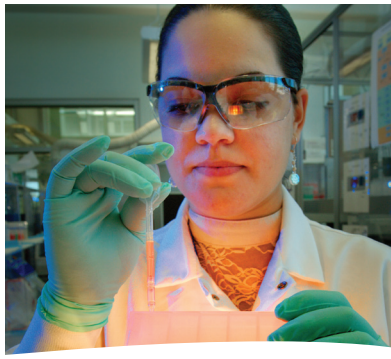
2014

Fourth National Report on Human Exposure to Environmental Chemicals

Updated Tables, August, 2014



U.S. Department of Health and Human Services
Centers for Disease Control and Prevention

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Fourth National Report on Human Exposure to Environmental Chemicals, Updated Tables, August 2014

The *Fourth National Report on Human Exposure to Environmental Chemicals, Updated Tables, August 2014* provides nationally representative biomonitoring data that has become available since the publication of the *Fourth National Report on Human Exposure to Environmental Chemicals, 2009*. The *Updated Tables, August 2014* is being released soon after the *Updated Tables, July 2014* because of errors in NHANES sampling weights that have recently been discovered by the National Center for Health Statistics (NCHS) in selected data files for NHANES 2011-2012 (see Important Notice below).

Compared to the *Updated Tables, September 2013*, the *Updated Tables, August 2014* present data for 35 new chemicals and updated data for 16 chemicals. Since publication of the *Fourth Report, 2009*, the *Updated Tables, August 2014* has updated tables for 129 chemicals and new tables for 70 chemicals.

Over time, some of the chemicals and the samples in which they have been measured have changed. In this release of the *Updated Tables,* a number of chemicals were measured in a Special Sample of the U.S. population, namely, adult cigarette smokers and nonsmokers. These data tables are presented together (Adult Cigarette Smokers and Nonsmokers: Analysis of Select Chemicals in a Special Sample). A link to a Biomonitoring Summary, information about a specific chemical or chemical group, is provided at the bottom of many of the data tables. For many chemicals, there is also a link to a brief overview about the chemical or chemical group, referred to as a Fact Sheet. Two appendices are updated to include information pertinent to these chemicals, as well as the other chemicals included in the *Updated Tables* (Appendix C. References for Biomonitoring Methods; Appendix D. Limit of Detection Table).

The chemicals included in this *Updated Tables* are posted on the *Report* website: Chemicals in the *Fourth Report: Updated Tables, August 2014*.

The *Report* website also is the best resource for the most recent updates of available data (http://www.cdc.gov/exposurereport). The website also contains details of the Data Sources and Data Analysis, Interpretation of *Report* Data, and Chemical and Toxicological Information that pertain to the *Updated Tables.*

Important Notice Regarding the *Updated Tables, July 2014*

The *Updated Tables, July 2014*, were withdrawn August 8, 2014 after NHANES discovered and alerted us to an error in sampling weights in selected data files for NHANES 2011-2012.

The chemicals affected by the NHANES 2011-2012 sampling weight error include the following:

- Environmental Phenols: Benzophenone-3, Bisphenol A, Triclosan
- Other Pesticide Metabolites
- Metals and Metalloids (urine and serum results only; whole blood results are not

affected)

- Parabens
- Perchlorate and Other Anions
- Perfluorinated Compounds: Surfactants
- Phthalate Metabolites
- Polycyclic Aromatic Hydrocarbon Metabolites
- Volatile Organic Compound (VOC) Metabolites

This *Updated Tables, August 2014,* includes NHANES 2011-2012 data ***not affected*** by the sampling weight error. When the NHANES 2011-2012 corrected files are available, we will recalculate our summary data and add appropriate tables to a future release of *Updated Tables*.

In addition, a second NHANES issue involving sample weights caused us to withdraw data tables on July 18 for the chemicals measured in **pooled samples** for NHANES 2005-2006 and 2007-2008. When corrected data files are available from NHANES for the NHANES 2005-2006 and 2007-2008 pooled samples, we will provide them in a future *Updated Tables*.

For additional details regarding the pooled samples, see the section Special Analysis of Pooled Samples for Select Chemicals.

What's New and Different?

The *Updated Tables* in this release include chemicals that have results available from the NHANES survey periods 2007-2008 or 2011-2012. New chemicals measured for the first time include ethyl mercury, methyl mercury, selenium, and manganese in whole blood. Urinary metabolites of several volatile organic compounds and urine manganese, strontium, and tin were measured in a special sample of adult smokers and nonsmokers.

Chemicals with updated data in this release are serum cotinine; urinary NNAL; metals in whole blood; and urinary metabolites of pyrethroids, herbicides, and specific organophosphorus pesticides.

Results for several chemicals will not be reported after NHANES 2009-2010 because their concentrations have been largely undetectable in previous survey periods. These chemicals are urinary beryllium and platinum; urinary 4-*tert*-octylphenol; urinary *o*-phenylphenol; the urinary organochlorine pesticide metabolites 2,4,5-trichlorophenol and 2,4,6-trichlorophenol; and the urinary phthalate metabolites, mono-cyclohexyl phthalate and mono-*n*-octyl phthalate. The phytoestrogen group of chemicals is not reported after NHANES 2009-2010 because the largely dietary sources remain unchanged, and urine concentrations of the phytoestrogens and metabolites have been relatively stable from 1999-2010.

Previously released data tables for several urinary pesticides and metabolites did not include results for ages 60 years and older in the NHANES 2001-2002 results. These results are included in the current *Updated Tables*. Therefore, sample sizes are larger and geometric means and percentile estimates are slightly different for several of the 2001-2002 categories in these data tables compared with previous tables. The 11 affected chemicals are four pyrethroid metabolites, three specific organophosphorus metabolites, 2,4-dichlorophenoxyacetic acid, 2,4,5-trichlorophenoxyacetic acid, and two carbamate metabolites.

Adult Cigarette Smokers and Nonsmokers: Analysis of Selected Chemicals in a Special Sample

Beginning with the NHANES 2011-2012 survey period, a special sample of adults (age 20 years and older) was used to measure select chemical groups that are associated with tobacco smoke exposure. This special sample includes adults who reported that they currently smoke cigarettes. Results for these chemicals are provided in the section, Adult Cigarette Smokers and Nonsmokers: Analysis of Select Chemicals in a Special Sample. The chemicals included in this section are urinary metals and arsenic species; urinary perchlorate, nitrate, and thiocyanate; urinary metabolites of several polycyclic aromatic hydrocarbons (PAHs); and urinary metabolites of several volatile organic compounds. Future *Updated Tables* will present additional data for the special sample as results become available.

For the information in this section, "What's New and Different," contained in previous releases of *Updated Tables*, please see the Archives from *Updated Tables* at: http://www.cdc.gov/exposurereport/.

Serum Cotinine

Metabolite of nicotine (component of tobacco smoke)

Geometric mean and selected percentiles of serum concentrations (in ng/mL) for the ***non-smoking** U.S. population from the National Health and Nutrition Examination Survey.

	Survey years	Geometric mean (95% conf. interval)	Selected percentiles (95% confidence interval) 50th	75th	90th	95th	Sample size
Total	99-00	*	**.060** (<LOD-.080)	**.240** (.190-.302)	**1.02** (.770-1.28)	**1.96** (1.60-2.62)	5999
	01-02**	**.062** (.050-.077)	**< LOD**	**.160** (.120-.220)	**.930** (.740-1.17)	**2.20** (1.83-2.44)	6819
	03-04	**.071** (.057-.089)	**.050** (.040-.070)	**.210** (.140-.310)	**.990** (.740-1.30)	**2.17** (1.81-2.54)	6320
	05-06	**.054** (.047-.061)	**.040** (.030-.040)	**.120** (.100-.150)	**.630** (.460-.870)	**1.47** (1.15-1.92)	6347
	07-08	**.057** (.048-.068)	**.040** (.030-.040)	**.130** (.100-.180)	**.760** (.550-1.09)	**1.81** (1.45-2.43)	6197
	09-10	**.041** (.037-.046)	**.030** (.020-.030)	**.070** (.070-.090)	**.450** (.350-.580)	**1.29** (1.04-1.61)	6678
	11-12	*	**.020** (.018-.023)	**.059** (.049-.072)	**.356** (.263-.500)	**1.30** (.882-1.60)	6108
Age group							
3-11 years	99-00	**.164** (.115-.234)	**.110** (.066-.188)	**.500** (.260-1.16)	**1.88** (.997-3.44)	**3.44** (1.42-4.79)	1174
	01-02**	**.110** (.076-.160)	**.070** (<LOD-.130)	**.570** (.310-1.00)	**2.23** (1.63-2.78)	**3.23** (2.53-4.01)	1415
	03-04	**.137** (.088-.213)	**.120** (.060-.220)	**.620** (.310-1.20)	**2.04** (1.38-2.94)	**3.35** (2.12-4.68)	1252
	05-06	**.078** (.062-.097)	**.050** (.040-.070)	**.220** (.160-.350)	**1.22** (.880-1.82)	**2.42** (1.63-3.46)	1296
	07-08	**.095** (.067-.136)	**.060** (.040-.100)	**.380** (.170-.840)	**1.67** (1.10-2.54)	**2.81** (2.26-3.54)	1337
	09-10	**.060** (.047-.075)	**.040** (.030-.050)	**.160** (.110-.250)	**.920** (.560-1.58)	**2.15** (1.35-3.00)	1355
	11-12	**.058** (.045-.074)	**.031** (.024-.045)	**.172** (.100-.313)	**1.02** (.627-1.94)	**2.49** (1.56-3.36)	1348
12-19 years	99-00	**.163** (.142-.187)	**.110** (.080-.163)	**.540** (.428-.660)	**1.66** (1.50-1.95)	**2.62** (2.09-3.39)	1773
	01-02**	**.086** (.059-.126)	**.050** (<LOD-.110)	**.350** (.190-.580)	**1.53** (1.09-2.12)	**3.12** (2.47-3.99)	1902
	03-04	**.110** (.087-.139)	**.080** (.060-.120)	**.510** (.350-.670)	**1.55** (1.21-1.93)	**2.68** (1.96-4.02)	1783
	05-06	**.074** (.060-.092)	**.050** (.040-.060)	**.230** (.150-.350)	**1.16** (.860-1.69)	**2.26** (1.69-2.72)	1714
	07-08	**.081** (.061-.106)	**.050** (.030-.070)	**.350** (.170-.550)	**1.25** (.930-1.99)	**2.54** (2.04-2.94)	934
	09-10	**.056** (.044-.072)	**.030** (.020-.040)	**.130** (.080-.230)	**.980** (.510-1.80)	**2.49** (1.31-3.65)	1042
	11-12	**.049** (.040-.061)	**.025** (.020-.037)	**.147** (.083-.235)	**.711** (.520-1.06)	**1.47** (1.05-2.29)	990
20 years and older	99-00	*	**.050** (<LOD-.061)	**.167** (.140-.193)	**.630** (.533-.820)	**1.50** (1.28-1.66)	3052
	01-02**	**.052** (<LOD-.063)	**< LOD**	**.110** (.090-.150)	**.630** (.470-.790)	**1.42** (1.14-1.89)	3502
	03-04	**.058** (.047-.071)	**.040** (.030-.050)	**.140** (.100-.200)	**.630** (.480-.840)	**1.54** (1.26-1.92)	3285
	05-06	**.047** (.042-.053)	**.030** (.030-.040)	**.100** (.080-.120)	**.440** (.310-.620)	**1.14** (.870-1.41)	3337
	07-08	**.049** (.043-.057)	**.030** (.030-.040)	**.100** (.080-.120)	**.490** (.390-.640)	**1.37** (.970-1.70)	3926
	09-10	**.037** (.034-.040)	**.020** (.020-.030)	**.070** (.060-.070)	**.310** (.240-.390)	**.990** (.700-1.24)	4281
	11-12	*	**.019** (.016-.020)	**.047** (.040-.053)	**.210** (.176-.263)	**.835** (.566-1.38)	3770
Gender							
Males	99-00	**.124** (.106-.145)	**.080** (.060-.110)	**.308** (.220-.410)	**1.20** (.950-1.49)	**2.39** (1.66-3.22)	2789
	01-02**	**.075** (.059-.094)	**.050** (<LOD-.070)	**.230** (.160-.320)	**1.17** (.960-1.49)	**2.44** (2.23-2.99)	3152
	03-04	**.087** (.070-.108)	**.060** (.040-.080)	**.280** (.190-.360)	**1.23** (.910-1.68)	**2.63** (2.09-3.19)	2937
	05-06	**.064** (.055-.074)	**.040** (.040-.050)	**.150** (.120-.190)	**.720** (.550-1.07)	**1.85** (1.42-2.24)	2922
	07-08	**.068** (.056-.081)	**.040** (.040-.050)	**.170** (.120-.240)	**1.07** (.690-1.39)	**2.52** (1.84-2.92)	2948
	09-10	**.046** (.042-.051)	**.030** (.030-.030)	**.080** (.070-.100)	**.550** (.410-.700)	**1.60** (1.19-2.38)	3181
	11-12	**.041** (.037-.045)	**.023** (.020-.026)	**.076** (.065-.095)	**.530** (.397-.715)	**1.76** (1.35-2.42)	2903
Females	99-00	*	**< LOD**	**.180** (.148-.230)	**.850** (.600-1.14)	**1.85** (1.33-2.45)	3210
	01-02**	**.053** (<LOD-.066)	**< LOD**	**.120** (.090-.180)	**.710** (.540-.990)	**1.77** (1.32-2.20)	3667
	03-04	**.060** (.047-.077)	**.040** (.030-.060)	**.160** (.110-.260)	**.860** (.580-1.15)	**1.76** (1.32-2.22)	3383
	05-06	**.047** (.040-.054)	**.030** (.030-.040)	**.100** (.070-.130)	**.510** (.300-.830)	**1.23** (1.04-1.52)	3425
	07-08	**.050** (.042-.059)	**.030** (.030-.040)	**.110** (.080-.150)	**.630** (.400-.900)	**1.40** (1.09-1.87)	3249
	09-10	**.037** (.033-.042)	**.020** (.020-.030)	**.070** (.050-.080)	**.380** (.270-.570)	**1.03** (.720-1.61)	3497
	11-12	*	**.019** (.016-.021)	**.048** (.040-.059)	**.244** (.189-.314)	**.819** (.572-1.31)	3205

Limit of detection (LOD, see Data Analysis section) for Survey years 99-00, 01-02, 03-04, 05-06, 07-08, 09-10, and 11-12 are 0.05, 0.05, 0.015, 0.015, 0.015, 0.015, and 0.015 respectively.
< LOD means less than the limit of detection, which may vary for some chemicals by year and by individual sample.
* Not calculated: proportion of results below limit of detection was too high to provide a valid result.
** In the 2001-2002 survey period, 83% of measurements had an LOD of 0.015 ng/mL, and 17% had an LOD of 0.05 ng/mL.
***Non-smoking is defined as a serum cotinine concentration of 10 ng/mL or less.

Biomonitoring Summary: http://www.cdc.gov/biomonitoring/Cotinine_BiomonitoringSummary.html
Factsheet: http://www.cdc.gov/biomonitoring/Cotinine_FactSheet.html

Serum Cotinine

Metabolite of nicotine (component of tobacco smoke)

Geometric mean and selected percentiles of serum concentrations (in ng/mL) for the ***non-smoking** U.S. population from the National Health and Nutrition Examination Survey.

	Survey years	Geometric mean (95% conf. interval)	Selected percentiles (95% confidence interval) 50th	75th	90th	95th	Sample size
Race/ethnicity							
Mexican Americans	99-00	*	**< LOD**	**.140** (.110-.180)	**.506** (.370-.726)	**1.21** (.900-1.70)	2241
	01-02**	**.060** (<LOD-.084)	**< LOD**	**.160** (.080-.310)	**.730** (.480-1.19)	**2.12** (1.19-2.96)	1878
	03-04	**.054** (.043-.068)	**.030** (.020-.050)	**.120** (.080-.180)	**.690** (.430-1.00)	**2.65** (1.87-3.57)	1707
	05-06	**.047** (.038-.059)	**.030** (.020-.040)	**.100** (.070-.150)	**.500** (.370-.730)	**1.54** (.830-2.49)	1807
	07-08	**.044** (.033-.057)	**.030** (.020-.040)	**.080** (.060-.120)	**.480** (.290-.880)	**1.59** (1.00-3.07)	1412
	09-10	**.038** (.032-.045)	**.020** (.020-.030)	**.060** (.050-.080)	**.360** (.230-.640)	**1.35** (.710-2.25)	1615
	11-12	**.033** (.027-.042)	**.021** (.016-.027)	**.055** (.040-.081)	**.230** (.106-.386)	**.668** (.349-2.07)	886
Non-Hispanic blacks	99-00	**.175** (.153-.201)	**.131** (.111-.150)	**.505** (.400-.625)	**1.43** (1.21-1.75)	**2.34** (1.84-3.50)	1333
	01-02**	**.164** (.137-.197)	**.130** (.110-.160)	**.580** (.450-.770)	**1.77** (1.55-2.05)	**3.15** (2.50-4.30)	1602
	03-04	**.144** (.104-.198)	**.120** (.080-.180)	**.520** (.350-.770)	**1.54** (1.20-2.14)	**2.77** (2.18-3.54)	1704
	05-06	**.114** (.085-.153)	**.080** (.060-.120)	**.440** (.240-.690)	**1.42** (.900-2.03)	**2.45** (1.70-3.70)	1630
	07-08	**.094** (.079-.112)	**.060** (.050-.090)	**.320** (.250-.390)	**1.19** (.980-1.46)	**2.37** (1.75-2.88)	1244
	09-10	**.095** (.074-.122)	**.070** (.050-.090)	**.320** (.210-.540)	**1.33** (.900-2.05)	**2.85** (1.97-3.60)	1129
	11-12	**.076** (.054-.107)	**.045** (.032-.071)	**.259** (.127-.513)	**1.10** (.678-2.02)	**2.86** (1.46-4.20)	1576
Non-Hispanic whites	99-00	*	**.050** (<LOD-.073)	**.216** (.154-.312)	**.950** (.621-1.40)	**1.92** (1.48-3.02)	1950
	01-02**	**.052** (<LOD-.068)	**< LOD**	**.120** (.090-.180)	**.800** (.570-1.11)	**1.88** (1.48-2.30)	2847
	03-04	**.066** (.050-.087)	**.040** (.030-.070)	**.180** (.120-.300)	**.920** (.620-1.32)	**2.01** (1.70-2.49)	2500
	05-06	**.049** (.042-.056)	**.030** (.030-.040)	**.100** (.080-.130)	**.530** (.330-.800)	**1.27** (.980-1.62)	2404
	07-08	**.056** (.043-.073)	**.040** (.030-.050)	**.130** (.080-.240)	**.750** (.440-1.27)	**1.70** (1.24-2.54)	2485
	09-10	**.037** (.033-.043)	**.020** (.020-.030)	**.070** (.050-.080)	**.350** (.240-.560)	**1.06** (.780-1.60)	2743
	11-12	*	**.017** (<LOD-.020)	**.048** (.039-.061)	**.277** (.207-.363)	**1.10** (.627-1.50)	1841
All Hispanics	11-12	**.033** (.028-.040)	**.021** (.017-.026)	**.054** (.041-.074)	**.233** (.123-.387)	**.834** (.377-2.37)	1587
Asians	11-12	**.030** (.026-.035)	**.023** (.020-.027)	**.046** (.037-.058)	**.123** (.083-.201)	**.308** (.201-.594)	878

Limit of detection (LOD, see Data Analysis section) for Survey years 99-00, 01-02, 03-04, 05-06, 07-08, 09-10, and 11-12 are 0.05, 0.05, 0.015, 0.015, 0.015, 0.015, and 0.015 respectively.
< LOD means less than the limit of detection, which may vary for some chemicals by year and by individual sample.
* Not calculated: proportion of results below limit of detection was too high to provide a valid result.
** In the 2001-2002 survey period, 83% of measurements had an LOD of 0.015 ng/mL, and 17% had an LOD of 0.05 ng/mL.
***Non-smoking is defined as a serum cotinine concentration of 10 ng/mL or less.

Biomonitoring Summary: http://www.cdc.gov/biomonitoring/Cotinine_BiomonitoringSummary.html
Factsheet: http://www.cdc.gov/biomonitoring/Cotinine_FactSheet.html

Urinary NNAL (4-(methylnitrosamino)-1-(3-pyridyl)-1-butanol)

Metabolite of (4-(methylnitrosamino)-1-(3-pyridyl)-1-butanone) (NNK)

Geometric mean and selected percentiles of urine concentrations (in pg/mL) for the ****non-smoking** U.S. population from the National Health and Nutrition Examination Survey.

	Survey years	Geometric mean (95% conf. interval)	Selected percentiles (95% confidence interval) 50th	75th	90th	95th	Sample size
Total	07-08	*	< LOD	**2.80** (2.20-3.70)	**11.1** (8.80-14.4)	**24.5** (18.0-30.4)	5212
	09-10	*	< LOD	**1.90** (1.60-2.40)	**7.30** (6.40-8.50)	**16.7** (13.9-19.6)	6067
	11-12	*	**.800** (.700-.900)	**2.30** (2.00-2.60)	**7.40** (6.10-8.90)	**15.7** (11.7-21.0)	5486
Age group							
6-11 years	07-08	*	**1.30** (.600-2.60)	**8.50** (4.70-13.8)	**31.4** (17.5-49.8)	**60.6** (37.1-75.7)	875
	09-10	*	**.600** (<LOD-1.00)	**3.10** (2.20-5.00)	**15.5** (10.4-22.8)	**29.3** (18.1-59.4)	937
	11-12	**1.91** (1.57-2.32)	**1.30** (1.10-1.70)	**5.10** (3.80-7.30)	**21.1** (11.5-31.9)	**36.7** (20.1-60.2)	955
12-19 years	07-08	*	**1.20** (.600-2.10)	**5.00** (3.80-9.20)	**20.0** (11.9-27.5)	**39.1** (20.6-60.9)	843
	09-10	*	**.900** (<LOD-1.50)	**3.70** (2.70-5.20)	**12.5** (6.90-25.5)	**29.1** (13.9-51.4)	1004
	11-12	**1.53** (1.35-1.73)	**1.30** (1.10-1.40)	**3.10** (2.20-4.30)	**10.8** (7.60-14.4)	**19.3** (13.2-27.0)	949
20 years and older	07-08	*	< LOD	**2.10** (1.70-2.50)	**8.20** (6.90-9.80)	**16.6** (13.9-21.5)	3494
	09-10	*	< LOD	**1.60** (1.30-1.90)	**6.10** (5.10-6.90)	**13.1** (10.7-15.8)	4126
	11-12	*	**.700** (.600-.900)	**2.00** (1.80-2.20)	**5.70** (4.80-6.80)	**11.7** (10.0-14.9)	3582
Gender							
Males	07-08	*	< LOD	**3.80** (3.00-4.50)	**12.6** (10.6-15.0)	**27.5** (18.9-38.1)	2463
	09-10	*	< LOD	**2.40** (1.90-3.00)	**8.30** (7.20-9.90)	**19.3** (15.2-22.5)	2903
	11-12	**1.32** (1.23-1.41)	**1.00** (.900-1.10)	**2.80** (2.40-3.10)	**9.80** (7.60-11.2)	**19.5** (13.5-26.4)	2616
Females	07-08	*	< LOD	**2.10** (1.50-2.90)	**9.70** (7.10-13.6)	**21.6** (16.6-28.0)	2749
	09-10	*	< LOD	**1.60** (1.30-1.90)	**6.50** (4.70-8.80)	**14.0** (10.7-19.0)	3164
	11-12	*	**.700** (.600-.800)	**1.90** (1.70-2.20)	**5.70** (4.60-7.20)	**12.4** (9.00-18.5)	2870
Race/ethnicity							
Mexican Americans	07-08	*	< LOD	**2.00** (1.20-3.10)	**6.90** (4.90-9.00)	**13.9** (10.8-17.3)	1206
	09-10	*	< LOD	**1.60** (1.20-2.20)	**4.90** (3.70-7.00)	**11.1** (5.70-18.4)	1476
	11-12	**1.12** (.956-1.30)	**.900** (.700-1.20)	**1.90** (1.50-2.50)	**5.30** (3.70-7.40)	**9.50** (7.70-15.0)	775
Non-Hispanic blacks	07-08	*	**.800** (<LOD-1.90)	**4.90** (3.60-6.30)	**14.0** (11.6-17.2)	**26.1** (18.5-33.2)	1057
	09-10	**1.81** (1.30-2.54)	**1.40** (<LOD-2.40)	**5.90** (3.80-8.10)	**18.9** (11.7-26.1)	**34.0** (18.9-61.9)	1004
	11-12	**1.98** (1.57-2.48)	**1.60** (1.30-2.10)	**5.10** (3.30-8.70)	**15.9** (9.40-28.8)	**30.4** (18.5-46.7)	1393
Non-Hispanic whites	07-08	*	< LOD	**2.80** (1.90-4.10)	**11.9** (8.20-17.7)	**27.5** (19.6-35.4)	2047
	09-10	*	< LOD	**1.80** (1.40-2.40)	**6.80** (5.40-8.40)	**15.2** (11.9-19.3)	2514
	11-12	*	**.800** (.600-.900)	**2.10** (1.80-2.40)	**6.70** (5.30-8.50)	**14.4** (11.4-20.4)	1679
Other Hispanics	11-12	**1.19** (.905-1.56)	**1.00** (.600-1.20)	**2.30** (1.50-4.00)	**6.30** (3.10-15.6)	**14.2** (6.90-22.6)	630
Asians	11-12	*	**.600** (<LOD-.700)	**1.20** (1.00-1.50)	**2.80** (1.90-3.80)	**5.00** (3.40-6.80)	814

Limit of detection (LOD, see Data Analysis section) for Survey years 07-08, 09-10, and 11-12 are 0.6, 0.6, and 0.6 respectively.
< LOD means less than the limit of detection, which may vary for some chemicals by year and by individual sample.
* Not calculated: proportion of results below limit of detection was too high to provide a valid result.
**Non-smoking is defined as a serum cotinine concentration of 10 ng/mL or less.

Biomonitoring Summary: http://www.cdc.gov/biomonitoring/NNAL_BiomonitoringSummary.html
Factsheet: http://www.cdc.gov/biomonitoring/NNAL_FactSheet.html

NNAL (4-(methylnitrosamino)-1-(3-pyridyl)-1-butanol) (creatinine corrected)

Metabolite of (4-(methylnitrosamino)-1-(3-pyridyl)-1-butanone) (NNK)

Geometric mean and selected percentiles of urine concentrations (in pg/mg of creatinine) for the ****non-smoking** U.S. population from the National Health and Nutrition Examination Survey.

	Survey years	Geometric mean (95% conf. interval)	Selected percentiles (95% confidence interval) 50th	75th	90th	95th	Sample size
Total	07-08	*	< LOD	**2.79** (2.31-3.50)	**10.3** (7.36-14.0)	**20.5** (16.4-27.5)	5210
	09-10	*	< LOD	**2.05** (1.88-2.28)	**6.40** (5.71-7.41)	**14.6** (11.5-17.3)	6066
	11-12	*	**1.06** (1.00-1.14)	**2.47** (2.14-2.72)	**6.57** (5.24-8.25)	**14.3** (11.7-18.4)	5483
Age group							
6-11 years	07-08	*	**2.15** (1.38-3.22)	**10.7** (5.95-17.9)	**38.3** (21.2-57.1)	**60.9** (46.4-72.1)	875
	09-10	*	**1.19** (<LOD-1.52)	**4.25** (2.88-6.37)	**19.2** (11.0-28.8)	**37.2** (22.9-53.0)	936
	11-12	**2.57** (2.13-3.10)	**1.91** (1.60-2.47)	**5.93** (4.21-8.49)	**23.5** (13.7-31.6)	**39.1** (23.5-59.0)	954
12-19 years	07-08	*	**1.14** (.710-1.75)	**4.40** (2.59-7.36)	**14.2** (10.5-23.1)	**29.2** (15.6-41.9)	841
	09-10	*	**1.05** (<LOD-1.26)	**3.08** (1.96-4.37)	**10.0** (6.02-15.2)	**20.7** (12.3-30.2)	1004
	11-12	**1.45** (1.31-1.60)	**1.14** (1.05-1.25)	**3.40** (2.50-3.99)	**9.14** (5.71-13.4)	**18.4** (12.2-22.2)	949
20 years and older	07-08	*	< LOD	**2.34** (2.00-2.73)	**6.82** (5.49-8.65)	**15.1** (11.8-17.7)	3494
	09-10	*	< LOD	**1.84** (1.71-2.00)	**5.21** (4.57-6.07)	**11.4** (8.42-14.1)	4126
	11-12	*	**1.00** (.938-1.08)	**2.12** (1.91-2.42)	**5.00** (4.26-6.18)	**10.5** (8.56-13.0)	3580
Gender							
Males	07-08	*	< LOD	**2.98** (2.39-3.71)	**10.5** (7.57-12.9)	**20.9** (15.7-29.0)	2462
	09-10	*	< LOD	**2.00** (1.86-2.25)	**6.61** (6.00-7.83)	**15.1** (11.7-19.8)	2902
	11-12	**1.19** (1.10-1.29)	**.984** (.909-1.05)	**2.38** (2.08-2.68)	**7.36** (5.60-9.33)	**15.2** (11.5-21.4)	2615
Females	07-08	*	< LOD	**2.67** (2.14-3.37)	**9.87** (6.79-14.9)	**20.0** (15.7-27.9)	2748
	09-10	*	< LOD	**2.09** (1.82-2.36)	**6.15** (4.88-8.21)	**12.7** (9.26-17.3)	3164
	11-12	*	**1.18** (1.04-1.30)	**2.48** (2.17-2.86)	**5.67** (4.69-8.21)	**13.5** (10.3-18.0)	2868
Race/ethnicity							
Mexican Americans	07-08	*	< LOD	**2.16** (1.55-3.00)	**5.91** (4.32-8.30)	**13.3** (8.36-17.9)	1205
	09-10	*	< LOD	**1.73** (1.36-2.11)	**5.00** (3.72-6.84)	**10.0** (6.79-14.7)	1476
	11-12	**1.15** (.985-1.35)	**1.03** (.860-1.22)	**1.94** (1.67-2.35)	**4.72** (3.51-6.74)	**9.93** (6.46-15.9)	775
Non-Hispanic blacks	07-08	*	**.960** (<LOD-1.42)	**3.70** (2.50-5.31)	**11.5** (9.18-14.2)	**20.8** (14.5-28.8)	1056
	09-10	**1.40** (.982-2.01)	**1.21** (<LOD-2.06)	**3.96** (2.78-5.99)	**12.2** (7.29-20.3)	**23.4** (14.3-35.4)	1003
	11-12	**1.50** (1.18-1.91)	**1.31** (1.02-1.63)	**3.70** (2.36-6.09)	**11.5** (6.69-19.0)	**19.7** (11.5-33.7)	1392
Non-Hispanic whites	07-08	*	< LOD	**2.93** (2.22-4.00)	**11.4** (7.22-17.1)	**23.9** (17.1-32.0)	2047
	09-10	*	< LOD	**1.96** (1.82-2.15)	**6.09** (5.00-7.83)	**14.7** (10.0-18.2)	2514
	11-12	*	**1.04** (.984-1.14)	**2.47** (2.06-2.79)	**5.94** (5.14-7.72)	**16.1** (11.5-18.9)	1677
Other Hispanics	11-12	**1.26** (.940-1.68)	**1.07** (.882-1.47)	**2.37** (1.58-3.43)	**5.42** (3.01-13.3)	**12.3** (5.92-15.6)	630
Asians	11-12	*	**.972** (<LOD-1.17)	**1.82** (1.56-2.24)	**3.57** (2.86-4.79)	**5.71** (4.29-8.57)	814

< LOD means less than the limit of detection for the urine levels not corrected for creatinine.
* Not calculated: proportion of results below limit of detection was too high to provide a valid result.
**Non-smoking is defined as a serum cotinine concentration of 10 ng/mL or less.

Biomonitoring Summary: http://www.cdc.gov/biomonitoring/NNAL_BiomonitoringSummary.html
Factsheet: http://www.cdc.gov/biomonitoring/NNAL_FactSheet.html

Blood Bromodichloromethane

Geometric mean and selected percentiles of whole blood concentrations (in pg/mL) for the U.S. population from the National Health and Nutrition Examination Survey.

	Survey years	Geometric mean (95% conf. interval)	Selected percentiles (95% confidence interval) 50th	75th	90th	95th	Sample size
Total	01-02	**2.21** (1.65-2.97)	**2.30** (1.56-3.21)	**4.63** (3.24-6.20)	**8.45** (5.86-12.0)	**12.0** (7.68-19.2)	785
	03-04	**1.50** (1.20-1.86)	**1.40** (1.10-1.90)	**3.40** (2.60-4.20)	**6.20** (5.30-7.00)	**9.50** (7.00-12.0)	1322
	05-06	**1.41** (1.09-1.83)	**1.30** (.880-1.80)	**3.00** (2.10-4.40)	**6.30** (4.30-9.70)	**10.0** (6.80-14.0)	3139
Age group							
12-19 years	05-06	**1.23** (.954-1.58)	**1.00** (.620-1.60)	**2.80** (1.70-4.10)	**5.50** (4.10-7.20)	**8.20** (6.20-12.0)	932
20-59 years	01-02	**2.21** (1.65-2.97)	**2.30** (1.56-3.21)	**4.63** (3.24-6.20)	**8.45** (5.86-12.0)	**12.0** (7.68-19.2)	785
	03-04	**1.50** (1.20-1.86)	**1.40** (1.10-1.90)	**3.40** (2.60-4.20)	**6.20** (5.30-7.00)	**9.50** (7.00-12.0)	1322
	05-06	**1.45** (1.11-1.89)	**1.30** (.900-1.90)	**3.10** (2.10-4.60)	**6.40** (4.30-10.0)	**11.0** (6.90-14.0)	1537
60 years and older	05-06	**1.43** (.996-2.05)	**1.40** (.850-2.00)	**3.20** (1.60-5.90)	**6.50** (3.20-15.0)	**9.70** (5.00-18.0)	670
Gender							
Males	01-02	**2.19** (1.60-3.00)	**2.31** (1.63-3.21)	**4.64** (3.21-6.08)	**7.96** (5.74-15.3)	**13.0** (6.93-20.5)	382
	03-04	**1.48** (1.18-1.85)	**1.40** (.940-2.00)	**3.40** (2.60-4.30)	**6.60** (5.40-7.20)	**11.0** (7.20-14.0)	650
	05-06	**1.39** (1.07-1.80)	**1.20** (.830-1.70)	**3.00** (2.00-4.30)	**6.50** (4.30-10.0)	**11.0** (6.80-16.0)	1489
Females	01-02	**2.24** (1.66-3.01)	**2.28** (1.49-3.24)	**4.63** (3.09-7.01)	**8.62** (5.26-12.9)	**11.1** (7.68-25.0)	403
	03-04	**1.51** (1.21-1.90)	**1.50** (1.10-1.90)	**3.30** (2.50-4.20)	**6.10** (4.69-7.30)	**7.80** (6.40-12.0)	672
	05-06	**1.44** (1.10-1.88)	**1.30** (.900-1.90)	**3.10** (2.10-4.60)	**6.20** (4.20-9.40)	**9.40** (6.30-13.0)	1650
Race/ethnicity							
Mexican Americans	01-02	**3.28** (2.29-4.68)	**3.32** (2.19-4.70)	**6.81** (3.71-10.4)	**10.8** (8.24-14.7)	**14.7** (11.1-20.5)	227
	03-04	**1.65** (1.15-2.38)	**1.60** (.820-2.80)	**3.50** (2.60-4.90)	**7.30** (4.50-10.0)	**10.0** (7.30-11.0)	244
	05-06	**1.95** (1.19-3.18)	**1.90** (1.00-3.70)	**4.40** (2.10-9.10)	**9.10** (4.80-17.0)	**14.0** (7.50-22.0)	771
Non-Hispanic blacks	01-02	**2.32** (1.82-2.94)	**2.50** (1.56-3.55)	**4.57** (3.60-5.56)	**8.69** (5.63-9.49)	**10.0** (5.89-13.5)	130
	03-04	**1.56** (1.15-2.13)	**1.70** (1.10-2.20)	**2.90** (2.15-3.80)	**5.10** (3.80-6.60)	**6.60** (4.90-13.0)	290
	05-06	**1.74** (1.27-2.37)	**1.70** (1.00-2.70)	**3.80** (2.70-4.80)	**6.40** (4.50-8.90)	**8.70** (6.60-11.0)	817
Non-Hispanic whites	01-02	**2.02** (1.42-2.87)	**2.16** (1.36-3.09)	**4.34** (2.92-6.01)	**7.33** (4.72-15.3)	**11.1** (6.01-26.1)	365
	03-04	**1.42** (1.11-1.81)	**1.30** (.850-1.90)	**3.30** (2.30-4.40)	**6.20** (5.20-7.20)	**9.80** (6.70-13.0)	684
	05-06	**1.29** (.989-1.67)	**1.10** (.710-1.70)	**2.70** (1.80-4.10)	**5.80** (4.00-8.60)	**9.40** (6.20-14.0)	1318

Limit of detection (LOD, see Data Analysis section) for Survey years 01-02, 03-04, and 05-06 are 0.233, 0.62, and 0.62 respectively.

Biomonitoring Summary: http://www.cdc.gov/biomonitoring/THM-DBP_BiomonitoringSummary.html

Blood Dibromochloromethane (Chlorodibromomethane)

Geometric mean and selected percentiles of whole blood concentrations (in pg/mL) for the U.S. population from the National Health and Nutrition Examination Survey.

	Survey years	Geometric mean (95% conf. interval)	Selected percentiles (95% confidence interval) 50th	75th	90th	95th	Sample size
Total	01-02	**.867** (.521-1.44)	**.780** (.340-1.90)	**2.61** (1.22-4.38)	**5.46** (3.53-9.71)	**8.96** (5.04-12.9)	781
	03-04	*	**< LOD**	**1.30** (1.00-1.80)	**3.60** (2.70-4.80)	**7.20** (4.80-8.60)	1333
	05-06	*	**< LOD**	**1.40** (.870-2.40)	**4.30** (2.40-7.40)	**7.80** (4.60-13.0)	3122
Age group							
12-19 years	05-06	*	**< LOD**	**1.30** (.750-2.50)	**4.10** (2.60-5.50)	**6.50** (4.10-11.0)	925
20-59 years	01-02	**.867** (.521-1.44)	**.780** (.340-1.90)	**2.61** (1.22-4.38)	**5.46** (3.53-9.71)	**8.96** (5.04-12.9)	781
	03-04	*	**< LOD**	**1.30** (1.00-1.80)	**3.60** (2.70-4.80)	**7.20** (4.80-8.60)	1333
	05-06	*	**< LOD**	**1.40** (.860-2.30)	**4.10** (2.40-7.10)	**7.80** (4.20-14.0)	1526
60 years and older	05-06	*	**< LOD**	**1.60** (.780-4.00)	**5.10** (1.30-13.0)	**7.90** (2.20-20.0)	671
Gender							
Males	01-02	**.850** (.481-1.50)	**.730** (.300-2.25)	**2.66** (.960-4.38)	**4.77** (3.33-9.20)	**8.06** (4.31-14.6)	371
	03-04	*	**< LOD**	**1.30** (1.00-1.90)	**3.70** (2.70-5.70)	**7.20** (5.20-8.60)	657
	05-06	*	**< LOD**	**1.40** (.830-2.30)	**4.40** (2.30-7.80)	**8.30** (4.30-14.0)	1487
Females	01-02	**.884** (.550-1.42)	**.820** (.340-1.69)	**2.54** (1.37-4.31)	**6.30** (3.28-10.1)	**9.91** (5.02-13.0)	410
	03-04	*	**< LOD**	**1.30** (1.00-1.80)	**3.60** (2.50-4.80)	**6.60** (3.80-9.20)	676
	05-06	*	**< LOD**	**1.50** (.920-2.50)	**4.20** (2.20-7.80)	**7.20** (4.10-14.0)	1635
Race/ethnicity							
Mexican Americans	01-02	**1.61** (.843-3.06)	**1.49** (.670-3.99)	**4.59** (1.93-8.89)	**9.26** (5.21-12.1)	**12.0** (9.63-16.1)	233
	03-04	**1.20** (.963-1.50)	**1.10** (.810-1.40)	**2.30** (1.50-4.10)	**5.20** (3.80-6.90)	**7.70** (5.20-11.0)	256
	05-06	**1.25** (.774-2.02)	**.950** (<LOD-1.70)	**2.50** (1.00-7.40)	**7.40** (2.50-19.0)	**13.0** (5.80-21.0)	759
Non-Hispanic blacks	01-02	**1.03** (.505-2.09)	**.930** (.530-2.03)	**2.03** (.770-7.06)	**4.22** (2.01-10.5)	**8.09** (2.80-16.5)	128
	03-04	*	**< LOD**	**.970** (.650-1.60)	**1.90** (1.20-3.20)	**3.20** (1.80-5.20)	288
	05-06	*	**.620** (<LOD-.820)	**1.30** (1.00-1.90)	**3.40** (2.10-4.90)	**5.50** (4.10-7.10)	822
Non-Hispanic whites	01-02	**.736** (.413-1.31)	**.640** (<LOD-1.93)	**2.49** (.870-4.27)	**4.57** (3.00-7.12)	**6.98** (4.27-11.1)	357
	03-04	*	**< LOD**	**1.30** (.950-1.80)	**3.30** (2.50-4.60)	**6.60** (3.70-9.20)	685
	05-06	*	**< LOD**	**1.30** (.710-2.30)	**4.10** (2.30-7.10)	**7.70** (4.60-11.0)	1311

Limit of detection (LOD, see Data Analysis section) for Survey years 01-02, 03-04, and 05-06 are 0.271, 0.62, and 0.62 respectively.
< LOD means less than the limit of detection, which may vary for some chemicals by year and by individual sample.
* Not calculated: proportion of results below limit of detection was too high to provide a valid result.

Biomonitoring Summary: **http://www.cdc.gov/biomonitoring/THM-DBP_BiomonitoringSummary.html**

Blood Tribromomethane (Bromoform)

Geometric mean and selected percentiles of whole blood concentrations (in pg/mL) for the U.S. population from the National Health and Nutrition Examination Survey.

	Survey years	Geometric mean (95% conf. interval)	Selected percentiles (95% confidence interval) 50th	75th	90th	95th	Sample size
Total	01-02	**1.57** (1.07-2.31)	**1.39** (.960-2.02)	**2.78** (1.76-4.63)	**6.05** (2.92-29.2)	**15.5** (3.68-85.4)	774
	03-04	*	**< LOD**	**1.80** (<LOD-2.80)	**3.74** (2.30-7.10)	**6.40** (3.60-14.0)	1310
	05-06	*	**< LOD**	**1.20** (<LOD-1.60)	**2.70** (2.00-4.00)	**5.20** (3.10-7.60)	3016
Age group							
12-19 years	05-06	*	**< LOD**	**1.20** (<LOD-1.60)	**2.40** (1.70-4.40)	**4.80** (2.80-7.10)	892
20-59 years	01-02	**1.57** (1.07-2.31)	**1.39** (.960-2.02)	**2.78** (1.76-4.63)	**6.05** (2.92-29.2)	**15.5** (3.68-85.4)	774
	03-04	*	**< LOD**	**1.80** (<LOD-2.80)	**3.74** (2.30-7.10)	**6.40** (3.60-14.0)	1310
	05-06	*	**< LOD**	**1.20** (<LOD-1.60)	**2.90** (1.90-4.20)	**5.20** (3.10-8.80)	1478
60 years and older	05-06	*	**< LOD**	**1.28** (<LOD-2.10)	**2.60** (2.30-3.50)	**4.70** (3.00-7.70)	646
Gender							
Males	01-02	**1.49** (.944-2.34)	**1.29** (.850-1.98)	**2.65** (1.49-5.05)	**6.12** (2.26-33.9)	**14.9** (2.79-69.9)	374
	03-04	*	**< LOD**	**1.90** (<LOD-2.87)	**4.00** (2.40-6.80)	**6.50** (4.00-13.0)	645
	05-06	*	**< LOD**	**1.16** (<LOD-1.60)	**2.70** (1.90-4.00)	**5.00** (3.10-7.60)	1424
Females	01-02	**1.67** (1.17-2.39)	**1.46** (1.05-2.21)	**2.86** (1.89-4.57)	**5.69** (3.30-27.5)	**22.2** (5.09-49.6)	400
	03-04	*	**< LOD**	**1.72** (<LOD-2.65)	**3.20** (1.93-7.70)	**6.10** (3.10-31.0)	665
	05-06	*	**< LOD**	**1.23** (1.00-1.60)	**2.70** (1.90-4.20)	**5.20** (3.10-8.80)	1592
Race/ethnicity							
Mexican Americans	01-02	**2.34** (1.15-4.77)	**1.66** (.990-3.38)	**4.03** (1.42-36.5)	**28.3** (4.39-49.2)	**40.8** (31.5-57.9)	234
	03-04	*	**1.60** (<LOD-3.10)	**3.30** (<LOD-9.40)	**7.60** (3.60-14.0)	**11.0** (5.60-210)	242
	05-06	*	**< LOD**	**1.60** (1.04-3.20)	**4.00** (2.40-5.90)	**5.90** (4.30-8.30)	721
Non-Hispanic blacks	01-02	**1.51** (.857-2.67)	**1.47** (.780-3.15)	**2.58** (1.39-4.64)	**4.34** (2.57-8.48)	**6.27** (3.28-15.2)	121
	03-04	*	**< LOD**	**1.60** (<LOD-2.30)	**2.50** (1.80-3.20)	**3.20** (2.40-6.10)	289
	05-06	*	**< LOD**	**1.10** (<LOD-1.30)	**2.00** (1.70-2.40)	**3.40** (2.30-4.30)	796
Non-Hispanic whites	01-02	**1.47** (.980-2.22)	**1.29** (.840-2.06)	**2.58** (1.51-4.91)	**5.69** (2.84-21.2)	**11.0** (3.30-69.9)	362
	03-04	*	**< LOD**	**1.70** (<LOD-2.90)	**3.50** (2.00-7.70)	**5.90** (3.30-21.0)	680
	05-06	*	**< LOD**	**1.20** (<LOD-1.60)	**2.80** (2.00-3.90)	**5.40** (3.10-9.90)	1271

Limit of detection (LOD, see Data Analysis section) for Survey years 01-02, 03-04, and 05-06 are 0.596, 1.5, and 1.0 respectively.
< LOD means less than the limit of detection, which may vary for some chemicals by year and by individual sample.
* Not calculated: proportion of results below limit of detection was too high to provide a valid result.

Biomonitoring Summary: http://www.cdc.gov/biomonitoring/THM-DBP_BiomonitoringSummary.html

Blood Trichloromethane (Chloroform)

Geometric mean and selected percentiles of whole blood concentrations (in pg/mL) for the U.S. population from the National Health and Nutrition Examination Survey.

	Survey years	Geometric mean (95% conf. interval)	Selected percentiles (95% confidence interval) 50th	75th	90th	95th	Sample size
Total	01-02	**16.6** (13.0-21.1)	**16.1** (11.9-22.2)	**31.7** (23.9-40.4)	**55.5** (44.5-68.6)	**72.1** (57.3-105)	744
	03-04	**10.2** (8.56-12.2)	**10.0** (8.50-13.0)	**20.0** (17.0-24.0)	**35.0** (29.0-40.0)	**50.0** (37.0-65.0)	1222
	05-06	**10.1** (9.09-11.3)	**9.90** (8.90-11.0)	**19.0** (17.0-21.0)	**36.0** (31.0-41.0)	**54.0** (46.0-64.0)	3111
Age group							
12-19 years	05-06	**9.22** (8.20-10.4)	**9.10** (8.10-10.0)	**17.0** (14.0-20.0)	**33.0** (27.0-40.0)	**46.0** (36.0-64.0)	913
20-59 years	01-02	**16.6** (13.0-21.1)	**16.1** (11.9-22.2)	**31.7** (23.9-40.4)	**55.5** (44.5-68.6)	**72.1** (57.3-105)	744
	03-04	**10.2** (8.56-12.2)	**10.0** (8.50-13.0)	**20.0** (17.0-24.0)	**35.0** (29.0-40.0)	**50.0** (37.0-65.0)	1222
	05-06	**10.5** (9.29-11.8)	**10.0** (8.90-12.0)	**20.0** (18.0-22.0)	**37.0** (31.0-44.0)	**55.0** (46.0-71.0)	1529
60 years and older	05-06	**9.71** (8.25-11.4)	**9.60** (8.20-11.0)	**19.0** (14.0-22.0)	**35.0** (27.0-40.0)	**46.0** (39.0-59.0)	669
Gender							
Males	01-02	**16.8** (12.0-23.5)	**16.1** (11.0-24.8)	**34.3** (22.4-48.7)	**57.0** (39.9-76.4)	**75.2** (54.5-156)	358
	03-04	**10.1** (8.43-12.1)	**10.0** (7.90-14.0)	**20.0** (17.0-25.0)	**36.8** (29.0-49.0)	**53.0** (36.8-69.0)	599
	05-06	**9.94** (8.80-11.2)	**9.80** (8.50-11.0)	**19.0** (17.0-22.0)	**38.0** (33.0-44.0)	**54.0** (46.0-67.0)	1483
Females	01-02	**16.4** (13.4-20.1)	**16.6** (12.0-21.5)	**29.2** (24.0-36.5)	**53.5** (38.4-68.9)	**69.5** (53.3-104)	386
	03-04	**10.4** (8.41-12.7)	**10.0** (8.40-13.0)	**20.0** (16.0-23.9)	**33.0** (26.0-40.0)	**46.0** (35.0-65.0)	623
	05-06	**10.4** (9.24-11.6)	**10.0** (9.10-11.0)	**19.0** (17.0-21.0)	**32.0** (29.0-39.0)	**52.0** (41.0-67.0)	1628
Race/ethnicity							
Mexican Americans	01-02	**17.0** (10.5-27.6)	**14.5** (10.0-32.7)	**35.1** (18.6-57.6)	**60.7** (41.5-100)	**93.0** (49.7-243)	223
	03-04	**9.17** (7.45-11.3)	**9.30** (7.60-11.0)	**19.0** (15.0-24.0)	**34.0** (24.0-44.4)	**44.4** (30.0-59.0)	225
	05-06	**10.3** (8.59-12.5)	**10.0** (7.60-14.0)	**20.0** (17.0-22.0)	**36.0** (30.0-41.0)	**47.0** (41.0-64.0)	740
Non-Hispanic blacks	01-02	**19.1** (12.9-28.1)	**20.9** (9.28-37.4)	**38.4** (27.7-46.0)	**55.9** (45.5-69.8)	**68.9** (51.9-74.0)	116
	03-04	**11.8** (9.54-14.6)	**12.0** (8.90-15.0)	**20.0** (15.0-30.0)	**35.0** (28.0-59.0)	**61.0** (34.0-100)	272
	05-06	**11.9** (9.78-14.4)	**12.0** (9.10-15.0)	**22.0** (19.0-26.0)	**39.0** (31.0-47.0)	**55.0** (46.0-70.0)	822
Non-Hispanic whites	01-02	**15.6** (12.0-20.2)	**15.2** (11.2-20.5)	**26.8** (20.4-39.5)	**53.5** (35.3-72.1)	**69.5** (53.5-105)	348
	03-04	**9.84** (8.09-12.0)	**10.0** (8.10-13.0)	**20.0** (16.0-23.0)	**33.8** (27.0-40.0)	**47.0** (35.0-67.0)	630
	05-06	**9.87** (8.79-11.1)	**9.70** (8.80-11.0)	**19.0** (16.0-21.0)	**34.0** (29.0-43.0)	**53.0** (45.0-67.0)	1318

Limit of detection (LOD, see Data Analysis section) for Survey years 01-02, 03-04, and 05-06 are 2.37, 2.11, and 2.1 respectively.
< LOD means less than the limit of detection, which may vary for some chemicals by year and by individual sample.

Biomonitoring Summary: http://www.cdc.gov/biomonitoring/THM-DBP_BiomonitoringSummary.html

Urinary Benzophenone-3

Geometric mean and selected percentiles of urine concentrations (in µg/L) for the U.S. population from the National Health and Nutrition Examination Survey.

	Survey years	Geometric mean (95% conf. interval)	Selected percentiles (95% confidence interval) 50th	75th	90th	95th	Sample size
Total	03-04	**22.9** (18.1-28.9)	**18.1** (15.5-23.2)	**94.0** (67.5-123)	**370** (225-570)	**1040** (698-1390)	2517
	05-06	**19.4** (16.5-22.8)	**14.1** (12.5-17.5)	**68.8** (54.5-87.2)	**433** (294-597)	**1150** (936-1510)	2548
	07-08	**18.3** (13.7-24.3)	**14.3** (10.7-19.8)	**64.1** (42.8-116)	**365** (223-524)	**801** (471-2080)	2604
	09-10	**22.3** (18.0-27.7)	**16.4** (12.7-20.5)	**81.2** (55.0-126)	**493** (320-742)	**1750** (931-3120)	2749
Age group							
6-11 years	03-04	**21.2** (16.4-27.3)	**17.2** (14.9-25.9)	**66.7** (38.7-102)	**158** (106-246)	**246** (154-618)	314
	05-06	**21.2** (14.3-31.3)	**19.4** (11.7-26.1)	**58.8** (40.5-102)	**259** (115-433)	**852** (355-2200)	356
	07-08	**24.1** (15.0-38.7)	**17.2** (11.8-25.0)	**79.9** (32.9-168)	**392** (129-1610)	**1410** (165-43600)	389
	09-10	**21.7** (15.6-30.2)	**14.6** (12.0-19.7)	**52.7** (27.2-119)	**470** (80.7-1900)	**1570** (153-6440)	415
12-19 years	03-04	**22.9** (18.0-29.3)	**20.1** (16.1-25.1)	**67.1** (45.2-93.8)	**170** (137-240)	**407** (183-717)	715
	05-06	**21.2** (15.8-28.4)	**14.9** (12.1-21.4)	**64.3** (39.7-95.3)	**227** (130-382)	**633** (252-1260)	702
	07-08	**21.5** (16.0-28.8)	**15.0** (11.9-21.3)	**59.3** (36.7-111)	**214** (113-613)	**613** (206-1350)	401
	09-10	**23.3** (16.6-32.5)	**16.6** (13.1-19.7)	**62.3** (35.1-129)	**423** (184-843)	**988** (550-2670)	420
20 years and older	03-04	**23.1** (18.0-29.6)	**18.1** (14.7-23.3)	**109** (72.1-140)	**450** (315-733)	**1220** (769-1750)	1488
	05-06	**19.0** (16.5-21.8)	**13.5** (12.0-16.3)	**70.9** (55.2-87.2)	**543** (390-638)	**1200** (954-1690)	1490
	07-08	**17.3** (13.0-23.0)	**13.7** (10.0-19.5)	**64.1** (41.5-117)	**371** (240-516)	**801** (516-1790)	1814
	09-10	**22.3** (17.9-27.7)	**16.5** (12.3-22.5)	**86.7** (63.1-129)	**505** (339-760)	**1890** (1240-3170)	1914
Gender							
Males	03-04	**16.8** (13.2-21.3)	**13.7** (11.4-16.8)	**55.3** (33.2-86.6)	**178** (134-324)	**567** (238-1350)	1229
	05-06	**14.6** (10.8-19.7)	**11.8** (8.80-15.9)	**43.4** (31.0-68.8)	**227** (103-552)	**909** (479-1190)	1270
	07-08	**11.9** (8.84-16.0)	**9.40** (7.70-12.3)	**37.6** (22.6-54.7)	**172** (79.9-376)	**471** (208-1410)	1294
	09-10	**15.3** (12.7-18.6)	**12.2** (10.0-15.2)	**52.8** (33.9-72.6)	**223** (129-332)	**610** (318-1270)	1399
Females	03-04	**30.7** (23.7-39.8)	**26.0** (20.2-34.1)	**137** (106-172)	**596** (403-769)	**1340** (776-1790)	1288
	05-06	**25.5** (21.7-29.9)	**17.9** (14.3-23.1)	**129** (82.9-166)	**638** (478-900)	**1410** (945-2620)	1278
	07-08	**27.6** (20.4-37.3)	**25.6** (17.5-33.9)	**117** (72.6-211)	**535** (361-757)	**1260** (643-2280)	1310
	09-10	**32.0** (23.7-43.3)	**23.0** (16.4-29.8)	**148** (73.3-260)	**1020** (540-1800)	**3200** (1760-4400)	1350
Race/ethnicity							
Mexican Americans	03-04	**16.5** (10.9-25.1)	**11.9** (8.50-18.3)	**45.5** (25.9-78.2)	**178** (76.4-412)	**412** (178-2180)	613
	05-06	**14.3** (10.7-19.1)	**10.2** (7.40-14.1)	**45.6** (24.1-75.7)	**214** (166-313)	**635** (337-1090)	637
	07-08	**12.1** (9.49-15.3)	**9.90** (7.70-12.4)	**32.6** (25.0-48.3)	**142** (85.0-268)	**409** (214-778)	531
	09-10	**17.2** (13.7-21.6)	**12.5** (10.5-14.5)	**41.9** (30.2-57.4)	**351** (248-546)	**1130** (493-2140)	566
Non-Hispanic blacks	03-04	**12.8** (9.38-17.4)	**10.2** (7.40-14.4)	**34.3** (22.8-50.6)	**127** (90.8-176)	**247** (143-499)	652
	05-06	**12.4** (9.77-15.6)	**9.40** (7.30-11.8)	**33.0** (22.3-46.5)	**208** (115-291)	**556** (269-1060)	678
	07-08	**8.55** (6.75-10.8)	**7.40** (5.00-9.70)	**25.5** (17.5-34.5)	**117** (66.8-217)	**422** (195-786)	597
	09-10	**14.0** (10.9-18.1)	**8.90** (7.30-10.5)	**30.9** (21.9-50.5)	**276** (143-437)	**705** (320-3000)	516
Non-Hispanic whites	03-04	**27.7** (20.3-37.8)	**24.4** (16.8-32.0)	**121** (83.6-162)	**507** (316-769)	**1340** (733-2070)	1092
	05-06	**21.6** (18.5-25.2)	**16.0** (13.5-19.0)	**82.4** (64.2-114)	**552** (392-754)	**1370** (945-2050)	1038
	07-08	**23.1** (15.0-35.5)	**18.7** (11.0-33.7)	**101** (47.4-206)	**459** (241-749)	**1160** (487-2620)	1077
	09-10	**26.1** (19.0-35.9)	**21.1** (14.6-29.7)	**94.9** (59.8-186)	**610** (325-1240)	**2130** (934-3820)	1206

Limit of detection (LOD, see Data Analysis section) for Survey years 03-04, 05-06, 07-08 and 09-10 are 0.3, 0.4, 0.4, and 0.4 respectively.

Biomonitoring Summary: http://www.cdc.gov/biomonitoring/Benzophenone-3_BiomonitoringSummary.html
Factsheet: http://www.cdc.gov/biomonitoring/Benzophenone-3_FactSheet.html

Urinary Benzophenone-3 (creatinine corrected)

Geometric mean and selected percentiles of urine concentrations (in µg/g of creatinine) for the U.S. population from the National Health and Nutrition Examination Survey.

	Survey years	Geometric mean (95% conf. interval)	Selected percentiles (95% confidence interval) 50th	75th	90th	95th	Sample size
Total	03-04	**22.2** (17.6-28.0)	**16.2** (12.7-21.6)	**82.0** (58.7-108)	**415** (283-577)	**1080** (686-1600)	2514
	05-06	**18.9** (15.8-22.6)	**13.5** (11.2-16.8)	**60.4** (47.6-81.4)	**445** (346-553)	**1210** (794-1970)	2548
	07-08	**18.4** (13.9-24.4)	**13.5** (10.2-17.8)	**67.9** (45.2-117)	**338** (215-584)	**935** (525-1800)	2604
	09-10	**23.3** (18.7-29.1)	**16.1** (12.8-19.8)	**79.1** (52.2-124)	**579** (355-1040)	**2340** (1380-3010)	2749
Age group							
6-11 years	03-04	**25.8** (19.5-34.1)	**22.4** (14.4-33.7)	**84.6** (41.0-131)	**171** (132-365)	**427** (171-710)	314
	05-06	**23.3** (15.9-34.1)	**17.5** (11.6-28.3)	**67.7** (39.7-105)	**249** (106-631)	**868** (264-2080)	356
	07-08	**29.7** (19.0-46.6)	**19.3** (12.4-32.3)	**103** (51.1-159)	**442** (133-1550)	**1430** (187-29100)	389
	09-10	**28.3** (20.4-39.4)	**18.8** (14.7-21.1)	**53.9** (33.2-132)	**565** (104-3410)	**1780** (253-8230)	415
12-19 years	03-04	**17.2** (13.7-21.5)	**12.9** (10.4-16.5)	**43.6** (29.5-57.7)	**136** (91.7-239)	**350** (173-646)	713
	05-06	**15.8** (11.6-21.6)	**12.1** (9.16-17.0)	**42.5** (28.6-58.7)	**164** (101-438)	**625** (225-956)	702
	07-08	**16.7** (12.4-22.4)	**12.1** (8.57-17.6)	**55.7** (30.4-74.8)	**211** (88.2-505)	**505** (163-902)	401
	09-10	**18.7** (13.4-26.1)	**13.6** (10.1-19.7)	**39.9** (25.5-91.6)	**412** (89.8-750)	**1240** (629-2540)	420
20 years and older	03-04	**22.8** (17.8-29.1)	**16.2** (12.7-21.9)	**93.2** (66.0-130)	**491** (361-700)	**1330** (880-1880)	1487
	05-06	**19.0** (16.3-22.2)	**13.4** (11.2-16.2)	**64.2** (49.3-87.0)	**509** (406-628)	**1480** (816-2200)	1490
	07-08	**17.7** (13.3-23.6)	**12.6** (9.93-17.5)	**67.7** (44.1-127)	**362** (249-584)	**960** (581-1970)	1814
	09-10	**23.6** (18.8-29.5)	**16.3** (12.7-20.2)	**83.6** (58.3-146)	**602** (364-1230)	**2470** (1350-3080)	1914
Gender							
Males	03-04	**13.6** (10.8-17.1)	**10.3** (8.36-12.9)	**40.0** (24.9-62.5)	**169** (93.3-316)	**381** (229-685)	1228
	05-06	**11.7** (8.74-15.8)	**9.43** (6.72-12.5)	**31.9** (19.7-49.4)	**176** (77.1-406)	**553** (317-948)	1270
	07-08	**10.0** (7.37-13.7)	**7.50** (5.74-10.0)	**28.7** (18.5-47.3)	**142** (65.8-225)	**332** (181-960)	1294
	09-10	**13.7** (11.4-16.6)	**10.7** (8.53-12.7)	**44.6** (29.7-57.4)	**186** (123-287)	**420** (287-1230)	1399
Females	03-04	**35.5** (27.1-46.4)	**28.2** (20.2-37.0)	**144** (101-224)	**686** (491-1130)	**1850** (1220-2580)	1286
	05-06	**30.0** (25.3-35.6)	**20.9** (17.0-29.0)	**129** (88.0-175)	**707** (527-912)	**1880** (1150-2770)	1278
	07-08	**33.0** (25.0-43.7)	**26.2** (19.1-41.1)	**156** (90.2-235)	**617** (385-935)	**1500** (746-2710)	1310
	09-10	**38.6** (28.1-53.0)	**25.7** (17.5-35.2)	**161** (76.3-378)	**1580** (955-2410)	**3250** (2540-4640)	1350
Race/ethnicity							
Mexican Americans	03-04	**15.1** (9.44-24.0)	**11.1** (6.95-16.0)	**40.7** (18.3-85.8)	**158** (87.4-362)	**595** (118-1860)	612
	05-06	**12.9** (10.2-16.2)	**8.63** (6.16-12.5)	**32.1** (23.1-51.8)	**216** (135-408)	**948** (441-1220)	637
	07-08	**11.8** (8.87-15.6)	**8.97** (7.00-12.4)	**33.6** (26.0-43.2)	**154** (93.4-249)	**413** (217-932)	531
	09-10	**17.1** (13.4-21.7)	**12.2** (9.64-14.5)	**40.4** (26.4-60.3)	**288** (155-603)	**1310** (441-2180)	566
Non-Hispanic blacks	03-04	**8.78** (6.49-11.9)	**6.80** (5.27-9.00)	**19.7** (13.5-33.4)	**79.8** (46.8-139)	**185** (79.8-536)	651
	05-06	**8.69** (7.02-10.8)	**6.29** (5.52-7.78)	**21.2** (14.5-34.5)	**118** (74.9-245)	**448** (208-876)	678
	07-08	**6.65** (5.24-8.42)	**5.09** (4.15-6.10)	**17.8** (13.2-24.2)	**86.6** (57.5-122)	**297** (113-903)	597
	09-10	**10.2** (8.12-12.7)	**6.46** (5.40-7.67)	**23.1** (15.5-38.2)	**160** (79.9-396)	**653** (305-1580)	516
Non-Hispanic whites	03-04	**28.3** (20.6-38.8)	**22.0** (14.6-32.7)	**116** (73.5-175)	**510** (380-760)	**1330** (852-2410)	1091
	05-06	**22.7** (19.4-26.7)	**16.2** (13.0-19.7)	**77.3** (56.5-106)	**538** (406-679)	**1500** (828-2430)	1038
	07-08	**24.1** (15.6-37.2)	**18.1** (11.0-30.0)	**103** (53.6-198)	**494** (227-960)	**1170** (522-2710)	1077
	09-10	**29.3** (20.7-41.5)	**22.1** (14.6-33.1)	**99.2** (54.3-241)	**767** (412-1550)	**2590** (1510-3250)	1206

Biomonitoring Summary: http://www.cdc.gov/biomonitoring/Benzophenone-3_BiomonitoringSummary.html
Factsheet: http://www.cdc.gov/biomonitoring/Benzophenone-3_FactSheet.html

Urinary Bisphenol A

Geometric mean and selected percentiles of urine concentrations (in µg/L) for the U.S. population from the National Health and Nutrition Examination Survey.

	Survey years	Geometric mean (95% conf. interval)	Selected percentiles (95% confidence interval) 50th	75th	90th	95th	Sample size
Total	03-04	**2.64** (2.38-2.94)	**2.80** (2.50-3.10)	**5.50** (5.00-6.20)	**10.6** (9.40-12.0)	**16.0** (14.4-17.2)	2517
	05-06	**1.90** (1.79-2.02)	**2.00** (1.90-2.00)	**3.70** (3.50-3.90)	**7.00** (6.40-7.60)	**11.5** (10.0-13.6)	2548
	07-08	**2.08** (1.92-2.26)	**2.10** (1.90-2.30)	**4.10** (3.60-4.60)	**7.70** (6.80-8.70)	**13.0** (10.0-15.6)	2604
	09-10	**1.83** (1.72-1.94)	**1.90** (1.70-2.00)	**3.50** (3.30-3.80)	**6.60** (6.00-7.20)	**9.60** (8.50-11.3)	2749
Age group							
6-11 years	03-04	**3.55** (2.95-4.29)	**3.80** (2.70-5.00)	**6.90** (6.00-8.30)	**12.6** (9.50-15.1)	**16.0** (11.5-23.3)	314
	05-06	**2.86** (2.52-3.24)	**2.70** (2.30-2.90)	**5.00** (4.40-5.80)	**13.5** (9.30-16.8)	**22.8** (13.6-34.6)	356
	07-08	**2.48** (2.21-2.77)	**2.40** (1.90-3.00)	**4.50** (3.70-5.50)	**7.60** (6.30-9.50)	**13.4** (8.80-17.8)	389
	09-10	**1.81** (1.55-2.10)	**1.70** (1.50-2.00)	**3.40** (3.00-4.00)	**6.50** (4.30-9.70)	**9.20** (6.50-15.1)	415
12-19 years	03-04	**3.74** (3.31-4.22)	**4.30** (3.60-4.60)	**7.80** (6.50-9.00)	**13.5** (11.8-15.2)	**16.5** (15.2-20.9)	715
	05-06	**2.42** (2.18-2.68)	**2.40** (2.10-2.70)	**4.30** (3.90-5.20)	**8.40** (6.50-10.8)	**11.9** (10.7-14.8)	702
	07-08	**2.45** (2.14-2.80)	**2.40** (2.10-2.60)	**4.40** (3.60-5.50)	**9.70** (7.30-11.9)	**12.2** (9.70-19.0)	401
	09-10	**2.11** (1.86-2.40)	**2.20** (1.90-2.40)	**3.80** (3.20-4.50)	**6.90** (4.70-10.8)	**11.1** (6.90-21.0)	420
20 years and older	03-04	**2.41** (2.15-2.72)	**2.60** (2.30-2.80)	**5.10** (4.50-5.70)	**9.50** (8.10-11.3)	**15.2** (12.4-18.1)	1488
	05-06	**1.75** (1.62-1.89)	**1.80** (1.70-2.00)	**3.40** (3.10-3.70)	**6.40** (5.80-7.50)	**10.7** (8.80-12.1)	1490
	07-08	**1.99** (1.82-2.18)	**2.00** (1.80-2.30)	**3.90** (3.40-4.60)	**7.40** (6.60-8.50)	**13.2** (9.10-15.7)	1814
	09-10	**1.79** (1.67-1.93)	**1.80** (1.60-2.00)	**3.50** (3.30-3.70)	**6.50** (6.00-7.20)	**9.60** (8.30-11.3)	1914
Gender							
Males	03-04	**2.92** (2.63-3.24)	**3.20** (2.70-3.60)	**6.10** (5.40-6.60)	**10.4** (9.50-11.6)	**16.0** (12.7-17.6)	1229
	05-06	**2.09** (1.92-2.28)	**2.10** (2.00-2.30)	**3.70** (3.40-4.20)	**7.70** (6.80-9.30)	**12.8** (10.1-15.8)	1270
	07-08	**2.20** (2.01-2.41)	**2.10** (1.90-2.40)	**4.00** (3.60-4.70)	**8.10** (6.70-9.70)	**14.0** (8.70-20.8)	1294
	09-10	**1.94** (1.82-2.07)	**1.90** (1.70-2.00)	**3.70** (3.40-4.10)	**6.90** (5.90-7.90)	**10.9** (8.40-13.5)	1399
Females	03-04	**2.41** (2.11-2.75)	**2.50** (2.20-2.80)	**5.00** (4.20-6.20)	**10.6** (8.70-12.5)	**15.9** (13.5-20.1)	1288
	05-06	**1.74** (1.55-1.95)	**1.80** (1.60-2.00)	**3.70** (3.10-4.00)	**6.20** (5.80-7.60)	**10.4** (7.70-14.7)	1278
	07-08	**1.97** (1.80-2.16)	**2.00** (1.80-2.20)	**4.10** (3.60-4.60)	**7.40** (6.80-8.20)	**12.0** (9.60-14.1)	1310
	09-10	**1.73** (1.60-1.87)	**1.80** (1.60-2.00)	**3.40** (3.20-3.70)	**6.50** (5.60-7.10)	**9.20** (8.00-11.2)	1350
Race/ethnicity							
Mexican Americans	03-04	**2.58** (2.15-3.08)	**2.60** (2.10-3.20)	**5.20** (4.40-6.50)	**9.90** (7.30-13.9)	**15.4** (10.2-19.7)	613
	05-06	**2.05** (1.75-2.40)	**2.00** (1.70-2.40)	**3.60** (3.00-4.20)	**6.90** (5.40-10.1)	**12.2** (8.00-15.6)	637
	07-08	**2.09** (1.94-2.26)	**2.00** (1.80-2.30)	**3.80** (3.30-4.30)	**7.10** (6.10-8.60)	**11.7** (7.70-14.6)	531
	09-10	**1.92** (1.69-2.19)	**2.10** (1.80-2.30)	**3.50** (3.10-4.10)	**6.50** (5.20-7.50)	**9.00** (6.90-16.2)	566
Non-Hispanic blacks	03-04	**4.24** (3.73-4.82)	**4.30** (3.80-5.10)	**8.20** (7.10-9.80)	**14.2** (11.7-16.9)	**20.6** (14.9-25.2)	652
	05-06	**2.50** (2.25-2.77)	**2.70** (2.30-3.00)	**4.60** (4.00-5.00)	**8.00** (6.80-9.30)	**11.3** (8.90-14.2)	678
	07-08	**2.66** (2.38-2.97)	**2.80** (2.60-3.10)	**5.40** (4.40-6.40)	**9.10** (7.50-10.4)	**13.3** (10.0-15.1)	597
	09-10	**2.51** (2.22-2.83)	**2.60** (2.30-3.00)	**4.40** (3.80-5.00)	**7.30** (6.10-8.80)	**10.3** (7.90-13.6)	516
Non-Hispanic whites	03-04	**2.51** (2.26-2.79)	**2.70** (2.50-3.00)	**5.20** (4.70-5.80)	**9.60** (8.30-10.9)	**15.1** (12.6-16.7)	1092
	05-06	**1.76** (1.62-1.91)	**1.80** (1.60-2.00)	**3.50** (3.20-3.80)	**6.80** (5.90-7.60)	**11.0** (8.80-13.7)	1038
	07-08	**2.06** (1.87-2.27)	**2.00** (1.80-2.30)	**4.00** (3.40-4.70)	**7.80** (6.70-8.90)	**13.7** (9.80-16.1)	1077
	09-10	**1.73** (1.60-1.87)	**1.70** (1.60-1.90)	**3.40** (3.10-3.70)	**6.40** (5.40-7.60)	**9.20** (8.20-11.2)	1206

Limit of detection (LOD, see Data Analysis section) for Survey years 03-04, 05-06, 07-08 and 09-10 are 0.4, 0.4, 0.4, and 0.4 respectively.

Biomonitoring Summary: http://www.cdc.gov/biomonitoring/BisphenolA_BiomonitoringSummary.html
Factsheet: http://www.cdc.gov/biomonitoring/BisphenolA_FactSheet.html

Urinary Bisphenol A (creatinine corrected)

Geometric mean and selected percentiles of urine concentrations (in µg/g of creatinine) for the U.S. population from the National Health and Nutrition Examination Survey.

	Survey years	Geometric mean (95% conf. interval)	Selected percentiles (95% confidence interval) 50th	75th	90th	95th	Sample size
Total	03-04	**2.58** (2.36-2.82)	**2.50** (2.31-2.80)	**4.29** (3.88-4.75)	**7.67** (6.62-8.66)	**11.2** (9.78-12.4)	2514
	05-06	**1.86** (1.79-1.92)	**1.71** (1.64-1.79)	**3.01** (2.86-3.20)	**5.73** (5.29-6.36)	**9.70** (8.31-10.9)	2548
	07-08	**2.10** (1.95-2.25)	**1.95** (1.84-2.03)	**3.45** (3.02-3.83)	**6.09** (5.10-7.45)	**10.0** (7.48-13.2)	2604
	09-10	**1.91** (1.79-2.04)	**1.76** (1.67-1.84)	**3.06** (2.80-3.33)	**5.33** (4.68-6.06)	**8.03** (6.94-10.0)	2749
Age group							
6-11 years	03-04	**4.32** (3.63-5.14)	**4.29** (3.63-5.23)	**7.14** (5.83-9.56)	**12.2** (9.84-14.8)	**15.7** (12.2-23.2)	314
	05-06	**3.14** (2.79-3.54)	**2.80** (2.55-3.06)	**5.04** (4.46-5.71)	**15.6** (8.15-22.4)	**24.6** (19.9-48.5)	356
	07-08	**3.05** (2.73-3.41)	**2.69** (2.38-3.12)	**5.06** (4.33-5.60)	**11.9** (6.30-17.4)	**20.8** (12.7-26.3)	389
	09-10	**2.36** (2.09-2.65)	**2.18** (2.00-2.53)	**3.70** (3.14-4.29)	**5.97** (4.57-9.15)	**9.57** (6.52-13.7)	415
12-19 years	03-04	**2.80** (2.52-3.11)	**2.74** (2.35-3.22)	**4.74** (4.21-5.09)	**7.79** (6.41-8.87)	**11.8** (8.05-14.2)	713
	05-06	**1.80** (1.67-1.95)	**1.65** (1.50-1.76)	**2.73** (2.41-2.98)	**5.71** (4.07-7.50)	**8.52** (6.94-12.2)	702
	07-08	**1.90** (1.72-2.10)	**1.69** (1.50-2.00)	**2.94** (2.38-3.60)	**5.10** (4.17-6.82)	**7.72** (5.32-13.9)	401
	09-10	**1.70** (1.47-1.95)	**1.60** (1.34-1.88)	**2.63** (2.11-3.58)	**4.47** (3.76-6.19)	**6.71** (4.40-17.8)	420
20 years and older	03-04	**2.39** (2.17-2.64)	**2.36** (2.15-2.59)	**3.93** (3.44-4.33)	**6.64** (5.97-7.74)	**10.0** (9.01-11.4)	1487
	05-06	**1.75** (1.67-1.84)	**1.64** (1.56-1.75)	**2.84** (2.67-3.08)	**5.38** (4.89-5.87)	**8.54** (7.58-9.77)	1490
	07-08	**2.04** (1.90-2.20)	**1.92** (1.79-2.03)	**3.36** (2.91-3.78)	**6.02** (4.88-7.48)	**9.32** (7.48-12.1)	1814
	09-10	**1.90** (1.76-2.05)	**1.76** (1.66-1.84)	**3.04** (2.76-3.24)	**5.33** (4.67-6.11)	**8.00** (6.97-10.0)	1914
Gender							
Males	03-04	**2.38** (2.15-2.63)	**2.31** (2.08-2.70)	**4.19** (3.81-4.64)	**7.10** (6.41-8.28)	**9.94** (9.06-11.7)	1228
	05-06	**1.68** (1.57-1.80)	**1.56** (1.45-1.64)	**2.73** (2.43-3.14)	**5.27** (4.64-6.04)	**8.40** (6.81-11.4)	1270
	07-08	**1.85** (1.71-2.01)	**1.77** (1.57-1.91)	**2.97** (2.59-3.33)	**5.41** (4.47-7.51)	**9.52** (6.29-13.4)	1294
	09-10	**1.74** (1.62-1.87)	**1.60** (1.48-1.72)	**2.76** (2.53-2.96)	**5.00** (4.16-5.86)	**7.50** (6.22-9.00)	1399
Females	03-04	**2.78** (2.50-3.08)	**2.68** (2.40-2.94)	**4.41** (3.81-5.15)	**7.93** (6.48-10.2)	**12.4** (9.29-18.2)	1286
	05-06	**2.04** (1.95-2.14)	**1.85** (1.76-2.02)	**3.21** (2.98-3.39)	**6.47** (5.51-7.50)	**9.86** (8.62-11.8)	1278
	07-08	**2.36** (2.17-2.57)	**2.14** (1.98-2.33)	**3.77** (3.43-4.31)	**6.67** (5.41-7.83)	**10.5** (7.45-15.2)	1310
	09-10	**2.09** (1.92-2.27)	**1.93** (1.80-2.15)	**3.33** (2.94-3.84)	**5.49** (4.87-6.74)	**8.80** (6.47-12.5)	1350
Race/ethnicity							
Mexican Americans	03-04	**2.34** (2.02-2.71)	**2.38** (2.00-2.65)	**3.85** (3.24-4.55)	**7.09** (5.00-9.04)	**10.9** (8.50-14.3)	612
	05-06	**1.84** (1.66-2.04)	**1.62** (1.45-1.84)	**2.99** (2.56-3.60)	**6.00** (4.51-8.00)	**10.3** (6.84-14.9)	637
	07-08	**2.04** (1.86-2.24)	**1.88** (1.72-2.11)	**3.33** (2.96-3.95)	**5.68** (5.05-6.59)	**8.90** (6.30-11.8)	531
	09-10	**1.91** (1.71-2.13)	**1.76** (1.67-1.87)	**3.13** (2.63-3.57)	**5.51** (4.72-6.97)	**8.71** (5.86-14.4)	566
Non-Hispanic blacks	03-04	**2.92** (2.58-3.32)	**2.95** (2.51-3.27)	**4.90** (4.07-6.13)	**8.64** (7.53-9.63)	**11.9** (10.2-13.3)	651
	05-06	**1.76** (1.62-1.90)	**1.68** (1.53-1.92)	**2.82** (2.67-3.04)	**4.56** (3.85-5.43)	**6.81** (5.00-9.27)	678
	07-08	**2.06** (1.91-2.23)	**2.03** (1.83-2.25)	**3.24** (2.86-3.78)	**5.71** (5.15-6.54)	**8.59** (6.54-10.9)	597
	09-10	**1.82** (1.65-2.01)	**1.70** (1.56-1.89)	**2.90** (2.39-3.17)	**4.94** (4.02-6.03)	**6.74** (5.95-8.09)	516
Non-Hispanic whites	03-04	**2.58** (2.37-2.81)	**2.55** (2.32-2.80)	**4.30** (3.93-4.67)	**7.58** (6.32-8.87)	**11.0** (9.34-12.4)	1091
	05-06	**1.85** (1.75-1.96)	**1.70** (1.60-1.82)	**3.08** (2.78-3.31)	**5.80** (5.13-6.72)	**9.77** (7.87-11.5)	1038
	07-08	**2.15** (1.97-2.35)	**1.97** (1.84-2.11)	**3.50** (3.04-3.95)	**6.44** (5.04-8.00)	**10.9** (7.47-14.5)	1077
	09-10	**1.94** (1.79-2.10)	**1.78** (1.67-1.92)	**3.16** (2.80-3.59)	**5.45** (4.67-6.94)	**8.55** (6.73-10.0)	1206

Biomonitoring Summary: http://www.cdc.gov/biomonitoring/BisphenolA_BiomonitoringSummary.html
Factsheet: http://www.cdc.gov/biomonitoring/BisphenolA_FactSheet.html

Urinary 4-*tert*-Octylphenol

Geometric mean and selected percentiles of urine concentrations (in µg/L) for the U.S. population from the National Health and Nutrition Examination Survey.

	Survey years+	Geometric mean (95% conf. interval)	Selected percentiles (95% confidence interval) 50th	75th	90th	95th	Sample size
Total	05-06	*	**< LOD**	**< LOD**	**< LOD**	**.200** (<LOD-.300)	2548
	07-08	*	**< LOD**	**< LOD**	**< LOD**	**.300** (.200-.300)	2604
	09-10	*	**< LOD**	**< LOD**	**.200** (<LOD-.300)	**.300** (.300-.400)	2749
Age group							
6-11 years	05-06	*	**< LOD**	**< LOD**	**< LOD**	**.300** (.200-.300)	356
	07-08	*	**< LOD**	**< LOD**	**.200** (<LOD-.300)	**.300** (.200-.400)	389
	09-10	*	**< LOD**	**< LOD**	**.300** (<LOD-.400)	**.400** (.300-.600)	415
12-19 years	05-06	*	**< LOD**	**< LOD**	**< LOD**	**.200** (<LOD-.400)	702
	07-08	*	**< LOD**	**< LOD**	**< LOD**	**.300** (<LOD-.400)	401
	09-10	*	**< LOD**	**< LOD**	**.300** (.200-.300)	**.300** (.300-.400)	420
20 years and older	05-06	*	**< LOD**	**< LOD**	**< LOD**	**.200** (<LOD-.300)	1490
	07-08	*	**< LOD**	**< LOD**	**< LOD**	**.300** (.200-.400)	1814
	09-10	*	**< LOD**	**< LOD**	**< LOD**	**.300** (.200-.400)	1914
Gender							
Males	05-06	*	**< LOD**	**< LOD**	**< LOD**	**.200** (<LOD-.300)	1270
	07-08	*	**< LOD**	**< LOD**	**< LOD**	**.300** (.200-.400)	1294
	09-10	*	**< LOD**	**< LOD**	**.200** (<LOD-.300)	**.300** (.300-.400)	1399
Females	05-06	*	**< LOD**	**< LOD**	**< LOD**	**< LOD**	1278
	07-08	*	**< LOD**	**< LOD**	**< LOD**	**.300** (.200-.300)	1310
	09-10	*	**< LOD**	**< LOD**	**.200** (<LOD-.300)	**.300** (.200-.400)	1350
Race/ethnicity							
Mexican Americans	05-06	*	**< LOD**	**< LOD**	**< LOD**	**.300** (<LOD-.800)	637
	07-08	*	**< LOD**	**< LOD**	**< LOD**	**.300** (.200-.300)	531
	09-10	*	**< LOD**	**< LOD**	**< LOD**	**.300** (<LOD-.500)	566
Non-Hispanic blacks	05-06	*	**< LOD**	**< LOD**	**< LOD**	**.200** (<LOD-.400)	678
	07-08	*	**< LOD**	**< LOD**	**.200** (<LOD-.300)	**.300** (.200-.500)	597
	09-10	*	**< LOD**	**< LOD**	**.300** (.200-.400)	**.500** (.400-.600)	516
Non-Hispanic whites	05-06	*	**< LOD**	**< LOD**	**< LOD**	**.200** (<LOD-.300)	1038
	07-08	*	**< LOD**	**< LOD**	**< LOD**	**.200** (.200-.300)	1077
	09-10	*	**< LOD**	**< LOD**	**.200** (<LOD-.300)	**.300** (.300-.400)	1206

Limit of detection (LOD, see Data Analysis section) for Survey years 05-06, 07-08, and 09-10 are 0.2, 0.2, and 0.2 respectively.
< LOD means less than the limit of detection, which may vary for some chemicals by year and by individual sample.
* Not calculated: proportion of results below limit of detection was too high to provide a valid result.
+The 2003-2004 data were removed due to potential for contamination that may have occurred during sampling. Not measured after Survey years 2009-2010.

Biomonitoring Summary: http://www.cdc.gov/biomonitoring/Octylphenol_BiomonitoringSummary.html

Urinary 4-*tert*-Octylphenol (creatinine corrected)

Geometric mean and selected percentiles of urine concentrations (in µg/g of creatinine) for the U.S. population from the National Health and Nutrition Examination Survey.

	Survey years+	Geometric mean (95% conf. interval)	Selected percentiles (95% confidence interval) 50th	75th	90th	95th	Sample size
Total	05-06	*	**< LOD**	**< LOD**	**< LOD**	**.560** (<LOD-.620)	2548
	07-08	*	**< LOD**	**< LOD**	**< LOD**	**.670** (.560-.880)	2604
	09-10	*	**< LOD**	**< LOD**	**.470** (<LOD-.500)	**.640** (.580-.680)	2749
Age group							
6-11 years	05-06	*	**< LOD**	**< LOD**	**< LOD**	**.410** (.350-.610)	356
	07-08	*	**< LOD**	**< LOD**	**.440** (<LOD-.540)	**.600** (.420-.930)	389
	09-10	*	**< LOD**	**< LOD**	**.560** (<LOD-.670)	**.740** (.640-.830)	415
12-19 years	05-06	*	**< LOD**	**< LOD**	**< LOD**	**.450** (<LOD-.560)	702
	07-08	*	**< LOD**	**< LOD**	**< LOD**	**.420** (<LOD-.540)	401
	09-10	*	**< LOD**	**< LOD**	**.360** (.270-.440)	**.450** (.340-.560)	420
20 years and older	05-06	*	**< LOD**	**< LOD**	**< LOD**	**.580** (<LOD-.670)	1490
	07-08	*	**< LOD**	**< LOD**	**< LOD**	**.700** (.580-.930)	1814
	09-10	*	**< LOD**	**< LOD**	**< LOD**	**.640** (.580-.700)	1914
Gender							
Males	05-06	*	**< LOD**	**< LOD**	**< LOD**	**.390** (<LOD-.440)	1270
	07-08	*	**< LOD**	**< LOD**	**< LOD**	**.510** (.390-.600)	1294
	09-10	*	**< LOD**	**< LOD**	**.380** (<LOD-.420)	**.480** (.450-.610)	1399
Females	05-06	*	**< LOD**	**< LOD**	**< LOD**	**< LOD**	1278
	07-08	*	**< LOD**	**< LOD**	**< LOD**	**.880** (.670-1.08)	1310
	09-10	*	**< LOD**	**< LOD**	**.540** (<LOD-.580)	**.700** (.640-.880)	1350
Race/ethnicity							
Mexican Americans	05-06	*	**< LOD**	**< LOD**	**< LOD**	**.480** (<LOD-.740)	637
	07-08	*	**< LOD**	**< LOD**	**< LOD**	**.520** (.440-.610)	531
	09-10	*	**< LOD**	**< LOD**	**< LOD**	**.560** (<LOD-.750)	566
Non-Hispanic blacks	05-06	*	**< LOD**	**< LOD**	**< LOD**	**.320** (<LOD-.400)	678
	07-08	*	**< LOD**	**< LOD**	**.320** (<LOD-.410)	**.460** (.340-.610)	597
	09-10	*	**< LOD**	**< LOD**	**.300** (.250-.330)	**.440** (.320-.560)	516
Non-Hispanic whites	05-06	*	**< LOD**	**< LOD**	**< LOD**	**.610** (<LOD-.670)	1038
	07-08	*	**< LOD**	**< LOD**	**< LOD**	**.700** (.560-.930)	1077
	09-10	*	**< LOD**	**< LOD**	**.500** (<LOD-.560)	**.670** (.580-.740)	1206

< LOD means less than the limit of detection for the urine levels not corrected for creatinine.
* Not calculated: proportion of results below limit of detection was too high to provide a valid result.
+The 2003-2004 data were removed due to potential for contamination that may have occurred during sampling. Not measured after Survey years 2009-2010.

Biomonitoring Summary: **http://www.cdc.gov/biomonitoring/Octylphenol_BiomonitoringSummary.html**

Urinary Triclosan

Geometric mean and selected percentiles of urine concentrations (in µg/L) for the U.S. population from the National Health and Nutrition Examination Survey.

	Survey years	Geometric mean (95% conf. interval)	Selected percentiles (95% confidence interval) 50th	75th	90th	95th	Sample size
Total	03-04	**13.0** (11.6-14.6)	**9.20** (7.90-10.9)	**47.4** (38.2-58.4)	**249** (188-304)	**461** (383-522)	2517
	05-06	**18.5** (16.1-21.3)	**15.1** (11.8-18.5)	**76.2** (57.9-97.6)	**334** (279-402)	**655** (573-739)	2548
	07-08	**15.3** (13.5-17.4)	**12.1** (10.2-13.8)	**57.2** (46.1-65.9)	**225** (176-288)	**494** (371-615)	2604
	09-10	**14.5** (12.6-16.6)	**10.7** (8.80-12.6)	**51.2** (39.4-67.7)	**238** (200-284)	**483** (398-569)	2749
Age group							
6-11 years	03-04	**8.16** (6.20-10.8)	**6.00** (4.00-8.50)	**20.7** (14.3-31.6)	**123** (36.4-163)	**157** (113-380)	314
	05-06	**12.8** (9.89-16.7)	**10.3** (8.30-17.2)	**35.4** (23.9-65.8)	**97.6** (67.4-181)	**246** (99.5-462)	356
	07-08	**11.8** (7.57-18.2)	**9.80** (6.70-13.9)	**27.7** (14.8-52.2)	**98.5** (40.5-364)	**296** (67.4-826)	389
	09-10	**10.9** (9.35-12.8)	**9.90** (7.10-11.9)	**28.3** (22.1-35.5)	**95.5** (71.5-117)	**200** (114-474)	415
12-19 years	03-04	**14.5** (11.0-19.1)	**10.3** (8.20-13.1)	**39.0** (26.5-86.4)	**304** (134-566)	**655** (310-890)	715
	05-06	**18.8** (14.9-23.8)	**15.4** (11.0-21.0)	**67.5** (45.3-100)	**330** (174-461)	**566** (389-707)	702
	07-08	**18.2** (13.8-23.8)	**13.8** (9.40-20.1)	**63.2** (38.7-110)	**296** (144-395)	**401** (308-853)	401
	09-10	**11.7** (9.89-13.8)	**8.80** (7.30-10.9)	**30.2** (24.3-40.6)	**165** (56.7-289)	**301** (220-431)	420
20 years and older	03-04	**13.6** (12.0-15.3)	**9.60** (8.20-11.5)	**51.7** (39.6-65.7)	**261** (198-317)	**472** (406-522)	1488
	05-06	**19.3** (16.4-22.6)	**15.5** (11.8-19.4)	**84.3** (61.0-114)	**366** (289-462)	**738** (583-864)	1490
	07-08	**15.4** (13.7-17.3)	**12.3** (10.1-14.4)	**60.1** (48.5-69.0)	**225** (185-286)	**504** (378-573)	1814
	09-10	**15.5** (12.9-18.5)	**11.1** (8.60-14.2)	**61.8** (41.8-86.0)	**262** (214-327)	**544** (415-621)	1914
Gender							
Males	03-04	**16.2** (13.4-19.6)	**11.7** (9.30-14.8)	**84.9** (50.6-111)	**317** (231-433)	**574** (461-716)	1229
	05-06	**21.3** (17.6-25.7)	**17.6** (11.9-23.2)	**103** (69.9-143)	**446** (366-488)	**738** (601-873)	1270
	07-08	**15.2** (12.9-17.9)	**12.3** (9.50-15.3)	**60.6** (45.8-72.8)	**236** (159-338)	**467** (367-636)	1294
	09-10	**14.8** (12.7-17.4)	**10.9** (8.60-13.3)	**55.1** (40.4-77.5)	**243** (214-295)	**455** (327-600)	1399
Females	03-04	**10.6** (9.29-12.1)	**7.60** (6.10-9.10)	**33.2** (27.1-39.4)	**144** (96.5-250)	**380** (258-430)	1288
	05-06	**16.2** (13.9-18.8)	**12.6** (10.1-15.6)	**58.7** (41.5-81.9)	**226** (169-304)	**513** (310-773)	1278
	07-08	**15.5** (12.6-18.9)	**12.0** (9.90-14.1)	**52.1** (37.1-74.4)	**210** (133-367)	**504** (285-648)	1310
	09-10	**14.2** (12.0-16.8)	**10.5** (8.70-12.6)	**50.0** (34.4-63.8)	**235** (149-302)	**488** (332-661)	1350
Race/ethnicity							
Mexican Americans	03-04	**14.6** (10.6-20.1)	**8.80** (5.40-17.5)	**65.4** (32.8-127)	**357** (225-456)	**597** (372-992)	613
	05-06	**26.7** (21.2-33.7)	**18.7** (13.5-25.5)	**196** (99.4-269)	**668** (475-759)	**866** (750-1180)	637
	07-08	**17.1** (12.9-22.6)	**11.8** (8.40-17.8)	**67.4** (42.5-106)	**358** (208-474)	**556** (363-856)	531
	09-10	**14.9** (12.2-18.3)	**10.2** (8.20-12.8)	**54.7** (33.3-86.5)	**345** (260-494)	**691** (443-1180)	566
Non-Hispanic blacks	03-04	**14.4** (11.4-18.2)	**11.1** (8.70-16.1)	**37.6** (30.2-58.0)	**203** (87.5-341)	**450** (254-750)	652
	05-06	**17.3** (13.3-22.4)	**14.0** (10.4-19.0)	**59.2** (37.7-98.3)	**258** (138-460)	**541** (273-1190)	678
	07-08	**13.7** (11.7-16.1)	**11.3** (8.80-13.9)	**41.4** (28.9-49.6)	**150** (93.5-265)	**480** (190-757)	597
	09-10	**12.8** (10.8-15.0)	**9.30** (7.70-11.7)	**34.3** (24.0-44.6)	**168** (88.4-263)	**451** (202-959)	516
Non-Hispanic whites	03-04	**12.9** (11.2-14.9)	**9.20** (7.40-11.0)	**49.2** (37.8-63.4)	**245** (163-334)	**461** (383-527)	1092
	05-06	**17.5** (14.9-20.6)	**15.1** (10.9-19.0)	**74.3** (54.1-90.3)	**288** (231-366)	**569** (462-693)	1038
	07-08	**15.0** (12.6-17.7)	**12.3** (9.80-14.5)	**59.6** (41.9-73.4)	**197** (147-266)	**408** (296-537)	1077
	09-10	**14.0** (11.8-16.7)	**10.5** (8.30-12.9)	**51.7** (33.1-79.2)	**216** (174-266)	**431** (301-565)	1206

Limit of detection (LOD, see Data Analysis section) for Survey years 03-04, 05-06, 07-08 and 09-10 are 2.3, 2.3, 2.3, and 2.3 respectively.

Biomonitoring Summary: http://www.cdc.gov/biomonitoring/Triclosan_BiomonitoringSummary.html
Factsheet: http://www.cdc.gov/biomonitoring/Triclosan_FactSheet.html

Urinary Triclosan (creatinine corrected)

Geometric mean and selected percentiles of urine concentrations (in µg/g of creatinine) for the U.S. population from the National Health and Nutrition Examination Survey.

	Survey years	Geometric mean (95% conf. interval)	Selected percentiles (95% confidence interval) 50th	75th	90th	95th	Sample size
Total	03-04	**12.7** (11.5-14.1)	**9.48** (8.22-10.4)	**43.9** (33.8-60.6)	**212** (172-241)	**368** (294-463)	2514
	05-06	**18.0** (16.0-20.3)	**13.0** (11.5-16.1)	**73.2** (57.3-91.6)	**304** (240-364)	**532** (434-674)	2548
	07-08	**15.5** (13.7-17.5)	**12.4** (10.6-14.2)	**50.4** (40.2-59.8)	**233** (171-300)	**443** (330-559)	2604
	09-10	**15.1** (13.2-17.4)	**10.9** (9.41-12.4)	**49.4** (37.0-67.3)	**256** (191-322)	**454** (352-557)	2749
Age group							
6-11 years	03-04	**9.93** (7.43-13.3)	**7.55** (4.72-13.4)	**25.1** (15.3-35.6)	**116** (39.9-236)	**236** (115-336)	314
	05-06	**14.1** (10.8-18.5)	**13.5** (7.97-18.5)	**38.6** (26.0-54.1)	**108** (62.4-169)	**241** (108-598)	356
	07-08	**14.5** (9.47-22.1)	**13.0** (8.00-17.5)	**33.1** (17.5-72.4)	**132** (52.7-331)	**331** (131-599)	389
	09-10	**14.2** (12.4-16.4)	**12.0** (8.84-15.0)	**37.1** (27.0-47.3)	**129** (89.1-155)	**300** (148-469)	415
12-19 years	03-04	**10.9** (8.32-14.2)	**7.45** (5.48-10.7)	**31.8** (21.9-61.1)	**193** (90.7-318)	**356** (169-580)	713
	05-06	**14.0** (11.0-17.8)	**11.1** (8.68-13.6)	**51.0** (33.0-73.4)	**193** (125-306)	**385** (203-739)	702
	07-08	**14.1** (11.0-18.1)	**11.0** (7.87-14.4)	**50.2** (27.1-78.8)	**206** (95.3-293)	**378** (238-571)	401
	09-10	**9.38** (7.86-11.2)	**7.71** (5.71-9.21)	**23.2** (17.3-29.3)	**153** (63.0-201)	**247** (166-379)	420
20 years and older	03-04	**13.4** (12.0-15.1)	**10.0** (8.89-11.4)	**50.0** (36.0-73.8)	**224** (186-272)	**385** (308-506)	1487
	05-06	**19.3** (16.9-22.0)	**13.7** (11.6-17.0)	**86.1** (64.0-109)	**343** (262-411)	**581** (440-718)	1490
	07-08	**15.8** (14.0-17.8)	**12.6** (10.7-14.5)	**52.3** (43.8-64.6)	**244** (186-309)	**484** (336-568)	1814
	09-10	**16.4** (13.7-19.6)	**11.5** (9.63-14.8)	**57.1** (38.4-80.2)	**279** (202-364)	**504** (372-601)	1914
Gender							
Males	03-04	**13.2** (11.3-15.6)	**9.21** (6.86-12.1)	**73.1** (45.8-85.9)	**237** (175-294)	**384** (294-506)	1228
	05-06	**17.1** (14.1-20.7)	**12.4** (10.0-18.5)	**82.6** (58.2-109)	**308** (232-368)	**472** (355-721)	1270
	07-08	**12.8** (10.9-15.0)	**10.0** (8.12-13.0)	**45.7** (32.1-57.3)	**191** (132-241)	**330** (253-456)	1294
	09-10	**13.3** (11.3-15.7)	**9.21** (7.40-11.7)	**43.9** (33.5-67.4)	**230** (178-276)	**345** (276-429)	1399
Females	03-04	**12.2** (10.6-14.2)	**9.54** (8.45-10.4)	**32.3** (26.2-46.6)	**182** (138-217)	**336** (225-480)	1286
	05-06	**19.0** (16.1-22.6)	**13.8** (11.7-16.7)	**64.0** (47.6-89.8)	**301** (209-434)	**619** (418-898)	1278
	07-08	**18.5** (15.6-22.0)	**14.4** (12.4-16.8)	**55.3** (38.5-77.0)	**300** (182-435)	**571** (359-729)	1310
	09-10	**17.1** (14.6-20.1)	**12.3** (10.7-14.8)	**50.6** (37.0-71.3)	**300** (187-422)	**556** (422-668)	1350
Race/ethnicity							
Mexican Americans	03-04	**13.3** (9.38-18.8)	**9.18** (5.45-13.9)	**66.7** (28.8-112)	**292** (151-432)	**453** (263-1150)	612
	05-06	**24.1** (19.3-29.9)	**17.6** (13.3-22.8)	**154** (96.4-242)	**440** (379-601)	**736** (601-818)	637
	07-08	**16.6** (12.2-22.6)	**12.6** (8.51-16.5)	**60.1** (39.6-80.3)	**325** (182-475)	**637** (368-828)	531
	09-10	**14.8** (12.1-18.2)	**9.38** (7.63-12.4)	**45.4** (32.2-110)	**352** (244-458)	**578** (402-737)	566
Non-Hispanic blacks	03-04	**9.94** (7.92-12.5)	**7.74** (5.50-10.0)	**30.2** (25.6-37.3)	**132** (78.0-213)	**260** (127-513)	651
	05-06	**12.2** (9.47-15.6)	**9.50** (7.64-11.8)	**41.0** (23.3-77.4)	**179** (106-243)	**352** (203-674)	678
	07-08	**10.6** (8.91-12.7)	**8.34** (6.47-10.1)	**28.6** (22.3-36.7)	**120** (71.0-203)	**266** (151-407)	597
	09-10	**9.23** (7.62-11.2)	**6.62** (5.63-8.18)	**22.7** (16.9-29.1)	**136** (63.6-240)	**356** (180-689)	516
Non-Hispanic whites	03-04	**13.3** (11.6-15.1)	**9.82** (8.11-11.5)	**47.0** (34.3-67.7)	**213** (160-272)	**358** (276-480)	1091
	05-06	**18.4** (16.0-21.2)	**13.5** (11.6-17.0)	**73.4** (56.8-97.0)	**282** (231-343)	**472** (367-699)	1038
	07-08	**15.6** (13.1-18.7)	**13.0** (10.7-14.8)	**50.4** (35.9-65.9)	**222** (129-303)	**418** (262-586)	1077
	09-10	**15.8** (13.1-19.0)	**11.4** (9.41-14.8)	**52.0** (37.0-71.3)	**242** (159-323)	**410** (317-547)	1206

Biomonitoring Summary: http://www.cdc.gov/biomonitoring/Triclosan_BiomonitoringSummary.html
Factsheet: http://www.cdc.gov/biomonitoring/Triclosan_FactSheet.html

Urinary *ortho*-Phenylphenol

Geometric mean and selected percentiles of urine concentrations (in µg/L) for the U.S. population from the National Health and Nutrition Examination Survey.

	Survey years+	Geometric mean (95% conf. interval)	Selected percentiles (95% confidence interval) 50th	75th	90th	95th	Sample size
Total	03-04	*	**.100** (<LOD-.200)	**.300** (.200-.400)	**.500** (.400-.700)	**.800** (.600-1.10)	2525
	05-06	*	**< LOD**	**< LOD**	**.300** (.200-.400)	**.500** (.400-.800)	2548
	07-08	*	**< LOD**	**< LOD**	**.100** (.100-.200)	**.300** (.200-.400)	2604
	09-10	*	**< LOD**	**< LOD**	**.300** (.300-.400)	**.500** (.500-.600)	2749
Age group							
6-11 years	03-04	**.180** (.158-.206)	**.200** (.200-.200)	**.300** (.300-.400)	**.600** (.500-.800)	**.800** (.500-1.30)	314
	05-06	*	**< LOD**	**.100** (<LOD-.200)	**.500** (.300-1.10)	**1.30** (.700-1.90)	356
	07-08	*	**< LOD**	**< LOD**	**.300** (.200-.500)	**.600** (.300-1.00)	389
	09-10	*	**< LOD**	**.200** (<LOD-.300)	**.400** (.300-.700)	**.600** (.400-1.20)	415
12-19 years	03-04	**.175** (.149-.206)	**.200** (.100-.200)	**.400** (.300-.500)	**.600** (.500-.800)	**.900** (.700-1.30)	722
	05-06	*	**< LOD**	**< LOD**	**.300** (.200-.500)	**.600** (.500-.800)	702
	07-08	*	**< LOD**	**< LOD**	**.100** (.100-.200)	**.300** (.200-.600)	401
	09-10	*	**< LOD**	**.200** (<LOD-.300)	**.400** (.300-.500)	**.600** (.500-.900)	420
20 years and older	03-04	*	**.100** (<LOD-.100)	**.300** (.200-.400)	**.500** (.400-.700)	**.800** (.600-1.10)	1489
	05-06	*	**< LOD**	**< LOD**	**.300** (.100-.400)	**.500** (.400-.800)	1490
	07-08	*	**< LOD**	**< LOD**	**.100** (<LOD-.200)	**.300** (.200-.400)	1814
	09-10	*	**< LOD**	**< LOD**	**.300** (.300-.400)	**.500** (.400-.500)	1914
Gender							
Males	03-04	*	**.100** (<LOD-.200)	**.400** (.300-.400)	**.600** (.500-.700)	**.800** (.600-1.00)	1231
	05-06	*	**< LOD**	**< LOD**	**.300** (.200-.400)	**.500** (.400-.900)	1270
	07-08	*	**< LOD**	**< LOD**	**.100** (<LOD-.200)	**.300** (.200-.500)	1294
	09-10	*	**< LOD**	**< LOD**	**.300** (.300-.400)	**.500** (.500-.700)	1399
Females	03-04	*	**.100** (<LOD-.200)	**.300** (.200-.400)	**.500** (.400-.700)	**.800** (.600-1.20)	1294
	05-06	*	**< LOD**	**< LOD**	**.300** (.200-.400)	**.500** (.400-.800)	1278
	07-08	*	**< LOD**	**< LOD**	**.100** (<LOD-.200)	**.300** (.200-.500)	1310
	09-10	*	**< LOD**	**< LOD**	**.300** (.300-.400)	**.500** (.400-.500)	1350

Limit of detection (LOD, see Data Analysis section) for Survey years 03-04, 05-06, 07-08, and 09-10 are 0.1, 0.1, 0.1, and 0.2 respectively.
< LOD means less than the limit of detection, which may vary for some chemicals by year and by individual sample.
* Not calculated: proportion of results below limit of detection was too high to provide a valid result.
+Not measured after Survey years 2009-2010.

Biomonitoring Summary: **http://www.cdc.gov/biomonitoring/OrthophenylphenolBiomonitoringSummary.html**

Urinary *ortho*-Phenylphenol

Geometric mean and selected percentiles of urine concentrations (in µg/L) for the U.S. population from the National Health and Nutrition Examination Survey.

	Survey years+	Geometric mean (95% conf. interval)	Selected percentiles (95% confidence interval) 50th	75th	90th	95th	Sample size
Race/ethnicity							
Mexican Americans	03-04	**.191** (.150-.245)	**.200** (.100-.300)	**.400** (.300-.600)	**.700** (.500-1.10)	**1.10** (.600-1.60)	617
	05-06	*	**< LOD**	**< LOD**	**.400** (.100-.900)	**.800** (.400-3.20)	637
	07-08	*	**< LOD**	**< LOD**	**.100** (<LOD-.300)	**.400** (.200-1.10)	531
	09-10	*	**< LOD**	**< LOD**	**.300** (.200-.400)	**.400** (.300-.900)	566
Non-Hispanic blacks	03-04	*	**.100** (<LOD-.200)	**.400** (.300-.400)	**.600** (.500-.800)	**1.00** (.600-1.40)	636
	05-06	*	**< LOD**	**< LOD**	**.400** (.300-.500)	**.500** (.400-.700)	678
	07-08	*	**< LOD**	**< LOD**	**.200** (<LOD-.300)	**.400** (.200-.600)	597
	09-10	*	**< LOD**	**.200** (<LOD-.300)	**.400** (.300-.600)	**.700** (.500-.800)	516
Non-Hispanic whites	03-04	*	**.100** (<LOD-.100)	**.300** (.200-.400)	**.500** (.400-.700)	**.800** (.600-1.00)	1077
	05-06	*	**< LOD**	**< LOD**	**.300** (.100-.400)	**.500** (.300-1.10)	1038
	07-08	*	**< LOD**	**< LOD**	**.100** (<LOD-.200)	**.300** (.200-.500)	1077
	09-10	*	**< LOD**	**< LOD**	**.300** (.300-.400)	**.500** (.400-.600)	1206

Limit of detection (LOD, see Data Analysis section) for Survey years 03-04, 05-06, 07-08, and 09-10 are 0.1, 0.1, 0.1, and 0.2 respectively.
< LOD means less than the limit of detection, which may vary for some chemicals by year and by individual sample.
* Not calculated: proportion of results below limit of detection was too high to provide a valid result.
+ Not measured after Survey years 2009-2010.

Biomonitoring Summary: **http://www.cdc.gov/biomonitoring/Orthophenylphenol_BiomonitoringSummary.html**

Urinary *ortho*-Phenylphenol (creatinine corrected)

Geometric mean and selected percentiles of urine concentrations (in µg/g of creatinine) for the U.S. population from the National Health and Nutrition Examination Survey.

	Survey years+	Geometric mean (95% conf. interval)	Selected percentiles (95% confidence interval) 50th	75th	90th	95th	Sample size
Total	03-04	*	**.150** (<LOD-.170)	**.320** (.270-.380)	**.670** (.500-.800)	**.950** (.750-1.31)	2522
	05-06	*	**< LOD**	**< LOD**	**.370** (.310-.410)	**.600** (.470-.750)	2548
	07-08	*	**< LOD**	**< LOD**	**.290** (.250-.330)	**.470** (.400-.520)	2604
	09-10	*	**< LOD**	**< LOD**	**.560** (.480-.640)	**.820** (.700-.910)	2749
Age group							
6-11 years	03-04	**.219** (.189-.255)	**.230** (.170-.280)	**.400** (.330-.540)	**.760** (.530-.860)	**.880** (.760-1.90)	314
	05-06	*	**< LOD**	**.180** (<LOD-.240)	**.590** (.430-.930)	**1.94** (.710-2.94)	356
	07-08	*	**< LOD**	**< LOD**	**.390** (.240-.660)	**.660** (.390-1.31)	389
	09-10	*	**< LOD**	**.410** (<LOD-.480)	**.820** (.560-1.06)	**1.22** (.850-1.56)	415
12-19 years	03-04	**.131** (.110-.156)	**.140** (.100-.160)	**.270** (.230-.340)	**.490** (.400-.690)	**.790** (.550-1.30)	720
	05-06	*	**< LOD**	**< LOD**	**.280** (.220-.320)	**.410** (.330-.710)	702
	07-08	*	**< LOD**	**< LOD**	**.190** (.170-.250)	**.330** (.240-.470)	401
	09-10	*	**< LOD**	**.250** (<LOD-.300)	**.420** (.300-.550)	**.550** (.390-1.20)	420
20 years and older	03-04	*	**.140** (<LOD-.170)	**.320** (.260-.370)	**.670** (.500-.800)	**1.00** (.740-1.38)	1488
	05-06	*	**< LOD**	**< LOD**	**.370** (.300-.410)	**.540** (.430-.710)	1490
	07-08	*	**< LOD**	**< LOD**	**.300** (<LOD-.330)	**.470** (.390-.520)	1814
	09-10	*	**< LOD**	**< LOD**	**.560** (.480-.640)	**.820** (.700-.880)	1914
Gender							
Males	03-04	*	**.130** (<LOD-.150)	**.290** (.240-.340)	**.570** (.430-.740)	**.880** (.720-1.06)	1230
	05-06	*	**< LOD**	**< LOD**	**.280** (.200-.350)	**.470** (.350-.670)	1270
	07-08	*	**< LOD**	**< LOD**	**.220** (<LOD-.250)	**.350** (.300-.440)	1294
	09-10	*	**< LOD**	**< LOD**	**.440** (.360-.540)	**.670** (.510-.850)	1399
Females	03-04	*	**.170** (<LOD-.200)	**.350** (.280-.440)	**.700** (.500-.940)	**1.07** (.730-1.57)	1292
	05-06	*	**< LOD**	**< LOD**	**.430** (.370-.500)	**.700** (.500-1.03)	1278
	07-08	*	**< LOD**	**< LOD**	**.350** (<LOD-.440)	**.500** (.440-.580)	1310
	09-10	*	**< LOD**	**< LOD**	**.640** (.570-.700)	**.930** (.780-1.17)	1350

< LOD means less than the limit of detection for the urine levels not corrected for creatinine.
* Not calculated: proportion of results below limit of detection was too high to provide a valid result.
+ Not measured after Survey years 2009-2010.

Biomonitoring Summary: http://www.cdc.gov/biomonitoring/Orthophenylphenol_BiomonitoringSummary.html

Urinary *ortho*-Phenylphenol (creatinine corrected)

Geometric mean and selected percentiles of urine concentrations (in µg/g of creatinine) for the U.S. population from the National Health and Nutrition Examination Survey.

	Survey years+	Geometric mean (95% conf. interval)	Selected percentiles (95% confidence interval) 50th	75th	90th	95th	Sample size
Race/ethnicity							
Mexican Americans	03-04	**.174** (.132-.229)	**.170** (.120-.240)	**.440** (.280-.590)	**.770** (.560-1.09)	**1.11** (.770-1.72)	616
	05-06	*	**< LOD**	**< LOD**	**.370** (.210-.670)	**.740** (.390-1.71)	637
	07-08	*	**< LOD**	**< LOD**	**.250** (<LOD-.290)	**.430** (.320-.910)	531
	09-10	*	**< LOD**	**< LOD**	**.420** (.370-.560)	**.680** (.560-.880)	566
Non-Hispanic blacks	03-04	*	**.110** (<LOD-.130)	**.250** (.200-.310)	**.530** (.380-.650)	**.770** (.600-1.02)	635
	05-06	*	**< LOD**	**< LOD**	**.290** (.220-.370)	**.440** (.380-.540)	678
	07-08	*	**< LOD**	**< LOD**	**.210** (<LOD-.250)	**.330** (.250-.640)	597
	09-10	*	**< LOD**	**.220** (<LOD-.240)	**.370** (.310-.450)	**.570** (.440-.860)	516
Non-Hispanic whites	03-04	*	**.150** (<LOD-.180)	**.330** (.260-.390)	**.690** (.470-.830)	**1.00** (.740-1.38)	1076
	05-06	*	**< LOD**	**< LOD**	**.390** (.320-.430)	**.610** (.470-.880)	1038
	07-08	*	**< LOD**	**< LOD**	**.300** (<LOD-.370)	**.470** (.390-.580)	1077
	09-10	*	**< LOD**	**< LOD**	**.610** (.520-.700)	**.870** (.700-.940)	1206

< LOD means less than the limit of detection for the urine levels not corrected for creatinine.
* Not calculated: proportion of results below limit of detection was too high to provide a valid result.
+ Not measured after Survey years 2009-2010.

Biomonitoring Summary: **http://www.cdc.gov/biomonitoring/Orthophenylphenol_BiomonitoringSummary.html**

Urinary Ethylene thiourea

Metabolite of Several Dithiocarbamate Fungicides

Geometric mean and selected percentiles of urine concentrations (in µg/L) for the U.S. population from the National Health and Nutrition Examination Survey.

	Survey years	Geometric mean (95% conf. interval)	Selected percentiles (95% confidence interval) 50th	75th	90th	95th	Sample size
Total	03-04	*	**< LOD**	**< LOD**	**< LOD**	**.310** (<LOD-.560)	2169
	05-06	*	**< LOD**	**< LOD**	**.600** (<LOD-1.08)	**1.34** (.900-1.75)	2585
Age group							
6-11 years	03-04	*	**< LOD**	**< LOD**	**< LOD**	**< LOD**	280
	05-06	*	**< LOD**	**< LOD**	**.830** (<LOD-1.53)	**1.55** (.960-3.11)	342
12-19 years	03-04	*	**< LOD**	**< LOD**	**< LOD**	**.600** (<LOD-.920)	622
	05-06	*	**< LOD**	**< LOD**	**.580** (<LOD-1.11)	**1.34** (.660-2.23)	698
20 years and older	03-04	*	**< LOD**	**< LOD**	**< LOD**	**< LOD**	1267
	05-06	*	**< LOD**	**< LOD**	**.590** (<LOD-1.09)	**1.32** (.880-1.66)	1545
Gender							
Males	03-04	*	**< LOD**	**< LOD**	**< LOD**	**.360** (<LOD-.530)	1056
	05-06	*	**< LOD**	**< LOD**	**.940** (.530-1.19)	**1.51** (1.08-2.09)	1219
Females	03-04	*	**< LOD**	**< LOD**	**< LOD**	**< LOD**	1113
	05-06	*	**< LOD**	**< LOD**	**.370** (<LOD-.890)	**.950** (.500-1.58)	1366
Race/ethnicity							
Mexican Americans	03-04	*	**< LOD**	**< LOD**	**< LOD**	**< LOD**	495
	05-06	*	**< LOD**	**< LOD**	**.440** (<LOD-.960)	**1.12** (.650-1.76)	686
Non-Hispanic blacks	03-04	*	**< LOD**	**< LOD**	**< LOD**	**.480** (<LOD-1.06)	607
	05-06	*	**< LOD**	**< LOD**	**1.37** (.790-2.05)	**2.22** (1.37-3.77)	695
Non-Hispanic whites	03-04	*	**< LOD**	**< LOD**	**< LOD**	**.330** (<LOD-.560)	925
	05-06	*	**< LOD**	**< LOD**	**.570** (<LOD-1.02)	**1.18** (.940-1.42)	998

Limit of detection (LOD, see Data Analysis section) for Survey years 03-04 and 05-06 are 0.1 and 0.24 respectively.
< LOD means less than the limit of detection, which may vary for some chemicals by year and by individual sample.
* Not calculated: proportion of results below limit of detection was too high to provide a valid result.

Biomonitoring Summary: http://www.cdc.gov/biomonitoring/ETUPTU_BiomonitoringSummary.html

Urinary Ethylene thiourea (creatinine corrected)

Metabolite of Several Dithiocarbamate Fungicides

Geometric mean and selected percentiles of urine concentrations (in µg/g of creatinine) for the U.S. population from the National Health and Nutrition Examination Survey.

	Survey years	Geometric mean (95% conf. interval)	Selected percentiles (95% confidence interval) 50th	75th	90th	95th	Sample size
Total	03-04	*	**< LOD**	**< LOD**	**< LOD**	**.434** (<LOD-.538)	2167
	05-06	*	**< LOD**	**< LOD**	**.792** (<LOD-1.06)	**1.32** (1.06-1.58)	2585
Age group							
6-11 years	03-04	*	**< LOD**	**< LOD**	**< LOD**	**< LOD**	280
	05-06	*	**< LOD**	**< LOD**	**1.04** (<LOD-1.36)	**2.36** (1.16-3.12)	342
12-19 years	03-04	*	**< LOD**	**< LOD**	**< LOD**	**.423** (<LOD-.700)	621
	05-06	*	**< LOD**	**< LOD**	**.582** (<LOD-.893)	**.967** (.680-1.58)	698
20 years and older	03-04	*	**< LOD**	**< LOD**	**< LOD**	**< LOD**	1266
	05-06	*	**< LOD**	**< LOD**	**.792** (<LOD-1.06)	**1.32** (1.06-1.49)	1545
Gender							
Males	03-04	*	**< LOD**	**< LOD**	**< LOD**	**.350** (<LOD-.467)	1055
	05-06	*	**< LOD**	**< LOD**	**.783** (.634-1.04)	**1.28** (1.05-1.45)	1219
Females	03-04	*	**< LOD**	**< LOD**	**< LOD**	**< LOD**	1112
	05-06	*	**< LOD**	**< LOD**	**.827** (<LOD-1.21)	**1.33** (1.00-2.01)	1366
Race/ethnicity							
Mexican Americans	03-04	*	**< LOD**	**< LOD**	**< LOD**	**< LOD**	494
	05-06	*	**< LOD**	**< LOD**	**.748** (<LOD-1.17)	**1.33** (.837-1.89)	686
Non-Hispanic blacks	03-04	*	**< LOD**	**< LOD**	**< LOD**	**.368** (<LOD-.619)	607
	05-06	*	**< LOD**	**< LOD**	**1.02** (.649-1.74)	**1.84** (1.04-2.50)	695
Non-Hispanic whites	03-04	*	**< LOD**	**< LOD**	**< LOD**	**.434** (<LOD-.583)	924
	05-06	*	**< LOD**	**< LOD**	**.773** (<LOD-1.04)	**1.25** (.968-1.48)	998

< LOD means less than the limit of detection for the urine levels not corrected for creatinine.

* Not calculated: proportion of results below limit of detection was too high to provide a valid result.

Biomonitoring Summary: http://www.cdc.gov/biomonitoring/ETUPTU_BiomonitoringSummary.html

Urinary Pentachlorophenol

Also a Metabolite of Several Organochlorine Insecticides

Geometric mean and selected percentiles of urine concentrations (in µg/L) for the U.S. population from the National Health and Nutrition Examination Survey.

	Survey years	Geometric mean (95% conf. interval)	Selected percentiles (95% confidence interval) 50th	75th	90th	95th	Sample size
Total	03-04	*	**< LOD**	**1.12** (.570-1.58)	**2.57** (2.08-2.99)	**3.63** (2.98-4.61)	2354
Age group							
6-11 years	03-04	*	**< LOD**	**1.57** (.970-2.25)	**3.23** (2.12-5.67)	**5.67** (2.94-6.38)	290
12-19 years	03-04	*	**< LOD**	**1.36** (.760-1.99)	**2.88** (2.08-3.53)	**3.80** (3.06-6.38)	674
20 years and older	03-04	*	**< LOD**	**1.00** (<LOD-1.47)	**2.41** (1.92-2.84)	**3.40** (2.95-3.81)	1390
Gender							
Males	03-04	*	**< LOD**	**1.32** (.720-2.05)	**2.79** (2.46-3.40)	**4.58** (3.50-5.49)	1147
Females	03-04	*	**< LOD**	**.880** (<LOD-1.41)	**2.12** (1.71-2.74)	**3.20** (2.44-3.84)	1207
Race/ethnicity							
Mexican Americans	03-04	*	**< LOD**	**< LOD**	**1.73** (.640-3.38)	**2.44** (1.73-3.84)	550
Non-Hispanic blacks	03-04	*	**< LOD**	**1.46** (1.11-1.93)	**2.79** (2.22-3.65)	**4.06** (3.20-4.77)	610
Non-Hispanic whites	03-04	*	**< LOD**	**1.17** (.580-1.74)	**2.66** (2.06-3.23)	**3.69** (2.99-5.17)	1039

Limit of detection (LOD, see Data Analysis section) for Survey year 03-04 is 0.5.
< LOD means less than the limit of detection, which may vary for some chemicals by year and by individual sample.
* Not calculated: proportion of results below limit of detection was too high to provide a valid result.

Biomonitoring Summary: **http://www.cdc.gov/biomonitoring/Pentachlorophenol_BiomonitoringSummary.html**

Urinary Pentachlorophenol (creatinine corrected)

Also a Metabolite of Several Organochlorine Insecticides

Geometric mean and selected percentiles of urine concentrations (in µg/g of creatinine) for the U.S. population from the National Health and Nutrition Examination Survey.

	Survey years	Geometric mean (95% conf. interval)	Selected percentiles (95% confidence interval) 50th	75th	90th	95th	Sample size
Total	03-04	*	**< LOD**	**1.22** (1.01-1.52)	**2.30** (1.84-2.77)	**3.44** (2.69-3.96)	2352
Age group							
6-11 years	03-04	*	**< LOD**	**1.75** (1.38-2.69)	**3.72** (2.50-4.96)	**4.96** (3.59-10.6)	290
12-19 years	03-04	*	**< LOD**	**1.11** (.800-1.28)	**1.67** (1.31-2.65)	**2.76** (1.64-3.89)	673
20 years and older	03-04	*	**< LOD**	**1.19** (<LOD-1.50)	**2.19** (1.86-2.64)	**3.24** (2.54-3.96)	1389
Gender							
Males	03-04	*	**< LOD**	**1.10** (.825-1.38)	**1.93** (1.62-2.65)	**3.23** (2.06-4.94)	1146
Females	03-04	*	**< LOD**	**1.37** (<LOD-1.74)	**2.50** (2.13-2.98)	**3.50** (2.79-4.07)	1206
Race/ethnicity							
Mexican Americans	03-04	*	**< LOD**	**< LOD**	**1.54** (1.01-2.69)	**2.33** (1.40-4.62)	549
Non-Hispanic blacks	03-04	*	**< LOD**	**.919** (.679-1.25)	**1.88** (1.42-2.77)	**2.94** (2.21-3.76)	610
Non-Hispanic whites	03-04	*	**< LOD**	**1.35** (1.08-1.64)	**2.42** (1.94-3.18)	**3.54** (2.77-4.78)	1038

< LOD means less than the limit of detection for the urine levels not corrected for creatinine.

* Not calculated: proportion of results below limit of detection was too high to provide a valid result.

Biomonitoring Summary: **http://www.cdc.gov/biomonitoring/Pentachlorophenol_BiomonitoringSummary.html**

Urinary Propylene thiourea

Metabolite of Propineb

Geometric mean and selected percentiles of urine concentrations (in µg/L) for the U.S. population from the National Health and Nutrition Examination Survey.

	Survey years	Geometric mean (95% conf. interval)	Selected percentiles (95% confidence interval) 50th	75th	90th	95th	Sample size
Total	03-04	*	< LOD	< LOD	< LOD	< LOD	2456
	05-06	*	< LOD	< LOD	< LOD	< LOD	2628
Age group							
6-11 years	03-04	*	< LOD	< LOD	< LOD	< LOD	305
	05-06	*	< LOD	< LOD	< LOD	< LOD	349
12-19 years	03-04	*	< LOD	< LOD	< LOD	< LOD	702
	05-06	*	< LOD	< LOD	< LOD	< LOD	718
20 years and older	03-04	*	< LOD	< LOD	< LOD	< LOD	1449
	05-06	*	< LOD	< LOD	< LOD	< LOD	1561
Gender							
Males	03-04	*	< LOD	< LOD	< LOD	< LOD	1209
	05-06	*	< LOD	< LOD	< LOD	< LOD	1246
Females	03-04	*	< LOD	< LOD	< LOD	< LOD	1247
	05-06	*	< LOD	< LOD	< LOD	< LOD	1382
Race/ethnicity							
Mexican Americans	03-04	*	< LOD	< LOD	< LOD	< LOD	598
	05-06	*	< LOD	< LOD	< LOD	< LOD	693
Non-Hispanic blacks	03-04	*	< LOD	< LOD	< LOD	< LOD	637
	05-06	*	< LOD	< LOD	< LOD	< LOD	720
Non-Hispanic whites	03-04	*	< LOD	< LOD	< LOD	< LOD	1062
	05-06	*	< LOD	< LOD	< LOD	< LOD	1006

Limit of detection (LOD, see Data Analysis section) for Survey years 03-04 and 05-06 are 0.1 and 0.37 respectively.
< LOD means less than the limit of detection, which may vary for some chemicals by year and by individual sample.
* Not calculated: proportion of results below limit of detection was too high to provide a valid result.

Biomonitoring Summary: http://www.cdc.gov/biomonitoring/ETUPTU_BiomonitoringSummary.html

Urinary Propylene thiourea (creatinine corrected)

Metabolite of Propineb

Geometric mean and selected percentiles of urine concentrations (in µg/g of creatinine) for the U.S. population from the National Health and Nutrition Examination Survey.

	Survey years	Geometric mean (95% conf. interval)	Selected percentiles (95% confidence interval) 50th	75th	90th	95th	Sample size
Total	03-04	*	< LOD	< LOD	< LOD	< LOD	2454
	05-06	*	< LOD	< LOD	< LOD	< LOD	2628
Age group							
6-11 years	03-04	*	< LOD	< LOD	< LOD	< LOD	305
	05-06	*	< LOD	< LOD	< LOD	< LOD	349
12-19 years	03-04	*	< LOD	< LOD	< LOD	< LOD	701
	05-06	*	< LOD	< LOD	< LOD	< LOD	718
20 years and older	03-04	*	< LOD	< LOD	< LOD	< LOD	1448
	05-06	*	< LOD	< LOD	< LOD	< LOD	1561
Gender							
Males	03-04	*	< LOD	< LOD	< LOD	< LOD	1208
	05-06	*	< LOD	< LOD	< LOD	< LOD	1246
Females	03-04	*	< LOD	< LOD	< LOD	< LOD	1246
	05-06	*	< LOD	< LOD	< LOD	< LOD	1382
Race/ethnicity							
Mexican Americans	03-04	*	< LOD	< LOD	< LOD	< LOD	597
	05-06	*	< LOD	< LOD	< LOD	< LOD	693
Non-Hispanic blacks	03-04	*	< LOD	< LOD	< LOD	< LOD	637
	05-06	*	< LOD	< LOD	< LOD	< LOD	720
Non-Hispanic whites	03-04	*	< LOD	< LOD	< LOD	< LOD	1061
	05-06	*	< LOD	< LOD	< LOD	< LOD	1006

< LOD means less than the limit of detection for the urine levels not corrected for creatinine.

* Not calculated: proportion of results below limit of detection was too high to provide a valid result.

Biomonitoring Summary: http://www.cdc.gov/biomonitoring/ETUPTU_BiomonitoringSummary.html

Urinary 2,4-Dichlorophenoxyacetic acid

Geometric mean and selected percentiles of urine concentrations (in µg/L) for the U.S. population from the National Health and Nutrition Examination Survey.

	Survey years+	Geometric mean (95% conf. interval)	Selected percentiles (95% confidence interval) 50th	75th	90th	95th	Sample size
Total	99-00	*	< LOD	< LOD	< LOD	< LOD	1977
	01-02	*	< LOD	.220 (<LOD-.310)	.690 (.560-.880)	1.26 (1.01-1.36)	2903
	03-04	.245 (.210-.286)	.230 (.180-.320)	.580 (.490-.660)	1.10 (.910-1.34)	1.71 (1.41-2.37)	2488
	07-08	*	< LOD	.550 (.530-.590)	1.06 (.940-1.19)	1.60 (1.38-1.79)	2587
Age group							
6-11 years	99-00	*	< LOD	< LOD	< LOD	1.30 (<LOD-2.40)	477
	01-02	*	< LOD	.310 (.210-.400)	.740 (.550-1.13)	1.55 (1.00-2.21)	546
	03-04	.266 (.214-.332)	.290 (.200-.390)	.670 (.440-.920)	1.03 (.890-1.40)	1.88 (1.01-2.54)	309
	07-08	*	< LOD	.720 (.630-.860)	1.44 (1.15-1.64)	1.93 (1.62-2.84)	385
12-19 years	99-00	*	< LOD	< LOD	< LOD	1.10 (<LOD-1.60)	677
	01-02	*	< LOD	.250 (<LOD-.420)	.690 (.440-1.16)	1.24 (.690-1.66)	797
	03-04	.256 (.212-.310)	.260 (.180-.380)	.580 (.470-.710)	1.04 (.890-1.31)	1.66 (1.20-2.97)	714
	07-08	*	< LOD	.590 (.530-.670)	1.29 (.790-1.97)	2.38 (1.46-2.73)	390
20-59 years	99-00	*	< LOD	< LOD	< LOD	< LOD	823
	01-02	*	< LOD	.210 (<LOD-.310)	.690 (.540-.910)	1.27 (.930-1.49)	1070
	03-04	.239 (.205-.279)	.220 (.170-.300)	.570 (.480-.640)	.980 (.840-1.35)	1.55 (1.25-2.50)	937
	07-08	*	< LOD	.530 (.490-.570)	.970 (.800-1.17)	1.36 (1.22-1.78)	1179
60 years and older	01-02	*	< LOD	< LOD	.560 (.390-.870)	1.26 (.690-1.78)	490
	03-04	.248 (.205-.301)	.210 (.130-.320)	.560 (.470-.680)	1.36 (1.07-1.90)	2.42 (1.66-3.67)	528
	07-08	*	< LOD	.560 (.530-.640)	1.02 (.840-1.12)	1.46 (1.10-2.11)	633
Gender							
Males	99-00	*	< LOD	< LOD	< LOD	1.10 (<LOD-1.80)	962
	01-02	*	< LOD	.330 (.220-.490)	.890 (.690-1.17)	1.49 (1.26-2.03)	1364
	03-04	.276 (.240-.317)	.290 (.210-.370)	.630 (.540-.740)	1.22 (.960-1.42)	2.12 (1.42-2.73)	1218
	07-08	*	< LOD	.610 (.580-.650)	1.26 (1.05-1.38)	2.11 (1.68-2.41)	1292
Females	99-00	*	< LOD	< LOD	< LOD	< LOD	1015
	01-02	*	< LOD	< LOD	.470 (.360-.620)	.890 (.670-1.21)	1539
	03-04	.219 (.181-.264)	.190 (.110-.280)	.490 (.400-.630)	.980 (.860-1.33)	1.48 (1.31-2.27)	1270
	07-08	*	< LOD	.500 (.460-.540)	.870 (.790-1.01)	1.28 (1.12-1.42)	1295
Race/ethnicity							
Mexican Americans	99-00	*	< LOD	< LOD	< LOD	< LOD	695
	01-02	*	< LOD	.250 (<LOD-.330)	.730 (.610-.890)	1.20 (.960-1.36)	743
	03-04	.313 (.256-.383)	.340 (.260-.440)	.730 (.610-.840)	1.42 (1.02-1.52)	1.81 (1.23-3.53)	606
	07-08	*	< LOD	.520 (.470-.590)	.860 (.790-1.00)	1.46 (.950-2.22)	500
Non-Hispanic blacks	99-00	*	< LOD	< LOD	< LOD	1.20 (<LOD-1.70)	520
	01-02	*	< LOD	< LOD	.560 (.420-.890)	1.06 (.790-1.48)	743
	03-04	*	.190 (<LOD-.290)	.510 (.380-.630)	.910 (.750-1.22)	1.31 (.990-1.98)	648
	07-08	*	< LOD	.580 (.530-.630)	1.05 (.910-1.20)	1.49 (1.23-1.97)	574
Non-Hispanic whites	99-00	*	< LOD	< LOD	< LOD	< LOD	589
	01-02	*	< LOD	.240 (<LOD-.360)	.730 (.560-.980)	1.30 (1.01-1.66)	1201
	03-04	.254 (.211-.306)	.240 (.180-.360)	.590 (.470-.720)	1.17 (.930-1.41)	2.00 (1.40-2.51)	1076
	07-08	*	< LOD	.560 (.540-.600)	1.12 (.940-1.29)	1.61 (1.36-2.16)	1083

Limit of detection (LOD, see Data Analysis section) for Survey years 99-00, 01-02, 03-04, and 07-08 are 0.952, 0.2, 0.1, and 0.4 respectively.
< LOD means less than the limit of detection, which may vary for some chemicals by year and by individual sample.
* Not calculated: proportion of results below limit of detection was too high to provide a valid result.
+Not measured in Survey years 2005-2006.

Biomonitoring Summary: http://www.cdc.gov/biomonitoring/2,4-DichlorophenoxyaceticAcid_BiomonitoringSummary.html

Urinary 2,4-Dichlorophenoxyacetic acid (creatinine corrected)

Geometric mean and selected percentiles of urine concentrations (in µg/g of creatinine) for the U.S. population from the National Health and Nutrition Examination Survey.

	Survey years+	Geometric mean (95% conf. interval)	Selected percentiles (95% confidence interval) 50th	75th	90th	95th	Sample size
Total	99-00	*	**< LOD**	**< LOD**	**< LOD**	**< LOD**	1977
	01-02	*	**< LOD**	**.378** (<LOD-.412)	**.700** (.635-.778)	**1.12** (1.03-1.26)	2901
	03-04	**.241** (.203-.287)	**.253** (.206-.290)	**.500** (.423-.610)	**1.03** (.855-1.28)	**1.85** (1.42-2.50)	2486
	07-08	*	**< LOD**	**.737** (.667-.779)	**1.28** (1.17-1.40)	**1.84** (1.65-2.12)	2585
Age group							
6-11 years	99-00	*	**< LOD**	**< LOD**	**< LOD**	**1.32** (<LOD-2.24)	477
	01-02	*	**< LOD**	**.485** (.378-.679)	**1.13** (.825-1.35)	**1.41** (1.27-1.73)	546
	03-04	**.323** (.249-.421)	**.320** (.250-.440)	**.744** (.500-1.06)	**1.30** (.990-2.55)	**2.55** (1.23-5.16)	309
	07-08	*	**< LOD**	**.970** (.817-1.24)	**1.65** (1.47-1.85)	**2.96** (1.65-6.18)	385
12-19 years	99-00	*	**< LOD**	**< LOD**	**< LOD**	**.593** (<LOD-1.05)	677
	01-02	*	**< LOD**	**.275** (<LOD-.376)	**.483** (.328-.662)	**.662** (.517-.918)	796
	03-04	**.193** (.160-.232)	**.205** (.157-.250)	**.419** (.328-.460)	**.709** (.540-.925)	**1.23** (.837-2.35)	713
	07-08	*	**< LOD**	**.555** (.475-.651)	**.908** (.778-1.05)	**1.56** (.950-2.79)	388
20-59 years	99-00	*	**< LOD**	**< LOD**	**< LOD**	**< LOD**	823
	01-02	*	**< LOD**	**.378** (<LOD-.412)	**.667** (.593-.778)	**1.08** (.806-1.29)	1070
	03-04	**.227** (.188-.274)	**.242** (.196-.278)	**.452** (.397-.545)	**.923** (.708-1.20)	**1.48** (1.14-2.43)	936
	07-08	*	**< LOD**	**.667** (.588-.769)	**1.17** (1.04-1.34)	**1.65** (1.43-2.33)	1179
Gender							
Males	99-00	*	**< LOD**	**< LOD**	**< LOD**	**.667** (<LOD-1.16)	962
	01-02	*	**< LOD**	**.336** (.272-.412)	**.652** (.560-.825)	**1.14** (.979-1.39)	1364
	03-04	**.227** (.189-.271)	**.238** (.194-.276)	**.473** (.412-.564)	**.941** (.767-1.23)	**1.80** (1.09-2.79)	1217
	07-08	*	**< LOD**	**.596** (.538-.670)	**1.14** (.980-1.24)	**1.63** (1.47-2.15)	1291
Females	99-00	*	**< LOD**	**< LOD**	**< LOD**	**< LOD**	1015
	01-02	*	**< LOD**	**< LOD**	**.711** (.631-.809)	**1.10** (.933-1.26)	1537
	03-04	**.256** (.213-.308)	**.263** (.212-.311)	**.522** (.435-.645)	**1.14** (.900-1.42)	**1.85** (1.42-2.64)	1269
	07-08	*	**< LOD**	**.854** (.757-.903)	**1.47** (1.23-1.58)	**1.91** (1.65-2.33)	1294
Race/ethnicity							
Mexican Americans	99-00	*	**< LOD**	**< LOD**	**< LOD**	**< LOD**	695
	01-02	*	**< LOD**	**.350** (<LOD-.386)	**.720** (.583-.840)	**1.08** (.778-1.56)	743
	03-04	**.287** (.223-.371)	**.309** (.194-.459)	**.593** (.463-.771)	**1.08** (.833-1.36)	**1.54** (1.17-3.19)	605
	07-08	*	**< LOD**	**.622** (.571-.691)	**1.15** (.903-1.43)	**1.74** (1.37-2.33)	499
Non-Hispanic blacks	99-00	*	**< LOD**	**< LOD**	**< LOD**	**.593** (<LOD-1.19)	520
	01-02	*	**< LOD**	**< LOD**	**.467** (.349-.583)	**.778** (.552-.975)	742
	03-04	*	**.140** (<LOD-.194)	**.304** (.264-.356)	**.629** (.461-.815)	**.970** (.719-1.50)	648
	07-08	*	**< LOD**	**.509** (.457-.596)	**.966** (.875-1.07)	**1.33** (1.12-1.75)	573
Non-Hispanic whites	99-00	*	**< LOD**	**< LOD**	**< LOD**	**< LOD**	589
	01-02	*	**< LOD**	**.412** (<LOD-.455)	**.769** (.667-.894)	**1.25** (1.05-1.40)	1200
	03-04	**.263** (.213-.326)	**.269** (.226-.318)	**.539** (.434-.665)	**1.13** (.941-1.46)	**2.34** (1.54-2.73)	1075
	07-08	*	**< LOD**	**.780** (.737-.871)	**1.36** (1.17-1.55)	**2.00** (1.60-2.49)	1083

< LOD means less than the limit of detection for the urine levels not corrected for creatinine.
* Not calculated: proportion of results below limit of detection was too high to provide a valid result.
+Not measured in Survey years 2005-2006.

Biomonitoring Summary: http://www.cdc.gov/biomonitoring/2,4-DichlorophenoxyaceticAcid_BiomonitoringSummary.html

Urinary 2,4,5-Trichlorophenoxyacetic acid

Geometric mean and selected percentiles of urine concentrations (in µg/L) for the U.S. population from the National Health and Nutrition Examination Survey.

	Survey years+	Geometric mean (95% conf. interval)	Selected percentiles (95% confidence interval) 50th	75th	90th	95th	Sample size
Total	99-00	*	< LOD	< LOD	< LOD	< LOD	1814
	01-02	*	< LOD	< LOD	< LOD	< LOD	3047
	03-04	*	< LOD	< LOD	< LOD	.140 (<LOD-.210)	2416
	07-08	*	< LOD	< LOD	< LOD	< LOD	2588
Age group							
6-11 years	99-00	*	< LOD	< LOD	< LOD	< LOD	430
	01-02	*	< LOD	< LOD	< LOD	< LOD	580
	03-04	*	< LOD	< LOD	< LOD	.110 (<LOD-.160)	303
	07-08	*	< LOD	< LOD	< LOD	< LOD	385
12-19 years	99-00	*	< LOD	< LOD	< LOD	< LOD	618
	01-02	*	< LOD	< LOD	< LOD	< LOD	831
	03-04	*	< LOD	< LOD	< LOD	.140 (<LOD-.190)	701
	07-08	*	< LOD	< LOD	< LOD	< LOD	390
20-59 years	99-00	*	< LOD	< LOD	< LOD	< LOD	766
	01-02	*	< LOD	< LOD	< LOD	< LOD	1127
	03-04	*	< LOD	< LOD	< LOD	.160 (<LOD-.250)	908
	07-08	*	< LOD	< LOD	< LOD	< LOD	1180
60 years and older	01-02	*	< LOD	< LOD	< LOD	< LOD	509
	03-04	*	< LOD	< LOD	< LOD	.140 (<LOD-.230)	504
	07-08	*	< LOD	< LOD	< LOD	< LOD	633
Gender							
Males	99-00	*	< LOD	< LOD	< LOD	< LOD	891
	01-02	*	< LOD	< LOD	< LOD	< LOD	1428
	03-04	*	< LOD	< LOD	< LOD	.140 (<LOD-.210)	1184
	07-08	*	< LOD	< LOD	< LOD	< LOD	1293
Females	99-00	*	< LOD	< LOD	< LOD	< LOD	923
	01-02	*	< LOD	< LOD	< LOD	< LOD	1619
	03-04	*	< LOD	< LOD	< LOD	.150 (<LOD-.230)	1232
	07-08	*	< LOD	< LOD	< LOD	< LOD	1295
Race/ethnicity							
Mexican Americans	99-00	*	< LOD	< LOD	< LOD	< LOD	652
	01-02	*	< LOD	< LOD	< LOD	< LOD	766
	03-04	*	< LOD	< LOD	.120 (<LOD-.340)	.200 (<LOD-.390)	605
	07-08	*	< LOD	< LOD	< LOD	< LOD	500
Non-Hispanic blacks	99-00	*	< LOD	< LOD	< LOD	< LOD	483
	01-02	*	< LOD	< LOD	< LOD	< LOD	776
	03-04	*	< LOD	< LOD	< LOD	< LOD	641
	07-08	*	< LOD	< LOD	< LOD	< LOD	574
Non-Hispanic whites	99-00	*	< LOD	< LOD	< LOD	< LOD	531
	01-02	*	< LOD	< LOD	< LOD	< LOD	1281
	03-04	*	< LOD	< LOD	< LOD	.150 (<LOD-.230)	1013
	07-08	*	< LOD	< LOD	< LOD	< LOD	1084

Limit of detection (LOD, see Data Analysis section) for Survey years 99-00, 01-02, 03-04, and 07-08 are 1.2, 0.1, 0.1, and 0.1 respectively.
< LOD means less than the limit of detection, which may vary for some chemicals by year and by individual sample.
* Not calculated: proportion of results below limit of detection was too high to provide a valid result.
+Not measured in Survey years 2005-2006.

Biomonitoring Summary: http://www.cdc.gov/biomonitoring/2,4,5-TrichlorophenoxyaceticAcid_BiomonitoringSummary.html

Urinary 2,4,5-Trichlorophenoxyacetic acid (creatinine corrected)

Geometric mean and selected percentiles of urine concentrations (in µg/g of creatinine) for the U.S. population from the National Health and Nutrition Examination Survey.

	Survey years+	Geometric mean (95% conf. interval)	Selected percentiles (95% confidence interval) 50th	75th	90th	95th	Sample size
Total	99-00	*	< LOD	< LOD	< LOD	< LOD	1814
	01-02	*	< LOD	< LOD	< LOD	< LOD	3045
	03-04	*	< LOD	< LOD	< LOD	.333 (<LOD-.412)	2414
	07-08	*	< LOD	< LOD	< LOD	< LOD	2586
Age group							
6-11 years	99-00	*	< LOD	< LOD	< LOD	< LOD	430
	01-02	*	< LOD	< LOD	< LOD	< LOD	580
	03-04	*	< LOD	< LOD	< LOD	.318 (<LOD-.368)	303
	07-08	*	< LOD	< LOD	< LOD	< LOD	385
12-19 years	99-00	*	< LOD	< LOD	< LOD	< LOD	618
	01-02	*	< LOD	< LOD	< LOD	< LOD	830
	03-04	*	< LOD	< LOD	< LOD	.226 (<LOD-.269)	700
	07-08	*	< LOD	< LOD	< LOD	< LOD	388
20-59 years	99-00	*	< LOD	< LOD	< LOD	< LOD	766
	01-02	*	< LOD	< LOD	< LOD	< LOD	1127
	03-04	*	< LOD	< LOD	< LOD	.350 (<LOD-.438)	907
	07-08	*	< LOD	< LOD	< LOD	< LOD	1180
Gender							
Males	99-00	*	< LOD	< LOD	< LOD	< LOD	891
	01-02	*	< LOD	< LOD	< LOD	< LOD	1428
	03-04	*	< LOD	< LOD	< LOD	.253 (<LOD-.350)	1183
	07-08	*	< LOD	< LOD	< LOD	< LOD	1292
Females	99-00	*	< LOD	< LOD	< LOD	< LOD	923
	01-02	*	< LOD	< LOD	< LOD	< LOD	1617
	03-04	*	< LOD	< LOD	< LOD	.432 (<LOD-.500)	1231
	07-08	*	< LOD	< LOD	< LOD	< LOD	1294
Race/ethnicity							
Mexican Americans	99-00	*	< LOD	< LOD	< LOD	< LOD	652
	01-02	*	< LOD	< LOD	< LOD	< LOD	766
	03-04	*	< LOD	< LOD	.200 (<LOD-.333)	.333 (<LOD-.467)	604
	07-08	*	< LOD	< LOD	< LOD	< LOD	499
Non-Hispanic blacks	99-00	*	< LOD	< LOD	< LOD	< LOD	483
	01-02	*	< LOD	< LOD	< LOD	< LOD	775
	03-04	*	< LOD	< LOD	< LOD	< LOD	641
	07-08	*	< LOD	< LOD	< LOD	< LOD	573
Non-Hispanic whites	99-00	*	< LOD	< LOD	< LOD	< LOD	531
	01-02	*	< LOD	< LOD	< LOD	< LOD	1280
	03-04	*	< LOD	< LOD	< LOD	.350 (<LOD-.438)	1012
	07-08	*	< LOD	< LOD	< LOD	< LOD	1084

< LOD means less than the limit of detection for the urine levels not corrected for creatinine.
* Not calculated: proportion of results below limit of detection was too high to provide a valid result.
+Not measured in Survey years 2005-2006.

Biomonitoring Summary: http://www.cdc.gov/biomonitoring/2,4,5-TrichlorophenoxyaceticAcid_BiomonitoringSummary.html

Urinary Bensulfuron-methyl

Geometric mean and selected percentiles of urine concentrations (in µg/L) for the U.S. population from the National Health and Nutrition Examination Survey.

	Survey years	Geometric mean (95% conf. interval)	Selected percentiles (95% confidence interval) 50th	75th	90th	95th	Sample size
Total	03-04	*	< LOD	< LOD	< LOD	< LOD	2355
	05-06	*	< LOD	< LOD	< LOD	< LOD	2634
	07-08	*	< LOD	< LOD	< LOD	< LOD	2494
Age group							
6-11 years	03-04	*	< LOD	< LOD	< LOD	< LOD	286
	05-06	*	< LOD	< LOD	< LOD	< LOD	350
	07-08	*	< LOD	< LOD	< LOD	< LOD	374
12-19 years	03-04	*	< LOD	< LOD	< LOD	< LOD	671
	05-06	*	< LOD	< LOD	< LOD	< LOD	718
	07-08	*	< LOD	< LOD	< LOD	< LOD	381
20 years and older	03-04	*	< LOD	< LOD	< LOD	< LOD	1398
	05-06	*	< LOD	< LOD	< LOD	< LOD	1566
	07-08	*	< LOD	< LOD	< LOD	< LOD	1739
Gender							
Males	03-04	*	< LOD	< LOD	< LOD	< LOD	1150
	05-06	*	< LOD	< LOD	< LOD	< LOD	1247
	07-08	*	< LOD	< LOD	< LOD	< LOD	1240
Females	03-04	*	< LOD	< LOD	< LOD	< LOD	1205
	05-06	*	< LOD	< LOD	< LOD	< LOD	1387
	07-08	*	< LOD	< LOD	< LOD	< LOD	1254
Race/ethnicity							
Mexican Americans	03-04	*	< LOD	< LOD	< LOD	< LOD	567
	05-06	*	< LOD	< LOD	< LOD	< LOD	697
	07-08	*	< LOD	< LOD	< LOD	< LOD	477
Non-Hispanic blacks	03-04	*	< LOD	< LOD	< LOD	< LOD	617
	05-06	*	< LOD	< LOD	< LOD	< LOD	720
	07-08	*	< LOD	< LOD	< LOD	< LOD	558
Non-Hispanic whites	03-04	*	< LOD	< LOD	< LOD	< LOD	1018
	05-06	*	< LOD	< LOD	< LOD	< LOD	1007
	07-08	*	< LOD	< LOD	< LOD	< LOD	1053

Limit of detection (LOD, see Data Analysis section) for Survey years 03-04, 05-06, and 07-08 are 0.05, 0.05, and 0.05 respectively.
< LOD means less than the limit of detection, which may vary for some chemicals by year and by individual sample.
* Not calculated: proportion of results below limit of detection was too high to provide a valid result.

Biomonitoring Summary: **http://www.cdc.gov/biomonitoring/SulfonylureaHerbicides_BiomonitoringSummary.html**

Urinary Bensulfuron-methyl (creatinine corrected)

Geometric mean and selected percentiles of urine concentrations (in µg/g of creatinine) for the U.S. population from the National Health and Nutrition Examination Survey.

	Survey years	Geometric mean (95% conf. interval)	Selected percentiles (95% confidence interval) 50th	75th	90th	95th	Sample size
Total	03-04	*	< LOD	< LOD	< LOD	< LOD	2353
	05-06	*	< LOD	< LOD	< LOD	< LOD	2634
	07-08	*	< LOD	< LOD	< LOD	< LOD	2492
Age group							
6-11 years	03-04	*	< LOD	< LOD	< LOD	< LOD	286
	05-06	*	< LOD	< LOD	< LOD	< LOD	350
	07-08	*	< LOD	< LOD	< LOD	< LOD	374
12-19 years	03-04	*	< LOD	< LOD	< LOD	< LOD	670
	05-06	*	< LOD	< LOD	< LOD	< LOD	718
	07-08	*	< LOD	< LOD	< LOD	< LOD	379
20 years and older	03-04	*	< LOD	< LOD	< LOD	< LOD	1397
	05-06	*	< LOD	< LOD	< LOD	< LOD	1566
	07-08	*	< LOD	< LOD	< LOD	< LOD	1739
Gender							
Males	03-04	*	< LOD	< LOD	< LOD	< LOD	1149
	05-06	*	< LOD	< LOD	< LOD	< LOD	1247
	07-08	*	< LOD	< LOD	< LOD	< LOD	1239
Females	03-04	*	< LOD	< LOD	< LOD	< LOD	1204
	05-06	*	< LOD	< LOD	< LOD	< LOD	1387
	07-08	*	< LOD	< LOD	< LOD	< LOD	1253
Race/ethnicity							
Mexican Americans	03-04	*	< LOD	< LOD	< LOD	< LOD	566
	05-06	*	< LOD	< LOD	< LOD	< LOD	697
	07-08	*	< LOD	< LOD	< LOD	< LOD	476
Non-Hispanic blacks	03-04	*	< LOD	< LOD	< LOD	< LOD	617
	05-06	*	< LOD	< LOD	< LOD	< LOD	720
	07-08	*	< LOD	< LOD	< LOD	< LOD	557
Non-Hispanic whites	03-04	*	< LOD	< LOD	< LOD	< LOD	1017
	05-06	*	< LOD	< LOD	< LOD	< LOD	1007
	07-08	*	< LOD	< LOD	< LOD	< LOD	1053

< LOD means less than the limit of detection for the urine levels not corrected for creatinine.
* Not calculated: proportion of results below limit of detection was too high to provide a valid result.

Biomonitoring Summary: http://www.cdc.gov/biomonitoring/SulfonylureaHerbicides_BiomonitoringSummary.html

Urinary Chlorsulfuron

Geometric mean and selected percentiles of urine concentrations (in µg/L) for the U.S. population from the National Health and Nutrition Examination Survey.

	Survey years	Geometric mean (95% conf. interval)	Selected percentiles (95% confidence interval) 50th	75th	90th	95th	Sample size
Total	03-04	*	< LOD	< LOD	< LOD	< LOD	2100
	05-06	*	< LOD	< LOD	< LOD	< LOD	2419
	07-08	*	< LOD	< LOD	< LOD	< LOD	2566
Age group							
6-11 years	03-04	*	< LOD	< LOD	< LOD	< LOD	259
	05-06	*	< LOD	< LOD	< LOD	< LOD	314
	07-08	*	< LOD	< LOD	< LOD	< LOD	380
12-19 years	03-04	*	< LOD	< LOD	< LOD	< LOD	601
	05-06	*	< LOD	< LOD	< LOD	< LOD	653
	07-08	*	< LOD	< LOD	< LOD	< LOD	386
20 years and older	03-04	*	< LOD	< LOD	< LOD	< LOD	1240
	05-06	*	< LOD	< LOD	< LOD	< LOD	1452
	07-08	*	< LOD	< LOD	< LOD	< LOD	1800
Gender							
Males	03-04	*	< LOD	< LOD	< LOD	< LOD	1031
	05-06	*	< LOD	< LOD	< LOD	< LOD	1151
	07-08	*	< LOD	< LOD	< LOD	< LOD	1285
Females	03-04	*	< LOD	< LOD	< LOD	< LOD	1069
	05-06	*	< LOD	< LOD	< LOD	< LOD	1268
	07-08	*	< LOD	< LOD	< LOD	< LOD	1281
Race/ethnicity							
Mexican Americans	03-04	*	< LOD	< LOD	< LOD	< LOD	506
	05-06	*	< LOD	< LOD	< LOD	< LOD	633
	07-08	*	< LOD	< LOD	< LOD	< LOD	491
Non-Hispanic blacks	03-04	*	< LOD	< LOD	< LOD	< LOD	568
	05-06	*	< LOD	< LOD	< LOD	< LOD	658
	07-08	*	< LOD	< LOD	< LOD	< LOD	570
Non-Hispanic whites	03-04	*	< LOD	< LOD	< LOD	< LOD	894
	05-06	*	< LOD	< LOD	< LOD	< LOD	940
	07-08	*	< LOD	< LOD	< LOD	< LOD	1081

Limit of detection (LOD, see Data Analysis section) for Survey years 03-04, 05-06, and 07-08 are 0.06, 0.06, and 0.06 respectively.
< LOD means less than the limit of detection, which may vary for some chemicals by year and by individual sample.
* Not calculated: proportion of results below limit of detection was too high to provide a valid result.

Biomonitoring Summary: **http://www.cdc.gov/biomonitoring/SulfonylureaHerbicides_BiomonitoringSummary.html**

Urinary Chlorsulfuron (creatinine corrected)

Geometric mean and selected percentiles of urine concentrations (in µg/g of creatinine) for the U.S. population from the National Health and Nutrition Examination Survey.

	Survey years	Geometric mean (95% conf. interval)	Selected percentiles (95% confidence interval) 50th	75th	90th	95th	Sample size
Total	03-04	*	< LOD	< LOD	< LOD	< LOD	2098
	05-06	*	< LOD	< LOD	< LOD	< LOD	2419
	07-08	*	< LOD	< LOD	< LOD	< LOD	2564
Age group							
6-11 years	03-04	*	< LOD	< LOD	< LOD	< LOD	259
	05-06	*	< LOD	< LOD	< LOD	< LOD	314
	07-08	*	< LOD	< LOD	< LOD	< LOD	380
12-19 years	03-04	*	< LOD	< LOD	< LOD	< LOD	600
	05-06	*	< LOD	< LOD	< LOD	< LOD	653
	07-08	*	< LOD	< LOD	< LOD	< LOD	384
20 years and older	03-04	*	< LOD	< LOD	< LOD	< LOD	1239
	05-06	*	< LOD	< LOD	< LOD	< LOD	1452
	07-08	*	< LOD	< LOD	< LOD	< LOD	1800
Gender							
Males	03-04	*	< LOD	< LOD	< LOD	< LOD	1030
	05-06	*	< LOD	< LOD	< LOD	< LOD	1151
	07-08	*	< LOD	< LOD	< LOD	< LOD	1284
Females	03-04	*	< LOD	< LOD	< LOD	< LOD	1068
	05-06	*	< LOD	< LOD	< LOD	< LOD	1268
	07-08	*	< LOD	< LOD	< LOD	< LOD	1280
Race/ethnicity							
Mexican Americans	03-04	*	< LOD	< LOD	< LOD	< LOD	505
	05-06	*	< LOD	< LOD	< LOD	< LOD	633
	07-08	*	< LOD	< LOD	< LOD	< LOD	490
Non-Hispanic blacks	03-04	*	< LOD	< LOD	< LOD	< LOD	568
	05-06	*	< LOD	< LOD	< LOD	< LOD	658
	07-08	*	< LOD	< LOD	< LOD	< LOD	569
Non-Hispanic whites	03-04	*	< LOD	< LOD	< LOD	< LOD	893
	05-06	*	< LOD	< LOD	< LOD	< LOD	940
	07-08	*	< LOD	< LOD	< LOD	< LOD	1081

< LOD means less than the limit of detection for the urine levels not corrected for creatinine.
* Not calculated: proportion of results below limit of detection was too high to provide a valid result.

Biomonitoring Summary: http://www.cdc.gov/biomonitoring/SulfonylureaHerbicides_BiomonitoringSummary.html

Urinary Ethametsulfuron-methyl

Geometric mean and selected percentiles of urine concentrations (in µg/L) for the U.S. population from the National Health and Nutrition Examination Survey.

	Survey years	Geometric mean (95% conf. interval)	Selected percentiles (95% confidence interval) 50th	75th	90th	95th	Sample size
Total	03-04	*	< LOD	< LOD	< LOD	< LOD	2321
	05-06	*	< LOD	< LOD	< LOD	< LOD	2634
	07-08	*	< LOD	< LOD	< LOD	< LOD	2458
Age group							
6-11 years	03-04	*	< LOD	< LOD	< LOD	< LOD	294
	05-06	*	< LOD	< LOD	< LOD	< LOD	350
	07-08	*	< LOD	< LOD	< LOD	< LOD	366
12-19 years	03-04	*	< LOD	< LOD	< LOD	< LOD	671
	05-06	*	< LOD	< LOD	< LOD	< LOD	718
	07-08	*	< LOD	< LOD	< LOD	< LOD	381
20 years and older	03-04	*	< LOD	< LOD	< LOD	< LOD	1356
	05-06	*	< LOD	< LOD	< LOD	< LOD	1566
	07-08	*	< LOD	< LOD	< LOD	< LOD	1711
Gender							
Males	03-04	*	< LOD	< LOD	< LOD	< LOD	1132
	05-06	*	< LOD	< LOD	< LOD	< LOD	1247
	07-08	*	< LOD	< LOD	< LOD	< LOD	1218
Females	03-04	*	< LOD	< LOD	< LOD	< LOD	1189
	05-06	*	< LOD	< LOD	< LOD	< LOD	1387
	07-08	*	< LOD	< LOD	< LOD	< LOD	1240
Race/ethnicity							
Mexican Americans	03-04	*	< LOD	< LOD	< LOD	< LOD	590
	05-06	*	< LOD	< LOD	< LOD	< LOD	697
	07-08	*	< LOD	< LOD	< LOD	< LOD	468
Non-Hispanic blacks	03-04	*	< LOD	< LOD	< LOD	< LOD	608
	05-06	*	< LOD	< LOD	< LOD	< LOD	720
	07-08	*	< LOD	< LOD	< LOD	< LOD	534
Non-Hispanic whites	03-04	*	< LOD	< LOD	< LOD	< LOD	974
	05-06	*	< LOD	< LOD	< LOD	< LOD	1007
	07-08	*	< LOD	< LOD	< LOD	< LOD	1052

Limit of detection (LOD, see Data Analysis section) for Survey year 03-04, 05-06, and 07-08 are 0.1, 0.1, and 0.1 respectively.
< LOD means less than the limit of detection, which may vary for some chemicals by year and by individual sample.
* Not calculated: proportion of results below limit of detection was too high to provide a valid result.

Biomonitoring Summary: http://www.cdc.gov/biomonitoring/SulfonylureaHerbicides_BiomonitoringSummary.html

Urinary Ethametsulfuron-methyl (creatinine corrected)

Geometric mean and selected percentiles of urine concentrations (in µg/g of creatinine) for the U.S. population from the National Health and Nutrition Examination Survey.

	Survey years	Geometric mean (95% conf. interval)	Selected percentiles (95% confidence interval) 50th	75th	90th	95th	Sample size
Total	03-04	*	< LOD	< LOD	< LOD	< LOD	2319
	05-06	*	< LOD	< LOD	< LOD	< LOD	2634
	07-08	*	< LOD	< LOD	< LOD	< LOD	2456
Age group							
6-11 years	03-04	*	< LOD	< LOD	< LOD	< LOD	294
	05-06	*	< LOD	< LOD	< LOD	< LOD	350
	07-08	*	< LOD	< LOD	< LOD	< LOD	366
12-19 years	03-04	*	< LOD	< LOD	< LOD	< LOD	670
	05-06	*	< LOD	< LOD	< LOD	< LOD	718
	07-08	*	< LOD	< LOD	< LOD	< LOD	379
20 years and older	03-04	*	< LOD	< LOD	< LOD	< LOD	1355
	05-06	*	< LOD	< LOD	< LOD	< LOD	1566
	07-08	*	< LOD	< LOD	< LOD	< LOD	1711
Gender							
Males	03-04	*	< LOD	< LOD	< LOD	< LOD	1131
	05-06	*	< LOD	< LOD	< LOD	< LOD	1247
	07-08	*	< LOD	< LOD	< LOD	< LOD	1217
Females	03-04	*	< LOD	< LOD	< LOD	< LOD	1188
	05-06	*	< LOD	< LOD	< LOD	< LOD	1387
	07-08	*	< LOD	< LOD	< LOD	< LOD	1239
Race/ethnicity							
Mexican Americans	03-04	*	< LOD	< LOD	< LOD	< LOD	589
	05-06	*	< LOD	< LOD	< LOD	< LOD	697
	07-08	*	< LOD	< LOD	< LOD	< LOD	467
Non-Hispanic blacks	03-04	*	< LOD	< LOD	< LOD	< LOD	608
	05-06	*	< LOD	< LOD	< LOD	< LOD	720
	07-08	*	< LOD	< LOD	< LOD	< LOD	533
Non-Hispanic whites	03-04	*	< LOD	< LOD	< LOD	< LOD	973
	05-06	*	< LOD	< LOD	< LOD	< LOD	1007
	07-08	*	< LOD	< LOD	< LOD	< LOD	1052

< LOD means less than the limit of detection for the urine levels not corrected for creatinine.
* Not calculated: proportion of results below limit of detection was too high to provide a valid result.

Biomonitoring Summary: http://www.cdc.gov/biomonitoring/SulfonylureaHerbicides_BiomonitoringSummary.html

Urinary Foramsulfuron

Geometric mean and selected percentiles of urine concentrations (in µg/L) for the U.S. population from the National Health and Nutrition Examination Survey.

	Survey years	Geometric mean (95% conf. interval)	Selected percentiles (95% confidence interval) 50th	75th	90th	95th	Sample size
Total	03-04	*	< LOD	< LOD	< LOD	< LOD	2255
	05-06	*	< LOD	< LOD	< LOD	< LOD	2534
	07-08	*	< LOD	< LOD	< LOD	< LOD	2423
Age group							
6-11 years	03-04	*	< LOD	< LOD	< LOD	< LOD	283
	05-06	*	< LOD	< LOD	< LOD	< LOD	334
	07-08	*	< LOD	< LOD	< LOD	< LOD	364
12-19 years	03-04	*	< LOD	< LOD	< LOD	< LOD	653
	05-06	*	< LOD	< LOD	< LOD	< LOD	688
	07-08	*	< LOD	< LOD	< LOD	< LOD	364
20 years and older	03-04	*	< LOD	< LOD	< LOD	< LOD	1319
	05-06	*	< LOD	< LOD	< LOD	< LOD	1512
	07-08	*	< LOD	< LOD	< LOD	< LOD	1695
Gender							
Males	03-04	*	< LOD	< LOD	< LOD	< LOD	1097
	05-06	*	< LOD	< LOD	< LOD	< LOD	1203
	07-08	*	< LOD	< LOD	< LOD	< LOD	1205
Females	03-04	*	< LOD	< LOD	< LOD	< LOD	1158
	05-06	*	< LOD	< LOD	< LOD	< LOD	1331
	07-08	*	< LOD	< LOD	< LOD	< LOD	1218
Race/ethnicity							
Mexican Americans	03-04	*	< LOD	< LOD	< LOD	< LOD	587
	05-06	*	< LOD	< LOD	< LOD	< LOD	632
	07-08	*	< LOD	< LOD	< LOD	< LOD	487
Non-Hispanic blacks	03-04	*	< LOD	< LOD	< LOD	< LOD	584
	05-06	*	< LOD	< LOD	< LOD	< LOD	711
	07-08	*	< LOD	< LOD	< LOD	< LOD	523
Non-Hispanic whites	03-04	*	< LOD	< LOD	< LOD	< LOD	935
	05-06	*	< LOD	< LOD	< LOD	< LOD	990
	07-08	*	< LOD	< LOD	< LOD	< LOD	1004

Limit of detection (LOD, see Data Analysis section) for Survey years 03-04, 05-06, and 07-08 are 0.05, 0.05, and 0.05 respectively.
< LOD means less than the limit of detection, which may vary for some chemicals by year and by individual sample.
* Not calculated: proportion of results below limit of detection was too high to provide a valid result.

Biomonitoring Summary: **http://www.cdc.gov/biomonitoring/SulfonylureaHerbicides_BiomonitoringSummary.html**

Urinary Foramsulfuron (creatinine corrected)

Geometric mean and selected percentiles of urine concentrations (in µg/g of creatinine) for the U.S. population from the National Health and Nutrition Examination Survey.

	Survey years	Geometric mean (95% conf. interval)	Selected percentiles (95% confidence interval) 50th	75th	90th	95th	Sample size
Total	03-04	*	< LOD	< LOD	< LOD	< LOD	2253
	05-06	*	< LOD	< LOD	< LOD	< LOD	2534
	07-08	*	< LOD	< LOD	< LOD	< LOD	2421
Age group							
6-11 years	03-04	*	< LOD	< LOD	< LOD	< LOD	283
	05-06	*	< LOD	< LOD	< LOD	< LOD	334
	07-08	*	< LOD	< LOD	< LOD	< LOD	364
12-19 years	03-04	*	< LOD	< LOD	< LOD	< LOD	652
	05-06	*	< LOD	< LOD	< LOD	< LOD	688
	07-08	*	< LOD	< LOD	< LOD	< LOD	362
20 years and older	03-04	*	< LOD	< LOD	< LOD	< LOD	1318
	05-06	*	< LOD	< LOD	< LOD	< LOD	1512
	07-08	*	< LOD	< LOD	< LOD	< LOD	1695
Gender							
Males	03-04	*	< LOD	< LOD	< LOD	< LOD	1096
	05-06	*	< LOD	< LOD	< LOD	< LOD	1203
	07-08	*	< LOD	< LOD	< LOD	< LOD	1204
Females	03-04	*	< LOD	< LOD	< LOD	< LOD	1157
	05-06	*	< LOD	< LOD	< LOD	< LOD	1331
	07-08	*	< LOD	< LOD	< LOD	< LOD	1217
Race/ethnicity							
Mexican Americans	03-04	*	< LOD	< LOD	< LOD	< LOD	586
	05-06	*	< LOD	< LOD	< LOD	< LOD	632
	07-08	*	< LOD	< LOD	< LOD	< LOD	486
Non-Hispanic blacks	03-04	*	< LOD	< LOD	< LOD	< LOD	584
	05-06	*	< LOD	< LOD	< LOD	< LOD	711
	07-08	*	< LOD	< LOD	< LOD	< LOD	522
Non-Hispanic whites	03-04	*	< LOD	< LOD	< LOD	< LOD	934
	05-06	*	< LOD	< LOD	< LOD	< LOD	990
	07-08	*	< LOD	< LOD	< LOD	< LOD	1004

< LOD means less than the limit of detection for the urine levels not corrected for creatinine.
* Not calculated: proportion of results below limit of detection was too high to provide a valid result.

Biomonitoring Summary: http://www.cdc.gov/biomonitoring/SulfonylureaHerbicides_BiomonitoringSummary.html

Urinary Halosulfuron

Geometric mean and selected percentiles of urine concentrations (in µg/L) for the U.S. population from the National Health and Nutrition Examination Survey.

	Survey years	Geometric mean (95% conf. interval)	Selected percentiles (95% confidence interval) 50th	75th	90th	95th	Sample size
Total	03-04	*	< LOD	< LOD	< LOD	< LOD	2356
	05-06	*	< LOD	< LOD	< LOD	< LOD	2485
	07-08	*	< LOD	< LOD	< LOD	< LOD	2530
Age group							
6-11 years	03-04	*	< LOD	< LOD	< LOD	< LOD	291
	05-06	*	< LOD	< LOD	< LOD	< LOD	331
	07-08	*	< LOD	< LOD	< LOD	< LOD	377
12-19 years	03-04	*	< LOD	< LOD	< LOD	< LOD	672
	05-06	*	< LOD	< LOD	< LOD	< LOD	679
	07-08	*	< LOD	< LOD	< LOD	< LOD	385
20 years and older	03-04	*	< LOD	< LOD	< LOD	< LOD	1393
	05-06	*	< LOD	< LOD	< LOD	< LOD	1475
	07-08	*	< LOD	< LOD	< LOD	< LOD	1768
Gender							
Males	03-04	*	< LOD	< LOD	< LOD	< LOD	1148
	05-06	*	< LOD	< LOD	< LOD	< LOD	1184
	07-08	*	< LOD	< LOD	< LOD	< LOD	1261
Females	03-04	*	< LOD	< LOD	< LOD	< LOD	1208
	05-06	*	< LOD	< LOD	< LOD	< LOD	1301
	07-08	*	< LOD	< LOD	< LOD	< LOD	1269
Race/ethnicity							
Mexican Americans	03-04	*	< LOD	< LOD	< LOD	< LOD	592
	05-06	*	< LOD	< LOD	< LOD	< LOD	650
	07-08	*	< LOD	< LOD	< LOD	< LOD	485
Non-Hispanic blacks	03-04	*	< LOD	< LOD	< LOD	< LOD	609
	05-06	*	< LOD	< LOD	< LOD	< LOD	694
	07-08	*	< LOD	< LOD	< LOD	< LOD	565
Non-Hispanic whites	03-04	*	< LOD	< LOD	< LOD	< LOD	1005
	05-06	*	< LOD	< LOD	< LOD	< LOD	950
	07-08	*	< LOD	< LOD	< LOD	< LOD	1068

Limit of detection (LOD, see Data Analysis section) for Survey years 03-04, 05-06, and 07-08 are 0.1, 0.1, and 0.1 respectively.
< LOD means less than the limit of detection, which may vary for some chemicals by year and by individual sample.
* Not calculated: proportion of results below limit of detection was too high to provide a valid result.

Biomonitoring Summary: http://www.cdc.gov/biomonitoring/SulfonylureaHerbicides_BiomonitoringSummary.html

Urinary Halosulfuron (creatinine corrected)

Geometric mean and selected percentiles of urine concentrations (in µg/g of creatinine) for the U.S. population from the National Health and Nutrition Examination Survey.

	Survey years	Geometric mean (95% conf. interval)	Selected percentiles (95% confidence interval) 50th	75th	90th	95th	Sample size
Total	03-04	*	< LOD	< LOD	< LOD	< LOD	2354
	05-06	*	< LOD	< LOD	< LOD	< LOD	2485
	07-08	*	< LOD	< LOD	< LOD	< LOD	2528
Age group							
6-11 years	03-04	*	< LOD	< LOD	< LOD	< LOD	291
	05-06	*	< LOD	< LOD	< LOD	< LOD	331
	07-08	*	< LOD	< LOD	< LOD	< LOD	377
12-19 years	03-04	*	< LOD	< LOD	< LOD	< LOD	671
	05-06	*	< LOD	< LOD	< LOD	< LOD	679
	07-08	*	< LOD	< LOD	< LOD	< LOD	383
20 years and older	03-04	*	< LOD	< LOD	< LOD	< LOD	1392
	05-06	*	< LOD	< LOD	< LOD	< LOD	1475
	07-08	*	< LOD	< LOD	< LOD	< LOD	1768
Gender							
Males	03-04	*	< LOD	< LOD	< LOD	< LOD	1147
	05-06	*	< LOD	< LOD	< LOD	< LOD	1184
	07-08	*	< LOD	< LOD	< LOD	< LOD	1260
Females	03-04	*	< LOD	< LOD	< LOD	< LOD	1207
	05-06	*	< LOD	< LOD	< LOD	< LOD	1301
	07-08	*	< LOD	< LOD	< LOD	< LOD	1268
Race/ethnicity							
Mexican Americans	03-04	*	< LOD	< LOD	< LOD	< LOD	591
	05-06	*	< LOD	< LOD	< LOD	< LOD	650
	07-08	*	< LOD	< LOD	< LOD	< LOD	484
Non-Hispanic blacks	03-04	*	< LOD	< LOD	< LOD	< LOD	609
	05-06	*	< LOD	< LOD	< LOD	< LOD	694
	07-08	*	< LOD	< LOD	< LOD	< LOD	564
Non-Hispanic whites	03-04	*	< LOD	< LOD	< LOD	< LOD	1004
	05-06	*	< LOD	< LOD	< LOD	< LOD	950
	07-08	*	< LOD	< LOD	< LOD	< LOD	1068

< LOD means less than the limit of detection for the urine levels not corrected for creatinine.
* Not calculated: proportion of results below limit of detection was too high to provide a valid result.

Biomonitoring Summary: http://www.cdc.gov/biomonitoring/SulfonylureaHerbicides_BiomonitoringSummary.html

Urinary Mesosulfuron-methyl

Geometric mean and selected percentiles of urine concentrations (in µg/L) for the U.S. population from the National Health and Nutrition Examination Survey.

	Survey years	Geometric mean (95% conf. interval)	Selected percentiles (95% confidence interval) 50th	75th	90th	95th	Sample size
Total	03-04	*	< LOD	< LOD	< LOD	< LOD	2427
	05-06	*	< LOD	< LOD	< LOD	< LOD	2634
	07-08	*	< LOD	< LOD	< LOD	< LOD	2494
Age group							
6-11 years	03-04	*	< LOD	< LOD	< LOD	< LOD	302
	05-06	*	< LOD	< LOD	< LOD	< LOD	350
	07-08	*	< LOD	< LOD	< LOD	< LOD	372
12-19 years	03-04	*	< LOD	< LOD	< LOD	< LOD	694
	05-06	*	< LOD	< LOD	< LOD	< LOD	718
	07-08	*	< LOD	< LOD	< LOD	< LOD	371
20 years and older	03-04	*	< LOD	< LOD	< LOD	< LOD	1431
	05-06	*	< LOD	< LOD	< LOD	< LOD	1566
	07-08	*	< LOD	< LOD	< LOD	< LOD	1751
Gender							
Males	03-04	*	< LOD	< LOD	< LOD	< LOD	1189
	05-06	*	< LOD	< LOD	< LOD	< LOD	1247
	07-08	*	< LOD	< LOD	< LOD	< LOD	1245
Females	03-04	*	< LOD	< LOD	< LOD	< LOD	1238
	05-06	*	< LOD	< LOD	< LOD	< LOD	1387
	07-08	*	< LOD	< LOD	< LOD	< LOD	1249
Race/ethnicity							
Mexican Americans	03-04	*	< LOD	< LOD	< LOD	< LOD	596
	05-06	*	< LOD	< LOD	< LOD	< LOD	697
	07-08	*	< LOD	< LOD	< LOD	< LOD	465
Non-Hispanic blacks	03-04	*	< LOD	< LOD	< LOD	< LOD	634
	05-06	*	< LOD	< LOD	< LOD	< LOD	720
	07-08	*	< LOD	< LOD	< LOD	< LOD	554
Non-Hispanic whites	03-04	*	< LOD	< LOD	< LOD	< LOD	1039
	05-06	*	< LOD	< LOD	< LOD	< LOD	1007
	07-08	*	< LOD	< LOD	< LOD	< LOD	1059

Limit of detection (LOD, see Data Analysis section) for Survey years 03-04, 05-06, and 07-08 are 0.06, 0.06, and 0.06 respectively.
< LOD means less than the limit of detection, which may vary for some chemicals by year and by individual sample.
* Not calculated: proportion of results below limit of detection was too high to provide a valid result.

Biomonitoring Summary: http://www.cdc.gov/biomonitoring/SulfonylureaHerbicides_BiomonitoringSummary.html

Urinary Mesosulfuron-methyl (creatinine corrected)

Geometric mean and selected percentiles of urine concentrations (in µg/g of creatinine) for the U.S. population from the National Health and Nutrition Examination Survey.

	Survey years	Geometric mean (95% conf. interval)	Selected percentiles (95% confidence interval) 50th	75th	90th	95th	Sample size
Total	03-04	*	< LOD	< LOD	< LOD	< LOD	2425
	05-06	*	< LOD	< LOD	< LOD	< LOD	2634
	07-08	*	< LOD	< LOD	< LOD	< LOD	2492
Age group							
6-11 years	03-04	*	< LOD	< LOD	< LOD	< LOD	302
	05-06	*	< LOD	< LOD	< LOD	< LOD	350
	07-08	*	< LOD	< LOD	< LOD	< LOD	372
12-19 years	03-04	*	< LOD	< LOD	< LOD	< LOD	693
	05-06	*	< LOD	< LOD	< LOD	< LOD	718
	07-08	*	< LOD	< LOD	< LOD	< LOD	369
20 years and older	03-04	*	< LOD	< LOD	< LOD	< LOD	1430
	05-06	*	< LOD	< LOD	< LOD	< LOD	1566
	07-08	*	< LOD	< LOD	< LOD	< LOD	1751
Gender							
Males	03-04	*	< LOD	< LOD	< LOD	< LOD	1188
	05-06	*	< LOD	< LOD	< LOD	< LOD	1247
	07-08	*	< LOD	< LOD	< LOD	< LOD	1244
Females	03-04	*	< LOD	< LOD	< LOD	< LOD	1237
	05-06	*	< LOD	< LOD	< LOD	< LOD	1387
	07-08	*	< LOD	< LOD	< LOD	< LOD	1248
Race/ethnicity							
Mexican Americans	03-04	*	< LOD	< LOD	< LOD	< LOD	595
	05-06	*	< LOD	< LOD	< LOD	< LOD	697
	07-08	*	< LOD	< LOD	< LOD	< LOD	464
Non-Hispanic blacks	03-04	*	< LOD	< LOD	< LOD	< LOD	634
	05-06	*	< LOD	< LOD	< LOD	< LOD	720
	07-08	*	< LOD	< LOD	< LOD	< LOD	553
Non-Hispanic whites	03-04	*	< LOD	< LOD	< LOD	< LOD	1038
	05-06	*	< LOD	< LOD	< LOD	< LOD	1007
	07-08	*	< LOD	< LOD	< LOD	< LOD	1059

< LOD means less than the limit of detection for the urine levels not corrected for creatinine.
* Not calculated: proportion of results below limit of detection was too high to provide a valid result.

Biomonitoring Summary: http://www.cdc.gov/biomonitoring/SulfonylureaHerbicides_BiomonitoringSummary.html

Urinary Metsulfuron-methyl

Geometric mean and selected percentiles of urine concentrations (in µg/L) for the U.S. population from the National Health and Nutrition Examination Survey.

	Survey years	Geometric mean (95% conf. interval)	Selected percentiles (95% confidence interval) 50th	75th	90th	95th	Sample size
Total	03-04	*	< LOD	< LOD	< LOD	< LOD	2360
	05-06	*	< LOD	< LOD	< LOD	< LOD	2634
	07-08	*	< LOD	< LOD	< LOD	< LOD	2494
Age group							
6-11 years	03-04	*	< LOD	< LOD	< LOD	< LOD	297
	05-06	*	< LOD	< LOD	< LOD	< LOD	350
	07-08	*	< LOD	< LOD	< LOD	< LOD	373
12-19 years	03-04	*	< LOD	< LOD	< LOD	< LOD	675
	05-06	*	< LOD	< LOD	< LOD	< LOD	718
	07-08	*	< LOD	< LOD	< LOD	< LOD	374
20 years and older	03-04	*	< LOD	< LOD	< LOD	< LOD	1388
	05-06	*	< LOD	< LOD	< LOD	< LOD	1566
	07-08	*	< LOD	< LOD	< LOD	< LOD	1747
Gender							
Males	03-04	*	< LOD	< LOD	< LOD	< LOD	1152
	05-06	*	< LOD	< LOD	< LOD	< LOD	1247
	07-08	*	< LOD	< LOD	< LOD	< LOD	1246
Females	03-04	*	< LOD	< LOD	< LOD	< LOD	1208
	05-06	*	< LOD	< LOD	< LOD	< LOD	1387
	07-08	*	< LOD	< LOD	< LOD	< LOD	1248
Race/ethnicity							
Mexican Americans	03-04	*	< LOD	< LOD	< LOD	< LOD	595
	05-06	*	< LOD	< LOD	< LOD	< LOD	697
	07-08	*	< LOD	< LOD	< LOD	< LOD	470
Non-Hispanic blacks	03-04	*	< LOD	< LOD	< LOD	< LOD	596
	05-06	*	< LOD	< LOD	< LOD	< LOD	720
	07-08	*	< LOD	< LOD	< LOD	< LOD	538
Non-Hispanic whites	03-04	*	< LOD	< LOD	< LOD	< LOD	1013
	05-06	*	< LOD	< LOD	< LOD	< LOD	1007
	07-08	*	< LOD	< LOD	< LOD	< LOD	1066

Limit of detection (LOD, see Data Analysis section) for Survey years 03-04, 05-06, and 07-08 are 0.05, 0.05, and 0.05 respectively.
< LOD means less than the limit of detection, which may vary for some chemicals by year and by individual sample.
* Not calculated: proportion of results below limit of detection was too high to provide a valid result.

Biomonitoring Summary: **http://www.cdc.gov/biomonitoring/SulfonylureaHerbicides_BiomonitoringSummary.html**

Urinary Metsulfuron-methyl (creatinine corrected)

Geometric mean and selected percentiles of urine concentrations (in µg/g of creatinine) for the U.S. population from the National Health and Nutrition Examination Survey.

	Survey years	Geometric mean (95% conf. interval)	Selected percentiles (95% confidence interval) 50th	75th	90th	95th	Sample size
Total	03-04	*	< LOD	< LOD	< LOD	< LOD	2358
	05-06	*	< LOD	< LOD	< LOD	< LOD	2634
	07-08	*	< LOD	< LOD	< LOD	< LOD	2492
Age group							
6-11 years	03-04	*	< LOD	< LOD	< LOD	< LOD	297
	05-06	*	< LOD	< LOD	< LOD	< LOD	350
	07-08	*	< LOD	< LOD	< LOD	< LOD	373
12-19 years	03-04	*	< LOD	< LOD	< LOD	< LOD	674
	05-06	*	< LOD	< LOD	< LOD	< LOD	718
	07-08	*	< LOD	< LOD	< LOD	< LOD	372
20 years and older	03-04	*	< LOD	< LOD	< LOD	< LOD	1387
	05-06	*	< LOD	< LOD	< LOD	< LOD	1566
	07-08	*	< LOD	< LOD	< LOD	< LOD	1747
Gender							
Males	03-04	*	< LOD	< LOD	< LOD	< LOD	1151
	05-06	*	< LOD	< LOD	< LOD	< LOD	1247
	07-08	*	< LOD	< LOD	< LOD	< LOD	1245
Females	03-04	*	< LOD	< LOD	< LOD	< LOD	1207
	05-06	*	< LOD	< LOD	< LOD	< LOD	1387
	07-08	*	< LOD	< LOD	< LOD	< LOD	1247
Race/ethnicity							
Mexican Americans	03-04	*	< LOD	< LOD	< LOD	< LOD	594
	05-06	*	< LOD	< LOD	< LOD	< LOD	697
	07-08	*	< LOD	< LOD	< LOD	< LOD	469
Non-Hispanic blacks	03-04	*	< LOD	< LOD	< LOD	< LOD	596
	05-06	*	< LOD	< LOD	< LOD	< LOD	720
	07-08	*	< LOD	< LOD	< LOD	< LOD	537
Non-Hispanic whites	03-04	*	< LOD	< LOD	< LOD	< LOD	1012
	05-06	*	< LOD	< LOD	< LOD	< LOD	1007
	07-08	*	< LOD	< LOD	< LOD	< LOD	1066

< LOD means less than the limit of detection for the urine levels not corrected for creatinine.
* Not calculated: proportion of results below limit of detection was too high to provide a valid result.

Biomonitoring Summary: http://www.cdc.gov/biomonitoring/SulfonylureaHerbicides_BiomonitoringSummary.html

Urinary Nicosulfuron

Geometric mean and selected percentiles of urine concentrations (in µg/L) for the U.S. population from the National Health and Nutrition Examination Survey.

	Survey years	Geometric mean (95% conf. interval)	Selected percentiles (95% confidence interval) 50th	75th	90th	95th	Sample size
Total	03-04	*	< LOD	< LOD	< LOD	< LOD	2322
	05-06	*	< LOD	< LOD	< LOD	< LOD	2570
	07-08	*	< LOD	< LOD	< LOD	< LOD	2422
Age group							
6-11 years	03-04	*	< LOD	< LOD	< LOD	< LOD	296
	05-06	*	< LOD	< LOD	< LOD	< LOD	341
	07-08	*	< LOD	< LOD	< LOD	< LOD	363
12-19 years	03-04	*	< LOD	< LOD	< LOD	< LOD	666
	05-06	*	< LOD	< LOD	< LOD	< LOD	699
	07-08	*	< LOD	< LOD	< LOD	< LOD	364
20 years and older	03-04	*	< LOD	< LOD	< LOD	< LOD	1360
	05-06	*	< LOD	< LOD	< LOD	< LOD	1530
	07-08	*	< LOD	< LOD	< LOD	< LOD	1695
Gender							
Males	03-04	*	< LOD	< LOD	< LOD	< LOD	1131
	05-06	*	< LOD	< LOD	< LOD	< LOD	1222
	07-08	*	< LOD	< LOD	< LOD	< LOD	1210
Females	03-04	*	< LOD	< LOD	< LOD	< LOD	1191
	05-06	*	< LOD	< LOD	< LOD	< LOD	1348
	07-08	*	< LOD	< LOD	< LOD	< LOD	1212
Race/ethnicity							
Mexican Americans	03-04	*	< LOD	< LOD	< LOD	< LOD	589
	05-06	*	< LOD	< LOD	< LOD	< LOD	656
	07-08	*	< LOD	< LOD	< LOD	< LOD	486
Non-Hispanic blacks	03-04	*	< LOD	< LOD	< LOD	< LOD	601
	05-06	*	< LOD	< LOD	< LOD	< LOD	719
	07-08	*	< LOD	< LOD	< LOD	< LOD	524
Non-Hispanic whites	03-04	*	< LOD	< LOD	< LOD	< LOD	980
	05-06	*	< LOD	< LOD	< LOD	< LOD	993
	07-08	*	< LOD	< LOD	< LOD	< LOD	1007

Limit of detection (LOD, see Data Analysis section) for Survey years 03-04, 05-06, and 07-08 are 0.1, 0.1, and 0.1 respectively.
< LOD means less than the limit of detection, which may vary for some chemicals by year and by individual sample.
* Not calculated: proportion of results below limit of detection was too high to provide a valid result.

Biomonitoring Summary: **http://www.cdc.gov/biomonitoring/SulfonylureaHerbicides_BiomonitoringSummary.html**

Urinary Nicosulfuron (creatinine corrected)

Geometric mean and selected percentiles of urine concentrations (in µg/g of creatinine) for the U.S. population from the National Health and Nutrition Examination Survey.

	Survey years	Geometric mean (95% conf. interval)	Selected percentiles (95% confidence interval) 50th	75th	90th	95th	Sample size
Total	03-04	*	< LOD	< LOD	< LOD	< LOD	2320
	05-06	*	< LOD	< LOD	< LOD	< LOD	2570
	07-08	*	< LOD	< LOD	< LOD	< LOD	2420
Age group							
6-11 years	03-04	*	< LOD	< LOD	< LOD	< LOD	296
	05-06	*	< LOD	< LOD	< LOD	< LOD	341
	07-08	*	< LOD	< LOD	< LOD	< LOD	363
12-19 years	03-04	*	< LOD	< LOD	< LOD	< LOD	665
	05-06	*	< LOD	< LOD	< LOD	< LOD	699
	07-08	*	< LOD	< LOD	< LOD	< LOD	362
20 years and older	03-04	*	< LOD	< LOD	< LOD	< LOD	1359
	05-06	*	< LOD	< LOD	< LOD	< LOD	1530
	07-08	*	< LOD	< LOD	< LOD	< LOD	1695
Gender							
Males	03-04	*	< LOD	< LOD	< LOD	< LOD	1130
	05-06	*	< LOD	< LOD	< LOD	< LOD	1222
	07-08	*	< LOD	< LOD	< LOD	< LOD	1209
Females	03-04	*	< LOD	< LOD	< LOD	< LOD	1190
	05-06	*	< LOD	< LOD	< LOD	< LOD	1348
	07-08	*	< LOD	< LOD	< LOD	< LOD	1211
Race/ethnicity							
Mexican Americans	03-04	*	< LOD	< LOD	< LOD	< LOD	588
	05-06	*	< LOD	< LOD	< LOD	< LOD	656
	07-08	*	< LOD	< LOD	< LOD	< LOD	485
Non-Hispanic blacks	03-04	*	< LOD	< LOD	< LOD	< LOD	601
	05-06	*	< LOD	< LOD	< LOD	< LOD	719
	07-08	*	< LOD	< LOD	< LOD	< LOD	523
Non-Hispanic whites	03-04	*	< LOD	< LOD	< LOD	< LOD	979
	05-06	*	< LOD	< LOD	< LOD	< LOD	993
	07-08	*	< LOD	< LOD	< LOD	< LOD	1007

< LOD means less than the limit of detection for the urine levels not corrected for creatinine.
* Not calculated: proportion of results below limit of detection was too high to provide a valid result.

Biomonitoring Summary: http://www.cdc.gov/biomonitoring/SulfonylureaHerbicides_BiomonitoringSummary.html

Urinary Oxasulfuron

Geometric mean and selected percentiles of urine concentrations (in µg/L) for the U.S. population from the National Health and Nutrition Examination Survey.

	Survey years	Geometric mean (95% conf. interval)	Selected percentiles (95% confidence interval) 50th	75th	90th	95th	Sample size
Total	03-04	*	< LOD	< LOD	< LOD	< LOD	2355
	05-06	*	< LOD	< LOD	< LOD	< LOD	2634
	07-08	*	< LOD	< LOD	< LOD	< LOD	2540
Age group							
6-11 years	03-04	*	< LOD	< LOD	< LOD	< LOD	290
	05-06	*	< LOD	< LOD	< LOD	< LOD	350
	07-08	*	< LOD	< LOD	< LOD	< LOD	379
12-19 years	03-04	*	< LOD	< LOD	< LOD	< LOD	672
	05-06	*	< LOD	< LOD	< LOD	< LOD	718
	07-08	*	< LOD	< LOD	< LOD	< LOD	381
20 years and older	03-04	*	< LOD	< LOD	< LOD	< LOD	1393
	05-06	*	< LOD	< LOD	< LOD	< LOD	1566
	07-08	*	< LOD	< LOD	< LOD	< LOD	1780
Gender							
Males	03-04	*	< LOD	< LOD	< LOD	< LOD	1150
	05-06	*	< LOD	< LOD	< LOD	< LOD	1247
	07-08	*	< LOD	< LOD	< LOD	< LOD	1269
Females	03-04	*	< LOD	< LOD	< LOD	< LOD	1205
	05-06	*	< LOD	< LOD	< LOD	< LOD	1387
	07-08	*	< LOD	< LOD	< LOD	< LOD	1271
Race/ethnicity							
Mexican Americans	03-04	*	< LOD	< LOD	< LOD	< LOD	579
	05-06	*	< LOD	< LOD	< LOD	< LOD	697
	07-08	*	< LOD	< LOD	< LOD	< LOD	487
Non-Hispanic blacks	03-04	*	< LOD	< LOD	< LOD	< LOD	616
	05-06	*	< LOD	< LOD	< LOD	< LOD	720
	07-08	*	< LOD	< LOD	< LOD	< LOD	567
Non-Hispanic whites	03-04	*	< LOD	< LOD	< LOD	< LOD	1018
	05-06	*	< LOD	< LOD	< LOD	< LOD	1007
	07-08	*	< LOD	< LOD	< LOD	< LOD	1076

Limit of detection (LOD, see Data Analysis section) for Survey years 03-04, 05-06, and 07-08 are 0.06, 0.06, and 0.06 respectively.
< LOD means less than the limit of detection, which may vary for some chemicals by year and by individual sample.
* Not calculated: proportion of results below limit of detection was too high to provide a valid result.

Biomonitoring Summary: http://www.cdc.gov/biomonitoring/SulfonylureaHerbicides_BiomonitoringSummary.html

Urinary Oxasulfuron (creatinine corrected)

Geometric mean and selected percentiles of urine concentrations (in µg/g of creatinine) for the U.S. population from the National Health and Nutrition Examination Survey.

	Survey years	Geometric mean (95% conf. interval)	Selected percentiles (95% confidence interval) 50th	75th	90th	95th	Sample size
Total	03-04	*	< LOD	< LOD	< LOD	< LOD	2353
	05-06	*	< LOD	< LOD	< LOD	< LOD	2634
	07-08	*	< LOD	< LOD	< LOD	< LOD	2538
Age group							
6-11 years	03-04	*	< LOD	< LOD	< LOD	< LOD	290
	05-06	*	< LOD	< LOD	< LOD	< LOD	350
	07-08	*	< LOD	< LOD	< LOD	< LOD	379
12-19 years	03-04	*	< LOD	< LOD	< LOD	< LOD	671
	05-06	*	< LOD	< LOD	< LOD	< LOD	718
	07-08	*	< LOD	< LOD	< LOD	< LOD	379
20 years and older	03-04	*	< LOD	< LOD	< LOD	< LOD	1392
	05-06	*	< LOD	< LOD	< LOD	< LOD	1566
	07-08	*	< LOD	< LOD	< LOD	< LOD	1780
Gender							
Males	03-04	*	< LOD	< LOD	< LOD	< LOD	1149
	05-06	*	< LOD	< LOD	< LOD	< LOD	1247
	07-08	*	< LOD	< LOD	< LOD	< LOD	1268
Females	03-04	*	< LOD	< LOD	< LOD	< LOD	1204
	05-06	*	< LOD	< LOD	< LOD	< LOD	1387
	07-08	*	< LOD	< LOD	< LOD	< LOD	1270
Race/ethnicity							
Mexican Americans	03-04	*	< LOD	< LOD	< LOD	< LOD	578
	05-06	*	< LOD	< LOD	< LOD	< LOD	697
	07-08	*	< LOD	< LOD	< LOD	< LOD	486
Non-Hispanic blacks	03-04	*	< LOD	< LOD	< LOD	< LOD	616
	05-06	*	< LOD	< LOD	< LOD	< LOD	720
	07-08	*	< LOD	< LOD	< LOD	< LOD	566
Non-Hispanic whites	03-04	*	< LOD	< LOD	< LOD	< LOD	1017
	05-06	*	< LOD	< LOD	< LOD	< LOD	1007
	07-08	*	< LOD	< LOD	< LOD	< LOD	1076

< LOD means less than the limit of detection for the urine levels not corrected for creatinine.
* Not calculated: proportion of results below limit of detection was too high to provide a valid result.

Biomonitoring Summary: http://www.cdc.gov/biomonitoring/SulfonylureaHerbicides_BiomonitoringSummary.html

Urinary Primisulfuron-methyl

Geometric mean and selected percentiles of urine concentrations (in µg/L) for the U.S. population from the National Health and Nutrition Examination Survey.

	Survey years	Geometric mean (95% conf. interval)	Selected percentiles (95% confidence interval) 50th	75th	90th	95th	Sample size
Total	03-04	*	< LOD	< LOD	< LOD	< LOD	2250
	05-06	*	< LOD	< LOD	< LOD	< LOD	2455
	07-08	*	< LOD	< LOD	< LOD	< LOD	2422
Age group							
6-11 years	03-04	*	< LOD	< LOD	< LOD	< LOD	285
	05-06	*	< LOD	< LOD	< LOD	< LOD	327
	07-08	*	< LOD	< LOD	< LOD	< LOD	356
12-19 years	03-04	*	< LOD	< LOD	< LOD	< LOD	627
	05-06	*	< LOD	< LOD	< LOD	< LOD	665
	07-08	*	< LOD	< LOD	< LOD	< LOD	376
20 years and older	03-04	*	< LOD	< LOD	< LOD	< LOD	1338
	05-06	*	< LOD	< LOD	< LOD	< LOD	1463
	07-08	*	< LOD	< LOD	< LOD	< LOD	1690
Gender							
Males	03-04	*	< LOD	< LOD	< LOD	< LOD	1107
	05-06	*	< LOD	< LOD	< LOD	< LOD	1160
	07-08	*	< LOD	< LOD	< LOD	< LOD	1207
Females	03-04	*	< LOD	< LOD	< LOD	< LOD	1143
	05-06	*	< LOD	< LOD	< LOD	< LOD	1295
	07-08	*	< LOD	< LOD	< LOD	< LOD	1215
Race/ethnicity							
Mexican Americans	03-04	*	< LOD	< LOD	< LOD	< LOD	574
	05-06	*	< LOD	< LOD	< LOD	< LOD	667
	07-08	*	< LOD	< LOD	< LOD	< LOD	456
Non-Hispanic blacks	03-04	*	< LOD	< LOD	< LOD	< LOD	556
	05-06	*	< LOD	< LOD	< LOD	< LOD	661
	07-08	*	< LOD	< LOD	< LOD	< LOD	549
Non-Hispanic whites	03-04	*	< LOD	< LOD	< LOD	< LOD	975
	05-06	*	< LOD	< LOD	< LOD	< LOD	938
	07-08	*	< LOD	< LOD	< LOD	< LOD	1030

Limit of detection (LOD, see Data Analysis section) for Survey years 03-04, 05-06, and 07-08 are 0.07, 0.07, and 0.07 respectively.
< LOD means less than the limit of detection, which may vary for some chemicals by year and by individual sample.
* Not calculated: proportion of results below limit of detection was too high to provide a valid result.

Biomonitoring Summary: http://www.cdc.gov/biomonitoring/SulfonylureaHerbicides_BiomonitoringSummary.html

Urinary Primisulfuron-methyl (creatinine corrected)

Geometric mean and selected percentiles of urine concentrations (in µg/g of creatinine) for the U.S. population from the National Health and Nutrition Examination Survey.

	Survey years	Geometric mean (95% conf. interval)	Selected percentiles (95% confidence interval) 50th	75th	90th	95th	Sample size
Total	03-04	*	< LOD	< LOD	< LOD	< LOD	2249
	05-06	*	< LOD	< LOD	< LOD	< LOD	2455
	07-08	*	< LOD	< LOD	< LOD	< LOD	2420
Age group							
6-11 years	03-04	*	< LOD	< LOD	< LOD	< LOD	285
	05-06	*	< LOD	< LOD	< LOD	< LOD	327
	07-08	*	< LOD	< LOD	< LOD	< LOD	356
12-19 years	03-04	*	< LOD	< LOD	< LOD	< LOD	626
	05-06	*	< LOD	< LOD	< LOD	< LOD	665
	07-08	*	< LOD	< LOD	< LOD	< LOD	374
20 years and older	03-04	*	< LOD	< LOD	< LOD	< LOD	1338
	05-06	*	< LOD	< LOD	< LOD	< LOD	1463
	07-08	*	< LOD	< LOD	< LOD	< LOD	1690
Gender							
Males	03-04	*	< LOD	< LOD	< LOD	< LOD	1107
	05-06	*	< LOD	< LOD	< LOD	< LOD	1160
	07-08	*	< LOD	< LOD	< LOD	< LOD	1206
Females	03-04	*	< LOD	< LOD	< LOD	< LOD	1142
	05-06	*	< LOD	< LOD	< LOD	< LOD	1295
	07-08	*	< LOD	< LOD	< LOD	< LOD	1214
Race/ethnicity							
Mexican Americans	03-04	*	< LOD	< LOD	< LOD	< LOD	573
	05-06	*	< LOD	< LOD	< LOD	< LOD	667
	07-08	*	< LOD	< LOD	< LOD	< LOD	455
Non-Hispanic blacks	03-04	*	< LOD	< LOD	< LOD	< LOD	556
	05-06	*	< LOD	< LOD	< LOD	< LOD	661
	07-08	*	< LOD	< LOD	< LOD	< LOD	548
Non-Hispanic whites	03-04	*	< LOD	< LOD	< LOD	< LOD	975
	05-06	*	< LOD	< LOD	< LOD	< LOD	938
	07-08	*	< LOD	< LOD	< LOD	< LOD	1030

< LOD means less than the limit of detection for the urine levels not corrected for creatinine.
* Not calculated: proportion of results below limit of detection was too high to provide a valid result.

Biomonitoring Summary: http://www.cdc.gov/biomonitoring/SulfonylureaHerbicides_BiomonitoringSummary.html

Urinary Prosulfuron

Geometric mean and selected percentiles of urine concentrations (in µg/L) for the U.S. population from the National Health and Nutrition Examination Survey.

	Survey years	Geometric mean (95% conf. interval)	Selected percentiles (95% confidence interval) 50th	75th	90th	95th	Sample size
Total	03-04	*	< LOD	< LOD	< LOD	< LOD	2247
	05-06	*	< LOD	< LOD	< LOD	< LOD	2461
	07-08	*	< LOD	< LOD	< LOD	< LOD	2566
Age group							
6-11 years	03-04	*	< LOD	< LOD	< LOD	< LOD	284
	05-06	*	< LOD	< LOD	< LOD	< LOD	326
	07-08	*	< LOD	< LOD	< LOD	< LOD	380
12-19 years	03-04	*	< LOD	< LOD	< LOD	< LOD	640
	05-06	*	< LOD	< LOD	< LOD	< LOD	676
	07-08	*	< LOD	< LOD	< LOD	< LOD	386
20 years and older	03-04	*	< LOD	< LOD	< LOD	< LOD	1323
	05-06	*	< LOD	< LOD	< LOD	< LOD	1459
	07-08	*	< LOD	< LOD	< LOD	< LOD	1800
Gender							
Males	03-04	*	< LOD	< LOD	< LOD	< LOD	1100
	05-06	*	< LOD	< LOD	< LOD	< LOD	1165
	07-08	*	< LOD	< LOD	< LOD	< LOD	1285
Females	03-04	*	< LOD	< LOD	< LOD	< LOD	1147
	05-06	*	< LOD	< LOD	< LOD	< LOD	1296
	07-08	*	< LOD	< LOD	< LOD	< LOD	1281
Race/ethnicity							
Mexican Americans	03-04	*	< LOD	< LOD	< LOD	< LOD	589
	05-06	*	< LOD	< LOD	< LOD	< LOD	673
	07-08	*	< LOD	< LOD	< LOD	< LOD	491
Non-Hispanic blacks	03-04	*	< LOD	< LOD	< LOD	< LOD	565
	05-06	*	< LOD	< LOD	< LOD	< LOD	677
	07-08	*	< LOD	< LOD	< LOD	< LOD	570
Non-Hispanic whites	03-04	*	< LOD	< LOD	< LOD	< LOD	940
	05-06	*	< LOD	< LOD	< LOD	< LOD	924
	07-08	*	< LOD	< LOD	< LOD	< LOD	1081

Limit of detection (LOD, see Data Analysis section) for Survey years 03-04, 05-06, and 07-08 are 0.05, 0.05, and 0.05 respectively.
< LOD means less than the limit of detection, which may vary for some chemicals by year and by individual sample.
* Not calculated: proportion of results below limit of detection was too high to provide a valid result.

Biomonitoring Summary: **http://www.cdc.gov/biomonitoring/SulfonylureaHerbicides_BiomonitoringSummary.html**

Urinary Prosulfuron (creatinine corrected)

Geometric mean and selected percentiles of urine concentrations (in µg/g of creatinine) for the U.S. population from the National Health and Nutrition Examination Survey.

	Survey years	Geometric mean (95% conf. interval)	Selected percentiles (95% confidence interval) 50th	75th	90th	95th	Sample size
Total	03-04	*	< LOD	< LOD	< LOD	< LOD	2245
	05-06	*	< LOD	< LOD	< LOD	< LOD	2461
	07-08	*	< LOD	< LOD	< LOD	< LOD	2564
Age group							
6-11 years	03-04	*	< LOD	< LOD	< LOD	< LOD	284
	05-06	*	< LOD	< LOD	< LOD	< LOD	326
	07-08	*	< LOD	< LOD	< LOD	< LOD	380
12-19 years	03-04	*	< LOD	< LOD	< LOD	< LOD	639
	05-06	*	< LOD	< LOD	< LOD	< LOD	676
	07-08	*	< LOD	< LOD	< LOD	< LOD	384
20 years and older	03-04	*	< LOD	< LOD	< LOD	< LOD	1322
	05-06	*	< LOD	< LOD	< LOD	< LOD	1459
	07-08	*	< LOD	< LOD	< LOD	< LOD	1800
Gender							
Males	03-04	*	< LOD	< LOD	< LOD	< LOD	1099
	05-06	*	< LOD	< LOD	< LOD	< LOD	1165
	07-08	*	< LOD	< LOD	< LOD	< LOD	1284
Females	03-04	*	< LOD	< LOD	< LOD	< LOD	1146
	05-06	*	< LOD	< LOD	< LOD	< LOD	1296
	07-08	*	< LOD	< LOD	< LOD	< LOD	1280
Race/ethnicity							
Mexican Americans	03-04	*	< LOD	< LOD	< LOD	< LOD	588
	05-06	*	< LOD	< LOD	< LOD	< LOD	673
	07-08	*	< LOD	< LOD	< LOD	< LOD	490
Non-Hispanic blacks	03-04	*	< LOD	< LOD	< LOD	< LOD	565
	05-06	*	< LOD	< LOD	< LOD	< LOD	677
	07-08	*	< LOD	< LOD	< LOD	< LOD	569
Non-Hispanic whites	03-04	*	< LOD	< LOD	< LOD	< LOD	939
	05-06	*	< LOD	< LOD	< LOD	< LOD	924
	07-08	*	< LOD	< LOD	< LOD	< LOD	1081

< LOD means less than the limit of detection for the urine levels not corrected for creatinine.
* Not calculated: proportion of results below limit of detection was too high to provide a valid result.

Biomonitoring Summary: http://www.cdc.gov/biomonitoring/SulfonylureaHerbicides_BiomonitoringSummary.html

Urinary Rimsulfuron

Geometric mean and selected percentiles of urine concentrations (in µg/L) for the U.S. population from the National Health and Nutrition Examination Survey.

	Survey years	Geometric mean (95% conf. interval)	Selected percentiles (95% confidence interval) 50th	75th	90th	95th	Sample size
Total	03-04	*	< LOD	< LOD	< LOD	< LOD	2284
	05-06	*	< LOD	< LOD	< LOD	< LOD	2593
	07-08	*	< LOD	< LOD	< LOD	< LOD	2530
Age group							
6-11 years	03-04	*	< LOD	< LOD	< LOD	< LOD	279
	05-06	*	< LOD	< LOD	< LOD	< LOD	346
	07-08	*	< LOD	< LOD	< LOD	< LOD	376
12-19 years	03-04	*	< LOD	< LOD	< LOD	< LOD	654
	05-06	*	< LOD	< LOD	< LOD	< LOD	706
	07-08	*	< LOD	< LOD	< LOD	< LOD	383
20 years and older	03-04	*	< LOD	< LOD	< LOD	< LOD	1351
	05-06	*	< LOD	< LOD	< LOD	< LOD	1541
	07-08	*	< LOD	< LOD	< LOD	< LOD	1771
Gender							
Males	03-04	*	< LOD	< LOD	< LOD	< LOD	1110
	05-06	*	< LOD	< LOD	< LOD	< LOD	1224
	07-08	*	< LOD	< LOD	< LOD	< LOD	1271
Females	03-04	*	< LOD	< LOD	< LOD	< LOD	1174
	05-06	*	< LOD	< LOD	< LOD	< LOD	1369
	07-08	*	< LOD	< LOD	< LOD	< LOD	1259
Race/ethnicity							
Mexican Americans	03-04	*	< LOD	< LOD	< LOD	< LOD	561
	05-06	*	< LOD	< LOD	< LOD	< LOD	675
	07-08	*	< LOD	< LOD	< LOD	< LOD	463
Non-Hispanic blacks	03-04	*	< LOD	< LOD	< LOD	< LOD	592
	05-06	*	< LOD	< LOD	< LOD	< LOD	715
	07-08	*	< LOD	< LOD	< LOD	< LOD	568
Non-Hispanic whites	03-04	*	< LOD	< LOD	< LOD	< LOD	985
	05-06	*	< LOD	< LOD	< LOD	< LOD	998
	07-08	*	< LOD	< LOD	< LOD	< LOD	1080

Limit of detection (LOD, see Data Analysis section) for Survey years 03-04, 05-06, and 07-08 are 0.05, 0.05, and 0.05 respectively.
< LOD means less than the limit of detection, which may vary for some chemicals by year and by individual sample.
* Not calculated: proportion of results below limit of detection was too high to provide a valid result.

Biomonitoring Summary: http://www.cdc.gov/biomonitoring/SulfonylureaHerbicides_BiomonitoringSummary.html

Urinary Rimsulfuron (creatinine corrected)

Geometric mean and selected percentiles of urine concentrations (in µg/g of creatinine) for the U.S. population from the National Health and Nutrition Examination Survey.

	Survey years	Geometric mean (95% conf. interval)	Selected percentiles (95% confidence interval) 50th	75th	90th	95th	Sample size
Total	03-04	*	< LOD	< LOD	< LOD	< LOD	2282
	05-06	*	< LOD	< LOD	< LOD	< LOD	2593
	07-08	*	< LOD	< LOD	< LOD	< LOD	2528
Age group							
6-11 years	03-04	*	< LOD	< LOD	< LOD	< LOD	279
	05-06	*	< LOD	< LOD	< LOD	< LOD	346
	07-08	*	< LOD	< LOD	< LOD	< LOD	376
12-19 years	03-04	*	< LOD	< LOD	< LOD	< LOD	653
	05-06	*	< LOD	< LOD	< LOD	< LOD	706
	07-08	*	< LOD	< LOD	< LOD	< LOD	381
20 years and older	03-04	*	< LOD	< LOD	< LOD	< LOD	1350
	05-06	*	< LOD	< LOD	< LOD	< LOD	1541
	07-08	*	< LOD	< LOD	< LOD	< LOD	1771
Gender							
Males	03-04	*	< LOD	< LOD	< LOD	< LOD	1109
	05-06	*	< LOD	< LOD	< LOD	< LOD	1224
	07-08	*	< LOD	< LOD	< LOD	< LOD	1270
Females	03-04	*	< LOD	< LOD	< LOD	< LOD	1173
	05-06	*	< LOD	< LOD	< LOD	< LOD	1369
	07-08	*	< LOD	< LOD	< LOD	< LOD	1258
Race/ethnicity							
Mexican Americans	03-04	*	< LOD	< LOD	< LOD	< LOD	560
	05-06	*	< LOD	< LOD	< LOD	< LOD	675
	07-08	*	< LOD	< LOD	< LOD	< LOD	462
Non-Hispanic blacks	03-04	*	< LOD	< LOD	< LOD	< LOD	592
	05-06	*	< LOD	< LOD	< LOD	< LOD	715
	07-08	*	< LOD	< LOD	< LOD	< LOD	567
Non-Hispanic whites	03-04	*	< LOD	< LOD	< LOD	< LOD	984
	05-06	*	< LOD	< LOD	< LOD	< LOD	998
	07-08	*	< LOD	< LOD	< LOD	< LOD	1080

< LOD means less than the limit of detection for the urine levels not corrected for creatinine.
* Not calculated: proportion of results below limit of detection was too high to provide a valid result.

Biomonitoring Summary: http://www.cdc.gov/biomonitoring/SulfonylureaHerbicides_BiomonitoringSummary.html

Urinary Sulfometuron-methyl

Geometric mean and selected percentiles of urine concentrations (in µg/L) for the U.S. population from the National Health and Nutrition Examination Survey.

	Survey years	Geometric mean (95% conf. interval)	Selected percentiles (95% confidence interval) 50th	75th	90th	95th	Sample size
Total	03-04	*	< LOD	< LOD	< LOD	< LOD	2067
	05-06	*	< LOD	< LOD	< LOD	< LOD	2598
	07-08	*	< LOD	< LOD	< LOD	< LOD	2458
Age group							
6-11 years	03-04	*	< LOD	< LOD	< LOD	< LOD	252
	05-06	*	< LOD	< LOD	< LOD	< LOD	345
	07-08	*	< LOD	< LOD	< LOD	< LOD	352
12-19 years	03-04	*	< LOD	< LOD	< LOD	< LOD	587
	05-06	*	< LOD	< LOD	< LOD	< LOD	710
	07-08	*	< LOD	< LOD	< LOD	< LOD	373
20 years and older	03-04	*	< LOD	< LOD	< LOD	< LOD	1228
	05-06	*	< LOD	< LOD	< LOD	< LOD	1543
	07-08	*	< LOD	< LOD	< LOD	< LOD	1733
Gender							
Males	03-04	*	< LOD	< LOD	< LOD	< LOD	1007
	05-06	*	< LOD	< LOD	< LOD	< LOD	1233
	07-08	*	< LOD	< LOD	< LOD	< LOD	1226
Females	03-04	*	< LOD	< LOD	< LOD	< LOD	1060
	05-06	*	< LOD	< LOD	< LOD	< LOD	1365
	07-08	*	< LOD	< LOD	< LOD	< LOD	1232
Race/ethnicity							
Mexican Americans	03-04	*	< LOD	< LOD	< LOD	< LOD	441
	05-06	*	< LOD	< LOD	< LOD	< LOD	697
	07-08	*	< LOD	< LOD	< LOD	< LOD	454
Non-Hispanic blacks	03-04	*	< LOD	< LOD	< LOD	< LOD	569
	05-06	*	< LOD	< LOD	< LOD	< LOD	698
	07-08	*	< LOD	< LOD	< LOD	< LOD	557
Non-Hispanic whites	03-04	*	< LOD	< LOD	< LOD	< LOD	916
	05-06	*	< LOD	< LOD	< LOD	< LOD	996
	07-08	*	< LOD	< LOD	< LOD	< LOD	1045

Limit of detection (LOD, see Data Analysis section) for Survey years 03-04, 05-06, and 07-08 are 0.05, 0.05, and 0.05 respectively.
< LOD means less than the limit of detection, which may vary for some chemicals by year and by individual sample.
* Not calculated: proportion of results below limit of detection was too high to provide a valid result.

Biomonitoring Summary: **http://www.cdc.gov/biomonitoring/SulfonylureaHerbicides_BiomonitoringSummary.html**

Urinary Sulfometuron-methyl (creatinine corrected)

Geometric mean and selected percentiles of urine concentrations (in µg/g of creatinine) for the U.S. population from the National Health and Nutrition Examination Survey.

	Survey years	Geometric mean (95% conf. interval)	Selected percentiles (95% confidence interval) 50th	75th	90th	95th	Sample size
Total	03-04	*	< LOD	< LOD	< LOD	< LOD	2065
	05-06	*	< LOD	< LOD	< LOD	< LOD	2598
	07-08	*	< LOD	< LOD	< LOD	< LOD	2456
Age group							
6-11 years	03-04	*	< LOD	< LOD	< LOD	< LOD	252
	05-06	*	< LOD	< LOD	< LOD	< LOD	345
	07-08	*	< LOD	< LOD	< LOD	< LOD	352
12-19 years	03-04	*	< LOD	< LOD	< LOD	< LOD	586
	05-06	*	< LOD	< LOD	< LOD	< LOD	710
	07-08	*	< LOD	< LOD	< LOD	< LOD	371
20 years and older	03-04	*	< LOD	< LOD	< LOD	< LOD	1227
	05-06	*	< LOD	< LOD	< LOD	< LOD	1543
	07-08	*	< LOD	< LOD	< LOD	< LOD	1733
Gender							
Males	03-04	*	< LOD	< LOD	< LOD	< LOD	1006
	05-06	*	< LOD	< LOD	< LOD	< LOD	1233
	07-08	*	< LOD	< LOD	< LOD	< LOD	1225
Females	03-04	*	< LOD	< LOD	< LOD	< LOD	1059
	05-06	*	< LOD	< LOD	< LOD	< LOD	1365
	07-08	*	< LOD	< LOD	< LOD	< LOD	1231
Race/ethnicity							
Mexican Americans	03-04	*	< LOD	< LOD	< LOD	< LOD	440
	05-06	*	< LOD	< LOD	< LOD	< LOD	697
	07-08	*	< LOD	< LOD	< LOD	< LOD	453
Non-Hispanic blacks	03-04	*	< LOD	< LOD	< LOD	< LOD	569
	05-06	*	< LOD	< LOD	< LOD	< LOD	698
	07-08	*	< LOD	< LOD	< LOD	< LOD	556
Non-Hispanic whites	03-04	*	< LOD	< LOD	< LOD	< LOD	915
	05-06	*	< LOD	< LOD	< LOD	< LOD	996
	07-08	*	< LOD	< LOD	< LOD	< LOD	1045

< LOD means less than the limit of detection for the urine levels not corrected for creatinine.
* Not calculated: proportion of results below limit of detection was too high to provide a valid result.

Biomonitoring Summary: http://www.cdc.gov/biomonitoring/SulfonylureaHerbicides_BiomonitoringSummary.html

Urinary Sulfosulfuron

Geometric mean and selected percentiles of urine concentrations (in µg/L) for the U.S. population from the National Health and Nutrition Examination Survey.

	Survey years	Geometric mean (95% conf. interval)	Selected percentiles (95% confidence interval) 50th	75th	90th	95th	Sample size
Total	03-04	*	< LOD	< LOD	< LOD	< LOD	2391
	05-06	*	< LOD	< LOD	< LOD	< LOD	2593
	07-08	*	< LOD	< LOD	< LOD	< LOD	2530
Age group							
6-11 years	03-04	*	< LOD	< LOD	< LOD	< LOD	294
	05-06	*	< LOD	< LOD	< LOD	< LOD	344
	07-08	*	< LOD	< LOD	< LOD	< LOD	377
12-19 years	03-04	*	< LOD	< LOD	< LOD	< LOD	681
	05-06	*	< LOD	< LOD	< LOD	< LOD	708
	07-08	*	< LOD	< LOD	< LOD	< LOD	385
20 years and older	03-04	*	< LOD	< LOD	< LOD	< LOD	1416
	05-06	*	< LOD	< LOD	< LOD	< LOD	1541
	07-08	*	< LOD	< LOD	< LOD	< LOD	1768
Gender							
Males	03-04	*	< LOD	< LOD	< LOD	< LOD	1170
	05-06	*	< LOD	< LOD	< LOD	< LOD	1230
	07-08	*	< LOD	< LOD	< LOD	< LOD	1261
Females	03-04	*	< LOD	< LOD	< LOD	< LOD	1221
	05-06	*	< LOD	< LOD	< LOD	< LOD	1363
	07-08	*	< LOD	< LOD	< LOD	< LOD	1269
Race/ethnicity							
Mexican Americans	03-04	*	< LOD	< LOD	< LOD	< LOD	594
	05-06	*	< LOD	< LOD	< LOD	< LOD	673
	07-08	*	< LOD	< LOD	< LOD	< LOD	485
Non-Hispanic blacks	03-04	*	< LOD	< LOD	< LOD	< LOD	617
	05-06	*	< LOD	< LOD	< LOD	< LOD	719
	07-08	*	< LOD	< LOD	< LOD	< LOD	565
Non-Hispanic whites	03-04	*	< LOD	< LOD	< LOD	< LOD	1026
	05-06	*	< LOD	< LOD	< LOD	< LOD	997
	07-08	*	< LOD	< LOD	< LOD	< LOD	1068

Limit of detection (LOD, see Data Analysis section) for Survey years 03-04, 05-06, and 07-08 are 0.1, 0.1, and 0.1 respectively.
< LOD means less than the limit of detection, which may vary for some chemicals by year and by individual sample.
* Not calculated: proportion of results below limit of detection was too high to provide a valid result.

Biomonitoring Summary: http://www.cdc.gov/biomonitoring/SulfonylureaHerbicides_BiomonitoringSummary.html

Urinary Sulfosulfuron (creatinine corrected)

Geometric mean and selected percentiles of urine concentrations (in µg/g of creatinine) for the U.S. population from the National Health and Nutrition Examination Survey.

	Survey years	Geometric mean (95% conf. interval)	Selected percentiles (95% confidence interval) 50th	75th	90th	95th	Sample size
Total	03-04	*	< LOD	< LOD	< LOD	< LOD	2389
	05-06	*	< LOD	< LOD	< LOD	< LOD	2593
	07-08	*	< LOD	< LOD	< LOD	< LOD	2528
Age group							
6-11 years	03-04	*	< LOD	< LOD	< LOD	< LOD	294
	05-06	*	< LOD	< LOD	< LOD	< LOD	344
	07-08	*	< LOD	< LOD	< LOD	< LOD	377
12-19 years	03-04	*	< LOD	< LOD	< LOD	< LOD	680
	05-06	*	< LOD	< LOD	< LOD	< LOD	708
	07-08	*	< LOD	< LOD	< LOD	< LOD	383
20 years and older	03-04	*	< LOD	< LOD	< LOD	< LOD	1415
	05-06	*	< LOD	< LOD	< LOD	< LOD	1541
	07-08	*	< LOD	< LOD	< LOD	< LOD	1768
Gender							
Males	03-04	*	< LOD	< LOD	< LOD	< LOD	1169
	05-06	*	< LOD	< LOD	< LOD	< LOD	1230
	07-08	*	< LOD	< LOD	< LOD	< LOD	1260
Females	03-04	*	< LOD	< LOD	< LOD	< LOD	1220
	05-06	*	< LOD	< LOD	< LOD	< LOD	1363
	07-08	*	< LOD	< LOD	< LOD	< LOD	1268
Race/ethnicity							
Mexican Americans	03-04	*	< LOD	< LOD	< LOD	< LOD	593
	05-06	*	< LOD	< LOD	< LOD	< LOD	673
	07-08	*	< LOD	< LOD	< LOD	< LOD	484
Non-Hispanic blacks	03-04	*	< LOD	< LOD	< LOD	< LOD	617
	05-06	*	< LOD	< LOD	< LOD	< LOD	719
	07-08	*	< LOD	< LOD	< LOD	< LOD	564
Non-Hispanic whites	03-04	*	< LOD	< LOD	< LOD	< LOD	1025
	05-06	*	< LOD	< LOD	< LOD	< LOD	997
	07-08	*	< LOD	< LOD	< LOD	< LOD	1068

< LOD means less than the limit of detection for the urine levels not corrected for creatinine.
* Not calculated: proportion of results below limit of detection was too high to provide a valid result.

Biomonitoring Summary: http://www.cdc.gov/biomonitoring/SulfonylureaHerbicides_BiomonitoringSummary.html

Urinary Thifensulfuron-methyl

Geometric mean and selected percentiles of urine concentrations (in µg/L) for the U.S. population from the National Health and Nutrition Examination Survey.

	Survey years	Geometric mean (95% conf. interval)	Selected percentiles (95% confidence interval) 50th	75th	90th	95th	Sample size
Total	03-04	*	< LOD	< LOD	< LOD	< LOD	2355
	05-06	*	< LOD	< LOD	< LOD	< LOD	2634
	07-08	*	< LOD	< LOD	< LOD	< LOD	2495
Age group							
6-11 years	03-04	*	< LOD	< LOD	< LOD	< LOD	291
	05-06	*	< LOD	< LOD	< LOD	< LOD	350
	07-08	*	< LOD	< LOD	< LOD	< LOD	370
12-19 years	03-04	*	< LOD	< LOD	< LOD	< LOD	677
	05-06	*	< LOD	< LOD	< LOD	< LOD	718
	07-08	*	< LOD	< LOD	< LOD	< LOD	375
20 years and older	03-04	*	< LOD	< LOD	< LOD	< LOD	1387
	05-06	*	< LOD	< LOD	< LOD	< LOD	1566
	07-08	*	< LOD	< LOD	< LOD	< LOD	1750
Gender							
Males	03-04	*	< LOD	< LOD	< LOD	< LOD	1145
	05-06	*	< LOD	< LOD	< LOD	< LOD	1247
	07-08	*	< LOD	< LOD	< LOD	< LOD	1252
Females	03-04	*	< LOD	< LOD	< LOD	< LOD	1210
	05-06	*	< LOD	< LOD	< LOD	< LOD	1387
	07-08	*	< LOD	< LOD	< LOD	< LOD	1243
Race/ethnicity							
Mexican Americans	03-04	*	< LOD	< LOD	< LOD	< LOD	566
	05-06	*	< LOD	< LOD	< LOD	< LOD	697
	07-08	*	< LOD	< LOD	< LOD	< LOD	479
Non-Hispanic blacks	03-04	*	< LOD	< LOD	< LOD	< LOD	616
	05-06	*	< LOD	< LOD	< LOD	< LOD	720
	07-08	*	< LOD	< LOD	< LOD	< LOD	542
Non-Hispanic whites	03-04	*	< LOD	< LOD	< LOD	< LOD	1022
	05-06	*	< LOD	< LOD	< LOD	< LOD	1007
	07-08	*	< LOD	< LOD	< LOD	< LOD	1056

Limit of detection (LOD, see Data Analysis section) for Survey years 03-04, 05-06, and 07-08 are 0.08, 0.08, and 0.08 respectively.
< LOD means less than the limit of detection, which may vary for some chemicals by year and by individual sample.
* Not calculated: proportion of results below limit of detection was too high to provide a valid result.

Biomonitoring Summary: **http://www.cdc.gov/biomonitoring/SulfonylureaHerbicides_BiomonitoringSummary.html**

Urinary Thifensulfuron-methyl (creatinine corrected)

Geometric mean and selected percentiles of urine concentrations (in µg/g of creatinine) for the U.S. population from the National Health and Nutrition Examination Survey.

	Survey years	Geometric mean (95% conf. interval)	Selected percentiles (95% confidence interval) 50th	75th	90th	95th	Sample size
Total	03-04	*	< LOD	< LOD	< LOD	< LOD	2353
	05-06	*	< LOD	< LOD	< LOD	< LOD	2634
	07-08	*	< LOD	< LOD	< LOD	< LOD	2493
Age group							
6-11 years	03-04	*	< LOD	< LOD	< LOD	< LOD	291
	05-06	*	< LOD	< LOD	< LOD	< LOD	350
	07-08	*	< LOD	< LOD	< LOD	< LOD	370
12-19 years	03-04	*	< LOD	< LOD	< LOD	< LOD	676
	05-06	*	< LOD	< LOD	< LOD	< LOD	718
	07-08	*	< LOD	< LOD	< LOD	< LOD	373
20 years and older	03-04	*	< LOD	< LOD	< LOD	< LOD	1386
	05-06	*	< LOD	< LOD	< LOD	< LOD	1566
	07-08	*	< LOD	< LOD	< LOD	< LOD	1750
Gender							
Males	03-04	*	< LOD	< LOD	< LOD	< LOD	1144
	05-06	*	< LOD	< LOD	< LOD	< LOD	1247
	07-08	*	< LOD	< LOD	< LOD	< LOD	1251
Females	03-04	*	< LOD	< LOD	< LOD	< LOD	1209
	05-06	*	< LOD	< LOD	< LOD	< LOD	1387
	07-08	*	< LOD	< LOD	< LOD	< LOD	1242
Race/ethnicity							
Mexican Americans	03-04	*	< LOD	< LOD	< LOD	< LOD	565
	05-06	*	< LOD	< LOD	< LOD	< LOD	697
	07-08	*	< LOD	< LOD	< LOD	< LOD	478
Non-Hispanic blacks	03-04	*	< LOD	< LOD	< LOD	< LOD	616
	05-06	*	< LOD	< LOD	< LOD	< LOD	720
	07-08	*	< LOD	< LOD	< LOD	< LOD	541
Non-Hispanic whites	03-04	*	< LOD	< LOD	< LOD	< LOD	1021
	05-06	*	< LOD	< LOD	< LOD	< LOD	1007
	07-08	*	< LOD	< LOD	< LOD	< LOD	1056

< LOD means less than the limit of detection for the urine levels not corrected for creatinine.
* Not calculated: proportion of results below limit of detection was too high to provide a valid result.

Biomonitoring Summary: http://www.cdc.gov/biomonitoring/SulfonylureaHerbicides_BiomonitoringSummary.html

Urinary Triasulfuron

Geometric mean and selected percentiles of urine concentrations (in µg/L) for the U.S. population from the National Health and Nutrition Examination Survey.

	Survey years	Geometric mean (95% conf. interval)	Selected percentiles (95% confidence interval) 50th	75th	90th	95th	Sample size
Total	03-04	*	< LOD	< LOD	< LOD	< LOD	2250
	05-06	*	< LOD	< LOD	< LOD	< LOD	2557
	07-08	*	< LOD	< LOD	< LOD	< LOD	2530
Age group							
6-11 years	03-04	*	< LOD	< LOD	< LOD	< LOD	278
	05-06	*	< LOD	< LOD	< LOD	< LOD	341
	07-08	*	< LOD	< LOD	< LOD	< LOD	378
12-19 years	03-04	*	< LOD	< LOD	< LOD	< LOD	643
	05-06	*	< LOD	< LOD	< LOD	< LOD	695
	07-08	*	< LOD	< LOD	< LOD	< LOD	385
20 years and older	03-04	*	< LOD	< LOD	< LOD	< LOD	1329
	05-06	*	< LOD	< LOD	< LOD	< LOD	1521
	07-08	*	< LOD	< LOD	< LOD	< LOD	1767
Gender							
Males	03-04	*	< LOD	< LOD	< LOD	< LOD	1101
	05-06	*	< LOD	< LOD	< LOD	< LOD	1210
	07-08	*	< LOD	< LOD	< LOD	< LOD	1265
Females	03-04	*	< LOD	< LOD	< LOD	< LOD	1149
	05-06	*	< LOD	< LOD	< LOD	< LOD	1347
	07-08	*	< LOD	< LOD	< LOD	< LOD	1265
Race/ethnicity							
Mexican Americans	03-04	*	< LOD	< LOD	< LOD	< LOD	549
	05-06	*	< LOD	< LOD	< LOD	< LOD	677
	07-08	*	< LOD	< LOD	< LOD	< LOD	488
Non-Hispanic blacks	03-04	*	< LOD	< LOD	< LOD	< LOD	580
	05-06	*	< LOD	< LOD	< LOD	< LOD	713
	07-08	*	< LOD	< LOD	< LOD	< LOD	547
Non-Hispanic whites	03-04	*	< LOD	< LOD	< LOD	< LOD	973
	05-06	*	< LOD	< LOD	< LOD	< LOD	968
	07-08	*	< LOD	< LOD	< LOD	< LOD	1073

Limit of detection (LOD, see Data Analysis section) for Survey years 03-04, 05-06, and 07-08 are 0.07, 0.07, and 0.07 respectively.
< LOD means less than the limit of detection, which may vary for some chemicals by year and by individual sample.
* Not calculated: proportion of results below limit of detection was too high to provide a valid result.

Biomonitoring Summary: **http://www.cdc.gov/biomonitoring/SulfonylureaHerbicides_BiomonitoringSummary.html**

Urinary Triasulfuron (creatinine corrected)

Geometric mean and selected percentiles of urine concentrations (in µg/g of creatinine) for the U.S. population from the National Health and Nutrition Examination Survey.

	Survey years	Geometric mean (95% conf. interval)	Selected percentiles (95% confidence interval) 50th	75th	90th	95th	Sample size
Total	03-04	*	< LOD	< LOD	< LOD	< LOD	2248
	05-06	*	< LOD	< LOD	< LOD	< LOD	2557
	07-08	*	< LOD	< LOD	< LOD	< LOD	2528
Age group							
6-11 years	03-04	*	< LOD	< LOD	< LOD	< LOD	278
	05-06	*	< LOD	< LOD	< LOD	< LOD	341
	07-08	*	< LOD	< LOD	< LOD	< LOD	378
12-19 years	03-04	*	< LOD	< LOD	< LOD	< LOD	642
	05-06	*	< LOD	< LOD	< LOD	< LOD	695
	07-08	*	< LOD	< LOD	< LOD	< LOD	383
20 years and older	03-04	*	< LOD	< LOD	< LOD	< LOD	1328
	05-06	*	< LOD	< LOD	< LOD	< LOD	1521
	07-08	*	< LOD	< LOD	< LOD	< LOD	1767
Gender							
Males	03-04	*	< LOD	< LOD	< LOD	< LOD	1100
	05-06	*	< LOD	< LOD	< LOD	< LOD	1210
	07-08	*	< LOD	< LOD	< LOD	< LOD	1264
Females	03-04	*	< LOD	< LOD	< LOD	< LOD	1148
	05-06	*	< LOD	< LOD	< LOD	< LOD	1347
	07-08	*	< LOD	< LOD	< LOD	< LOD	1264
Race/ethnicity							
Mexican Americans	03-04	*	< LOD	< LOD	< LOD	< LOD	548
	05-06	*	< LOD	< LOD	< LOD	< LOD	677
	07-08	*	< LOD	< LOD	< LOD	< LOD	487
Non-Hispanic blacks	03-04	*	< LOD	< LOD	< LOD	< LOD	580
	05-06	*	< LOD	< LOD	< LOD	< LOD	713
	07-08	*	< LOD	< LOD	< LOD	< LOD	546
Non-Hispanic whites	03-04	*	< LOD	< LOD	< LOD	< LOD	972
	05-06	*	< LOD	< LOD	< LOD	< LOD	968
	07-08	*	< LOD	< LOD	< LOD	< LOD	1073

< LOD means less than the limit of detection for the urine levels not corrected for creatinine.
* Not calculated: proportion of results below limit of detection was too high to provide a valid result.

Biomonitoring Summary: http://www.cdc.gov/biomonitoring/SulfonylureaHerbicides_BiomonitoringSummary.html

Urinary Triflusulfuron-methyl

Geometric mean and selected percentiles of urine concentrations (in µg/L) for the U.S. population from the National Health and Nutrition Examination Survey.

	Survey years	Geometric mean (95% conf. interval)	Selected percentiles (95% confidence interval) 50th	75th	90th	95th	Sample size
Total	03-04	*	< LOD	< LOD	< LOD	< LOD	2427
	05-06	*	< LOD	< LOD	< LOD	< LOD	2562
	07-08	*	< LOD	< LOD	< LOD	< LOD	2494
Age group							
6-11 years	03-04	*	< LOD	< LOD	< LOD	< LOD	302
	05-06	*	< LOD	< LOD	< LOD	< LOD	340
	07-08	*	< LOD	< LOD	< LOD	< LOD	374
12-19 years	03-04	*	< LOD	< LOD	< LOD	< LOD	694
	05-06	*	< LOD	< LOD	< LOD	< LOD	702
	07-08	*	< LOD	< LOD	< LOD	< LOD	381
20 years and older	03-04	*	< LOD	< LOD	< LOD	< LOD	1431
	05-06	*	< LOD	< LOD	< LOD	< LOD	1520
	07-08	*	< LOD	< LOD	< LOD	< LOD	1739
Gender							
Males	03-04	*	< LOD	< LOD	< LOD	< LOD	1189
	05-06	*	< LOD	< LOD	< LOD	< LOD	1216
	07-08	*	< LOD	< LOD	< LOD	< LOD	1240
Females	03-04	*	< LOD	< LOD	< LOD	< LOD	1238
	05-06	*	< LOD	< LOD	< LOD	< LOD	1346
	07-08	*	< LOD	< LOD	< LOD	< LOD	1254
Race/ethnicity							
Mexican Americans	03-04	*	< LOD	< LOD	< LOD	< LOD	596
	05-06	*	< LOD	< LOD	< LOD	< LOD	693
	07-08	*	< LOD	< LOD	< LOD	< LOD	477
Non-Hispanic blacks	03-04	*	< LOD	< LOD	< LOD	< LOD	634
	05-06	*	< LOD	< LOD	< LOD	< LOD	699
	07-08	*	< LOD	< LOD	< LOD	< LOD	558
Non-Hispanic whites	03-04	*	< LOD	< LOD	< LOD	< LOD	1039
	05-06	*	< LOD	< LOD	< LOD	< LOD	972
	07-08	*	< LOD	< LOD	< LOD	< LOD	1053

Limit of detection (LOD, see Data Analysis section) for Survey years 03-04, 05-06, and 07-08 are 0.05, 0.05, and 0.05 respectively.
< LOD means less than the limit of detection, which may vary for some chemicals by year and by individual sample.
* Not calculated: proportion of results below limit of detection was too high to provide a valid result.

Biomonitoring Summary: http://www.cdc.gov/biomonitoring/SulfonylureaHerbicides_BiomonitoringSummary.html

Urinary Triflusulfuron-methyl (creatinine corrected)

Geometric mean and selected percentiles of urine concentrations (in µg/g of creatinine) for the U.S. population from the National Health and Nutrition Examination Survey.

	Survey years	Geometric mean (95% conf. interval)	Selected percentiles (95% confidence interval) 50th	75th	90th	95th	Sample size
Total	03-04	*	< LOD	< LOD	< LOD	< LOD	2425
	05-06	*	< LOD	< LOD	< LOD	< LOD	2562
	07-08	*	< LOD	< LOD	< LOD	< LOD	2492
Age group							
6-11 years	03-04	*	< LOD	< LOD	< LOD	< LOD	302
	05-06	*	< LOD	< LOD	< LOD	< LOD	340
	07-08	*	< LOD	< LOD	< LOD	< LOD	374
12-19 years	03-04	*	< LOD	< LOD	< LOD	< LOD	693
	05-06	*	< LOD	< LOD	< LOD	< LOD	702
	07-08	*	< LOD	< LOD	< LOD	< LOD	379
20 years and older	03-04	*	< LOD	< LOD	< LOD	< LOD	1430
	05-06	*	< LOD	< LOD	< LOD	< LOD	1520
	07-08	*	< LOD	< LOD	< LOD	< LOD	1739
Gender							
Males	03-04	*	< LOD	< LOD	< LOD	< LOD	1188
	05-06	*	< LOD	< LOD	< LOD	< LOD	1216
	07-08	*	< LOD	< LOD	< LOD	< LOD	1239
Females	03-04	*	< LOD	< LOD	< LOD	< LOD	1237
	05-06	*	< LOD	< LOD	< LOD	< LOD	1346
	07-08	*	< LOD	< LOD	< LOD	< LOD	1253
Race/ethnicity							
Mexican Americans	03-04	*	< LOD	< LOD	< LOD	< LOD	595
	05-06	*	< LOD	< LOD	< LOD	< LOD	693
	07-08	*	< LOD	< LOD	< LOD	< LOD	476
Non-Hispanic blacks	03-04	*	< LOD	< LOD	< LOD	< LOD	634
	05-06	*	< LOD	< LOD	< LOD	< LOD	699
	07-08	*	< LOD	< LOD	< LOD	< LOD	557
Non-Hispanic whites	03-04	*	< LOD	< LOD	< LOD	< LOD	1038
	05-06	*	< LOD	< LOD	< LOD	< LOD	972
	07-08	*	< LOD	< LOD	< LOD	< LOD	1053

< LOD means less than the limit of detection for the urine levels not corrected for creatinine.
* Not calculated: proportion of results below limit of detection was too high to provide a valid result.

Biomonitoring Summary: http://www.cdc.gov/biomonitoring/SulfonylureaHerbicides_BiomonitoringSummary.html

Urinary Carbofuranphenol

Metabolite of Benfuracarb, Carbofuran, Carbosulfan, and Furathiocar

Geometric mean and selected percentiles of urine concentrations (in µg/L) for the U.S. population from the National Health and Nutrition Examination Survey.

	Survey years	Geometric mean (95% conf. interval)	Selected percentiles (95% confidence interval) 50th	75th	90th	95th	Sample size
Total	99-00	*	**< LOD**	**< LOD**	**< LOD**	**.770** (<LOD-1.30)	1994
	01-02	*	**< LOD**	**< LOD**	**< LOD**	**< LOD**	3030
	03-04	*	**< LOD**	**< LOD**	**< LOD**	**< LOD**	2390
Age group							
6-11 years	99-00	*	**< LOD**	**< LOD**	**< LOD**	**.450** (<LOD-2.20)	482
	01-02	*	**< LOD**	**< LOD**	**< LOD**	**< LOD**	578
	03-04	*	**< LOD**	**< LOD**	**< LOD**	**< LOD**	293
12-19 years	99-00	*	**< LOD**	**< LOD**	**< LOD**	**.570** (<LOD-1.20)	681
	01-02	*	**< LOD**	**< LOD**	**< LOD**	**< LOD**	827
	03-04	*	**< LOD**	**< LOD**	**< LOD**	**< LOD**	684
20-59 years	99-00	*	**< LOD**	**< LOD**	**< LOD**	**.840** (<LOD-1.50)	831
	01-02	*	**< LOD**	**< LOD**	**< LOD**	**< LOD**	1125
	03-04	*	**< LOD**	**< LOD**	**< LOD**	**< LOD**	902
60 years and older	01-02	*	**< LOD**	**< LOD**	**< LOD**	**< LOD**	500
	03-04	*	**< LOD**	**< LOD**	**< LOD**	**< LOD**	511
Gender							
Males	99-00	*	**< LOD**	**< LOD**	**< LOD**	**.740** (<LOD-1.50)	973
	01-02	*	**< LOD**	**< LOD**	**< LOD**	**< LOD**	1423
	03-04	*	**< LOD**	**< LOD**	**< LOD**	**< LOD**	1164
Females	99-00	*	**< LOD**	**< LOD**	**< LOD**	**.840** (<LOD-1.50)	1021
	01-02	*	**< LOD**	**< LOD**	**< LOD**	**< LOD**	1607
	03-04	*	**< LOD**	**< LOD**	**< LOD**	**< LOD**	1226
Race/ethnicity							
Mexican Americans	99-00	*	**< LOD**	**< LOD**	**.590** (<LOD-2.00)	**1.90** (<LOD-5.10)	696
	01-02	*	**< LOD**	**< LOD**	**< LOD**	**< LOD**	765
	03-04	*	**< LOD**	**< LOD**	**< LOD**	**< LOD**	568
Non-Hispanic blacks	99-00	*	**< LOD**	**< LOD**	**< LOD**	**.550** (<LOD-1.60)	521
	01-02	*	**< LOD**	**< LOD**	**< LOD**	**< LOD**	770
	03-04	*	**< LOD**	**< LOD**	**< LOD**	**< LOD**	613
Non-Hispanic whites	99-00	*	**< LOD**	**< LOD**	**< LOD**	**.740** (<LOD-1.50)	603
	01-02	*	**< LOD**	**< LOD**	**< LOD**	**< LOD**	1272
	03-04	*	**< LOD**	**< LOD**	**< LOD**	**< LOD**	1054

Limit of detection (LOD, see Data Analysis section) for Survey years 99-00, 01-02, and 03-04 are 0.4, 0.4, and 0.4 respectively.
< LOD means less than the limit of detection, which may vary for some chemicals by year and by individual sample.
* Not calculated: proportion of results below limit of detection was too high to provide a valid result.

Biomonitoring Summary: **http://www.cdc.gov/biomonitoring/Carbofuran_BiomonitoringSummary.html**

Urinary Carbofuranphenol (creatinine corrected)

Metabolite of Benfuracarb, Carbofuran, Carbosulfan, and Furathiocar

Geometric mean and selected percentiles of urine concentrations (in µg/g of creatinine) for the U.S. population from the National Health and Nutrition Examination Survey.

	Survey years	Geometric mean (95% conf. interval)	Selected percentiles (95% confidence interval) 50th	75th	90th	95th	Sample size
Total	99-00	*	**< LOD**	**< LOD**	**< LOD**	**.778** (<LOD-1.00)	1994
	01-02	*	**< LOD**	**< LOD**	**< LOD**	**< LOD**	3029
	03-04	*	**< LOD**	**< LOD**	**< LOD**	**< LOD**	2388
Age group							
6-11 years	99-00	*	**< LOD**	**< LOD**	**< LOD**	**.988** (<LOD-2.80)	482
	01-02	*	**< LOD**	**< LOD**	**< LOD**	**< LOD**	578
	03-04	*	**< LOD**	**< LOD**	**< LOD**	**< LOD**	293
12-19 years	99-00	*	**< LOD**	**< LOD**	**< LOD**	**.482** (<LOD-.853)	681
	01-02	*	**< LOD**	**< LOD**	**< LOD**	**< LOD**	826
	03-04	*	**< LOD**	**< LOD**	**< LOD**	**< LOD**	683
20-59 years	99-00	*	**< LOD**	**< LOD**	**< LOD**	**.875** (<LOD-1.06)	831
	01-02	*	**< LOD**	**< LOD**	**< LOD**	**< LOD**	1125
	03-04	*	**< LOD**	**< LOD**	**< LOD**	**< LOD**	901
Gender							
Males	99-00	*	**< LOD**	**< LOD**	**< LOD**	**.667** (<LOD-1.08)	973
	01-02	*	**< LOD**	**< LOD**	**< LOD**	**< LOD**	1423
	03-04	*	**< LOD**	**< LOD**	**< LOD**	**< LOD**	1163
Females	99-00	*	**< LOD**	**< LOD**	**< LOD**	**.881** (<LOD-1.13)	1021
	01-02	*	**< LOD**	**< LOD**	**< LOD**	**< LOD**	1606
	03-04	*	**< LOD**	**< LOD**	**< LOD**	**< LOD**	1225
Race/ethnicity							
Mexican Americans	99-00	*	**< LOD**	**< LOD**	**.778** (<LOD-1.94)	**1.83** (<LOD-4.16)	696
	01-02	*	**< LOD**	**< LOD**	**< LOD**	**< LOD**	765
	03-04	*	**< LOD**	**< LOD**	**< LOD**	**< LOD**	567
Non-Hispanic blacks	99-00	*	**< LOD**	**< LOD**	**< LOD**	**.700** (<LOD-1.08)	521
	01-02	*	**< LOD**	**< LOD**	**< LOD**	**< LOD**	769
	03-04	*	**< LOD**	**< LOD**	**< LOD**	**< LOD**	613
Non-Hispanic whites	99-00	*	**< LOD**	**< LOD**	**< LOD**	**.737** (<LOD-.929)	603
	01-02	*	**< LOD**	**< LOD**	**< LOD**	**< LOD**	1272
	03-04	*	**< LOD**	**< LOD**	**< LOD**	**< LOD**	1053

< LOD means less than the limit of detection for the urine levels not corrected for creatinine.
* Not calculated: proportion of results below limit of detection was too high to provide a valid result.

Biomonitoring Summary: **http://www.cdc.gov/biomonitoring/Carbofuran_BiomonitoringSummary.html**

Urinary 2-Isopropoxyphenol

Metabolite of Propoxur

Geometric mean and selected percentiles of urine concentrations (in µg/L) for the U.S. population from the National Health and Nutrition Examination Survey.

	Survey years	Geometric mean (95% conf. interval)	Selected percentiles (95% confidence interval) 50th	75th	90th	95th	Sample size
Total	99-00	*	< LOD	< LOD	< LOD	< LOD	1917
	01-02	*	< LOD	< LOD	< LOD	< LOD	2994
	03-04	*	< LOD	< LOD	< LOD	< LOD	2387
Age group							
6-11 years	99-00	*	< LOD	< LOD	< LOD	< LOD	456
	01-02	*	< LOD	< LOD	< LOD	< LOD	574
	03-04	*	< LOD	< LOD	< LOD	< LOD	295
12-19 years	99-00	*	< LOD	< LOD	< LOD	< LOD	655
	01-02	*	< LOD	< LOD	< LOD	< LOD	820
	03-04	*	< LOD	< LOD	< LOD	< LOD	686
20-59 years	99-00	*	< LOD	< LOD	< LOD	< LOD	806
	01-02	*	< LOD	< LOD	< LOD	< LOD	1109
	03-04	*	< LOD	< LOD	< LOD	< LOD	900
60 years and older	01-02	*	< LOD	< LOD	< LOD	< LOD	491
	03-04	*	< LOD	< LOD	< LOD	< LOD	506
Gender							
Males	99-00	*	< LOD	< LOD	< LOD	< LOD	936
	01-02	*	< LOD	< LOD	< LOD	< LOD	1406
	03-04	*	< LOD	< LOD	< LOD	< LOD	1161
Females	99-00	*	< LOD	< LOD	< LOD	< LOD	981
	01-02	*	< LOD	< LOD	< LOD	< LOD	1588
	03-04	*	< LOD	< LOD	< LOD	< LOD	1226
Race/ethnicity							
Mexican Americans	99-00	*	< LOD	< LOD	< LOD	< LOD	664
	01-02	*	< LOD	< LOD	< LOD	< LOD	762
	03-04	*	< LOD	< LOD	< LOD	< LOD	594
Non-Hispanic blacks	99-00	*	< LOD	< LOD	< LOD	< LOD	500
	01-02	*	< LOD	< LOD	< LOD	< LOD	770
	03-04	*	< LOD	< LOD	< LOD	< LOD	601
Non-Hispanic whites	99-00	*	< LOD	< LOD	< LOD	< LOD	585
	01-02	*	< LOD	< LOD	< LOD	< LOD	1241
	03-04	*	< LOD	< LOD	< LOD	< LOD	1041

Limit of detection (LOD, see Data Analysis section) for Survey years 99-00, 01-02, and 03-04 are 1.1, 0.4, and 0.4 respectively.
< LOD means less than the limit of detection, which may vary for some chemicals by year and by individual sample.
* Not calculated: proportion of results below limit of detection was too high to provide a valid result.

Biomonitoring Summary: http://www.cdc.gov/biomonitoring/Propoxur_BiomonitoringSummary.html

Urinary 2-Isopropoxyphenol (creatinine corrected)

Metabolite of Propoxur

Geometric mean and selected percentiles of urine concentrations (in µg/g of creatinine) for the U.S. population from the National Health and Nutrition Examination Survey.

	Survey years	Geometric mean (95% conf. interval)	Selected percentiles (95% confidence interval) 50th	75th	90th	95th	Sample size
Total	99-00	*	< LOD	< LOD	< LOD	< LOD	1917
	01-02	*	< LOD	< LOD	< LOD	< LOD	2993
	03-04	*	< LOD	< LOD	< LOD	< LOD	2385
Age group							
6-11 years	99-00	*	< LOD	< LOD	< LOD	< LOD	456
	01-02	*	< LOD	< LOD	< LOD	< LOD	574
	03-04	*	< LOD	< LOD	< LOD	< LOD	295
12-19 years	99-00	*	< LOD	< LOD	< LOD	< LOD	655
	01-02	*	< LOD	< LOD	< LOD	< LOD	819
	03-04	*	< LOD	< LOD	< LOD	< LOD	685
20-59 years	99-00	*	< LOD	< LOD	< LOD	< LOD	806
	01-02	*	< LOD	< LOD	< LOD	< LOD	1109
	03-04	*	< LOD	< LOD	< LOD	< LOD	899
Gender							
Males	99-00	*	< LOD	< LOD	< LOD	< LOD	936
	01-02	*	< LOD	< LOD	< LOD	< LOD	1406
	03-04	*	< LOD	< LOD	< LOD	< LOD	1160
Females	99-00	*	< LOD	< LOD	< LOD	< LOD	981
	01-02	*	< LOD	< LOD	< LOD	< LOD	1587
	03-04	*	< LOD	< LOD	< LOD	< LOD	1225
Race/ethnicity							
Mexican Americans	99-00	*	< LOD	< LOD	< LOD	< LOD	664
	01-02	*	< LOD	< LOD	< LOD	< LOD	762
	03-04	*	< LOD	< LOD	< LOD	< LOD	593
Non-Hispanic blacks	99-00	*	< LOD	< LOD	< LOD	< LOD	500
	01-02	*	< LOD	< LOD	< LOD	< LOD	769
	03-04	*	< LOD	< LOD	< LOD	< LOD	601
Non-Hispanic whites	99-00	*	< LOD	< LOD	< LOD	< LOD	585
	01-02	*	< LOD	< LOD	< LOD	< LOD	1241
	03-04	*	< LOD	< LOD	< LOD	< LOD	1040

< LOD means less than the limit of detection for the urine levels not corrected for creatinine.
* Not calculated: proportion of results below limit of detection was too high to provide a valid result.

Biomonitoring Summary: http://www.cdc.gov/biomonitoring/Propoxur_BiomonitoringSummary.html

Serum Aldrin (lipid adjusted)

Geometric mean and selected percentiles of serum concentrations (in ng/g of lipid or parts per billion on a lipid-weight basis) for the U.S. population from the National Health and Nutrition Examination Survey.

	Survey years	Geometric mean (95% conf. interval)	Selected percentiles (95% confidence interval) 50th	75th	90th	95th	Sample size
Total	01-02	*	< LOD	< LOD	< LOD	< LOD	2275
	03-04	*	< LOD	< LOD	< LOD	< LOD	1946
Age group							
12-19 years	01-02	*	< LOD	< LOD	< LOD	< LOD	756
	03-04	*	< LOD	< LOD	< LOD	< LOD	588
20 years and older	01-02	*	< LOD	< LOD	< LOD	< LOD	1519
	03-04	*	< LOD	< LOD	< LOD	< LOD	1358
Gender							
Males	01-02	*	< LOD	< LOD	< LOD	< LOD	1057
	03-04	*	< LOD	< LOD	< LOD	< LOD	946
Females	01-02	*	< LOD	< LOD	< LOD	< LOD	1218
	03-04	*	< LOD	< LOD	< LOD	< LOD	1000
Race/ethnicity							
Mexican Americans	01-02	*	< LOD	< LOD	< LOD	< LOD	559
	03-04	*	< LOD	< LOD	< LOD	< LOD	456
Non-Hispanic blacks	01-02	*	< LOD	< LOD	< LOD	< LOD	512
	03-04	*	< LOD	< LOD	< LOD	< LOD	485
Non-Hispanic whites	01-02	*	< LOD	< LOD	< LOD	< LOD	1045
	03-04	*	< LOD	< LOD	< LOD	< LOD	881

Limit of detection (LOD, see Data Analysis section) for Survey years 01-02 and 03-04 are 5.94 and 7.8.
< LOD means less than the limit of detection, which may vary for some chemicals by year and by individual sample.
* Not calculated: proportion of results below limit of detection was too high to provide a valid result.

Biomonitoring Summary: http://www.cdc.gov/biomonitoring/AldrinDieldrin_BiomonitoringSummary.html

Serum Aldrin (whole weight)

Geometric mean and selected percentiles of serum concentrations (in ng/g of serum or parts per billion) for the U.S. population from the National Health and Nutrition Examination Survey.

	Survey years	Geometric mean (95% conf. interval)	Selected percentiles (95% confidence interval) 50th	75th	90th	95th	Sample size
Total	01-02	*	< LOD	< LOD	< LOD	< LOD	2275
	03-04	*	< LOD	< LOD	< LOD	< LOD	1946
Age group							
12-19 years	01-02	*	< LOD	< LOD	< LOD	< LOD	756
	03-04	*	< LOD	< LOD	< LOD	< LOD	588
20 years and older	01-02	*	< LOD	< LOD	< LOD	< LOD	1519
	03-04	*	< LOD	< LOD	< LOD	< LOD	1358
Gender							
Males	01-02	*	< LOD	< LOD	< LOD	< LOD	1057
	03-04	*	< LOD	< LOD	< LOD	< LOD	946
Females	01-02	*	< LOD	< LOD	< LOD	< LOD	1218
	03-04	*	< LOD	< LOD	< LOD	< LOD	1000
Race/ethnicity							
Mexican Americans	01-02	*	< LOD	< LOD	< LOD	< LOD	559
	03-04	*	< LOD	< LOD	< LOD	< LOD	456
Non-Hispanic blacks	01-02	*	< LOD	< LOD	< LOD	< LOD	512
	03-04	*	< LOD	< LOD	< LOD	< LOD	485
Non-Hispanic whites	01-02	*	< LOD	< LOD	< LOD	< LOD	1045
	03-04	*	< LOD	< LOD	< LOD	< LOD	881

< LOD means less than the limit of detection for the lipid adjusted serum level, which may vary for some chemicals by year and by individual sample.
* Not calculated: proportion of results below limit of detection was too high to provide a valid result.

Biomonitoring Summary: http://www.cdc.gov/biomonitoring/AldrinDieldrin_BiomonitoringSummary.html

Serum Dieldrin (lipid adjusted)

Also a Metabolite of Aldrin

Geometric mean and selected percentiles of serum concentrations (in ng/g of lipid or parts per billion on a lipid-weight basis) for the U.S. population from the National Health and Nutrition Examination Survey.

	Survey years	Geometric mean (95% conf. interval)	Selected percentiles (95% confidence interval) 50th	75th	90th	95th	Sample size
Total	01-02	*	< LOD	< LOD	**15.3** (14.5-17.4)	**20.3** (18.7-22.4)	2159
	03-04	*	< LOD	**9.00** (8.40-9.90)	**14.4** (12.1-16.4)	**19.0** (15.8-24.2)	1952
Age group							
12-19 years	01-02	*	< LOD	< LOD	< LOD	< LOD	716
	03-04	*	< LOD	< LOD	< LOD	**9.10** (<LOD-16.4)	587
20 years and older	01-02	*	< LOD	**10.5** (<LOD-11.6)	**16.6** (15.1-18.2)	**21.3** (19.1-24.0)	1443
	03-04	*	< LOD	**9.50** (8.80-10.4)	**14.9** (12.8-17.0)	**19.5** (16.0-25.7)	1365
Gender							
Males	01-02	*	< LOD	< LOD	**15.7** (14.4-18.7)	**20.3** (18.6-24.0)	1007
	03-04	*	< LOD	**9.30** (8.40-10.8)	**15.1** (13.1-19.1)	**21.9** (14.9-38.5)	954
Females	01-02	*	< LOD	< LOD	**15.3** (13.4-17.2)	**19.8** (18.0-21.6)	1152
	03-04	*	< LOD	**8.70** (7.80-9.50)	**12.8** (11.2-15.4)	**16.9** (13.9-22.4)	998
Race/ethnicity							
Mexican Americans	01-02	*	< LOD	< LOD	**11.7** (<LOD-15.1)	**15.4** (12.7-19.1)	539
	03-04	*	< LOD	< LOD	**10.8** (9.00-14.1)	**14.0** (10.6-24.1)	456
Non-Hispanic blacks	01-02	*	< LOD	< LOD	**15.0** (11.8-19.1)	**20.6** (15.8-25.2)	484
	03-04	*	< LOD	**8.80** (<LOD-10.1)	**13.0** (10.5-15.8)	**15.9** (13.3-21.5)	487
Non-Hispanic whites	01-02	*	< LOD	< LOD	**15.6** (14.8-17.8)	**21.1** (18.9-23.6)	980
	03-04	*	< LOD	**9.30** (8.60-10.2)	**14.9** (12.5-17.5)	**19.7** (15.6-33.4)	885

Limit of detection (LOD, see Data Analysis section) for Survey years 01-02 and 03-04 are 10.5 and 7.8.
< LOD means less than the limit of detection, which may vary for some chemicals by year and by individual sample.
* Not calculated: proportion of results below limit of detection was too high to provide a valid result.

Biomonitoring Summary: http://www.cdc.gov/biomonitoring/AldrinDieldrin_BiomonitoringSummary.html

Serum Dieldrin (whole weight)

Also a Metabolite of Aldrin

Geometric mean and selected percentiles of serum concentrations (in ng/g of serum or parts per billion) for the U.S. population from the National Health and Nutrition Examination Survey.

	Survey years	Geometric mean (95% conf. interval)	Selected percentiles (95% confidence interval) 50th	75th	90th	95th	Sample size
Total	01-02	*	**< LOD**	**< LOD**	**.110** (.100-.120)	**.150** (.130-.170)	2159
	03-04	*	**< LOD**	**.059** (.054-.064)	**.098** (.083-.112)	**.138** (.109-.177)	1952
Age group							
12-19 years	01-02	*	**< LOD**	**< LOD**	**< LOD**	**< LOD**	716
	03-04	*	**< LOD**	**< LOD**	**< LOD**	**.048** (<LOD-.093)	587
20 years and older	01-02	*	**< LOD**	**.070** (<LOD-.080)	**.120** (.110-.130)	**.160** (.140-.180)	1443
	03-04	*	**< LOD**	**.062** (.056-.069)	**.102** (.088-.117)	**.139** (.112-.182)	1365
Gender							
Males	01-02	*	**< LOD**	**< LOD**	**.120** (.100-.130)	**.160** (.130-.190)	1007
	03-04	*	**< LOD**	**.064** (.054-.075)	**.109** (.084-.138)	**.147** (.108-.242)	954
Females	01-02	*	**< LOD**	**< LOD**	**.100** (.090-.110)	**.140** (.120-.160)	1152
	03-04	*	**< LOD**	**.055** (.049-.060)	**.089** (.077-.100)	**.110** (.096-.147)	998
Race/ethnicity							
Mexican Americans	01-02	*	**< LOD**	**< LOD**	**.090** (<LOD-.100)	**.120** (.090-.140)	539
	03-04	*	**< LOD**	**< LOD**	**.077** (.062-.116)	**.113** (.073-.158)	456
Non-Hispanic blacks	01-02	*	**< LOD**	**< LOD**	**.090** (.070-.110)	**.130** (.090-.190)	484
	03-04	*	**< LOD**	**.053** (<LOD-.058)	**.080** (.063-.101)	**.103** (.080-.149)	487
Non-Hispanic whites	01-02	*	**< LOD**	**< LOD**	**.110** (.100-.130)	**.150** (.130-.180)	980
	03-04	*	**< LOD**	**.062** (.054-.070)	**.103** (.086-.124)	**.139** (.109-.202)	885

< LOD means less than the limit of detection for the lipid adjusted serum level, which may vary for some chemicals by year and by individual sample.
* Not calculated: proportion of results below limit of detection was too high to provide a valid result.

Biomonitoring Summary: **http://www.cdc.gov/biomonitoring/AldrinDieldrin_BiomonitoringSummary.html**

Serum Endrin (lipid adjusted)

Geometric mean and selected percentiles of serum concentrations (in ng/g of lipid or parts per billion on a lipid-weight basis) for the U.S. population from the National Health and Nutrition Examination Survey.

	Survey years	Geometric mean (95% conf. interval)	Selected percentiles (95% confidence interval) 50th	75th	90th	95th	Sample size
Total	01-02	*	**< LOD**	**< LOD**	**< LOD**	**5.10** (<LOD-5.40)	2187
	03-04	*	**< LOD**	**< LOD**	**< LOD**	**< LOD**	1825
Age group							
12-19 years	01-02	*	**< LOD**	**< LOD**	**5.20** (<LOD-5.50)	**5.60** (5.40-5.70)	730
	03-04	*	**< LOD**	**< LOD**	**< LOD**	**< LOD**	539
20 years and older	01-02	*	**< LOD**	**< LOD**	**< LOD**	**< LOD**	1457
	03-04	*	**< LOD**	**< LOD**	**< LOD**	**< LOD**	1286
Gender							
Males	01-02	*	**< LOD**	**< LOD**	**< LOD**	**5.20** (<LOD-5.40)	1022
	03-04	*	**< LOD**	**< LOD**	**< LOD**	**< LOD**	885
Females	01-02	*	**< LOD**	**< LOD**	**< LOD**	**< LOD**	1165
	03-04	*	**< LOD**	**< LOD**	**< LOD**	**< LOD**	940
Race/ethnicity							
Mexican Americans	01-02	*	**< LOD**	**< LOD**	**< LOD**	**5.30** (<LOD-6.50)	547
	03-04	*	**< LOD**	**< LOD**	**< LOD**	**< LOD**	433
Non-Hispanic blacks	01-02	*	**< LOD**	**< LOD**	**< LOD**	**5.40** (<LOD-6.30)	487
	03-04	*	**< LOD**	**< LOD**	**< LOD**	**< LOD**	446
Non-Hispanic whites	01-02	*	**< LOD**	**< LOD**	**< LOD**	**5.10** (<LOD-5.40)	1000
	03-04	*	**< LOD**	**< LOD**	**< LOD**	**< LOD**	831

Limit of detection (LOD, see Data Analysis section) for Survey years 01-02 and 03-04 are 5.09 and 7.8.
< LOD means less than the limit of detection, which may vary for some chemicals by year and by individual sample.
* Not calculated: proportion of results below limit of detection was too high to provide a valid result.

Biomonitoring Summary: http://www.cdc.gov/biomonitoring/Endrin_BiomonitoringSummary.html

Serum Endrin (whole weight)

Geometric mean and selected percentiles of serum concentrations (in ng/g of serum or parts per billion) for the U.S. population from the National Health and Nutrition Examination Survey.

	Survey years	Geometric mean (95% conf. interval)	Selected percentiles (95% confidence interval) 50th	75th	90th	95th	Sample size
Total	01-02	*	**< LOD**	**< LOD**	**< LOD**	**.020** (<LOD-.020)	2187
	03-04	*	**< LOD**	**< LOD**	**< LOD**	**< LOD**	1825
Age group							
12-19 years	01-02	*	**< LOD**	**< LOD**	**.020** (<LOD-.020)	**.020** (.020-.020)	730
	03-04	*	**< LOD**	**< LOD**	**< LOD**	**< LOD**	539
20 years and older	01-02	*	**< LOD**	**< LOD**	**< LOD**	**< LOD**	1457
	03-04	*	**< LOD**	**< LOD**	**< LOD**	**< LOD**	1286
Gender							
Males	01-02	*	**< LOD**	**< LOD**	**< LOD**	**.020** (<LOD-.020)	1022
	03-04	*	**< LOD**	**< LOD**	**< LOD**	**< LOD**	885
Females	01-02	*	**< LOD**	**< LOD**	**< LOD**	**< LOD**	1165
	03-04	*	**< LOD**	**< LOD**	**< LOD**	**< LOD**	940
Race/ethnicity							
Mexican Americans	01-02	*	**< LOD**	**< LOD**	**< LOD**	**.020** (<LOD-.020)	547
	03-04	*	**< LOD**	**< LOD**	**< LOD**	**< LOD**	433
Non-Hispanic blacks	01-02	*	**< LOD**	**< LOD**	**< LOD**	**.020** (<LOD-.020)	487
	03-04	*	**< LOD**	**< LOD**	**< LOD**	**< LOD**	446
Non-Hispanic whites	01-02	*	**< LOD**	**< LOD**	**< LOD**	**.020** (<LOD-.020)	1000
	03-04	*	**< LOD**	**< LOD**	**< LOD**	**< LOD**	831

< LOD means less than the limit of detection for the lipid adjusted serum level, which may vary for some chemicals by year and by individual sample.
* Not calculated: proportion of results below limit of detection was too high to provide a valid result.

Biomonitoring Summary: **http://www.cdc.gov/biomonitoring/Endrin_BiomonitoringSummary.html**

Serum Heptachlor epoxide (lipid adjusted)

Metabolite of Heptachlor

Geometric mean and selected percentiles of serum concentrations (in ng/g of lipid or parts per billion on a lipid-weight basis) for the U.S. population from the National Health and Nutrition Examination Survey.

	Survey years	Geometric mean (95% conf. interval)	Selected percentiles (95% confidence interval) 50th	75th	90th	95th	Sample size
Total	99-00	*	< LOD	< LOD	**15.4** (<LOD-19.8)	**24.0** (15.1-38.8)	1589
	01-02	*	< LOD	< LOD	**14.8** (13.0-17.8)	**21.8** (18.2-27.3)	2259
	03-04	*	< LOD	< LOD	**13.4** (11.1-15.9)	**18.9** (15.9-23.0)	1963
Age group							
12-19 years	99-00	*	< LOD	< LOD	< LOD	< LOD	638
	01-02	*	< LOD	< LOD	< LOD	< LOD	741
	03-04	*	< LOD	< LOD	< LOD	< LOD	592
20 years and older	99-00	*	< LOD	< LOD	**17.8** (<LOD-23.9)	**27.1** (16.8-46.1)	951
	01-02	*	< LOD	< LOD	**15.7** (13.7-18.8)	**23.1** (19.1-29.1)	1518
	03-04	*	< LOD	**8.20** (<LOD-9.50)	**14.5** (11.6-17.6)	**20.6** (16.8-24.0)	1371
Gender							
Males	99-00	*	< LOD	< LOD	< LOD	**19.6** (<LOD-27.2)	760
	01-02	*	< LOD	< LOD	**13.9** (12.0-17.8)	**20.8** (15.9-25.3)	1047
	03-04	*	< LOD	< LOD	**13.4** (11.2-16.4)	**18.6** (16.6-21.3)	956
Females	99-00	*	< LOD	< LOD	**18.2** (<LOD-25.2)	**27.7** (16.0-54.3)	829
	01-02	*	< LOD	< LOD	**15.6** (13.3-18.2)	**23.2** (18.9-29.8)	1212
	03-04	*	< LOD	< LOD	**13.5** (11.0-16.8)	**19.6** (14.8-24.5)	1007
Race/ethnicity							
Mexican Americans	99-00	*	< LOD	< LOD	**15.3** (<LOD-25.6)	**22.2** (<LOD-62.3)	598
	01-02	*	< LOD	< LOD	**13.2** (<LOD-16.3)	**16.8** (13.8-23.1)	553
	03-04	*	< LOD	< LOD	**10.6** (8.10-13.5)	**13.7** (10.9-16.5)	460
Non-Hispanic blacks	99-00	*	< LOD	< LOD	< LOD	**19.5** (<LOD-32.4)	336
	01-02	*	< LOD	< LOD	**14.6** (11.7-19.0)	**21.5** (18.2-27.3)	503
	03-04	*	< LOD	< LOD	**13.5** (10.1-16.8)	**18.6** (12.7-25.2)	490
Non-Hispanic whites	99-00	*	< LOD	< LOD	**16.5** (<LOD-21.8)	**26.4** (<LOD-54.3)	539
	01-02	*	< LOD	< LOD	**15.3** (13.0-19.6)	**22.8** (18.9-29.8)	1041
	03-04	*	< LOD	**7.90** (<LOD-9.40)	**14.0** (11.2-17.6)	**20.4** (15.8-24.5)	888

Limit of detection (LOD, see Data Analysis section) for Survey years 99-00, 01-02, and 03-04 are 14.6, 10.5, and 7.8, respectively.
< LOD means less than the limit of detection, which may vary for some chemicals by year and by individual sample.
* Not calculated: proportion of results below limit of detection was too high to provide a valid result.

Biomonitoring Summary: http://www.cdc.gov/biomonitoring/ChlordaneHeptachlor_BiomonitoringSummary.html
Factsheet: http://www.cdc.gov/biomonitoring/ChlordaneHeptachlor_FactSheet.html

Serum Heptachlor epoxide (whole weight)

Metabolite of Heptachlor

Geometric mean and selected percentiles of serum concentrations (in ng/g of serum or parts per billion) for the U.S. population from the National Health and Nutrition Examination Survey.

	Survey years	Geometric mean (95% conf. interval)	Selected percentiles (95% confidence interval) 50th	75th	90th	95th	Sample size
Total	99-00	*	**< LOD**	**< LOD**	**.110** (<LOD-.140)	**.180** (.110-.220)	1589
	01-02	*	**< LOD**	**< LOD**	**.100** (.090-.120)	**.150** (.130-.180)	2259
	03-04	*	**< LOD**	**< LOD**	**.094** (.076-.108)	**.128** (.108-.161)	1963
Age group							
12-19 years	99-00	*	**< LOD**	**< LOD**	**< LOD**	**< LOD**	638
	01-02	*	**< LOD**	**< LOD**	**< LOD**	**< LOD**	741
	03-04	*	**< LOD**	**< LOD**	**< LOD**	**< LOD**	592
20 years and older	99-00	*	**< LOD**	**< LOD**	**.130** (<LOD-.170)	**.190** (.130-.270)	951
	01-02	*	**< LOD**	**< LOD**	**.110** (.090-.140)	**.170** (.140-.190)	1518
	03-04	*	**< LOD**	**.057** (<LOD-.063)	**.101** (.082-.116)	**.135** (.113-.173)	1371
Gender							
Males	99-00	*	**< LOD**	**< LOD**	**< LOD**	**.150** (<LOD-.180)	760
	01-02	*	**< LOD**	**< LOD**	**.100** (.090-.120)	**.150** (.110-.180)	1047
	03-04	*	**< LOD**	**< LOD**	**.094** (.077-.111)	**.126** (.106-.149)	956
Females	99-00	*	**< LOD**	**< LOD**	**.120** (<LOD-.190)	**.200** (.120-.310)	829
	01-02	*	**< LOD**	**< LOD**	**.100** (.090-.130)	**.170** (.130-.200)	1212
	03-04	*	**< LOD**	**< LOD**	**.096** (.071-.108)	**.133** (.107-.173)	1007
Race/ethnicity							
Mexican Americans	99-00	*	**< LOD**	**< LOD**	**.100** (<LOD-.170)	**.170** (<LOD-.380)	598
	01-02	*	**< LOD**	**< LOD**	**.090** (<LOD-.110)	**.120** (.100-.240)	553
	03-04	*	**< LOD**	**< LOD**	**.069** (.053-.097)	**.098** (.074-.113)	460
Non-Hispanic blacks	99-00	*	**< LOD**	**< LOD**	**< LOD**	**.110** (<LOD-.200)	336
	01-02	*	**< LOD**	**< LOD**	**.090** (.070-.110)	**.130** (.100-.180)	503
	03-04	*	**< LOD**	**< LOD**	**.087** (.067-.104)	**.110** (.090-.157)	490
Non-Hispanic whites	99-00	*	**< LOD**	**< LOD**	**.120** (<LOD-.170)	**.180** (<LOD-.310)	539
	01-02	*	**< LOD**	**< LOD**	**.100** (.090-.130)	**.170** (.130-.190)	1041
	03-04	*	**< LOD**	**.055** (<LOD-.063)	**.101** (.077-.117)	**.135** (.111-.180)	888

< LOD means less than the limit of detection for the lipid adjusted serum level, which may vary for some chemicals by year and by individual sample.
* Not calculated: proportion of results below limit of detection was too high to provide a valid result.

Biomonitoring Summary: http://www.cdc.gov/biomonitoring/ChlordaneHeptachlor_BiomonitoringSummary.html
Factsheet: http://www.cdc.gov/biomonitoring/ChlordaneHeptachlor_FactSheet.html

Serum *o,p'*-Dichlorodiphenyltrichloroethane (DDT) (lipid adjusted)

Geometric mean and selected percentiles of serum concentrations (in ng/g of lipid or parts per billion on a lipid-weight basis) for the U.S. population from the National Health and Nutrition Examination Survey.

	Survey years	Geometric mean (95% conf. interval)	Selected percentiles (95% confidence interval) 50th	75th	90th	95th	Sample size
Total	99-00	*	< LOD	< LOD	< LOD	< LOD	1669
	01-02	*	< LOD	< LOD	< LOD	< LOD	2279
	03-04	*	< LOD	< LOD	< LOD	< LOD	1946
Age group							
12-19 years	99-00	*	< LOD	< LOD	< LOD	< LOD	667
	01-02	*	< LOD	< LOD	< LOD	< LOD	756
	03-04	*	< LOD	< LOD	< LOD	< LOD	588
20 years and older	99-00	*	< LOD	< LOD	< LOD	< LOD	1002
	01-02	*	< LOD	< LOD	< LOD	< LOD	1523
	03-04	*	< LOD	< LOD	< LOD	< LOD	1358
Gender							
Males	99-00	*	< LOD	< LOD	< LOD	< LOD	796
	01-02	*	< LOD	< LOD	< LOD	< LOD	1059
	03-04	*	< LOD	< LOD	< LOD	< LOD	949
Females	99-00	*	< LOD	< LOD	< LOD	< LOD	873
	01-02	*	< LOD	< LOD	< LOD	< LOD	1220
	03-04	*	< LOD	< LOD	< LOD	< LOD	997
Race/ethnicity							
Mexican Americans	99-00	*	< LOD	< LOD	< LOD	< LOD	632
	01-02	*	< LOD	< LOD	< LOD	< LOD	565
	03-04	*	< LOD	< LOD	< LOD	< LOD	458
Non-Hispanic blacks	99-00	*	< LOD	< LOD	< LOD	< LOD	354
	01-02	*	< LOD	< LOD	< LOD	< LOD	507
	03-04	*	< LOD	< LOD	< LOD	< LOD	486
Non-Hispanic whites	99-00	*	< LOD	< LOD	< LOD	< LOD	560
	01-02	*	< LOD	< LOD	< LOD	< LOD	1045
	03-04	*	< LOD	< LOD	< LOD	< LOD	880

Limit of detection (LOD, see Data Analysis section) for Survey years 99-00, 01-02, and 03-04 are 20.7, 17.4, and 7.8, respectively.
< LOD means less than the limit of detection, which may vary for some chemicals by year and by individual sample.
* Not calculated: proportion of results below limit of detection was too high to provide a valid result.

Biomonitoring Summary: http://www.cdc.gov/biomonitoring/DDT_BiomonitoringSummary.html

Serum *o,p'*-Dichlorodiphenyltrichloroethane (DDT) (whole weight)

Geometric mean and selected percentiles of serum concentrations (in ng/g of serum or parts per billion) for the U.S. population from the National Health and Nutrition Examination Survey.

	Survey years	Geometric mean (95% conf. interval)	Selected percentiles (95% confidence interval) 50th	75th	90th	95th	Sample size
Total	99-00	*	< LOD	< LOD	< LOD	< LOD	1669
	01-02	*	< LOD	< LOD	< LOD	< LOD	2279
	03-04	*	< LOD	< LOD	< LOD	< LOD	1946
Age group							
12-19 years	99-00	*	< LOD	< LOD	< LOD	< LOD	667
	01-02	*	< LOD	< LOD	< LOD	< LOD	756
	03-04	*	< LOD	< LOD	< LOD	< LOD	588
20 years and older	99-00	*	< LOD	< LOD	< LOD	< LOD	1002
	01-02	*	< LOD	< LOD	< LOD	< LOD	1523
	03-04	*	< LOD	< LOD	< LOD	< LOD	1358
Gender							
Males	99-00	*	< LOD	< LOD	< LOD	< LOD	796
	01-02	*	< LOD	< LOD	< LOD	< LOD	1059
	03-04	*	< LOD	< LOD	< LOD	< LOD	949
Females	99-00	*	< LOD	< LOD	< LOD	< LOD	873
	01-02	*	< LOD	< LOD	< LOD	< LOD	1220
	03-04	*	< LOD	< LOD	< LOD	< LOD	997
Race/ethnicity							
Mexican Americans	99-00	*	< LOD	< LOD	< LOD	< LOD	632
	01-02	*	< LOD	< LOD	< LOD	< LOD	565
	03-04	*	< LOD	< LOD	< LOD	< LOD	458
Non-Hispanic blacks	99-00	*	< LOD	< LOD	< LOD	< LOD	354
	01-02	*	< LOD	< LOD	< LOD	< LOD	507
	03-04	*	< LOD	< LOD	< LOD	< LOD	486
Non-Hispanic whites	99-00	*	< LOD	< LOD	< LOD	< LOD	560
	01-02	*	< LOD	< LOD	< LOD	< LOD	1045
	03-04	*	< LOD	< LOD	< LOD	< LOD	880

< LOD means less than the limit of detection for the lipid adjusted serum level, which may vary for some chemicals by year and by individual sample.
* Not calculated: proportion of results below limit of detection was too high to provide a valid result.

Biomonitoring Summary: http://www.cdc.gov/biomonitoring/DDT_BiomonitoringSummary.html

Urinary 2,4,5-Trichlorophenol

Metabolite of Several Organochlorine Insecticides

Geometric mean and selected percentiles of urine concentrations (in µg/L) for the U.S. population from the National Health and Nutrition Examination Survey.

	Survey years+	Geometric mean (95% conf. interval)	Selected percentiles (95% confidence interval) 50th	75th	90th	95th	Sample size
Total	03-04	*	**< LOD**	**.100** (.100-.100)	**.200** (.200-.300)	**.400** (.300-.400)	2525
	05-06	*	**< LOD**	**.100** (.100-.200)	**.300** (.200-.300)	**.400** (.300-.500)	2548
	07-08	*	**< LOD**	**.100** (<LOD-.100)	**.200** (.200-.200)	**.300** (.200-.300)	2604
	09-10	*	**< LOD**	**< LOD**	**.200** (.200-.200)	**.300** (.200-.300)	2749
Age group							
6-11 years	03-04	*	**< LOD**	**.100** (.100-.200)	**.200** (.200-.300)	**.300** (.200-.500)	314
	05-06	*	**< LOD**	**.100** (.100-.200)	**.300** (.200-.400)	**.400** (.300-.500)	356
	07-08	*	**< LOD**	**.100** (<LOD-.100)	**.200** (.100-.300)	**.300** (.200-.500)	389
	09-10	*	**< LOD**	**< LOD**	**.200** (.100-.200)	**.200** (.200-.300)	415
12-19 years	03-04	*	**< LOD**	**.100** (.100-.200)	**.200** (.200-.300)	**.300** (.200-.500)	722
	05-06	*	**< LOD**	**.100** (.100-.200)	**.300** (.200-.300)	**.400** (.300-.500)	702
	07-08	*	**< LOD**	**.100** (<LOD-.100)	**.200** (.100-.200)	**.200** (.200-.500)	401
	09-10	*	**< LOD**	**.100** (<LOD-.100)	**.200** (.200-.300)	**.300** (.200-.500)	420
20 years and older	03-04	*	**< LOD**	**.100** (.100-.100)	**.300** (.200-.300)	**.400** (.300-.500)	1489
	05-06	*	**< LOD**	**.100** (.100-.200)	**.300** (.200-.300)	**.400** (.300-.500)	1490
	07-08	*	**< LOD**	**.100** (<LOD-.100)	**.200** (.200-.300)	**.300** (.200-.400)	1814
	09-10	*	**< LOD**	**< LOD**	**.200** (.200-.200)	**.300** (.200-.300)	1914
Gender							
Males	03-04	*	**< LOD**	**.100** (.100-.100)	**.200** (.200-.300)	**.400** (.300-.400)	1231
	05-06	*	**< LOD**	**.100** (.100-.200)	**.200** (.200-.300)	**.400** (.300-.500)	1270
	07-08	*	**< LOD**	**.100** (<LOD-.100)	**.200** (.200-.200)	**.300** (.200-.300)	1294
	09-10	*	**< LOD**	**< LOD**	**.200** (.200-.200)	**.300** (.200-.300)	1399
Females	03-04	*	**< LOD**	**.100** (.100-.200)	**.200** (.200-.300)	**.400** (.300-.400)	1294
	05-06	*	**< LOD**	**.100** (.100-.200)	**.300** (.200-.400)	**.500** (.300-.500)	1278
	07-08	*	**< LOD**	**.100** (<LOD-.100)	**.200** (.200-.300)	**.300** (.200-.400)	1310
	09-10	*	**< LOD**	**.100** (<LOD-.100)	**.200** (.200-.200)	**.300** (.200-.300)	1350
Race/ethnicity							
Mexican Americans	03-04	*	**< LOD**	**.100** (<LOD-.200)	**.200** (.200-.300)	**.300** (.200-.400)	617
	05-06	*	**< LOD**	**.100** (<LOD-.200)	**.300** (.200-.300)	**.400** (.300-.500)	637
	07-08	*	**< LOD**	**< LOD**	**.200** (.100-.200)	**.200** (.200-.300)	531
	09-10	*	**< LOD**	**< LOD**	**.100** (<LOD-.200)	**.200** (.100-.300)	566
Non-Hispanic blacks	03-04	*	**< LOD**	**.200** (.100-.200)	**.300** (.200-.500)	**.400** (.300-.700)	636
	05-06	*	**< LOD**	**.200** (.100-.200)	**.300** (.200-.400)	**.500** (.300-.500)	678
	07-08	*	**< LOD**	**.100** (.100-.200)	**.200** (.200-.300)	**.400** (.300-.500)	597
	09-10	*	**< LOD**	**.100** (<LOD-.100)	**.200** (.200-.200)	**.200** (.200-.300)	516
Non-Hispanic whites	03-04	*	**< LOD**	**.100** (.100-.100)	**.200** (.200-.300)	**.400** (.300-.400)	1077
	05-06	*	**< LOD**	**.100** (.100-.200)	**.300** (.200-.300)	**.400** (.300-.600)	1038
	07-08	*	**< LOD**	**.100** (<LOD-.100)	**.200** (.200-.300)	**.300** (.200-.400)	1077
	09-10	*	**< LOD**	**< LOD**	**.200** (.200-.200)	**.300** (.200-.300)	1206

Limit of detection (LOD, see Data Analysis section) for Survey years 03-04, 05-06, 07-08 and 09-10 are 0.1, 0.1, 0.1, and 0.1 respectively.
< LOD means less than the limit of detection, which may vary for some chemicals by year and by individual sample.
* Not calculated: proportion of results below limit of detection was too high to provide a valid result.
+Not measured after Survey years 2009-2010.

Biomonitoring Summary: http://www.cdc.gov/biomonitoring/Trichlorophenols_BiomonitoringSummary.html

Urinary 2,4,5-Trichlorophenol (creatinine corrected)

Metabolite of Several Organochlorine Insecticides

Geometric mean and selected percentiles of urine concentrations (in µg/g of creatinine) for the U.S. population from the National Health and Nutrition Examination Survey.

	Survey years+	Geometric mean (95% conf. interval)	Selected percentiles (95% confidence interval) 50th	75th	90th	95th	Sample size
Total	03-04	*	**< LOD**	**.170** (.160-.180)	**.280** (.260-.310)	**.370** (.330-.420)	2522
	05-06	*	**< LOD**	**.160** (.150-.180)	**.290** (.260-.320)	**.410** (.360-.450)	2548
	07-08	*	**< LOD**	**.150** (<LOD-.160)	**.280** (.230-.320)	**.390** (.330-.470)	2604
	09-10	*	**< LOD**	**< LOD**	**.260** (.240-.280)	**.350** (.320-.390)	2749
Age group							
6-11 years	03-04	*	**< LOD**	**.180** (.150-.230)	**.290** (.250-.320)	**.370** (.310-.540)	314
	05-06	*	**< LOD**	**.180** (.140-.200)	**.310** (.210-.450)	**.450** (.320-.610)	356
	07-08	*	**< LOD**	**.180** (<LOD-.190)	**.270** (.210-.390)	**.430** (.270-.580)	389
	09-10	*	**< LOD**	**< LOD**	**.320** (.240-.350)	**.390** (.320-.470)	415
12-19 years	03-04	*	**< LOD**	**.120** (.100-.140)	**.200** (.170-.220)	**.240** (.220-.280)	720
	05-06	*	**< LOD**	**.120** (.110-.130)	**.210** (.180-.240)	**.290** (.240-.330)	702
	07-08	*	**< LOD**	**.100** (<LOD-.120)	**.170** (.150-.210)	**.250** (.170-.310)	401
	09-10	*	**< LOD**	**.110** (<LOD-.130)	**.190** (.150-.250)	**.280** (.190-.380)	420
20 years and older	03-04	*	**< LOD**	**.180** (.160-.180)	**.290** (.270-.320)	**.390** (.350-.470)	1488
	05-06	*	**< LOD**	**.170** (.150-.190)	**.300** (.260-.330)	**.410** (.370-.470)	1490
	07-08	*	**< LOD**	**.150** (<LOD-.180)	**.290** (.230-.350)	**.410** (.340-.500)	1814
	09-10	*	**< LOD**	**< LOD**	**.270** (.240-.280)	**.350** (.320-.410)	1914
Gender							
Males	03-04	*	**< LOD**	**.130** (.110-.150)	**.230** (.190-.260)	**.320** (.270-.350)	1230
	05-06	*	**< LOD**	**.130** (.120-.140)	**.220** (.190-.240)	**.310** (.260-.360)	1270
	07-08	*	**< LOD**	**.110** (<LOD-.120)	**.190** (.180-.230)	**.300** (.230-.340)	1294
	09-10	*	**< LOD**	**< LOD**	**.210** (.190-.230)	**.280** (.240-.330)	1399
Females	03-04	*	**< LOD**	**.200** (.180-.210)	**.320** (.290-.350)	**.440** (.350-.510)	1292
	05-06	*	**< LOD**	**.210** (.180-.230)	**.350** (.300-.410)	**.470** (.410-.550)	1278
	07-08	*	**< LOD**	**.190** (<LOD-.230)	**.330** (.280-.410)	**.470** (.370-.580)	1310
	09-10	*	**< LOD**	**.180** (<LOD-.190)	**.300** (.280-.330)	**.420** (.330-.470)	1350
Race/ethnicity							
Mexican Americans	03-04	*	**< LOD**	**.140** (<LOD-.150)	**.240** (.200-.280)	**.330** (.280-.460)	616
	05-06	*	**< LOD**	**.140** (<LOD-.160)	**.240** (.190-.320)	**.350** (.290-.380)	637
	07-08	*	**< LOD**	**< LOD**	**.210** (.180-.250)	**.270** (.240-.320)	531
	09-10	*	**< LOD**	**< LOD**	**.190** (<LOD-.230)	**.290** (.220-.330)	566
Non-Hispanic blacks	03-04	*	**< LOD**	**.120** (.100-.150)	**.230** (.170-.290)	**.310** (.230-.390)	635
	05-06	*	**< LOD**	**.110** (.100-.140)	**.210** (.170-.260)	**.320** (.260-.360)	678
	07-08	*	**< LOD**	**.120** (.100-.140)	**.200** (.170-.250)	**.290** (.230-.420)	597
	09-10	*	**< LOD**	**.090** (<LOD-.110)	**.160** (.130-.200)	**.220** (.160-.380)	516
Non-Hispanic whites	03-04	*	**< LOD**	**.180** (.160-.190)	**.290** (.260-.320)	**.370** (.340-.440)	1076
	05-06	*	**< LOD**	**.180** (.160-.190)	**.300** (.270-.350)	**.410** (.360-.500)	1038
	07-08	*	**< LOD**	**.160** (<LOD-.190)	**.300** (.250-.360)	**.440** (.330-.510)	1077
	09-10	*	**< LOD**	**< LOD**	**.280** (.250-.320)	**.370** (.330-.410)	1206

< LOD means less than the limit of detection for the urine levels not corrected for creatinine.
* Not calculated: proportion of results below limit of detection was too high to provide a valid result.
+Not measured after Survey years 2009-2010.

Biomonitoring Summary: **http://www.cdc.gov/biomonitoring/Trichlorophenols_BiomonitoringSummary.html**

Urinary 2,4,6-Trichlorophenol

Metabolite of Several Organochlorine Insecticides

Geometric mean and selected percentiles of urine concentrations (in µg/L) for the U.S. population from the National Health and Nutrition Examination Survey.

	Survey years+	Geometric mean (95% conf. interval)	Selected percentiles (95% confidence interval) 50th	75th	90th	95th	Sample size
Total	03-04	*	< LOD	.500 (<LOD-.600)	1.00 (.800-1.20)	1.40 (1.20-1.80)	2525
	05-06	*	< LOD	.600 (<LOD-.700)	1.00 (.800-1.20)	1.40 (1.20-1.80)	2548
	07-08	*	< LOD	< LOD	.800 (.700-.900)	1.20 (1.00-1.30)	2604
	09-10	*	< LOD	.500 (<LOD-.600)	.800 (.700-.900)	1.10 (1.00-1.40)	2749
Age group							
6-11 years	03-04	*	< LOD	.600 (.500-.700)	1.10 (.800-1.40)	1.90 (1.10-3.10)	314
	05-06	*	< LOD	.700 (.600-.900)	1.30 (1.00-2.30)	2.70 (1.30-5.40)	356
	07-08	*	< LOD	.600 (<LOD-.700)	1.10 (.900-1.40)	1.60 (1.30-2.10)	389
	09-10	*	< LOD	.500 (<LOD-.600)	.900 (.700-1.20)	1.30 (.900-2.20)	415
12-19 years	03-04	*	< LOD	.600 (.500-.800)	1.20 (.900-1.70)	1.80 (1.50-2.10)	722
	05-06	*	< LOD	.600 (<LOD-.800)	1.00 (.800-1.30)	1.30 (1.20-1.70)	702
	07-08	*	< LOD	.600 (<LOD-.700)	.800 (.700-1.10)	1.10 (.800-1.70)	401
	09-10	*	< LOD	.600 (<LOD-.700)	.900 (.700-1.30)	1.30 (.900-1.90)	420
20 years and older	03-04	*	< LOD	.500 (<LOD-.600)	1.00 (.800-1.10)	1.30 (1.10-1.70)	1489
	05-06	*	< LOD	.600 (<LOD-.700)	1.00 (.800-1.20)	1.30 (1.20-1.80)	1490
	07-08	*	< LOD	< LOD	.800 (.700-.900)	1.10 (.900-1.30)	1814
	09-10	*	< LOD	< LOD	.800 (.700-.900)	1.10 (1.00-1.20)	1914
Gender							
Males	03-04	*	< LOD	.600 (<LOD-.600)	1.00 (.800-1.10)	1.30 (1.10-1.80)	1231
	05-06	*	< LOD	.600 (<LOD-.800)	1.10 (.900-1.30)	1.60 (1.20-2.00)	1270
	07-08	*	< LOD	.500 (<LOD-.600)	.900 (.700-1.00)	1.20 (1.10-1.40)	1294
	09-10	*	< LOD	< LOD	.800 (.700-.900)	1.10 (1.00-1.20)	1399
Females	03-04	*	< LOD	.500 (<LOD-.600)	1.10 (.900-1.20)	1.40 (1.10-2.00)	1294
	05-06	*	< LOD	.500 (<LOD-.600)	.900 (.800-1.20)	1.30 (1.10-1.70)	1278
	07-08	*	< LOD	< LOD	.800 (.700-.900)	1.10 (.900-1.40)	1310
	09-10	*	< LOD	.500 (<LOD-.600)	.800 (.700-1.00)	1.10 (.900-1.60)	1350
Race/ethnicity							
Mexican Americans	03-04	*	< LOD	.700 (.600-.800)	1.20 (1.10-1.60)	1.80 (1.30-2.00)	617
	05-06	*	< LOD	.600 (.500-.700)	1.00 (.800-1.20)	1.30 (1.20-1.70)	637
	07-08	*	< LOD	< LOD	.700 (.700-.900)	1.00 (.900-1.20)	531
	09-10	*	< LOD	.500 (<LOD-.600)	.900 (.700-1.10)	1.10 (.900-1.30)	566
Non-Hispanic blacks	03-04	*	< LOD	.900 (.700-1.00)	1.40 (1.10-1.90)	2.00 (1.50-2.70)	636
	05-06	*	< LOD	.800 (.700-1.10)	1.50 (1.20-1.90)	2.20 (1.60-3.30)	678
	07-08	*	< LOD	.600 (.500-.600)	1.00 (.900-1.10)	1.30 (1.10-1.60)	597
	09-10	*	< LOD	.700 (.600-.800)	1.10 (.900-1.30)	1.50 (1.20-2.00)	516
Non-Hispanic whites	03-04	*	< LOD	< LOD	.800 (.700-1.00)	1.20 (1.00-1.50)	1077
	05-06	*	< LOD	.500 (<LOD-.700)	.900 (.700-1.30)	1.30 (1.10-1.80)	1038
	07-08	*	< LOD	< LOD	.800 (.700-.900)	1.20 (1.00-1.40)	1077
	09-10	*	< LOD	< LOD	.700 (.600-.900)	1.00 (.800-1.30)	1206

Limit of detection (LOD, see Data Analysis section) for Survey years 03-04, 05-06, 07-08 and 09-10 are 0.5, 0.5, 0.5, and 0.5 respectively.
< LOD means less than the limit of detection, which may vary for some chemicals by year and by individual sample.
* Not calculated: proportion of results below limit of detection was too high to provide a valid result.
+Not measured after Survey years 2009-2010.

Biomonitoring Summary: http://www.cdc.gov/biomonitoring/Trichlorophenols_BiomonitoringSummary.html

Urinary 2,4,6-Trichlorophenol (creatinine corrected)

Metabolite of Several Organochlorine Insecticides

Geometric mean and selected percentiles of urine concentrations (in µg/g of creatinine) for the U.S. population from the National Health and Nutrition Examination Survey.

	Survey years+	Geometric mean (95% conf. interval)	Selected percentiles (95% confidence interval) 50th	75th	90th	95th	Sample size
Total	03-04	*	< LOD	.710 (<LOD-.780)	1.25 (1.17-1.35)	1.75 (1.59-2.06)	2522
	05-06	*	< LOD	.720 (<LOD-.760)	1.27 (1.17-1.38)	1.75 (1.59-1.94)	2548
	07-08	*	< LOD	< LOD	1.25 (1.06-1.42)	1.75 (1.52-2.19)	2604
	09-10	*	< LOD	.710 (<LOD-.760)	1.21 (1.13-1.35)	1.67 (1.55-1.84)	2749
Age group							
6-11 years	03-04	*	< LOD	.920 (.850-1.13)	1.59 (1.22-1.91)	2.11 (1.46-4.55)	314
	05-06	*	< LOD	.880 (.740-1.06)	1.59 (1.21-2.06)	2.50 (1.61-5.20)	356
	07-08	*	< LOD	.900 (<LOD-.930)	1.46 (1.14-1.67)	2.33 (1.52-2.92)	389
	09-10	*	< LOD	.850 (<LOD-1.03)	1.59 (1.17-1.74)	1.85 (1.67-2.33)	415
12-19 years	03-04	*	< LOD	.580 (.510-.660)	.970 (.830-1.10)	1.21 (1.09-1.49)	720
	05-06	*	< LOD	.550 (<LOD-.630)	.970 (.690-1.17)	1.40 (1.08-1.59)	702
	07-08	*	< LOD	.550 (<LOD-.610)	.830 (.730-1.03)	1.30 (.930-1.48)	401
	09-10	*	< LOD	.590 (<LOD-.700)	.970 (.690-1.23)	1.23 (.920-1.66)	420
20 years and older	03-04	*	< LOD	.710 (<LOD-.770)	1.25 (1.17-1.35)	1.75 (1.59-2.00)	1488
	05-06	*	< LOD	.730 (<LOD-.780)	1.30 (1.17-1.40)	1.75 (1.57-2.06)	1490
	07-08	*	< LOD	< LOD	1.30 (1.06-1.46)	1.84 (1.52-2.33)	1814
	09-10	*	< LOD	< LOD	1.21 (1.13-1.35)	1.67 (1.52-1.94)	1914
Gender							
Males	03-04	*	< LOD	.560 (<LOD-.600)	.920 (.820-1.10)	1.30 (1.17-1.46)	1230
	05-06	*	< LOD	.600 (<LOD-.650)	1.00 (.850-1.13)	1.43 (1.25-1.59)	1270
	07-08	*	< LOD	.530 (<LOD-.600)	.930 (.830-1.06)	1.46 (1.18-1.59)	1294
	09-10	*	< LOD	< LOD	.980 (.850-1.12)	1.33 (1.13-1.59)	1399
Females	03-04	*	< LOD	.900 (<LOD-.960)	1.59 (1.35-1.75)	2.19 (1.75-2.63)	1292
	05-06	*	< LOD	.850 (<LOD-.970)	1.46 (1.30-1.67)	2.06 (1.67-2.50)	1278
	07-08	*	< LOD	< LOD	1.46 (1.23-1.75)	2.19 (1.67-2.50)	1310
	09-10	*	< LOD	.850 (<LOD-.920)	1.46 (1.30-1.59)	2.06 (1.62-2.33)	1350
Race/ethnicity							
Mexican Americans	03-04	*	< LOD	.760 (.600-.900)	1.15 (.970-1.38)	1.59 (1.18-2.42)	616
	05-06	*	< LOD	.650 (.570-.700)	1.03 (.860-1.19)	1.46 (1.11-1.94)	637
	07-08	*	< LOD	< LOD	1.05 (.910-1.17)	1.35 (1.13-1.57)	531
	09-10	*	< LOD	.690 (<LOD-.760)	1.00 (.900-1.33)	1.67 (1.13-2.18)	566
Non-Hispanic blacks	03-04	*	< LOD	.600 (.560-.640)	.950 (.800-1.10)	1.34 (1.06-1.67)	635
	05-06	*	< LOD	.630 (.540-.740)	1.03 (.830-1.49)	1.59 (1.13-2.07)	678
	07-08	*	< LOD	.520 (.470-.620)	1.00 (.830-1.13)	1.40 (1.13-1.52)	597
	09-10	*	< LOD	.560 (.490-.610)	.830 (.750-.950)	1.17 (.920-1.52)	516
Non-Hispanic whites	03-04	*	< LOD	< LOD	1.30 (1.17-1.46)	1.75 (1.59-2.11)	1076
	05-06	*	< LOD	.760 (<LOD-.830)	1.35 (1.25-1.50)	1.79 (1.60-2.06)	1038
	07-08	*	< LOD	< LOD	1.35 (1.13-1.52)	1.84 (1.52-2.50)	1077
	09-10	*	< LOD	< LOD	1.30 (1.18-1.46)	1.73 (1.59-2.06)	1206

< LOD means less than the limit of detection for the urine levels not corrected for creatinine.
* Not calculated: proportion of results below limit of detection was too high to provide a valid result.
+Not measured after Survey years 2009-2010.

Biomonitoring Summary: http://www.cdc.gov/biomonitoring/Trichlorophenols_BiomonitoringSummary.html

Urinary 2,4-Dichlorophenol

Metabolite of other chlorophenols

Geometric mean and selected percentiles of urine concentrations (in µg/L) for the U.S. population from the National Health and Nutrition Examination Survey.

	Survey years	Geometric mean (95% conf. interval)	Selected percentiles (95% confidence interval) 50th	75th	90th	95th	Sample size
Total	03-04	**1.04** (.895-1.21)	**.900** (.800-1.10)	**2.70** (2.30-3.10)	**8.80** (6.60-11.9)	**21.3** (14.1-29.5)	2525
	05-06	**.945** (.791-1.13)	**.800** (.700-1.00)	**2.00** (1.60-2.40)	**4.90** (3.90-6.30)	**11.9** (7.00-20.4)	2548
	07-08	**.970** (.852-1.11)	**.800** (.700-.900)	**1.80** (1.50-2.30)	**5.10** (3.80-7.60)	**12.6** (9.00-18.1)	2604
	09-10	**.803** (.729-.885)	**.700** (.700-.800)	**1.50** (1.40-1.70)	**4.00** (3.30-5.00)	**8.80** (6.40-15.7)	2749
Age group							
6-11 years	03-04	**1.01** (.796-1.28)	**.800** (.600-1.20)	**2.30** (1.70-3.20)	**7.70** (3.80-20.1)	**23.5** (9.40-31.0)	314
	05-06	**1.01** (.879-1.15)	**.800** (.800-1.10)	**2.00** (1.60-2.30)	**4.90** (3.30-6.60)	**9.80** (6.30-17.6)	356
	07-08	**1.04** (.778-1.39)	**.900** (.700-1.20)	**1.80** (1.20-2.80)	**5.90** (2.90-10.1)	**11.4** (6.60-20.7)	389
	09-10	**.975** (.768-1.24)	**.700** (.600-.900)	**1.80** (1.40-2.30)	**5.00** (3.20-8.40)	**14.2** (4.40-90.9)	415
12-19 years	03-04	**1.27** (.971-1.67)	**1.10** (.800-1.50)	**3.40** (2.50-5.00)	**13.6** (6.10-25.5)	**31.5** (14.5-85.0)	722
	05-06	**1.18** (.997-1.39)	**1.00** (.900-1.20)	**2.50** (2.00-3.10)	**5.50** (4.00-8.30)	**13.9** (7.10-33.6)	702
	07-08	**1.19** (.989-1.44)	**1.10** (.800-1.40)	**2.60** (2.00-3.00)	**5.60** (3.10-10.8)	**11.6** (5.70-36.5)	401
	09-10	**.967** (.794-1.18)	**.800** (.700-.900)	**1.60** (1.40-2.70)	**5.80** (3.70-10.1)	**14.4** (7.10-24.8)	420
20 years and older	03-04	**1.01** (.874-1.17)	**.900** (.700-1.10)	**2.60** (2.20-3.00)	**8.50** (6.60-10.4)	**19.4** (12.2-27.0)	1489
	05-06	**.907** (.737-1.12)	**.800** (.600-1.00)	**2.00** (1.50-2.40)	**4.90** (3.70-6.40)	**11.1** (6.50-20.9)	1490
	07-08	**.932** (.820-1.06)	**.800** (.700-.900)	**1.70** (1.40-2.20)	**5.00** (3.80-7.60)	**13.2** (9.20-18.1)	1814
	09-10	**.764** (.699-.836)	**.700** (.600-.700)	**1.40** (1.30-1.60)	**3.60** (3.10-4.50)	**8.00** (5.60-13.9)	1914
Gender							
Males	03-04	**1.22** (1.02-1.45)	**1.10** (.800-1.50)	**3.00** (2.50-3.50)	**9.40** (6.80-13.9)	**22.7** (13.6-40.9)	1231
	05-06	**1.16** (.973-1.37)	**1.00** (.900-1.20)	**2.40** (2.00-2.80)	**5.50** (4.40-7.90)	**12.9** (7.30-25.3)	1270
	07-08	**1.06** (.943-1.19)	**.900** (.800-1.00)	**1.90** (1.60-2.20)	**5.40** (3.90-8.20)	**13.6** (10.1-18.1)	1294
	09-10	**.879** (.789-.979)	**.800** (.700-.800)	**1.60** (1.40-1.80)	**4.00** (3.20-5.70)	**10.4** (5.20-18.4)	1399
Females	03-04	**.896** (.754-1.07)	**.800** (.600-.900)	**2.30** (2.00-2.70)	**8.10** (5.70-11.1)	**19.8** (12.0-27.5)	1294
	05-06	**.779** (.637-.954)	**.700** (.500-.800)	**1.50** (1.30-2.10)	**4.30** (2.80-6.20)	**9.40** (5.40-19.6)	1278
	07-08	**.893** (.750-1.06)	**.700** (.600-.800)	**1.80** (1.20-2.50)	**4.70** (3.10-8.00)	**11.9** (7.60-18.6)	1310
	09-10	**.737** (.659-.824)	**.600** (.600-.700)	**1.40** (1.30-1.70)	**4.00** (3.00-5.50)	**7.80** (5.80-15.8)	1350
Race/ethnicity							
Mexican Americans	03-04	**1.94** (1.46-2.56)	**1.70** (1.20-2.10)	**4.50** (2.80-9.30)	**26.9** (12.7-52.1)	**66.0** (47.5-84.2)	617
	05-06	**1.97** (1.49-2.59)	**1.60** (1.20-2.10)	**5.00** (3.30-6.60)	**20.9** (8.80-39.7)	**46.5** (21.9-79.5)	637
	07-08	**1.59** (.969-2.60)	**1.20** (.600-2.60)	**4.20** (2.10-9.50)	**13.4** (7.90-29.6)	**38.0** (16.4-74.0)	531
	09-10	**1.25** (.860-1.81)	**.900** (.700-1.30)	**2.70** (1.60-4.30)	**11.3** (4.30-26.3)	**29.1** (7.60-76.3)	566
Non-Hispanic blacks	03-04	**2.42** (1.92-3.06)	**2.20** (1.70-2.70)	**7.40** (4.00-9.60)	**20.8** (11.2-38.3)	**49.2** (24.0-69.7)	636
	05-06	**2.45** (1.93-3.12)	**2.10** (1.70-2.40)	**5.20** (3.90-7.40)	**20.3** (10.6-36.9)	**42.6** (21.3-129)	678
	07-08	**1.73** (1.49-2.01)	**1.40** (1.10-1.60)	**3.70** (2.90-4.90)	**17.8** (9.70-25.8)	**37.7** (24.6-56.8)	597
	09-10	**1.54** (1.06-2.23)	**1.20** (.800-2.00)	**3.10** (2.10-4.80)	**12.4** (4.30-46.4)	**35.2** (7.80-107)	516
Non-Hispanic whites	03-04	**.837** (.698-1.00)	**.700** (.600-.900)	**2.10** (1.70-2.60)	**6.20** (4.00-8.80)	**13.4** (8.60-22.0)	1077
	05-06	**.734** (.610-.883)	**.700** (.500-.900)	**1.40** (1.20-1.80)	**3.10** (2.70-3.90)	**5.30** (4.30-7.90)	1038
	07-08	**.817** (.732-.911)	**.700** (.600-.800)	**1.50** (1.20-1.80)	**3.10** (2.60-4.40)	**6.40** (4.60-8.80)	1077
	09-10	**.651** (.594-.712)	**.600** (.500-.700)	**1.30** (1.10-1.40)	**2.80** (2.20-3.50)	**5.60** (3.80-7.40)	1206

Limit of detection (LOD, see Data Analysis section) for Survey years 03-04, 05-06, 07-08 and 09-10 are 0.17, 0.2, 0.2, and 0.2 respectively.

Biomonitoring Summary: http://www.cdc.gov/biomonitoring/24D_BiomonitoringSummary.html

Urinary 2,4-Dichlorophenol (creatinine corrected)

Metabolite of other chlorophenols

Geometric mean and selected percentiles of urine concentrations (in µg/g of creatinine) for the U.S. population from the National Health and Nutrition Examination Survey.

	Survey years	Geometric mean (95% conf. interval)	Selected percentiles (95% confidence interval) 50th	75th	90th	95th	Sample size
Total	03-04	**1.02** (.873-1.18)	**.880** (.770-1.00)	**2.19** (1.84-2.73)	**7.39** (5.00-9.83)	**15.4** (11.1-20.9)	2522
	05-06	**.922** (.798-1.06)	**.750** (.660-.880)	**1.58** (1.33-1.86)	**4.00** (3.00-5.71)	**8.90** (5.98-16.6)	2548
	07-08	**.978** (.867-1.10)	**.790** (.700-.880)	**1.63** (1.36-1.89)	**4.00** (3.14-5.63)	**11.7** (6.82-18.9)	2604
	09-10	**.838** (.757-.929)	**.680** (.630-.740)	**1.33** (1.18-1.58)	**3.48** (2.77-4.55)	**8.17** (5.44-14.3)	2749
Age group							
6-11 years	03-04	**1.23** (.965-1.56)	**1.03** (.750-1.45)	**2.39** (1.82-3.36)	**9.29** (3.98-16.5)	**20.9** (12.9-38.1)	314
	05-06	**1.11** (.950-1.29)	**.970** (.800-1.08)	**1.74** (1.38-2.19)	**4.38** (3.33-7.80)	**10.9** (5.12-23.3)	356
	07-08	**1.28** (1.00-1.63)	**1.06** (.750-1.40)	**2.06** (1.44-3.21)	**4.49** (3.13-9.27)	**11.2** (5.70-24.4)	389
	09-10	**1.27** (.986-1.64)	**.930** (.820-1.20)	**2.03** (1.54-2.94)	**5.89** (3.50-11.0)	**15.9** (5.71-121)	415
12-19 years	03-04	**.954** (.725-1.26)	**.790** (.660-1.00)	**2.08** (1.44-3.75)	**8.02** (4.72-12.5)	**14.8** (8.02-40.0)	720
	05-06	**.878** (.765-1.01)	**.700** (.600-.800)	**1.65** (1.22-1.93)	**3.92** (2.90-4.82)	**8.28** (4.82-15.9)	702
	07-08	**.927** (.776-1.11)	**.790** (.640-1.00)	**1.51** (1.14-2.22)	**3.81** (2.38-5.92)	**10.3** (4.28-21.8)	401
	09-10	**.778** (.656-.921)	**.580** (.510-.690)	**1.18** (.970-1.40)	**3.38** (2.11-6.27)	**7.38** (3.39-19.4)	420
20 years and older	03-04	**1.00** (.863-1.16)	**.870** (.770-1.00)	**2.17** (1.80-2.69)	**7.16** (4.88-9.01)	**15.0** (10.6-20.8)	1488
	05-06	**.909** (.774-1.07)	**.740** (.650-.870)	**1.55** (1.25-1.89)	**4.00** (2.84-6.19)	**8.80** (5.71-16.8)	1490
	07-08	**.958** (.847-1.08)	**.770** (.670-.880)	**1.60** (1.32-1.85)	**3.98** (3.14-5.59)	**12.1** (8.15-18.9)	1814
	09-10	**.810** (.735-.892)	**.670** (.620-.730)	**1.27** (1.11-1.56)	**3.33** (2.65-4.23)	**7.64** (5.16-12.3)	1914
Gender							
Males	03-04	**.995** (.850-1.17)	**.900** (.730-1.06)	**2.23** (1.82-2.82)	**6.84** (4.54-9.01)	**13.7** (9.29-21.8)	1230
	05-06	**.927** (.814-1.06)	**.770** (.670-.880)	**1.60** (1.36-1.86)	**4.12** (3.08-5.45)	**8.90** (5.19-16.6)	1270
	07-08	**.891** (.808-.984)	**.720** (.660-.790)	**1.44** (1.29-1.67)	**4.00** (2.97-5.30)	**9.96** (6.82-13.4)	1294
	09-10	**.788** (.706-.879)	**.620** (.580-.660)	**1.25** (1.06-1.48)	**3.66** (2.52-5.47)	**7.69** (4.84-16.9)	1399
Females	03-04	**1.03** (.845-1.27)	**.870** (.770-1.00)	**2.17** (1.73-2.73)	**8.00** (4.57-12.1)	**17.2** (11.1-23.7)	1292
	05-06	**.916** (.770-1.09)	**.740** (.640-.880)	**1.56** (1.19-1.96)	**3.91** (2.66-6.50)	**8.93** (5.53-23.7)	1278
	07-08	**1.07** (.910-1.26)	**.850** (.720-1.00)	**1.75** (1.43-2.29)	**4.07** (3.13-7.65)	**14.4** (6.50-26.8)	1310
	09-10	**.890** (.789-1.00)	**.740** (.660-.850)	**1.41** (1.24-1.67)	**3.39** (2.76-4.52)	**8.79** (5.16-14.8)	1350
Race/ethnicity							
Mexican Americans	03-04	**1.76** (1.30-2.38)	**1.33** (1.04-1.74)	**3.85** (2.29-8.81)	**23.8** (10.6-51.6)	**71.4** (30.8-88.8)	616
	05-06	**1.77** (1.38-2.27)	**1.25** (.990-1.73)	**3.79** (2.70-5.35)	**16.6** (6.75-31.8)	**38.1** (23.8-55.3)	637
	07-08	**1.55** (.925-2.60)	**1.18** (.630-2.28)	**3.33** (1.93-6.50)	**14.2** (5.65-30.6)	**33.1** (16.6-60.0)	531
	09-10	**1.24** (.860-1.78)	**.910** (.630-1.28)	**2.03** (1.43-3.90)	**11.0** (3.54-26.4)	**26.4** (10.2-93.5)	566
Non-Hispanic blacks	03-04	**1.66** (1.28-2.16)	**1.47** (1.06-1.96)	**4.14** (2.46-7.31)	**14.9** (7.93-20.1)	**22.9** (16.7-45.0)	635
	05-06	**1.72** (1.39-2.14)	**1.32** (1.11-1.56)	**3.28** (2.33-5.35)	**14.9** (7.40-28.1)	**37.0** (15.0-83.4)	678
	07-08	**1.34** (1.14-1.59)	**.990** (.800-1.17)	**2.36** (1.85-3.12)	**13.1** (5.70-23.3)	**33.8** (22.7-41.1)	597
	09-10	**1.11** (.739-1.67)	**.890** (.630-1.19)	**2.07** (1.25-3.87)	**8.37** (2.99-22.0)	**22.0** (7.05-83.1)	516
Non-Hispanic whites	03-04	**.864** (.721-1.03)	**.780** (.690-.890)	**1.86** (1.54-2.23)	**5.08** (3.58-8.00)	**10.8** (6.84-18.2)	1076
	05-06	**.772** (.660-.904)	**.670** (.580-.790)	**1.25** (1.07-1.56)	**2.78** (2.11-3.52)	**4.82** (3.33-8.62)	1038
	07-08	**.853** (.765-.950)	**.730** (.660-.810)	**1.36** (1.14-1.67)	**2.97** (2.53-3.33)	**5.16** (3.84-9.38)	1077
	09-10	**.731** (.674-.793)	**.630** (.580-.690)	**1.13** (1.01-1.25)	**2.76** (2.29-3.30)	**5.16** (3.79-6.46)	1206

Biomonitoring Summary: http://www.cdc.gov/biomonitoring/24D_BiomonitoringSummary.html

Urinary 2,5-Dichlorophenol

Metabolite of 1,4-Dichlorobenzene (Paradichlorobenzene) and other chlorophenols

Geometric mean and selected percentiles of urine concentrations (in µg/L) for the U.S. population from the National Health and Nutrition Examination Survey.

	Survey years	Geometric mean (95% conf. interval)	Selected percentiles (95% confidence interval) 50th	75th	90th	95th	Sample size
Total	03-04	**12.9** (10.1-16.3)	**10.5** (8.00-14.2)	**40.9** (29.8-54.7)	**190** (133-282)	**705** (342-1330)	2525
	05-06	**9.55** (6.67-13.7)	**8.10** (5.60-11.5)	**26.4** (19.0-36.6)	**111** (69.9-166)	**332** (175-794)	2548
	07-08	**9.04** (7.22-11.3)	**6.60** (5.50-8.30)	**25.7** (19.2-34.7)	**131** (90.2-222)	**473** (296-753)	2604
	09-10	**6.10** (4.94-7.53)	**4.70** (3.70-5.90)	**18.4** (13.3-26.0)	**101** (68.0-146)	**301** (168-618)	2749
Age group							
6-11 years	03-04	**12.5** (8.22-18.9)	**9.10** (5.60-17.4)	**42.1** (21.7-83.9)	**161** (111-626)	**928** (249-1640)	314
	05-06	**10.5** (8.29-13.4)	**7.80** (5.90-10.6)	**28.1** (17.8-40.2)	**104** (55.4-226)	**336** (189-785)	356
	07-08	**9.31** (6.20-14.0)	**6.50** (4.60-10.9)	**23.3** (12.2-45.6)	**151** (61.1-306)	**464** (222-934)	389
	09-10	**7.19** (4.36-11.8)	**4.80** (2.70-9.90)	**30.4** (12.4-50.7)	**146** (63.7-368)	**503** (103-4940)	415
12-19 years	03-04	**16.9** (11.1-26.0)	**11.5** (8.20-20.6)	**49.9** (26.8-94.0)	**233** (94.5-1060)	**1080** (287-3970)	722
	05-06	**11.9** (8.47-16.8)	**9.60** (6.40-16.7)	**36.0** (22.3-54.4)	**127** (89.9-160)	**459** (160-894)	702
	07-08	**11.3** (8.78-14.5)	**7.40** (6.20-9.10)	**30.1** (18.5-52.6)	**193** (66.7-448)	**611** (254-1560)	401
	09-10	**8.01** (5.53-11.6)	**4.80** (3.50-8.80)	**24.9** (19.1-42.7)	**191** (61.2-368)	**526** (243-1140)	420
20 years and older	03-04	**12.3** (9.97-15.3)	**10.4** (8.00-14.0)	**40.5** (30.1-49.2)	**181** (141-250)	**583** (316-924)	1489
	05-06	**9.12** (6.15-13.5)	**7.80** (5.20-11.5)	**24.9** (17.3-35.3)	**110** (62.9-183)	**327** (159-852)	1490
	07-08	**8.71** (6.83-11.1)	**6.60** (5.10-8.70)	**24.6** (18.8-34.5)	**124** (95.9-186)	**452** (286-672)	1814
	09-10	**5.75** (4.77-6.92)	**4.60** (3.70-5.70)	**16.9** (12.7-23.1)	**88.4** (66.4-117)	**266** (156-450)	1914
Gender							
Males	03-04	**14.9** (11.8-18.8)	**12.5** (9.00-16.5)	**40.5** (30.7-54.5)	**152** (120-259)	**631** (259-1950)	1231
	05-06	**12.0** (8.55-16.7)	**9.90** (7.80-13.8)	**29.0** (21.8-40.5)	**114** (71.7-200)	**396** (175-916)	1270
	07-08	**10.9** (8.86-13.4)	**8.30** (6.30-9.90)	**29.4** (23.2-39.6)	**139** (100-248)	**546** (311-727)	1294
	09-10	**7.09** (5.68-8.85)	**5.30** (4.40-6.70)	**21.9** (15.2-33.5)	**103** (63.3-191)	**311** (133-736)	1399
Females	03-04	**11.2** (8.51-14.7)	**8.50** (6.30-12.0)	**42.8** (26.0-64.2)	**212** (141-364)	**732** (371-1100)	1294
	05-06	**7.69** (5.17-11.4)	**5.90** (3.90-9.40)	**21.1** (14.3-35.7)	**110** (60.5-183)	**317** (141-794)	1278
	07-08	**7.57** (5.70-10.1)	**5.50** (4.40-7.30)	**20.6** (13.9-31.8)	**118** (57.4-268)	**442** (213-838)	1310
	09-10	**5.28** (4.17-6.69)	**3.90** (3.00-5.10)	**16.7** (12.1-22.1)	**99.5** (58.2-156)	**287** (158-591)	1350
Race/ethnicity							
Mexican Americans	03-04	**30.1** (19.2-47.2)	**23.7** (14.7-39.8)	**103** (57.4-156)	**841** (282-2040)	**2370** (2040-3710)	617
	05-06	**32.2** (22.2-46.7)	**23.0** (14.9-37.1)	**120** (69.6-228)	**867** (298-1320)	**1630** (916-3650)	637
	07-08	**22.2** (9.88-49.8)	**16.4** (5.40-60.7)	**104** (35.2-364)	**566** (313-1710)	**1920** (672-3460)	531
	09-10	**13.0** (5.80-29.1)	**10.3** (3.30-26.2)	**53.6** (19.4-199)	**361** (124-900)	**998** (247-3700)	566
Non-Hispanic blacks	03-04	**54.0** (35.9-81.2)	**43.9** (26.2-65.6)	**159** (97.0-338)	**817** (342-2330)	**2330** (887-3730)	636
	05-06	**43.9** (33.2-58.1)	**33.2** (25.3-47.6)	**161** (79.9-255)	**722** (360-1370)	**1700** (886-6440)	678
	07-08	**27.4** (21.3-35.2)	**18.5** (13.2-26.7)	**102** (61.9-147)	**682** (364-943)	**1490** (933-1870)	597
	09-10	**23.0** (13.0-40.8)	**17.3** (8.00-42.7)	**82.7** (38.6-168)	**443** (119-2180)	**1240** (273-4940)	516
Non-Hispanic whites	03-04	**8.94** (7.15-11.2)	**7.80** (6.30-9.40)	**25.9** (19.3-36.6)	**115** (61.8-171)	**255** (148-522)	1077
	05-06	**6.19** (4.18-9.17)	**5.90** (3.80-9.20)	**15.7** (11.4-21.9)	**43.7** (31.2-73.1)	**105** (62.2-166)	1038
	07-08	**6.24** (5.04-7.74)	**5.10** (4.20-6.20)	**15.4** (12.2-19.9)	**49.8** (37.0-90.2)	**142** (103-294)	1077
	09-10	**4.10** (3.22-5.21)	**3.30** (2.60-4.40)	**10.9** (8.10-15.5)	**45.5** (29.0-82.7)	**124** (79.3-215)	1206

Limit of detection (LOD, see Data Analysis section) for Survey years 03-04, 05-06, 07-08 and 09-10 are 0.12, 0.2, 0.2, and 0.2 respectively.

Biomonitoring Summary: http://www.cdc.gov/biomonitoring/25D_BiomonitoringSummary.html

Urinary 2,5-Dichlorophenol (creatinine corrected)

Metabolite of 1,4-Dichlorobenzene (Paradichlorobenzene) and other chlorophenols

Geometric mean and selected percentiles of urine concentrations (in µg/g of creatinine) for the U.S. population from the National Health and Nutrition Examination Survey.

	Survey years	Geometric mean (95% conf. interval)	Selected percentiles (95% confidence interval) 50th	75th	90th	95th	Sample size
Total	03-04	**12.5** (10.1-15.6)	**9.29** (7.25-12.5)	**34.4** (26.8-45.4)	**141** (100-251)	**578** (313-851)	2522
	05-06	**9.31** (6.70-12.9)	**7.32** (5.33-10.2)	**20.4** (14.8-30.5)	**89.3** (54.9-176)	**292** (176-640)	2548
	07-08	**9.12** (7.35-11.3)	**6.24** (5.00-7.77)	**24.2** (17.2-30.3)	**109** (70.8-175)	**409** (234-745)	2604
	09-10	**6.36** (5.07-7.99)	**4.12** (3.31-5.16)	**16.2** (11.7-22.8)	**80.2** (59.5-127)	**269** (144-505)	2749
Age group							
6-11 years	03-04	**15.2** (9.93-23.1)	**10.6** (5.87-26.7)	**44.7** (28.9-80.0)	**183** (95.3-617)	**830** (330-2150)	314
	05-06	**11.6** (8.90-15.1)	**8.00** (5.95-12.6)	**24.7** (16.8-37.8)	**129** (55.8-242)	**419** (151-709)	356
	07-08	**11.5** (7.95-16.5)	**7.70** (5.41-11.7)	**29.5** (19.6-50.9)	**131** (59.9-239)	**420** (170-1110)	389
	09-10	**9.36** (5.65-15.5)	**6.25** (4.09-9.60)	**33.9** (12.6-65.0)	**177** (66.1-496)	**536** (111-5950)	415
12-19 years	03-04	**12.7** (8.50-18.9)	**9.05** (6.17-13.3)	**34.8** (18.6-67.0)	**177** (67.0-516)	**549** (187-2120)	720
	05-06	**8.88** (6.34-12.4)	**6.91** (4.15-11.1)	**23.4** (17.7-30.0)	**78.0** (58.5-112)	**279** (112-659)	702
	07-08	**8.79** (6.81-11.4)	**5.56** (4.42-7.50)	**20.9** (13.8-34.9)	**130** (41.8-251)	**353** (158-799)	401
	09-10	**6.44** (4.40-9.42)	**4.05** (2.34-8.69)	**19.4** (11.6-37.7)	**121** (49.3-218)	**257** (119-1180)	420
20 years and older	03-04	**12.2** (10.1-14.8)	**9.13** (7.25-12.4)	**32.7** (26.7-42.9)	**140** (103-203)	**552** (283-838)	1488
	05-06	**9.15** (6.43-13.0)	**7.29** (5.29-10.0)	**19.6** (14.2-30.4)	**90.7** (48.5-197)	**274** (163-701)	1490
	07-08	**8.94** (7.07-11.3)	**6.15** (4.93-8.00)	**24.3** (16.6-30.6)	**101** (70.0-162)	**422** (234-729)	1814
	09-10	**6.09** (4.97-7.45)	**3.97** (3.27-4.78)	**14.7** (11.0-20.5)	**72.5** (56.6-97.2)	**261** (141-446)	1914
Gender							
Males	03-04	**12.2** (9.73-15.3)	**9.65** (7.23-12.7)	**32.7** (25.3-39.1)	**108** (79.0-183)	**358** (161-1080)	1230
	05-06	**9.60** (7.17-12.9)	**8.11** (5.95-10.5)	**20.5** (15.9-28.2)	**74.9** (50.5-141)	**249** (137-534)	1270
	07-08	**9.17** (7.63-11.0)	**6.24** (5.22-7.81)	**25.5** (19.7-32.4)	**110** (70.7-167)	**353** (234-572)	1294
	09-10	**6.36** (5.04-8.02)	**4.21** (3.36-4.97)	**16.7** (11.7-24.0)	**83.2** (53.7-141)	**280** (111-727)	1399
Females	03-04	**12.9** (9.91-16.8)	**8.95** (6.98-13.2)	**37.1** (26.7-56.9)	**209** (124-362)	**660** (408-940)	1292
	05-06	**9.04** (6.18-13.2)	**6.60** (4.56-10.4)	**20.4** (14.1-33.8)	**104** (55.8-199)	**309** (149-933)	1278
	07-08	**9.07** (6.91-11.9)	**6.08** (4.71-8.04)	**22.4** (14.7-30.6)	**107** (59.2-216)	**509** (185-908)	1310
	09-10	**6.37** (4.92-8.25)	**4.10** (3.09-5.69)	**15.6** (11.3-22.1)	**77.1** (53.3-148)	**267** (151-481)	1350
Race/ethnicity							
Mexican Americans	03-04	**27.3** (17.4-42.9)	**17.8** (9.86-36.3)	**79.8** (45.8-138)	**809** (196-2110)	**2200** (1250-2480)	616
	05-06	**29.0** (20.5-41.0)	**18.6** (12.9-27.3)	**99.4** (61.6-165)	**675** (296-1400)	**1680** (718-2720)	637
	07-08	**21.6** (9.44-49.6)	**16.4** (5.09-58.9)	**83.9** (30.8-281)	**572** (182-1490)	**1490** (700-2220)	531
	09-10	**12.9** (5.78-28.8)	**9.12** (3.38-26.7)	**45.0** (17.3-236)	**460** (105-1000)	**1000** (380-2800)	566
Non-Hispanic blacks	03-04	**37.1** (24.3-56.7)	**27.4** (17.5-47.7)	**103** (63.8-216)	**609** (248-1210)	**1240** (627-2430)	635
	05-06	**30.9** (23.6-40.3)	**20.5** (17.3-29.1)	**104** (57.7-180)	**480** (294-1080)	**1480** (515-3100)	678
	07-08	**21.3** (16.2-27.9)	**14.6** (10.2-19.7)	**64.6** (48.0-101)	**529** (217-884)	**1130** (793-1560)	597
	09-10	**16.7** (9.19-30.2)	**12.5** (6.74-22.0)	**58.9** (22.3-106)	**349** (92.6-878)	**878** (277-3890)	516
Non-Hispanic whites	03-04	**9.24** (7.48-11.4)	**7.14** (5.67-8.76)	**24.8** (18.7-31.7)	**79.7** (50.2-141)	**216** (124-516)	1076
	05-06	**6.52** (4.51-9.43)	**5.60** (3.86-8.51)	**14.1** (10.7-19.7)	**40.2** (28.4-61.6)	**110** (47.3-224)	1038
	07-08	**6.52** (5.26-8.07)	**4.89** (3.95-6.20)	**14.4** (11.4-19.2)	**53.2** (40.1-75.9)	**131** (82.5-249)	1077
	09-10	**4.60** (3.59-5.90)	**3.27** (2.77-4.10)	**10.4** (7.22-15.2)	**41.3** (25.0-69.1)	**130** (73.4-180)	1206

Biomonitoring Summary: http://www.cdc.gov/biomonitoring/25D_BiomonitoringSummary.html

Urinary Acephate

Geometric mean and selected percentiles of urine concentrations (in µg/L) for the U.S. population from the National Health and Nutrition Examination Survey.

	Survey years	Geometric mean (95% conf. interval)	Selected percentiles (95% confidence interval) 50th	75th	90th	95th	Sample size
Total	03-04	*	< LOD	< LOD	< LOD	< LOD	2491
	05-06	*	< LOD	< LOD	< LOD	< LOD	2546
Age group							
6-11 years	03-04	*	< LOD	< LOD	< LOD	< LOD	309
	05-06	*	< LOD	< LOD	< LOD	< LOD	343
12-19 years	03-04	*	< LOD	< LOD	< LOD	< LOD	715
	05-06	*	< LOD	< LOD	< LOD	< LOD	696
20 years and older	03-04	*	< LOD	< LOD	< LOD	< LOD	1467
	05-06	*	< LOD	< LOD	< LOD	< LOD	1507
Gender							
Males	03-04	*	< LOD	< LOD	< LOD	< LOD	1221
	05-06	*	< LOD	< LOD	< LOD	< LOD	1205
Females	03-04	*	< LOD	< LOD	< LOD	< LOD	1270
	05-06	*	< LOD	< LOD	< LOD	< LOD	1341
Race/ethnicity							
Mexican Americans	03-04	*	< LOD	< LOD	< LOD	< LOD	608
	05-06	*	< LOD	< LOD	< LOD	< LOD	666
Non-Hispanic blacks	03-04	*	< LOD	< LOD	< LOD	< LOD	647
	05-06	*	< LOD	< LOD	< LOD	< LOD	698
Non-Hispanic whites	03-04	*	< LOD	< LOD	< LOD	< LOD	1077
	05-06	*	< LOD	< LOD	< LOD	< LOD	979

Limit of detection (LOD, see Data Analysis section) for Survey years 03-04 and 05-06 are 0.1 and 0.25 respectively.
< LOD means less than the limit of detection, which may vary for some chemicals by year and by individual sample.
* Not calculated: proportion of results below limit of detection was too high to provide a valid result.

Biomonitoring Summary: http://www.cdc.gov/biomonitoring/Acephate_BiomonitoringSummary.html

Urinary Acephate (creatinine corrected)

Geometric mean and selected percentiles of urine concentrations (in µg/g of creatinine) for the U.S. population from the National Health and Nutrition Examination Survey.

	Survey years	Geometric mean (95% conf. interval)	Selected percentiles (95% confidence interval) 50th	75th	90th	95th	Sample size
Total	03-04	*	< LOD	< LOD	< LOD	< LOD	2489
	05-06	*	< LOD	< LOD	< LOD	< LOD	2546
Age group							
6-11 years	03-04	*	< LOD	< LOD	< LOD	< LOD	309
	05-06	*	< LOD	< LOD	< LOD	< LOD	343
12-19 years	03-04	*	< LOD	< LOD	< LOD	< LOD	714
	05-06	*	< LOD	< LOD	< LOD	< LOD	696
20 years and older	03-04	*	< LOD	< LOD	< LOD	< LOD	1466
	05-06	*	< LOD	< LOD	< LOD	< LOD	1507
Gender							
Males	03-04	*	< LOD	< LOD	< LOD	< LOD	1220
	05-06	*	< LOD	< LOD	< LOD	< LOD	1205
Females	03-04	*	< LOD	< LOD	< LOD	< LOD	1269
	05-06	*	< LOD	< LOD	< LOD	< LOD	1341
Race/ethnicity							
Mexican Americans	03-04	*	< LOD	< LOD	< LOD	< LOD	607
	05-06	*	< LOD	< LOD	< LOD	< LOD	666
Non-Hispanic blacks	03-04	*	< LOD	< LOD	< LOD	< LOD	647
	05-06	*	< LOD	< LOD	< LOD	< LOD	698
Non-Hispanic whites	03-04	*	< LOD	< LOD	< LOD	< LOD	1076
	05-06	*	< LOD	< LOD	< LOD	< LOD	979

< LOD means less than the limit of detection for the urine levels not corrected for creatinine.
* Not calculated: proportion of results below limit of detection was too high to provide a valid result.

Biomonitoring Summary: http://www.cdc.gov/biomonitoring/Acephate_BiomonitoringSummary.html

Urinary Dimethoate

Geometric mean and selected percentiles of urine concentrations (in µg/L) for the U.S. population from the National Health and Nutrition Examination Survey.

	Survey years	Geometric mean (95% conf. interval)	Selected percentiles (95% confidence interval) 50th	75th	90th	95th	Sample size
Total	03-04	*	< LOD	< LOD	< LOD	< LOD	2455
	05-06	*	< LOD	< LOD	< LOD	< LOD	2628
Age group							
6-11 years	03-04	*	< LOD	< LOD	< LOD	< LOD	306
	05-06	*	< LOD	< LOD	< LOD	< LOD	349
12-19 years	03-04	*	< LOD	< LOD	< LOD	< LOD	708
	05-06	*	< LOD	< LOD	< LOD	< LOD	718
20 years and older	03-04	*	< LOD	< LOD	< LOD	< LOD	1441
	05-06	*	< LOD	< LOD	< LOD	< LOD	1561
Gender							
Males	03-04	*	< LOD	< LOD	< LOD	< LOD	1197
	05-06	*	< LOD	< LOD	< LOD	< LOD	1245
Females	03-04	*	< LOD	< LOD	< LOD	< LOD	1258
	05-06	*	< LOD	< LOD	< LOD	< LOD	1383
Race/ethnicity							
Mexican Americans	03-04	*	< LOD	< LOD	< LOD	< LOD	605
	05-06	*	< LOD	< LOD	< LOD	< LOD	693
Non-Hispanic blacks	03-04	*	< LOD	< LOD	< LOD	< LOD	629
	05-06	*	< LOD	< LOD	< LOD	< LOD	719
Non-Hispanic whites	03-04	*	< LOD	< LOD	< LOD	< LOD	1068
	05-06	*	< LOD	< LOD	< LOD	< LOD	1007

Limit of detection (LOD, see Data Analysis section) for Survey years 03-04 and 05-06 are 0.1 and 0.25 respectively.
< LOD means less than the limit of detection, which may vary for some chemicals by year and by individual sample.
* Not calculated: proportion of results below limit of detection was too high to provide a valid result.

Biomonitoring Summary: http://www.cdc.gov/biomonitoring/DimethoateOmethoate_BiomonitoringSummary.html

Urinary Dimethoate (creatinine corrected)

Geometric mean and selected percentiles of urine concentrations (in µg/g of creatinine) for the U.S. population from the National Health and Nutrition Examination Survey.

	Survey years	Geometric mean (95% conf. interval)	Selected percentiles (95% confidence interval) 50th	75th	90th	95th	Sample size
Total	03-04	*	< LOD	< LOD	< LOD	< LOD	2453
	05-06	*	< LOD	< LOD	< LOD	< LOD	2628
Age group							
6-11 years	03-04	*	< LOD	< LOD	< LOD	< LOD	306
	05-06	*	< LOD	< LOD	< LOD	< LOD	349
12-19 years	03-04	*	< LOD	< LOD	< LOD	< LOD	707
	05-06	*	< LOD	< LOD	< LOD	< LOD	718
20 years and older	03-04	*	< LOD	< LOD	< LOD	< LOD	1440
	05-06	*	< LOD	< LOD	< LOD	< LOD	1561
Gender							
Males	03-04	*	< LOD	< LOD	< LOD	< LOD	1196
	05-06	*	< LOD	< LOD	< LOD	< LOD	1245
Females	03-04	*	< LOD	< LOD	< LOD	< LOD	1257
	05-06	*	< LOD	< LOD	< LOD	< LOD	1383
Race/ethnicity							
Mexican Americans	03-04	*	< LOD	< LOD	< LOD	< LOD	604
	05-06	*	< LOD	< LOD	< LOD	< LOD	693
Non-Hispanic blacks	03-04	*	< LOD	< LOD	< LOD	< LOD	629
	05-06	*	< LOD	< LOD	< LOD	< LOD	719
Non-Hispanic whites	03-04	*	< LOD	< LOD	< LOD	< LOD	1067
	05-06	*	< LOD	< LOD	< LOD	< LOD	1007

< LOD means less than the limit of detection for the urine levels not corrected for creatinine.
* Not calculated: proportion of results below limit of detection was too high to provide a valid result.

Biomonitoring Summary: http://www.cdc.gov/biomonitoring/DimethoateOmethoate_BiomonitoringSummary.html

Urinary Methamidophos

Also a metabolite of Acephate

Geometric mean and selected percentiles of urine concentrations (in µg/L) for the U.S. population from the National Health and Nutrition Examination Survey.

	Survey years	Geometric mean (95% conf. interval)	Selected percentiles (95% confidence interval) 50th	75th	90th	95th	Sample size
Total	03-04	*	< LOD	< LOD	< LOD	< LOD	2379
	05-06	*	< LOD	< LOD	< LOD	< LOD	2591
Age group							
6-11 years	03-04	*	< LOD	< LOD	< LOD	< LOD	295
	05-06	*	< LOD	< LOD	< LOD	< LOD	346
12-19 years	03-04	*	< LOD	< LOD	< LOD	< LOD	683
	05-06	*	< LOD	< LOD	< LOD	< LOD	710
20 years and older	03-04	*	< LOD	< LOD	< LOD	< LOD	1401
	05-06	*	< LOD	< LOD	< LOD	< LOD	1535
Gender							
Males	03-04	*	< LOD	< LOD	< LOD	< LOD	1171
	05-06	*	< LOD	< LOD	< LOD	< LOD	1232
Females	03-04	*	< LOD	< LOD	< LOD	< LOD	1208
	05-06	*	< LOD	< LOD	< LOD	< LOD	1359
Race/ethnicity							
Mexican Americans	03-04	*	< LOD	< LOD	< LOD	< LOD	564
	05-06	*	< LOD	< LOD	< LOD	< LOD	688
Non-Hispanic blacks	03-04	*	< LOD	< LOD	< LOD	< LOD	631
	05-06	*	< LOD	< LOD	< LOD	< LOD	717
Non-Hispanic whites	03-04	*	< LOD	< LOD	< LOD	< LOD	1034
	05-06	*	< LOD	< LOD	< LOD	< LOD	979

Limit of detection (LOD, see Data Analysis section) for Survey years 03-04 and 05-06 are 0.1 and 0.37 respectively.
< LOD means less than the limit of detection, which may vary for some chemicals by year and by individual sample.
* Not calculated: proportion of results below limit of detection was too high to provide a valid result.

Biomonitoring Summary: **http://www.cdc.gov/biomonitoring/Methamidophos_BiomonitoringSummary.html**

Urinary Methamidophos (creatinine corrected)

Also a metabolite of Acephate

Geometric mean and selected percentiles of urine concentrations (in µg/g of creatinine) for the U.S. population from the National Health and Nutrition Examination Survey.

	Survey years	Geometric mean (95% conf. interval)	Selected percentiles (95% confidence interval) 50th	75th	90th	95th	Sample size
Total	03-04	*	< LOD	< LOD	< LOD	< LOD	2377
	05-06	*	< LOD	< LOD	< LOD	< LOD	2591
Age group							
6-11 years	03-04	*	< LOD	< LOD	< LOD	< LOD	295
	05-06	*	< LOD	< LOD	< LOD	< LOD	346
12-19 years	03-04	*	< LOD	< LOD	< LOD	< LOD	682
	05-06	*	< LOD	< LOD	< LOD	< LOD	710
20 years and older	03-04	*	< LOD	< LOD	< LOD	< LOD	1400
	05-06	*	< LOD	< LOD	< LOD	< LOD	1535
Gender							
Males	03-04	*	< LOD	< LOD	< LOD	< LOD	1170
	05-06	*	< LOD	< LOD	< LOD	< LOD	1232
Females	03-04	*	< LOD	< LOD	< LOD	< LOD	1207
	05-06	*	< LOD	< LOD	< LOD	< LOD	1359
Race/ethnicity							
Mexican Americans	03-04	*	< LOD	< LOD	< LOD	< LOD	563
	05-06	*	< LOD	< LOD	< LOD	< LOD	688
Non-Hispanic blacks	03-04	*	< LOD	< LOD	< LOD	< LOD	631
	05-06	*	< LOD	< LOD	< LOD	< LOD	717
Non-Hispanic whites	03-04	*	< LOD	< LOD	< LOD	< LOD	1033
	05-06	*	< LOD	< LOD	< LOD	< LOD	979

< LOD means less than the limit of detection for the urine levels not corrected for creatinine.

* Not calculated: proportion of results below limit of detection was too high to provide a valid result.

Biomonitoring Summary: http://www.cdc.gov/biomonitoring/Methamidophos_BiomonitoringSummary.html

Urinary Omethoate

Metabolite of Dimethoate

Geometric mean and selected percentiles of urine concentrations (in µg/L) for the U.S. population from the National Health and Nutrition Examination Survey.

	Survey years	Geometric mean (95% conf. interval)	Selected percentiles (95% confidence interval) 50th	75th	90th	95th	Sample size
Total	03-04	*	< LOD	< LOD	< LOD	< LOD	2455
	05-06	*	< LOD	< LOD	< LOD	< LOD	2628
Age group							
6-11 years	03-04	*	< LOD	< LOD	< LOD	< LOD	303
	05-06	*	< LOD	< LOD	< LOD	< LOD	349
12-19 years	03-04	*	< LOD	< LOD	< LOD	< LOD	707
	05-06	*	< LOD	< LOD	< LOD	< LOD	718
20 years and older	03-04	*	< LOD	< LOD	< LOD	< LOD	1445
	05-06	*	< LOD	< LOD	< LOD	< LOD	1561
Gender							
Males	03-04	*	< LOD	< LOD	< LOD	< LOD	1207
	05-06	*	< LOD	< LOD	< LOD	< LOD	1245
Females	03-04	*	< LOD	< LOD	< LOD	< LOD	1248
	05-06	*	< LOD	< LOD	< LOD	< LOD	1383
Race/ethnicity							
Mexican Americans	03-04	*	< LOD	< LOD	< LOD	< LOD	606
	05-06	*	< LOD	< LOD	< LOD	< LOD	693
Non-Hispanic blacks	03-04	*	< LOD	< LOD	< LOD	< LOD	637
	05-06	*	< LOD	< LOD	< LOD	< LOD	719
Non-Hispanic whites	03-04	*	< LOD	< LOD	< LOD	< LOD	1055
	05-06	*	< LOD	< LOD	< LOD	< LOD	1007

Limit of detection (LOD, see Data Analysis section) for Survey years 03-04 and 05-06 are 0.1 and 0.14 respectively.
< LOD means less than the limit of detection, which may vary for some chemicals by year and by individual sample.
* Not calculated: proportion of results below limit of detection was too high to provide a valid result.

Biomonitoring Summary: http://www.cdc.gov/biomonitoring/DimethoateOmethoate_BiomonitoringSummary.html

Urinary Omethoate (creatinine corrected)

Metabolite of Dimethoate

Geometric mean and selected percentiles of urine concentrations (in µg/g of creatinine) for the U.S. population from the National Health and Nutrition Examination Survey.

	Survey years	Geometric mean (95% conf. interval)	Selected percentiles (95% confidence interval) 50th	75th	90th	95th	Sample size
Total	03-04	*	< LOD	< LOD	< LOD	< LOD	2453
	05-06	*	< LOD	< LOD	< LOD	< LOD	2628
Age group							
6-11 years	03-04	*	< LOD	< LOD	< LOD	< LOD	303
	05-06	*	< LOD	< LOD	< LOD	< LOD	349
12-19 years	03-04	*	< LOD	< LOD	< LOD	< LOD	706
	05-06	*	< LOD	< LOD	< LOD	< LOD	718
20 years and older	03-04	*	< LOD	< LOD	< LOD	< LOD	1444
	05-06	*	< LOD	< LOD	< LOD	< LOD	1561
Gender							
Males	03-04	*	< LOD	< LOD	< LOD	< LOD	1206
	05-06	*	< LOD	< LOD	< LOD	< LOD	1245
Females	03-04	*	< LOD	< LOD	< LOD	< LOD	1247
	05-06	*	< LOD	< LOD	< LOD	< LOD	1383
Race/ethnicity							
Mexican Americans	03-04	*	< LOD	< LOD	< LOD	< LOD	605
	05-06	*	< LOD	< LOD	< LOD	< LOD	693
Non-Hispanic blacks	03-04	*	< LOD	< LOD	< LOD	< LOD	637
	05-06	*	< LOD	< LOD	< LOD	< LOD	719
Non-Hispanic whites	03-04	*	< LOD	< LOD	< LOD	< LOD	1054
	05-06	*	< LOD	< LOD	< LOD	< LOD	1007

< LOD means less than the limit of detection for the urine levels not corrected for creatinine.

* Not calculated: proportion of results below limit of detection was too high to provide a valid result.

Biomonitoring Summary: http://www.cdc.gov/biomonitoring/DimethoateOmethoate_BiomonitoringSummary.html

Urinary Malathion dicarboxylic acid

Metabolite of Malathion

Geometric mean and selected percentiles of urine concentrations (in µg/L) for the U.S. population from the National Health and Nutrition Examination Survey.

	Survey years	Geometric mean (95% conf. interval)	Selected percentiles (95% confidence interval) 50th	75th	90th	95th	Sample size
Total	99-00	*	**< LOD**	**< LOD**	**< LOD**	**< LOD**	1920
	07-08	*	**< LOD**	**< LOD**	**.980** (.900-1.08)	**1.65** (1.44-1.94)	2581
Age group							
6-11 years	99-00	*	**< LOD**	**< LOD**	**< LOD**	**2.80** (<LOD-5.50)	453
	07-08	*	**< LOD**	**.510** (<LOD-.640)	**1.26** (.810-2.13)	**2.32** (1.43-3.55)	383
12-19 years	99-00	*	**< LOD**	**< LOD**	**< LOD**	**< LOD**	660
	07-08	*	**< LOD**	**< LOD**	**1.09** (.740-1.40)	**1.59** (1.14-1.94)	390
20-59 years	99-00	*	**< LOD**	**< LOD**	**< LOD**	**< LOD**	807
	07-08	*	**< LOD**	**< LOD**	**.900** (.770-1.01)	**1.41** (1.14-1.65)	1177
60 years and older	07-08	*	**< LOD**	**.500** (<LOD-.580)	**1.37** (.980-1.73)	**3.29** (1.48-7.45)	631
Gender							
Males	99-00	*	**< LOD**	**< LOD**	**< LOD**	**< LOD**	937
	07-08	*	**< LOD**	**< LOD**	**1.05** (.930-1.23)	**1.90** (1.55-2.46)	1290
Females	99-00	*	**< LOD**	**< LOD**	**< LOD**	**< LOD**	983
	07-08	*	**< LOD**	**< LOD**	**.860** (.660-1.13)	**1.52** (1.13-1.91)	1291
Race/ethnicity							
Mexican Americans	99-00	*	**< LOD**	**< LOD**	**< LOD**	**< LOD**	680
	07-08	*	**< LOD**	**< LOD**	**.740** (.550-1.01)	**1.12** (.900-1.52)	500
Non-Hispanic blacks	99-00	*	**< LOD**	**< LOD**	**< LOD**	**< LOD**	498
	07-08	*	**< LOD**	**< LOD**	**.670** (.540-.810)	**1.06** (.860-1.34)	573
Non-Hispanic whites	99-00	*	**< LOD**	**< LOD**	**< LOD**	**< LOD**	580
	07-08	*	**< LOD**	**< LOD**	**1.08** (.900-1.29)	**1.84** (1.55-2.47)	1079

Limit of detection (LOD, see Data Analysis section) for Survey year 99-00 and 07-08 are 2.64 and 0.5.
< LOD means less than the limit of detection, which may vary for some chemicals by year and by individual sample.
* Not calculated: proportion of results below limit of detection was too high to provide a valid result.

Urinary Malathion dicarboxylic acid (creatinine corrected)

Metabolite of Malathion

Geometric mean and selected percentiles of urine concentrations (in µg/g of creatinine) for the U.S. population from the National Health and Nutrition Examination Survey.

	Survey years	Geometric mean (95% conf. interval)	Selected percentiles (95% confidence interval) 50th	75th	90th	95th	Sample size
Total	99-00	*	**< LOD**	**< LOD**	**< LOD**	**< LOD**	1920
	07-08	*	**< LOD**	**< LOD**	**1.46** (1.30-1.71)	**2.19** (1.85-2.72)	2579
Age group							
6-11 years	99-00	*	**< LOD**	**< LOD**	**< LOD**	**3.74** (<LOD-5.50)	453
	07-08	*	**< LOD**	**.946** (<LOD-1.14)	**1.85** (1.55-2.27)	**2.84** (1.85-5.11)	383
12-19 years	99-00	*	**< LOD**	**< LOD**	**< LOD**	**< LOD**	660
	07-08	*	**< LOD**	**< LOD**	**.982** (.761-1.21)	**1.46** (1.06-1.80)	388
20-59 years	99-00	*	**< LOD**	**< LOD**	**< LOD**	**< LOD**	807
	07-08	*	**< LOD**	**< LOD**	**1.35** (1.21-1.52)	**1.96** (1.71-2.69)	1177
Gender							
Males	99-00	*	**< LOD**	**< LOD**	**< LOD**	**< LOD**	937
	07-08	*	**< LOD**	**< LOD**	**1.13** (1.00-1.31)	**1.73** (1.40-2.09)	1289
Females	99-00	*	**< LOD**	**< LOD**	**< LOD**	**< LOD**	983
	07-08	*	**< LOD**	**< LOD**	**1.82** (1.46-2.06)	**2.72** (2.19-3.08)	1290
Race/ethnicity							
Mexican Americans	99-00	*	**< LOD**	**< LOD**	**< LOD**	**< LOD**	680
	07-08	*	**< LOD**	**< LOD**	**1.13** (.946-1.46)	**1.84** (1.21-2.69)	499
Non-Hispanic blacks	99-00	*	**< LOD**	**< LOD**	**< LOD**	**< LOD**	498
	07-08	*	**< LOD**	**< LOD**	**.946** (.756-1.09)	**1.35** (1.03-1.67)	572
Non-Hispanic whites	99-00	*	**< LOD**	**< LOD**	**< LOD**	**< LOD**	580
	07-08	*	**< LOD**	**< LOD**	**1.63** (1.32-1.84)	**2.47** (1.94-3.06)	1079

< LOD means less than the limit of detection for the urine levels not corrected for creatinine.

* Not calculated: proportion of results below limit of detection was too high to provide a valid result.

Urinary 2-Isopropyl-4-methyl-6-hydroxypyrimidine

Metabolite of Diazinon

Geometric mean and selected percentiles of urine concentrations (in µg/L) for the U.S. population from the National Health and Nutrition Examination Survey.

	Survey years	Geometric mean (95% conf. interval)	Selected percentiles (95% confidence interval) 50th	75th	90th	95th	Sample size
Total	99-00	*	**< LOD**	**< LOD**	**< LOD**	**< LOD**	1842
	01-02	*	**< LOD**	**< LOD**	**< LOD**	**< LOD**	3044
	07-08	*	**< LOD**	**< LOD**	**.350** (.260-.470)	**.720** (.530-.890)	2588
Age group							
6-11 years	99-00	*	**< LOD**	**< LOD**	**< LOD**	**< LOD**	454
	01-02	*	**< LOD**	**< LOD**	**< LOD**	**1.45** (<LOD-3.11)	580
	07-08	*	**< LOD**	**< LOD**	**.260** (.160-.510)	**.580** (.380-1.29)	385
12-19 years	99-00	*	**< LOD**	**< LOD**	**< LOD**	**< LOD**	632
	01-02	*	**< LOD**	**< LOD**	**< LOD**	**< LOD**	829
	07-08	*	**< LOD**	**< LOD**	**.320** (.180-.510)	**.660** (.350-1.24)	390
20-59 years	99-00	*	**< LOD**	**< LOD**	**< LOD**	**< LOD**	756
	01-02	*	**< LOD**	**< LOD**	**< LOD**	**< LOD**	1126
	07-08	*	**< LOD**	**< LOD**	**.310** (.220-.500)	**.670** (.490-.890)	1180
60 years and older	01-02	*	**< LOD**	**< LOD**	**< LOD**	**< LOD**	509
	07-08	*	**< LOD**	**< LOD**	**.470** (.320-.670)	**1.02** (.600-1.27)	633
Gender							
Males	99-00	*	**< LOD**	**< LOD**	**< LOD**	**< LOD**	894
	01-02	*	**< LOD**	**< LOD**	**< LOD**	**< LOD**	1427
	07-08	*	**< LOD**	**< LOD**	**.390** (.300-.500)	**.760** (.530-1.02)	1293
Females	99-00	*	**< LOD**	**< LOD**	**< LOD**	**< LOD**	948
	01-02	*	**< LOD**	**< LOD**	**< LOD**	**< LOD**	1617
	07-08	*	**< LOD**	**< LOD**	**.300** (.210-.450)	**.670** (.510-.830)	1295
Race/ethnicity							
Mexican Americans	99-00	*	**< LOD**	**< LOD**	**< LOD**	**< LOD**	644
	01-02	*	**< LOD**	**< LOD**	**< LOD**	**< LOD**	765
	07-08	*	**< LOD**	**.110** (<LOD-.160)	**.350** (.260-.440)	**.540** (.400-.790)	500
Non-Hispanic blacks	99-00	*	**< LOD**	**< LOD**	**< LOD**	**< LOD**	484
	01-02	*	**< LOD**	**< LOD**	**< LOD**	**1.49** (<LOD-2.36)	775
	07-08	*	**< LOD**	**.230** (.140-.300)	**.680** (.460-.990)	**1.26** (.880-1.77)	574
Non-Hispanic whites	99-00	*	**< LOD**	**< LOD**	**< LOD**	**< LOD**	554
	01-02	*	**< LOD**	**< LOD**	**< LOD**	**< LOD**	1280
	07-08	*	**< LOD**	**< LOD**	**.270** (.190-.400)	**.650** (.440-.880)	1084

Limit of detection (LOD, see Data Analysis section) for Survey years 99-00, 01-02, and 07-08 are 7.2, 0.7, and 0.1 respectively.
< LOD means less than the limit of detection, which may vary for some chemicals by year and by individual sample.
* Not calculated: proportion of results below limit of detection was too high to provide a valid result.

Urinary 2-Isopropyl-4-methyl-6-hydroxypyrimidine (creatinine corrected)

Metabolite of Diazinon

Geometric mean and selected percentiles of urine concentrations (in µg/g of creatinine) for the U.S. population from the National Health and Nutrition Examination Survey.

	Survey years	Geometric mean (95% conf. interval)	Selected percentiles (95% confidence interval) 50th	75th	90th	95th	Sample size
Total	99-00	*	**< LOD**	**< LOD**	**< LOD**	**< LOD**	1842
	01-02	*	**< LOD**	**< LOD**	**< LOD**	**< LOD**	3042
	07-08	*	**< LOD**	**< LOD**	**.412** (.333-.508)	**.731** (.538-1.00)	2586
Age group							
6-11 years	99-00	*	**< LOD**	**< LOD**	**< LOD**	**< LOD**	454
	01-02	*	**< LOD**	**< LOD**	**< LOD**	**2.72** (<LOD-4.46)	580
	07-08	*	**< LOD**	**< LOD**	**.412** (.304-.658)	**1.00** (.412-1.59)	385
12-19 years	99-00	*	**< LOD**	**< LOD**	**< LOD**	**< LOD**	632
	01-02	*	**< LOD**	**< LOD**	**< LOD**	**< LOD**	828
	07-08	*	**< LOD**	**< LOD**	**.278** (.175-.452)	**.460** (.276-1.17)	388
20-59 years	99-00	*	**< LOD**	**< LOD**	**< LOD**	**< LOD**	756
	01-02	*	**< LOD**	**< LOD**	**< LOD**	**< LOD**	1126
	07-08	*	**< LOD**	**< LOD**	**.383** (.304-.508)	**.645** (.500-.846)	1180
Gender							
Males	99-00	*	**< LOD**	**< LOD**	**< LOD**	**< LOD**	894
	01-02	*	**< LOD**	**< LOD**	**< LOD**	**< LOD**	1427
	07-08	*	**< LOD**	**< LOD**	**.333** (.286-.457)	**.677** (.500-.795)	1292
Females	99-00	*	**< LOD**	**< LOD**	**< LOD**	**< LOD**	948
	01-02	*	**< LOD**	**< LOD**	**< LOD**	**< LOD**	1615
	07-08	*	**< LOD**	**< LOD**	**.438** (.368-.632)	**.822** (.562-1.35)	1294
Race/ethnicity							
Mexican Americans	99-00	*	**< LOD**	**< LOD**	**< LOD**	**< LOD**	644
	01-02	*	**< LOD**	**< LOD**	**< LOD**	**< LOD**	765
	07-08	*	**< LOD**	**.172** (<LOD-.203)	**.385** (.260-.483)	**.636** (.401-.990)	499
Non-Hispanic blacks	99-00	*	**< LOD**	**< LOD**	**< LOD**	**< LOD**	484
	01-02	*	**< LOD**	**< LOD**	**< LOD**	**1.89** (<LOD-3.06)	774
	07-08	*	**< LOD**	**.202** (.152-.256)	**.571** (.333-.800)	**1.01** (.728-1.47)	573
Non-Hispanic whites	99-00	*	**< LOD**	**< LOD**	**< LOD**	**< LOD**	554
	01-02	*	**< LOD**	**< LOD**	**< LOD**	**< LOD**	1279
	07-08	*	**< LOD**	**< LOD**	**.368** (.292-.484)	**.700** (.418-1.06)	1084

< LOD means less than the limit of detection for the urine levels not corrected for creatinine.

* Not calculated: proportion of results below limit of detection was too high to provide a valid result.

Urinary *para*-Nitrophenol

Metabolite of Ethyl Parathion, Methyl Parathion, and Nitrobenzene

Geometric mean and selected percentiles of urine concentrations (in µg/L) for the U.S. population from the National Health and Nutrition Examination Survey.

	Survey years	Geometric mean (95% conf. interval)	Selected percentiles (95% confidence interval) 50th	75th	90th	95th	Sample size
Total	99-00	*	**< LOD**	**< LOD**	**2.50** (1.40-4.50)	**5.00** (2.90-11.0)	1989
	01-02	*	**< LOD**	**1.33** (1.20-1.46)	**2.69** (2.39-3.01)	**3.72** (3.46-4.15)	2975
	07-08	**.673** (.595-.761)	**.740** (.660-.830)	**1.49** (1.32-1.66)	**2.77** (2.19-3.45)	**4.50** (3.50-5.42)	2564
Age group							
6-11 years	99-00	*	**< LOD**	**.940** (<LOD-2.40)	**2.67** (1.70-3.80)	**4.30** (2.70-6.40)	479
	01-02	*	**.790** (<LOD-.910)	**1.49** (1.36-1.61)	**2.89** (2.22-3.58)	**4.10** (3.01-4.74)	565
	07-08	**.803** (.678-.952)	**.890** (.760-1.01)	**1.66** (1.26-1.99)	**2.85** (2.10-3.94)	**4.37** (2.91-6.75)	383
12-19 years	99-00	*	**< LOD**	**< LOD**	**3.40** (1.60-5.70)	**5.70** (2.60-19.0)	680
	01-02	*	**.730** (<LOD-.910)	**1.45** (1.32-1.61)	**2.66** (2.15-3.11)	**3.34** (3.11-4.01)	813
	07-08	**.769** (.614-.962)	**.850** (.680-1.02)	**1.49** (1.28-1.74)	**2.79** (1.94-3.45)	**3.47** (2.97-4.48)	387
20-59 years	99-00	*	**< LOD**	**< LOD**	**2.30** (1.20-5.70)	**4.50** (2.30-16.0)	830
	01-02	*	**< LOD**	**1.28** (1.09-1.47)	**2.69** (2.32-3.10)	**3.72** (3.37-4.24)	1099
	07-08	**.658** (.574-.754)	**.720** (.640-.840)	**1.49** (1.31-1.65)	**2.77** (2.10-3.70)	**4.68** (3.37-5.56)	1173
60 years and older	01-02	*	**< LOD**	**1.29** (1.07-1.49)	**2.66** (2.11-3.39)	**4.01** (3.17-7.19)	498
	07-08	**.607** (.512-.720)	**.610** (.550-.710)	**1.41** (1.14-1.76)	**2.81** (2.19-3.90)	**4.70** (2.90-6.91)	621
Gender							
Males	99-00	*	**< LOD**	**< LOD**	**2.50** (1.40-4.50)	**4.50** (2.50-14.0)	971
	01-02	*	**.760** (.450-.880)	**1.49** (1.32-1.63)	**3.01** (2.66-3.33)	**4.13** (3.61-4.92)	1395
	07-08	**.782** (.690-.887)	**.850** (.740-.980)	**1.59** (1.43-1.73)	**2.85** (2.19-3.53)	**4.52** (3.47-5.01)	1282
Females	99-00	*	**< LOD**	**< LOD**	**2.50** (1.30-5.70)	**5.70** (2.90-9.50)	1018
	01-02	*	**< LOD**	**1.18** (1.01-1.37)	**2.29** (1.95-2.69)	**3.52** (3.16-3.77)	1580
	07-08	**.582** (.510-.664)	**.640** (.550-.720)	**1.32** (1.10-1.59)	**2.72** (2.16-3.35)	**4.37** (3.09-5.64)	1282
Race/ethnicity							
Mexican Americans	99-00	*	**< LOD**	**1.70** (<LOD-3.50)	**5.80** (2.60-24.0)	**22.0** (3.60-36.0)	695
	01-02	*	**.680** (<LOD-.840)	**1.33** (1.08-1.58)	**2.61** (1.91-3.41)	**3.64** (2.70-5.73)	744
	07-08	**.624** (.542-.720)	**.700** (.560-.810)	**1.37** (1.16-1.52)	**2.58** (2.03-3.33)	**4.46** (2.79-6.91)	494
Non-Hispanic blacks	99-00	*	**< LOD**	**1.20** (<LOD-2.60)	**2.90** (1.70-6.00)	**4.80** (2.50-9.20)	518
	01-02	*	**.850** (<LOD-1.10)	**1.76** (1.36-2.15)	**3.13** (2.47-4.26)	**4.92** (3.75-6.36)	752
	07-08	**.826** (.716-.952)	**.860** (.760-1.01)	**1.71** (1.45-1.92)	**3.15** (2.56-3.90)	**4.72** (3.91-5.68)	568
Non-Hispanic whites	99-00	*	**< LOD**	**< LOD**	**2.10** (<LOD-6.33)	**4.20** (2.10-11.0)	603
	01-02	*	**< LOD**	**1.29** (1.14-1.42)	**2.70** (2.38-3.10)	**3.71** (3.38-4.00)	1259
	07-08	**.623** (.531-.730)	**.690** (.610-.790)	**1.36** (1.19-1.59)	**2.51** (1.89-3.08)	**3.63** (2.82-5.48)	1075

Limit of detection (LOD, see Data Analysis section) for Survey years 99-00, 01-02, and 07-08 are 0.8, 0.1, and 0.1 respectively.
< LOD means less than the limit of detection, which may vary for some chemicals by year and by individual sample.
* Not calculated: proportion of results below limit of detection was too high to provide a valid result.

Urinary *para*-Nitrophenol (creatinine corrected)

Metabolite of Ethyl Parathion, Methyl Parathion, and Nitrobenzene

Geometric mean and selected percentiles of urine concentrations (in µg/g of creatinine) for the U.S. population from the National Health and Nutrition Examination Survey.

	Survey years	Geometric mean (95% conf. interval)	Selected percentiles (95% confidence interval) 50th	75th	90th	95th	Sample size
Total	99-00	*	**< LOD**	**< LOD**	**2.08** (1.33-3.91)	**4.25** (2.15-10.2)	1989
	01-02	*	**< LOD**	**.987** (.868-1.10)	**1.97** (1.86-2.13)	**2.98** (2.60-3.33)	2973
	07-08	**.692** (.632-.757)	**.673** (.624-.737)	**1.28** (1.15-1.40)	**2.38** (2.11-2.66)	**3.57** (2.94-4.39)	2562
Age group							
6-11 years	99-00	*	**< LOD**	**.938** (<LOD-1.95)	**2.80** (1.94-4.00)	**4.20** (3.33-6.70)	479
	01-02	*	**.715** (<LOD-.870)	**1.60** (1.30-1.82)	**2.78** (2.31-3.11)	**3.67** (3.11-4.61)	565
	07-08	**1.02** (.892-1.17)	**1.02** (.920-1.12)	**1.67** (1.46-1.90)	**3.13** (2.51-3.64)	**3.76** (3.31-4.89)	383
12-19 years	99-00	*	**< LOD**	**< LOD**	**1.80** (1.08-3.04)	**4.00** (1.57-7.29)	680
	01-02	*	**.373** (<LOD-.503)	**.840** (.790-.951)	**1.59** (1.37-1.78)	**2.10** (1.78-2.43)	812
	07-08	**.597** (.511-.698)	**.581** (.497-.697)	**1.02** (.891-1.14)	**1.64** (1.29-2.17)	**2.92** (1.55-4.54)	385
20-59 years	99-00	*	**< LOD**	**< LOD**	**2.00** (1.17-4.25)	**4.29** (2.13-12.3)	830
	01-02	*	**< LOD**	**.875** (.693-1.07)	**1.79** (1.56-2.05)	**2.89** (2.35-3.33)	1099
	07-08	**.656** (.595-.724)	**.635** (.585-.706)	**1.22** (1.09-1.34)	**2.19** (1.94-2.51)	**3.04** (2.56-4.07)	1173
Gender							
Males	99-00	*	**< LOD**	**< LOD**	**1.90** (1.01-3.39)	**3.39** (1.77-7.55)	971
	01-02	*	**.433** (.333-.534)	**.984** (.869-1.07)	**1.89** (1.66-2.09)	**2.98** (2.29-3.57)	1395
	07-08	**.650** (.595-.712)	**.641** (.594-.697)	**1.20** (1.08-1.33)	**2.11** (1.63-2.49)	**3.02** (2.51-3.71)	1281
Females	99-00	*	**< LOD**	**< LOD**	**2.26** (1.48-4.88)	**6.92** (2.76-14.1)	1018
	01-02	*	**< LOD**	**.995** (.801-1.23)	**2.08** (1.85-2.32)	**3.04** (2.58-3.44)	1578
	07-08	**.735** (.660-.818)	**.707** (.644-.779)	**1.37** (1.21-1.63)	**2.67** (2.20-3.25)	**4.11** (3.11-5.06)	1281
Race/ethnicity							
Mexican Americans	99-00	*	**< LOD**	**1.55** (<LOD-3.17)	**4.86** (2.21-21.9)	**17.4** (3.94-47.7)	695
	01-02	*	**.389** (<LOD-.546)	**.935** (.716-1.22)	**1.89** (1.43-2.63)	**3.23** (2.49-3.84)	744
	07-08	**.638** (.538-.757)	**.604** (.554-.708)	**1.14** (.938-1.40)	**2.03** (1.45-3.57)	**3.63** (2.05-4.71)	493
Non-Hispanic blacks	99-00	*	**< LOD**	**.683** (<LOD-1.79)	**2.07** (1.33-3.71)	**3.71** (1.98-7.20)	518
	01-02	*	**.438** (<LOD-.640)	**1.04** (.847-1.27)	**1.84** (1.59-2.30)	**2.81** (2.14-4.30)	751
	07-08	**.633** (.565-.708)	**.634** (.553-.743)	**1.07** (.973-1.23)	**2.04** (1.64-2.32)	**2.66** (2.11-3.54)	567
Non-Hispanic whites	99-00	*	**< LOD**	**< LOD**	**1.97** (<LOD-4.29)	**3.83** (1.97-10.2)	603
	01-02	*	**< LOD**	**.984** (.827-1.16)	**2.06** (1.89-2.29)	**3.11** (2.49-3.57)	1258
	07-08	**.677** (.604-.759)	**.664** (.604-.761)	**1.25** (1.10-1.38)	**2.28** (2.00-2.56)	**3.23** (2.60-4.00)	1075

< LOD means less than the limit of detection for the urine levels not corrected for creatinine.

* Not calculated: proportion of results below limit of detection was too high to provide a valid result.

Urinary 3,5,6-Trichloro-2-pyridinol

Metabolite of Chlorpyrifos and Chlorpyrifos-methyl

Geometric mean and selected percentiles of urine concentrations (in µg/L) for the U.S. population from the National Health and Nutrition Examination Survey.

	Survey years	Geometric mean (95% conf. interval)	Selected percentiles (95% confidence interval) 50th	75th	90th	95th	Sample size
Total	99-00	**1.77** (1.46-2.14)	**1.70** (1.40-2.20)	**3.50** (2.50-5.20)	**7.30** (4.80-10.0)	**10.0** (7.70-15.0)	1994
	01-02	**1.72** (1.50-1.97)	**2.17** (1.81-2.51)	**4.87** (4.45-5.24)	**8.80** (7.80-9.77)	**12.4** (10.7-15.2)	3011
	07-08	**1.29** (1.20-1.39)	**1.48** (1.31-1.65)	**2.63** (2.39-2.94)	**4.55** (4.03-5.14)	**6.11** (5.60-6.93)	2588
Age group							
6-11 years	99-00	**2.88** (1.99-4.16)	**2.80** (1.60-4.90)	**7.09** (3.40-10.0)	**12.0** (7.70-17.0)	**16.0** (10.0-28.0)	481
	01-02	**2.67** (2.13-3.35)	**3.09** (2.50-4.22)	**6.36** (4.97-7.97)	**10.9** (7.98-15.3)	**15.3** (11.5-24.0)	573
	07-08	**1.72** (1.48-2.01)	**1.85** (1.49-2.22)	**3.18** (2.58-3.68)	**4.69** (3.90-5.74)	**6.04** (5.12-7.63)	385
12-19 years	99-00	**2.37** (1.89-2.97)	**2.10** (1.60-3.00)	**4.50** (2.90-7.10)	**8.10** (5.50-14.0)	**12.5** (8.00-24.0)	681
	01-02	**2.71** (2.19-3.35)	**3.57** (2.66-4.34)	**6.60** (5.61-7.59)	**11.3** (8.66-15.1)	**18.0** (13.7-23.7)	823
	07-08	**1.54** (1.27-1.86)	**1.81** (1.39-2.20)	**2.75** (2.34-3.29)	**4.70** (3.66-5.72)	**6.33** (4.98-7.96)	390
20-59 years	99-00	**1.53** (1.29-1.83)	**1.50** (1.30-1.80)	**2.90** (2.20-4.30)	**5.90** (3.90-8.90)	**8.90** (6.70-11.0)	832
	01-02	**1.51** (1.32-1.72)	**1.91** (1.44-2.26)	**4.44** (3.90-4.80)	**7.78** (7.00-8.91)	**10.9** (9.52-12.4)	1113
	07-08	**1.19** (1.07-1.33)	**1.36** (1.22-1.53)	**2.55** (2.21-2.98)	**4.46** (3.82-5.30)	**5.85** (5.40-6.93)	1180
60 years and older	01-02	**1.51** (1.21-1.89)	**1.76** (1.22-2.33)	**4.36** (3.54-5.08)	**9.11** (6.67-13.0)	**13.5** (11.2-15.5)	502
	07-08	**1.31** (1.17-1.47)	**1.51** (1.27-1.70)	**2.51** (2.34-2.78)	**4.64** (3.97-5.81)	**6.69** (5.14-8.14)	633
Gender							
Males	99-00	**1.92** (1.60-2.32)	**1.90** (1.50-2.40)	**3.60** (2.70-5.60)	**7.40** (5.04-10.0)	**10.0** (7.70-16.0)	972
	01-02	**2.13** (1.82-2.49)	**2.67** (2.24-3.16)	**5.33** (4.81-6.05)	**9.69** (8.45-11.5)	**15.0** (11.7-17.7)	1416
	07-08	**1.49** (1.36-1.64)	**1.70** (1.49-1.92)	**2.85** (2.50-3.17)	**4.87** (4.17-5.52)	**6.01** (5.56-6.67)	1293
Females	99-00	**1.63** (1.31-2.02)	**1.50** (1.20-2.00)	**3.30** (2.30-5.30)	**7.20** (4.30-12.0)	**11.0** (7.20-16.0)	1022
	01-02	**1.40** (1.21-1.62)	**1.63** (1.32-2.01)	**4.31** (3.57-4.84)	**7.78** (6.52-9.20)	**10.9** (8.62-13.2)	1595
	07-08	**1.13** (1.04-1.22)	**1.26** (1.13-1.40)	**2.41** (2.15-2.79)	**4.32** (3.76-4.98)	**6.30** (5.27-7.59)	1295
Race/ethnicity							
Mexican Americans	99-00	**1.61** (1.31-2.00)	**1.67** (1.30-2.20)	**3.20** (2.60-3.80)	**5.10** (3.80-8.40)	**7.40** (5.10-17.0)	697
	01-02	**1.98** (1.77-2.21)	**2.54** (2.21-2.89)	**4.55** (4.09-5.22)	**8.94** (7.06-10.4)	**11.9** (10.0-15.7)	744
	07-08	**1.13** (.926-1.38)	**1.26** (1.06-1.53)	**2.34** (1.89-2.94)	**4.04** (3.13-4.92)	**5.36** (4.37-7.16)	500
Non-Hispanic blacks	99-00	**2.17** (1.59-2.97)	**1.90** (1.43-2.80)	**4.30** (2.50-8.30)	**9.40** (6.40-13.7)	**13.0** (9.40-26.0)	521
	01-02	**2.14** (1.61-2.84)	**2.85** (2.16-3.38)	**5.45** (4.57-6.96)	**9.27** (7.21-11.7)	**12.9** (9.57-17.5)	776
	07-08	**1.64** (1.36-1.97)	**1.86** (1.47-2.24)	**3.22** (2.65-4.17)	**5.79** (4.85-7.17)	**7.97** (6.49-9.58)	574
Non-Hispanic whites	99-00	**1.76** (1.51-2.05)	**1.70** (1.50-2.10)	**3.50** (2.50-4.86)	**7.10** (4.30-11.0)	**10.0** (7.20-14.0)	602
	01-02	**1.67** (1.44-1.94)	**2.11** (1.64-2.47)	**4.85** (4.38-5.29)	**8.91** (7.63-9.97)	**12.9** (10.4-15.7)	1267
	07-08	**1.23** (1.16-1.30)	**1.44** (1.27-1.58)	**2.57** (2.35-2.83)	**4.41** (3.89-4.87)	**5.69** (5.40-6.14)	1084

Limit of detection (LOD, see Data Analysis section) for Survey years 99-00, 01-02, and 07-08 are 0.4, 0.4, and 0.1 respectively.

Urinary 3,5,6-Trichloro-2-pyridinol (creatinine corrected)

Metabolite of Chlorpyrifos and Chlorpyrifos-methyl

Geometric mean and selected percentiles of urine concentrations (in µg/g of creatinine) for the U.S. population from the National Health and Nutrition Examination Survey.

	Survey years	Geometric mean (95% conf. interval)	Selected percentiles (95% confidence interval) 50th	75th	90th	95th	Sample size
Total	99-00	**1.58** (1.35-1.85)	**1.47** (1.24-1.74)	**2.85** (2.12-3.59)	**5.43** (4.22-6.68)	**8.42** (6.25-11.6)	1994
	01-02	**1.75** (1.53-2.00)	**1.94** (1.66-2.25)	**3.80** (3.13-4.48)	**6.53** (5.24-8.23)	**9.27** (7.46-12.1)	3009
	07-08	**1.33** (1.22-1.44)	**1.34** (1.25-1.48)	**2.29** (2.06-2.48)	**3.80** (3.44-4.15)	**4.91** (4.47-5.83)	2586
Age group							
6-11 years	99-00	**3.11** (2.31-4.19)	**3.20** (2.05-4.80)	**6.39** (4.14-8.19)	**10.1** (7.26-14.0)	**14.1** (10.1-21.0)	481
	01-02	**3.48** (2.80-4.32)	**3.76** (3.17-4.36)	**6.22** (4.88-8.57)	**12.2** (7.24-24.4)	**16.9** (12.1-38.0)	573
	07-08	**2.18** (1.89-2.53)	**2.21** (1.86-2.66)	**3.23** (2.86-3.89)	**4.67** (4.23-5.00)	**5.94** (4.76-6.58)	385
12-19 years	99-00	**1.60** (1.34-1.91)	**1.45** (1.21-1.81)	**2.58** (1.98-3.92)	**4.83** (3.44-6.16)	**6.16** (4.43-10.6)	681
	01-02	**2.09** (1.72-2.55)	**2.24** (1.92-2.66)	**3.97** (3.30-4.72)	**6.33** (5.62-7.89)	**10.3** (7.65-15.2)	822
	07-08	**1.19** (1.05-1.34)	**1.20** (1.05-1.33)	**1.85** (1.61-2.22)	**2.66** (2.32-3.62)	**4.00** (2.70-5.77)	388
20-59 years	99-00	**1.41** (1.23-1.62)	**1.33** (1.12-1.58)	**2.37** (1.87-3.01)	**4.29** (3.53-5.56)	**6.42** (5.11-9.02)	832
	01-02	**1.49** (1.30-1.71)	**1.64** (1.39-1.88)	**3.11** (2.60-3.91)	**5.51** (4.33-7.23)	**7.44** (5.80-11.0)	1113
	07-08	**1.19** (1.09-1.30)	**1.22** (1.10-1.33)	**2.04** (1.78-2.32)	**3.42** (2.93-3.96)	**4.84** (3.96-6.31)	1180
Gender							
Males	99-00	**1.48** (1.27-1.72)	**1.44** (1.19-1.68)	**2.54** (2.05-3.38)	**4.95** (3.84-6.54)	**7.63** (5.65-11.0)	972
	01-02	**1.75** (1.51-2.02)	**1.93** (1.66-2.24)	**3.61** (3.01-4.22)	**6.33** (5.08-8.88)	**11.3** (7.54-13.5)	1416
	07-08	**1.24** (1.13-1.35)	**1.29** (1.15-1.46)	**2.12** (1.87-2.34)	**3.44** (3.03-3.78)	**4.41** (3.82-4.97)	1292
Females	99-00	**1.69** (1.42-2.01)	**1.51** (1.25-1.85)	**2.97** (2.25-4.02)	**5.63** (4.27-7.39)	**8.44** (5.79-13.3)	1022
	01-02	**1.75** (1.52-2.02)	**1.96** (1.61-2.30)	**3.96** (3.16-4.78)	**6.58** (5.37-7.95)	**8.98** (7.07-11.8)	1593
	07-08	**1.42** (1.30-1.55)	**1.40** (1.29-1.53)	**2.43** (2.22-2.70)	**4.18** (3.73-4.74)	**5.77** (4.76-7.03)	1294
Race/ethnicity							
Mexican Americans	99-00	**1.46** (1.20-1.77)	**1.44** (1.05-1.93)	**2.39** (2.09-2.96)	**3.86** (3.24-5.09)	**5.85** (3.88-9.57)	697
	01-02	**1.86** (1.64-2.10)	**2.06** (1.85-2.30)	**3.79** (3.23-4.46)	**6.52** (5.73-7.58)	**8.71** (7.68-11.0)	744
	07-08	**1.15** (.895-1.46)	**1.18** (.941-1.50)	**1.97** (1.55-2.38)	**3.04** (2.31-4.41)	**4.41** (2.92-7.11)	499
Non-Hispanic blacks	99-00	**1.47** (1.09-1.99)	**1.33** (.936-1.94)	**2.86** (1.58-5.05)	**5.91** (4.05-8.93)	**9.02** (5.91-13.7)	521
	01-02	**1.58** (1.19-2.08)	**1.95** (1.56-2.48)	**3.53** (2.84-4.28)	**5.60** (4.68-6.40)	**7.21** (5.83-9.11)	775
	07-08	**1.25** (1.05-1.49)	**1.24** (1.03-1.47)	**2.25** (1.86-2.86)	**3.91** (3.13-4.68)	**5.39** (4.12-8.30)	573
Non-Hispanic whites	99-00	**1.66** (1.45-1.91)	**1.55** (1.31-1.83)	**2.93** (2.09-3.97)	**5.56** (4.21-6.75)	**8.44** (6.25-12.3)	602
	01-02	**1.81** (1.55-2.11)	**2.00** (1.65-2.35)	**3.91** (3.03-4.91)	**6.94** (5.24-9.22)	**10.6** (7.76-12.6)	1266
	07-08	**1.33** (1.22-1.45)	**1.37** (1.26-1.53)	**2.31** (2.02-2.54)	**3.76** (3.40-4.03)	**4.73** (4.35-5.68)	1084

Urinary Diethylphosphate (DEP)

Metabolite of Several Organophosphorus Insecticides

Geometric mean and selected percentiles of urine concentrations (in µg/L) for the U.S. population from the National Health and Nutrition Examination Survey.

	Survey years	Geometric mean (95% conf. interval)	Selected percentiles (95% confidence interval) 50th	75th	90th	95th	Sample size
Total	99-00	**1.03** (.670-1.58)	**1.20** (.750-1.70)	**3.20** (2.30-4.80)	**7.60** (5.00-12.0)	**13.0** (7.70-23.0)	1949
	01-02	*	**< LOD**	**2.90** (2.50-3.26)	**6.68** (5.78-7.52)	**10.6** (9.14-12.0)	3018
	03-04	*	**< LOD**	**4.56** (3.57-5.83)	**10.2** (9.00-11.5)	**15.5** (13.5-16.8)	2453
	05-06	*	**< LOD**	**1.46** (.780-2.17)	**7.01** (5.67-8.94)	**13.3** (10.2-16.0)	2635
	07-08	*	**< LOD**	**2.48** (1.44-3.33)	**8.74** (7.51-10.3)	**15.3** (13.1-17.8)	2591
Age group							
6-11 years	99-00	**1.32** (.757-2.29)	**1.50** (.860-2.60)	**4.50** (2.10-7.90)	**11.0** (4.80-24.0)	**16.0** (8.50-36.0)	471
	01-02	*	**.290** (<LOD-1.04)	**3.45** (2.36-4.47)	**9.56** (6.33-18.0)	**20.0** (9.44-38.2)	576
	03-04	*	**< LOD**	**5.13** (2.48-7.94)	**10.9** (8.08-15.9)	**16.1** (10.9-18.5)	308
	05-06	*	**< LOD**	**1.45** (<LOD-4.51)	**8.21** (4.85-13.4)	**13.5** (8.36-20.4)	350
	07-08	*	**< LOD**	**4.31** (.420-6.49)	**12.9** (9.14-17.7)	**20.2** (11.9-37.5)	385
12-19 years	99-00	**1.21** (.758-1.94)	**1.40** (.970-2.10)	**3.70** (2.40-5.50)	**8.00** (4.70-19.0)	**20.0** (8.00-27.0)	664
	01-02	*	**< LOD**	**2.86** (1.96-3.95)	**7.58** (5.71-9.15)	**11.0** (9.35-12.4)	822
	03-04	*	**.530** (<LOD-2.32)	**5.80** (4.34-7.67)	**14.8** (9.12-19.8)	**20.8** (14.8-32.7)	701
	05-06	*	**< LOD**	**.460** (<LOD-3.69)	**9.47** (4.67-14.1)	**14.4** (10.2-22.4)	718
	07-08	*	**< LOD**	**3.81** (<LOD-5.42)	**10.7** (7.76-14.2)	**23.3** (11.3-35.6)	391
20-59 years	99-00	**.955** (.623-1.47)	**1.10** (.700-1.60)	**3.00** (1.80-4.80)	**7.30** (4.70-11.0)	**11.0** (6.80-22.0)	814
	01-02	*	**< LOD**	**2.71** (2.34-3.12)	**5.79** (5.05-7.21)	**10.4** (7.43-12.3)	1122
	03-04	*	**< LOD**	**4.37** (3.02-5.81)	**9.74** (8.35-11.3)	**14.2** (11.5-16.2)	922
	05-06	*	**< LOD**	**1.13** (<LOD-2.17)	**6.15** (4.51-8.24)	**11.5** (8.23-15.5)	1092
	07-08	*	**< LOD**	**1.55** (.470-2.48)	**7.54** (6.10-8.98)	**14.0** (9.62-15.7)	1178
60 years and older	01-02	*	**.440** (<LOD-1.63)	**3.30** (2.63-4.51)	**7.06** (5.17-8.69)	**9.41** (8.31-10.6)	498
	03-04	*	**1.80** (<LOD-2.98)	**4.73** (3.98-5.91)	**10.0** (8.09-11.3)	**13.6** (10.6-16.7)	522
	05-06	*	**< LOD**	**2.69** (1.71-3.95)	**8.33** (6.60-12.0)	**16.3** (12.0-18.7)	475
	07-08	*	**< LOD**	**3.55** (2.80-5.31)	**9.86** (7.53-14.2)	**17.1** (12.6-22.1)	637
Gender							
Males	99-00	**1.11** (.717-1.73)	**1.20** (.810-1.70)	**3.80** (2.50-5.00)	**8.00** (5.00-19.0)	**19.0** (7.20-30.0)	952
	01-02	*	**< LOD**	**3.21** (2.72-3.56)	**6.99** (5.83-7.71)	**11.5** (9.36-12.1)	1420
	03-04	*	**< LOD**	**5.01** (3.90-6.50)	**11.0** (10.1-12.7)	**16.2** (14.3-18.8)	1198
	05-06	*	**< LOD**	**.770** (<LOD-1.71)	**6.82** (5.14-9.54)	**13.4** (9.36-16.1)	1246
	07-08	*	**< LOD**	**1.95** (<LOD-3.34)	**9.39** (7.90-11.8)	**17.0** (13.7-21.5)	1295
Females	99-00	**.954** (.599-1.52)	**1.20** (.620-1.70)	**2.90** (1.90-4.80)	**7.50** (4.60-11.0)	**11.0** (7.40-16.0)	997
	01-02	*	**.290** (<LOD-.790)	**2.63** (2.22-3.03)	**6.21** (4.59-8.64)	**10.2** (7.52-14.7)	1598
	03-04	*	**.110** (<LOD-2.29)	**4.29** (3.21-5.80)	**9.38** (7.95-10.7)	**13.3** (11.2-15.9)	1255
	05-06	*	**< LOD**	**2.15** (1.27-2.76)	**7.23** (5.79-9.32)	**12.9** (9.64-16.0)	1389
	07-08	*	**< LOD**	**2.76** (1.69-3.62)	**7.76** (6.23-10.7)	**14.5** (10.7-18.8)	1296

Limit of detection (LOD, see Data Analysis section) for Survey years 99-00, 01-02, 03-04, 05-06, and 07-08 are 0.2, 0.2, 0.1, 0.37,and 0.37 respectively.
< LOD means less than the limit of detection, which may vary for some chemicals by year and by individual sample.
* Not calculated: proportion of results below limit of detection was too high to provide a valid result.

Biomonitoring Summary: http://www.cdc.gov/biomonitoring/OP-DPM_BiomonitoringSummary.html

Urinary Diethylphosphate (DEP)

Metabolite of Several Organophosphorus Insecticides

Geometric mean and selected percentiles of urine concentrations (in µg/L) for the U.S. population from the National Health and Nutrition Examination Survey.

	Survey years	Geometric mean (95% conf. interval)	Selected percentiles (95% confidence interval) 50th	75th	90th	95th	Sample size
Race/ethnicity							
Mexican Americans	99-00	**1.22** (.740-2.01)	**1.20** (.840-1.80)	**4.10** (2.20-7.00)	**11.0** (6.40-19.0)	**18.0** (12.0-27.0)	672
	01-02	*	**.600** (<LOD-1.49)	**3.07** (2.22-3.83)	**6.26** (5.00-7.82)	**11.2** (7.82-12.3)	763
	03-04	*	**1.18** (<LOD-2.97)	**5.81** (3.99-7.59)	**11.0** (8.48-16.1)	**16.9** (12.1-24.0)	581
	05-06	*	**< LOD**	**< LOD**	**6.30** (1.57-11.6)	**14.9** (5.72-33.5)	695
	07-08	*	**< LOD**	**1.63** (<LOD-3.88)	**8.36** (6.44-9.61)	**14.8** (8.85-25.1)	501
Non-Hispanic blacks	99-00	**1.56** (1.13-2.14)	**1.60** (1.40-1.80)	**4.30** (2.90-5.80)	**10.0** (5.60-18.0)	**18.0** (8.00-27.0)	509
	01-02	*	**1.03** (<LOD-2.33)	**4.81** (3.48-6.52)	**9.98** (7.39-13.3)	**15.1** (9.81-23.4)	756
	03-04	*	**1.04** (<LOD-3.28)	**6.29** (5.05-8.44)	**11.9** (9.92-15.5)	**16.2** (14.1-22.5)	628
	05-06	*	**< LOD**	**2.10** (<LOD-4.57)	**8.87** (6.52-12.0)	**14.3** (11.2-19.1)	723
	07-08	*	**< LOD**	**3.92** (2.67-5.19)	**11.3** (9.44-14.0)	**19.5** (14.1-22.0)	574
Non-Hispanic whites	99-00	**.981** (.579-1.66)	**1.10** (.490-2.10)	**3.30** (2.20-4.90)	**7.70** (4.70-14.0)	**14.0** (7.60-25.0)	595
	01-02	*	**< LOD**	**2.63** (2.21-3.13)	**5.79** (5.05-7.35)	**9.90** (8.38-11.7)	1253
	03-04	*	**< LOD**	**4.25** (3.12-5.77)	**9.74** (8.37-11.3)	**14.4** (12.4-16.0)	1055
	05-06	*	**< LOD**	**1.50** (.900-2.27)	**6.82** (5.08-9.74)	**13.3** (8.37-16.9)	1007
	07-08	*	**< LOD**	**2.14** (1.27-3.03)	**7.57** (6.57-8.97)	**14.5** (11.4-16.5)	1086

Limit of detection (LOD, see Data Analysis section) for Survey years 99-00, 01-02, 03-04, 05-06, and 07-08 are 0.2, 0.2, 0.1, 0.37,and 0.37 respectively.
< LOD means less than the limit of detection, which may vary for some chemicals by year and by individual sample.
* Not calculated: proportion of results below limit of detection was too high to provide a valid result.

Biomonitoring Summary: **http://www.cdc.gov/biomonitoring/OP-DPM_BiomonitoringSummary.html**

Urinary Diethylphosphate (DEP) (creatinine corrected)

Metabolite of Several Organophosphorus Insecticides

Geometric mean and selected percentiles of urine concentrations (in µg/g of creatinine) for the U.S. population from the National Health and Nutrition Examination Survey.

	Survey years	Geometric mean (95% conf. interval)	Selected percentiles (95% confidence interval) 50th	75th	90th	95th	Sample size
Total	99-00	**.924** (.608-1.41)	**.920** (.570-1.40)	**2.73** (1.68-4.60)	**7.94** (4.40-12.2)	**12.2** (8.00-19.6)	1949
	01-02	*	**< LOD**	**2.56** (2.17-2.85)	**5.36** (4.75-6.06)	**8.72** (7.19-10.3)	3017
	03-04	*	**< LOD**	**4.64** (3.82-5.79)	**9.18** (7.85-10.8)	**13.1** (10.5-16.1)	2450
	05-06	*	**< LOD**	**2.23** (1.49-3.09)	**7.72** (6.26-9.36)	**13.5** (11.0-19.0)	2634
	07-08	*	**< LOD**	**3.20** (2.37-4.12)	**8.86** (7.52-10.7)	**15.7** (11.9-19.8)	2589
Age group							
6-11 years	99-00	**1.43** (.870-2.34)	**1.47** (1.02-2.41)	**3.94** (2.20-8.57)	**10.5** (4.55-20.8)	**16.6** (10.5-32.7)	471
	01-02	*	**.886** (<LOD-1.76)	**4.02** (2.87-5.25)	**8.85** (6.88-15.6)	**18.4** (9.40-28.8)	576
	03-04	*	**< LOD**	**6.10** (3.79-9.03)	**11.9** (9.54-15.2)	**16.1** (11.9-28.3)	308
	05-06	*	**< LOD**	**3.09** (<LOD-6.77)	**9.50** (5.67-17.6)	**20.7** (9.50-26.5)	350
	07-08	*	**< LOD**	**4.67** (2.01-6.96)	**17.2** (13.1-20.3)	**28.2** (19.3-34.8)	385
12-19 years	99-00	**.818** (.533-1.26)	**.790** (.560-1.25)	**2.35** (1.37-3.75)	**5.44** (2.82-14.4)	**12.4** (4.66-34.2)	664
	01-02	*	**< LOD**	**2.05** (1.54-2.67)	**4.40** (3.40-5.28)	**7.28** (5.28-9.75)	821
	03-04	*	**.438** (<LOD-2.05)	**4.47** (3.90-5.43)	**10.1** (7.10-13.5)	**14.7** (9.82-26.4)	699
	05-06	*	**< LOD**	**1.27** (<LOD-2.81)	**6.74** (4.24-9.87)	**11.7** (6.98-16.6)	718
	07-08	*	**< LOD**	**2.86** (<LOD-4.53)	**8.56** (5.70-17.0)	**17.0** (8.05-23.0)	389
20-59 years	99-00	**.883** (.574-1.36)	**.860** (.500-1.35)	**2.66** (1.54-4.95)	**7.37** (4.32-12.1)	**12.1** (8.00-17.5)	814
	01-02	*	**< LOD**	**2.28** (2.01-2.56)	**4.75** (3.92-5.83)	**7.37** (5.93-9.72)	1122
	03-04	*	**< LOD**	**4.29** (2.98-5.71)	**8.35** (6.09-11.3)	**11.9** (9.02-14.7)	921
	05-06	*	**< LOD**	**1.92** (<LOD-2.95)	**6.64** (5.22-9.25)	**12.3** (9.25-19.4)	1091
	07-08	*	**< LOD**	**2.38** (1.81-3.27)	**7.45** (6.11-9.43)	**11.4** (9.22-15.8)	1178
60+ years	01-02	*	**1.00** (<LOD-1.88)	**3.29** (2.74-4.14)	**6.52** (4.92-8.21)	**9.82** (7.05-14.4)	498
	03-04	*	**2.39** (<LOD-3.35)	**5.65** (4.36-7.50)	**9.44** (8.38-10.5)	**13.3** (10.5-18.2)	522
	05-06	*	**< LOD**	**3.75** (2.30-5.14)	**9.88** (7.72-12.6)	**19.3** (12.6-26.6)	475
	07-08	*	**< LOD**	**5.28** (4.03-6.23)	**11.8** (9.36-14.4)	**17.7** (13.2-21.9)	637
Gender							
Males	99-00	**.855** (.566-1.29)	**.820** (.510-1.34)	**2.61** (1.76-4.03)	**7.69** (4.41-12.1)	**12.2** (6.94-23.8)	952
	01-02	*	**< LOD**	**2.20** (1.86-2.64)	**4.49** (3.92-5.31)	**7.50** (5.79-9.10)	1420
	03-04	*	**< LOD**	**4.20** (3.28-5.30)	**8.35** (7.10-10.1)	**12.0** (9.33-14.7)	1197
	05-06	*	**< LOD**	**1.16** (<LOD-2.25)	**6.24** (4.58-7.63)	**10.0** (7.60-17.8)	1246
	07-08	*	**< LOD**	**2.17** (<LOD-3.23)	**8.14** (6.35-10.7)	**13.6** (9.79-18.6)	1294
Females	99-00	**.996** (.620-1.60)	**.960** (.540-1.62)	**2.81** (1.45-5.85)	**8.00** (4.00-13.0)	**12.1** (6.67-19.6)	997
	01-02	*	**.778** (<LOD-1.31)	**2.81** (2.44-3.33)	**6.49** (4.95-7.76)	**9.61** (7.12-13.6)	1597
	03-04	*	**.636** (<LOD-2.84)	**5.06** (4.03-6.86)	**9.85** (8.25-11.8)	**13.8** (10.9-20.3)	1253
	05-06	*	**< LOD**	**3.50** (2.43-4.11)	**9.36** (6.91-11.8)	**16.5** (12.4-22.3)	1388
	07-08	*	**< LOD**	**4.09** (2.80-4.91)	**9.46** (8.43-11.5)	**16.5** (13.1-20.9)	1295

< LOD means less than the limit of detection for the urine levels not corrected for creatinine.
* Not calculated: proportion of results below limit of detection was too high to provide a valid result.

Biomonitoring Summary: **http://www.cdc.gov/biomonitoring/OP-DPM_BiomonitoringSummary.html**

Urinary Diethylphosphate (DEP) (creatinine corrected)

Metabolite of Several Organophosphorus Insecticides

Geometric mean and selected percentiles of urine concentrations (in µg/g of creatinine) for the U.S. population from the National Health and Nutrition Examination Survey.

	Survey years	Geometric mean (95% conf. interval)	Selected percentiles (95% confidence interval) 50th	75th	90th	95th	Sample size
Race/ethnicity							
Mexican Americans	99-00	**1.09** (.633-1.89)	**1.05** (.650-1.98)	**3.78** (2.11-6.46)	**9.84** (5.66-15.7)	**15.7** (8.61-29.0)	672
	01-02	*	**.891** (<LOD-1.41)	**2.39** (1.77-3.14)	**5.17** (4.10-6.53)	**8.04** (6.40-10.9)	763
	03-04	*	**1.07** (<LOD-2.79)	**4.94** (3.30-7.01)	**9.94** (7.89-13.3)	**16.6** (10.1-22.4)	580
	05-06	*	**< LOD**	**< LOD**	**6.26** (3.71-10.1)	**14.9** (5.75-37.3)	695
	07-08	*	**< LOD**	**3.19** (<LOD-4.27)	**8.56** (6.00-10.3)	**13.3** (9.77-15.9)	500
Non-Hispanic blacks	99-00	**1.07** (.773-1.47)	**1.18** (.830-1.54)	**2.61** (1.89-3.47)	**5.98** (3.94-9.56)	**11.9** (5.98-22.2)	509
	01-02	*	**.797** (<LOD-1.62)	**2.98** (2.57-3.61)	**6.91** (5.17-8.69)	**9.58** (7.82-12.1)	755
	03-04	*	**.741** (<LOD-2.21)	**4.25** (3.46-5.36)	**8.30** (6.57-10.7)	**11.7** (10.5-13.2)	627
	05-06	*	**< LOD**	**1.92** (<LOD-3.58)	**7.08** (5.16-9.35)	**11.4** (8.91-12.3)	722
	07-08	*	**< LOD**	**3.33** (2.33-4.15)	**8.72** (7.27-10.2)	**16.7** (11.5-19.4)	573
Non-Hispanic whites	99-00	**.932** (.549-1.58)	**.900** (.430-1.68)	**2.87** (1.51-5.88)	**8.57** (4.40-14.4)	**13.0** (8.21-23.8)	595
	01-02	*	**< LOD**	**2.52** (2.08-2.95)	**5.26** (4.57-5.93)	**8.26** (6.61-10.8)	1253
	03-04	*	**< LOD**	**4.65** (3.73-5.87)	**9.12** (7.79-11.2)	**12.7** (10.1-15.7)	1054
	05-06	*	**< LOD**	**2.50** (1.74-3.30)	**7.72** (6.24-9.25)	**13.9** (10.0-19.5)	1007
	07-08	*	**< LOD**	**3.10** (2.19-4.18)	**8.44** (6.84-9.74)	**13.6** (10.9-17.5)	1086

< LOD means less than the limit of detection for the urine levels not corrected for creatinine.
* Not calculated: proportion of results below limit of detection was too high to provide a valid result.

Biomonitoring Summary: http://www.cdc.gov/biomonitoring/OP-DPM_BiomonitoringSummary.html

Urinary Dimethylphosphate (DMP)

Metabolite of Several Organophosphorus Insecticides

Geometric mean and selected percentiles of urine concentrations (in µg/L) for the U.S. population from the National Health and Nutrition Examination Survey.

	Survey years	Geometric mean (95% conf. interval)	Selected percentiles (95% confidence interval) 50th	75th	90th	95th	Sample size
Total	99-00	*	**.740** (<LOD-1.40)	**2.90** (2.10-4.00)	**7.90** (6.20-8.90)	**14.0** (10.0-19.0)	1949
	01-02	*	**< LOD**	**3.32** (2.90-3.74)	**8.40** (7.11-9.23)	**13.4** (11.4-14.9)	3017
	03-04	*	**< LOD**	**4.15** (3.39-4.94)	**9.54** (7.46-11.9)	**15.1** (12.8-18.2)	2494
	05-06	*	**< LOD**	**5.21** (4.15-6.56)	**17.2** (13.8-20.5)	**29.6** (24.3-35.2)	2635
	07-08	*	**< LOD**	**7.91** (6.64-9.07)	**20.8** (18.2-24.4)	**35.6** (30.3-39.4)	2593
Age group							
6-11 years	99-00	**1.58** (1.15-2.18)	**1.10** (.580-2.20)	**4.40** (2.80-6.80)	**10.0** (7.80-21.0)	**22.0** (15.0-33.0)	471
	01-02	*	**.970** (<LOD-2.00)	**5.04** (3.31-7.66)	**12.2** (9.10-15.1)	**18.3** (12.6-41.7)	576
	03-04	*	**< LOD**	**4.53** (3.34-5.96)	**11.0** (5.62-17.9)	**16.2** (7.46-28.3)	310
	05-06	*	**< LOD**	**9.92** (3.24-20.0)	**27.1** (16.5-46.6)	**46.6** (27.1-63.0)	350
	07-08	*	**< LOD**	**12.5** (7.22-16.4)	**29.7** (20.3-39.1)	**43.3** (29.7-62.7)	385
12-19 years	99-00	*	**.670** (<LOD-1.80)	**3.80** (2.50-4.90)	**9.90** (6.20-18.0)	**22.0** (13.0-29.0)	664
	01-02	*	**.670** (<LOD-1.31)	**4.27** (3.41-5.35)	**9.27** (7.80-12.3)	**14.7** (11.8-21.3)	822
	03-04	*	**1.20** (<LOD-2.27)	**4.61** (3.47-6.72)	**10.9** (7.90-15.0)	**20.9** (12.5-26.8)	717
	05-06	*	**< LOD**	**7.32** (1.35-12.4)	**22.6** (16.1-36.1)	**44.0** (27.6-54.0)	718
	07-08	*	**< LOD**	**10.0** (7.22-14.5)	**25.5** (16.8-35.6)	**36.2** (25.5-49.6)	391
20-59 years	99-00	*	**.680** (<LOD-1.30)	**2.70** (1.80-3.70)	**6.60** (5.70-8.10)	**9.70** (8.80-14.0)	814
	01-02	*	**< LOD**	**2.95** (2.35-3.41)	**6.95** (5.80-8.82)	**11.5** (9.66-13.7)	1121
	03-04	*	**< LOD**	**3.75** (2.84-4.88)	**8.52** (6.86-10.7)	**14.1** (10.8-17.5)	938
	05-06	*	**< LOD**	**4.09** (2.45-6.03)	**13.8** (9.82-19.8)	**24.6** (19.8-32.8)	1092
	07-08	*	**< LOD**	**6.07** (4.26-7.69)	**18.0** (13.6-22.6)	**30.3** (23.2-37.9)	1180
60 years and older	01-02	*	**.700** (<LOD-1.50)	**3.68** (2.91-4.56)	**8.93** (6.79-10.7)	**14.4** (9.60-19.1)	498
	03-04	*	**2.04** (<LOD-2.63)	**4.60** (3.83-5.15)	**11.3** (7.68-13.4)	**16.3** (12.4-19.4)	529
	05-06	*	**< LOD**	**6.75** (4.75-9.32)	**16.8** (11.7-22.1)	**26.3** (18.9-38.8)	475
	07-08	*	**< LOD**	**10.8** (8.64-13.0)	**24.9** (19.2-32.4)	**40.5** (32.5-47.4)	637
Gender							
Males	99-00	*	**.670** (<LOD-1.30)	**2.90** (2.20-4.00)	**7.90** (6.00-9.30)	**18.0** (10.0-24.0)	952
	01-02	*	**< LOD**	**3.49** (2.90-4.15)	**8.40** (6.95-10.3)	**12.8** (11.3-14.7)	1420
	03-04	*	**< LOD**	**4.03** (3.30-4.91)	**8.49** (6.82-11.9)	**15.1** (11.3-20.0)	1221
	05-06	*	**< LOD**	**4.10** (2.37-6.40)	**15.9** (12.4-20.9)	**28.1** (22.3-36.7)	1246
	07-08	*	**< LOD**	**7.75** (6.50-9.63)	**20.8** (17.6-26.6)	**36.1** (27.0-47.4)	1295
Females	99-00	*	**.790** (<LOD-1.60)	**2.90** (2.00-4.20)	**7.80** (5.70-9.00)	**11.0** (9.00-18.0)	997
	01-02	*	**< LOD**	**3.06** (2.63-3.63)	**8.38** (6.56-9.63)	**13.7** (10.9-17.6)	1597
	03-04	*	**1.08** (<LOD-1.92)	**4.29** (3.31-5.28)	**10.4** (7.64-12.9)	**14.8** (13.3-18.0)	1273
	05-06	*	**< LOD**	**6.40** (5.04-7.21)	**18.7** (14.6-20.8)	**30.9** (24.6-41.1)	1389
	07-08	*	**< LOD**	**7.91** (6.18-9.36)	**20.6** (16.5-25.5)	**34.2** (26.6-41.5)	1298

Limit of detection (LOD, see Data Analysis section) for Survey years 99-00, 01-02, 03-04, 05-06, and 07-08 are 0.58, 0.5, 0.5, 0.47,and 0.47 respectively.
< LOD means less than the limit of detection, which may vary for some chemicals by year and by individual sample.
* Not calculated: proportion of results below limit of detection was too high to provide a valid result.

Biomonitoring Summary: http://www.cdc.gov/biomonitoring/OP-DPM_BiomonitoringSummary.html

Urinary Dimethylphosphate (DMP)

Metabolite of Several Organophosphorus Insecticides

Geometric mean and selected percentiles of urine concentrations (in µg/L) for the U.S. population from the National Health and Nutrition Examination Survey.

	Survey years	Geometric mean (95% conf. interval)	Selected percentiles (95% confidence interval) 50th	75th	90th	95th	Sample size
Race/ethnicity							
Mexican Americans	99-00	*	**1.10** (<LOD-1.80)	**3.80** (2.70-5.30)	**9.60** (6.00-16.0)	**16.0** (8.90-31.0)	672
	01-02	*	**.710** (<LOD-1.52)	**3.34** (2.45-4.42)	**9.13** (7.29-10.7)	**14.4** (11.0-20.6)	763
	03-04	*	**< LOD**	**4.37** (3.12-6.86)	**10.3** (7.85-17.4)	**22.3** (9.61-31.6)	610
	05-06	*	**< LOD**	**2.65** (<LOD-6.47)	**18.9** (13.3-27.9)	**39.0** (30.0-47.2)	695
	07-08	*	**< LOD**	**6.85** (3.69-8.82)	**20.9** (14.1-26.4)	**35.6** (26.3-49.4)	501
Non-Hispanic blacks	99-00	**1.42** (1.16-1.74)	**1.00** (.650-1.50)	**3.60** (2.50-5.50)	**8.90** (6.90-15.0)	**21.0** (14.0-24.0)	509
	01-02	*	**.890** (<LOD-2.20)	**4.71** (3.68-6.62)	**10.7** (8.54-13.9)	**19.4** (14.7-22.8)	755
	03-04	*	**< LOD**	**5.28** (4.18-6.37)	**10.8** (8.33-12.5)	**15.8** (12.2-23.4)	631
	05-06	*	**< LOD**	**9.16** (2.74-15.1)	**22.7** (18.2-33.7)	**42.5** (27.3-61.9)	723
	07-08	*	**< LOD**	**8.67** (6.43-11.1)	**23.7** (18.3-28.6)	**38.0** (27.7-48.1)	574
Non-Hispanic whites	99-00	*	**< LOD**	**2.90** (1.80-4.20)	**7.90** (5.90-9.00)	**11.0** (9.00-18.0)	595
	01-02	*	**< LOD**	**3.13** (2.49-3.58)	**7.79** (6.67-9.22)	**12.5** (10.3-14.7)	1253
	03-04	*	**< LOD**	**3.95** (3.23-4.91)	**8.83** (6.56-12.5)	**14.8** (11.9-20.0)	1061
	05-06	*	**< LOD**	**5.04** (3.60-6.75)	**15.3** (11.8-20.5)	**27.8** (20.8-36.7)	1007
	07-08	*	**< LOD**	**7.46** (6.27-9.03)	**20.7** (17.5-25.5)	**35.6** (28.7-39.1)	1088

Limit of detection (LOD, see Data Analysis section) for Survey years 99-00, 01-02, 03-04, 05-06, and 07-08 are 0.58, 0.5, 0.5, 0.47,and 0.47 respectively.
< LOD means less than the limit of detection, which may vary for some chemicals by year and by individual sample.
* Not calculated: proportion of results below limit of detection was too high to provide a valid result.

Biomonitoring Summary: **http://www.cdc.gov/biomonitoring/OP-DPM_BiomonitoringSummary.html**

Urinary Dimethylphosphate (DMP) (creatinine corrected)

Metabolite of Several Organophosphorus Insecticides

Geometric mean and selected percentiles of urine concentrations (in µg/g of creatinine) for the U.S. population from the National Health and Nutrition Examination Survey.

	Survey years	Geometric mean (95% conf. interval)	Selected percentiles (95% confidence interval) 50th	75th	90th	95th	Sample size
Total	99-00	*	**.810** (<LOD-1.15)	**2.93** (2.11-3.92)	**8.50** (6.96-10.4)	**16.1** (13.3-17.6)	1949
	01-02	*	**< LOD**	**3.16** (2.69-3.59)	**8.00** (7.12-9.28)	**12.9** (11.5-15.0)	3016
	03-04	*	**< LOD**	**4.05** (3.50-5.15)	**9.96** (8.78-11.2)	**15.0** (13.0-18.1)	2491
	05-06	*	**< LOD**	**5.97** (4.75-7.43)	**18.0** (15.9-20.5)	**27.9** (24.0-32.7)	2634
	07-08	*	**< LOD**	**9.10** (8.08-10.2)	**20.0** (18.0-24.2)	**33.6** (28.8-40.2)	2591
Age group							
6-11 years	99-00	**1.71** (1.29-2.27)	**1.38** (.890-2.38)	**4.48** (2.88-7.89)	**16.7** (8.21-21.2)	**22.1** (19.2-30.1)	471
	01-02	*	**1.93** (<LOD-2.97)	**5.99** (4.32-8.28)	**12.9** (9.34-18.5)	**20.6** (13.3-34.8)	576
	03-04	*	**< LOD**	**6.87** (3.80-9.00)	**13.9** (9.68-19.3)	**19.6** (13.9-25.9)	310
	05-06	*	**< LOD**	**12.4** (6.71-21.9)	**41.2** (23.4-62.2)	**71.5** (37.9-107)	350
	07-08	*	**< LOD**	**15.6** (10.8-21.6)	**35.3** (27.6-39.2)	**54.3** (36.5-67.1)	385
12-19 years	99-00	*	**.590** (<LOD-.950)	**2.28** (1.70-2.80)	**7.78** (4.16-14.4)	**16.0** (8.70-35.3)	664
	01-02	*	**.913** (<LOD-1.27)	**3.29** (2.76-3.78)	**6.29** (5.51-7.30)	**9.83** (7.94-14.2)	821
	03-04	*	**1.00** (<LOD-1.68)	**4.16** (3.37-5.07)	**8.81** (7.78-10.2)	**12.7** (10.3-17.7)	715
	05-06	*	**< LOD**	**5.89** (2.00-10.1)	**18.1** (13.9-24.0)	**28.9** (19.9-37.9)	718
	07-08	*	**< LOD**	**9.10** (5.62-10.9)	**19.9** (15.5-22.5)	**26.1** (19.8-27.2)	389
20-59 years	99-00	*	**.760** (<LOD-1.12)	**2.88** (1.89-3.99)	**8.11** (5.89-10.3)	**14.6** (10.4-16.8)	814
	01-02	*	**< LOD**	**2.55** (2.05-3.03)	**6.92** (5.85-8.00)	**11.5** (9.38-13.6)	1121
	03-04	*	**< LOD**	**3.77** (2.72-4.55)	**8.78** (6.68-10.5)	**13.5** (11.2-15.6)	937
	05-06	*	**< LOD**	**4.71** (3.22-6.50)	**16.3** (13.3-18.7)	**24.0** (19.9-27.6)	1091
	07-08	*	**< LOD**	**7.32** (6.02-8.62)	**17.2** (13.0-20.0)	**28.2** (19.3-40.7)	1180
60+ years	01-02	*	**1.46** (<LOD-2.00)	**4.31** (3.44-5.39)	**10.6** (7.92-12.0)	**14.3** (11.8-18.5)	498
	03-04	*	**2.19** (<LOD-2.69)	**5.88** (4.65-7.51)	**12.3** (9.79-14.8)	**17.4** (13.0-24.2)	529
	05-06	*	**< LOD**	**9.16** (6.36-11.1)	**19.7** (13.7-26.4)	**30.5** (22.0-46.2)	475
	07-08	*	**< LOD**	**12.9** (10.5-15.3)	**29.9** (20.9-38.5)	**45.5** (30.5-80.3)	637
Gender							
Males	99-00	*	**.620** (<LOD-.940)	**2.38** (1.86-3.18)	**7.58** (4.64-11.6)	**15.2** (9.74-19.5)	952
	01-02	*	**< LOD**	**2.77** (2.32-3.19)	**7.06** (5.44-8.80)	**11.2** (9.70-12.7)	1420
	03-04	*	**< LOD**	**3.27** (2.55-3.94)	**8.58** (6.79-10.4)	**12.5** (10.5-15.4)	1220
	05-06	*	**< LOD**	**4.15** (2.16-5.95)	**14.7** (11.1-18.0)	**21.9** (18.9-26.9)	1246
	07-08	*	**< LOD**	**7.08** (5.54-8.54)	**17.5** (15.1-20.4)	**28.0** (21.2-35.4)	1294
Females	99-00	*	**1.00** (<LOD-1.71)	**3.63** (2.30-5.19)	**9.12** (7.82-11.7)	**16.4** (11.7-19.7)	997
	01-02	*	**< LOD**	**3.50** (2.86-4.49)	**9.09** (7.83-10.8)	**15.0** (12.5-17.8)	1596
	03-04	*	**1.67** (<LOD-2.25)	**5.28** (4.05-6.49)	**11.2** (9.65-13.8)	**18.1** (14.8-20.6)	1271
	05-06	*	**< LOD**	**8.22** (6.99-9.20)	**22.0** (17.7-24.9)	**37.9** (27.0-47.2)	1388
	07-08	*	**< LOD**	**10.7** (9.10-12.4)	**24.3** (19.5-28.2)	**38.6** (27.2-54.6)	1297

< LOD means less than the limit of detection for the urine levels not corrected for creatinine.
* Not calculated: proportion of results below limit of detection was too high to provide a valid result.

Biomonitoring Summary: **http://www.cdc.gov/biomonitoring/OP-DPM_BiomonitoringSummary.html**

Urinary Dimethylphosphate (DMP) (creatinine corrected)

Metabolite of Several Organophosphorus Insecticides

Geometric mean and selected percentiles of urine concentrations (in µg/g of creatinine) for the U.S. population from the National Health and Nutrition Examination Survey.

	Survey years	Geometric mean (95% conf. interval)	Selected percentiles (95% confidence interval) 50th	75th	90th	95th	Sample size
Race/ethnicity							
Mexican Americans	99-00	*	**1.06** (<LOD-1.55)	**3.89** (2.54-5.45)	**9.41** (7.69-11.5)	**16.7** (11.7-23.6)	672
	01-02	*	**.947** (<LOD-1.35)	**3.18** (2.54-3.80)	**8.44** (6.24-10.9)	**14.3** (11.4-16.2)	763
	03-04	*	**< LOD**	**4.16** (2.57-6.30)	**12.3** (7.50-16.5)	**18.8** (15.3-21.5)	609
	05-06	*	**< LOD**	**4.27** (<LOD-8.50)	**19.1** (14.9-22.7)	**29.9** (23.8-39.0)	695
	07-08	*	**< LOD**	**7.47** (5.57-9.46)	**19.9** (16.8-24.7)	**29.8** (24.7-33.4)	500
Non-Hispanic blacks	99-00	**.973** (.780-1.21)	**.690** (.530-1.06)	**2.67** (1.89-3.77)	**7.07** (5.09-11.4)	**14.0** (10.6-19.1)	509
	01-02	*	**.851** (<LOD-1.34)	**3.36** (2.68-4.22)	**7.63** (6.35-9.18)	**13.2** (10.1-14.9)	754
	03-04	*	**< LOD**	**3.70** (2.84-4.48)	**7.52** (6.59-8.89)	**12.7** (8.89-19.3)	630
	05-06	*	**< LOD**	**5.89** (2.56-8.89)	**18.7** (13.1-26.4)	**29.9** (24.0-38.7)	722
	07-08	*	**< LOD**	**6.75** (4.80-8.65)	**20.1** (15.5-25.1)	**30.7** (24.2-37.7)	573
Non-Hispanic whites	99-00	*	**< LOD**	**3.15** (1.97-4.32)	**8.73** (5.89-13.3)	**15.8** (10.0-21.2)	595
	01-02	*	**< LOD**	**3.12** (2.50-3.76)	**8.30** (6.91-10.0)	**13.6** (11.2-16.9)	1253
	03-04	*	**< LOD**	**4.05** (3.49-5.64)	**10.2** (8.83-11.8)	**14.8** (12.1-19.2)	1060
	05-06	*	**< LOD**	**5.97** (4.53-8.08)	**17.7** (15.2-20.6)	**26.3** (23.3-29.3)	1007
	07-08	*	**< LOD**	**9.33** (7.92-10.8)	**20.0** (17.5-24.2)	**35.1** (27.2-43.9)	1088

< LOD means less than the limit of detection for the urine levels not corrected for creatinine.
* Not calculated: proportion of results below limit of detection was too high to provide a valid result.

Biomonitoring Summary: http://www.cdc.gov/biomonitoring/OP-DPM_BiomonitoringSummary.html

Urinary Diethylthiophosphate (DETP)

Metabolite of Several Organophosphorus Insecticides

Geometric mean and selected percentiles of urine concentrations (in µg/L) for the U.S. population from the National Health and Nutrition Examination Survey.

	Survey years	Geometric mean (95% conf. interval)	Selected percentiles (95% confidence interval) 50th	75th	90th	95th	Sample size
Total	99-00	*	**.500** (<LOD-.690)	**.760** (.620-1.10)	**1.40** (1.10-1.80)	**2.20** (1.70-2.80)	1949
	01-02	**.484** (.381-.615)	**.630** (.450-.930)	**1.53** (1.33-1.80)	**2.57** (2.28-3.01)	**3.94** (3.26-4.94)	3016
	03-04	*	**< LOD**	**.830** (.710-.960)	**1.83** (1.51-2.30)	**3.00** (2.39-3.78)	2422
	05-06	*	**< LOD**	**.620** (<LOD-.710)	**1.43** (1.17-1.84)	**2.55** (1.94-3.37)	2634
	07-08	*	**< LOD**	**1.00** (.880-1.16)	**2.18** (1.75-2.75)	**4.35** (2.95-6.01)	2590
Age group							
6-11 years	99-00	*	**.600** (<LOD-.810)	**.910** (.720-1.30)	**1.70** (1.20-3.20)	**3.20** (1.70-7.30)	471
	01-02	**.453** (.350-.585)	**.550** (.350-.850)	**1.58** (1.33-2.04)	**2.75** (2.22-3.38)	**4.08** (2.95-5.16)	575
	03-04	*	**< LOD**	**.820** (.580-.970)	**1.45** (1.05-2.16)	**2.18** (1.45-4.13)	296
	05-06	*	**< LOD**	**.700** (<LOD-.950)	**1.38** (1.03-2.05)	**2.15** (1.37-4.06)	350
	07-08	*	**< LOD**	**1.18** (.990-1.42)	**2.93** (2.06-5.58)	**6.44** (2.87-13.2)	385
12-19 years	99-00	*	**.210** (<LOD-.710)	**.780** (.600-1.20)	**1.50** (1.20-2.30)	**2.30** (1.60-4.30)	664
	01-02	**.505** (.388-.657)	**.690** (.440-.960)	**1.61** (1.32-1.94)	**2.57** (2.23-3.39)	**4.08** (2.73-5.86)	822
	03-04	*	**.260** (<LOD-.400)	**.930** (.750-1.13)	**2.14** (1.75-2.89)	**3.27** (2.69-4.83)	690
	05-06	*	**< LOD**	**.700** (<LOD-.920)	**1.42** (1.07-1.94)	**2.46** (1.47-4.42)	717
	07-08	*	**< LOD**	**1.04** (.880-1.45)	**2.20** (1.58-3.11)	**4.02** (2.16-7.07)	390
20-59 years	99-00	*	**.490** (<LOD-.670)	**.740** (.600-.930)	**1.30** (.990-1.80)	**2.00** (1.50-2.60)	814
	01-02	**.449** (.340-.592)	**.540** (.380-.880)	**1.45** (1.19-1.79)	**2.46** (2.11-3.17)	**3.83** (2.96-5.34)	1122
	03-04	*	**< LOD**	**.800** (.650-.960)	**1.76** (1.37-2.32)	**2.65** (2.31-3.89)	919
	05-06	*	**< LOD**	**.600** (<LOD-.680)	**1.42** (1.12-1.77)	**2.45** (1.82-3.31)	1092
	07-08	*	**< LOD**	**.930** (.780-1.22)	**2.16** (1.68-2.76)	**4.20** (2.76-5.92)	1179
60 years and older	01-02	**.662** (.571-.768)	**1.00** (.740-1.14)	**1.77** (1.50-2.10)	**2.81** (2.44-3.46)	**4.45** (2.93-8.31)	497
	03-04	*	**.310** (<LOD-.520)	**.890** (.740-1.05)	**1.99** (1.52-2.67)	**3.72** (2.19-6.81)	517
	05-06	*	**< LOD**	**.660** (<LOD-.840)	**1.62** (1.25-2.31)	**3.20** (2.04-4.18)	475
	07-08	*	**< LOD**	**.980** (.860-1.16)	**2.04** (1.60-3.01)	**4.25** (2.76-5.40)	636
Gender							
Males	99-00	*	**.510** (<LOD-.700)	**.790** (.680-1.10)	**1.50** (1.20-2.20)	**2.70** (1.90-4.10)	952
	01-02	**.495** (.393-.623)	**.660** (.470-.900)	**1.53** (1.37-1.82)	**2.68** (2.28-3.34)	**3.96** (3.07-5.85)	1419
	03-04	*	**.250** (<LOD-.380)	**.890** (.780-1.04)	**2.20** (1.65-2.41)	**3.15** (2.42-4.29)	1174
	05-06	*	**< LOD**	**.590** (<LOD-.720)	**1.48** (1.15-1.97)	**2.61** (1.89-3.58)	1246
	07-08	*	**< LOD**	**1.03** (.890-1.25)	**2.49** (1.82-3.29)	**4.79** (3.44-5.92)	1293
Females	99-00	*	**< LOD**	**.720** (.570-1.00)	**1.30** (.910-1.60)	**1.70** (1.30-3.20)	997
	01-02	**.474** (.360-.624)	**.620** (.410-.960)	**1.51** (1.22-1.86)	**2.49** (2.15-3.04)	**3.94** (2.82-5.27)	1597
	03-04	*	**< LOD**	**.770** (.600-.930)	**1.59** (1.24-2.08)	**2.67** (2.07-3.81)	1248
	05-06	*	**< LOD**	**.630** (.580-.710)	**1.43** (1.14-1.77)	**2.42** (1.78-3.52)	1388
	07-08	*	**< LOD**	**.960** (.840-1.14)	**2.00** (1.60-2.50)	**4.01** (2.41-6.59)	1297

Limit of detection (LOD, see Data Analysis section) for Survey years 99-00, 01-02, 03-04, 05-06, and 07-08 are 0.09, 0.1, 0.2, 0.56,and 0.56 respectively.
< LOD means less than the limit of detection, which may vary for some chemicals by year and by individual sample.
* Not calculated: proportion of results below limit of detection was too high to provide a valid result.

Biomonitoring Summary: http://www.cdc.gov/biomonitoring/OP-DPM_BiomonitoringSummary.html

Urinary Diethylthiophosphate (DETP)

Metabolite of Several Organophosphorus Insecticides

Geometric mean and selected percentiles of urine concentrations (in µg/L) for the U.S. population from the National Health and Nutrition Examination Survey.

	Survey years	Geometric mean (95% conf. interval)	Selected percentiles (95% confidence interval) 50th	75th	90th	95th	Sample size
Race/ethnicity							
Mexican Americans	99-00	*	**.570** (<LOD-.780)	**.840** (.740-.980)	**1.50** (1.20-1.90)	**2.20** (2.00-2.90)	672
	01-02	**.549** (.403-.749)	**.710** (.470-.960)	**1.40** (1.04-1.97)	**2.63** (2.06-3.14)	**3.98** (2.75-5.21)	763
	03-04	*	**.250** (<LOD-.380)	**.970** (.720-1.52)	**2.35** (1.69-3.83)	**4.19** (2.38-8.80)	584
	05-06	*	**< LOD**	**.700** (<LOD-.900)	**1.42** (.980-2.48)	**2.72** (1.42-4.48)	695
	07-08	*	**< LOD**	**.970** (.830-1.15)	**1.98** (1.60-2.65)	**3.46** (2.78-4.46)	500
Non-Hispanic blacks	99-00	**.343** (.201-.584)	**.570** (<LOD-.750)	**.820** (.690-1.20)	**1.80** (1.30-3.20)	**3.60** (2.00-4.80)	509
	01-02	**.755** (.589-.966)	**1.17** (.740-1.46)	**1.85** (1.73-1.99)	**3.54** (2.95-3.87)	**5.27** (3.89-6.74)	755
	03-04	**.466** (.384-.564)	**.430** (.210-.710)	**1.08** (.930-1.29)	**2.32** (1.74-2.70)	**3.25** (2.55-4.83)	605
	05-06	*	**< LOD**	**.850** (.640-1.18)	**1.74** (1.43-2.27)	**2.96** (2.09-4.20)	722
	07-08	*	**< LOD**	**1.23** (.890-1.40)	**2.85** (2.05-4.12)	**4.81** (4.00-6.59)	574
Non-Hispanic whites	99-00	*	**.160** (<LOD-.700)	**.740** (.580-1.10)	**1.30** (.960-1.90)	**1.90** (1.50-2.80)	595
	01-02	**.464** (.344-.626)	**.600** (.410-.950)	**1.53** (1.27-1.83)	**2.46** (2.15-3.17)	**3.75** (2.82-5.54)	1252
	03-04	*	**< LOD**	**.750** (.610-.890)	**1.75** (1.33-2.20)	**2.68** (2.20-3.78)	1044
	05-06	*	**< LOD**	**.600** (<LOD-.690)	**1.42** (1.04-1.99)	**2.56** (1.82-3.70)	1007
	07-08	*	**< LOD**	**.910** (.820-1.04)	**1.80** (1.56-2.46)	**3.52** (2.20-5.61)	1087

Limit of detection (LOD, see Data Analysis section) for Survey years 99-00, 01-02, 03-04, 05-06, and 07-08 are 0.09, 0.1, 0.2, 0.56,and 0.56 respectively.
< LOD means less than the limit of detection, which may vary for some chemicals by year and by individual sample.
* Not calculated: proportion of results below limit of detection was too high to provide a valid result.

Biomonitoring Summary: **http://www.cdc.gov/biomonitoring/OP-DPM_BiomonitoringSummary.html**

Urinary Diethylthiophosphate (DETP) (creatinine corrected)

Metabolite of Several Organophosphorus Insecticides

Geometric mean and selected percentiles of urine concentrations (in µg/g of creatinine) for the U.S. population from the National Health and Nutrition Examination Survey.

	Survey years	Geometric mean (95% conf. interval)	Selected percentiles (95% confidence interval) 50th	75th	90th	95th	Sample size
Total	99-00	*	**.250** (<LOD-.480)	**.710** (.460-1.07)	**1.72** (1.17-2.32)	**2.64** (2.08-3.06)	1949
	01-02	**.496** (.388-.636)	**.569** (.403-.789)	**1.42** (1.16-1.79)	**3.11** (2.58-3.82)	**4.88** (3.78-6.65)	3015
	03-04	*	**< LOD**	**.740** (.667-.839)	**1.59** (1.32-2.05)	**2.87** (2.22-3.77)	2420
	05-06	*	**< LOD**	**.956** (<LOD-1.09)	**1.88** (1.67-2.21)	**2.89** (2.35-3.37)	2633
	07-08	*	**< LOD**	**1.24** (1.15-1.37)	**2.46** (1.98-3.11)	**3.92** (3.05-5.12)	2588
Age group							
6-11 years	99-00	*	**.470** (<LOD-.870)	**1.08** (.800-1.32)	**1.75** (1.44-2.36)	**2.45** (2.04-5.32)	471
	01-02	**.591** (.471-.742)	**.636** (.397-1.05)	**1.63** (1.31-1.94)	**3.22** (2.72-4.16)	**5.70** (3.84-6.80)	575
	03-04	*	**< LOD**	**.869** (.592-1.09)	**1.57** (1.08-2.67)	**2.67** (1.57-4.05)	296
	05-06	*	**< LOD**	**1.23** (<LOD-1.33)	**1.95** (1.60-2.86)	**3.97** (1.95-5.88)	350
	07-08	*	**< LOD**	**1.89** (1.32-2.09)	**3.74** (2.46-5.55)	**6.54** (3.49-16.0)	385
12-19 years	99-00	*	**.180** (<LOD-.400)	**.510** (.320-.820)	**1.07** (.720-1.61)	**1.97** (1.07-3.92)	664
	01-02	**.393** (.300-.515)	**.534** (.313-.735)	**1.23** (.978-1.53)	**2.19** (1.61-3.07)	**3.14** (2.25-3.97)	821
	03-04	*	**.300** (<LOD-.354)	**.645** (.559-.734)	**1.49** (1.16-1.60)	**1.97** (1.57-2.43)	689
	05-06	*	**< LOD**	**.710** (<LOD-.889)	**1.35** (1.00-2.03)	**2.21** (1.35-3.33)	717
	07-08	*	**< LOD**	**.902** (.692-1.15)	**1.78** (1.15-3.32)	**3.32** (1.68-5.48)	388
20-59 years	99-00	*	**.250** (<LOD-.460)	**.680** (.440-1.08)	**1.79** (1.08-2.39)	**2.75** (2.02-3.22)	814
	01-02	**.447** (.335-.597)	**.494** (.316-.742)	**1.32** (.986-1.71)	**2.87** (2.08-3.95)	**4.69** (3.20-7.81)	1122
	03-04	*	**< LOD**	**.700** (.550-.875)	**1.47** (1.11-2.23)	**2.82** (2.02-3.81)	918
	05-06	*	**< LOD**	**.913** (<LOD-1.13)	**1.84** (1.65-2.11)	**2.86** (2.25-3.33)	1091
	07-08	*	**< LOD**	**1.24** (1.09-1.40)	**2.27** (1.79-3.07)	**3.51** (2.59-4.78)	1179
60+ years	01-02	**.821** (.708-.952)	**.971** (.849-1.10)	**2.25** (1.81-2.66)	**3.97** (3.33-5.06)	**5.51** (4.79-8.07)	497
	03-04	*	**.491** (<LOD-.560)	**.933** (.814-1.17)	**2.14** (1.46-3.00)	**3.92** (2.28-8.15)	517
	05-06	*	**< LOD**	**1.11** (<LOD-1.38)	**2.50** (1.67-3.11)	**3.80** (2.86-8.71)	475
	07-08	*	**< LOD**	**1.32** (1.20-1.58)	**2.91** (2.25-3.38)	**4.49** (3.05-9.80)	636
Gender							
Males	99-00	*	**.270** (<LOD-.470)	**.670** (.520-.840)	**1.34** (1.08-2.17)	**2.67** (1.67-3.23)	952
	01-02	**.410** (.319-.526)	**.517** (.342-.721)	**1.22** (1.02-1.41)	**2.46** (1.71-3.18)	**3.67** (2.70-4.71)	1419
	03-04	*	**.276** (<LOD-.326)	**.667** (.560-.804)	**1.49** (1.15-1.91)	**2.87** (1.74-3.72)	1173
	05-06	*	**< LOD**	**.773** (<LOD-.907)	**1.42** (1.21-2.00)	**2.35** (1.90-3.27)	1246
	07-08	*	**< LOD**	**1.02** (.943-1.09)	**1.94** (1.60-2.39)	**3.22** (2.50-4.42)	1292
Females	99-00	*	**< LOD**	**.790** (.380-1.50)	**1.89** (1.07-2.52)	**2.52** (1.89-3.75)	997
	01-02	**.597** (.457-.779)	**.647** (.423-.961)	**1.77** (1.34-2.50)	**3.82** (2.93-5.14)	**6.57** (4.34-9.28)	1596
	03-04	*	**< LOD**	**.821** (.700-.946)	**1.76** (1.34-2.29)	**3.02** (2.25-4.33)	1247
	05-06	*	**< LOD**	**1.17** (1.03-1.38)	**2.21** (1.83-2.50)	**3.18** (2.50-4.47)	1387
	07-08	*	**< LOD**	**1.47** (1.28-1.72)	**2.86** (2.29-3.51)	**4.48** (3.30-5.73)	1296

< LOD means less than the limit of detection for the urine levels not corrected for creatinine.
* Not calculated: proportion of results below limit of detection was too high to provide a valid result.

Biomonitoring Summary: **http://www.cdc.gov/biomonitoring/OP-DPM_BiomonitoringSummary.html**

Urinary Diethylthiophosphate (DETP) (creatinine corrected)

Metabolite of Several Organophosphorus Insecticides

Geometric mean and selected percentiles of urine concentrations (in µg/g of creatinine) for the U.S. population from the National Health and Nutrition Examination Survey.

	Survey years	Geometric mean (95% conf. interval)	Selected percentiles (95% confidence interval) 50th	75th	90th	95th	Sample size
Race/ethnicity							
Mexican Americans	99-00	*	**.330** (<LOD-.790)	**.830** (.550-1.20)	**1.69** (1.20-2.43)	**2.71** (1.75-3.78)	672
	01-02	**.520** (.390-.693)	**.570** (.416-.824)	**1.30** (1.05-1.74)	**2.58** (1.82-3.72)	**3.82** (2.77-6.43)	763
	03-04	*	**.329** (<LOD-.414)	**.824** (.555-1.22)	**2.03** (1.26-3.63)	**3.74** (2.47-6.18)	584
	05-06	*	**< LOD**	**.907** (<LOD-1.10)	**1.74** (1.35-2.07)	**2.86** (2.02-4.00)	695
	07-08	*	**< LOD**	**1.20** (.989-1.32)	**2.20** (1.83-2.86)	**3.32** (2.59-5.11)	499
Non-Hispanic blacks	99-00	**.234** (.136-.403)	**.310** (<LOD-.580)	**.720** (.510-.850)	**1.39** (1.03-2.10)	**2.91** (1.49-4.24)	509
	01-02	**.556** (.457-.676)	**.726** (.565-.938)	**1.50** (1.34-1.70)	**2.80** (2.35-3.30)	**4.00** (3.29-4.99)	754
	03-04	**.321** (.270-.381)	**.313** (.231-.407)	**.699** (.561-.831)	**1.45** (1.09-1.75)	**2.64** (1.71-3.64)	604
	05-06	*	**< LOD**	**.720** (.606-.824)	**1.48** (1.24-1.73)	**2.45** (1.76-3.19)	721
	07-08	*	**< LOD**	**1.07** (.880-1.21)	**2.40** (1.85-2.89)	**4.12** (3.19-5.67)	573
Non-Hispanic whites	99-00	*	**.230** (<LOD-.550)	**.710** (.390-1.22)	**1.88** (1.05-2.58)	**2.64** (2.08-3.07)	595
	01-02	**.506** (.373-.687)	**.579** (.368-.850)	**1.51** (1.18-2.00)	**3.38** (2.64-4.35)	**5.83** (3.95-7.81)	1252
	03-04	*	**< LOD**	**.735** (.636-.848)	**1.52** (1.20-2.07)	**2.69** (2.07-3.97)	1043
	05-06	*	**< LOD**	**1.00** (<LOD-1.21)	**2.00** (1.73-2.27)	**3.08** (2.50-3.74)	1007
	07-08	*	**< LOD**	**1.24** (1.07-1.39)	**2.28** (1.71-3.30)	**3.49** (2.56-4.60)	1087

< LOD means less than the limit of detection for the urine levels not corrected for creatinine.
* Not calculated: proportion of results below limit of detection was too high to provide a valid result.

Biomonitoring Summary: http://www.cdc.gov/biomonitoring/OP-DPM_BiomonitoringSummary.html

Urinary Dimethylthiophosphate (DMTP)

Metabolite of Several Organophosphorus Insecticides

Geometric mean and selected percentiles of urine concentrations (in µg/L) for the U.S. population from the National Health and Nutrition Examination Survey.

	Survey years	Geometric mean (95% conf. interval)	Selected percentiles (95% confidence interval) 50th	75th	90th	95th	Sample size
Total	99-00	**1.82** (1.36-2.44)	**2.70** (1.40-4.10)	**11.0** (8.40-16.0)	**38.0** (25.0-41.0)	**48.0** (38.0-62.0)	1948
	01-02	*	**.580** (<LOD-1.45)	**4.23** (3.10-5.88)	**17.5** (13.0-22.7)	**32.9** (27.2-45.3)	3016
	03-04	**2.25** (1.98-2.56)	**2.03** (1.73-2.37)	**6.36** (5.11-7.34)	**19.6** (16.2-21.5)	**35.3** (27.4-45.3)	2494
	05-06	**1.96** (1.74-2.20)	**1.71** (1.43-1.94)	**5.34** (4.49-6.08)	**14.2** (10.5-20.8)	**28.2** (22.1-36.0)	2631
	07-08	**2.28** (1.97-2.64)	**2.10** (1.77-2.44)	**5.90** (4.94-7.01)	**18.3** (13.5-23.0)	**36.8** (27.8-45.7)	2591
Age group							
6-11 years	99-00	**2.72** (1.93-3.85)	**4.20** (2.50-7.20)	**20.0** (13.0-29.0)	**40.0** (38.0-52.0)	**62.0** (40.0-92.0)	471
	01-02	*	**1.46** (.600-2.69)	**8.33** (5.75-14.0)	**28.4** (19.7-41.4)	**45.7** (28.5-74.5)	575
	03-04	**2.79** (2.25-3.45)	**2.67** (1.81-3.88)	**6.95** (5.64-8.58)	**19.4** (10.5-27.4)	**30.9** (19.4-76.5)	310
	05-06	**2.70** (2.25-3.26)	**2.38** (1.76-3.33)	**8.21** (4.96-11.8)	**21.4** (12.7-40.7)	**40.7** (18.3-90.4)	349
	07-08	**3.43** (2.88-4.09)	**3.50** (2.69-4.10)	**9.90** (7.14-13.9)	**32.0** (19.1-45.7)	**52.5** (36.7-67.4)	385
12-19 years	99-00	**2.53** (1.64-3.92)	**3.70** (1.70-6.80)	**16.0** (11.0-31.0)	**38.0** (33.0-58.0)	**69.0** (38.0-260)	664
	01-02	*	**1.04** (<LOD-2.12)	**4.83** (3.35-6.48)	**20.8** (12.2-27.9)	**34.9** (23.6-54.7)	822
	03-04	**2.21** (1.81-2.70)	**1.83** (1.46-2.16)	**5.91** (4.04-8.78)	**18.7** (12.2-33.9)	**47.1** (22.2-80.8)	717
	05-06	**2.51** (2.00-3.16)	**2.53** (1.90-3.02)	**6.44** (4.91-8.77)	**21.7** (13.1-28.2)	**38.5** (25.3-79.2)	717
	07-08	**2.10** (1.68-2.61)	**1.82** (1.53-2.31)	**5.18** (3.55-7.48)	**13.6** (8.16-27.9)	**31.5** (12.4-54.5)	391
20-59 years	99-00	**1.59** (1.17-2.16)	**2.30** (.830-3.80)	**9.10** (7.10-13.0)	**38.0** (19.0-39.0)	**39.0** (38.0-58.0)	813
	01-02	*	**< LOD**	**3.32** (2.29-4.96)	**13.6** (9.50-20.0)	**30.0** (20.5-45.3)	1121
	03-04	**1.98** (1.71-2.30)	**1.78** (1.48-2.18)	**5.11** (4.31-6.53)	**16.7** (12.1-20.8)	**28.5** (24.1-40.0)	938
	05-06	**1.72** (1.50-1.97)	**1.37** (1.20-1.73)	**4.25** (3.68-5.22)	**12.4** (8.37-19.6)	**26.6** (16.4-37.9)	1092
	07-08	**2.03** (1.68-2.46)	**1.90** (1.46-2.39)	**5.18** (4.24-6.09)	**13.3** (10.4-19.2)	**30.6** (21.4-44.6)	1179
60 years and older	01-02	*	**.860** (<LOD-2.16)	**5.85** (3.33-9.56)	**19.6** (13.0-27.9)	**32.9** (22.7-51.0)	498
	03-04	**3.18** (2.47-4.08)	**2.64** (2.16-3.81)	**9.63** (6.32-15.5)	**25.0** (15.5-45.3)	**45.3** (20.9-119)	529
	05-06	**2.18** (1.81-2.63)	**2.03** (1.46-2.68)	**6.38** (4.62-8.23)	**14.0** (9.72-20.9)	**25.2** (18.2-37.6)	473
	07-08	**2.91** (2.37-3.58)	**2.57** (1.99-3.18)	**9.19** (5.54-13.0)	**26.2** (19.4-32.5)	**42.7** (30.5-54.1)	636
Gender							
Males	99-00	**2.10** (1.48-2.98)	**3.50** (2.20-4.80)	**14.0** (8.00-24.0)	**38.0** (21.0-49.0)	**42.0** (38.0-53.0)	952
	01-02	*	**.690** (<LOD-1.52)	**4.44** (3.32-6.48)	**18.3** (12.7-25.6)	**31.1** (25.0-43.3)	1420
	03-04	**2.30** (1.95-2.70)	**2.15** (1.70-2.53)	**6.42** (4.90-7.75)	**18.8** (13.3-22.5)	**30.0** (23.3-45.3)	1221
	05-06	**1.88** (1.64-2.14)	**1.61** (1.28-1.94)	**5.38** (3.96-6.38)	**13.1** (9.59-20.9)	**28.7** (19.5-41.7)	1243
	07-08	**2.33** (2.00-2.71)	**2.15** (1.85-2.50)	**5.98** (4.78-7.26)	**16.7** (11.8-24.7)	**31.5** (21.2-48.9)	1293
Females	99-00	**1.59** (1.23-2.06)	**2.00** (.690-3.60)	**9.70** (7.30-14.0)	**38.0** (26.0-39.0)	**52.0** (38.0-110)	996
	01-02	*	**.430** (<LOD-1.45)	**3.81** (2.68-5.85)	**16.0** (10.9-22.7)	**35.2** (25.0-46.1)	1596
	03-04	**2.21** (1.92-2.55)	**1.95** (1.68-2.29)	**6.27** (4.93-7.39)	**20.4** (16.4-24.0)	**36.7** (27.7-47.8)	1273
	05-06	**2.04** (1.79-2.33)	**1.75** (1.46-2.13)	**5.23** (4.49-6.10)	**15.6** (10.9-20.8)	**28.1** (20.8-37.9)	1388
	07-08	**2.24** (1.88-2.66)	**1.99** (1.57-2.52)	**5.85** (4.92-7.31)	**18.7** (13.4-26.0)	**37.7** (27.0-50.1)	1298

Limit of detection (LOD, see Data Analysis section) for Survey years 99-00, 01-02, 03-04, 05-06, and 07-08 are 0.18, 0.4, 0.5, 0.55,and 0.55 respectively.
< LOD means less than the limit of detection, which may vary for some chemicals by year and by individual sample.
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Urinary Dimethylthiophosphate (DMTP)

Metabolite of Several Organophosphorus Insecticides

Geometric mean and selected percentiles of urine concentrations (in µg/L) for the U.S. population from the National Health and Nutrition Examination Survey.

	Survey years	Geometric mean (95% conf. interval)	Selected percentiles (95% confidence interval) 50th	75th	90th	95th	Sample size
Race/ethnicity							
Mexican Americans	99-00	**1.79** (1.05-3.05)	**2.00** (.530-4.40)	**11.0** (6.70-17.0)	**39.0** (32.0-62.0)	**140** (46.0-230)	671
	01-02	*	**< LOD**	**3.93** (3.05-5.06)	**15.1** (11.1-19.1)	**35.6** (22.7-46.0)	763
	03-04	**2.41** (1.88-3.09)	**2.54** (1.41-3.98)	**6.43** (4.90-8.02)	**17.2** (12.0-22.3)	**28.9** (19.2-39.8)	610
	05-06	**2.37** (2.07-2.71)	**2.26** (1.95-2.68)	**5.65** (4.86-6.44)	**16.4** (12.9-21.4)	**28.3** (23.3-41.4)	693
	07-08	**2.10** (1.83-2.42)	**1.98** (1.63-2.31)	**5.18** (4.17-6.61)	**13.6** (11.5-20.0)	**31.0** (20.0-43.5)	501
Non-Hispanic blacks	99-00	**2.13** (1.57-2.88)	**3.60** (2.10-4.70)	**12.0** (8.80-18.0)	**38.0** (20.0-41.0)	**41.0** (37.0-110)	509
	01-02	**1.54** (1.15-2.07)	**1.18** (.580-1.97)	**5.21** (3.11-8.25)	**20.0** (13.4-27.2)	**39.1** (25.9-62.8)	755
	03-04	**2.13** (1.83-2.48)	**1.85** (1.65-2.20)	**5.44** (3.87-8.28)	**20.4** (15.8-24.9)	**31.1** (24.9-51.9)	631
	05-06	**1.94** (1.63-2.31)	**1.63** (1.23-2.02)	**5.21** (3.93-7.18)	**16.8** (13.3-21.6)	**28.4** (21.5-40.6)	723
	07-08	**2.12** (1.89-2.38)	**1.97** (1.64-2.26)	**5.63** (4.15-6.94)	**20.8** (12.9-23.9)	**33.5** (26.3-47.6)	573
Non-Hispanic whites	99-00	**1.77** (1.23-2.53)	**2.70** (.830-4.40)	**11.0** (7.50-17.0)	**38.0** (17.0-53.0)	**48.0** (38.0-69.0)	595
	01-02	*	**.540** (<LOD-1.71)	**4.21** (2.77-6.48)	**18.8** (10.9-25.4)	**33.1** (26.6-46.5)	1252
	03-04	**2.31** (2.00-2.66)	**2.07** (1.73-2.41)	**6.51** (5.12-7.85)	**19.8** (15.4-23.3)	**36.7** (27.4-47.8)	1061
	05-06	**1.94** (1.67-2.26)	**1.76** (1.40-1.99)	**5.33** (4.32-6.19)	**13.6** (9.80-22.1)	**28.9** (20.2-42.8)	1005
	07-08	**2.22** (1.83-2.69)	**1.96** (1.57-2.48)	**5.84** (4.70-7.68)	**17.1** (12.4-24.3)	**37.3** (25.9-48.7)	1088

Limit of detection (LOD, see Data Analysis section) for Survey years 99-00, 01-02, 03-04, 05-06, and 07-08 are 0.18, 0.4, 0.5, 0.55,and 0.55 respectively.
< LOD means less than the limit of detection, which may vary for some chemicals by year and by individual sample.
* Not calculated: proportion of results below limit of detection was too high to provide a valid result.

Biomonitoring Summary: **http://www.cdc.gov/biomonitoring/OP-DPM_BiomonitoringSummary.html**

Urinary Dimethylthiophosphate (DMTP) (creatinine corrected)

Metabolite of Several Organophosphorus Insecticides

Geometric mean and selected percentiles of urine concentrations (in µg/g of creatinine) for the U.S. population from the National Health and Nutrition Examination Survey.

	Survey years	Geometric mean (95% conf. interval)	Selected percentiles (95% confidence interval) 50th	75th	90th	95th	Sample size
Total	99-00	**1.64** (1.22-2.20)	**2.12** (1.22-3.35)	**9.57** (6.59-15.8)	**32.0** (23.9-41.1)	**51.0** (39.0-70.1)	1948
	01-02	*	**.933** (<LOD-1.40)	**4.08** (2.65-6.06)	**14.6** (11.5-20.5)	**28.9** (24.7-39.4)	3015
	03-04	**2.21** (1.92-2.55)	**1.98** (1.69-2.38)	**5.96** (5.07-7.16)	**19.1** (14.8-22.4)	**32.6** (25.8-41.9)	2491
	05-06	**1.99** (1.76-2.26)	**1.75** (1.56-1.90)	**5.00** (4.16-6.24)	**16.8** (11.8-22.1)	**30.0** (24.1-38.3)	2630
	07-08	**2.34** (2.05-2.66)	**2.00** (1.77-2.31)	**5.91** (4.88-7.09)	**17.5** (13.9-23.2)	**33.7** (25.7-45.9)	2589
Age group							
6-11 years	99-00	**2.95** (2.25-3.86)	**5.32** (3.75-6.33)	**19.1** (12.2-28.0)	**47.0** (32.1-60.3)	**66.1** (50.9-95.0)	471
	01-02	*	**2.16** (1.32-3.12)	**10.6** (7.84-13.6)	**28.7** (18.8-45.0)	**48.1** (33.4-71.1)	575
	03-04	**3.40** (2.70-4.28)	**3.41** (2.40-4.17)	**7.91** (6.43-12.2)	**25.2** (16.7-34.2)	**36.1** (25.4-67.7)	310
	05-06	**3.35** (2.67-4.21)	**2.78** (2.03-3.66)	**9.26** (5.67-15.1)	**33.4** (16.8-54.3)	**71.5** (28.7-161)	349
	07-08	**4.35** (3.78-5.01)	**4.26** (3.36-4.75)	**14.1** (9.35-16.6)	**32.8** (23.8-45.4)	**51.3** (41.1-77.9)	385
12-19 years	99-00	**1.71** (1.07-2.75)	**2.14** (.890-4.83)	**13.5** (6.46-22.6)	**36.0** (25.6-51.4)	**61.5** (41.7-109)	664
	01-02	*	**.933** (<LOD-1.57)	**3.56** (2.38-5.57)	**12.2** (8.96-16.0)	**22.5** (13.2-34.7)	821
	03-04	**1.66** (1.37-2.03)	**1.52** (1.19-1.82)	**4.38** (3.29-5.66)	**13.3** (9.94-20.5)	**26.5** (15.5-36.0)	715
	05-06	**1.89** (1.54-2.33)	**1.81** (1.38-2.33)	**4.55** (3.47-6.17)	**14.3** (8.75-27.5)	**32.9** (14.3-51.4)	717
	07-08	**1.62** (1.27-2.06)	**1.46** (1.19-1.74)	**4.14** (3.12-5.52)	**11.1** (5.52-20.5)	**20.5** (9.61-32.2)	389
20-59 years	99-00	**1.47** (1.07-2.02)	**1.90** (.870-3.11)	**8.09** (5.19-14.6)	**27.0** (19.8-37.6)	**47.5** (34.2-70.1)	813
	01-02	*	**< LOD**	**3.16** (1.99-4.62)	**11.9** (7.79-17.2)	**25.2** (15.9-37.0)	1121
	03-04	**1.88** (1.61-2.19)	**1.67** (1.45-1.94)	**4.88** (4.20-5.68)	**13.9** (10.3-19.7)	**30.3** (19.7-38.2)	937
	05-06	**1.72** (1.52-1.96)	**1.46** (1.28-1.65)	**4.18** (3.14-4.99)	**13.2** (9.30-21.9)	**25.4** (21.4-30.3)	1091
	07-08	**2.02** (1.73-2.36)	**1.79** (1.52-2.05)	**4.53** (3.90-5.90)	**13.2** (9.47-17.2)	**26.7** (17.1-41.8)	1179
60+ years	01-02	*	**1.39** (<LOD-2.40)	**6.38** (3.68-9.97)	**24.0** (14.9-35.2)	**45.5** (26.5-69.7)	498
	03-04	**3.86** (2.99-4.97)	**3.18** (2.46-4.84)	**11.2** (7.10-18.6)	**29.2** (18.6-47.9)	**48.2** (24.9-113)	529
	05-06	**2.61** (2.12-3.20)	**2.40** (1.75-2.75)	**7.66** (5.71-11.3)	**19.2** (12.1-31.1)	**35.3** (20.5-56.4)	473
	07-08	**3.56** (2.79-4.55)	**3.05** (2.31-4.13)	**10.6** (6.86-14.8)	**31.8** (17.7-50.2)	**54.2** (34.1-87.5)	636
Gender							
Males	99-00	**1.61** (1.11-2.34)	**2.39** (1.27-3.51)	**9.27** (6.00-16.9)	**28.9** (19.0-40.4)	**41.1** (34.9-52.9)	952
	01-02	*	**.778** (<LOD-1.14)	**3.82** (2.65-4.98)	**13.6** (10.0-17.8)	**25.2** (17.2-37.6)	1420
	03-04	**1.88** (1.58-2.23)	**1.76** (1.51-2.12)	**4.87** (3.87-6.31)	**14.4** (9.18-20.4)	**25.7** (17.7-36.9)	1220
	05-06	**1.59** (1.37-1.86)	**1.33** (1.14-1.57)	**4.06** (2.85-5.27)	**13.1** (8.56-20.5)	**26.0** (17.2-34.2)	1243
	07-08	**1.93** (1.68-2.21)	**1.62** (1.42-1.94)	**4.36** (3.77-5.50)	**14.2** (10.4-17.7)	**25.9** (18.2-39.7)	1292
Females	99-00	**1.66** (1.26-2.18)	**2.01** (.870-3.33)	**10.0** (6.67-16.2)	**34.9** (26.2-47.1)	**70.1** (39.0-118)	996
	01-02	*	**1.08** (<LOD-1.65)	**4.44** (2.55-7.02)	**17.4** (11.9-24.8)	**38.0** (27.4-51.6)	1595
	03-04	**2.60** (2.23-3.02)	**2.24** (1.83-2.63)	**7.11** (5.54-10.2)	**22.8** (18.9-28.7)	**41.6** (29.2-58.9)	1271
	05-06	**2.47** (2.16-2.83)	**2.19** (1.83-2.44)	**6.07** (4.74-8.34)	**20.7** (13.8-25.6)	**36.7** (26.1-46.2)	1387
	07-08	**2.81** (2.40-3.29)	**2.50** (2.07-2.93)	**7.40** (5.83-8.83)	**21.9** (16.7-27.4)	**41.2** (27.4-60.8)	1297

< LOD means less than the limit of detection for the urine levels not corrected for creatinine.
* Not calculated: proportion of results below limit of detection was too high to provide a valid result.

Biomonitoring Summary: **http://www.cdc.gov/biomonitoring/OP-DPM_BiomonitoringSummary.html**

Urinary Dimethylthiophosphate (DMTP) (creatinine corrected)

Metabolite of Several Organophosphorus Insecticides

Geometric mean and selected percentiles of urine concentrations (in µg/g of creatinine) for the U.S. population from the National Health and Nutrition Examination Survey.

	Survey years	Geometric mean (95% conf. interval)	Selected percentiles (95% confidence interval) 50th	75th	90th	95th	Sample size
Race/ethnicity							
Mexican Americans	99-00	**1.60** (.899-2.86)	**1.83** (.680-4.23)	**10.4** (5.95-16.9)	**37.0** (23.1-63.1)	**112** (40.5-190)	671
	01-02	*	**< LOD**	**3.55** (2.65-4.68)	**13.8** (9.88-22.9)	**30.4** (22.9-47.2)	763
	03-04	**2.20** (1.65-2.94)	**2.24** (1.70-3.00)	**5.95** (4.14-8.68)	**15.7** (10.7-20.1)	**24.5** (18.9-36.9)	609
	05-06	**2.24** (1.96-2.55)	**2.14** (1.89-2.40)	**5.19** (4.33-6.18)	**14.7** (10.9-20.0)	**28.4** (21.5-36.3)	693
	07-08	**2.14** (1.92-2.38)	**1.88** (1.61-2.22)	**4.84** (4.08-6.48)	**13.2** (10.0-18.6)	**26.2** (18.6-34.1)	500
Non-Hispanic blacks	99-00	**1.45** (1.03-2.06)	**1.75** (1.17-3.06)	**8.48** (4.36-13.4)	**25.5** (15.4-39.3)	**54.4** (25.5-97.6)	509
	01-02	**1.13** (.889-1.44)	**1.00** (.693-1.23)	**3.62** (2.29-5.41)	**12.4** (9.17-17.5)	**23.3** (17.4-43.1)	754
	03-04	**1.46** (1.28-1.67)	**1.22** (1.06-1.37)	**3.90** (2.77-5.34)	**12.7** (8.09-18.7)	**26.0** (14.6-38.7)	630
	05-06	**1.40** (1.14-1.71)	**1.12** (.938-1.37)	**3.58** (2.63-5.06)	**12.0** (8.44-19.3)	**25.6** (17.4-31.2)	722
	07-08	**1.61** (1.45-1.80)	**1.38** (1.22-1.61)	**4.26** (3.41-5.20)	**14.7** (10.7-18.8)	**27.5** (20.9-37.4)	572
Non-Hispanic whites	99-00	**1.68** (1.16-2.43)	**2.22** (.870-3.51)	**9.40** (5.58-17.0)	**33.3** (20.6-49.4)	**52.9** (39.0-71.1)	595
	01-02	*	**.966** (<LOD-1.61)	**4.22** (2.41-7.00)	**15.9** (11.6-24.1)	**33.1** (24.8-45.4)	1252
	03-04	**2.40** (2.05-2.81)	**2.12** (1.75-2.53)	**6.27** (5.10-8.10)	**20.0** (15.3-25.7)	**36.2** (25.7-52.7)	1060
	05-06	**2.09** (1.80-2.42)	**1.78** (1.56-2.06)	**5.14** (4.02-6.91)	**16.8** (11.3-23.4)	**30.0** (23.4-38.3)	1005
	07-08	**2.40** (1.99-2.90)	**2.04** (1.67-2.57)	**6.00** (4.64-7.49)	**16.9** (13.0-25.3)	**37.6** (23.1-54.2)	1088

< LOD means less than the limit of detection for the urine levels not corrected for creatinine.
* Not calculated: proportion of results below limit of detection was too high to provide a valid result.

Biomonitoring Summary: http://www.cdc.gov/biomonitoring/OP-DPM_BiomonitoringSummary.html

Urinary Diethyldithiophosphate (DEDTP)

Metabolite of Several Organophosphorus Insecticides

Geometric mean and selected percentiles of urine concentrations (in µg/L) for the U.S. population from the National Health and Nutrition Examination Survey.

	Survey years	Geometric mean (95% conf. interval)	Selected percentiles (95% confidence interval) 50th	75th	90th	95th	Sample size
Total	99-00	*	**.090** (<LOD-.140)	**.210** (.140-.290)	**.470** (.380-.640)	**.870** (.640-1.10)	1949
	01-02	*	**< LOD**	**< LOD**	**.610** (.410-.780)	**.890** (.710-1.32)	3013
	03-04	*	**< LOD**	**< LOD**	**< LOD**	**.290** (.160-.510)	2494
	05-06	*	**< LOD**	**< LOD**	**< LOD**	**< LOD**	2420
	07-08	*	**< LOD**	**< LOD**	**< LOD**	**< LOD**	2585
Age group							
6-11 years	99-00	*	**.090** (<LOD-.160)	**.190** (.130-.280)	**.430** (.300-.650)	**.850** (.470-1.00)	471
	01-02	*	**< LOD**	**< LOD**	**.630** (.380-.870)	**.940** (.690-1.42)	576
	03-04	*	**< LOD**	**< LOD**	**< LOD**	**.540** (<LOD-.650)	310
	05-06	*	**< LOD**	**< LOD**	**< LOD**	**< LOD**	317
	07-08	*	**< LOD**	**< LOD**	**< LOD**	**< LOD**	383
12-19 years	99-00	*	**.080** (<LOD-.180)	**.260** (.120-.350)	**.640** (.420-.840)	**.930** (.720-1.30)	664
	01-02	*	**< LOD**	**< LOD**	**.560** (.330-.730)	**.820** (.610-.990)	822
	03-04	*	**< LOD**	**< LOD**	**.150** (<LOD-.350)	**.450** (.370-.570)	717
	05-06	*	**< LOD**	**< LOD**	**< LOD**	**< LOD**	660
	07-08	*	**< LOD**	**< LOD**	**< LOD**	**< LOD**	390
20-59 years	99-00	*	**.090** (<LOD-.130)	**.210** (.130-.290)	**.450** (.360-.640)	**.900** (.610-1.10)	814
	01-02	*	**< LOD**	**< LOD**	**.620** (.430-.760)	**.830** (.700-1.32)	1118
	03-04	*	**< LOD**	**< LOD**	**< LOD**	**.220** (<LOD-.580)	938
	05-06	*	**< LOD**	**< LOD**	**< LOD**	**< LOD**	1006
	07-08	*	**< LOD**	**< LOD**	**< LOD**	**< LOD**	1176
60 years and older	01-02	*	**< LOD**	**< LOD**	**.630** (.360-1.08)	**1.11** (.610-1.41)	497
	03-04	*	**< LOD**	**< LOD**	**< LOD**	**.150** (<LOD-.550)	529
	05-06	*	**< LOD**	**< LOD**	**< LOD**	**< LOD**	437
	07-08	*	**< LOD**	**< LOD**	**< LOD**	**< LOD**	636
Gender							
Males	99-00	*	**.090** (<LOD-.150)	**.220** (.140-.310)	**.490** (.380-.680)	**.870** (.680-1.10)	952
	01-02	*	**< LOD**	**< LOD**	**.600** (.380-.740)	**.780** (.700-1.03)	1420
	03-04	*	**< LOD**	**< LOD**	**< LOD**	**.390** (.160-.540)	1221
	05-06	*	**< LOD**	**< LOD**	**< LOD**	**< LOD**	1142
	07-08	*	**< LOD**	**< LOD**	**< LOD**	**< LOD**	1290
Females	99-00	*	**.090** (<LOD-.130)	**.190** (.110-.310)	**.460** (.320-.840)	**.870** (.440-1.40)	997
	01-02	*	**< LOD**	**< LOD**	**.660** (.460-.880)	**1.03** (.700-1.47)	1593
	03-04	*	**< LOD**	**< LOD**	**< LOD**	**.230** (<LOD-.600)	1273
	05-06	*	**< LOD**	**< LOD**	**< LOD**	**< LOD**	1278
	07-08	*	**< LOD**	**< LOD**	**< LOD**	**< LOD**	1295

Limit of detection (LOD, see Data Analysis section) for Survey years 99-00, 01-02, 03-04, 05-06, and 07-08 are 0.05, 0.1, 0.1, 0.39,and 0.39 respectively.
< LOD means less than the limit of detection, which may vary for some chemicals by year and by individual sample.
* Not calculated: proportion of results below limit of detection was too high to provide a valid result.

Biomonitoring Summary: **http://www.cdc.gov/biomonitoring/OP-DPM_BiomonitoringSummary.html**

Urinary Diethyldithiophosphate (DEDTP)

Metabolite of Several Organophosphorus Insecticides

Geometric mean and selected percentiles of urine concentrations (in µg/L) for the U.S. population from the National Health and Nutrition Examination Survey.

	Survey years	Geometric mean (95% conf. interval)	Selected percentiles (95% confidence interval) 50th	75th	90th	95th	Sample size
Race/ethnicity							
Mexican Americans	99-00	**.130** (.099-.171)	**.100** (.050-.200)	**.310** (.230-.390)	**.650** (.530-.860)	**1.10** (.860-1.60)	672
	01-02	*	**< LOD**	**.200** (<LOD-.520)	**.720** (.410-1.12)	**1.12** (.700-1.58)	763
	03-04	*	**< LOD**	**< LOD**	**.110** (<LOD-.680)	**.680** (.180-1.15)	610
	05-06	*	**< LOD**	**< LOD**	**< LOD**	**< LOD**	665
	07-08	*	**< LOD**	**< LOD**	**< LOD**	**< LOD**	495
Non-Hispanic blacks	99-00	**.117** (.084-.162)	**.090** (<LOD-.230)	**.270** (.140-.410)	**.560** (.400-.830)	**.870** (.650-1.20)	509
	01-02	*	**< LOD**	**< LOD**	**.620** (.440-.800)	**.810** (.670-.930)	754
	03-04	*	**< LOD**	**< LOD**	**< LOD**	**.250** (.110-.540)	631
	05-06	*	**< LOD**	**< LOD**	**< LOD**	**< LOD**	660
	07-08	*	**< LOD**	**< LOD**	**< LOD**	**< LOD**	574
Non-Hispanic whites	99-00	*	**.080** (<LOD-.160)	**.190** (.120-.290)	**.450** (.310-.720)	**.870** (.510-1.30)	595
	01-02	*	**< LOD**	**< LOD**	**.610** (.350-.800)	**.910** (.660-1.41)	1252
	03-04	*	**< LOD**	**< LOD**	**< LOD**	**.240** (.120-.540)	1061
	05-06	*	**< LOD**	**< LOD**	**< LOD**	**< LOD**	917
	07-08	*	**< LOD**	**< LOD**	**< LOD**	**< LOD**	1087

Limit of detection (LOD, see Data Analysis section) for Survey years 99-00, 01-02, 03-04, 05-06, and 07-08 are 0.05, 0.1, 0.1, 0.39,and 0.39 respectively.
< LOD means less than the limit of detection, which may vary for some chemicals by year and by individual sample.
* Not calculated: proportion of results below limit of detection was too high to provide a valid result.

Biomonitoring Summary: **http://www.cdc.gov/biomonitoring/OP-DPM_BiomonitoringSummary.html**

Urinary Diethyldithiophosphate (DEDTP) (creatinine corrected)

Metabolite of Several Organophosphorus Insecticides

Geometric mean and selected percentiles of urine concentrations (in µg/g of creatinine) for the U.S. population from the National Health and Nutrition Examination Survey.

	Survey years	Geometric mean (95% conf. interval)	Selected percentiles (95% confidence interval) 50th	75th	90th	95th	Sample size
Total	99-00	*	**.070** (<LOD-.110)	**.200** (.140-.290)	**.550** (.390-.700)	**.860** (.670-1.14)	1949
	01-02	*	**< LOD**	**< LOD**	**.604** (.389-.783)	**1.08** (.768-1.52)	3012
	03-04	*	**< LOD**	**< LOD**	**< LOD**	**.412** (.350-.507)	2491
	05-06	*	**< LOD**	**< LOD**	**< LOD**	**< LOD**	2419
	07-08	*	**< LOD**	**< LOD**	**< LOD**	**< LOD**	2583
Age group							
6-11 years	99-00	*	**.100** (<LOD-.140)	**.190** (.150-.270)	**.570** (.410-.760)	**1.03** (.570-1.58)	471
	01-02	*	**< LOD**	**< LOD**	**.778** (.606-1.12)	**1.36** (1.02-1.86)	576
	03-04	*	**< LOD**	**< LOD**	**< LOD**	**.475** (<LOD-.967)	310
	05-06	*	**< LOD**	**< LOD**	**< LOD**	**< LOD**	317
	07-08	*	**< LOD**	**< LOD**	**< LOD**	**< LOD**	383
12-19 years	99-00	*	**.050** (<LOD-.080)	**.170** (.100-.220)	**.440** (.230-.730)	**.730** (.380-1.09)	664
	01-02	*	**< LOD**	**< LOD**	**.359** (.250-.537)	**.667** (.375-.987)	821
	03-04	*	**< LOD**	**< LOD**	**.226** (<LOD-.259)	**.333** (.241-.600)	715
	05-06	*	**< LOD**	**< LOD**	**< LOD**	**< LOD**	660
	07-08	*	**< LOD**	**< LOD**	**< LOD**	**< LOD**	388
20-59 years	99-00	*	**.080** (<LOD-.110)	**.210** (.140-.310)	**.550** (.360-.730)	**.860** (.650-1.20)	814
	01-02	*	**< LOD**	**< LOD**	**.583** (.379-.740)	**1.03** (.699-1.60)	1118
	03-04	*	**< LOD**	**< LOD**	**< LOD**	**.400** (<LOD-.537)	937
	05-06	*	**< LOD**	**< LOD**	**< LOD**	**< LOD**	1005
	07-08	*	**< LOD**	**< LOD**	**< LOD**	**< LOD**	1176
60+ years	01-02	*	**< LOD**	**< LOD**	**.833** (.368-1.28)	**1.44** (.853-2.61)	497
	03-04	*	**< LOD**	**< LOD**	**< LOD**	**.438** (<LOD-.700)	529
	05-06	*	**< LOD**	**< LOD**	**< LOD**	**< LOD**	437
	07-08	*	**< LOD**	**< LOD**	**< LOD**	**< LOD**	636
Gender							
Males	99-00	*	**.070** (<LOD-.110)	**.190** (.140-.230)	**.410** (.340-.500)	**.720** (.520-.940)	952
	01-02	*	**< LOD**	**< LOD**	**.389** (.309-.658)	**.768** (.637-1.01)	1420
	03-04	*	**< LOD**	**< LOD**	**< LOD**	**.339** (.269-.412)	1220
	05-06	*	**< LOD**	**< LOD**	**< LOD**	**< LOD**	1142
	07-08	*	**< LOD**	**< LOD**	**< LOD**	**< LOD**	1289
Females	99-00	*	**.090** (<LOD-.120)	**.220** (.140-.360)	**.670** (.410-.870)	**.890** (.660-1.62)	997
	01-02	*	**< LOD**	**< LOD**	**.733** (.527-1.03)	**1.27** (.868-2.37)	1592
	03-04	*	**< LOD**	**< LOD**	**< LOD**	**.500** (<LOD-.604)	1271
	05-06	*	**< LOD**	**< LOD**	**< LOD**	**< LOD**	1277
	07-08	*	**< LOD**	**< LOD**	**< LOD**	**< LOD**	1294

< LOD means less than the limit of detection for the urine levels not corrected for creatinine.
* Not calculated: proportion of results below limit of detection was too high to provide a valid result.

Biomonitoring Summary: **http://www.cdc.gov/biomonitoring/OP-DPM_BiomonitoringSummary.html**

Urinary Diethyldithiophosphate (DEDTP) (creatinine corrected)

Metabolite of Several Organophosphorus Insecticides

Geometric mean and selected percentiles of urine concentrations (in µg/g of creatinine) for the U.S. population from the National Health and Nutrition Examination Survey.

	Survey years	Geometric mean (95% conf. interval)	Selected percentiles (95% confidence interval) 50th	75th	90th	95th	Sample size
Race/ethnicity							
Mexican Americans	99-00	**.116** (.084-.161)	**.090** (.060-.170)	**.300** (.190-.410)	**.810** (.570-.990)	**1.19** (.860-2.66)	672
	01-02	*	**< LOD**	**.292** (<LOD-.444)	**.845** (.487-1.24)	**1.29** (.901-1.67)	763
	03-04	*	**< LOD**	**< LOD**	**.318** (<LOD-.467)	**.579** (.404-.940)	609
	05-06	*	**< LOD**	**< LOD**	**< LOD**	**< LOD**	665
	07-08	*	**< LOD**	**< LOD**	**< LOD**	**< LOD**	494
Non-Hispanic blacks	99-00	**.080** (.057-.111)	**.070** (<LOD-.110)	**.170** (.110-.280)	**.450** (.300-.580)	**.700** (.500-1.02)	509
	01-02	*	**< LOD**	**< LOD**	**.456** (.362-.593)	**.769** (.541-1.07)	753
	03-04	*	**< LOD**	**< LOD**	**< LOD**	**.269** (.196-.368)	630
	05-06	*	**< LOD**	**< LOD**	**< LOD**	**< LOD**	659
	07-08	*	**< LOD**	**< LOD**	**< LOD**	**< LOD**	573
Non-Hispanic whites	99-00	*	**.070** (<LOD-.120)	**.200** (.140-.310)	**.560** (.380-.730)	**.880** (.600-1.38)	595
	01-02	*	**< LOD**	**< LOD**	**.583** (.368-.868)	**1.14** (.682-1.70)	1252
	03-04	*	**< LOD**	**< LOD**	**< LOD**	**.389** (.333-.523)	1060
	05-06	*	**< LOD**	**< LOD**	**< LOD**	**< LOD**	917
	07-08	*	**< LOD**	**< LOD**	**< LOD**	**< LOD**	1087

< LOD means less than the limit of detection for the urine levels not corrected for creatinine.
* Not calculated: proportion of results below limit of detection was too high to provide a valid result.

Biomonitoring Summary: http://www.cdc.gov/biomonitoring/OP-DPM_BiomonitoringSummary.html

Urinary Dimethyldithiophosphate (DMDTP)

Metabolite of Several Organophosphorus Insecticides

Geometric mean and selected percentiles of urine concentrations (in µg/L) for the U.S. population from the National Health and Nutrition Examination Survey.

	Survey years	Geometric mean (95% conf. interval)	Selected percentiles (95% confidence interval) 50th	75th	90th	95th	Sample size
Total	99-00	*	< LOD	**2.30** (1.30-3.90)	**13.0** (5.00-17.0)	**19.0** (17.0-38.0)	1949
	01-02	*	< LOD	**.920** (.330-1.30)	**2.61** (2.04-3.45)	**5.96** (4.41-7.90)	3015
	03-04	*	< LOD	**.700** (.570-.920)	**2.54** (1.64-3.87)	**5.74** (3.63-9.85)	2458
	05-06	*	< LOD	< LOD	**1.96** (1.41-2.59)	**3.87** (2.77-6.09)	2635
	07-08	*	< LOD	< LOD	**2.37** (1.93-2.93)	**5.60** (4.62-6.79)	2571
Age group							
6-11 years	99-00	**.691** (.425-1.12)	**.740** (.080-1.80)	**4.30** (2.40-8.60)	**17.0** (6.90-37.0)	**32.0** (17.0-44.0)	471
	01-02	*	< LOD	**1.30** (.750-2.11)	**3.53** (2.20-4.50)	**7.33** (4.32-9.74)	575
	03-04	*	< LOD	**.900** (.620-1.14)	**2.94** (1.14-5.48)	**5.48** (2.94-8.53)	306
	05-06	*	< LOD	< LOD	**1.84** (.540-3.35)	**3.69** (2.67-9.95)	350
	07-08	*	< LOD	**.950** (<LOD-1.48)	**3.80** (2.45-5.70)	**6.66** (5.11-9.64)	379
12-19 years	99-00	*	< LOD	**2.30** (1.40-4.50)	**13.0** (5.40-20.0)	**20.0** (17.0-38.0)	664
	01-02	*	< LOD	**.830** (.400-1.14)	**2.52** (1.85-3.07)	**4.63** (3.59-5.83)	821
	03-04	*	< LOD	**.580** (.350-.770)	**1.46** (1.12-1.99)	**2.67** (1.82-4.49)	699
	05-06	*	< LOD	< LOD	**2.78** (1.51-3.76)	**5.98** (3.03-11.5)	718
	07-08	*	< LOD	< LOD	**1.45** (.810-2.03)	**2.45** (1.65-3.93)	384
20-59 years	99-00	*	< LOD	**2.10** (.840-3.60)	**11.0** (4.00-17.0)	**17.0** (7.70-50.0)	814
	01-02	*	< LOD	**.840** (<LOD-1.31)	**2.32** (1.70-3.40)	**4.90** (2.90-9.52)	1122
	03-04	*	< LOD	**.610** (.350-.800)	**2.00** (1.36-3.63)	**5.07** (3.62-8.62)	925
	05-06	*	< LOD	< LOD	**1.71** (.880-2.36)	**3.60** (2.40-5.18)	1092
	07-08	*	< LOD	< LOD	**1.84** (1.34-2.32)	**4.27** (2.84-6.79)	1172
60 years and older	01-02	*	< LOD	**1.02** (.540-1.37)	**3.57** (2.58-5.96)	**8.16** (5.04-16.1)	497
	03-04	*	< LOD	**1.39** (.720-2.34)	**4.09** (2.35-13.4)	**13.4** (3.36-33.3)	528
	05-06	*	< LOD	< LOD	**2.13** (1.67-3.34)	**5.12** (2.62-8.17)	475
	07-08	*	< LOD	**1.03** (<LOD-1.99)	**5.47** (4.31-6.33)	**8.89** (6.33-12.2)	636
Gender							
Males	99-00	*	**.110** (<LOD-.610)	**2.30** (1.20-4.90)	**16.0** (5.70-17.0)	**19.0** (17.0-38.0)	952
	01-02	*	< LOD	**.890** (.370-1.28)	**2.59** (1.88-3.41)	**5.96** (4.47-7.86)	1420
	03-04	*	< LOD	**.680** (.360-1.01)	**2.26** (1.14-4.45)	**5.30** (3.20-10.2)	1209
	05-06	*	< LOD	< LOD	**1.96** (.980-3.04)	**4.33** (2.42-7.65)	1246
	07-08	*	< LOD	< LOD	**2.38** (1.76-3.70)	**5.70** (3.80-10.0)	1278
Females	99-00	*	< LOD	**2.20** (1.10-3.90)	**11.0** (4.20-17.0)	**20.0** (13.0-40.0)	997
	01-02	*	< LOD	**.960** (.250-1.37)	**2.61** (1.96-3.68)	**5.72** (3.79-9.87)	1595
	03-04	*	< LOD	**.730** (.590-.970)	**2.83** (1.99-3.96)	**6.15** (3.91-11.3)	1249
	05-06	*	< LOD	< LOD	**1.96** (1.49-2.59)	**3.75** (2.90-4.60)	1389
	07-08	*	< LOD	< LOD	**2.34** (1.79-3.12)	**5.54** (4.06-6.69)	1293

Limit of detection (LOD, see Data Analysis section) for Survey years 99-00, 01-02, 03-04, 05-06, and 07-08 are 0.08, 0.1, 0.1, 0.51,and 0.51 respectively.
< LOD means less than the limit of detection, which may vary for some chemicals by year and by individual sample.
* Not calculated: proportion of results below limit of detection was too high to provide a valid result.

Biomonitoring Summary: http://www.cdc.gov/biomonitoring/OP-DPM_BiomonitoringSummary.html

Urinary Dimethyldithiophosphate (DMDTP)

Metabolite of Several Organophosphorus Insecticides

Geometric mean and selected percentiles of urine concentrations (in µg/L) for the U.S. population from the National Health and Nutrition Examination Survey.

	Survey years	Geometric mean (95% conf. interval)	Selected percentiles (95% confidence interval) 50th	75th	90th	95th	Sample size
Race/ethnicity							
Mexican Americans	99-00	*	**.250** (<LOD-.870)	**1.90** (1.10-3.00)	**5.80** (4.10-9.70)	**12.0** (5.90-28.0)	672
	01-02	*	**< LOD**	**1.08** (.780-1.38)	**2.80** (2.19-3.54)	**4.93** (3.73-7.42)	763
	03-04	*	**< LOD**	**.730** (.360-1.21)	**2.11** (1.38-3.15)	**5.26** (2.31-6.94)	610
	05-06	*	**< LOD**	**< LOD**	**2.04** (1.62-2.96)	**5.12** (2.98-10.7)	695
	07-08	*	**< LOD**	**< LOD**	**1.63** (1.18-2.12)	**3.88** (2.12-6.07)	491
Non-Hispanic blacks	99-00	*	**.330** (<LOD-1.20)	**3.20** (1.40-7.00)	**14.0** (5.70-30.0)	**19.0** (17.0-39.0)	509
	01-02	*	**< LOD**	**.640** (<LOD-1.41)	**1.96** (1.36-4.15)	**4.42** (2.68-8.38)	755
	03-04	*	**< LOD**	**.590** (.310-.730)	**1.77** (1.05-3.33)	**4.77** (2.75-7.80)	604
	05-06	*	**< LOD**	**< LOD**	**2.15** (1.66-2.82)	**5.45** (2.82-8.39)	723
	07-08	*	**< LOD**	**< LOD**	**2.04** (1.54-2.65)	**4.27** (2.66-7.79)	568
Non-Hispanic whites	99-00	*	**< LOD**	**2.00** (.800-4.00)	**13.0** (3.90-20.0)	**20.0** (16.0-40.0)	595
	01-02	*	**< LOD**	**1.01** (.180-1.43)	**2.74** (1.94-4.18)	**6.72** (4.88-8.54)	1252
	03-04	*	**< LOD**	**.740** (.540-1.04)	**2.66** (1.55-4.56)	**5.89** (3.63-11.6)	1056
	05-06	*	**< LOD**	**< LOD**	**1.93** (1.23-2.65)	**3.60** (2.71-5.51)	1007
	07-08	*	**< LOD**	**< LOD**	**2.32** (1.75-3.28)	**5.60** (4.46-6.88)	1087

Limit of detection (LOD, see Data Analysis section) for Survey years 99-00, 01-02, 03-04, 05-06, and 07-08 are 0.08, 0.1, 0.1, 0.51,and 0.51 respectively.
< LOD means less than the limit of detection, which may vary for some chemicals by year and by individual sample.
* Not calculated: proportion of results below limit of detection was too high to provide a valid result.

Biomonitoring Summary: **http://www.cdc.gov/biomonitoring/OP-DPM_BiomonitoringSummary.html**

Urinary Dimethyldithiophosphate (DMDTP) (creatinine corrected)

Metabolite of Several Organophosphorus Insecticides

Geometric mean and selected percentiles of urine concentrations (in µg/g of creatinine) for the U.S. population from the National Health and Nutrition Examination Survey.

	Survey years	Geometric mean (95% conf. interval)	Selected percentiles (95% confidence interval) 50th	75th	90th	95th	Sample size
Total	99-00	*	**< LOD**	**1.88** (.970-3.86)	**10.1** (5.31-18.3)	**21.7** (12.8-33.7)	1949
	01-02	*	**< LOD**	**.717** (.389-1.12)	**2.80** (2.21-3.96)	**6.84** (4.96-8.09)	3014
	03-04	*	**< LOD**	**.572** (.411-.772)	**2.62** (1.72-4.12)	**6.40** (3.85-9.75)	2455
	05-06	*	**< LOD**	**< LOD**	**2.18** (1.64-3.00)	**4.62** (3.23-7.12)	2634
	07-08	*	**< LOD**	**< LOD**	**2.63** (2.17-3.08)	**6.12** (4.15-8.24)	2569
Age group							
6-11 years	99-00	**.748** (.474-1.18)	**.790** (.190-1.60)	**4.07** (2.31-7.18)	**16.2** (8.22-27.0)	**30.8** (20.2-38.9)	471
	01-02	*	**< LOD**	**1.36** (.805-2.31)	**4.10** (2.67-6.24)	**6.98** (4.40-12.8)	575
	03-04	*	**< LOD**	**.962** (.584-1.57)	**3.39** (2.29-6.15)	**7.12** (4.48-7.55)	306
	05-06	*	**< LOD**	**< LOD**	**2.57** (1.39-4.14)	**4.50** (3.17-9.35)	350
	07-08	*	**< LOD**	**1.50** (<LOD-1.95)	**4.35** (3.05-6.59)	**8.01** (4.75-12.9)	379
12-19 years	99-00	*	**< LOD**	**1.52** (.620-3.47)	**9.48** (4.04-16.8)	**21.5** (9.48-42.3)	664
	01-02	*	**< LOD**	**.543** (.306-.773)	**2.02** (1.49-2.40)	**3.13** (2.51-4.67)	820
	03-04	*	**< LOD**	**.361** (.241-.584)	**1.02** (.628-1.57)	**2.46** (1.33-3.39)	697
	05-06	*	**< LOD**	**< LOD**	**2.05** (1.16-3.56)	**4.27** (2.30-8.66)	718
	07-08	*	**< LOD**	**< LOD**	**1.16** (.782-1.85)	**1.94** (1.39-3.79)	382
20-59 years	99-00	*	**< LOD**	**1.71** (.850-3.56)	**8.50** (4.00-19.1)	**20.5** (8.57-40.7)	814
	01-02	*	**< LOD**	**.605** (<LOD-1.05)	**2.56** (1.64-4.03)	**6.33** (3.96-8.17)	1122
	03-04	*	**< LOD**	**.451** (.340-.583)	**2.17** (1.10-3.64)	**5.71** (2.47-10.1)	924
	05-06	*	**< LOD**	**< LOD**	**1.90** (1.44-2.57)	**3.69** (2.37-7.07)	1091
	07-08	*	**< LOD**	**< LOD**	**1.99** (1.80-2.32)	**4.15** (2.77-6.77)	1172
60+ years	01-02	*	**< LOD**	**1.10** (.631-1.86)	**4.89** (3.36-7.82)	**13.4** (6.98-19.8)	497
	03-04	*	**< LOD**	**1.55** (.765-2.48)	**6.52** (2.73-13.3)	**13.3** (5.44-23.0)	528
	05-06	*	**< LOD**	**< LOD**	**3.22** (2.25-4.54)	**6.53** (3.70-10.4)	475
	07-08	*	**< LOD**	**1.72** (<LOD-2.58)	**5.92** (3.29-8.44)	**10.3** (7.25-18.4)	636
Gender							
Males	99-00	*	**.150** (<LOD-.370)	**1.79** (.840-3.97)	**11.0** (4.62-17.4)	**18.1** (7.51-44.7)	952
	01-02	*	**< LOD**	**.628** (.333-.850)	**2.39** (1.75-3.13)	**5.37** (4.23-7.29)	1420
	03-04	*	**< LOD**	**.467** (.280-.743)	**2.03** (.990-3.56)	**5.38** (2.29-8.25)	1208
	05-06	*	**< LOD**	**< LOD**	**1.80** (1.14-3.17)	**4.14** (2.18-7.15)	1246
	07-08	*	**< LOD**	**< LOD**	**1.89** (1.44-2.71)	**4.92** (2.77-8.44)	1277
Females	99-00	*	**< LOD**	**2.06** (.940-4.00)	**9.30** (4.96-25.5)	**27.0** (9.66-47.5)	997
	01-02	*	**< LOD**	**.831** (.412-1.50)	**3.35** (2.50-4.96)	**7.81** (5.29-11.9)	1594
	03-04	*	**< LOD**	**.680** (.538-.887)	**3.59** (2.41-5.18)	**7.12** (4.13-13.1)	1247
	05-06	*	**< LOD**	**< LOD**	**2.40** (2.00-3.18)	**5.25** (3.18-7.60)	1388
	07-08	*	**< LOD**	**< LOD**	**3.05** (2.44-4.00)	**7.18** (4.22-11.1)	1292

< LOD means less than the limit of detection for the urine levels not corrected for creatinine.
* Not calculated: proportion of results below limit of detection was too high to provide a valid result.

Biomonitoring Summary: **http://www.cdc.gov/biomonitoring/OP-DPM_BiomonitoringSummary.html**

Urinary Dimethyldithiophosphate (DMDTP) (creatinine corrected)

Metabolite of Several Organophosphorus Insecticides

Geometric mean and selected percentiles of urine concentrations (in µg/g of creatinine) for the U.S. population from the National Health and Nutrition Examination Survey.

	Survey years	Geometric mean (95% conf. interval)	Selected percentiles (95% confidence interval) 50th	75th	90th	95th	Sample size
Race/ethnicity							
Mexican Americans	99-00	*	**.270** (<LOD-.660)	**1.35** (.860-2.53)	**6.55** (3.83-11.8)	**16.7** (6.25-38.8)	672
	01-02	*	**< LOD**	**.833** (.589-1.15)	**2.72** (2.05-3.32)	**5.16** (3.69-7.83)	763
	03-04	*	**< LOD**	**.651** (.318-1.09)	**2.04** (1.10-3.74)	**4.50** (2.17-5.88)	609
	05-06	*	**< LOD**	**< LOD**	**2.40** (1.29-4.00)	**5.14** (3.45-10.5)	695
	07-08	*	**< LOD**	**< LOD**	**1.97** (1.50-2.77)	**4.30** (2.77-6.92)	490
Non-Hispanic blacks	99-00	*	**.250** (<LOD-.700)	**2.40** (.690-5.44)	**9.41** (4.81-17.8)	**17.9** (11.5-40.7)	509
	01-02	*	**< LOD**	**.403** (<LOD-.847)	**1.69** (.793-3.50)	**3.50** (2.19-5.91)	754
	03-04	*	**< LOD**	**.343** (.242-.477)	**1.07** (.727-1.84)	**3.21** (1.45-6.07)	603
	05-06	*	**< LOD**	**< LOD**	**1.80** (.990-3.89)	**4.95** (2.93-5.59)	722
	07-08	*	**< LOD**	**< LOD**	**1.79** (1.38-2.31)	**4.27** (2.44-6.16)	567
Non-Hispanic whites	99-00	*	**< LOD**	**1.77** (.780-4.02)	**11.4** (4.07-21.5)	**21.5** (11.4-34.8)	595
	01-02	*	**< LOD**	**.787** (.389-1.37)	**3.42** (2.48-5.24)	**7.75** (5.80-9.47)	1252
	03-04	*	**< LOD**	**.631** (.412-.897)	**3.06** (1.75-5.84)	**6.74** (4.42-12.0)	1055
	05-06	*	**< LOD**	**< LOD**	**2.16** (1.64-3.00)	**4.14** (2.91-7.59)	1007
	07-08	*	**< LOD**	**< LOD**	**2.74** (2.12-3.58)	**5.92** (4.00-9.71)	1087

< LOD means less than the limit of detection for the urine levels not corrected for creatinine.
* Not calculated: proportion of results below limit of detection was too high to provide a valid result.

Biomonitoring Summary: http://www.cdc.gov/biomonitoring/OP-DPM_BiomonitoringSummary.html

Urinary *trans*-3-(2,2-Dichlorovinyl)-2,2-dimethylcyclopropane carboxylic acid

Metabolite of Cyfluthrin, trans-Cypermethrin, and trans-Permethrin

Geometric mean and selected percentiles of urine concentrations (in µg/L) for the U.S. population from the National Health and Nutrition Examination Survey.

	Survey years	Geometric mean (95% conf. interval)	Selected percentiles (95% confidence interval) 50th	75th	90th	95th	Sample size
Total	99-00	*	**< LOD**	**.560** (.480-.700)	**1.40** (1.17-1.77)	**3.42** (2.39-5.56)	1976
	01-02	*	**< LOD**	**.430** (<LOD-.560)	**1.18** (.930-1.64)	**2.60** (1.85-3.58)	3033
	07-08	*	**< LOD**	**< LOD**	**2.23** (1.58-3.30)	**5.23** (3.87-7.05)	2576
Age group							
6-11 years	99-00	*	**< LOD**	**.970** (.700-1.66)	**2.91** (1.76-4.19)	**4.19** (2.97-11.7)	478
	01-02	*	**< LOD**	**.470** (<LOD-.760)	**1.39** (1.03-1.68)	**2.50** (1.55-3.54)	576
	07-08	*	**< LOD**	**< LOD**	**1.50** (.740-3.01)	**4.01** (1.81-10.4)	384
12-19 years	99-00	*	**< LOD**	**.710** (.520-.860)	**2.07** (1.25-3.42)	**4.28** (2.12-6.23)	675
	01-02	*	**< LOD**	**.490** (<LOD-.670)	**1.20** (.800-1.60)	**2.01** (1.49-3.77)	826
	07-08	*	**< LOD**	**< LOD**	**2.30** (1.13-3.73)	**5.08** (2.36-7.61)	388
20-59 years	99-00	*	**< LOD**	**.500** (.400-.620)	**1.17** (.910-1.68)	**2.94** (1.49-5.56)	823
	01-02	*	**< LOD**	**< LOD**	**1.17** (.850-1.85)	**2.56** (1.64-4.66)	1123
	07-08	*	**< LOD**	**< LOD**	**2.15** (1.38-3.55)	**5.36** (3.51-7.28)	1174
60 years and older	01-02	*	**< LOD**	**.460** (<LOD-.630)	**1.13** (.760-2.44)	**4.27** (1.20-6.49)	508
	07-08	*	**< LOD**	**< LOD**	**2.33** (.850-4.26)	**4.87** (2.75-9.01)	630
Gender							
Males	99-00	*	**< LOD**	**.560** (.500-.670)	**1.28** (1.11-1.63)	**2.25** (1.55-5.10)	961
	01-02	*	**< LOD**	**.420** (<LOD-.500)	**1.12** (.860-1.58)	**2.44** (1.69-3.70)	1419
	07-08	*	**< LOD**	**< LOD**	**2.20** (1.20-3.76)	**5.29** (3.12-7.61)	1289
Females	99-00	*	**< LOD**	**.550** (.410-.820)	**1.77** (1.07-3.08)	**4.19** (3.08-6.81)	1015
	01-02	*	**< LOD**	**.440** (<LOD-.630)	**1.23** (.910-1.98)	**2.62** (1.90-3.58)	1614
	07-08	*	**< LOD**	**< LOD**	**2.27** (1.49-3.51)	**5.08** (3.55-6.48)	1287
Race/ethnicity							
Mexican Americans	99-00	*	**< LOD**	**.470** (.410-.530)	**1.23** (.830-1.60)	**1.87** (1.49-3.35)	691
	01-02	*	**< LOD**	**.410** (<LOD-.510)	**.860** (.680-1.14)	**1.57** (1.08-2.01)	767
	07-08	*	**< LOD**	**< LOD**	**1.37** (<LOD-1.99)	**2.89** (1.63-4.19)	495
Non-Hispanic blacks	99-00	*	**< LOD**	**.780** (.490-1.13)	**1.84** (1.08-4.69)	**4.69** (1.41-14.5)	518
	01-02	*	**< LOD**	**.590** (.490-.740)	**1.26** (1.05-1.70)	**2.25** (1.54-3.32)	764
	07-08	*	**< LOD**	**< LOD**	**2.24** (1.26-3.30)	**4.25** (3.38-8.10)	569
Non-Hispanic whites	99-00	*	**< LOD**	**.560** (.460-.730)	**1.41** (1.14-2.14)	**3.89** (2.14-6.43)	595
	01-02	*	**< LOD**	**.410** (<LOD-.580)	**1.18** (.850-1.85)	**2.64** (1.85-4.27)	1278
	07-08	*	**< LOD**	**< LOD**	**2.24** (1.38-3.76)	**5.23** (3.96-6.48)	1082

Limit of detection (LOD, see Data Analysis section) for Survey years 99-00, 01-02, and 07-08 are 0.4, 0.4, and 0.6 respectively.
< LOD means less than the limit of detection, which may vary for some chemicals by year and by individual sample.
* Not calculated: proportion of results below limit of detection was too high to provide a valid result.

Urinary *trans*-3-(2,2-Dichlorovinyl)-2,2-dimethylcyclopropane carboxylic acid (creatinine corrected)

Metabolite of Cyfluthrin, trans-Cypermethrin, and trans-Permethrin

Geometric mean and selected percentiles of urine concentrations (in µg/g of creatinine) for the U.S. population from the National Health and Nutrition Examination Survey.

	Survey years	Geometric mean (95% conf. interval)	Selected percentiles (95% confidence interval) 50th	75th	90th	95th	Sample size
Total	99-00	*	**< LOD**	**.700** (.609-.778)	**1.56** (1.33-1.87)	**2.65** (2.15-3.89)	1976
	01-02	*	**< LOD**	**.737** (<LOD-.796)	**1.47** (1.32-1.87)	**2.62** (2.31-3.11)	3031
	07-08	*	**< LOD**	**< LOD**	**2.90** (2.21-3.81)	**5.15** (4.20-6.40)	2574
Age group							
6-11 years	99-00	*	**< LOD**	**1.31** (.718-1.74)	**2.37** (1.56-5.07)	**5.60** (1.91-11.3)	478
	01-02	*	**< LOD**	**.903** (<LOD-1.13)	**2.16** (1.40-2.61)	**2.87** (2.34-3.44)	576
	07-08	*	**< LOD**	**< LOD**	**2.46** (2.07-3.46)	**4.18** (2.47-9.69)	384
12-19 years	99-00	*	**< LOD**	**.525** (.438-.727)	**1.42** (.824-2.19)	**2.19** (1.34-4.31)	675
	01-02	*	**< LOD**	**.528** (<LOD-.657)	**.966** (.800-1.29)	**1.57** (1.07-2.60)	825
	07-08	*	**< LOD**	**< LOD**	**2.06** (1.16-4.97)	**5.51** (2.06-7.15)	386
20-59 years	99-00	*	**< LOD**	**.700** (.571-.769)	**1.33** (1.12-1.87)	**2.39** (1.87-3.36)	823
	01-02	*	**< LOD**	**< LOD**	**1.47** (1.22-2.00)	**2.55** (2.07-3.11)	1123
	07-08	*	**< LOD**	**< LOD**	**2.87** (2.15-3.82)	**5.09** (3.83-6.81)	1174
Gender							
Males	99-00	*	**< LOD**	**.562** (.484-.667)	**1.26** (1.07-1.42)	**2.15** (1.47-2.74)	961
	01-02	*	**< LOD**	**.529** (<LOD-.583)	**1.09** (.966-1.35)	**2.25** (1.57-2.57)	1419
	07-08	*	**< LOD**	**< LOD**	**2.10** (1.36-3.47)	**4.85** (3.20-5.95)	1288
Females	99-00	*	**< LOD**	**.875** (.718-1.11)	**1.91** (1.48-2.39)	**3.67** (2.30-6.28)	1015
	01-02	*	**< LOD**	**.903** (<LOD-1.00)	**1.90** (1.56-2.15)	**3.03** (2.55-3.20)	1612
	07-08	*	**< LOD**	**< LOD**	**3.50** (2.37-4.69)	**6.23** (4.20-9.69)	1286
Race/ethnicity							
Mexican Americans	99-00	*	**< LOD**	**.583** (.500-.745)	**1.35** (1.02-1.65)	**2.00** (1.56-2.80)	691
	01-02	*	**< LOD**	**.573** (<LOD-.651)	**1.08** (.909-1.22)	**1.87** (1.39-2.15)	767
	07-08	*	**< LOD**	**< LOD**	**1.87** (<LOD-2.94)	**3.20** (2.07-4.16)	494
Non-Hispanic blacks	99-00	*	**< LOD**	**.571** (.467-.739)	**1.70** (.853-3.13)	**3.36** (1.87-8.91)	518
	01-02	*	**< LOD**	**.490** (.433-.571)	**1.17** (.848-1.56)	**2.37** (1.40-2.89)	763
	07-08	*	**< LOD**	**< LOD**	**2.00** (1.56-2.63)	**4.85** (2.31-8.30)	568
Non-Hispanic whites	99-00	*	**< LOD**	**.757** (.695-.848)	**1.64** (1.33-2.00)	**3.31** (2.00-5.60)	595
	01-02	*	**< LOD**	**.778** (<LOD-.848)	**1.56** (1.34-2.00)	**2.63** (2.30-3.16)	1277
	07-08	*	**< LOD**	**< LOD**	**3.10** (2.21-4.20)	**5.34** (4.46-7.21)	1082

< LOD means less than the limit of detection for the urine levels not corrected for creatinine.

* Not calculated: proportion of results below limit of detection was too high to provide a valid result.

Urinary *cis*-3-(2,2-Dibromovinyl)-2,2-dimethylcyclopropane carboxylic acid

Metabolite of Deltamethrin

Geometric mean and selected percentiles of urine concentrations (in µg/L) for the U.S. population from the National Health and Nutrition Examination Survey.

	Survey years	Geometric mean (95% conf. interval)	Selected percentiles (95% confidence interval) 50th	75th	90th	95th	Sample size
Total	99-00	*	< LOD	< LOD	< LOD	< LOD	1698
	01-02	*	< LOD	< LOD	< LOD	< LOD	3048
	07-08	*	< LOD	< LOD	< LOD	< LOD	2583
Age group							
6-11 years	99-00	*	< LOD	< LOD	< LOD	< LOD	415
	01-02	*	< LOD	< LOD	< LOD	< LOD	580
	07-08	*	< LOD	< LOD	< LOD	< LOD	384
12-19 years	99-00	*	< LOD	< LOD	< LOD	< LOD	570
	01-02	*	< LOD	< LOD	< LOD	< LOD	831
	07-08	*	< LOD	< LOD	< LOD	< LOD	389
20-59 years	99-00	*	< LOD	< LOD	< LOD	< LOD	713
	01-02	*	< LOD	< LOD	< LOD	< LOD	1128
	07-08	*	< LOD	< LOD	< LOD	< LOD	1177
60 years and older	01-02	*	< LOD	< LOD	< LOD	< LOD	509
	07-08	*	< LOD	< LOD	< LOD	< LOD	633
Gender							
Males	99-00	*	< LOD	< LOD	< LOD	< LOD	818
	01-02	*	< LOD	< LOD	< LOD	< LOD	1429
	07-08	*	< LOD	< LOD	< LOD	< LOD	1290
Females	99-00	*	< LOD	< LOD	< LOD	< LOD	880
	01-02	*	< LOD	< LOD	< LOD	< LOD	1619
	07-08	*	< LOD	< LOD	< LOD	< LOD	1293
Race/ethnicity							
Mexican Americans	99-00	*	< LOD	< LOD	< LOD	< LOD	578
	01-02	*	< LOD	< LOD	< LOD	< LOD	767
	07-08	*	< LOD	< LOD	< LOD	< LOD	500
Non-Hispanic blacks	99-00	*	< LOD	< LOD	< LOD	< LOD	445
	01-02	*	< LOD	< LOD	< LOD	< LOD	776
	07-08	*	< LOD	< LOD	< LOD	< LOD	572
Non-Hispanic whites	99-00	*	< LOD	< LOD	< LOD	< LOD	527
	01-02	*	< LOD	< LOD	< LOD	< LOD	1281
	07-08	*	< LOD	< LOD	< LOD	< LOD	1082

Limit of detection (LOD, see Data Analysis section) for Survey years 99-00, 01-02, and 07-08 are 0.1, 0.1, and 0.5 respectively.
< LOD means less than the limit of detection, which may vary for some chemicals by year and by individual sample.
* Not calculated: proportion of results below limit of detection was too high to provide a valid result.

Urinary *cis*-3-(2,2-Dibromovinyl)-2,2-dimethylcyclopropane carboxylic acid (creatinine corrected)

Metabolite of Deltamethrin

Geometric mean and selected percentiles of urine concentrations (in µg/g of creatinine) for the U.S. population from the National Health and Nutrition Examination Survey.

	Survey years	Geometric mean (95% conf. interval)	Selected percentiles (95% confidence interval) 50th	75th	90th	95th	Sample size
Total	99-00	*	< LOD	< LOD	< LOD	< LOD	1698
	01-02	*	< LOD	< LOD	< LOD	< LOD	3046
	07-08	*	< LOD	< LOD	< LOD	< LOD	2581
Age group							
6-11 years	99-00	*	< LOD	< LOD	< LOD	< LOD	415
	01-02	*	< LOD	< LOD	< LOD	< LOD	580
	07-08	*	< LOD	< LOD	< LOD	< LOD	384
12-19 years	99-00	*	< LOD	< LOD	< LOD	< LOD	570
	01-02	*	< LOD	< LOD	< LOD	< LOD	830
	07-08	*	< LOD	< LOD	< LOD	< LOD	387
20-59 years	99-00	*	< LOD	< LOD	< LOD	< LOD	713
	01-02	*	< LOD	< LOD	< LOD	< LOD	1128
	07-08	*	< LOD	< LOD	< LOD	< LOD	1177
Gender							
Males	99-00	*	< LOD	< LOD	< LOD	< LOD	818
	01-02	*	< LOD	< LOD	< LOD	< LOD	1429
	07-08	*	< LOD	< LOD	< LOD	< LOD	1289
Females	99-00	*	< LOD	< LOD	< LOD	< LOD	880
	01-02	*	< LOD	< LOD	< LOD	< LOD	1617
	07-08	*	< LOD	< LOD	< LOD	< LOD	1292
Race/ethnicity							
Mexican Americans	99-00	*	< LOD	< LOD	< LOD	< LOD	578
	01-02	*	< LOD	< LOD	< LOD	< LOD	767
	07-08	*	< LOD	< LOD	< LOD	< LOD	499
Non-Hispanic blacks	99-00	*	< LOD	< LOD	< LOD	< LOD	445
	01-02	*	< LOD	< LOD	< LOD	< LOD	775
	07-08	*	< LOD	< LOD	< LOD	< LOD	571
Non-Hispanic whites	99-00	*	< LOD	< LOD	< LOD	< LOD	527
	01-02	*	< LOD	< LOD	< LOD	< LOD	1280
	07-08	*	< LOD	< LOD	< LOD	< LOD	1082

< LOD means less than the limit of detection for the urine levels not corrected for creatinine.

* Not calculated: proportion of results below limit of detection was too high to provide a valid result.

Urinary 4-Fluoro-3-phenoxybenzoic acid

Metabolite of Cyfluthrin

Geometric mean and selected percentiles of urine concentrations (in µg/L) for the U.S. population from the National Health and Nutrition Examination Survey.

	Survey years	Geometric mean (95% conf. interval)	Selected percentiles (95% confidence interval) 50th	75th	90th	95th	Sample size
Total	99-00	*	**< LOD**	**< LOD**	**< LOD**	**< LOD**	1949
	01-02	*	**< LOD**	**< LOD**	**< LOD**	**< LOD**	3048
	07-08	*	**< LOD**	**< LOD**	**< LOD**	**.140** (<LOD-.210)	2588
Age group							
6-11 years	99-00	*	**< LOD**	**< LOD**	**< LOD**	**< LOD**	473
	01-02	*	**< LOD**	**< LOD**	**< LOD**	**< LOD**	580
	07-08	*	**< LOD**	**< LOD**	**< LOD**	**.120** (<LOD-.160)	385
12-19 years	99-00	*	**< LOD**	**< LOD**	**< LOD**	**< LOD**	662
	01-02	*	**< LOD**	**< LOD**	**< LOD**	**< LOD**	831
	07-08	*	**< LOD**	**< LOD**	**< LOD**	**< LOD**	390
20-59 years	99-00	*	**< LOD**	**< LOD**	**< LOD**	**< LOD**	814
	01-02	*	**< LOD**	**< LOD**	**< LOD**	**< LOD**	1128
	07-08	*	**< LOD**	**< LOD**	**< LOD**	**.170** (<LOD-.290)	1180
60 years and older	01-02	*	**< LOD**	**< LOD**	**< LOD**	**< LOD**	509
	07-08	*	**< LOD**	**< LOD**	**< LOD**	**.120** (<LOD-.260)	633
Gender							
Males	99-00	*	**< LOD**	**< LOD**	**< LOD**	**< LOD**	950
	01-02	*	**< LOD**	**< LOD**	**< LOD**	**< LOD**	1429
	07-08	*	**< LOD**	**< LOD**	**< LOD**	**.160** (<LOD-.270)	1293
Females	99-00	*	**< LOD**	**< LOD**	**< LOD**	**< LOD**	999
	01-02	*	**< LOD**	**< LOD**	**< LOD**	**< LOD**	1619
	07-08	*	**< LOD**	**< LOD**	**< LOD**	**< LOD**	1295
Race/ethnicity							
Mexican Americans	99-00	*	**< LOD**	**< LOD**	**< LOD**	**< LOD**	666
	01-02	*	**< LOD**	**< LOD**	**< LOD**	**< LOD**	767
	07-08	*	**< LOD**	**< LOD**	**< LOD**	**.160** (<LOD-.240)	500
Non-Hispanic blacks	99-00	*	**< LOD**	**< LOD**	**< LOD**	**< LOD**	517
	01-02	*	**< LOD**	**< LOD**	**< LOD**	**< LOD**	776
	07-08	*	**< LOD**	**< LOD**	**< LOD**	**.140** (<LOD-.250)	574
Non-Hispanic whites	99-00	*	**< LOD**	**< LOD**	**< LOD**	**< LOD**	594
	01-02	*	**< LOD**	**< LOD**	**< LOD**	**< LOD**	1281
	07-08	*	**< LOD**	**< LOD**	**< LOD**	**.140** (<LOD-.210)	1084

Limit of detection (LOD, see Data Analysis section) for Survey years 99-00, 01-02, and 07-08 are 0.2, 0.2, and 0.1 respectively.
< LOD means less than the limit of detection, which may vary for some chemicals by year and by individual sample.
* Not calculated: proportion of results below limit of detection was too high to provide a valid result.

Urinary 4-Fluoro-3-phenoxybenzoic acid (creatinine corrected)

Metabolite of Cyfluthrin

Geometric mean and selected percentiles of urine concentrations (in µg/g of creatinine) for the U.S. population from the National Health and Nutrition Examination Survey.

	Survey years	Geometric mean (95% conf. interval)	Selected percentiles (95% confidence interval) 50th	75th	90th	95th	Sample size
Total	99-00	*	**< LOD**	**< LOD**	**< LOD**	**< LOD**	1949
	01-02	*	**< LOD**	**< LOD**	**< LOD**	**< LOD**	3046
	07-08	*	**< LOD**	**< LOD**	**< LOD**	**.350** (<LOD-.412)	2586
Age group							
6-11 years	99-00	*	**< LOD**	**< LOD**	**< LOD**	**< LOD**	473
	01-02	*	**< LOD**	**< LOD**	**< LOD**	**< LOD**	580
	07-08	*	**< LOD**	**< LOD**	**< LOD**	**.374** (<LOD-.412)	385
12-19 years	99-00	*	**< LOD**	**< LOD**	**< LOD**	**< LOD**	662
	01-02	*	**< LOD**	**< LOD**	**< LOD**	**< LOD**	830
	07-08	*	**< LOD**	**< LOD**	**< LOD**	**< LOD**	388
20-59 years	99-00	*	**< LOD**	**< LOD**	**< LOD**	**< LOD**	814
	01-02	*	**< LOD**	**< LOD**	**< LOD**	**< LOD**	1128
	07-08	*	**< LOD**	**< LOD**	**< LOD**	**.368** (<LOD-.467)	1180
Gender							
Males	99-00	*	**< LOD**	**< LOD**	**< LOD**	**< LOD**	950
	01-02	*	**< LOD**	**< LOD**	**< LOD**	**< LOD**	1429
	07-08	*	**< LOD**	**< LOD**	**< LOD**	**.233** (<LOD-.280)	1292
Females	99-00	*	**< LOD**	**< LOD**	**< LOD**	**< LOD**	999
	01-02	*	**< LOD**	**< LOD**	**< LOD**	**< LOD**	1617
	07-08	*	**< LOD**	**< LOD**	**< LOD**	**< LOD**	1294
Race/ethnicity							
Mexican Americans	99-00	*	**< LOD**	**< LOD**	**< LOD**	**< LOD**	666
	01-02	*	**< LOD**	**< LOD**	**< LOD**	**< LOD**	767
	07-08	*	**< LOD**	**< LOD**	**< LOD**	**.333** (<LOD-.414)	499
Non-Hispanic blacks	99-00	*	**< LOD**	**< LOD**	**< LOD**	**< LOD**	517
	01-02	*	**< LOD**	**< LOD**	**< LOD**	**< LOD**	775
	07-08	*	**< LOD**	**< LOD**	**< LOD**	**.235** (<LOD-.292)	573
Non-Hispanic whites	99-00	*	**< LOD**	**< LOD**	**< LOD**	**< LOD**	594
	01-02	*	**< LOD**	**< LOD**	**< LOD**	**< LOD**	1280
	07-08	*	**< LOD**	**< LOD**	**< LOD**	**.368** (<LOD-.438)	1084

< LOD means less than the limit of detection for the urine levels not corrected for creatinine.

* Not calculated: proportion of results below limit of detection was too high to provide a valid result.

Urinary 3-Phenoxybenzoic acid

Metabolite of Cypermethrin, Deltamethrin, and Permethrin

Geometric mean and selected percentiles of urine concentrations (in µg/L) for the U.S. population from the National Health and Nutrition Examination Survey.

	Survey years	Geometric mean (95% conf. interval)	Selected percentiles (95% confidence interval) 50th	75th	90th	95th	Sample size
Total	99-00	**.292** (.247-.345)	**.250** (.190-.320)	**.730** (.590-.850)	**1.75** (1.49-2.16)	**4.33** (2.62-6.30)	1998
	01-02	**.318** (.275-.368)	**.270** (.220-.340)	**.700** (.570-.810)	**1.73** (1.49-2.16)	**3.54** (2.69-5.25)	3048
	07-08	**.401** (.350-.460)	**.390** (.340-.450)	**1.10** (.870-1.39)	**3.22** (2.55-4.19)	**6.63** (4.99-8.24)	2454
Age group							
6-11 years	99-00	**.417** (.292-.595)	**.320** (.210-.490)	**1.12** (.700-1.60)	**4.18** (2.02-6.54)	**8.63** (3.89-71.1)	483
	01-02	**.325** (.260-.406)	**.300** (.200-.420)	**.760** (.570-1.05)	**1.81** (1.42-2.78)	**3.38** (2.25-4.12)	580
	07-08	**.397** (.339-.464)	**.360** (.280-.410)	**1.13** (.780-1.55)	**3.40** (2.19-5.87)	**9.88** (3.40-17.3)	371
12-19 years	99-00	**.336** (.265-.427)	**.290** (.200-.440)	**.870** (.620-1.04)	**1.93** (1.49-2.90)	**4.33** (1.83-11.1)	682
	01-02	**.353** (.288-.434)	**.300** (.250-.390)	**.800** (.560-1.13)	**1.86** (1.48-2.35)	**3.45** (2.14-6.69)	831
	07-08	**.393** (.273-.565)	**.360** (.200-.640)	**1.15** (.720-1.83)	**2.96** (2.11-6.73)	**7.42** (2.96-12.1)	361
20-59 years	99-00	**.267** (.227-.314)	**.230** (.160-.300)	**.640** (.510-.820)	**1.49** (1.25-1.78)	**3.21** (2.04-5.41)	833
	01-02	**.314** (.271-.364)	**.270** (.220-.340)	**.670** (.530-.780)	**1.65** (1.27-2.34)	**3.25** (2.51-6.16)	1128
	07-08	**.427** (.376-.485)	**.420** (.370-.470)	**1.11** (.900-1.39)	**3.38** (2.42-4.99)	**6.65** (4.86-9.69)	1110
60 years and older	01-02	**.303** (.233-.394)	**.250** (.180-.350)	**.690** (.490-1.10)	**2.03** (1.45-3.68)	**5.16** (2.77-6.61)	509
	07-08	**.335** (.270-.416)	**.300** (.210-.470)	**1.05** (.690-1.54)	**2.68** (1.84-3.97)	**4.70** (2.83-6.43)	612
Gender							
Males	99-00	**.273** (.226-.330)	**.250** (.180-.330)	**.710** (.570-.820)	**1.49** (1.29-1.73)	**2.41** (1.92-3.79)	974
	01-02	**.326** (.281-.379)	**.300** (.230-.360)	**.690** (.570-.750)	**1.60** (1.37-2.15)	**3.23** (2.56-5.25)	1429
	07-08	**.419** (.361-.487)	**.430** (.370-.500)	**1.11** (.830-1.48)	**3.12** (2.15-4.58)	**5.91** (4.19-7.56)	1215
Females	99-00	**.311** (.253-.384)	**.250** (.190-.340)	**.740** (.510-.990)	**2.30** (1.63-3.36)	**6.03** (3.27-11.8)	1024
	01-02	**.311** (.260-.371)	**.250** (.200-.320)	**.730** (.550-.920)	**1.81** (1.53-2.47)	**3.76** (2.51-6.55)	1619
	07-08	**.385** (.322-.462)	**.360** (.290-.450)	**1.07** (.820-1.42)	**3.30** (2.32-5.30)	**6.79** (5.15-9.69)	1239
Race/ethnicity							
Mexican Americans	99-00	**.260** (.230-.295)	**.230** (.190-.270)	**.600** (.430-.750)	**1.35** (1.16-1.53)	**2.18** (1.53-3.26)	697
	01-02	**.290** (.233-.361)	**.260** (.190-.350)	**.650** (.490-.810)	**1.26** (.860-2.17)	**2.65** (1.50-3.44)	767
	07-08	**.369** (.302-.451)	**.400** (.280-.460)	**.940** (.740-1.15)	**2.27** (1.58-3.39)	**3.62** (2.70-12.7)	476
Non-Hispanic blacks	99-00	**.454** (.352-.586)	**.450** (.350-.610)	**1.13** (.750-1.46)	**2.32** (1.45-5.35)	**5.35** (2.32-21.1)	524
	01-02	**.507** (.430-.599)	**.520** (.440-.630)	**.980** (.840-1.20)	**2.03** (1.72-2.52)	**3.86** (3.05-5.84)	776
	07-08	**.420** (.353-.501)	**.430** (.320-.540)	**1.12** (.770-1.66)	**3.11** (2.44-4.26)	**6.13** (4.12-8.39)	533
Non-Hispanic whites	99-00	**.288** (.233-.355)	**.240** (.160-.320)	**.710** (.530-.850)	**1.78** (1.41-3.05)	**5.34** (2.62-8.43)	603
	01-02	**.297** (.248-.355)	**.240** (.190-.320)	**.600** (.490-.780)	**1.75** (1.46-2.34)	**3.70** (2.52-6.16)	1281
	07-08	**.394** (.329-.470)	**.380** (.310-.450)	**1.09** (.780-1.42)	**3.38** (2.42-4.92)	**6.53** (5.15-8.24)	1040

Limit of detection (LOD, see Data Analysis section) for Survey years 99-00, 01-02, and 07-08 are 0.1, 0.1, and 0.1 respectively.

Urinary 3-Phenoxybenzoic acid (creatinine corrected)

Metabolite of Cypermethrin, Deltamethrin, and Permethrin

Geometric mean and selected percentiles of urine concentrations (in µg/g of creatinine) for the U.S. population from the National Health and Nutrition Examination Survey.

	Survey years	Geometric mean (95% conf. interval)	Selected percentiles (95% confidence interval) 50th	75th	90th	95th	Sample size
Total	99-00	**.261** (.224-.304)	**.246** (.203-.280)	**.550** (.459-.629)	**1.40** (1.13-1.73)	**3.19** (2.16-4.55)	1998
	01-02	**.324** (.284-.371)	**.290** (.247-.336)	**.600** (.512-.743)	**1.54** (1.26-1.91)	**3.35** (2.50-4.92)	3046
	07-08	**.426** (.374-.485)	**.384** (.333-.450)	**1.02** (.886-1.19)	**3.08** (2.31-4.04)	**5.83** (4.52-7.51)	2452
Age group							
6-11 years	99-00	**.450** (.299-.677)	**.371** (.241-.592)	**1.13** (.733-1.62)	**3.97** (1.75-8.07)	**9.91** (2.43-64.0)	483
	01-02	**.423** (.335-.534)	**.383** (.296-.500)	**.864** (.594-1.35)	**2.21** (1.61-2.95)	**3.32** (2.64-5.40)	580
	07-08	**.511** (.431-.605)	**.448** (.363-.545)	**1.20** (.886-1.83)	**3.81** (2.13-7.27)	**9.86** (3.81-15.7)	371
12-19 years	99-00	**.227** (.178-.290)	**.205** (.156-.269)	**.486** (.379-.732)	**1.37** (1.03-1.62)	**2.52** (1.41-4.44)	682
	01-02	**.274** (.229-.328)	**.236** (.189-.313)	**.539** (.424-.730)	**1.11** (.864-1.63)	**2.35** (1.36-6.19)	830
	07-08	**.316** (.230-.434)	**.281** (.191-.425)	**.869** (.523-1.29)	**3.13** (1.47-4.37)	**5.41** (3.36-9.20)	359
20-59 years	99-00	**.246** (.216-.278)	**.239** (.200-.272)	**.505** (.405-.590)	**1.11** (.861-1.49)	**2.53** (1.73-4.09)	833
	01-02	**.311** (.271-.357)	**.282** (.245-.328)	**.552** (.444-.673)	**1.44** (1.02-1.91)	**3.22** (1.91-4.92)	1128
	07-08	**.443** (.384-.510)	**.401** (.353-.472)	**1.01** (.867-1.16)	**2.95** (2.22-4.04)	**6.29** (4.18-8.05)	1110
Gender							
Males	99-00	**.210** (.173-.253)	**.195** (.152-.254)	**.513** (.388-.582)	**1.09** (.841-1.41)	**1.72** (1.49-2.52)	974
	01-02	**.269** (.233-.310)	**.239** (.203-.280)	**.500** (.429-.571)	**1.27** (1.05-1.59)	**2.95** (1.74-4.00)	1429
	07-08	**.359** (.314-.411)	**.333** (.291-.392)	**.840** (.722-1.00)	**2.58** (1.58-3.57)	**4.42** (3.40-6.46)	1214
Females	99-00	**.323** (.270-.387)	**.273** (.235-.333)	**.608** (.477-.743)	**1.94** (1.35-3.00)	**5.04** (3.19-6.90)	1024
	01-02	**.388** (.331-.455)	**.344** (.284-.408)	**.737** (.563-.938)	**1.84** (1.46-2.35)	**4.43** (2.62-5.59)	1617
	07-08	**.500** (.416-.601)	**.433** (.355-.540)	**1.28** (.995-1.60)	**3.56** (2.40-4.93)	**7.20** (5.15-9.57)	1238
Race/ethnicity							
Mexican Americans	99-00	**.234** (.202-.272)	**.219** (.187-.234)	**.475** (.368-.594)	**1.04** (.700-1.39)	**1.67** (1.06-3.00)	697
	01-02	**.274** (.230-.328)	**.242** (.206-.316)	**.512** (.404-.654)	**1.03** (.750-1.67)	**1.83** (1.15-2.75)	767
	07-08	**.386** (.320-.466)	**.379** (.287-.488)	**.911** (.692-1.24)	**1.94** (1.47-2.38)	**3.16** (2.08-9.55)	475
Non-Hispanic blacks	99-00	**.309** (.238-.401)	**.268** (.224-.353)	**.636** (.456-.935)	**1.49** (1.05-3.43)	**3.86** (1.51-7.25)	524
	01-02	**.374** (.308-.455)	**.357** (.290-.430)	**.675** (.561-.817)	**1.44** (1.20-2.31)	**2.91** (2.03-3.76)	775
	07-08	**.335** (.287-.391)	**.320** (.269-.375)	**.748** (.621-1.03)	**2.30** (1.68-3.35)	**4.62** (3.21-6.54)	532
Non-Hispanic whites	99-00	**.272** (.225-.329)	**.250** (.200-.292)	**.552** (.443-.667)	**1.55** (1.09-2.27)	**4.02** (2.07-5.49)	603
	01-02	**.321** (.274-.377)	**.281** (.238-.333)	**.586** (.468-.811)	**1.59** (1.26-2.19)	**3.57** (2.25-5.59)	1280
	07-08	**.438** (.369-.519)	**.368** (.304-.488)	**1.00** (.849-1.23)	**3.41** (2.41-4.37)	**6.29** (4.52-8.37)	1040

Urinary Antimony

Geometric mean and selected percentiles of urine concentrations (in µg/L) for the U.S. population from the National Health and Nutrition Examination Survey.

	Survey years	Geometric mean (95% conf. interval)	Selected percentiles (95% confidence interval) 50th	75th	90th	95th	Sample size
Total	99-00	**.132** (.120-.145)	**.130** (.120-.150)	**.220** (.200-.230)	**.330** (.300-.350)	**.430** (.390-.470)	2276
	01-02	**.134** (.126-.142)	**.130** (.130-.140)	**.190** (.180-.200)	**.270** (.250-.310)	**.350** (.320-.400)	2690
	03-04	*	**.080** (<LOD-.090)	**.130** (.120-.150)	**.200** (.190-.220)	**.280** (.250-.320)	2558
	05-06	**.073** (.066-.081)	**.070** (.070-.080)	**.120** (.110-.140)	**.220** (.180-.250)	**.300** (.270-.360)	2576
	07-08	**.061** (.057-.066)	**.060** (.060-.060)	**.100** (.090-.110)	**.170** (.140-.200)	**.240** (.220-.260)	2627
	09-10	**.056** (.053-.059)	**.050** (.050-.060)	**.090** (.090-.100)	**.170** (.140-.180)	**.230** (.200-.280)	2847
Age group							
6-11 years	99-00	**.176** (.154-.200)	**.190** (.160-.210)	**.260** (.230-.280)	**.350** (.300-.400)	**.440** (.320-.600)	316
	01-02	**.146** (.134-.160)	**.150** (.130-.160)	**.200** (.180-.210)	**.270** (.240-.330)	**.340** (.280-.440)	368
	03-04	**.099** (.087-.114)	**.100** (.070-.120)	**.160** (.120-.200)	**.240** (.190-.310)	**.310** (.230-.330)	290
	05-06	**.075** (.063-.088)	**.080** (.060-.090)	**.110** (.090-.130)	**.190** (.120-.260)	**.240** (.170-.340)	355
	07-08	**.068** (.061-.077)	**.070** (.060-.080)	**.110** (.090-.130)	**.170** (.150-.210)	**.230** (.180-.280)	394
	09-10	**.069** (.061-.079)	**.070** (.060-.080)	**.120** (.100-.150)	**.220** (.150-.260)	**.260** (.230-.350)	378
12-19 years	99-00	**.158** (.141-.178)	**.170** (.150-.180)	**.240** (.210-.270)	**.350** (.290-.420)	**.460** (.350-.510)	663
	01-02	**.169** (.156-.184)	**.160** (.150-.180)	**.240** (.220-.260)	**.350** (.320-.410)	**.460** (.400-.500)	762
	03-04	**.105** (.095-.115)	**.100** (.090-.120)	**.150** (.140-.160)	**.230** (.200-.270)	**.290** (.250-.370)	725
	05-06	**.092** (.083-.101)	**.090** (.080-.100)	**.140** (.130-.160)	**.240** (.200-.270)	**.280** (.250-.320)	701
	07-08	**.079** (.069-.091)	**.080** (.070-.090)	**.130** (.110-.140)	**.210** (.150-.230)	**.230** (.210-.340)	376
	09-10	**.063** (.056-.071)	**.060** (.050-.070)	**.100** (.090-.120)	**.180** (.150-.210)	**.270** (.180-.370)	451
20 years and older	99-00	**.123** (.112-.137)	**.120** (.110-.130)	**.200** (.180-.220)	**.310** (.290-.350)	**.430** (.390-.470)	1297
	01-02	**.128** (.119-.136)	**.130** (.120-.130)	**.180** (.170-.190)	**.250** (.220-.300)	**.330** (.280-.390)	1560
	03-04	*	**.070** (<LOD-.080)	**.120** (.100-.140)	**.190** (.170-.210)	**.270** (.220-.320)	1543
	05-06	**.070** (.064-.078)	**.070** (.060-.080)	**.120** (.110-.140)	**.220** (.180-.270)	**.320** (.260-.420)	1520
	07-08	**.058** (.054-.062)	**.060** (.050-.060)	**.090** (.090-.100)	**.160** (.130-.190)	**.240** (.210-.270)	1857
	09-10	**.054** (.051-.057)	**.050** (.050-.050)	**.090** (.080-.090)	**.150** (.140-.180)	**.220** (.190-.270)	2018
Gender							
Males	99-00	**.143** (.131-.157)	**.150** (.130-.160)	**.240** (.220-.260)	**.350** (.330-.390)	**.470** (.390-.570)	1132
	01-02	**.145** (.136-.154)	**.140** (.130-.150)	**.200** (.190-.210)	**.310** (.280-.330)	**.390** (.350-.440)	1335
	03-04	**.095** (.088-.103)	**.090** (.080-.100)	**.140** (.130-.160)	**.220** (.200-.250)	**.320** (.270-.350)	1281
	05-06	**.085** (.076-.095)	**.080** (.080-.090)	**.140** (.120-.160)	**.250** (.210-.290)	**.350** (.260-.460)	1271
	07-08	**.068** (.062-.076)	**.070** (.060-.070)	**.110** (.100-.120)	**.210** (.170-.230)	**.280** (.230-.340)	1327
	09-10	**.060** (.055-.065)	**.060** (.050-.070)	**.100** (.090-.110)	**.170** (.150-.200)	**.250** (.200-.290)	1397
Females	99-00	**.122** (.109-.137)	**.120** (.110-.140)	**.200** (.180-.220)	**.300** (.280-.340)	**.400** (.350-.460)	1144
	01-02	**.125** (.117-.133)	**.120** (.120-.130)	**.180** (.160-.190)	**.240** (.220-.280)	**.320** (.260-.360)	1355
	03-04	*	**< LOD**	**.120** (.090-.140)	**.180** (.150-.220)	**.230** (.190-.330)	1277
	05-06	**.063** (.057-.071)	**.060** (.050-.070)	**.100** (.090-.120)	**.180** (.150-.230)	**.270** (.200-.330)	1305
	07-08	**.055** (.052-.058)	**.050** (.050-.060)	**.090** (.080-.100)	**.130** (.120-.150)	**.200** (.170-.230)	1300
	09-10	**.052** (.049-.056)	**.050** (.040-.050)	**.090** (.080-.090)	**.150** (.130-.170)	**.220** (.190-.270)	1450

Limit of detection (LOD, see Data Analysis section) for Survey years 99-00, 01-02, 03-04, 05-06, 07-08, and 09-10 are 0.04, 0.04, 0.07, 0.032, 0.032, and 0.032 respectively.
< LOD means less than the limit of detection, which may vary for some chemicals by year and by individual sample.
* Not calculated: proportion of results below limit of detection was too high to provide a valid result.

Biomonitoring Summary: http://www.cdc.gov/biomonitoring/Antimony_BiomonitoringSummary.html

Urinary Antimony

Geometric mean and selected percentiles of urine concentrations (in µg/L) for the U.S. population from the National Health and Nutrition Examination Survey.

	Survey years	Geometric mean (95% conf. interval)	Selected percentiles (95% confidence interval) 50th	75th	90th	95th	Sample size
Race/ethnicity							
Mexican Americans	99-00	**.132** (.108-.161)	**.140** (.120-.170)	**.210** (.180-.240)	**.300** (.260-.390)	**.430** (.330-.560)	787
	01-02	**.142** (.130-.154)	**.130** (.130-.150)	**.200** (.170-.230)	**.260** (.240-.320)	**.360** (.300-.400)	683
	03-04	**.093** (.079-.110)	**.090** (<LOD-.120)	**.140** (.120-.160)	**.190** (.160-.260)	**.270** (.210-.330)	618
	05-06	**.093** (.082-.105)	**.090** (.080-.100)	**.150** (.140-.170)	**.250** (.210-.340)	**.470** (.270-.850)	652
	07-08	**.069** (.060-.079)	**.070** (.060-.080)	**.110** (.100-.120)	**.190** (.150-.250)	**.270** (.220-.390)	515
	09-10	**.063** (.060-.067)	**.060** (.060-.070)	**.110** (.090-.120)	**.170** (.150-.200)	**.250** (.200-.270)	613
Non-Hispanic blacks	99-00	**.175** (.148-.207)	**.180** (.150-.200)	**.260** (.230-.300)	**.400** (.310-.490)	**.490** (.410-.710)	554
	01-02	**.180** (.164-.197)	**.170** (.160-.190)	**.250** (.220-.280)	**.360** (.320-.410)	**.460** (.370-.530)	667
	03-04	**.108** (.098-.119)	**.110** (.100-.120)	**.160** (.150-.190)	**.230** (.200-.280)	**.310** (.250-.360)	723
	05-06	**.088** (.077-.100)	**.090** (.080-.100)	**.140** (.130-.170)	**.210** (.190-.250)	**.280** (.240-.320)	692
	07-08	**.085** (.079-.092)	**.080** (.080-.090)	**.130** (.120-.140)	**.210** (.180-.250)	**.290** (.250-.370)	589
	09-10	**.073** (.065-.081)	**.070** (.060-.080)	**.120** (.110-.140)	**.190** (.160-.250)	**.280** (.220-.350)	544
Non-Hispanic whites	99-00	**.128** (.115-.144)	**.130** (.110-.140)	**.210** (.190-.230)	**.330** (.280-.350)	**.400** (.360-.500)	768
	01-02	**.126** (.117-.135)	**.130** (.120-.130)	**.180** (.170-.190)	**.250** (.230-.300)	**.340** (.310-.390)	1132
	03-04	*	**.070** (<LOD-.080)	**.130** (.110-.140)	**.190** (.170-.210)	**.280** (.230-.320)	1074
	05-06	**.069** (.062-.077)	**.070** (.060-.080)	**.110** (.100-.130)	**.210** (.170-.260)	**.300** (.240-.380)	1041
	07-08	**.057** (.052-.063)	**.060** (.050-.060)	**.090** (.080-.110)	**.150** (.130-.200)	**.230** (.190-.260)	1095
	09-10	**.053** (.050-.057)	**.050** (.040-.050)	**.090** (.080-.090)	**.160** (.130-.190)	**.230** (.190-.280)	1225

Limit of detection (LOD, see Data Analysis section) for Survey years 99-00, 01-02, 03-04, 05-06, 07-08, and 09-10 are 0.04, 0.04, 0.07, 0.032, 0.032, and 0.032 respectively.
< LOD means less than the limit of detection, which may vary for some chemicals by year and by individual sample.
* Not calculated: proportion of results below limit of detection was too high to provide a valid result.

Biomonitoring Summary: **http://www.cdc.gov/biomonitoring/Antimony_BiomonitoringSummary.html**

Urinary Antimony (creatinine corrected)

Geometric mean and selected percentiles of urine concentrations (in µg/g of creatinine) for the U.S. population from the National Health and Nutrition Examination Survey.

	Survey years	Geometric mean (95% conf. interval)	Selected percentiles (95% confidence interval) 50th	75th	90th	95th	Sample size
Total	99-00	**.124** (.108-.143)	**.119** (.102-.143)	**.185** (.164-.214)	**.276** (.233-.333)	**.385** (.333-.430)	2276
	01-02	**.126** (.119-.134)	**.120** (.115-.126)	**.173** (.162-.188)	**.267** (.242-.300)	**.364** (.320-.414)	2689
	03-04	*	**.080** (<LOD-.086)	**.135** (.119-.143)	**.208** (.192-.230)	**.277** (.250-.294)	2558
	05-06	**.072** (.068-.077)	**.070** (.060-.070)	**.100** (.100-.110)	**.160** (.150-.190)	**.230** (.190-.290)	2576
	07-08	**.064** (.060-.068)	**.060** (.060-.060)	**.090** (.080-.100)	**.140** (.140-.160)	**.200** (.170-.230)	2627
	09-10	**.060** (.056-.064)	**.060** (.050-.060)	**.090** (.080-.090)	**.140** (.120-.160)	**.200** (.180-.230)	2847
Age group							
6-11 years	99-00	**.191** (.147-.248)	**.185** (.156-.220)	**.250** (.200-.417)	**.447** (.271-.741)	**.741** (.333-1.30)	316
	01-02	**.178** (.159-.200)	**.173** (.150-.193)	**.228** (.200-.272)	**.338** (.265-.480)	**.471** (.313-.727)	368
	03-04	**.116** (.103-.130)	**.118** (.098-.136)	**.167** (.146-.187)	**.256** (.194-.317)	**.333** (.250-.500)	290
	05-06	**.092** (.081-.104)	**.090** (.080-.110)	**.130** (.110-.150)	**.180** (.150-.210)	**.220** (.180-.270)	355
	07-08	**.089** (.079-.100)	**.090** (.070-.100)	**.120** (.110-.140)	**.200** (.150-.240)	**.300** (.200-.370)	394
	09-10	**.094** (.084-.106)	**.090** (.080-.100)	**.140** (.120-.160)	**.200** (.170-.250)	**.280** (.220-.320)	378
12-19 years	99-00	**.121** (.104-.140)	**.120** (.095-.146)	**.176** (.146-.207)	**.259** (.206-.310)	**.310** (.228-.421)	663
	01-02	**.121** (.112-.131)	**.115** (.106-.127)	**.160** (.138-.186)	**.224** (.199-.245)	**.266** (.244-.310)	762
	03-04	**.075** (.068-.082)	**.068** (.061-.077)	**.100** (.092-.113)	**.156** (.126-.173)	**.193** (.172-.255)	725
	05-06	**.070** (.065-.076)	**.070** (.060-.080)	**.100** (.090-.110)	**.140** (.120-.150)	**.170** (.150-.250)	701
	07-08	**.062** (.054-.070)	**.060** (.050-.070)	**.090** (.070-.100)	**.120** (.100-.160)	**.160** (.110-.240)	376
	09-10	**.059** (.053-.066)	**.060** (.050-.060)	**.090** (.070-.100)	**.130** (.110-.170)	**.180** (.150-.220)	451
20 years and older	99-00	**.118** (.104-.135)	**.111** (.097-.135)	**.175** (.149-.209)	**.263** (.227-.320)	**.352** (.320-.391)	1297
	01-02	**.122** (.115-.129)	**.115** (.108-.121)	**.167** (.153-.181)	**.265** (.241-.300)	**.364** (.318-.405)	1559
	03-04	*	**.079** (<LOD-.087)	**.135** (.116-.145)	**.209** (.195-.233)	**.278** (.250-.294)	1543
	05-06	**.070** (.066-.075)	**.060** (.060-.070)	**.100** (.090-.110)	**.170** (.150-.190)	**.250** (.190-.300)	1520
	07-08	**.062** (.058-.066)	**.060** (.050-.060)	**.090** (.080-.100)	**.140** (.130-.160)	**.200** (.160-.240)	1857
	09-10	**.057** (.053-.061)	**.050** (.050-.060)	**.080** (.080-.090)	**.130** (.120-.140)	**.190** (.160-.220)	2018
Gender							
Males	99-00	**.112** (.099-.127)	**.109** (.095-.127)	**.164** (.146-.181)	**.226** (.204-.268)	**.320** (.235-.391)	1132
	01-02	**.114** (.107-.123)	**.108** (.103-.115)	**.153** (.138-.171)	**.228** (.205-.250)	**.333** (.281-.438)	1334
	03-04	**.080** (.076-.084)	**.075** (.069-.081)	**.122** (.111-.132)	**.192** (.173-.209)	**.253** (.230-.278)	1281
	05-06	**.070** (.064-.077)	**.060** (.060-.070)	**.100** (.090-.120)	**.160** (.130-.220)	**.250** (.170-.310)	1271
	07-08	**.061** (.057-.066)	**.060** (.050-.060)	**.090** (.080-.100)	**.140** (.130-.160)	**.210** (.160-.260)	1327
	09-10	**.055** (.050-.060)	**.050** (.050-.060)	**.080** (.070-.100)	**.130** (.120-.150)	**.190** (.160-.210)	1397
Females	99-00	**.137** (.117-.161)	**.131** (.108-.164)	**.213** (.176-.247)	**.320** (.263-.417)	**.429** (.357-.485)	1144
	01-02	**.139** (.131-.148)	**.132** (.124-.140)	**.196** (.178-.211)	**.295** (.267-.317)	**.371** (.333-.444)	1355
	03-04	*	**< LOD**	**.143** (.125-.161)	**.225** (.188-.261)	**.288** (.250-.333)	1277
	05-06	**.074** (.070-.078)	**.070** (.070-.070)	**.110** (.100-.110)	**.170** (.150-.190)	**.220** (.180-.300)	1305
	07-08	**.067** (.062-.071)	**.060** (.060-.070)	**.100** (.090-.100)	**.140** (.130-.160)	**.200** (.160-.230)	1300
	09-10	**.064** (.060-.069)	**.060** (.060-.070)	**.090** (.090-.100)	**.150** (.130-.170)	**.220** (.180-.260)	1450

< LOD means less than the limit of detection for the urine levels not corrected for creatinine.
* Not calculated: proportion of results below limit of detection was too high to provide a valid result.

Biomonitoring Summary: http://www.cdc.gov/biomonitoring/Antimony_BiomonitoringSummary.html

Urinary Antimony (creatinine corrected)

Geometric mean and selected percentiles of urine concentrations (in µg/g of creatinine) for the U.S. population from the National Health and Nutrition Examination Survey.

	Survey years	Geometric mean (95% conf. interval)	Selected percentiles (95% confidence interval) 50th	75th	90th	95th	Sample size
Race/ethnicity							
Mexican Americans	99-00	**.120** (.107-.135)	**.114** (.105-.129)	**.167** (.148-.203)	**.250** (.209-.315)	**.333** (.280-.357)	787
	01-02	**.138** (.128-.149)	**.130** (.117-.143)	**.182** (.159-.203)	**.269** (.229-.308)	**.338** (.308-.429)	682
	03-04	**.086** (.076-.098)	**.082** (<LOD-.092)	**.129** (.107-.151)	**.189** (.154-.238)	**.238** (.185-.321)	618
	05-06	**.087** (.076-.099)	**.080** (.070-.080)	**.120** (.110-.130)	**.190** (.150-.310)	**.370** (.200-.800)	652
	07-08	**.069** (.059-.081)	**.060** (.050-.080)	**.100** (.080-.120)	**.160** (.130-.180)	**.200** (.160-.360)	515
	09-10	**.066** (.063-.071)	**.060** (.060-.060)	**.100** (.080-.110)	**.160** (.130-.190)	**.240** (.190-.280)	613
Non-Hispanic blacks	99-00	**.114** (.099-.133)	**.112** (.098-.130)	**.163** (.144-.183)	**.236** (.195-.338)	**.343** (.255-.425)	554
	01-02	**.123** (.113-.134)	**.115** (.106-.127)	**.163** (.150-.181)	**.233** (.208-.267)	**.300** (.248-.373)	667
	03-04	**.078** (.071-.085)	**.074** (.069-.082)	**.109** (.096-.124)	**.170** (.148-.192)	**.222** (.179-.257)	723
	05-06	**.064** (.058-.071)	**.060** (.050-.070)	**.090** (.080-.090)	**.130** (.120-.150)	**.190** (.150-.220)	692
	07-08	**.062** (.059-.066)	**.060** (.050-.070)	**.090** (.080-.090)	**.140** (.120-.160)	**.180** (.160-.220)	589
	09-10	**.058** (.053-.063)	**.060** (.050-.060)	**.080** (.070-.090)	**.130** (.110-.160)	**.170** (.150-.190)	544
Non-Hispanic whites	99-00	**.129** (.109-.152)	**.125** (.102-.152)	**.195** (.167-.225)	**.298** (.239-.352)	**.400** (.333-.444)	768
	01-02	**.127** (.117-.138)	**.120** (.113-.130)	**.176** (.159-.198)	**.280** (.241-.317)	**.380** (.318-.471)	1132
	03-04	*	**.081** (<LOD-.089)	**.139** (.124-.147)	**.217** (.200-.238)	**.286** (.253-.333)	1074
	05-06	**.072** (.068-.077)	**.070** (.060-.070)	**.110** (.100-.110)	**.170** (.150-.190)	**.230** (.190-.280)	1041
	07-08	**.064** (.060-.069)	**.060** (.050-.070)	**.090** (.080-.100)	**.140** (.140-.160)	**.210** (.170-.230)	1095
	09-10	**.060** (.055-.065)	**.060** (.050-.060)	**.090** (.080-.100)	**.140** (.120-.170)	**.200** (.170-.250)	1225

< LOD means less than the limit of detection for the urine levels not corrected for creatinine.
* Not calculated: proportion of results below limit of detection was too high to provide a valid result.

Biomonitoring Summary: **http://www.cdc.gov/biomonitoring/Antimony_BiomonitoringSummary.html**

Urinary Total Arsenic

Geometric mean and selected percentiles of urine concentrations (in µg /L) for the U.S. population from the National Health and Nutrition Examination Survey.

	Survey years	Geometric mean (95% conf. interval)	Selected percentiles (95% confidence interval) 50th	75th	90th	95th	Sample size
Total	03-04	**8.30** (7.19-9.57)	**7.70** (6.90-8.90)	**16.0** (14.1-18.7)	**37.4** (31.6-43.5)	**65.4** (48.7-83.3)	2557
	05-06	**9.29** (8.05-10.7)	**8.65** (7.48-9.99)	**17.1** (14.9-20.6)	**41.1** (33.3-49.7)	**66.7** (53.7-87.0)	2576
	07-08	**8.10** (7.44-8.83)	**7.49** (6.90-8.12)	**14.9** (13.2-17.0)	**33.3** (29.8-38.7)	**50.8** (42.3-65.1)	2605
	09-10	**9.28** (8.47-10.2)	**8.15** (7.20-8.98)	**18.0** (15.3-20.8)	**44.6** (39.0-55.1)	**85.6** (64.7-114)	2860
Age group							
6-11 years	03-04	**7.08** (5.66-8.84)	**6.80** (5.90-7.70)	**10.9** (8.90-14.2)	**24.6** (13.8-61.8)	**46.9** (17.5-178)	290
	05-06	**7.19** (5.81-8.90)	**6.96** (5.32-8.88)	**11.5** (9.19-16.0)	**19.6** (13.1-51.5)	**34.1** (19.6-58.5)	355
	07-08	**6.85** (5.98-7.83)	**6.40** (5.74-7.23)	**10.8** (9.75-12.3)	**22.5** (16.9-34.7)	**41.0** (21.1-52.8)	390
	09-10	**6.63** (5.74-7.66)	**5.94** (5.14-7.19)	**10.8** (9.37-12.5)	**26.0** (18.2-33.4)	**37.7** (27.8-65.6)	378
12-19 years	03-04	**8.55** (7.34-9.97)	**8.10** (6.80-9.40)	**15.2** (12.2-17.8)	**30.5** (23.1-40.4)	**46.1** (32.9-62.5)	725
	05-06	**8.19** (6.87-9.77)	**7.92** (6.37-9.50)	**14.0** (11.6-18.1)	**28.2** (22.9-32.9)	**41.9** (32.7-48.0)	701
	07-08	**7.09** (6.17-8.14)	**6.87** (5.88-7.86)	**11.4** (9.41-13.7)	**20.4** (16.1-26.6)	**38.2** (21.6-53.3)	373
	09-10	**6.45** (5.58-7.47)	**6.11** (5.26-6.89)	**10.8** (8.59-13.7)	**25.9** (16.2-32.9)	**38.8** (27.8-55.1)	454
20 years and older	03-04	**8.41** (7.25-9.77)	**7.90** (7.00-9.10)	**17.0** (15.0-19.7)	**40.5** (34.9-46.2)	**66.2** (51.2-93.1)	1542
	05-06	**9.76** (8.43-11.3)	**9.12** (7.85-10.4)	**18.9** (15.8-22.9)	**44.2** (35.2-56.1)	**71.4** (57.7-98.3)	1520
	07-08	**8.43** (7.70-9.22)	**7.94** (7.09-8.67)	**16.2** (14.5-18.6)	**35.2** (30.4-42.3)	**59.0** (44.2-75.6)	1842
	09-10	**10.2** (9.14-11.3)	**8.75** (7.95-9.81)	**20.4** (17.2-24.1)	**52.1** (42.4-66.1)	**93.1** (74.2-127)	2028
Gender							
Males	03-04	**9.50** (8.34-10.8)	**8.90** (7.70-9.80)	**17.6** (15.2-20.1)	**41.6** (32.5-52.8)	**65.8** (48.7-95.4)	1281
	05-06	**10.1** (8.61-11.8)	**8.95** (8.05-10.0)	**18.3** (15.5-22.9)	**40.8** (31.0-52.6)	**63.7** (46.4-78.7)	1271
	07-08	**9.25** (8.28-10.3)	**8.50** (7.37-9.53)	**17.0** (14.6-19.4)	**36.0** (32.1-44.2)	**62.5** (44.3-84.6)	1318
	09-10	**10.1** (9.06-11.3)	**8.80** (7.80-9.75)	**20.4** (16.1-23.9)	**47.4** (42.1-64.1)	**89.1** (71.6-114)	1401
Females	03-04	**7.30** (6.02-8.84)	**6.90** (5.90-8.30)	**15.0** (11.3-19.5)	**33.4** (26.5-41.7)	**60.5** (40.8-77.1)	1276
	05-06	**8.60** (7.38-10.0)	**8.18** (6.64-9.97)	**15.9** (13.7-19.9)	**41.5** (32.2-53.7)	**72.6** (54.8-122)	1305
	07-08	**7.14** (6.51-7.82)	**6.54** (6.09-7.14)	**12.7** (11.6-14.4)	**30.1** (26.0-34.0)	**49.1** (40.1-57.5)	1287
	09-10	**8.55** (7.44-9.83)	**7.63** (6.45-8.62)	**15.8** (13.1-19.9)	**41.5** (31.7-55.5)	**81.5** (54.3-132)	1459
Race/ethnicity							
Mexican Americans	03-04	**9.29** (8.12-10.6)	**9.20** (8.10-10.3)	**16.2** (13.5-19.9)	**34.4** (24.0-60.5)	**68.2** (41.3-111)	618
	05-06	**9.55** (8.54-10.7)	**9.11** (7.99-10.3)	**15.6** (14.0-17.1)	**29.2** (21.4-56.8)	**67.6** (41.7-81.4)	652
	07-08	**8.98** (8.13-9.92)	**8.84** (7.80-9.48)	**15.4** (12.3-19.7)	**35.2** (25.0-46.0)	**53.0** (44.2-77.4)	510
	09-10	**8.47** (7.30-9.84)	**7.96** (6.87-9.08)	**13.9** (11.3-17.7)	**34.7** (25.0-53.2)	**60.9** (49.3-78.7)	613
Non-Hispanic blacks	03-04	**11.6** (9.50-14.1)	**10.4** (7.90-11.8)	**21.5** (14.9-34.4)	**43.5** (36.2-61.8)	**78.0** (43.6-141)	722
	05-06	**11.0** (8.60-14.0)	**9.55** (6.99-13.3)	**21.9** (14.9-28.9)	**44.9** (31.1-71.4)	**82.3** (49.2-164)	692
	07-08	**10.5** (9.40-11.7)	**9.21** (8.22-10.4)	**18.4** (16.1-21.5)	**42.4** (32.9-52.8)	**65.6** (45.5-112)	585
	09-10	**10.9** (9.46-12.5)	**9.26** (7.70-11.4)	**21.7** (17.6-24.2)	**49.1** (32.2-81.7)	**84.8** (51.3-174)	546
Non-Hispanic whites	03-04	**7.12** (6.13-8.27)	**7.00** (6.10-7.90)	**13.7** (11.3-15.8)	**29.0** (22.6-35.9)	**53.1** (38.4-65.6)	1074
	05-06	**8.66** (7.20-10.4)	**8.05** (6.52-9.66)	**16.3** (13.4-20.6)	**40.8** (29.4-50.2)	**58.5** (46.0-88.0)	1041
	07-08	**6.98** (6.31-7.71)	**6.46** (5.93-7.29)	**12.4** (11.3-14.3)	**28.3** (21.6-32.6)	**42.1** (32.3-50.0)	1088
	09-10	**8.18** (7.46-8.96)	**7.24** (6.46-8.21)	**14.8** (12.7-17.4)	**38.9** (31.7-44.4)	**66.3** (49.3-88.7)	1224

Limit of detection (LOD, see Data Analysis section) for Survey years 03-04, 05-06, 07-08 and 09-10 are 0.74, 0.74, 0.74, and 0.74 respectively.

Biomonitoring Summary: http://www.cdc.gov/biomonitoring/Arsenic_BiomonitoringSummary.html
Factsheet: http://www.cdc.gov/biomonitoring/Arsenic_FactSheet.html

Urinary Total Arsenic (creatinine corrected)

Geometric mean and selected percentiles of urine concentrations (in µg /g of creatinine) for the U.S. population from the National Health and Nutrition Examination Survey.

	Survey years	Geometric mean (95% conf. interval)	Selected percentiles (95% confidence interval) 50th	75th	90th	95th	Sample size
Total	03-04	**8.24** (7.07-9.59)	**7.04** (5.93-8.51)	**14.1** (11.6-17.2)	**30.4** (26.0-38.7)	**50.4** (40.3-64.5)	2557
	05-06	**9.15** (7.93-10.6)	**7.70** (6.55-8.98)	**15.2** (11.7-19.4)	**35.1** (26.5-44.7)	**62.8** (44.7-85.0)	2576
	07-08	**8.46** (7.78-9.21)	**7.06** (6.56-7.74)	**13.8** (12.5-15.2)	**28.9** (24.2-36.7)	**49.0** (38.8-70.5)	2605
	09-10	**9.90** (9.06-10.8)	**7.90** (6.98-8.97)	**17.6** (15.4-20.2)	**45.2** (36.6-53.3)	**80.8** (60.5-94.4)	2860
Age group							
6-11 years	03-04	**8.25** (6.58-10.3)	**7.18** (5.93-9.45)	**11.7** (9.10-16.3)	**22.2** (12.0-69.5)	**40.1** (14.7-188)	290
	05-06	**8.88** (7.05-11.2)	**7.87** (6.19-9.42)	**11.8** (9.32-18.9)	**24.5** (13.0-62.8)	**45.4** (22.9-80.9)	355
	07-08	**8.87** (8.06-9.77)	**7.53** (6.73-7.88)	**13.4** (10.2-16.0)	**26.7** (19.9-34.0)	**37.2** (28.6-71.4)	390
	09-10	**8.97** (7.93-10.2)	**7.42** (6.70-8.32)	**11.0** (9.90-14.0)	**33.5** (17.0-54.6)	**60.8** (36.6-84.9)	378
12-19 years	03-04	**6.11** (5.23-7.13)	**5.06** (4.47-6.04)	**9.66** (7.44-11.2)	**17.8** (12.0-26.0)	**27.8** (20.7-35.9)	725
	05-06	**6.30** (5.56-7.14)	**5.19** (4.80-6.19)	**9.62** (8.12-11.1)	**19.4** (13.9-25.8)	**28.0** (21.9-33.2)	701
	07-08	**5.50** (4.91-6.16)	**4.96** (4.25-5.40)	**7.69** (6.09-9.31)	**16.8** (10.8-21.1)	**22.5** (16.8-29.1)	373
	09-10	**6.06** (5.34-6.87)	**4.95** (4.39-5.81)	**9.18** (7.00-11.0)	**19.2** (14.5-21.3)	**28.4** (20.8-35.7)	454
20 years and older	03-04	**8.64** (7.38-10.1)	**7.47** (6.20-9.01)	**15.4** (12.7-18.8)	**33.8** (27.3-41.2)	**53.9** (45.4-64.5)	1542
	05-06	**9.75** (8.46-11.2)	**8.22** (6.98-9.75)	**17.0** (12.8-21.3)	**41.0** (29.6-52.5)	**68.4** (52.8-89.7)	1520
	07-08	**9.00** (8.20-9.88)	**7.55** (6.79-8.53)	**14.9** (13.1-17.1)	**32.5** (25.8-41.0)	**59.4** (41.0-86.2)	1842
	09-10	**10.8** (9.71-12.0)	**8.73** (7.69-9.71)	**20.1** (16.5-24.2)	**50.8** (40.5-59.7)	**87.3** (70.0-105)	2028
Gender							
Males	03-04	**8.00** (6.81-9.40)	**6.75** (5.66-8.35)	**13.7** (11.0-18.0)	**28.7** (25.1-36.4)	**45.6** (35.3-62.1)	1281
	05-06	**8.26** (7.09-9.63)	**7.16** (5.87-8.54)	**12.9** (10.2-18.0)	**28.8** (22.9-36.3)	**46.1** (35.1-66.5)	1271
	07-08	**8.30** (7.49-9.18)	**6.79** (6.39-7.61)	**13.2** (11.8-15.2)	**28.9** (23.5-38.5)	**47.7** (35.7-68.1)	1318
	09-10	**9.21** (8.55-9.93)	**7.22** (6.43-8.67)	**17.0** (14.9-18.6)	**41.8** (35.4-47.9)	**66.9** (52.0-81.5)	1401
Females	03-04	**8.47** (7.12-10.1)	**7.33** (6.10-8.75)	**14.4** (11.7-17.7)	**32.3** (24.2-46.6)	**58.4** (42.8-75.0)	1276
	05-06	**10.1** (8.72-11.7)	**8.29** (7.23-9.87)	**17.4** (13.0-21.4)	**43.8** (29.2-61.5)	**74.1** (55.0-96.2)	1305
	07-08	**8.63** (7.91-9.41)	**7.13** (6.53-8.33)	**14.1** (12.3-16.9)	**27.9** (24.1-37.0)	**51.4** (39.7-83.3)	1287
	09-10	**10.6** (9.36-12.0)	**8.38** (7.40-9.41)	**18.6** (14.9-23.9)	**50.8** (35.1-72.9)	**87.8** (66.8-109)	1459
Race/ethnicity							
Mexican Americans	03-04	**8.61** (7.33-10.1)	**7.76** (6.30-9.44)	**12.6** (10.2-15.9)	**24.0** (17.7-34.8)	**42.4** (24.8-62.4)	618
	05-06	**8.98** (7.89-10.2)	**7.48** (6.72-8.87)	**12.8** (11.0-16.3)	**28.1** (21.1-35.5)	**49.1** (31.0-108)	652
	07-08	**8.88** (7.71-10.2)	**7.38** (6.51-8.63)	**14.1** (10.6-17.8)	**28.6** (22.5-35.3)	**48.2** (31.1-75.7)	510
	09-10	**8.88** (7.87-10.0)	**7.62** (6.69-8.45)	**13.2** (10.7-17.2)	**31.4** (23.7-38.5)	**49.8** (37.5-68.9)	613
Non-Hispanic blacks	03-04	**8.31** (6.99-9.88)	**6.88** (5.66-8.41)	**13.8** (11.5-17.0)	**27.6** (17.9-56.0)	**54.3** (27.5-120)	722
	05-06	**7.96** (6.40-9.92)	**6.48** (5.21-8.30)	**13.4** (10.0-18.6)	**32.5** (18.7-66.5)	**71.4** (35.6-98.8)	692
	07-08	**7.72** (6.98-8.54)	**6.60** (6.01-7.56)	**13.4** (11.5-15.4)	**25.7** (22.1-30.0)	**42.7** (31.4-60.3)	585
	09-10	**8.67** (7.54-9.98)	**7.26** (5.96-9.02)	**15.6** (12.4-21.3)	**38.7** (31.5-48.7)	**63.9** (43.1-102)	546
Non-Hispanic whites	03-04	**7.50** (6.25-9.01)	**6.32** (5.28-7.96)	**12.5** (9.86-17.1)	**26.8** (21.8-32.0)	**40.0** (31.3-53.9)	1074
	05-06	**9.01** (7.57-10.7)	**7.68** (6.18-9.56)	**14.3** (11.1-20.8)	**31.9** (24.1-46.1)	**59.4** (37.9-96.2)	1041
	07-08	**7.82** (7.05-8.68)	**6.72** (6.00-7.54)	**12.5** (11.1-13.9)	**24.6** (19.6-32.3)	**43.1** (29.1-64.0)	1088
	09-10	**9.14** (8.35-10.0)	**7.10** (6.43-8.06)	**15.8** (13.7-18.4)	**40.9** (30.4-50.8)	**66.4** (50.9-90.0)	1224

Biomonitoring Summary: http://www.cdc.gov/biomonitoring/Arsenic_BiomonitoringSummary.html
Factsheet: http://www.cdc.gov/biomonitoring/Arsenic_FactSheet.html

Urinary Arsenic (V) acid

Geometric mean and selected percentiles of urine concentrations (in µg As/L) for the U.S. population from the National Health and Nutrition Examination Survey.

	Survey years	Geometric mean (95% conf. interval)	Selected percentiles (95% confidence interval) 50th	75th	90th	95th	Sample size
Total	03-04	*	< LOD	< LOD	< LOD	**1.10** (<LOD-1.50)	2568
	05-06	*	< LOD	< LOD	< LOD	**1.06** (<LOD-1.43)	2588
	07-08	*	< LOD	< LOD	< LOD	< LOD	2576
	09-10	*	< LOD	< LOD	< LOD	< LOD	2852
Age group							
6-11 years	03-04	*	< LOD	< LOD	< LOD	**1.10** (<LOD-1.30)	292
	05-06	*	< LOD	< LOD	< LOD	< LOD	354
	07-08	*	< LOD	< LOD	< LOD	< LOD	390
	09-10	*	< LOD	< LOD	< LOD	< LOD	379
12-19 years	03-04	*	< LOD	< LOD	< LOD	**1.20** (<LOD-1.60)	728
	05-06	*	< LOD	< LOD	< LOD	**1.00** (<LOD-1.30)	703
	07-08	*	< LOD	< LOD	< LOD	< LOD	366
	09-10	*	< LOD	< LOD	< LOD	< LOD	453
20 years and older	03-04	*	< LOD	< LOD	< LOD	**1.10** (<LOD-1.50)	1548
	05-06	*	< LOD	< LOD	< LOD	**1.09** (<LOD-1.71)	1531
	07-08	*	< LOD	< LOD	< LOD	< LOD	1820
	09-10	*	< LOD	< LOD	< LOD	< LOD	2020
Gender							
Males	03-04	*	< LOD	< LOD	< LOD	**1.20** (<LOD-1.50)	1284
	05-06	*	< LOD	< LOD	< LOD	**1.14** (<LOD-1.71)	1276
	07-08	*	< LOD	< LOD	< LOD	< LOD	1289
	09-10	*	< LOD	< LOD	< LOD	< LOD	1396
Females	03-04	*	< LOD	< LOD	< LOD	**1.10** (<LOD-1.30)	1284
	05-06	*	< LOD	< LOD	< LOD	**1.01** (<LOD-1.22)	1312
	07-08	*	< LOD	< LOD	< LOD	< LOD	1287
	09-10	*	< LOD	< LOD	< LOD	< LOD	1456
Race/ethnicity							
Mexican Americans	03-04	*	< LOD	< LOD	< LOD	**1.20** (<LOD-1.60)	621
	05-06	*	< LOD	< LOD	< LOD	< LOD	651
	07-08	*	< LOD	< LOD	< LOD	< LOD	513
	09-10	*	< LOD	< LOD	< LOD	< LOD	618
Non-Hispanic blacks	03-04	*	< LOD	< LOD	< LOD	**1.20** (<LOD-1.80)	725
	05-06	*	< LOD	< LOD	< LOD	< LOD	695
	07-08	*	< LOD	< LOD	< LOD	< LOD	586
	09-10	*	< LOD	< LOD	< LOD	< LOD	543
Non-Hispanic whites	03-04	*	< LOD	< LOD	< LOD	**1.10** (<LOD-1.50)	1078
	05-06	*	< LOD	< LOD	< LOD	**1.10** (<LOD-1.74)	1050
	07-08	*	< LOD	< LOD	< LOD	< LOD	1063
	09-10	*	< LOD	< LOD	< LOD	< LOD	1210

Limit of detection (LOD, see Data Analysis section) for Survey years 03-04, 05-06, 07-08 and 09-10 are 1.0, 1.0, 1.0, and 1.0 respectively.
< LOD means less than the limit of detection, which may vary for some chemicals by year and by individual sample.
* Not calculated: proportion of results below limit of detection was too high to provide a valid result.

Biomonitoring Summary: http://www.cdc.gov/biomonitoring/Arsenic_BiomonitoringSummary.html
Factsheet: http://www.cdc.gov/biomonitoring/Arsenic_FactSheet.html

Urinary Arsenic (V) acid (creatinine corrected)

Geometric mean and selected percentiles of urine concentrations (in µg As/g of creatinine) for the U.S. population from the National Health and Nutrition Examination Survey.

	Survey years	Geometric mean (95% conf. interval)	Selected percentiles (95% confidence interval) 50th	75th	90th	95th	Sample size
Total	03-04	*	< LOD	< LOD	< LOD	**3.04** (<LOD-3.50)	2568
	05-06	*	< LOD	< LOD	< LOD	**3.23** (<LOD-3.55)	2588
	07-08	*	< LOD	< LOD	< LOD	< LOD	2576
	09-10	*	< LOD	< LOD	< LOD	< LOD	2851
Age group							
6-11 years	03-04	*	< LOD	< LOD	< LOD	**2.80** (<LOD-4.00)	292
	05-06	*	< LOD	< LOD	< LOD	< LOD	354
	07-08	*	< LOD	< LOD	< LOD	< LOD	390
	09-10	*	< LOD	< LOD	< LOD	< LOD	378
12-19 years	03-04	*	< LOD	< LOD	< LOD	**1.75** (<LOD-2.41)	728
	05-06	*	< LOD	< LOD	< LOD	**1.69** (<LOD-2.73)	703
	07-08	*	< LOD	< LOD	< LOD	< LOD	366
	09-10	*	< LOD	< LOD	< LOD	< LOD	453
20 years and older	03-04	*	< LOD	< LOD	< LOD	**3.18** (<LOD-3.70)	1548
	05-06	*	< LOD	< LOD	< LOD	**3.38** (<LOD-3.94)	1531
	07-08	*	< LOD	< LOD	< LOD	< LOD	1820
	09-10	*	< LOD	< LOD	< LOD	< LOD	2020
Gender							
Males	03-04	*	< LOD	< LOD	< LOD	**2.61** (<LOD-3.18)	1284
	05-06	*	< LOD	< LOD	< LOD	**2.14** (<LOD-2.73)	1276
	07-08	*	< LOD	< LOD	< LOD	< LOD	1289
	09-10	*	< LOD	< LOD	< LOD	< LOD	1395
Females	03-04	*	< LOD	< LOD	< LOD	**3.33** (<LOD-3.89)	1284
	05-06	*	< LOD	< LOD	< LOD	**3.55** (<LOD-4.44)	1312
	07-08	*	< LOD	< LOD	< LOD	< LOD	1287
	09-10	*	< LOD	< LOD	< LOD	< LOD	1456
Race/ethnicity							
Mexican Americans	03-04	*	< LOD	< LOD	< LOD	**2.69** (<LOD-3.50)	621
	05-06	*	< LOD	< LOD	< LOD	< LOD	651
	07-08	*	< LOD	< LOD	< LOD	< LOD	513
	09-10	*	< LOD	< LOD	< LOD	< LOD	618
Non-Hispanic blacks	03-04	*	< LOD	< LOD	< LOD	**1.75** (<LOD-2.19)	725
	05-06	*	< LOD	< LOD	< LOD	< LOD	695
	07-08	*	< LOD	< LOD	< LOD	< LOD	586
	09-10	*	< LOD	< LOD	< LOD	< LOD	542
Non-Hispanic whites	03-04	*	< LOD	< LOD	< LOD	**3.33** (<LOD-3.95)	1078
	05-06	*	< LOD	< LOD	< LOD	**3.38** (<LOD-3.80)	1050
	07-08	*	< LOD	< LOD	< LOD	< LOD	1063
	09-10	*	< LOD	< LOD	< LOD	< LOD	1210

< LOD means less than the limit of detection for the urine levels not corrected for creatinine.
* Not calculated: proportion of results below limit of detection was too high to provide a valid result.

Biomonitoring Summary: http://www.cdc.gov/biomonitoring/Arsenic_BiomonitoringSummary.html
Factsheet: http://www.cdc.gov/biomonitoring/Arsenic_FactSheet.html

Urinary Arsenobetaine

Geometric mean and selected percentiles of urine concentrations (in µg As/L) for the U.S. population from the National Health and Nutrition Examination Survey.

	Survey years	Geometric mean (95% conf. interval)	Selected percentiles (95% confidence interval) 50th	75th	90th	95th	Sample size
Total	03-04	**1.55** (1.31-1.83)	**1.00** (.800-1.40)	**5.20** (4.00-6.50)	**16.8** (12.7-22.3)	**35.0** (27.6-44.6)	2568
	05-06	**1.86** (1.43-2.41)	**1.53** (.980-2.26)	**6.73** (4.80-8.91)	**22.6** (16.5-30.3)	**40.6** (30.7-59.4)	2588
	07-08	*	**.670** (.510-.910)	**4.26** (3.53-4.88)	**16.6** (12.5-20.2)	**29.5** (22.8-37.1)	2576
	09-10	**1.59** (1.38-1.83)	**.940** (.720-1.26)	**6.18** (4.67-7.87)	**23.5** (19.8-30.1)	**50.4** (35.7-63.2)	2870
Age group							
6-11 years	03-04	*	**< LOD**	**1.80** (.800-4.00)	**8.80** (3.90-29.9)	**29.9** (6.20-190)	292
	05-06	*	**< LOD**	**2.22** (.620-5.35)	**7.14** (2.34-29.9)	**18.9** (5.46-45.0)	354
	07-08	*	**< LOD**	**1.24** (.780-2.42)	**6.71** (3.37-8.38)	**13.0** (7.22-25.2)	390
	09-10	*	**< LOD**	**1.20** (.590-3.12)	**7.98** (5.20-15.7)	**19.4** (9.25-47.9)	380
12-19 years	03-04	*	**.600** (.400-.800)	**3.20** (2.00-4.70)	**13.9** (7.20-25.1)	**31.8** (17.2-35.8)	728
	05-06	*	**.550** (<LOD-1.14)	**3.76** (1.95-7.16)	**12.4** (9.15-20.4)	**25.6** (16.4-32.4)	703
	07-08	*	**< LOD**	**1.72** (.780-2.62)	**4.88** (3.49-9.17)	**10.4** (6.81-23.6)	366
	09-10	*	**< LOD**	**2.07** (1.26-3.60)	**11.0** (5.35-16.7)	**17.8** (12.8-24.0)	455
20 years and older	03-04	**1.74** (1.48-2.05)	**1.30** (1.00-1.60)	**6.10** (4.90-7.10)	**18.5** (14.0-23.5)	**35.5** (26.8-50.5)	1548
	05-06	**2.20** (1.71-2.84)	**1.89** (1.41-2.64)	**8.14** (5.86-10.4)	**27.6** (18.7-35.7)	**43.9** (36.0-67.9)	1531
	07-08	**1.46** (1.28-1.67)	**.960** (.750-1.22)	**5.08** (4.30-6.20)	**19.1** (14.3-23.7)	**31.7** (23.9-46.1)	1820
	09-10	**1.92** (1.63-2.26)	**1.33** (.960-1.91)	**7.60** (6.06-9.90)	**28.2** (21.9-34.9)	**59.5** (45.7-76.7)	2035
Gender							
Males	03-04	**1.66** (1.43-1.93)	**1.20** (.900-1.50)	**5.80** (4.40-7.10)	**18.6** (13.9-23.7)	**35.0** (26.8-40.5)	1284
	05-06	**1.83** (1.40-2.40)	**1.44** (.920-2.04)	**6.63** (5.06-8.66)	**23.2** (12.8-33.4)	**37.1** (28.5-51.3)	1276
	07-08	*	**.910** (.660-1.26)	**5.07** (4.01-6.81)	**19.1** (13.8-22.6)	**30.3** (22.8-46.1)	1289
	09-10	**1.71** (1.48-1.97)	**.990** (.780-1.33)	**7.14** (5.38-9.86)	**26.8** (21.5-31.8)	**57.4** (36.4-64.6)	1402
Females	03-04	**1.45** (1.17-1.80)	**.900** (.700-1.40)	**4.70** (3.40-6.20)	**15.6** (11.1-25.3)	**32.7** (21.1-51.3)	1284
	05-06	**1.88** (1.42-2.50)	**1.64** (.950-2.51)	**6.81** (4.03-9.88)	**21.8** (17.3-30.1)	**43.3** (33.8-67.9)	1312
	07-08	*	**.530** (.410-.650)	**3.52** (2.94-4.35)	**14.0** (10.9-17.5)	**29.5** (19.4-34.0)	1287
	09-10	**1.49** (1.20-1.84)	**.890** (.590-1.35)	**5.54** (3.56-7.74)	**21.2** (14.7-32.7)	**47.1** (32.5-76.4)	1468
Race/ethnicity							
Mexican Americans	03-04	**1.19** (.871-1.62)	**.800** (.500-1.30)	**3.20** (1.80-5.20)	**10.2** (6.70-21.4)	**31.4** (16.3-39.1)	621
	05-06	**1.44** (1.23-1.69)	**1.04** (.770-1.35)	**3.90** (3.03-5.06)	**16.8** (11.1-32.0)	**41.4** (23.4-57.9)	651
	07-08	*	**.560** (<LOD-.910)	**3.27** (2.00-5.65)	**16.9** (9.73-20.8)	**29.6** (19.3-40.5)	513
	09-10	*	**.640** (.440-.800)	**3.58** (1.80-5.89)	**15.5** (7.83-24.6)	**31.9** (18.7-44.7)	617
Non-Hispanic blacks	03-04	**2.29** (1.60-3.28)	**2.00** (1.20-3.50)	**7.70** (5.00-12.0)	**23.7** (13.2-38.7)	**45.6** (25.1-94.0)	725
	05-06	**2.55** (1.64-3.99)	**2.42** (1.15-4.58)	**8.74** (6.01-14.4)	**23.8** (15.9-48.9)	**59.6** (30.5-121)	695
	07-08	**1.58** (1.31-1.90)	**1.11** (.750-1.60)	**5.88** (4.12-8.13)	**21.9** (16.4-24.9)	**35.9** (25.4-47.7)	586
	09-10	**1.99** (1.60-2.47)	**1.79** (1.05-2.41)	**7.61** (5.34-10.0)	**25.5** (15.4-37.6)	**51.2** (31.0-90.9)	546
Non-Hispanic whites	03-04	**1.37** (1.11-1.68)	**.800** (.700-1.20)	**4.30** (2.50-6.30)	**13.3** (9.70-21.4)	**29.3** (21.4-35.5)	1078
	05-06	**1.74** (1.27-2.40)	**1.41** (.750-2.27)	**6.40** (3.93-9.04)	**22.4** (14.1-30.1)	**38.4** (27.8-66.8)	1050
	07-08	*	**.530** (<LOD-.780)	**3.63** (3.06-4.38)	**12.6** (9.08-17.1)	**24.3** (17.6-30.3)	1063
	09-10	**1.43** (1.24-1.65)	**.800** (.610-1.18)	**5.40** (3.77-7.27)	**20.6** (17.7-24.5)	**41.3** (30.6-59.5)	1226

Limit of detection (LOD, see Data Analysis section) for Survey years 03-04, 05-06, 07-08 and 09-10 are 0.4, 0.4, 0.4, and 0.4 respectively.
< LOD means less than the limit of detection, which may vary for some chemicals by year and by individual sample.
* Not calculated: proportion of results below limit of detection was too high to provide a valid result.

Biomonitoring Summary: http://www.cdc.gov/biomonitoring/Arsenic_BiomonitoringSummary.html
Factsheet: http://www.cdc.gov/biomonitoring/Arsenic_FactSheet.html

Urinary Arsenobetaine (creatinine corrected)

Geometric mean and selected percentiles of urine concentrations (in µg As/g of creatinine) for the U.S. population from the National Health and Nutrition Examination Survey.

	Survey years	Geometric mean (95% conf. interval)	Selected percentiles (95% confidence interval) 50th	75th	90th	95th	Sample size
Total	03-04	**1.54** (1.30-1.82)	**1.16** (.959-1.43)	**5.00** (3.62-6.91)	**16.2** (12.5-20.3)	**29.4** (24.0-36.4)	2568
	05-06	**1.82** (1.40-2.37)	**1.64** (1.10-2.41)	**6.64** (4.48-8.79)	**20.3** (14.5-28.1)	**37.0** (27.5-58.3)	2588
	07-08	*	**1.00** (.850-1.18)	**4.07** (3.36-4.98)	**14.7** (11.1-17.8)	**27.7** (18.9-45.4)	2576
	09-10	**1.69** (1.45-1.97)	**1.23** (.980-1.47)	**6.48** (4.90-8.00)	**23.6** (18.5-30.7)	**49.6** (36.6-61.3)	2869
Age group							
6-11 years	03-04	*	**< LOD**	**2.00** (1.15-4.83)	**12.2** (4.13-39.7)	**29.6** (6.80-153)	292
	05-06	*	**< LOD**	**2.88** (1.04-6.25)	**8.77** (2.88-40.5)	**23.6** (6.86-74.8)	354
	07-08	*	**< LOD**	**2.11** (1.27-3.79)	**8.98** (4.76-14.8)	**16.4** (8.98-23.8)	390
	09-10	*	**< LOD**	**1.70** (1.21-3.02)	**9.52** (5.08-20.7)	**24.9** (9.81-50.7)	379
12-19 years	03-04	*	**.531** (.400-.638)	**2.14** (1.39-3.51)	**9.29** (4.29-14.7)	**17.3** (10.4-28.7)	728
	05-06	*	**.620** (<LOD-.800)	**2.82** (1.58-4.77)	**10.5** (7.03-13.7)	**15.4** (11.8-22.3)	703
	07-08	*	**< LOD**	**1.28** (.650-1.72)	**5.17** (2.31-6.53)	**9.88** (5.72-16.0)	366
	09-10	*	**< LOD**	**2.25** (1.17-3.76)	**8.69** (5.03-12.8)	**14.0** (9.82-15.5)	455
20 years and older	03-04	**1.79** (1.51-2.12)	**1.47** (1.15-1.88)	**5.91** (4.32-7.72)	**17.2** (13.4-21.8)	**30.1** (26.1-36.4)	1548
	05-06	**2.19** (1.70-2.82)	**2.13** (1.40-2.83)	**7.79** (5.38-10.2)	**24.4** (16.6-32.9)	**43.1** (30.5-71.4)	1531
	07-08	**1.55** (1.36-1.78)	**1.29** (1.13-1.52)	**5.27** (3.91-6.40)	**16.6** (12.2-21.6)	**33.4** (21.0-55.9)	1820
	09-10	**2.03** (1.70-2.42)	**1.52** (1.18-2.16)	**7.65** (6.04-10.4)	**27.7** (22.1-35.9)	**57.0** (39.7-71.9)	2035
Gender							
Males	03-04	**1.40** (1.18-1.67)	**1.11** (.909-1.28)	**4.78** (3.61-6.70)	**14.4** (11.1-18.5)	**26.5** (18.6-29.9)	1284
	05-06	**1.50** (1.15-1.96)	**1.25** (.800-1.93)	**5.11** (3.41-7.54)	**15.3** (11.2-20.8)	**30.5** (19.6-44.0)	1276
	07-08	*	**1.04** (.870-1.25)	**4.11** (3.16-5.30)	**14.9** (10.1-17.9)	**27.0** (17.8-49.2)	1289
	09-10	**1.56** (1.35-1.80)	**1.04** (.880-1.34)	**6.20** (4.34-7.79)	**23.4** (18.7-27.6)	**39.2** (32.0-54.8)	1401
Females	03-04	**1.68** (1.37-2.05)	**1.25** (.938-1.67)	**5.58** (3.50-7.43)	**17.2** (12.3-24.5)	**32.9** (25.6-46.3)	1284
	05-06	**2.20** (1.65-2.93)	**2.04** (1.30-2.92)	**7.86** (5.38-10.8)	**26.4** (16.6-35.6)	**46.2** (30.3-74.3)	1312
	07-08	*	**.980** (.800-1.18)	**4.06** (3.35-5.29)	**14.6** (11.1-17.8)	**29.6** (18.2-50.0)	1287
	09-10	**1.83** (1.48-2.26)	**1.36** (1.04-1.75)	**6.65** (4.68-9.21)	**24.1** (16.5-37.3)	**57.0** (36.3-71.3)	1468
Race/ethnicity							
Mexican Americans	03-04	**1.10** (.786-1.55)	**.877** (.612-1.40)	**2.93** (1.78-5.21)	**8.88** (5.50-15.4)	**19.0** (9.64-29.4)	621
	05-06	**1.35** (1.13-1.62)	**.970** (.810-1.19)	**4.21** (2.79-5.68)	**16.6** (10.5-21.3)	**36.9** (18.4-69.5)	651
	07-08	*	**.780** (<LOD-1.21)	**3.04** (1.99-5.09)	**13.7** (9.09-16.7)	**28.9** (16.2-46.7)	513
	09-10	*	**.790** (.670-.940)	**3.64** (2.28-4.41)	**13.5** (7.78-19.1)	**26.8** (16.5-42.0)	617
Non-Hispanic blacks	03-04	**1.65** (1.19-2.30)	**1.53** (.901-2.45)	**5.81** (4.25-7.82)	**13.6** (9.76-27.9)	**32.9** (13.4-82.1)	725
	05-06	**1.84** (1.20-2.83)	**1.71** (.910-2.95)	**6.07** (3.83-9.25)	**19.4** (10.4-45.2)	**47.5** (25.3-62.0)	695
	07-08	**1.16** (.955-1.41)	**.830** (.620-1.12)	**4.44** (3.23-6.58)	**14.9** (10.5-17.6)	**25.1** (17.4-40.0)	586
	09-10	**1.59** (1.29-1.96)	**1.30** (.850-2.04)	**5.92** (4.20-8.40)	**19.5** (13.5-27.1)	**37.9** (26.1-51.7)	545
Non-Hispanic whites	03-04	**1.44** (1.15-1.80)	**1.05** (.833-1.36)	**4.47** (2.73-6.83)	**14.3** (10.9-18.6)	**26.5** (18.6-32.0)	1078
	05-06	**1.81** (1.32-2.47)	**1.65** (.970-2.55)	**6.65** (3.95-9.34)	**19.7** (12.6-30.5)	**36.6** (25.1-71.4)	1050
	07-08	*	**.970** (<LOD-1.18)	**3.56** (2.93-4.53)	**11.6** (8.98-16.6)	**23.8** (15.5-41.7)	1063
	09-10	**1.60** (1.36-1.87)	**1.15** (.900-1.43)	**5.85** (4.33-7.65)	**22.8** (15.6-29.4)	**38.5** (32.0-57.0)	1226

< LOD means less than the limit of detection for the urine levels not corrected for creatinine.
* Not calculated: proportion of results below limit of detection was too high to provide a valid result.

Biomonitoring Summary: http://www.cdc.gov/biomonitoring/Arsenic_BiomonitoringSummary.html
Factsheet: http://www.cdc.gov/biomonitoring/Arsenic_FactSheet.html

Urinary Arsenocholine

Geometric mean and selected percentiles of urine concentrations (in µg As/L) for the U.S. population from the National Health and Nutrition Examination Survey.

	Survey years	Geometric mean (95% conf. interval)	Selected percentiles (95% confidence interval) 50th	75th	90th	95th	Sample size
Total	03-04	*	< LOD	< LOD	< LOD	< LOD	2568
	05-06	*	< LOD	< LOD	< LOD	< LOD	2588
	07-08	*	< LOD	< LOD	< LOD	< LOD	2576
	09-10	*	< LOD	< LOD	< LOD	< LOD	2871
Age group							
6-11 years	03-04	*	< LOD	< LOD	< LOD	< LOD	292
	05-06	*	< LOD	< LOD	< LOD	< LOD	354
	07-08	*	< LOD	< LOD	< LOD	< LOD	390
	09-10	*	< LOD	< LOD	< LOD	< LOD	380
12-19 years	03-04	*	< LOD	< LOD	< LOD	< LOD	728
	05-06	*	< LOD	< LOD	< LOD	< LOD	703
	07-08	*	< LOD	< LOD	< LOD	< LOD	366
	09-10	*	< LOD	< LOD	< LOD	< LOD	456
20 years and older	03-04	*	< LOD	< LOD	< LOD	< LOD	1548
	05-06	*	< LOD	< LOD	< LOD	< LOD	1531
	07-08	*	< LOD	< LOD	< LOD	< LOD	1820
	09-10	*	< LOD	< LOD	< LOD	< LOD	2035
Gender							
Males	03-04	*	< LOD	< LOD	< LOD	< LOD	1284
	05-06	*	< LOD	< LOD	< LOD	< LOD	1276
	07-08	*	< LOD	< LOD	< LOD	< LOD	1289
	09-10	*	< LOD	< LOD	< LOD	< LOD	1403
Females	03-04	*	< LOD	< LOD	< LOD	< LOD	1284
	05-06	*	< LOD	< LOD	< LOD	< LOD	1312
	07-08	*	< LOD	< LOD	< LOD	< LOD	1287
	09-10	*	< LOD	< LOD	< LOD	< LOD	1468
Race/ethnicity							
Mexican Americans	03-04	*	< LOD	< LOD	< LOD	< LOD	621
	05-06	*	< LOD	< LOD	< LOD	< LOD	651
	07-08	*	< LOD	< LOD	< LOD	< LOD	513
	09-10	*	< LOD	< LOD	< LOD	< LOD	618
Non-Hispanic blacks	03-04	*	< LOD	< LOD	< LOD	< LOD	725
	05-06	*	< LOD	< LOD	< LOD	< LOD	695
	07-08	*	< LOD	< LOD	< LOD	< LOD	586
	09-10	*	< LOD	< LOD	< LOD	< LOD	546
Non-Hispanic whites	03-04	*	< LOD	< LOD	< LOD	< LOD	1078
	05-06	*	< LOD	< LOD	< LOD	< LOD	1050
	07-08	*	< LOD	< LOD	< LOD	< LOD	1063
	09-10	*	< LOD	< LOD	< LOD	< LOD	1226

Limit of detection (LOD, see Data Analysis section) for Survey years 03-04, 05-06, 07-08 and 09-10 are 0.6, 0.6, 0.6, and 0.6 respectively.
< LOD means less than the limit of detection, which may vary for some chemicals by year and by individual sample.
* Not calculated: proportion of results below limit of detection was too high to provide a valid result.

Biomonitoring Summary: http://www.cdc.gov/biomonitoring/Arsenic_BiomonitoringSummary.html
Factsheet: http://www.cdc.gov/biomonitoring/Arsenic_FactSheet.html

Urinary Arsenocholine (creatinine corrected)

Geometric mean and selected percentiles of urine concentrations (in µg As/g of creatinine) for the U.S. population from the National Health and Nutrition Examination Survey.

	Survey years	Geometric mean (95% conf. interval)	Selected percentiles (95% confidence interval) 50th	75th	90th	95th	Sample size
Total	03-04	*	< LOD	< LOD	< LOD	< LOD	2568
	05-06	*	< LOD	< LOD	< LOD	< LOD	2588
	07-08	*	< LOD	< LOD	< LOD	< LOD	2576
	09-10	*	< LOD	< LOD	< LOD	< LOD	2870
Age group							
6-11 years	03-04	*	< LOD	< LOD	< LOD	< LOD	292
	05-06	*	< LOD	< LOD	< LOD	< LOD	354
	07-08	*	< LOD	< LOD	< LOD	< LOD	390
	09-10	*	< LOD	< LOD	< LOD	< LOD	379
12-19 years	03-04	*	< LOD	< LOD	< LOD	< LOD	728
	05-06	*	< LOD	< LOD	< LOD	< LOD	703
	07-08	*	< LOD	< LOD	< LOD	< LOD	366
	09-10	*	< LOD	< LOD	< LOD	< LOD	456
20 years and older	03-04	*	< LOD	< LOD	< LOD	< LOD	1548
	05-06	*	< LOD	< LOD	< LOD	< LOD	1531
	07-08	*	< LOD	< LOD	< LOD	< LOD	1820
	09-10	*	< LOD	< LOD	< LOD	< LOD	2035
Gender							
Males	03-04	*	< LOD	< LOD	< LOD	< LOD	1284
	05-06	*	< LOD	< LOD	< LOD	< LOD	1276
	07-08	*	< LOD	< LOD	< LOD	< LOD	1289
	09-10	*	< LOD	< LOD	< LOD	< LOD	1402
Females	03-04	*	< LOD	< LOD	< LOD	< LOD	1284
	05-06	*	< LOD	< LOD	< LOD	< LOD	1312
	07-08	*	< LOD	< LOD	< LOD	< LOD	1287
	09-10	*	< LOD	< LOD	< LOD	< LOD	1468
Race/ethnicity							
Mexican Americans	03-04	*	< LOD	< LOD	< LOD	< LOD	621
	05-06	*	< LOD	< LOD	< LOD	< LOD	651
	07-08	*	< LOD	< LOD	< LOD	< LOD	513
	09-10	*	< LOD	< LOD	< LOD	< LOD	618
Non-Hispanic blacks	03-04	*	< LOD	< LOD	< LOD	< LOD	725
	05-06	*	< LOD	< LOD	< LOD	< LOD	695
	07-08	*	< LOD	< LOD	< LOD	< LOD	586
	09-10	*	< LOD	< LOD	< LOD	< LOD	545
Non-Hispanic whites	03-04	*	< LOD	< LOD	< LOD	< LOD	1078
	05-06	*	< LOD	< LOD	< LOD	< LOD	1050
	07-08	*	< LOD	< LOD	< LOD	< LOD	1063
	09-10	*	< LOD	< LOD	< LOD	< LOD	1226

< LOD means less than the limit of detection for the urine levels not corrected for creatinine.
* Not calculated: proportion of results below limit of detection was too high to provide a valid result.

Biomonitoring Summary: http://www.cdc.gov/biomonitoring/Arsenic_BiomonitoringSummary.html
Factsheet: http://www.cdc.gov/biomonitoring/Arsenic_FactSheet.html

Urinary Arsenous (III) acid

Geometric mean and selected percentiles of urine concentrations (in µg As/L) for the U.S. population from the National Health and Nutrition Examination Survey.

	Survey years	Geometric mean (95% conf. interval)	Selected percentiles (95% confidence interval) 50th	75th	90th	95th	Sample size
Total	03-04	*	< LOD	< LOD	< LOD	< LOD	2568
	05-06	*	< LOD	< LOD	< LOD	< LOD	2588
	07-08	*	< LOD	< LOD	< LOD	< LOD	2576
	09-10	*	< LOD	< LOD	< LOD	< LOD	2871
Age group							
6-11 years	03-04	*	< LOD	< LOD	< LOD	< LOD	292
	05-06	*	< LOD	< LOD	< LOD	< LOD	354
	07-08	*	< LOD	< LOD	< LOD	< LOD	390
	09-10	*	< LOD	< LOD	< LOD	< LOD	380
12-19 years	03-04	*	< LOD	< LOD	< LOD	**1.40** (<LOD-1.70)	728
	05-06	*	< LOD	< LOD	< LOD	**1.20** (<LOD-1.40)	703
	07-08	*	< LOD	< LOD	< LOD	< LOD	366
	09-10	*	< LOD	< LOD	< LOD	< LOD	456
20 years and older	03-04	*	< LOD	< LOD	< LOD	< LOD	1548
	05-06	*	< LOD	< LOD	< LOD	< LOD	1531
	07-08	*	< LOD	< LOD	< LOD	< LOD	1820
	09-10	*	< LOD	< LOD	< LOD	< LOD	2035
Gender							
Males	03-04	*	< LOD	< LOD	< LOD	< LOD	1284
	05-06	*	< LOD	< LOD	< LOD	**1.26** (<LOD-1.73)	1276
	07-08	*	< LOD	< LOD	< LOD	< LOD	1289
	09-10	*	< LOD	< LOD	< LOD	**1.24** (<LOD-1.50)	1403
Females	03-04	*	< LOD	< LOD	< LOD	< LOD	1284
	05-06	*	< LOD	< LOD	< LOD	< LOD	1312
	07-08	*	< LOD	< LOD	< LOD	< LOD	1287
	09-10	*	< LOD	< LOD	< LOD	< LOD	1468
Race/ethnicity							
Mexican Americans	03-04	*	< LOD	< LOD	< LOD	**2.00** (<LOD-3.00)	621
	05-06	*	< LOD	< LOD	< LOD	< LOD	651
	07-08	*	< LOD	< LOD	< LOD	**1.20** (<LOD-1.76)	513
	09-10	*	< LOD	< LOD	< LOD	< LOD	618
Non-Hispanic blacks	03-04	*	< LOD	< LOD	< LOD	**1.20** (<LOD-1.80)	725
	05-06	*	< LOD	< LOD	< LOD	< LOD	695
	07-08	*	< LOD	< LOD	< LOD	< LOD	586
	09-10	*	< LOD	< LOD	< LOD	< LOD	546
Non-Hispanic whites	03-04	*	< LOD	< LOD	< LOD	< LOD	1078
	05-06	*	< LOD	< LOD	< LOD	< LOD	1050
	07-08	*	< LOD	< LOD	< LOD	< LOD	1063
	09-10	*	< LOD	< LOD	< LOD	< LOD	1226

Limit of detection (LOD, see Data Analysis section) for Survey years 03-04, 05-06, 07-08 and 09-10 are 1.2, 1.2, 1.2, and 1.2 respectively.
< LOD means less than the limit of detection, which may vary for some chemicals by year and by individual sample.
* Not calculated: proportion of results below limit of detection was too high to provide a valid result.

Biomonitoring Summary: http://www.cdc.gov/biomonitoring/Arsenic_BiomonitoringSummary.html
Factsheet: http://www.cdc.gov/biomonitoring/Arsenic_FactSheet.html

Urinary Arsenous (III) acid (creatinine corrected)

Geometric mean and selected percentiles of urine concentrations (in µg As/g of creatinine) for the U.S. population from the National Health and Nutrition Examination Survey.

	Survey years	Geometric mean (95% conf. interval)	Selected percentiles (95% confidence interval) 50th	75th	90th	95th	Sample size
Total	03-04	*	< LOD	< LOD	< LOD	< LOD	2568
	05-06	*	< LOD	< LOD	< LOD	< LOD	2588
	07-08	*	< LOD	< LOD	< LOD	< LOD	2576
	09-10	*	< LOD	< LOD	< LOD	< LOD	2870
Age group							
6-11 years	03-04	*	< LOD	< LOD	< LOD	< LOD	292
	05-06	*	< LOD	< LOD	< LOD	< LOD	354
	07-08	*	< LOD	< LOD	< LOD	< LOD	390
	09-10	*	< LOD	< LOD	< LOD	< LOD	379
12-19 years	03-04	*	< LOD	< LOD	< LOD	**1.95** (<LOD-2.76)	728
	05-06	*	< LOD	< LOD	< LOD	**2.02** (<LOD-3.04)	703
	07-08	*	< LOD	< LOD	< LOD	< LOD	366
	09-10	*	< LOD	< LOD	< LOD	< LOD	456
20 years and older	03-04	*	< LOD	< LOD	< LOD	< LOD	1548
	05-06	*	< LOD	< LOD	< LOD	< LOD	1531
	07-08	*	< LOD	< LOD	< LOD	< LOD	1820
	09-10	*	< LOD	< LOD	< LOD	< LOD	2035
Gender							
Males	03-04	*	< LOD	< LOD	< LOD	< LOD	1284
	05-06	*	< LOD	< LOD	< LOD	**2.43** (<LOD-3.15)	1276
	07-08	*	< LOD	< LOD	< LOD	< LOD	1289
	09-10	*	< LOD	< LOD	< LOD	**2.93** (<LOD-3.54)	1402
Females	03-04	*	< LOD	< LOD	< LOD	< LOD	1284
	05-06	*	< LOD	< LOD	< LOD	< LOD	1312
	07-08	*	< LOD	< LOD	< LOD	< LOD	1287
	09-10	*	< LOD	< LOD	< LOD	< LOD	1468
Race/ethnicity							
Mexican Americans	03-04	*	< LOD	< LOD	< LOD	**3.08** (<LOD-4.44)	621
	05-06	*	< LOD	< LOD	< LOD	< LOD	651
	07-08	*	< LOD	< LOD	< LOD	**3.54** (<LOD-4.72)	513
	09-10	*	< LOD	< LOD	< LOD	< LOD	618
Non-Hispanic blacks	03-04	*	< LOD	< LOD	< LOD	**2.00** (<LOD-2.29)	725
	05-06	*	< LOD	< LOD	< LOD	< LOD	695
	07-08	*	< LOD	< LOD	< LOD	< LOD	586
	09-10	*	< LOD	< LOD	< LOD	< LOD	545
Non-Hispanic whites	03-04	*	< LOD	< LOD	< LOD	< LOD	1078
	05-06	*	< LOD	< LOD	< LOD	< LOD	1050
	07-08	*	< LOD	< LOD	< LOD	< LOD	1063
	09-10	*	< LOD	< LOD	< LOD	< LOD	1226

< LOD means less than the limit of detection for the urine levels not corrected for creatinine.
* Not calculated: proportion of results below limit of detection was too high to provide a valid result.

Biomonitoring Summary: http://www.cdc.gov/biomonitoring/Arsenic_BiomonitoringSummary.html
Factsheet: http://www.cdc.gov/biomonitoring/Arsenic_FactSheet.html

Urinary Dimethylarsinic acid

Metabolite of Arsenic

Geometric mean and selected percentiles of urine concentrations (in µg As/L) for the U.S. population from the National Health and Nutrition Examination Survey.

	Survey years	Geometric mean (95% conf. interval)	Selected percentiles (95% confidence interval) 50th	75th	90th	95th	Sample size
Total	03-04	**3.71** (3.33-4.14)	**3.90** (3.00-4.00)	**6.00** (5.00-7.00)	**11.0** (9.20-12.0)	**16.0** (13.0-17.8)	2568
	05-06	**3.95** (3.59-4.35)	**3.90** (3.46-4.31)	**6.17** (5.53-7.04)	**10.3** (9.00-12.2)	**15.0** (12.2-17.8)	2588
	07-08	**3.67** (3.44-3.91)	**3.58** (3.44-3.84)	**5.96** (5.44-6.57)	**9.78** (8.72-11.2)	**13.3** (11.8-15.3)	2576
	09-10	**3.67** (3.43-3.93)	**3.50** (3.25-3.76)	**6.16** (5.59-6.73)	**11.5** (9.35-13.7)	**17.4** (14.0-21.0)	2871
Age group							
6-11 years	03-04	**3.73** (3.12-4.45)	**4.00** (3.00-4.00)	**6.00** (5.00-7.00)	**9.00** (7.00-12.0)	**12.0** (8.00-22.0)	292
	05-06	**3.96** (3.49-4.49)	**3.94** (3.20-4.71)	**5.94** (5.01-7.10)	**10.5** (7.10-12.1)	**13.0** (10.7-15.3)	354
	07-08	**3.86** (3.45-4.32)	**3.76** (3.47-4.01)	**6.10** (5.29-6.99)	**10.4** (7.57-13.9)	**15.2** (9.32-39.2)	390
	09-10	**3.53** (3.17-3.92)	**3.27** (2.81-3.87)	**5.76** (5.07-6.53)	**10.7** (7.84-11.9)	**12.8** (11.0-14.4)	380
12-19 years	03-04	**3.85** (3.34-4.42)	**4.00** (3.00-4.00)	**6.00** (5.00-7.10)	**9.30** (7.70-12.0)	**13.0** (10.0-16.0)	728
	05-06	**3.97** (3.46-4.55)	**3.97** (3.31-4.64)	**5.74** (5.11-7.10)	**9.43** (7.63-11.6)	**12.0** (10.7-13.9)	703
	07-08	**3.60** (3.16-4.09)	**3.66** (3.24-4.26)	**5.53** (4.75-6.72)	**8.90** (7.33-9.95)	**10.7** (9.08-13.3)	366
	09-10	**3.08** (2.77-3.43)	**2.89** (2.64-3.29)	**5.05** (4.44-5.77)	**7.89** (6.87-10.1)	**11.3** (8.75-13.8)	456
20 years and older	03-04	**3.69** (3.31-4.11)	**3.70** (3.00-4.00)	**6.00** (5.00-7.00)	**11.0** (10.0-12.0)	**16.0** (13.0-19.0)	1548
	05-06	**3.95** (3.58-4.36)	**3.87** (3.46-4.32)	**6.30** (5.59-7.28)	**10.3** (9.25-13.3)	**16.2** (12.5-19.4)	1531
	07-08	**3.66** (3.43-3.91)	**3.56** (3.41-3.80)	**5.97** (5.44-6.63)	**9.89** (8.72-11.4)	**13.8** (11.8-15.5)	1820
	09-10	**3.79** (3.51-4.09)	**3.60** (3.33-3.87)	**6.40** (5.71-7.03)	**12.1** (9.52-16.0)	**18.2** (15.8-23.6)	2035
Gender							
Males	03-04	**4.12** (3.60-4.71)	**4.00** (3.70-4.30)	**6.00** (5.60-7.70)	**11.0** (9.00-15.0)	**17.0** (12.1-22.0)	1284
	05-06	**4.17** (3.79-4.59)	**4.04** (3.68-4.43)	**6.32** (5.41-7.61)	**10.5** (8.68-13.3)	**14.8** (11.8-19.2)	1276
	07-08	**4.05** (3.73-4.40)	**3.96** (3.63-4.27)	**6.53** (5.77-7.15)	**10.3** (9.31-12.0)	**14.6** (11.6-20.2)	1289
	09-10	**3.89** (3.50-4.32)	**3.71** (3.35-4.11)	**6.33** (5.80-7.02)	**11.6** (8.80-17.3)	**19.2** (13.0-24.7)	1403
Females	03-04	**3.37** (3.00-3.78)	**3.00** (3.00-4.00)	**5.50** (4.80-6.20)	**10.0** (8.00-11.0)	**14.0** (11.0-17.7)	1284
	05-06	**3.75** (3.37-4.18)	**3.70** (3.28-4.21)	**6.03** (5.46-6.99)	**9.95** (8.81-12.2)	**15.5** (11.6-19.0)	1312
	07-08	**3.34** (3.13-3.57)	**3.37** (3.15-3.53)	**5.48** (5.00-6.05)	**8.99** (7.97-10.4)	**11.9** (10.7-13.9)	1287
	09-10	**3.48** (3.22-3.76)	**3.28** (2.95-3.63)	**5.85** (5.21-6.69)	**11.5** (9.42-13.3)	**16.1** (13.8-17.7)	1468
Race/ethnicity							
Mexican Americans	03-04	**4.72** (4.27-5.22)	**4.80** (4.00-5.00)	**7.00** (6.00-9.00)	**12.0** (10.0-16.0)	**17.0** (12.0-25.0)	621
	05-06	**4.43** (4.15-4.72)	**4.66** (4.26-5.13)	**6.93** (6.38-7.58)	**9.51** (8.70-11.1)	**13.1** (10.3-15.1)	651
	07-08	**4.36** (4.05-4.69)	**4.62** (4.07-5.07)	**7.14** (6.23-7.76)	**9.67** (8.39-10.8)	**11.7** (9.96-17.6)	513
	09-10	**3.90** (3.45-4.40)	**3.98** (3.18-4.63)	**6.53** (5.61-7.15)	**10.7** (8.95-13.2)	**16.2** (13.1-19.2)	618
Non-Hispanic blacks	03-04	**4.27** (3.71-4.92)	**4.00** (3.50-5.00)	**7.00** (6.00-8.00)	**11.6** (9.00-15.0)	**16.0** (14.0-18.7)	725
	05-06	**4.28** (3.68-4.98)	**4.02** (3.37-4.82)	**6.42** (5.31-7.36)	**10.9** (8.22-13.1)	**15.2** (11.5-27.1)	695
	07-08	**4.19** (3.92-4.49)	**3.98** (3.63-4.27)	**6.69** (5.80-7.43)	**11.2** (10.1-12.5)	**14.7** (12.1-19.2)	586
	09-10	**4.09** (3.63-4.61)	**3.93** (3.31-4.36)	**7.13** (5.99-8.63)	**12.3** (10.1-17.0)	**18.2** (13.7-27.8)	546
Non-Hispanic whites	03-04	**3.27** (2.95-3.62)	**3.00** (3.00-3.80)	**5.00** (4.60-6.00)	**9.00** (7.00-10.0)	**12.0** (9.50-15.0)	1078
	05-06	**3.69** (3.28-4.15)	**3.60** (3.19-4.08)	**5.66** (5.10-6.70)	**9.62** (8.11-11.8)	**13.9** (10.6-17.8)	1050
	07-08	**3.23** (3.01-3.48)	**3.34** (3.04-3.53)	**5.14** (4.77-5.59)	**8.27** (7.48-9.07)	**10.5** (9.25-13.2)	1063
	09-10	**3.21** (3.07-3.37)	**3.12** (2.91-3.29)	**5.32** (5.00-5.66)	**8.65** (7.23-10.1)	**12.0** (10.1-14.4)	1226

Limit of detection (LOD, see Data Analysis section) for Survey years 03-04, 05-06, 07-08 and 09-10 are 1.7, 1.7, 1.7, and 1.7 respectively.

Biomonitoring Summary: http://www.cdc.gov/biomonitoring/Arsenic_BiomonitoringSummary.html
Factsheet: http://www.cdc.gov/biomonitoring/Arsenic_FactSheet.html

Urinary Dimethylarsinic acid (creatinine corrected)

Metabolite of Arsenic

Geometric mean and selected percentiles of urine concentrations (in µg As/g of creatinine) for the U.S. population from the National Health and Nutrition Examination Survey.

	Survey years	Geometric mean (95% conf. interval)	Selected percentiles (95% confidence interval) 50th	75th	90th	95th	Sample size
Total	03-04	**3.69** (3.24-4.19)	**3.37** (2.94-3.91)	**5.71** (4.69-6.74)	**9.09** (7.61-11.5)	**13.0** (10.7-16.0)	2568
	05-06	**3.88** (3.57-4.22)	**3.66** (3.39-3.93)	**5.71** (5.10-6.43)	**9.57** (7.95-10.9)	**12.3** (10.6-15.0)	2588
	07-08	**3.83** (3.60-4.07)	**3.62** (3.37-3.93)	**5.80** (5.33-6.32)	**9.01** (8.00-9.97)	**11.6** (9.97-14.4)	2576
	09-10	**3.90** (3.64-4.18)	**3.53** (3.30-3.80)	**6.03** (5.36-6.62)	**10.2** (9.15-11.8)	**14.9** (12.3-19.2)	2870
Age group							
6-11 years	03-04	**4.34** (3.57-5.28)	**4.03** (3.20-4.80)	**6.32** (4.65-8.33)	**10.3** (7.00-13.9)	**13.9** (7.86-21.8)	292
	05-06	**4.89** (4.22-5.65)	**4.31** (3.64-5.69)	**6.85** (5.71-7.69)	**10.0** (7.54-14.7)	**14.7** (10.0-18.8)	354
	07-08	**5.07** (4.56-5.64)	**4.54** (4.08-4.82)	**6.90** (6.14-7.76)	**12.0** (8.39-17.1)	**20.9** (12.0-40.8)	390
	09-10	**4.77** (4.34-5.23)	**4.48** (4.12-4.85)	**6.41** (5.66-6.82)	**10.0** (7.63-15.3)	**16.5** (9.33-27.0)	379
12-19 years	03-04	**2.74** (2.39-3.14)	**2.55** (2.27-2.94)	**3.77** (3.17-4.44)	**5.88** (4.65-6.67)	**7.18** (6.16-11.7)	728
	05-06	**3.05** (2.78-3.34)	**2.92** (2.55-3.29)	**4.25** (3.87-4.84)	**6.68** (5.49-8.06)	**9.08** (7.11-10.6)	703
	07-08	**2.80** (2.54-3.09)	**2.69** (2.37-2.93)	**3.91** (3.46-4.56)	**6.27** (4.72-8.21)	**8.21** (5.77-10.1)	366
	09-10	**2.89** (2.61-3.20)	**2.60** (2.36-2.86)	**4.08** (3.43-4.80)	**6.67** (5.71-8.57)	**10.0** (7.61-12.6)	456
20 years and older	03-04	**3.79** (3.34-4.31)	**3.48** (3.00-4.00)	**5.95** (4.86-7.05)	**9.45** (8.00-12.0)	**13.5** (11.1-18.6)	1548
	05-06	**3.93** (3.62-4.27)	**3.71** (3.42-4.02)	**5.82** (5.22-6.47)	**9.74** (8.00-11.2)	**12.6** (10.9-15.8)	1531
	07-08	**3.89** (3.64-4.16)	**3.69** (3.44-4.02)	**5.96** (5.47-6.58)	**9.10** (8.00-10.0)	**11.6** (9.74-14.5)	1820
	09-10	**4.00** (3.70-4.32)	**3.61** (3.33-3.90)	**6.25** (5.57-6.88)	**10.8** (9.23-12.9)	**16.1** (12.6-22.2)	2035
Gender							
Males	03-04	**3.48** (2.95-4.10)	**3.16** (2.70-3.82)	**5.46** (4.17-6.90)	**8.59** (6.92-12.0)	**12.3** (8.84-18.9)	1284
	05-06	**3.43** (3.13-3.75)	**3.24** (2.91-3.63)	**5.11** (4.25-6.08)	**7.90** (6.65-9.77)	**11.0** (9.29-13.0)	1276
	07-08	**3.63** (3.41-3.85)	**3.44** (3.22-3.68)	**5.33** (5.00-5.82)	**8.31** (7.21-10.1)	**12.1** (9.73-14.9)	1289
	09-10	**3.54** (3.29-3.80)	**3.20** (3.04-3.38)	**5.31** (4.80-5.99)	**9.24** (7.80-10.8)	**13.3** (10.3-16.5)	1402
Females	03-04	**3.89** (3.49-4.34)	**3.57** (3.13-4.06)	**5.78** (4.95-6.67)	**9.32** (8.00-11.5)	**13.7** (10.6-18.6)	1284
	05-06	**4.37** (4.03-4.75)	**4.03** (3.72-4.51)	**6.26** (5.71-6.84)	**10.0** (8.50-12.6)	**14.4** (11.2-19.3)	1312
	07-08	**4.02** (3.75-4.32)	**3.80** (3.46-4.26)	**6.15** (5.58-7.06)	**9.23** (8.11-10.1)	**10.9** (9.52-14.9)	1287
	09-10	**4.28** (3.96-4.63)	**4.00** (3.62-4.32)	**6.55** (5.98-7.14)	**11.0** (9.64-13.2)	**17.2** (13.2-24.4)	1468
Race/ethnicity							
Mexican Americans	03-04	**4.38** (3.80-5.05)	**4.11** (3.29-4.90)	**6.25** (4.84-8.15)	**10.3** (8.00-11.8)	**12.9** (11.1-15.2)	621
	05-06	**4.16** (3.83-4.52)	**4.00** (3.65-4.36)	**5.94** (5.40-6.49)	**8.69** (7.23-9.65)	**10.2** (9.52-13.2)	651
	07-08	**4.34** (3.87-4.88)	**4.19** (3.66-4.83)	**6.23** (5.31-7.44)	**9.14** (8.00-11.0)	**12.1** (10.1-15.1)	513
	09-10	**4.06** (3.63-4.54)	**3.95** (3.33-4.44)	**6.32** (5.36-7.10)	**9.23** (8.10-10.6)	**11.7** (10.2-14.8)	618
Non-Hispanic blacks	03-04	**3.08** (2.69-3.52)	**2.86** (2.60-3.24)	**4.34** (3.82-5.05)	**7.81** (5.82-9.45)	**10.4** (7.61-16.9)	725
	05-06	**3.08** (2.70-3.52)	**2.91** (2.52-3.32)	**4.21** (3.75-4.91)	**7.33** (5.40-10.7)	**11.6** (7.66-17.9)	695
	07-08	**3.08** (2.87-3.31)	**2.77** (2.56-3.13)	**4.74** (4.31-5.22)	**7.29** (6.58-8.26)	**9.67** (8.26-11.0)	586
	09-10	**3.26** (2.90-3.66)	**2.86** (2.47-3.34)	**5.10** (4.43-6.06)	**10.0** (7.39-11.7)	**13.1** (11.1-15.2)	545
Non-Hispanic whites	03-04	**3.44** (2.97-3.98)	**3.17** (2.80-3.73)	**5.16** (4.03-6.49)	**8.00** (6.32-10.9)	**11.1** (8.00-15.4)	1078
	05-06	**3.82** (3.47-4.21)	**3.64** (3.30-3.93)	**5.71** (4.90-6.51)	**9.23** (7.26-10.6)	**11.6** (9.93-13.9)	1050
	07-08	**3.62** (3.38-3.87)	**3.48** (3.20-3.76)	**5.38** (4.95-5.80)	**8.00** (7.28-8.86)	**10.0** (8.96-11.1)	1063
	09-10	**3.58** (3.36-3.81)	**3.31** (3.09-3.49)	**5.30** (4.87-5.75)	**8.12** (7.06-9.21)	**11.5** (9.43-14.3)	1226

Biomonitoring Summary: http://www.cdc.gov/biomonitoring/Arsenic_BiomonitoringSummary.html
Factsheet: http://www.cdc.gov/biomonitoring/Arsenic_FactSheet.html

Urinary Monomethylarsonic acid

Metabolite of Arsenic

Geometric mean and selected percentiles of urine concentrations (in µg As/L) for the U.S. population from the National Health and Nutrition Examination Survey.

	Survey years	Geometric mean (95% conf. interval)	Selected percentiles (95% confidence interval) 50th	75th	90th	95th	Sample size
Total	03-04	*	< LOD	**1.20** (1.00-1.30)	**1.90** (1.60-2.10)	**2.40** (2.00-2.80)	2567
	05-06	*	< LOD	**1.19** (1.05-1.34)	**1.72** (1.51-1.94)	**2.12** (1.79-2.70)	2588
	07-08	*	< LOD	**1.11** (1.00-1.20)	**1.61** (1.51-1.69)	**2.09** (1.91-2.26)	2576
	09-10	*	< LOD	**1.02** (.920-1.10)	**1.64** (1.41-1.83)	**2.01** (1.82-2.28)	2871
Age group							
6-11 years	03-04	*	< LOD	**1.00** (<LOD-1.40)	**1.80** (1.30-2.60)	**2.30** (1.70-2.90)	292
	05-06	*	< LOD	**1.03** (<LOD-1.37)	**1.54** (1.37-2.12)	**2.12** (1.51-2.73)	354
	07-08	*	< LOD	**1.05** (<LOD-1.28)	**1.60** (1.32-1.83)	**2.04** (1.64-2.86)	390
	09-10	*	< LOD	< LOD	**1.38** (1.00-1.84)	**1.81** (1.26-2.13)	380
12-19 years	03-04	*	< LOD	**1.50** (1.10-1.80)	**2.20** (1.70-3.00)	**2.90** (2.20-3.60)	728
	05-06	*	< LOD	**1.31** (1.09-1.46)	**1.99** (1.62-2.23)	**2.41** (2.04-2.89)	703
	07-08	*	< LOD	**1.26** (1.11-1.35)	**1.83** (1.54-2.22)	**2.31** (1.87-2.90)	366
	09-10	*	< LOD	**1.10** (.910-1.25)	**1.62** (1.33-1.92)	**2.03** (1.74-2.30)	456
20 years and older	03-04	*	< LOD	**1.20** (1.00-1.30)	**1.80** (1.50-2.10)	**2.30** (2.00-2.60)	1547
	05-06	*	< LOD	**1.20** (1.05-1.33)	**1.70** (1.48-1.90)	**2.06** (1.74-2.75)	1531
	07-08	*	< LOD	**1.08** (.970-1.17)	**1.58** (1.44-1.71)	**1.98** (1.82-2.21)	1820
	09-10	*	< LOD	**1.02** (.930-1.11)	**1.65** (1.42-1.86)	**2.03** (1.81-2.35)	2035
Gender							
Males	03-04	*	< LOD	**1.30** (1.10-1.60)	**2.00** (1.80-2.40)	**2.60** (2.10-3.00)	1283
	05-06	*	< LOD	**1.31** (1.12-1.49)	**1.79** (1.57-2.09)	**2.23** (1.85-2.86)	1276
	07-08	*	< LOD	**1.24** (1.13-1.35)	**1.78** (1.63-1.94)	**2.33** (1.97-2.71)	1289
	09-10	*	< LOD	**1.07** (.970-1.23)	**1.77** (1.47-2.01)	**2.19** (1.83-2.68)	1403
Females	03-04	*	< LOD	**1.00** (<LOD-1.20)	**1.60** (1.30-1.90)	**2.10** (1.70-2.60)	1284
	05-06	*	< LOD	**1.08** (.920-1.24)	**1.57** (1.36-1.90)	**2.04** (1.67-2.50)	1312
	07-08	*	< LOD	**.970** (<LOD-1.06)	**1.42** (1.30-1.57)	**1.81** (1.68-1.90)	1287
	09-10	*	< LOD	**.950** (<LOD-1.06)	**1.52** (1.27-1.74)	**1.89** (1.66-2.12)	1468
Race/ethnicity							
Mexican Americans	03-04	*	< LOD	**1.50** (1.20-1.90)	**2.20** (1.70-2.80)	**2.80** (2.00-4.40)	621
	05-06	*	< LOD	**1.19** (1.10-1.32)	**1.73** (1.51-1.97)	**2.04** (1.67-2.51)	651
	07-08	*	< LOD	**1.22** (1.02-1.35)	**1.69** (1.43-2.12)	**2.32** (1.75-2.85)	513
	09-10	*	< LOD	**1.02** (<LOD-1.37)	**1.65** (1.38-1.90)	**2.02** (1.65-2.33)	618
Non-Hispanic blacks	03-04	*	< LOD	**1.10** (<LOD-1.30)	**1.80** (1.40-2.00)	**2.20** (1.70-2.70)	725
	05-06	*	< LOD	**1.02** (.950-1.07)	**1.35** (1.29-1.44)	**1.70** (1.50-1.88)	695
	07-08	*	< LOD	**1.21** (1.09-1.33)	**1.79** (1.61-2.05)	**2.32** (2.15-2.63)	586
	09-10	*	< LOD	**1.02** (<LOD-1.18)	**1.51** (1.36-1.84)	**1.88** (1.73-2.24)	546
Non-Hispanic whites	03-04	*	< LOD	**1.10** (.900-1.30)	**1.80** (1.40-2.00)	**2.10** (1.80-2.50)	1077
	05-06	*	< LOD	**1.22** (1.02-1.39)	**1.75** (1.42-2.12)	**2.14** (1.72-2.93)	1050
	07-08	*	< LOD	**1.04** (.930-1.15)	**1.50** (1.37-1.63)	**1.91** (1.69-2.09)	1063
	09-10	*	< LOD	**.940** (<LOD-1.04)	**1.45** (1.24-1.76)	**1.90** (1.65-2.12)	1226

Limit of detection (LOD, see Data Analysis section) for Survey years 03-04, 05-06, 07-08 and 09-10 are 0.9, 0.9, 0.9, and 0.9 respectively.
< LOD means less than the limit of detection, which may vary for some chemicals by year and by individual sample.
* Not calculated: proportion of results below limit of detection was too high to provide a valid result.

Biomonitoring Summary: http://www.cdc.gov/biomonitoring/Arsenic_BiomonitoringSummary.html
Factsheet: http://www.cdc.gov/biomonitoring/Arsenic_FactSheet.html

Urinary Monomethylarsonic acid (creatinine corrected)

Metabolite of Arsenic

Geometric mean and selected percentiles of urine concentrations (in µg As/g of creatinine) for the U.S. population from the National Health and Nutrition Examination Survey.

	Survey years	Geometric mean (95% conf. interval)	Selected percentiles (95% confidence interval) 50th	75th	90th	95th	Sample size
Total	03-04	*	**< LOD**	**1.33** (1.18-1.54)	**2.22** (1.82-2.57)	**2.86** (2.40-3.53)	2567
	05-06	*	**< LOD**	**1.28** (1.14-1.52)	**2.37** (1.94-2.78)	**3.13** (2.67-3.76)	2588
	07-08	*	**< LOD**	**1.31** (1.23-1.42)	**2.24** (2.00-2.56)	**3.19** (2.78-3.58)	2576
	09-10	*	**< LOD**	**1.36** (1.25-1.45)	**2.16** (2.00-2.29)	**2.91** (2.67-3.15)	2870
Age group							
6-11 years	03-04	*	**< LOD**	**1.63** (<LOD-1.81)	**2.31** (1.88-2.50)	**2.52** (2.31-3.07)	292
	05-06	*	**< LOD**	**1.44** (<LOD-1.83)	**2.37** (1.65-3.20)	**3.13** (2.29-4.92)	354
	07-08	*	**< LOD**	**1.69** (<LOD-2.06)	**2.46** (2.09-2.91)	**3.20** (2.56-4.32)	390
	09-10	*	**< LOD**	**< LOD**	**2.37** (2.07-2.78)	**3.16** (2.55-3.76)	379
12-19 years	03-04	*	**< LOD**	**1.10** (.853-1.23)	**1.53** (1.30-1.85)	**2.07** (1.71-2.22)	728
	05-06	*	**< LOD**	**1.05** (.930-1.14)	**1.56** (1.49-1.73)	**1.97** (1.78-2.13)	703
	07-08	*	**< LOD**	**.970** (.880-1.07)	**1.45** (1.19-1.73)	**1.97** (1.49-2.34)	366
	09-10	*	**< LOD**	**1.21** (1.02-1.45)	**1.98** (1.60-2.56)	**2.56** (1.94-4.57)	456
20 years and older	03-04	*	**< LOD**	**1.36** (1.18-1.58)	**2.28** (1.82-2.79)	**3.00** (2.43-3.53)	1547
	05-06	*	**< LOD**	**1.31** (1.13-1.58)	**2.46** (2.00-2.91)	**3.20** (2.78-3.81)	1531
	07-08	*	**< LOD**	**1.32** (1.23-1.45)	**2.35** (2.02-2.67)	**3.38** (2.78-3.83)	1820
	09-10	*	**< LOD**	**1.36** (1.25-1.45)	**2.18** (2.00-2.29)	**2.91** (2.78-3.20)	2035
Gender							
Males	03-04	*	**< LOD**	**1.20** (1.05-1.36)	**1.88** (1.53-2.34)	**2.50** (2.07-3.45)	1283
	05-06	*	**< LOD**	**1.11** (.950-1.28)	**1.78** (1.47-2.29)	**2.46** (1.88-3.32)	1276
	07-08	*	**< LOD**	**1.18** (1.07-1.26)	**2.06** (1.85-2.34)	**2.71** (2.46-3.37)	1289
	09-10	*	**< LOD**	**1.16** (1.07-1.25)	**1.79** (1.64-1.99)	**2.29** (2.08-2.78)	1402
Females	03-04	*	**< LOD**	**1.50** (<LOD-1.77)	**2.40** (1.96-2.86)	**3.00** (2.61-3.53)	1284
	05-06	*	**< LOD**	**1.58** (1.36-1.76)	**2.78** (2.29-3.20)	**3.56** (3.05-4.35)	1312
	07-08	*	**< LOD**	**1.45** (<LOD-1.60)	**2.41** (1.94-2.91)	**3.56** (2.78-4.27)	1287
	09-10	*	**< LOD**	**1.56** (<LOD-1.73)	**2.46** (2.29-2.62)	**3.37** (2.91-3.56)	1468
Race/ethnicity							
Mexican Americans	03-04	*	**< LOD**	**1.46** (1.11-1.93)	**2.30** (1.84-3.00)	**3.16** (2.40-3.85)	621
	05-06	*	**< LOD**	**1.19** (1.08-1.35)	**1.92** (1.60-2.13)	**2.53** (2.06-2.91)	651
	07-08	*	**< LOD**	**1.28** (1.10-1.60)	**2.27** (1.64-2.71)	**3.05** (2.35-3.76)	513
	09-10	*	**< LOD**	**1.31** (<LOD-1.49)	**2.00** (1.73-2.56)	**3.05** (2.29-3.56)	618
Non-Hispanic blacks	03-04	*	**< LOD**	**.816** (<LOD-.985)	**1.37** (1.14-1.61)	**1.88** (1.46-2.17)	725
	05-06	*	**< LOD**	**.790** (.720-.880)	**1.11** (.980-1.34)	**1.57** (1.23-1.98)	695
	07-08	*	**< LOD**	**.920** (.840-1.06)	**1.45** (1.33-1.73)	**2.09** (1.73-2.56)	586
	09-10	*	**< LOD**	**.970** (<LOD-1.08)	**1.73** (1.39-1.94)	**2.29** (1.83-2.91)	545
Non-Hispanic whites	03-04	*	**< LOD**	**1.33** (1.15-1.62)	**2.28** (1.73-2.86)	**2.86** (2.35-3.75)	1077
	05-06	*	**< LOD**	**1.35** (1.16-1.64)	**2.50** (2.00-3.05)	**3.20** (2.78-3.81)	1050
	07-08	*	**< LOD**	**1.35** (1.23-1.52)	**2.37** (2.04-2.78)	**3.37** (2.78-4.00)	1063
	09-10	*	**< LOD**	**1.36** (<LOD-1.52)	**2.21** (1.99-2.37)	**2.91** (2.67-3.20)	1226

< LOD means less than the limit of detection for the urine levels not corrected for creatinine.
* Not calculated: proportion of results below limit of detection was too high to provide a valid result.

Biomonitoring Summary: http://www.cdc.gov/biomonitoring/Arsenic_BiomonitoringSummary.html
Factsheet: http://www.cdc.gov/biomonitoring/Arsenic_FactSheet.html

Urinary Trimethylarsine oxide

Geometric mean and selected percentiles of urine concentrations (in µg As/L) for the U.S. population from the National Health and Nutrition Examination Survey.

	Survey years	Geometric mean (95% conf. interval)	Selected percentiles (95% confidence interval) 50th	75th	90th	95th	Sample size
Total	03-04	*	< LOD	< LOD	< LOD	< LOD	2568
	05-06	*	< LOD	< LOD	< LOD	< LOD	2588
	07-08	*	< LOD	< LOD	< LOD	< LOD	2576
	09-10	*	< LOD	< LOD	< LOD	< LOD	2871
Age group							
6-11 years	03-04	*	< LOD	< LOD	< LOD	< LOD	292
	05-06	*	< LOD	< LOD	< LOD	< LOD	354
	07-08	*	< LOD	< LOD	< LOD	< LOD	390
	09-10	*	< LOD	< LOD	< LOD	< LOD	380
12-19 years	03-04	*	< LOD	< LOD	< LOD	< LOD	728
	05-06	*	< LOD	< LOD	< LOD	< LOD	703
	07-08	*	< LOD	< LOD	< LOD	< LOD	366
	09-10	*	< LOD	< LOD	< LOD	< LOD	456
20 years and older	03-04	*	< LOD	< LOD	< LOD	< LOD	1548
	05-06	*	< LOD	< LOD	< LOD	< LOD	1531
	07-08	*	< LOD	< LOD	< LOD	< LOD	1820
	09-10	*	< LOD	< LOD	< LOD	< LOD	2035
Gender							
Males	03-04	*	< LOD	< LOD	< LOD	< LOD	1284
	05-06	*	< LOD	< LOD	< LOD	< LOD	1276
	07-08	*	< LOD	< LOD	< LOD	< LOD	1289
	09-10	*	< LOD	< LOD	< LOD	< LOD	1403
Females	03-04	*	< LOD	< LOD	< LOD	< LOD	1284
	05-06	*	< LOD	< LOD	< LOD	< LOD	1312
	07-08	*	< LOD	< LOD	< LOD	< LOD	1287
	09-10	*	< LOD	< LOD	< LOD	< LOD	1468
Race/ethnicity							
Mexican Americans	03-04	*	< LOD	< LOD	< LOD	< LOD	621
	05-06	*	< LOD	< LOD	< LOD	< LOD	651
	07-08	*	< LOD	< LOD	< LOD	< LOD	513
	09-10	*	< LOD	< LOD	< LOD	< LOD	618
Non-Hispanic blacks	03-04	*	< LOD	< LOD	< LOD	< LOD	725
	05-06	*	< LOD	< LOD	< LOD	< LOD	695
	07-08	*	< LOD	< LOD	< LOD	< LOD	586
	09-10	*	< LOD	< LOD	< LOD	< LOD	546
Non-Hispanic whites	03-04	*	< LOD	< LOD	< LOD	< LOD	1078
	05-06	*	< LOD	< LOD	< LOD	< LOD	1050
	07-08	*	< LOD	< LOD	< LOD	< LOD	1063
	09-10	*	< LOD	< LOD	< LOD	< LOD	1226

Limit of detection (LOD, see Data Analysis section) for Survey years 03-04, 05-06, 07-08 and 09-10 are 1.0, 1.0, 1.0, and 1.0 respectively.
< LOD means less than the limit of detection, which may vary for some chemicals by year and by individual sample.
* Not calculated: proportion of results below limit of detection was too high to provide a valid result.

Biomonitoring Summary: http://www.cdc.gov/biomonitoring/Arsenic_BiomonitoringSummary.html
Factsheet: http://www.cdc.gov/biomonitoring/Arsenic_FactSheet.html

Urinary Trimethylarsine oxide (creatinine corrected)

Geometric mean and selected percentiles of urine concentrations (in µg As/g of creatinine) for the U.S. population from the National Health and Nutrition Examination Survey.

	Survey years	Geometric mean (95% conf. interval)	Selected percentiles (95% confidence interval) 50th	75th	90th	95th	Sample size
Total	03-04	*	< LOD	< LOD	< LOD	< LOD	2568
	05-06	*	< LOD	< LOD	< LOD	< LOD	2588
	07-08	*	< LOD	< LOD	< LOD	< LOD	2576
	09-10	*	< LOD	< LOD	< LOD	< LOD	2870
Age group							
6-11 years	03-04	*	< LOD	< LOD	< LOD	< LOD	292
	05-06	*	< LOD	< LOD	< LOD	< LOD	354
	07-08	*	< LOD	< LOD	< LOD	< LOD	390
	09-10	*	< LOD	< LOD	< LOD	< LOD	379
12-19 years	03-04	*	< LOD	< LOD	< LOD	< LOD	728
	05-06	*	< LOD	< LOD	< LOD	< LOD	703
	07-08	*	< LOD	< LOD	< LOD	< LOD	366
	09-10	*	< LOD	< LOD	< LOD	< LOD	456
20 years and older	03-04	*	< LOD	< LOD	< LOD	< LOD	1548
	05-06	*	< LOD	< LOD	< LOD	< LOD	1531
	07-08	*	< LOD	< LOD	< LOD	< LOD	1820
	09-10	*	< LOD	< LOD	< LOD	< LOD	2035
Gender							
Males	03-04	*	< LOD	< LOD	< LOD	< LOD	1284
	05-06	*	< LOD	< LOD	< LOD	< LOD	1276
	07-08	*	< LOD	< LOD	< LOD	< LOD	1289
	09-10	*	< LOD	< LOD	< LOD	< LOD	1402
Females	03-04	*	< LOD	< LOD	< LOD	< LOD	1284
	05-06	*	< LOD	< LOD	< LOD	< LOD	1312
	07-08	*	< LOD	< LOD	< LOD	< LOD	1287
	09-10	*	< LOD	< LOD	< LOD	< LOD	1468
Race/ethnicity							
Mexican Americans	03-04	*	< LOD	< LOD	< LOD	< LOD	621
	05-06	*	< LOD	< LOD	< LOD	< LOD	651
	07-08	*	< LOD	< LOD	< LOD	< LOD	513
	09-10	*	< LOD	< LOD	< LOD	< LOD	618
Non-Hispanic blacks	03-04	*	< LOD	< LOD	< LOD	< LOD	725
	05-06	*	< LOD	< LOD	< LOD	< LOD	695
	07-08	*	< LOD	< LOD	< LOD	< LOD	586
	09-10	*	< LOD	< LOD	< LOD	< LOD	545
Non-Hispanic whites	03-04	*	< LOD	< LOD	< LOD	< LOD	1078
	05-06	*	< LOD	< LOD	< LOD	< LOD	1050
	07-08	*	< LOD	< LOD	< LOD	< LOD	1063
	09-10	*	< LOD	< LOD	< LOD	< LOD	1226

< LOD means less than the limit of detection for the urine levels not corrected for creatinine.
* Not calculated: proportion of results below limit of detection was too high to provide a valid result.

Biomonitoring Summary: http://www.cdc.gov/biomonitoring/Arsenic_BiomonitoringSummary.html
Factsheet: http://www.cdc.gov/biomonitoring/Arsenic_FactSheet.html

Urinary Barium

Geometric mean and selected percentiles of urine concentrations (in µg/L) for the U.S. population from the National Health and Nutrition Examination Survey.

	Survey years	Geometric mean (95% conf. interval)	Selected percentiles (95% confidence interval) 50th	75th	90th	95th	Sample size
Total	99-00	**1.50** (1.35-1.66)	**1.60** (1.50-1.90)	**3.10** (2.70-3.40)	**5.40** (4.60-6.10)	**6.90** (6.20-8.40)	2180
	01-02	**1.52** (1.41-1.65)	**1.63** (1.50-1.76)	**3.12** (2.77-3.51)	**5.24** (4.73-5.84)	**7.48** (6.54-8.12)	2690
	03-04	**1.49** (1.36-1.64)	**1.51** (1.35-1.72)	**2.91** (2.64-3.28)	**5.36** (4.86-5.71)	**7.54** (6.93-8.63)	2558
	05-06	**1.52** (1.39-1.66)	**1.58** (1.44-1.70)	**2.99** (2.63-3.41)	**5.34** (4.82-5.83)	**7.10** (6.46-8.18)	2576
	07-08	**1.56** (1.45-1.69)	**1.64** (1.49-1.80)	**3.01** (2.72-3.34)	**4.93** (4.39-5.69)	**7.04** (6.07-8.20)	2627
	09-10	**1.47** (1.34-1.60)	**1.48** (1.35-1.62)	**2.81** (2.52-3.06)	**4.66** (4.34-5.35)	**6.78** (5.86-7.76)	2848
Age group							
6-11 years	99-00	**2.15** (1.70-2.72)	**2.20** (1.90-2.50)	**4.00** (2.60-6.10)	**6.40** (5.20-8.30)	**8.30** (5.00-76.2)	297
	01-02	**1.80** (1.44-2.26)	**2.09** (1.74-2.49)	**3.63** (2.86-4.39)	**5.37** (4.26-7.38)	**6.88** (5.37-8.49)	368
	03-04	**2.21** (1.81-2.71)	**2.50** (1.81-2.75)	**4.76** (3.80-5.65)	**8.63** (5.59-11.8)	**11.8** (6.87-14.8)	290
	05-06	**1.73** (1.53-1.97)	**1.87** (1.61-2.03)	**3.55** (2.41-4.30)	**6.21** (4.30-7.32)	**7.72** (6.26-8.92)	355
	07-08	**1.75** (1.50-2.04)	**1.86** (1.58-2.23)	**3.41** (2.85-3.79)	**5.57** (4.49-6.59)	**7.32** (5.71-9.18)	394
	09-10	**1.49** (1.28-1.74)	**1.50** (1.22-1.68)	**2.72** (2.19-3.13)	**4.63** (4.02-5.37)	**6.59** (5.24-7.72)	378
12-19 years	99-00	**1.97** (1.78-2.19)	**2.00** (1.70-2.30)	**3.50** (3.10-4.00)	**5.90** (4.80-7.00)	**9.70** (5.90-13.1)	621
	01-02	**2.03** (1.76-2.34)	**2.27** (1.96-2.53)	**4.11** (3.48-4.72)	**6.73** (5.55-7.87)	**9.02** (7.25-11.4)	762
	03-04	**2.16** (1.93-2.41)	**2.35** (2.06-2.63)	**4.11** (3.48-4.71)	**7.18** (6.00-8.29)	**9.63** (8.15-11.4)	725
	05-06	**2.16** (1.92-2.42)	**2.33** (1.99-2.56)	**3.80** (3.60-4.21)	**6.35** (5.48-7.49)	**8.24** (6.06-10.5)	701
	07-08	**2.18** (1.99-2.39)	**2.31** (2.07-2.59)	**3.62** (3.34-4.10)	**6.19** (4.75-7.51)	**8.20** (6.22-11.1)	376
	09-10	**1.79** (1.52-2.09)	**1.90** (1.46-2.45)	**3.25** (2.82-4.14)	**5.43** (4.45-6.07)	**6.87** (5.73-8.16)	451
20 years and older	99-00	**1.36** (1.24-1.51)	**1.50** (1.30-1.70)	**2.80** (2.60-3.20)	**5.10** (4.30-5.50)	**6.40** (5.70-8.40)	1262
	01-02	**1.43** (1.32-1.54)	**1.50** (1.39-1.65)	**2.85** (2.55-3.27)	**4.86** (4.53-5.47)	**7.14** (6.08-8.12)	1560
	03-04	**1.34** (1.20-1.50)	**1.39** (1.19-1.56)	**2.54** (2.21-2.91)	**4.61** (3.99-5.30)	**6.61** (5.57-7.43)	1543
	05-06	**1.42** (1.28-1.57)	**1.43** (1.28-1.63)	**2.75** (2.47-3.11)	**5.12** (4.45-5.81)	**6.83** (6.14-7.90)	1520
	07-08	**1.46** (1.35-1.58)	**1.51** (1.39-1.67)	**2.79** (2.54-3.15)	**4.61** (4.19-5.42)	**6.80** (5.50-8.37)	1857
	09-10	**1.42** (1.30-1.55)	**1.43** (1.31-1.58)	**2.67** (2.36-3.02)	**4.58** (4.22-5.14)	**6.80** (5.70-8.63)	2019
Gender							
Males	99-00	**1.70** (1.54-1.88)	**1.90** (1.80-2.00)	**3.20** (3.00-3.60)	**5.50** (4.20-6.70)	**7.50** (5.90-9.70)	1083
	01-02	**1.64** (1.47-1.82)	**1.80** (1.65-1.98)	**3.15** (2.76-3.73)	**5.52** (4.82-6.35)	**7.87** (6.49-9.32)	1335
	03-04	**1.62** (1.47-1.78)	**1.69** (1.49-1.85)	**3.09** (2.81-3.54)	**5.65** (5.14-6.16)	**8.56** (6.71-9.67)	1281
	05-06	**1.66** (1.48-1.85)	**1.71** (1.50-1.94)	**3.21** (2.76-3.79)	**5.48** (4.68-6.22)	**7.10** (6.18-8.84)	1271
	07-08	**1.62** (1.48-1.77)	**1.80** (1.57-1.93)	**3.14** (2.79-3.42)	**5.00** (4.31-5.70)	**6.84** (5.83-7.72)	1327
	09-10	**1.53** (1.35-1.74)	**1.57** (1.36-1.82)	**3.01** (2.53-3.36)	**4.83** (4.25-5.77)	**6.81** (5.77-8.76)	1398
Females	99-00	**1.33** (1.15-1.53)	**1.50** (1.20-1.60)	**2.80** (2.30-3.30)	**5.20** (4.20-5.90)	**6.80** (5.60-10.4)	1097
	01-02	**1.43** (1.30-1.56)	**1.44** (1.29-1.63)	**3.11** (2.74-3.43)	**4.93** (4.44-5.88)	**7.15** (6.32-7.86)	1355
	03-04	**1.38** (1.24-1.54)	**1.39** (1.18-1.57)	**2.71** (2.41-3.15)	**4.95** (4.29-5.51)	**6.87** (5.65-8.10)	1277
	05-06	**1.40** (1.27-1.54)	**1.42** (1.30-1.63)	**2.70** (2.39-3.19)	**5.21** (4.65-5.71)	**7.09** (6.24-7.94)	1305
	07-08	**1.51** (1.36-1.68)	**1.54** (1.38-1.70)	**2.84** (2.52-3.37)	**4.87** (4.23-6.13)	**7.18** (5.94-8.83)	1300
	09-10	**1.40** (1.30-1.51)	**1.38** (1.31-1.47)	**2.61** (2.41-2.90)	**4.58** (4.33-4.95)	**6.59** (5.37-7.86)	1450

Limit of detection (LOD, see Data Analysis section) for Survey years 99-00, 01-02, 03-04, 05-06, 07-08, and 09-10 are 0.12, 0.12, 0.31, 0.12, 0.12, and 0.12 respectively.

Biomonitoring Summary: http://www.cdc.gov/biomonitoring/Barium_BiomonitoringSummary.html

Urinary Barium

Geometric mean and selected percentiles of urine concentrations (in µg/L) for the U.S. population from the National Health and Nutrition Examination Survey.

	Survey years	Geometric mean (95% conf. interval)	Selected percentiles (95% confidence interval) 50th	75th	90th	95th	Sample size
Race/ethnicity							
Mexican Americans	99-00	**1.35** (1.25-1.46)	**1.40** (1.20-1.50)	**2.60** (2.30-2.90)	**4.50** (4.10-5.30)	**6.30** (5.50-6.80)	692
	01-02	**1.21** (1.06-1.37)	**1.25** (1.11-1.46)	**2.56** (2.04-2.91)	**4.35** (3.65-5.49)	**6.43** (5.21-8.22)	683
	03-04	**1.40** (1.15-1.70)	**1.45** (1.22-1.73)	**2.62** (1.78-3.38)	**4.07** (2.95-6.37)	**6.01** (4.01-7.88)	618
	05-06	**1.33** (1.24-1.42)	**1.36** (1.22-1.50)	**2.63** (2.35-2.89)	**4.47** (3.80-5.23)	**6.21** (5.23-7.00)	652
	07-08	**1.33** (1.16-1.53)	**1.37** (1.19-1.48)	**2.60** (2.29-2.84)	**4.21** (3.53-4.90)	**5.79** (4.90-8.00)	515
	09-10	**1.24** (1.07-1.45)	**1.18** (1.05-1.40)	**2.25** (1.88-2.71)	**4.15** (3.55-5.40)	**6.35** (5.00-8.75)	613
Non-Hispanic blacks	99-00	**1.34** (1.12-1.62)	**1.40** (1.20-1.60)	**2.50** (2.30-2.90)	**5.10** (3.70-6.60)	**7.40** (5.40-13.9)	540
	01-02	**1.30** (1.14-1.48)	**1.42** (1.22-1.62)	**2.61** (2.31-2.82)	**4.30** (3.70-5.18)	**5.99** (4.87-7.26)	667
	03-04	**1.27** (1.17-1.39)	**1.38** (1.26-1.48)	**2.34** (2.05-2.59)	**3.77** (3.35-4.36)	**5.86** (4.76-7.45)	723
	05-06	**1.25** (1.15-1.37)	**1.31** (1.21-1.41)	**2.40** (2.22-2.61)	**4.24** (3.69-4.83)	**6.19** (5.23-6.96)	692
	07-08	**1.17** (1.07-1.28)	**1.23** (1.12-1.37)	**2.14** (2.01-2.34)	**3.70** (3.27-4.00)	**5.00** (3.93-5.90)	589
	09-10	**1.22** (1.08-1.38)	**1.22** (1.07-1.38)	**2.13** (1.91-2.51)	**3.76** (3.09-4.88)	**5.50** (4.06-7.32)	544
Non-Hispanic whites	99-00	**1.56** (1.36-1.80)	**1.80** (1.60-2.00)	**3.30** (2.80-3.70)	**5.50** (4.50-6.30)	**7.50** (6.20-8.80)	765
	01-02	**1.61** (1.46-1.77)	**1.68** (1.54-1.85)	**3.31** (2.87-3.74)	**5.66** (4.94-6.30)	**7.73** (6.61-8.49)	1132
	03-04	**1.56** (1.37-1.78)	**1.61** (1.28-1.92)	**3.12** (2.75-3.70)	**5.57** (5.04-6.43)	**8.08** (6.87-9.53)	1074
	05-06	**1.59** (1.42-1.78)	**1.66** (1.50-1.86)	**3.08** (2.63-3.79)	**5.50** (4.90-6.08)	**7.10** (6.46-8.24)	1041
	07-08	**1.71** (1.55-1.88)	**1.82** (1.62-1.97)	**3.36** (2.91-3.71)	**5.38** (4.51-6.30)	**7.18** (6.22-9.05)	1095
	09-10	**1.56** (1.42-1.73)	**1.60** (1.40-1.76)	**3.00** (2.64-3.36)	**4.89** (4.48-5.84)	**7.16** (6.12-9.31)	1225

Limit of detection (LOD, see Data Analysis section) for Survey years 99-00, 01-02, 03-04, 05-06, 07-08, and 09-10 are 0.12, 0.12, 0.31, 0.12, 0.12, and 0.12 respectively.

Biomonitoring Summary: http://www.cdc.gov/biomonitoring/Barium_BiomonitoringSummary.html

Urinary Barium (creatinine corrected)

Geometric mean and selected percentiles of urine concentrations (in µg/g of creatinine) for the U.S. population from the National Health and Nutrition Examination Survey.

	Survey years	Geometric mean (95% conf. interval)	Selected percentiles (95% confidence interval) 50th	75th	90th	95th	Sample size
Total	99-00	**1.40** (1.26-1.56)	**1.41** (1.28-1.54)	**2.54** (2.20-2.91)	**4.68** (3.85-5.47)	**6.33** (5.47-8.09)	2180
	01-02	**1.44** (1.31-1.58)	**1.49** (1.35-1.63)	**2.76** (2.51-3.03)	**4.58** (4.15-4.96)	**6.24** (5.28-7.27)	2689
	03-04	**1.48** (1.37-1.60)	**1.41** (1.31-1.58)	**2.68** (2.44-2.89)	**4.92** (4.39-5.45)	**7.10** (6.29-7.77)	2558
	05-06	**1.50** (1.40-1.61)	**1.48** (1.37-1.61)	**2.75** (2.50-3.03)	**4.65** (4.09-5.10)	**6.38** (5.62-7.56)	2576
	07-08	**1.63** (1.51-1.75)	**1.60** (1.51-1.72)	**2.92** (2.72-3.16)	**4.85** (4.40-5.57)	**7.20** (5.94-8.59)	2627
	09-10	**1.56** (1.45-1.68)	**1.55** (1.42-1.64)	**2.72** (2.54-2.97)	**4.69** (4.12-5.16)	**6.24** (5.60-7.43)	2848
Age group							
6-11 years	99-00	**2.37** (1.68-3.32)	**2.38** (1.84-2.92)	**4.47** (2.55-6.46)	**10.2** (3.75-22.0)	**11.4** (5.46-22.0)	297
	01-02	**2.20** (1.91-2.52)	**2.41** (2.19-2.83)	**3.91** (3.29-4.51)	**5.01** (4.58-6.00)	**6.71** (5.20-8.47)	368
	03-04	**2.58** (2.22-2.99)	**3.00** (2.35-3.29)	**4.45** (3.57-5.54)	**6.69** (5.59-7.70)	**10.3** (6.53-21.0)	290
	05-06	**2.14** (1.85-2.48)	**2.15** (1.76-2.51)	**3.83** (3.10-4.73)	**6.19** (4.84-7.83)	**10.0** (5.76-11.1)	355
	07-08	**2.28** (2.04-2.54)	**2.41** (2.05-2.59)	**4.43** (3.87-4.70)	**6.58** (5.05-9.46)	**9.89** (7.13-13.3)	394
	09-10	**2.03** (1.78-2.30)	**2.00** (1.77-2.40)	**3.33** (2.81-3.79)	**5.04** (4.17-7.39)	**8.76** (5.93-10.8)	378
12-19 years	99-00	**1.51** (1.34-1.70)	**1.40** (1.26-1.59)	**2.48** (1.97-3.06)	**4.36** (3.23-5.39)	**7.62** (4.24-11.4)	621
	01-02	**1.45** (1.33-1.59)	**1.56** (1.31-1.77)	**2.89** (2.68-3.12)	**4.52** (3.84-5.20)	**5.55** (4.81-6.10)	762
	03-04	**1.54** (1.36-1.75)	**1.59** (1.39-1.87)	**2.60** (2.24-3.48)	**4.97** (4.34-5.58)	**6.47** (5.38-7.77)	725
	05-06	**1.66** (1.50-1.84)	**1.73** (1.52-1.93)	**3.15** (2.76-3.42)	**4.25** (3.88-4.56)	**5.00** (4.46-6.68)	701
	07-08	**1.71** (1.52-1.92)	**1.70** (1.48-1.96)	**3.03** (2.51-3.65)	**4.80** (3.96-5.47)	**6.17** (4.80-8.12)	376
	09-10	**1.67** (1.48-1.88)	**1.66** (1.54-1.84)	**2.69** (2.24-3.18)	**3.98** (3.40-5.29)	**6.42** (4.61-9.33)	451
20 years and older	99-00	**1.30** (1.19-1.42)	**1.33** (1.20-1.46)	**2.32** (2.08-2.62)	**4.29** (3.63-4.96)	**5.65** (5.28-6.33)	1262
	01-02	**1.37** (1.24-1.50)	**1.40** (1.24-1.52)	**2.53** (2.23-2.84)	**4.38** (4.02-5.00)	**6.55** (5.00-7.64)	1559
	03-04	**1.38** (1.26-1.50)	**1.32** (1.22-1.41)	**2.39** (2.13-2.70)	**4.39** (3.77-5.16)	**7.00** (5.45-8.50)	1543
	05-06	**1.42** (1.30-1.54)	**1.39** (1.26-1.55)	**2.59** (2.33-2.82)	**4.53** (3.65-5.40)	**6.34** (5.37-7.67)	1520
	07-08	**1.56** (1.44-1.69)	**1.55** (1.40-1.66)	**2.80** (2.55-3.04)	**4.64** (4.05-5.43)	**7.20** (5.78-8.65)	1857
	09-10	**1.50** (1.40-1.61)	**1.46** (1.38-1.55)	**2.67** (2.42-2.92)	**4.71** (4.07-5.23)	**6.03** (5.53-7.34)	2019
Gender							
Males	99-00	**1.32** (1.22-1.42)	**1.36** (1.23-1.47)	**2.39** (2.11-2.57)	**4.24** (3.48-5.00)	**5.61** (4.39-10.2)	1083
	01-02	**1.30** (1.16-1.45)	**1.34** (1.19-1.50)	**2.46** (2.14-2.83)	**4.51** (3.73-4.96)	**5.42** (4.81-7.51)	1334
	03-04	**1.36** (1.26-1.47)	**1.31** (1.19-1.43)	**2.60** (2.37-2.75)	**4.36** (3.97-4.72)	**6.01** (5.45-6.96)	1281
	05-06	**1.36** (1.23-1.50)	**1.38** (1.25-1.52)	**2.36** (2.19-2.73)	**4.24** (3.65-4.82)	**5.69** (4.75-7.36)	1271
	07-08	**1.45** (1.34-1.55)	**1.50** (1.32-1.60)	**2.59** (2.34-2.79)	**4.30** (3.84-4.72)	**5.56** (5.05-6.30)	1327
	09-10	**1.40** (1.28-1.52)	**1.38** (1.29-1.50)	**2.39** (2.13-2.68)	**4.05** (3.52-4.71)	**5.55** (4.89-6.77)	1398
Females	99-00	**1.49** (1.27-1.74)	**1.48** (1.29-1.68)	**2.65** (2.13-3.46)	**4.91** (3.96-6.38)	**7.36** (5.25-11.3)	1097
	01-02	**1.59** (1.45-1.75)	**1.64** (1.48-1.79)	**2.98** (2.75-3.30)	**4.76** (4.38-5.31)	**6.97** (5.86-7.52)	1355
	03-04	**1.60** (1.45-1.77)	**1.55** (1.35-1.73)	**2.78** (2.34-3.25)	**5.50** (4.43-6.86)	**7.88** (6.28-11.5)	1277
	05-06	**1.65** (1.54-1.76)	**1.63** (1.45-1.83)	**3.09** (2.71-3.38)	**4.87** (4.48-5.65)	**7.48** (6.04-10.0)	1305
	07-08	**1.83** (1.63-2.05)	**1.74** (1.52-2.06)	**3.22** (2.82-3.89)	**5.94** (4.57-7.38)	**8.15** (7.18-9.49)	1300
	09-10	**1.73** (1.60-1.87)	**1.71** (1.62-1.86)	**3.06** (2.72-3.41)	**5.06** (4.59-5.74)	**6.58** (5.88-8.19)	1450

Biomonitoring Summary: http://www.cdc.gov/biomonitoring/Barium_BiomonitoringSummary.html

Urinary Barium (creatinine corrected)

Geometric mean and selected percentiles of urine concentrations (in µg/g of creatinine) for the U.S. population from the National Health and Nutrition Examination Survey.

	Survey years	Geometric mean (95% conf. interval)	Selected percentiles (95% confidence interval) 50th	75th	90th	95th	Sample size
Race/ethnicity							
Mexican Americans	99-00	**1.21** (1.10-1.33)	**1.18** (1.05-1.38)	**2.39** (2.10-2.59)	**4.00** (3.33-4.80)	**5.31** (4.80-6.51)	692
	01-02	**1.18** (1.03-1.34)	**1.16** (1.00-1.38)	**2.33** (1.90-2.61)	**3.68** (3.29-4.10)	**4.96** (4.24-6.80)	682
	03-04	**1.29** (1.08-1.55)	**1.28** (1.03-1.53)	**2.25** (1.73-2.97)	**3.99** (2.79-5.03)	**4.99** (4.24-6.56)	618
	05-06	**1.25** (1.17-1.33)	**1.21** (1.09-1.33)	**2.27** (1.84-2.61)	**3.66** (3.07-4.35)	**5.11** (4.00-5.95)	652
	07-08	**1.33** (1.16-1.53)	**1.28** (1.14-1.49)	**2.40** (1.87-2.90)	**4.23** (3.45-4.87)	**6.18** (4.75-7.27)	515
	09-10	**1.30** (1.18-1.44)	**1.26** (1.14-1.41)	**2.33** (1.98-2.79)	**3.55** (3.11-4.42)	**5.50** (4.27-6.58)	613
Non-Hispanic blacks	99-00	**.881** (.703-1.11)	**.905** (.710-1.06)	**1.64** (1.36-2.00)	**3.27** (2.26-4.76)	**4.84** (3.57-10.8)	540
	01-02	**.891** (.777-1.02)	**.921** (.754-1.11)	**1.64** (1.44-2.03)	**2.86** (2.48-3.37)	**4.02** (3.52-4.68)	667
	03-04	**.915** (.832-1.01)	**.963** (.880-1.04)	**1.51** (1.39-1.75)	**2.62** (2.29-3.04)	**3.76** (3.22-4.72)	723
	05-06	**.909** (.845-.979)	**.880** (.820-.970)	**1.78** (1.56-1.97)	**2.99** (2.63-3.14)	**3.91** (3.39-4.73)	692
	07-08	**.858** (.807-.913)	**.850** (.790-.920)	**1.53** (1.34-1.61)	**2.51** (2.01-3.03)	**3.43** (2.83-5.05)	589
	09-10	**.965** (.853-1.09)	**.930** (.860-1.05)	**1.63** (1.40-1.85)	**2.92** (2.33-3.34)	**3.71** (3.24-4.69)	544
Non-Hispanic whites	99-00	**1.56** (1.38-1.77)	**1.55** (1.36-1.74)	**2.72** (2.27-3.24)	**5.00** (3.81-6.02)	**6.60** (5.52-10.2)	765
	01-02	**1.62** (1.49-1.76)	**1.66** (1.49-1.82)	**3.04** (2.76-3.32)	**4.96** (4.55-5.41)	**6.74** (5.57-7.64)	1132
	03-04	**1.64** (1.49-1.82)	**1.60** (1.40-1.76)	**2.88** (2.56-3.26)	**5.38** (4.67-6.28)	**7.57** (6.69-9.27)	1074
	05-06	**1.65** (1.52-1.80)	**1.61** (1.46-1.83)	**2.95** (2.70-3.26)	**4.82** (4.32-5.65)	**7.21** (5.69-8.51)	1041
	07-08	**1.91** (1.74-2.10)	**1.85** (1.65-2.09)	**3.22** (2.84-3.76)	**5.42** (4.55-6.91)	**7.81** (6.33-9.45)	1095
	09-10	**1.75** (1.59-1.92)	**1.70** (1.58-1.86)	**2.99** (2.67-3.33)	**5.00** (4.14-5.69)	**6.63** (5.69-8.50)	1225

Biomonitoring Summary: **http://www.cdc.gov/biomonitoring/Barium_BiomonitoringSummary.html**

Urinary Beryllium

Geometric mean and selected percentiles of urine concentrations (in µg/L) for the U.S. population from the National Health and Nutrition Examination Survey.

	Survey years	Geometric mean (95% conf. interval)	Selected percentiles (95% confidence interval) 50th	75th	90th	95th	Sample size
Total	99-00	*	< LOD	< LOD	< LOD	< LOD	2465
	01-02	*	< LOD	< LOD	< LOD	< LOD	2690
	03-04	*	< LOD	< LOD	< LOD	< LOD	2558
	05-06	*	< LOD	< LOD	< LOD	< LOD	2576
	07-08	*	< LOD	< LOD	< LOD	< LOD	2627
	09-10	*	< LOD	< LOD	< LOD	< LOD	2848
Age group							
6-11 years	99-00	*	< LOD	< LOD	< LOD	< LOD	340
	01-02	*	< LOD	< LOD	< LOD	< LOD	368
	03-04	*	< LOD	< LOD	< LOD	< LOD	290
	05-06	*	< LOD	< LOD	< LOD	< LOD	355
	07-08	*	< LOD	< LOD	< LOD	< LOD	394
	09-10	*	< LOD	< LOD	< LOD	< LOD	378
12-19 years	99-00	*	< LOD	< LOD	< LOD	< LOD	719
	01-02	*	< LOD	< LOD	< LOD	**.140** (<LOD-.170)	762
	03-04	*	< LOD	< LOD	< LOD	< LOD	725
	05-06	*	< LOD	< LOD	< LOD	< LOD	701
	07-08	*	< LOD	< LOD	< LOD	< LOD	376
	09-10	*	< LOD	< LOD	< LOD	< LOD	451
20 years and older	99-00	*	< LOD	< LOD	< LOD	< LOD	1406
	01-02	*	< LOD	< LOD	< LOD	< LOD	1560
	03-04	*	< LOD	< LOD	< LOD	< LOD	1543
	05-06	*	< LOD	< LOD	< LOD	< LOD	1520
	07-08	*	< LOD	< LOD	< LOD	< LOD	1857
	09-10	*	< LOD	< LOD	< LOD	< LOD	2019
Gender							
Males	99-00	*	< LOD	< LOD	< LOD	< LOD	1227
	01-02	*	< LOD	< LOD	< LOD	**.130** (<LOD-.150)	1335
	03-04	*	< LOD	< LOD	< LOD	< LOD	1281
	05-06	*	< LOD	< LOD	< LOD	< LOD	1271
	07-08	*	< LOD	< LOD	< LOD	< LOD	1327
	09-10	*	< LOD	< LOD	< LOD	< LOD	1398
Females	99-00	*	< LOD	< LOD	< LOD	< LOD	1238
	01-02	*	< LOD	< LOD	< LOD	< LOD	1355
	03-04	*	< LOD	< LOD	< LOD	< LOD	1277
	05-06	*	< LOD	< LOD	< LOD	< LOD	1305
	07-08	*	< LOD	< LOD	< LOD	< LOD	1300
	09-10	*	< LOD	< LOD	< LOD	< LOD	1450

Limit of detection (LOD, see Data Analysis section) for Survey years 99-00, 01-02, 03-04, 05-06, 07-08, and 09-10 are 0.13, 0.13, 0.13, 0.072, 0.072, and 0.072 respectively.
< LOD means less than the limit of detection, which may vary for some chemicals by year and by individual sample.
* Not calculated: proportion of results below limit of detection was too high to provide a valid result.

Biomonitoring Summary: **http://www.cdc.gov/biomonitoring/Beryllium_BiomonitoringSummary.html**

Urinary Beryllium

Geometric mean and selected percentiles of urine concentrations (in µg/L) for the U.S. population from the National Health and Nutrition Examination Survey.

	Survey years	Geometric mean (95% conf. interval)	Selected percentiles (95% confidence interval) 50th	75th	90th	95th	Sample size
Race/ethnicity							
Mexican Americans	99-00	*	**< LOD**	**< LOD**	**< LOD**	**< LOD**	884
	01-02	*	**< LOD**	**< LOD**	**< LOD**	**.130** (<LOD-.160)	683
	03-04	*	**< LOD**	**< LOD**	**< LOD**	**< LOD**	618
	05-06	*	**< LOD**	**< LOD**	**< LOD**	**< LOD**	652
	07-08	*	**< LOD**	**< LOD**	**< LOD**	**< LOD**	515
	09-10	*	**< LOD**	**< LOD**	**< LOD**	**< LOD**	613
Non-Hispanic blacks	99-00	*	**< LOD**	**< LOD**	**< LOD**	**< LOD**	568
	01-02	*	**< LOD**	**< LOD**	**< LOD**	**< LOD**	667
	03-04	*	**< LOD**	**< LOD**	**< LOD**	**< LOD**	723
	05-06	*	**< LOD**	**< LOD**	**< LOD**	**< LOD**	692
	07-08	*	**< LOD**	**< LOD**	**< LOD**	**< LOD**	589
	09-10	*	**< LOD**	**< LOD**	**< LOD**	**< LOD**	544
Non-Hispanic whites	99-00	*	**< LOD**	**< LOD**	**< LOD**	**< LOD**	822
	01-02	*	**< LOD**	**< LOD**	**< LOD**	**< LOD**	1132
	03-04	*	**< LOD**	**< LOD**	**< LOD**	**< LOD**	1074
	05-06	*	**< LOD**	**< LOD**	**< LOD**	**< LOD**	1041
	07-08	*	**< LOD**	**< LOD**	**< LOD**	**< LOD**	1095
	09-10	*	**< LOD**	**< LOD**	**< LOD**	**< LOD**	1225

Limit of detection (LOD, see Data Analysis section) for Survey years 99-00, 01-02, 03-04, 05-06, 07-08, and 09-10 are 0.13, 0.13, 0.13, 0.072, 0.072, and 0.072 respectively.
< LOD means less than the limit of detection, which may vary for some chemicals by year and by individual sample.
* Not calculated: proportion of results below limit of detection was too high to provide a valid result.

Biomonitoring Summary: **http://www.cdc.gov/biomonitoring/Beryllium_BiomonitoringSummary.html**

Urinary Beryllium (creatinine corrected)

Geometric mean and selected percentiles of urine concentrations (in µg/g of creatinine) for the U.S. population from the National Health and Nutrition Examination Survey.

	Survey years	Geometric mean (95% conf. interval)	Selected percentiles (95% confidence interval) 50th	75th	90th	95th	Sample size
Total	99-00	*	< LOD	< LOD	< LOD	< LOD	2465
	01-02	*	< LOD	< LOD	< LOD	< LOD	2689
	03-04	*	< LOD	< LOD	< LOD	< LOD	2558
	05-06	*	< LOD	< LOD	< LOD	< LOD	2576
	07-08	*	< LOD	< LOD	< LOD	< LOD	2627
	09-10	*	< LOD	< LOD	< LOD	< LOD	2848
Age group							
6-11 years	99-00	*	< LOD	< LOD	< LOD	< LOD	340
	01-02	*	< LOD	< LOD	< LOD	< LOD	368
	03-04	*	< LOD	< LOD	< LOD	< LOD	290
	05-06	*	< LOD	< LOD	< LOD	< LOD	355
	07-08	*	< LOD	< LOD	< LOD	< LOD	394
	09-10	*	< LOD	< LOD	< LOD	< LOD	378
12-19 years	99-00	*	< LOD	< LOD	< LOD	< LOD	719
	01-02	*	< LOD	< LOD	< LOD	**.231** (<LOD-.273)	762
	03-04	*	< LOD	< LOD	< LOD	< LOD	725
	05-06	*	< LOD	< LOD	< LOD	< LOD	701
	07-08	*	< LOD	< LOD	< LOD	< LOD	376
	09-10	*	< LOD	< LOD	< LOD	< LOD	451
20 years and older	99-00	*	< LOD	< LOD	< LOD	< LOD	1406
	01-02	*	< LOD	< LOD	< LOD	< LOD	1559
	03-04	*	< LOD	< LOD	< LOD	< LOD	1543
	05-06	*	< LOD	< LOD	< LOD	< LOD	1520
	07-08	*	< LOD	< LOD	< LOD	< LOD	1857
	09-10	*	< LOD	< LOD	< LOD	< LOD	2019
Gender							
Males	99-00	*	< LOD	< LOD	< LOD	< LOD	1227
	01-02	*	< LOD	< LOD	< LOD	**.281** (<LOD-.333)	1334
	03-04	*	< LOD	< LOD	< LOD	< LOD	1281
	05-06	*	< LOD	< LOD	< LOD	< LOD	1271
	07-08	*	< LOD	< LOD	< LOD	< LOD	1327
	09-10	*	< LOD	< LOD	< LOD	< LOD	1398
Females	99-00	*	< LOD	< LOD	< LOD	< LOD	1238
	01-02	*	< LOD	< LOD	< LOD	< LOD	1355
	03-04	*	< LOD	< LOD	< LOD	< LOD	1277
	05-06	*	< LOD	< LOD	< LOD	< LOD	1305
	07-08	*	< LOD	< LOD	< LOD	< LOD	1300
	09-10	*	< LOD	< LOD	< LOD	< LOD	1450

< LOD means less than the limit of detection for the urine levels not corrected for creatinine.
* Not calculated: proportion of results below limit of detection was too high to provide a valid result.

Biomonitoring Summary: http://www.cdc.gov/biomonitoring/Beryllium_BiomonitoringSummary.html

Urinary Beryllium (creatinine corrected)

Geometric mean and selected percentiles of urine concentrations (in µg/g of creatinine) for the U.S. population from the National Health and Nutrition Examination Survey.

	Survey years	Geometric mean (95% conf. interval)	Selected percentiles (95% confidence interval) 50th	75th	90th	95th	Sample size
Race/ethnicity							
Mexican Americans	99-00	*	**< LOD**	**< LOD**	**< LOD**	**< LOD**	884
	01-02	*	**< LOD**	**< LOD**	**< LOD**	**.346** (<LOD-.391)	682
	03-04	*	**< LOD**	**< LOD**	**< LOD**	**< LOD**	618
	05-06	*	**< LOD**	**< LOD**	**< LOD**	**< LOD**	652
	07-08	*	**< LOD**	**< LOD**	**< LOD**	**< LOD**	515
	09-10	*	**< LOD**	**< LOD**	**< LOD**	**< LOD**	613
Non-Hispanic blacks	99-00	*	**< LOD**	**< LOD**	**< LOD**	**< LOD**	568
	01-02	*	**< LOD**	**< LOD**	**< LOD**	**< LOD**	667
	03-04	*	**< LOD**	**< LOD**	**< LOD**	**< LOD**	723
	05-06	*	**< LOD**	**< LOD**	**< LOD**	**< LOD**	692
	07-08	*	**< LOD**	**< LOD**	**< LOD**	**< LOD**	589
	09-10	*	**< LOD**	**< LOD**	**< LOD**	**< LOD**	544
Non-Hispanic whites	99-00	*	**< LOD**	**< LOD**	**< LOD**	**< LOD**	822
	01-02	*	**< LOD**	**< LOD**	**< LOD**	**< LOD**	1132
	03-04	*	**< LOD**	**< LOD**	**< LOD**	**< LOD**	1074
	05-06	*	**< LOD**	**< LOD**	**< LOD**	**< LOD**	1041
	07-08	*	**< LOD**	**< LOD**	**< LOD**	**< LOD**	1095
	09-10	*	**< LOD**	**< LOD**	**< LOD**	**< LOD**	1225

< LOD means less than the limit of detection for the urine levels not corrected for creatinine.
* Not calculated: proportion of results below limit of detection was too high to provide a valid result.

Biomonitoring Summary: **http://www.cdc.gov/biomonitoring/Beryllium_BiomonitoringSummary.html**

Blood Cadmium

Geometric mean and selected percentiles of blood concentrations (in µg/L) for the U.S. population from the National Health and Nutrition Examination Survey.

	Survey years	Geometric mean (95% conf. interval)	Selected percentiles (95% confidence interval) 50th	75th	90th	95th	Sample size
Total	99-00	**.412** (.378-.449)	**.400** (.300-.400)	**.600** (.500-.700)	**1.00** (1.00-1.10)	**1.40** (1.30-1.40)	7970
	01-02	*	**.300** (.300-.400)	**.500** (.500-.600)	**1.00** (.900-1.10)	**1.40** (1.20-1.70)	8945
	03-04	**.304** (.289-.320)	**.300** (.300-.300)	**.500** (.500-.600)	**1.10** (1.00-1.20)	**1.60** (1.50-1.60)	8372
	05-06	**.310** (.294-.327)	**.270** (.250-.280)	**.510** (.460-.560)	**1.02** (.910-1.13)	**1.53** (1.34-1.75)	8407
	07-08	**.315** (.300-.331)	**.270** (.260-.280)	**.500** (.460-.560)	**1.00** (.900-1.13)	**1.52** (1.30-1.77)	8266
	09-10	**.302** (.293-.311)	**.260** (.250-.270)	**.480** (.460-.510)	**.960** (.880-1.01)	**1.40** (1.29-1.53)	8793
	11-12	**.279** (.267-.292)	**.250** (.230-.260)	**.460** (.430-.490)	**.960** (.870-1.10)	**1.50** (1.30-1.70)	7920
Gender							
Males	99-00	**.403** (.368-.441)	**.400** (.300-.400)	**.600** (.500-.700)	**1.00** (.900-1.10)	**1.40** (1.30-1.50)	3913
	01-02	*	**.300** (<LOD-.300)	**.500** (.500-.600)	**1.00** (.900-1.10)	**1.50** (1.20-1.80)	4339
	03-04	**.283** (.266-.300)	**.300** (.200-.300)	**.500** (.500-.500)	**1.10** (1.00-1.20)	**1.60** (1.50-1.60)	4131
	05-06	*	**.240** (.220-.260)	**.470** (.420-.530)	**1.02** (.910-1.12)	**1.53** (1.27-1.86)	4092
	07-08	**.299** (.283-.317)	**.250** (.230-.260)	**.470** (.420-.540)	**1.05** (.930-1.19)	**1.60** (1.30-1.90)	4147
	09-10	**.279** (.268-.289)	**.230** (.220-.240)	**.410** (.390-.460)	**.920** (.830-1.00)	**1.45** (1.30-1.58)	4366
	11-12	**.255** (.238-.274)	**.210** (.200-.230)	**.410** (.360-.480)	**.940** (.820-1.09)	**1.48** (1.20-1.70)	3968
Females	99-00	**.421** (.386-.460)	**.400** (.400-.400)	**.600** (.500-.700)	**1.00** (1.00-1.10)	**1.30** (1.20-1.40)	4057
	01-02	**.382** (.362-.403)	**.400** (.300-.400)	**.600** (.500-.600)	**1.00** (.900-1.10)	**1.40** (1.20-1.70)	4606
	03-04	**.326** (.309-.344)	**.300** (.300-.300)	**.600** (.500-.600)	**1.10** (1.00-1.20)	**1.60** (1.50-1.70)	4241
	05-06	**.329** (.311-.349)	**.290** (.280-.310)	**.530** (.480-.580)	**1.02** (.870-1.18)	**1.54** (1.33-1.79)	4315
	07-08	**.331** (.316-.348)	**.290** (.280-.310)	**.530** (.480-.570)	**.980** (.860-1.10)	**1.43** (1.29-1.63)	4119
	09-10	**.326** (.314-.339)	**.290** (.280-.310)	**.520** (.490-.550)	**.960** (.880-1.10)	**1.40** (1.20-1.53)	4427
	11-12	**.304** (.289-.320)	**.280** (.260-.300)	**.490** (.460-.510)	**.980** (.850-1.16)	**1.53** (1.30-1.70)	3952

Limit of detection (LOD, see Data Analysis section) for Survey years 99-00, 01-02, 03-04, 05-06, 07-08, 09-10, and 11-12 are 0.3, 0.3, 0.14, 0.2, 0.2, 0.2, and 0.16 respectively.
< LOD means less than the limit of detection, which may vary for some chemicals by year and by individual sample.
* Not calculated: proportion of results below limit of detection was too high to provide a valid result.

Biomonitoring Summary: http://www.cdc.gov/biomonitoring/Cadmium_BiomonitoringSummary.html
Factsheet: http://www.cdc.gov/biomonitoring/Cadmium_FactSheet.html

Blood Cadmium

Geometric mean and selected percentiles of blood concentrations (in µg/L) for the U.S. population from the National Health and Nutrition Examination Survey.

	Survey years	Geometric mean (95% conf. interval)	Selected percentiles (95% confidence interval) 50th	75th	90th	95th	Sample size
Age group							
1-5 years	99-00	*	**< LOD**	**.300** (<LOD-.400)	**.400** (.300-.400)	**.400** (.300-.700)	723
	01-02	*	**< LOD**	**< LOD**	**< LOD**	**.300** (.300-.300)	898
	03-04	*	**< LOD**	**< LOD**	**.200** (.200-.300)	**.200** (.200-.400)	910
	05-06	*	**< LOD**	**< LOD**	**< LOD**	**.230** (.210-.250)	968
	07-08	*	**< LOD**	**< LOD**	**.210** (<LOD-.230)	**.240** (.220-.260)	817
	09-10	*	**< LOD**	**< LOD**	**.200** (<LOD-.210)	**.220** (.200-.240)	836
	11-12	*	**< LOD**	**< LOD**	**.190** (.160-.200)	**.210** (.190-.240)	713
6-11 years	99-00	*	**< LOD**	**.300** (<LOD-.400)	**.400** (.300-.500)	**.500** (.400-.500)	905
	01-02	*	**< LOD**	**< LOD**	**.300** (.300-.300)	**.400** (.400-.400)	1044
	03-04	*	**< LOD**	**.200** (<LOD-.200)	**.300** (.200-.300)	**.300** (.300-.300)	856
	05-06	*	**< LOD**	**< LOD**	**.220** (.200-.240)	**.260** (.230-.280)	934
	07-08	*	**< LOD**	**< LOD**	**.230** (.210-.240)	**.260** (.240-.280)	1011
	09-10	*	**< LOD**	**< LOD**	**.210** (.200-.240)	**.240** (.220-.280)	1009
	11-12	*	**< LOD**	**.160** (<LOD-.180)	**.210** (.190-.230)	**.240** (.220-.280)	1048
12-19 years	99-00	**.333** (.304-.366)	**.300** (.300-.400)	**.400** (.400-.500)	**.800** (.600-1.00)	**1.10** (.900-1.20)	2135
	01-02	*	**< LOD**	**.300** (.300-.400)	**.500** (.400-.700)	**.900** (.700-1.20)	2231
	03-04	*	**.200** (<LOD-.200)	**.300** (.300-.300)	**.600** (.500-.700)	**.900** (.800-1.10)	2081
	05-06	*	**< LOD**	**.250** (.240-.270)	**.520** (.410-.680)	**.960** (.820-1.08)	1996
	07-08	*	**< LOD**	**.260** (.240-.270)	**.520** (.400-.670)	**.900** (.730-1.19)	1074
	09-10	*	**< LOD**	**.240** (.220-.260)	**.340** (.310-.450)	**.620** (.460-.850)	1183
	11-12	*	**.160** (<LOD-.170)	**.230** (.210-.240)	**.340** (.290-.470)	**.650** (.470-.880)	1129
20 years and older	99-00	**.468** (.426-.513)	**.400** (.400-.500)	**.700** (.600-.800)	**1.10** (1.00-1.20)	**1.50** (1.40-1.60)	4207
	01-02	**.425** (.400-.452)	**.400** (.400-.400)	**.600** (.600-.700)	**1.10** (1.00-1.30)	**1.60** (1.40-1.90)	4772
	03-04	**.378** (.359-.398)	**.400** (.300-.400)	**.600** (.600-.700)	**1.20** (1.20-1.30)	**1.80** (1.60-1.90)	4525
	05-06	**.373** (.352-.395)	**.330** (.310-.350)	**.610** (.570-.660)	**1.17** (1.06-1.26)	**1.72** (1.53-1.95)	4509
	07-08	**.376** (.354-.399)	**.330** (.310-.350)	**.600** (.550-.670)	**1.16** (1.02-1.30)	**1.70** (1.50-1.96)	5364
	09-10	**.358** (.347-.370)	**.320** (.310-.330)	**.580** (.550-.600)	**1.10** (1.00-1.18)	**1.55** (1.43-1.72)	5765
	11-12	**.337** (.323-.353)	**.300** (.290-.320)	**.550** (.520-.580)	**1.14** (1.01-1.28)	**1.70** (1.50-1.80)	5030

Limit of detection (LOD, see Data Analysis section) for Survey years 99-00, 01-02, 03-04, 05-06, 07-08, 09-10, and 11-12 are 0.3, 0.3, 0.14, 0.2, 0.2, 0.2, and 0.16 respectively.
< LOD means less than the limit of detection, which may vary for some chemicals by year and by individual sample.
* Not calculated: proportion of results below limit of detection was too high to provide a valid result.

Biomonitoring Summary: http://www.cdc.gov/biomonitoring/Cadmium_BiomonitoringSummary.html
Factsheet: http://www.cdc.gov/biomonitoring/Cadmium_FactSheet.html

Blood Cadmium

Geometric mean and selected percentiles of blood concentrations (in µg/L) for the U.S. population from the National Health and Nutrition Examination Survey.

	Survey years	Geometric mean (95% conf. interval)	Selected percentiles (95% confidence interval) 50th	75th	90th	95th	Sample size
Race/ethnicity							
Mexican Americans	99-00	**.395** (.367-.424)	**.400** (.400-.400)	**.500** (.500-.600)	**.800** (.700-1.00)	**1.20** (.900-1.30)	2742
	01-02	*	**< LOD**	**.400** (.400-.500)	**.600** (.500-.800)	**1.00** (.700-1.30)	2268
	03-04	**.235** (.216-.255)	**.200** (.200-.300)	**.400** (.300-.400)	**.600** (.500-.800)	**1.00** (.800-1.50)	2085
	05-06	*	**.220** (.200-.240)	**.350** (.300-.400)	**.580** (.510-.680)	**.820** (.710-1.00)	2236
	07-08	*	**.220** (.210-.230)	**.350** (.320-.370)	**.570** (.510-.660)	**.840** (.690-1.02)	1712
	09-10	*	**.220** (.200-.230)	**.330** (.300-.370)	**.580** (.500-.670)	**.800** (.690-.960)	1966
	11-12	**.217** (.202-.233)	**.200** (.180-.220)	**.310** (.290-.340)	**.550** (.510-.600)	**.810** (.710-.920)	1077
Non-Hispanic blacks	99-00	**.393** (.361-.427)	**.400** (.300-.400)	**.600** (.500-.600)	**1.00** (.900-1.20)	**1.40** (1.20-1.60)	1842
	01-02	*	**.300** (<LOD-.300)	**.500** (.500-.600)	**1.00** (.900-1.10)	**1.40** (1.20-1.70)	2219
	03-04	**.304** (.275-.337)	**.300** (.300-.300)	**.500** (.400-.600)	**1.00** (.900-1.20)	**1.50** (1.30-1.70)	2292
	05-06	**.307** (.290-.326)	**.260** (.250-.280)	**.490** (.440-.570)	**1.03** (.880-1.21)	**1.50** (1.23-1.79)	2193
	07-08	**.333** (.316-.352)	**.280** (.270-.300)	**.550** (.480-.620)	**1.20** (1.01-1.36)	**1.81** (1.45-2.13)	1746
	09-10	**.328** (.310-.347)	**.280** (.260-.290)	**.550** (.490-.640)	**1.10** (1.00-1.20)	**1.52** (1.38-1.73)	1593
	11-12	**.291** (.274-.309)	**.260** (.240-.270)	**.470** (.430-.520)	**1.07** (.950-1.20)	**1.50** (1.40-1.60)	2195
Non-Hispanic whites	99-00	**.420** (.376-.470)	**.400** (.300-.500)	**.600** (.500-.700)	**1.10** (1.00-1.20)	**1.40** (1.30-1.50)	2716
	01-02	*	**.300** (.300-.400)	**.600** (.500-.600)	**1.00** (.900-1.20)	**1.50** (1.30-1.80)	3806
	03-04	**.313** (.296-.331)	**.300** (.300-.300)	**.600** (.500-.600)	**1.10** (1.00-1.20)	**1.60** (1.50-1.70)	3478
	05-06	**.321** (.300-.343)	**.270** (.250-.300)	**.540** (.470-.610)	**1.08** (.930-1.23)	**1.64** (1.40-1.94)	3310
	07-08	**.321** (.303-.341)	**.270** (.260-.290)	**.520** (.470-.580)	**1.05** (.920-1.20)	**1.55** (1.30-1.80)	3461
	09-10	**.307** (.297-.318)	**.270** (.260-.280)	**.490** (.460-.540)	**.990** (.900-1.10)	**1.50** (1.36-1.60)	3760
	11-12	**.284** (.264-.305)	**.250** (.230-.270)	**.470** (.420-.520)	**1.02** (.810-1.25)	**1.65** (1.30-1.90)	2493
All Hispanics	11-12	**.227** (.211-.244)	**.210** (.190-.230)	**.330** (.310-.380)	**.600** (.540-.660)	**.900** (.760-1.00)	1931
Asians	11-12	**.394** (.355-.437)	**.390** (.340-.450)	**.680** (.610-.760)	**1.04** (.960-1.18)	**1.40** (1.20-1.48)	1005

Limit of detection (LOD, see Data Analysis section) for Survey years 99-00, 01-02, 03-04, 05-06, 07-08, 09-10, and 11-12 are 0.3, 0.3, 0.14, 0.2, 0.2, 0.2, and 0.16 respectively.
< LOD means less than the limit of detection, which may vary for some chemicals by year and by individual sample.
* Not calculated: proportion of results below limit of detection was too high to provide a valid result.

Biomonitoring Summary: http://www.cdc.gov/biomonitoring/Cadmium_BiomonitoringSummary.html
Factsheet: http://www.cdc.gov/biomonitoring/Cadmium_FactSheet.html

Urinary Cadmium

Geometric mean and selected percentiles of urine concentrations (in µg/L) for the U.S. population from the National Health and Nutrition Examination Survey.**

	Survey years	Geometric mean (95% conf. interval)	Selected percentiles (95% confidence interval) 50th	75th	90th	95th	Sample size
Total	99-00	**.193** (.169-.220)	**.232** (.214-.249)	**.475** (.436-.519)	**.858** (.763-.980)	**1.20** (1.06-1.34)	2257
	01-02	**.210** (.189-.235)	**.230** (.207-.255)	**.458** (.423-.482)	**.839** (.753-.919)	**1.20** (1.07-1.28)	2690
	03-04	**.211** (.196-.226)	**.210** (.200-.230)	**.450** (.400-.500)	**.800** (.730-.880)	**1.15** (.980-1.26)	2543
	05-06	**.191** (.170-.216)	**.200** (.170-.220)	**.400** (.360-.460)	**.780** (.700-.860)	**1.05** (.960-1.17)	2576
	07-08	**.185** (.172-.198)	**.180** (.170-.200)	**.380** (.360-.400)	**.700** (.650-.770)	**1.00** (.920-1.12)	2627
	09-10	**.179** (.169-.190)	**.180** (.170-.200)	**.370** (.340-.400)	**.690** (.630-.770)	**1.03** (.910-1.13)	2848
Age group							
6-11 years	99-00	*	**.078** (.061-.101)	**.141** (.115-.173)	**.219** (.178-.233)	**.279** (.211-.507)	310
	01-02	**.061** (<LOD-.081)	**.077** (.067-.092)	**.140** (.112-.160)	**.219** (.184-.262)	**.282** (.260-.326)	368
	03-04	**.077** (.065-.090)	**.080** (.060-.090)	**.120** (.100-.160)	**.180** (.160-.310)	**.310** (.170-.610)	287
	05-06	**.066** (.056-.078)	**.060** (.050-.080)	**.110** (.090-.130)	**.180** (.130-.240)	**.240** (.160-.290)	355
	07-08	**.064** (.058-.071)	**.060** (.050-.070)	**.110** (.090-.130)	**.180** (.140-.210)	**.230** (.180-.310)	394
	09-10	**.057** (.053-.061)	**.060** (.050-.060)	**.090** (.080-.100)	**.130** (.120-.160)	**.170** (.140-.230)	378
12-19 years	99-00	**.092** (.067-.126)	**.128** (.107-.148)	**.203** (.183-.232)	**.329** (.272-.372)	**.426** (.366-.596)	648
	01-02	**.109** (.087-.136)	**.135** (.114-.157)	**.210** (.189-.247)	**.327** (.289-.366)	**.452** (.366-.480)	762
	03-04	**.121** (.109-.134)	**.130** (.110-.150)	**.200** (.170-.210)	**.300** (.260-.360)	**.390** (.330-.490)	724
	05-06	**.099** (.090-.109)	**.110** (.100-.120)	**.170** (.150-.190)	**.240** (.210-.280)	**.310** (.250-.430)	701
	07-08	**.089** (.080-.100)	**.080** (.070-.110)	**.160** (.140-.170)	**.260** (.200-.300)	**.330** (.280-.410)	376
	09-10	**.081** (.076-.086)	**.080** (.070-.080)	**.140** (.120-.150)	**.220** (.180-.250)	**.280** (.240-.300)	451
20 years and older	99-00	**.281** (.253-.313)	**.306** (.261-.339)	**.551** (.510-.623)	**.980** (.836-1.13)	**1.32** (1.13-1.57)	1299
	01-02	**.273** (.249-.299)	**.280** (.261-.308)	**.545** (.493-.607)	**.972** (.855-1.06)	**1.28** (1.20-1.43)	1560
	03-04	**.260** (.238-.284)	**.270** (.240-.300)	**.530** (.470-.580)	**.890** (.800-.990)	**1.25** (1.09-1.46)	1532
	05-06	**.241** (.213-.272)	**.250** (.220-.290)	**.490** (.440-.560)	**.860** (.790-.930)	**1.21** (1.06-1.32)	1520
	07-08	**.232** (.215-.251)	**.240** (.210-.260)	**.450** (.410-.490)	**.790** (.730-.870)	**1.13** (.990-1.44)	1857
	09-10	**.229** (.213-.245)	**.230** (.210-.260)	**.430** (.400-.470)	**.790** (.700-.910)	**1.13** (1.03-1.28)	2019
Gender							
Males	99-00	**.199** (.165-.241)	**.227** (.193-.263)	**.462** (.381-.539)	**.892** (.748-1.15)	**1.41** (.980-1.83)	1121
	01-02	**.201** (.177-.229)	**.223** (.191-.257)	**.445** (.393-.481)	**.875** (.741-1.03)	**1.22** (1.12-1.38)	1335
	03-04	**.206** (.190-.222)	**.210** (.190-.230)	**.440** (.390-.490)	**.790** (.700-.870)	**1.01** (.890-1.25)	1277
	05-06	**.195** (.176-.217)	**.210** (.190-.230)	**.400** (.360-.440)	**.800** (.730-.890)	**1.17** (1.01-1.30)	1271
	07-08	**.179** (.162-.197)	**.180** (.160-.200)	**.360** (.320-.400)	**.670** (.540-.780)	**.950** (.800-1.16)	1327
	09-10	**.170** (.157-.185)	**.180** (.150-.200)	**.350** (.310-.380)	**.650** (.560-.700)	**.950** (.770-1.14)	1398
Females	99-00	**.187** (.153-.229)	**.239** (.220-.255)	**.492** (.456-.540)	**.818** (.705-.980)	**1.10** (1.01-1.19)	1136
	01-02	**.219** (.192-.251)	**.234** (.202-.265)	**.466** (.433-.519)	**.817** (.733-.886)	**1.17** (.918-1.36)	1355
	03-04	**.216** (.195-.238)	**.210** (.200-.240)	**.450** (.400-.530)	**.820** (.700-.960)	**1.20** (1.02-1.37)	1266
	05-06	**.188** (.160-.221)	**.190** (.160-.220)	**.400** (.350-.480)	**.750** (.640-.860)	**.980** (.830-1.20)	1305
	07-08	**.191** (.177-.207)	**.190** (.170-.200)	**.400** (.370-.430)	**.740** (.660-.840)	**1.09** (.940-1.38)	1300
	09-10	**.188** (.172-.206)	**.200** (.170-.210)	**.400** (.360-.440)	**.740** (.620-.880)	**1.07** (.910-1.31)	1450

Limit of detection (LOD, see Data Analysis section) for Survey years 99-00, 01-02, 03-04, 05-06, 07-08, and 09-10 are 0.06, 0.06, 0.06, 0.042, 0.042, and 0.042 respectively.
< LOD means less than the limit of detection, which may vary for some chemicals by year and by individual sample.
* Not calculated: proportion of results below limit of detection was too high to provide a valid result.
**All results are corrected for molybdenum oxide interference in the ICP-MS method.

Biomonitoring Summary: http://www.cdc.gov/biomonitoring/Cadmium_BiomonitoringSummary.html
Factsheet: http://www.cdc.gov/biomonitoring/Cadmium_FactSheet.html

Urinary Cadmium

Geometric mean and selected percentiles of urine concentrations (in µg/L) for the U.S. population from the National Health and Nutrition Examination Survey.**

	Survey years	Geometric mean (95% conf. interval)	Selected percentiles (95% confidence interval) 50th	75th	90th	95th	Sample size
Race/ethnicity							
Mexican Americans	99-00	**.191** (.157-.233)	**.202** (.167-.221)	**.447** (.351-.551)	**.813** (.686-.977)	**1.12** (.886-1.38)	780
	01-02	**.160** (.135-.189)	**.181** (.171-.198)	**.322** (.285-.362)	**.559** (.430-.733)	**.766** (.633-1.15)	683
	03-04	**.175** (.151-.203)	**.170** (.150-.210)	**.350** (.290-.430)	**.680** (.520-.820)	**1.04** (.820-1.20)	614
	05-06	**.173** (.152-.196)	**.180** (.160-.200)	**.340** (.300-.380)	**.560** (.500-.630)	**.780** (.660-.900)	652
	07-08	**.159** (.139-.181)	**.170** (.140-.200)	**.320** (.290-.370)	**.570** (.510-.620)	**.710** (.630-.830)	515
	09-10	**.153** (.136-.173)	**.150** (.130-.170)	**.300** (.240-.360)	**.530** (.440-.680)	**.790** (.610-.840)	613
Non-Hispanic blacks	99-00	**.283** (.208-.387)	**.316** (.243-.412)	**.633** (.498-.806)	**1.22** (.892-1.38)	**1.48** (1.30-1.72)	546
	01-02	**.277** (.229-.336)	**.302** (.257-.354)	**.589** (.476-.713)	**1.04** (.843-1.38)	**1.51** (1.28-1.74)	667
	03-04	**.265** (.237-.295)	**.270** (.220-.320)	**.550** (.440-.640)	**.960** (.810-1.17)	**1.52** (1.06-1.82)	717
	05-06	**.236** (.218-.254)	**.240** (.210-.260)	**.480** (.420-.530)	**.830** (.670-.930)	**1.04** (.870-1.26)	692
	07-08	**.246** (.218-.277)	**.260** (.220-.300)	**.460** (.420-.530)	**.840** (.690-.980)	**1.40** (.900-1.85)	589
	09-10	**.234** (.211-.260)	**.240** (.220-.270)	**.450** (.410-.540)	**.910** (.750-1.06)	**1.42** (.990-1.74)	544
Non-Hispanic whites	99-00	**.175** (.148-.206)	**.220** (.194-.246)	**.455** (.388-.510)	**.848** (.714-1.01)	**1.17** (.963-1.47)	760
	01-02	**.204** (.179-.231)	**.221** (.191-.255)	**.445** (.394-.479)	**.817** (.717-.875)	**1.17** (.989-1.24)	1132
	03-04	**.209** (.192-.226)	**.200** (.190-.220)	**.440** (.390-.500)	**.790** (.700-.860)	**1.13** (.940-1.26)	1070
	05-06	**.185** (.159-.216)	**.200** (.160-.230)	**.400** (.330-.480)	**.780** (.670-.920)	**1.05** (.940-1.25)	1041
	07-08	**.177** (.161-.195)	**.170** (.150-.190)	**.370** (.320-.400)	**.690** (.620-.780)	**1.00** (.880-1.13)	1095
	09-10	**.171** (.158-.186)	**.180** (.150-.200)	**.350** (.320-.390)	**.680** (.590-.780)	**1.05** (.880-1.18)	1225

Limit of detection (LOD, see Data Analysis section) for Survey years 99-00, 01-02, 03-04, 05-06, 07-08, and 09-10 are 0.06, 0.06, 0.06, 0.042, 0.042, and 0.042 respectively.
< LOD means less than the limit of detection, which may vary for some chemicals by year and by individual sample.
* Not calculated: proportion of results below limit of detection was too high to provide a valid result
.**All results are corrected for molybdenum oxide interference in the ICP-MS method.

Biomonitoring Summary: http://www.cdc.gov/biomonitoring/Cadmium_BiomonitoringSummary.html
Factsheet: http://www.cdc.gov/biomonitoring/Cadmium_FactSheet.html

Urinary Cadmium (creatinine corrected)

Geometric mean and selected percentiles of urine concentrations (in µg/g of creatinine) for the U.S. population from the National Health and Nutrition Examination Survey.**

	Survey years	Geometric mean (95% conf. interval)	Selected percentiles (95% confidence interval) 50th	75th	90th	95th	Sample size
Total	99-00	**.181** (.157-.209)	**.219** (.199-.238)	**.423** (.391-.446)	**.712** (.645-.757)	**.941** (.826-1.07)	2257
	01-02	**.199** (.181-.218)	**.212** (.194-.232)	**.404** (.377-.440)	**.690** (.630-.754)	**.919** (.813-.998)	2689
	03-04	**.210** (.201-.219)	**.208** (.189-.226)	**.412** (.381-.438)	**.678** (.650-.716)	**.940** (.833-1.04)	2543
	05-06	**.189** (.169-.210)	**.180** (.160-.200)	**.370** (.310-.430)	**.650** (.590-.720)	**.910** (.770-1.08)	2576
	07-08	**.193** (.177-.210)	**.190** (.180-.210)	**.370** (.330-.410)	**.660** (.580-.740)	**.960** (.840-1.06)	2627
	09-10	**.191** (.184-.199)	**.180** (.170-.190)	**.370** (.340-.400)	**.680** (.630-.730)	**.910** (.840-1.00)	2848
Age group							
6-11 years	99-00	*	**.085** (.063-.107)	**.148** (.123-.182)	**.210** (.171-.316)	**.316** (.184-.607)	310
	01-02	**.075** (<LOD-.094)	**.100** (.083-.112)	**.166** (.136-.192)	**.233** (.206-.281)	**.318** (.221-.440)	368
	03-04	**.090** (.078-.104)	**.091** (.075-.104)	**.126** (.111-.156)	**.200** (.147-.350)	**.308** (.178-.415)	287
	05-06	**.081** (.072-.092)	**.080** (.070-.090)	**.130** (.110-.140)	**.170** (.150-.190)	**.200** (.180-.240)	355
	07-08	**.084** (.076-.092)	**.080** (.080-.090)	**.120** (.110-.140)	**.170** (.150-.240)	**.260** (.180-.430)	394
	09-10	**.077** (.070-.085)	**.080** (.070-.090)	**.110** (.100-.130)	**.160** (.130-.220)	**.230** (.140-.280)	378
12-19 years	99-00	**.071** (.051-.098)	**.093** (.084-.106)	**.147** (.130-.163)	**.215** (.204-.240)	**.283** (.222-.404)	648
	01-02	**.078** (.067-.091)	**.091** (.085-.101)	**.137** (.123-.143)	**.191** (.175-.234)	**.280** (.234-.321)	762
	03-04	**.086** (.077-.096)	**.084** (.074-.097)	**.122** (.113-.135)	**.176** (.154-.198)	**.234** (.187-.274)	724
	05-06	**.076** (.071-.081)	**.080** (.070-.090)	**.120** (.110-.130)	**.150** (.140-.180)	**.210** (.160-.240)	701
	07-08	**.070** (.062-.079)	**.070** (.070-.080)	**.110** (.100-.110)	**.150** (.140-.160)	**.180** (.160-.210)	376
	09-10	**.076** (.068-.084)	**.080** (.070-.090)	**.120** (.100-.130)	**.160** (.140-.180)	**.190** (.170-.270)	451
20 years and older	99-00	**.267** (.247-.289)	**.288** (.261-.304)	**.484** (.433-.545)	**.769** (.727-.818)	**1.07** (.927-1.17)	1299
	01-02	**.261** (.236-.289)	**.273** (.247-.303)	**.481** (.426-.518)	**.779** (.691-.850)	**.979** (.874-1.12)	1559
	03-04	**.268** (.255-.281)	**.270** (.247-.292)	**.490** (.444-.538)	**.767** (.688-.830)	**1.02** (.909-1.14)	1532
	05-06	**.240** (.216-.267)	**.230** (.200-.260)	**.440** (.400-.500)	**.730** (.660-.820)	**1.02** (.850-1.18)	1520
	07-08	**.247** (.227-.270)	**.240** (.220-.270)	**.430** (.390-.470)	**.740** (.670-.840)	**1.05** (.930-1.16)	1857
	09-10	**.242** (.232-.253)	**.230** (.220-.250)	**.440** (.420-.460)	**.760** (.700-.820)	**1.01** (.910-1.14)	2019
Gender							
Males	99-00	**.154** (.131-.182)	**.176** (.158-.191)	**.329** (.293-.382)	**.617** (.537-.700)	**.789** (.696-.929)	1121
	01-02	**.159** (.143-.177)	**.168** (.157-.182)	**.335** (.304-.364)	**.536** (.491-.653)	**.757** (.690-.856)	1334
	03-04	**.173** (.161-.187)	**.162** (.143-.185)	**.325** (.300-.352)	**.591** (.560-.631)	**.740** (.678-.795)	1277
	05-06	**.160** (.145-.177)	**.150** (.130-.160)	**.300** (.260-.340)	**.620** (.560-.670)	**.820** (.710-.990)	1271
	07-08	**.160** (.146-.175)	**.160** (.140-.180)	**.290** (.260-.330)	**.520** (.440-.650)	**.740** (.600-.960)	1327
	09-10	**.155** (.149-.161)	**.140** (.140-.160)	**.280** (.250-.300)	**.540** (.510-.600)	**.800** (.670-.900)	1398
Females	99-00	**.211** (.170-.261)	**.267** (.239-.308)	**.473** (.423-.551)	**.783** (.690-.917)	**1.09** (.813-1.38)	1136
	01-02	**.245** (.216-.278)	**.263** (.228-.297)	**.479** (.414-.541)	**.792** (.687-.884)	**.985** (.876-1.16)	1355
	03-04	**.252** (.238-.266)	**.253** (.227-.288)	**.487** (.438-.533)	**.802** (.716-.906)	**1.06** (.940-1.21)	1266
	05-06	**.220** (.193-.252)	**.220** (.180-.250)	**.420** (.370-.470)	**.690** (.590-.850)	**.990** (.780-1.31)	1305
	07-08	**.231** (.210-.254)	**.230** (.200-.270)	**.440** (.390-.480)	**.770** (.700-.860)	**1.08** (.970-1.16)	1300
	09-10	**.233** (.218-.248)	**.240** (.220-.260)	**.450** (.420-.490)	**.770** (.680-.860)	**1.09** (.910-1.19)	1450

< LOD means less than the limit of detection for the urine levels not corrected for creatinine.
* Not calculated: proportion of results below limit of detection was too high to provide a valid result.
**All results are corrected for molybdenum oxide interference in the ICP-MS method.

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Factsheet: http://www.cdc.gov/biomonitoring/Cadmium_FactSheet.html

Urinary Cadmium (creatinine corrected)

Geometric mean and selected percentiles of urine concentrations (in µg/g of creatinine) for the U.S. population from the National Health and Nutrition Examination Survey.**

	Survey years	Geometric mean (95% conf. interval)	Selected percentiles (95% confidence interval) 50th	75th	90th	95th	Sample size
Race/ethnicity							
Mexican Americans	99-00	**.175** (.137-.223)	**.181** (.144-.225)	**.331** (.266-.418)	**.622** (.441-.828)	**.856** (.674-1.13)	780
	01-02	**.156** (.136-.178)	**.170** (.150-.184)	**.282** (.263-.340)	**.501** (.388-.614)	**.693** (.507-.839)	682
	03-04	**.163** (.147-.181)	**.159** (.140-.183)	**.296** (.256-.311)	**.531** (.418-.667)	**.718** (.562-.950)	614
	05-06	**.162** (.146-.181)	**.150** (.140-.170)	**.280** (.220-.340)	**.480** (.430-.510)	**.570** (.520-.640)	652
	07-08	**.159** (.141-.178)	**.160** (.130-.180)	**.270** (.220-.330)	**.480** (.370-.620)	**.720** (.520-.950)	515
	09-10	**.161** (.149-.173)	**.150** (.130-.170)	**.280** (.240-.320)	**.510** (.410-.630)	**.720** (.540-.890)	613
Non-Hispanic blacks	99-00	**.183** (.140-.240)	**.202** (.168-.241)	**.414** (.343-.472)	**.663** (.516-.827)	**.873** (.722-.962)	546
	01-02	**.190** (.156-.232)	**.196** (.174-.225)	**.387** (.336-.449)	**.686** (.559-.850)	**.917** (.725-1.08)	667
	03-04	**.190** (.173-.210)	**.185** (.168-.207)	**.338** (.288-.431)	**.700** (.500-.818)	**.865** (.708-1.10)	717
	05-06	**.171** (.159-.183)	**.160** (.140-.180)	**.320** (.290-.370)	**.550** (.500-.580)	**.700** (.610-.730)	692
	07-08	**.180** (.164-.197)	**.170** (.160-.190)	**.330** (.290-.390)	**.600** (.470-.700)	**.770** (.690-.900)	589
	09-10	**.186** (.170-.203)	**.180** (.160-.200)	**.360** (.310-.430)	**.680** (.570-.760)	**.860** (.740-1.04)	544
Non-Hispanic whites	99-00	**.175** (.146-.209)	**.219** (.191-.250)	**.432** (.387-.470)	**.729** (.666-.783)	**1.00** (.826-1.16)	760
	01-02	**.205** (.184-.229)	**.224** (.208-.242)	**.421** (.382-.470)	**.719** (.668-.784)	**.931** (.806-1.05)	1132
	03-04	**.220** (.207-.235)	**.221** (.197-.253)	**.434** (.398-.476)	**.687** (.647-.767)	**1.00** (.830-1.08)	1070
	05-06	**.193** (.169-.221)	**.180** (.160-.220)	**.390** (.310-.480)	**.680** (.630-.750)	**.930** (.800-1.07)	1041
	07-08	**.199** (.178-.222)	**.200** (.180-.230)	**.380** (.340-.440)	**.700** (.630-.810)	**1.03** (.880-1.13)	1095
	09-10	**.192** (.183-.201)	**.180** (.170-.200)	**.390** (.340-.420)	**.700** (.630-.760)	**.910** (.840-1.02)	1225

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Factsheet: http://www.cdc.gov/biomonitoring/Cadmium_FactSheet.html

Urinary Cesium

Geometric mean and selected percentiles of urine concentrations (in µg/L) for the U.S. population from the National Health and Nutrition Examination Survey.

	Survey years	Geometric mean (95% conf. interval)	Selected percentiles (95% confidence interval) 50th	75th	90th	95th	Sample size
Total	99-00	**4.35** (4.00-4.74)	**4.90** (4.40-5.40)	**7.10** (6.60-7.70)	**9.60** (8.80-10.3)	**11.5** (10.2-13.0)	2464
	01-02	**4.81** (4.40-5.26)	**5.49** (5.12-5.90)	**7.91** (7.47-8.39)	**10.4** (9.56-11.4)	**12.6** (11.1-13.8)	2690
	03-04	**4.67** (4.39-4.97)	**5.14** (4.84-5.49)	**7.68** (7.20-8.21)	**10.6** (9.55-11.4)	**12.7** (11.5-13.9)	2558
	05-06	**4.69** (4.41-4.98)	**5.19** (4.91-5.43)	**7.68** (7.21-8.09)	**10.1** (9.65-10.9)	**12.6** (12.0-13.4)	2576
	07-08	**4.42** (4.25-4.60)	**4.90** (4.64-5.12)	**7.02** (6.79-7.38)	**9.46** (9.04-9.86)	**11.3** (10.5-11.8)	2627
	09-10	**4.06** (3.87-4.26)	**4.47** (4.22-4.66)	**6.54** (6.35-6.75)	**8.98** (8.25-9.68)	**11.0** (10.1-11.6)	2848
Age group							
6-11 years	99-00	**4.87** (4.08-5.81)	**5.70** (4.60-6.70)	**7.30** (6.70-8.00)	**9.00** (7.90-10.1)	**9.70** (9.00-10.8)	340
	01-02	**4.87** (4.08-5.82)	**5.64** (4.69-6.56)	**7.96** (6.77-8.84)	**9.88** (8.64-10.6)	**11.1** (10.2-12.4)	368
	03-04	**5.21** (4.74-5.71)	**5.50** (4.76-6.37)	**8.08** (7.10-8.83)	**11.5** (8.86-12.9)	**12.9** (10.8-13.6)	290
	05-06	**4.74** (4.31-5.21)	**5.38** (4.67-5.60)	**7.00** (6.38-7.50)	**9.30** (8.60-9.95)	**11.2** (9.62-12.9)	355
	07-08	**4.58** (4.22-4.96)	**5.10** (4.50-5.44)	**6.91** (6.45-7.47)	**8.25** (7.77-8.93)	**9.88** (8.47-10.9)	394
	09-10	**4.21** (3.84-4.62)	**4.58** (4.01-5.12)	**6.68** (6.25-6.98)	**8.28** (7.47-9.11)	**9.56** (8.68-11.9)	378
12-19 years	99-00	**4.55** (4.09-5.05)	**5.20** (4.40-5.60)	**6.90** (6.10-7.80)	**8.80** (8.10-9.50)	**10.7** (8.90-12.5)	718
	01-02	**5.22** (4.57-5.95)	**5.62** (5.16-6.12)	**7.55** (7.13-8.04)	**9.77** (9.12-11.1)	**12.0** (10.0-15.0)	762
	03-04	**5.04** (4.59-5.54)	**5.70** (5.16-6.07)	**7.53** (6.91-8.37)	**9.71** (8.80-10.4)	**11.6** (9.92-13.2)	725
	05-06	**4.76** (4.24-5.34)	**5.27** (4.80-5.74)	**7.50** (6.71-8.04)	**9.60** (8.52-10.5)	**10.6** (9.68-11.8)	701
	07-08	**4.58** (4.10-5.13)	**5.14** (4.30-5.76)	**6.93** (6.33-7.37)	**9.20** (7.67-9.91)	**10.6** (8.91-15.1)	376
	09-10	**3.70** (3.39-4.02)	**4.11** (3.54-4.70)	**6.17** (5.72-6.47)	**8.20** (7.16-8.79)	**9.52** (8.66-10.6)	451
20 years and older	99-00	**4.26** (3.94-4.62)	**4.80** (4.40-5.30)	**7.10** (6.50-7.60)	**9.80** (8.90-10.7)	**11.7** (10.2-13.4)	1406
	01-02	**4.74** (4.32-5.20)	**5.43** (5.05-5.87)	**7.97** (7.43-8.52)	**10.6** (9.73-11.5)	**12.9** (11.2-14.2)	1560
	03-04	**4.56** (4.23-4.90)	**5.03** (4.60-5.42)	**7.66** (7.01-8.34)	**10.7** (9.40-11.5)	**12.9** (11.5-14.9)	1543
	05-06	**4.67** (4.38-4.99)	**5.14** (4.84-5.44)	**7.77** (7.32-8.30)	**10.4** (9.72-11.5)	**13.2** (12.4-13.9)	1520
	07-08	**4.38** (4.20-4.58)	**4.79** (4.59-4.99)	**7.12** (6.81-7.52)	**9.69** (9.23-10.2)	**11.4** (10.6-12.0)	1857
	09-10	**4.10** (3.88-4.34)	**4.49** (4.21-4.71)	**6.57** (6.33-6.84)	**9.26** (8.37-10.1)	**11.1** (10.3-11.9)	2019
Gender							
Males	99-00	**4.84** (4.35-5.38)	**5.50** (4.60-6.00)	**7.50** (7.00-8.20)	**9.70** (8.80-11.3)	**11.7** (10.3-13.0)	1226
	01-02	**5.34** (4.89-5.84)	**6.13** (5.61-6.64)	**8.27** (7.84-9.08)	**10.8** (10.1-12.1)	**12.8** (11.3-15.0)	1335
	03-04	**5.03** (4.73-5.36)	**5.59** (5.17-6.00)	**7.98** (7.31-8.63)	**11.0** (9.53-11.8)	**12.9** (11.5-16.1)	1281
	05-06	**5.13** (4.78-5.51)	**5.37** (5.03-5.71)	**7.92** (7.61-8.41)	**10.9** (9.96-11.6)	**13.2** (12.4-13.9)	1271
	07-08	**4.77** (4.59-4.96)	**5.26** (4.98-5.43)	**7.18** (6.93-7.54)	**9.68** (8.93-10.6)	**11.6** (10.6-12.6)	1327
	09-10	**4.27** (4.00-4.55)	**4.70** (4.46-5.00)	**6.57** (6.39-6.81)	**8.67** (7.91-9.57)	**10.7** (9.66-11.3)	1398
Females	99-00	**3.95** (3.63-4.29)	**4.50** (4.20-4.90)	**6.70** (6.20-7.30)	**9.10** (8.30-10.0)	**11.2** (9.90-12.9)	1238
	01-02	**4.36** (3.95-4.81)	**4.87** (4.45-5.25)	**7.33** (6.71-8.01)	**9.77** (9.07-11.0)	**12.4** (10.4-13.8)	1355
	03-04	**4.35** (4.03-4.70)	**4.79** (4.25-5.26)	**7.30** (6.87-7.81)	**10.2** (9.40-11.0)	**12.1** (11.2-13.6)	1277
	05-06	**4.30** (3.98-4.65)	**4.89** (4.58-5.25)	**7.43** (6.99-7.83)	**9.79** (9.30-10.5)	**12.1** (10.6-13.1)	1305
	07-08	**4.12** (3.88-4.37)	**4.40** (4.17-4.74)	**6.84** (6.32-7.36)	**9.31** (8.69-9.76)	**10.5** (9.93-11.7)	1300
	09-10	**3.88** (3.63-4.14)	**4.13** (3.83-4.55)	**6.46** (5.95-6.90)	**9.29** (8.62-10.0)	**11.2** (10.3-12.1)	1450

Limit of detection (LOD, see Data Analysis section) for Survey years 99-00, 01-02, 03-04, 05-06, 07-08, and 09-10 are 0.14, 0.14, 0.2, 0.066, 0.066, and 0.066 respectively.

Biomonitoring Summary: http://www.cdc.gov/biomonitoring/Cesium_BiomonitoringSummary.html

Urinary Cesium

Geometric mean and selected percentiles of urine concentrations (in µg/L) for the U.S. population from the National Health and Nutrition Examination Survey.

	Survey years	Geometric mean (95% conf. interval)	Selected percentiles (95% confidence interval) 50th	75th	90th	95th	Sample size
Race/ethnicity							
Mexican Americans	99-00	**4.32** (3.82-4.89)	**4.80** (4.30-5.20)	**6.70** (6.40-7.20)	**9.10** (8.00-9.90)	**11.1** (9.60-12.7)	884
	01-02	**4.63** (4.10-5.24)	**5.29** (4.59-5.89)	**7.08** (6.42-7.99)	**9.13** (7.86-11.3)	**11.3** (8.81-14.9)	683
	03-04	**4.94** (4.64-5.27)	**5.62** (5.01-6.09)	**7.86** (7.15-8.46)	**10.3** (8.99-11.3)	**11.9** (10.7-14.7)	618
	05-06	**4.64** (4.41-4.88)	**5.18** (4.91-5.55)	**7.29** (6.74-7.73)	**9.52** (8.76-9.98)	**11.5** (9.88-11.9)	652
	07-08	**4.50** (4.06-4.99)	**4.93** (4.40-5.56)	**6.98** (6.38-7.49)	**9.12** (8.25-9.82)	**10.8** (9.45-12.1)	515
	09-10	**4.20** (3.95-4.48)	**4.47** (4.16-4.87)	**6.49** (6.00-7.01)	**8.64** (7.81-9.40)	**10.2** (9.15-11.4)	613
Non-Hispanic blacks	99-00	**4.94** (4.33-5.64)	**5.40** (4.80-6.40)	**7.50** (6.90-8.40)	**9.80** (8.80-10.8)	**11.6** (9.80-13.1)	568
	01-02	**4.93** (4.70-5.17)	**5.33** (5.05-5.64)	**7.36** (6.97-7.59)	**9.44** (8.71-9.68)	**10.7** (10.1-12.3)	667
	03-04	**4.71** (4.47-4.97)	**5.12** (4.71-5.49)	**7.17** (6.72-7.60)	**9.13** (8.52-9.99)	**10.7** (9.99-11.4)	723
	05-06	**4.78** (4.42-5.18)	**5.26** (5.03-5.44)	**7.20** (6.63-7.66)	**9.14** (8.26-10.6)	**11.0** (9.63-13.7)	692
	07-08	**4.64** (4.29-5.01)	**4.90** (4.48-5.31)	**6.90** (6.35-7.42)	**9.39** (8.29-10.3)	**11.3** (9.59-12.6)	589
	09-10	**4.07** (3.82-4.35)	**4.68** (4.29-4.84)	**6.56** (6.19-7.01)	**8.98** (8.12-9.31)	**9.97** (9.27-11.3)	544
Non-Hispanic whites	99-00	**4.25** (3.83-4.72)	**4.80** (4.20-5.50)	**7.20** (6.60-7.90)	**9.70** (8.90-10.7)	**11.8** (10.3-13.3)	821
	01-02	**4.77** (4.27-5.32)	**5.49** (4.99-6.05)	**7.98** (7.45-8.61)	**10.4** (9.54-11.4)	**12.6** (11.0-13.8)	1132
	03-04	**4.56** (4.22-4.94)	**5.02** (4.59-5.42)	**7.60** (7.00-8.23)	**10.7** (9.26-11.8)	**12.9** (11.5-14.7)	1074
	05-06	**4.64** (4.25-5.05)	**5.19** (4.76-5.49)	**7.77** (7.18-8.46)	**10.3** (9.62-11.5)	**13.1** (12.1-13.9)	1041
	07-08	**4.29** (4.07-4.53)	**4.76** (4.48-5.08)	**7.02** (6.67-7.49)	**9.50** (8.91-9.93)	**11.3** (10.3-12.2)	1095
	09-10	**3.96** (3.73-4.20)	**4.38** (4.10-4.64)	**6.43** (6.15-6.63)	**8.62** (7.86-9.29)	**10.5** (9.35-11.5)	1225

Limit of detection (LOD, see Data Analysis section) for Survey years 99-00, 01-02, 03-04, 05-06, 07-08, and 09-10 are 0.14, 0.14, 0.2, 0.066, 0.066, and 0.066 respectively.

Biomonitoring Summary: http://www.cdc.gov/biomonitoring/Cesium_BiomonitoringSummary.html

Urinary Cesium (creatinine corrected)

Geometric mean and selected percentiles of urine concentrations (in µg/g of creatinine) for the U.S. population from the National Health and Nutrition Examination Survey.

	Survey years	Geometric mean (95% conf. interval)	Selected percentiles (95% confidence interval) 50th	75th	90th	95th	Sample size
Total	99-00	**4.10** (3.96-4.25)	**4.13** (3.97-4.27)	**5.41** (5.21-5.70)	**7.14** (6.83-7.50)	**8.64** (8.00-9.30)	2464
	01-02	**4.54** (4.30-4.79)	**4.44** (4.20-4.64)	**6.06** (5.66-6.47)	**8.18** (7.62-8.95)	**10.2** (8.84-11.7)	2689
	03-04	**4.64** (4.42-4.87)	**4.42** (4.21-4.74)	**6.11** (5.76-6.48)	**8.51** (7.99-9.15)	**10.6** (9.75-11.0)	2558
	05-06	**4.62** (4.37-4.88)	**4.51** (4.20-4.76)	**6.19** (5.90-6.55)	**8.84** (8.14-9.24)	**10.8** (9.71-12.1)	2576
	07-08	**4.62** (4.42-4.82)	**4.58** (4.36-4.79)	**6.23** (5.96-6.61)	**8.67** (7.79-9.52)	**10.6** (9.78-11.2)	2627
	09-10	**4.33** (4.17-4.49)	**4.28** (4.12-4.45)	**6.00** (5.70-6.23)	**8.06** (7.76-8.36)	**9.75** (9.05-10.4)	2848
Age group							
6-11 years	99-00	**5.34** (5.03-5.67)	**5.42** (5.03-6.04)	**6.63** (6.18-7.13)	**8.23** (7.13-9.41)	**9.90** (7.88-10.1)	340
	01-02	**5.95** (5.48-6.46)	**5.91** (5.43-6.53)	**7.77** (7.00-8.28)	**9.27** (8.35-11.9)	**11.9** (9.38-12.3)	368
	03-04	**6.07** (5.63-6.53)	**6.02** (5.45-6.49)	**8.30** (7.16-8.99)	**10.8** (9.15-11.8)	**11.9** (10.3-15.8)	290
	05-06	**5.85** (5.41-6.34)	**5.74** (5.21-6.41)	**7.65** (6.67-9.11)	**10.1** (9.38-10.8)	**11.6** (10.1-14.9)	355
	07-08	**5.96** (5.53-6.43)	**6.12** (5.79-6.55)	**7.88** (7.33-8.53)	**10.7** (8.91-12.1)	**12.5** (10.9-14.1)	394
	09-10	**5.74** (5.30-6.22)	**5.58** (5.15-6.12)	**7.16** (6.71-7.87)	**9.19** (8.13-10.4)	**12.2** (8.69-14.8)	378
12-19 years	99-00	**3.43** (3.29-3.58)	**3.54** (3.29-3.68)	**4.35** (4.17-4.56)	**5.31** (4.97-5.79)	**6.67** (5.33-8.09)	718
	01-02	**3.73** (3.41-4.08)	**3.55** (3.36-3.74)	**4.74** (4.40-5.14)	**6.10** (5.35-7.63)	**8.08** (6.44-9.82)	762
	03-04	**3.60** (3.37-3.85)	**3.51** (3.33-3.72)	**4.53** (4.24-4.87)	**6.08** (5.14-6.94)	**7.27** (6.13-9.07)	725
	05-06	**3.66** (3.40-3.93)	**3.59** (3.40-3.83)	**4.76** (4.30-5.20)	**5.93** (5.62-6.62)	**7.62** (6.03-8.07)	701
	07-08	**3.58** (3.31-3.88)	**3.70** (3.22-3.96)	**4.98** (4.60-5.17)	**6.36** (5.38-7.28)	**7.93** (6.06-9.76)	376
	09-10	**3.46** (3.27-3.65)	**3.48** (3.23-3.74)	**4.39** (4.16-4.70)	**5.54** (5.01-6.32)	**6.56** (5.95-7.35)	451
20 years and older	99-00	**4.08** (3.88-4.29)	**4.06** (3.85-4.29)	**5.39** (5.04-5.85)	**7.17** (6.84-7.58)	**8.61** (7.91-9.30)	1406
	01-02	**4.54** (4.30-4.78)	**4.43** (4.20-4.59)	**5.94** (5.64-6.40)	**8.15** (7.46-8.97)	**10.2** (8.74-11.7)	1559
	03-04	**4.68** (4.46-4.91)	**4.47** (4.27-4.80)	**6.11** (5.83-6.43)	**8.47** (7.76-9.17)	**10.5** (9.68-11.2)	1543
	05-06	**4.67** (4.42-4.93)	**4.54** (4.25-4.78)	**6.24** (5.93-6.66)	**8.92** (8.29-9.31)	**11.2** (9.71-12.7)	1520
	07-08	**4.67** (4.46-4.88)	**4.58** (4.34-4.82)	**6.19** (5.93-6.61)	**8.65** (7.79-9.52)	**10.6** (9.68-11.3)	1857
	09-10	**4.34** (4.17-4.53)	**4.28** (4.10-4.49)	**6.07** (5.70-6.33)	**8.20** (7.81-8.65)	**9.80** (9.05-11.1)	2019
Gender							
Males	99-00	**3.78** (3.65-3.91)	**3.78** (3.61-3.96)	**4.96** (4.72-5.20)	**6.50** (6.18-6.70)	**7.71** (7.01-8.64)	1226
	01-02	**4.22** (3.96-4.51)	**4.10** (3.87-4.41)	**5.60** (5.27-6.03)	**7.67** (6.90-8.48)	**9.46** (8.22-11.5)	1334
	03-04	**4.24** (3.99-4.50)	**4.12** (3.89-4.37)	**5.66** (5.19-6.06)	**7.66** (6.90-8.40)	**9.00** (8.36-10.3)	1281
	05-06	**4.21** (3.94-4.50)	**4.11** (3.72-4.46)	**5.75** (5.14-6.11)	**7.68** (6.91-8.78)	**9.33** (8.84-9.84)	1271
	07-08	**4.27** (4.04-4.51)	**4.19** (4.02-4.42)	**5.81** (5.46-6.29)	**7.84** (7.20-8.65)	**9.61** (8.65-10.2)	1327
	09-10	**3.89** (3.70-4.09)	**3.85** (3.60-4.06)	**5.29** (4.89-5.69)	**7.02** (6.76-7.42)	**8.38** (7.87-9.18)	1398
Females	99-00	**4.43** (4.20-4.68)	**4.45** (4.14-4.77)	**5.92** (5.36-6.47)	**7.70** (7.16-8.07)	**9.41** (8.00-10.4)	1238
	01-02	**4.86** (4.58-5.16)	**4.72** (4.50-5.06)	**6.54** (5.93-7.00)	**8.50** (7.84-9.79)	**10.3** (8.95-12.2)	1355
	03-04	**5.05** (4.77-5.35)	**4.77** (4.44-5.14)	**6.58** (6.14-7.22)	**9.43** (8.56-10.5)	**11.3** (10.7-12.3)	1277
	05-06	**5.05** (4.78-5.33)	**4.86** (4.57-5.17)	**6.72** (6.31-7.23)	**9.65** (9.23-10.3)	**12.6** (11.0-13.3)	1305
	07-08	**4.98** (4.76-5.20)	**4.90** (4.69-5.20)	**6.72** (6.20-7.06)	**9.50** (8.37-10.5)	**11.3** (10.7-12.1)	1300
	09-10	**4.79** (4.63-4.97)	**4.69** (4.50-4.93)	**6.57** (6.34-6.85)	**8.88** (8.36-9.33)	**10.5** (9.56-12.0)	1450

Biomonitoring Summary: http://www.cdc.gov/biomonitoring/Cesium_BiomonitoringSummary.html

Urinary Cesium (creatinine corrected)

Geometric mean and selected percentiles of urine concentrations (in µg/g of creatinine) for the U.S. population from the National Health and Nutrition Examination Survey.

	Survey years	Geometric mean (95% conf. interval)	Selected percentiles (95% confidence interval) 50th	75th	90th	95th	Sample size
Race/ethnicity							
Mexican Americans	99-00	**3.99** (3.73-4.25)	**3.95** (3.65-4.17)	**5.09** (4.79-5.39)	**6.65** (6.08-7.10)	**7.98** (7.20-8.95)	884
	01-02	**4.51** (4.00-5.08)	**4.51** (3.82-4.95)	**5.91** (5.31-6.64)	**7.77** (6.60-10.0)	**10.0** (7.60-20.5)	682
	03-04	**4.58** (4.16-5.05)	**4.51** (4.10-4.92)	**5.74** (5.42-6.09)	**7.53** (6.59-8.91)	**9.44** (8.24-10.6)	618
	05-06	**4.36** (4.10-4.64)	**4.40** (3.97-4.73)	**5.69** (5.24-6.22)	**7.23** (6.69-7.80)	**8.14** (7.65-9.33)	652
	07-08	**4.50** (4.22-4.79)	**4.39** (3.96-4.86)	**6.07** (5.57-6.59)	**7.63** (7.30-7.89)	**9.06** (7.89-10.5)	515
	09-10	**4.41** (4.17-4.65)	**4.38** (4.04-4.59)	**5.70** (5.34-6.07)	**7.68** (7.17-8.24)	**8.89** (8.50-9.52)	613
Non-Hispanic blacks	99-00	**3.21** (2.90-3.56)	**3.26** (3.05-3.44)	**4.30** (4.00-4.55)	**5.50** (5.00-5.98)	**6.33** (5.91-7.04)	568
	01-02	**3.38** (3.19-3.57)	**3.35** (3.05-3.60)	**4.41** (4.15-4.78)	**5.87** (5.63-6.29)	**6.75** (6.41-7.03)	667
	03-04	**3.38** (3.21-3.56)	**3.30** (3.08-3.50)	**4.31** (4.02-4.62)	**5.79** (5.12-6.47)	**6.98** (6.38-7.18)	723
	05-06	**3.47** (3.34-3.60)	**3.40** (3.21-3.60)	**4.47** (4.25-4.68)	**5.94** (5.52-6.31)	**6.95** (6.20-7.51)	692
	07-08	**3.39** (3.21-3.58)	**3.33** (3.18-3.54)	**4.50** (4.21-4.78)	**5.84** (5.41-6.18)	**6.87** (5.94-7.58)	589
	09-10	**3.23** (3.05-3.42)	**3.20** (2.99-3.46)	**4.31** (4.12-4.59)	**5.88** (5.30-6.28)	**6.69** (6.32-7.89)	544
Non-Hispanic whites	99-00	**4.26** (4.07-4.47)	**4.28** (4.05-4.50)	**5.66** (5.26-6.05)	**7.27** (6.84-7.83)	**8.75** (7.93-9.38)	821
	01-02	**4.81** (4.55-5.08)	**4.63** (4.42-4.96)	**6.33** (5.91-6.68)	**8.46** (7.84-9.39)	**10.3** (9.04-11.8)	1132
	03-04	**4.81** (4.52-5.12)	**4.56** (4.31-4.98)	**6.28** (5.95-6.71)	**8.63** (7.99-9.28)	**10.6** (9.43-11.0)	1074
	05-06	**4.82** (4.50-5.17)	**4.68** (4.32-5.04)	**6.41** (6.00-6.81)	**9.18** (8.67-9.53)	**11.0** (9.71-12.7)	1041
	07-08	**4.81** (4.54-5.09)	**4.73** (4.42-5.12)	**6.43** (6.01-6.80)	**9.24** (8.20-9.82)	**11.0** (10.2-11.7)	1095
	09-10	**4.42** (4.23-4.63)	**4.36** (4.15-4.54)	**6.16** (5.82-6.51)	**8.13** (7.68-8.65)	**9.83** (8.79-11.4)	1225

Biomonitoring Summary: **http://www.cdc.gov/biomonitoring/Cesium_BiomonitoringSummary.html**

Urinary Cobalt

Geometric mean and selected percentiles of urine concentrations (in µg/L) for the U.S. population from the National Health and Nutrition Examination Survey.

	Survey years	Geometric mean (95% conf. interval)	Selected percentiles (95% confidence interval) 50th	75th	90th	95th	Sample size
Total	99-00	**.375** (.336-.419)	**.410** (.370-.450)	**.630** (.570-.680)	**.950** (.890-1.03)	**1.32** (1.16-1.48)	2465
	01-02	**.379** (.355-.404)	**.410** (.380-.430)	**.610** (.570-.660)	**.940** (.870-1.00)	**1.28** (1.15-1.44)	2690
	03-04	**.316** (.291-.343)	**.330** (.300-.350)	**.520** (.490-.550)	**.820** (.750-.890)	**1.16** (1.08-1.26)	2558
	05-06	**.374** (.357-.392)	**.390** (.370-.410)	**.600** (.560-.630)	**.880** (.840-.950)	**1.33** (1.17-1.47)	2576
	07-08	**.369** (.351-.389)	**.380** (.360-.390)	**.580** (.550-.600)	**.920** (.840-1.01)	**1.32** (1.10-1.43)	2627
	09-10	**.369** (.341-.398)	**.380** (.350-.400)	**.600** (.560-.650)	**.960** (.870-1.06)	**1.40** (1.20-1.58)	2848
Age group							
6-11 years	99-00	**.499** (.427-.583)	**.530** (.450-.640)	**.750** (.610-.900)	**1.03** (.880-1.12)	**1.22** (1.03-1.50)	340
	01-02	**.452** (.377-.543)	**.520** (.430-.610)	**.710** (.670-.810)	**1.07** (.940-1.21)	**1.32** (1.17-1.53)	368
	03-04	**.454** (.393-.523)	**.460** (.410-.520)	**.750** (.590-.900)	**1.24** (.910-1.47)	**1.68** (1.26-1.81)	290
	05-06	**.424** (.383-.468)	**.450** (.410-.490)	**.660** (.580-.710)	**.870** (.830-1.04)	**1.16** (.910-1.39)	355
	07-08	**.433** (.367-.509)	**.450** (.360-.550)	**.700** (.560-.810)	**.960** (.790-1.28)	**1.40** (.880-1.82)	394
	09-10	**.424** (.379-.474)	**.440** (.400-.490)	**.670** (.610-.740)	**.960** (.850-1.10)	**1.14** (1.01-1.69)	378
12-19 years	99-00	**.519** (.463-.581)	**.520** (.490-.570)	**.820** (.670-.890)	**1.17** (1.01-1.47)	**1.52** (1.26-2.56)	719
	01-02	**.515** (.469-.564)	**.520** (.480-.570)	**.750** (.690-.840)	**1.24** (1.07-1.32)	**1.59** (1.37-1.99)	762
	03-04	**.461** (.428-.496)	**.480** (.450-.520)	**.740** (.650-.800)	**1.03** (.940-1.23)	**1.60** (1.14-1.92)	725
	05-06	**.510** (.451-.577)	**.500** (.460-.570)	**.820** (.690-.980)	**1.30** (1.08-1.40)	**1.74** (1.39-2.08)	701
	07-08	**.529** (.478-.585)	**.510** (.450-.570)	**.820** (.690-.960)	**1.36** (1.09-1.53)	**1.70** (1.40-1.78)	376
	09-10	**.465** (.406-.533)	**.460** (.430-.530)	**.830** (.710-.920)	**1.21** (1.05-1.51)	**1.56** (1.19-2.11)	451
20 years and older	99-00	**.343** (.305-.386)	**.370** (.330-.420)	**.570** (.520-.640)	**.880** (.810-.980)	**1.28** (1.07-1.39)	1406
	01-02	**.352** (.333-.373)	**.380** (.350-.410)	**.560** (.520-.590)	**.860** (.800-.930)	**1.15** (1.04-1.42)	1560
	03-04	**.285** (.259-.313)	**.300** (.270-.330)	**.460** (.410-.510)	**.690** (.660-.730)	**1.06** (.890-1.14)	1543
	05-06	**.351** (.332-.371)	**.370** (.350-.390)	**.550** (.520-.600)	**.810** (.760-.880)	**1.30** (1.05-1.47)	1520
	07-08	**.343** (.326-.362)	**.350** (.340-.370)	**.530** (.500-.560)	**.830** (.750-.920)	**1.20** (1.00-1.38)	1857
	09-10	**.351** (.322-.382)	**.350** (.330-.380)	**.570** (.520-.630)	**.890** (.800-1.02)	**1.35** (1.12-1.58)	2019
Gender							
Males	99-00	**.371** (.331-.416)	**.410** (.370-.450)	**.580** (.540-.640)	**.820** (.740-.900)	**1.01** (.900-1.12)	1227
	01-02	**.367** (.338-.399)	**.390** (.360-.420)	**.550** (.520-.600)	**.790** (.740-.850)	**1.05** (.960-1.14)	1335
	03-04	**.294** (.270-.319)	**.320** (.290-.340)	**.480** (.440-.500)	**.670** (.620-.710)	**.870** (.790-.920)	1281
	05-06	**.369** (.354-.383)	**.380** (.370-.400)	**.540** (.510-.570)	**.760** (.690-.850)	**1.06** (.910-1.27)	1271
	07-08	**.350** (.330-.371)	**.370** (.350-.390)	**.530** (.500-.560)	**.750** (.690-.820)	**1.00** (.860-1.14)	1327
	09-10	**.336** (.307-.368)	**.360** (.330-.380)	**.530** (.480-.570)	**.750** (.690-.850)	**.960** (.850-1.12)	1398
Females	99-00	**.379** (.333-.431)	**.410** (.340-.460)	**.680** (.590-.790)	**1.17** (.930-1.36)	**1.50** (1.28-2.05)	1238
	01-02	**.390** (.364-.417)	**.430** (.400-.450)	**.670** (.620-.700)	**1.06** (.980-1.16)	**1.46** (1.22-1.81)	1355
	03-04	**.339** (.308-.372)	**.340** (.310-.370)	**.580** (.540-.610)	**1.04** (.900-1.13)	**1.47** (1.33-1.73)	1277
	05-06	**.379** (.351-.409)	**.410** (.370-.440)	**.660** (.620-.700)	**1.04** (.900-1.21)	**1.54** (1.30-1.93)	1305
	07-08	**.389** (.367-.411)	**.390** (.360-.410)	**.650** (.590-.690)	**1.08** (.980-1.26)	**1.43** (1.34-1.62)	1300
	09-10	**.403** (.364-.447)	**.400** (.360-.440)	**.700** (.640-.770)	**1.19** (1.05-1.36)	**1.68** (1.51-2.11)	1450

Limit of detection (LOD, see Data Analysis section) for Survey years 99-00, 01-02, 03-04, 05-06, 07-08, and 09-10 are 0.07, 0.07, 0.08, 0.041, 0.041, and 0.041 respectively.

Biomonitoring Summary: http://www.cdc.gov/biomonitoring/Cobalt_BiomonitoringSummary.html

Urinary Cobalt

Geometric mean and selected percentiles of urine concentrations (in µg/L) for the U.S. population from the National Health and Nutrition Examination Survey.

	Survey years	Geometric mean (95% conf. interval)	Selected percentiles (95% confidence interval) 50th	75th	90th	95th	Sample size
Race/ethnicity							
Mexican Americans	99-00	**.418** (.348-.502)	**.470** (.370-.530)	**.670** (.630-.770)	**1.05** (.950-1.19)	**1.47** (1.25-1.67)	884
	01-02	**.398** (.373-.424)	**.430** (.410-.450)	**.650** (.600-.710)	**.950** (.850-1.03)	**1.20** (1.06-1.48)	683
	03-04	**.374** (.350-.398)	**.350** (.340-.390)	**.580** (.530-.620)	**1.09** (.920-1.16)	**1.33** (1.16-1.73)	618
	05-06	**.437** (.404-.473)	**.450** (.420-.500)	**.680** (.620-.720)	**1.11** (.940-1.30)	**1.58** (1.33-1.79)	652
	07-08	**.396** (.349-.450)	**.400** (.330-.480)	**.610** (.560-.710)	**.980** (.870-1.08)	**1.26** (1.05-1.69)	515
	09-10	**.378** (.351-.407)	**.380** (.360-.410)	**.590** (.560-.640)	**.920** (.860-1.04)	**1.24** (1.04-1.58)	613
Non-Hispanic blacks	99-00	**.434** (.405-.465)	**.430** (.390-.470)	**.680** (.620-.760)	**1.17** (1.04-1.26)	**1.45** (1.23-2.04)	568
	01-02	**.435** (.388-.487)	**.420** (.380-.460)	**.650** (.540-.810)	**1.16** (.850-1.64)	**1.75** (1.32-2.22)	667
	03-04	**.380** (.348-.414)	**.380** (.360-.410)	**.600** (.540-.680)	**1.01** (.890-1.09)	**1.28** (1.01-2.03)	723
	05-06	**.412** (.374-.453)	**.410** (.360-.440)	**.600** (.560-.670)	**.930** (.830-1.11)	**1.47** (1.12-2.00)	692
	07-08	**.403** (.367-.443)	**.390** (.360-.420)	**.620** (.560-.740)	**1.06** (.880-1.31)	**1.57** (1.22-1.86)	589
	09-10	**.368** (.335-.403)	**.380** (.340-.400)	**.590** (.520-.650)	**.990** (.870-1.15)	**1.47** (1.20-1.58)	544
Non-Hispanic whites	99-00	**.369** (.316-.431)	**.410** (.350-.460)	**.630** (.550-.700)	**.930** (.830-1.08)	**1.29** (1.02-1.65)	822
	01-02	**.359** (.327-.394)	**.390** (.360-.430)	**.590** (.520-.660)	**.870** (.800-.950)	**1.16** (1.04-1.32)	1132
	03-04	**.301** (.270-.334)	**.310** (.280-.340)	**.500** (.460-.540)	**.760** (.690-.850)	**1.09** (.950-1.26)	1074
	05-06	**.361** (.340-.384)	**.380** (.360-.410)	**.580** (.530-.630)	**.860** (.800-.940)	**1.30** (1.06-1.50)	1041
	07-08	**.358** (.338-.379)	**.370** (.350-.390)	**.560** (.520-.600)	**.900** (.780-1.00)	**1.32** (1.02-1.46)	1095
	09-10	**.369** (.335-.408)	**.370** (.350-.400)	**.600** (.540-.660)	**.970** (.850-1.10)	**1.40** (1.17-1.64)	1225

Limit of detection (LOD, see Data Analysis section) for Survey years 99-00, 01-02, 03-04, 05-06, 07-08, and 09-10 are 0.07, 0.07, 0.08, 0.041, 0.041, and 0.041 respectively.

Biomonitoring Summary: http://www.cdc.gov/biomonitoring/Cobalt_BiomonitoringSummary.html

Urinary Cobalt (creatinine corrected)

Geometric mean and selected percentiles of urine concentrations (in µg/g of creatinine) for the U.S. population from the National Health and Nutrition Examination Survey.

	Survey years	Geometric mean (95% conf. interval)	Selected percentiles (95% confidence interval) 50th	75th	90th	95th	Sample size
Total	99-00	**.353** (.319-.391)	**.328** (.302-.365)	**.515** (.457-.581)	**.821** (.679-.963)	**1.16** (.938-1.50)	2465
	01-02	**.358** (.333-.384)	**.335** (.313-.360)	**.523** (.487-.562)	**.844** (.750-.955)	**1.16** (1.00-1.28)	2689
	03-04	**.314** (.303-.325)	**.290** (.278-.306)	**.455** (.434-.481)	**.737** (.703-.781)	**1.02** (.911-1.10)	2558
	05-06	**.368** (.353-.384)	**.340** (.320-.360)	**.520** (.490-.550)	**.810** (.750-.920)	**1.17** (.990-1.27)	2576
	07-08	**.385** (.366-.406)	**.360** (.350-.380)	**.560** (.520-.590)	**.870** (.760-.990)	**1.22** (1.01-1.46)	2627
	09-10	**.393** (.372-.415)	**.370** (.350-.390)	**.560** (.530-.600)	**.890** (.830-.940)	**1.29** (1.08-1.49)	2848
Age group							
6-11 years	99-00	**.547** (.467-.640)	**.554** (.449-.647)	**.774** (.626-.938)	**1.00** (.833-1.49)	**1.25** (.895-1.50)	340
	01-02	**.552** (.508-.599)	**.548** (.503-.609)	**.756** (.660-.829)	**1.00** (.900-1.27)	**1.30** (1.03-1.73)	368
	03-04	**.529** (.471-.593)	**.500** (.463-.543)	**.689** (.634-.750)	**1.04** (.760-1.29)	**1.29** (1.04-1.36)	290
	05-06	**.523** (.494-.554)	**.520** (.480-.570)	**.720** (.660-.760)	**.900** (.840-1.04)	**1.27** (.980-1.45)	355
	07-08	**.564** (.501-.635)	**.580** (.500-.630)	**.760** (.660-.910)	**1.12** (.830-1.46)	**1.39** (1.06-1.81)	394
	09-10	**.578** (.538-.620)	**.570** (.530-.620)	**.760** (.690-.840)	**1.06** (.920-1.21)	**1.26** (1.06-1.58)	378
12-19 years	99-00	**.391** (.353-.433)	**.378** (.329-.407)	**.537** (.469-.595)	**.824** (.638-1.17)	**1.44** (.821-3.54)	719
	01-02	**.368** (.343-.396)	**.352** (.327-.372)	**.534** (.471-.611)	**.851** (.673-.949)	**1.06** (.932-1.24)	762
	03-04	**.329** (.304-.355)	**.316** (.277-.348)	**.495** (.442-.561)	**.738** (.630-.847)	**.952** (.792-1.09)	725
	05-06	**.392** (.360-.427)	**.360** (.330-.400)	**.530** (.480-.620)	**.810** (.720-.920)	**1.02** (.870-1.48)	701
	07-08	**.414** (.382-.448)	**.390** (.340-.450)	**.610** (.520-.700)	**.880** (.750-1.13)	**1.17** (.890-1.35)	376
	09-10	**.435** (.398-.476)	**.410** (.370-.470)	**.610** (.550-.700)	**.960** (.790-1.07)	**1.30** (1.00-1.53)	451
20 years and older	99-00	**.328** (.297-.362)	**.306** (.280-.328)	**.471** (.428-.522)	**.727** (.632-.905)	**1.12** (.861-1.36)	1406
	01-02	**.337** (.313-.363)	**.313** (.294-.337)	**.475** (.435-.513)	**.792** (.704-.955)	**1.15** (.963-1.33)	1559
	03-04	**.293** (.282-.304)	**.271** (.257-.286)	**.400** (.380-.429)	**.691** (.616-.744)	**.976** (.829-1.10)	1543
	05-06	**.350** (.334-.367)	**.320** (.300-.340)	**.490** (.450-.520)	**.780** (.690-.940)	**1.17** (.970-1.31)	1520
	07-08	**.366** (.348-.384)	**.340** (.330-.360)	**.510** (.480-.540)	**.830** (.720-.960)	**1.19** (.980-1.47)	1857
	09-10	**.371** (.350-.394)	**.340** (.320-.360)	**.520** (.490-.550)	**.840** (.750-.930)	**1.29** (1.02-1.52)	2019
Gender							
Males	99-00	**.290** (.259-.324)	**.279** (.248-.301)	**.402** (.365-.449)	**.608** (.534-.728)	**.838** (.667-1.10)	1227
	01-02	**.290** (.272-.310)	**.278** (.256-.297)	**.392** (.361-.425)	**.644** (.574-.707)	**.848** (.786-.929)	1334
	03-04	**.247** (.237-.259)	**.234** (.215-.250)	**.333** (.313-.352)	**.513** (.476-.585)	**.700** (.630-.753)	1281
	05-06	**.302** (.289-.317)	**.290** (.270-.300)	**.410** (.370-.440)	**.610** (.580-.640)	**.770** (.710-.850)	1271
	07-08	**.313** (.298-.329)	**.300** (.280-.310)	**.420** (.400-.440)	**.630** (.580-.680)	**.830** (.680-1.02)	1327
	09-10	**.306** (.290-.323)	**.290** (.280-.300)	**.420** (.390-.450)	**.630** (.570-.690)	**.810** (.720-.920)	1398
Females	99-00	**.426** (.378-.479)	**.407** (.362-.457)	**.606** (.550-.694)	**.960** (.781-1.29)	**1.50** (1.11-1.83)	1238
	01-02	**.435** (.404-.468)	**.408** (.382-.438)	**.635** (.560-.708)	**1.00** (.879-1.19)	**1.29** (1.12-1.60)	1355
	03-04	**.393** (.378-.409)	**.361** (.342-.381)	**.554** (.513-.615)	**.937** (.850-1.00)	**1.29** (1.10-1.33)	1277
	05-06	**.445** (.423-.468)	**.420** (.400-.440)	**.630** (.590-.700)	**.990** (.900-1.17)	**1.34** (1.18-1.60)	1305
	07-08	**.470** (.442-.499)	**.450** (.430-.480)	**.690** (.630-.750)	**1.09** (.930-1.27)	**1.46** (1.26-1.69)	1300
	09-10	**.498** (.465-.534)	**.460** (.450-.480)	**.690** (.650-.720)	**1.09** (.990-1.33)	**1.64** (1.34-2.15)	1450

Biomonitoring Summary: http://www.cdc.gov/biomonitoring/Cobalt_BiomonitoringSummary.html

Urinary Cobalt (creatinine corrected)

Geometric mean and selected percentiles of urine concentrations (in µg/g of creatinine) for the U.S. population from the National Health and Nutrition Examination Survey.

	Survey years	Geometric mean (95% conf. interval)	Selected percentiles (95% confidence interval) 50th	75th	90th	95th	Sample size
Race/ethnicity							
Mexican Americans	99-00	**.386** (.339-.439)	**.376** (.333-.419)	**.598** (.500-.669)	**.898** (.826-1.00)	**1.23** (1.11-1.35)	884
	01-02	**.388** (.361-.417)	**.361** (.333-.394)	**.591** (.500-.662)	**.872** (.777-.990)	**1.10** (.990-1.27)	682
	03-04	**.346** (.326-.368)	**.327** (.296-.349)	**.542** (.487-.594)	**.850** (.753-.963)	**1.14** (.963-1.35)	618
	05-06	**.411** (.388-.436)	**.380** (.360-.400)	**.580** (.520-.650)	**.900** (.820-1.02)	**1.19** (1.05-1.35)	652
	07-08	**.396** (.348-.450)	**.370** (.330-.410)	**.560** (.470-.690)	**.900** (.770-1.12)	**1.17** (.990-1.54)	515
	09-10	**.396** (.367-.427)	**.380** (.340-.420)	**.590** (.530-.650)	**.930** (.820-1.03)	**1.22** (1.04-1.30)	613
Non-Hispanic blacks	99-00	**.282** (.275-.289)	**.257** (.243-.279)	**.417** (.378-.462)	**.723** (.600-.785)	**.975** (.757-1.60)	568
	01-02	**.298** (.275-.323)	**.268** (.251-.296)	**.444** (.393-.505)	**.728** (.582-.917)	**1.03** (.740-1.55)	667
	03-04	**.273** (.248-.300)	**.259** (.239-.281)	**.388** (.344-.461)	**.700** (.563-.842)	**.964** (.733-1.15)	723
	05-06	**.299** (.281-.318)	**.280** (.240-.300)	**.420** (.380-.460)	**.700** (.570-.780)	**.950** (.790-1.17)	692
	07-08	**.295** (.277-.314)	**.270** (.260-.290)	**.420** (.390-.450)	**.710** (.570-.860)	**1.07** (.850-1.28)	589
	09-10	**.291** (.271-.314)	**.280** (.240-.310)	**.420** (.380-.480)	**.700** (.610-.750)	**.840** (.750-1.06)	544
Non-Hispanic whites	99-00	**.369** (.324-.421)	**.352** (.313-.387)	**.533** (.452-.611)	**.861** (.667-1.16)	**1.25** (.895-1.57)	822
	01-02	**.362** (.331-.396)	**.343** (.313-.368)	**.523** (.479-.562)	**.830** (.736-.983)	**1.16** (.983-1.33)	1132
	03-04	**.317** (.301-.334)	**.291** (.274-.309)	**.457** (.425-.488)	**.738** (.683-.804)	**1.00** (.857-1.13)	1074
	05-06	**.376** (.357-.395)	**.350** (.330-.370)	**.520** (.490-.580)	**.810** (.710-.950)	**1.18** (.950-1.43)	1041
	07-08	**.401** (.380-.423)	**.380** (.360-.400)	**.590** (.530-.630)	**.890** (.760-1.06)	**1.27** (.980-1.55)	1095
	09-10	**.413** (.388-.440)	**.390** (.360-.410)	**.580** (.530-.620)	**.910** (.830-.980)	**1.33** (1.08-1.58)	1225

Biomonitoring Summary: http://www.cdc.gov/biomonitoring/Cobalt_BiomonitoringSummary.html

Blood Lead

Geometric mean and selected percentiles of blood concentrations (in µg/dL) for the U.S. population from the National Health and Nutrition Examination Survey.

	Survey years	Geometric mean (95% conf. interval)	Selected percentiles (95% confidence interval) 50th	75th	90th	95th	Sample size
Total	99-00	**1.66** (1.60-1.72)	**1.60** (1.60-1.70)	**2.50** (2.40-2.60)	**3.80** (3.60-4.00)	**5.00** (4.70-5.50)	7970
	01-02	**1.45** (1.39-1.51)	**1.40** (1.40-1.50)	**2.20** (2.10-2.30)	**3.40** (3.20-3.60)	**4.50** (4.20-4.70)	8945
	03-04	**1.43** (1.36-1.50)	**1.40** (1.30-1.50)	**2.10** (2.10-2.20)	**3.20** (3.10-3.30)	**4.20** (3.90-4.40)	8373
	05-06	**1.29** (1.23-1.36)	**1.27** (1.20-1.34)	**2.01** (1.91-2.11)	**3.05** (2.86-3.22)	**3.91** (3.64-4.18)	8407
	07-08	**1.27** (1.21-1.34)	**1.22** (1.18-1.30)	**1.90** (1.80-2.00)	**2.80** (2.67-2.96)	**3.70** (3.50-3.90)	8266
	09-10	**1.12** (1.08-1.16)	**1.07** (1.03-1.12)	**1.70** (1.62-1.77)	**2.58** (2.45-2.71)	**3.34** (3.14-3.57)	8793
	11-12	**.973** (.916-1.04)	**.930** (.880-.980)	**1.52** (1.41-1.61)	**2.38** (2.17-2.61)	**3.16** (2.77-3.68)	7920
Gender							
Males	99-00	**2.01** (1.93-2.09)	**1.90** (1.90-2.00)	**2.90** (2.80-3.00)	**4.50** (4.10-4.80)	**6.00** (5.50-6.50)	3913
	01-02	**1.78** (1.71-1.86)	**1.80** (1.70-1.80)	**2.70** (2.50-2.80)	**3.90** (3.80-4.10)	**5.40** (5.00-5.50)	4339
	03-04	**1.69** (1.62-1.75)	**1.60** (1.50-1.70)	**2.50** (2.40-2.60)	**3.70** (3.40-3.90)	**4.80** (4.50-5.20)	4132
	05-06	**1.52** (1.42-1.62)	**1.49** (1.41-1.58)	**2.30** (2.12-2.51)	**3.48** (3.20-3.75)	**4.36** (4.04-4.76)	4092
	07-08	**1.47** (1.39-1.56)	**1.40** (1.32-1.50)	**2.17** (2.00-2.30)	**3.21** (3.01-3.53)	**4.41** (4.10-4.88)	4147
	09-10	**1.31** (1.25-1.36)	**1.26** (1.20-1.32)	**1.96** (1.89-2.03)	**2.93** (2.72-3.15)	**3.84** (3.54-4.39)	4366
	11-12	**1.13** (1.06-1.21)	**1.07** (1.01-1.14)	**1.74** (1.63-1.88)	**2.73** (2.48-3.01)	**3.68** (3.18-4.22)	3968
Females	99-00	**1.37** (1.32-1.43)	**1.30** (1.30-1.40)	**2.00** (1.90-2.10)	**3.10** (2.90-3.30)	**4.00** (3.80-4.20)	4057
	01-02	**1.19** (1.14-1.25)	**1.20** (1.10-1.20)	**1.80** (1.70-1.90)	**2.60** (2.50-2.80)	**3.60** (3.10-4.00)	4606
	03-04	**1.22** (1.14-1.31)	**1.20** (1.10-1.30)	**1.80** (1.70-2.00)	**2.70** (2.50-3.00)	**3.50** (3.10-3.80)	4241
	05-06	**1.11** (1.05-1.17)	**1.06** (.980-1.15)	**1.73** (1.61-1.84)	**2.59** (2.44-2.74)	**3.25** (3.12-3.44)	4315
	07-08	**1.11** (1.06-1.16)	**1.09** (1.00-1.14)	**1.64** (1.54-1.74)	**2.41** (2.35-2.50)	**3.00** (2.81-3.20)	4119
	09-10	**.966** (.929-1.01)	**.940** (.890-.970)	**1.43** (1.36-1.53)	**2.18** (2.08-2.30)	**2.81** (2.63-2.93)	4427
	11-12	**.842** (.796-.890)	**.820** (.780-.860)	**1.30** (1.22-1.39)	**1.98** (1.83-2.22)	**2.59** (2.32-2.94)	3952

Limit of detection (LOD, see Data Analysis section) for Survey years 99-00, 01-02, 03-04, 05-06, 07-08, 09-10, and 11-12 are 0.3, 0.3, 0.28, 0.25, 0.25, 0.25, and 0.25 respectively.

Biomonitoring Summary: http://www.cdc.gov/biomonitoring/Lead_BiomonitoringSummary.html
Factsheet: http://www.cdc.gov/biomonitoring/Lead_FactSheet.html

Blood Lead

Geometric mean and selected percentiles of blood concentrations (in µg/dL) for the U.S. population from the National Health and Nutrition Examination Survey.

	Survey years	Geometric mean (95% conf. interval)	Selected percentiles (95% confidence interval) 50th	75th	90th	95th	Sample size
Age group							
1-5 years	99-00	**2.23** (1.96-2.53)	**2.20** (1.90-2.50)	**3.40** (2.80-3.90)	**4.90** (4.00-6.60)	**7.00** (6.10-8.30)	723
	01-02	**1.70** (1.55-1.87)	**1.60** (1.50-1.80)	**2.50** (2.20-2.90)	**4.20** (3.50-5.20)	**5.80** (4.70-6.90)	898
	03-04	**1.77** (1.60-1.95)	**1.70** (1.50-1.90)	**2.50** (2.30-2.80)	**3.90** (3.30-4.60)	**5.10** (4.10-6.60)	911
	05-06	**1.46** (1.36-1.57)	**1.43** (1.34-1.55)	**2.10** (1.97-2.20)	**2.98** (2.72-3.32)	**3.80** (3.49-4.54)	968
	07-08	**1.51** (1.37-1.66)	**1.43** (1.30-1.60)	**2.20** (1.98-2.31)	**3.20** (2.65-3.85)	**4.10** (3.40-5.19)	817
	09-10	**1.17** (1.08-1.26)	**1.15** (1.03-1.27)	**1.70** (1.50-1.87)	**2.39** (2.08-2.65)	**3.37** (2.63-4.11)	836
	11-12	**.970** (.877-1.07)	**.950** (.870-1.04)	**1.34** (1.20-1.65)	**2.26** (1.88-2.65)	**2.91** (2.41-3.83)	713
6-11 years	99-00	**1.51** (1.36-1.66)	**1.40** (1.30-1.60)	**2.10** (1.80-2.50)	**3.30** (2.80-3.80)	**4.50** (3.40-6.20)	905
	01-02	**1.25** (1.14-1.36)	**1.20** (1.00-1.30)	**1.70** (1.60-2.00)	**2.80** (2.50-3.10)	**3.70** (3.00-4.70)	1044
	03-04	**1.25** (1.12-1.39)	**1.20** (1.10-1.40)	**1.80** (1.50-2.10)	**2.60** (2.10-3.10)	**3.30** (2.50-4.60)	856
	05-06	**1.02** (.948-1.10)	**.970** (.890-1.01)	**1.40** (1.28-1.55)	**2.06** (1.80-2.72)	**3.00** (2.26-3.81)	934
	07-08	**.988** (.914-1.07)	**.960** (.880-1.07)	**1.31** (1.22-1.49)	**1.90** (1.70-2.11)	**2.50** (2.10-2.88)	1011
	09-10	**.838** (.792-.887)	**.810** (.740-.840)	**1.13** (1.06-1.21)	**1.64** (1.45-1.84)	**2.01** (1.88-2.25)	1009
	11-12	**.681** (.623-.744)	**.640** (.600-.700)	**.930** (.820-1.05)	**1.34** (1.14-1.60)	**1.89** (1.36-2.94)	1048
12-19 years	99-00	**1.10** (1.04-1.17)	**1.10** (1.00-1.20)	**1.50** (1.40-1.70)	**2.30** (2.10-2.40)	**2.90** (2.70-3.00)	2135
	01-02	**.942** (.899-.986)	**.900** (.900-1.00)	**1.30** (1.20-1.40)	**2.00** (1.90-2.10)	**2.70** (2.40-2.90)	2231
	03-04	**.946** (.878-1.02)	**.900** (.800-1.00)	**1.30** (1.20-1.40)	**1.90** (1.70-2.10)	**2.60** (2.20-3.00)	2081
	05-06	**.797** (.746-.852)	**.740** (.690-.790)	**1.08** (.990-1.20)	**1.69** (1.50-1.85)	**2.23** (1.98-2.46)	1996
	07-08	**.800** (.744-.859)	**.760** (.720-.820)	**1.04** (.980-1.16)	**1.50** (1.35-1.70)	**1.90** (1.70-2.32)	1074
	09-10	**.680** (.636-.727)	**.660** (.590-.700)	**.910** (.840-.990)	**1.29** (1.19-1.43)	**1.72** (1.52-1.86)	1183
	11-12	**.554** (.511-.601)	**.530** (.490-.570)	**.740** (.660-.830)	**1.09** (.960-1.19)	**1.31** (1.16-1.65)	1129
20 years and older	99-00	**1.75** (1.68-1.81)	**1.70** (1.60-1.80)	**2.60** (2.50-2.70)	**3.90** (3.70-4.10)	**5.20** (4.80-5.60)	4207
	01-02	**1.56** (1.49-1.62)	**1.60** (1.50-1.60)	**2.30** (2.30-2.40)	**3.60** (3.40-3.70)	**4.60** (4.30-5.00)	4772
	03-04	**1.52** (1.45-1.60)	**1.50** (1.40-1.60)	**2.30** (2.20-2.40)	**3.30** (3.20-3.50)	**4.30** (4.00-4.60)	4525
	05-06	**1.41** (1.34-1.48)	**1.41** (1.33-1.48)	**2.17** (2.04-2.31)	**3.22** (3.05-3.43)	**4.12** (3.82-4.38)	4509
	07-08	**1.38** (1.31-1.46)	**1.34** (1.26-1.42)	**2.06** (1.94-2.18)	**3.00** (2.80-3.14)	**3.90** (3.68-4.23)	5364
	09-10	**1.23** (1.19-1.28)	**1.20** (1.14-1.25)	**1.85** (1.78-1.93)	**2.77** (2.60-2.93)	**3.57** (3.29-3.84)	5765
	11-12	**1.09** (1.03-1.16)	**1.05** (1.00-1.12)	**1.67** (1.56-1.79)	**2.56** (2.33-2.77)	**3.36** (2.98-3.93)	5030

Limit of detection (LOD, see Data Analysis section) for Survey years 99-00, 01-02, 03-04, 05-06, 07-08, 09-10, and 11-12 are 0.3, 0.3, 0.28, 0.25, 0.25, 0.25, and 0.25 respectively.

Biomonitoring Summary: http://www.cdc.gov/biomonitoring/Lead_BiomonitoringSummary.html
Factsheet: http://www.cdc.gov/biomonitoring/Lead_FactSheet.html

Blood Lead

Geometric mean and selected percentiles of blood concentrations (in µg/dL) for the U.S. population from the National Health and Nutrition Examination Survey.

	Survey years	Geometric mean (95% conf. interval)	Selected percentiles (95% confidence interval) 50th	75th	90th	95th	Sample size
Race/ethnicity							
Mexican Americans	99-00	**1.83** (1.75-1.91)	**1.80** (1.70-1.90)	**2.80** (2.60-2.90)	**4.20** (3.90-4.60)	**5.80** (5.10-6.60)	2742
	01-02	**1.46** (1.34-1.60)	**1.50** (1.30-1.60)	**2.30** (2.10-2.60)	**3.60** (3.40-4.20)	**5.40** (4.40-6.70)	2268
	03-04	**1.55** (1.43-1.69)	**1.50** (1.40-1.60)	**2.30** (2.10-2.50)	**3.50** (2.90-4.20)	**4.90** (3.90-6.40)	2085
	05-06	**1.29** (1.21-1.38)	**1.26** (1.15-1.36)	**2.00** (1.87-2.20)	**3.16** (2.79-3.58)	**4.22** (3.47-5.36)	2236
	07-08	**1.25** (1.15-1.36)	**1.20** (1.10-1.31)	**1.88** (1.70-2.06)	**2.81** (2.60-3.20)	**3.92** (3.20-5.00)	1712
	09-10	**1.14** (1.03-1.28)	**1.04** (.940-1.18)	**1.76** (1.52-1.99)	**2.93** (2.63-3.30)	**3.92** (3.60-4.69)	1966
	11-12	**.838** (.767-.916)	**.780** (.690-.880)	**1.27** (1.15-1.40)	**2.05** (1.81-2.36)	**3.06** (2.34-3.59)	1077
Non-Hispanic blacks	99-00	**1.87** (1.75-2.00)	**1.80** (1.70-2.00)	**2.80** (2.60-3.00)	**4.30** (4.00-4.60)	**5.70** (5.20-6.10)	1842
	01-02	**1.65** (1.52-1.80)	**1.60** (1.40-1.70)	**2.60** (2.30-2.90)	**4.20** (3.80-4.70)	**5.80** (5.30-6.50)	2219
	03-04	**1.69** (1.52-1.89)	**1.60** (1.40-1.80)	**2.60** (2.20-3.00)	**4.10** (3.50-4.70)	**5.30** (4.60-6.60)	2293
	05-06	**1.39** (1.26-1.53)	**1.31** (1.19-1.45)	**2.16** (1.95-2.42)	**3.48** (3.19-3.80)	**4.65** (4.21-5.14)	2193
	07-08	**1.39** (1.30-1.48)	**1.30** (1.20-1.42)	**2.10** (2.00-2.20)	**3.22** (3.08-3.50)	**4.50** (4.00-4.80)	1746
	09-10	**1.24** (1.18-1.30)	**1.19** (1.12-1.25)	**1.87** (1.76-1.99)	**2.90** (2.68-3.18)	**3.86** (3.57-4.29)	1593
	11-12	**.998** (.947-1.05)	**.910** (.850-.990)	**1.53** (1.45-1.60)	**2.58** (2.31-2.91)	**3.72** (3.04-4.58)	2195
Non-Hispanic whites	99-00	**1.62** (1.55-1.69)	**1.60** (1.50-1.70)	**2.40** (2.30-2.50)	**3.60** (3.40-3.90)	**5.00** (4.40-5.70)	2716
	01-02	**1.43** (1.37-1.48)	**1.40** (1.30-1.50)	**2.20** (2.10-2.20)	**3.20** (3.10-3.40)	**4.20** (3.90-4.50)	3806
	03-04	**1.37** (1.32-1.43)	**1.30** (1.30-1.40)	**2.10** (2.00-2.10)	**3.00** (2.80-3.20)	**3.90** (3.60-4.30)	3478
	05-06	**1.28** (1.19-1.37)	**1.27** (1.17-1.38)	**1.97** (1.86-2.14)	**2.99** (2.73-3.25)	**3.82** (3.41-4.20)	3310
	07-08	**1.24** (1.16-1.33)	**1.20** (1.10-1.30)	**1.86** (1.72-2.00)	**2.70** (2.54-2.90)	**3.50** (3.20-3.89)	3461
	09-10	**1.10** (1.04-1.16)	**1.07** (1.00-1.15)	**1.67** (1.59-1.76)	**2.49** (2.35-2.63)	**3.14** (2.99-3.36)	3760
	11-12	**.993** (.914-1.08)	**.960** (.880-1.03)	**1.56** (1.40-1.73)	**2.43** (2.11-2.74)	**3.14** (2.67-3.85)	2493
All Hispanics	11-12	**.855** (.793-.922)	**.820** (.750-.880)	**1.27** (1.18-1.39)	**2.00** (1.86-2.23)	**2.84** (2.41-3.34)	1931
Asians	11-12	**1.15** (1.06-1.24)	**1.14** (1.02-1.26)	**1.70** (1.56-1.86)	**2.56** (2.36-2.72)	**3.28** (2.80-3.65)	1005

Limit of detection (LOD, see Data Analysis section) for Survey years 99-00, 01-02, 03-04, 05-06, 07-08, 09-10, and 11-12 are 0.3, 0.3, 0.28, 0.25, 0.25, 0.25, and 0.25 respectively.

Biomonitoring Summary: http://www.cdc.gov/biomonitoring/Lead_BiomonitoringSummary.html
Factsheet: http://www.cdc.gov/biomonitoring/Lead_FactSheet.html

Urinary Lead

Geometric mean and selected percentiles of urine concentrations (in µg/L) for the U.S. population from the National Health and Nutrition Examination Survey.

	Survey years	Geometric mean (95% conf. interval)	Selected percentiles (95% confidence interval) 50th	75th	90th	95th	Sample size
Total	99-00	**.766** (.708-.828)	**.800** (.800-.900)	**1.40** (1.30-1.50)	**2.20** (2.00-2.30)	**2.90** (2.60-3.30)	2465
	01-02	**.677** (.637-.718)	**.700** (.700-.800)	**1.20** (1.20-1.30)	**2.00** (1.90-2.20)	**2.70** (2.50-2.80)	2690
	03-04	**.636** (.595-.680)	**.640** (.580-.690)	**1.04** (.960-1.12)	**1.73** (1.52-1.86)	**2.29** (2.03-2.62)	2558
	05-06	**.554** (.523-.587)	**.570** (.540-.600)	**.990** (.910-1.05)	**1.58** (1.44-1.73)	**2.14** (1.94-2.45)	2576
	07-08	**.493** (.467-.520)	**.500** (.470-.530)	**.850** (.790-.910)	**1.38** (1.23-1.58)	**1.97** (1.75-2.17)	2627
	09-10	**.458** (.441-.476)	**.470** (.450-.480)	**.790** (.750-.830)	**1.24** (1.11-1.38)	**1.65** (1.46-1.84)	2848
Age group							
6-11 years	99-00	**1.07** (.955-1.20)	**1.10** (.900-1.30)	**1.50** (1.40-1.70)	**2.40** (1.80-3.10)	**3.40** (2.40-5.00)	340
	01-02	**.753** (.661-.857)	**.800** (.600-.900)	**1.20** (1.10-1.40)	**2.10** (1.60-2.40)	**2.60** (2.10-3.70)	368
	03-04	**.795** (.671-.941)	**.790** (.640-.900)	**1.35** (.970-1.86)	**2.27** (1.62-4.09)	**3.33** (2.23-4.41)	290
	05-06	**.508** (.447-.579)	**.510** (.440-.560)	**.740** (.620-.980)	**1.33** (1.00-1.86)	**1.90** (1.33-2.60)	355
	07-08	**.494** (.411-.593)	**.520** (.410-.590)	**.790** (.660-.900)	**1.23** (.980-1.73)	**1.90** (1.51-2.18)	394
	09-10	**.443** (.399-.493)	**.460** (.430-.490)	**.710** (.630-.820)	**1.09** (.880-1.33)	**1.40** (1.06-1.82)	378
12-19 years	99-00	**.659** (.579-.749)	**.700** (.600-.800)	**1.10** (.900-1.30)	**1.80** (1.40-2.20)	**2.20** (1.90-2.80)	719
	01-02	**.564** (.526-.605)	**.600** (.500-.600)	**1.00** (.800-1.10)	**1.60** (1.40-1.70)	**2.00** (1.80-2.40)	762
	03-04	**.604** (.553-.660)	**.630** (.570-.680)	**.920** (.810-1.02)	**1.32** (1.14-1.80)	**1.86** (1.44-2.29)	725
	05-06	**.472** (.421-.530)	**.490** (.450-.540)	**.780** (.710-.830)	**1.19** (1.10-1.45)	**1.65** (1.34-1.80)	701
	07-08	**.386** (.346-.431)	**.380** (.350-.410)	**.640** (.560-.720)	**1.03** (.870-1.24)	**1.38** (1.09-1.91)	376
	09-10	**.320** (.283-.361)	**.320** (.270-.370)	**.530** (.460-.630)	**.830** (.710-1.10)	**1.16** (.860-1.37)	451
20 years and older	99-00	**.752** (.691-.818)	**.800** (.700-.900)	**1.40** (1.30-1.50)	**2.20** (2.00-2.40)	**2.90** (2.60-3.30)	1406
	01-02	**.688** (.641-.738)	**.700** (.700-.800)	**1.20** (1.20-1.30)	**2.00** (1.90-2.30)	**2.80** (2.50-2.90)	1560
	03-04	**.625** (.579-.674)	**.620** (.560-.700)	**1.04** (.960-1.11)	**1.70** (1.52-1.80)	**2.21** (2.04-2.49)	1543
	05-06	**.574** (.539-.612)	**.600** (.560-.640)	**1.02** (.970-1.13)	**1.65** (1.53-1.81)	**2.21** (1.99-2.57)	1520
	07-08	**.512** (.485-.540)	**.530** (.490-.560)	**.900** (.820-.950)	**1.49** (1.29-1.64)	**2.01** (1.78-2.33)	1857
	09-10	**.486** (.465-.507)	**.490** (.470-.520)	**.830** (.780-.880)	**1.32** (1.16-1.46)	**1.71** (1.52-2.03)	2019
Gender							
Males	99-00	**.923** (.822-1.04)	**.900** (.900-1.00)	**1.60** (1.40-1.80)	**2.50** (2.20-2.90)	**3.40** (2.90-3.80)	1227
	01-02	**.808** (.757-.862)	**.800** (.800-.900)	**1.40** (1.30-1.50)	**2.50** (2.20-2.70)	**3.20** (2.90-3.50)	1335
	03-04	**.731** (.680-.785)	**.730** (.680-.800)	**1.17** (1.07-1.27)	**2.03** (1.78-2.22)	**2.66** (2.33-2.91)	1281
	05-06	**.672** (.638-.707)	**.690** (.620-.760)	**1.16** (1.04-1.28)	**1.78** (1.60-2.00)	**2.45** (2.00-2.97)	1271
	07-08	**.560** (.518-.606)	**.570** (.530-.620)	**.930** (.840-1.02)	**1.63** (1.36-1.97)	**2.30** (1.97-3.07)	1327
	09-10	**.527** (.491-.566)	**.540** (.480-.580)	**.880** (.820-.960)	**1.41** (1.25-1.58)	**1.83** (1.62-2.21)	1398
Females	99-00	**.642** (.589-.701)	**.700** (.600-.800)	**1.20** (1.10-1.30)	**1.90** (1.60-2.20)	**2.40** (2.10-3.00)	1238
	01-02	**.573** (.535-.613)	**.600** (.600-.600)	**1.10** (1.00-1.10)	**1.60** (1.50-1.80)	**2.20** (1.90-2.40)	1355
	03-04	**.558** (.506-.616)	**.540** (.480-.620)	**.920** (.820-1.04)	**1.49** (1.24-1.75)	**1.82** (1.59-2.30)	1277
	05-06	**.461** (.425-.499)	**.460** (.430-.510)	**.810** (.730-.880)	**1.27** (1.17-1.46)	**1.86** (1.54-2.17)	1305
	07-08	**.436** (.412-.461)	**.430** (.400-.480)	**.760** (.690-.830)	**1.22** (1.05-1.34)	**1.67** (1.44-1.81)	1300
	09-10	**.400** (.378-.424)	**.420** (.390-.440)	**.690** (.660-.740)	**1.05** (.990-1.13)	**1.42** (1.26-1.59)	1450

Limit of detection (LOD, see Data Analysis section) for Survey years 99-00, 01-02, 03-04, 05-06, 07-08, and 09-10 are 0.1, 0.1, 0.33, 0.1, 0.1, and 0.1 respectively.

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Urinary Lead

Geometric mean and selected percentiles of urine concentrations (in µg/L) for the U.S. population from the National Health and Nutrition Examination Survey.

	Survey years	Geometric mean (95% conf. interval)	Selected percentiles (95% confidence interval) 50th	75th	90th	95th	Sample size
Race/ethnicity							
Mexican Americans	99-00	**1.02** (.915-1.13)	**1.10** (.900-1.20)	**1.80** (1.60-1.90)	**2.90** (2.50-3.40)	**4.30** (3.10-5.40)	884
	01-02	**.833** (.745-.931)	**.900** (.700-1.00)	**1.50** (1.20-1.70)	**2.50** (2.00-2.90)	**3.30** (2.70-3.80)	683
	03-04	**.815** (.710-.935)	**.840** (.700-.990)	**1.31** (1.18-1.59)	**2.19** (1.86-2.50)	**2.66** (2.13-3.97)	618
	05-06	**.729** (.653-.815)	**.770** (.680-.860)	**1.32** (1.15-1.59)	**2.22** (1.81-2.64)	**3.08** (2.50-4.03)	652
	07-08	**.607** (.528-.698)	**.610** (.530-.690)	**.990** (.890-1.21)	**1.76** (1.37-2.17)	**2.29** (1.82-2.80)	515
	09-10	**.546** (.483-.618)	**.520** (.460-.580)	**.930** (.800-1.09)	**1.66** (1.34-1.89)	**2.16** (1.80-2.87)	613
Non-Hispanic blacks	99-00	**1.11** (1.00-1.23)	**1.10** (1.00-1.20)	**1.90** (1.50-2.10)	**3.00** (2.40-3.50)	**4.20** (3.30-5.70)	568
	01-02	**.940** (.833-1.06)	**.900** (.800-1.00)	**1.60** (1.30-1.80)	**2.70** (2.10-3.40)	**3.70** (2.90-4.80)	667
	03-04	**.848** (.729-.986)	**.850** (.710-1.00)	**1.40** (1.10-1.72)	**2.14** (1.78-2.64)	**2.82** (2.31-3.89)	723
	05-06	**.666** (.604-.734)	**.660** (.590-.760)	**1.09** (.980-1.18)	**1.62** (1.42-1.85)	**2.24** (1.65-2.90)	692
	07-08	**.618** (.558-.685)	**.620** (.560-.690)	**1.01** (.920-1.13)	**1.56** (1.38-1.90)	**2.06** (1.88-2.60)	589
	09-10	**.560** (.522-.601)	**.550** (.490-.600)	**.910** (.830-1.01)	**1.53** (1.26-1.71)	**1.96** (1.68-2.80)	544
Non-Hispanic whites	99-00	**.695** (.625-.773)	**.700** (.700-.900)	**1.30** (1.10-1.40)	**2.00** (1.80-2.40)	**2.70** (2.30-3.10)	822
	01-02	**.610** (.572-.651)	**.700** (.600-.700)	**1.10** (1.10-1.20)	**1.90** (1.70-2.00)	**2.40** (2.30-2.60)	1132
	03-04	**.591** (.556-.628)	**.590** (.540-.650)	**.960** (.910-.990)	**1.52** (1.40-1.75)	**2.14** (1.78-2.51)	1074
	05-06	**.520** (.477-.566)	**.540** (.490-.580)	**.950** (.820-1.05)	**1.53** (1.30-1.76)	**2.07** (1.78-2.45)	1041
	07-08	**.452** (.422-.485)	**.460** (.430-.490)	**.780** (.700-.880)	**1.23** (1.03-1.50)	**1.79** (1.58-1.97)	1095
	09-10	**.431** (.406-.458)	**.450** (.410-.480)	**.750** (.690-.820)	**1.11** (1.05-1.24)	**1.51** (1.39-1.67)	1225

Limit of detection (LOD, see Data Analysis section) for Survey years 99-00, 01-02, 03-04, 05-06, 07-08, and 09-10 are 0.1, 0.1, 0.33, 0.1, 0.1, and 0.1 respectively.

Biomonitoring Summary: http://www.cdc.gov/biomonitoring/Lead_BiomonitoringSummary.html
Factsheet: http://www.cdc.gov/biomonitoring/Lead_FactSheet.html

Urinary Lead (creatinine corrected)

Geometric mean and selected percentiles of urine concentrations (in µg/g of creatinine) for the U.S. population from the National Health and Nutrition Examination Survey.

	Survey years	Geometric mean (95% conf. interval)	Selected percentiles (95% confidence interval) 50th	75th	90th	95th	Sample size
Total	99-00	**.721** (.700-.742)	**.701** (.677-.725)	**1.11** (1.05-1.15)	**1.70** (1.62-1.85)	**2.38** (2.22-2.79)	2465
	01-02	**.639** (.603-.677)	**.635** (.588-.676)	**1.03** (.963-1.08)	**1.52** (1.43-1.61)	**2.03** (1.89-2.22)	2689
	03-04	**.632** (.603-.662)	**.622** (.594-.655)	**.979** (.920-1.03)	**1.49** (1.33-1.64)	**1.97** (1.73-2.26)	2558
	05-06	**.546** (.520-.573)	**.530** (.510-.560)	**.860** (.810-.900)	**1.27** (1.15-1.37)	**1.71** (1.50-1.89)	2576
	07-08	**.514** (.482-.548)	**.500** (.460-.530)	**.800** (.720-.880)	**1.30** (1.23-1.42)	**1.85** (1.73-1.96)	2627
	09-10	**.488** (.466-.512)	**.470** (.440-.500)	**.760** (.710-.810)	**1.16** (1.08-1.28)	**1.53** (1.41-1.62)	2848
Age group							
6-11 years	99-00	**1.17** (.975-1.41)	**1.06** (.918-1.22)	**1.55** (1.22-1.97)	**2.71** (1.67-4.66)	**4.66** (1.97-18.0)	340
	01-02	**.918** (.841-1.00)	**.870** (.800-.933)	**1.27** (1.12-1.43)	**2.33** (1.59-3.64)	**3.64** (1.89-5.56)	368
	03-04	**.926** (.812-1.06)	**.914** (.781-1.03)	**1.45** (1.17-1.72)	**2.14** (1.62-3.47)	**3.47** (2.19-5.31)	290
	05-06	**.628** (.563-.701)	**.590** (.530-.680)	**.870** (.770-.940)	**1.29** (1.03-1.82)	**1.96** (1.32-2.42)	355
	07-08	**.643** (.543-.763)	**.630** (.530-.730)	**1.02** (.770-1.24)	**1.50** (1.24-2.02)	**2.04** (1.70-2.58)	394
	09-10	**.604** (.551-.662)	**.580** (.520-.650)	**.870** (.780-1.00)	**1.32** (1.09-1.51)	**1.60** (1.38-1.75)	378
12-19 years	99-00	**.496** (.460-.535)	**.469** (.408-.508)	**.709** (.655-.828)	**1.11** (.981-1.28)	**1.65** (1.15-2.79)	719
	01-02	**.404** (.380-.428)	**.375** (.342-.400)	**.603** (.541-.702)	**.990** (.882-1.18)	**1.41** (1.07-1.63)	762
	03-04	**.432** (.404-.461)	**.404** (.383-.436)	**.623** (.551-.730)	**.938** (.828-1.06)	**1.23** (1.09-1.35)	725
	05-06	**.363** (.333-.395)	**.340** (.310-.360)	**.510** (.460-.600)	**.800** (.690-.930)	**1.07** (.940-1.23)	701
	07-08	**.302** (.270-.337)	**.290** (.250-.340)	**.430** (.400-.490)	**.670** (.550-.790)	**.900** (.700-1.09)	376
	09-10	**.299** (.273-.328)	**.290** (.260-.320)	**.420** (.370-.490)	**.620** (.550-.760)	**.880** (.740-1.01)	451
20 years and older	99-00	**.720** (.683-.758)	**.712** (.667-.739)	**1.10** (1.02-1.18)	**1.69** (1.53-1.87)	**2.31** (2.15-2.62)	1406
	01-02	**.658** (.617-.703)	**.652** (.608-.702)	**1.05** (.992-1.11)	**1.51** (1.40-1.61)	**2.00** (1.85-2.19)	1559
	03-04	**.641** (.606-.679)	**.633** (.605-.670)	**.988** (.917-1.04)	**1.47** (1.28-1.63)	**1.94** (1.72-2.12)	1543
	05-06	**.573** (.548-.600)	**.570** (.530-.600)	**.890** (.850-.960)	**1.32** (1.22-1.41)	**1.77** (1.53-1.94)	1520
	07-08	**.545** (.513-.579)	**.530** (.490-.570)	**.840** (.760-.910)	**1.36** (1.27-1.49)	**1.92** (1.78-2.08)	1857
	09-10	**.514** (.489-.539)	**.500** (.460-.530)	**.790** (.730-.840)	**1.22** (1.10-1.35)	**1.57** (1.46-1.71)	2019
Gender							
Males	99-00	**.720** (.679-.763)	**.693** (.645-.734)	**1.10** (.992-1.22)	**1.68** (1.50-2.09)	**2.43** (2.15-3.03)	1227
	01-02	**.639** (.607-.673)	**.638** (.586-.686)	**1.01** (.957-1.08)	**1.55** (1.41-1.61)	**2.06** (1.88-2.43)	1334
	03-04	**.615** (.588-.644)	**.593** (.561-.639)	**.914** (.862-.977)	**1.44** (1.25-1.53)	**2.00** (1.71-2.28)	1281
	05-06	**.551** (.522-.582)	**.530** (.510-.580)	**.830** (.770-.910)	**1.25** (1.13-1.39)	**1.77** (1.42-2.20)	1271
	07-08	**.501** (.471-.534)	**.490** (.450-.530)	**.750** (.700-.810)	**1.29** (1.15-1.49)	**1.88** (1.71-1.98)	1327
	09-10	**.481** (.458-.505)	**.450** (.430-.490)	**.740** (.690-.800)	**1.15** (1.04-1.29)	**1.56** (1.37-1.70)	1398
Females	99-00	**.722** (.681-.765)	**.707** (.667-.746)	**1.11** (1.05-1.18)	**1.74** (1.50-2.02)	**2.38** (2.03-2.88)	1238
	01-02	**.639** (.594-.688)	**.625** (.571-.682)	**1.03** (.946-1.11)	**1.50** (1.39-1.61)	**1.98** (1.85-2.15)	1355
	03-04	**.648** (.601-.698)	**.649** (.604-.718)	**1.03** (.938-1.10)	**1.56** (1.34-1.73)	**1.96** (1.72-2.20)	1277
	05-06	**.541** (.507-.577)	**.530** (.500-.580)	**.880** (.820-.940)	**1.28** (1.12-1.41)	**1.64** (1.38-1.91)	1305
	07-08	**.527** (.489-.568)	**.500** (.470-.550)	**.840** (.740-.960)	**1.34** (1.23-1.47)	**1.79** (1.56-2.08)	1300
	09-10	**.495** (.466-.526)	**.480** (.450-.520)	**.780** (.710-.830)	**1.20** (1.08-1.32)	**1.52** (1.39-1.62)	1450

Biomonitoring Summary: http://www.cdc.gov/biomonitoring/Lead_BiomonitoringSummary.html
Factsheet: http://www.cdc.gov/biomonitoring/Lead_FactSheet.html

Urinary Lead (creatinine corrected)

Geometric mean and selected percentiles of urine concentrations (in µg/g of creatinine) for the U.S. population from the National Health and Nutrition Examination Survey.

	Survey years	Geometric mean (95% conf. interval)	Selected percentiles (95% confidence interval) 50th	75th	90th	95th	Sample size
Race/ethnicity							
Mexican Americans	99-00	**.940** (.876-1.01)	**.887** (.796-1.03)	**1.43** (1.37-1.58)	**2.38** (2.08-2.77)	**3.46** (2.78-4.18)	884
	01-02	**.810** (.731-.898)	**.774** (.702-.893)	**1.29** (1.09-1.44)	**2.05** (1.75-2.50)	**2.78** (2.56-3.33)	682
	03-04	**.755** (.681-.838)	**.708** (.612-.851)	**1.18** (1.09-1.31)	**1.86** (1.50-2.26)	**2.31** (1.98-2.92)	618
	05-06	**.686** (.638-.737)	**.680** (.620-.740)	**1.00** (.930-1.13)	**1.63** (1.39-1.88)	**2.20** (1.77-3.20)	652
	07-08	**.607** (.514-.717)	**.590** (.500-.690)	**.970** (.770-1.19)	**1.56** (1.25-2.07)	**2.20** (1.78-2.46)	515
	09-10	**.573** (.526-.623)	**.540** (.470-.610)	**.950** (.780-1.06)	**1.59** (1.41-1.82)	**2.02** (1.82-2.40)	613
Non-Hispanic blacks	99-00	**.722** (.659-.790)	**.671** (.583-.753)	**1.11** (.988-1.20)	**2.00** (1.56-2.51)	**2.83** (2.20-3.88)	568
	01-02	**.644** (.559-.742)	**.608** (.510-.710)	**.962** (.853-1.20)	**1.79** (1.36-2.33)	**2.75** (2.04-3.98)	667
	03-04	**.609** (.529-.701)	**.569** (.492-.698)	**.900** (.793-1.03)	**1.48** (1.11-1.97)	**2.24** (1.65-2.88)	723
	05-06	**.483** (.459-.508)	**.470** (.440-.490)	**.740** (.670-.820)	**1.18** (1.06-1.29)	**1.60** (1.37-1.85)	692
	07-08	**.452** (.414-.492)	**.440** (.400-.490)	**.710** (.610-.780)	**1.13** (.930-1.33)	**1.57** (1.21-1.88)	589
	09-10	**.444** (.417-.473)	**.420** (.390-.470)	**.680** (.600-.740)	**1.07** (.940-1.18)	**1.51** (1.18-1.65)	544
Non-Hispanic whites	99-00	**.696** (.668-.725)	**.677** (.645-.718)	**1.07** (.997-1.14)	**1.66** (1.50-1.83)	**2.31** (1.94-2.82)	822
	01-02	**.615** (.579-.654)	**.621** (.571-.667)	**1.00** (.933-1.07)	**1.46** (1.37-1.52)	**1.88** (1.62-2.03)	1132
	03-04	**.623** (.592-.655)	**.618** (.587-.657)	**.971** (.914-1.03)	**1.44** (1.25-1.61)	**1.85** (1.64-2.10)	1074
	05-06	**.541** (.500-.585)	**.530** (.490-.580)	**.850** (.790-.920)	**1.24** (1.12-1.37)	**1.62** (1.37-1.94)	1041
	07-08	**.506** (.466-.550)	**.490** (.460-.540)	**.790** (.700-.880)	**1.27** (1.15-1.42)	**1.81** (1.59-1.96)	1095
	09-10	**.482** (.448-.518)	**.460** (.430-.500)	**.740** (.690-.820)	**1.15** (1.01-1.30)	**1.46** (1.32-1.59)	1225

Biomonitoring Summary: http://www.cdc.gov/biomonitoring/Lead_BiomonitoringSummary.html
Factsheet: http://www.cdc.gov/biomonitoring/Lead_FactSheet.html

Blood Manganese

Geometric mean and selected percentiles of blood concentrations (in µg/L) for the U.S. population from the National Health and Nutrition Examination Survey.

	Survey years	Geometric mean (95% conf. interval)	Selected percentiles (95% confidence interval) 50th	75th	90th	95th	Sample size
Total	11-12	**9.35** (9.19-9.51)	**9.22** (9.04-9.40)	**11.5** (11.3-11.7)	**14.4** (14.2-14.6)	**16.7** (16.2-17.3)	7920
Age group							
1-5 years	11-12	**10.7** (10.2-11.2)	**10.6** (10.1-11.2)	**13.2** (12.6-13.5)	**15.3** (14.5-16.8)	**18.2** (15.3-19.7)	713
6-11 years	11-12	**10.3** (9.98-10.6)	**10.2** (9.83-10.4)	**12.6** (12.2-12.8)	**14.9** (14.2-15.5)	**16.5** (16.0-17.6)	1048
12-19 years	11-12	**10.1** (9.67-10.5)	**9.90** (9.42-10.8)	**12.5** (11.7-13.2)	**14.8** (14.1-15.4)	**16.6** (15.3-17.9)	1129
20 years and older	11-12	**9.09** (8.94-9.24)	**8.96** (8.83-9.11)	**11.1** (10.9-11.3)	**14.1** (13.7-14.5)	**16.7** (16.1-17.3)	5030
Gender							
Males	11-12	**8.74** (8.58-8.91)	**8.78** (8.65-8.91)	**10.6** (10.3-10.9)	**13.0** (12.7-13.4)	**14.9** (14.4-15.3)	3968
Females	11-12	**9.96** (9.75-10.2)	**9.72** (9.52-10.0)	**12.4** (12.0-12.9)	**15.5** (15.2-15.9)	**17.8** (17.4-18.4)	3952
Race/ethnicity							
Mexican Americans	11-12	**10.7** (10.4-11.0)	**10.7** (10.3-11.0)	**13.2** (12.9-13.5)	**16.4** (15.2-17.1)	**19.1** (17.7-20.3)	1077
Non-Hispanic blacks	11-12	**8.34** (8.19-8.49)	**8.18** (8.04-8.33)	**10.1** (9.81-10.4)	**12.7** (12.0-13.3)	**15.5** (14.5-16.5)	2195
Non-Hispanic whites	11-12	**9.08** (8.91-9.26)	**9.01** (8.79-9.21)	**11.1** (10.9-11.3)	**13.7** (13.3-14.2)	**15.9** (15.2-16.4)	2493
All Hispanics	11-12	**10.4** (10.1-10.8)	**10.3** (9.95-10.7)	**12.8** (12.3-13.3)	**15.7** (14.9-16.7)	**18.3** (17.3-19.2)	1931
Asians	11-12	**11.9** (11.5-12.4)	**11.8** (11.4-12.3)	**14.7** (14.1-15.3)	**17.6** (16.8-18.4)	**19.8** (19.0-21.1)	1005

Limit of detection (LOD, see Data Analysis section) for Survey year 11-12 is 1.06.
< LOD means less than the limit of detection, which may vary for some chemicals by year and by individual sample.

Blood Total Mercury

Geometric mean and selected percentiles of blood concentrations (in µg/L) for the U.S. population from the National Health and Nutrition Examination Survey.

	Survey years	Geometric mean (95% conf. interval)	Selected percentiles (95% confidence interval) 50th	75th	90th	95th	Sample size
Total	03-04	**.797** (.703-.903)	**.800** (.700-.900)	**1.70** (1.50-1.90)	**3.30** (2.90-3.90)	**4.90** (4.30-5.50)	8373
	05-06	**.863** (.787-.946)	**.830** (.760-.920)	**1.66** (1.48-1.93)	**3.20** (2.87-3.54)	**4.64** (4.17-5.25)	8407
	07-08	**.769** (.689-.859)	**.740** (.660-.830)	**1.48** (1.29-1.69)	**2.95** (2.46-3.59)	**4.64** (3.74-5.79)	8266
	09-10	**.863** (.792-.941)	**.790** (.730-.880)	**1.68** (1.49-1.91)	**3.43** (3.07-3.84)	**5.13** (4.57-5.67)	8793
	11-12	**.703** (.617-.801)	**.640** (.580-.730)	**1.38** (1.14-1.72)	**2.87** (2.39-3.62)	**4.40** (3.50-5.71)	7920
Age group							
1-5 years	03-04	**.326** (.285-.372)	**.300** (.300-.300)	**.500** (.500-.700)	**1.00** (.800-1.60)	**1.80** (1.30-2.50)	911
	05-06	*	**< LOD**	**.500** (.470-.550)	**.940** (.820-1.24)	**1.43** (1.25-1.59)	968
	07-08	*	**< LOD**	**.440** (.380-.540)	**.830** (.620-1.12)	**1.32** (.960-2.40)	817
	09-10	*	**< LOD**	**.490** (.430-.590)	**.890** (.740-1.08)	**1.30** (1.08-1.52)	836
	11-12	**.262** (.237-.291)	**.250** (.220-.270)	**.390** (.340-.450)	**.680** (.540-.880)	**.990** (.790-1.21)	713
6-11 years	03-04	**.419** (.363-.484)	**.400** (.400-.500)	**.700** (.700-.900)	**1.30** (1.00-1.60)	**1.90** (1.40-3.50)	856
	05-06	*	**.410** (.330-.460)	**.740** (.630-1.00)	**1.43** (1.21-1.87)	**2.34** (1.53-3.42)	934
	07-08	*	**.380** (.340-.440)	**.700** (.600-.790)	**1.21** (.970-1.36)	**1.56** (1.34-1.80)	1011
	09-10	*	**.360** (<LOD-.400)	**.670** (.590-.770)	**1.22** (1.05-1.45)	**1.88** (1.43-2.61)	1009
	11-12	**.330** (.287-.379)	**.320** (.280-.360)	**.530** (.480-.600)	**.930** (.780-1.20)	**1.40** (1.02-2.17)	1048
12-19 years	03-04	**.490** (.418-.574)	**.500** (.400-.600)	**1.00** (.800-1.20)	**1.80** (1.40-2.30)	**2.60** (2.10-3.30)	2081
	05-06	**.513** (.461-.570)	**.460** (.390-.530)	**.850** (.740-1.04)	**1.66** (1.31-1.98)	**2.41** (2.12-2.90)	1996
	07-08	**.469** (.426-.516)	**.440** (.390-.490)	**.800** (.670-.970)	**1.55** (1.30-1.72)	**2.05** (1.77-2.34)	1074
	09-10	**.534** (.473-.602)	**.450** (.370-.540)	**.910** (.770-1.11)	**2.04** (1.53-2.55)	**3.01** (2.53-3.63)	1183
	11-12	**.411** (.355-.476)	**.370** (.320-.450)	**.680** (.590-.800)	**1.32** (1.08-1.75)	**2.25** (1.46-2.87)	1129
20 years and older	03-04	**.979** (.860-1.12)	**1.00** (.800-1.10)	**2.00** (1.70-2.30)	**3.80** (3.20-4.40)	**5.40** (4.60-6.70)	4525
	05-06	**1.06** (.967-1.15)	**1.03** (.930-1.15)	**1.98** (1.73-2.22)	**3.64** (3.33-4.01)	**5.31** (4.82-5.67)	4509
	07-08	**.944** (.833-1.07)	**.890** (.780-1.03)	**1.73** (1.47-2.09)	**3.41** (2.82-4.17)	**5.32** (4.32-6.72)	5364
	09-10	**1.04** (.956-1.14)	**.970** (.870-1.08)	**2.00** (1.80-2.20)	**3.96** (3.55-4.27)	**5.75** (5.14-6.50)	5765
	11-12	**.863** (.753-.990)	**.790** (.690-.940)	**1.68** (1.36-2.12)	**3.35** (2.71-4.31)	**5.02** (3.94-6.96)	5030
Gender							
Males	03-04	**.814** (.714-.927)	**.800** (.700-.900)	**1.80** (1.50-2.00)	**3.70** (3.20-4.30)	**5.40** (4.60-6.50)	4132
	05-06	**.864** (.783-.954)	**.810** (.720-.940)	**1.69** (1.48-2.01)	**3.30** (2.86-3.73)	**4.83** (4.08-5.45)	4092
	07-08	**.809** (.709-.923)	**.760** (.670-.850)	**1.56** (1.31-1.81)	**3.21** (2.72-4.06)	**5.16** (4.12-6.97)	4147
	09-10	**.883** (.810-.962)	**.790** (.730-.870)	**1.75** (1.54-2.02)	**3.84** (3.35-4.26)	**5.65** (5.13-6.34)	4366
	11-12	**.712** (.623-.815)	**.650** (.570-.730)	**1.40** (1.17-1.72)	**3.00** (2.44-3.91)	**4.94** (3.50-6.79)	3968
Females	03-04	**.781** (.689-.886)	**.800** (.700-.900)	**1.60** (1.40-1.80)	**3.00** (2.50-3.50)	**4.40** (3.60-5.30)	4241
	05-06	**.864** (.791-.943)	**.850** (.770-.920)	**1.63** (1.44-1.89)	**3.09** (2.75-3.46)	**4.51** (4.01-5.28)	4315
	07-08	**.748** (.677-.827)	**.720** (.660-.810)	**1.42** (1.24-1.60)	**2.70** (2.27-3.27)	**3.93** (3.17-5.16)	4119
	09-10	**.845** (.772-.924)	**.800** (.720-.880)	**1.61** (1.43-1.81)	**3.13** (2.76-3.48)	**4.43** (4.04-5.11)	4427
	11-12	**.694** (.609-.791)	**.640** (.580-.740)	**1.36** (1.09-1.75)	**2.81** (2.28-3.50)	**4.03** (3.29-5.08)	3952

Limit of detection (LOD, see Data Analysis section) for Survey years 03-04, 05-06, 07-08, 09-10, and 11-12 are 0.2, 0.33, 0.33, 0.33, and 0.16 respectively.
< LOD means less than the limit of detection, which may vary for some chemicals by year and by individual sample.
* Not calculated: proportion of results below limit of detection was too high to provide a valid result.

Biomonitoring Summary: http://www.cdc.gov/biomonitoring/Mercury_BiomonitoringSummary.html
Factsheet: http://www.cdc.gov/biomonitoring/Mercury_FactSheet.html

Blood Total Mercury

Geometric mean and selected percentiles of blood concentrations (in µg/L) for the U.S. population from the National Health and Nutrition Examination Survey.

	Survey years	Geometric mean (95% conf. interval)	Selected percentiles (95% confidence interval) 50th	75th	90th	95th	Sample size
Race/ethnicity							
Mexican Americans	03-04	**.563** (.472-.672)	**.600** (.500-.700)	**1.00** (.800-1.30)	**1.90** (1.60-2.40)	**3.00** (2.20-3.80)	2085
	05-06	**.597** (.524-.679)	**.580** (.490-.670)	**1.04** (.870-1.24)	**1.70** (1.40-2.12)	**2.58** (1.96-3.31)	2236
	07-08	**.594** (.536-.658)	**.580** (.520-.670)	**1.03** (.900-1.17)	**1.73** (1.49-2.04)	**2.48** (2.10-2.91)	1712
	09-10	**.613** (.571-.659)	**.580** (.540-.630)	**1.01** (.890-1.15)	**1.63** (1.47-1.90)	**2.45** (2.03-2.93)	1966
	11-12	**.483** (.424-.550)	**.480** (.400-.560)	**.810** (.720-.900)	**1.44** (1.16-1.63)	**1.90** (1.57-2.19)	1077
Non-Hispanic blacks	03-04	**.877** (.753-1.02)	**.900** (.800-1.00)	**1.60** (1.40-1.80)	**3.00** (2.30-4.00)	**4.40** (3.30-6.00)	2293
	05-06	**.823** (.697-.972)	**.800** (.670-.940)	**1.50** (1.21-1.92)	**2.72** (2.14-3.59)	**4.09** (3.22-5.16)	2193
	07-08	**.766** (.711-.825)	**.780** (.710-.830)	**1.32** (1.23-1.42)	**2.25** (1.99-2.58)	**3.42** (2.74-3.90)	1746
	09-10	**.928** (.805-1.07)	**.900** (.800-1.02)	**1.67** (1.38-1.96)	**2.93** (2.20-4.21)	**4.56** (3.34-6.69)	1593
	11-12	**.679** (.542-.852)	**.630** (.500-.790)	**1.24** (.880-1.72)	**2.45** (1.84-3.14)	**3.80** (2.70-5.37)	2195
Non-Hispanic whites	03-04	**.776** (.655-.919)	**.800** (.700-.900)	**1.70** (1.40-2.00)	**3.20** (2.60-3.90)	**4.70** (4.00-5.60)	3478
	05-06	**.891** (.801-.992)	**.870** (.770-1.00)	**1.74** (1.50-2.10)	**3.37** (2.88-3.76)	**4.76** (4.18-5.37)	3310
	07-08	**.743** (.651-.847)	**.720** (.620-.820)	**1.43** (1.18-1.70)	**2.79** (2.33-3.41)	**4.18** (3.57-4.83)	3461
	09-10	**.856** (.766-.957)	**.790** (.690-.920)	**1.70** (1.46-1.98)	**3.43** (2.94-3.94)	**4.92** (4.30-5.65)	3760
	11-12	**.688** (.582-.813)	**.630** (.550-.750)	**1.38** (1.09-1.82)	**2.83** (2.18-3.82)	**4.25** (3.02-6.24)	2493
All Hispanics	11-12	**.612** (.527-.710)	**.590** (.490-.700)	**1.08** (.890-1.33)	**1.96** (1.60-2.68)	**3.03** (2.37-3.86)	1931
Asians	11-12	**1.86** (1.58-2.19)	**2.30** (1.84-2.64)	**4.32** (3.71-5.21)	**7.71** (6.38-8.79)	**10.3** (8.85-12.0)	1005

Limit of detection (LOD, see Data Analysis section) for Survey years 03-04, 05-06, 07-08, 09-10, and 11-12 are 0.2, 0.33, 0.33, 0.33, and 0.16 respectively.
< LOD means less than the limit of detection, which may vary for some chemicals by year and by individual sample.
* Not calculated: proportion of results below limit of detection was too high to provide a valid result.

Biomonitoring Summary: http://www.cdc.gov/biomonitoring/Mercury_BiomonitoringSummary.html
Factsheet: http://www.cdc.gov/biomonitoring/Mercury_FactSheet.html

Blood Inorganic Mercury

Geometric mean and selected percentiles of blood concentrations (in µg/L) for the U.S. population from the National Health and Nutrition Examination Survey.

	Survey years	Geometric mean (95% conf. interval)	Selected percentiles (95% confidence interval) 50th	75th	90th	95th	Sample size
Total	03-04	*	**< LOD**	**< LOD**	**.600** (.500-.600)	**.700** (.700-.700)	8147
	05-06	*	**< LOD**	**< LOD**	**.540** (.500-.580)	**.660** (.620-.710)	8371
	07-08	*	**< LOD**	**.350** (<LOD-.370)	**.520** (.500-.540)	**.650** (.620-.690)	8162
	09-10	*	**< LOD**	**< LOD**	**.390** (.360-.430)	**.510** (.480-.570)	8733
	11-12	*	**< LOD**	**< LOD**	**.440** (.390-.480)	**.600** (.520-.680)	7841
Age group							
1-5 years	03-04	*	**< LOD**	**< LOD**	**< LOD**	**.500** (<LOD-.600)	792
	05-06	*	**< LOD**	**< LOD**	**.430** (<LOD-.470)	**.510** (.430-.670)	948
	07-08	*	**< LOD**	**< LOD**	**.350** (<LOD-.450)	**.500** (.410-.550)	726
	09-10	*	**< LOD**	**< LOD**	**< LOD**	**.360** (<LOD-.460)	789
	11-12	*	**< LOD**	**< LOD**	**< LOD**	**.280** (<LOD-.360)	657
6-11 years	03-04	*	**< LOD**	**< LOD**	**< LOD**	**.600** (.500-.600)	842
	05-06	*	**< LOD**	**< LOD**	**.450** (<LOD-.520)	**.560** (.470-.640)	932
	07-08	*	**< LOD**	**< LOD**	**.380** (.350-.410)	**.470** (.420-.520)	1010
	09-10	*	**< LOD**	**< LOD**	**< LOD**	**.380** (.350-.440)	1006
	11-12	*	**< LOD**	**< LOD**	**.280** (<LOD-.320)	**.360** (.290-.450)	1044
12-19 years	03-04	*	**< LOD**	**< LOD**	**.500** (<LOD-.500)	**.600** (.500-.600)	2060
	05-06	*	**< LOD**	**< LOD**	**.430** (.410-.460)	**.540** (.480-.590)	1984
	07-08	*	**< LOD**	**< LOD**	**.370** (<LOD-.400)	**.480** (.410-.530)	1069
	09-10	*	**< LOD**	**< LOD**	**< LOD**	**.420** (.350-.500)	1184
	11-12	*	**< LOD**	**< LOD**	**.280** (<LOD-.350)	**.400** (.300-.540)	1121
20 years and older	03-04	*	**< LOD**	**< LOD**	**.600** (.500-.600)	**.700** (.700-.800)	4453
	05-06	*	**< LOD**	**< LOD**	**.570** (.530-.610)	**.690** (.650-.750)	4507
	07-08	*	**< LOD**	**.380** (.360-.390)	**.550** (.530-.570)	**.700** (.660-.730)	5357
	09-10	*	**< LOD**	**< LOD**	**.420** (.390-.450)	**.540** (.490-.600)	5754
	11-12	*	**< LOD**	**.290** (.270-.310)	**.470** (.420-.530)	**.630** (.550-.760)	5019
Gender							
Males	03-04	*	**< LOD**	**< LOD**	**.500** (.500-.600)	**.600** (.600-.700)	4015
	05-06	*	**< LOD**	**< LOD**	**.480** (.450-.520)	**.600** (.550-.640)	4076
	07-08	*	**< LOD**	**< LOD**	**.500** (.470-.520)	**.600** (.570-.650)	4093
	09-10	*	**< LOD**	**< LOD**	**.370** (<LOD-.420)	**.500** (.440-.560)	4336
	11-12	*	**< LOD**	**< LOD**	**.420** (.370-.480)	**.600** (.490-.680)	3925
Females	03-04	*	**< LOD**	**< LOD**	**.600** (.500-.600)	**.700** (.700-.800)	4132
	05-06	*	**< LOD**	**< LOD**	**.580** (.550-.640)	**.700** (.670-.780)	4295
	07-08	*	**< LOD**	**.380** (.360-.390)	**.550** (.520-.570)	**.700** (.670-.740)	4069
	09-10	*	**< LOD**	**< LOD**	**.410** (.380-.440)	**.530** (.490-.600)	4397
	11-12	*	**< LOD**	**.280** (<LOD-.300)	**.450** (.390-.490)	**.610** (.520-.700)	3916

Limit of detection (LOD, see Data Analysis section) for Survey years 03-04, 05-06, 07-08, 09-10, and 11-12 are 0.42, 0.4, 0.35, 0.35, and 0.27 respectively.
< LOD means less than the limit of detection, which may vary for some chemicals by year and by individual sample.
* Not calculated: proportion of results below limit of detection was too high to provide a valid result.

Biomonitoring Summary: http://www.cdc.gov/biomonitoring/Mercury_BiomonitoringSummary.html
Factsheet: http://www.cdc.gov/biomonitoring/Mercury_FactSheet.html

Blood Inorganic Mercury

Geometric mean and selected percentiles of blood concentrations (in µg/L) for the U.S. population from the National Health and Nutrition Examination Survey.

	Survey years	Geometric mean (95% conf. interval)	Selected percentiles (95% confidence interval) 50th	75th	90th	95th	Sample size
Race/ethnicity							
Mexican Americans	03-04	*	**< LOD**	**< LOD**	**.500** (.500-.600)	**.700** (.600-.800)	2007
	05-06	*	**< LOD**	**< LOD**	**.530** (.470-.580)	**.670** (.560-.830)	2224
	07-08	*	**< LOD**	**< LOD**	**.430** (.400-.480)	**.560** (.520-.610)	1685
	09-10	*	**< LOD**	**< LOD**	**< LOD**	**.470** (.390-.530)	1947
	11-12	*	**< LOD**	**< LOD**	**.390** (.330-.460)	**.580** (.460-.710)	1058
Non-Hispanic blacks	03-04	*	**< LOD**	**< LOD**	**.600** (.500-.600)	**.700** (.600-.800)	2240
	05-06	*	**< LOD**	**< LOD**	**.530** (.470-.600)	**.670** (.600-.760)	2183
	07-08	*	**< LOD**	**< LOD**	**.490** (.450-.530)	**.610** (.560-.650)	1729
	09-10	*	**< LOD**	**< LOD**	**.370** (.350-.390)	**.480** (.410-.530)	1580
	11-12	*	**< LOD**	**< LOD**	**.410** (.370-.470)	**.570** (.480-.670)	2170
Non-Hispanic whites	03-04	*	**< LOD**	**< LOD**	**.600** (.500-.600)	**.700** (.600-.700)	3406
	05-06	*	**< LOD**	**< LOD**	**.540** (.500-.580)	**.650** (.610-.710)	3298
	07-08	*	**< LOD**	**.360** (<LOD-.390)	**.530** (.500-.550)	**.660** (.620-.700)	3421
	09-10	*	**< LOD**	**< LOD**	**.410** (.370-.450)	**.520** (.480-.590)	3739
	11-12	*	**< LOD**	**.270** (<LOD-.300)	**.430** (.370-.490)	**.590** (.480-.690)	2477
All Hispanics	11-12	*	**< LOD**	**< LOD**	**.430** (.370-.490)	**.630** (.540-.760)	1902
Asians	11-12	*	**< LOD**	**.350** (.310-.390)	**.550** (.500-.590)	**.700** (.630-.760)	997

Limit of detection (LOD, see Data Analysis section) for Survey years 03-04, 05-06, 07-08, 09-10, and 11-12 are 0.42, 0.4, 0.35, 0.35, and 0.27 respectively.
< LOD means less than the limit of detection, which may vary for some chemicals by year and by individual sample.
* Not calculated: proportion of results below limit of detection was too high to provide a valid result.

Biomonitoring Summary: http://www.cdc.gov/biomonitoring/Mercury_BiomonitoringSummary.html
Factsheet: http://www.cdc.gov/biomonitoring/Mercury_FactSheet.html

Blood Ethyl Mercury

Geometric mean and selected percentiles of blood concentrations (in µg/L) for the U.S. population from the National Health and Nutrition Examination Survey.

	Survey years	Geometric mean (95% conf. interval)	Selected percentiles (95% confidence interval) 50th	75th	90th	95th	Sample size
Total	11-12	*	**< LOD**	**< LOD**	**< LOD**	**< LOD**	7841
Age group							
1-5 years	11-12	*	**< LOD**	**< LOD**	**< LOD**	**< LOD**	657
6-11 years	11-12	*	**< LOD**	**< LOD**	**< LOD**	**< LOD**	1044
12-19 years	11-12	*	**< LOD**	**< LOD**	**< LOD**	**< LOD**	1121
20 years and older	11-12	*	**< LOD**	**< LOD**	**< LOD**	**< LOD**	5019
Gender							
Males	11-12	*	**< LOD**	**< LOD**	**< LOD**	**< LOD**	3925
Females	11-12	*	**< LOD**	**< LOD**	**< LOD**	**< LOD**	3916
Race/ethnicity							
Mexican Americans	11-12	*	**< LOD**	**< LOD**	**< LOD**	**< LOD**	1058
Non-Hispanic blacks	11-12	*	**< LOD**	**< LOD**	**< LOD**	**< LOD**	2170
Non-Hispanic whites	11-12	*	**< LOD**	**< LOD**	**< LOD**	**< LOD**	2477
All Hispanics	11-12	*	**< LOD**	**< LOD**	**< LOD**	**< LOD**	1902
Asians	11-12	*	**< LOD**	**< LOD**	**< LOD**	**.160** (<LOD-.280)	997

Limit of detection (LOD, see Data Analysis section) for Survey year 11-12 is 0.16.
< LOD means less than the limit of detection, which may vary for some chemicals by year and by individual sample.
* Not calculated: proportion of results below limit of detection was too high to provide a valid result.

Biomonitoring Summary: http://www.cdc.gov/biomonitoring/Mercury_BiomonitoringSummary.html
Factsheet: http://www.cdc.gov/biomonitoring/Mercury_FactSheet.html

Blood Methyl Mercury

Geometric mean and selected percentiles of blood concentrations (in µg/L) for the U.S. population from the National Health and Nutrition Examination Survey.

	Survey years	Geometric mean (95% conf. interval)	Selected percentiles (95% confidence interval) 50th	75th	90th	95th	Sample size
Total	11-12	**.498** (.423-.587)	**.480** (.400-.570)	**1.25** (.950-1.61)	**2.81** (2.29-3.55)	**4.43** (3.46-5.49)	7841
Age group							
1-5 years	11-12	*	**.140** (.120-.170)	**.270** (.220-.350)	**.540** (.420-.780)	**.970** (.590-1.14)	657
6-11 years	11-12	**.209** (.182-.241)	**.180** (.150-.220)	**.400** (.330-.490)	**.820** (.630-1.06)	**1.34** (.940-1.84)	1044
12-19 years	11-12	**.276** (.237-.322)	**.270** (.210-.310)	**.570** (.460-.670)	**1.27** (.870-1.67)	**2.15** (1.40-2.81)	1121
20 years and older	11-12	**.624** (.523-.746)	**.610** (.500-.760)	**1.53** (1.18-2.00)	**3.28** (2.56-4.31)	**4.97** (3.91-6.89)	5019
Gender							
Males	11-12	**.509** (.433-.598)	**.490** (.400-.590)	**1.30** (.990-1.62)	**2.84** (2.29-3.68)	**4.77** (3.44-6.74)	3925
Females	11-12	**.489** (.413-.580)	**.470** (.380-.560)	**1.19** (.900-1.61)	**2.72** (2.18-3.46)	**3.99** (3.28-4.99)	3916
Race/ethnicity							
Mexican Americans	11-12	**.320** (.264-.387)	**.330** (.260-.410)	**.610** (.500-.770)	**1.23** (.920-1.40)	**1.66** (1.33-2.06)	1058
Non-Hispanic blacks	11-12	**.517** (.392-.681)	**.510** (.380-.660)	**1.13** (.750-1.61)	**2.37** (1.66-3.08)	**3.63** (2.57-5.16)	2170
Non-Hispanic whites	11-12	**.478** (.392-.583)	**.470** (.360-.580)	**1.25** (.870-1.69)	**2.76** (2.06-3.69)	**4.24** (2.92-6.38)	2477
All Hispanics	11-12	**.429** (.350-.525)	**.420** (.340-.520)	**.890** (.700-1.17)	**1.81** (1.39-2.46)	**2.94** (2.19-3.71)	1902
Asians	11-12	**1.58** (1.29-1.94)	**2.16** (1.68-2.55)	**4.35** (3.64-5.13)	**7.57** (6.21-8.61)	**10.5** (8.48-12.5)	997

Limit of detection (LOD, see Data Analysis section) for Survey year 11-12 is 0.12.
< LOD means less than the limit of detection, which may vary for some chemicals by year and by individual sample.
* Not calculated: proportion of results below limit of detection was too high to provide a valid result.

Biomonitoring Summary: http://www.cdc.gov/biomonitoring/Mercury_BiomonitoringSummary.html
Factsheet: http://www.cdc.gov/biomonitoring/Mercury_FactSheet.html

Urinary Molybdenum

Geometric mean and selected percentiles of urine concentrations (in µg/L) for the U.S. population from the National Health and Nutrition Examination Survey.

	Survey years	Geometric mean (95% conf. interval)	Selected percentiles (95% confidence interval) 50th	75th	90th	95th	Sample size
Total	99-00	**45.9** (40.1-52.6)	**50.7** (44.6-58.4)	**84.9** (78.7-92.3)	**135** (125-146)	**180** (154-216)	2257
	01-02	**45.0** (42.1-48.0)	**52.4** (48.9-55.5)	**83.4** (79.1-88.7)	**124** (117-130)	**165** (145-176)	2690
	03-04	**39.7** (37.7-41.7)	**44.5** (41.6-46.7)	**78.5** (74.9-82.3)	**111** (105-118)	**138** (133-146)	2558
	05-06	**45.0** (42.4-47.8)	**51.0** (47.2-54.7)	**81.5** (77.4-85.8)	**127** (117-132)	**158** (144-174)	2576
	07-08	**45.2** (43.1-47.3)	**49.7** (47.4-52.0)	**86.2** (82.3-89.3)	**136** (128-142)	**163** (154-171)	2627
	09-10	**42.7** (40.8-44.7)	**45.2** (43.6-47.3)	**79.9** (75.9-83.0)	**121** (112-130)	**160** (147-180)	2848
Age group							
6-11 years	99-00	**78.2** (61.0-100)	**84.8** (67.7-105)	**126** (106-147)	**178** (147-259)	**267** (159-840)	310
	01-02	**63.3** (53.4-75.0)	**69.2** (63.0-77.6)	**109** (94.5-124)	**169** (138-197)	**197** (161-291)	368
	03-04	**62.2** (56.7-68.3)	**71.3** (55.7-84.1)	**108** (92.7-122)	**138** (127-152)	**181** (138-235)	290
	05-06	**65.6** (56.6-76.0)	**73.5** (62.8-85.5)	**108** (98.6-115)	**154** (130-176)	**181** (154-205)	355
	07-08	**69.3** (60.8-79.0)	**72.8** (62.1-83.9)	**123** (99.9-148)	**169** (154-217)	**235** (169-282)	394
	09-10	**65.0** (57.8-73.2)	**69.7** (61.1-84.2)	**123** (103-138)	**180** (146-205)	**218** (180-263)	378
12-19 years	99-00	**54.3** (47.6-62.0)	**60.6** (52.2-70.3)	**93.3** (79.9-109)	**146** (112-171)	**188** (146-216)	648
	01-02	**60.6** (55.5-66.2)	**65.7** (58.7-73.1)	**97.1** (91.8-108)	**145** (129-159)	**179** (155-227)	762
	03-04	**52.5** (49.0-56.3)	**59.6** (55.5-65.1)	**87.3** (84.5-91.4)	**118** (105-125)	**143** (130-156)	725
	05-06	**59.1** (53.7-65.1)	**63.8** (57.9-69.4)	**96.6** (86.3-103)	**136** (127-147)	**173** (148-202)	701
	07-08	**64.1** (58.6-70.2)	**68.6** (63.7-80.2)	**107** (97.2-118)	**149** (125-167)	**174** (151-196)	376
	09-10	**52.4** (47.5-57.7)	**58.5** (51.4-65.6)	**96.2** (85.0-104)	**148** (120-170)	**178** (151-201)	451
20 years and older	99-00	**41.7** (36.7-47.4)	**46.6** (40.5-52.5)	**76.7** (73.4-82.2)	**126** (114-134)	**168** (143-206)	1299
	01-02	**41.1** (38.3-44.1)	**47.6** (43.7-51.2)	**79.1** (71.9-83.6)	**114** (103-124)	**150** (130-166)	1560
	03-04	**35.9** (34.0-38.0)	**40.3** (37.6-42.1)	**71.5** (67.3-75.2)	**105** (98.6-111)	**133** (119-144)	1543
	05-06	**41.3** (38.7-44.0)	**46.0** (41.7-49.6)	**75.7** (72.1-80.3)	**116** (107-127)	**153** (135-171)	1520
	07-08	**40.8** (38.7-43.0)	**44.5** (42.2-47.8)	**77.7** (74.1-81.2)	**123** (114-135)	**152** (145-164)	1857
	09-10	**39.6** (37.5-41.8)	**42.0** (39.8-43.9)	**73.5** (69.0-76.8)	**107** (100-113)	**144** (130-163)	2019
Gender							
Males	99-00	**52.7** (45.7-60.7)	**57.5** (48.5-68.4)	**93.2** (83.8-106)	**150** (128-187)	**215** (161-278)	1121
	01-02	**51.0** (46.6-55.7)	**56.9** (52.0-62.6)	**88.5** (81.6-96.5)	**130** (120-141)	**169** (145-194)	1335
	03-04	**45.5** (43.3-47.8)	**51.0** (48.1-55.4)	**85.8** (82.8-90.7)	**119** (112-130)	**148** (136-163)	1281
	05-06	**50.9** (48.2-53.9)	**56.0** (51.0-60.3)	**85.7** (80.3-92.8)	**130** (122-136)	**161** (145-177)	1271
	07-08	**50.6** (48.1-53.2)	**56.7** (52.4-60.6)	**93.6** (88.7-98.7)	**148** (137-150)	**171** (159-178)	1327
	09-10	**46.2** (43.5-49.1)	**50.2** (46.4-52.7)	**81.8** (77.0-85.9)	**127** (113-144)	**169** (147-197)	1398
Females	99-00	**40.4** (34.8-46.8)	**45.6** (40.4-52.0)	**77.3** (71.0-85.7)	**119** (105-138)	**154** (132-180)	1136
	01-02	**39.9** (37.2-42.9)	**45.8** (42.8-49.3)	**78.4** (72.6-82.9)	**115** (104-128)	**158** (130-177)	1355
	03-04	**34.9** (32.2-37.7)	**37.9** (33.5-41.6)	**67.3** (64.6-72.2)	**101** (97.3-108)	**127** (114-139)	1277
	05-06	**40.0** (36.4-43.8)	**45.6** (40.0-51.0)	**75.6** (71.2-82.0)	**118** (107-128)	**154** (136-179)	1305
	07-08	**40.5** (38.1-43.0)	**43.5** (39.0-48.0)	**77.0** (72.0-84.5)	**123** (114-134)	**152** (142-165)	1300
	09-10	**39.6** (36.9-42.4)	**41.4** (39.0-43.8)	**76.8** (70.7-82.0)	**114** (106-127)	**151** (135-170)	1450

Limit of detection (LOD, see Data Analysis section) for Survey years 99-00, 01-02, 03-04, 05-06, 07-08, and 09-10 are 0.8, 0.8, 1.5, 0.92, 0.92, and 0.92 respectively.

Biomonitoring Summary: http://www.cdc.gov/biomonitoring/Molybdenum_BiomonitoringSummary.html

Urinary Molybdenum

Geometric mean and selected percentiles of urine concentrations (in µg/L) for the U.S. population from the National Health and Nutrition Examination Survey.

	Survey years	Geometric mean (95% conf. interval)	Selected percentiles (95% confidence interval) 50th	75th	90th	95th	Sample size
Race/ethnicity							
Mexican Americans	99-00	**47.0** (42.1-52.4)	**53.2** (49.2-59.0)	**80.6** (73.7-91.7)	**121** (103-139)	**152** (120-217)	780
	01-02	**49.3** (46.5-52.3)	**55.7** (50.4-61.0)	**86.4** (80.8-94.1)	**133** (113-155)	**177** (142-207)	683
	03-04	**47.0** (43.1-51.1)	**54.4** (48.2-59.9)	**82.9** (73.2-91.0)	**121** (106-143)	**152** (141-169)	618
	05-06	**55.1** (51.7-58.7)	**58.4** (54.1-63.6)	**98.3** (91.5-105)	**140** (134-150)	**177** (153-200)	652
	07-08	**53.3** (47.6-59.6)	**57.3** (49.6-64.3)	**90.4** (82.5-97.2)	**140** (125-156)	**176** (154-191)	515
	09-10	**49.4** (45.9-53.2)	**51.1** (46.4-55.4)	**81.4** (76.2-85.9)	**134** (115-149)	**180** (148-231)	613
Non-Hispanic blacks	99-00	**57.7** (51.0-65.2)	**62.2** (55.0-71.5)	**97.8** (85.0-110)	**153** (126-188)	**206** (150-274)	546
	01-02	**53.2** (49.9-56.7)	**60.3** (55.1-63.8)	**90.0** (81.0-101)	**132** (121-147)	**166** (147-170)	667
	03-04	**46.0** (41.7-50.8)	**46.2** (40.9-55.2)	**82.3** (73.3-91.3)	**117** (109-129)	**156** (135-175)	723
	05-06	**48.1** (44.7-51.8)	**52.0** (48.3-55.7)	**80.0** (71.6-89.4)	**125** (112-133)	**160** (139-189)	692
	07-08	**51.9** (45.6-59.1)	**56.9** (47.5-65.8)	**90.3** (83.0-102)	**137** (118-158)	**168** (147-180)	589
	09-10	**45.8** (41.4-50.8)	**52.1** (47.9-55.6)	**85.6** (77.7-94.0)	**132** (107-166)	**184** (152-216)	544
Non-Hispanic whites	99-00	**44.5** (37.0-53.4)	**48.5** (41.1-59.8)	**85.0** (76.7-96.5)	**135** (119-154)	**187** (146-223)	760
	01-02	**42.2** (38.5-46.2)	**48.9** (44.2-53.2)	**80.7** (71.9-85.8)	**117** (108-129)	**152** (134-180)	1132
	03-04	**37.1** (34.7-39.6)	**41.3** (38.1-44.5)	**75.2** (69.2-79.6)	**107** (99.3-115)	**130** (119-142)	1074
	05-06	**42.8** (39.7-46.1)	**48.6** (42.3-53.4)	**79.0** (73.5-84.0)	**123** (108-132)	**156** (136-178)	1041
	07-08	**41.7** (39.2-44.5)	**46.5** (42.9-49.8)	**81.2** (76.6-86.6)	**131** (119-142)	**153** (149-164)	1095
	09-10	**40.6** (38.1-43.1)	**42.6** (39.6-45.3)	**75.9** (70.6-81.0)	**114** (104-123)	**148** (134-166)	1225

Limit of detection (LOD, see Data Analysis section) for Survey years 99-00, 01-02, 03-04, 05-06, 07-08, and 09-10 are 0.8, 0.8, 1.5, 0.92, 0.92, and 0.92 respectively.

Biomonitoring Summary: **http://www.cdc.gov/biomonitoring/Molybdenum_BiomonitoringSummary.html**

Urinary Molybdenum (creatinine corrected)

Geometric mean and selected percentiles of urine concentrations (in µg/g of creatinine) for the U.S. population from the National Health and Nutrition Examination Survey.

	Survey years	Geometric mean (95% conf. interval)	Selected percentiles (95% confidence interval) 50th	75th	90th	95th	Sample size
Total	99-00	**43.2** (40.0-46.6)	**41.6** (38.5-45.2)	**63.5** (59.3-68.8)	**108** (97.3-115)	**144** (125-171)	2257
	01-02	**42.5** (39.9-45.2)	**42.2** (40.1-45.2)	**62.0** (58.4-66.4)	**98.8** (90.1-109)	**130** (120-149)	2689
	03-04	**39.4** (37.6-41.3)	**39.2** (37.9-40.7)	**58.3** (55.6-61.5)	**89.0** (80.5-99.0)	**120** (107-135)	2558
	05-06	**44.3** (42.4-46.3)	**43.9** (41.8-45.7)	**65.9** (61.8-68.6)	**97.3** (92.5-103)	**132** (125-143)	2576
	07-08	**47.1** (45.8-48.4)	**46.3** (44.8-47.7)	**72.4** (68.7-74.3)	**104** (96.7-111)	**137** (127-152)	2627
	09-10	**45.5** (43.2-47.8)	**44.4** (41.9-47.4)	**67.2** (64.7-69.4)	**105** (95.4-121)	**143** (129-157)	2848
Age group							
6-11 years	99-00	**85.9** (73.7-100)	**79.3** (71.6-88.4)	**122** (107-133)	**173** (130-243)	**214** (154-1040)	310
	01-02	**77.2** (73.1-81.5)	**77.6** (71.8-84.5)	**109** (99.4-120)	**159** (129-170)	**185** (165-219)	368
	03-04	**72.5** (65.2-80.7)	**73.5** (65.1-79.9)	**101** (84.9-117)	**132** (107-158)	**160** (129-257)	290
	05-06	**81.0** (71.9-91.3)	**78.6** (72.1-89.0)	**112** (93.7-134)	**161** (133-199)	**201** (160-261)	355
	07-08	**90.4** (81.8-99.8)	**88.2** (79.2-101)	**133** (113-147)	**206** (159-259)	**274** (224-354)	394
	09-10	**88.6** (81.9-95.9)	**89.0** (79.2-95.4)	**131** (123-148)	**174** (154-191)	**195** (178-216)	378
12-19 years	99-00	**41.9** (39.3-44.6)	**40.5** (37.7-44.4)	**57.3** (51.5-62.5)	**85.4** (67.4-107)	**112** (78.4-185)	648
	01-02	**43.4** (40.8-46.1)	**44.1** (40.8-47.2)	**60.8** (57.6-63.7)	**85.5** (79.7-93.8)	**106** (94.8-118)	762
	03-04	**37.5** (35.4-39.8)	**38.9** (36.9-41.8)	**53.2** (50.3-56.1)	**71.9** (64.6-76.9)	**81.0** (74.3-102)	725
	05-06	**45.5** (42.5-48.7)	**45.7** (41.3-49.2)	**64.6** (58.5-71.2)	**91.4** (75.3-102)	**109** (95.0-131)	701
	07-08	**50.1** (47.2-53.2)	**50.1** (44.2-53.4)	**71.6** (64.0-79.6)	**95.8** (85.1-107)	**129** (99.5-138)	376
	09-10	**49.0** (45.3-53.0)	**50.7** (44.6-56.2)	**67.6** (63.0-73.1)	**93.6** (85.8-101)	**126** (96.4-134)	451
20 years and older	99-00	**39.6** (36.9-42.6)	**38.5** (36.1-41.0)	**56.4** (53.5-60.7)	**92.5** (83.1-100)	**122** (116-147)	1299
	01-02	**39.3** (36.8-42.0)	**39.6** (36.4-42.1)	**57.2** (52.9-61.0)	**86.7** (75.2-96.8)	**123** (109-139)	1559
	03-04	**36.9** (35.0-38.9)	**37.0** (35.7-38.4)	**53.5** (50.0-56.9)	**79.8** (75.9-87.5)	**118** (101-134)	1543
	05-06	**41.2** (39.3-43.1)	**40.5** (38.8-42.7)	**59.1** (55.6-62.8)	**87.9** (79.7-96.9)	**119** (103-132)	1520
	07-08	**43.5** (42.1-44.9)	**42.9** (41.3-44.7)	**64.9** (61.7-69.9)	**94.7** (90.8-97.1)	**122** (110-132)	1857
	09-10	**41.9** (40.0-43.9)	**41.2** (39.4-43.0)	**61.9** (59.0-64.0)	**90.4** (84.3-98.5)	**127** (115-141)	2019
Gender							
Males	99-00	**40.8** (37.5-44.3)	**38.5** (37.2-40.4)	**62.4** (55.9-68.4)	**101** (83.9-118)	**131** (112-179)	1121
	01-02	**40.3** (37.1-43.8)	**40.2** (36.3-43.3)	**60.5** (54.8-66.3)	**91.3** (83.4-106)	**123** (107-155)	1334
	03-04	**38.3** (36.1-40.7)	**37.8** (36.1-39.3)	**56.3** (53.3-59.3)	**85.7** (77.2-96.7)	**118** (100-139)	1281
	05-06	**41.8** (39.5-44.2)	**41.7** (39.2-44.1)	**62.1** (58.1-67.4)	**94.6** (84.2-101)	**126** (112-132)	1271
	07-08	**45.3** (43.8-46.8)	**44.6** (42.9-46.7)	**72.3** (65.4-74.8)	**105** (96.0-118)	**135** (126-152)	1327
	09-10	**42.1** (39.6-44.9)	**41.3** (38.7-44.2)	**63.4** (59.4-67.4)	**101** (88.3-121)	**139** (123-151)	1398
Females	99-00	**45.5** (41.5-50.0)	**44.1** (39.5-48.8)	**64.4** (59.5-70.5)	**112** (95.2-121)	**152** (122-181)	1136
	01-02	**44.6** (42.2-47.1)	**45.1** (42.2-46.9)	**63.6** (59.5-69.4)	**107** (92.5-119)	**136** (117-169)	1355
	03-04	**40.5** (38.1-43.0)	**41.1** (38.7-43.7)	**61.4** (56.8-65.1)	**90.1** (82.2-103)	**122** (115-142)	1277
	05-06	**46.9** (44.7-49.2)	**46.5** (43.9-48.8)	**67.2** (63.3-71.7)	**103** (93.6-110)	**157** (126-173)	1305
	07-08	**48.9** (47.2-50.7)	**48.3** (45.7-51.0)	**72.6** (69.2-74.4)	**103** (93.6-116)	**139** (113-177)	1300
	09-10	**48.9** (46.4-51.5)	**48.8** (45.8-51.5)	**70.1** (67.2-73.9)	**109** (97.1-125)	**148** (137-162)	1450

Biomonitoring Summary: http://www.cdc.gov/biomonitoring/Molybdenum_BiomonitoringSummary.html

Urinary Molybdenum (creatinine corrected)

Geometric mean and selected percentiles of urine concentrations (in µg/g of creatinine) for the U.S. population from the National Health and Nutrition Examination Survey.

	Survey years	Geometric mean (95% conf. interval)	Selected percentiles (95% confidence interval) 50th	75th	90th	95th	Sample size
Race/ethnicity							
Mexican Americans	99-00	**42.9** (40.6-45.4)	**43.2** (40.9-45.6)	**61.6** (57.2-65.5)	**89.5** (80.0-103)	**115** (93.7-137)	780
	01-02	**48.1** (44.3-52.2)	**48.4** (44.8-52.3)	**71.7** (66.4-76.0)	**103** (90.0-120)	**129** (109-155)	682
	03-04	**43.5** (40.5-46.8)	**43.5** (41.0-46.2)	**62.8** (56.8-67.2)	**85.9** (79.5-97.0)	**112** (97.0-133)	618
	05-06	**51.8** (49.9-53.8)	**52.1** (49.7-54.7)	**73.5** (69.5-77.4)	**106** (99.5-111)	**133** (112-151)	652
	07-08	**53.3** (50.2-56.5)	**51.9** (47.1-55.3)	**77.9** (70.6-82.1)	**113** (103-129)	**151** (132-185)	515
	09-10	**51.8** (48.9-54.9)	**51.4** (48.3-54.8)	**74.0** (68.7-78.8)	**109** (92.7-125)	**148** (125-173)	613
Non-Hispanic blacks	99-00	**37.2** (33.4-41.6)	**37.1** (33.0-41.2)	**55.9** (49.6-63.3)	**88.2** (69.1-112)	**119** (88.3-141)	546
	01-02	**36.5** (34.1-39.0)	**37.5** (35.1-38.9)	**57.1** (49.7-62.4)	**78.3** (71.5-92.0)	**109** (81.1-127)	667
	03-04	**33.1** (30.5-35.9)	**31.7** (30.1-34.7)	**47.2** (43.7-52.1)	**72.9** (64.6-78.4)	**90.5** (78.4-118)	723
	05-06	**34.9** (33.1-36.8)	**35.4** (32.7-38.1)	**53.5** (49.7-55.8)	**81.1** (75.4-89.4)	**102** (89.4-119)	692
	07-08	**38.0** (34.8-41.4)	**38.7** (34.2-43.0)	**57.0** (52.7-60.2)	**82.0** (73.2-92.4)	**105** (92.0-118)	589
	09-10	**36.3** (32.9-40.1)	**37.2** (35.1-39.5)	**54.7** (50.3-60.4)	**85.2** (68.6-110)	**121** (97.1-155)	544
Non-Hispanic whites	99-00	**44.5** (40.2-49.2)	**42.1** (38.8-47.3)	**65.3** (58.9-71.3)	**116** (101-126)	**172** (131-195)	760
	01-02	**42.5** (39.3-46.0)	**41.9** (39.3-45.6)	**61.2** (57.1-67.2)	**104** (88.7-120)	**138** (120-163)	1132
	03-04	**39.1** (37.2-41.1)	**39.3** (37.7-40.8)	**58.1** (54.6-61.4)	**87.4** (78.9-96.7)	**118** (106-134)	1074
	05-06	**44.5** (42.4-46.6)	**43.9** (41.7-45.7)	**65.0** (59.9-68.5)	**97.3** (90.7-105)	**132** (119-152)	1041
	07-08	**46.7** (45.0-48.6)	**46.1** (43.6-48.4)	**72.4** (65.8-75.1)	**103** (95.7-113)	**135** (120-152)	1095
	09-10	**45.3** (42.4-48.5)	**44.2** (41.5-48.4)	**66.6** (63.1-69.3)	**101** (88.4-124)	**141** (121-159)	1225

Biomonitoring Summary: http://www.cdc.gov/biomonitoring/Molybdenum_BiomonitoringSummary.html

Urinary Platinum

Geometric mean and selected percentiles of urine concentrations (in µg/L) for the U.S. population from the National Health and Nutrition Examination Survey.

	Survey years	Geometric mean (95% conf. interval)	Selected percentiles (95% confidence interval) 50th	75th	90th	95th	Sample size
Total	99-00	*	**< LOD**	**< LOD**	**< LOD**	**< LOD**	2465
	01-02	*	**< LOD**	**< LOD**	**< LOD**	**< LOD**	2690
	03-04	*	**< LOD**	**< LOD**	**< LOD**	**< LOD**	2558
	05-06	*	**< LOD**	**< LOD**	**.009** (<LOD-.012)	**.014** (.009-.025)	2576
	07-08	*	**< LOD**	**< LOD**	**< LOD**	**< LOD**	2627
	09-10	*	**< LOD**	**< LOD**	**.009** (<LOD-.015)	**.016** (.009-.049)	2847
Age group							
6-11 years	99-00	*	**< LOD**	**< LOD**	**< LOD**	**< LOD**	340
	01-02	*	**< LOD**	**< LOD**	**< LOD**	**< LOD**	368
	03-04	*	**< LOD**	**< LOD**	**< LOD**	**< LOD**	290
	05-06	*	**< LOD**	**< LOD**	**.010** (<LOD-.011)	**.014** (.010-.020)	355
	07-08	*	**< LOD**	**< LOD**	**< LOD**	**.009** (<LOD-.011)	394
	09-10	*	**< LOD**	**< LOD**	**.010** (<LOD-.014)	**.015** (.009-.036)	378
12-19 years	99-00	*	**< LOD**	**< LOD**	**< LOD**	**< LOD**	719
	01-02	*	**< LOD**	**< LOD**	**< LOD**	**< LOD**	762
	03-04	*	**< LOD**	**< LOD**	**< LOD**	**< LOD**	725
	05-06	*	**< LOD**	**< LOD**	**< LOD**	**.012** (.009-.019)	701
	07-08	*	**< LOD**	**< LOD**	**< LOD**	**.009** (<LOD-.017)	376
	09-10	*	**< LOD**	**< LOD**	**.010** (<LOD-.019)	**.018** (<LOD-.078)	451
20 years and older	99-00	*	**< LOD**	**< LOD**	**< LOD**	**< LOD**	1406
	01-02	*	**< LOD**	**< LOD**	**< LOD**	**< LOD**	1560
	03-04	*	**< LOD**	**< LOD**	**< LOD**	**< LOD**	1543
	05-06	*	**< LOD**	**< LOD**	**.009** (<LOD-.014)	**.014** (.009-.032)	1520
	07-08	*	**< LOD**	**< LOD**	**< LOD**	**< LOD**	1857
	09-10	*	**< LOD**	**< LOD**	**.009** (<LOD-.016)	**.017** (.009-.049)	2018
Gender							
Males	99-00	*	**< LOD**	**< LOD**	**< LOD**	**< LOD**	1227
	01-02	*	**< LOD**	**< LOD**	**< LOD**	**< LOD**	1335
	03-04	*	**< LOD**	**< LOD**	**< LOD**	**< LOD**	1281
	05-06	*	**< LOD**	**< LOD**	**.009** (<LOD-.012)	**.012** (.009-.020)	1271
	07-08	*	**< LOD**	**< LOD**	**< LOD**	**< LOD**	1327
	09-10	*	**< LOD**	**< LOD**	**.009** (<LOD-.015)	**.016** (<LOD-.047)	1397
Females	99-00	*	**< LOD**	**< LOD**	**< LOD**	**< LOD**	1238
	01-02	*	**< LOD**	**< LOD**	**< LOD**	**< LOD**	1355
	03-04	*	**< LOD**	**< LOD**	**< LOD**	**< LOD**	1277
	05-06	*	**< LOD**	**< LOD**	**.010** (<LOD-.014)	**.015** (.010-.033)	1305
	07-08	*	**< LOD**	**< LOD**	**< LOD**	**.009** (<LOD-.009)	1300
	09-10	*	**< LOD**	**< LOD**	**.010** (<LOD-.015)	**.017** (.009-.051)	1450

Limit of detection (LOD, see Data Analysis section) for Survey years 99-00, 01-02, 03-04, 05-06, 07-08, and 09-10 are 0.04, 0.04, 0.07, 0.009, 0.009, and 0.009 respectively.
< LOD means less than the limit of detection, which may vary for some chemicals by year and by individual sample.
* Not calculated: proportion of results below limit of detection was too high to provide a valid result.

Biomonitoring Summary: http://www.cdc.gov/biomonitoring/Platinum_BiomonitoringSummary.html

Urinary Platinum

Geometric mean and selected percentiles of urine concentrations (in µg/L) for the U.S. population from the National Health and Nutrition Examination Survey.

	Survey years	Geometric mean (95% conf. interval)	Selected percentiles (95% confidence interval) 50th	75th	90th	95th	Sample size
Race/ethnicity							
Mexican Americans	99-00	*	**< LOD**	**< LOD**	**< LOD**	**< LOD**	884
	01-02	*	**< LOD**	**< LOD**	**< LOD**	**< LOD**	683
	03-04	*	**< LOD**	**< LOD**	**< LOD**	**< LOD**	618
	05-06	*	**< LOD**	**< LOD**	**.010** (<LOD-.014)	**.014** (.009-.023)	652
	07-08	*	**< LOD**	**< LOD**	**< LOD**	**.009** (<LOD-.010)	515
	09-10	*	**< LOD**	**< LOD**	**< LOD**	**.010** (.009-.012)	613
Non-Hispanic blacks	99-00	*	**< LOD**	**< LOD**	**< LOD**	**< LOD**	568
	01-02	*	**< LOD**	**< LOD**	**< LOD**	**< LOD**	667
	03-04	*	**< LOD**	**< LOD**	**< LOD**	**< LOD**	723
	05-06	*	**< LOD**	**< LOD**	**< LOD**	**.011** (.009-.016)	692
	07-08	*	**< LOD**	**< LOD**	**< LOD**	**.009** (<LOD-.013)	589
	09-10	*	**< LOD**	**< LOD**	**.012** (<LOD-.032)	**.024** (.009-.103)	544
Non-Hispanic whites	99-00	*	**< LOD**	**< LOD**	**< LOD**	**< LOD**	822
	01-02	*	**< LOD**	**< LOD**	**< LOD**	**< LOD**	1132
	03-04	*	**< LOD**	**< LOD**	**< LOD**	**< LOD**	1074
	05-06	*	**< LOD**	**< LOD**	**.009** (<LOD-.012)	**.013** (.009-.026)	1041
	07-08	*	**< LOD**	**< LOD**	**< LOD**	**.009** (<LOD-.009)	1095
	09-10	*	**< LOD**	**< LOD**	**.009** (<LOD-.019)	**.018** (<LOD-.073)	1224

Limit of detection (LOD, see Data Analysis section) for Survey years 99-00, 01-02, 03-04, 05-06, 07-08, and 09-10 are 0.04, 0.04, 0.07, 0.009, 0.009, and 0.009 respectively.
< LOD means less than the limit of detection, which may vary for some chemicals by year and by individual sample.
* Not calculated: proportion of results below limit of detection was too high to provide a valid result.

Biomonitoring Summary: **http://www.cdc.gov/biomonitoring/Platinum_BiomonitoringSummary.html**

Urinary Platinum (creatinine corrected)

Geometric mean and selected percentiles of urine concentrations (in µg/g of creatinine) for the U.S. population from the National Health and Nutrition Examination Survey.

	Survey years	Geometric mean (95% conf. interval)	Selected percentiles (95% confidence interval) 50th	75th	90th	95th	Sample size
Total	99-00	*	< LOD	< LOD	< LOD	< LOD	2465
	01-02	*	< LOD	< LOD	< LOD	< LOD	2689
	03-04	*	< LOD	< LOD	< LOD	< LOD	2558
	05-06	*	< LOD	< LOD	.021 (<LOD-.023)	.029 (.026-.035)	2576
	07-08	*	< LOD	< LOD	< LOD	< LOD	2627
	09-10	*	< LOD	< LOD	.023 (<LOD-.027)	.033 (.026-.046)	2847
Age group							
6-11 years	99-00	*	< LOD	< LOD	< LOD	< LOD	340
	01-02	*	< LOD	< LOD	< LOD	< LOD	368
	03-04	*	< LOD	< LOD	< LOD	< LOD	290
	05-06	*	< LOD	< LOD	.020 (<LOD-.027)	.030 (.021-.050)	355
	07-08	*	< LOD	< LOD	< LOD	.026 (<LOD-.032)	394
	09-10	*	< LOD	< LOD	.026 (<LOD-.030)	.043 (.027-.050)	378
12-19 years	99-00	*	< LOD	< LOD	< LOD	< LOD	719
	01-02	*	< LOD	< LOD	< LOD	< LOD	762
	03-04	*	< LOD	< LOD	< LOD	< LOD	725
	05-06	*	< LOD	< LOD	< LOD	.017 (.012-.026)	701
	07-08	*	< LOD	< LOD	< LOD	.017 (<LOD-.025)	376
	09-10	*	< LOD	< LOD	.021 (<LOD-.029)	.032 (<LOD-.050)	451
20 years and older	99-00	*	< LOD	< LOD	< LOD	< LOD	1406
	01-02	*	< LOD	< LOD	< LOD	< LOD	1559
	03-04	*	< LOD	< LOD	< LOD	< LOD	1543
	05-06	*	< LOD	< LOD	.022 (<LOD-.025)	.030 (.026-.035)	1520
	07-08	*	< LOD	< LOD	< LOD	< LOD	1857
	09-10	*	< LOD	< LOD	.023 (<LOD-.030)	.035 (.024-.050)	2018
Gender							
Males	99-00	*	< LOD	< LOD	< LOD	< LOD	1227
	01-02	*	< LOD	< LOD	< LOD	< LOD	1334
	03-04	*	< LOD	< LOD	< LOD	< LOD	1281
	05-06	*	< LOD	< LOD	.014 (<LOD-.016)	.021 (.016-.025)	1271
	07-08	*	< LOD	< LOD	< LOD	< LOD	1327
	09-10	*	< LOD	< LOD	.019 (<LOD-.025)	.027 (<LOD-.036)	1397
Females	99-00	*	< LOD	< LOD	< LOD	< LOD	1238
	01-02	*	< LOD	< LOD	< LOD	< LOD	1355
	03-04	*	< LOD	< LOD	< LOD	< LOD	1277
	05-06	*	< LOD	< LOD	.026 (<LOD-.030)	.033 (.029-.050)	1305
	07-08	*	< LOD	< LOD	< LOD	.033 (<LOD-.043)	1300
	09-10	*	< LOD	< LOD	.027 (<LOD-.032)	.038 (.030-.054)	1450

< LOD means less than the limit of detection for the urine levels not corrected for creatinine.
* Not calculated: proportion of results below limit of detection was too high to provide a valid result.

Biomonitoring Summary: http://www.cdc.gov/biomonitoring/Platinum_BiomonitoringSummary.html

Urinary Platinum (creatinine corrected)

Geometric mean and selected percentiles of urine concentrations (in µg/g of creatinine) for the U.S. population from the National Health and Nutrition Examination Survey.

	Survey years	Geometric mean (95% conf. interval)	Selected percentiles (95% confidence interval) 50th	75th	90th	95th	Sample size
Race/ethnicity							
Mexican Americans	99-00	*	**< LOD**	**< LOD**	**< LOD**	**< LOD**	884
	01-02	*	**< LOD**	**< LOD**	**< LOD**	**< LOD**	682
	03-04	*	**< LOD**	**< LOD**	**< LOD**	**< LOD**	618
	05-06	*	**< LOD**	**< LOD**	**.016** (<LOD-.019)	**.023** (.017-.032)	652
	07-08	*	**< LOD**	**< LOD**	**< LOD**	**.025** (<LOD-.033)	515
	09-10	*	**< LOD**	**< LOD**	**< LOD**	**.025** (.021-.029)	613
Non-Hispanic blacks	99-00	*	**< LOD**	**< LOD**	**< LOD**	**< LOD**	568
	01-02	*	**< LOD**	**< LOD**	**< LOD**	**< LOD**	667
	03-04	*	**< LOD**	**< LOD**	**< LOD**	**< LOD**	723
	05-06	*	**< LOD**	**< LOD**	**< LOD**	**.018** (.014-.022)	692
	07-08	*	**< LOD**	**< LOD**	**< LOD**	**.017** (<LOD-.021)	589
	09-10	*	**< LOD**	**< LOD**	**.017** (<LOD-.024)	**.027** (.019-.050)	544
Non-Hispanic whites	99-00	*	**< LOD**	**< LOD**	**< LOD**	**< LOD**	822
	01-02	*	**< LOD**	**< LOD**	**< LOD**	**< LOD**	1132
	03-04	*	**< LOD**	**< LOD**	**< LOD**	**< LOD**	1074
	05-06	*	**< LOD**	**< LOD**	**.023** (<LOD-.025)	**.030** (.027-.035)	1041
	07-08	*	**< LOD**	**< LOD**	**< LOD**	**.030** (<LOD-.038)	1095
	09-10	*	**< LOD**	**< LOD**	**.025** (<LOD-.032)	**.036** (<LOD-.058)	1224

< LOD means less than the limit of detection for the urine levels not corrected for creatinine.
* Not calculated: proportion of results below limit of detection was too high to provide a valid result.

Biomonitoring Summary: **http://www.cdc.gov/biomonitoring/Platinum_BiomonitoringSummary.html**

Blood Selenium

Geometric mean and selected percentiles of blood concentrations (in µg/L) for the U.S. population from the National Health and Nutrition Examination Survey.

	Survey years	Geometric mean (95% conf. interval)	Selected percentiles (95% confidence interval) 50th	75th	90th	95th	Sample size
Total	11-12	**190** (187-193)	**190** (187-193)	**206** (203-210)	**223** (219-228)	**236** (231-241)	7920
Age group							
1-5 years	11-12	**167** (164-171)	**167** (163-172)	**181** (175-187)	**196** (187-201)	**201** (197-207)	713
6-11 years	11-12	**176** (172-180)	**177** (172-181)	**189** (185-193)	**201** (197-206)	**208** (205-215)	1048
12-19 years	11-12	**189** (184-193)	**189** (182-194)	**206** (198-211)	**220** (212-231)	**232** (221-245)	1129
20 years and older	11-12	**193** (190-196)	**193** (190-196)	**209** (205-213)	**227** (222-231)	**238** (233-243)	5030
Gender							
Males	11-12	**192** (189-195)	**192** (188-195)	**208** (204-213)	**227** (221-232)	**238** (232-243)	3968
Females	11-12	**188** (185-191)	**188** (186-191)	**204** (201-207)	**220** (218-224)	**233** (227-240)	3952
Race/ethnicity							
Mexican Americans	11-12	**189** (184-194)	**189** (183-195)	**205** (200-209)	**220** (217-223)	**229** (224-233)	1077
Non-Hispanic blacks	11-12	**184** (181-187)	**183** (180-187)	**199** (196-202)	**216** (211-220)	**226** (220-233)	2195
Non-Hispanic whites	11-12	**192** (188-196)	**192** (188-196)	**208** (204-213)	**227** (220-232)	**238** (231-245)	2493
All Hispanics	11-12	**187** (183-191)	**188** (183-192)	**203** (198-208)	**218** (214-222)	**228** (223-234)	1931
Asians	11-12	**193** (189-197)	**192** (188-196)	**210** (204-215)	**227** (223-235)	**243** (233-253)	1005

Limit of detection (LOD, see Data Analysis section) for Survey year 11-12 is 30.0.
< LOD means less than the limit of detection, which may vary for some chemicals by year and by individual sample.

Urinary Thallium

Geometric mean and selected percentiles of urine concentrations (in µg/L) for the U.S. population from the National Health and Nutrition Examination Survey.

	Survey years	Geometric mean (95% conf. interval)	Selected percentiles (95% confidence interval) 50th	75th	90th	95th	Sample size
Total	99-00	**.176** (.162-.192)	**.200** (.180-.220)	**.290** (.270-.330)	**.400** (.370-.420)	**.450** (.430-.480)	2413
	01-02	**.165** (.154-.177)	**.190** (.180-.200)	**.280** (.260-.290)	**.370** (.350-.390)	**.440** (.410-.470)	2653
	03-04	**.155** (.145-.165)	**.170** (.160-.180)	**.270** (.250-.290)	**.370** (.340-.400)	**.440** (.410-.490)	2558
	05-06	**.158** (.151-.165)	**.180** (.170-.190)	**.270** (.260-.280)	**.360** (.350-.390)	**.430** (.410-.460)	2576
	07-08	**.146** (.139-.153)	**.160** (.150-.170)	**.250** (.230-.260)	**.330** (.320-.360)	**.400** (.390-.420)	2627
	09-10	**.144** (.137-.152)	**.160** (.150-.170)	**.240** (.230-.250)	**.340** (.310-.360)	**.410** (.380-.440)	2848
Age group							
6-11 years	99-00	**.201** (.167-.243)	**.210** (.150-.280)	**.310** (.250-.350)	**.410** (.330-.450)	**.450** (.350-.590)	336
	01-02	**.172** (.147-.202)	**.200** (.160-.220)	**.290** (.230-.330)	**.350** (.340-.370)	**.390** (.360-.430)	362
	03-04	**.191** (.170-.215)	**.190** (.170-.230)	**.300** (.250-.370)	**.430** (.360-.500)	**.510** (.430-.690)	290
	05-06	**.174** (.158-.192)	**.190** (.170-.210)	**.280** (.250-.300)	**.380** (.320-.430)	**.430** (.400-.480)	355
	07-08	**.166** (.150-.185)	**.170** (.150-.200)	**.250** (.230-.270)	**.350** (.310-.410)	**.420** (.360-.470)	394
	09-10	**.161** (.147-.176)	**.170** (.150-.200)	**.280** (.230-.310)	**.360** (.330-.410)	**.440** (.400-.460)	378
12-19 years	99-00	**.202** (.181-.225)	**.220** (.200-.240)	**.300** (.270-.340)	**.410** (.390-.430)	**.470** (.430-.510)	697
	01-02	**.200** (.182-.220)	**.220** (.190-.250)	**.310** (.290-.320)	**.370** (.350-.420)	**.470** (.400-.500)	746
	03-04	**.201** (.185-.218)	**.220** (.210-.240)	**.310** (.290-.320)	**.410** (.360-.470)	**.500** (.420-.560)	725
	05-06	**.182** (.165-.200)	**.210** (.190-.230)	**.290** (.270-.310)	**.370** (.350-.400)	**.430** (.390-.480)	701
	07-08	**.172** (.155-.190)	**.180** (.160-.210)	**.270** (.230-.300)	**.330** (.310-.350)	**.390** (.340-.420)	376
	09-10	**.150** (.137-.163)	**.160** (.150-.180)	**.250** (.240-.270)	**.340** (.290-.380)	**.400** (.350-.430)	451
20 years and older	99-00	**.170** (.157-.183)	**.190** (.180-.210)	**.290** (.260-.320)	**.400** (.370-.420)	**.450** (.420-.480)	1380
	01-02	**.159** (.147-.173)	**.190** (.170-.200)	**.270** (.250-.290)	**.380** (.350-.400)	**.440** (.410-.490)	1545
	03-04	**.145** (.134-.156)	**.160** (.150-.170)	**.250** (.240-.270)	**.360** (.330-.390)	**.420** (.390-.460)	1543
	05-06	**.152** (.144-.161)	**.170** (.160-.180)	**.260** (.240-.270)	**.360** (.340-.390)	**.440** (.400-.470)	1520
	07-08	**.140** (.133-.148)	**.150** (.140-.160)	**.240** (.230-.250)	**.330** (.310-.360)	**.400** (.380-.440)	1857
	09-10	**.142** (.133-.150)	**.160** (.150-.170)	**.240** (.220-.250)	**.330** (.310-.360)	**.410** (.370-.440)	2019
Gender							
Males	99-00	**.197** (.179-.217)	**.220** (.200-.240)	**.320** (.280-.350)	**.400** (.370-.440)	**.450** (.420-.520)	1200
	01-02	**.184** (.173-.196)	**.210** (.200-.230)	**.290** (.280-.300)	**.380** (.360-.400)	**.430** (.400-.470)	1313
	03-04	**.167** (.156-.178)	**.190** (.180-.200)	**.280** (.260-.300)	**.370** (.340-.400)	**.430** (.400-.480)	1281
	05-06	**.171** (.163-.179)	**.190** (.180-.200)	**.270** (.260-.280)	**.370** (.360-.390)	**.430** (.410-.470)	1271
	07-08	**.154** (.148-.161)	**.170** (.160-.180)	**.250** (.240-.270)	**.340** (.320-.360)	**.390** (.380-.440)	1327
	09-10	**.152** (.140-.164)	**.170** (.150-.180)	**.250** (.240-.270)	**.330** (.310-.360)	**.410** (.360-.440)	1398
Females	99-00	**.159** (.145-.175)	**.180** (.150-.200)	**.270** (.250-.300)	**.390** (.350-.420)	**.460** (.410-.490)	1213
	01-02	**.149** (.137-.163)	**.160** (.150-.180)	**.260** (.230-.290)	**.370** (.330-.400)	**.440** (.400-.500)	1340
	03-04	**.144** (.133-.156)	**.160** (.140-.170)	**.250** (.230-.280)	**.370** (.330-.410)	**.450** (.410-.510)	1277
	05-06	**.146** (.138-.155)	**.160** (.150-.180)	**.260** (.240-.270)	**.360** (.350-.380)	**.440** (.400-.460)	1305
	07-08	**.139** (.129-.148)	**.150** (.130-.160)	**.240** (.220-.260)	**.330** (.300-.390)	**.410** (.380-.430)	1300
	09-10	**.137** (.129-.146)	**.150** (.140-.160)	**.230** (.210-.250)	**.340** (.310-.360)	**.410** (.380-.450)	1450

Limit of detection (LOD, see Data Analysis section) for Survey years 99-00, 01-02, 03-04, 05-06, 07-08, and 09-10 are 0.02, 0.02, 0.02, 0.015, 0.015, and 0.015 respectively.

Biomonitoring Summary: http://www.cdc.gov/biomonitoring/Thallium_BiomonitoringSummary.html
Factsheet: http://www.cdc.gov/biomonitoring/Thallium_FactSheet.html

Urinary Thallium

Geometric mean and selected percentiles of urine concentrations (in µg/L) for the U.S. population from the National Health and Nutrition Examination Survey.

	Survey years	Geometric mean (95% conf. interval)	Selected percentiles (95% confidence interval) 50th	75th	90th	95th	Sample size
Race/ethnicity							
Mexican Americans	99-00	**.172** (.150-.196)	**.200** (.160-.230)	**.270** (.250-.300)	**.370** (.320-.420)	**.450** (.370-.520)	861
	01-02	**.160** (.148-.173)	**.180** (.160-.200)	**.260** (.240-.270)	**.340** (.310-.360)	**.400** (.350-.440)	675
	03-04	**.171** (.160-.183)	**.200** (.170-.220)	**.280** (.260-.310)	**.360** (.340-.420)	**.450** (.390-.480)	618
	05-06	**.158** (.149-.167)	**.180** (.170-.190)	**.250** (.240-.270)	**.330** (.300-.360)	**.400** (.360-.440)	652
	07-08	**.151** (.140-.164)	**.170** (.150-.180)	**.250** (.220-.270)	**.330** (.310-.360)	**.380** (.350-.390)	515
	09-10	**.147** (.139-.155)	**.160** (.150-.180)	**.240** (.210-.260)	**.310** (.290-.320)	**.390** (.320-.430)	613
Non-Hispanic blacks	99-00	**.217** (.197-.239)	**.230** (.220-.260)	**.350** (.300-.390)	**.450** (.400-.520)	**.550** (.460-.630)	561
	01-02	**.202** (.187-.218)	**.220** (.200-.230)	**.300** (.270-.340)	**.410** (.380-.440)	**.520** (.440-.590)	657
	03-04	**.185** (.167-.206)	**.190** (.170-.220)	**.290** (.250-.330)	**.410** (.330-.490)	**.490** (.410-.640)	723
	05-06	**.188** (.169-.210)	**.210** (.180-.230)	**.300** (.270-.320)	**.390** (.360-.440)	**.500** (.430-.530)	692
	07-08	**.171** (.160-.182)	**.180** (.170-.190)	**.270** (.250-.290)	**.350** (.330-.390)	**.430** (.390-.460)	589
	09-10	**.162** (.148-.177)	**.180** (.160-.200)	**.270** (.250-.280)	**.350** (.330-.400)	**.450** (.390-.510)	544
Non-Hispanic whites	99-00	**.170** (.153-.188)	**.200** (.170-.220)	**.290** (.260-.330)	**.400** (.360-.420)	**.450** (.420-.480)	801
	01-02	**.159** (.147-.172)	**.180** (.170-.200)	**.270** (.250-.290)	**.360** (.330-.390)	**.430** (.390-.460)	1114
	03-04	**.146** (.135-.158)	**.160** (.150-.170)	**.260** (.240-.280)	**.360** (.330-.380)	**.410** (.380-.460)	1074
	05-06	**.150** (.140-.160)	**.170** (.160-.180)	**.260** (.240-.270)	**.350** (.320-.380)	**.420** (.390-.450)	1041
	07-08	**.138** (.130-.147)	**.150** (.130-.160)	**.240** (.220-.260)	**.320** (.300-.360)	**.390** (.350-.440)	1095
	09-10	**.139** (.130-.149)	**.150** (.140-.170)	**.240** (.210-.250)	**.330** (.300-.360)	**.400** (.360-.430)	1225

Limit of detection (LOD, see Data Analysis section) for Survey years 99-00, 01-02, 03-04, 05-06, 07-08, and 09-10 are 0.02, 0.02, 0.02, 0.015, 0.015, and 0.015 respectively.

Biomonitoring Summary: http://www.cdc.gov/biomonitoring/Thallium_BiomonitoringSummary.html
Factsheet: http://www.cdc.gov/biomonitoring/Thallium_FactSheet.html

Urinary Thallium (creatinine corrected)

Geometric mean and selected percentiles of urine concentrations (in µg/g of creatinine) for the U.S. population from the National Health and Nutrition Examination Survey.

	Survey years	Geometric mean (95% conf. interval)	Selected percentiles (95% confidence interval) 50th	75th	90th	95th	Sample size
Total	99-00	**.166** (.159-.173)	**.168** (.162-.176)	**.224** (.217-.233)	**.297** (.273-.319)	**.366** (.338-.387)	2413
	01-02	**.156** (.151-.162)	**.156** (.148-.164)	**.215** (.208-.222)	**.287** (.278-.300)	**.349** (.337-.365)	2652
	03-04	**.154** (.149-.158)	**.153** (.146-.160)	**.214** (.203-.222)	**.286** (.274-.304)	**.350** (.328-.369)	2558
	05-06	**.155** (.149-.162)	**.150** (.140-.160)	**.210** (.200-.220)	**.300** (.290-.320)	**.370** (.350-.390)	2576
	07-08	**.152** (.147-.158)	**.150** (.140-.160)	**.210** (.200-.220)	**.290** (.280-.310)	**.370** (.350-.380)	2627
	09-10	**.153** (.145-.162)	**.150** (.140-.160)	**.220** (.200-.230)	**.300** (.280-.320)	**.370** (.350-.400)	2848
Age group							
6-11 years	99-00	**.221** (.197-.248)	**.222** (.196-.236)	**.297** (.229-.356)	**.375** (.318-.469)	**.424** (.356-.600)	336
	01-02	**.211** (.198-.226)	**.207** (.198-.221)	**.286** (.260-.321)	**.370** (.333-.402)	**.412** (.389-.456)	362
	03-04	**.223** (.208-.238)	**.216** (.198-.229)	**.306** (.280-.346)	**.412** (.346-.458)	**.458** (.400-.532)	290
	05-06	**.215** (.200-.231)	**.210** (.190-.250)	**.310** (.270-.320)	**.360** (.320-.410)	**.430** (.360-.510)	355
	07-08	**.217** (.201-.234)	**.220** (.210-.240)	**.310** (.270-.340)	**.410** (.370-.440)	**.470** (.410-.540)	394
	09-10	**.219** (.199-.241)	**.220** (.200-.260)	**.300** (.280-.340)	**.400** (.350-.440)	**.500** (.390-.600)	378
12-19 years	99-00	**.153** (.146-.160)	**.154** (.146-.162)	**.205** (.191-.219)	**.258** (.231-.278)	**.321** (.265-.364)	697
	01-02	**.143** (.137-.150)	**.145** (.135-.152)	**.196** (.184-.207)	**.272** (.250-.289)	**.312** (.299-.333)	746
	03-04	**.143** (.135-.152)	**.146** (.131-.155)	**.194** (.179-.208)	**.254** (.234-.280)	**.304** (.271-.327)	725
	05-06	**.140** (.133-.147)	**.140** (.130-.150)	**.190** (.170-.200)	**.240** (.220-.270)	**.290** (.250-.310)	701
	07-08	**.134** (.124-.145)	**.140** (.120-.150)	**.190** (.180-.220)	**.260** (.220-.300)	**.300** (.250-.370)	376
	09-10	**.140** (.127-.155)	**.140** (.120-.160)	**.190** (.170-.220)	**.260** (.220-.310)	**.310** (.260-.370)	451
20 years and older	99-00	**.162** (.153-.171)	**.167** (.155-.176)	**.218** (.207-.230)	**.286** (.271-.300)	**.364** (.325-.389)	1380
	01-02	**.153** (.147-.159)	**.153** (.144-.161)	**.210** (.200-.217)	**.278** (.263-.293)	**.343** (.313-.362)	1544
	03-04	**.148** (.144-.153)	**.149** (.141-.156)	**.206** (.192-.215)	**.273** (.258-.289)	**.333** (.306-.353)	1543
	05-06	**.152** (.145-.159)	**.150** (.140-.160)	**.210** (.200-.210)	**.290** (.270-.310)	**.370** (.350-.400)	1520
	07-08	**.149** (.143-.156)	**.150** (.140-.160)	**.210** (.200-.220)	**.280** (.270-.300)	**.350** (.330-.380)	1857
	09-10	**.150** (.142-.157)	**.150** (.140-.160)	**.210** (.200-.220)	**.290** (.270-.320)	**.370** (.330-.400)	2019
Gender							
Males	99-00	**.154** (.147-.161)	**.156** (.149-.164)	**.202** (.192-.214)	**.269** (.254-.297)	**.338** (.300-.364)	1200
	01-02	**.146** (.140-.153)	**.148** (.142-.157)	**.192** (.184-.204)	**.260** (.246-.278)	**.307** (.291-.342)	1312
	03-04	**.140** (.135-.146)	**.142** (.134-.149)	**.188** (.180-.198)	**.264** (.235-.286)	**.317** (.287-.350)	1281
	05-06	**.140** (.134-.147)	**.140** (.130-.140)	**.190** (.180-.200)	**.270** (.240-.300)	**.320** (.300-.340)	1271
	07-08	**.138** (.131-.145)	**.130** (.130-.140)	**.190** (.180-.210)	**.270** (.250-.290)	**.330** (.300-.360)	1327
	09-10	**.138** (.129-.148)	**.130** (.130-.150)	**.190** (.170-.210)	**.270** (.240-.300)	**.330** (.290-.360)	1398
Females	99-00	**.178** (.167-.189)	**.182** (.169-.197)	**.244** (.226-.259)	**.317** (.281-.366)	**.380** (.333-.462)	1213
	01-02	**.167** (.158-.176)	**.167** (.153-.180)	**.233** (.217-.250)	**.313** (.282-.348)	**.378** (.348-.402)	1340
	03-04	**.167** (.162-.173)	**.166** (.157-.177)	**.235** (.222-.243)	**.313** (.286-.333)	**.368** (.340-.412)	1277
	05-06	**.171** (.162-.181)	**.170** (.160-.180)	**.230** (.220-.250)	**.330** (.300-.360)	**.430** (.370-.490)	1305
	07-08	**.167** (.163-.173)	**.170** (.160-.180)	**.230** (.230-.240)	**.320** (.300-.340)	**.390** (.360-.430)	1300
	09-10	**.170** (.161-.178)	**.170** (.160-.180)	**.230** (.220-.250)	**.340** (.310-.370)	**.420** (.370-.470)	1450

Biomonitoring Summary: http://www.cdc.gov/biomonitoring/Thallium_BiomonitoringSummary.html
Factsheet: http://www.cdc.gov/biomonitoring/Thallium_FactSheet.html

Urinary Thallium (creatinine corrected)

Geometric mean and selected percentiles of urine concentrations (in µg/g of creatinine) for the U.S. population from the National Health and Nutrition Examination Survey.

	Survey years	Geometric mean (95% conf. interval)	Selected percentiles (95% confidence interval) 50th	75th	90th	95th	Sample size
Race/ethnicity							
Mexican Americans	99-00	**.158** (.147-.170)	**.160** (.148-.176)	**.213** (.200-.237)	**.282** (.266-.304)	**.343** (.306-.389)	861
	01-02	**.156** (.145-.169)	**.155** (.145-.167)	**.204** (.191-.221)	**.286** (.250-.317)	**.361** (.301-.424)	674
	03-04	**.159** (.148-.170)	**.157** (.143-.172)	**.211** (.187-.241)	**.293** (.273-.324)	**.369** (.326-.422)	618
	05-06	**.149** (.139-.158)	**.150** (.140-.160)	**.200** (.180-.210)	**.270** (.240-.290)	**.320** (.280-.370)	652
	07-08	**.151** (.143-.160)	**.160** (.130-.170)	**.200** (.190-.220)	**.270** (.250-.280)	**.320** (.290-.370)	515
	09-10	**.154** (.141-.167)	**.150** (.140-.170)	**.210** (.180-.230)	**.280** (.250-.330)	**.360** (.310-.430)	613
Non-Hispanic blacks	99-00	**.142** (.133-.152)	**.140** (.129-.151)	**.200** (.184-.214)	**.278** (.244-.307)	**.383** (.286-.462)	561
	01-02	**.138** (.128-.150)	**.136** (.125-.146)	**.194** (.170-.212)	**.256** (.238-.278)	**.328** (.271-.387)	657
	03-04	**.133** (.122-.145)	**.128** (.119-.143)	**.185** (.171-.200)	**.255** (.237-.269)	**.323** (.267-.377)	723
	05-06	**.137** (.128-.145)	**.130** (.130-.140)	**.190** (.180-.200)	**.240** (.220-.290)	**.320** (.270-.370)	692
	07-08	**.125** (.118-.132)	**.130** (.120-.130)	**.170** (.160-.180)	**.230** (.210-.260)	**.280** (.250-.330)	589
	09-10	**.128** (.120-.137)	**.120** (.110-.130)	**.180** (.160-.210)	**.250** (.230-.280)	**.310** (.270-.350)	544
Non-Hispanic whites	99-00	**.169** (.160-.179)	**.173** (.167-.181)	**.227** (.215-.240)	**.300** (.272-.329)	**.364** (.333-.377)	801
	01-02	**.161** (.155-.167)	**.161** (.153-.171)	**.222** (.214-.231)	**.292** (.278-.304)	**.348** (.330-.383)	1114
	03-04	**.154** (.148-.160)	**.153** (.143-.162)	**.214** (.200-.223)	**.283** (.271-.304)	**.333** (.313-.363)	1074
	05-06	**.156** (.148-.164)	**.150** (.140-.160)	**.210** (.200-.230)	**.300** (.280-.320)	**.360** (.330-.400)	1041
	07-08	**.154** (.146-.164)	**.160** (.140-.170)	**.220** (.210-.230)	**.300** (.280-.320)	**.370** (.340-.390)	1095
	09-10	**.155** (.145-.166)	**.150** (.140-.170)	**.220** (.200-.240)	**.310** (.280-.330)	**.380** (.340-.410)	1225

Biomonitoring Summary: http://www.cdc.gov/biomonitoring/Thallium_BiomonitoringSummary.html
Factsheet: http://www.cdc.gov/biomonitoring/Thallium_FactSheet.html

Urinary Tungsten

Geometric mean and selected percentiles of urine concentrations (in µg/L) for the U.S. population from the National Health and Nutrition Examination Survey.

	Survey years	Geometric mean (95% conf. interval)	Selected percentiles (95% confidence interval) 50th	75th	90th	95th	Sample size
Total	99-00	**.093** (.087-.100)	**.090** (.080-.090)	**.180** (.160-.190)	**.320** (.280-.370)	**.500** (.430-.550)	2338
	01-02	**.082** (.073-.092)	**.070** (.060-.090)	**.160** (.140-.180)	**.300** (.260-.350)	**.460** (.370-.560)	2652
	03-04	**.071** (.064-.078)	**.070** (.060-.080)	**.130** (.120-.140)	**.270** (.230-.300)	**.400** (.330-.480)	2558
	05-06	**.085** (.079-.092)	**.090** (.080-.090)	**.170** (.150-.180)	**.310** (.280-.340)	**.470** (.400-.520)	2576
	07-08	**.099** (.093-.105)	**.100** (.090-.110)	**.190** (.180-.200)	**.360** (.320-.380)	**.500** (.440-.570)	2627
	09-10	**.081** (.075-.087)	**.080** (.070-.090)	**.160** (.150-.170)	**.310** (.270-.330)	**.460** (.370-.540)	2847
Age group							
6-11 years	99-00	**.158** (.123-.204)	**.160** (.120-.220)	**.270** (.220-.350)	**.510** (.380-.560)	**.620** (.510-.950)	320
	01-02	**.137** (.110-.170)	**.140** (.110-.170)	**.260** (.200-.350)	**.460** (.360-.690)	**.770** (.510-1.53)	363
	03-04	**.130** (.111-.151)	**.140** (.120-.150)	**.240** (.190-.290)	**.410** (.290-.500)	**.500** (.370-.630)	290
	05-06	**.142** (.121-.166)	**.140** (.120-.170)	**.230** (.210-.290)	**.430** (.330-.610)	**.640** (.440-.850)	355
	07-08	**.160** (.138-.186)	**.150** (.130-.170)	**.310** (.240-.390)	**.510** (.450-.580)	**.810** (.560-1.15)	394
	09-10	**.151** (.126-.180)	**.150** (.110-.200)	**.310** (.230-.400)	**.560** (.400-.770)	**.770** (.560-1.04)	378
12-19 years	99-00	**.113** (.097-.132)	**.110** (.090-.130)	**.210** (.180-.250)	**.360** (.310-.440)	**.530** (.380-.800)	679
	01-02	**.113** (.095-.135)	**.110** (.090-.130)	**.210** (.180-.260)	**.400** (.310-.520)	**.570** (.430-.790)	744
	03-04	**.105** (.090-.122)	**.100** (.090-.120)	**.190** (.160-.230)	**.350** (.290-.460)	**.530** (.350-1.00)	725
	05-06	**.131** (.108-.158)	**.130** (.100-.160)	**.250** (.200-.310)	**.430** (.360-.530)	**.620** (.410-1.04)	701
	07-08	**.150** (.136-.167)	**.160** (.140-.180)	**.250** (.220-.290)	**.470** (.350-.660)	**.660** (.430-1.05)	376
	09-10	**.101** (.089-.115)	**.100** (.080-.120)	**.210** (.190-.240)	**.360** (.300-.460)	**.540** (.440-.650)	451
20 years and older	99-00	**.084** (.078-.091)	**.080** (.070-.090)	**.160** (.130-.180)	**.280** (.260-.320)	**.450** (.360-.520)	1339
	01-02	**.073** (.065-.082)	**.060** (.050-.070)	**.140** (.110-.160)	**.260** (.210-.310)	**.380** (.310-.490)	1545
	03-04	**.062** (.056-.068)	**.060** (.050-.070)	**.110** (.100-.120)	**.210** (.180-.250)	**.360** (.270-.430)	1543
	05-06	**.075** (.070-.081)	**.080** (.070-.080)	**.140** (.130-.160)	**.250** (.220-.310)	**.410** (.340-.470)	1520
	07-08	**.088** (.081-.095)	**.090** (.080-.100)	**.170** (.150-.190)	**.310** (.280-.340)	**.450** (.390-.500)	1857
	09-10	**.073** (.068-.079)	**.080** (.070-.080)	**.150** (.130-.160)	**.260** (.230-.300)	**.370** (.330-.460)	2018
Gender							
Males	99-00	**.107** (.096-.120)	**.100** (.090-.120)	**.210** (.190-.230)	**.390** (.310-.470)	**.530** (.470-.650)	1160
	01-02	**.088** (.074-.105)	**.080** (.060-.100)	**.170** (.140-.220)	**.330** (.260-.390)	**.490** (.380-.580)	1307
	03-04	**.081** (.071-.093)	**.080** (.070-.090)	**.140** (.130-.170)	**.300** (.250-.340)	**.430** (.340-.560)	1281
	05-06	**.095** (.090-.101)	**.090** (.080-.100)	**.180** (.160-.190)	**.340** (.310-.380)	**.480** (.420-.610)	1271
	07-08	**.109** (.102-.116)	**.110** (.100-.130)	**.210** (.190-.240)	**.380** (.350-.450)	**.550** (.450-.660)	1327
	09-10	**.090** (.082-.098)	**.090** (.080-.100)	**.170** (.150-.190)	**.320** (.290-.350)	**.500** (.410-.550)	1398
Females	99-00	**.082** (.077-.087)	**.070** (.060-.080)	**.150** (.130-.160)	**.270** (.240-.300)	**.400** (.320-.470)	1178
	01-02	**.076** (.069-.084)	**.060** (.060-.080)	**.150** (.120-.170)	**.280** (.230-.330)	**.430** (.340-.560)	1345
	03-04	**.062** (.056-.069)	**.060** (.050-.070)	**.110** (.100-.120)	**.220** (.190-.250)	**.370** (.270-.460)	1277
	05-06	**.077** (.069-.085)	**.080** (.070-.090)	**.160** (.150-.170)	**.280** (.250-.320)	**.440** (.350-.510)	1305
	07-08	**.090** (.083-.098)	**.090** (.080-.100)	**.170** (.160-.180)	**.300** (.270-.350)	**.460** (.420-.550)	1300
	09-10	**.074** (.067-.081)	**.070** (.070-.080)	**.150** (.130-.170)	**.280** (.240-.330)	**.400** (.320-.600)	1449

Limit of detection (LOD, see Data Analysis section) for Survey years 99-00, 01-02, 03-04, 05-06, 07-08, and 09-10 are 0.04, 0.04, 0.04, 0.021, 0.021, and 0.021 respectively.

Biomonitoring Summary: http://www.cdc.gov/biomonitoring/Tungsten_BiomonitoringSummary.html

Urinary Tungsten

Geometric mean and selected percentiles of urine concentrations (in µg/L) for the U.S. population from the National Health and Nutrition Examination Survey.

	Survey years	Geometric mean (95% conf. interval)	Selected percentiles (95% confidence interval) 50th	75th	90th	95th	Sample size
Race/ethnicity							
Mexican Americans	99-00	**.113** (.095-.133)	**.110** (.090-.130)	**.200** (.160-.250)	**.400** (.300-.520)	**.550** (.420-.830)	790
	01-02	**.101** (.093-.109)	**.100** (.090-.110)	**.190** (.170-.210)	**.370** (.310-.430)	**.570** (.450-.670)	680
	03-04	**.086** (.073-.100)	**.080** (.070-.100)	**.170** (.120-.220)	**.360** (.230-.620)	**.640** (.410-.800)	618
	05-06	**.102** (.088-.118)	**.100** (.080-.110)	**.200** (.170-.220)	**.450** (.310-.650)	**.730** (.510-1.04)	652
	07-08	**.106** (.084-.135)	**.110** (.080-.150)	**.210** (.170-.270)	**.400** (.250-.670)	**.580** (.400-1.12)	515
	09-10	**.099** (.089-.109)	**.090** (.090-.100)	**.200** (.170-.220)	**.380** (.340-.470)	**.540** (.480-.580)	613
Non-Hispanic blacks	99-00	**.113** (.101-.126)	**.100** (.090-.130)	**.210** (.180-.250)	**.370** (.290-.460)	**.560** (.420-.810)	562
	01-02	**.096** (.080-.116)	**.090** (.070-.120)	**.160** (.130-.250)	**.310** (.270-.400)	**.460** (.400-.590)	649
	03-04	**.092** (.082-.104)	**.090** (.080-.110)	**.160** (.150-.180)	**.300** (.250-.330)	**.470** (.340-.550)	723
	05-06	**.101** (.088-.116)	**.110** (.090-.120)	**.190** (.160-.220)	**.320** (.280-.370)	**.450** (.340-.650)	692
	07-08	**.120** (.099-.146)	**.120** (.090-.160)	**.240** (.200-.290)	**.390** (.340-.440)	**.540** (.460-.690)	589
	09-10	**.093** (.086-.100)	**.100** (.090-.110)	**.180** (.160-.200)	**.290** (.270-.340)	**.400** (.320-.590)	543
Non-Hispanic whites	99-00	**.092** (.084-.100)	**.080** (.070-.100)	**.180** (.160-.200)	**.320** (.270-.380)	**.470** (.380-.550)	802
	01-02	**.076** (.066-.088)	**.060** (.050-.080)	**.150** (.120-.180)	**.290** (.230-.360)	**.430** (.330-.620)	1117
	03-04	**.065** (.058-.073)	**.060** (.060-.070)	**.120** (.100-.130)	**.230** (.190-.290)	**.380** (.320-.410)	1074
	05-06	**.082** (.075-.089)	**.080** (.080-.090)	**.160** (.140-.180)	**.300** (.250-.340)	**.430** (.380-.480)	1041
	07-08	**.093** (.087-.101)	**.100** (.090-.110)	**.180** (.160-.190)	**.330** (.290-.370)	**.470** (.410-.570)	1095
	09-10	**.077** (.070-.083)	**.080** (.070-.090)	**.150** (.140-.170)	**.280** (.250-.310)	**.400** (.330-.540)	1225

Limit of detection (LOD, see Data Analysis section) for Survey years 99-00, 01-02, 03-04, 05-06, 07-08, and 09-10 are 0.04, 0.04, 0.04, 0.021, 0.021, and 0.021 respectively.

Biomonitoring Summary: http://www.cdc.gov/biomonitoring/Tungsten_BiomonitoringSummary.html

Urinary Tungsten (creatinine corrected)

Geometric mean and selected percentiles of urine concentrations (in µg/g of creatinine) for the U.S. population from the National Health and Nutrition Examination Survey.

	Survey years	Geometric mean (95% conf. interval)	Selected percentiles (95% confidence interval) 50th	75th	90th	95th	Sample size
Total	99-00	**.087** (.080-.095)	**.080** (.075-.086)	**.146** (.136-.158)	**.270** (.206-.333)	**.383** (.302-.459)	2338
	01-02	**.078** (.069-.087)	**.074** (.064-.084)	**.138** (.122-.154)	**.255** (.216-.300)	**.359** (.315-.436)	2651
	03-04	**.070** (.063-.078)	**.065** (.059-.074)	**.117** (.107-.133)	**.215** (.179-.253)	**.333** (.255-.439)	2558
	05-06	**.084** (.080-.089)	**.080** (.080-.080)	**.140** (.130-.150)	**.250** (.210-.290)	**.350** (.290-.440)	2576
	07-08	**.103** (.096-.111)	**.100** (.090-.110)	**.170** (.160-.190)	**.320** (.290-.360)	**.470** (.410-.540)	2627
	09-10	**.086** (.080-.093)	**.080** (.070-.090)	**.150** (.130-.160)	**.270** (.230-.310)	**.400** (.340-.470)	2847
Age group							
6-11 years	99-00	**.174** (.150-.201)	**.169** (.136-.198)	**.293** (.216-.333)	**.439** (.331-.667)	**.667** (.452-.880)	320
	01-02	**.168** (.144-.197)	**.158** (.139-.190)	**.275** (.231-.326)	**.412** (.333-.554)	**.634** (.436-1.28)	363
	03-04	**.151** (.131-.174)	**.144** (.119-.167)	**.250** (.205-.283)	**.333** (.278-.484)	**.484** (.333-.739)	290
	05-06	**.175** (.152-.202)	**.160** (.140-.180)	**.270** (.220-.320)	**.560** (.330-.790)	**.790** (.470-1.18)	355
	07-08	**.209** (.185-.235)	**.200** (.180-.240)	**.340** (.290-.370)	**.540** (.450-.660)	**.780** (.620-.910)	394
	09-10	**.205** (.177-.239)	**.200** (.160-.230)	**.330** (.290-.440)	**.620** (.450-.850)	**.930** (.690-1.08)	378
12-19 years	99-00	**.084** (.078-.091)	**.079** (.074-.084)	**.138** (.124-.158)	**.231** (.180-.287)	**.339** (.237-.465)	679
	01-02	**.081** (.071-.092)	**.081** (.072-.091)	**.148** (.122-.167)	**.250** (.208-.301)	**.359** (.272-.431)	744
	03-04	**.075** (.065-.086)	**.071** (.061-.082)	**.122** (.098-.148)	**.197** (.167-.308)	**.379** (.197-.582)	725
	05-06	**.101** (.086-.117)	**.100** (.080-.110)	**.170** (.140-.200)	**.300** (.200-.370)	**.370** (.300-.770)	701
	07-08	**.118** (.104-.132)	**.120** (.110-.130)	**.180** (.160-.210)	**.340** (.230-.550)	**.530** (.310-.810)	376
	09-10	**.094** (.085-.106)	**.090** (.080-.110)	**.150** (.120-.180)	**.270** (.210-.290)	**.370** (.280-.500)	451
20 years and older	99-00	**.080** (.072-.089)	**.075** (.067-.082)	**.130** (.116-.146)	**.218** (.179-.301)	**.347** (.245-.426)	1339
	01-02	**.070** (.063-.079)	**.067** (.058-.075)	**.119** (.099-.139)	**.216** (.176-.267)	**.333** (.253-.431)	1544
	03-04	**.063** (.057-.071)	**.059** (.053-.065)	**.105** (.094-.117)	**.181** (.155-.215)	**.279** (.217-.370)	1543
	05-06	**.075** (.071-.079)	**.070** (.070-.080)	**.120** (.110-.130)	**.210** (.200-.220)	**.290** (.240-.360)	1520
	07-08	**.093** (.087-.101)	**.090** (.080-.100)	**.160** (.140-.170)	**.280** (.250-.310)	**.420** (.350-.490)	1857
	09-10	**.078** (.072-.084)	**.070** (.070-.080)	**.130** (.120-.140)	**.220** (.190-.260)	**.340** (.270-.400)	2018
Gender							
Males	99-00	**.083** (.074-.094)	**.073** (.063-.086)	**.146** (.126-.165)	**.279** (.198-.386)	**.439** (.329-.605)	1160
	01-02	**.071** (.060-.083)	**.065** (.056-.077)	**.125** (.098-.153)	**.255** (.203-.306)	**.364** (.300-.431)	1306
	03-04	**.068** (.059-.079)	**.062** (.054-.071)	**.111** (.098-.133)	**.216** (.170-.284)	**.341** (.240-.500)	1281
	05-06	**.078** (.073-.083)	**.070** (.070-.080)	**.130** (.120-.150)	**.240** (.200-.300)	**.360** (.300-.440)	1271
	07-08	**.097** (.090-.106)	**.090** (.090-.110)	**.170** (.150-.180)	**.310** (.280-.360)	**.440** (.410-.480)	1327
	09-10	**.082** (.074-.089)	**.070** (.070-.080)	**.140** (.120-.150)	**.250** (.220-.310)	**.440** (.320-.500)	1398
Females	99-00	**.091** (.085-.098)	**.084** (.080-.091)	**.145** (.136-.158)	**.265** (.200-.301)	**.339** (.300-.381)	1178
	01-02	**.085** (.077-.094)	**.083** (.075-.091)	**.143** (.130-.161)	**.258** (.216-.317)	**.353** (.317-.538)	1345
	03-04	**.072** (.065-.079)	**.069** (.063-.078)	**.121** (.108-.138)	**.211** (.176-.237)	**.333** (.261-.439)	1277
	05-06	**.090** (.085-.096)	**.080** (.080-.090)	**.150** (.140-.160)	**.250** (.210-.290)	**.350** (.260-.530)	1305
	07-08	**.109** (.100-.118)	**.100** (.090-.120)	**.180** (.160-.210)	**.330** (.290-.360)	**.520** (.400-.590)	1300
	09-10	**.091** (.083-.100)	**.090** (.080-.090)	**.150** (.130-.170)	**.270** (.210-.340)	**.380** (.330-.450)	1449

Biomonitoring Summary: http://www.cdc.gov/biomonitoring/Tungsten_BiomonitoringSummary.html

Urinary Tungsten (creatinine corrected)

Geometric mean and selected percentiles of urine concentrations (in µg/g of creatinine) for the U.S. population from the National Health and Nutrition Examination Survey.

	Survey years	Geometric mean (95% conf. interval)	Selected percentiles (95% confidence interval) 50th	75th	90th	95th	Sample size
Race/ethnicity							
Mexican Americans	99-00	**.106** (.093-.120)	**.100** (.086-.116)	**.184** (.152-.214)	**.329** (.267-.392)	**.497** (.354-.727)	790
	01-02	**.098** (.090-.108)	**.089** (.081-.100)	**.164** (.143-.187)	**.294** (.258-.375)	**.555** (.410-.797)	679
	03-04	**.079** (.065-.096)	**.073** (.054-.093)	**.136** (.103-.197)	**.300** (.233-.426)	**.482** (.344-.823)	618
	05-06	**.096** (.083-.111)	**.090** (.080-.090)	**.160** (.150-.180)	**.330** (.250-.420)	**.670** (.360-.890)	652
	07-08	**.106** (.083-.137)	**.110** (.080-.140)	**.200** (.160-.270)	**.400** (.260-.710)	**.610** (.310-1.12)	515
	09-10	**.103** (.096-.111)	**.100** (.090-.110)	**.180** (.160-.200)	**.330** (.290-.390)	**.480** (.390-.540)	613
Non-Hispanic blacks	99-00	**.073** (.064-.083)	**.071** (.061-.081)	**.124** (.109-.154)	**.201** (.188-.222)	**.360** (.217-.465)	562
	01-02	**.066** (.056-.077)	**.060** (.049-.079)	**.109** (.090-.125)	**.199** (.153-.285)	**.340** (.250-.414)	649
	03-04	**.066** (.059-.074)	**.067** (.055-.075)	**.105** (.095-.120)	**.186** (.150-.224)	**.317** (.214-.358)	723
	05-06	**.073** (.065-.082)	**.070** (.060-.080)	**.120** (.110-.140)	**.210** (.190-.260)	**.320** (.260-.390)	692
	07-08	**.088** (.076-.102)	**.090** (.070-.100)	**.150** (.140-.160)	**.240** (.220-.300)	**.380** (.270-.630)	589
	09-10	**.074** (.067-.080)	**.070** (.060-.080)	**.120** (.110-.140)	**.210** (.180-.250)	**.310** (.220-.410)	543
Non-Hispanic whites	99-00	**.091** (.083-.100)	**.082** (.077-.088)	**.150** (.136-.169)	**.279** (.200-.354)	**.385** (.302-.462)	802
	01-02	**.078** (.068-.088)	**.073** (.061-.085)	**.139** (.121-.157)	**.253** (.209-.308)	**.353** (.286-.453)	1117
	03-04	**.069** (.060-.078)	**.063** (.057-.071)	**.116** (.104-.133)	**.199** (.167-.237)	**.299** (.222-.439)	1074
	05-06	**.085** (.080-.090)	**.080** (.080-.090)	**.140** (.130-.160)	**.240** (.210-.280)	**.340** (.280-.420)	1041
	07-08	**.104** (.096-.114)	**.100** (.090-.110)	**.180** (.160-.200)	**.310** (.280-.360)	**.460** (.390-.530)	1095
	09-10	**.086** (.078-.094)	**.080** (.070-.090)	**.140** (.130-.160)	**.250** (.200-.310)	**.370** (.330-.400)	1225

Biomonitoring Summary: **http://www.cdc.gov/biomonitoring/Tungsten_BiomonitoringSummary.html**

Urinary Uranium

Geometric mean and selected percentiles of urine concentrations (in µg/L) for the U.S. population from the National Health and Nutrition Examination Survey.

	Survey years	Geometric mean (95% conf. interval)	Selected percentiles (95% confidence interval) 50th	75th	90th	95th	Sample size
Total	99-00	**.008** (.007-.009)	**.007** (.006-.008)	**.013** (.010-.017)	**.027** (.021-.038)	**.046** (.037-.056)	2464
	01-02	**.009** (.007-.010)	**.008** (.007-.009)	**.014** (.012-.018)	**.030** (.023-.039)	**.046** (.034-.062)	2690
	03-04	**.008** (.007-.008)	**.007** (.006-.007)	**.011** (.010-.013)	**.021** (.017-.026)	**.031** (.026-.037)	2557
	05-06	**.006** (.005-.006)	**.005** (.005-.006)	**.010** (.009-.012)	**.019** (.016-.022)	**.033** (.023-.041)	2576
	07-08	**.007** (.006-.008)	**.007** (.005-.008)	**.013** (.011-.015)	**.024** (.018-.033)	**.039** (.026-.057)	2627
	09-10	**.007** (.006-.008)	**.007** (.006-.008)	**.013** (.011-.015)	**.022** (.019-.030)	**.036** (.029-.044)	2848
Age group							
6-11 years	99-00	**.009** (.007-.011)	**.007** (.006-.009)	**.013** (.009-.022)	**.032** (.019-.048)	**.048** (.033-.066)	340
	01-02	**.008** (.007-.010)	**.008** (.006-.010)	**.014** (.010-.020)	**.026** (.020-.036)	**.040** (.025-.049)	368
	03-04	**.008** (.007-.009)	**.007** (.006-.009)	**.012** (.009-.016)	**.020** (.016-.026)	**.028** (.020-.039)	289
	05-06	**.006** (.005-.007)	**.005** (.004-.007)	**.010** (.008-.011)	**.015** (.012-.031)	**.031** (.013-.051)	355
	07-08	**.007** (.006-.008)	**.006** (.005-.008)	**.012** (.009-.016)	**.021** (.016-.027)	**.030** (.022-.039)	394
	09-10	**.006** (.005-.008)	**.006** (.005-.008)	**.012** (.009-.014)	**.018** (.013-.034)	**.033** (.016-.052)	378
12-19 years	99-00	**.009** (.008-.011)	**.009** (.008-.010)	**.015** (.012-.018)	**.026** (.020-.043)	**.044** (.028-.072)	719
	01-02	**.010** (.008-.012)	**.010** (.008-.012)	**.017** (.013-.023)	**.030** (.022-.042)	**.042** (.027-.088)	762
	03-04	**.010** (.009-.011)	**.009** (.008-.010)	**.015** (.012-.018)	**.028** (.023-.036)	**.038** (.036-.053)	725
	05-06	**.007** (.006-.008)	**.007** (.006-.008)	**.013** (.011-.015)	**.023** (.018-.032)	**.034** (.027-.045)	701
	07-08	**.009** (.007-.011)	**.008** (.007-.011)	**.016** (.014-.020)	**.029** (.022-.056)	**.056** (.027-.156)	376
	09-10	**.008** (.007-.010)	**.008** (.006-.010)	**.014** (.011-.018)	**.023** (.020-.038)	**.040** (.024-.059)	451
20 years and older	99-00	**.008** (.006-.009)	**.007** (.005-.008)	**.013** (.010-.017)	**.027** (.021-.040)	**.046** (.036-.056)	1405
	01-02	**.009** (.007-.010)	**.008** (.007-.009)	**.014** (.012-.017)	**.031** (.022-.040)	**.046** (.034-.065)	1560
	03-04	*	**.006** (.005-.007)	**.011** (.009-.012)	**.019** (.016-.026)	**.029** (.024-.038)	1543
	05-06	**.006** (.005-.006)	**.005** (.005-.006)	**.010** (.008-.012)	**.019** (.015-.022)	**.032** (.022-.041)	1520
	07-08	**.007** (.005-.008)	**.006** (.005-.008)	**.013** (.010-.015)	**.024** (.017-.035)	**.039** (.026-.052)	1857
	09-10	**.007** (.006-.008)	**.007** (.006-.008)	**.013** (.011-.015)	**.023** (.019-.030)	**.036** (.029-.044)	2019
Gender							
Males	99-00	**.009** (.008-.011)	**.008** (.007-.010)	**.015** (.012-.021)	**.036** (.024-.046)	**.053** (.040-.067)	1227
	01-02	**.009** (.008-.011)	**.009** (.007-.010)	**.015** (.013-.021)	**.033** (.024-.045)	**.047** (.035-.065)	1335
	03-04	**.008** (.007-.009)	**.007** (.006-.008)	**.013** (.011-.016)	**.023** (.019-.027)	**.031** (.027-.035)	1280
	05-06	**.006** (.006-.007)	**.006** (.005-.006)	**.011** (.009-.012)	**.019** (.015-.022)	**.030** (.021-.043)	1271
	07-08	**.007** (.006-.009)	**.007** (.006-.009)	**.014** (.013-.016)	**.026** (.021-.037)	**.046** (.030-.056)	1327
	09-10	**.007** (.006-.009)	**.007** (.006-.009)	**.014** (.012-.017)	**.024** (.020-.034)	**.040** (.032-.046)	1398
Females	99-00	**.007** (.006-.008)	**.006** (.005-.007)	**.012** (.009-.015)	**.023** (.016-.033)	**.036** (.026-.050)	1237
	01-02	**.008** (.007-.010)	**.008** (.006-.009)	**.014** (.011-.017)	**.027** (.019-.037)	**.041** (.029-.063)	1355
	03-04	*	**.006** (.005-.007)	**.010** (.009-.011)	**.018** (.013-.027)	**.031** (.022-.039)	1277
	05-06	**.005** (.005-.006)	**.005** (.004-.006)	**.010** (.008-.011)	**.019** (.016-.023)	**.034** (.025-.040)	1305
	07-08	**.006** (.005-.008)	**.006** (.005-.007)	**.011** (.009-.015)	**.024** (.016-.033)	**.035** (.022-.067)	1300
	09-10	**.007** (.006-.008)	**.007** (.006-.008)	**.012** (.011-.014)	**.022** (.017-.029)	**.033** (.023-.045)	1450

Limit of detection (LOD, see Data Analysis section) for Survey years 99-00, 01-02, 03-04, 05-06, 07-08, and 09-10 are 0.004, 0.004, 0.005, 0.002, 0.002, and 0.002 respectively.
* Not calculated: proportion of results below limit of detection was too high to provide a valid result.

Biomonitoring Summary: http://www.cdc.gov/biomonitoring/Uranium_BiomonitoringSummary.html

Urinary Uranium

Geometric mean and selected percentiles of urine concentrations (in µg/L) for the U.S. population from the National Health and Nutrition Examination Survey.

	Survey years	Geometric mean (95% conf. interval)	Selected percentiles (95% confidence interval) 50th	75th	90th	95th	Sample size
Race/ethnicity							
Mexican Americans	99-00	**.017** (.012-.023)	**.016** (.011-.021)	**.033** (.020-.054)	**.060** (.040-.127)	**.114** (.054-.279)	883
	01-02	**.013** (.010-.016)	**.012** (.009-.016)	**.022** (.017-.030)	**.040** (.031-.054)	**.055** (.046-.069)	683
	03-04	**.014** (.011-.017)	**.013** (.009-.018)	**.024** (.017-.034)	**.041** (.028-.073)	**.064** (.039-.158)	618
	05-06	**.008** (.007-.009)	**.009** (.007-.010)	**.014** (.013-.017)	**.025** (.021-.033)	**.042** (.028-.051)	652
	07-08	**.009** (.008-.011)	**.009** (.008-.010)	**.017** (.014-.022)	**.032** (.026-.039)	**.047** (.032-.073)	515
	09-10	**.009** (.008-.011)	**.009** (.008-.011)	**.018** (.015-.021)	**.034** (.027-.040)	**.046** (.039-.055)	613
Non-Hispanic blacks	99-00	**.009** (.007-.011)	**.008** (.006-.010)	**.014** (.010-.020)	**.028** (.018-.049)	**.052** (.030-.067)	568
	01-02	**.008** (.007-.009)	**.008** (.007-.009)	**.012** (.011-.015)	**.021** (.017-.027)	**.030** (.023-.037)	667
	03-04	**.008** (.008-.009)	**.007** (.007-.008)	**.012** (.011-.013)	**.021** (.017-.027)	**.031** (.023-.045)	722
	05-06	**.006** (.005-.007)	**.006** (.005-.007)	**.010** (.009-.011)	**.016** (.014-.020)	**.023** (.018-.031)	692
	07-08	**.007** (.006-.009)	**.007** (.006-.008)	**.013** (.010-.016)	**.024** (.016-.038)	**.038** (.025-.055)	589
	09-10	**.008** (.007-.010)	**.008** (.007-.010)	**.014** (.012-.016)	**.027** (.017-.044)	**.044** (.027-.074)	544
Non-Hispanic whites	99-00	**.007** (.006-.009)	**.007** (.006-.007)	**.012** (.009-.016)	**.023** (.017-.037)	**.043** (.027-.051)	822
	01-02	**.008** (.007-.009)	**.007** (.006-.009)	**.013** (.011-.016)	**.026** (.019-.035)	**.037** (.029-.050)	1132
	03-04	*	**.006** (.005-.007)	**.010** (.009-.012)	**.018** (.015-.023)	**.027** (.020-.036)	1074
	05-06	**.005** (.005-.006)	**.005** (.004-.006)	**.010** (.008-.012)	**.018** (.014-.022)	**.033** (.021-.043)	1041
	07-08	**.006** (.005-.008)	**.006** (.005-.008)	**.013** (.009-.016)	**.023** (.015-.039)	**.038** (.022-.086)	1095
	09-10	**.006** (.005-.007)	**.006** (.005-.007)	**.012** (.011-.014)	**.021** (.017-.027)	**.032** (.023-.041)	1225

Limit of detection (LOD, see Data Analysis section) for Survey years 99-00, 01-02, 03-04, 05-06, 07-08, and 09-10 are 0.004, 0.004, 0.005, 0.002, 0.002, and 0.002 respectively.
* Not calculated: proportion of results below limit of detection was too high to provide a valid result.

Biomonitoring Summary: **http://www.cdc.gov/biomonitoring/Uranium_BiomonitoringSummary.html**

Urinary Uranium (creatinine corrected)

Geometric mean and selected percentiles of urine concentrations (in µg/g of creatinine) for the U.S. population from the National Health and Nutrition Examination Survey.

	Survey years	Geometric mean (95% conf. interval)	Selected percentiles (95% confidence interval) 50th	75th	90th	95th	Sample size
Total	99-00	**.007** (.006-.009)	**.007** (.006-.009)	**.013** (.010-.016)	**.024** (.019-.030)	**.034** (.027-.053)	2464
	01-02	**.008** (.007-.010)	**.007** (.006-.009)	**.014** (.011-.018)	**.026** (.020-.034)	**.040** (.028-.058)	2689
	03-04	**.008** (.007-.008)	**.007** (.006-.008)	**.012** (.010-.014)	**.021** (.017-.025)	**.029** (.023-.039)	2557
	05-06	**.006** (.005-.006)	**.005** (.005-.006)	**.009** (.008-.010)	**.017** (.014-.020)	**.026** (.020-.039)	2576
	07-08	**.007** (.006-.009)	**.006** (.005-.008)	**.012** (.009-.016)	**.024** (.016-.038)	**.038** (.025-.065)	2627
	09-10	**.007** (.006-.008)	**.007** (.006-.008)	**.012** (.010-.013)	**.020** (.017-.024)	**.029** (.024-.035)	2848
Age group							
6-11 years	99-00	**.009** (.007-.012)	**.008** (.006-.011)	**.015** (.010-.024)	**.030** (.016-.044)	**.037** (.030-.077)	340
	01-02	**.010** (.008-.011)	**.010** (.008-.012)	**.015** (.013-.019)	**.027** (.018-.032)	**.033** (.027-.048)	368
	03-04	**.009** (.008-.010)	**.008** (.007-.010)	**.013** (.011-.017)	**.024** (.016-.039)	**.033** (.022-.050)	289
	05-06	**.007** (.006-.008)	**.006** (.005-.008)	**.010** (.008-.014)	**.018** (.013-.035)	**.034** (.018-.048)	355
	07-08	**.009** (.007-.011)	**.008** (.007-.010)	**.014** (.010-.022)	**.026** (.016-.053)	**.042** (.023-.065)	394
	09-10	**.009** (.007-.010)	**.008** (.007-.010)	**.014** (.011-.016)	**.020** (.015-.030)	**.029** (.022-.033)	378
12-19 years	99-00	**.007** (.006-.008)	**.006** (.005-.008)	**.010** (.009-.014)	**.020** (.014-.030)	**.030** (.019-.074)	719
	01-02	**.007** (.006-.008)	**.007** (.006-.008)	**.012** (.009-.016)	**.020** (.015-.026)	**.026** (.020-.042)	762
	03-04	**.007** (.006-.008)	**.006** (.005-.007)	**.010** (.008-.013)	**.019** (.015-.027)	**.034** (.022-.041)	725
	05-06	**.006** (.005-.007)	**.005** (.005-.006)	**.009** (.007-.012)	**.017** (.013-.022)	**.023** (.019-.026)	701
	07-08	**.007** (.006-.009)	**.006** (.005-.008)	**.012** (.009-.016)	**.025** (.013-.050)	**.033** (.022-.077)	376
	09-10	**.007** (.006-.009)	**.007** (.006-.008)	**.011** (.010-.013)	**.017** (.014-.021)	**.025** (.017-.038)	451
20 years and older	99-00	**.007** (.006-.009)	**.007** (.006-.009)	**.013** (.010-.016)	**.024** (.019-.029)	**.034** (.025-.051)	1405
	01-02	**.008** (.007-.010)	**.007** (.006-.009)	**.014** (.011-.019)	**.027** (.020-.039)	**.043** (.030-.063)	1559
	03-04	*	**.007** (.006-.008)	**.012** (.010-.014)	**.020** (.017-.024)	**.028** (.022-.038)	1543
	05-06	**.006** (.005-.006)	**.005** (.005-.006)	**.009** (.008-.010)	**.016** (.014-.019)	**.026** (.020-.039)	1520
	07-08	**.007** (.006-.008)	**.006** (.005-.008)	**.012** (.009-.016)	**.024** (.016-.036)	**.037** (.025-.065)	1857
	09-10	**.007** (.006-.008)	**.007** (.006-.008)	**.012** (.010-.013)	**.020** (.017-.025)	**.029** (.024-.036)	2019
Gender							
Males	99-00	**.007** (.006-.009)	**.006** (.005-.008)	**.011** (.009-.015)	**.021** (.017-.028)	**.035** (.024-.056)	1227
	01-02	**.007** (.006-.008)	**.007** (.006-.008)	**.012** (.010-.015)	**.022** (.018-.028)	**.033** (.025-.047)	1334
	03-04	**.007** (.006-.008)	**.006** (.006-.007)	**.010** (.009-.012)	**.019** (.015-.024)	**.026** (.019-.039)	1280
	05-06	**.005** (.005-.005)	**.005** (.004-.005)	**.008** (.007-.009)	**.014** (.013-.016)	**.021** (.016-.031)	1271
	07-08	**.007** (.005-.008)	**.006** (.005-.007)	**.012** (.009-.015)	**.022** (.016-.031)	**.032** (.024-.056)	1327
	09-10	**.007** (.006-.008)	**.006** (.006-.007)	**.011** (.010-.012)	**.019** (.015-.023)	**.028** (.022-.033)	1398
Females	99-00	**.008** (.007-.010)	**.007** (.006-.010)	**.013** (.010-.017)	**.025** (.019-.033)	**.034** (.027-.054)	1237
	01-02	**.009** (.008-.011)	**.009** (.007-.011)	**.016** (.012-.021)	**.029** (.021-.042)	**.045** (.031-.067)	1355
	03-04	*	**.008** (.007-.009)	**.013** (.011-.016)	**.022** (.018-.028)	**.031** (.025-.041)	1277
	05-06	**.006** (.006-.007)	**.006** (.005-.006)	**.010** (.009-.011)	**.019** (.015-.024)	**.035** (.022-.041)	1305
	07-08	**.008** (.006-.009)	**.007** (.006-.008)	**.013** (.010-.018)	**.026** (.016-.043)	**.042** (.024-.083)	1300
	09-10	**.008** (.007-.009)	**.008** (.006-.009)	**.013** (.011-.015)	**.021** (.017-.027)	**.031** (.024-.041)	1450

* Not calculated: proportion of results below limit of detection was too high to provide a valid result.

Biomonitoring Summary: http://www.cdc.gov/biomonitoring/Uranium_BiomonitoringSummary.html

Urinary Uranium (creatinine corrected)

Geometric mean and selected percentiles of urine concentrations (in µg/g of creatinine) for the U.S. population from the National Health and Nutrition Examination Survey.

	Survey years	Geometric mean (95% conf. interval)	Selected percentiles (95% confidence interval) 50th	75th	90th	95th	Sample size
Race/ethnicity							
Mexican Americans	99-00	**.015** (.011-.022)	**.015** (.011-.020)	**.029** (.016-.058)	**.059** (.027-.146)	**.100** (.042-.270)	883
	01-02	**.012** (.010-.016)	**.012** (.009-.016)	**.021** (.015-.028)	**.033** (.024-.053)	**.050** (.034-.080)	682
	03-04	**.013** (.010-.016)	**.013** (.009-.017)	**.022** (.016-.029)	**.035** (.026-.051)	**.051** (.034-.061)	618
	05-06	**.008** (.007-.009)	**.007** (.006-.008)	**.013** (.010-.015)	**.022** (.016-.031)	**.035** (.025-.060)	652
	07-08	**.009** (.008-.012)	**.009** (.007-.011)	**.017** (.014-.021)	**.031** (.021-.048)	**.042** (.027-.097)	515
	09-10	**.010** (.009-.011)	**.010** (.008-.011)	**.016** (.013-.018)	**.026** (.022-.030)	**.036** (.030-.044)	613
Non-Hispanic blacks	99-00	**.006** (.004-.007)	**.005** (.004-.006)	**.008** (.006-.013)	**.017** (.011-.029)	**.028** (.018-.048)	568
	01-02	**.005** (.005-.006)	**.005** (.005-.006)	**.008** (.007-.010)	**.013** (.011-.014)	**.017** (.014-.029)	667
	03-04	**.006** (.005-.006)	**.005** (.005-.006)	**.009** (.008-.009)	**.013** (.012-.015)	**.018** (.014-.024)	722
	05-06	**.004** (.004-.005)	**.004** (.003-.005)	**.006** (.006-.007)	**.011** (.009-.015)	**.017** (.012-.021)	692
	07-08	**.005** (.005-.006)	**.005** (.004-.006)	**.009** (.007-.011)	**.014** (.011-.017)	**.018** (.014-.041)	589
	09-10	**.006** (.005-.008)	**.006** (.005-.007)	**.010** (.008-.012)	**.018** (.013-.021)	**.023** (.018-.044)	544
Non-Hispanic whites	99-00	**.007** (.006-.009)	**.007** (.006-.009)	**.012** (.010-.015)	**.021** (.017-.027)	**.030** (.024-.050)	822
	01-02	**.008** (.007-.009)	**.007** (.006-.009)	**.013** (.011-.016)	**.025** (.018-.032)	**.034** (.025-.051)	1132
	03-04	*	**.007** (.006-.008)	**.011** (.010-.013)	**.019** (.015-.024)	**.027** (.020-.040)	1074
	05-06	**.006** (.005-.006)	**.005** (.005-.006)	**.009** (.008-.010)	**.016** (.013-.020)	**.024** (.019-.039)	1041
	07-08	**.007** (.006-.009)	**.006** (.005-.008)	**.012** (.009-.019)	**.025** (.015-.043)	**.039** (.024-.081)	1095
	09-10	**.007** (.006-.008)	**.007** (.006-.008)	**.012** (.010-.013)	**.018** (.015-.024)	**.028** (.021-.035)	1225

* Not calculated: proportion of results below limit of detection was too high to provide a valid result.

Biomonitoring Summary: http://www.cdc.gov/biomonitoring/Uranium_BiomonitoringSummary.html

Urinary Butyl paraben

Geometric mean and selected percentiles of urine concentrations (in µg/L) for the U.S. population from the National Health and Nutrition Examination Survey.

	Survey years	Geometric mean (95% conf. interval)	Selected percentiles (95% confidence interval) 50th	75th	90th	95th	Sample size
Total	05-06	*	**< LOD**	**1.30** (.800-1.80)	**6.60** (4.80-10.7)	**19.6** (16.4-26.7)	2548
	07-08	*	**< LOD**	**1.10** (.900-1.50)	**9.00** (6.20-11.4)	**20.9** (15.2-30.1)	2604
	09-10	*	**< LOD**	**.600** (.500-.800)	**5.10** (3.40-8.10)	**17.1** (10.5-29.4)	2749
Age group							
6-11 years	05-06	*	**< LOD**	**.400** (.200-.600)	**1.90** (.800-5.80)	**7.50** (1.70-18.5)	356
	07-08	*	**< LOD**	**.300** (.200-.500)	**1.30** (.900-1.70)	**3.80** (1.00-114)	389
	09-10	*	**< LOD**	**.300** (<LOD-.400)	**.900** (.500-1.70)	**2.20** (1.30-5.10)	415
12-19 years	05-06	*	**.200** (<LOD-.400)	**.900** (.600-1.80)	**9.60** (4.10-16.1)	**24.6** (14.5-33.4)	702
	07-08	*	**< LOD**	**.800** (.600-1.40)	**6.20** (2.50-11.5)	**15.8** (6.20-33.2)	401
	09-10	*	**< LOD**	**.500** (.400-.900)	**5.70** (1.40-15.7)	**18.6** (5.70-39.0)	420
20 years and older	05-06	*	**< LOD**	**1.70** (1.00-2.20)	**6.80** (4.80-11.7)	**20.5** (15.8-28.3)	1490
	07-08	*	**< LOD**	**1.50** (1.00-1.90)	**9.80** (6.70-13.4)	**24.6** (16.5-32.0)	1814
	09-10	*	**< LOD**	**.700** (.500-1.00)	**6.00** (3.70-10.0)	**18.7** (11.9-35.1)	1914
Gender							
Males	05-06	*	**< LOD**	**.300** (<LOD-.300)	**1.10** (.600-2.00)	**3.20** (1.90-5.50)	1270
	07-08	*	**< LOD**	**.200** (.200-.300)	**1.00** (.700-1.50)	**3.60** (2.00-7.20)	1294
	09-10	*	**< LOD**	**< LOD**	**.800** (.500-1.20)	**2.70** (1.50-12.0)	1399
Females	05-06	**.904** (.760-1.07)	**.500** (.400-.700)	**3.70** (2.90-4.80)	**17.4** (11.7-20.8)	**34.9** (28.2-41.1)	1278
	07-08	**.926** (.825-1.04)	**.500** (.400-.700)	**3.90** (3.00-4.70)	**17.9** (12.1-20.5)	**34.8** (25.2-52.1)	1310
	09-10	*	**.300** (.200-.400)	**1.80** (1.30-2.30)	**11.3** (6.60-18.8)	**31.8** (17.7-49.4)	1350
Race/ethnicity							
Mexican Americans	05-06	*	**.200** (<LOD-.300)	**1.10** (.700-2.30)	**11.3** (6.40-15.6)	**27.3** (16.5-35.9)	637
	07-08	*	**< LOD**	**.900** (.500-1.30)	**6.80** (3.50-13.2)	**22.7** (13.2-30.7)	531
	09-10	*	**< LOD**	**.900** (.400-1.30)	**8.30** (4.50-13.8)	**18.8** (13.8-35.1)	566
Non-Hispanic blacks	05-06	*	**.300** (.200-.400)	**2.10** (1.00-3.50)	**9.10** (4.40-25.0)	**31.8** (10.1-82.6)	678
	07-08	*	**.200** (<LOD-.300)	**1.10** (.700-1.70)	**7.10** (4.20-9.90)	**20.0** (8.90-31.3)	597
	09-10	*	**< LOD**	**.500** (.300-.900)	**3.10** (1.40-7.30)	**9.00** (5.60-16.7)	516
Non-Hispanic whites	05-06	*	**< LOD**	**1.00** (.700-1.80)	**5.80** (4.00-9.00)	**17.7** (11.7-25.9)	1038
	07-08	*	**< LOD**	**1.20** (.800-1.60)	**9.10** (5.00-13.3)	**19.6** (12.1-32.0)	1077
	09-10	*	**< LOD**	**.700** (.500-.900)	**4.90** (2.70-9.20)	**17.7** (9.20-34.5)	1206

Limit of detection (LOD, see Data Analysis section) for Survey years 05-06, 07-08, and 09-10 are 0.2, 0.2, and 0.2 respectively.
< LOD means less than the limit of detection, which may vary for some chemicals by year and by individual sample.
* Not calculated: proportion of results below limit of detection was too high to provide a valid result.

Biomonitoring Summary: http://www.cdc.gov/biomonitoring/Parabens_BiomonitoringSummary.html
Factsheet: http://www.cdc.gov/biomonitoring/Parabens_FactSheet.html

Urinary Butyl paraben (creatinine corrected)

Geometric mean and selected percentiles of urine concentrations (in µg/g of creatinine) for the U.S. population from the National Health and Nutrition Examination Survey.

	Survey years	Geometric mean (95% conf. interval)	Selected percentiles (95% confidence interval) 50th	75th	90th	95th	Sample size
Total	05-06	*	**< LOD**	**1.16** (.910-1.62)	**7.82** (6.26-11.2)	**21.2** (16.8-27.3)	2548
	07-08	*	**< LOD**	**1.16** (.880-1.59)	**9.83** (6.51-13.5)	**23.1** (18.1-30.4)	2604
	09-10	*	**< LOD**	**.710** (.610-.930)	**5.58** (3.55-10.0)	**18.0** (10.2-27.6)	2749
Age group							
6-11 years	05-06	*	**< LOD**	**.440** (.370-.660)	**1.65** (1.00-5.29)	**7.92** (1.64-30.5)	356
	07-08	*	**< LOD**	**.540** (.410-.720)	**1.24** (.920-2.80)	**5.91** (.930-76.0)	389
	09-10	*	**< LOD**	**.530** (<LOD-.630)	**1.36** (.740-1.89)	**2.74** (1.56-6.58)	415
12-19 years	05-06	*	**.190** (<LOD-.250)	**.690** (.490-1.20)	**6.67** (3.60-11.2)	**18.7** (9.52-28.9)	702
	07-08	*	**< LOD**	**.670** (.450-.930)	**3.70** (1.80-7.41)	**9.64** (6.00-18.7)	401
	09-10	*	**< LOD**	**.550** (.420-.790)	**3.75** (1.21-11.9)	**13.8** (3.75-23.7)	420
20 years and older	05-06	*	**< LOD**	**1.49** (1.06-1.96)	**9.07** (6.55-14.8)	**25.5** (17.9-30.4)	1490
	07-08	*	**< LOD**	**1.52** (1.04-2.21)	**12.4** (8.35-15.1)	**27.5** (21.2-36.8)	1814
	09-10	*	**< LOD**	**.830** (.640-1.19)	**7.06** (3.79-11.9)	**22.0** (13.1-31.2)	1914
Gender							
Males	05-06	*	**< LOD**	**.290** (<LOD-.350)	**.830** (.570-1.16)	**2.28** (1.43-2.91)	1270
	07-08	*	**< LOD**	**.290** (.260-.340)	**.830** (.620-1.36)	**2.40** (1.56-4.85)	1294
	09-10	*	**< LOD**	**< LOD**	**.700** (.560-1.09)	**2.50** (1.18-5.87)	1399
Females	05-06	**1.06** (.914-1.24)	**.750** (.600-.860)	**4.44** (3.01-6.26)	**19.8** (13.5-25.7)	**34.7** (26.9-42.7)	1278
	07-08	**1.11** (.984-1.25)	**.670** (.550-.920)	**4.44** (3.02-6.12)	**20.6** (14.6-25.9)	**39.4** (28.1-77.7)	1310
	09-10	*	**.450** (.420-.520)	**2.17** (1.67-3.10)	**13.5** (8.75-22.5)	**28.2** (18.4-45.7)	1350
Race/ethnicity							
Mexican Americans	05-06	*	**.240** (<LOD-.290)	**1.20** (.760-1.68)	**9.15** (5.36-15.2)	**20.3** (15.8-29.2)	637
	07-08	*	**< LOD**	**.810** (.610-1.07)	**8.57** (3.28-12.0)	**23.0** (12.7-29.5)	531
	09-10	*	**< LOD**	**.930** (.570-1.76)	**8.01** (4.77-10.5)	**17.0** (10.5-27.1)	566
Non-Hispanic blacks	05-06	*	**.220** (.180-.270)	**1.46** (.750-2.64)	**8.18** (3.65-17.9)	**21.0** (10.9-51.3)	678
	07-08	*	**.220** (<LOD-.280)	**.900** (.570-1.27)	**5.21** (3.13-6.18)	**12.1** (6.14-21.4)	597
	09-10	*	**< LOD**	**.390** (.270-.590)	**2.63** (.890-4.71)	**7.00** (3.26-11.9)	516
Non-Hispanic whites	05-06	*	**< LOD**	**1.12** (.850-1.65)	**6.93** (5.21-9.91)	**20.9** (15.4-27.3)	1038
	07-08	*	**< LOD**	**1.18** (.810-2.09)	**10.7** (6.32-14.8)	**26.8** (15.1-40.4)	1077
	09-10	*	**< LOD**	**.780** (.620-1.13)	**6.34** (3.44-12.6)	**20.8** (9.12-33.2)	1206

< LOD means less than the limit of detection for the urine levels not corrected for creatinine.
* Not calculated: proportion of results below limit of detection was too high to provide a valid result.

Biomonitoring Summary: http://www.cdc.gov/biomonitoring/Parabens_BiomonitoringSummary.html
Factsheet: http://www.cdc.gov/biomonitoring/Parabens_FactSheet.html

Urinary Ethyl paraben

Geometric mean and selected percentiles of urine concentrations (in µg/L) for the U.S. population from the National Health and Nutrition Examination Survey.

	Survey years	Geometric mean (95% conf. interval)	Selected percentiles (95% confidence interval) 50th	75th	90th	95th	Sample size
Total	05-06	*	< LOD	**4.80** (3.40-6.00)	**26.2** (19.4-31.9)	**57.2** (40.3-83.4)	2548
	07-08	*	< LOD	**5.40** (3.80-6.90)	**29.3** (21.9-42.4)	**72.1** (54.6-91.8)	2604
	09-10	*	**1.10** (<LOD-1.20)	**6.60** (4.90-8.30)	**37.6** (24.4-51.3)	**82.6** (60.3-119)	2749
Age group							
6-11 years	05-06	*	< LOD	< LOD	**2.60** (1.70-4.70)	**9.90** (2.80-30.7)	356
	07-08	*	< LOD	**1.70** (1.10-2.60)	**4.60** (2.30-36.7)	**35.6** (2.60-282)	389
	09-10	*	< LOD	**1.50** (1.20-1.80)	**3.70** (2.50-5.30)	**11.5** (4.50-18.4)	415
12-19 years	05-06	*	< LOD	**2.30** (1.30-3.20)	**11.3** (7.90-24.1)	**38.0** (17.7-122)	702
	07-08	*	< LOD	**3.00** (2.30-4.90)	**23.0** (7.30-60.3)	**60.3** (12.5-159)	401
	09-10	*	< LOD	**3.50** (2.10-5.90)	**33.8** (19.4-49.6)	**83.2** (34.5-284)	420
20 years and older	05-06	*	< LOD	**5.90** (4.60-8.10)	**30.4** (22.3-38.6)	**69.5** (48.1-89.5)	1490
	07-08	*	**1.10** (<LOD-1.40)	**6.20** (4.60-9.20)	**34.7** (22.8-50.4)	**77.4** (51.4-120)	1814
	09-10	*	**1.30** (1.10-1.50)	**8.40** (6.00-10.6)	**45.0** (29.1-60.3)	**91.4** (62.6-129)	1914
Gender							
Males	05-06	*	< LOD	**1.90** (1.20-3.00)	**8.90** (5.80-13.7)	**25.2** (15.7-29.2)	1270
	07-08	*	< LOD	**2.40** (1.50-3.00)	**11.2** (6.60-15.3)	**28.3** (15.3-42.8)	1294
	09-10	*	< LOD	**2.20** (1.90-2.70)	**10.4** (7.40-19.1)	**36.4** (19.1-61.3)	1399
Females	05-06	*	**1.30** (<LOD-2.20)	**10.0** (7.50-13.2)	**42.7** (32.3-62.8)	**98.7** (74.7-147)	1278
	07-08	*	**1.80** (1.40-2.50)	**10.1** (6.90-16.5)	**62.0** (38.2-80.8)	**123** (78.5-259)	1310
	09-10	**3.84** (3.35-4.41)	**2.00** (1.60-2.40)	**15.4** (12.5-18.4)	**62.4** (45.7-78.7)	**138** (92.2-211)	1350
Race/ethnicity							
Mexican Americans	05-06	*	< LOD	**3.70** (1.90-6.10)	**24.0** (11.6-37.7)	**55.6** (40.3-120)	637
	07-08	*	< LOD	**4.10** (2.90-5.90)	**23.6** (12.8-30.1)	**48.3** (31.0-65.2)	531
	09-10	*	< LOD	**4.30** (2.60-7.70)	**31.0** (21.5-46.3)	**65.5** (46.3-92.2)	566
Non-Hispanic blacks	05-06	*	**1.00** (<LOD-1.50)	**5.70** (3.70-9.80)	**31.3** (20.4-52.1)	**92.3** (41.5-166)	678
	07-08	*	**1.00** (<LOD-1.50)	**7.90** (3.90-15.8)	**39.9** (24.0-63.4)	**97.2** (58.3-256)	597
	09-10	**3.62** (3.11-4.22)	**1.90** (1.60-2.40)	**11.1** (8.10-17.5)	**58.6** (33.8-93.7)	**166** (66.0-297)	516
Non-Hispanic whites	05-06	*	< LOD	**4.80** (3.10-6.10)	**24.0** (15.5-32.3)	**54.7** (36.4-86.8)	1038
	07-08	*	**1.00** (<LOD-1.30)	**5.20** (3.50-7.10)	**27.2** (18.0-40.8)	**67.1** (42.8-98.1)	1077
	09-10	*	**1.10** (<LOD-1.20)	**6.50** (4.50-8.50)	**37.5** (22.7-52.7)	**78.7** (49.7-138)	1206

Limit of detection (LOD, see Data Analysis section) for Survey years 05-06, 07-08, and 09-10 are 1.0, 1.0, and 1.0 respectively.
< LOD means less than the limit of detection, which may vary for some chemicals by year and by individual sample.
* Not calculated: proportion of results below limit of detection was too high to provide a valid result.

Biomonitoring Summary: http://www.cdc.gov/biomonitoring/Parabens_BiomonitoringSummary.html
Factsheet: http://www.cdc.gov/biomonitoring/Parabens_FactSheet.html

Urinary Ethyl paraben (creatinine corrected)

Geometric mean and selected percentiles of urine concentrations (in µg/g of creatinine) for the U.S. population from the National Health and Nutrition Examination Survey.

	Survey years	Geometric mean (95% conf. interval)	Selected percentiles (95% confidence interval) 50th	75th	90th	95th	Sample size
Total	05-06	*	< LOD	**4.61** (3.39-6.30)	**27.1** (19.1-34.0)	**66.5** (46.5-84.2)	2548
	07-08	*	< LOD	**5.56** (4.31-7.56)	**32.7** (22.5-50.2)	**80.0** (53.2-117)	2604
	09-10	*	**1.65** (<LOD-1.82)	**6.11** (4.90-7.96)	**36.6** (28.0-47.2)	**94.6** (67.3-127)	2749
Age group							
6-11 years	05-06	*	< LOD	< LOD	**4.18** (1.91-10.2)	**13.5** (4.18-29.0)	356
	07-08	*	< LOD	**2.54** (1.82-3.30)	**6.13** (3.26-34.3)	**34.3** (3.30-207)	389
	09-10	*	< LOD	**2.37** (1.97-3.09)	**5.00** (3.74-6.67)	**10.1** (6.11-27.3)	415
12-19 years	05-06	*	< LOD	**1.94** (1.29-2.65)	**10.9** (3.57-20.2)	**32.0** (14.1-57.8)	702
	07-08	*	< LOD	**2.93** (1.93-3.97)	**12.9** (4.60-37.9)	**37.9** (8.79-110)	401
	09-10	*	< LOD	**3.11** (2.22-5.94)	**26.2** (13.0-33.9)	**52.4** (28.8-177)	420
20 years and older	05-06	*	< LOD	**6.36** (4.63-7.92)	**32.4** (23.7-46.0)	**76.8** (57.3-97.9)	1490
	07-08	*	**1.58** (<LOD-1.97)	**6.97** (4.94-10.9)	**38.5** (24.8-61.9)	**94.1** (53.6-146)	1814
	09-10	*	**1.82** (1.61-2.13)	**8.08** (5.92-10.7)	**43.7** (33.1-56.0)	**106** (78.1-137)	1914
Gender							
Males	05-06	*	< LOD	**1.82** (1.48-2.15)	**6.38** (3.55-9.95)	**15.5** (10.2-22.3)	1270
	07-08	*	< LOD	**2.14** (1.67-3.03)	**8.61** (5.54-12.4)	**21.7** (11.7-32.7)	1294
	09-10	*	< LOD	**2.45** (2.22-2.92)	**8.63** (6.14-13.7)	**28.8** (14.4-43.2)	1399
Females	05-06	*	**2.09** (<LOD-2.60)	**12.7** (8.45-16.2)	**57.3** (40.7-75.2)	**107** (82.9-141)	1278
	07-08	*	**2.63** (2.09-3.55)	**13.9** (9.09-22.5)	**66.1** (40.9-95.1)	**130** (78.8-203)	1310
	09-10	**4.63** (4.13-5.19)	**2.90** (2.47-3.43)	**16.8** (13.7-22.0)	**71.9** (53.4-98.8)	**173** (121-227)	1350
Race/ethnicity							
Mexican Americans	05-06	*	< LOD	**3.49** (2.09-5.23)	**23.6** (11.8-33.2)	**68.5** (32.1-107)	637
	07-08	*	< LOD	**4.44** (2.86-5.81)	**22.5** (15.9-27.2)	**47.7** (26.7-74.2)	531
	09-10	*	< LOD	**4.40** (3.09-6.31)	**30.0** (16.0-36.9)	**59.1** (36.9-87.2)	566
Non-Hispanic blacks	05-06	*	**.970** (<LOD-1.14)	**4.48** (2.90-6.07)	**22.0** (14.1-36.8)	**47.5** (33.7-106)	678
	07-08	*	**1.18** (<LOD-1.47)	**6.37** (3.20-10.9)	**38.8** (16.5-53.1)	**90.7** (42.6-172)	597
	09-10	**2.62** (2.14-3.21)	**1.57** (1.20-2.05)	**7.35** (5.15-9.97)	**44.9** (22.0-75.0)	**98.8** (60.0-162)	516
Non-Hispanic whites	05-06	*	< LOD	**4.73** (3.38-6.58)	**27.5** (16.2-38.4)	**70.6** (46.0-91.2)	1038
	07-08	*	**1.48** (<LOD-1.82)	**5.71** (3.74-8.97)	**32.3** (20.0-53.6)	**75.7** (40.5-121)	1077
	09-10	*	**1.79** (<LOD-2.03)	**6.63** (4.84-9.18)	**37.7** (27.7-53.4)	**114** (62.8-164)	1206

< LOD means less than the limit of detection for the urine levels not corrected for creatinine.
* Not calculated: proportion of results below limit of detection was too high to provide a valid result.

Biomonitoring Summary: http://www.cdc.gov/biomonitoring/Parabens_BiomonitoringSummary.html
Factsheet: http://www.cdc.gov/biomonitoring/Parabens_FactSheet.html

Urinary Methyl paraben

Geometric mean and selected percentiles of urine concentrations (in µg/L) for the U.S. population from the National Health and Nutrition Examination Survey.

	Survey years	Geometric mean (95% conf. interval)	Selected percentiles (95% confidence interval) 50th	75th	90th	95th	Sample size
Total	05-06	**56.4** (46.9-67.9)	**63.5** (47.9-74.5)	**216** (168-282)	**560** (432-777)	**974** (827-1110)	2548
	07-08	**60.1** (49.6-72.8)	**59.8** (47.5-73.3)	**204** (171-253)	**544** (444-675)	**902** (746-1100)	2604
	09-10	**57.1** (51.0-63.9)	**55.1** (46.7-62.6)	**213** (179-259)	**621** (546-716)	**1010** (919-1170)	2749
Age group							
6-11 years	05-06	**33.5** (25.6-43.8)	**25.0** (19.4-35.3)	**86.7** (61.5-153)	**289** (238-868)	**1560** (389-2090)	356
	07-08	**35.2** (25.0-49.6)	**30.1** (19.6-38.5)	**94.0** (46.6-214)	**340** (218-527)	**651** (430-995)	389
	09-10	**33.9** (27.4-41.9)	**26.5** (20.4-33.3)	**79.4** (59.0-126)	**415** (163-849)	**873** (477-1230)	415
12-19 years	05-06	**53.8** (43.9-66.0)	**53.5** (39.4-65.7)	**192** (163-264)	**491** (380-720)	**901** (571-1210)	702
	07-08	**64.9** (50.3-83.8)	**66.3** (48.0-96.7)	**221** (180-276)	**521** (424-789)	**971** (574-1390)	401
	09-10	**53.9** (40.9-70.9)	**56.5** (39.4-75.6)	**176** (122-291)	**716** (399-934)	**984** (805-1210)	420
20 years and older	05-06	**60.3** (48.7-74.7)	**70.0** (57.1-85.3)	**225** (177-322)	**602** (439-814)	**974** (827-1110)	1490
	07-08	**63.0** (51.8-76.7)	**64.0** (51.4-79.8)	**210** (172-267)	**558** (447-678)	**916** (743-1190)	1814
	09-10	**61.0** (53.5-69.6)	**59.1** (50.6-72.6)	**239** (188-276)	**625** (566-711)	**1010** (909-1270)	1914
Gender							
Males	05-06	**29.8** (24.8-35.8)	**23.7** (19.5-29.4)	**97.6** (78.1-121)	**299** (229-355)	**491** (385-743)	1270
	07-08	**33.6** (27.3-41.3)	**27.4** (20.8-39.9)	**93.5** (71.0-137)	**312** (260-407)	**598** (460-734)	1294
	09-10	**31.7** (27.6-36.4)	**25.3** (20.6-30.6)	**94.0** (76.8-122)	**366** (275-482)	**727** (569-919)	1399
Females	05-06	**104** (80.8-135)	**137** (93.0-168)	**356** (279-427)	**842** (660-974)	**1110** (956-1330)	1278
	07-08	**105** (90.2-123)	**116** (95.2-139)	**315** (248-424)	**683** (558-901)	**1140** (917-1420)	1310
	09-10	**100** (87.9-114)	**106** (90.9-125)	**349** (271-405)	**812** (696-931)	**1230** (1010-1550)	1350
Race/ethnicity							
Mexican Americans	05-06	**78.2** (61.0-100)	**86.3** (64.7-121)	**301** (233-349)	**742** (474-896)	**1100** (896-1170)	637
	07-08	**80.5** (66.0-98.2)	**87.0** (63.4-117)	**283** (222-348)	**630** (533-791)	**1030** (773-1240)	531
	09-10	**82.9** (68.6-100)	**85.5** (73.0-99.8)	**293** (231-385)	**821** (536-1120)	**1580** (855-2360)	566
Non-Hispanic blacks	05-06	**174** (133-229)	**216** (150-306)	**616** (465-789)	**1180** (1010-1480)	**1690** (1210-2880)	678
	07-08	**152** (135-171)	**159** (135-194)	**483** (421-552)	**1080** (938-1350)	**1720** (1210-2700)	597
	09-10	**191** (171-213)	**223** (170-288)	**678** (533-849)	**1470** (1220-2010)	**2340** (1650-2750)	516
Non-Hispanic whites	05-06	**43.8** (36.7-52.3)	**44.3** (36.7-58.2)	**165** (132-209)	**412** (320-520)	**806** (485-974)	1038
	07-08	**48.9** (39.9-59.9)	**47.6** (37.8-62.0)	**158** (129-198)	**430** (301-557)	**671** (524-921)	1077
	09-10	**43.5** (39.4-48.1)	**41.3** (33.5-47.7)	**150** (127-176)	**463** (361-557)	**757** (619-888)	1206

Limit of detection (LOD, see Data Analysis section) for Survey years 05-06, 07-08, and 09-10 are 1.0, 1.0, and 1.0 respectively.

Biomonitoring Summary: http://www.cdc.gov/biomonitoring/Parabens_BiomonitoringSummary.html
Factsheet: http://www.cdc.gov/biomonitoring/Parabens_FactSheet.html

Urinary Methyl paraben (creatinine corrected)

Geometric mean and selected percentiles of urine concentrations (in µg/g of creatinine) for the U.S. population from the National Health and Nutrition Examination Survey.

	Survey years	Geometric mean (95% conf. interval)	Selected percentiles (95% confidence interval) 50th	75th	90th	95th	Sample size
Total	05-06	**55.0** (46.8-64.6)	**58.8** (47.0-73.4)	**221** (170-264)	**527** (426-685)	**902** (753-995)	2548
	07-08	**60.6** (49.8-73.8)	**61.0** (45.3-83.2)	**228** (188-288)	**538** (439-645)	**820** (694-1000)	2604
	09-10	**59.6** (53.5-66.3)	**57.7** (52.3-68.5)	**232** (195-262)	**544** (468-632)	**887** (734-1020)	2749
Age group							
6-11 years	05-06	**36.8** (27.9-48.7)	**26.9** (21.0-36.6)	**108** (55.9-164)	**259** (195-753)	**1540** (313-2510)	356
	07-08	**43.4** (31.3-60.2)	**33.1** (21.8-55.0)	**118** (62.3-197)	**424** (218-668)	**817** (558-1020)	389
	09-10	**44.2** (35.7-54.6)	**32.3** (26.5-42.9)	**110** (67.6-158)	**483** (258-722)	**849** (535-1080)	415
12-19 years	05-06	**40.1** (33.7-47.8)	**41.7** (31.5-56.3)	**160** (129-178)	**362** (280-428)	**549** (434-656)	702
	07-08	**50.5** (40.1-63.7)	**52.8** (36.6-78.1)	**167** (111-245)	**336** (292-395)	**475** (376-623)	401
	09-10	**43.3** (33.5-55.9)	**43.5** (27.5-68.6)	**168** (123-221)	**399** (292-558)	**632** (425-890)	420
20 years and older	05-06	**60.5** (50.5-72.5)	**69.6** (51.5-90.9)	**251** (189-320)	**602** (462-729)	**930** (788-1010)	1490
	07-08	**64.7** (52.9-79.2)	**69.7** (51.1-92.5)	**256** (209-316)	**576** (450-710)	**865** (697-1130)	1814
	09-10	**64.6** (57.0-73.3)	**71.2** (56.6-84.7)	**251** (217-287)	**566** (495-673)	**924** (753-1060)	1914
Gender							
Males	05-06	**23.9** (20.6-27.8)	**21.1** (17.4-25.3)	**72.1** (58.0-89.5)	**209** (160-260)	**368** (262-498)	1270
	07-08	**28.3** (22.8-35.0)	**23.5** (17.2-33.2)	**80.7** (56.9-111)	**257** (181-318)	**444** (386-558)	1294
	09-10	**28.4** (25.1-32.2)	**23.3** (19.3-26.9)	**77.7** (59.6-105)	**260** (212-370)	**516** (412-633)	1399
Females	05-06	**123** (99.3-152)	**147** (111-196)	**377** (319-445)	**788** (676-910)	**1050** (937-1290)	1278
	07-08	**126** (109-145)	**160** (134-182)	**374** (325-422)	**734** (576-879)	**1040** (835-1260)	1310
	09-10	**121** (107-137)	**146** (125-162)	**359** (307-426)	**745** (606-890)	**1080** (924-1390)	1350
Race/ethnicity							
Mexican Americans	05-06	**70.3** (57.1-86.7)	**85.8** (67.2-106)	**249** (191-303)	**515** (431-656)	**870** (656-1080)	637
	07-08	**78.5** (63.6-97.0)	**96.2** (59.4-127)	**293** (245-370)	**627** (541-728)	**831** (729-963)	531
	09-10	**82.3** (71.1-95.2)	**95.2** (76.0-113)	**284** (237-337)	**623** (459-899)	**1130** (657-2120)	566
Non-Hispanic blacks	05-06	**122** (93.0-161)	**161** (98.2-225)	**377** (334-462)	**792** (581-1100)	**1220** (916-1590)	678
	07-08	**118** (105-133)	**134** (111-155)	**356** (311-403)	**757** (573-882)	**1030** (847-1290)	597
	09-10	**138** (118-163)	**165** (127-203)	**403** (356-498)	**928** (729-1120)	**1350** (1080-1680)	516
Non-Hispanic whites	05-06	**46.1** (39.0-54.4)	**45.6** (34.5-59.7)	**170** (142-234)	**447** (339-706)	**814** (640-995)	1038
	07-08	**51.0** (40.5-64.2)	**46.7** (35.8-66.3)	**191** (154-230)	**481** (383-614)	**747** (574-966)	1077
	09-10	**48.9** (44.5-53.7)	**45.9** (39.5-51.9)	**184** (154-215)	**468** (388-560)	**734** (631-924)	1206

Biomonitoring Summary: http://www.cdc.gov/biomonitoring/Parabens_BiomonitoringSummary.html
Factsheet: http://www.cdc.gov/biomonitoring/Parabens_FactSheet.html

Urinary *n*-Propyl paraben

Geometric mean and selected percentiles of urine concentrations (in µg/L) for the U.S. population from the National Health and Nutrition Examination Survey.

	Survey years	Geometric mean (95% conf. interval)	Selected percentiles (95% confidence interval) 50th	75th	90th	95th	Sample size
Total	05-06	**7.91** (6.41-9.77)	**8.70** (5.90-12.4)	**48.9** (36.6-64.8)	**160** (129-200)	**299** (237-354)	2548
	07-08	**7.59** (6.22-9.26)	**7.60** (5.70-10.6)	**44.1** (34.1-55.6)	**144** (115-196)	**268** (231-290)	2604
	09-10	**6.97** (5.96-8.16)	**6.40** (5.10-8.00)	**44.3** (38.6-50.3)	**153** (133-183)	**297** (233-334)	2749
Age group							
6-11 years	05-06	**3.41** (2.43-4.77)	**2.50** (1.60-4.30)	**11.1** (7.10-21.0)	**47.5** (30.0-91.9)	**125** (55.8-383)	356
	07-08	**3.61** (2.39-5.44)	**3.50** (1.90-6.00)	**13.7** (7.60-22.8)	**49.1** (21.7-99.6)	**99.6** (80.4-120)	389
	09-10	**3.28** (2.58-4.17)	**2.70** (2.00-4.00)	**10.2** (7.00-14.0)	**42.9** (28.2-61.6)	**114** (56.8-239)	415
12-19 years	05-06	**8.16** (5.70-11.7)	**8.40** (5.00-13.9)	**46.4** (24.1-68.5)	**165** (96.7-222)	**310** (201-361)	702
	07-08	**8.85** (6.73-11.6)	**7.90** (5.30-12.0)	**49.2** (31.1-62.2)	**193** (100-234)	**271** (195-314)	401
	09-10	**7.01** (5.13-9.58)	**7.90** (4.40-11.0)	**39.7** (24.8-57.8)	**153** (78.1-299)	**367** (136-694)	420
20 years and older	05-06	**8.67** (6.83-11.0)	**11.2** (7.70-14.4)	**55.6** (41.2-75.6)	**172** (130-233)	**302** (237-367)	1490
	07-08	**8.04** (6.56-9.84)	**8.40** (6.10-11.9)	**48.8** (38.3-61.1)	**152** (118-202)	**272** (232-312)	1814
	09-10	**7.58** (6.28-9.15)	**7.50** (5.30-9.90)	**48.9** (42.6-58.0)	**166** (139-199)	**298** (251-334)	1914
Gender							
Males	05-06	**2.96** (2.33-3.77)	**2.30** (1.60-3.10)	**13.8** (9.00-18.0)	**51.7** (39.7-70.9)	**125** (77.2-185)	1270
	07-08	**3.02** (2.47-3.71)	**2.30** (1.70-3.30)	**12.6** (8.40-17.4)	**56.4** (38.9-89.5)	**140** (98.1-209)	1294
	09-10	**2.77** (2.26-3.40)	**2.00** (1.40-2.60)	**11.4** (7.70-15.4)	**57.3** (44.6-67.8)	**134** (86.1-184)	1399
Females	05-06	**20.4** (16.0-25.9)	**29.1** (21.6-37.5)	**93.0** (75.7-129)	**254** (193-318)	**357** (318-395)	1278
	07-08	**18.4** (15.7-21.5)	**23.3** (20.5-26.1)	**76.3** (62.9-100)	**210** (164-269)	**312** (271-363)	1310
	09-10	**16.9** (14.6-19.4)	**20.2** (17.0-25.9)	**83.3** (70.0-92.4)	**227** (171-295)	**361** (297-502)	1350
Race/ethnicity							
Mexican Americans	05-06	**10.6** (8.08-13.8)	**12.1** (7.00-17.5)	**65.9** (43.5-93.3)	**247** (174-293)	**389** (293-453)	637
	07-08	**7.82** (5.98-10.2)	**7.00** (4.20-12.9)	**52.1** (36.9-64.1)	**146** (105-201)	**217** (161-401)	531
	09-10	**8.94** (7.25-11.0)	**8.70** (5.70-13.3)	**58.9** (45.7-68.5)	**182** (117-299)	**451** (269-911)	566
Non-Hispanic blacks	05-06	**26.8** (21.5-33.3)	**34.7** (28.3-44.2)	**125** (89.5-165)	**331** (236-411)	**531** (367-730)	678
	07-08	**21.3** (18.4-24.7)	**28.6** (21.8-34.8)	**85.4** (70.8-96.9)	**222** (176-282)	**410** (277-506)	597
	09-10	**26.1** (21.8-31.3)	**29.9** (23.4-39.5)	**129** (87.4-167)	**322** (229-503)	**572** (369-654)	516
Non-Hispanic whites	05-06	**6.21** (5.02-7.68)	**6.00** (4.60-9.10)	**35.7** (28.4-49.6)	**130** (92.1-157)	**229** (156-318)	1038
	07-08	**6.49** (5.05-8.33)	**6.10** (4.50-9.20)	**36.8** (26.9-47.5)	**129** (91.3-196)	**251** (190-290)	1077
	09-10	**5.34** (4.55-6.27)	**4.40** (3.60-5.70)	**35.6** (26.1-44.3)	**128** (92.4-141)	**235** (170-300)	1206

Limit of detection (LOD, see Data Analysis section) for Survey years 05-06, 07-08, and 09-10 are 0.2, 0.2, and 0.2 respectively.

Biomonitoring Summary: http://www.cdc.gov/biomonitoring/Parabens_BiomonitoringSummary.html
Factsheet: http://www.cdc.gov/biomonitoring/Parabens_FactSheet.html

Urinary *n*-Propyl paraben (creatinine corrected)

Geometric mean and selected percentiles of urine concentrations (in µg/g of creatinine) for the U.S. population from the National Health and Nutrition Examination Survey.

	Survey years	Geometric mean (95% conf. interval)	Selected percentiles (95% confidence interval) 50th	75th	90th	95th	Sample size
Total	05-06	**7.71** (6.40-9.30)	**8.27** (5.87-11.3)	**52.9** (41.6-66.1)	**161** (140-178)	**263** (226-288)	2548
	07-08	**7.65** (6.22-9.40)	**8.00** (5.34-11.6)	**50.0** (39.5-59.8)	**138** (115-168)	**235** (199-293)	2604
	09-10	**7.28** (6.30-8.41)	**6.67** (5.35-8.50)	**45.1** (37.3-53.5)	**155** (128-187)	**253** (223-300)	2749
Age group							
6-11 years	05-06	**3.75** (2.67-5.26)	**2.70** (1.89-4.43)	**11.5** (8.07-16.0)	**52.1** (22.9-100)	**121** (55.5-352)	356
	07-08	**4.45** (3.03-6.53)	**3.50** (1.79-6.85)	**16.5** (8.82-28.8)	**59.1** (28.6-94.4)	**98.4** (65.0-139)	389
	09-10	**4.27** (3.34-5.47)	**3.33** (2.41-4.62)	**12.0** (8.52-16.6)	**46.1** (27.5-108)	**143** (72.5-243)	415
12-19 years	05-06	**6.08** (4.36-8.49)	**5.44** (3.03-10.5)	**33.0** (20.7-48.7)	**116** (81.9-161)	**175** (140-239)	702
	07-08	**6.88** (5.30-8.94)	**5.68** (3.51-9.90)	**33.2** (26.7-46.5)	**103** (87.2-112)	**132** (105-235)	401
	09-10	**5.64** (4.17-7.62)	**5.19** (3.53-9.03)	**32.9** (20.4-42.4)	**107** (57.6-217)	**218** (101-397)	420
20 years and older	05-06	**8.70** (7.08-10.7)	**10.8** (7.39-15.2)	**63.2** (49.7-80.5)	**178** (152-198)	**270** (236-293)	1490
	07-08	**8.26** (6.70-10.2)	**9.91** (6.15-12.6)	**57.9** (47.3-69.1)	**161** (127-199)	**273** (212-312)	1814
	09-10	**8.03** (6.74-9.56)	**8.27** (6.10-10.8)	**55.5** (43.5-66.0)	**164** (136-200)	**270** (232-314)	1914
Gender							
Males	05-06	**2.38** (1.92-2.95)	**1.84** (1.42-2.46)	**9.52** (6.79-12.8)	**40.5** (31.1-51.5)	**90.8** (56.8-125)	1270
	07-08	**2.55** (2.06-3.15)	**1.74** (1.40-2.53)	**10.7** (5.99-15.4)	**44.7** (29.0-66.1)	**112** (77.4-144)	1294
	09-10	**2.48** (2.05-3.00)	**1.71** (1.35-2.25)	**8.85** (6.12-14.2)	**40.3** (33.8-57.6)	**105** (74.5-143)	1399
Females	05-06	**23.9** (19.9-28.8)	**34.9** (26.9-46.6)	**114** (101-132)	**235** (193-263)	**306** (277-342)	1278
	07-08	**22.0** (18.7-25.8)	**30.4** (25.2-36.3)	**93.3** (80.8-110)	**199** (161-245)	**302** (271-370)	1310
	09-10	**20.4** (17.8-23.3)	**25.7** (21.8-30.7)	**97.1** (81.8-115)	**223** (191-248)	**334** (295-389)	1350
Race/ethnicity							
Mexican Americans	05-06	**9.49** (7.29-12.4)	**11.0** (6.69-16.4)	**55.2** (44.9-79.6)	**186** (147-271)	**329** (194-441)	637
	07-08	**7.63** (5.72-10.2)	**6.60** (4.10-13.4)	**47.9** (39.5-66.7)	**162** (123-187)	**273** (187-304)	531
	09-10	**8.87** (7.42-10.6)	**7.97** (5.87-12.8)	**54.7** (42.3-73.8)	**184** (140-269)	**325** (221-575)	566
Non-Hispanic blacks	05-06	**18.8** (15.2-23.3)	**23.6** (19.0-30.8)	**83.7** (61.8-105)	**217** (169-255)	**318** (242-377)	678
	07-08	**16.6** (14.1-19.5)	**22.9** (18.0-27.2)	**64.2** (51.4-73.3)	**141** (117-172)	**254** (169-311)	597
	09-10	**18.9** (15.2-23.5)	**21.1** (18.2-27.7)	**80.9** (59.5-109)	**200** (151-249)	**301** (223-376)	516
Non-Hispanic whites	05-06	**6.53** (5.32-8.02)	**6.45** (3.96-9.11)	**47.4** (32.6-65.3)	**146** (119-184)	**241** (184-278)	1038
	07-08	**6.77** (5.14-8.93)	**5.81** (3.94-10.5)	**45.4** (32.2-61.4)	**132** (105-172)	**215** (169-295)	1077
	09-10	**6.00** (5.19-6.94)	**5.12** (4.05-6.25)	**37.8** (32.1-49.2)	**148** (115-183)	**242** (215-272)	1206

Biomonitoring Summary: http://www.cdc.gov/biomonitoring/Parabens_BiomonitoringSummary.html
Factsheet: http://www.cdc.gov/biomonitoring/Parabens_FactSheet.html

Urinary Nitrate

Geometric mean and selected percentiles of urine concentrations (in mg/L) for the U.S. population from the National Health and Nutrition Examination Survey.

	Survey years	Geometric mean (95% conf. interval)	Selected percentiles (95% confidence interval) 50th	75th	90th	95th	Sample size
Total	01-02	**48.2** (46.2-50.3)	**49.0** (46.0-52.0)	**78.0** (73.0-83.0)	**100** (100-130)	**140** (130-150)	1617
	05-06	**42.7** (39.6-46.1)	**47.8** (44.4-51.2)	**74.6** (69.8-79.4)	**108** (101-114)	**133** (125-144)	7697
	07-08	**46.3** (44.6-48.1)	**50.3** (48.4-52.0)	**76.0** (72.7-79.1)	**110** (104-116)	**138** (132-146)	7629
Age group							
6-11 years	01-02	**62.2** (53.8-71.8)	**68.0** (58.0-79.0)	**94.0** (84.0-100)	**130** (100-160)	**150** (120-380)	374
	05-06	**51.2** (47.4-55.4)	**54.7** (51.9-58.2)	**79.2** (72.8-87.2)	**113** (101-128)	**141** (120-158)	1054
	07-08	**55.2** (51.7-58.9)	**60.2** (56.1-64.3)	**84.5** (80.1-92.5)	**117** (107-135)	**149** (132-189)	1143
12-19 years	01-02	**57.4** (53.5-61.6)	**66.0** (60.0-69.0)	**91.0** (86.0-95.0)	**120** (100-130)	**150** (130-160)	827
	05-06	**52.5** (48.5-56.8)	**57.5** (52.3-62.6)	**84.2** (79.9-88.4)	**119** (111-124)	**144** (129-153)	2106
	07-08	**55.5** (51.5-59.7)	**56.8** (51.9-61.5)	**84.1** (76.2-94.5)	**119** (107-133)	**144** (133-162)	1135
20 years and older	01-02	**45.4** (43.3-47.5)	**49.0** (46.0-52.0)	**78.0** (73.0-83.0)	**100** (100-130)	**140** (130-150)	1617
	05-06	**40.5** (37.4-43.9)	**45.0** (41.3-48.3)	**71.7** (67.1-77.4)	**105** (98.0-113)	**129** (122-142)	4537
	07-08	**44.2** (42.5-45.9)	**48.1** (46.0-49.7)	**73.2** (70.1-76.5)	**107** (101-113)	**135** (128-146)	5351
Gender							
Males	01-02	**57.5** (54.6-60.6)	**63.0** (59.0-67.0)	**89.0** (83.0-94.0)	**130** (100-140)	**150** (140-170)	1335
	05-06	**48.4** (44.6-52.6)	**52.7** (48.3-57.8)	**79.4** (72.8-86.5)	**110** (103-121)	**136** (123-152)	3765
	07-08	**51.9** (49.9-54.1)	**56.1** (53.8-58.0)	**79.5** (75.7-83.5)	**112** (105-119)	**137** (131-149)	3839
Females	01-02	**40.7** (38.4-43.2)	**43.0** (41.0-48.0)	**72.0** (68.0-76.0)	**100** (98.0-120)	**130** (120-150)	1483
	05-06	**37.9** (35.1-40.8)	**42.0** (38.2-46.0)	**69.2** (65.5-73.4)	**104** (96.6-110)	**130** (124-140)	3932
	07-08	**41.4** (39.3-43.7)	**43.9** (41.5-46.3)	**71.3** (67.5-74.8)	**108** (99.8-115)	**138** (132-149)	3790
Race/ethnicity							
Mexican Americans	01-02	**53.2** (48.7-58.2)	**59.0** (52.0-66.0)	**84.0** (79.0-91.0)	**120** (100-150)	**160** (130-180)	707
	05-06	**47.8** (44.7-51.2)	**52.4** (49.9-56.2)	**77.9** (75.1-83.1)	**113** (104-120)	**148** (133-156)	1972
	07-08	**48.7** (45.0-52.6)	**51.9** (47.4-56.7)	**75.6** (69.7-81.3)	**111** (100-122)	**148** (127-164)	1505
Non-Hispanic blacks	01-02	**53.8** (47.8-60.5)	**58.0** (51.0-64.0)	**84.0** (77.0-93.0)	**120** (100-130)	**140** (130-170)	680
	05-06	**45.9** (42.1-50.0)	**50.4** (46.6-54.9)	**75.0** (68.8-80.8)	**101** (95.3-110)	**127** (114-148)	2078
	07-08	**47.5** (45.0-50.3)	**50.3** (48.6-52.5)	**74.7** (71.9-77.3)	**105** (97.1-116)	**134** (125-150)	1707
Non-Hispanic whites	01-02	**46.3** (44.1-48.6)	**51.0** (47.0-53.0)	**81.0** (78.0-85.0)	**120** (100-130)	**140** (130-150)	1228
	05-06	**41.2** (37.6-45.2)	**46.2** (41.3-50.6)	**73.3** (67.3-80.1)	**107** (98.2-115)	**129** (122-142)	3056
	07-08	**45.0** (42.7-47.5)	**49.2** (46.1-52.6)	**75.5** (70.5-80.0)	**108** (101-116)	**134** (128-140)	3190

Limit of detection (LOD, see Data Analysis section) for Survey years 01-02, 05-06, and 07-08 are 0.7, 0.7, and 0.7 respectively.

Urinary Nitrate (creatinine corrected)

Geometric mean and selected percentiles of urine concentrations (in mg/g of creatinine) for the U.S. population from the National Health and Nutrition Examination Survey.

	Survey years	Geometric mean (95% conf. interval)	Selected percentiles (95% confidence interval) 50th	75th	90th	95th	Sample size
Total	01-02	**49.8** (47.7-51.9)	**46.9** (44.2-49.6)	**63.8** (61.2-67.7)	**90.9** (84.3-98.8)	**120** (111-128)	1616
	05-06	**42.6** (40.2-45.1)	**42.4** (40.1-44.7)	**59.7** (55.8-64.1)	**85.5** (81.3-91.3)	**113** (106-118)	7697
	07-08	**47.7** (45.9-49.7)	**46.0** (44.0-48.3)	**66.5** (62.4-70.5)	**98.0** (92.3-102)	**127** (119-135)	7628
Age group							
6-11 years	01-02	**72.0** (66.1-78.4)	**66.0** (62.6-70.4)	**87.0** (80.2-97.7)	**129** (96.5-144)	**144** (130-235)	374
	05-06	**60.8** (57.4-64.5)	**57.3** (53.6-60.6)	**76.5** (70.9-82.1)	**109** (95.0-123)	**134** (121-164)	1054
	07-08	**70.2** (65.7-74.9)	**65.9** (62.4-69.5)	**89.0** (83.2-96.5)	**128** (112-152)	**173** (140-216)	1143
12-19 years	01-02	**44.8** (43.4-46.2)	**43.8** (42.6-45.0)	**56.2** (52.2-59.7)	**73.2** (65.2-85.1)	**93.4** (79.0-104)	826
	05-06	**39.8** (37.8-41.9)	**38.1** (36.3-40.3)	**51.8** (47.7-56.0)	**70.6** (63.1-78.8)	**88.9** (79.4-103)	2106
	07-08	**43.4** (41.3-45.5)	**40.5** (38.6-43.5)	**56.0** (52.7-59.2)	**76.6** (69.0-86.2)	**98.0** (85.4-121)	1134
20 years and older	01-02	**48.3** (45.9-50.9)	**46.9** (44.2-49.6)	**63.8** (61.2-67.7)	**90.9** (84.3-98.8)	**120** (111-128)	1616
	05-06	**41.4** (38.9-43.9)	**41.0** (38.8-43.7)	**58.6** (54.8-63.1)	**85.3** (80.2-91.0)	**111** (105-116)	4537
	07-08	**46.5** (44.6-48.4)	**44.7** (42.5-47.0)	**65.0** (60.7-69.2)	**96.1** (90.0-102)	**125** (117-132)	5351
Gender							
Males	01-02	**47.6** (44.7-50.7)	**46.1** (43.4-48.7)	**61.3** (58.0-64.5)	**86.7** (77.1-97.3)	**114** (97.3-125)	1335
	05-06	**40.1** (37.5-42.9)	**39.5** (36.7-42.8)	**55.3** (51.6-59.5)	**77.2** (70.7-83.0)	**95.9** (89.6-102)	3765
	07-08	**44.6** (42.8-46.6)	**42.8** (40.7-45.1)	**60.6** (58.1-64.4)	**85.6** (81.1-91.3)	**111** (101-121)	3839
Females	01-02	**51.9** (49.9-54.1)	**51.2** (48.4-53.0)	**69.1** (66.7-71.2)	**100** (91.7-111)	**129** (118-140)	1481
	05-06	**45.1** (42.8-47.6)	**45.0** (42.4-47.4)	**64.4** (60.0-69.6)	**96.8** (87.8-105)	**128** (117-134)	3932
	07-08	**51.0** (48.9-53.2)	**50.0** (47.5-52.7)	**72.3** (67.8-76.8)	**107** (101-116)	**146** (129-163)	3789
Race/ethnicity							
Mexican Americans	01-02	**50.9** (45.7-56.8)	**48.1** (44.9-51.4)	**67.4** (60.3-77.6)	**97.3** (85.7-117)	**135** (100-161)	707
	05-06	**44.6** (42.6-46.7)	**44.0** (42.2-45.3)	**60.4** (58.1-62.9)	**89.9** (82.0-95.4)	**120** (111-128)	1972
	07-08	**48.7** (45.1-52.7)	**47.0** (43.5-50.5)	**64.8** (59.7-69.9)	**93.5** (88.9-101)	**128** (108-156)	1505
Non-Hispanic blacks	01-02	**38.7** (36.3-41.3)	**38.0** (34.6-41.3)	**53.5** (50.3-57.4)	**70.3** (64.9-79.3)	**91.7** (78.9-100)	679
	05-06	**32.9** (30.9-35.0)	**31.9** (29.8-34.1)	**45.4** (41.5-49.6)	**64.0** (60.1-68.0)	**81.2** (75.3-89.6)	2078
	07-08	**35.9** (34.2-37.7)	**34.8** (33.3-36.6)	**49.0** (44.8-53.6)	**69.1** (63.5-77.4)	**87.8** (78.1-97.4)	1706
Non-Hispanic whites	01-02	**51.4** (49.4-53.4)	**49.1** (46.9-51.5)	**66.9** (64.2-69.4)	**95.2** (87.7-100)	**124** (115-132)	1227
	05-06	**43.7** (40.8-46.8)	**43.9** (40.8-46.8)	**61.4** (56.5-66.2)	**85.5** (80.6-91.9)	**110** (102-116)	3056
	07-08	**49.0** (46.7-51.4)	**47.4** (44.9-50.5)	**68.2** (63.3-73.1)	**98.3** (91.2-105)	**126** (118-135)	3190

Urinary Perchlorate

Geometric mean and selected percentiles of urine concentrations (in µg/L) for the U.S. population from the National Health and Nutrition Examination Survey.

	Survey years	Geometric mean (95% conf. interval)	Selected percentiles (95% confidence interval) 50th	75th	90th	95th	Sample size
Total	01-02	**3.72** (3.46-4.01)	**3.70** (3.40-3.90)	**6.20** (5.60-6.90)	**10.0** (8.90-12.0)	**14.0** (12.0-18.0)	1618
	03-04	**3.39** (3.08-3.73)	**3.50** (3.00-4.00)	**5.80** (5.20-6.70)	**10.0** (8.80-12.0)	**14.0** (13.0-16.0)	2522
	05-06	**3.47** (3.20-3.76)	**3.62** (3.35-3.98)	**6.10** (5.67-6.52)	**9.76** (9.19-10.5)	**13.4** (12.4-14.6)	7697
	07-08	**3.88** (3.60-4.18)	**3.96** (3.59-4.30)	**7.10** (6.50-7.74)	**12.0** (11.2-13.0)	**17.3** (16.1-18.8)	7629
Age group							
6-11 years	01-02	**5.19** (4.44-6.05)	**5.50** (4.60-6.70)	**8.50** (7.20-10.0)	**13.0** (9.80-20.0)	**20.0** (13.0-24.0)	374
	03-04	**4.54** (3.85-5.36)	**4.80** (4.20-5.50)	**8.30** (6.00-10.0)	**14.0** (9.20-17.0)	**17.0** (12.0-30.0)	314
	05-06	**4.64** (4.15-5.18)	**4.81** (4.26-5.38)	**7.67** (6.71-8.60)	**11.6** (10.0-12.7)	**14.1** (12.4-16.3)	1054
	07-08	**4.88** (4.31-5.53)	**4.86** (4.22-5.93)	**9.11** (7.84-10.3)	**14.4** (12.1-16.9)	**18.9** (16.1-23.2)	1143
12-19 years	01-02	**4.00** (3.62-4.42)	**4.60** (4.00-5.00)	**7.10** (6.60-7.70)	**10.0** (9.70-12.0)	**14.0** (12.0-18.0)	828
	03-04	**3.81** (3.35-4.33)	**4.00** (3.40-4.60)	**6.70** (5.80-7.40)	**10.0** (8.20-13.0)	**14.0** (10.0-19.0)	721
	05-06	**4.14** (3.77-4.53)	**4.25** (3.94-4.65)	**7.00** (6.41-7.69)	**10.9** (9.71-12.4)	**15.6** (12.4-17.9)	2106
	07-08	**4.50** (4.06-4.97)	**4.73** (4.39-5.05)	**7.93** (6.89-8.89)	**13.0** (11.1-15.4)	**17.7** (15.8-20.2)	1135
20 years and older	01-02	**3.53** (3.24-3.84)	**3.70** (3.40-3.90)	**6.20** (5.60-6.90)	**10.0** (8.90-12.0)	**14.0** (12.0-18.0)	1618
	03-04	**3.21** (2.89-3.56)	**3.40** (2.80-3.80)	**5.50** (4.90-6.40)	**9.50** (8.30-10.0)	**13.0** (12.0-15.0)	1487
	05-06	**3.27** (3.01-3.55)	**3.42** (3.14-3.72)	**5.75** (5.33-6.21)	**9.38** (8.73-9.86)	**13.1** (12.2-14.5)	4537
	07-08	**3.70** (3.43-3.99)	**3.69** (3.42-4.09)	**6.75** (6.09-7.38)	**11.6** (10.8-12.7)	**16.8** (15.4-18.7)	5351
Gender							
Males	01-02	**4.41** (4.13-4.70)	**4.60** (4.40-4.80)	**7.40** (6.70-8.30)	**12.0** (10.0-13.0)	**15.0** (12.0-20.0)	1335
	03-04	**3.95** (3.56-4.37)	**4.10** (3.60-4.60)	**6.70** (5.90-7.90)	**12.0** (9.70-13.0)	**15.0** (14.0-18.0)	1229
	05-06	**3.93** (3.64-4.25)	**4.07** (3.77-4.38)	**6.50** (6.11-6.92)	**10.4** (9.65-11.6)	**14.7** (13.2-16.3)	3765
	07-08	**4.40** (4.13-4.70)	**4.42** (4.12-4.78)	**7.90** (7.16-8.46)	**13.3** (12.0-14.4)	**18.6** (17.0-19.7)	3839
Females	01-02	**3.17** (2.89-3.48)	**3.30** (2.80-3.60)	**5.70** (5.20-6.30)	**9.70** (8.60-12.0)	**14.0** (12.0-18.0)	1485
	03-04	**2.93** (2.62-3.28)	**3.00** (2.60-3.40)	**5.10** (4.60-5.80)	**8.60** (7.20-10.0)	**12.0** (9.20-16.0)	1293
	05-06	**3.08** (2.80-3.38)	**3.24** (2.96-3.51)	**5.55** (5.14-6.07)	**9.20** (8.22-10.3)	**12.4** (11.3-14.2)	3932
	07-08	**3.42** (3.11-3.76)	**3.44** (3.10-3.79)	**6.41** (5.95-7.01)	**10.8** (10.0-12.0)	**16.0** (14.1-17.9)	3790
Race/ethnicity							
Mexican Americans	01-02	**4.23** (3.65-4.90)	**4.60** (3.90-5.20)	**7.40** (6.10-8.80)	**13.0** (9.90-14.0)	**15.0** (13.0-19.0)	708
	03-04	**3.96** (3.63-4.32)	**4.20** (3.70-4.60)	**6.50** (5.60-7.90)	**12.0** (9.50-13.0)	**16.0** (13.0-18.0)	617
	05-06	**4.02** (3.77-4.28)	**4.16** (3.84-4.46)	**6.93** (6.62-7.26)	**11.3** (10.4-12.0)	**15.7** (14.6-16.8)	1972
	07-08	**4.20** (3.95-4.46)	**4.38** (4.08-4.65)	**7.32** (6.73-7.95)	**12.1** (10.9-14.0)	**16.7** (15.0-17.7)	1505
Non-Hispanic blacks	01-02	**3.69** (3.22-4.23)	**3.90** (3.30-4.30)	**6.20** (5.30-7.30)	**9.70** (8.20-13.0)	**16.0** (12.0-21.0)	681
	03-04	**3.38** (3.05-3.74)	**3.40** (3.00-3.70)	**5.70** (4.80-6.60)	**9.00** (7.90-12.0)	**14.0** (9.80-18.0)	652
	05-06	**3.48** (3.19-3.80)	**3.54** (3.24-3.94)	**5.95** (5.33-6.65)	**9.99** (9.02-11.0)	**14.4** (12.8-15.7)	2078
	07-08	**3.82** (3.37-4.33)	**3.82** (3.37-4.48)	**6.96** (6.18-7.97)	**12.0** (10.6-13.8)	**17.2** (14.3-20.6)	1707
Non-Hispanic whites	01-02	**3.70** (3.35-4.08)	**3.90** (3.60-4.30)	**6.60** (6.00-7.40)	**10.0** (9.20-12.0)	**15.0** (12.0-19.0)	1228
	03-04	**3.43** (3.04-3.86)	**3.50** (2.90-4.20)	**5.90** (5.10-7.10)	**9.90** (8.50-12.0)	**14.0** (12.0-16.0)	1092
	05-06	**3.42** (3.08-3.80)	**3.59** (3.23-4.04)	**6.05** (5.52-6.55)	**9.62** (8.90-10.5)	**13.2** (11.9-14.8)	3056
	07-08	**3.84** (3.52-4.18)	**3.93** (3.48-4.36)	**7.07** (6.37-7.77)	**11.7** (10.8-12.7)	**16.8** (15.3-18.4)	3190

Limit of detection (LOD, see Data Analysis section) for Survey years 01-02, 03-04, 05-06, and 07-08 are 0.05, 0.05, 0.05, and 0.05 respectively.

Biomonitoring Summary: http://www.cdc.gov/biomonitoring/Perchlorate_BiomonitoringSummary.html
Factsheet: http://www.cdc.gov/biomonitoring/Perchlorate_FactSheet.html

Urinary Perchlorate (creatinine corrected)

Geometric mean and selected percentiles of urine concentrations (in µg/g of creatinine) for the U.S. population from the National Health and Nutrition Examination Survey.

	Survey years	Geometric mean (95% conf. interval)	Selected percentiles (95% confidence interval) 50th	75th	90th	95th	Sample size
Total	01-02	**3.74** (3.51-3.99)	**3.70** (3.40-3.90)	**6.20** (5.60-6.90)	**10.0** (8.90-12.0)	**14.0** (12.0-18.0)	1618
	03-04	**3.31** (3.04-3.59)	**3.18** (2.90-3.45)	**5.19** (4.80-5.55)	**8.86** (7.69-10.0)	**12.4** (11.2-14.5)	2519
	05-06	**3.46** (3.27-3.66)	**3.37** (3.17-3.59)	**5.42** (5.08-5.86)	**8.56** (8.19-9.17)	**11.6** (10.4-13.4)	7697
	07-08	**4.00** (3.69-4.33)	**3.89** (3.59-4.26)	**6.59** (6.10-7.13)	**10.9** (10.1-11.8)	**15.7** (14.6-16.8)	7628
Age group							
6-11 years	01-02	**6.01** (5.49-6.57)	**5.50** (4.60-6.70)	**8.50** (7.20-10.0)	**13.0** (9.80-20.0)	**20.0** (13.0-24.0)	374
	03-04	**5.52** (4.86-6.28)	**5.34** (4.92-5.78)	**7.64** (6.67-10.5)	**13.5** (9.66-21.3)	**21.3** (12.0-46.9)	314
	05-06	**5.51** (5.06-6.00)	**5.66** (5.08-6.22)	**8.39** (7.61-9.25)	**12.3** (10.3-13.6)	**15.4** (14.3-17.0)	1054
	07-08	**6.21** (5.52-6.99)	**6.34** (5.56-7.10)	**9.78** (8.63-11.3)	**14.7** (13.3-16.0)	**20.6** (16.4-25.0)	1143
12-19 years	01-02	**3.10** (2.77-3.46)	**4.60** (4.00-5.00)	**7.10** (6.60-7.70)	**10.0** (9.70-12.0)	**14.0** (12.0-18.0)	828
	03-04	**2.85** (2.59-3.14)	**2.83** (2.62-3.17)	**4.39** (3.88-4.67)	**6.63** (5.56-7.82)	**8.62** (7.24-11.4)	719
	05-06	**3.14** (2.89-3.41)	**3.17** (2.87-3.40)	**4.86** (4.32-5.41)	**7.30** (6.40-8.43)	**9.54** (8.46-11.0)	2106
	07-08	**3.52** (3.27-3.78)	**3.43** (3.07-3.80)	**5.62** (5.13-6.11)	**8.84** (7.70-9.73)	**12.6** (10.4-15.8)	1134
20 years and older	01-02	**3.64** (3.37-3.93)	**3.70** (3.40-3.90)	**6.20** (5.60-6.90)	**10.0** (8.90-12.0)	**14.0** (12.0-18.0)	1618
	03-04	**3.18** (2.90-3.49)	**3.02** (2.74-3.33)	**4.94** (4.53-5.35)	**8.64** (7.18-10.0)	**11.7** (10.3-15.2)	1486
	05-06	**3.34** (3.15-3.53)	**3.24** (3.08-3.45)	**5.12** (4.82-5.45)	**8.24** (7.67-8.64)	**11.4** (10.0-13.0)	4537
	07-08	**3.88** (3.57-4.22)	**3.77** (3.49-4.14)	**6.35** (5.85-6.91)	**10.5** (9.64-11.5)	**15.4** (13.6-16.9)	5351
Gender							
Males	01-02	**3.57** (3.36-3.79)	**4.60** (4.40-4.80)	**7.40** (6.70-8.30)	**12.0** (10.0-13.0)	**15.0** (12.0-20.0)	1335
	03-04	**3.23** (2.96-3.52)	**3.09** (2.83-3.33)	**5.00** (4.60-5.55)	**8.00** (6.86-10.2)	**12.5** (10.2-15.3)	1228
	05-06	**3.25** (3.08-3.44)	**3.16** (2.99-3.36)	**4.98** (4.71-5.37)	**8.07** (7.60-8.58)	**11.0** (10.0-12.9)	3765
	07-08	**3.78** (3.47-4.12)	**3.64** (3.28-4.03)	**6.29** (5.72-6.85)	**10.3** (9.28-11.3)	**14.4** (13.1-15.5)	3839
Females	01-02	**3.92** (3.57-4.30)	**3.30** (2.80-3.60)	**5.70** (5.20-6.30)	**9.70** (8.60-12.0)	**14.0** (12.0-18.0)	1485
	03-04	**3.38** (3.02-3.78)	**3.28** (2.90-3.61)	**5.24** (4.73-6.00)	**9.40** (7.24-11.4)	**12.4** (10.7-15.2)	1291
	05-06	**3.67** (3.43-3.93)	**3.58** (3.31-3.91)	**5.86** (5.39-6.19)	**9.21** (8.35-9.77)	**12.1** (10.5-14.5)	3932
	07-08	**4.22** (3.90-4.56)	**4.16** (3.81-4.55)	**6.89** (6.40-7.54)	**11.5** (10.4-12.6)	**16.6** (14.5-18.6)	3789
Race/ethnicity							
Mexican Americans	01-02	**3.96** (3.39-4.63)	**4.60** (3.90-5.20)	**7.40** (6.10-8.80)	**13.0** (9.90-14.0)	**15.0** (13.0-19.0)	708
	03-04	**3.59** (3.32-3.88)	**3.45** (3.10-3.68)	**5.69** (4.82-6.45)	**9.77** (8.00-11.2)	**13.5** (11.2-20.0)	616
	05-06	**3.75** (3.56-3.95)	**3.60** (3.42-3.81)	**5.97** (5.53-6.48)	**9.83** (9.19-10.4)	**12.7** (11.3-14.5)	1972
	07-08	**4.20** (3.96-4.46)	**4.17** (3.81-4.58)	**6.95** (6.33-7.73)	**11.8** (10.4-12.3)	**15.7** (14.4-17.6)	1505
Non-Hispanic blacks	01-02	**2.66** (2.35-3.01)	**3.90** (3.30-4.30)	**6.20** (5.30-7.30)	**9.70** (8.20-13.0)	**16.0** (12.0-21.0)	681
	03-04	**2.33** (2.11-2.57)	**2.24** (2.02-2.47)	**3.60** (3.22-4.13)	**6.54** (4.91-8.47)	**9.02** (6.84-11.8)	651
	05-06	**2.50** (2.32-2.69)	**2.40** (2.24-2.61)	**3.97** (3.69-4.26)	**6.71** (6.30-7.13)	**9.41** (8.53-10.4)	2078
	07-08	**2.89** (2.60-3.21)	**2.76** (2.47-3.17)	**4.92** (4.36-5.54)	**8.63** (7.43-9.78)	**11.8** (10.6-13.6)	1706
Non-Hispanic whites	01-02	**3.95** (3.64-4.29)	**3.90** (3.60-4.30)	**6.60** (6.00-7.40)	**10.0** (9.20-12.0)	**15.0** (12.0-19.0)	1228
	03-04	**3.53** (3.16-3.94)	**3.35** (3.01-3.68)	**5.29** (4.81-5.96)	**9.23** (7.61-11.0)	**12.8** (11.0-16.5)	1091
	05-06	**3.63** (3.36-3.91)	**3.51** (3.20-3.85)	**5.60** (5.10-6.10)	**8.58** (7.98-9.42)	**11.8** (10.0-14.3)	3056
	07-08	**4.17** (3.83-4.54)	**4.06** (3.71-4.52)	**6.63** (6.18-7.23)	**10.8** (9.86-11.8)	**15.5** (14.0-16.8)	3190

Biomonitoring Summary: http://www.cdc.gov/biomonitoring/Perchlorate_BiomonitoringSummary.html
Factsheet: http://www.cdc.gov/biomonitoring/Perchlorate_FactSheet.html

Urinary Thiocyanate

Geometric mean and selected percentiles of urine concentrations (in mg/L) for the U.S. population from the National Health and Nutrition Examination Survey.

	Survey years	Geometric mean (95% conf. interval)	Selected percentiles (95% confidence interval) 50th	75th	90th	95th	Sample size
Total	01-02	**1.52** (1.44-1.61)	**1.50** (1.40-1.60)	**3.60** (3.00-4.10)	**7.90** (6.90-9.00)	**12.0** (10.0-13.0)	1617
	05-06	**1.23** (1.12-1.35)	**1.18** (1.08-1.31)	**2.55** (2.31-2.83)	**6.11** (5.10-6.85)	**9.04** (8.14-9.93)	7697
	07-08	**1.35** (1.26-1.45)	**1.32** (1.23-1.42)	**2.77** (2.47-3.13)	**6.36** (5.39-7.33)	**9.54** (8.58-11.1)	7629
Age group							
6-11 years	01-02	**1.35** (1.20-1.51)	**1.50** (1.30-1.70)	**2.50** (1.90-3.00)	**3.70** (3.30-4.10)	**4.90** (3.90-5.60)	374
	05-06	**.980** (.892-1.08)	**1.03** (.916-1.15)	**1.72** (1.55-1.92)	**2.65** (2.31-3.09)	**3.45** (2.96-4.21)	1054
	07-08	**1.10** (.989-1.22)	**1.12** (1.02-1.24)	**1.88** (1.68-2.07)	**2.92** (2.48-3.52)	**4.08** (3.35-5.30)	1143
12-19 years	01-02	**1.59** (1.43-1.77)	**1.50** (1.40-1.70)	**2.90** (2.50-3.30)	**5.30** (4.30-7.40)	**7.70** (5.90-10.0)	826
	05-06	**1.24** (1.11-1.39)	**1.29** (1.15-1.47)	**2.27** (1.99-2.62)	**3.84** (3.18-4.65)	**6.07** (4.76-6.95)	2106
	07-08	**1.29** (1.15-1.46)	**1.35** (1.14-1.53)	**2.39** (2.06-2.69)	**3.93** (3.36-4.57)	**6.14** (4.55-7.27)	1135
20 years and older	01-02	**1.54** (1.43-1.65)	**1.50** (1.40-1.60)	**3.60** (3.00-4.10)	**7.90** (6.90-9.00)	**12.0** (10.0-13.0)	1617
	05-06	**1.26** (1.14-1.40)	**1.19** (1.08-1.34)	**2.82** (2.50-3.15)	**6.87** (6.06-7.58)	**9.79** (8.78-10.7)	4537
	07-08	**1.39** (1.29-1.50)	**1.34** (1.25-1.46)	**3.11** (2.68-3.57)	**7.21** (6.05-8.31)	**10.8** (8.99-12.0)	5351
Gender							
Males	01-02	**1.86** (1.67-2.07)	**1.80** (1.60-2.10)	**4.00** (3.40-4.90)	**8.40** (7.00-10.0)	**12.0** (10.0-13.0)	1335
	05-06	**1.49** (1.36-1.64)	**1.44** (1.27-1.62)	**3.10** (2.82-3.56)	**6.90** (6.13-7.64)	**9.93** (8.99-10.7)	3765
	07-08	**1.61** (1.50-1.72)	**1.60** (1.50-1.71)	**3.32** (2.96-3.77)	**7.27** (6.01-8.22)	**10.9** (9.04-12.3)	3839
Females	01-02	**1.26** (1.16-1.36)	**1.30** (1.00-1.40)	**2.50** (2.40-2.80)	**6.00** (5.20-6.70)	**8.70** (7.20-10.0)	1482
	05-06	**1.02** (.920-1.13)	**.995** (.886-1.13)	**2.07** (1.86-2.25)	**4.61** (3.81-5.98)	**8.04** (7.26-8.78)	3932
	07-08	**1.14** (1.04-1.24)	**1.09** (.991-1.19)	**2.31** (2.06-2.62)	**5.51** (4.58-6.52)	**8.59** (7.36-9.85)	3790
Race/ethnicity							
Mexican Americans	01-02	**1.14** (.977-1.33)	**1.20** (.940-1.40)	**2.20** (1.80-2.60)	**3.90** (3.00-4.90)	**5.70** (4.20-6.60)	707
	05-06	**.823** (.744-.912)	**.844** (.763-.937)	**1.51** (1.36-1.71)	**2.70** (2.26-3.22)	**4.48** (3.49-5.40)	1972
	07-08	**.993** (.926-1.06)	**1.04** (.987-1.11)	**1.88** (1.75-2.02)	**3.30** (2.98-3.52)	**4.56** (3.92-5.43)	1505
Non-Hispanic blacks	01-02	**1.91** (1.72-2.11)	**2.00** (1.80-2.20)	**3.90** (3.30-4.90)	**7.60** (6.20-10.0)	**10.0** (7.00-15.0)	679
	05-06	**1.50** (1.32-1.72)	**1.51** (1.36-1.68)	**3.13** (2.56-3.81)	**6.94** (5.66-8.09)	**10.3** (8.01-12.4)	2078
	07-08	**1.73** (1.61-1.86)	**1.73** (1.61-1.86)	**3.78** (3.53-4.23)	**8.29** (7.25-9.07)	**12.8** (11.2-14.5)	1707
Non-Hispanic whites	01-02	**1.56** (1.45-1.68)	**1.50** (1.40-1.70)	**3.40** (2.80-3.80)	**7.20** (6.30-8.50)	**12.0** (8.90-13.0)	1228
	05-06	**1.30** (1.18-1.44)	**1.25** (1.12-1.40)	**2.74** (2.46-3.01)	**6.53** (5.57-7.31)	**9.43** (8.58-10.4)	3056
	07-08	**1.42** (1.29-1.56)	**1.41** (1.28-1.53)	**2.98** (2.52-3.44)	**6.67** (5.24-8.14)	**9.71** (8.32-11.9)	3190

Limit of detection (LOD, see Data Analysis section) for Survey years 01-02, 05-06, and 07-08 are 0.02, 0.02, and 0.02 respectively.

Urinary Thiocyanate (creatinine corrected)

Geometric mean and selected percentiles of urine concentrations (in mg/g of creatinine) for the U.S. population from the National Health and Nutrition Examination Survey.

	Survey years	Geometric mean (95% conf. interval)	Selected percentiles (95% confidence interval) 50th	75th	90th	95th	Sample size
Total	01-02	**1.53** (1.43-1.64)	**1.47** (1.37-1.61)	**3.35** (2.95-3.74)	**7.34** (6.67-7.81)	**10.3** (8.81-11.3)	1616
	05-06	**1.23** (1.13-1.33)	**1.15** (1.05-1.27)	**2.44** (2.18-2.68)	**5.67** (5.16-6.28)	**8.23** (7.71-8.98)	7697
	07-08	**1.39** (1.28-1.51)	**1.33** (1.22-1.43)	**2.72** (2.42-3.04)	**6.11** (5.25-7.30)	**9.59** (8.03-11.5)	7628
Age group							
6-11 years	01-02	**1.56** (1.35-1.80)	**1.55** (1.35-1.82)	**2.67** (2.33-3.13)	**4.46** (3.79-5.20)	**5.33** (4.58-6.16)	374
	05-06	**1.16** (1.06-1.28)	**1.18** (1.06-1.34)	**2.03** (1.81-2.32)	**3.15** (2.83-3.43)	**4.25** (3.49-4.58)	1054
	07-08	**1.40** (1.27-1.54)	**1.42** (1.24-1.59)	**2.28** (2.02-2.53)	**3.74** (3.29-4.26)	**5.23** (4.39-6.65)	1143
12-19 years	01-02	**1.23** (1.12-1.35)	**1.14** (1.08-1.24)	**2.12** (1.78-2.45)	**3.88** (3.28-4.91)	**5.75** (3.93-8.13)	825
	05-06	**.941** (.867-1.02)	**.937** (.855-1.03)	**1.69** (1.51-1.86)	**2.95** (2.43-3.64)	**4.15** (3.64-5.00)	2106
	07-08	**1.01** (.910-1.12)	**1.04** (.906-1.17)	**1.75** (1.60-1.92)	**2.94** (2.49-3.54)	**4.69** (3.64-5.44)	1134
20 years and older	01-02	**1.59** (1.47-1.71)	**1.47** (1.37-1.61)	**3.35** (2.95-3.74)	**7.34** (6.67-7.81)	**10.3** (8.81-11.3)	1616
	05-06	**1.29** (1.17-1.42)	**1.20** (1.08-1.33)	**2.68** (2.37-3.10)	**6.43** (5.88-7.07)	**8.99** (8.23-10.2)	4537
	07-08	**1.46** (1.34-1.59)	**1.37** (1.27-1.47)	**3.00** (2.69-3.45)	**7.02** (5.82-8.26)	**10.5** (8.63-12.9)	5351
Gender							
Males	01-02	**1.51** (1.37-1.67)	**1.42** (1.31-1.59)	**3.33** (3.00-3.67)	**6.38** (5.81-6.92)	**8.51** (7.41-9.72)	1335
	05-06	**1.24** (1.12-1.37)	**1.18** (1.05-1.32)	**2.61** (2.26-3.01)	**5.67** (5.00-6.43)	**8.17** (7.15-9.13)	3765
	07-08	**1.38** (1.28-1.50)	**1.32** (1.23-1.42)	**2.77** (2.42-3.08)	**6.13** (5.47-6.97)	**9.27** (7.82-11.1)	3839
Females	01-02	**1.55** (1.43-1.69)	**1.45** (1.33-1.58)	**2.79** (2.42-3.25)	**7.07** (5.86-7.69)	**10.0** (8.18-11.1)	1480
	05-06	**1.22** (1.12-1.33)	**1.13** (1.04-1.24)	**2.27** (2.00-2.54)	**5.62** (4.91-6.37)	**8.40** (7.20-10.5)	3932
	07-08	**1.40** (1.27-1.55)	**1.34** (1.19-1.45)	**2.69** (2.40-3.03)	**6.07** (4.89-7.80)	**9.88** (7.93-12.1)	3789
Race/ethnicity							
Mexican Americans	01-02	**1.07** (.898-1.27)	**1.06** (.819-1.29)	**1.97** (1.51-2.50)	**3.62** (2.86-4.52)	**5.10** (3.52-7.33)	707
	05-06	**.768** (.685-.861)	**.773** (.684-.881)	**1.37** (1.20-1.59)	**2.44** (2.19-2.85)	**3.66** (3.28-4.27)	1972
	07-08	**.995** (.923-1.07)	**1.03** (.918-1.14)	**1.88** (1.71-2.05)	**3.27** (2.77-3.76)	**4.59** (3.86-5.59)	1505
Non-Hispanic blacks	01-02	**1.37** (1.18-1.59)	**1.37** (1.18-1.61)	**2.80** (2.21-3.43)	**5.67** (4.17-6.74)	**7.64** (5.91-11.3)	678
	05-06	**1.08** (.972-1.20)	**1.05** (.972-1.16)	**2.15** (1.84-2.57)	**4.77** (3.93-5.61)	**6.91** (5.84-7.80)	2078
	07-08	**1.31** (1.21-1.41)	**1.25** (1.18-1.36)	**2.81** (2.55-3.24)	**6.19** (5.29-6.77)	**8.74** (7.44-9.59)	1706
Non-Hispanic whites	01-02	**1.67** (1.55-1.80)	**1.55** (1.42-1.73)	**3.29** (3.00-3.73)	**7.09** (6.38-7.95)	**10.3** (8.78-11.1)	1227
	05-06	**1.38** (1.25-1.52)	**1.30** (1.14-1.44)	**2.78** (2.48-3.12)	**6.31** (5.67-7.08)	**9.00** (8.13-10.5)	3056
	07-08	**1.55** (1.40-1.70)	**1.45** (1.32-1.58)	**2.96** (2.56-3.53)	**7.03** (5.71-8.56)	**10.9** (8.70-13.1)	3190

Serum Perfluorobutane sulfonic acid (PFBuS)

Geometric mean and selected percentiles of serum concentrations (in µg/L) for the U.S. population from the National Health and Nutrition Examination Survey.

	Survey years	Geometric mean (95% conf. interval)	Selected percentiles (95% confidence interval) 50th	75th	90th	95th	Sample size
Total	03-04	*	**< LOD**	**< LOD**	**< LOD**	**< LOD**	2094
	05-06	*	**< LOD**	**< LOD**	**< LOD**	**.100** (<LOD-.200)	2120
	07-08	*	**< LOD**	**< LOD**	**< LOD**	**< LOD**	2100
	09-10	*	**< LOD**	**< LOD**	**< LOD**	**< LOD**	2233
Age group							
12-19 years	03-04	*	**< LOD**	**< LOD**	**< LOD**	**< LOD**	640
	05-06	*	**< LOD**	**< LOD**	**< LOD**	**.100** (<LOD-.100)	640
	07-08	*	**< LOD**	**< LOD**	**< LOD**	**< LOD**	357
	09-10	*	**< LOD**	**< LOD**	**< LOD**	**< LOD**	364
20 years and older	03-04	*	**< LOD**	**< LOD**	**< LOD**	**< LOD**	1454
	05-06	*	**< LOD**	**< LOD**	**< LOD**	**.100** (<LOD-.200)	1480
	07-08	*	**< LOD**	**< LOD**	**< LOD**	**< LOD**	1743
	09-10	*	**< LOD**	**< LOD**	**< LOD**	**< LOD**	1869
Gender							
Males	03-04	*	**< LOD**	**< LOD**	**< LOD**	**< LOD**	1053
	05-06	*	**< LOD**	**< LOD**	**< LOD**	**.100** (<LOD-.200)	1048
	07-08	*	**< LOD**	**< LOD**	**< LOD**	**< LOD**	1059
	09-10	*	**< LOD**	**< LOD**	**< LOD**	**< LOD**	1075
Females	03-04	*	**< LOD**	**< LOD**	**< LOD**	**< LOD**	1041
	05-06	*	**< LOD**	**< LOD**	**< LOD**	**.100** (<LOD-.200)	1072
	07-08	*	**< LOD**	**< LOD**	**< LOD**	**< LOD**	1041
	09-10	*	**< LOD**	**< LOD**	**< LOD**	**< LOD**	1158
Race/ethnicity							
Mexican Americans	03-04	*	**< LOD**	**< LOD**	**< LOD**	**< LOD**	485
	05-06	*	**< LOD**	**< LOD**	**< LOD**	**.100** (<LOD-.200)	499
	07-08	*	**< LOD**	**< LOD**	**< LOD**	**< LOD**	391
	09-10	*	**< LOD**	**< LOD**	**< LOD**	**< LOD**	461
Non-Hispanic blacks	03-04	*	**< LOD**	**< LOD**	**< LOD**	**< LOD**	538
	05-06	*	**< LOD**	**< LOD**	**< LOD**	**.100** (<LOD-.100)	544
	07-08	*	**< LOD**	**< LOD**	**< LOD**	**< LOD**	419
	09-10	*	**< LOD**	**< LOD**	**< LOD**	**< LOD**	391
Non-Hispanic whites	03-04	*	**< LOD**	**< LOD**	**< LOD**	**< LOD**	962
	05-06	*	**< LOD**	**< LOD**	**< LOD**	**.100** (<LOD-.400)	935
	07-08	*	**< LOD**	**< LOD**	**< LOD**	**< LOD**	931
	09-10	*	**< LOD**	**< LOD**	**< LOD**	**< LOD**	1031

Limit of detection (LOD, see Data Analysis section) for Survey years 03-04, 05-06, 07-08 and 09-10 are 0.4, 0.1, 0.1, and 0.1 respectively.
< LOD means less than the limit of detection, which may vary for some chemicals by year and by individual sample.
* Not calculated: proportion of results below limit of detection was too high to provide a valid result.

Biomonitoring Summary: http://www.cdc.gov/biomonitoring/PFCs_BiomonitoringSummary.html
Factsheet: http://www.cdc.gov/biomonitoring/PFCs_FactSheet.html

Serum Perfluorodecanoic acid (PFDeA)

Geometric mean and selected percentiles of serum concentrations (in µg/L) for the U.S. population from the National Health and Nutrition Examination Survey.

	Survey years	Geometric mean (95% conf. interval)	Selected percentiles (95% confidence interval) 50th	75th	90th	95th	Sample size
Total	99-00	*	**.200** (.200-.200)	**.200** (.200-.300)	**.400** (.300-.700)	**.600** (.400-1.10)	1562
	03-04	*	**< LOD**	**.300** (<LOD-.500)	**.600** (.400-1.10)	**.900** (.500-1.80)	2094
	05-06	**.355** (.297-.423)	**.300** (.300-.400)	**.500** (.400-.700)	**.900** (.600-1.60)	**1.50** (.900-2.60)	2120
	07-08	**.286** (.264-.309)	**.300** (.300-.300)	**.400** (.400-.500)	**.700** (.600-.700)	**.900** (.800-1.00)	2100
	09-10	**.279** (.258-.303)	**.300** (.300-.300)	**.400** (.400-.500)	**.700** (.600-.800)	**.900** (.800-1.10)	2233
Age group							
12-19 years	99-00	*	**.200** (.200-.200)	**.200** (.200-.200)	**.300** (.200-.400)	**.400** (.300-.600)	543
	03-04	*	**< LOD**	**< LOD**	**.500** (<LOD-1.00)	**.800** (.300-1.20)	640
	05-06	**.295** (.258-.338)	**.300** (.200-.300)	**.500** (.400-.500)	**.600** (.500-.800)	**.800** (.600-1.60)	640
	07-08	**.231** (.214-.248)	**.200** (.200-.300)	**.300** (.300-.400)	**.500** (.400-.500)	**.600** (.500-.700)	357
	09-10	**.220** (.198-.245)	**.200** (.200-.200)	**.300** (.300-.300)	**.400** (.400-.600)	**.600** (.400-.800)	364
20 years and older	99-00	*	**.200** (.200-.200)	**.300** (.200-.300)	**.400** (.300-.800)	**.600** (.400-1.50)	1019
	03-04	*	**< LOD**	**.400** (<LOD-.500)	**.700** (.400-1.00)	**.900** (.500-1.80)	1454
	05-06	**.364** (.303-.438)	**.300** (.300-.400)	**.500** (.400-.700)	**1.00** (.600-1.70)	**1.50** (.900-2.60)	1480
	07-08	**.295** (.271-.321)	**.300** (.300-.300)	**.400** (.400-.500)	**.700** (.600-.800)	**.900** (.800-1.10)	1743
	09-10	**.289** (.265-.314)	**.300** (.300-.300)	**.400** (.400-.500)	**.700** (.600-.800)	**.900** (.800-1.20)	1869
Gender							
Males	99-00	*	**.200** (.200-.200)	**.300** (.200-.300)	**.400** (.300-.700)	**.500** (.300-1.90)	743
	03-04	*	**< LOD**	**.400** (<LOD-.500)	**.800** (.400-1.40)	**1.10** (.600-2.10)	1053
	05-06	**.381** (.318-.456)	**.400** (.300-.400)	**.600** (.400-.800)	**1.00** (.600-2.20)	**1.70** (1.00-2.60)	1048
	07-08	**.306** (.283-.331)	**.300** (.300-.300)	**.400** (.400-.500)	**.700** (.600-.800)	**.900** (.800-1.20)	1059
	09-10	**.289** (.264-.318)	**.300** (.300-.300)	**.400** (.400-.500)	**.600** (.500-.800)	**.800** (.600-1.20)	1075
Females	99-00	*	**.200** (.200-.200)	**.200** (.200-.300)	**.400** (.300-.800)	**.600** (.400-1.40)	819
	03-04	*	**< LOD**	**.300** (<LOD-.400)	**.500** (.400-.800)	**.800** (.500-1.20)	1041
	05-06	**.331** (.277-.396)	**.300** (.300-.400)	**.500** (.400-.600)	**.900** (.600-1.40)	**1.30** (.800-2.30)	1072
	07-08	**.267** (.245-.292)	**.300** (.200-.300)	**.400** (.400-.500)	**.600** (.500-.800)	**.800** (.700-1.10)	1041
	09-10	**.270** (.248-.295)	**.300** (.200-.300)	**.400** (.400-.500)	**.700** (.600-.800)	**1.00** (.800-1.10)	1158
Race/ethnicity							
Mexican Americans	99-00	*	**.200** (.200-.200)	**.200** (.200-.200)	**.300** (.200-.300)	**.300** (.200-1.50)	584
	03-04	*	**< LOD**	**< LOD**	**.500** (.400-.500)	**.600** (.500-.800)	485
	05-06	**.283** (.245-.327)	**.300** (.200-.300)	**.400** (.300-.500)	**.600** (.500-1.00)	**1.00** (.500-2.40)	499
	07-08	**.253** (.222-.289)	**.200** (.200-.300)	**.400** (.300-.500)	**.600** (.400-.700)	**.600** (.500-1.40)	391
	09-10	**.242** (.215-.272)	**.200** (.200-.300)	**.400** (.300-.400)	**.500** (.500-.600)	**.700** (.600-.800)	461
Non-Hispanic blacks	99-00	*	**.200** (.200-.200)	**.400** (.200-.700)	**.800** (.500-1.20)	**1.10** (.600-2.30)	303
	03-04	*	**< LOD**	**.400** (<LOD-.700)	**.800** (.400-1.50)	**1.00** (.500-3.10)	538
	05-06	**.405** (.309-.531)	**.400** (.300-.500)	**.600** (.400-.900)	**1.20** (.600-2.90)	**2.30** (1.10-3.70)	544
	07-08	**.331** (.298-.368)	**.300** (.300-.400)	**.500** (.400-.600)	**.800** (.600-.900)	**1.00** (.800-1.50)	419
	09-10	**.336** (.298-.379)	**.300** (.300-.300)	**.500** (.400-.600)	**.800** (.600-1.00)	**1.10** (.800-2.60)	391
Non-Hispanic whites	99-00	*	**.200** (.200-.200)	**.300** (.200-.300)	**.400** (.300-.600)	**.500** (.400-.800)	519
	03-04	*	**< LOD**	**.300** (<LOD-.500)	**.600** (.400-1.00)	**.900** (.500-1.80)	962
	05-06	**.350** (.294-.417)	**.300** (.300-.400)	**.500** (.400-.700)	**.900** (.600-1.50)	**1.40** (.800-2.30)	935
	07-08	**.276** (.254-.301)	**.300** (.200-.300)	**.400** (.400-.500)	**.600** (.500-.700)	**.900** (.700-.900)	931
	09-10	**.270** (.240-.304)	**.300** (.200-.300)	**.400** (.300-.500)	**.600** (.500-.800)	**.800** (.600-1.10)	1031

Limit of detection (LOD, see Data Analysis section) for Survey years 99-00, 03-04, 05-06, 07-08, and 09-10 are 0.2, 0.3, 0.2, 0.2, and 0.1 respectively.
< LOD means less than the limit of detection, which may vary for some chemicals by year and by individual sample.
* Not calculated: proportion of results below limit of detection was too high to provide a valid result.

Biomonitoring Summary: http://www.cdc.gov/biomonitoring/PFCs_BiomonitoringSummary.html
Factsheet: http://www.cdc.gov/biomonitoring/PFCs_FactSheet.html

Serum Perfluorododecanoic acid (PFDoA)

Geometric mean and selected percentiles of serum concentrations (in µg/L) for the U.S. population from the National Health and Nutrition Examination Survey.

	Survey years	Geometric mean (95% conf. interval)	Selected percentiles (95% confidence interval) 50th	75th	90th	95th	Sample size
Total	99-00	*	**.200** (.200-.200)	**.200** (.200-.200)	**.200** (.200-.200)	**.200** (.200-.200)	1562
	03-04	*	**< LOD**	**< LOD**	**< LOD**	**< LOD**	2094
	05-06	*	**< LOD**	**< LOD**	**< LOD**	**< LOD**	2120
	07-08	*	**< LOD**	**< LOD**	**< LOD**	**< LOD**	2100
	09-10	*	**< LOD**	**< LOD**	**< LOD**	**< LOD**	2233
Age group							
12-19 years	99-00	*	**.200** (.200-.200)	**.200** (.200-.200)	**.200** (.200-.200)	**.200** (.200-.200)	543
	03-04	*	**< LOD**	**< LOD**	**< LOD**	**< LOD**	640
	05-06	*	**< LOD**	**< LOD**	**< LOD**	**< LOD**	640
	07-08	*	**< LOD**	**< LOD**	**< LOD**	**< LOD**	357
	09-10	*	**< LOD**	**< LOD**	**< LOD**	**< LOD**	364
20 years and older	99-00	*	**.200** (.200-.200)	**.200** (.200-.200)	**.200** (.200-.200)	**.200** (.200-.200)	1019
	03-04	*	**< LOD**	**< LOD**	**< LOD**	**< LOD**	1454
	05-06	*	**< LOD**	**< LOD**	**< LOD**	**< LOD**	1480
	07-08	*	**< LOD**	**< LOD**	**< LOD**	**< LOD**	1743
	09-10	*	**< LOD**	**< LOD**	**< LOD**	**.100** (<LOD-.100)	1869
Gender							
Males	99-00	*	**.200** (.200-.200)	**.200** (.200-.200)	**.200** (.200-.200)	**.200** (.200-.200)	743
	03-04	*	**< LOD**	**< LOD**	**< LOD**	**< LOD**	1053
	05-06	*	**< LOD**	**< LOD**	**< LOD**	**< LOD**	1048
	07-08	*	**< LOD**	**< LOD**	**< LOD**	**< LOD**	1059
	09-10	*	**< LOD**	**< LOD**	**< LOD**	**< LOD**	1075
Females	99-00	*	**.200** (.200-.200)	**.200** (.200-.200)	**.200** (.200-.200)	**.200** (.200-.200)	819
	03-04	*	**< LOD**	**< LOD**	**< LOD**	**< LOD**	1041
	05-06	*	**< LOD**	**< LOD**	**< LOD**	**< LOD**	1072
	07-08	*	**< LOD**	**< LOD**	**< LOD**	**< LOD**	1041
	09-10	*	**< LOD**	**< LOD**	**< LOD**	**.100** (<LOD-.100)	1158
Race/ethnicity							
Mexican Americans	99-00	*	**.200** (.200-.200)	**.200** (.200-.200)	**.200** (.200-.200)	**.200** (.200-.200)	584
	03-04	*	**< LOD**	**< LOD**	**< LOD**	**< LOD**	485
	05-06	*	**< LOD**	**< LOD**	**< LOD**	**< LOD**	499
	07-08	*	**< LOD**	**< LOD**	**< LOD**	**< LOD**	391
	09-10	*	**< LOD**	**< LOD**	**< LOD**	**< LOD**	461
Non-Hispanic blacks	99-00	*	**.200** (.200-.200)	**.200** (.200-.200)	**.200** (.200-.200)	**.200** (.200-.200)	303
	03-04	*	**< LOD**	**< LOD**	**< LOD**	**< LOD**	538
	05-06	*	**< LOD**	**< LOD**	**< LOD**	**< LOD**	544
	07-08	*	**< LOD**	**< LOD**	**< LOD**	**< LOD**	419
	09-10	*	**< LOD**	**< LOD**	**< LOD**	**.100** (<LOD-.400)	391
Non-Hispanic whites	99-00	*	**.200** (.200-.200)	**.200** (.200-.200)	**.200** (.200-.200)	**.200** (.200-.200)	519
	03-04	*	**< LOD**	**< LOD**	**< LOD**	**< LOD**	962
	05-06	*	**< LOD**	**< LOD**	**< LOD**	**< LOD**	935
	07-08	*	**< LOD**	**< LOD**	**< LOD**	**< LOD**	931
	09-10	*	**< LOD**	**< LOD**	**< LOD**	**< LOD**	1031

Limit of detection (LOD, see Data Analysis section) for Survey years 99-00, 03-04, 05-06, 07-08, and 09-10 are 0.2, 1.0, 0.2, 0.2, and 0.1 respectively.
< LOD means less than the limit of detection, which may vary for some chemicals by year and by individual sample.
* Not calculated: proportion of results below limit of detection was too high to provide a valid result.

Biomonitoring Summary: http://www.cdc.gov/biomonitoring/PFCs_BiomonitoringSummary.html
Factsheet: http://www.cdc.gov/biomonitoring/PFCs_FactSheet.html

Serum Perfluoroheptanoic acid (PFHpA)

Geometric mean and selected percentiles of serum concentrations (in µg/L) for the U.S. population from the National Health and Nutrition Examination Survey.

	Survey years	Geometric mean (95% conf. interval)	Selected percentiles (95% confidence interval) 50th	75th	90th	95th	Sample size
Total	99-00	*	**.400** (.400-.400)	**.400** (.400-.400)	**.500** (.400-.600)	**.700** (.500-1.00)	1562
	03-04	*	**< LOD**	**< LOD**	**< LOD**	**.400** (<LOD-.500)	2094
	05-06	*	**< LOD**	**< LOD**	**< LOD**	**.700** (<LOD-1.70)	2120
	07-08	*	**< LOD**	**< LOD**	**< LOD**	**.500** (.400-.600)	2100
	09-10	*	**< LOD**	**< LOD**	**.200** (.100-.200)	**.200** (.200-.300)	2233
Age group							
12-19 years	99-00	*	**.400** (.400-.400)	**.400** (.400-.500)	**.800** (.600-1.10)	**1.20** (.800-1.80)	543
	03-04	*	**< LOD**	**< LOD**	**.400** (<LOD-.600)	**.600** (.500-.900)	640
	05-06	*	**< LOD**	**< LOD**	**.700** (<LOD-1.10)	**1.10** (.600-2.70)	640
	07-08	*	**< LOD**	**< LOD**	**.500** (<LOD-.600)	**.600** (.500-.700)	357
	09-10	*	**< LOD**	**.100** (.100-.200)	**.200** (.200-.400)	**.400** (.200-.500)	364
20 years and older	99-00	*	**.400** (.400-.400)	**.400** (.400-.400)	**.400** (.400-.500)	**.600** (.400-.900)	1019
	03-04	*	**< LOD**	**< LOD**	**< LOD**	**< LOD**	1454
	05-06	*	**< LOD**	**< LOD**	**< LOD**	**.600** (<LOD-2.10)	1480
	07-08	*	**< LOD**	**< LOD**	**< LOD**	**.500** (<LOD-.500)	1743
	09-10	*	**< LOD**	**< LOD**	**.100** (.100-.200)	**.200** (.200-.200)	1869
Gender							
Males	99-00	*	**.400** (.400-.400)	**.400** (.400-.400)	**.500** (.400-.600)	**.700** (.500-1.00)	743
	03-04	*	**< LOD**	**< LOD**	**< LOD**	**.300** (<LOD-.400)	1053
	05-06	*	**< LOD**	**< LOD**	**.400** (<LOD-1.00)	**.800** (<LOD-2.10)	1048
	07-08	*	**< LOD**	**< LOD**	**< LOD**	**.600** (.400-.700)	1059
	09-10	*	**< LOD**	**< LOD**	**.200** (.100-.200)	**.200** (.200-.300)	1075
Females	99-00	*	**.400** (.400-.400)	**.400** (.400-.400)	**.500** (.400-.700)	**.700** (.400-1.20)	819
	03-04	*	**< LOD**	**< LOD**	**< LOD**	**.400** (.300-.600)	1041
	05-06	*	**< LOD**	**< LOD**	**< LOD**	**.600** (<LOD-1.30)	1072
	07-08	*	**< LOD**	**< LOD**	**< LOD**	**.500** (.400-.500)	1041
	09-10	*	**< LOD**	**< LOD**	**.200** (.100-.200)	**.200** (.200-.300)	1158
Race/ethnicity							
Mexican Americans	99-00	*	**.400** (.400-.400)	**.400** (.400-.400)	**.500** (.400-.900)	**.900** (.500-1.30)	584
	03-04	*	**< LOD**	**< LOD**	**< LOD**	**.500** (<LOD-.900)	485
	05-06	*	**< LOD**	**< LOD**	**< LOD**	**.500** (<LOD-1.50)	499
	07-08	*	**< LOD**	**< LOD**	**< LOD**	**.500** (<LOD-.500)	391
	09-10	*	**< LOD**	**< LOD**	**.200** (.100-.200)	**.200** (.200-.300)	461
Non-Hispanic blacks	99-00	*	**.400** (.400-.400)	**.400** (.400-.400)	**.400** (.400-.500)	**.600** (.400-1.20)	303
	03-04	*	**< LOD**	**< LOD**	**< LOD**	**< LOD**	538
	05-06	*	**< LOD**	**< LOD**	**< LOD**	**.500** (<LOD-1.80)	544
	07-08	*	**< LOD**	**< LOD**	**< LOD**	**.600** (.400-.700)	419
	09-10	*	**< LOD**	**< LOD**	**.100** (.100-.200)	**.200** (.200-.200)	391
Non-Hispanic whites	99-00	*	**.400** (.400-.400)	**.400** (.400-.400)	**.400** (.400-.600)	**.600** (.500-.900)	519
	03-04	*	**< LOD**	**< LOD**	**< LOD**	**.300** (<LOD-.500)	962
	05-06	*	**< LOD**	**< LOD**	**< LOD**	**.800** (<LOD-2.10)	935
	07-08	*	**< LOD**	**< LOD**	**< LOD**	**.500** (.400-.700)	931
	09-10	*	**< LOD**	**< LOD**	**.200** (.100-.200)	**.200** (.200-.300)	1031

Limit of detection (LOD, see Data Analysis section) for Survey years 99-00, 03-04, 05-06, 07-08, and 09-10 are 0.4, 0.3, 0.4, 0.4, and 0.1 respectively.
< LOD means less than the limit of detection, which may vary for some chemicals by year and by individual sample.
* Not calculated: proportion of results below limit of detection was too high to provide a valid result.

Biomonitoring Summary: http://www.cdc.gov/biomonitoring/PFCs_BiomonitoringSummary.html
Factsheet: http://www.cdc.gov/biomonitoring/PFCs_FactSheet.html

Serum Perfluorohexane sulfonic acid (PFHxS)

Geometric mean and selected percentiles of serum concentrations (in µg/L) for the U.S. population from the National Health and Nutrition Examination Survey.

	Survey years	Geometric mean (95% conf. interval)	Selected percentiles (95% confidence interval) 50th	75th	90th	95th	Sample size
Total	99-00	**2.13** (1.91-2.38)	**2.10** (1.80-2.30)	**3.40** (3.10-4.00)	**5.80** (5.20-6.90)	**8.70** (7.00-10.0)	1562
	03-04	**1.93** (1.73-2.16)	**1.90** (1.70-2.10)	**3.30** (2.80-3.90)	**5.90** (4.80-7.20)	**8.30** (7.10-9.70)	2094
	05-06	**1.67** (1.42-1.98)	**1.80** (1.50-2.10)	**3.20** (2.60-4.00)	**5.40** (4.40-7.10)	**8.30** (5.80-11.9)	2120
	07-08	**1.95** (1.76-2.17)	**2.00** (1.80-2.10)	**3.50** (3.10-4.00)	**5.90** (4.90-8.30)	**9.80** (6.10-15.2)	2100
	09-10	**1.66** (1.51-1.82)	**1.70** (1.50-1.90)	**3.00** (2.60-3.30)	**4.80** (4.40-5.30)	**6.90** (5.90-7.60)	2233
Age group							
12-19 years	99-00	**2.69** (2.14-3.39)	**2.50** (2.00-3.70)	**5.00** (3.60-6.50)	**8.00** (5.80-12.9)	**12.9** (6.90-16.4)	543
	03-04	**2.44** (2.05-2.90)	**2.40** (1.80-3.20)	**4.90** (4.00-6.30)	**9.50** (6.80-12.5)	**13.3** (9.90-19.6)	640
	05-06	**2.09** (1.74-2.52)	**2.40** (2.00-2.90)	**4.30** (3.70-5.40)	**9.50** (6.40-13.1)	**14.1** (9.80-17.8)	640
	07-08	**2.40** (2.09-2.75)	**2.30** (1.80-2.70)	**4.30** (3.70-5.70)	**9.90** (6.50-12.5)	**15.9** (11.1-21.5)	357
	09-10	**2.03** (1.77-2.33)	**1.90** (1.60-2.10)	**3.80** (3.20-4.20)	**8.10** (6.30-9.70)	**12.3** (8.60-19.0)	364
20 years and older	99-00	**2.05** (1.85-2.28)	**2.00** (1.80-2.30)	**3.30** (3.00-3.70)	**5.40** (4.90-5.90)	**8.20** (6.70-9.50)	1019
	03-04	**1.86** (1.67-2.08)	**1.80** (1.60-2.10)	**3.00** (2.60-3.60)	**5.50** (4.50-6.70)	**7.60** (6.30-9.40)	1454
	05-06	**1.62** (1.37-1.92)	**1.70** (1.50-2.10)	**3.10** (2.50-3.80)	**5.20** (4.20-6.50)	**7.20** (5.10-11.6)	1480
	07-08	**1.90** (1.69-2.13)	**1.90** (1.70-2.10)	**3.30** (2.90-3.90)	**5.80** (4.50-8.00)	**9.00** (5.60-15.0)	1743
	09-10	**1.61** (1.45-1.79)	**1.70** (1.50-1.90)	**2.90** (2.50-3.30)	**4.50** (4.00-5.20)	**6.00** (5.40-7.10)	1869
Gender							
Males	99-00	**2.61** (2.27-3.01)	**2.60** (2.20-3.00)	**4.10** (3.50-4.70)	**6.60** (5.30-9.40)	**10.5** (6.90-15.0)	743
	03-04	**2.17** (1.87-2.51)	**2.10** (1.80-2.40)	**3.40** (2.80-4.50)	**6.10** (4.60-8.10)	**8.50** (6.50-10.5)	1053
	05-06	**2.08** (1.76-2.45)	**2.20** (1.80-2.70)	**3.70** (3.20-4.60)	**6.40** (4.80-9.30)	**9.50** (6.70-13.7)	1048
	07-08	**2.63** (2.36-2.94)	**2.60** (2.40-2.80)	**4.20** (3.80-4.90)	**7.30** (5.50-11.0)	**11.4** (7.10-18.1)	1059
	09-10	**2.21** (1.99-2.46)	**2.20** (1.90-2.50)	**3.40** (3.00-4.00)	**5.50** (5.00-6.40)	**7.80** (6.50-9.90)	1075
Females	99-00	**1.79** (1.56-2.06)	**1.70** (1.50-2.10)	**2.80** (2.30-3.50)	**5.10** (4.10-6.70)	**8.00** (5.70-9.00)	819
	03-04	**1.72** (1.56-1.91)	**1.60** (1.40-1.80)	**2.90** (2.50-3.50)	**5.80** (4.60-7.10)	**8.20** (6.70-10.0)	1041
	05-06	**1.37** (1.15-1.63)	**1.50** (1.20-1.70)	**2.80** (2.20-3.30)	**4.60** (3.90-5.80)	**6.60** (5.60-9.30)	1072
	07-08	**1.46** (1.30-1.64)	**1.40** (1.30-1.50)	**2.60** (2.20-3.10)	**4.70** (3.80-6.10)	**7.50** (5.00-12.5)	1041
	09-10	**1.26** (1.14-1.40)	**1.30** (1.20-1.40)	**2.20** (2.00-2.60)	**4.00** (3.50-4.50)	**5.40** (4.70-6.50)	1158
Race/ethnicity							
Mexican Americans	99-00	**1.47** (1.13-1.92)	**1.50** (1.00-2.00)	**2.80** (1.80-3.80)	**4.50** (3.30-6.90)	**6.70** (4.60-9.50)	584
	03-04	**1.42** (1.17-1.72)	**1.50** (1.20-1.70)	**2.30** (1.90-2.90)	**4.30** (3.10-5.10)	**5.50** (4.00-8.90)	485
	05-06	**1.25** (.884-1.76)	**1.60** (1.20-2.10)	**2.80** (2.50-3.40)	**4.30** (3.60-5.20)	**6.00** (4.60-7.20)	499
	07-08	**1.65** (1.46-1.86)	**1.70** (1.40-1.90)	**3.00** (2.70-3.40)	**5.00** (3.70-6.10)	**6.70** (5.20-10.7)	391
	09-10	**1.01** (.835-1.22)	**1.10** (.800-1.30)	**1.80** (1.50-2.20)	**3.10** (2.50-3.70)	**4.00** (3.20-5.30)	461
Non-Hispanic blacks	99-00	**2.14** (1.58-2.89)	**2.10** (1.40-3.00)	**3.40** (2.70-5.00)	**6.70** (3.90-10.7)	**10.7** (6.80-14.3)	303
	03-04	**1.92** (1.62-2.26)	**1.90** (1.60-2.20)	**3.50** (2.80-4.60)	**6.00** (5.00-7.10)	**8.30** (6.30-12.0)	538
	05-06	**1.53** (1.13-2.07)	**1.70** (1.40-2.20)	**3.30** (2.50-4.10)	**5.40** (3.90-7.50)	**7.50** (5.30-11.0)	544
	07-08	**1.98** (1.55-2.52)	**2.10** (1.80-2.50)	**3.90** (2.80-5.40)	**7.90** (4.20-12.5)	**11.1** (5.90-17.2)	419
	09-10	**1.44** (1.26-1.64)	**1.40** (1.20-1.70)	**2.60** (2.10-3.00)	**4.40** (3.80-5.20)	**6.50** (4.60-8.20)	391
Non-Hispanic whites	99-00	**2.30** (2.07-2.56)	**2.30** (1.90-2.60)	**3.60** (3.20-4.20)	**5.90** (5.30-7.00)	**8.40** (7.00-9.70)	519
	03-04	**2.01** (1.77-2.27)	**1.90** (1.70-2.20)	**3.30** (2.80-4.10)	**6.10** (4.70-7.80)	**8.20** (6.90-10.1)	962
	05-06	**1.79** (1.48-2.17)	**1.80** (1.50-2.20)	**3.30** (2.70-4.30)	**5.60** (4.60-8.20)	**9.40** (6.10-13.1)	935
	07-08	**2.13** (1.89-2.41)	**2.10** (1.80-2.40)	**3.70** (3.20-4.20)	**6.40** (5.30-9.00)	**10.5** (6.50-15.6)	931
	09-10	**1.93** (1.77-2.10)	**2.00** (1.80-2.20)	**3.30** (2.90-3.70)	**5.30** (4.80-5.60)	**7.30** (6.20-8.80)	1031

Limit of detection (LOD, see Data Analysis section) for Survey years 99-00, 03-04, 05-06, 07-08, and 09-10 are 0.1, 0.3, 0.1, 0.1, and 0.1 respectively.

Biomonitoring Summary: http://www.cdc.gov/biomonitoring/PFCs_BiomonitoringSummary.html
Factsheet: http://www.cdc.gov/biomonitoring/PFCs_FactSheet.html

Serum Perfluorononanoic acid (PFNA)

Geometric mean and selected percentiles of serum concentrations (in µg/L) for the U.S. population from the National Health and Nutrition Examination Survey.**

	Survey years	Geometric mean (95% conf. interval)	Selected percentiles (95% confidence interval) 50th	75th	90th	95th	Sample size
Total	99-00	**.557** (.463-.671)	**.600** (.500-.700)	**.900** (.700-1.00)	**1.30** (1.00-1.90)	**1.80** (1.30-2.40)	1562
	03-04	**.966** (.816-1.14)	**1.00** (.900-1.10)	**1.50** (1.20-1.80)	**2.30** (1.60-4.30)	**3.20** (1.80-7.70)	2094
	05-06	**1.09** (.909-1.29)	**1.10** (.900-1.20)	**1.70** (1.30-2.10)	**2.60** (1.80-4.20)	**3.60** (2.50-5.70)	2120
	07-08	**1.22** (1.12-1.32)	**1.23** (1.15-1.31)	**1.72** (1.56-1.89)	**2.62** (2.30-2.87)	**3.28** (2.95-3.77)	2100
	09-10	**1.26** (1.11-1.44)	**1.23** (1.07-1.31)	**1.80** (1.48-2.13)	**2.71** (1.97-4.26)	**3.77** (2.30-7.22)	2233
Age group							
12-19 years	99-00	**.476** (.410-.553)	**.500** (.400-.600)	**.700** (.600-.800)	**.900** (.800-1.10)	**1.20** (.900-1.40)	543
	03-04	**.852** (.697-1.04)	**.800** (.700-1.00)	**1.20** (1.00-1.60)	**1.90** (1.20-3.70)	**2.80** (1.30-6.30)	640
	05-06	**.929** (.782-1.10)	**.900** (.800-1.10)	**1.40** (1.10-1.80)	**2.00** (1.60-2.70)	**2.70** (2.10-3.40)	640
	07-08	**1.16** (1.04-1.30)	**1.15** (.980-1.31)	**1.56** (1.31-1.97)	**2.05** (1.64-2.71)	**2.54** (2.13-3.28)	357
	09-10	**1.10** (.950-1.27)	**1.07** (.900-1.23)	**1.48** (1.31-1.80)	**2.21** (1.48-2.95)	**2.62** (1.89-4.84)	364
20 years and older	99-00	**.573** (.472-.695)	**.600** (.500-.700)	**.900** (.700-1.20)	**1.40** (1.00-1.90)	**1.90** (1.40-2.40)	1019
	03-04	**.984** (.835-1.16)	**1.00** (.900-1.10)	**1.50** (1.20-1.80)	**2.40** (1.60-4.40)	**3.40** (1.80-8.40)	1454
	05-06	**1.11** (.929-1.33)	**1.10** (1.00-1.20)	**1.70** (1.30-2.20)	**2.60** (1.80-4.40)	**3.90** (2.50-5.80)	1480
	07-08	**1.23** (1.13-1.33)	**1.23** (1.15-1.31)	**1.72** (1.64-1.89)	**2.62** (2.38-2.95)	**3.36** (3.03-3.77)	1743
	09-10	**1.29** (1.13-1.47)	**1.23** (1.15-1.39)	**1.80** (1.56-2.21)	**2.71** (1.97-4.67)	**3.94** (2.38-8.36)	1869
Gender							
Males	99-00	**.608** (.515-.717)	**.600** (.500-.700)	**.900** (.800-1.10)	**1.30** (1.10-1.80)	**1.70** (1.30-2.40)	743
	03-04	**1.09** (.912-1.30)	**1.10** (.900-1.20)	**1.60** (1.40-1.90)	**2.40** (1.70-5.00)	**4.00** (1.80-8.70)	1053
	05-06	**1.19** (.993-1.43)	**1.20** (1.00-1.30)	**1.80** (1.40-2.50)	**2.90** (1.80-4.60)	**3.90** (2.50-6.70)	1048
	07-08	**1.36** (1.27-1.47)	**1.31** (1.23-1.39)	**1.89** (1.72-2.05)	**2.87** (2.54-3.12)	**3.53** (3.12-4.18)	1059
	09-10	**1.37** (1.17-1.59)	**1.31** (1.15-1.48)	**1.80** (1.56-2.30)	**2.79** (1.89-4.84)	**4.10** (2.21-12.1)	1075
Females	99-00	**.517** (.419-.638)	**.500** (.400-.600)	**.800** (.600-1.00)	**1.30** (.900-2.00)	**1.80** (1.30-2.60)	819
	03-04	**.861** (.721-1.03)	**.900** (.800-1.00)	**1.30** (1.00-1.70)	**2.20** (1.40-3.40)	**3.00** (1.70-6.10)	1041
	05-06	**.992** (.833-1.18)	**.900** (.800-1.10)	**1.50** (1.20-1.90)	**2.40** (1.70-3.50)	**3.10** (2.10-5.70)	1072
	07-08	**1.09** (.985-1.21)	**1.07** (.980-1.23)	**1.56** (1.48-1.72)	**2.21** (1.97-2.54)	**2.79** (2.54-3.53)	1041
	09-10	**1.17** (1.05-1.31)	**1.15** (.980-1.23)	**1.72** (1.39-2.05)	**2.62** (1.97-3.77)	**3.53** (2.30-6.15)	1158
Race/ethnicity							
Mexican Americans	99-00	**.349** (.303-.403)	**.400** (.300-.400)	**.500** (.400-.700)	**.700** (.600-.900)	**.900** (.700-1.30)	584
	03-04	**.689** (.586-.809)	**.700** (.600-.900)	**1.10** (.900-1.40)	**1.60** (1.30-2.00)	**2.00** (1.60-2.80)	485
	05-06	**.821** (.710-.951)	**.800** (.700-.900)	**1.20** (1.10-1.40)	**1.60** (1.30-2.30)	**2.30** (1.50-3.20)	499
	07-08	**1.10** (.967-1.25)	**1.15** (.980-1.31)	**1.56** (1.39-1.80)	**2.13** (1.80-2.71)	**2.71** (2.13-3.28)	391
	09-10	**.993** (.906-1.09)	**.980** (.900-1.07)	**1.39** (1.31-1.56)	**2.05** (1.80-2.38)	**2.46** (2.21-3.03)	461
Non-Hispanic blacks	99-00	**.765** (.607-.965)	**.700** (.600-1.00)	**1.30** (.800-1.80)	**1.90** (1.50-2.50)	**2.50** (1.90-2.90)	303
	03-04	**1.14** (.834-1.54)	**1.10** (.900-1.40)	**1.70** (1.20-2.90)	**3.20** (1.50-6.50)	**4.70** (2.10-9.30)	538
	05-06	**1.17** (.916-1.50)	**1.20** (.900-1.40)	**1.60** (1.30-2.50)	**2.60** (1.70-5.60)	**4.40** (2.40-8.20)	544
	07-08	**1.35** (1.23-1.48)	**1.39** (1.23-1.48)	**1.89** (1.72-2.13)	**2.79** (2.30-3.36)	**3.36** (2.79-4.67)	419
	09-10	**1.42** (1.29-1.56)	**1.39** (1.23-1.56)	**1.97** (1.80-2.30)	**2.79** (2.38-3.36)	**3.36** (2.62-4.84)	391
Non-Hispanic whites	99-00	**.571** (.471-.691)	**.600** (.500-.700)	**.900** (.700-1.10)	**1.30** (1.00-1.90)	**1.70** (1.30-2.30)	519
	03-04	**.963** (.826-1.12)	**.900** (.900-1.10)	**1.50** (1.20-1.70)	**2.30** (1.60-3.60)	**3.00** (1.80-6.20)	962
	05-06	**1.10** (.914-1.31)	**1.10** (.900-1.20)	**1.70** (1.30-2.10)	**2.60** (1.80-4.20)	**3.50** (2.40-5.70)	935
	07-08	**1.22** (1.10-1.34)	**1.23** (1.15-1.31)	**1.72** (1.48-1.89)	**2.54** (2.13-3.03)	**3.20** (2.79-3.85)	931
	09-10	**1.28** (1.08-1.51)	**1.23** (1.07-1.39)	**1.80** (1.48-2.21)	**2.62** (1.80-5.08)	**3.85** (2.05-10.8)	1031

Limit of detection (LOD, see Data Analysis section) for Survey years 99-00, 03-04, 05-06, 07-08, and 09-10 are 0.1, 0.1, 0.1, 0.082, and 0.082 respectively.

**To correct for inadequate purity in the analytical standards, all results and LODs have been adjusted by a factor of 0.82 for survey periods 2007-2008 and 2009-2010 compared with results previously released.

Biomonitoring Summary: http://www.cdc.gov/biomonitoring/PFCs_BiomonitoringSummary.html

Factsheet: http://www.cdc.gov/biomonitoring/PFCs_FactSheet.html

Serum Perfluorooctanoic acid (PFOA)

Geometric mean and selected percentiles of serum concentrations (in µg/L) for the U.S. population from the National Health and Nutrition Examination Survey.

	Survey years	Geometric mean (95% conf. interval)	Selected percentiles (95% confidence interval) 50th	75th	90th	95th	Sample size
Total	99-00	**5.21** (4.72-5.74)	**5.20** (4.80-5.90)	**6.90** (6.30-7.80)	**9.40** (8.20-11.1)	**11.9** (10.9-13.5)	1562
	03-04	**3.95** (3.65-4.27)	**4.10** (3.80-4.40)	**5.80** (5.30-6.40)	**7.80** (6.70-9.60)	**9.80** (7.40-14.1)	2094
	05-06	**3.92** (3.48-4.42)	**4.20** (3.80-4.50)	**6.20** (5.40-7.20)	**9.00** (7.40-11.2)	**11.3** (8.80-14.5)	2120
	07-08	**4.12** (4.01-4.24)	**4.30** (4.20-4.50)	**5.90** (5.70-6.20)	**7.90** (7.50-8.30)	**9.60** (8.90-10.1)	2100
	09-10	**3.07** (2.81-3.36)	**3.20** (2.90-3.50)	**4.60** (4.10-5.10)	**6.00** (5.30-7.20)	**7.50** (6.20-9.70)	2233
Age group							
12-19 years	99-00	**5.46** (4.98-5.99)	**5.60** (4.90-6.10)	**6.90** (6.20-7.70)	**9.40** (7.70-11.0)	**11.6** (10.2-12.5)	543
	03-04	**3.89** (3.47-4.35)	**4.00** (3.50-4.50)	**5.40** (4.60-6.10)	**7.00** (5.60-9.20)	**8.60** (5.90-12.6)	640
	05-06	**3.59** (3.26-3.96)	**3.80** (3.30-4.20)	**5.40** (4.60-5.90)	**6.90** (6.30-7.90)	**8.40** (7.30-10.1)	640
	07-08	**3.91** (3.71-4.12)	**4.00** (3.70-4.40)	**5.00** (4.70-5.50)	**6.10** (5.70-6.70)	**7.30** (6.20-8.00)	357
	09-10	**2.74** (2.46-3.05)	**2.90** (2.60-3.10)	**3.80** (3.30-4.20)	**4.80** (4.10-5.30)	**5.00** (4.40-7.20)	364
20 years and older	99-00	**5.16** (4.66-5.72)	**5.20** (4.70-5.70)	**7.00** (6.30-7.80)	**9.40** (8.20-11.1)	**12.0** (10.8-14.0)	1019
	03-04	**3.96** (3.67-4.27)	**4.10** (3.90-4.40)	**5.90** (5.40-6.50)	**7.80** (6.80-9.60)	**9.90** (7.60-14.2)	1454
	05-06	**3.97** (3.51-4.49)	**4.20** (3.80-4.60)	**6.40** (5.40-7.50)	**9.30** (7.40-11.9)	**11.6** (9.00-14.8)	1480
	07-08	**4.15** (4.02-4.30)	**4.30** (4.20-4.60)	**6.10** (5.80-6.50)	**8.10** (7.70-8.70)	**9.80** (9.00-10.4)	1743
	09-10	**3.12** (2.84-3.43)	**3.30** (3.00-3.60)	**4.70** (4.20-5.30)	**6.40** (5.40-7.50)	**7.70** (6.30-10.2)	1869
Gender							
Males	99-00	**5.71** (5.17-6.31)	**6.00** (5.40-6.50)	**7.70** (6.80-8.70)	**10.6** (9.00-11.8)	**12.1** (11.2-13.1)	743
	03-04	**4.47** (4.07-4.91)	**4.60** (4.30-5.00)	**6.30** (5.70-7.20)	**8.40** (6.80-12.5)	**10.7** (7.40-17.5)	1053
	05-06	**4.69** (4.23-5.20)	**4.90** (4.40-5.40)	**7.20** (6.10-8.00)	**9.90** (8.00-12.2)	**12.2** (9.60-15.2)	1048
	07-08	**4.80** (4.55-5.06)	**4.90** (4.60-5.20)	**6.70** (6.30-7.10)	**8.70** (8.10-9.30)	**10.1** (9.50-11.1)	1059
	09-10	**3.53** (3.22-3.87)	**3.70** (3.40-4.00)	**4.90** (4.50-5.40)	**6.80** (5.40-8.00)	**7.90** (6.40-10.2)	1075
Females	99-00	**4.80** (4.32-5.34)	**4.70** (4.40-5.20)	**6.30** (5.60-7.10)	**8.30** (7.50-9.90)	**11.3** (9.20-14.4)	819
	03-04	**3.50** (3.21-3.82)	**3.60** (3.30-3.90)	**5.20** (4.70-5.80)	**7.10** (6.30-8.20)	**8.60** (7.40-10.6)	1041
	05-06	**3.31** (2.89-3.79)	**3.50** (3.10-4.00)	**5.20** (4.40-6.00)	**7.90** (6.10-9.70)	**10.1** (7.50-14.2)	1072
	07-08	**3.55** (3.38-3.73)	**3.70** (3.50-3.90)	**5.20** (4.80-5.60)	**7.00** (6.50-7.50)	**8.30** (7.20-9.90)	1041
	09-10	**2.69** (2.45-2.96)	**2.70** (2.50-3.00)	**4.10** (3.60-4.70)	**5.60** (5.10-6.50)	**6.90** (5.80-8.40)	1158
Race/ethnicity							
Mexican Americans	99-00	**3.89** (3.58-4.22)	**4.20** (3.80-4.60)	**5.80** (5.20-6.30)	**7.70** (6.40-8.00)	**8.20** (7.70-8.90)	584
	03-04	**3.11** (2.84-3.40)	**3.30** (3.10-3.70)	**4.50** (4.20-5.20)	**6.70** (5.70-7.30)	**7.60** (6.70-10.5)	485
	05-06	**2.62** (2.33-2.95)	**2.80** (2.50-3.30)	**4.30** (3.80-4.70)	**5.80** (5.30-6.70)	**7.40** (5.90-8.10)	499
	07-08	**3.54** (3.35-3.75)	**3.80** (3.50-4.00)	**5.20** (4.90-5.60)	**6.60** (6.20-7.10)	**7.60** (6.80-9.00)	391
	09-10	**2.26** (2.00-2.54)	**2.40** (2.10-2.60)	**3.60** (3.10-3.80)	**4.60** (4.00-5.30)	**5.40** (4.50-6.60)	461
Non-Hispanic blacks	99-00	**4.78** (4.10-5.57)	**4.80** (3.80-5.90)	**6.40** (5.90-7.50)	**9.00** (7.40-11.5)	**11.5** (9.20-14.0)	303
	03-04	**3.37** (2.99-3.79)	**3.70** (3.20-4.20)	**5.20** (4.40-6.30)	**7.70** (5.30-11.6)	**9.60** (6.50-13.9)	538
	05-06	**3.27** (2.61-4.08)	**3.70** (3.00-4.20)	**5.50** (4.40-6.80)	**8.10** (6.00-11.3)	**10.4** (7.80-12.3)	544
	07-08	**3.86** (3.57-4.16)	**4.00** (3.50-4.30)	**5.90** (5.20-6.50)	**7.80** (7.10-8.70)	**9.20** (8.50-10.1)	419
	09-10	**2.74** (2.47-3.04)	**2.80** (2.60-3.00)	**4.00** (3.70-4.40)	**5.50** (5.00-6.20)	**6.70** (5.60-9.40)	391
Non-Hispanic whites	99-00	**5.61** (5.06-6.23)	**5.60** (4.90-6.20)	**7.30** (6.50-8.20)	**10.3** (8.40-12.1)	**13.0** (11.0-14.9)	519
	03-04	**4.18** (3.85-4.53)	**4.30** (3.90-4.70)	**6.00** (5.50-6.70)	**7.90** (7.20-9.20)	**9.90** (7.60-13.3)	962
	05-06	**4.27** (3.80-4.81)	**4.40** (4.00-5.00)	**6.60** (5.60-7.80)	**9.60** (7.40-12.2)	**11.6** (8.80-14.8)	935
	07-08	**4.38** (4.20-4.56)	**4.60** (4.30-4.70)	**6.10** (5.80-6.60)	**8.20** (7.80-8.80)	**9.90** (9.30-10.6)	931
	09-10	**3.36** (3.06-3.69)	**3.50** (3.20-3.90)	**4.80** (4.40-5.40)	**6.60** (5.40-7.80)	**7.80** (6.20-10.5)	1031

Limit of detection (LOD, see Data Analysis section) for Survey years 99-00, 03-04, 05-06, 07-08, and 09-10 are 0.1, 0.1, 0.1, 0.1, and 0.1 respectively.

Biomonitoring Summary: http://www.cdc.gov/biomonitoring/PFCs_BiomonitoringSummary.html
Factsheet: http://www.cdc.gov/biomonitoring/PFCs_FactSheet.html

Serum Perfluorooctane sulfonic acid (PFOS)

Geometric mean and selected percentiles of serum concentrations (in µg/L) for the U.S. population from the National Health and Nutrition Examination Survey.

	Survey years	Geometric mean (95% conf. interval)	Selected percentiles (95% confidence interval) 50th	75th	90th	95th	Sample size
Total	99-00	**30.4** (27.1-33.9)	**30.2** (27.8-33.9)	**43.7** (37.5-47.3)	**57.0** (50.2-71.7)	**75.7** (58.1-97.5)	1562
	03-04	**20.7** (19.2-22.3)	**21.2** (19.8-22.4)	**30.0** (27.5-33.0)	**41.3** (35.6-50.0)	**54.6** (44.0-66.5)	2094
	05-06	**17.1** (16.0-18.2)	**17.5** (16.8-18.6)	**27.2** (24.9-29.6)	**39.4** (34.9-43.1)	**47.5** (42.7-56.8)	2120
	07-08	**13.2** (12.2-14.2)	**13.6** (12.8-14.7)	**21.0** (18.9-23.3)	**32.6** (29.4-36.3)	**40.5** (35.4-47.4)	2100
	09-10	**9.32** (8.13-10.7)	**9.70** (8.50-10.8)	**14.8** (12.9-17.3)	**23.7** (18.3-30.2)	**32.0** (22.6-48.5)	2233
Age group							
12-19 years	99-00	**29.1** (26.2-32.4)	**29.5** (26.9-34.2)	**39.0** (35.9-45.0)	**52.7** (46.0-56.2)	**57.4** (52.7-66.5)	543
	03-04	**19.3** (17.5-21.4)	**19.9** (17.8-22.0)	**27.1** (23.7-30.2)	**36.5** (28.6-45.6)	**42.6** (35.1-52.1)	640
	05-06	**15.0** (14.3-15.7)	**14.9** (13.6-16.6)	**22.7** (19.7-24.9)	**30.6** (27.8-34.1)	**38.5** (33.0-44.6)	640
	07-08	**11.3** (10.3-12.3)	**11.3** (10.3-13.0)	**15.9** (15.1-17.7)	**21.7** (17.7-28.2)	**28.0** (22.0-32.2)	357
	09-10	**6.84** (5.81-8.06)	**6.90** (6.00-8.40)	**10.7** (8.90-12.5)	**14.4** (12.4-18.1)	**18.1** (13.5-26.0)	364
20 years and older	99-00	**30.6** (27.1-34.4)	**30.3** (27.9-33.9)	**44.4** (37.9-48.0)	**58.0** (50.1-75.7)	**78.0** (59.9-107)	1019
	03-04	**20.9** (19.3-22.5)	**21.4** (19.8-22.8)	**30.4** (28.1-33.0)	**42.7** (35.7-53.3)	**57.8** (45.7-69.4)	1454
	05-06	**17.4** (16.2-18.7)	**18.0** (17.1-19.4)	**27.8** (25.3-30.8)	**40.2** (35.6-44.5)	**49.6** (42.8-60.7)	1480
	07-08	**13.5** (12.4-14.6)	**14.0** (13.0-15.5)	**21.7** (19.5-24.6)	**33.9** (29.9-39.0)	**42.8** (37.3-50.3)	1743
	09-10	**9.72** (8.45-11.2)	**10.1** (8.90-11.2)	**15.7** (13.4-18.4)	**25.3** (19.3-32.9)	**34.1** (23.4-52.7)	1869
Gender							
Males	99-00	**33.4** (29.6-37.6)	**34.9** (31.1-37.9)	**46.3** (41.2-51.6)	**58.4** (50.2-78.3)	**78.3** (58.0-108)	743
	03-04	**23.2** (21.1-25.6)	**23.9** (22.4-25.5)	**32.2** (28.8-35.9)	**45.3** (35.5-62.7)	**62.7** (43.8-81.8)	1053
	05-06	**20.5** (19.4-21.8)	**21.3** (20.0-22.5)	**31.4** (27.9-33.7)	**43.3** (38.7-49.7)	**54.3** (43.5-80.7)	1048
	07-08	**16.3** (15.0-17.7)	**17.0** (15.7-17.8)	**23.9** (21.6-26.9)	**36.4** (33.5-41.1)	**45.3** (40.4-53.1)	1059
	09-10	**11.5** (9.93-13.3)	**11.8** (10.6-12.9)	**16.8** (14.3-20.4)	**25.7** (19.4-39.7)	**37.4** (22.5-72.3)	1075
Females	99-00	**28.0** (24.6-31.8)	**27.8** (24.5-30.2)	**39.0** (32.7-46.0)	**55.4** (46.3-70.2)	**75.7** (56.1-98.4)	819
	03-04	**18.4** (17.0-20.0)	**18.2** (16.9-19.8)	**27.4** (23.8-30.2)	**39.8** (34.4-42.6)	**46.6** (42.3-61.5)	1041
	05-06	**14.4** (13.3-15.4)	**14.6** (13.5-15.9)	**23.3** (21.1-25.3)	**34.2** (30.6-37.7)	**42.8** (38.0-46.5)	1072
	07-08	**10.7** (9.70-11.7)	**10.7** (9.80-11.7)	**17.2** (15.4-19.1)	**28.7** (21.7-32.5)	**33.6** (29.9-41.6)	1041
	09-10	**7.65** (6.73-8.71)	**7.80** (6.70-9.00)	**12.0** (10.8-14.4)	**21.1** (16.4-26.9)	**28.8** (22.3-34.1)	1158
Race/ethnicity							
Mexican Americans	99-00	**22.7** (19.8-25.9)	**23.7** (20.8-27.2)	**33.0** (27.9-39.7)	**41.9** (36.7-54.5)	**53.6** (41.3-72.0)	584
	03-04	**14.7** (13.0-16.6)	**15.9** (13.4-17.9)	**21.2** (18.7-23.5)	**28.1** (24.1-35.0)	**35.5** (28.9-38.5)	485
	05-06	**11.2** (10.3-12.2)	**11.6** (9.90-13.3)	**17.2** (15.4-19.3)	**24.9** (22.0-30.3)	**31.9** (26.4-40.6)	499
	07-08	**10.6** (9.47-11.9)	**10.8** (9.70-12.2)	**17.1** (14.9-19.2)	**26.3** (20.7-30.4)	**31.5** (25.7-36.1)	391
	09-10	**6.23** (5.28-7.36)	**6.10** (5.10-8.10)	**11.2** (8.50-14.1)	**16.8** (14.9-18.8)	**20.4** (17.5-22.7)	461
Non-Hispanic blacks	99-00	**32.9** (26.0-41.6)	**32.0** (23.9-45.8)	**50.6** (37.4-62.2)	**69.3** (60.9-75.9)	**81.5** (68.0-129)	303
	03-04	**21.6** (19.1-24.4)	**22.1** (19.6-24.9)	**32.3** (28.1-36.2)	**43.8** (37.2-57.3)	**57.7** (43.8-78.4)	538
	05-06	**18.4** (15.6-21.8)	**19.0** (16.7-22.3)	**27.6** (24.3-35.5)	**45.9** (34.4-58.1)	**57.9** (45.0-84.4)	544
	07-08	**15.0** (12.6-17.8)	**15.2** (12.9-17.7)	**25.8** (21.0-33.3)	**42.7** (31.5-57.3)	**57.3** (43.4-79.2)	419
	09-10	**9.11** (7.93-10.5)	**9.50** (8.20-11.2)	**16.0** (13.4-17.4)	**23.0** (20.5-26.1)	**28.7** (25.7-39.7)	391
Non-Hispanic whites	99-00	**32.3** (29.5-35.3)	**32.8** (29.5-36.0)	**45.1** (40.4-47.4)	**56.3** (51.7-70.0)	**78.0** (58.0-98.4)	519
	03-04	**21.4** (19.9-23.1)	**22.0** (20.5-23.0)	**30.2** (27.7-33.3)	**41.7** (35.7-49.6)	**56.3** (44.0-70.0)	962
	05-06	**18.1** (17.1-19.1)	**18.6** (17.3-19.8)	**28.3** (26.1-30.8)	**39.7** (35.6-43.3)	**46.6** (42.7-54.3)	935
	07-08	**13.7** (12.7-14.8)	**14.3** (13.2-15.5)	**21.1** (18.7-23.7)	**32.9** (29.7-36.0)	**40.4** (36.1-44.9)	931
	09-10	**10.2** (8.69-11.9)	**10.4** (9.20-11.5)	**15.6** (13.0-18.7)	**24.7** (17.5-35.1)	**33.1** (20.7-56.7)	1031

Limit of detection (LOD, see Data Analysis section) for Survey years 99-00, 03-04, 05-06, 07-08, and 09-10 are 0.2, 0.4, 0.2, 0.2, and 0.2 respectively.

Biomonitoring Summary: http://www.cdc.gov/biomonitoring/PFCs_BiomonitoringSummary.html
Factsheet: http://www.cdc.gov/biomonitoring/PFCs_FactSheet.html

Serum Perfluorooctane sulfonamide (PFOSA)

Geometric mean and selected percentiles of serum concentrations (in µg/L) for the U.S. population from the National Health and Nutrition Examination Survey.

	Survey years	Geometric mean (95% conf. interval)	Selected percentiles (95% confidence interval) 50th	75th	90th	95th	Sample size
Total	99-00	**.361** (.303-.431)	**.400** (.300-.400)	**.700** (.500-.800)	**1.00** (.900-1.40)	**1.40** (1.00-2.00)	1562
	03-04	*	**< LOD**	**< LOD**	**.300** (.200-.300)	**.300** (.300-.400)	2094
	05-06	*	**< LOD**	**.100** (<LOD-.200)	**.200** (.200-.300)	**.300** (.200-.500)	2120
	07-08	*	**< LOD**	**< LOD**	**< LOD**	**< LOD**	2100
	09-10	*	**< LOD**	**< LOD**	**< LOD**	**< LOD**	2233
Age group							
12-19 years	99-00	**.432** (.372-.501)	**.400** (.400-.500)	**.700** (.700-.900)	**1.10** (.900-1.40)	**1.60** (1.10-2.90)	543
	03-04	*	**< LOD**	**< LOD**	**.300** (.200-.300)	**.300** (.200-.500)	640
	05-06	*	**< LOD**	**< LOD**	**.200** (.100-.300)	**.300** (.200-.500)	640
	07-08	*	**< LOD**	**< LOD**	**< LOD**	**< LOD**	357
	09-10	*	**< LOD**	**< LOD**	**< LOD**	**< LOD**	364
20 years and older	99-00	**.351** (.291-.422)	**.300** (.300-.400)	**.600** (.500-.800)	**1.00** (.800-1.40)	**1.40** (1.00-2.00)	1019
	03-04	*	**< LOD**	**< LOD**	**.300** (.200-.300)	**.300** (.300-.400)	1454
	05-06	*	**< LOD**	**.100** (<LOD-.200)	**.200** (.200-.300)	**.300** (.200-.500)	1480
	07-08	*	**< LOD**	**< LOD**	**< LOD**	**< LOD**	1743
	09-10	*	**< LOD**	**< LOD**	**< LOD**	**< LOD**	1869
Gender							
Males	99-00	**.359** (.301-.428)	**.400** (.300-.400)	**.600** (.500-.700)	**.900** (.700-1.30)	**1.30** (.900-1.90)	743
	03-04	*	**< LOD**	**< LOD**	**.300** (.200-.300)	**.300** (.200-.500)	1053
	05-06	*	**< LOD**	**.100** (.100-.200)	**.200** (.200-.300)	**.300** (.200-.600)	1048
	07-08	*	**< LOD**	**< LOD**	**< LOD**	**< LOD**	1059
	09-10	*	**< LOD**	**< LOD**	**< LOD**	**< LOD**	1075
Females	99-00	**.364** (.302-.438)	**.300** (.300-.500)	**.700** (.500-.900)	**1.10** (.900-1.40)	**1.50** (1.20-2.00)	819
	03-04	*	**< LOD**	**< LOD**	**.300** (.200-.300)	**.300** (.300-.500)	1041
	05-06	*	**< LOD**	**.100** (<LOD-.100)	**.200** (.200-.300)	**.300** (.200-.400)	1072
	07-08	*	**< LOD**	**< LOD**	**< LOD**	**< LOD**	1041
	09-10	*	**< LOD**	**< LOD**	**< LOD**	**< LOD**	1158
Race/ethnicity							
Mexican Americans	99-00	**.294** (.255-.340)	**.300** (.200-.400)	**.500** (.400-.600)	**.800** (.700-1.00)	**1.10** (.800-1.60)	584
	03-04	*	**< LOD**	**< LOD**	**< LOD**	**.200** (<LOD-.300)	485
	05-06	*	**< LOD**	**< LOD**	**.200** (<LOD-.300)	**.200** (<LOD-5.00)	499
	07-08	*	**< LOD**	**< LOD**	**< LOD**	**< LOD**	391
	09-10	*	**< LOD**	**< LOD**	**< LOD**	**< LOD**	461
Non-Hispanic blacks	99-00	**.352** (.292-.425)	**.300** (.300-.400)	**.600** (.500-.800)	**1.00** (.700-1.70)	**1.70** (.900-2.60)	303
	03-04	*	**< LOD**	**< LOD**	**.300** (.200-.300)	**.300** (.200-.500)	538
	05-06	*	**< LOD**	**< LOD**	**.200** (.100-.200)	**.200** (.200-.400)	544
	07-08	*	**< LOD**	**< LOD**	**< LOD**	**< LOD**	419
	09-10	*	**< LOD**	**< LOD**	**< LOD**	**< LOD**	391
Non-Hispanic whites	99-00	**.390** (.315-.483)	**.400** (.300-.500)	**.700** (.600-.900)	**1.10** (.900-1.40)	**1.50** (1.10-2.00)	519
	03-04	*	**< LOD**	**< LOD**	**.300** (.200-.300)	**.300** (.300-.500)	962
	05-06	*	**< LOD**	**.100** (.100-.200)	**.200** (.200-.300)	**.300** (.200-.500)	935
	07-08	*	**< LOD**	**< LOD**	**< LOD**	**< LOD**	931
	09-10	*	**< LOD**	**< LOD**	**< LOD**	**< LOD**	1031

Limit of detection (LOD, see Data Analysis section) for Survey years 99-00, 03-04, 05-06, 07-08, and 09-10 are 0.05, 0.2, 0.1, 0.1, and 0.1 respectively.
< LOD means less than the limit of detection, which may vary for some chemicals by year and by individual sample.
* Not calculated: proportion of results below limit of detection was too high to provide a valid result.

Biomonitoring Summary: http://www.cdc.gov/biomonitoring/PFCs_BiomonitoringSummary.html
Factsheet: http://www.cdc.gov/biomonitoring/PFCs_FactSheet.html

Serum 2-(N-Ethyl-perfluorooctane sulfonamido) acetic acid (Et-PFOSA-AcOH)

Geometric mean and selected percentiles of serum concentrations (in µg/L) for the U.S. population from the National Health and Nutrition Examination Survey.

	Survey years	Geometric mean (95% conf. interval)	Selected percentiles (95% confidence interval) 50th	75th	90th	95th	Sample size
Total	99-00	**.654** (.611-.701)	**.600** (.500-.700)	**1.10** (1.00-1.20)	**1.60** (1.50-1.80)	**2.30** (1.90-2.70)	1562
	03-04	*	**< LOD**	**< LOD**	**< LOD**	**< LOD**	2094
	05-06	*	**< LOD**	**< LOD**	**< LOD**	**.300** (<LOD-.300)	2120
	07-08	*	**< LOD**	**< LOD**	**< LOD**	**< LOD**	2100
	09-10	*	**< LOD**	**< LOD**	**< LOD**	**.100** (<LOD-.100)	2233
Age group							
12-19 years	99-00	**.827** (.765-.894)	**.800** (.700-.800)	**1.20** (1.10-1.30)	**1.70** (1.50-2.00)	**2.40** (1.90-3.30)	543
	03-04	*	**< LOD**	**< LOD**	**< LOD**	**< LOD**	640
	05-06	*	**< LOD**	**< LOD**	**< LOD**	**.200** (<LOD-.400)	640
	07-08	*	**< LOD**	**< LOD**	**< LOD**	**< LOD**	357
	09-10	*	**< LOD**	**< LOD**	**< LOD**	**< LOD**	364
20 years and older	99-00	**.628** (.586-.674)	**.600** (.500-.700)	**1.00** (.900-1.10)	**1.60** (1.50-1.80)	**2.30** (1.80-2.70)	1019
	03-04	*	**< LOD**	**< LOD**	**< LOD**	**< LOD**	1454
	05-06	*	**< LOD**	**< LOD**	**< LOD**	**.300** (<LOD-.300)	1480
	07-08	*	**< LOD**	**< LOD**	**< LOD**	**< LOD**	1743
	09-10	*	**< LOD**	**< LOD**	**< LOD**	**.100** (<LOD-.100)	1869
Gender							
Males	99-00	**.632** (.586-.681)	**.600** (.500-.700)	**1.00** (.900-1.10)	**1.50** (1.30-1.80)	**1.90** (1.60-2.90)	743
	03-04	*	**< LOD**	**< LOD**	**< LOD**	**< LOD**	1053
	05-06	*	**< LOD**	**< LOD**	**< LOD**	**.300** (.200-.300)	1048
	07-08	*	**< LOD**	**< LOD**	**< LOD**	**< LOD**	1059
	09-10	*	**< LOD**	**< LOD**	**< LOD**	**.100** (<LOD-.100)	1075
Females	99-00	**.675** (.616-.740)	**.700** (.500-.700)	**1.10** (1.00-1.20)	**1.70** (1.50-2.20)	**2.50** (2.00-2.80)	819
	03-04	*	**< LOD**	**< LOD**	**< LOD**	**< LOD**	1041
	05-06	*	**< LOD**	**< LOD**	**< LOD**	**.300** (<LOD-.300)	1072
	07-08	*	**< LOD**	**< LOD**	**< LOD**	**< LOD**	1041
	09-10	*	**< LOD**	**< LOD**	**< LOD**	**.100** (<LOD-.100)	1158
Race/ethnicity							
Mexican Americans	99-00	**.591** (.498-.702)	**.600** (.400-.700)	**1.00** (.800-1.20)	**1.70** (1.30-2.00)	**2.50** (1.90-3.00)	584
	03-04	*	**< LOD**	**< LOD**	**< LOD**	**< LOD**	485
	05-06	*	**< LOD**	**< LOD**	**< LOD**	**< LOD**	499
	07-08	*	**< LOD**	**< LOD**	**< LOD**	**< LOD**	391
	09-10	*	**< LOD**	**< LOD**	**< LOD**	**< LOD**	461
Non-Hispanic blacks	99-00	**.570** (.495-.655)	**.500** (.500-.600)	**.900** (.700-1.00)	**1.50** (1.20-1.90)	**2.20** (1.40-3.20)	303
	03-04	*	**< LOD**	**< LOD**	**< LOD**	**.400** (<LOD-.500)	538
	05-06	*	**< LOD**	**< LOD**	**< LOD**	**< LOD**	544
	07-08	*	**< LOD**	**< LOD**	**< LOD**	**< LOD**	419
	09-10	*	**< LOD**	**< LOD**	**< LOD**	**< LOD**	391
Non-Hispanic whites	99-00	**.673** (.625-.725)	**.700** (.600-.700)	**1.10** (1.00-1.20)	**1.70** (1.50-1.90)	**2.40** (1.90-2.80)	519
	03-04	*	**< LOD**	**< LOD**	**< LOD**	**< LOD**	962
	05-06	*	**< LOD**	**< LOD**	**< LOD**	**.300** (.200-.400)	935
	07-08	*	**< LOD**	**< LOD**	**< LOD**	**< LOD**	931
	09-10	*	**< LOD**	**< LOD**	**< LOD**	**.100** (<LOD-.200)	1031

Limit of detection (LOD, see Data Analysis section) for Survey years 99-00, 03-04, 05-06, 07-08, and 09-10 are 0.2, 0.4, 0.2, 0.2, and 0.1 respectively.
< LOD means less than the limit of detection, which may vary for some chemicals by year and by individual sample.
* Not calculated: proportion of results below limit of detection was too high to provide a valid result.

Biomonitoring Summary: http://www.cdc.gov/biomonitoring/PFCs_BiomonitoringSummary.html
Factsheet: http://www.cdc.gov/biomonitoring/PFCs_FactSheet.html

Serum 2-(N-Methyl-perfluorooctane sulfonamido) acetic acid (Me-PFOSA-AcOH)

Geometric mean and selected percentiles of serum concentrations (in µg/L) for the U.S. population from the National Health and Nutrition Examination Survey.**

	Survey years	Geometric mean (95% conf. interval)	Selected percentiles (95% confidence interval) 50th	75th	90th	95th	Sample size
Total	99-00	**.852** (.746-.974)	**.870** (.780-.960)	**1.40** (1.13-1.66)	**2.18** (1.83-2.62)	**2.79** (2.44-3.23)	1562
	03-04	*	**< LOD**	**.610** (<LOD-.610)	**.870** (.780-.960)	**1.13** (.960-1.31)	2094
	05-06	**.410** (.372-.451)	**.440** (.350-.440)	**.700** (.610-.780)	**1.22** (1.13-1.22)	**1.57** (1.48-1.74)	2120
	07-08	**.301** (.276-.329)	**.260** (.260-.350)	**.520** (.440-.610)	**.960** (.780-1.05)	**1.31** (1.22-1.40)	2100
	09-10	**.189** (.176-.204)	**.170** (.170-.170)	**.350** (.350-.440)	**.700** (.610-.700)	**.960** (.870-1.05)	2233
Age group							
12-19 years	99-00	**1.17** (1.03-1.34)	**1.22** (1.05-1.31)	**1.83** (1.31-2.18)	**2.70** (2.18-3.05)	**3.23** (2.79-4.10)	543
	03-04	*	**< LOD**	**.610** (<LOD-.700)	**.960** (.780-1.13)	**1.31** (1.05-1.57)	640
	05-06	**.432** (.380-.490)	**.440** (.350-.520)	**.780** (.610-.870)	**1.13** (.960-1.31)	**1.48** (1.13-1.66)	640
	07-08	**.338** (.302-.379)	**.350** (.260-.440)	**.610** (.520-.610)	**.960** (.780-1.48)	**1.57** (.960-2.01)	357
	09-10	**.225** (.193-.263)	**.260** (.170-.260)	**.440** (.350-.520)	**.700** (.520-.870)	**.870** (.610-1.66)	364
20 years and older	99-00	**.806** (.701-.927)	**.780** (.700-.960)	**1.31** (1.13-1.57)	**2.09** (1.74-2.44)	**2.70** (2.27-3.14)	1019
	03-04	*	**< LOD**	**.610** (<LOD-.610)	**.870** (.780-.960)	**1.05** (.960-1.40)	1454
	05-06	**.406** (.369-.448)	**.440** (.350-.440)	**.700** (.610-.780)	**1.22** (1.13-1.31)	**1.66** (1.48-1.74)	1480
	07-08	**.296** (.269-.326)	**.260** (.260-.350)	**.520** (.440-.610)	**.960** (.780-1.05)	**1.22** (1.13-1.40)	1743
	09-10	**.185** (.170-.200)	**.170** (.170-.170)	**.350** (.260-.350)	**.700** (.610-.780)	**.960** (.870-1.05)	1869
Gender							
Males	99-00	**.891** (.764-1.04)	**.870** (.780-1.05)	**1.40** (1.13-1.74)	**2.27** (2.01-2.79)	**2.79** (2.44-3.66)	743
	03-04	*	**< LOD**	**.610** (<LOD-.610)	**.960** (.780-1.05)	**1.13** (.960-1.48)	1053
	05-06	**.435** (.400-.472)	**.440** (.350-.440)	**.780** (.700-.870)	**1.22** (1.13-1.31)	**1.66** (1.40-1.74)	1048
	07-08	**.305** (.279-.333)	**.260** (.260-.350)	**.520** (.440-.610)	**.870** (.780-.960)	**1.31** (1.13-1.40)	1059
	09-10	**.192** (.179-.205)	**.170** (.170-.170)	**.350** (.350-.440)	**.700** (.610-.780)	**.960** (.780-1.13)	1075
Females	99-00	**.820** (.724-.928)	**.780** (.700-.960)	**1.31** (1.13-1.66)	**2.01** (1.74-2.35)	**2.62** (2.27-3.23)	819
	03-04	*	**< LOD**	**< LOD**	**.870** (.780-.960)	**.960** (.870-1.57)	1041
	05-06	**.387** (.342-.438)	**.350** (.350-.440)	**.700** (.610-.780)	**1.13** (1.05-1.31)	**1.57** (1.40-1.83)	1072
	07-08	**.298** (.266-.334)	**.260** (.260-.350)	**.520** (.440-.610)	**.960** (.780-1.13)	**1.31** (1.13-1.66)	1041
	09-10	**.187** (.170-.206)	**.170** (.170-.170)	**.350** (.260-.350)	**.610** (.520-.780)	**.960** (.780-1.05)	1158
Race/ethnicity							
Mexican Americans	99-00	**.675** (.552-.825)	**.700** (.520-.780)	**1.13** (.870-1.31)	**1.83** (1.40-2.35)	**2.35** (1.74-3.92)	584
	03-04	*	**< LOD**	**< LOD**	**.610** (<LOD-.780)	**.780** (<LOD-1.13)	485
	05-06	**.292** (.245-.348)	**.260** (.260-.350)	**.440** (.350-.700)	**.780** (.610-1.05)	**1.05** (.870-1.22)	499
	07-08	*	**< LOD**	**.350** (.260-.440)	**.520** (.440-.780)	**.780** (.520-1.13)	391
	09-10	**.133** (.113-.157)	**.090** (.090-.170)	**.260** (.170-.350)	**.520** (.440-.610)	**.700** (.520-.960)	461
Non-Hispanic blacks	99-00	**.991** (.857-1.15)	**1.05** (.780-1.22)	**1.57** (1.31-1.83)	**2.35** (1.92-2.79)	**3.14** (2.27-4.27)	303
	03-04	*	**< LOD**	**.700** (<LOD-.780)	**.960** (.780-1.22)	**1.31** (.960-1.57)	538
	05-06	**.418** (.361-.486)	**.440** (.350-.520)	**.700** (.610-.870)	**1.22** (1.05-1.48)	**1.66** (1.48-2.01)	544
	07-08	**.329** (.302-.357)	**.350** (.260-.350)	**.520** (.520-.700)	**1.05** (.780-1.22)	**1.40** (1.22-1.66)	419
	09-10	**.184** (.158-.215)	**.170** (.170-.170)	**.350** (.260-.440)	**.610** (.440-.780)	**.870** (.610-1.13)	391
Non-Hispanic whites	99-00	**.889** (.766-1.03)	**.870** (.780-1.05)	**1.40** (1.22-1.74)	**2.18** (1.92-2.70)	**2.79** (2.44-3.66)	519
	03-04	*	**< LOD**	**.610** (<LOD-.700)	**.870** (.780-.960)	**1.13** (.960-1.40)	962
	05-06	**.428** (.380-.483)	**.440** (.350-.520)	**.780** (.700-.870)	**1.22** (1.13-1.31)	**1.66** (1.40-1.83)	935
	07-08	**.332** (.296-.372)	**.350** (.260-.350)	**.610** (.520-.700)	**.960** (.780-1.22)	**1.31** (1.13-1.57)	931
	09-10	**.206** (.191-.222)	**.170** (.170-.260)	**.350** (.350-.440)	**.700** (.610-.780)	**.960** (.870-1.13)	1031

Limit of detection (LOD, see Data Analysis section) for Survey years 99-00, 03-04, 05-06, 07-08, and 09-10 are 0.2, 0.5, 0.2, 0.2, and 0.1 respectively.
< LOD means less than the limit of detection, which may vary for some chemicals by year and by individual sample.
* Not calculated: proportion of results below limit of detection was too high to provide a valid result.
**To correct for inadequate purity in the analytical standards, all results and LODs have been adjusted by a factor of 0.872 for survey periods 1999-2000 and 2003-2010 compared with results previously released.

Biomonitoring Summary: http://www.cdc.gov/biomonitoring/PFCs_BiomonitoringSummary.html
Factsheet: http://www.cdc.gov/biomonitoring/PFCs_FactSheet.html

Serum Perfluoroundecanoic acid (PFUA)

Geometric mean and selected percentiles of serum concentrations (in µg/L) for the U.S. population from the National Health and Nutrition Examination Survey.

	Survey years	Geometric mean (95% conf. interval)	Selected percentiles (95% confidence interval) 50th	75th	90th	95th	Sample size
Total	99-00	*	**.200** (.200-.200)	**.200** (.200-.200)	**.300** (.200-.400)	**.400** (.300-.700)	1562
	03-04	*	**< LOD**	**< LOD**	**< LOD**	**.600** (<LOD-1.30)	2094
	05-06	*	**< LOD**	**.300** (.200-.400)	**.500** (.400-.800)	**.700** (.600-1.20)	2120
	07-08	*	**< LOD**	**.200** (<LOD-.300)	**.400** (.300-.500)	**.600** (.500-.800)	2100
	09-10	**.172** (.151-.196)	**.200** (.100-.200)	**.300** (.200-.400)	**.600** (.400-.800)	**.900** (.600-1.10)	2233
Age group							
12-19 years	99-00	*	**.200** (.200-.200)	**.200** (.200-.200)	**.200** (.200-.200)	**.200** (.200-.300)	543
	03-04	*	**< LOD**	**< LOD**	**< LOD**	**.300** (<LOD-1.10)	640
	05-06	*	**< LOD**	**< LOD**	**.300** (.200-.500)	**.500** (.300-.900)	640
	07-08	*	**< LOD**	**< LOD**	**.200** (<LOD-.200)	**.300** (.200-.300)	357
	09-10	*	**.100** (<LOD-.100)	**.200** (.100-.200)	**.300** (.200-.600)	**.400** (.200-.900)	364
20 years and older	99-00	*	**.200** (.200-.200)	**.200** (.200-.200)	**.300** (.200-.500)	**.500** (.300-.700)	1019
	03-04	*	**< LOD**	**< LOD**	**.300** (<LOD-.600)	**.600** (<LOD-1.40)	1454
	05-06	*	**< LOD**	**.300** (.200-.400)	**.500** (.400-.800)	**.800** (.600-1.10)	1480
	07-08	*	**< LOD**	**.200** (.200-.300)	**.400** (.300-.600)	**.600** (.500-.900)	1743
	09-10	**.182** (.160-.207)	**.200** (.200-.200)	**.300** (.300-.400)	**.600** (.400-.800)	**.900** (.700-1.20)	1869
Gender							
Males	99-00	*	**.200** (.200-.200)	**.200** (.200-.200)	**.300** (.200-.500)	**.500** (.300-.600)	743
	03-04	*	**< LOD**	**< LOD**	**.400** (<LOD-1.00)	**.700** (<LOD-2.30)	1053
	05-06	*	**< LOD**	**.300** (.200-.400)	**.600** (.400-.700)	**.800** (.600-1.10)	1048
	07-08	*	**< LOD**	**.200** (<LOD-.300)	**.400** (.300-.500)	**.700** (.500-1.00)	1059
	09-10	**.170** (.147-.196)	**.200** (.100-.200)	**.300** (.200-.400)	**.500** (.400-.900)	**.800** (.500-1.20)	1075
Females	99-00	*	**.200** (.200-.200)	**.200** (.200-.200)	**.300** (.200-.400)	**.400** (.200-.800)	819
	03-04	*	**< LOD**	**< LOD**	**< LOD**	**.400** (<LOD-.700)	1041
	05-06	*	**< LOD**	**.300** (<LOD-.400)	**.500** (.400-.700)	**.700** (.500-1.10)	1072
	07-08	*	**< LOD**	**.200** (<LOD-.200)	**.400** (.300-.500)	**.600** (.400-.700)	1041
	09-10	**.175** (.153-.199)	**.200** (.100-.200)	**.300** (.200-.400)	**.600** (.400-.800)	**.900** (.700-1.20)	1158
Race/ethnicity							
Mexican Americans	99-00	*	**.200** (.200-.200)	**.200** (.200-.200)	**.200** (.200-.200)	**.200** (.200-.200)	584
	03-04	*	**< LOD**	**< LOD**	**< LOD**	**< LOD**	485
	05-06	*	**< LOD**	**< LOD**	**.300** (<LOD-.700)	**.500** (.300-1.00)	499
	07-08	*	**< LOD**	**< LOD**	**.300** (<LOD-.400)	**.300** (<LOD-1.40)	391
	09-10	*	**.100** (.100-.100)	**.200** (.200-.200)	**.300** (.300-.400)	**.400** (.300-.600)	461
Non-Hispanic blacks	99-00	*	**.200** (.200-.200)	**.300** (.200-.500)	**.600** (.300-1.00)	**.900** (.600-1.80)	303
	03-04	*	**< LOD**	**< LOD**	**.600** (<LOD-1.40)	**.900** (.300-2.90)	538
	05-06	*	**< LOD**	**.300** (<LOD-.500)	**.600** (.400-1.50)	**1.20** (.600-2.70)	544
	07-08	*	**< LOD**	**.300** (.200-.400)	**.500** (.400-.700)	**.800** (.600-1.20)	419
	09-10	**.237** (.199-.283)	**.200** (.200-.200)	**.400** (.300-.500)	**.800** (.500-1.10)	**1.30** (.800-1.80)	391
Non-Hispanic whites	99-00	*	**.200** (.200-.200)	**.200** (.200-.200)	**.200** (.200-.300)	**.300** (.200-.800)	519
	03-04	*	**< LOD**	**< LOD**	**< LOD**	**.500** (<LOD-.900)	962
	05-06	*	**< LOD**	**.300** (.200-.400)	**.500** (.400-.700)	**.600** (.400-1.50)	935
	07-08	*	**< LOD**	**.200** (<LOD-.200)	**.300** (.300-.500)	**.500** (.400-.600)	931
	09-10	**.162** (.136-.193)	**.200** (.100-.200)	**.300** (.200-.400)	**.500** (.300-.800)	**.800** (.500-1.00)	1031

Limit of detection (LOD, see Data Analysis section) for Survey years 99-00, 03-04, 05-06, 07-08, and 09-10 are 0.2, 0.3, 0.2, 0.2, and 0.1 respectively.
< LOD means less than the limit of detection, which may vary for some chemicals by year and by individual sample.
* Not calculated: proportion of results below limit of detection was too high to provide a valid result.

Biomonitoring Summary: http://www.cdc.gov/biomonitoring/PFCs_BiomonitoringSummary.html
Factsheet: http://www.cdc.gov/biomonitoring/PFCs_FactSheet.html

Urinary Mono-benzyl phthalate (MBzP)

Metabolite of Benzylbutyl phthalate (BzBP)

Geometric mean and selected percentiles of urine concentrations (in µg/L) for the U.S. population from the National Health and Nutrition Examination Survey.**

	Survey years	Geometric mean (95% conf. interval)	Selected percentiles (95% confidence interval) 50th	75th	90th	95th	Sample size
Total	99-00	**11.0** (9.88-12.3)	**12.2** (11.0-13.6)	**25.5** (23.5-28.6)	**48.3** (39.8-59.3)	**74.4** (68.1-83.4)	2541
	01-02	**10.8** (10.0-11.7)	**11.4** (10.7-12.5)	**27.4** (24.8-29.7)	**58.2** (51.3-63.5)	**87.6** (73.7-102)	2782
	03-04	**9.89** (9.12-10.7)	**10.3** (9.22-11.8)	**23.3** (21.7-25.2)	**47.9** (41.3-54.4)	**72.6** (61.4-90.2)	2605
	05-06	**8.32** (7.28-9.51)	**8.93** (7.78-10.4)	**20.7** (18.2-23.7)	**44.6** (37.6-52.8)	**67.1** (57.4-77.7)	2548
	07-08	**7.24** (6.47-8.09)	**8.42** (7.20-9.50)	**18.3** (16.6-20.4)	**37.3** (31.3-43.3)	**58.8** (48.7-69.1)	2604
	09-10	**6.46** (5.76-7.24)	**6.70** (5.97-7.49)	**15.4** (13.4-17.1)	**31.0** (26.8-36.1)	**48.3** (43.1-55.4)	2749
Age group							
6-11 years	99-00	**28.4** (23.7-34.0)	**29.0** (24.3-35.0)	**59.0** (40.2-70.6)	**92.8** (70.6-154)	**154** (77.8-287)	328
	01-02	**24.1** (21.0-27.6)	**26.6** (19.2-31.2)	**49.3** (44.4-66.8)	**120** (83.7-137)	**169** (132-237)	393
	03-04	**24.4** (20.3-29.2)	**25.2** (21.7-28.7)	**45.9** (36.3-66.5)	**105** (79.1-154)	**184** (105-263)	342
	05-06	**21.3** (19.2-23.7)	**23.5** (19.4-26.6)	**46.1** (37.1-56.9)	**78.6** (64.3-104)	**116** (88.4-137)	356
	07-08	**15.4** (12.3-19.3)	**17.6** (13.8-20.8)	**33.8** (27.0-47.5)	**69.9** (51.3-104)	**131** (69.9-221)	389
	09-10	**11.6** (9.51-14.1)	**12.6** (10.4-14.5)	**28.4** (20.2-37.8)	**63.9** (47.4-76.8)	**87.8** (65.4-212)	415
12-19 years	99-00	**18.4** (15.7-21.6)	**20.4** (16.1-25.1)	**36.9** (31.5-42.1)	**63.7** (48.4-82.6)	**90.2** (67.5-122)	752
	01-02	**16.7** (14.3-19.6)	**17.9** (15.3-22.3)	**40.0** (34.1-45.3)	**81.1** (66.1-95.5)	**122** (96.3-143)	742
	03-04	**15.9** (14.0-18.1)	**17.9** (16.1-19.6)	**35.9** (28.7-46.5)	**64.7** (51.2-86.3)	**110** (71.9-136)	729
	05-06	**14.2** (11.9-16.9)	**14.8** (11.5-18.3)	**31.8** (24.2-41.0)	**62.6** (44.0-85.0)	**94.2** (67.7-134)	702
	07-08	**11.6** (9.56-14.2)	**14.6** (11.5-16.6)	**27.2** (22.0-31.5)	**46.7** (35.4-58.3)	**63.9** (54.7-102)	401
	09-10	**10.6** (8.75-12.9)	**11.9** (10.1-15.4)	**24.8** (21.9-29.2)	**43.1** (36.0-45.8)	**56.1** (44.7-74.3)	420
20 years and older	99-00	**8.96** (7.83-10.3)	**9.94** (8.71-11.2)	**21.0** (18.1-23.8)	**37.4** (31.6-45.0)	**62.1** (39.4-85.5)	1461
	01-02	**9.16** (8.40-9.98)	**10.0** (9.22-10.7)	**22.9** (20.5-24.1)	**47.1** (38.7-54.9)	**71.8** (59.6-87.1)	1647
	03-04	**8.22** (7.42-9.11)	**8.71** (7.78-9.72)	**19.4** (17.0-21.2)	**39.0** (33.9-44.3)	**57.2** (47.9-68.3)	1534
	05-06	**6.87** (6.00-7.86)	**7.34** (6.41-8.71)	**17.1** (14.5-19.7)	**34.0** (28.3-43.4)	**56.9** (45.9-66.7)	1490
	07-08	**6.18** (5.40-7.08)	**7.13** (6.12-8.06)	**15.5** (13.4-17.6)	**30.5** (25.2-37.7)	**49.5** (40.3-63.9)	1814
	09-10	**5.61** (4.97-6.34)	**5.95** (5.17-6.61)	**12.7** (10.9-14.8)	**25.6** (21.5-29.4)	**39.6** (34.2-47.7)	1914
Gender							
Males	99-00	**11.6** (10.1-13.4)	**12.7** (10.9-14.4)	**25.5** (22.7-29.0)	**50.0** (43.1-62.8)	**77.8** (69.3-93.4)	1215
	01-02	**11.2** (9.78-12.9)	**11.5** (10.5-13.3)	**26.6** (23.8-31.0)	**56.4** (45.7-70.1)	**87.5** (63.5-132)	1371
	03-04	**10.5** (9.50-11.6)	**10.9** (9.50-12.6)	**23.3** (21.2-25.6)	**47.2** (38.6-57.3)	**72.6** (56.6-94.8)	1250
	05-06	**9.47** (8.20-10.9)	**10.2** (8.78-12.2)	**23.3** (19.3-25.9)	**51.6** (39.8-61.6)	**71.0** (61.6-83.2)	1270
	07-08	**7.80** (6.96-8.74)	**8.64** (7.49-10.0)	**17.6** (15.8-20.4)	**33.8** (28.4-41.3)	**49.3** (41.5-62.1)	1294
	09-10	**6.93** (6.07-7.92)	**6.98** (6.21-7.80)	**15.6** (13.3-17.6)	**33.0** (27.4-37.8)	**49.0** (40.4-62.8)	1399
Females	99-00	**10.5** (9.17-12.0)	**11.6** (10.2-13.8)	**25.8** (22.2-29.8)	**45.9** (38.7-59.3)	**73.9** (60.6-83.4)	1326
	01-02	**10.5** (9.40-11.7)	**11.1** (9.94-12.9)	**27.4** (23.3-31.5)	**58.6** (49.2-66.0)	**88.0** (73.2-103)	1411
	03-04	**9.33** (8.53-10.2)	**9.58** (8.71-11.2)	**24.0** (21.2-26.1)	**48.3** (42.3-52.1)	**72.5** (60.8-86.3)	1355
	05-06	**7.34** (6.30-8.55)	**7.70** (6.55-9.36)	**18.4** (15.6-22.2)	**39.5** (33.0-46.3)	**62.1** (48.0-73.7)	1278
	07-08	**6.73** (5.77-7.85)	**7.99** (6.41-9.36)	**18.8** (15.4-22.5)	**40.1** (32.2-50.9)	**64.4** (51.1-78.8)	1310
	09-10	**6.04** (5.38-6.77)	**6.36** (5.18-7.47)	**15.3** (12.9-16.9)	**29.3** (24.5-36.9)	**47.7** (38.0-60.4)	1350

Limit of detection (LOD, see Data Analysis section) for Survey years 99-00, 01-02, 03-04, 05-06, 07-08, and 09-10 are 0.576, 0.216, 0.072, 0.216, 0.216, and 0.216 respectively.

**To correct for inadequate purity in the analytical standards, all results and LODs have been adjusted by a factor of 0.72 for survey periods 1999-2008 compared with results previously released.

Biomonitoring Summary: http://www.cdc.gov/biomonitoring/BzBP_BiomonitoringSummary.html

Factsheet: http://www.cdc.gov/biomonitoring/Phthalates_FactSheet.html

Urinary Mono-benzyl phthalate (MBzP)

Metabolite of Benzylbutyl phthalate (BzBP)

Geometric mean and selected percentiles of urine concentrations (in µg/L) for the U.S. population from the National Health and Nutrition Examination Survey.**

	Survey years	Geometric mean (95% conf. interval)	Selected percentiles (95% confidence interval) 50th	75th	90th	95th	Sample size
Race/ethnicity							
Mexican Americans	99-00	**10.0** (8.69-11.6)	**11.3** (9.65-12.2)	**23.8** (19.8-26.0)	**48.6** (40.0-60.5)	**71.1** (58.0-108)	814
	01-02	**9.49** (7.75-11.6)	**10.7** (7.78-13.3)	**21.2** (18.9-27.4)	**50.7** (38.2-61.5)	**68.2** (50.6-116)	677
	03-04	**10.7** (9.52-12.0)	**11.2** (9.72-13.2)	**23.3** (19.9-25.5)	**51.4** (35.0-66.5)	**71.9** (62.3-104)	652
	05-06	**8.95** (7.12-11.3)	**10.2** (8.57-11.9)	**20.1** (14.3-31.0)	**43.1** (33.9-49.8)	**59.8** (43.6-77.3)	637
	07-08	**7.87** (6.39-9.68)	**9.43** (6.91-11.5)	**18.7** (14.1-25.3)	**38.0** (30.2-47.5)	**60.4** (40.5-73.9)	531
	09-10	**7.58** (6.42-8.96)	**7.39** (6.33-9.00)	**17.1** (14.3-20.3)	**33.8** (26.5-43.5)	**54.5** (34.4-79.7)	566
Non-Hispanic blacks	99-00	**16.6** (14.9-18.4)	**16.6** (14.8-18.4)	**35.5** (31.7-40.0)	**68.2** (57.6-93.4)	**99.1** (76.6-174)	603
	01-02	**17.1** (15.1-19.4)	**17.4** (14.3-20.2)	**36.4** (29.9-45.3)	**72.6** (62.2-91.3)	**103** (91.2-129)	703
	03-04	**13.6** (11.8-15.7)	**14.4** (11.1-17.7)	**31.5** (28.0-35.3)	**58.2** (50.4-76.0)	**86.2** (71.8-124)	699
	05-06	**11.9** (9.03-15.7)	**12.7** (10.1-17.1)	**26.1** (21.0-35.0)	**60.6** (47.2-74.6)	**83.2** (74.6-102)	678
	07-08	**9.37** (8.28-10.6)	**9.72** (8.35-11.7)	**21.4** (18.4-24.8)	**46.9** (34.3-61.6)	**71.3** (63.7-89.6)	597
	09-10	**8.98** (7.67-10.5)	**9.14** (7.76-10.5)	**21.0** (16.4-24.7)	**38.9** (30.3-52.6)	**67.4** (51.3-80.7)	516
Non-Hispanic whites	99-00	**10.3** (9.12-11.6)	**11.6** (10.3-13.4)	**24.5** (22.0-27.6)	**42.3** (36.9-53.4)	**73.9** (53.4-83.4)	912
	01-02	**10.1** (9.12-11.1)	**10.5** (9.65-11.2)	**25.6** (23.2-28.4)	**55.2** (47.6-65.0)	**87.5** (67.1-112)	1216
	03-04	**9.25** (8.30-10.3)	**9.50** (8.42-11.5)	**22.0** (20.0-25.3)	**45.9** (38.6-52.1)	**65.9** (54.9-87.9)	1088
	05-06	**7.67** (6.61-8.90)	**8.06** (6.98-10.1)	**19.8** (17.1-23.5)	**43.4** (32.4-52.5)	**65.8** (52.5-76.8)	1038
	07-08	**7.10** (6.33-7.97)	**8.14** (7.06-9.29)	**17.9** (16.5-20.3)	**37.7** (31.0-44.2)	**57.0** (46.0-68.6)	1077
	09-10	**6.07** (5.24-7.03)	**6.31** (5.54-7.23)	**14.7** (12.4-16.7)	**29.5** (23.4-36.9)	**44.6** (34.9-64.1)	1206

Limit of detection (LOD, see Data Analysis section) for Survey years 99-00, 01-02, 03-04, 05-06, 07-08, and 09-10 are 0.576, 0.216, 0.072, 0.216, 0.216, and 0.216 respectively.
**To correct for inadequate purity in the analytical standards, all results and LODs have been adjusted by a factor of 0.72 for survey periods 1999-2008 compared with results previously released.

Biomonitoring Summary: http://www.cdc.gov/biomonitoring/BzBP_BiomonitoringSummary.html
Factsheet: http://www.cdc.gov/biomonitoring/Phthalates_FactSheet.html

Urinary Mono-benzyl phthalate (MBzP) (creatinine corrected)

Metabolite of Benzylbutyl phthalate (BzBP)

Geometric mean and selected percentiles of urine concentrations (in µg/g of creatinine) for the U.S. population from the National Health and Nutrition Examination Survey.**

	Survey years	Geometric mean (95% conf. interval)	Selected percentiles (95% confidence interval) 50th	75th	90th	95th	Sample size
Total	99-00	**10.0** (9.33-10.8)	**9.60** (9.22-10.3)	**18.1** (16.8-19.6)	**36.1** (29.9-42.3)	**55.7** (50.1-62.1)	2541
	01-02	**10.2** (9.50-10.9)	**9.71** (9.12-10.4)	**19.1** (17.8-20.9)	**39.5** (35.3-42.1)	**65.1** (53.6-73.2)	2782
	03-04	**9.29** (8.76-9.86)	**9.04** (8.07-9.82)	**17.7** (16.0-19.0)	**33.1** (29.5-37.1)	**50.4** (44.9-57.5)	2605
	05-06	**8.11** (7.28-9.04)	**8.24** (7.37-8.98)	**15.3** (13.9-17.4)	**30.2** (26.4-35.1)	**47.4** (42.7-53.3)	2548
	07-08	**7.29** (6.71-7.93)	**7.20** (6.57-8.17)	**14.3** (13.1-15.4)	**28.3** (24.4-31.8)	**42.6** (36.3-49.1)	2604
	09-10	**6.74** (6.06-7.50)	**6.40** (5.63-7.30)	**12.4** (11.3-13.8)	**24.0** (20.4-26.6)	**34.1** (30.5-41.4)	2749
Age group							
6-11 years	99-00	**28.8** (24.2-34.3)	**27.8** (21.7-36.9)	**52.9** (40.8-71.4)	**75.1** (64.4-102)	**102** (71.8-124)	328
	01-02	**27.4** (24.8-30.3)	**26.9** (24.3-30.4)	**48.9** (40.2-57.9)	**96.7** (83.3-127)	**140** (86.9-219)	393
	03-04	**25.8** (21.9-30.3)	**23.2** (20.1-29.1)	**43.7** (36.1-57.2)	**97.8** (61.6-154)	**165** (71.8-286)	342
	05-06	**23.5** (21.1-26.2)	**25.5** (20.5-29.5)	**47.1** (35.8-57.8)	**77.6** (62.8-94.3)	**104** (85.8-130)	356
	07-08	**19.0** (16.0-22.5)	**20.7** (15.6-27.0)	**35.4** (32.3-40.0)	**67.2** (51.9-91.5)	**118** (74.3-159)	389
	09-10	**15.1** (12.7-18.0)	**14.6** (12.0-17.2)	**29.3** (25.9-37.6)	**66.5** (45.3-84.1)	**92.2** (67.1-163)	415
12-19 years	99-00	**12.4** (11.1-14.0)	**12.3** (10.5-14.6)	**20.4** (17.5-25.1)	**35.8** (27.9-49.9)	**50.4** (35.7-59.0)	752
	01-02	**12.9** (11.3-14.8)	**13.0** (11.3-15.0)	**24.4** (21.1-27.8)	**48.7** (40.2-61.9)	**72.0** (58.1-88.6)	742
	03-04	**11.9** (11.1-12.8)	**12.2** (11.1-13.1)	**21.6** (18.0-25.6)	**37.5** (29.3-44.5)	**56.0** (39.5-82.6)	729
	05-06	**10.6** (9.14-12.2)	**10.5** (8.33-13.0)	**18.5** (15.9-23.7)	**35.8** (28.1-46.0)	**48.8** (41.3-65.3)	702
	07-08	**9.06** (7.76-10.6)	**9.39** (8.12-11.1)	**16.7** (13.8-21.0)	**32.1** (22.0-45.9)	**48.4** (32.3-55.6)	401
	09-10	**8.54** (7.36-9.90)	**8.73** (7.44-10.8)	**14.9** (13.2-17.5)	**24.9** (21.6-28.9)	**32.5** (25.7-42.7)	420
20 years and older	99-00	**8.47** (7.73-9.27)	**8.68** (8.01-9.26)	**14.5** (13.2-16.8)	**24.9** (22.0-29.4)	**41.1** (29.7-53.2)	1461
	01-02	**8.66** (8.08-9.28)	**8.47** (8.00-9.00)	**15.6** (14.3-17.1)	**30.5** (25.8-34.7)	**46.8** (39.0-56.4)	1647
	03-04	**7.90** (7.39-8.45)	**7.58** (6.98-8.37)	**14.2** (13.1-15.4)	**26.3** (25.0-28.2)	**40.2** (33.7-44.9)	1534
	05-06	**6.89** (6.20-7.66)	**7.10** (6.60-7.71)	**13.1** (12.1-14.2)	**22.4** (19.9-25.5)	**34.6** (28.9-43.1)	1490
	07-08	**6.35** (5.74-7.03)	**6.41** (5.65-7.15)	**12.3** (11.1-13.6)	**21.8** (19.1-25.7)	**32.6** (28.7-40.5)	1814
	09-10	**5.94** (5.31-6.66)	**5.67** (5.03-6.53)	**10.8** (9.18-12.5)	**19.2** (16.6-23.5)	**29.1** (24.2-33.4)	1914
Gender							
Males	99-00	**9.14** (8.51-9.82)	**8.96** (8.32-9.39)	**17.1** (15.5-18.8)	**32.0** (25.5-41.0)	**52.9** (34.9-71.8)	1215
	01-02	**9.13** (8.18-10.2)	**8.55** (7.85-9.53)	**17.4** (15.1-19.0)	**35.3** (31.5-40.4)	**57.8** (43.8-74.7)	1371
	03-04	**8.25** (7.60-8.95)	**7.99** (7.01-9.03)	**15.2** (14.0-17.0)	**28.4** (24.6-35.8)	**45.3** (37.4-59.8)	1250
	05-06	**7.61** (6.65-8.70)	**7.57** (6.65-8.91)	**14.3** (13.0-16.6)	**30.0** (25.5-34.5)	**43.7** (36.2-48.2)	1270
	07-08	**6.57** (5.91-7.31)	**6.66** (5.68-7.46)	**12.8** (11.3-14.8)	**24.4** (21.2-29.5)	**36.3** (30.6-45.5)	1294
	09-10	**6.21** (5.56-6.94)	**5.88** (5.13-6.74)	**11.6** (10.1-12.9)	**21.3** (18.8-24.1)	**32.2** (27.6-35.6)	1399
Females	99-00	**11.0** (9.96-12.1)	**10.6** (9.60-11.5)	**18.6** (17.3-21.1)	**40.6** (33.7-43.6)	**57.9** (43.3-84.2)	1326
	01-02	**11.3** (10.2-12.4)	**10.8** (9.97-11.9)	**21.2** (18.6-24.5)	**42.1** (35.9-50.0)	**69.0** (50.0-83.4)	1411
	03-04	**10.4** (9.65-11.2)	**9.97** (9.20-10.9)	**20.1** (17.8-22.6)	**37.4** (31.2-43.4)	**52.9** (45.8-65.0)	1355
	05-06	**8.63** (7.84-9.51)	**8.67** (8.12-9.26)	**15.9** (14.8-18.3)	**32.0** (26.3-41.4)	**52.3** (45.2-62.8)	1278
	07-08	**8.07** (7.29-8.93)	**8.37** (7.20-9.16)	**15.5** (13.9-18.0)	**31.5** (27.5-34.2)	**48.3** (40.2-54.9)	1310
	09-10	**7.29** (6.47-8.21)	**6.90** (5.90-8.04)	**13.6** (11.9-15.3)	**25.6** (21.9-30.4)	**38.8** (30.7-47.3)	1350

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	Survey years	Geometric mean (95% conf. interval)	Selected percentiles (95% confidence interval) 50th	75th	90th	95th	Sample size
Race/ethnicity							
Mexican Americans	99-00	**9.10** (8.20-10.1)	**8.60** (7.87-9.53)	**17.4** (15.5-19.1)	**33.5** (30.2-38.7)	**49.1** (40.6-67.5)	814
	01-02	**8.95** (7.69-10.4)	**8.55** (7.16-10.7)	**17.1** (14.1-20.9)	**33.6** (26.3-44.4)	**51.5** (36.8-86.5)	677
	03-04	**9.66** (8.41-11.1)	**9.00** (8.25-9.66)	**17.3** (15.1-20.0)	**38.2** (27.6-46.7)	**56.0** (41.1-89.8)	652
	05-06	**8.05** (6.69-9.69)	**8.38** (7.48-8.91)	**16.0** (12.6-20.2)	**31.0** (22.4-40.6)	**45.7** (31.3-54.2)	637
	07-08	**7.68** (6.13-9.62)	**8.06** (6.42-10.3)	**15.5** (12.5-19.2)	**29.1** (21.9-36.9)	**42.9** (33.5-51.8)	531
	09-10	**7.53** (6.52-8.69)	**7.29** (6.30-8.18)	**13.3** (11.6-16.3)	**32.3** (23.3-43.6)	**52.2** (33.0-66.1)	566
Non-Hispanic blacks	99-00	**10.7** (9.75-11.7)	**9.83** (8.76-10.9)	**19.4** (16.2-22.9)	**40.5** (28.4-54.7)	**62.5** (46.4-71.9)	603
	01-02	**12.0** (10.5-13.7)	**11.3** (9.84-13.9)	**24.1** (19.1-27.4)	**43.3** (38.7-50.0)	**77.7** (54.4-83.4)	703
	03-04	**9.65** (8.46-11.0)	**9.81** (8.32-11.2)	**17.4** (15.8-20.7)	**36.0** (29.6-41.6)	**53.8** (42.5-65.2)	699
	05-06	**8.38** (6.44-10.9)	**8.24** (6.72-10.6)	**16.1** (12.8-21.5)	**34.1** (25.8-43.9)	**52.3** (39.9-62.9)	678
	07-08	**7.28** (6.51-8.14)	**7.07** (5.97-8.28)	**14.7** (12.2-16.0)	**25.8** (22.6-31.5)	**42.3** (32.6-50.3)	597
	09-10	**6.50** (5.49-7.70)	**6.50** (5.38-7.45)	**11.7** (9.80-14.9)	**23.9** (17.0-31.8)	**34.4** (25.8-48.9)	516
Non-Hispanic whites	99-00	**10.0** (9.16-11.0)	**9.66** (9.25-10.7)	**18.2** (16.6-19.8)	**38.3** (27.9-46.7)	**56.1** (48.5-65.0)	912
	01-02	**9.97** (9.24-10.8)	**9.33** (8.69-10.3)	**18.5** (17.1-20.1)	**38.2** (33.5-42.1)	**64.2** (49.7-78.5)	1216
	03-04	**9.14** (8.48-9.84)	**8.97** (7.77-9.93)	**17.6** (15.6-19.2)	**30.2** (28.1-35.2)	**47.2** (41.4-57.3)	1088
	05-06	**8.08** (7.17-9.10)	**8.35** (7.31-9.49)	**15.2** (13.7-17.4)	**29.9** (25.1-36.5)	**47.4** (40.0-57.1)	1038
	07-08	**7.42** (6.90-7.97)	**7.38** (6.65-8.23)	**14.0** (12.9-15.4)	**28.3** (24.2-32.3)	**44.5** (36.3-52.4)	1077
	09-10	**6.83** (6.08-7.67)	**6.37** (5.58-7.34)	**12.6** (11.1-14.5)	**24.0** (19.5-27.6)	**33.4** (27.9-44.6)	1206

**To correct for inadequate purity in the analytical standards, all results and LODs have been adjusted by a factor of 0.72 for survey periods 1999-2008 compared with results previously released.

Biomonitoring Summary: http://www.cdc.gov/biomonitoring/BzBP_BiomonitoringSummary.html
Factsheet: http://www.cdc.gov/biomonitoring/Phthalates_FactSheet.html

Urinary Mono-isobutyl phthalate (MiBP)

Metabolite of Di-isobutyl phthalate (DiBP)

Geometric mean and selected percentiles of urine concentrations (in µg/L) for the U.S. population from the National Health and Nutrition Examination Survey.

	Survey years	Geometric mean (95% conf. interval)	Selected percentiles (95% confidence interval) 50th	75th	90th	95th	Sample size
Total	01-02	**2.71** (2.49-2.94)	**2.70** (2.40-3.00)	**5.70** (5.30-6.10)	**12.0** (11.4-12.7)	**17.9** (16.3-19.8)	2782
	03-04	**3.80** (3.40-4.25)	**4.20** (3.70-4.80)	**8.40** (7.40-9.50)	**15.0** (13.1-17.3)	**21.3** (18.6-26.0)	2605
	05-06	**5.20** (4.64-5.83)	**5.80** (5.40-6.60)	**11.9** (10.6-13.3)	**21.3** (18.7-23.7)	**31.6** (27.1-37.2)	2548
	07-08	**7.15** (6.59-7.77)	**8.00** (7.50-8.60)	**15.3** (13.9-16.9)	**27.2** (24.6-30.4)	**39.1** (35.4-43.8)	2604
	09-10	**7.64** (6.88-8.49)	**8.30** (7.24-9.27)	**15.8** (14.5-17.4)	**27.6** (24.7-31.7)	**41.3** (35.6-47.5)	2749
Age group							
6-11 years	01-02	**4.22** (3.28-5.43)	**4.40** (3.20-6.20)	**10.7** (7.30-13.4)	**18.6** (14.2-22.0)	**23.4** (20.4-27.8)	393
	03-04	**6.56** (5.24-8.22)	**7.00** (5.10-9.10)	**12.8** (9.40-17.7)	**24.3** (19.6-34.5)	**40.6** (29.3-48.5)	342
	05-06	**8.53** (7.67-9.48)	**9.00** (8.20-10.3)	**15.8** (13.7-19.2)	**33.2** (27.5-38.4)	**49.1** (33.2-54.4)	356
	07-08	**10.7** (8.94-12.8)	**11.4** (8.90-13.2)	**21.1** (16.6-27.2)	**35.9** (30.2-44.7)	**55.4** (36.4-75.5)	389
	09-10	**10.2** (9.10-11.4)	**10.9** (9.45-12.2)	**20.8** (18.8-23.6)	**35.7** (28.8-46.9)	**55.4** (41.2-75.4)	415
12-19 years	01-02	**3.48** (2.90-4.17)	**3.80** (2.90-4.40)	**7.40** (6.00-9.00)	**14.5** (11.7-18.6)	**22.3** (16.2-33.4)	742
	03-04	**4.55** (3.73-5.55)	**5.60** (4.50-6.30)	**10.1** (8.00-11.4)	**17.1** (13.3-20.9)	**22.7** (18.5-29.1)	729
	05-06	**7.46** (6.53-8.51)	**7.90** (6.90-9.80)	**16.2** (13.6-19.3)	**29.2** (23.6-31.3)	**34.1** (30.1-49.9)	702
	07-08	**10.2** (8.53-12.3)	**10.5** (8.40-12.9)	**22.3** (17.0-26.9)	**41.6** (32.9-48.1)	**56.2** (44.6-82.7)	401
	09-10	**10.7** (9.54-12.1)	**12.3** (10.7-13.6)	**20.2** (17.3-22.2)	**36.1** (28.3-46.0)	**49.8** (42.3-60.2)	420
20 years and older	01-02	**2.46** (2.30-2.63)	**2.40** (2.20-2.70)	**5.10** (4.80-5.50)	**10.6** (9.40-12.0)	**16.3** (13.6-18.5)	1647
	03-04	**3.46** (3.11-3.84)	**3.90** (3.40-4.30)	**7.50** (6.70-8.50)	**13.3** (11.5-16.5)	**19.9** (16.0-25.0)	1534
	05-06	**4.65** (4.07-5.30)	**5.40** (4.70-6.00)	**10.6** (9.50-12.0)	**18.7** (16.0-21.9)	**29.0** (22.1-34.4)	1490
	07-08	**6.47** (5.91-7.09)	**7.50** (6.70-8.00)	**14.1** (12.5-16.1)	**24.5** (21.3-27.7)	**34.2** (27.9-39.5)	1814
	09-10	**7.03** (6.26-7.90)	**7.55** (6.66-8.57)	**14.6** (12.8-16.6)	**25.7** (23.2-28.5)	**38.6** (31.4-43.6)	1914
Gender							
Males	01-02	**2.73** (2.50-2.97)	**2.80** (2.40-3.20)	**5.60** (5.00-6.10)	**11.6** (10.1-12.6)	**16.6** (13.6-20.1)	1371
	03-04	**4.07** (3.56-4.66)	**4.30** (3.80-5.10)	**9.20** (7.50-10.2)	**16.0** (13.3-18.5)	**22.7** (17.3-30.3)	1250
	05-06	**5.65** (5.08-6.29)	**6.20** (5.60-6.90)	**11.9** (10.7-13.3)	**22.1** (18.7-26.5)	**32.3** (25.5-39.8)	1270
	07-08	**7.52** (6.84-8.26)	**8.30** (7.70-9.40)	**15.2** (13.6-17.2)	**25.0** (21.7-28.4)	**38.3** (27.3-44.2)	1294
	09-10	**7.80** (6.96-8.74)	**8.48** (7.44-9.16)	**15.3** (14.0-17.0)	**26.2** (23.2-30.9)	**39.1** (31.1-46.4)	1399
Females	01-02	**2.68** (2.44-2.96)	**2.60** (2.30-3.00)	**5.80** (5.30-6.50)	**12.6** (11.0-14.7)	**18.7** (16.3-24.0)	1411
	03-04	**3.56** (3.19-3.97)	**4.10** (3.50-4.50)	**8.00** (7.10-9.10)	**14.2** (12.5-16.6)	**20.5** (17.9-23.0)	1355
	05-06	**4.80** (4.15-5.55)	**5.50** (4.70-6.60)	**11.9** (10.1-13.6)	**19.6** (17.0-24.1)	**29.8** (24.6-35.9)	1278
	07-08	**6.82** (6.21-7.49)	**7.40** (6.50-8.30)	**15.5** (14.5-16.9)	**29.1** (27.0-32.9)	**39.8** (36.2-46.7)	1310
	09-10	**7.50** (6.68-8.43)	**8.07** (6.94-9.62)	**16.4** (14.0-18.9)	**29.1** (25.3-33.5)	**45.0** (36.0-52.7)	1350
Race/ethnicity							
Mexican Americans	01-02	**3.26** (2.72-3.91)	**3.40** (2.70-4.30)	**7.20** (6.20-9.30)	**12.2** (11.2-14.7)	**18.4** (14.1-25.6)	677
	03-04	**4.81** (3.85-6.02)	**5.10** (4.00-6.70)	**10.2** (8.20-12.6)	**18.3** (13.5-24.5)	**26.0** (19.0-38.5)	652
	05-06	**6.88** (5.58-8.48)	**7.30** (6.00-8.90)	**14.5** (11.5-17.5)	**26.3** (20.7-34.1)	**40.4** (33.8-46.8)	637
	07-08	**9.30** (8.12-10.6)	**10.2** (9.40-11.1)	**17.4** (15.9-18.8)	**31.9** (24.0-39.2)	**47.6** (34.2-58.2)	531
	09-10	**9.34** (8.22-10.6)	**9.97** (8.31-11.6)	**18.8** (16.0-21.8)	**31.7** (25.6-37.2)	**46.4** (37.3-54.0)	566
Non-Hispanic blacks	01-02	**4.90** (4.46-5.37)	**5.30** (4.60-6.00)	**10.7** (9.20-12.0)	**18.3** (16.1-20.1)	**25.5** (20.7-31.3)	703
	03-04	**6.67** (5.97-7.46)	**6.90** (6.30-7.50)	**12.6** (10.9-14.7)	**25.7** (17.7-31.0)	**33.5** (27.3-43.9)	699
	05-06	**8.37** (7.06-9.91)	**8.70** (7.50-10.2)	**16.1** (13.8-19.7)	**30.1** (22.1-37.2)	**41.4** (30.1-67.7)	678
	07-08	**10.7** (9.08-12.5)	**12.5** (10.5-14.8)	**23.1** (21.7-25.0)	**38.9** (32.4-43.5)	**47.6** (44.5-57.0)	597
	09-10	**14.0** (11.9-16.4)	**15.4** (12.9-17.8)	**27.5** (22.4-34.1)	**47.6** (34.4-65.6)	**66.0** (46.3-85.2)	516
Non-Hispanic whites	01-02	**2.33** (2.10-2.59)	**2.30** (1.90-2.60)	**4.90** (4.40-5.30)	**9.60** (8.30-11.6)	**15.6** (13.0-18.6)	1216
	03-04	**3.17** (2.82-3.56)	**3.50** (3.00-4.00)	**6.80** (5.90-7.90)	**12.5** (10.6-14.5)	**17.6** (14.7-20.8)	1088
	05-06	**4.41** (3.86-5.04)	**5.00** (4.20-5.70)	**10.3** (9.10-11.5)	**18.7** (16.3-21.1)	**28.8** (22.1-32.2)	1038
	07-08	**6.32** (5.78-6.93)	**7.20** (6.40-7.90)	**13.6** (12.4-14.9)	**24.3** (20.1-27.3)	**33.8** (27.0-39.5)	1077
	09-10	**6.34** (5.65-7.10)	**6.92** (6.08-7.90)	**12.9** (11.7-14.5)	**21.6** (19.1-24.2)	**29.6** (26.0-34.3)	1206

Limit of detection (LOD, see Data Analysis section) for Survey years 01-02, 03-04, 05-06,07-08, and 09-10 are 1.0, 0.3, 0.3,0.3, and 0.2 respectively.

Urinary Mono-isobutyl phthalate (MiBP) (creatinine corrected)

Metabolite of Di-isobutyl phthalate (DiBP)

Geometric mean and selected percentiles of urine concentrations (in µg/g of creatinine) for the U.S. population from the National Health and Nutrition Examination Survey.

	Survey years	Geometric mean (95% conf. interval)	Selected percentiles (95% confidence interval) 50th	75th	90th	95th	Sample size
Total	01-02	**2.54** (2.36-2.73)	**2.46** (2.26-2.68)	**4.54** (4.20-4.86)	**8.02** (7.78-8.66)	**12.0** (10.8-13.5)	2782
	03-04	**3.57** (3.18-4.00)	**3.57** (3.15-4.08)	**6.21** (5.36-7.17)	**10.9** (9.47-12.7)	**15.4** (12.8-18.6)	2605
	05-06	**5.07** (4.68-5.50)	**5.07** (4.74-5.45)	**8.81** (8.08-9.55)	**15.2** (13.4-16.5)	**21.3** (18.3-24.3)	2548
	07-08	**7.21** (6.76-7.70)	**7.25** (6.77-7.81)	**12.1** (11.2-13.3)	**19.5** (17.2-21.5)	**27.8** (24.9-31.3)	2604
	09-10	**7.98** (7.34-8.68)	**7.86** (7.12-8.52)	**12.4** (11.2-14.1)	**20.1** (17.3-23.0)	**26.8** (23.7-32.8)	2749
Age group							
6-11 years	01-02	**4.81** (3.89-5.94)	**5.18** (4.13-6.32)	**9.20** (7.03-11.7)	**15.2** (11.1-24.3)	**24.3** (13.9-40.3)	393
	03-04	**6.94** (5.79-8.31)	**7.03** (5.29-8.95)	**11.8** (9.56-15.1)	**18.6** (15.1-25.1)	**28.7** (21.8-36.9)	342
	05-06	**9.39** (8.56-10.3)	**9.46** (8.50-10.3)	**15.3** (13.0-18.1)	**25.2** (21.6-30.1)	**37.9** (28.0-65.5)	356
	07-08	**13.2** (11.1-15.5)	**12.9** (10.5-15.7)	**21.9** (17.8-26.0)	**35.5** (28.3-43.5)	**52.6** (41.4-58.3)	389
	09-10	**13.2** (11.8-14.9)	**12.6** (11.0-14.7)	**20.9** (18.7-24.9)	**35.3** (28.6-46.1)	**53.0** (39.1-95.1)	415
12-19 years	01-02	**2.68** (2.29-3.15)	**2.83** (2.39-3.33)	**4.79** (4.04-5.51)	**7.62** (6.18-10.2)	**12.8** (8.76-15.6)	742
	03-04	**3.41** (2.86-4.05)	**3.69** (2.99-4.31)	**5.75** (4.69-7.04)	**9.32** (7.17-12.0)	**13.5** (9.52-20.1)	729
	05-06	**5.56** (5.05-6.11)	**5.82** (5.20-6.53)	**9.05** (8.06-10.4)	**14.3** (13.4-16.5)	**20.3** (17.7-26.8)	702
	07-08	**7.95** (6.96-9.09)	**8.30** (6.89-9.76)	**13.7** (11.3-15.7)	**21.3** (16.3-28.4)	**28.7** (20.5-62.6)	401
	09-10	**8.63** (7.97-9.34)	**8.94** (7.87-9.78)	**12.7** (11.7-14.9)	**19.5** (16.5-25.3)	**28.8** (20.6-53.4)	420
20 years and older	01-02	**2.33** (2.20-2.46)	**2.26** (2.08-2.43)	**3.89** (3.65-4.25)	**7.31** (7.00-7.78)	**10.6** (9.46-11.3)	1647
	03-04	**3.32** (3.00-3.68)	**3.33** (3.00-3.81)	**5.59** (4.93-6.51)	**9.84** (8.65-11.2)	**13.5** (11.4-16.0)	1534
	05-06	**4.66** (4.23-5.13)	**4.62** (4.36-5.03)	**8.00** (7.23-8.78)	**13.5** (11.6-15.7)	**18.2** (16.1-23.0)	1490
	07-08	**6.65** (6.21-7.12)	**6.73** (6.29-7.20)	**11.1** (10.2-12.1)	**17.1** (15.6-18.6)	**23.8** (21.0-26.7)	1814
	09-10	**7.45** (6.81-8.15)	**7.24** (6.69-7.89)	**11.6** (10.4-12.6)	**17.7** (15.1-21.9)	**23.8** (20.7-28.8)	1914
Gender							
Males	01-02	**2.22** (2.09-2.35)	**2.18** (1.97-2.37)	**3.76** (3.58-4.11)	**7.38** (6.64-7.95)	**11.1** (10.1-12.5)	1371
	03-04	**3.20** (2.80-3.66)	**3.19** (2.74-3.56)	**5.84** (4.79-6.56)	**10.0** (8.27-12.2)	**13.9** (11.5-19.1)	1250
	05-06	**4.54** (4.19-4.92)	**4.45** (4.21-4.81)	**7.95** (6.95-8.73)	**13.4** (11.6-15.8)	**18.5** (16.7-19.8)	1270
	07-08	**6.33** (5.91-6.79)	**6.36** (5.93-6.77)	**10.4** (9.43-11.3)	**16.4** (15.0-19.7)	**24.1** (21.1-27.7)	1294
	09-10	**6.99** (6.44-7.59)	**6.70** (6.26-7.21)	**10.6** (9.80-11.5)	**17.5** (15.4-19.8)	**23.4** (20.9-27.3)	1399
Females	01-02	**2.88** (2.61-3.18)	**2.85** (2.52-3.18)	**5.14** (4.67-5.89)	**8.66** (8.02-10.1)	**13.7** (11.1-15.0)	1411
	03-04	**3.96** (3.56-4.42)	**4.00** (3.57-4.45)	**6.73** (5.64-7.80)	**11.6** (10.2-13.0)	**15.7** (13.0-18.7)	1355
	05-06	**5.64** (5.04-6.32)	**5.86** (5.39-6.39)	**9.61** (8.85-10.6)	**15.8** (14.3-18.1)	**24.3** (18.7-32.5)	1278
	07-08	**8.18** (7.46-8.96)	**8.70** (7.78-9.47)	**13.9** (12.2-15.2)	**21.3** (18.3-25.3)	**31.6** (26.4-34.7)	1310
	09-10	**9.05** (8.22-9.97)	**9.13** (8.19-9.90)	**14.4** (12.2-16.2)	**22.0** (18.1-26.3)	**29.8** (25.8-36.4)	1350
Race/ethnicity							
Mexican Americans	01-02	**3.07** (2.58-3.66)	**2.98** (2.53-3.82)	**5.82** (4.91-6.99)	**10.6** (8.28-13.3)	**16.0** (12.6-19.4)	677
	03-04	**4.34** (3.47-5.43)	**4.47** (3.53-5.24)	**7.75** (6.33-9.69)	**13.1** (11.9-16.8)	**23.3** (17.9-26.1)	652
	05-06	**6.19** (5.24-7.31)	**6.17** (5.59-7.02)	**10.9** (9.61-12.3)	**18.6** (17.1-21.5)	**28.3** (23.7-36.2)	637
	07-08	**9.07** (7.87-10.5)	**8.94** (8.07-10.3)	**14.6** (12.4-18.0)	**25.9** (21.1-32.4)	**36.1** (28.0-42.3)	531
	09-10	**9.27** (8.37-10.3)	**8.95** (8.00-10.0)	**14.6** (12.8-17.3)	**25.6** (23.1-28.2)	**40.6** (28.7-47.4)	566
Non-Hispanic blacks	01-02	**3.44** (3.20-3.69)	**3.52** (2.95-3.81)	**6.11** (5.03-7.04)	**10.6** (8.94-12.4)	**15.6** (12.6-19.7)	703
	03-04	**4.74** (4.07-5.51)	**4.65** (4.10-5.30)	**7.81** (6.38-10.0)	**15.2** (10.8-18.4)	**19.9** (15.7-28.7)	699
	05-06	**5.88** (5.12-6.76)	**5.86** (5.03-7.03)	**9.74** (8.21-11.3)	**14.9** (12.0-19.9)	**21.4** (14.9-29.7)	678
	07-08	**8.28** (7.20-9.52)	**8.96** (8.33-9.71)	**14.4** (12.9-15.7)	**21.6** (20.3-24.3)	**29.6** (24.3-37.7)	597
	09-10	**10.1** (8.76-11.7)	**10.5** (9.41-11.6)	**15.2** (12.9-19.2)	**24.1** (19.3-32.2)	**33.2** (26.3-42.0)	516
Non-Hispanic whites	01-02	**2.31** (2.11-2.52)	**2.20** (2.01-2.43)	**3.80** (3.53-4.39)	**7.30** (6.72-7.78)	**10.7** (9.62-12.6)	1216
	03-04	**3.13** (2.76-3.54)	**3.17** (2.76-3.72)	**5.28** (4.55-6.21)	**8.92** (7.64-10.3)	**11.8** (10.2-15.1)	1088
	05-06	**4.64** (4.25-5.07)	**4.58** (4.35-4.91)	**8.28** (7.45-9.01)	**13.7** (12.2-15.6)	**18.8** (16.9-22.2)	1038
	07-08	**6.60** (6.14-7.10)	**6.70** (6.26-7.08)	**10.9** (10.0-12.1)	**17.0** (15.2-20.5)	**24.9** (20.5-29.1)	1077
	09-10	**7.12** (6.62-7.66)	**6.95** (6.51-7.40)	**10.7** (10.1-11.8)	**17.0** (14.6-20.3)	**22.0** (19.1-26.2)	1206

Urinary Mono-*n*-butyl phthalate (MnBP)

Metabolite of Dibutyl phthalate (DBP) and Benzylbutyl phthalate (BzBP)

Geometric mean and selected percentiles of urine concentrations (in µg/L) for the U.S. population from the National Health and Nutrition Examination Survey.*

	Survey years	Geometric mean (95% conf. interval)	Selected percentiles (95% confidence interval) 50th	75th	90th	95th	Sample size
Total	99-00	**24.6** (22.1-27.4)	**26.0** (23.6-29.2)	**51.6** (44.5-60.3)	**98.6** (90.2-114)	**150** (121-169)	2541
	01-02	**18.9** (17.4-20.6)	**20.4** (19.2-21.8)	**40.4** (36.5-44.2)	**73.6** (65.3-85.6)	**108** (94.1-122)	2782
	03-04	**21.1** (19.8-22.5)	**23.2** (21.2-24.8)	**42.7** (38.5-47.2)	**80.7** (70.2-93.9)	**122** (104-137)	2605
	05-06	**19.6** (18.2-21.3)	**20.6** (18.6-23.0)	**40.4** (36.4-44.9)	**71.5** (66.5-79.5)	**107** (96.3-124)	2548
	07-08	**18.9** (17.2-20.7)	**20.0** (18.1-21.9)	**39.1** (34.5-43.4)	**72.4** (64.5-77.7)	**110** (94.5-120)	2604
	09-10	**14.6** (13.2-16.2)	**15.9** (14.3-17.3)	**30.5** (27.2-33.3)	**54.4** (49.7-59.1)	**75.9** (67.5-86.8)	2749
Age group							
6-11 years	99-00	**41.4** (35.6-48.0)	**40.0** (36.2-49.2)	**75.5** (59.1-92.8)	**124** (98.4-159)	**166** (127-279)	328
	01-02	**31.1** (26.6-36.5)	**32.4** (25.6-37.1)	**62.1** (51.3-76.9)	**107** (84.3-136)	**159** (110-290)	393
	03-04	**36.3** (30.7-42.9)	**36.7** (28.5-47.5)	**71.3** (56.9-87.2)	**137** (107-162)	**191** (150-243)	342
	05-06	**30.5** (27.5-33.8)	**32.3** (27.8-35.0)	**57.4** (46.8-65.4)	**93.4** (75.6-130)	**136** (108-181)	356
	07-08	**26.9** (22.5-32.1)	**28.7** (21.3-38.0)	**53.6** (45.6-63.6)	**85.6** (71.4-102)	**119** (91.6-150)	389
	09-10	**21.7** (19.0-24.8)	**23.3** (20.8-26.2)	**44.9** (39.1-49.7)	**83.8** (59.6-121)	**124** (92.3-173)	415
12-19 years	99-00	**36.0** (30.8-42.1)	**36.3** (30.6-44.9)	**68.6** (55.9-79.7)	**119** (90.2-159)	**165** (121-227)	752
	01-02	**25.1** (21.6-29.2)	**26.7** (22.0-32.7)	**52.6** (48.4-60.4)	**92.4** (72.7-121)	**148** (106-185)	742
	03-04	**26.7** (24.1-29.5)	**28.2** (25.2-33.1)	**52.0** (45.3-60.9)	**97.5** (74.7-116)	**134** (110-158)	729
	05-06	**27.5** (24.3-31.3)	**29.0** (23.7-36.6)	**57.2** (48.7-64.9)	**88.6** (75.1-105)	**125** (96.2-154)	702
	07-08	**26.2** (22.5-30.6)	**27.3** (22.1-32.8)	**51.7** (46.2-63.8)	**111** (77.7-132)	**149** (103-188)	401
	09-10	**18.9** (16.1-22.2)	**22.3** (19.4-24.4)	**37.2** (31.3-43.4)	**61.7** (52.8-73.2)	**81.4** (68.9-86.3)	420
20 years and older	99-00	**21.6** (19.0-24.5)	**23.1** (19.7-26.1)	**46.3** (36.9-53.6)	**95.0** (78.7-111)	**143** (117-161)	1461
	01-02	**17.0** (15.4-18.8)	**19.1** (17.1-20.4)	**35.1** (31.6-40.2)	**64.8** (57.3-79.7)	**95.4** (84.6-113)	1647
	03-04	**19.0** (17.7-20.5)	**20.7** (18.9-22.9)	**38.4** (35.7-42.7)	**74.7** (64.1-82.6)	**108** (90.7-127)	1534
	05-06	**17.7** (16.0-19.6)	**18.4** (16.6-20.6)	**36.7** (32.5-41.4)	**65.1** (55.4-74.3)	**101** (84.3-121)	1490
	07-08	**17.2** (15.6-19.1)	**18.6** (16.7-20.3)	**34.5** (31.5-39.1)	**63.8** (56.4-72.5)	**98.3** (83.0-115)	1814
	09-10	**13.5** (12.0-15.1)	**14.5** (13.0-16.0)	**28.1** (24.1-32.0)	**50.0** (44.1-56.1)	**68.9** (60.6-77.3)	1914
Gender							
Males	99-00	**22.0** (20.1-24.1)	**23.2** (20.4-26.3)	**43.1** (36.6-49.5)	**84.4** (71.3-96.2)	**116** (97.8-132)	1215
	01-02	**17.7** (16.0-19.6)	**19.3** (17.3-21.0)	**34.5** (30.3-40.6)	**62.1** (54.1-75.5)	**95.2** (75.5-117)	1371
	03-04	**20.0** (18.1-22.0)	**21.1** (19.0-24.0)	**39.4** (35.5-43.4)	**65.5** (59.0-73.0)	**95.9** (79.8-111)	1250
	05-06	**19.8** (18.4-21.4)	**20.7** (19.0-23.0)	**38.5** (34.6-42.0)	**63.8** (56.8-72.0)	**96.2** (79.0-113)	1270
	07-08	**18.4** (16.8-20.3)	**19.0** (17.3-21.3)	**36.0** (32.5-40.4)	**60.9** (52.8-68.8)	**88.3** (72.6-110)	1294
	09-10	**14.5** (13.0-16.3)	**15.4** (13.7-16.9)	**28.4** (25.9-31.2)	**51.7** (44.3-54.8)	**68.9** (58.9-78.0)	1399
Females	99-00	**27.3** (23.6-31.5)	**30.0** (25.9-33.3)	**59.7** (51.6-69.6)	**120** (98.3-145)	**167** (143-223)	1326
	01-02	**20.2** (18.2-22.4)	**21.7** (19.7-24.3)	**46.7** (43.1-51.1)	**85.0** (72.7-92.5)	**121** (106-136)	1411
	03-04	**22.2** (21.2-23.3)	**24.4** (23.4-25.8)	**47.3** (42.7-53.0)	**95.9** (79.9-114)	**137** (122-156)	1355
	05-06	**19.5** (17.2-22.0)	**20.4** (17.1-24.7)	**42.3** (36.7-52.0)	**83.2** (71.0-90.2)	**124** (101-137)	1278
	07-08	**19.3** (17.2-21.7)	**20.8** (18.1-23.2)	**42.5** (35.6-50.6)	**83.7** (68.6-109)	**132** (109-151)	1310
	09-10	**14.7** (13.1-16.5)	**16.4** (13.9-19.3)	**32.7** (29.9-37.1)	**57.7** (52.7-63.9)	**86.2** (68.9-113)	1350

Limit of detection (LOD, see Data Analysis section) for Survey years 99-00, 01-02, 03-04, 05-06, 07-08, and 09-10 are 0.9, 1.1, 0.4, 0.6, 0.6, and 0.4 respectively.

*In the 1999-2000 survey period, concentrations of mono-isobutyl and mono-n-butyl phthalates were measured together and expressed as the combined value, monobutyl phthalate (MBP)

Biomonitoring Summary: http://www.cdc.gov/biomonitoring/DBP_BiomonitoringSummary.html

Factsheet: http://www.cdc.gov/biomonitoring/Phthalates_FactSheet.html

Urinary Mono-*n*-butyl phthalate (MnBP)

Metabolite of Dibutyl phthalate (DBP) and Benzylbutyl phthalate (BzBP)

Geometric mean and selected percentiles of urine concentrations (in µg/L) for the U.S. population from the National Health and Nutrition Examination Survey.*

	Survey years	Geometric mean (95% conf. interval)	Selected percentiles (95% confidence interval) 50th	75th	90th	95th	Sample size
Race/ethnicity							
Mexican Americans	99-00	**23.4** (21.8-25.1)	**26.3** (23.9-28.1)	**48.1** (41.2-56.7)	**92.2** (78.9-101)	**117** (104-131)	814
	01-02	**20.1** (16.6-24.5)	**23.1** (18.0-26.5)	**42.1** (34.0-51.5)	**77.1** (62.9-92.5)	**112** (84.6-143)	677
	03-04	**24.1** (19.8-29.5)	**26.9** (20.2-32.0)	**47.4** (38.0-58.5)	**85.6** (61.7-117)	**127** (99.8-165)	652
	05-06	**22.4** (18.6-27.0)	**23.5** (19.0-29.0)	**45.4** (37.1-55.4)	**90.2** (71.1-119)	**132** (106-174)	637
	07-08	**22.2** (18.5-26.7)	**22.4** (17.8-27.1)	**43.8** (36.2-50.4)	**76.4** (59.8-106)	**145** (85.6-223)	531
	09-10	**17.2** (15.3-19.4)	**17.3** (14.3-20.9)	**34.3** (31.4-38.8)	**56.1** (47.7-67.9)	**80.0** (65.1-107)	566
Non-Hispanic blacks	99-00	**37.0** (31.9-42.9)	**38.7** (33.4-44.5)	**78.2** (58.7-91.8)	**118** (108-143)	**167** (143-197)	603
	01-02	**29.6** (26.6-33.1)	**31.5** (28.7-34.1)	**58.3** (51.2-63.4)	**93.2** (79.5-121)	**138** (110-184)	703
	03-04	**30.1** (28.4-31.9)	**31.5** (29.7-34.1)	**64.1** (58.3-67.1)	**106** (94.8-119)	**144** (115-168)	699
	05-06	**27.1** (23.1-31.8)	**28.5** (25.0-31.2)	**53.1** (39.9-65.8)	**105** (77.3-135)	**143** (118-183)	678
	07-08	**25.0** (21.9-28.4)	**25.8** (22.0-30.4)	**52.4** (43.9-59.5)	**91.2** (75.6-106)	**114** (96.8-148)	597
	09-10	**21.9** (19.2-25.0)	**23.2** (20.0-26.3)	**42.4** (37.1-47.5)	**69.1** (59.4-84.2)	**103** (74.8-134)	516
Non-Hispanic whites	99-00	**21.8** (19.3-24.6)	**23.2** (19.5-27.5)	**46.3** (37.5-53.3)	**90.2** (74.7-106)	**142** (111-161)	912
	01-02	**17.6** (16.0-19.3)	**19.2** (17.0-21.0)	**36.6** (32.4-42.6)	**69.2** (59.2-87.6)	**107** (89.8-123)	1216
	03-04	**18.9** (17.6-20.3)	**20.7** (18.9-22.8)	**38.4** (35.5-42.7)	**71.3** (60.1-80.0)	**101** (90.7-124)	1088
	05-06	**17.8** (16.2-19.5)	**18.6** (16.9-20.7)	**37.8** (33.1-42.1)	**65.4** (55.4-73.9)	**95.9** (79.5-113)	1038
	07-08	**17.8** (16.2-19.5)	**18.9** (17.2-20.9)	**36.7** (32.3-41.4)	**68.0** (58.9-77.2)	**110** (86.5-120)	1077
	09-10	**13.0** (11.6-14.5)	**14.1** (12.7-15.8)	**26.6** (23.4-31.0)	**48.8** (42.2-54.3)	**67.5** (57.6-76.5)	1206

Limit of detection (LOD, see Data Analysis section) for Survey years 99-00, 01-02, 03-04, 05-06, 07-08, and 09-10 are 0.9, 1.1, 0.4, 0.6, 0.6, and 0.4 respectively.

*In the 1999-2000 survey period, concentrations of mono-isobutyl and mono-n-butyl phthalates were measured together and expressed as the combined value, monobutyl phthalate (MBP)

Biomonitoring Summary: http://www.cdc.gov/biomonitoring/DBP_BiomonitoringSummary.html

Factsheet: http://www.cdc.gov/biomonitoring/Phthalates_FactSheet.html

Urinary Mono-*n*-butyl phthalate (MnBP) (creatinine corrected)

Metabolite of Dibutyl phthalate (DBP) and Benzylbutyl phthalate (BzBP)

Geometric mean and selected percentiles of urine concentrations (in µg/g of creatinine) for the U.S. population from the National Health and Nutrition Examination Survey.*

	Survey years	Geometric mean (95% conf. interval)	Selected percentiles (95% confidence interval) 50th	75th	90th	95th	Sample size
Total	99-00	**22.4** (20.6-24.4)	**21.9** (19.8-24.3)	**38.9** (35.0-41.8)	**68.3** (60.3-78.3)	**97.7** (81.4-131)	2541
	01-02	**17.8** (16.7-19.0)	**17.4** (16.3-18.4)	**30.3** (28.1-32.3)	**52.4** (47.4-61.0)	**81.3** (71.0-92.5)	2782
	03-04	**19.8** (18.5-21.2)	**19.3** (17.7-20.8)	**33.9** (30.9-38.5)	**59.0** (52.9-68.1)	**91.6** (74.1-115)	2605
	05-06	**19.2** (18.0-20.4)	**18.3** (16.8-19.8)	**30.8** (29.0-33.0)	**50.8** (47.8-56.6)	**77.8** (67.2-94.8)	2548
	07-08	**19.0** (17.7-20.5)	**18.8** (17.2-20.0)	**31.4** (28.7-34.1)	**52.0** (46.4-59.5)	**77.1** (64.2-88.6)	2604
	09-10	**15.3** (14.0-16.6)	**14.4** (13.4-15.8)	**23.6** (21.7-25.2)	**38.7** (34.1-45.8)	**57.4** (49.8-69.9)	2749
Age group							
6-11 years	99-00	**41.9** (37.4-47.1)	**39.1** (34.3-49.0)	**65.9** (56.7-80.0)	**108** (71.2-179)	**159** (102-263)	328
	01-02	**35.4** (31.7-39.6)	**35.1** (29.3-38.9)	**55.4** (50.1-62.3)	**84.0** (69.0-113)	**147** (93.8-235)	393
	03-04	**38.4** (33.8-43.6)	**39.0** (34.7-42.6)	**59.3** (52.9-68.1)	**104** (83.6-119)	**137** (108-198)	342
	05-06	**33.6** (30.8-36.6)	**33.9** (30.6-37.4)	**50.6** (45.0-58.3)	**78.5** (66.8-111)	**128** (73.4-172)	356
	07-08	**33.1** (27.6-39.7)	**34.2** (27.5-41.3)	**51.9** (42.6-63.8)	**81.8** (61.3-101)	**109** (83.1-159)	389
	09-10	**28.3** (25.0-32.0)	**26.7** (24.0-31.1)	**47.8** (39.4-53.9)	**78.6** (59.8-101)	**130** (98.9-156)	415
12-19 years	99-00	**24.3** (21.2-27.8)	**23.7** (20.6-27.4)	**37.6** (31.6-43.8)	**63.3** (52.4-76.4)	**88.1** (61.5-142)	752
	01-02	**19.4** (17.3-21.7)	**20.3** (17.5-22.3)	**34.9** (30.5-37.9)	**53.4** (45.2-73.9)	**89.7** (60.3-106)	742
	03-04	**20.0** (18.7-21.3)	**19.8** (18.2-21.7)	**30.7** (27.9-34.8)	**52.7** (43.4-65.4)	**74.4** (56.0-90.9)	729
	05-06	**20.5** (19.0-22.2)	**21.2** (18.8-22.9)	**31.9** (29.6-33.8)	**49.3** (42.1-56.4)	**70.2** (52.0-108)	702
	07-08	**20.4** (18.4-22.6)	**21.9** (18.7-25.7)	**33.8** (30.0-38.5)	**50.7** (42.4-64.0)	**72.4** (50.7-84.5)	401
	09-10	**15.2** (13.8-16.8)	**15.3** (13.8-18.4)	**22.5** (21.1-24.8)	**31.8** (28.2-34.6)	**42.3** (33.8-51.2)	420
20 years and older	99-00	**20.4** (18.6-22.4)	**19.5** (18.1-21.4)	**34.9** (30.3-40.0)	**62.4** (53.4-72.1)	**91.0** (70.4-135)	1461
	01-02	**16.1** (15.0-17.3)	**15.5** (14.2-16.5)	**26.3** (24.2-28.6)	**44.2** (38.7-51.1)	**71.6** (61.2-85.6)	1647
	03-04	**18.3** (17.0-19.6)	**17.7** (16.6-19.2)	**31.0** (27.4-34.0)	**53.3** (46.5-64.2)	**83.8** (65.3-114)	1534
	05-06	**17.8** (16.4-19.2)	**16.8** (15.6-18.4)	**28.1** (25.3-30.9)	**46.1** (41.5-53.0)	**74.3** (55.4-94.8)	1490
	07-08	**17.7** (16.3-19.2)	**17.2** (15.7-18.8)	**28.2** (25.8-30.5)	**46.7** (42.0-53.3)	**71.8** (57.8-89.5)	1814
	09-10	**14.3** (13.0-15.7)	**13.5** (12.5-14.8)	**21.6** (20.0-23.8)	**34.5** (30.1-40.2)	**50.9** (42.2-67.7)	1914
Gender							
Males	99-00	**17.3** (16.1-18.6)	**17.0** (15.5-18.8)	**28.6** (25.8-32.1)	**49.3** (42.6-53.5)	**64.7** (57.3-71.5)	1215
	01-02	**14.4** (13.5-15.4)	**13.7** (12.9-14.9)	**22.9** (20.8-24.6)	**39.9** (35.6-44.0)	**60.0** (50.5-76.2)	1371
	03-04	**15.7** (14.5-16.9)	**14.8** (13.6-16.0)	**25.4** (23.6-28.1)	**41.4** (37.0-47.5)	**59.4** (50.3-81.5)	1250
	05-06	**15.9** (15.1-16.8)	**15.4** (14.2-16.4)	**24.9** (23.1-27.0)	**38.6** (35.7-42.3)	**51.2** (46.1-63.5)	1270
	07-08	**15.5** (14.4-16.8)	**14.7** (13.4-16.3)	**24.9** (22.6-27.6)	**40.8** (35.2-44.9)	**55.2** (46.1-65.2)	1294
	09-10	**13.0** (12.0-14.2)	**12.8** (11.7-13.6)	**19.9** (18.1-21.2)	**30.3** (28.4-33.2)	**45.3** (39.7-53.8)	1399
Females	99-00	**28.6** (25.3-32.3)	**28.8** (25.5-30.5)	**50.6** (41.9-56.3)	**84.3** (69.2-106)	**134** (93.6-155)	1326
	01-02	**21.7** (19.6-23.9)	**21.6** (19.7-23.6)	**35.8** (33.0-38.7)	**64.9** (58.9-70.2)	**91.5** (81.4-103)	1411
	03-04	**24.8** (22.9-26.8)	**24.1** (21.6-26.8)	**42.9** (39.2-48.9)	**74.9** (64.2-86.6)	**117** (83.6-139)	1355
	05-06	**22.9** (20.9-25.1)	**21.5** (19.4-24.6)	**37.1** (33.3-41.9)	**67.2** (56.8-74.4)	**99.6** (77.8-128)	1278
	07-08	**23.1** (21.0-25.5)	**22.8** (20.9-25.2)	**38.0** (32.7-43.1)	**62.7** (52.1-78.5)	**89.8** (76.2-126)	1310
	09-10	**17.8** (16.0-19.7)	**17.6** (15.1-19.4)	**27.1** (24.4-30.3)	**47.8** (37.9-53.8)	**70.6** (53.8-91.5)	1350

*In the 1999-2000 survey period, concentrations of mono-isobutyl and mono-n-butyl phthalates were measured together and expressed as the combined value, monobutyl phthalate (MBP)

Biomonitoring Summary: http://www.cdc.gov/biomonitoring/DBP_BiomonitoringSummary.html
Factsheet: http://www.cdc.gov/biomonitoring/Phthalates_FactSheet.html

Urinary Mono-*n*-butyl phthalate (MnBP) (creatinine corrected)

Metabolite of Dibutyl phthalate (DBP) and Benzylbutyl phthalate (BzBP)

Geometric mean and selected percentiles of urine concentrations (in µg/g of creatinine) for the U.S. population from the National Health and Nutrition Examination Survey.*

	Survey years	Geometric mean (95% conf. interval)	Selected percentiles (95% confidence interval) 50th	75th	90th	95th	Sample size
Race/ethnicity							
Mexican Americans	99-00	**21.2** (19.3-23.3)	**20.0** (18.2-22.9)	**40.1** (32.6-44.3)	**63.6** (57.5-70.1)	**82.9** (73.9-100)	814
	01-02	**19.0** (16.2-22.2)	**19.2** (16.3-21.9)	**33.7** (28.3-39.6)	**61.0** (43.9-84.0)	**86.7** (60.6-128)	677
	03-04	**21.8** (17.7-26.8)	**20.4** (17.4-24.0)	**37.6** (29.6-50.1)	**75.3** (55.6-92.0)	**96.3** (76.4-164)	652
	05-06	**20.1** (17.8-22.8)	**19.1** (16.4-23.0)	**34.3** (29.2-42.6)	**64.8** (54.6-75.9)	**98.1** (70.2-154)	637
	07-08	**21.7** (17.7-26.5)	**20.9** (16.4-27.1)	**36.9** (29.1-46.7)	**59.5** (47.1-88.9)	**102** (63.4-161)	531
	09-10	**17.1** (15.5-18.8)	**15.0** (14.0-16.3)	**27.4** (23.6-31.6)	**51.0** (42.9-69.6)	**88.1** (59.8-100)	566
Non-Hispanic blacks	99-00	**23.9** (21.3-26.8)	**25.0** (20.7-28.1)	**42.2** (35.9-49.6)	**70.0** (61.1-83.9)	**96.2** (83.9-105)	603
	01-02	**20.8** (18.8-23.1)	**20.2** (19.2-22.8)	**34.5** (30.9-36.8)	**62.8** (50.6-74.6)	**85.6** (72.1-99.0)	703
	03-04	**21.4** (19.5-23.4)	**22.0** (19.6-24.8)	**35.4** (31.6-42.7)	**65.7** (54.0-75.3)	**94.0** (71.1-128)	699
	05-06	**19.1** (16.4-22.1)	**18.5** (16.2-20.7)	**30.1** (24.9-39.5)	**54.6** (42.0-81.3)	**84.7** (51.3-125)	678
	07-08	**19.4** (17.3-21.7)	**19.2** (16.8-22.0)	**30.5** (27.0-36.5)	**50.7** (42.8-60.4)	**78.3** (59.3-125)	597
	09-10	**15.9** (14.5-17.4)	**15.3** (13.5-18.6)	**24.9** (22.6-27.2)	**37.6** (33.8-45.4)	**51.2** (44.7-70.6)	516
Non-Hispanic whites	99-00	**21.3** (19.1-23.8)	**20.5** (18.6-23.2)	**36.4** (31.5-41.0)	**67.1** (56.7-78.4)	**97.7** (73.5-142)	912
	01-02	**17.4** (16.2-18.6)	**16.5** (15.3-17.8)	**29.0** (26.6-32.2)	**51.1** (46.0-60.0)	**81.4** (68.1-99.0)	1216
	03-04	**18.6** (17.3-20.1)	**17.9** (16.7-19.8)	**31.6** (27.7-37.8)	**53.3** (48.2-61.5)	**81.5** (64.2-108)	1088
	05-06	**18.7** (17.5-19.9)	**17.9** (16.3-19.5)	**29.7** (27.5-32.0)	**48.7** (42.2-55.4)	**74.3** (58.3-94.5)	1038
	07-08	**18.5** (17.3-19.9)	**18.1** (16.6-19.6)	**30.4** (27.3-33.3)	**50.9** (43.6-61.0)	**75.8** (62.6-88.0)	1077
	09-10	**14.6** (13.5-15.7)	**13.9** (13.2-15.0)	**22.1** (20.3-24.2)	**35.3** (30.9-40.6)	**52.5** (45.8-63.0)	1206

*In the 1999-2000 survey period, concentrations of mono-isobutyl and mono-n-butyl phthalates were measured together and expressed as the combined value, monobutyl phthalate (MBP)

Biomonitoring Summary: http://www.cdc.gov/biomonitoring/DBP_BiomonitoringSummary.html
Factsheet: http://www.cdc.gov/biomonitoring/Phthalates_FactSheet.html

Urinary Mono-cyclohexyl phthalate (MCHP)

Metabolite of Dicyclohexyl phthalate (DCHP)

Geometric mean and selected percentiles of urine concentrations (in µg/L) for the U.S. population from the National Health and Nutrition Examination Survey.**

	Survey years	Geometric mean (95% conf. interval)	Selected percentiles (95% confidence interval) 50th	75th	90th	95th	Sample size
Total	99-00	*	< LOD	< LOD	< LOD	**2.21** (<LOD-3.42)	2541
	01-02	*	< LOD	< LOD	**.804** (.603-1.01)	**1.01** (.804-1.21)	2782
	03-04	*	< LOD	< LOD	< LOD	**.603** (.402-.804)	2605
	05-06	*	< LOD	< LOD	< LOD	< LOD	2548
	07-08	*	< LOD	< LOD	< LOD	< LOD	2604
	09-10	*	< LOD	< LOD	< LOD	< LOD	2749
Age group							
6-11 years	99-00	*	< LOD	< LOD	**2.01** (<LOD-2.21)	**3.42** (2.01-7.64)	328
	01-02	*	< LOD	< LOD	**.804** (.603-1.01)	**1.21** (1.01-1.41)	393
	03-04	*	< LOD	< LOD	**.603** (<LOD-.804)	**1.01** (.603-1.01)	342
	05-06	*	< LOD	< LOD	< LOD	< LOD	356
	07-08	*	< LOD	< LOD	< LOD	< LOD	389
	09-10	*	< LOD	< LOD	< LOD	**.960** (.640-1.57)	415
12-19 years	99-00	*	< LOD	< LOD	**2.01** (<LOD-3.02)	**3.42** (2.01-5.03)	752
	01-02	*	< LOD	< LOD	**.804** (.603-1.01)	**1.01** (.804-1.21)	742
	03-04	*	< LOD	< LOD	**.402** (<LOD-.603)	**.804** (.603-1.21)	729
	05-06	*	< LOD	< LOD	< LOD	< LOD	702
	07-08	*	< LOD	< LOD	< LOD	< LOD	401
	09-10	*	< LOD	< LOD	< LOD	< LOD	420
20 years and older	99-00	*	< LOD	< LOD	< LOD	< LOD	1461
	01-02	*	< LOD	< LOD	**.804** (<LOD-1.01)	**1.01** (.804-1.21)	1647
	03-04	*	< LOD	< LOD	< LOD	**.603** (.402-.603)	1534
	05-06	*	< LOD	< LOD	< LOD	< LOD	1490
	07-08	*	< LOD	< LOD	< LOD	< LOD	1814
	09-10	*	< LOD	< LOD	< LOD	< LOD	1914
Gender							
Males	99-00	*	< LOD	< LOD	< LOD	**2.21** (<LOD-4.02)	1215
	01-02	*	< LOD	< LOD	**.804** (.603-1.01)	**1.01** (.804-1.21)	1371
	03-04	*	< LOD	< LOD	< LOD	**.603** (.603-.804)	1250
	05-06	*	< LOD	< LOD	< LOD	< LOD	1270
	07-08	*	< LOD	< LOD	< LOD	< LOD	1294
	09-10	*	< LOD	< LOD	< LOD	< LOD	1399
Females	99-00	*	< LOD	< LOD	< LOD	**2.21** (<LOD-3.82)	1326
	01-02	*	< LOD	< LOD	**.804** (<LOD-.804)	**1.01** (.804-1.01)	1411
	03-04	*	< LOD	< LOD	< LOD	**.603** (.402-1.01)	1355
	05-06	*	< LOD	< LOD	< LOD	< LOD	1278
	07-08	*	< LOD	< LOD	< LOD	< LOD	1310
	09-10	*	< LOD	< LOD	< LOD	< LOD	1350

Limit of detection (LOD, see Data Analysis section) for Survey years 99-00, 01-02, 03-04, 05-06, 07-08, and 09-10 are 1.81, 0.603, 0.402, 0.603, 0.603, and 0.402 respectively.
< LOD means less than the limit of detection, which may vary for some chemicals by year and by individual sample.
* Not calculated: proportion of results below limit of detection was too high to provide a valid result.
**To correct for inadequate purity in the analytical standards, all results and LODs have been adjusted by a factor of 2.01 for survey periods 1999-2008 compared with results previously released.

Biomonitoring Summary: http://www.cdc.gov/biomonitoring/DCHP_BiomonitoringSummary.html
Factsheet: http://www.cdc.gov/biomonitoring/Phthalates_FactSheet.html

Urinary Mono-cyclohexyl phthalate (MCHP)

Metabolite of Dicyclohexyl phthalate (DCHP)

Geometric mean and selected percentiles of urine concentrations (in µg/L) for the U.S. population from the National Health and Nutrition Examination Survey.**

	Survey years	Geometric mean (95% conf. interval)	Selected percentiles (95% confidence interval) 50th	75th	90th	95th	Sample size
Race/ethnicity							
Mexican Americans	99-00	*	**< LOD**	**< LOD**	**< LOD**	**< LOD**	814
	01-02	*	**< LOD**	**< LOD**	**.804** (<LOD-1.01)	**1.01** (.603-1.41)	677
	03-04	*	**< LOD**	**< LOD**	**< LOD**	**.603** (.402-1.01)	652
	05-06	*	**< LOD**	**< LOD**	**< LOD**	**< LOD**	637
	07-08	*	**< LOD**	**< LOD**	**< LOD**	**< LOD**	531
	09-10	*	**< LOD**	**< LOD**	**< LOD**	**.440** (<LOD-.640)	566
Non-Hispanic blacks	99-00	*	**< LOD**	**< LOD**	**< LOD**	**2.21** (1.81-2.41)	603
	01-02	*	**< LOD**	**< LOD**	**.804** (.603-1.01)	**1.01** (.804-1.41)	703
	03-04	*	**< LOD**	**< LOD**	**.603** (.402-.603)	**.804** (.603-1.01)	699
	05-06	*	**< LOD**	**< LOD**	**< LOD**	**< LOD**	678
	07-08	*	**< LOD**	**< LOD**	**< LOD**	**< LOD**	597
	09-10	*	**< LOD**	**< LOD**	**< LOD**	**.480** (<LOD-.620)	516
Non-Hispanic whites	99-00	*	**< LOD**	**< LOD**	**< LOD**	**2.01** (<LOD-3.42)	912
	01-02	*	**< LOD**	**< LOD**	**.804** (<LOD-.804)	**1.01** (.804-1.21)	1216
	03-04	*	**< LOD**	**< LOD**	**< LOD**	**.603** (.402-.804)	1088
	05-06	*	**< LOD**	**< LOD**	**< LOD**	**< LOD**	1038
	07-08	*	**< LOD**	**< LOD**	**< LOD**	**< LOD**	1077
	09-10	*	**< LOD**	**< LOD**	**< LOD**	**< LOD**	1206

Limit of detection (LOD, see Data Analysis section) for Survey years 99-00, 01-02, 03-04, 05-06, 07-08, and 09-10 are 1.81, 0.603, 0.402, 0.603, 0.603, and 0.402 respectively.
< LOD means less than the limit of detection, which may vary for some chemicals by year and by individual sample.
* Not calculated: proportion of results below limit of detection was too high to provide a valid result.
**To correct for inadequate purity in the analytical standards, all results and LODs have been adjusted by a factor of 2.01 for survey periods 1999-2008 compared with results previously released.

Biomonitoring Summary: http://www.cdc.gov/biomonitoring/DCHP_BiomonitoringSummary.html
Factsheet: http://www.cdc.gov/biomonitoring/Phthalates_FactSheet.html

Urinary Mono-cyclohexyl phthalate (MCHP) (creatinine corrected)

Metabolite of Dicyclohexyl phthalate (DCHP)

Geometric mean and selected percentiles of urine concentrations (in µg/g of creatinine) for the U.S. population from the National Health and Nutrition Examination Survey.**

	Survey years	Geometric mean (95% conf. interval)	Selected percentiles (95% confidence interval) 50th	75th	90th	95th	Sample size
Total	99-00	*	< LOD	< LOD	< LOD	**6.03** (<LOD-6.69)	2541
	01-02	*	< LOD	< LOD	**1.23** (1.07-1.39)	**1.83** (1.55-2.01)	2782
	03-04	*	< LOD	< LOD	< LOD	**.905** (.804-1.01)	2605
	05-06	*	< LOD	< LOD	< LOD	< LOD	2548
	07-08	*	< LOD	< LOD	< LOD	< LOD	2604
	09-10	*	< LOD	< LOD	< LOD	< LOD	2749
Age group							
6-11 years	99-00	*	< LOD	< LOD	**3.10** (<LOD-4.70)	**5.67** (3.10-12.9)	328
	01-02	*	< LOD	< LOD	**1.39** (1.03-1.49)	**1.89** (1.39-2.35)	393
	03-04	*	< LOD	< LOD	**.744** (<LOD-1.07)	**1.07** (.704-1.67)	342
	05-06	*	< LOD	< LOD	< LOD	< LOD	356
	07-08	*	< LOD	< LOD	< LOD	< LOD	389
	09-10	*	< LOD	< LOD	< LOD	**1.80** (1.34-2.55)	415
12-19 years	99-00	*	< LOD	< LOD	**2.45** (<LOD-3.10)	**3.36** (2.73-3.66)	752
	01-02	*	< LOD	< LOD	**.945** (.764-1.33)	**1.55** (1.07-2.37)	742
	03-04	*	< LOD	< LOD	**.442** (<LOD-.543)	**.764** (.482-1.25)	729
	05-06	*	< LOD	< LOD	< LOD	< LOD	702
	07-08	*	< LOD	< LOD	< LOD	< LOD	401
	09-10	*	< LOD	< LOD	< LOD	< LOD	420
20 years and older	99-00	*	< LOD	< LOD	< LOD	< LOD	1461
	01-02	*	< LOD	< LOD	**1.27** (<LOD-1.39)	**1.83** (1.55-2.11)	1647
	03-04	*	< LOD	< LOD	< LOD	**.905** (.804-1.01)	1534
	05-06	*	< LOD	< LOD	< LOD	< LOD	1490
	07-08	*	< LOD	< LOD	< LOD	< LOD	1814
	09-10	*	< LOD	< LOD	< LOD	< LOD	1914
Gender							
Males	99-00	*	< LOD	< LOD	< LOD	**4.30** (<LOD-6.35)	1215
	01-02	*	< LOD	< LOD	**1.03** (.844-1.33)	**1.77** (1.35-2.13)	1371
	03-04	*	< LOD	< LOD	< LOD	**.663** (.583-1.01)	1250
	05-06	*	< LOD	< LOD	< LOD	< LOD	1270
	07-08	*	< LOD	< LOD	< LOD	< LOD	1294
	09-10	*	< LOD	< LOD	< LOD	< LOD	1399
Females	99-00	*	< LOD	< LOD	< LOD	**6.69** (<LOD-7.10)	1326
	01-02	*	< LOD	< LOD	**1.35** (<LOD-1.55)	**1.83** (1.61-2.21)	1411
	03-04	*	< LOD	< LOD	< LOD	**1.01** (.844-1.19)	1355
	05-06	*	< LOD	< LOD	< LOD	< LOD	1278
	07-08	*	< LOD	< LOD	< LOD	< LOD	1310
	09-10	*	< LOD	< LOD	< LOD	< LOD	1350

< LOD means less than the limit of detection for the urine levels not corrected for creatinine.
* Not calculated: proportion of results below limit of detection was too high to provide a valid result.
**To correct for inadequate purity in the analytical standards, all results and LODs have been adjusted by a factor of 2.01 for survey periods 1999-2008 compared with results previously released

Biomonitoring Summary: http://www.cdc.gov/biomonitoring/DCHP_BiomonitoringSummary.html
Factsheet: http://www.cdc.gov/biomonitoring/Phthalates_FactSheet.html

Urinary Mono-cyclohexyl phthalate (MCHP) (creatinine corrected)

Metabolite of Dicyclohexyl phthalate (DCHP)

Geometric mean and selected percentiles of urine concentrations (in µg/g of creatinine) for the U.S. population from the National Health and Nutrition Examination Survey.**

	Survey years	Geometric mean (95% conf. interval)	Selected percentiles (95% confidence interval) 50th	75th	90th	95th	Sample size
Race/ethnicity							
Mexican Americans	99-00	*	**< LOD**	**< LOD**	**< LOD**	**< LOD**	814
	01-02	*	**< LOD**	**< LOD**	**1.19** (<LOD-1.39)	**1.91** (1.59-2.23)	677
	03-04	*	**< LOD**	**< LOD**	**< LOD**	**.784** (.623-1.13)	652
	05-06	*	**< LOD**	**< LOD**	**< LOD**	**< LOD**	637
	07-08	*	**< LOD**	**< LOD**	**< LOD**	**< LOD**	531
	09-10	*	**< LOD**	**< LOD**	**< LOD**	**1.20** (<LOD-1.56)	566
Non-Hispanic blacks	99-00	*	**< LOD**	**< LOD**	**< LOD**	**2.87** (2.25-3.50)	603
	01-02	*	**< LOD**	**< LOD**	**.824** (.724-.985)	**1.19** (1.01-1.43)	703
	03-04	*	**< LOD**	**< LOD**	**.503** (.342-.623)	**.663** (.523-.945)	699
	05-06	*	**< LOD**	**< LOD**	**< LOD**	**< LOD**	678
	07-08	*	**< LOD**	**< LOD**	**< LOD**	**< LOD**	597
	09-10	*	**< LOD**	**< LOD**	**< LOD**	**.880** (<LOD-1.08)	516
Non-Hispanic whites	99-00	*	**< LOD**	**< LOD**	**< LOD**	**6.35** (<LOD-7.10)	912
	01-02	*	**< LOD**	**< LOD**	**1.27** (<LOD-1.49)	**1.83** (1.55-2.13)	1216
	03-04	*	**< LOD**	**< LOD**	**< LOD**	**.965** (.844-1.07)	1088
	05-06	*	**< LOD**	**< LOD**	**< LOD**	**< LOD**	1038
	07-08	*	**< LOD**	**< LOD**	**< LOD**	**< LOD**	1077
	09-10	*	**< LOD**	**< LOD**	**< LOD**	**< LOD**	1206

< LOD means less than the limit of detection for the urine levels not corrected for creatinine.

* Not calculated: proportion of results below limit of detection was too high to provide a valid result.

**To correct for inadequate purity in the analytical standards, all results and LODs have been adjusted by a factor of 2.01 for survey periods 1999-2008 compared with results previously released

Biomonitoring Summary: http://www.cdc.gov/biomonitoring/DCHP_BiomonitoringSummary.html

Factsheet: http://www.cdc.gov/biomonitoring/Phthalates_FactSheet.html

Urinary Mono-ethyl phthalate (MEP)

Metabolite of Diethyl phthalate (DEP)

Geometric mean and selected percentiles of urine concentrations (in µg/L) for the U.S. population from the National Health and Nutrition Examination Survey.**

	Survey years	Geometric mean (95% conf. interval)	Selected percentiles (95% confidence interval) 50th	75th	90th	95th	Sample size
Total	99-00	**118** (103-135)	**108** (90.0-132)	**300** (244-355)	**830** (664-977)	**1870** (1420-2490)	2536
	01-02	**117** (105-131)	**112** (93.0-128)	**307** (274-348)	**813** (688-947)	**1650** (1230-2130)	2782
	03-04	**127** (112-145)	**115** (99.9-137)	**332** (302-366)	**909** (769-1150)	**1780** (1420-2180)	2605
	05-06	**108** (95.5-123)	**102** (83.4-121)	**284** (257-323)	**750** (707-825)	**1410** (1140-1830)	2548
	07-08	**90.4** (80.3-102)	**81.1** (70.8-93.5)	**239** (205-272)	**605** (493-713)	**1180** (821-1760)	2604
	09-10	**64.4** (58.3-71.2)	**54.9** (50.5-62.7)	**163** (145-187)	**485** (374-604)	**988** (805-1180)	2749
Age group							
6-11 years	99-00	**60.3** (49.4-73.6)	**49.8** (41.0-61.8)	**130** (85.2-164)	**249** (192-481)	**499** (250-703)	328
	01-02	**56.2** (47.0-67.2)	**47.5** (40.9-61.1)	**121** (93.7-143)	**297** (208-420)	**533** (377-717)	393
	03-04	**62.9** (54.3-72.9)	**53.9** (46.4-67.9)	**130** (112-159)	**344** (195-377)	**546** (358-949)	342
	05-06	**55.7** (45.7-67.9)	**47.9** (38.3-61.6)	**111** (73.9-147)	**289** (173-368)	**522** (326-719)	356
	07-08	**49.0** (42.4-56.6)	**45.2** (38.5-53.3)	**108** (80.5-135)	**193** (155-227)	**296** (214-359)	389
	09-10	**35.2** (31.2-39.8)	**33.0** (29.8-37.8)	**68.7** (54.3-80.9)	**151** (114-207)	**288** (205-530)	415
12-19 years	99-00	**139** (105-183)	**127** (92.8-169)	**372** (276-540)	**994** (694-1420)	**2150** (1020-2920)	752
	01-02	**130** (105-161)	**121** (97.9-150)	**316** (256-429)	**835** (649-974)	**1360** (969-2020)	742
	03-04	**148** (123-178)	**146** (109-194)	**367** (285-459)	**828** (642-1030)	**1520** (900-2180)	729
	05-06	**126** (108-146)	**114** (96.4-134)	**315** (256-390)	**765** (636-1060)	**1360** (1030-1680)	702
	07-08	**98.6** (79.1-123)	**97.4** (68.3-130)	**214** (173-330)	**477** (356-705)	**821** (511-1270)	401
	09-10	**64.0** (50.1-81.8)	**53.9** (39.0-75.4)	**151** (101-228)	**354** (260-497)	**662** (371-1190)	420
20 years and older	99-00	**125** (108-145)	**119** (92.6-146)	**318** (257-389)	**882** (666-1100)	**2300** (1470-3060)	1456
	01-02	**126** (113-141)	**120** (101-140)	**329** (291-374)	**888** (702-1100)	**1800** (1420-2420)	1647
	03-04	**135** (116-157)	**124** (104-145)	**351** (311-415)	**1050** (807-1370)	**1970** (1480-2510)	1534
	05-06	**114** (99.0-132)	**111** (87.1-131)	**299** (268-346)	**782** (724-901)	**1480** (1140-2080)	1490
	07-08	**95.3** (85.4-106)	**84.7** (75.6-97.8)	**264** (235-299)	**673** (539-823)	**1470** (913-1920)	1814
	09-10	**69.0** (61.8-76.9)	**60.5** (54.0-68.7)	**183** (159-207)	**557** (445-712)	**1110** (875-1350)	1914
Gender							
Males	99-00	**118** (98.5-142)	**102** (78.3-130)	**345** (246-429)	**948** (672-1500)	**2310** (1400-3010)	1214
	01-02	**120** (103-139)	**113** (91.8-131)	**331** (276-398)	**957** (703-1390)	**2040** (1390-2900)	1371
	03-04	**130** (114-148)	**113** (97.8-133)	**354** (296-432)	**1000** (801-1370)	**1920** (1460-2300)	1250
	05-06	**107** (92.1-124)	**95.9** (75.8-120)	**279** (227-340)	**757** (651-855)	**1470** (923-1930)	1270
	07-08	**92.8** (80.1-107)	**81.0** (70.4-93.3)	**245** (194-298)	**659** (481-867)	**1450** (851-1900)	1294
	09-10	**61.0** (54.2-68.6)	**52.8** (45.4-58.3)	**157** (126-202)	**436** (342-586)	**965** (768-1170)	1399
Females	99-00	**118** (102-136)	**115** (91.3-139)	**280** (231-335)	**652** (581-813)	**1470** (903-2560)	1322
	01-02	**115** (101-131)	**110** (91.5-128)	**282** (255-329)	**692** (580-867)	**1230** (982-1650)	1411
	03-04	**125** (106-148)	**120** (90.9-145)	**316** (258-372)	**830** (639-1080)	**1710** (1190-2260)	1355
	05-06	**110** (92.8-130)	**109** (86.8-130)	**291** (252-346)	**734** (671-871)	**1310** (1140-1900)	1278
	07-08	**88.2** (77.8-99.9)	**82.4** (67.6-101)	**233** (202-264)	**553** (462-703)	**1050** (713-1680)	1310
	09-10	**67.8** (60.3-76.4)	**59.6** (52.4-73.7)	**164** (148-192)	**548** (392-675)	**988** (777-1340)	1350

Limit of detection (LOD, see Data Analysis section) for Survey years 99-00, 01-02, 03-04, 05-06, 07-08, and 09-10 are 0.792, 0.594, 0.264, 0.528, 0.462, and 0.396 respectively.
**To correct for inadequate purity in the analytical standards, all results and LODs have been adjusted by a factor of 0.66 for survey periods 1999-2008 compared with results previously released.

Biomonitoring Summary: http://www.cdc.gov/biomonitoring/DEP_BiomonitoringSummary.html
Factsheet: http://www.cdc.gov/biomonitoring/Phthalates_FactSheet.html

Urinary Mono-ethyl phthalate (MEP)

Metabolite of Diethyl phthalate (DEP)

Geometric mean and selected percentiles of urine concentrations (in µg/L) for the U.S. population from the National Health and Nutrition Examination Survey.**

	Survey years	Geometric mean (95% conf. interval)	Selected percentiles (95% confidence interval) 50th	75th	90th	95th	Sample size
Race/ethnicity							
Mexican Americans	99-00	**119** (103-138)	**115** (96.5-138)	**291** (257-357)	**842** (561-996)	**1130** (966-1410)	813
	01-02	**149** (129-173)	**145** (125-174)	**349** (293-435)	**984** (690-1390)	**1730** (1010-2940)	677
	03-04	**176** (158-196)	**164** (140-202)	**394** (345-454)	**1080** (873-1440)	**2010** (1470-2840)	652
	05-06	**163** (130-203)	**161** (124-186)	**384** (310-466)	**1030** (682-1830)	**1930** (1170-3330)	637
	07-08	**122** (105-141)	**111** (82.0-144)	**314** (270-372)	**850** (604-971)	**1180** (971-1520)	531
	09-10	**82.2** (70.0-96.5)	**72.6** (59.6-84.0)	**199** (142-254)	**586** (415-869)	**1300** (818-1760)	566
Non-Hispanic blacks	99-00	**213** (182-249)	**202** (169-231)	**521** (419-626)	**1250** (932-1500)	**2380** (1410-3060)	603
	01-02	**233** (214-253)	**235** (191-269)	**563** (468-718)	**1430** (1070-1630)	**2340** (1860-3350)	703
	03-04	**236** (205-272)	**202** (167-273)	**626** (507-760)	**1650** (1220-1970)	**2880** (1840-3900)	699
	05-06	**219** (189-254)	**199** (163-253)	**522** (440-700)	**1450** (1070-1900)	**2610** (1900-3600)	678
	07-08	**168** (145-195)	**165** (132-202)	**415** (343-493)	**994** (711-1260)	**1920** (1090-3370)	597
	09-10	**156** (130-188)	**137** (113-159)	**405** (276-543)	**1190** (841-1570)	**1930** (1430-3380)	516
Non-Hispanic whites	99-00	**101** (87.6-116)	**88.4** (71.0-104)	**242** (189-318)	**651** (527-882)	**1630** (1050-2560)	908
	01-02	**104** (92.8-117)	**96.8** (78.8-117)	**273** (241-297)	**672** (598-813)	**1530** (1030-1800)	1216
	03-04	**110** (95.4-128)	**97.8** (82.4-115)	**276** (242-315)	**801** (630-975)	**1480** (1050-2170)	1088
	05-06	**91.3** (80.3-104)	**84.2** (69.4-111)	**232** (196-278)	**600** (500-715)	**1140** (757-1550)	1038
	07-08	**78.9** (70.4-88.5)	**68.9** (59.8-80.1)	**199** (175-233)	**506** (429-650)	**880** (670-1500)	1077
	09-10	**52.1** (48.1-56.5)	**45.1** (40.0-51.6)	**127** (106-140)	**309** (259-394)	**768** (468-988)	1206

Limit of detection (LOD, see Data Analysis section) for Survey years 99-00, 01-02, 03-04, 05-06, 07-08, and 09-10 are 0.792, 0.594, 0.264, 0.528, 0.462, and 0.396 respectively.
**To correct for inadequate purity in the analytical standards, all results and LODs have been adjusted by a factor of 0.66 for survey periods 1999-2008 compared with results previously released.

Biomonitoring Summary: http://www.cdc.gov/biomonitoring/DEP_BiomonitoringSummary.html
Factsheet: http://www.cdc.gov/biomonitoring/Phthalates_FactSheet.html

Urinary Mono-ethyl phthalate (MEP) (creatinine corrected)

Metabolite of Diethyl phthalate (DEP)

Geometric mean and selected percentiles of urine concentrations (in µg/g of creatinine) for the U.S. population from the National Health and Nutrition Examination Survey.**

	Survey years	Geometric mean (95% conf. interval)	Selected percentiles (95% confidence interval) 50th	75th	90th	95th	Sample size
Total	99-00	**107** (98.0-118)	**93.0** (85.4-104)	**237** (203-278)	**598** (497-781)	**1290** (1100-1530)	2536
	01-02	**110** (99.3-122)	**97.4** (87.9-107)	**256** (218-287)	**640** (532-778)	**1220** (959-1450)	2782
	03-04	**120** (107-133)	**101** (90.1-117)	**298** (254-332)	**733** (587-853)	**1350** (1080-1680)	2605
	05-06	**106** (95.3-117)	**92.3** (80.9-104)	**242** (211-286)	**625** (528-711)	**1140** (942-1310)	2548
	07-08	**91.1** (82.6-101)	**75.3** (68.6-83.5)	**204** (185-231)	**547** (433-680)	**987** (821-1190)	2604
	09-10	**67.2** (60.5-74.7)	**56.1** (48.9-66.8)	**150** (128-172)	**433** (373-524)	**850** (709-999)	2749
Age group							
6-11 years	99-00	**61.1** (51.4-72.7)	**52.5** (43.3-72.4)	**109** (83.6-137)	**225** (145-365)	**412** (264-517)	328
	01-02	**64.0** (54.4-75.2)	**53.6** (43.7-69.4)	**117** (88.8-148)	**338** (191-529)	**556** (338-874)	393
	03-04	**66.6** (57.5-77.1)	**57.4** (43.9-74.7)	**119** (95.6-134)	**310** (205-394)	**474** (310-877)	342
	05-06	**61.3** (49.6-75.8)	**50.1** (42.7-61.0)	**107** (76.2-145)	**279** (167-441)	**512** (366-1210)	356
	07-08	**60.4** (53.9-67.7)	**52.8** (42.4-64.2)	**108** (96.3-134)	**205** (166-237)	**278** (228-386)	389
	09-10	**45.9** (41.0-51.3)	**39.0** (34.7-41.8)	**73.0** (63.2-87.2)	**168** (125-234)	**296** (182-590)	415
12-19 years	99-00	**93.7** (78.6-112)	**80.7** (61.4-103)	**240** (181-326)	**580** (446-834)	**1160** (661-1320)	752
	01-02	**100** (83.0-121)	**92.4** (73.1-119)	**218** (164-270)	**533** (389-729)	**878** (573-1220)	742
	03-04	**111** (93.1-132)	**99.1** (81.2-121)	**240** (193-320)	**522** (389-714)	**969** (651-1470)	729
	05-06	**93.6** (80.5-109)	**85.3** (69.0-104)	**201** (174-238)	**500** (389-635)	**813** (590-1110)	702
	07-08	**76.7** (61.8-95.1)	**72.8** (53.3-91.3)	**161** (108-218)	**334** (213-491)	**547** (334-866)	401
	09-10	**51.4** (40.8-64.9)	**46.6** (31.2-68.8)	**108** (84.2-137)	**236** (150-393)	**419** (268-524)	420
20 years and older	99-00	**118** (107-131)	**102** (89.5-117)	**257** (222-298)	**669** (530-965)	**1430** (1180-2210)	1456
	01-02	**119** (108-132)	**105** (96.3-120)	**277** (240-321)	**702** (583-871)	**1400** (1010-1840)	1647
	03-04	**130** (115-147)	**117** (96.8-133)	**338** (279-417)	**815** (652-1060)	**1510** (1170-2110)	1534
	05-06	**115** (103-128)	**100** (87.6-117)	**278** (233-309)	**700** (574-803)	**1220** (972-1530)	1490
	07-08	**97.9** (89.6-107)	**78.7** (73.2-87.7)	**236** (208-266)	**624** (518-759)	**1100** (875-1380)	1814
	09-10	**73.0** (65.1-81.9)	**62.5** (52.4-72.8)	**173** (149-195)	**523** (407-662)	**989** (810-1120)	1914
Gender							
Males	99-00	**92.8** (82.0-105)	**79.0** (70.8-88.2)	**214** (165-274)	**661** (457-978)	**1290** (965-1920)	1214
	01-02	**97.6** (85.8-111)	**83.2** (72.6-96.8)	**232** (186-280)	**729** (554-974)	**1400** (980-2000)	1371
	03-04	**102** (91.9-113)	**83.7** (71.0-99.0)	**258** (225-307)	**704** (562-896)	**1320** (1060-1590)	1250
	05-06	**85.7** (75.4-97.4)	**73.0** (61.0-90.2)	**204** (172-231)	**504** (368-673)	**898** (607-1240)	1270
	07-08	**78.1** (68.5-89.1)	**65.5** (57.0-73.8)	**181** (162-216)	**490** (390-625)	**936** (662-1190)	1294
	09-10	**54.7** (48.3-62.0)	**43.3** (38.2-54.2)	**125** (97.7-153)	**314** (262-436)	**792** (570-935)	1399
Females	99-00	**123** (109-139)	**104** (93.7-118)	**249** (203-326)	**543** (460-770)	**1270** (770-2250)	1322
	01-02	**123** (110-139)	**113** (97.4-124)	**269** (235-312)	**568** (470-725)	**944** (784-1330)	1411
	03-04	**139** (119-163)	**120** (97.8-143)	**335** (250-418)	**741** (587-923)	**1490** (951-2200)	1355
	05-06	**129** (116-144)	**106** (97.4-121)	**293** (247-333)	**759** (629-920)	**1370** (1150-1730)	1278
	07-08	**106** (95.5-117)	**88.5** (77.6-98.6)	**227** (188-278)	**610** (491-727)	**1040** (759-1520)	1310
	09-10	**81.9** (72.7-92.2)	**69.9** (57.2-80.9)	**178** (151-214)	**523** (407-661)	**987** (716-1220)	1350

**To correct for inadequate purity in the analytical standards, all results and LODs have been adjusted by a factor of 0.66 for survey periods 1999-2008 compared with results previously released.

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Factsheet: http://www.cdc.gov/biomonitoring/Phthalates_FactSheet.html

Urinary Mono-ethyl phthalate (MEP) (creatinine corrected)

Metabolite of Diethyl phthalate (DEP)

Geometric mean and selected percentiles of urine concentrations (in µg/g of creatinine) for the U.S. population from the National Health and Nutrition Examination Survey.**

	Survey years	Geometric mean (95% conf. interval)	Selected percentiles (95% confidence interval) 50th	75th	90th	95th	Sample size
Race/ethnicity							
Mexican Americans	99-00	**108** (93.9-125)	**102** (89.8-115)	**252** (207-312)	**538** (444-643)	**875** (643-1270)	813
	01-02	**141** (120-165)	**131** (108-160)	**304** (261-378)	**714** (568-1090)	**1280** (928-1740)	677
	03-04	**159** (141-179)	**154** (133-178)	**352** (275-439)	**815** (631-1060)	**1500** (1190-2070)	652
	05-06	**146** (123-173)	**125** (107-157)	**324** (235-425)	**767** (600-1020)	**1410** (926-2510)	637
	07-08	**119** (100-140)	**105** (81.9-142)	**260** (224-306)	**616** (502-750)	**1230** (628-2160)	531
	09-10	**81.6** (70.9-93.8)	**64.9** (56.3-72.7)	**170** (131-254)	**523** (324-792)	**945** (685-1510)	566
Non-Hispanic blacks	99-00	**137** (121-156)	**130** (109-151)	**292** (257-333)	**682** (503-1120)	**1270** (810-1710)	603
	01-02	**163** (149-179)	**150** (122-178)	**367** (316-408)	**818** (634-979)	**1380** (1020-1850)	703
	03-04	**167** (148-189)	**140** (124-162)	**409** (314-522)	**1010** (793-1300)	**1710** (1420-2310)	699
	05-06	**154** (131-181)	**134** (113-160)	**360** (311-412)	**919** (590-1290)	**1700** (1070-2030)	678
	07-08	**131** (115-148)	**121** (105-132)	**280** (224-334)	**614** (489-843)	**1100** (836-1780)	597
	09-10	**113** (89.0-143)	**92.7** (77.5-121)	**236** (180-338)	**722** (443-1210)	**1300** (890-2240)	516
Non-Hispanic whites	99-00	**98.3** (88.9-109)	**84.5** (72.9-93.7)	**206** (158-255)	**565** (432-916)	**1290** (975-1810)	908
	01-02	**103** (93.5-114)	**89.6** (82.1-98.9)	**223** (190-265)	**607** (470-765)	**1050** (874-1440)	1216
	03-04	**109** (95.3-125)	**88.9** (79.2-105)	**254** (223-320)	**652** (548-876)	**1270** (922-1830)	1088
	05-06	**96.1** (86.5-107)	**84.5** (71.2-97.6)	**211** (189-242)	**532** (450-686)	**993** (828-1240)	1038
	07-08	**82.4** (74.7-90.9)	**66.4** (58.5-73.8)	**185** (158-219)	**523** (397-640)	**871** (708-1040)	1077
	09-10	**58.6** (53.2-64.4)	**49.1** (41.4-56.8)	**125** (110-146)	**366** (278-437)	**706** (515-965)	1206

**To correct for inadequate purity in the analytical standards, all results and LODs have been adjusted by a factor of 0.66 for survey periods 1999-2008 compared with results previously released.

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Factsheet: http://www.cdc.gov/biomonitoring/Phthalates_FactSheet.html

Urinary Mono-2-ethylhexyl phthalate (MEHP)

Metabolite of Di-2-ethylhexyl phthalate (DEHP)

Geometric mean and selected percentiles of urine concentrations (in µg/L) for the U.S. population from the National Health and Nutrition Examination Survey.

	Survey years	Geometric mean (95% conf. interval)	Selected percentiles (95% confidence interval) 50th	75th	90th	95th	Sample size
Total	99-00	**3.43** (3.19-3.69)	**3.20** (3.00-3.60)	**7.60** (6.80-8.40)	**14.9** (13.5-17.4)	**23.8** (19.2-28.6)	2541
	01-02	**4.27** (3.80-4.79)	**4.20** (3.70-4.90)	**9.80** (8.40-11.6)	**23.0** (19.1-27.9)	**39.2** (31.8-50.0)	2782
	03-04	**2.34** (2.10-2.62)	**1.90** (1.70-2.40)	**5.30** (4.50-6.60)	**15.1** (11.4-20.6)	**31.0** (21.4-42.0)	2605
	05-06	**3.04** (2.78-3.32)	**2.50** (2.10-2.80)	**6.30** (5.70-7.10)	**17.7** (14.0-22.5)	**39.7** (28.6-52.1)	2548
	07-08	**2.64** (2.29-3.05)	**2.20** (1.80-2.50)	**5.40** (4.30-6.90)	**14.1** (11.2-20.2)	**27.6** (19.8-39.8)	2604
	09-10	**1.59** (1.41-1.79)	**1.51** (1.33-1.71)	**3.52** (2.99-4.00)	**7.54** (5.96-9.54)	**14.1** (9.91-21.1)	2749
Age group							
6-11 years	99-00	**5.12** (4.42-5.92)	**4.90** (3.70-6.40)	**11.1** (8.30-13.6)	**19.0** (13.8-36.1)	**35.3** (15.6-130)	328
	01-02	**4.41** (3.90-5.00)	**4.40** (4.10-5.30)	**9.30** (7.90-11.7)	**19.7** (14.6-25.9)	**31.4** (21.8-47.9)	393
	03-04	**2.84** (2.10-3.84)	**2.70** (1.80-4.10)	**6.40** (4.40-9.60)	**13.9** (7.80-27.6)	**27.6** (11.3-64.7)	342
	05-06	**3.10** (2.78-3.47)	**3.00** (2.60-3.30)	**6.20** (5.10-7.10)	**14.1** (9.40-19.3)	**19.7** (14.7-36.6)	356
	07-08	**2.39** (2.05-2.80)	**2.20** (1.70-2.90)	**4.50** (3.70-6.20)	**8.70** (6.40-13.9)	**15.1** (10.6-24.1)	389
	09-10	**1.64** (1.45-1.85)	**1.71** (1.26-2.02)	**3.50** (3.09-3.94)	**5.95** (4.56-7.56)	**8.92** (6.94-12.9)	415
12-19 years	99-00	**3.75** (3.24-4.35)	**3.70** (2.90-4.60)	**8.10** (6.40-9.40)	**15.3** (11.4-20.5)	**22.8** (19.1-29.2)	752
	01-02	**4.57** (3.96-5.27)	**4.50** (3.70-5.10)	**11.0** (9.50-14.4)	**23.0** (17.7-32.7)	**42.5** (25.9-57.5)	742
	03-04	**2.77** (2.25-3.41)	**2.50** (2.00-3.00)	**6.40** (4.50-8.60)	**18.6** (10.2-35.6)	**40.6** (20.7-58.4)	729
	05-06	**3.72** (3.04-4.56)	**3.20** (2.40-4.10)	**8.80** (6.20-13.3)	**22.6** (13.8-43.4)	**48.7** (23.1-62.9)	702
	07-08	**2.99** (2.39-3.75)	**2.30** (1.80-2.70)	**6.00** (4.40-9.90)	**21.1** (11.8-32.8)	**37.6** (24.8-74.1)	401
	09-10	**1.82** (1.52-2.16)	**1.66** (1.42-1.94)	**3.98** (3.35-4.73)	**9.53** (6.27-14.0)	**17.6** (9.54-27.4)	420
20 years and older	99-00	**3.21** (2.94-3.51)	**3.00** (2.70-3.40)	**7.30** (6.40-8.00)	**14.5** (12.1-17.0)	**22.7** (17.5-27.0)	1461
	01-02	**4.20** (3.63-4.86)	**4.10** (3.50-5.00)	**9.50** (8.10-11.9)	**23.5** (18.0-29.8)	**39.5** (30.3-57.1)	1647
	03-04	**2.23** (2.03-2.44)	**1.70** (1.50-2.00)	**5.10** (4.50-6.00)	**15.1** (10.9-19.7)	**29.5** (20.4-40.0)	1534
	05-06	**2.94** (2.68-3.21)	**2.30** (1.90-2.70)	**6.20** (5.60-6.70)	**17.7** (13.6-24.5)	**41.5** (28.6-54.1)	1490
	07-08	**2.62** (2.27-3.02)	**2.10** (1.80-2.50)	**5.40** (4.20-7.10)	**14.4** (11.2-20.2)	**27.3** (19.2-40.6)	1814
	09-10	**1.55** (1.36-1.78)	**1.44** (1.25-1.68)	**3.40** (2.88-4.03)	**7.39** (5.94-9.58)	**14.6** (9.91-21.1)	1914
Gender							
Males	99-00	**3.68** (3.31-4.10)	**3.40** (2.90-3.90)	**8.00** (7.40-8.80)	**16.0** (14.0-19.0)	**25.3** (19.5-36.7)	1215
	01-02	**4.31** (3.84-4.83)	**4.30** (3.70-5.10)	**9.70** (8.30-11.2)	**23.0** (16.9-29.8)	**37.9** (29.9-48.4)	1371
	03-04	**2.56** (2.26-2.90)	**2.20** (1.70-2.60)	**6.00** (4.60-7.70)	**17.2** (11.3-26.3)	**33.3** (24.9-55.5)	1250
	05-06	**3.40** (3.01-3.85)	**2.80** (2.40-3.30)	**7.00** (5.70-9.00)	**22.6** (15.0-35.8)	**49.8** (35.2-67.4)	1270
	07-08	**2.77** (2.35-3.27)	**2.30** (1.90-2.80)	**5.50** (4.20-7.60)	**14.4** (11.2-20.5)	**28.9** (19.2-40.0)	1294
	09-10	**1.83** (1.63-2.05)	**1.77** (1.63-1.91)	**3.97** (3.49-4.51)	**8.63** (6.94-11.9)	**18.0** (12.6-29.0)	1399
Females	99-00	**3.21** (2.91-3.54)	**3.10** (2.80-3.50)	**7.10** (5.90-8.50)	**13.6** (12.1-17.2)	**21.9** (15.6-28.5)	1326
	01-02	**4.23** (3.67-4.86)	**4.10** (3.50-5.00)	**9.80** (8.40-12.2)	**23.0** (19.5-28.4)	**43.5** (31.4-53.7)	1411
	03-04	**2.15** (1.92-2.42)	**1.80** (1.50-2.10)	**4.90** (4.10-5.70)	**13.2** (10.0-18.1)	**27.8** (17.5-40.7)	1355
	05-06	**2.72** (2.49-2.98)	**2.10** (1.90-2.40)	**6.00** (5.20-6.80)	**13.9** (11.7-17.5)	**30.8** (21.9-36.2)	1278
	07-08	**2.52** (2.18-2.92)	**2.00** (1.70-2.40)	**5.10** (4.20-6.30)	**14.1** (9.50-21.4)	**26.4** (19.2-42.1)	1310
	09-10	**1.39** (1.21-1.60)	**1.30** (1.12-1.53)	**3.00** (2.51-3.62)	**6.48** (5.45-8.09)	**10.3** (8.33-14.9)	1350

Limit of detection (LOD, see Data Analysis section) for Survey years 99-00, 01-02, 03-04, 05-06, 07-08, and 09-10 are 1.2, 1.0, 0.9, 1.2, 1.1, and 0.5 respectively.

Biomonitoring Summary: http://www.cdc.gov/biomonitoring/DEHP_BiomonitoringSummary.html
Factsheet: http://www.cdc.gov/biomonitoring/Phthalates_FactSheet.html

Urinary Mono-2-ethylhexyl phthalate (MEHP)

Metabolite of Di-2-ethylhexyl phthalate (DEHP)

Geometric mean and selected percentiles of urine concentrations (in µg/L) for the U.S. population from the National Health and Nutrition Examination Survey.

	Survey years	Geometric mean (95% conf. interval)	Selected percentiles (95% confidence interval) 50th	75th	90th	95th	Sample size
Race/ethnicity							
Mexican Americans	99-00	**3.49** (3.16-3.85)	**3.50** (3.10-3.90)	**7.00** (5.70-8.60)	**13.3** (10.7-18.7)	**23.9** (17.4-27.3)	814
	01-02	**4.32** (3.75-4.98)	**4.70** (3.80-5.70)	**10.1** (8.50-11.4)	**19.6** (16.6-23.0)	**28.5** (24.2-39.9)	677
	03-04	**2.35** (1.87-2.96)	**2.20** (1.50-3.00)	**5.10** (4.30-6.60)	**11.2** (7.50-16.5)	**18.5** (11.6-38.2)	652
	05-06	**2.99** (2.50-3.57)	**2.30** (1.70-3.30)	**5.70** (4.70-7.60)	**18.4** (12.1-30.6)	**36.4** (26.2-63.8)	637
	07-08	**2.89** (2.38-3.50)	**2.60** (2.00-3.10)	**5.30** (4.40-8.20)	**16.9** (10.3-27.3)	**30.2** (22.9-34.3)	531
	09-10	**2.08** (1.84-2.36)	**2.10** (1.86-2.40)	**4.44** (3.73-5.63)	**9.67** (6.89-16.0)	**17.9** (13.1-24.3)	566
Non-Hispanic blacks	99-00	**4.82** (3.92-5.93)	**5.20** (4.10-5.80)	**9.50** (7.60-11.4)	**19.5** (12.9-26.5)	**29.5** (18.6-60.3)	603
	01-02	**6.60** (5.57-7.82)	**6.70** (5.40-8.10)	**15.4** (13.0-18.7)	**32.9** (26.5-41.4)	**52.6** (41.0-84.0)	703
	03-04	**3.61** (3.07-4.23)	**3.50** (3.00-4.00)	**8.50** (7.10-11.4)	**22.9** (16.5-28.6)	**35.2** (29.3-49.1)	699
	05-06	**4.09** (3.51-4.75)	**3.70** (3.10-4.10)	**9.10** (6.90-11.9)	**22.5** (17.4-40.7)	**59.3** (34.5-86.7)	678
	07-08	**3.30** (2.98-3.64)	**3.20** (2.70-3.60)	**7.20** (6.30-8.90)	**15.3** (13.3-20.2)	**25.5** (19.2-38.1)	597
	09-10	**2.08** (1.79-2.41)	**2.05** (1.70-2.42)	**4.79** (3.80-5.95)	**10.1** (7.50-14.4)	**16.4** (9.60-38.4)	516
Non-Hispanic whites	99-00	**3.16** (2.89-3.46)	**2.80** (2.50-3.10)	**7.40** (6.30-8.40)	**14.5** (12.2-17.4)	**22.4** (16.9-28.5)	912
	01-02	**3.85** (3.37-4.40)	**3.70** (3.10-4.40)	**8.70** (7.80-9.90)	**20.9** (17.3-25.9)	**37.9** (29.9-49.5)	1216
	03-04	**2.14** (1.92-2.39)	**1.70** (1.40-1.90)	**4.80** (4.00-5.80)	**13.6** (9.50-20.0)	**31.0** (18.1-48.9)	1088
	05-06	**2.83** (2.59-3.10)	**2.20** (1.80-2.60)	**5.90** (5.30-6.90)	**17.0** (13.3-21.6)	**36.3** (26.6-51.0)	1038
	07-08	**2.44** (2.07-2.88)	**2.00** (1.70-2.30)	**4.90** (3.70-6.20)	**13.1** (8.70-20.1)	**25.0** (15.8-42.1)	1077
	09-10	**1.41** (1.22-1.62)	**1.30** (1.12-1.57)	**3.04** (2.53-3.60)	**6.12** (5.23-7.65)	**11.8** (7.63-21.1)	1206

Limit of detection (LOD, see Data Analysis section) for Survey years 99-00, 01-02, 03-04, 05-06, 07-08, and 09-10 are 1.2, 1.0, 0.9, 1.2, 1.1, and 0.5 respectively.

Biomonitoring Summary: http://www.cdc.gov/biomonitoring/DEHP_BiomonitoringSummary.html
Factsheet: http://www.cdc.gov/biomonitoring/Phthalates_FactSheet.html

Urinary Mono-2-ethylhexyl phthalate (MEHP) (creatinine corrected)

Metabolite of Di-2-ethylhexyl phthalate (DEHP)

Geometric mean and selected percentiles of urine concentrations (in µg/g of creatinine) for the U.S. population from the National Health and Nutrition Examination Survey.

	Survey years	Geometric mean (95% conf. interval)	Selected percentiles (95% confidence interval) 50th	75th	90th	95th	Sample size
Total	99-00	**3.12** (2.95-3.31)	**3.08** (2.82-3.27)	**5.88** (5.38-6.25)	**10.8** (9.62-12.5)	**18.9** (15.0-21.8)	2541
	01-02	**4.00** (3.58-4.48)	**3.90** (3.44-4.47)	**7.94** (7.22-9.02)	**18.0** (15.3-21.5)	**32.8** (25.2-42.9)	2782
	03-04	**2.20** (2.01-2.41)	**1.89** (1.68-2.19)	**4.31** (3.84-4.74)	**10.8** (8.72-13.8)	**25.4** (16.7-34.7)	2605
	05-06	**2.96** (2.72-3.23)	**2.61** (2.37-2.86)	**5.69** (5.00-6.47)	**13.7** (11.4-17.8)	**30.1** (21.2-35.2)	2548
	07-08	**2.66** (2.37-2.99)	**2.36** (2.11-2.67)	**5.15** (4.35-6.00)	**11.8** (8.89-15.6)	**21.9** (14.6-33.4)	2604
	09-10	**1.66** (1.45-1.90)	**1.52** (1.36-1.77)	**3.09** (2.69-3.60)	**6.28** (4.98-8.48)	**11.2** (8.33-19.1)	2749
Age group							
6-11 years	99-00	**5.19** (4.55-5.93)	**5.37** (4.52-5.95)	**9.11** (8.06-11.4)	**21.6** (11.5-41.9)	**41.9** (13.5-86.2)	328
	01-02	**5.03** (4.47-5.65)	**5.38** (4.51-6.21)	**9.90** (7.87-11.5)	**21.1** (13.8-28.8)	**31.4** (24.3-40.7)	393
	03-04	**3.00** (2.30-3.93)	**2.80** (1.93-4.09)	**5.86** (4.69-7.70)	**14.3** (8.54-24.4)	**28.7** (14.1-45.3)	342
	05-06	**3.42** (3.08-3.79)	**3.26** (2.63-3.92)	**6.18** (5.40-6.85)	**11.3** (8.96-17.4)	**20.7** (11.3-31.8)	356
	07-08	**2.95** (2.49-3.49)	**2.80** (2.17-3.33)	**5.42** (3.95-6.51)	**10.6** (7.47-14.0)	**15.6** (10.6-23.7)	389
	09-10	**2.13** (1.90-2.40)	**2.08** (1.88-2.33)	**3.69** (3.13-4.20)	**5.83** (4.80-7.95)	**8.89** (5.88-20.1)	415
12-19 years	99-00	**2.53** (2.14-2.99)	**2.35** (2.05-2.76)	**5.83** (4.38-6.29)	**9.66** (7.41-11.5)	**12.1** (10.5-17.3)	752
	01-02	**3.53** (3.09-4.03)	**3.67** (2.89-4.48)	**7.47** (6.51-8.67)	**15.2** (11.7-21.9)	**25.2** (17.7-32.8)	742
	03-04	**2.07** (1.74-2.48)	**1.88** (1.60-2.23)	**4.25** (3.19-5.62)	**11.6** (6.83-23.2)	**24.8** (11.6-37.9)	729
	05-06	**2.77** (2.27-3.38)	**2.43** (2.03-2.87)	**5.24** (4.06-7.75)	**15.2** (9.86-23.2)	**27.1** (16.0-43.7)	702
	07-08	**2.33** (1.90-2.86)	**2.00** (1.67-2.57)	**4.33** (3.55-6.23)	**12.6** (8.31-16.3)	**21.9** (12.0-45.7)	401
	09-10	**1.46** (1.20-1.77)	**1.33** (1.09-1.61)	**2.85** (2.24-3.63)	**7.47** (4.31-11.6)	**13.2** (8.11-20.9)	420
20 years and older	99-00	**3.03** (2.83-3.25)	**2.98** (2.73-3.23)	**5.55** (4.90-6.06)	**10.0** (8.60-12.9)	**17.5** (13.8-22.1)	1461
	01-02	**3.97** (3.49-4.52)	**3.82** (3.26-4.38)	**7.79** (7.00-9.00)	**18.3** (15.3-21.8)	**34.5** (23.1-47.9)	1647
	03-04	**2.14** (1.98-2.31)	**1.84** (1.63-2.08)	**4.14** (3.78-4.40)	**10.5** (8.38-12.9)	**25.6** (15.9-36.3)	1534
	05-06	**2.94** (2.69-3.23)	**2.60** (2.36-2.83)	**5.67** (4.77-6.52)	**13.8** (11.3-18.1)	**33.1** (21.9-47.4)	1490
	07-08	**2.69** (2.39-3.02)	**2.36** (2.14-2.66)	**5.20** (4.38-6.04)	**11.8** (8.94-16.6)	**22.1** (13.5-37.1)	1814
	09-10	**1.65** (1.43-1.90)	**1.51** (1.34-1.75)	**3.04** (2.63-3.60)	**6.24** (4.98-8.61)	**11.1** (8.03-19.4)	1914
Gender							
Males	99-00	**2.89** (2.60-3.22)	**2.76** (2.52-2.96)	**5.58** (4.71-6.08)	**10.3** (9.35-12.4)	**21.6** (14.1-27.7)	1215
	01-02	**3.50** (3.08-3.99)	**3.33** (2.83-3.90)	**7.00** (6.49-7.77)	**16.2** (12.8-20.9)	**31.6** (20.5-49.4)	1371
	03-04	**2.01** (1.82-2.21)	**1.71** (1.46-1.89)	**4.14** (3.49-4.81)	**10.4** (7.68-16.2)	**23.3** (15.1-41.1)	1250
	05-06	**2.73** (2.43-3.07)	**2.30** (2.12-2.61)	**5.08** (4.29-6.14)	**14.3** (11.2-20.5)	**31.0** (21.5-50.9)	1270
	07-08	**2.33** (2.03-2.68)	**2.00** (1.71-2.34)	**4.36** (3.71-5.41)	**11.6** (8.33-14.2)	**20.2** (14.6-26.3)	1294
	09-10	**1.64** (1.45-1.85)	**1.52** (1.39-1.74)	**3.06** (2.70-3.60)	**6.53** (5.18-9.49)	**13.0** (8.65-22.2)	1399
Females	99-00	**3.36** (3.11-3.63)	**3.33** (2.91-3.80)	**6.15** (5.55-6.77)	**11.1** (9.11-14.0)	**17.3** (12.4-24.6)	1326
	01-02	**4.54** (4.02-5.13)	**4.47** (3.85-5.14)	**9.28** (7.94-10.3)	**20.3** (16.6-24.4)	**34.7** (27.1-42.0)	1411
	03-04	**2.40** (2.15-2.69)	**2.16** (1.84-2.40)	**4.40** (3.97-4.89)	**10.9** (8.27-16.0)	**27.0** (17.5-34.6)	1355
	05-06	**3.20** (2.89-3.55)	**2.89** (2.58-3.17)	**6.07** (5.00-7.00)	**13.3** (10.4-16.3)	**28.2** (18.2-37.4)	1278
	07-08	**3.02** (2.70-3.38)	**2.76** (2.36-3.02)	**5.57** (4.90-6.50)	**12.1** (8.64-18.2)	**24.7** (14.8-44.4)	1310
	09-10	**1.68** (1.44-1.96)	**1.53** (1.35-1.89)	**3.10** (2.68-3.69)	**5.75** (4.58-8.03)	**10.5** (7.36-17.5)	1350

Biomonitoring Summary: http://www.cdc.gov/biomonitoring/DEHP_BiomonitoringSummary.html
Factsheet: http://www.cdc.gov/biomonitoring/Phthalates_FactSheet.html

Urinary Mono-2-ethylhexyl phthalate (MEHP) (creatinine corrected)

Metabolite of Di-2-ethylhexyl phthalate (DEHP)

Geometric mean and selected percentiles of urine concentrations (in µg/g of creatinine) for the U.S. population from the National Health and Nutrition Examination Survey.

	Survey years	Geometric mean (95% conf. interval)	Selected percentiles (95% confidence interval) 50th	75th	90th	95th	Sample size
Race/ethnicity							
Mexican Americans	99-00	**3.16** (2.72-3.68)	**3.15** (2.52-3.81)	**5.88** (4.86-7.24)	**11.6** (9.63-13.1)	**15.7** (12.6-23.1)	814
	01-02	**4.07** (3.60-4.61)	**4.18** (3.82-4.90)	**7.80** (6.64-9.49)	**16.4** (13.6-18.9)	**24.9** (19.8-28.7)	677
	03-04	**2.12** (1.74-2.59)	**1.94** (1.50-2.42)	**4.06** (3.29-4.93)	**9.38** (5.72-15.4)	**16.8** (9.86-38.6)	652
	05-06	**2.69** (2.36-3.07)	**2.41** (2.04-2.73)	**4.82** (4.09-6.05)	**14.3** (10.0-16.9)	**27.2** (16.3-40.1)	637
	07-08	**2.82** (2.38-3.34)	**2.45** (2.08-2.89)	**5.00** (4.14-6.86)	**12.3** (9.58-20.7)	**29.0** (17.0-50.3)	531
	09-10	**2.07** (1.83-2.34)	**1.89** (1.69-2.31)	**4.06** (3.50-4.98)	**8.38** (6.08-11.3)	**13.9** (9.70-20.0)	566
Non-Hispanic blacks	99-00	**3.11** (2.59-3.73)	**3.13** (2.50-3.61)	**5.84** (4.43-7.32)	**10.2** (8.05-15.6)	**18.4** (11.6-35.2)	603
	01-02	**4.63** (3.96-5.42)	**4.59** (3.97-5.02)	**9.93** (7.95-12.4)	**21.2** (16.0-33.2)	**39.9** (27.7-48.1)	703
	03-04	**2.56** (2.24-2.92)	**2.28** (2.02-2.78)	**5.17** (4.48-6.83)	**13.2** (10.5-16.2)	**27.5** (18.4-36.0)	699
	05-06	**2.87** (2.45-3.38)	**2.41** (2.09-2.78)	**5.72** (4.40-7.29)	**15.0** (12.0-20.6)	**54.4** (18.4-84.0)	678
	07-08	**2.56** (2.26-2.90)	**2.40** (2.17-2.73)	**4.77** (4.07-5.76)	**11.4** (8.75-15.4)	**18.0** (16.1-26.3)	597
	09-10	**1.51** (1.22-1.86)	**1.48** (1.14-1.93)	**2.87** (2.26-3.69)	**5.73** (3.69-10.7)	**10.7** (5.61-19.1)	516
Non-Hispanic whites	99-00	**3.09** (2.84-3.36)	**3.08** (2.73-3.47)	**5.87** (5.11-6.67)	**10.6** (8.95-13.5)	**20.0** (14.0-24.6)	912
	01-02	**3.81** (3.34-4.35)	**3.67** (3.11-4.33)	**7.78** (6.74-9.35)	**17.0** (14.1-21.8)	**32.8** (21.5-46.9)	1216
	03-04	**2.12** (1.91-2.35)	**1.82** (1.60-2.13)	**4.11** (3.49-4.42)	**10.7** (7.42-15.1)	**27.0** (15.1-37.4)	1088
	05-06	**2.98** (2.77-3.21)	**2.66** (2.43-2.93)	**5.73** (5.00-6.47)	**13.4** (11.3-17.8)	**27.7** (19.5-37.4)	1038
	07-08	**2.55** (2.20-2.94)	**2.26** (1.97-2.67)	**4.90** (3.99-5.92)	**11.0** (7.80-14.8)	**20.5** (11.9-30.2)	1077
	09-10	**1.58** (1.36-1.84)	**1.49** (1.27-1.76)	**2.94** (2.50-3.49)	**5.64** (4.53-7.96)	**10.3** (6.85-18.3)	1206

Biomonitoring Summary: http://www.cdc.gov/biomonitoring/DEHP_BiomonitoringSummary.html
Factsheet: http://www.cdc.gov/biomonitoring/Phthalates_FactSheet.html

Urinary Mono-(2-ethyl-5-hydroxyhexyl) phthalate (MEHHP)

Metabolite of Di-2-ethylhexyl phthalate (DEHP)

Geometric mean and selected percentiles of urine concentrations (in µg/L) for the U.S. population from the National Health and Nutrition Examination Survey.

	Survey years	Geometric mean (95% conf. interval)	Selected percentiles (95% confidence interval) 50th	75th	90th	95th	Sample size
Total	01-02	**20.0** (17.8-22.5)	**20.1** (17.8-22.4)	**43.6** (38.0-49.7)	**92.3** (77.0-108)	**192** (131-256)	2782
	03-04	**21.7** (19.3-24.4)	**21.2** (18.7-24.1)	**49.1** (40.5-56.9)	**121** (91.3-164)	**266** (165-383)	2605
	05-06	**25.5** (23.0-28.2)	**23.8** (21.5-26.8)	**55.1** (50.2-61.0)	**153** (132-180)	**306** (240-421)	2548
	07-08	**22.1** (18.7-26.0)	**20.7** (17.6-23.7)	**48.2** (39.8-61.8)	**123** (83.7-181)	**238** (171-336)	2604
	09-10	**12.9** (11.3-14.7)	**12.9** (11.4-14.8)	**25.8** (22.1-30.3)	**53.2** (41.7-75.2)	**103** (74.2-149)	2749
Age group							
6-11 years	01-02	**33.6** (29.7-37.9)	**32.9** (26.9-39.1)	**66.9** (49.7-74.0)	**127** (103-148)	**216** (137-280)	393
	03-04	**36.9** (28.4-47.9)	**36.5** (26.5-47.0)	**77.4** (49.1-103)	**164** (79.9-350)	**318** (164-400)	342
	05-06	**34.9** (30.8-39.6)	**35.7** (31.3-40.7)	**68.9** (56.5-76.0)	**140** (101-169)	**206** (133-401)	356
	07-08	**28.6** (23.4-34.8)	**27.0** (20.1-36.4)	**56.1** (45.4-67.8)	**113** (76.5-218)	**242** (109-351)	389
	09-10	**15.0** (13.2-17.1)	**17.0** (14.1-19.8)	**28.9** (24.4-37.4)	**49.3** (41.2-70.2)	**75.1** (55.2-117)	415
12-19 years	01-02	**24.9** (21.3-29.1)	**25.3** (22.9-31.3)	**50.6** (40.7-64.5)	**107** (78.5-148)	**216** (117-330)	742
	03-04	**28.3** (23.0-34.8)	**29.8** (25.9-33.9)	**56.9** (45.4-73.7)	**157** (84.1-299)	**317** (176-553)	729
	05-06	**34.8** (28.0-43.3)	**32.5** (27.1-42.2)	**79.5** (66.9-103)	**213** (131-384)	**424** (232-836)	702
	07-08	**29.8** (22.5-39.3)	**26.6** (20.0-35.4)	**66.7** (43.7-96.6)	**224** (101-417)	**417** (209-615)	401
	09-10	**15.3** (12.4-18.8)	**14.9** (12.0-18.0)	**28.8** (22.7-41.0)	**70.2** (41.0-110)	**117** (61.0-215)	420
20 years and older	01-02	**18.1** (15.7-20.9)	**17.8** (14.7-20.7)	**39.8** (32.7-48.0)	**86.2** (65.7-107)	**175** (110-279)	1647
	03-04	**19.5** (17.7-21.5)	**18.4** (16.6-21.0)	**41.9** (36.9-51.2)	**107** (88.2-136)	**225** (148-384)	1534
	05-06	**23.4** (21.1-25.9)	**21.4** (19.5-23.7)	**48.6** (43.7-55.1)	**148** (121-172)	**306** (238-421)	1490
	07-08	**20.5** (17.4-24.1)	**19.6** (17.1-22.2)	**46.3** (37.2-59.9)	**110** (75.0-169)	**214** (157-303)	1814
	09-10	**12.4** (10.7-14.3)	**12.5** (10.8-14.3)	**24.5** (21.1-29.3)	**52.5** (40.1-72.6)	**104** (72.6-151)	1914
Gender							
Males	01-02	**22.0** (19.5-24.7)	**21.2** (19.4-24.2)	**48.0** (41.4-54.4)	**94.2** (80.8-110)	**212** (130-256)	1371
	03-04	**24.1** (20.9-27.9)	**22.9** (19.2-27.9)	**51.0** (40.5-59.8)	**133** (94.8-220)	**317** (162-470)	1250
	05-06	**29.6** (26.0-33.8)	**27.2** (22.9-31.0)	**63.1** (54.3-71.9)	**180** (143-263)	**494** (285-626)	1270
	07-08	**23.2** (19.4-27.8)	**20.8** (18.1-24.5)	**46.0** (39.2-57.3)	**132** (85.4-190)	**277** (162-349)	1294
	09-10	**15.2** (13.1-17.6)	**14.6** (12.9-16.4)	**29.5** (24.6-36.2)	**71.0** (50.3-93.5)	**128** (90.6-181)	1399
Females	01-02	**18.3** (15.7-21.4)	**18.2** (14.9-22.1)	**39.8** (34.3-46.0)	**86.0** (69.4-115)	**170** (119-273)	1411
	03-04	**19.7** (17.4-22.2)	**19.4** (16.7-22.8)	**46.4** (37.5-54.4)	**103** (84.1-148)	**214** (140-318)	1355
	05-06	**22.0** (19.2-25.2)	**21.4** (19.5-23.4)	**47.1** (42.6-54.3)	**135** (113-156)	**232** (186-300)	1278
	07-08	**21.0** (17.8-24.8)	**19.9** (16.8-23.3)	**51.0** (39.9-64.6)	**121** (76.9-183)	**223** (171-336)	1310
	09-10	**11.0** (9.58-12.8)	**11.6** (9.73-13.5)	**22.5** (19.2-27.2)	**42.8** (33.2-59.1)	**82.2** (53.1-116)	1350

Limit of detection (LOD, see Data Analysis section) for Survey years 01-02, 03-04, 05-06,07-08, and 09-10 are 1.0, 0.3, 0.7,0.7, and 0.2 respectively.

Biomonitoring Summary: http://www.cdc.gov/biomonitoring/DEHP_BiomonitoringSummary.html
Factsheet: http://www.cdc.gov/biomonitoring/Phthalates_FactSheet.html

Urinary Mono-(2-ethyl-5-hydroxyhexyl) phthalate (MEHHP)

Metabolite of Di-2-ethylhexyl phthalate (DEHP)

Geometric mean and selected percentiles of urine concentrations (in µg/L) for the U.S. population from the National Health and Nutrition Examination Survey.

	Survey years	Geometric mean (95% conf. interval)	Selected percentiles (95% confidence interval) 50th	75th	90th	95th	Sample size
Race/ethnicity							
Mexican Americans	01-02	**18.5** (16.2-21.1)	**19.1** (16.3-21.6)	**36.3** (31.6-44.0)	**79.9** (66.4-93.9)	**123** (100-161)	677
	03-04	**18.9** (15.4-23.4)	**19.8** (17.6-22.3)	**37.5** (30.0-45.6)	**72.2** (52.4-115)	**116** (71.6-327)	652
	05-06	**23.0** (18.0-29.3)	**19.9** (15.7-23.9)	**47.8** (34.8-65.3)	**136** (84.6-223)	**244** (157-520)	637
	07-08	**22.7** (18.5-27.7)	**19.8** (17.5-23.8)	**43.6** (33.5-66.6)	**104** (82.8-157)	**238** (158-282)	531
	09-10	**15.3** (12.9-18.2)	**15.8** (13.3-18.3)	**31.5** (26.6-39.2)	**64.5** (46.4-94.9)	**108** (70.7-153)	566
Non-Hispanic blacks	01-02	**29.8** (26.1-34.1)	**30.9** (27.2-34.3)	**61.9** (52.6-69.4)	**126** (108-157)	**276** (157-339)	703
	03-04	**30.8** (26.8-35.5)	**29.1** (25.3-32.3)	**65.6** (53.7-76.3)	**154** (113-178)	**275** (174-401)	699
	05-06	**34.8** (30.3-39.9)	**30.2** (27.6-33.2)	**73.8** (61.0-96.7)	**206** (156-275)	**395** (274-547)	678
	07-08	**25.7** (23.1-28.6)	**25.8** (22.4-28.9)	**55.9** (47.1-64.7)	**121** (99.1-150)	**184** (137-255)	597
	09-10	**15.5** (12.8-18.8)	**15.7** (13.4-17.7)	**30.4** (24.4-35.7)	**54.5** (37.7-84.1)	**94.6** (51.5-229)	516
Non-Hispanic whites	01-02	**19.1** (16.7-21.9)	**19.2** (16.9-21.4)	**41.7** (35.3-50.7)	**91.1** (75.6-110)	**212** (130-275)	1216
	03-04	**20.8** (18.6-23.3)	**19.7** (17.2-22.5)	**47.5** (39.4-56.1)	**120** (91.3-165)	**270** (155-403)	1088
	05-06	**24.3** (21.9-26.9)	**23.0** (21.1-26.0)	**54.6** (48.4-61.0)	**148** (121-172)	**302** (221-421)	1038
	07-08	**21.3** (17.6-25.8)	**20.2** (16.5-24.1)	**46.7** (36.1-65.2)	**123** (75.1-203)	**277** (161-373)	1077
	09-10	**12.2** (10.5-14.1)	**12.3** (10.5-14.2)	**24.4** (20.7-29.1)	**51.7** (37.7-77.1)	**104** (72.6-151)	1206

Limit of detection (LOD, see Data Analysis section) for Survey years 01-02, 03-04, 05-06,07-08, and 09-10 are 1.0, 0.3, 0.7,0.7, and 0.2 respectively.

Biomonitoring Summary: http://www.cdc.gov/biomonitoring/DEHP_BiomonitoringSummary.html
Factsheet: http://www.cdc.gov/biomonitoring/Phthalates_FactSheet.html

Urinary Mono-(2-ethyl-5-hydroxyhexyl) phthalate (MEHHP) (creatinine corrected)

Metabolite of Di-2-ethylhexyl phthalate (DEHP)

Geometric mean and selected percentiles of urine concentrations (in µg/g of creatinine) for the U.S. population from the National Health and Nutrition Examination Survey.

	Survey years	Geometric mean (95% conf. interval)	Selected percentiles (95% confidence interval) 50th	75th	90th	95th	Sample size
Total	01-02	**18.8** (17.0-20.7)	**16.6** (14.9-18.5)	**32.2** (27.8-37.1)	**71.1** (58.7-88.3)	**143** (101-200)	2782
	03-04	**20.4** (18.7-22.3)	**17.7** (16.3-19.6)	**35.8** (30.5-43.3)	**93.5** (74.0-128)	**182** (134-262)	2605
	05-06	**24.8** (22.4-27.5)	**21.4** (19.1-23.4)	**46.1** (40.0-52.1)	**117** (97.8-148)	**235** (197-272)	2548
	07-08	**22.2** (19.4-25.5)	**19.3** (17.4-22.1)	**40.5** (34.1-50.3)	**99.3** (69.7-134)	**179** (135-252)	2604
	09-10	**13.5** (11.6-15.6)	**11.9** (10.5-13.9)	**22.3** (18.6-26.4)	**44.0** (35.3-61.0)	**86.3** (59.2-131)	2749
Age group							
6-11 years	01-02	**38.2** (34.3-42.6)	**34.3** (29.9-38.9)	**60.6** (51.9-76.4)	**107** (96.3-147)	**211** (122-313)	393
	03-04	**39.0** (31.1-48.9)	**36.6** (25.3-49.3)	**65.6** (49.8-91.3)	**129** (77.1-253)	**211** (123-708)	342
	05-06	**38.5** (34.2-43.3)	**37.0** (32.9-40.3)	**65.5** (55.4-71.9)	**115** (85.1-165)	**213** (119-333)	356
	07-08	**35.2** (29.1-42.5)	**31.4** (25.6-37.8)	**53.5** (44.8-72.3)	**139** (79.9-230)	**258** (141-303)	389
	09-10	**19.6** (17.3-22.2)	**18.6** (16.5-21.5)	**34.2** (27.3-40.4)	**55.4** (44.0-64.8)	**72.1** (56.3-140)	415
12-19 years	01-02	**19.2** (17.0-21.8)	**17.8** (15.6-20.0)	**34.9** (29.2-42.7)	**73.4** (58.4-80.7)	**102** (86.6-160)	742
	03-04	**21.2** (18.1-24.7)	**18.6** (16.9-21.7)	**38.7** (29.7-53.4)	**103** (62.7-209)	**212** (100-358)	729
	05-06	**26.0** (21.2-31.7)	**23.7** (18.8-28.4)	**49.4** (37.4-74.0)	**131** (79.0-228)	**278** (132-375)	702
	07-08	**23.2** (18.1-29.6)	**20.0** (14.6-23.9)	**46.1** (31.5-66.3)	**148** (66.6-234)	**234** (146-373)	401
	09-10	**12.3** (9.73-15.5)	**10.5** (8.95-13.3)	**20.9** (14.2-31.0)	**45.3** (28.9-91.9)	**110** (44.6-200)	420
20 years and older	01-02	**17.1** (15.2-19.3)	**15.0** (13.3-16.7)	**27.7** (23.2-34.0)	**63.7** (48.3-86.9)	**137** (84.4-203)	1647
	03-04	**18.8** (17.5-20.2)	**16.3** (15.4-17.5)	**31.6** (28.1-35.3)	**83.8** (67.2-106)	**171** (129-246)	1534
	05-06	**23.4** (21.1-26.0)	**19.4** (17.6-21.8)	**42.5** (37.6-49.2)	**115** (93.1-153)	**235** (184-298)	1490
	07-08	**21.0** (18.5-24.0)	**18.5** (16.3-20.2)	**38.1** (30.9-49.2)	**94.3** (62.6-126)	**164** (120-235)	1814
	09-10	**13.1** (11.3-15.2)	**11.5** (10.1-13.4)	**20.9** (17.7-25.1)	**40.6** (32.4-64.9)	**86.3** (59.2-131)	1914
Gender							
Males	01-02	**17.9** (16.2-19.7)	**15.4** (13.8-17.9)	**32.2** (27.8-36.8)	**73.4** (55.3-91.8)	**137** (97.7-224)	1371
	03-04	**18.9** (17.1-20.9)	**17.1** (15.2-18.6)	**32.7** (26.6-41.6)	**93.4** (68.8-123)	**193** (108-291)	1250
	05-06	**23.8** (21.0-26.9)	**20.2** (17.5-23.3)	**44.8** (38.5-54.1)	**129** (92.5-166)	**251** (202-352)	1270
	07-08	**19.6** (16.8-22.7)	**16.8** (14.6-20.0)	**34.8** (28.7-41.8)	**90.3** (65.2-119)	**164** (111-258)	1294
	09-10	**13.6** (11.7-15.9)	**11.6** (10.5-13.1)	**22.9** (17.8-27.4)	**52.8** (39.1-74.3)	**103** (73.3-173)	1399
Females	01-02	**19.7** (17.3-22.4)	**17.6** (15.4-19.5)	**32.1** (26.8-38.6)	**70.5** (57.8-93.7)	**156** (93.7-201)	1411
	03-04	**21.9** (19.7-24.5)	**18.7** (16.8-20.9)	**39.3** (33.8-46.9)	**94.3** (72.8-136)	**171** (146-261)	1355
	05-06	**25.9** (23.2-28.8)	**22.5** (19.6-25.5)	**47.3** (40.5-52.3)	**108** (88.8-131)	**202** (157-278)	1278
	07-08	**25.2** (22.1-28.6)	**22.1** (19.6-24.4)	**47.4** (38.5-56.1)	**112** (84.6-150)	**190** (162-268)	1310
	09-10	**13.3** (11.4-15.6)	**12.4** (10.4-14.6)	**21.9** (18.3-26.7)	**38.8** (30.9-52.2)	**74.0** (46.9-115)	1350

Biomonitoring Summary: http://www.cdc.gov/biomonitoring/DEHP_BiomonitoringSummary.html
Factsheet: http://www.cdc.gov/biomonitoring/Phthalates_FactSheet.html

Urinary Mono-(2-ethyl-5-hydroxyhexyl) phthalate (MEHHP) (creatinine corrected)

Metabolite of Di-2-ethylhexyl phthalate (DEHP)

Geometric mean and selected percentiles of urine concentrations (in µg/g of creatinine) for the U.S. population from the National Health and Nutrition Examination Survey.

	Survey years	Geometric mean (95% conf. interval)	Selected percentiles (95% confidence interval) 50th	75th	90th	95th	Sample size
Race/ethnicity							
Mexican Americans	01-02	**17.4** (15.9-19.1)	**15.7** (14.4-17.5)	**30.6** (26.0-34.7)	**65.9** (50.6-83.9)	**103** (75.5-128)	677
	03-04	**17.1** (14.3-20.4)	**15.4** (13.2-17.7)	**29.3** (23.8-36.8)	**57.3** (45.7-97.6)	**105** (70.1-195)	652
	05-06	**20.7** (17.2-25.0)	**17.5** (15.3-21.3)	**37.3** (30.9-45.7)	**99.9** (67.6-159)	**181** (110-357)	637
	07-08	**22.1** (17.7-27.7)	**18.8** (15.2-23.4)	**38.6** (28.3-54.9)	**91.4** (61.0-170)	**197** (141-282)	531
	09-10	**15.2** (12.9-17.8)	**14.6** (12.8-16.2)	**27.0** (21.3-33.3)	**60.0** (42.3-77.7)	**94.8** (66.4-142)	566
Non-Hispanic blacks	01-02	**20.9** (18.8-23.3)	**19.7** (17.5-21.8)	**38.3** (32.1-46.0)	**93.5** (69.2-123)	**164** (130-183)	703
	03-04	**21.9** (20.1-23.8)	**19.5** (17.3-22.6)	**40.1** (35.8-45.3)	**102** (75.5-122)	**164** (133-269)	699
	05-06	**24.5** (21.2-28.2)	**18.9** (17.1-22.8)	**46.1** (37.9-59.7)	**128** (100-158)	**308** (158-399)	678
	07-08	**20.0** (18.1-22.0)	**18.3** (16.5-19.2)	**36.9** (27.9-46.7)	**85.5** (65.8-103)	**136** (107-227)	597
	09-10	**11.2** (8.71-14.5)	**10.5** (8.26-13.5)	**18.9** (13.6-25.3)	**32.9** (22.3-58.4)	**47.2** (33.6-153)	516
Non-Hispanic whites	01-02	**18.9** (17.0-21.0)	**16.3** (14.8-18.4)	**32.1** (27.3-37.3)	**70.8** (56.9-93.7)	**177** (98.0-242)	1216
	03-04	**20.5** (18.5-22.8)	**17.8** (16.2-19.7)	**35.3** (29.7-44.9)	**96.2** (75.8-136)	**211** (136-283)	1088
	05-06	**25.6** (23.1-28.2)	**22.4** (19.6-24.5)	**47.6** (40.7-54.1)	**119** (98.2-148)	**231** (181-297)	1038
	07-08	**22.2** (18.7-26.3)	**19.5** (16.7-23.0)	**40.4** (32.1-54.8)	**99.1** (68.1-145)	**179** (129-258)	1077
	09-10	**13.7** (11.7-16.1)	**11.9** (10.4-13.9)	**22.4** (18.0-27.6)	**43.0** (34.2-61.0)	**84.1** (54.7-142)	1206

Biomonitoring Summary: http://www.cdc.gov/biomonitoring/DEHP_BiomonitoringSummary.html
Factsheet: http://www.cdc.gov/biomonitoring/Phthalates_FactSheet.html

Urinary Mono-(2-ethyl-5-oxohexyl) phthalate (MEOHP)

Metabolite of Di-2-ethylhexyl phthalate (DEHP)

Geometric mean and selected percentiles of urine concentrations (in µg/L) for the U.S. population from the National Health and Nutrition Examination Survey.

	Survey years	Geometric mean (95% conf. interval)	Selected percentiles (95% confidence interval) 50th	75th	90th	95th	Sample size
Total	01-02	**13.5** (12.0-15.0)	**14.0** (12.5-15.1)	**29.6** (25.2-34.0)	**59.9** (50.4-70.9)	**120** (87.2-156)	2782
	03-04	**14.5** (13.0-16.1)	**14.4** (12.4-16.7)	**31.4** (27.4-36.6)	**76.7** (59.4-102)	**157** (106-232)	2605
	05-06	**16.2** (14.6-18.0)	**15.1** (13.5-17.1)	**35.5** (32.1-40.3)	**94.8** (78.5-112)	**183** (147-250)	2548
	07-08	**12.2** (10.3-14.3)	**11.3** (10.0-13.3)	**27.1** (21.8-33.8)	**64.2** (47.3-93.6)	**130** (93.6-177)	2604
	09-10	**8.02** (7.11-9.06)	**8.02** (7.27-9.04)	**16.1** (13.8-19.0)	**32.5** (25.2-41.8)	**55.7** (41.8-80.9)	2749
Age group							
6-11 years	01-02	**23.3** (20.9-26.1)	**22.9** (18.5-28.1)	**46.5** (38.1-52.0)	**81.6** (64.7-109)	**142** (93.9-178)	393
	03-04	**25.1** (19.6-32.3)	**25.8** (19.3-31.4)	**51.1** (32.1-76.5)	**97.9** (58.8-197)	**197** (97.6-261)	342
	05-06	**23.0** (20.3-26.1)	**24.5** (19.9-27.6)	**44.3** (38.1-52.3)	**83.8** (63.6-115)	**126** (77.3-253)	356
	07-08	**16.9** (13.9-20.6)	**16.6** (12.4-22.6)	**34.5** (26.2-40.9)	**64.4** (46.9-129)	**137** (63.8-179)	389
	09-10	**9.78** (8.72-11.0)	**11.1** (8.87-12.7)	**20.0** (17.1-21.6)	**35.4** (24.8-41.4)	**48.4** (36.0-74.0)	415
12-19 years	01-02	**17.5** (15.1-20.3)	**18.6** (16.2-20.7)	**35.0** (27.7-42.1)	**70.7** (52.2-104)	**118** (74.0-174)	742
	03-04	**19.5** (16.0-23.7)	**20.3** (18.4-23.5)	**37.8** (32.6-44.6)	**110** (54.6-168)	**212** (103-326)	729
	05-06	**23.0** (18.7-28.4)	**22.1** (18.0-26.2)	**50.7** (42.7-62.2)	**134** (82.3-240)	**263** (134-511)	702
	07-08	**16.9** (12.8-22.3)	**15.9** (11.9-19.3)	**38.2** (24.0-55.5)	**121** (58.1-258)	**258** (120-354)	401
	09-10	**10.0** (8.32-12.1)	**9.82** (7.96-12.3)	**19.0** (15.9-23.5)	**40.0** (26.7-61.5)	**68.4** (32.6-154)	420
20 years and older	01-02	**12.0** (10.5-13.9)	**12.3** (10.4-14.1)	**26.0** (21.6-32.1)	**52.3** (41.8-68.3)	**116** (74.9-160)	1647
	03-04	**12.9** (11.8-14.1)	**12.4** (10.9-14.5)	**27.0** (25.0-30.9)	**68.9** (55.0-86.5)	**139** (92.7-216)	1534
	05-06	**14.7** (13.2-16.4)	**13.4** (12.2-15.1)	**31.9** (28.2-36.2)	**91.6** (74.6-104)	**182** (138-247)	1490
	07-08	**11.1** (9.48-13.1)	**10.7** (9.30-12.3)	**25.5** (20.2-31.4)	**59.8** (42.3-88.9)	**108** (80.0-155)	1814
	09-10	**7.59** (6.64-8.68)	**7.55** (6.69-8.58)	**15.3** (12.6-18.6)	**30.6** (24.1-41.5)	**54.9** (41.8-81.0)	1914
Gender							
Males	01-02	**14.5** (13.0-16.2)	**14.6** (13.1-16.2)	**31.6** (25.6-34.7)	**60.4** (52.3-71.4)	**129** (84.4-167)	1371
	03-04	**15.6** (13.6-17.9)	**14.7** (12.7-18.1)	**31.8** (27.2-39.5)	**83.8** (59.4-134)	**185** (96.2-277)	1250
	05-06	**18.3** (16.0-20.9)	**16.3** (14.7-19.7)	**39.3** (33.4-48.1)	**104** (80.7-140)	**258** (180-337)	1270
	07-08	**12.5** (10.5-15.0)	**11.3** (9.80-13.4)	**26.1** (21.8-32.2)	**61.8** (46.8-98.1)	**139** (83.7-189)	1294
	09-10	**9.14** (8.01-10.4)	**8.76** (7.87-9.88)	**18.2** (14.8-21.0)	**39.3** (27.5-50.9)	**69.6** (50.0-109)	1399
Females	01-02	**12.5** (10.8-14.6)	**13.1** (11.2-15.0)	**28.1** (23.7-33.5)	**57.5** (45.8-72.7)	**115** (81.8-147)	1411
	03-04	**13.4** (11.9-15.1)	**13.7** (11.4-16.4)	**29.5** (26.1-36.6)	**68.6** (53.7-88.1)	**143** (88.2-210)	1355
	05-06	**14.4** (12.6-16.5)	**13.8** (12.5-15.7)	**32.5** (29.3-36.4)	**81.7** (68.6-104)	**159** (114-182)	1278
	07-08	**11.8** (10.0-14.0)	**11.7** (9.80-13.5)	**27.9** (21.3-37.5)	**64.2** (43.9-93.6)	**122** (92.0-191)	1310
	09-10	**7.09** (6.17-8.14)	**7.35** (6.13-8.67)	**15.2** (12.1-17.5)	**27.1** (21.6-36.9)	**48.2** (31.3-67.1)	1350

Limit of detection (LOD, see Data Analysis section) for Survey years 01-02, 03-04, 05-06,07-08, and 09-10 are 1.1, 0.5, 0.7,0.6, and 0.2 respectively.

Biomonitoring Summary: http://www.cdc.gov/biomonitoring/DEHP_BiomonitoringSummary.html
Factsheet: http://www.cdc.gov/biomonitoring/Phthalates_FactSheet.html

Urinary Mono-(2-ethyl-5-oxohexyl) phthalate (MEOHP)

Metabolite of Di-2-ethylhexyl phthalate (DEHP)

Geometric mean and selected percentiles of urine concentrations (in µg/L) for the U.S. population from the National Health and Nutrition Examination Survey.

	Survey years	Geometric mean (95% conf. interval)	Selected percentiles (95% confidence interval) 50th	75th	90th	95th	Sample size
Race/ethnicity							
Mexican Americans	01-02	**13.1** (11.6-14.9)	**13.4** (11.6-15.0)	**25.5** (21.6-30.8)	**56.6** (40.6-70.3)	**77.3** (70.5-101)	677
	03-04	**12.8** (10.5-15.5)	**13.6** (11.4-15.6)	**25.3** (20.4-29.9)	**46.6** (32.3-70.8)	**76.0** (51.6-153)	652
	05-06	**14.8** (11.7-18.8)	**12.8** (10.5-16.1)	**30.9** (22.6-42.9)	**79.1** (51.7-131)	**152** (92.9-276)	637
	07-08	**12.6** (10.5-15.1)	**11.4** (10.4-12.9)	**25.1** (18.7-37.2)	**53.4** (43.2-91.7)	**118** (88.4-147)	531
	09-10	**9.57** (8.10-11.3)	**9.65** (8.17-11.3)	**19.2** (16.3-23.3)	**39.0** (30.9-54.7)	**64.6** (43.0-95.3)	566
Non-Hispanic blacks	01-02	**19.6** (17.1-22.5)	**20.1** (17.9-22.4)	**39.0** (34.8-44.2)	**80.5** (71.4-97.4)	**153** (102-228)	703
	03-04	**20.2** (17.7-23.0)	**20.1** (17.0-22.5)	**40.0** (33.9-46.9)	**92.6** (68.8-130)	**173** (104-247)	699
	05-06	**21.8** (18.9-25.2)	**18.8** (16.8-21.0)	**46.0** (38.0-59.1)	**130** (104-168)	**243** (159-304)	678
	07-08	**14.2** (12.7-15.9)	**14.0** (12.7-16.3)	**30.5** (25.8-35.9)	**64.2** (52.1-76.1)	**110** (71.9-136)	597
	09-10	**9.57** (8.17-11.2)	**9.64** (8.15-11.1)	**19.8** (16.5-22.1)	**31.4** (25.5-44.0)	**50.9** (31.4-129)	516
Non-Hispanic whites	01-02	**12.8** (11.2-14.6)	**13.2** (11.6-14.6)	**28.5** (23.6-34.0)	**58.6** (48.8-70.9)	**126** (83.7-172)	1216
	03-04	**13.8** (12.4-15.4)	**13.4** (11.3-16.3)	**31.0** (27.0-36.3)	**77.6** (59.4-102)	**161** (98.7-241)	1088
	05-06	**15.5** (13.9-17.3)	**15.0** (13.3-16.5)	**35.3** (30.1-40.8)	**92.6** (74.6-111)	**182** (134-247)	1038
	07-08	**11.7** (9.66-14.2)	**11.0** (9.20-13.6)	**26.9** (20.2-35.1)	**64.2** (43.4-108)	**137** (90.0-197)	1077
	09-10	**7.59** (6.60-8.73)	**7.55** (6.81-8.63)	**15.7** (12.9-18.6)	**29.1** (22.9-46.5)	**55.7** (41.5-83.5)	1206

Limit of detection (LOD, see Data Analysis section) for Survey years 01-02, 03-04, 05-06,07-08, and 09-10 are 1.1, 0.5, 0.7,0.6, and 0.2 respectively.

Biomonitoring Summary: http://www.cdc.gov/biomonitoring/DEHP_BiomonitoringSummary.html
Factsheet: http://www.cdc.gov/biomonitoring/Phthalates_FactSheet.html

Urinary Mono-(2-ethyl-5-oxohexyl) phthalate (MEOHP) (creatinine corrected)

Metabolite of Di-2-ethylhexyl phthalate (DEHP)

Geometric mean and selected percentiles of urine concentrations (in µg/g of creatinine) for the U.S. population from the National Health and Nutrition Examination Survey.

	Survey years	Geometric mean (95% conf. interval)	Selected percentiles (95% confidence interval) 50th	75th	90th	95th	Sample size
Total	01-02	**12.6** (11.5-13.9)	**11.2** (10.2-12.3)	**21.3** (18.3-23.8)	**45.2** (37.1-58.1)	**87.0** (68.0-124)	2782
	03-04	**13.6** (12.4-14.8)	**12.1** (11.0-12.9)	**24.3** (20.9-27.8)	**63.0** (47.8-75.8)	**118** (94.1-153)	2605
	05-06	**15.8** (14.2-17.5)	**13.5** (12.4-14.7)	**28.9** (26.0-33.8)	**77.7** (62.4-91.1)	**144** (118-172)	2548
	07-08	**12.3** (10.7-14.0)	**11.0** (9.72-12.2)	**22.3** (18.4-27.9)	**52.9** (37.9-74.6)	**107** (74.8-136)	2604
	09-10	**8.37** (7.31-9.59)	**7.44** (6.71-8.42)	**13.5** (11.5-15.7)	**25.9** (21.4-34.6)	**47.7** (34.6-67.8)	2749
Age group							
6-11 years	01-02	**26.6** (24.0-29.4)	**22.8** (20.3-25.0)	**43.3** (33.6-47.1)	**74.7** (69.0-91.9)	**131** (83.0-183)	393
	03-04	**26.6** (21.4-33.0)	**25.3** (17.8-32.4)	**43.6** (34.2-63.2)	**77.1** (63.0-118)	**121** (76.3-435)	342
	05-06	**25.4** (22.5-28.6)	**24.4** (21.4-26.4)	**42.7** (36.0-46.9)	**70.4** (52.8-117)	**136** (77.2-195)	356
	07-08	**20.8** (17.1-25.4)	**18.5** (15.6-21.5)	**35.0** (26.4-46.0)	**84.1** (47.2-137)	**145** (84.8-187)	389
	09-10	**12.7** (11.4-14.2)	**12.6** (11.5-14.1)	**20.8** (16.5-25.1)	**33.3** (29.5-44.1)	**45.5** (33.7-74.5)	415
12-19 years	01-02	**13.5** (12.0-15.2)	**12.0** (10.8-14.3)	**23.4** (20.0-28.5)	**48.4** (39.2-54.9)	**70.5** (55.0-97.2)	742
	03-04	**14.6** (12.6-16.9)	**12.7** (11.6-14.4)	**25.5** (20.7-33.8)	**67.9** (42.3-143)	**153** (61.8-209)	729
	05-06	**17.2** (14.1-20.9)	**15.3** (12.5-18.6)	**32.5** (25.7-41.3)	**84.2** (49.1-147)	**163** (93.1-250)	702
	07-08	**13.2** (10.3-16.7)	**11.1** (9.08-13.5)	**25.9** (18.9-35.6)	**86.3** (39.4-128)	**132** (84.3-203)	401
	09-10	**8.06** (6.57-9.88)	**7.05** (6.16-8.25)	**13.3** (9.53-18.3)	**24.8** (17.8-47.9)	**55.2** (23.6-110)	420
20 years and older	01-02	**11.4** (10.2-12.8)	**10.1** (8.89-11.4)	**17.5** (15.2-21.8)	**38.4** (30.5-52.5)	**84.3** (53.3-128)	1647
	03-04	**12.4** (11.5-13.3)	**11.0** (10.0-12.0)	**20.9** (18.6-22.8)	**53.9** (40.7-70.2)	**109** (88.6-130)	1534
	05-06	**14.8** (13.3-16.4)	**12.4** (11.2-13.5)	**26.7** (23.8-31.3)	**76.3** (61.0-89.9)	**144** (106-170)	1490
	07-08	**11.4** (10.0-13.0)	**10.0** (9.15-11.2)	**20.8** (16.7-25.6)	**47.3** (33.2-65.3)	**87.4** (62.7-136)	1814
	09-10	**8.04** (6.99-9.24)	**7.19** (6.36-8.00)	**12.7** (10.7-14.7)	**24.3** (19.7-34.6)	**47.4** (33.7-67.3)	1914
Gender							
Males	01-02	**11.8** (10.7-13.0)	**10.2** (8.93-11.7)	**21.2** (18.5-23.3)	**46.1** (35.3-58.7)	**84.2** (69.6-104)	1371
	03-04	**12.3** (11.1-13.5)	**11.1** (10.0-12.0)	**21.6** (17.6-26.9)	**59.1** (45.4-72.0)	**120** (72.0-162)	1250
	05-06	**14.7** (12.9-16.7)	**12.6** (10.9-14.3)	**27.1** (23.3-35.6)	**79.5** (59.6-96.9)	**147** (120-190)	1270
	07-08	**10.5** (9.08-12.2)	**9.25** (8.08-10.6)	**18.9** (15.9-23.1)	**46.7** (32.6-62.4)	**86.4** (56.5-144)	1294
	09-10	**8.19** (7.15-9.38)	**7.07** (6.59-7.55)	**13.4** (10.8-15.8)	**30.2** (21.7-41.2)	**52.1** (41.2-82.3)	1399
Females	01-02	**13.5** (11.9-15.2)	**12.0** (10.8-13.7)	**21.5** (18.0-25.6)	**44.8** (36.8-61.6)	**92.3** (61.0-139)	1411
	03-04	**14.9** (13.4-16.7)	**12.7** (11.4-14.2)	**26.6** (21.8-30.6)	**65.6** (48.0-90.1)	**118** (97.0-157)	1355
	05-06	**16.9** (15.1-19.0)	**14.7** (13.2-16.5)	**30.3** (26.6-34.7)	**76.4** (57.6-97.2)	**137** (106-170)	1278
	07-08	**14.2** (12.5-16.0)	**12.5** (11.5-13.8)	**25.9** (21.2-31.0)	**61.1** (40.9-84.1)	**114** (84.3-142)	1310
	09-10	**8.55** (7.37-9.93)	**8.06** (6.76-9.33)	**13.6** (11.6-16.2)	**24.1** (20.0-32.7)	**43.2** (27.7-64.5)	1350

Biomonitoring Summary: http://www.cdc.gov/biomonitoring/DEHP_BiomonitoringSummary.html
Factsheet: http://www.cdc.gov/biomonitoring/Phthalates_FactSheet.html

Urinary Mono-(2-ethyl-5-oxohexyl) phthalate (MEOHP) (creatinine corrected)

Metabolite of Di-2-ethylhexyl phthalate (DEHP)

Geometric mean and selected percentiles of urine concentrations (in µg/g of creatinine) for the U.S. population from the National Health and Nutrition Examination Survey.

	Survey years	Geometric mean (95% conf. interval)	Selected percentiles (95% confidence interval) 50th	75th	90th	95th	Sample size
Race/ethnicity							
Mexican Americans	01-02	**12.4** (11.4-13.5)	**11.0** (10.5-12.3)	**20.9** (18.5-24.4)	**44.6** (33.4-56.2)	**65.9** (53.1-83.1)	677
	03-04	**11.5** (9.81-13.6)	**10.7** (9.04-12.3)	**18.8** (15.6-24.6)	**39.1** (31.8-53.9)	**63.0** (47.2-121)	652
	05-06	**13.3** (11.1-16.1)	**11.4** (9.58-13.6)	**24.0** (19.4-30.4)	**61.2** (45.6-85.9)	**102** (69.9-200)	637
	07-08	**12.3** (10.0-15.0)	**10.6** (8.57-14.1)	**21.7** (16.1-28.7)	**53.1** (32.7-85.2)	**113** (79.7-149)	531
	09-10	**9.50** (8.16-11.1)	**8.72** (8.13-9.61)	**16.6** (12.9-20.5)	**35.4** (24.4-46.6)	**56.7** (40.9-82.3)	566
Non-Hispanic blacks	01-02	**13.8** (12.3-15.4)	**13.1** (12.0-14.2)	**23.9** (20.0-29.3)	**58.3** (45.3-79.7)	**101** (81.3-124)	703
	03-04	**14.3** (13.1-15.6)	**13.3** (11.3-15.5)	**24.8** (21.7-27.7)	**61.2** (46.8-76.6)	**105** (79.7-152)	699
	05-06	**15.3** (13.2-17.8)	**11.6** (9.87-14.6)	**29.1** (24.7-38.5)	**77.1** (61.9-113)	**172** (99.8-251)	678
	07-08	**11.0** (9.94-12.2)	**9.90** (9.16-11.1)	**20.6** (16.6-23.5)	**42.2** (33.8-58.6)	**75.8** (57.2-124)	597
	09-10	**6.92** (5.60-8.57)	**6.49** (5.12-8.24)	**11.4** (9.09-14.1)	**19.2** (14.9-27.3)	**28.1** (19.8-61.1)	516
Non-Hispanic whites	01-02	**12.7** (11.4-14.0)	**11.1** (9.90-12.3)	**20.8** (18.0-23.9)	**45.7** (35.9-64.9)	**96.0** (68.5-161)	1216
	03-04	**13.7** (12.2-15.3)	**12.0** (10.5-12.9)	**24.9** (20.7-28.6)	**69.5** (51.4-95.3)	**124** (90.3-182)	1088
	05-06	**16.3** (14.8-18.0)	**14.0** (12.9-15.7)	**30.8** (27.3-34.8)	**79.3** (66.0-93.8)	**139** (117-163)	1038
	07-08	**12.2** (10.3-14.5)	**11.0** (9.38-13.1)	**22.3** (17.4-30.4)	**51.4** (35.7-77.7)	**107** (74.6-139)	1077
	09-10	**8.53** (7.35-9.90)	**7.62** (6.76-8.54)	**13.7** (11.2-16.2)	**24.9** (20.3-35.7)	**47.8** (32.8-76.4)	1206

Biomonitoring Summary: http://www.cdc.gov/biomonitoring/DEHP_BiomonitoringSummary.html
Factsheet: http://www.cdc.gov/biomonitoring/Phthalates_FactSheet.html

Urinary Mono-(2-ethyl-5-carboxypentyl) phthalate (MECPP)

Metabolite of Di-2-ethylhexyl phthalate (DEHP)

Geometric mean and selected percentiles of urine concentrations (in µg/L) for the U.S. population from the National Health and Nutrition Examination Survey.

	Survey years	Geometric mean (95% conf. interval)	Selected percentiles (95% confidence interval) 50th	75th	90th	95th	Sample size
Total	03-04	**34.7** (31.0-38.9)	**33.0** (29.1-37.4)	**71.8** (61.7-84.8)	**168** (133-240)	**339** (235-506)	2605
	05-06	**38.6** (34.7-42.9)	**35.6** (31.1-40.3)	**79.7** (70.9-92.9)	**211** (180-246)	**386** (311-484)	2548
	07-08	**33.3** (28.7-38.6)	**31.2** (27.1-36.0)	**69.5** (55.8-86.3)	**153** (120-216)	**308** (220-397)	2604
	09-10	**20.7** (18.5-23.3)	**20.4** (18.1-23.5)	**39.9** (34.9-45.5)	**78.4** (67.2-95.5)	**127** (99.5-199)	2749
Age group							
6-11 years	03-04	**58.2** (44.7-75.6)	**51.6** (39.2-67.6)	**112** (71.4-182)	**314** (124-524)	**391** (238-781)	342
	05-06	**57.4** (50.2-65.7)	**53.5** (42.7-67.2)	**94.7** (83.2-108)	**200** (154-247)	**297** (196-548)	356
	07-08	**46.6** (39.2-55.3)	**44.1** (34.9-54.7)	**92.7** (64.7-112)	**156** (117-278)	**357** (176-441)	389
	09-10	**27.7** (24.7-31.2)	**29.4** (25.4-33.2)	**48.5** (39.0-60.2)	**87.1** (64.4-102)	**118** (87.1-202)	415
12-19 years	03-04	**44.6** (36.8-54.0)	**42.7** (38.4-47.6)	**86.5** (67.3-108)	**220** (120-397)	**448** (235-808)	729
	05-06	**52.9** (43.0-65.2)	**46.7** (39.4-61.6)	**114** (85.6-173)	**314** (195-515)	**560** (324-1180)	702
	07-08	**44.3** (35.2-55.9)	**38.9** (28.9-49.3)	**97.3** (64.3-127)	**247** (140-456)	**476** (231-977)	401
	09-10	**26.2** (22.4-30.6)	**25.7** (21.2-30.0)	**50.1** (38.3-57.7)	**90.3** (58.2-162)	**147** (83.9-349)	420
20 years and older	03-04	**31.3** (28.6-34.4)	**29.2** (26.2-33.0)	**63.5** (56.5-73.9)	**157** (130-187)	**312** (199-457)	1534
	05-06	**35.1** (31.5-39.0)	**31.3** (28.1-35.7)	**72.7** (65.4-82.4)	**193** (163-237)	**377** (285-460)	1490
	07-08	**30.7** (26.4-35.8)	**29.2** (24.3-34.4)	**63.2** (51.6-80.0)	**145** (109-206)	**286** (182-378)	1814
	09-10	**19.4** (17.0-22.0)	**18.8** (15.7-22.3)	**37.7** (32.8-44.0)	**76.9** (63.1-92.8)	**126** (96.1-197)	1914
Gender							
Males	03-04	**37.9** (33.1-43.5)	**34.7** (30.0-39.5)	**73.7** (60.8-91.9)	**187** (133-300)	**388** (222-660)	1250
	05-06	**43.6** (38.1-49.8)	**39.7** (31.9-46.2)	**87.0** (76.8-103)	**260** (188-308)	**460** (347-670)	1270
	07-08	**34.4** (29.3-40.5)	**31.5** (27.3-35.7)	**65.1** (52.1-87.4)	**161** (120-217)	**321** (213-422)	1294
	09-10	**23.4** (20.7-26.4)	**23.0** (20.2-25.6)	**44.9** (40.1-51.0)	**87.1** (70.3-110)	**162** (107-288)	1399
Females	03-04	**31.9** (28.1-36.2)	**31.3** (27.5-35.8)	**69.3** (58.9-81.9)	**154** (128-199)	**312** (182-441)	1355
	05-06	**34.3** (30.4-38.6)	**31.7** (28.0-36.6)	**71.0** (63.0-85.3)	**192** (156-217)	**309** (251-386)	1278
	07-08	**32.3** (27.8-37.5)	**31.0** (26.4-38.3)	**73.0** (56.9-90.2)	**147** (112-220)	**297** (185-420)	1310
	09-10	**18.5** (16.2-21.0)	**18.8** (15.8-22.4)	**34.7** (29.3-41.5)	**72.9** (56.3-93.2)	**111** (90.3-146)	1350
Race/ethnicity							
Mexican Americans	03-04	**31.9** (27.1-37.6)	**31.5** (26.8-37.4)	**57.4** (45.9-71.8)	**116** (86.0-162)	**175** (133-355)	652
	05-06	**39.4** (30.3-51.2)	**34.2** (24.1-47.1)	**74.6** (54.0-111)	**220** (124-338)	**394** (222-673)	637
	07-08	**36.7** (30.6-44.0)	**31.3** (27.0-35.7)	**71.9** (54.9-91.7)	**162** (123-241)	**321** (209-477)	531
	09-10	**26.2** (22.5-30.4)	**25.8** (22.3-29.8)	**51.0** (41.3-57.4)	**92.6** (74.5-122)	**160** (113-245)	566
Non-Hispanic blacks	03-04	**42.6** (37.0-49.2)	**38.3** (33.8-46.9)	**82.5** (68.7-103)	**191** (146-246)	**339** (244-468)	699
	05-06	**46.6** (41.3-52.5)	**40.3** (35.6-46.1)	**96.3** (76.6-132)	**256** (208-347)	**455** (328-528)	678
	07-08	**35.0** (31.1-39.4)	**35.6** (30.7-38.8)	**71.6** (59.1-84.5)	**151** (113-192)	**235** (184-338)	597
	09-10	**21.9** (18.6-25.7)	**22.3** (18.2-25.6)	**40.5** (35.7-47.1)	**77.0** (61.1-97.1)	**127** (76.0-268)	516
Non-Hispanic whites	03-04	**33.8** (30.1-37.9)	**32.1** (27.6-37.5)	**72.4** (62.0-87.7)	**167** (133-240)	**354** (220-560)	1088
	05-06	**37.0** (33.4-41.0)	**35.4** (30.4-40.9)	**79.7** (70.0-93.3)	**203** (174-237)	**380** (284-484)	1038
	07-08	**32.0** (26.7-38.3)	**30.4** (24.5-38.0)	**67.6** (52.5-90.9)	**145** (105-244)	**316** (197-476)	1077
	09-10	**19.6** (17.2-22.2)	**19.3** (16.4-23.1)	**39.3** (33.0-45.3)	**75.0** (61.9-95.7)	**120** (95.5-197)	1206

Limit of detection (LOD, see Data Analysis section) for Survey years 03-04, 05-06, 07-08 and 09-10 are 0.3, 0.6, 0.5, and 0.2 respectively.

Biomonitoring Summary: http://www.cdc.gov/biomonitoring/DEHP_BiomonitoringSummary.html
Factsheet: http://www.cdc.gov/biomonitoring/Phthalates_FactSheet.html

Urinary Mono-(2-ethyl-5-carboxypentyl) phthalate (MECPP) (creatinine corrected)

Metabolite of Di-2-ethylhexyl phthalate (DEHP)

Geometric mean and selected percentiles of urine concentrations (in µg/g of creatinine) for the U.S. population from the National Health and Nutrition Examination Survey.

	Survey years	Geometric mean (95% conf. interval)	Selected percentiles (95% confidence interval) 50th	75th	90th	95th	Sample size
Total	03-04	**32.6** (29.6-36.0)	**27.0** (24.3-30.6)	**54.6** (48.0-63.5)	**139** (109-186)	**251** (192-356)	2605
	05-06	**37.6** (33.7-42.0)	**32.2** (29.5-37.0)	**67.5** (58.2-80.8)	**168** (139-209)	**290** (261-328)	2548
	07-08	**33.6** (29.7-38.0)	**29.1** (25.8-32.2)	**58.7** (49.6-68.8)	**138** (109-164)	**233** (178-319)	2604
	09-10	**21.6** (19.0-24.7)	**19.2** (16.8-22.1)	**33.7** (30.0-40.0)	**69.4** (54.0-84.3)	**121** (85.1-184)	2749
Age group							
6-11 years	03-04	**61.5** (49.0-77.2)	**52.2** (41.6-73.8)	**104** (74.2-140)	**210** (111-500)	**372** (192-988)	342
	05-06	**63.2** (55.6-71.9)	**54.2** (48.1-63.6)	**92.8** (82.6-111)	**160** (124-247)	**312** (172-480)	356
	07-08	**57.4** (49.2-66.9)	**49.6** (42.7-61.5)	**94.2** (79.5-122)	**185** (138-294)	**376** (188-404)	389
	09-10	**36.1** (32.4-40.3)	**33.6** (32.3-36.8)	**55.4** (43.9-66.9)	**88.7** (69.2-113)	**121** (90.6-224)	415
12-19 years	03-04	**33.4** (28.7-38.7)	**27.1** (23.9-32.0)	**55.0** (43.8-83.8)	**168** (92.5-289)	**294** (159-387)	729
	05-06	**39.5** (32.5-47.8)	**33.9** (27.9-41.0)	**72.7** (56.9-96.7)	**197** (106-327)	**385** (216-531)	702
	07-08	**34.5** (28.1-42.3)	**28.0** (23.2-35.0)	**65.9** (47.5-85.9)	**159** (90.1-233)	**246** (159-489)	401
	09-10	**21.1** (17.4-25.5)	**18.2** (15.6-20.7)	**33.2** (25.5-43.3)	**64.9** (42.7-158)	**158** (58.4-246)	420
20 years and older	03-04	**30.1** (27.7-32.7)	**25.1** (22.9-27.6)	**49.1** (44.1-55.2)	**126** (101-154)	**237** (191-315)	1534
	05-06	**35.2** (31.2-39.6)	**29.8** (26.1-33.3)	**60.8** (54.2-74.0)	**167** (131-206)	**279** (247-322)	1490
	07-08	**31.5** (27.8-35.8)	**27.8** (24.1-30.8)	**53.1** (45.0-65.4)	**128** (101-155)	**214** (162-319)	1814
	09-10	**20.5** (17.9-23.5)	**18.2** (15.9-20.5)	**31.7** (27.4-36.8)	**65.0** (52.1-80.6)	**118** (81.3-173)	1914
Gender							
Males	03-04	**29.8** (26.8-33.1)	**23.5** (21.4-27.1)	**50.7** (42.2-61.7)	**132** (98.0-191)	**248** (159-422)	1250
	05-06	**35.0** (30.7-39.9)	**29.0** (25.7-32.1)	**69.3** (54.2-82.9)	**172** (141-210)	**301** (249-376)	1270
	07-08	**29.0** (25.3-33.2)	**25.1** (21.7-28.8)	**47.6** (40.8-57.4)	**120** (91.7-157)	**210** (157-331)	1294
	09-10	**21.0** (18.4-23.9)	**18.4** (16.1-20.4)	**33.1** (29.2-38.5)	**70.2** (53.4-94.6)	**125** (92.8-210)	1399
Females	03-04	**35.5** (31.6-40.0)	**30.6** (26.4-35.5)	**58.3** (48.8-71.8)	**144** (108-192)	**251** (192-349)	1355
	05-06	**40.3** (36.2-44.9)	**36.7** (31.6-40.0)	**66.1** (58.2-83.7)	**168** (127-206)	**279** (240-341)	1278
	07-08	**38.7** (34.5-43.3)	**32.8** (30.0-36.4)	**67.8** (58.5-80.0)	**147** (117-176)	**266** (176-379)	1310
	09-10	**22.3** (19.3-25.7)	**20.5** (17.2-23.9)	**34.9** (30.0-41.7)	**67.0** (53.5-80.8)	**104** (80.8-170)	1350
Race/ethnicity							
Mexican Americans	03-04	**28.8** (25.4-32.6)	**24.7** (22.4-26.3)	**46.7** (39.0-56.3)	**94.7** (73.2-137)	**152** (118-238)	652
	05-06	**35.5** (28.7-43.7)	**29.8** (25.5-34.9)	**61.5** (48.4-86.2)	**165** (105-201)	**278** (181-501)	637
	07-08	**35.8** (29.1-44.0)	**30.6** (23.2-38.6)	**64.1** (47.2-84.8)	**151** (92.3-240)	**286** (198-402)	531
	09-10	**26.0** (22.5-30.0)	**23.8** (21.3-27.0)	**40.1** (35.0-52.3)	**88.8** (69.5-104)	**148** (100-203)	566
Non-Hispanic blacks	03-04	**30.3** (27.7-33.2)	**27.0** (23.2-30.7)	**51.1** (41.6-64.0)	**135** (100-161)	**212** (173-252)	699
	05-06	**32.7** (28.9-37.1)	**27.1** (22.4-31.5)	**62.4** (53.1-76.0)	**166** (119-260)	**370** (231-429)	678
	07-08	**27.2** (24.3-30.5)	**23.5** (21.9-26.1)	**49.1** (37.7-58.6)	**103** (85.9-132)	**178** (140-259)	597
	09-10	**15.9** (12.6-19.9)	**14.5** (11.5-18.8)	**26.3** (19.5-32.9)	**48.0** (32.6-66.4)	**70.7** (46.1-209)	516
Non-Hispanic whites	03-04	**33.4** (29.5-37.7)	**27.0** (23.5-31.6)	**56.8** (48.6-69.4)	**145** (109-198)	**294** (193-385)	1088
	05-06	**39.0** (34.9-43.4)	**34.3** (30.3-39.1)	**69.5** (59.5-83.7)	**182** (143-214)	**284** (237-324)	1038
	07-08	**33.4** (28.4-39.3)	**29.2** (25.1-34.6)	**57.7** (46.6-72.4)	**138** (101-166)	**233** (164-338)	1077
	09-10	**22.0** (19.1-25.3)	**19.4** (16.8-22.9)	**34.0** (29.3-42.5)	**67.6** (52.5-84.3)	**113** (81.3-188)	1206

Biomonitoring Summary: http://www.cdc.gov/biomonitoring/DEHP_BiomonitoringSummary.html
Factsheet: http://www.cdc.gov/biomonitoring/Phthalates_FactSheet.html

Urinary Mono-(carboxynonyl) phthalate (MCNP)

Metabolite of Di-isodecyl phthalate (DiDP)

Geometric mean and selected percentiles of urine concentrations (in µg/L) for the U.S. population from the National Health and Nutrition Examination Survey.

	Survey years	Geometric mean (95% conf. interval)	Selected percentiles (95% confidence interval) 50th	75th	90th	95th	Sample size
Total	05-06	**2.73** (2.50-2.98)	**2.70** (2.40-3.00)	**5.30** (4.80-5.90)	**10.2** (8.80-11.9)	**17.5** (14.0-21.4)	2548
	07-08	**2.42** (2.17-2.71)	**2.40** (2.20-2.70)	**4.70** (4.20-5.30)	**9.20** (8.00-10.6)	**16.1** (12.3-21.0)	2604
	09-10	**2.88** (2.58-3.22)	**2.91** (2.51-3.26)	**5.52** (4.83-6.30)	**10.6** (9.14-12.6)	**16.8** (13.9-22.1)	2749
Age group							
6-11 years	05-06	**4.54** (3.94-5.24)	**4.70** (4.00-5.60)	**8.10** (6.80-9.60)	**14.6** (10.8-19.1)	**22.8** (16.7-35.3)	356
	07-08	**3.15** (2.65-3.74)	**3.40** (2.90-3.80)	**5.40** (4.60-6.80)	**9.10** (7.40-12.3)	**14.9** (9.10-24.8)	389
	09-10	**3.45** (2.95-4.03)	**3.59** (3.04-4.34)	**6.39** (5.39-7.41)	**9.65** (8.75-11.2)	**14.5** (10.4-23.2)	415
12-19 years	05-06	**3.18** (2.74-3.68)	**3.30** (2.90-3.80)	**6.00** (4.70-7.20)	**10.3** (7.60-13.7)	**16.5** (11.5-21.5)	702
	07-08	**2.86** (2.59-3.16)	**2.70** (2.40-2.90)	**5.10** (4.30-5.70)	**10.3** (8.90-13.0)	**16.8** (10.7-32.4)	401
	09-10	**3.02** (2.61-3.51)	**3.05** (2.41-3.65)	**5.11** (4.49-6.43)	**11.0** (7.24-14.6)	**16.9** (10.9-32.0)	420
20 years and older	05-06	**2.51** (2.27-2.78)	**2.40** (2.20-2.70)	**4.90** (4.40-5.40)	**9.50** (7.90-11.9)	**17.0** (13.1-21.5)	1490
	07-08	**2.29** (2.04-2.58)	**2.30** (2.00-2.50)	**4.50** (4.00-5.10)	**9.10** (7.60-10.7)	**16.1** (12.2-21.4)	1814
	09-10	**2.81** (2.49-3.16)	**2.80** (2.44-3.09)	**5.52** (4.69-6.45)	**10.7** (8.95-13.5)	**17.3** (13.5-23.7)	1914
Gender							
Males	05-06	**3.16** (2.82-3.54)	**3.00** (2.70-3.50)	**5.90** (5.10-6.90)	**11.0** (8.80-14.0)	**19.5** (14.0-28.0)	1270
	07-08	**2.75** (2.50-3.03)	**2.60** (2.40-2.90)	**5.10** (4.50-5.70)	**9.50** (8.00-12.2)	**19.4** (12.4-29.1)	1294
	09-10	**3.14** (2.80-3.53)	**3.11** (2.72-3.61)	**5.75** (5.13-6.56)	**10.4** (9.14-11.5)	**15.1** (12.5-20.5)	1399
Females	05-06	**2.37** (2.13-2.65)	**2.30** (2.00-2.70)	**4.80** (4.30-5.30)	**9.30** (7.60-11.5)	**14.7** (13.1-18.2)	1278
	07-08	**2.14** (1.84-2.49)	**2.20** (1.80-2.60)	**4.40** (3.80-4.90)	**9.00** (7.30-10.3)	**14.1** (10.8-18.5)	1310
	09-10	**2.66** (2.32-3.04)	**2.60** (2.21-2.98)	**5.21** (4.43-6.17)	**11.6** (8.88-14.8)	**17.5** (14.6-23.4)	1350
Race/ethnicity							
Mexican Americans	05-06	**2.72** (2.40-3.08)	**2.70** (2.40-3.20)	**4.90** (4.30-5.70)	**9.00** (7.00-12.4)	**14.4** (9.00-26.8)	637
	07-08	**2.37** (2.15-2.62)	**2.30** (2.10-2.60)	**4.30** (3.70-5.10)	**8.40** (6.50-10.5)	**12.3** (8.40-16.2)	531
	09-10	**2.35** (2.15-2.57)	**2.51** (2.18-2.69)	**4.35** (3.83-4.83)	**7.72** (6.56-9.53)	**11.0** (8.09-14.1)	566
Non-Hispanic blacks	05-06	**3.18** (2.75-3.67)	**3.20** (2.70-3.80)	**5.90** (4.90-7.30)	**13.0** (9.50-14.6)	**19.2** (14.6-30.5)	678
	07-08	**2.89** (2.64-3.17)	**2.90** (2.50-3.10)	**5.60** (4.80-6.20)	**11.9** (9.10-15.4)	**21.7** (17.9-28.9)	597
	09-10	**3.51** (2.92-4.22)	**3.64** (2.97-4.24)	**6.94** (5.75-8.47)	**13.2** (10.2-17.5)	**20.8** (13.5-41.7)	516
Non-Hispanic whites	05-06	**2.67** (2.39-2.98)	**2.60** (2.30-2.90)	**5.30** (4.70-6.10)	**10.1** (8.20-12.6)	**17.6** (12.6-24.3)	1038
	07-08	**2.42** (2.09-2.81)	**2.40** (2.10-2.70)	**4.70** (4.10-5.60)	**9.10** (7.60-11.6)	**14.9** (10.5-29.1)	1077
	09-10	**2.98** (2.61-3.40)	**2.96** (2.53-3.48)	**5.59** (4.78-6.57)	**10.7** (8.83-14.3)	**16.6** (12.6-23.7)	1206

Limit of detection (LOD, see Data Analysis section) for Survey years 05-06, 07-08, and 09-10 are 0.6, 0.5, and 0.2 respectively.

Biomonitoring Summary: http://www.cdc.gov/biomonitoring/DiDP_BiomonitoringSummary.html
Factsheet: http://www.cdc.gov/biomonitoring/Phthalates_FactSheet.html

Urinary Mono-(carboxynonyl) phthalate (MCNP) (creatinine corrected)

Metabolite of Di-isodecyl phthalate (DiDP)

Geometric mean and selected percentiles of urine concentrations (in µg/g of creatinine) for the U.S. population from the National Health and Nutrition Examination Survey.

	Survey years	Geometric mean (95% conf. interval)	Selected percentiles (95% confidence interval) 50th	75th	90th	95th	Sample size
Total	05-06	**2.66** (2.43-2.91)	**2.48** (2.29-2.71)	**4.48** (4.05-4.85)	**8.67** (7.17-9.71)	**13.2** (10.8-17.5)	2548
	07-08	**2.44** (2.25-2.65)	**2.21** (2.00-2.36)	**4.00** (3.68-4.44)	**8.31** (6.96-9.04)	**12.8** (11.2-15.1)	2604
	09-10	**3.01** (2.74-3.31)	**2.79** (2.48-3.10)	**5.04** (4.47-5.66)	**9.76** (8.41-11.2)	**15.5** (12.8-18.9)	2749
Age group							
6-11 years	05-06	**5.00** (4.45-5.63)	**5.06** (4.18-5.76)	**7.48** (6.70-8.84)	**16.1** (12.5-18.9)	**23.5** (16.1-31.7)	356
	07-08	**3.88** (3.34-4.50)	**3.82** (3.17-4.18)	**6.07** (5.14-7.00)	**11.2** (9.01-13.6)	**18.2** (12.6-27.0)	389
	09-10	**4.49** (4.01-5.03)	**4.33** (3.95-4.82)	**7.30** (6.41-8.54)	**11.2** (9.74-13.6)	**14.9** (12.7-23.1)	415
12-19 years	05-06	**2.37** (2.04-2.75)	**2.18** (1.91-2.52)	**3.64** (2.94-4.55)	**6.26** (5.15-8.70)	**10.7** (7.57-14.1)	702
	07-08	**2.23** (2.07-2.40)	**1.96** (1.83-2.08)	**3.68** (3.08-3.83)	**6.39** (4.88-9.01)	**10.0** (7.26-13.5)	401
	09-10	**2.43** (2.10-2.81)	**2.17** (1.79-2.54)	**3.94** (3.23-4.87)	**7.67** (5.32-11.2)	**12.8** (8.43-14.4)	420
20 years and older	05-06	**2.52** (2.29-2.78)	**2.37** (2.14-2.57)	**4.05** (3.77-4.51)	**7.90** (6.46-9.40)	**12.0** (9.71-16.7)	1490
	07-08	**2.36** (2.15-2.58)	**2.14** (1.91-2.32)	**3.88** (3.44-4.29)	**8.21** (6.67-9.00)	**12.3** (11.0-15.3)	1814
	09-10	**2.97** (2.69-3.29)	**2.72** (2.43-3.03)	**4.93** (4.32-5.62)	**9.68** (7.90-11.6)	**15.6** (11.9-22.5)	1914
Gender							
Males	05-06	**2.53** (2.28-2.82)	**2.36** (2.14-2.56)	**4.38** (3.74-5.04)	**7.41** (6.47-8.88)	**13.0** (9.40-19.6)	1270
	07-08	**2.32** (2.11-2.55)	**2.12** (1.90-2.32)	**3.88** (3.50-4.29)	**7.13** (5.78-9.15)	**11.4** (9.68-15.5)	1294
	09-10	**2.82** (2.55-3.12)	**2.56** (2.28-2.96)	**4.73** (4.19-5.49)	**8.68** (7.21-10.2)	**13.4** (11.2-15.4)	1399
Females	05-06	**2.79** (2.47-3.15)	**2.65** (2.34-2.95)	**4.51** (4.03-5.15)	**9.41** (6.82-11.6)	**13.5** (10.7-19.7)	1278
	07-08	**2.57** (2.33-2.83)	**2.27** (2.03-2.57)	**4.13** (3.78-4.82)	**8.71** (7.41-9.50)	**13.5** (12.0-16.0)	1310
	09-10	**3.20** (2.88-3.57)	**2.98** (2.72-3.28)	**5.40** (4.70-6.23)	**10.6** (8.39-13.8)	**16.9** (12.5-27.3)	1350
Race/ethnicity							
Mexican Americans	05-06	**2.45** (2.13-2.81)	**2.32** (2.14-2.60)	**4.04** (3.64-4.58)	**6.96** (5.73-8.14)	**11.0** (7.89-19.1)	637
	07-08	**2.32** (2.10-2.56)	**2.10** (1.90-2.34)	**4.12** (3.54-4.68)	**6.89** (5.73-7.67)	**9.75** (7.69-11.7)	531
	09-10	**2.33** (2.08-2.62)	**2.12** (1.80-2.66)	**3.80** (3.27-4.58)	**7.02** (5.44-9.66)	**11.3** (8.09-13.0)	566
Non-Hispanic blacks	05-06	**2.24** (1.96-2.55)	**1.97** (1.78-2.37)	**3.60** (3.25-4.24)	**7.82** (6.38-10.4)	**12.1** (10.1-17.4)	678
	07-08	**2.25** (2.05-2.47)	**2.00** (1.88-2.17)	**3.88** (3.50-4.27)	**8.18** (6.25-10.4)	**14.9** (9.31-20.4)	597
	09-10	**2.54** (2.24-2.88)	**2.46** (2.02-2.96)	**4.52** (4.20-5.13)	**8.51** (6.35-10.9)	**11.3** (9.81-16.0)	516
Non-Hispanic whites	05-06	**2.81** (2.51-3.14)	**2.57** (2.33-2.85)	**4.62** (4.10-5.19)	**9.26** (7.00-10.8)	**13.5** (10.3-23.5)	1038
	07-08	**2.53** (2.23-2.86)	**2.26** (1.98-2.57)	**4.11** (3.66-4.70)	**8.51** (6.59-10.2)	**13.3** (10.7-17.6)	1077
	09-10	**3.35** (2.98-3.77)	**3.06** (2.76-3.36)	**5.51** (4.74-6.35)	**10.4** (8.43-13.5)	**15.8** (12.3-24.8)	1206

Biomonitoring Summary: http://www.cdc.gov/biomonitoring/DiDP_BiomonitoringSummary.html
Factsheet: http://www.cdc.gov/biomonitoring/Phthalates_FactSheet.html

Urinary Mono-isononyl phthalate (MiNP)

Metabolite of Di-isononyl phthalate (DiNP)

Geometric mean and selected percentiles of urine concentrations (in µg/L) for the U.S. population from the National Health and Nutrition Examination Survey.**

	Survey years	Geometric mean (95% conf. interval)	Selected percentiles (95% confidence interval) 50th	75th	90th	95th	Sample size
Total	99-00	*	< LOD	< LOD	< LOD	**5.39** (<LOD-21.3)	2541
	01-02	*	< LOD	< LOD	< LOD	< LOD	2782
	03-04	*	< LOD	< LOD	< LOD	**1.54** (<LOD-2.00)	2605
	05-06	*	< LOD	< LOD	**1.69** (<LOD-2.00)	**3.54** (2.31-6.16)	2548
	07-08	*	< LOD	< LOD	**1.54** (<LOD-1.69)	**3.08** (2.16-4.16)	2604
	09-10	*	< LOD	**1.80** (1.49-2.13)	**5.62** (4.48-7.28)	**14.6** (10.7-18.3)	2749
Age group							
6-11 years	99-00	*	< LOD	< LOD	< LOD	**9.55** (<LOD-34.7)	328
	01-02	*	< LOD	< LOD	< LOD	< LOD	393
	03-04	*	< LOD	< LOD	**1.54** (<LOD-2.31)	**2.62** (1.85-4.77)	342
	05-06	*	< LOD	< LOD	**1.69** (<LOD-2.00)	**2.16** (2.00-2.62)	356
	07-08	*	< LOD	< LOD	**1.39** (<LOD-2.00)	**2.16** (1.54-3.85)	389
	09-10	*	< LOD	**1.72** (1.09-2.94)	**5.30** (3.08-8.98)	**13.1** (5.33-21.5)	415
12-19 years	99-00	*	< LOD	< LOD	< LOD	**3.54** (<LOD-31.3)	752
	01-02	*	< LOD	< LOD	< LOD	**1.39** (<LOD-1.69)	742
	03-04	*	< LOD	< LOD	< LOD	**2.16** (<LOD-2.77)	729
	05-06	*	< LOD	< LOD	**2.16** (<LOD-4.31)	**5.39** (2.00-12.2)	702
	07-08	*	< LOD	< LOD	**2.46** (1.39-5.39)	**5.54** (2.46-8.01)	401
	09-10	*	< LOD	**2.20** (1.42-3.96)	**10.7** (4.87-17.1)	**20.6** (14.8-36.1)	420
20 years and older	99-00	*	< LOD	< LOD	< LOD	**4.77** (<LOD-20.3)	1461
	01-02	*	< LOD	< LOD	< LOD	< LOD	1647
	03-04	*	< LOD	< LOD	< LOD	< LOD	1534
	05-06	*	< LOD	< LOD	**1.54** (<LOD-2.00)	**3.54** (2.16-6.47)	1490
	07-08	*	< LOD	< LOD	**1.39** (<LOD-1.69)	**2.77** (1.85-3.85)	1814
	09-10	*	< LOD	**1.76** (1.43-2.11)	**5.44** (4.31-6.64)	**12.9** (8.32-17.9)	1914
Gender							
Males	99-00	*	< LOD	< LOD	< LOD	**7.55** (<LOD-29.1)	1215
	01-02	*	< LOD	< LOD	< LOD	< LOD	1371
	03-04	*	< LOD	< LOD	< LOD	**1.54** (<LOD-2.77)	1250
	05-06	*	< LOD	< LOD	**2.00** (1.39-2.93)	**4.00** (3.23-6.31)	1270
	07-08	*	< LOD	< LOD	**1.54** (<LOD-2.16)	**3.23** (2.31-4.93)	1294
	09-10	*	< LOD	**2.06** (1.74-2.68)	**7.19** (5.62-10.5)	**17.1** (11.7-27.6)	1399
Females	99-00	*	< LOD	< LOD	< LOD	**3.85** (<LOD-10.5)	1326
	01-02	*	< LOD	< LOD	< LOD	**1.39** (<LOD-1.69)	1411
	03-04	*	< LOD	< LOD	< LOD	< LOD	1355
	05-06	*	< LOD	< LOD	**1.39** (<LOD-1.54)	**2.62** (1.85-4.31)	1278
	07-08	*	< LOD	< LOD	**1.39** (<LOD-1.69)	**2.77** (2.00-3.70)	1310
	09-10	*	< LOD	**1.52** (1.12-1.91)	**4.70** (3.80-5.47)	**12.3** (6.61-16.5)	1350

Limit of detection (LOD, see Data Analysis section) for Survey years 99-00, 01-02, 03-04, 05-06, 07-08, and 09-10 are 1.23, 1.23, 1.54, 1.23, 1.23, and 0.77 respectively.
< LOD means less than the limit of detection, which may vary for some chemicals by year and by individual sample.
* Not calculated: proportion of results below limit of detection was too high to provide a valid result.
**To correct for inadequate purity in the analytical standards, all results and LODs have been adjusted by a factor of 1.54 for survey periods 1999-2008 compared with results previously reported.

Biomonitoring Summary: http://www.cdc.gov/biomonitoring/DiNP_BiomonitoringSummary.html
Factsheet: http://www.cdc.gov/biomonitoring/Phthalates_FactSheet.html

Urinary Mono-isononyl phthalate (MiNP)

Metabolite of Di-isononyl phthalate (DiNP)

Geometric mean and selected percentiles of urine concentrations (in µg/L) for the U.S. population from the National Health and Nutrition Examination Survey.**

	Survey years	Geometric mean (95% conf. interval)	Selected percentiles (95% confidence interval) 50th	75th	90th	95th	Sample size
Race/ethnicity							
Mexican Americans	99-00	*	**< LOD**	**< LOD**	**< LOD**	**2.31** (<LOD-4.31)	814
	01-02	*	**< LOD**	**< LOD**	**< LOD**	**1.54** (<LOD-2.16)	677
	03-04	*	**< LOD**	**< LOD**	**< LOD**	**< LOD**	652
	05-06	*	**< LOD**	**< LOD**	**1.54** (<LOD-2.00)	**4.31** (2.00-8.62)	637
	07-08	*	**< LOD**	**< LOD**	**1.39** (<LOD-2.93)	**3.08** (2.00-3.85)	531
	09-10	*	**< LOD**	**1.52** (1.19-1.91)	**5.11** (3.77-7.67)	**12.9** (6.27-22.2)	566
Non-Hispanic blacks	99-00	*	**< LOD**	**< LOD**	**3.54** (<LOD-21.3)	**10.5** (<LOD-46.5)	603
	01-02	*	**< LOD**	**< LOD**	**< LOD**	**1.54** (<LOD-2.62)	703
	03-04	*	**< LOD**	**< LOD**	**< LOD**	**2.00** (1.54-3.08)	699
	05-06	*	**< LOD**	**< LOD**	**2.00** (1.54-2.77)	**5.70** (3.54-8.62)	678
	07-08	*	**< LOD**	**< LOD**	**1.69** (<LOD-2.31)	**3.70** (2.16-5.70)	597
	09-10	*	**< LOD**	**2.14** (1.79-2.56)	**6.05** (4.48-10.5)	**17.1** (8.32-21.9)	516
Non-Hispanic whites	99-00	*	**< LOD**	**< LOD**	**< LOD**	**5.39** (<LOD-24.6)	912
	01-02	*	**< LOD**	**< LOD**	**< LOD**	**< LOD**	1216
	03-04	*	**< LOD**	**< LOD**	**< LOD**	**< LOD**	1088
	05-06	*	**< LOD**	**< LOD**	**1.54** (<LOD-2.16)	**3.23** (1.85-6.47)	1038
	07-08	*	**< LOD**	**< LOD**	**1.39** (<LOD-2.00)	**2.77** (1.69-4.93)	1077
	09-10	*	**< LOD**	**1.83** (1.40-2.53)	**5.67** (4.59-8.07)	**14.7** (10.3-21.5)	1206

Limit of detection (LOD, see Data Analysis section) for Survey years 99-00, 01-02, 03-04, 05-06, 07-08, and 09-10 are 1.23, 1.23, 1.54, 1.23, 1.23, and 0.77 respectively.
< LOD means less than the limit of detection, which may vary for some chemicals by year and by individual sample.
* Not calculated: proportion of results below limit of detection was too high to provide a valid result.
**To correct for inadequate purity in the analytical standards, all results and LODs have been adjusted by a factor of 1.54 for survey periods 1999-2008 compared with results previously reported

Biomonitoring Summary: http://www.cdc.gov/biomonitoring/DiNP_BiomonitoringSummary.html
Factsheet: http://www.cdc.gov/biomonitoring/Phthalates_FactSheet.html

Urinary Mono-isononyl phthalate (MiNP) (creatinine corrected)

Metabolite of Di-isononyl phthalate (DiNP)

Geometric mean and selected percentiles of urine concentrations (in µg/g of creatinine) for the U.S. population from the National Health and Nutrition Examination Survey.**

	Survey years	Geometric mean (95% conf. interval)	Selected percentiles (95% confidence interval) 50th	75th	90th	95th	Sample size
Total	99-00	*	< LOD	< LOD	< LOD	**6.61** (<LOD-12.8)	2541
	01-02	*	< LOD	< LOD	< LOD	< LOD	2782
	03-04	*	< LOD	< LOD	< LOD	**4.50** (<LOD-4.90)	2605
	05-06	*	< LOD	< LOD	**3.20** (<LOD-3.82)	**5.16** (3.99-5.67)	2548
	07-08	*	< LOD	< LOD	**3.35** (<LOD-3.96)	**5.05** (4.15-6.22)	2604
	09-10	*	< LOD	**2.16** (1.91-2.41)	**5.40** (4.21-7.00)	**11.8** (9.59-14.2)	2749
Age group							
6-11 years	99-00	*	< LOD	< LOD	< LOD	**9.24** (<LOD-21.9)	328
	01-02	*	< LOD	< LOD	< LOD	< LOD	393
	03-04	*	< LOD	< LOD	**3.71** (<LOD-4.82)	**5.04** (3.71-7.19)	342
	05-06	*	< LOD	< LOD	**2.37** (<LOD-2.93)	**3.03** (2.54-5.16)	356
	07-08	*	< LOD	< LOD	**3.35** (<LOD-5.33)	**5.33** (3.11-7.26)	389
	09-10	*	< LOD	**2.53** (1.93-3.09)	**6.61** (3.77-9.73)	**10.7** (6.70-21.7)	415
12-19 years	99-00	*	< LOD	< LOD	< LOD	**3.08** (<LOD-11.8)	752
	01-02	*	< LOD	< LOD	< LOD	**3.19** (<LOD-5.13)	742
	03-04	*	< LOD	< LOD	< LOD	**3.03** (<LOD-3.99)	729
	05-06	*	< LOD	< LOD	**2.66** (<LOD-3.59)	**3.99** (2.97-5.28)	702
	07-08	*	< LOD	< LOD	**2.56** (2.10-3.23)	**3.68** (2.90-6.84)	401
	09-10	*	< LOD	**2.14** (1.40-3.40)	**7.58** (4.06-11.2)	**13.2** (10.2-23.4)	420
20 years and older	99-00	*	< LOD	< LOD	< LOD	**7.11** (<LOD-12.4)	1461
	01-02	*	< LOD	< LOD	< LOD	< LOD	1647
	03-04	*	< LOD	< LOD	< LOD	< LOD	1534
	05-06	*	< LOD	< LOD	**3.37** (<LOD-4.19)	**5.17** (4.17-6.11)	1490
	07-08	*	< LOD	< LOD	**3.48** (<LOD-4.15)	**5.45** (4.15-6.39)	1814
	09-10	*	< LOD	**2.12** (1.86-2.35)	**5.00** (3.91-6.67)	**11.7** (8.29-14.5)	1914
Gender							
Males	99-00	*	< LOD	< LOD	< LOD	**6.53** (<LOD-15.7)	1215
	01-02	*	< LOD	< LOD	< LOD	< LOD	1371
	03-04	*	< LOD	< LOD	< LOD	**3.56** (<LOD-4.54)	1250
	05-06	*	< LOD	< LOD	**2.51** (1.96-3.51)	**3.99** (2.79-5.61)	1270
	07-08	*	< LOD	< LOD	**2.42** (<LOD-2.95)	**3.96** (3.23-5.05)	1294
	09-10	*	< LOD	**1.91** (1.59-2.37)	**5.54** (4.14-7.89)	**12.9** (9.90-18.8)	1399
Females	99-00	*	< LOD	< LOD	< LOD	**6.61** (<LOD-11.8)	1326
	01-02	*	< LOD	< LOD	< LOD	**4.20** (<LOD-4.40)	1411
	03-04	*	< LOD	< LOD	< LOD	< LOD	1355
	05-06	*	< LOD	< LOD	**3.67** (<LOD-4.39)	**5.37** (4.88-6.27)	1278
	07-08	*	< LOD	< LOD	**4.08** (<LOD-4.84)	**5.81** (4.36-7.26)	1310
	09-10	*	< LOD	**2.35** (2.01-2.49)	**5.40** (4.13-7.00)	**10.8** (7.58-14.9)	1350

< LOD means less than the limit of detection for the urine levels not corrected for creatinine.
* Not calculated: proportion of results below limit of detection was too high to provide a valid result.
**To correct for inadequate purity in the analytical standards, all results and LODs have been adjusted by a factor of 1.54 for survey periods 1999-2008 compared with results previously reported

Biomonitoring Summary: http://www.cdc.gov/biomonitoring/DiNP_BiomonitoringSummary.html
Factsheet: http://www.cdc.gov/biomonitoring/Phthalates_FactSheet.html

Urinary Mono-isononyl phthalate (MiNP) (creatinine corrected)

Metabolite of Di-isononyl phthalate (DiNP)

Geometric mean and selected percentiles of urine concentrations (in µg/g of creatinine) for the U.S. population from the National Health and Nutrition Examination Survey.**

	Survey years	Geometric mean (95% conf. interval)	Selected percentiles (95% confidence interval) 50th	75th	90th	95th	Sample size
Race/ethnicity							
Mexican Americans	99-00	*	**< LOD**	**< LOD**	**< LOD**	**5.44** (<LOD-7.70)	814
	01-02	*	**< LOD**	**< LOD**	**< LOD**	**3.70** (<LOD-4.20)	677
	03-04	*	**< LOD**	**< LOD**	**< LOD**	**< LOD**	652
	05-06	*	**< LOD**	**< LOD**	**2.71** (<LOD-3.73)	**4.88** (3.73-6.27)	637
	07-08	*	**< LOD**	**< LOD**	**2.81** (<LOD-3.23)	**3.96** (3.23-5.13)	531
	09-10	*	**< LOD**	**1.74** (1.42-2.35)	**4.35** (3.10-9.92)	**11.5** (8.42-19.1)	566
Non-Hispanic blacks	99-00	*	**< LOD**	**< LOD**	**3.13** (<LOD-8.18)	**6.61** (<LOD-22.1)	603
	01-02	*	**< LOD**	**< LOD**	**< LOD**	**2.71** (<LOD-3.30)	703
	03-04	*	**< LOD**	**< LOD**	**< LOD**	**3.37** (2.57-3.85)	699
	05-06	*	**< LOD**	**< LOD**	**2.22** (1.83-2.59)	**4.39** (2.83-6.75)	678
	07-08	*	**< LOD**	**< LOD**	**2.49** (<LOD-3.35)	**4.19** (3.11-4.62)	597
	09-10	*	**< LOD**	**1.51** (1.25-1.80)	**4.00** (2.90-5.61)	**8.97** (5.15-15.1)	516
Non-Hispanic whites	99-00	*	**< LOD**	**< LOD**	**< LOD**	**8.39** (<LOD-15.4)	912
	01-02	*	**< LOD**	**< LOD**	**< LOD**	**< LOD**	1216
	03-04	*	**< LOD**	**< LOD**	**< LOD**	**< LOD**	1088
	05-06	*	**< LOD**	**< LOD**	**3.37** (<LOD-3.99)	**4.88** (3.99-5.41)	1038
	07-08	*	**< LOD**	**< LOD**	**3.60** (<LOD-4.15)	**5.45** (3.96-6.96)	1077
	09-10	*	**< LOD**	**2.41** (2.08-2.70)	**6.00** (4.23-8.05)	**12.9** (10.4-16.6)	1206

< LOD means less than the limit of detection for the urine levels not corrected for creatinine.
* Not calculated: proportion of results below limit of detection was too high to provide a valid result.
**To correct for inadequate purity in the analytical standards, all results and LODs have been adjusted by a factor of 1.54 for survey periods 1999-2008 compared with results previously reported

Biomonitoring Summary: http://www.cdc.gov/biomonitoring/DiNP_BiomonitoringSummary.html
Factsheet: http://www.cdc.gov/biomonitoring/Phthalates_FactSheet.html

Urinary Mono-(carboxyoctyl) phthalate (MCOP)

Metabolite of Di-isononyl phthalate (DiNP)

Geometric mean and selected percentiles of urine concentrations (in µg/L) for the U.S. population from the National Health and Nutrition Examination Survey.

	Survey years	Geometric mean (95% conf. interval)	Selected percentiles (95% confidence interval) 50th	75th	90th	95th	Sample size
Total	05-06	**5.39** (4.68-6.22)	**5.10** (4.40-6.00)	**10.9** (9.10-13.1)	**25.5** (19.1-35.4)	**54.4** (32.5-85.2)	2548
	07-08	**6.79** (5.83-7.92)	**6.40** (5.60-7.40)	**14.9** (12.1-18.2)	**34.6** (25.2-43.8)	**63.0** (41.8-80.0)	2604
	09-10	**12.6** (10.4-15.2)	**11.8** (9.26-14.7)	**33.1** (25.8-40.2)	**83.3** (61.2-113)	**160** (117-191)	2749
Age group							
6-11 years	05-06	**8.52** (7.19-10.1)	**8.90** (7.60-9.90)	**15.0** (11.3-19.3)	**26.4** (19.9-37.3)	**40.3** (26.4-61.6)	356
	07-08	**10.8** (9.25-12.6)	**10.7** (9.10-13.1)	**19.8** (15.8-24.5)	**33.8** (26.1-50.3)	**59.9** (33.5-79.5)	389
	09-10	**15.0** (10.8-20.7)	**14.2** (9.15-20.7)	**34.7** (18.6-56.5)	**74.6** (41.6-135)	**120** (74.6-340)	415
12-19 years	05-06	**6.61** (5.42-8.06)	**6.30** (5.20-7.30)	**11.9** (9.60-16.0)	**28.4** (18.2-58.7)	**63.2** (28.4-106)	702
	07-08	**9.25** (7.33-11.7)	**8.10** (6.80-10.3)	**20.8** (15.4-28.7)	**60.5** (29.6-79.4)	**79.4** (49.7-166)	401
	09-10	**16.1** (12.3-20.9)	**14.5** (11.6-17.0)	**39.8** (22.5-61.2)	**96.8** (66.7-191)	**209** (135-263)	420
20 years and older	05-06	**4.96** (4.27-5.76)	**4.50** (3.90-5.20)	**9.70** (8.20-12.3)	**25.1** (18.2-35.7)	**54.4** (30.8-88.5)	1490
	07-08	**6.15** (5.20-7.29)	**5.80** (5.00-6.60)	**13.2** (10.5-16.8)	**32.0** (23.0-41.8)	**61.2** (38.9-80.0)	1814
	09-10	**11.9** (9.89-14.3)	**11.0** (8.58-13.7)	**32.1** (25.8-39.0)	**83.7** (56.0-114)	**158** (109-188)	1914
Gender							
Males	05-06	**6.24** (5.25-7.42)	**5.70** (4.70-6.90)	**12.1** (10.2-15.1)	**30.8** (19.0-58.8)	**66.4** (33.8-122)	1270
	07-08	**7.14** (6.10-8.36)	**6.60** (5.70-7.70)	**15.6** (12.4-19.3)	**35.7** (24.7-43.2)	**61.2** (40.1-89.1)	1294
	09-10	**14.0** (11.6-16.8)	**13.4** (10.5-15.6)	**36.0** (27.5-45.9)	**92.9** (66.1-134)	**168** (111-217)	1399
Females	05-06	**4.69** (4.14-5.30)	**4.50** (4.00-5.20)	**9.30** (8.20-11.1)	**21.5** (17.5-27.0)	**41.7** (28.1-61.7)	1278
	07-08	**6.48** (5.49-7.65)	**6.20** (5.40-7.40)	**14.3** (12.0-17.0)	**32.6** (24.8-47.0)	**64.8** (47.0-73.3)	1310
	09-10	**11.4** (9.17-14.1)	**10.6** (8.05-13.7)	**29.6** (20.8-38.4)	**70.4** (50.1-113)	**146** (85.2-188)	1350
Race/ethnicity							
Mexican Americans	05-06	**5.77** (4.84-6.87)	**5.20** (4.50-5.70)	**9.90** (8.50-12.0)	**23.6** (14.9-49.7)	**54.4** (23.0-185)	637
	07-08	**6.83** (6.23-7.49)	**6.20** (5.60-6.80)	**12.9** (11.3-14.9)	**29.1** (25.2-33.8)	**52.0** (36.8-61.2)	531
	09-10	**9.96** (7.99-12.4)	**8.59** (6.21-12.1)	**20.3** (15.8-32.6)	**59.3** (44.0-69.5)	**86.2** (63.2-136)	566
Non-Hispanic blacks	05-06	**6.08** (5.60-6.61)	**6.00** (5.10-6.70)	**11.4** (10.4-13.0)	**24.5** (20.3-28.1)	**50.0** (32.0-70.3)	678
	07-08	**7.55** (6.21-9.17)	**7.00** (6.00-8.00)	**16.6** (12.0-22.9)	**40.3** (25.5-51.9)	**60.4** (41.8-97.8)	597
	09-10	**12.6** (9.85-16.1)	**11.0** (7.35-16.2)	**34.5** (26.5-42.1)	**82.4** (63.8-109)	**137** (83.3-188)	516
Non-Hispanic whites	05-06	**5.25** (4.40-6.27)	**5.00** (4.10-6.20)	**11.1** (8.60-13.6)	**25.5** (17.7-43.5)	**56.1** (28.1-88.5)	1038
	07-08	**6.81** (5.48-8.46)	**6.40** (5.20-7.90)	**15.1** (11.0-20.8)	**35.7** (23.2-62.0)	**64.7** (39.4-89.0)	1077
	09-10	**13.4** (10.7-16.8)	**12.9** (10.1-16.1)	**34.8** (27.5-43.4)	**88.9** (64.4-136)	**168** (113-220)	1206

Limit of detection (LOD, see Data Analysis section) for Survey years 05-06, 07-08, and 09-10 are 0.7, 0.7, and 0.2 respectively.

Biomonitoring Summary: http://www.cdc.gov/biomonitoring/DiNP_BiomonitoringSummary.html
Factsheet: http://www.cdc.gov/biomonitoring/Phthalates_FactSheet.html

Urinary Mono-(carboxyoctyl) phthalate (MCOP) (creatinine corrected)

Metabolite of Di-isononyl phthalate (DiNP)

Geometric mean and selected percentiles of urine concentrations (in µg/g of creatinine) for the U.S. population from the National Health and Nutrition Examination Survey.

	Survey years	Geometric mean (95% conf. interval)	Selected percentiles (95% confidence interval) 50th	75th	90th	95th	Sample size
Total	05-06	**5.26** (4.54-6.10)	**4.53** (3.95-5.11)	**9.25** (7.64-11.2)	**24.0** (17.1-30.8)	**40.2** (30.3-55.2)	2548
	07-08	**6.85** (6.05-7.75)	**5.94** (5.19-6.67)	**12.6** (10.8-14.4)	**30.6** (23.4-38.5)	**50.2** (40.0-60.0)	2604
	09-10	**13.1** (11.1-15.5)	**11.6** (9.69-13.8)	**29.3** (23.7-36.2)	**72.3** (55.0-93.8)	**119** (89.1-147)	2749
Age group							
6-11 years	05-06	**9.38** (8.08-10.9)	**8.48** (7.66-10.1)	**14.8** (12.2-18.7)	**30.3** (20.0-38.8)	**40.1** (28.2-57.3)	356
	07-08	**13.3** (11.4-15.5)	**11.6** (9.90-14.2)	**23.1** (16.2-32.5)	**44.2** (27.0-64.1)	**60.3** (44.2-110)	389
	09-10	**19.5** (14.7-25.9)	**18.6** (11.7-26.9)	**35.9** (25.7-56.9)	**87.8** (43.7-132)	**139** (80.1-312)	415
12-19 years	05-06	**4.93** (4.10-5.93)	**4.32** (3.61-4.89)	**7.44** (5.93-11.0)	**19.4** (12.4-31.8)	**34.7** (24.1-58.3)	702
	07-08	**7.20** (5.94-8.73)	**6.28** (4.79-8.08)	**12.6** (10.0-20.7)	**32.7** (22.6-56.9)	**56.9** (31.4-103)	401
	09-10	**12.9** (10.5-15.8)	**11.5** (8.38-15.1)	**26.3** (19.2-37.9)	**74.8** (43.5-120)	**125** (101-167)	420
20 years and older	05-06	**4.97** (4.26-5.81)	**4.17** (3.68-4.77)	**8.58** (7.23-10.6)	**23.4** (15.5-31.8)	**41.1** (29.2-55.9)	1490
	07-08	**6.32** (5.49-7.27)	**5.31** (4.77-6.05)	**11.8** (9.27-13.9)	**27.5** (19.5-36.8)	**47.7** (34.4-60.9)	1814
	09-10	**12.6** (10.7-14.8)	**10.9** (9.42-12.7)	**28.5** (23.3-35.9)	**69.5** (52.5-89.4)	**113** (81.9-153)	1914
Gender							
Males	05-06	**5.01** (4.21-5.97)	**4.29** (3.75-5.03)	**8.44** (7.17-10.9)	**21.6** (15.1-35.4)	**44.6** (25.7-85.9)	1270
	07-08	**6.01** (5.29-6.84)	**5.14** (4.54-6.26)	**11.5** (9.32-13.6)	**24.5** (19.2-31.0)	**43.2** (31.2-54.9)	1294
	09-10	**12.5** (10.6-14.7)	**11.4** (9.29-13.9)	**28.6** (23.5-36.6)	**67.2** (52.0-85.9)	**106** (82.2-138)	1399
Females	05-06	**5.51** (4.75-6.39)	**4.73** (4.23-5.32)	**9.55** (8.26-12.2)	**24.7** (17.3-30.3)	**39.3** (30.3-45.0)	1278
	07-08	**7.76** (6.84-8.81)	**6.52** (5.95-7.39)	**13.7** (11.9-16.5)	**35.3** (26.6-44.2)	**57.7** (43.5-74.4)	1310
	09-10	**13.7** (11.5-16.4)	**11.8** (9.80-14.4)	**29.5** (22.8-37.9)	**75.3** (54.2-110)	**123** (93.8-197)	1350
Race/ethnicity							
Mexican Americans	05-06	**5.19** (4.38-6.14)	**4.50** (3.64-5.29)	**8.04** (7.13-10.1)	**19.5** (12.3-37.7)	**43.6** (20.9-93.4)	637
	07-08	**6.66** (5.97-7.44)	**5.29** (4.69-6.20)	**11.6** (10.4-13.0)	**25.7** (20.9-29.8)	**38.3** (30.8-58.3)	531
	09-10	**9.89** (7.75-12.6)	**8.53** (6.98-10.0)	**20.9** (12.8-28.3)	**51.6** (34.2-72.3)	**89.4** (59.3-125)	566
Non-Hispanic blacks	05-06	**4.28** (3.86-4.74)	**3.67** (3.26-4.09)	**7.60** (6.80-8.81)	**17.1** (13.2-21.5)	**31.8** (22.5-43.7)	678
	07-08	**5.87** (4.82-7.13)	**5.37** (4.16-6.50)	**11.1** (8.68-15.2)	**28.1** (17.7-37.2)	**40.2** (32.0-57.8)	597
	09-10	**9.11** (7.52-11.0)	**7.62** (5.84-10.8)	**19.8** (15.5-26.5)	**47.6** (36.9-57.7)	**77.8** (57.0-104)	516
Non-Hispanic whites	05-06	**5.53** (4.61-6.63)	**4.81** (4.13-5.56)	**10.0** (7.63-13.3)	**25.2** (16.3-34.5)	**39.3** (26.8-59.7)	1038
	07-08	**7.11** (5.91-8.56)	**6.27** (5.09-7.50)	**13.0** (10.4-16.3)	**31.1** (21.3-43.2)	**54.2** (40.2-64.1)	1077
	09-10	**15.1** (12.6-18.1)	**13.5** (11.3-16.4)	**33.6** (27.0-43.5)	**79.2** (60.0-106)	**126** (97.9-186)	1206

Biomonitoring Summary: http://www.cdc.gov/biomonitoring/DiNP_BiomonitoringSummary.html
Factsheet: http://www.cdc.gov/biomonitoring/Phthalates_FactSheet.html

Urinary Mono-methyl phthalate (MMP)

Metabolite of Dimethyl phthalate (DMP)

Geometric mean and selected percentiles of urine concentrations (in µg/L) for the U.S. population from the National Health and Nutrition Examination Survey.

	Survey years	Geometric mean (95% conf. interval)	Selected percentiles (95% confidence interval) 50th	75th	90th	95th	Sample size
Total	01-02	**1.15** (.985-1.34)	**1.50** (1.30-1.80)	**3.30** (2.90-3.70)	**6.00** (5.10-7.50)	**9.80** (8.00-12.5)	2782
	03-04	*	**1.30** (<LOD-1.70)	**3.90** (3.00-4.90)	**9.70** (7.70-12.2)	**16.3** (12.0-20.4)	2605
	05-06	*	**< LOD**	**2.50** (1.90-3.40)	**7.40** (6.10-8.60)	**12.4** (10.8-14.7)	2548
	07-08	*	**< LOD**	**2.20** (1.80-2.70)	**6.50** (4.70-8.30)	**11.3** (8.40-16.3)	2604
	09-10	*	**.940** (.670-1.21)	**2.89** (2.51-3.28)	**6.72** (5.76-8.16)	**12.0** (9.29-15.3)	2749
Age group							
6-11 years	01-02	**1.45** (1.13-1.87)	**1.90** (1.40-2.80)	**4.00** (3.40-4.90)	**7.20** (6.00-8.00)	**11.8** (7.60-20.8)	393
	03-04	**2.10** (1.67-2.63)	**1.70** (1.20-2.40)	**4.30** (2.80-6.40)	**9.50** (6.40-18.8)	**18.8** (9.40-33.4)	342
	05-06	*	**< LOD**	**4.00** (3.30-4.80)	**10.6** (7.40-13.4)	**15.4** (10.6-30.6)	356
	07-08	*	**1.20** (<LOD-1.60)	**3.70** (3.00-5.30)	**8.00** (6.50-8.70)	**12.1** (8.30-35.8)	389
	09-10	**2.13** (1.83-2.47)	**2.36** (1.72-2.92)	**4.83** (3.85-5.61)	**10.8** (8.59-16.7)	**22.3** (11.4-25.8)	415
12-19 years	01-02	**1.59** (1.28-1.96)	**2.10** (1.80-2.50)	**3.90** (3.30-4.70)	**8.50** (5.30-10.5)	**13.0** (9.60-17.8)	742
	03-04	*	**1.50** (1.00-2.20)	**4.40** (3.00-7.00)	**13.3** (7.40-20.9)	**21.8** (17.8-31.5)	729
	05-06	*	**< LOD**	**3.70** (2.70-4.60)	**8.60** (7.00-9.50)	**12.4** (9.30-20.7)	702
	07-08	*	**< LOD**	**2.30** (1.70-3.20)	**6.70** (4.20-8.90)	**12.0** (7.90-17.4)	401
	09-10	**1.45** (1.12-1.89)	**1.37** (.870-1.98)	**3.33** (2.76-4.53)	**7.68** (5.27-11.7)	**12.0** (7.33-19.6)	420
20 years and older	01-02	**1.06** (.904-1.25)	**1.40** (1.10-1.60)	**3.10** (2.50-3.50)	**5.60** (4.60-7.10)	**9.20** (7.40-12.3)	1647
	03-04	*	**1.20** (<LOD-1.50)	**3.80** (2.80-4.90)	**9.30** (7.10-11.8)	**14.3** (10.8-19.9)	1534
	05-06	*	**< LOD**	**2.20** (1.60-2.80)	**6.90** (5.30-8.40)	**11.9** (9.50-14.7)	1490
	07-08	*	**< LOD**	**2.00** (1.60-2.50)	**6.00** (4.20-8.30)	**11.1** (8.10-17.3)	1814
	09-10	*	**.750** (<LOD-1.02)	**2.59** (2.19-2.90)	**6.30** (5.22-7.60)	**10.5** (8.49-14.2)	1914
Gender							
Males	01-02	**1.17** (.962-1.43)	**1.50** (1.30-1.90)	**3.30** (2.90-4.00)	**5.90** (4.80-7.90)	**9.20** (7.10-13.5)	1371
	03-04	*	**1.30** (1.00-1.80)	**4.00** (3.20-5.20)	**10.0** (7.30-13.5)	**17.7** (11.8-20.4)	1250
	05-06	*	**< LOD**	**2.40** (1.80-3.50)	**7.40** (5.70-9.20)	**13.4** (11.0-15.7)	1270
	07-08	*	**< LOD**	**2.40** (1.80-3.20)	**6.90** (4.70-8.70)	**10.3** (8.20-17.2)	1294
	09-10	*	**1.04** (.730-1.40)	**2.92** (2.60-3.47)	**6.53** (5.38-8.66)	**11.4** (8.86-13.9)	1399
Females	01-02	**1.13** (.973-1.31)	**1.40** (1.10-1.70)	**3.30** (2.80-3.70)	**6.40** (5.00-7.80)	**10.3** (8.20-16.2)	1411
	03-04	*	**1.20** (<LOD-1.60)	**3.60** (2.80-4.70)	**9.50** (7.70-12.2)	**15.3** (11.7-22.9)	1355
	05-06	*	**< LOD**	**2.60** (1.80-3.40)	**7.40** (5.10-9.30)	**12.0** (9.30-16.0)	1278
	07-08	*	**< LOD**	**2.10** (1.70-2.50)	**6.20** (4.30-8.20)	**12.0** (7.90-16.1)	1310
	09-10	*	**.840** (.600-1.09)	**2.81** (2.30-3.25)	**6.81** (5.49-8.27)	**13.5** (8.91-16.8)	1350

Limit of detection (LOD, see Data Analysis section) for Survey years 01-02, 03-04, 05-06,07-08, and 09-10 are 0.2, 1.0, 1.1,1.1, and 0.5 respectively.
< LOD means less than the limit of detection, which may vary for some chemicals by year and by individual sample.
* Not calculated: proportion of results below limit of detection was too high to provide a valid result.

Biomonitoring Summary: http://www.cdc.gov/biomonitoring/DMP_BiomonitoringSummary.html
Factsheet: http://www.cdc.gov/biomonitoring/Phthalates_FactSheet.html

Urinary Mono-methyl phthalate (MMP)

Metabolite of Dimethyl phthalate (DMP)

Geometric mean and selected percentiles of urine concentrations (in µg/L) for the U.S. population from the National Health and Nutrition Examination Survey.

	Survey years	Geometric mean (95% conf. interval)	Selected percentiles (95% confidence interval) 50th	75th	90th	95th	Sample size
Race/ethnicity							
Mexican Americans	01-02	**1.21** (1.02-1.45)	**1.60** (1.30-1.70)	**3.30** (2.70-4.00)	**5.60** (4.70-7.30)	**8.60** (6.40-15.2)	677
	03-04	*	**1.40** (1.10-1.80)	**4.00** (2.50-6.30)	**9.60** (7.30-13.4)	**15.0** (11.4-18.8)	652
	05-06	*	**< LOD**	**3.10** (2.20-4.30)	**7.30** (5.90-9.40)	**11.3** (8.50-18.0)	637
	07-08	*	**< LOD**	**2.50** (1.30-3.70)	**6.40** (4.20-11.1)	**12.1** (6.80-16.3)	531
	09-10	**1.36** (1.22-1.51)	**1.26** (.970-1.53)	**3.67** (2.97-4.16)	**8.30** (6.51-9.24)	**12.0** (9.36-18.2)	566
Non-Hispanic blacks	01-02	**1.64** (1.37-1.98)	**2.10** (1.70-2.70)	**4.40** (3.60-5.10)	**8.30** (6.20-10.1)	**11.0** (9.50-13.4)	703
	03-04	**2.16** (1.64-2.84)	**1.70** (1.00-2.80)	**5.10** (3.70-7.00)	**11.4** (7.30-17.3)	**17.8** (10.2-39.4)	699
	05-06	*	**< LOD**	**3.70** (2.40-4.70)	**8.20** (6.10-10.6)	**13.0** (10.6-15.8)	678
	07-08	*	**< LOD**	**2.40** (1.50-3.40)	**6.10** (4.10-8.80)	**10.6** (6.70-16.4)	597
	09-10	**1.71** (1.32-2.21)	**1.89** (1.33-2.66)	**4.11** (3.38-5.12)	**7.87** (5.90-12.5)	**14.2** (8.47-17.0)	516
Non-Hispanic whites	01-02	**1.08** (.906-1.29)	**1.40** (1.10-1.70)	**3.20** (2.50-3.60)	**5.60** (4.70-6.70)	**9.70** (7.10-14.0)	1216
	03-04	*	**1.20** (<LOD-1.60)	**3.60** (2.80-4.80)	**9.70** (7.50-12.2)	**16.5** (12.0-20.4)	1088
	05-06	*	**< LOD**	**2.30** (1.70-2.80)	**7.40** (5.50-8.80)	**12.5** (10.4-15.0)	1038
	07-08	*	**< LOD**	**2.10** (1.70-2.60)	**6.80** (4.30-8.50)	**11.2** (8.00-18.7)	1077
	09-10	*	**.690** (<LOD-.930)	**2.37** (1.95-2.85)	**6.17** (5.23-8.04)	**12.3** (8.97-15.9)	1206

Limit of detection (LOD, see Data Analysis section) for Survey years 01-02, 03-04, 05-06,07-08, and 09-10 are 0.2, 1.0, 1.1,1.1, and 0.5 respectively.
< LOD means less than the limit of detection, which may vary for some chemicals by year and by individual sample.
* Not calculated: proportion of results below limit of detection was too high to provide a valid result.

Biomonitoring Summary: http://www.cdc.gov/biomonitoring/DMP_BiomonitoringSummary.html
Factsheet: http://www.cdc.gov/biomonitoring/Phthalates_FactSheet.html

Urinary Mono-methyl phthalate (MMP) (creatinine corrected)

Metabolite of Dimethyl phthalate (DMP)

Geometric mean and selected percentiles of urine concentrations (in µg/g of creatinine) for the U.S. population from the National Health and Nutrition Examination Survey.

	Survey years	Geometric mean (95% conf. interval)	Selected percentiles (95% confidence interval) 50th	75th	90th	95th	Sample size
Total	01-02	**1.08** (.936-1.25)	**1.33** (1.13-1.55)	**2.62** (2.36-2.97)	**5.00** (3.97-6.02)	**8.00** (6.07-11.0)	2782
	03-04	*	**1.53** (<LOD-1.79)	**3.45** (2.76-4.37)	**7.95** (5.83-11.8)	**13.5** (11.3-18.1)	2605
	05-06	*	**< LOD**	**2.85** (2.52-3.25)	**6.53** (5.49-7.67)	**12.2** (9.74-14.3)	2548
	07-08	*	**< LOD**	**2.79** (2.31-3.25)	**5.68** (4.77-7.36)	**10.8** (8.00-13.6)	2604
	09-10	*	**1.18** (1.03-1.38)	**2.56** (2.29-2.92)	**5.55** (4.81-6.54)	**10.6** (7.70-13.1)	2749
Age group							
6-11 years	01-02	**1.65** (1.28-2.14)	**2.32** (1.72-2.86)	**3.97** (3.27-4.71)	**7.20** (5.99-9.41)	**13.2** (7.60-22.5)	393
	03-04	**2.22** (1.75-2.81)	**1.88** (1.49-2.60)	**4.96** (2.81-6.49)	**9.67** (6.15-14.6)	**16.2** (12.1-34.5)	342
	05-06	*	**< LOD**	**4.59** (3.09-6.35)	**11.0** (8.07-15.0)	**18.6** (10.4-21.9)	356
	07-08	*	**2.05** (<LOD-2.33)	**4.56** (3.85-5.36)	**9.06** (6.63-11.4)	**13.6** (10.4-36.0)	389
	09-10	**2.77** (2.44-3.15)	**2.85** (2.46-3.29)	**5.24** (4.34-6.18)	**14.7** (9.87-16.6)	**20.5** (14.7-27.7)	415
12-19 years	01-02	**1.23** (1.01-1.48)	**1.51** (1.32-1.82)	**2.84** (2.52-3.33)	**5.36** (3.68-6.39)	**7.27** (5.64-11.4)	742
	03-04	*	**1.34** (1.12-1.73)	**3.19** (2.26-4.43)	**7.84** (4.95-12.1)	**13.3** (9.49-19.1)	729
	05-06	*	**< LOD**	**2.80** (2.15-3.55)	**5.65** (4.33-6.52)	**12.4** (6.45-18.9)	702
	07-08	*	**< LOD**	**2.00** (1.63-2.63)	**4.32** (3.10-6.05)	**7.25** (4.77-10.8)	401
	09-10	**1.17** (.907-1.51)	**1.18** (.930-1.49)	**2.24** (1.81-2.62)	**4.17** (3.09-6.47)	**7.33** (4.56-15.9)	420
20 years and older	01-02	**1.00** (.868-1.16)	**1.21** (1.05-1.40)	**2.44** (2.14-2.68)	**4.53** (3.49-6.02)	**7.72** (5.52-11.4)	1647
	03-04	*	**1.52** (<LOD-1.79)	**3.39** (2.69-4.31)	**7.69** (5.40-11.8)	**13.3** (10.1-18.9)	1534
	05-06	*	**< LOD**	**2.76** (2.44-3.12)	**6.09** (5.00-7.75)	**11.2** (9.17-13.4)	1490
	07-08	*	**< LOD**	**2.75** (2.26-3.25)	**5.58** (4.33-7.59)	**10.4** (7.09-14.8)	1814
	09-10	*	**1.09** (<LOD-1.23)	**2.34** (2.02-2.69)	**5.16** (4.25-6.39)	**9.53** (7.07-12.1)	1914
Gender							
Males	01-02	**.954** (.794-1.15)	**1.17** (1.02-1.40)	**2.37** (2.03-2.75)	**4.18** (3.45-5.64)	**6.42** (4.94-9.59)	1371
	03-04	*	**1.35** (1.15-1.52)	**2.95** (2.26-4.09)	**7.11** (5.00-10.2)	**11.8** (9.05-13.3)	1250
	05-06	*	**< LOD**	**2.19** (1.89-2.50)	**5.03** (4.09-6.45)	**10.2** (7.75-13.4)	1270
	07-08	*	**< LOD**	**2.33** (1.92-2.88)	**4.88** (3.85-7.25)	**8.56** (6.25-13.8)	1294
	09-10	*	**1.02** (.850-1.21)	**2.49** (2.00-2.86)	**5.23** (4.25-6.84)	**9.51** (7.20-12.4)	1399
Females	01-02	**1.21** (1.06-1.38)	**1.45** (1.23-1.82)	**2.87** (2.58-3.06)	**5.56** (4.55-7.14)	**10.0** (7.20-15.3)	1411
	03-04	*	**1.83** (<LOD-2.10)	**3.87** (3.04-4.96)	**9.41** (6.41-13.6)	**16.5** (12.5-23.5)	1355
	05-06	*	**< LOD**	**3.47** (3.00-4.11)	**7.67** (6.00-9.75)	**13.2** (9.75-18.7)	1278
	07-08	*	**< LOD**	**3.12** (2.72-3.71)	**6.50** (5.20-8.67)	**11.7** (8.56-14.8)	1310
	09-10	*	**1.35** (1.16-1.57)	**2.76** (2.34-3.18)	**5.77** (4.94-7.22)	**11.3** (8.29-15.5)	1350

< LOD means less than the limit of detection for the urine levels not corrected for creatinine.

* Not calculated: proportion of results below limit of detection was too high to provide a valid result.

Biomonitoring Summary: http://www.cdc.gov/biomonitoring/DMP_BiomonitoringSummary.html

Factsheet: http://www.cdc.gov/biomonitoring/Phthalates_FactSheet.html

Urinary Mono-methyl phthalate (MMP) (creatinine corrected)

Metabolite of Dimethyl phthalate (DMP)

Geometric mean and selected percentiles of urine concentrations (in µg/g of creatinine) for the U.S. population from the National Health and Nutrition Examination Survey.

	Survey years	Geometric mean (95% conf. interval)	Selected percentiles (95% confidence interval) 50th	75th	90th	95th	Sample size
Race/ethnicity							
Mexican Americans	01-02	**1.14** (.975-1.34)	**1.48** (1.30-1.63)	**2.50** (2.20-2.94)	**4.19** (3.77-5.76)	**8.47** (5.58-12.5)	677
	03-04	*	**1.36** (1.15-1.71)	**3.56** (2.45-4.90)	**7.53** (5.62-9.64)	**12.5** (9.44-16.9)	652
	05-06	*	**< LOD**	**2.86** (2.07-3.67)	**6.48** (4.21-8.24)	**11.5** (6.94-21.7)	637
	07-08	*	**< LOD**	**2.59** (2.06-3.39)	**5.65** (3.60-8.13)	**9.40** (6.06-13.9)	531
	09-10	**1.35** (1.19-1.53)	**1.37** (1.13-1.67)	**3.13** (2.61-3.57)	**6.18** (5.33-8.40)	**10.7** (8.33-15.2)	566
Non-Hispanic blacks	01-02	**1.15** (.949-1.40)	**1.39** (1.29-1.67)	**2.70** (2.36-2.95)	**4.87** (4.21-5.93)	**8.09** (5.86-11.0)	703
	03-04	**1.53** (1.21-1.94)	**1.40** (1.07-1.75)	**3.14** (2.26-4.37)	**7.50** (4.29-14.6)	**13.7** (7.70-20.7)	699
	05-06	*	**< LOD**	**2.59** (1.87-3.28)	**5.20** (4.53-6.29)	**8.50** (6.79-10.3)	678
	07-08	*	**< LOD**	**2.10** (1.69-2.44)	**4.22** (2.94-5.74)	**7.36** (4.88-8.79)	597
	09-10	**1.24** (.983-1.56)	**1.35** (1.08-1.58)	**2.69** (2.22-3.23)	**4.94** (4.03-6.54)	**8.18** (5.74-15.5)	516
Non-Hispanic whites	01-02	**1.07** (.914-1.26)	**1.30** (1.05-1.58)	**2.62** (2.32-2.99)	**5.22** (3.68-6.82)	**8.26** (6.07-12.6)	1216
	03-04	*	**1.56** (<LOD-1.89)	**3.50** (2.71-4.67)	**8.10** (6.00-11.9)	**13.6** (11.3-18.9)	1088
	05-06	*	**< LOD**	**2.98** (2.60-3.39)	**7.19** (5.58-9.51)	**13.4** (10.4-16.6)	1038
	07-08	*	**< LOD**	**2.89** (2.26-3.67)	**6.01** (4.63-8.57)	**11.7** (7.47-15.6)	1077
	09-10	*	**1.13** (<LOD-1.29)	**2.48** (2.06-2.80)	**5.38** (4.44-6.76)	**10.9** (7.68-13.8)	1206

< LOD means less than the limit of detection for the urine levels not corrected for creatinine.
* Not calculated: proportion of results below limit of detection was too high to provide a valid result.

Biomonitoring Summary: http://www.cdc.gov/biomonitoring/DMP_BiomonitoringSummary.html
Factsheet: http://www.cdc.gov/biomonitoring/Phthalates_FactSheet.html

Urinary Mono-(3-carboxypropyl) phthalate (MCPP)

Metabolite of Di-n-octyl phthalate (DOP)

Geometric mean and selected percentiles of urine concentrations (in µg/L) for the U.S. population from the National Health and Nutrition Examination Survey.

	Survey years	Geometric mean (95% conf. interval)	Selected percentiles (95% confidence interval) 50th	75th	90th	95th	Sample size
Total	01-02	**2.75** (2.49-3.04)	**3.10** (2.80-3.30)	**5.70** (5.10-6.40)	**10.0** (8.90-11.3)	**14.6** (12.7-17.5)	2782
	03-04	**2.91** (2.79-3.04)	**3.10** (3.00-3.30)	**5.70** (5.20-6.10)	**10.2** (9.20-11.8)	**15.3** (13.8-16.2)	2605
	05-06	**2.05** (1.87-2.26)	**2.10** (1.90-2.40)	**4.40** (4.00-4.80)	**8.90** (7.60-10.1)	**13.1** (10.6-17.4)	2548
	07-08	**2.76** (2.52-3.04)	**2.70** (2.50-3.00)	**5.80** (5.20-6.50)	**11.1** (9.70-13.1)	**18.1** (15.4-22.3)	2604
	09-10	**3.02** (2.58-3.53)	**3.10** (2.57-3.65)	**6.44** (5.44-7.70)	**13.4** (11.4-16.5)	**22.3** (19.5-26.2)	2749
Age group							
6-11 years	01-02	**6.11** (5.46-6.84)	**6.70** (5.40-7.50)	**11.8** (10.2-13.3)	**20.1** (17.8-23.1)	**24.7** (22.2-31.6)	393
	03-04	**6.86** (5.80-8.11)	**7.10** (6.00-8.90)	**12.7** (10.4-16.4)	**22.0** (17.2-27.7)	**29.2** (22.3-36.6)	342
	05-06	**4.82** (4.09-5.68)	**4.90** (4.30-5.90)	**8.50** (6.70-10.4)	**13.1** (10.3-17.9)	**17.9** (12.6-34.5)	356
	07-08	**6.01** (4.80-7.53)	**6.40** (5.10-8.00)	**11.3** (8.40-15.9)	**20.3** (13.2-27.3)	**23.9** (19.1-34.1)	389
	09-10	**4.54** (3.74-5.52)	**4.86** (3.71-6.49)	**9.08** (7.14-11.2)	**14.4** (10.8-20.3)	**20.3** (14.3-51.9)	415
12-19 years	01-02	**3.71** (3.18-4.33)	**4.00** (3.40-4.70)	**7.10** (6.10-8.10)	**11.5** (9.50-12.7)	**14.1** (11.8-19.0)	742
	03-04	**3.72** (3.33-4.15)	**4.10** (3.50-4.60)	**7.20** (5.80-8.40)	**11.0** (9.50-13.6)	**15.4** (13.4-17.9)	729
	05-06	**2.96** (2.52-3.46)	**3.10** (2.50-3.60)	**5.90** (4.80-7.30)	**11.8** (9.10-14.5)	**17.0** (12.7-21.5)	702
	07-08	**3.81** (3.15-4.61)	**4.00** (3.20-4.70)	**8.20** (6.90-9.40)	**13.3** (11.1-17.1)	**24.1** (13.8-25.6)	401
	09-10	**3.65** (2.88-4.64)	**3.74** (2.90-4.74)	**7.16** (5.48-9.32)	**15.9** (10.8-25.8)	**32.3** (20.9-54.3)	420
20 years and older	01-02	**2.37** (2.11-2.66)	**2.60** (2.20-3.00)	**4.80** (4.30-5.40)	**8.10** (7.20-9.50)	**12.0** (10.1-14.2)	1647
	03-04	**2.53** (2.41-2.66)	**2.80** (2.60-2.90)	**4.90** (4.50-5.20)	**8.10** (7.50-8.90)	**13.2** (10.8-14.3)	1534
	05-06	**1.76** (1.60-1.93)	**1.70** (1.60-2.00)	**3.60** (3.20-4.10)	**7.10** (6.10-8.40)	**11.3** (9.60-13.6)	1490
	07-08	**2.41** (2.18-2.67)	**2.50** (2.20-2.60)	**5.00** (4.60-5.50)	**9.60** (8.00-11.1)	**15.6** (12.9-19.9)	1814
	09-10	**2.80** (2.40-3.28)	**2.88** (2.42-3.39)	**6.00** (5.04-7.15)	**13.1** (10.8-16.4)	**21.8** (18.7-27.9)	1914
Gender							
Males	01-02	**2.89** (2.64-3.17)	**3.10** (2.80-3.40)	**5.70** (5.00-6.80)	**9.90** (8.70-12.0)	**14.2** (12.4-18.1)	1371
	03-04	**3.25** (3.01-3.52)	**3.30** (3.00-3.60)	**6.00** (5.60-6.80)	**11.8** (10.1-13.6)	**16.0** (14.2-20.0)	1250
	05-06	**2.32** (2.11-2.54)	**2.40** (2.00-2.70)	**4.70** (4.30-5.20)	**9.60** (7.90-11.8)	**14.5** (11.5-22.3)	1270
	07-08	**3.02** (2.70-3.39)	**2.90** (2.60-3.30)	**5.80** (5.10-6.60)	**12.3** (10.1-15.3)	**21.3** (16.7-28.5)	1294
	09-10	**3.37** (2.86-3.96)	**3.42** (2.91-4.04)	**7.09** (6.04-8.32)	**15.5** (12.9-18.7)	**23.6** (19.9-33.0)	1399
Females	01-02	**2.62** (2.29-2.99)	**3.00** (2.50-3.30)	**5.70** (5.00-6.30)	**10.0** (8.50-11.5)	**14.7** (11.2-20.3)	1411
	03-04	**2.63** (2.44-2.83)	**3.00** (2.60-3.20)	**5.20** (4.70-5.80)	**9.20** (8.20-10.3)	**13.4** (11.0-16.2)	1355
	05-06	**1.83** (1.59-2.10)	**1.80** (1.60-2.10)	**4.00** (3.30-4.60)	**8.00** (6.60-9.50)	**12.1** (9.50-14.7)	1278
	07-08	**2.54** (2.30-2.79)	**2.60** (2.30-3.00)	**5.90** (5.00-6.80)	**10.5** (9.10-12.3)	**15.4** (13.3-21.5)	1310
	09-10	**2.72** (2.29-3.22)	**2.79** (2.25-3.40)	**5.78** (4.67-7.20)	**12.6** (9.86-15.9)	**20.7** (15.9-29.7)	1350

Limit of detection (LOD, see Data Analysis section) for Survey years 01-02, 03-04, 05-06,07-08, and 09-10 are 0.4, 0.2, 0.2,0.2, and 0.2 respectively.

Biomonitoring Summary: http://www.cdc.gov/biomonitoring/DOP_BiomonitoringSummary.html
Factsheet: http://www.cdc.gov/biomonitoring/Phthalates_FactSheet.html

Urinary Mono-(3-carboxypropyl) phthalate (MCPP)

Metabolite of Di-n-octyl phthalate (DOP) and of several high molecular weight phthalates

Geometric mean and selected percentiles of urine concentrations (in µg/L) for the U.S. population from the National Health and Nutrition Examination Survey.

	Survey years	Geometric mean (95% conf. interval)	Selected percentiles (95% confidence interval) 50th	75th	90th	95th	Sample size
Race/ethnicity							
Mexican Americans	01-02	**2.67** (2.26-3.16)	**3.00** (2.30-3.50)	**5.30** (4.40-5.90)	**9.20** (7.30-12.4)	**13.6** (10.4-18.7)	677
	03-04	**3.08** (2.86-3.32)	**3.10** (2.80-3.40)	**5.50** (4.80-6.10)	**9.90** (7.90-12.6)	**13.7** (11.5-19.8)	652
	05-06	**2.24** (1.71-2.94)	**2.20** (1.60-3.10)	**4.50** (3.30-6.50)	**9.40** (6.50-13.1)	**14.1** (9.90-25.4)	637
	07-08	**2.66** (2.37-3.00)	**2.70** (2.40-3.20)	**5.00** (4.30-5.70)	**8.80** (7.60-11.2)	**14.5** (11.5-17.8)	531
	09-10	**2.31** (1.95-2.74)	**2.32** (1.92-2.93)	**5.11** (4.44-5.58)	**8.95** (7.39-11.3)	**14.8** (11.1-23.2)	566
Non-Hispanic blacks	01-02	**3.09** (2.81-3.40)	**3.30** (2.90-3.60)	**6.30** (5.50-6.50)	**10.9** (9.10-13.0)	**15.1** (13.5-22.4)	703
	03-04	**3.30** (3.01-3.62)	**3.20** (2.90-3.60)	**6.10** (5.50-6.90)	**11.6** (9.30-13.4)	**20.1** (13.6-25.5)	699
	05-06	**2.28** (2.03-2.57)	**2.40** (2.10-2.80)	**4.50** (3.80-5.60)	**8.70** (7.10-10.3)	**13.3** (10.4-16.5)	678
	07-08	**2.94** (2.50-3.44)	**2.90** (2.50-3.40)	**5.80** (4.90-6.80)	**12.2** (8.50-17.1)	**21.1** (13.7-42.4)	597
	09-10	**3.38** (2.66-4.31)	**3.35** (2.49-4.56)	**6.92** (5.86-8.97)	**13.6** (10.2-21.0)	**22.9** (17.9-28.7)	516
Non-Hispanic whites	01-02	**2.72** (2.40-3.08)	**3.00** (2.60-3.30)	**5.80** (4.80-6.80)	**10.3** (8.90-11.9)	**15.8** (12.6-19.5)	1216
	03-04	**2.87** (2.73-3.02)	**3.10** (2.90-3.30)	**5.60** (5.00-6.00)	**10.1** (9.10-12.0)	**15.2** (13.4-16.1)	1088
	05-06	**1.97** (1.81-2.15)	**2.00** (1.80-2.20)	**4.20** (3.80-4.60)	**8.70** (6.80-10.3)	**13.1** (10.0-17.5)	1038
	07-08	**2.84** (2.51-3.21)	**2.90** (2.50-3.40)	**6.10** (5.30-7.00)	**11.4** (9.70-14.0)	**18.1** (14.0-24.1)	1077
	09-10	**3.17** (2.65-3.79)	**3.16** (2.60-3.87)	**6.86** (5.72-8.32)	**14.5** (12.6-17.8)	**23.6** (18.9-35.7)	1206

Limit of detection (LOD, see Data Analysis section) for Survey years 01-02, 03-04, 05-06,07-08, and 09-10 are 0.4, 0.2, 0.2,0.2, and 0.2 respectively.

Biomonitoring Summary: http://www.cdc.gov/biomonitoring/DOP_BiomonitoringSummary.html
Factsheet: http://www.cdc.gov/biomonitoring/Phthalates_FactSheet.html

Urinary Mono-(3-carboxypropyl) phthalate (MCPP) (creatinine corrected)

Metabolite of Di-n-octyl phthalate (DOP)

Geometric mean and selected percentiles of urine concentrations (in µg/g of creatinine) for the U.S. population from the National Health and Nutrition Examination Survey.

	Survey years	Geometric mean (95% conf. interval)	Selected percentiles (95% confidence interval) 50th	75th	90th	95th	Sample size
Total	01-02	**2.58** (2.35-2.83)	**2.47** (2.25-2.76)	**4.08** (3.87-4.48)	**7.24** (6.58-8.00)	**11.4** (10.0-12.5)	2782
	03-04	**2.74** (2.56-2.93)	**2.60** (2.42-2.79)	**4.39** (3.94-4.86)	**7.70** (6.65-8.60)	**10.7** (9.53-11.9)	2605
	05-06	**2.00** (1.82-2.20)	**1.86** (1.67-2.06)	**3.55** (3.14-4.00)	**6.80** (5.77-7.95)	**10.3** (8.68-12.7)	2548
	07-08	**2.79** (2.63-2.96)	**2.53** (2.37-2.70)	**4.76** (4.33-5.16)	**9.70** (8.52-10.9)	**14.8** (12.7-17.0)	2604
	09-10	**3.15** (2.77-3.59)	**2.94** (2.55-3.38)	**5.71** (4.88-6.72)	**11.8** (10.5-13.5)	**18.8** (16.0-21.9)	2749
Age group							
6-11 years	01-02	**6.96** (6.29-7.70)	**7.08** (5.83-7.87)	**11.2** (9.15-14.0)	**20.7** (15.5-22.3)	**26.4** (20.7-27.0)	393
	03-04	**7.25** (6.43-8.18)	**7.06** (5.93-7.59)	**11.2** (9.38-12.4)	**19.1** (14.4-25.6)	**26.9** (19.3-29.0)	342
	05-06	**5.31** (4.57-6.17)	**5.06** (4.57-5.79)	**8.78** (7.50-10.0)	**13.7** (10.2-21.3)	**21.3** (13.2-36.7)	356
	07-08	**7.41** (5.87-9.34)	**6.81** (5.50-9.05)	**11.6** (9.43-14.1)	**20.2** (12.7-39.2)	**30.4** (16.5-68.9)	389
	09-10	**5.92** (5.09-6.88)	**5.94** (5.09-6.92)	**9.47** (8.38-10.3)	**15.5** (10.7-23.7)	**22.7** (13.6-47.2)	415
12-19 years	01-02	**2.86** (2.52-3.25)	**2.94** (2.50-3.36)	**4.59** (4.03-5.23)	**6.69** (6.30-7.25)	**9.55** (8.03-10.7)	742
	03-04	**2.78** (2.54-3.05)	**2.75** (2.53-2.99)	**4.55** (4.05-5.15)	**6.61** (6.15-7.20)	**8.24** (7.00-10.2)	729
	05-06	**2.20** (1.90-2.55)	**2.07** (1.76-2.46)	**3.67** (2.99-4.39)	**6.84** (5.35-8.67)	**9.67** (7.12-11.4)	702
	07-08	**2.96** (2.59-3.38)	**2.95** (2.51-3.62)	**5.04** (4.33-6.00)	**8.18** (6.75-10.4)	**10.9** (9.38-15.1)	401
	09-10	**2.94** (2.40-3.60)	**2.67** (2.26-3.28)	**4.68** (4.04-5.56)	**10.8** (7.30-17.8)	**21.4** (15.6-29.9)	420
20 years and older	01-02	**2.24** (2.03-2.47)	**2.20** (2.00-2.40)	**3.51** (3.11-3.95)	**5.39** (4.82-6.18)	**7.71** (6.71-9.28)	1647
	03-04	**2.43** (2.27-2.61)	**2.38** (2.19-2.56)	**3.70** (3.33-4.08)	**6.09** (5.38-7.06)	**8.79** (7.84-9.56)	1534
	05-06	**1.76** (1.60-1.94)	**1.67** (1.47-1.86)	**2.96** (2.60-3.38)	**5.55** (4.61-6.46)	**8.46** (7.00-10.3)	1490
	07-08	**2.48** (2.33-2.64)	**2.26** (2.14-2.36)	**4.00** (3.68-4.39)	**8.03** (7.11-9.09)	**12.7** (11.1-14.8)	1814
	09-10	**2.97** (2.60-3.39)	**2.75** (2.38-3.22)	**5.25** (4.45-6.31)	**11.3** (9.63-13.2)	**18.1** (15.4-21.6)	1914
Gender							
Males	01-02	**2.35** (2.17-2.56)	**2.20** (2.02-2.42)	**3.76** (3.45-4.20)	**7.17** (6.27-8.06)	**11.5** (9.28-15.1)	1371
	03-04	**2.55** (2.39-2.72)	**2.36** (2.22-2.47)	**4.14** (3.52-4.86)	**7.84** (6.80-8.79)	**11.6** (10.2-13.5)	1250
	05-06	**1.86** (1.70-2.03)	**1.70** (1.53-1.88)	**3.33** (2.92-3.70)	**6.70** (5.59-8.33)	**10.7** (8.72-14.2)	1270
	07-08	**2.54** (2.34-2.76)	**2.32** (2.10-2.50)	**4.17** (3.80-4.81)	**8.91** (7.37-11.2)	**14.7** (12.9-17.5)	1294
	09-10	**3.02** (2.61-3.49)	**2.82** (2.43-3.36)	**5.51** (4.70-6.36)	**10.9** (9.84-12.1)	**18.5** (13.7-23.7)	1399
Females	01-02	**2.81** (2.48-3.18)	**2.76** (2.46-3.02)	**4.39** (3.97-4.92)	**7.66** (6.17-8.69)	**11.0** (8.62-15.9)	1411
	03-04	**2.93** (2.68-3.20)	**2.89** (2.58-3.23)	**4.53** (4.09-5.00)	**7.58** (6.44-8.57)	**10.0** (8.60-11.6)	1355
	05-06	**2.15** (1.88-2.45)	**2.00** (1.72-2.44)	**3.77** (3.15-4.47)	**6.90** (5.62-8.43)	**10.0** (8.14-12.5)	1278
	07-08	**3.04** (2.84-3.25)	**2.80** (2.50-3.11)	**5.08** (4.64-5.52)	**10.3** (8.67-11.3)	**15.0** (11.8-17.8)	1310
	09-10	**3.28** (2.88-3.74)	**3.00** (2.58-3.46)	**5.87** (4.96-7.05)	**13.0** (10.3-14.8)	**19.1** (15.4-29.5)	1350

Biomonitoring Summary: http://www.cdc.gov/biomonitoring/DOP_BiomonitoringSummary.html
Factsheet: http://www.cdc.gov/biomonitoring/Phthalates_FactSheet.html

Urinary Mono-(3-carboxypropyl) phthalate (MCPP) (creatinine corrected)

Metabolite of Di-n-octyl phthalate (DOP) and of several high molecular weight phthalates

Geometric mean and selected percentiles of urine concentrations (in µg/g of creatinine) for the U.S. population from the National Health and Nutrition Examination Survey.

	Survey years	Geometric mean (95% conf. interval)	Selected percentiles (95% confidence interval) 50th	75th	90th	95th	Sample size
Race/ethnicity							
Mexican Americans	01-02	**2.52** (2.21-2.88)	**2.37** (2.07-2.73)	**4.29** (3.73-5.00)	**7.36** (5.58-10.3)	**11.4** (8.36-14.5)	677
	03-04	**2.78** (2.56-3.02)	**2.63** (2.30-2.96)	**4.32** (3.66-4.96)	**8.14** (6.72-10.3)	**12.8** (9.37-17.1)	652
	05-06	**2.02** (1.62-2.51)	**1.79** (1.42-2.53)	**3.85** (2.74-5.22)	**7.00** (5.40-8.82)	**10.2** (7.64-16.4)	637
	07-08	**2.60** (2.26-2.99)	**2.45** (2.05-3.10)	**4.31** (3.49-5.22)	**8.31** (6.67-9.76)	**12.9** (9.50-15.5)	531
	09-10	**2.29** (1.92-2.74)	**2.08** (1.76-2.60)	**4.29** (3.61-5.05)	**9.02** (7.16-11.4)	**13.7** (10.9-17.8)	566
Non-Hispanic blacks	01-02	**2.17** (2.02-2.33)	**2.07** (1.88-2.28)	**3.68** (3.25-4.07)	**6.73** (5.46-7.70)	**10.0** (8.27-13.1)	703
	03-04	**2.34** (2.13-2.58)	**2.17** (1.99-2.45)	**3.96** (3.33-4.43)	**6.93** (6.03-8.80)	**13.4** (9.32-15.9)	699
	05-06	**1.61** (1.42-1.81)	**1.58** (1.38-1.77)	**2.76** (2.27-3.37)	**5.63** (4.33-7.59)	**8.68** (6.86-10.4)	678
	07-08	**2.28** (1.96-2.65)	**2.11** (1.72-2.35)	**3.91** (3.33-4.56)	**7.97** (5.58-12.8)	**16.4** (8.21-57.0)	597
	09-10	**2.45** (2.02-2.97)	**2.26** (1.81-2.84)	**4.14** (3.35-5.19)	**8.02** (6.24-11.3)	**14.7** (9.92-19.7)	516
Non-Hispanic whites	01-02	**2.69** (2.42-3.00)	**2.57** (2.25-2.94)	**4.19** (3.87-4.79)	**7.63** (6.58-8.45)	**11.8** (10.0-14.7)	1216
	03-04	**2.83** (2.60-3.09)	**2.65** (2.43-2.96)	**4.55** (3.90-5.16)	**7.79** (6.59-8.79)	**10.6** (9.43-11.3)	1088
	05-06	**2.08** (1.92-2.24)	**1.95** (1.76-2.12)	**3.60** (3.26-4.00)	**6.47** (5.56-7.93)	**10.3** (7.95-13.1)	1038
	07-08	**2.96** (2.72-3.23)	**2.70** (2.50-2.93)	**5.06** (4.35-5.77)	**10.3** (8.61-11.5)	**15.1** (12.3-19.3)	1077
	09-10	**3.57** (3.12-4.07)	**3.28** (2.81-3.73)	**6.33** (5.25-7.39)	**13.2** (11.1-14.9)	**21.6** (16.6-26.2)	1206

Biomonitoring Summary: http://www.cdc.gov/biomonitoring/DOP_BiomonitoringSummary.html
Factsheet: http://www.cdc.gov/biomonitoring/Phthalates_FactSheet.html

Urinary Mono-*n*-octyl phthalate (MOP)

Metabolite of Di-n-octyl phthalate (DOP)

Geometric mean and selected percentiles of urine concentrations (in µg/L) for the U.S. population from the National Health and Nutrition Examination Survey.**

	Survey years	Geometric mean (95% conf. interval)	Selected percentiles (95% confidence interval) 50th	75th	90th	95th	Sample size
Total	99-00	*	< LOD	< LOD	**2.69** (2.02-3.36)	**4.87** (3.86-5.71)	2541
	01-02	*	< LOD	< LOD	< LOD	< LOD	2782
	03-04	*	< LOD	< LOD	< LOD	< LOD	2605
	05-06	*	< LOD	< LOD	< LOD	< LOD	2548
	07-08	*	< LOD	< LOD	< LOD	< LOD	2604
	09-10	*	< LOD	< LOD	< LOD	< LOD	2749
Age group							
6-11 years	99-00	*	< LOD	< LOD	**3.70** (<LOD-5.88)	**5.38** (2.86-8.40)	328
	01-02	*	< LOD	< LOD	< LOD	< LOD	393
	03-04	*	< LOD	< LOD	< LOD	< LOD	342
	05-06	*	< LOD	< LOD	< LOD	< LOD	356
	07-08	*	< LOD	< LOD	< LOD	< LOD	389
	09-10	*	< LOD	< LOD	< LOD	< LOD	415
12-19 years	99-00	*	< LOD	< LOD	**2.86** (<LOD-4.20)	**4.70** (3.36-7.06)	752
	01-02	*	< LOD	< LOD	< LOD	< LOD	742
	03-04	*	< LOD	< LOD	< LOD	< LOD	729
	05-06	*	< LOD	< LOD	< LOD	< LOD	702
	07-08	*	< LOD	< LOD	< LOD	< LOD	401
	09-10	*	< LOD	< LOD	< LOD	< LOD	420
20 years and older	99-00	*	< LOD	< LOD	**2.52** (1.85-3.19)	**4.87** (3.53-5.88)	1461
	01-02	*	< LOD	< LOD	< LOD	< LOD	1647
	03-04	*	< LOD	< LOD	< LOD	< LOD	1534
	05-06	*	< LOD	< LOD	< LOD	< LOD	1490
	07-08	*	< LOD	< LOD	< LOD	< LOD	1814
	09-10	*	< LOD	< LOD	< LOD	< LOD	1914
Gender							
Males	99-00	*	< LOD	< LOD	**2.69** (1.85-3.70)	**4.70** (3.36-5.88)	1215
	01-02	*	< LOD	< LOD	< LOD	< LOD	1371
	03-04	*	< LOD	< LOD	< LOD	< LOD	1250
	05-06	*	< LOD	< LOD	< LOD	< LOD	1270
	07-08	*	< LOD	< LOD	< LOD	< LOD	1294
	09-10	*	< LOD	< LOD	< LOD	< LOD	1399
Females	99-00	*	< LOD	< LOD	**2.52** (2.02-3.53)	**5.21** (3.70-6.38)	1326
	01-02	*	< LOD	< LOD	< LOD	< LOD	1411
	03-04	*	< LOD	< LOD	< LOD	< LOD	1355
	05-06	*	< LOD	< LOD	< LOD	< LOD	1278
	07-08	*	< LOD	< LOD	< LOD	< LOD	1310
	09-10	*	< LOD	< LOD	< LOD	< LOD	1350

Limit of detection (LOD, see Data Analysis section) for Survey years 99-00, 01-02, 03-04, 05-06, 07-08, and 09-10 are 1.51, 1.68, 1.68, 1.85, 1.85, and 0.84 respectively.
< LOD means less than the limit of detection, which may vary for some chemicals by year and by individual sample.
* Not calculated: proportion of results below limit of detection was too high to provide a valid result.
**To correct for inadequate purity in the analytical standards, all results and LODs have been adjusted by a factor of 1.68 for survey periods 1999-2008 compared with results previously reported.

Biomonitoring Summary: http://www.cdc.gov/biomonitoring/DOP_BiomonitoringSummary.html
Factsheet: http://www.cdc.gov/biomonitoring/Phthalates_FactSheet.html

Urinary Mono-*n*-octyl phthalate (MOP)

Metabolite of Di-n-octyl phthalate (DOP)

Geometric mean and selected percentiles of urine concentrations (in µg/L) for the U.S. population from the National Health and Nutrition Examination Survey.**

	Survey years	Geometric mean (95% conf. interval)	Selected percentiles (95% confidence interval) 50th	75th	90th	95th	Sample size
Race/ethnicity							
Mexican Americans	99-00	*	**< LOD**	**< LOD**	**1.85** (<LOD-2.35)	**2.69** (2.35-4.37)	814
	01-02	*	**< LOD**	**< LOD**	**< LOD**	**< LOD**	677
	03-04	*	**< LOD**	**< LOD**	**< LOD**	**< LOD**	652
	05-06	*	**< LOD**	**< LOD**	**< LOD**	**< LOD**	637
	07-08	*	**< LOD**	**< LOD**	**< LOD**	**< LOD**	531
	09-10	*	**< LOD**	**< LOD**	**< LOD**	**< LOD**	566
Non-Hispanic blacks	99-00	*	**< LOD**	**< LOD**	**3.19** (<LOD-5.04)	**5.04** (3.70-6.89)	603
	01-02	*	**< LOD**	**< LOD**	**< LOD**	**< LOD**	703
	03-04	*	**< LOD**	**< LOD**	**< LOD**	**< LOD**	699
	05-06	*	**< LOD**	**< LOD**	**< LOD**	**< LOD**	678
	07-08	*	**< LOD**	**< LOD**	**< LOD**	**< LOD**	597
	09-10	*	**< LOD**	**< LOD**	**< LOD**	**< LOD**	516
Non-Hispanic whites	99-00	*	**< LOD**	**< LOD**	**2.69** (2.02-3.53)	**5.04** (3.86-5.88)	912
	01-02	*	**< LOD**	**< LOD**	**< LOD**	**< LOD**	1216
	03-04	*	**< LOD**	**< LOD**	**< LOD**	**< LOD**	1088
	05-06	*	**< LOD**	**< LOD**	**< LOD**	**< LOD**	1038
	07-08	*	**< LOD**	**< LOD**	**< LOD**	**< LOD**	1077
	09-10	*	**< LOD**	**< LOD**	**< LOD**	**< LOD**	1206

Limit of detection (LOD, see Data Analysis section) for Survey years 99-00, 01-02, 03-04, 05-06, 07-08, and 09-10 are 1.51, 1.68, 1.68, 1.85, 1.85, and 0.84 respectively.
< LOD means less than the limit of detection, which may vary for some chemicals by year and by individual sample.
* Not calculated: proportion of results below limit of detection was too high to provide a valid result.
**To correct for inadequate purity in the analytical standards, all results and LODs have been adjusted by a factor of 1.68 for survey periods 1999-2008 compared with results previously reported.

Biomonitoring Summary: http://www.cdc.gov/biomonitoring/DOP_BiomonitoringSummary.html
Factsheet: http://www.cdc.gov/biomonitoring/Phthalates_FactSheet.html

Urinary Mono-*n*-octyl phthalate (MOP) (creatinine corrected)

Metabolite of Di-n-octyl phthalate (DOP)

Geometric mean and selected percentiles of urine concentrations (in µg/g of creatinine) for the U.S. population from the National Health and Nutrition Examination Survey.**

	Survey years	Geometric mean (95% conf. interval)	Selected percentiles (95% confidence interval) 50th	75th	90th	95th	Sample size
Total	99-00	*	< LOD	< LOD	**4.03** (3.48-4.38)	**5.93** (4.96-7.21)	2541
	01-02	*	< LOD	< LOD	< LOD	< LOD	2782
	03-04	*	< LOD	< LOD	< LOD	< LOD	2605
	05-06	*	< LOD	< LOD	< LOD	< LOD	2548
	07-08	*	< LOD	< LOD	< LOD	< LOD	2604
	09-10	*	< LOD	< LOD	< LOD	< LOD	2749
Age group							
6-11 years	99-00	*	< LOD	< LOD	**3.73** (<LOD-6.30)	**6.30** (3.31-17.2)	328
	01-02	*	< LOD	< LOD	< LOD	< LOD	393
	03-04	*	< LOD	< LOD	< LOD	< LOD	342
	05-06	*	< LOD	< LOD	< LOD	< LOD	356
	07-08	*	< LOD	< LOD	< LOD	< LOD	389
	09-10	*	< LOD	< LOD	< LOD	< LOD	415
12-19 years	99-00	*	< LOD	< LOD	**2.50** (<LOD-2.87)	**3.16** (2.59-5.59)	752
	01-02	*	< LOD	< LOD	< LOD	< LOD	742
	03-04	*	< LOD	< LOD	< LOD	< LOD	729
	05-06	*	< LOD	< LOD	< LOD	< LOD	702
	07-08	*	< LOD	< LOD	< LOD	< LOD	401
	09-10	*	< LOD	< LOD	< LOD	< LOD	420
20 years and older	99-00	*	< LOD	< LOD	**4.37** (3.48-4.89)	**5.93** (5.04-7.76)	1461
	01-02	*	< LOD	< LOD	< LOD	< LOD	1647
	03-04	*	< LOD	< LOD	< LOD	< LOD	1534
	05-06	*	< LOD	< LOD	< LOD	< LOD	1490
	07-08	*	< LOD	< LOD	< LOD	< LOD	1814
	09-10	*	< LOD	< LOD	< LOD	< LOD	1914
Gender							
Males	99-00	*	< LOD	< LOD	**3.06** (2.59-3.48)	**4.30** (3.26-5.80)	1215
	01-02	*	< LOD	< LOD	< LOD	< LOD	1371
	03-04	*	< LOD	< LOD	< LOD	< LOD	1250
	05-06	*	< LOD	< LOD	< LOD	< LOD	1270
	07-08	*	< LOD	< LOD	< LOD	< LOD	1294
	09-10	*	< LOD	< LOD	< LOD	< LOD	1399
Females	99-00	*	< LOD	< LOD	**5.04** (4.20-5.96)	**7.21** (5.59-10.5)	1326
	01-02	*	< LOD	< LOD	< LOD	< LOD	1411
	03-04	*	< LOD	< LOD	< LOD	< LOD	1355
	05-06	*	< LOD	< LOD	< LOD	< LOD	1278
	07-08	*	< LOD	< LOD	< LOD	< LOD	1310
	09-10	*	< LOD	< LOD	< LOD	< LOD	1350

< LOD means less than the limit of detection for the urine levels not corrected for creatinine.
* Not calculated: proportion of results below limit of detection was too high to provide a valid result.
**To correct for inadequate purity in the analytical standards, all results and LODs have been adjusted by a factor of 1.68 for survey periods 1999-2008 compared with results previously reported.

Biomonitoring Summary: http://www.cdc.gov/biomonitoring/DOP_BiomonitoringSummary.html
Factsheet: http://www.cdc.gov/biomonitoring/Phthalates_FactSheet.html

Urinary Mono-*n*-octyl phthalate (MOP) (creatinine corrected)

Metabolite of Di-n-octyl phthalate (DOP)

Geometric mean and selected percentiles of urine concentrations (in µg/g of creatinine) for the U.S. population from the National Health and Nutrition Examination Survey.**

	Survey years	Geometric mean (95% conf. interval)	Selected percentiles (95% confidence interval) 50th	75th	90th	95th	Sample size
Race/ethnicity							
Mexican Americans	99-00	*	**< LOD**	**< LOD**	**3.06** (<LOD-4.70)	**5.59** (4.37-6.72)	814
	01-02	*	**< LOD**	**< LOD**	**< LOD**	**< LOD**	677
	03-04	*	**< LOD**	**< LOD**	**< LOD**	**< LOD**	652
	05-06	*	**< LOD**	**< LOD**	**< LOD**	**< LOD**	637
	07-08	*	**< LOD**	**< LOD**	**< LOD**	**< LOD**	531
	09-10	*	**< LOD**	**< LOD**	**< LOD**	**< LOD**	566
Non-Hispanic blacks	99-00	*	**< LOD**	**< LOD**	**2.28** (<LOD-3.26)	**3.73** (2.52-5.49)	603
	01-02	*	**< LOD**	**< LOD**	**< LOD**	**< LOD**	703
	03-04	*	**< LOD**	**< LOD**	**< LOD**	**< LOD**	699
	05-06	*	**< LOD**	**< LOD**	**< LOD**	**< LOD**	678
	07-08	*	**< LOD**	**< LOD**	**< LOD**	**< LOD**	597
	09-10	*	**< LOD**	**< LOD**	**< LOD**	**< LOD**	516
Non-Hispanic whites	99-00	*	**< LOD**	**< LOD**	**4.38** (3.60-5.17)	**6.12** (5.29-8.40)	912
	01-02	*	**< LOD**	**< LOD**	**< LOD**	**< LOD**	1216
	03-04	*	**< LOD**	**< LOD**	**< LOD**	**< LOD**	1088
	05-06	*	**< LOD**	**< LOD**	**< LOD**	**< LOD**	1038
	07-08	*	**< LOD**	**< LOD**	**< LOD**	**< LOD**	1077
	09-10	*	**< LOD**	**< LOD**	**< LOD**	**< LOD**	1206

< LOD means less than the limit of detection for the urine levels not corrected for creatinine.

* Not calculated: proportion of results below limit of detection was too high to provide a valid result.

**To correct for inadequate purity in the analytical standards, all results and LODs have been adjusted by a factor of 1.68 for survey periods 1999-2008 compared with results previously reported.

Biomonitoring Summary: http://www.cdc.gov/biomonitoring/DOP_BiomonitoringSummary.html

Factsheet: http://www.cdc.gov/biomonitoring/Phthalates_FactSheet.html

Urinary Daidzein

Geometric mean and selected percentiles of urine concentrations (in µg/L) for the U.S. population from the National Health and Nutrition Examination Survey.

	Survey years+	Geometric mean (95% conf. interval)	Selected percentiles (95% confidence interval) 50th	75th	90th	95th	Sample size
Total	99-00	**75.1** (61.9-91.1)	**69.8** (57.8-82.6)	**229** (184-298)	**538** (471-702)	**1320** (1020-1540)	2553
	01-02	**51.7** (46.6-57.5)	**52.3** (48.9-57.4)	**192** (151-226)	**577** (447-725)	**1250** (863-1640)	2794
	03-04	**66.7** (60.4-73.7)	**62.0** (54.1-69.7)	**195** (171-219)	**590** (500-675)	**1070** (893-1330)	2594
	05-06	**66.5** (59.7-74.1)	**58.8** (51.0-67.7)	**204** (187-226)	**648** (485-745)	**1180** (1000-1350)	2528
	07-08	**67.1** (60.2-74.8)	**57.6** (49.1-66.0)	**203** (182-222)	**747** (551-994)	**1740** (1210-2240)	2424
	09-10	**69.3** (61.6-77.9)	**57.2** (48.8-64.3)	**228** (190-262)	**753** (671-880)	**1850** (1380-2480)	2792
Age group							
6-11 years	99-00	**90.5** (75.1-109)	**101** (70.3-138)	**257** (172-430)	**510** (437-840)	**1130** (657-1740)	330
	01-02	**84.9** (71.6-101)	**72.7** (56.3-97.0)	**261** (155-385)	**605** (437-989)	**1060** (645-1500)	396
	03-04	**84.9** (71.6-101)	**66.8** (55.4-92.8)	**229** (151-314)	**574** (371-654)	**818** (625-1060)	341
	05-06	**94.1** (74.3-119)	**74.0** (56.0-95.9)	**287** (149-471)	**1010** (557-1600)	**1870** (1040-3830)	351
	07-08	**105** (80.2-137)	**90.6** (61.4-123)	**277** (183-431)	**1370** (491-2190)	**2190** (1340-3500)	360
	09-10	**109** (88.1-135)	**98.5** (75.4-119)	**461** (262-605)	**1000** (730-1520)	**1900** (1120-2800)	371
12-19 years	99-00	**123** (91.4-166)	**124** (85.6-168)	**326** (227-454)	**833** (445-1490)	**1460** (861-2410)	753
	01-02	**69.3** (52.6-91.3)	**70.2** (52.5-87.5)	**255** (185-344)	**774** (573-984)	**1360** (922-1950)	744
	03-04	**89.0** (75.2-105)	**78.0** (59.0-104)	**248** (197-332)	**808** (500-968)	**1200** (900-1790)	729
	05-06	**94.4** (76.0-117)	**77.1** (59.7-103)	**286** (200-416)	**836** (530-1170)	**1390** (929-2220)	693
	07-08	**79.7** (64.4-98.6)	**76.0** (52.2-107)	**256** (189-300)	**828** (396-1100)	**1220** (874-2070)	375
	09-10	**94.2** (74.1-120)	**82.9** (60.8-116)	**295** (201-395)	**1020** (690-1210)	**1390** (1150-2500)	447
20 years and older	99-00	**67.6** (55.4-82.4)	**60.9** (49.3-74.1)	**215** (167-239)	**518** (459-573)	**1320** (978-1540)	1470
	01-02	**46.4** (41.4-52.0)	**49.1** (40.8-53.4)	**176** (133-216)	**520** (396-703)	**1210** (771-1900)	1654
	03-04	**61.9** (55.2-69.4)	**57.9** (48.7-68.5)	**180** (150-214)	**554** (416-695)	**1110** (857-1360)	1524
	05-06	**60.5** (53.4-68.7)	**54.0** (46.8-63.8)	**197** (169-209)	**512** (427-664)	**1100** (795-1270)	1484
	07-08	**62.2** (55.0-70.4)	**51.7** (44.3-60.3)	**189** (169-211)	**686** (514-939)	**1640** (1060-2500)	1689
	09-10	**63.0** (54.7-72.5)	**49.3** (43.0-59.8)	**203** (168-250)	**701** (572-856)	**1980** (1220-2780)	1974
Gender							
Males	99-00	**88.9** (71.4-111)	**80.6** (66.6-112)	**262** (198-355)	**587** (501-989)	**1540** (989-2080)	1220
	01-02	**49.8** (42.8-57.9)	**50.8** (46.0-55.0)	**190** (137-240)	**498** (386-694)	**920** (717-1380)	1375
	03-04	**73.8** (63.4-85.9)	**65.2** (56.1-76.4)	**214** (156-311)	**709** (535-900)	**1200** (969-1380)	1244
	05-06	**73.9** (65.3-83.6)	**66.4** (53.8-78.5)	**210** (180-241)	**694** (471-823)	**1180** (979-1400)	1252
	07-08	**72.7** (62.2-85.0)	**63.4** (49.3-76.5)	**210** (174-259)	**706** (520-1180)	**2010** (1210-3520)	1198
	09-10	**68.8** (59.0-80.3)	**55.0** (46.0-65.0)	**207** (168-257)	**674** (559-840)	**1430** (1160-2370)	1377
Females	99-00	**64.1** (52.9-77.6)	**57.8** (45.0-73.2)	**199** (150-244)	**476** (389-722)	**1220** (566-1700)	1333
	01-02	**53.6** (48.1-59.8)	**55.7** (49.8-62.7)	**199** (149-234)	**642** (511-816)	**1470** (1170-1980)	1419
	03-04	**60.7** (53.6-68.8)	**57.4** (49.1-67.6)	**175** (159-201)	**466** (381-622)	**884** (654-1380)	1350
	05-06	**60.1** (52.5-68.9)	**52.5** (45.0-61.1)	**200** (166-231)	**587** (420-717)	**1140** (811-1440)	1276
	07-08	**62.2** (54.4-71.0)	**52.2** (44.4-58.7)	**191** (169-217)	**752** (476-905)	**1570** (994-2180)	1226
	09-10	**69.8** (60.7-80.3)	**60.2** (46.1-71.1)	**249** (200-309)	**840** (694-973)	**2140** (1210-2910)	1415

Limit of detection (LOD, see Data Analysis section) for Survey years 99-00, 01-02, 03-04, 05-06, 07-08, and 09-10 are 0.5, 1.6, 0.3, 0.4, 0.4, and 0.4 respectively.
+Not measured after Survey years 2009-2010.

Biomonitoring Summary: http://www.cdc.gov/biomonitoring/Phytoestrogens_BiomonitoringSummary.html

Urinary Daidzein

Geometric mean and selected percentiles of urine concentrations (in µg/L) for the U.S. population from the National Health and Nutrition Examination Survey.

	Survey years+	Geometric mean (95% conf. interval)	Selected percentiles (95% confidence interval) 50th	75th	90th	95th	Sample size
Race/ethnicity							
Mexican Americans	99-00	**78.9** (59.8-104)	**66.2** (48.4-87.1)	**254** (170-402)	**806** (534-1020)	**1360** (968-2780)	816
	01-02	**39.2** (28.5-54.0)	**39.9** (28.8-59.9)	**169** (100-291)	**515** (388-669)	**896** (613-1480)	679
	03-04	**57.4** (50.2-65.7)	**45.5** (35.2-53.3)	**178** (130-236)	**686** (487-934)	**1390** (934-1650)	653
	05-06	**60.6** (53.3-68.9)	**54.1** (44.3-65.2)	**193** (155-239)	**671** (424-966)	**1350** (966-1550)	634
	07-08	**60.5** (46.6-78.6)	**45.8** (34.4-67.3)	**206** (143-313)	**815** (510-1010)	**1410** (994-2010)	520
	09-10	**60.6** (48.8-75.2)	**48.8** (38.6-74.3)	**219** (142-283)	**622** (495-853)	**1190** (884-1570)	604
Non-Hispanic blacks	99-00	**91.9** (71.9-118)	**103** (81.6-133)	**286** (243-377)	**553** (459-824)	**1190** (640-1900)	607
	01-02	**66.1** (48.2-90.7)	**72.9** (52.8-97.3)	**255** (182-393)	**757** (448-1400)	**1410** (757-2480)	706
	03-04	**75.0** (56.1-100)	**66.0** (50.7-86.6)	**241** (151-340)	**622** (408-875)	**1190** (660-2300)	699
	05-06	**81.3** (71.6-92.4)	**76.5** (64.7-97.1)	**254** (199-331)	**676** (463-874)	**1210** (760-1790)	662
	07-08	**84.0** (63.3-111)	**69.8** (43.4-102)	**338** (248-419)	**1080** (735-1500)	**2180** (1230-2610)	562
	09-10	**77.2** (64.6-92.1)	**69.9** (58.1-82.6)	**229** (192-281)	**711** (534-1080)	**1350** (894-3480)	534
Non-Hispanic whites	99-00	**74.4** (61.5-89.9)	**66.9** (56.2-78.2)	**216** (157-298)	**512** (438-745)	**1360** (989-1710)	917
	01-02	**48.6** (43.8-54.0)	**49.8** (42.8-54.2)	**171** (137-204)	**504** (389-658)	**1140** (774-1620)	1222
	03-04	**65.8** (58.6-74.0)	**62.0** (52.8-71.9)	**191** (165-215)	**572** (416-722)	**1070** (823-1330)	1079
	05-06	**62.0** (54.4-70.7)	**54.2** (46.9-64.1)	**200** (164-216)	**581** (430-717)	**1040** (811-1310)	1039
	07-08	**63.6** (56.8-71.2)	**56.7** (46.2-65.0)	**180** (158-212)	**603** (455-832)	**1430** (915-2170)	993
	09-10	**68.3** (58.2-80.2)	**55.0** (45.5-66.8)	**219** (168-284)	**726** (584-887)	**1740** (1150-2510)	1186

Limit of detection (LOD, see Data Analysis section) for Survey years 99-00, 01-02, 03-04, 05-06, 07-08, and 09-10 are 0.5, 1.6, 0.3, 0.4, 0.4, and 0.4 respectively.
+Not measured after Survey years 2009-2010.

Biomonitoring Summary: **http://www.cdc.gov/biomonitoring/Phytoestrogens_BiomonitoringSummary.html**

Urinary Daidzein (creatinine corrected)

Geometric mean and selected percentiles of urine concentrations (in µg/g of creatinine) for the U.S. population from the National Health and Nutrition Examination Survey.

	Survey years+	Geometric mean (95% conf. interval)	Selected percentiles (95% confidence interval) 50th	75th	90th	95th	Sample size
Total	99-00	**68.5** (55.9-83.9)	**65.1** (52.8-80.8)	**204** (156-249)	**560** (471-629)	**944** (836-1150)	2553
	01-02	**48.5** (43.7-54.0)	**48.3** (43.1-56.5)	**166** (140-196)	**500** (391-608)	**957** (801-1180)	2794
	03-04	**62.5** (58.3-67.0)	**56.1** (50.0-63.5)	**164** (144-187)	**502** (429-591)	**1060** (825-1150)	2594
	05-06	**64.8** (58.7-71.6)	**52.4** (47.4-59.7)	**184** (162-209)	**564** (461-679)	**1070** (896-1310)	2528
	07-08	**67.5** (60.5-75.2)	**55.6** (47.4-64.0)	**197** (178-217)	**672** (538-897)	**1400** (1070-2250)	2424
	09-10	**74.2** (67.0-82.2)	**55.9** (51.6-61.7)	**219** (184-272)	**790** (688-1090)	**1920** (1550-2390)	2791
Age group							
6-11 years	99-00	**92.6** (76.3-112)	**93.1** (71.2-114)	**251** (157-324)	**552** (363-838)	**1070** (781-2150)	330
	01-02	**96.4** (79.0-118)	**85.9** (60.3-127)	**275** (159-395)	**655** (452-733)	**938** (683-1140)	396
	03-04	**90.4** (77.2-106)	**72.8** (58.1-99.5)	**201** (152-240)	**454** (329-638)	**702** (526-1200)	341
	05-06	**104** (83.1-130)	**73.8** (59.5-96.7)	**305** (175-453)	**1040** (686-1830)	**2430** (1190-3630)	351
	07-08	**128** (101-164)	**106** (80.0-141)	**307** (197-429)	**1420** (543-2630)	**2630** (1380-3670)	360
	09-10	**149** (124-179)	**128** (91.0-162)	**500** (346-601)	**1230** (814-1530)	**2150** (1450-3070)	370
12-19 years	99-00	**83.1** (58.4-118)	**85.6** (53.8-126)	**207** (138-386)	**628** (295-1060)	**1000** (628-2380)	753
	01-02	**53.4** (40.8-70.0)	**50.9** (38.3-77.6)	**181** (142-248)	**549** (385-718)	**1030** (622-1360)	744
	03-04	**66.6** (55.7-79.6)	**56.4** (43.9-74.6)	**179** (151-217)	**517** (370-753)	**877** (617-1240)	729
	05-06	**70.0** (56.9-86.2)	**55.1** (42.9-74.3)	**203** (149-263)	**545** (338-845)	**914** (659-1750)	693
	07-08	**61.3** (51.5-72.9)	**61.9** (39.9-75.0)	**191** (144-217)	**470** (295-645)	**821** (544-1110)	375
	09-10	**88.6** (71.3-110)	**76.5** (53.6-107)	**249** (177-312)	**689** (522-969)	**1410** (823-2740)	447
20 years and older	99-00	**63.8** (51.5-79.1)	**59.3** (48.7-75.0)	**194** (151-234)	**554** (471-624)	**908** (783-1180)	1470
	01-02	**43.9** (39.4-48.9)	**43.8** (37.4-53.3)	**153** (125-186)	**428** (348-590)	**946** (728-1220)	1654
	03-04	**59.2** (54.3-64.5)	**51.7** (46.4-62.6)	**155** (131-185)	**501** (404-658)	**1090** (808-1240)	1524
	05-06	**60.7** (54.3-67.8)	**50.6** (43.1-59.5)	**171** (151-199)	**483** (434-609)	**1030** (847-1200)	1484
	07-08	**63.9** (56.0-72.9)	**49.2** (42.6-57.7)	**187** (164-216)	**675** (514-904)	**1340** (962-2780)	1689
	09-10	**67.1** (59.4-75.7)	**50.3** (44.2-55.5)	**194** (168-232)	**775** (613-1120)	**1980** (1550-2640)	1974
Gender							
Males	99-00	**69.7** (54.7-88.8)	**70.2** (51.3-84.3)	**198** (147-276)	**623** (494-836)	**1050** (884-1290)	1220
	01-02	**40.5** (34.8-47.1)	**41.7** (34.5-47.9)	**139** (107-179)	**348** (260-553)	**788** (585-947)	1375
	03-04	**57.7** (49.4-67.3)	**48.9** (41.6-58.2)	**160** (126-205)	**467** (368-600)	**919** (665-1200)	1244
	05-06	**59.5** (53.3-66.3)	**51.0** (43.2-57.6)	**164** (134-203)	**467** (403-612)	**927** (781-1100)	1252
	07-08	**61.3** (52.5-71.7)	**48.7** (41.5-63.2)	**178** (141-205)	**585** (412-845)	**1290** (907-2810)	1198
	09-10	**62.8** (54.8-72.1)	**49.9** (42.6-57.3)	**174** (145-196)	**613** (497-790)	**1740** (1170-2570)	1376
Females	99-00	**67.4** (54.8-82.9)	**62.7** (51.1-80.9)	**207** (152-250)	**509** (356-624)	**850** (610-1410)	1333
	01-02	**57.6** (50.8-65.2)	**59.5** (48.1-73.4)	**191** (159-227)	**615** (536-722)	**1180** (924-1430)	1419
	03-04	**67.4** (60.8-74.9)	**65.1** (54.6-73.4)	**165** (143-191)	**564** (409-699)	**1090** (757-1370)	1350
	05-06	**70.4** (61.3-80.8)	**57.1** (45.1-71.7)	**194** (169-216)	**609** (463-887)	**1200** (957-1750)	1276
	07-08	**73.8** (64.9-84.0)	**63.0** (52.1-77.2)	**223** (190-259)	**763** (577-1000)	**1410** (1070-1990)	1226
	09-10	**87.2** (77.9-97.7)	**64.1** (55.6-76.7)	**292** (240-336)	**972** (800-1230)	**2280** (1560-2880)	1415

+Not measured after Survey years 2009-2010.

Biomonitoring Summary: http://www.cdc.gov/biomonitoring/Phytoestrogens_BiomonitoringSummary.html

Urinary Daidzein (creatinine corrected)

Geometric mean and selected percentiles of urine concentrations (in µg/g of creatinine) for the U.S. population from the National Health and Nutrition Examination Survey.

	Survey years+	Geometric mean (95% conf. interval)	Selected percentiles (95% confidence interval) 50th	75th	90th	95th	Sample size
Race/ethnicity							
Mexican Americans	99-00	**72.5** (59.1-88.9)	**64.2** (47.1-91.1)	**243** (176-310)	**677** (468-1080)	**1380** (753-2690)	816
	01-02	**36.9** (27.8-49.0)	**37.1** (24.8-57.9)	**146** (101-225)	**441** (307-596)	**722** (565-1160)	679
	03-04	**51.8** (45.0-59.6)	**47.7** (35.9-58.3)	**159** (117-209)	**502** (354-686)	**1130** (779-1390)	653
	05-06	**54.7** (45.6-65.7)	**47.2** (35.7-61.1)	**174** (136-219)	**558** (380-617)	**925** (642-1140)	634
	07-08	**59.5** (44.1-80.1)	**41.1** (27.4-76.1)	**200** (150-288)	**715** (502-1060)	**1410** (1090-1860)	520
	09-10	**63.7** (52.5-77.1)	**49.2** (37.9-65.4)	**213** (167-273)	**614** (487-861)	**1380** (865-1940)	604
Non-Hispanic blacks	99-00	**59.1** (46.5-75.1)	**67.6** (52.1-87.1)	**172** (134-207)	**381** (316-533)	**802** (562-1010)	607
	01-02	**46.4** (33.7-63.8)	**49.8** (35.5-69.7)	**169** (104-249)	**504** (263-773)	**939** (542-1530)	706
	03-04	**53.1** (42.5-66.4)	**44.7** (28.6-72.1)	**147** (121-191)	**415** (275-538)	**727** (538-1040)	699
	05-06	**57.0** (50.3-64.5)	**48.5** (40.3-59.7)	**157** (124-221)	**467** (370-654)	**913** (603-1290)	662
	07-08	**65.0** (48.7-86.6)	**53.0** (36.0-80.6)	**240** (171-292)	**728** (520-937)	**1330** (800-2670)	562
	09-10	**62.1** (53.0-72.8)	**55.7** (42.7-65.0)	**179** (157-223)	**576** (457-690)	**956** (710-1840)	533
Non-Hispanic whites	99-00	**72.8** (60.3-88.0)	**67.5** (55.3-81.5)	**207** (160-249)	**560** (442-659)	**908** (742-1350)	917
	01-02	**48.1** (43.4-53.3)	**47.0** (42.0-56.0)	**163** (137-191)	**463** (375-627)	**957** (805-1220)	1222
	03-04	**64.9** (59.8-70.3)	**58.2** (50.4-66.3)	**165** (138-204)	**516** (385-667)	**1090** (786-1250)	1079
	05-06	**65.2** (57.9-73.3)	**52.7** (46.5-60.7)	**184** (155-211)	**564** (443-737)	**1070** (894-1390)	1039
	07-08	**66.2** (58.4-75.1)	**57.7** (46.0-65.5)	**187** (160-216)	**604** (474-763)	**1210** (907-1670)	993
	09-10	**76.6** (67.1-87.4)	**56.7** (51.2-64.1)	**225** (173-306)	**809** (617-1180)	**1920** (1410-2470)	1186

+Not measured after Survey years 2009-2010.

Biomonitoring Summary: http://www.cdc.gov/biomonitoring/Phytoestrogens_BiomonitoringSummary.html

Urinary Enterodiol

Geometric mean and selected percentiles of urine concentrations (in µg/L) for the U.S. population from the National Health and Nutrition Examination Survey.

	Survey years+	Geometric mean (95% conf. interval)	Selected percentiles (95% confidence interval) 50th	75th	90th	95th	Sample size
Total	99-00	**26.6** (21.9-32.3)	**34.0** (29.4-38.7)	**78.8** (62.6-95.5)	**165** (135-215)	**266** (215-335)	2527
	01-02	**35.7** (32.5-39.3)	**39.4** (36.3-43.4)	**89.2** (80.7-96.9)	**181** (162-205)	**253** (223-308)	2794
	03-04	**39.5** (36.1-43.3)	**44.9** (40.6-50.3)	**106** (97.2-115)	**242** (212-264)	**367** (311-423)	2594
	05-06	**37.7** (33.2-42.9)	**42.4** (39.4-47.2)	**106** (95.5-120)	**244** (226-266)	**379** (305-440)	2528
	07-08	**36.8** (32.0-42.4)	**43.5** (37.8-49.2)	**109** (92.1-124)	**238** (199-294)	**429** (279-723)	2424
	09-10	**39.5** (36.3-43.1)	**44.5** (41.0-48.5)	**107** (98.4-120)	**264** (226-288)	**545** (446-651)	2792
Age group							
6-11 years	99-00	**26.5** (17.1-41.0)	**29.4** (21.2-44.2)	**78.7** (44.2-109)	**215** (91.1-279)	**276** (131-458)	327
	01-02	**33.6** (29.8-37.8)	**35.5** (29.4-43.7)	**78.1** (63.8-87.0)	**152** (113-171)	**203** (167-327)	396
	03-04	**42.0** (34.5-51.1)	**42.1** (34.4-49.2)	**91.4** (74.4-110)	**199** (126-289)	**312** (217-525)	341
	05-06	**33.2** (26.1-42.3)	**38.5** (34.7-43.2)	**70.4** (55.7-91.7)	**129** (99.1-162)	**181** (129-366)	351
	07-08	**38.5** (30.1-49.3)	**42.9** (31.3-55.3)	**80.4** (62.7-118)	**181** (119-318)	**318** (186-439)	360
	09-10	**38.6** (33.9-44.0)	**39.9** (32.5-44.2)	**88.8** (67.7-106)	**195** (131-265)	**277** (210-380)	371
12-19 years	99-00	**29.8** (23.8-37.2)	**34.0** (27.4-42.0)	**84.4** (59.1-101)	**166** (112-234)	**253** (182-337)	744
	01-02	**35.3** (30.5-40.9)	**37.7** (34.8-43.4)	**84.2** (72.1-96.9)	**165** (128-206)	**238** (169-343)	744
	03-04	**45.1** (39.4-51.6)	**46.3** (38.7-56.9)	**99.5** (84.9-109)	**191** (161-269)	**325** (275-415)	729
	05-06	**39.1** (34.0-45.0)	**41.1** (36.8-46.5)	**92.0** (80.2-109)	**193** (151-238)	**265** (231-303)	693
	07-08	**37.3** (29.5-47.2)	**45.8** (32.2-54.1)	**97.9** (73.4-126)	**199** (151-253)	**293** (212-483)	375
	09-10	**37.5** (30.4-46.2)	**38.3** (32.5-50.7)	**98.0** (72.3-119)	**184** (122-286)	**315** (177-820)	447
20 years and older	99-00	**26.1** (21.8-31.3)	**34.3** (29.8-38.7)	**78.3** (63.5-94.8)	**160** (132-196)	**263** (189-335)	1456
	01-02	**36.1** (31.8-41.0)	**40.4** (36.0-45.7)	**91.2** (79.3-105)	**190** (161-220)	**256** (224-312)	1654
	03-04	**38.4** (34.2-43.0)	**44.9** (40.1-51.9)	**112** (98.8-125)	**255** (215-274)	**398** (320-448)	1524
	05-06	**38.1** (32.7-44.4)	**43.8** (39.0-49.5)	**116** (103-130)	**266** (242-281)	**413** (326-479)	1484
	07-08	**36.5** (31.2-42.8)	**43.5** (37.6-49.3)	**116** (97.5-130)	**247** (194-326)	**473** (300-757)	1689
	09-10	**40.0** (36.2-44.1)	**47.6** (42.2-53.0)	**114** (101-130)	**277** (230-366)	**596** (460-746)	1974
Gender							
Males	99-00	**25.3** (19.5-32.7)	**33.0** (28.0-38.0)	**72.6** (54.7-94.3)	**149** (109-219)	**258** (169-286)	1206
	01-02	**35.2** (31.8-39.1)	**40.5** (36.8-44.8)	**90.6** (82.3-103)	**184** (158-198)	**263** (223-338)	1375
	03-04	**39.7** (36.2-43.6)	**45.1** (40.5-51.1)	**102** (92.9-115)	**231** (186-266)	**361** (268-460)	1244
	05-06	**40.4** (32.8-49.8)	**46.2** (38.9-52.3)	**107** (90.6-127)	**264** (227-289)	**413** (287-496)	1252
	07-08	**33.1** (28.6-38.2)	**39.8** (34.7-43.3)	**91.8** (78.6-116)	**216** (180-242)	**378** (238-738)	1198
	09-10	**37.4** (30.9-45.3)	**41.7** (35.5-48.4)	**94.7** (78.9-111)	**227** (173-312)	**476** (366-664)	1377
Females	99-00	**27.9** (23.4-33.3)	**36.0** (29.9-40.3)	**84.4** (71.8-97.9)	**177** (146-219)	**280** (219-375)	1321
	01-02	**36.2** (32.2-40.7)	**38.5** (35.3-43.4)	**87.0** (75.6-98.5)	**175** (152-212)	**248** (220-283)	1419
	03-04	**39.3** (33.8-45.5)	**44.9** (38.3-53.0)	**110** (97.3-124)	**250** (203-294)	**398** (309-464)	1350
	05-06	**35.4** (30.3-41.2)	**41.1** (35.6-45.4)	**106** (94.2-123)	**225** (186-267)	**352** (268-477)	1276
	07-08	**40.7** (33.0-50.2)	**48.4** (39.3-58.1)	**123** (101-145)	**258** (206-336)	**479** (311-757)	1226
	09-10	**41.7** (37.6-46.3)	**48.9** (41.6-56.7)	**123** (111-140)	**277** (243-304)	**553** (448-778)	1415

Limit of detection (LOD, see Data Analysis section) for Survey years 99-00, 01-02, 03-04, 05-06, 07-08, and 09-10 are 0.8, 1.5, 0.3, 0.04, 0.04, and 0.04 respectively.
+Not measured after Survey years 2009-2010.

Biomonitoring Summary: http://www.cdc.gov/biomonitoring/Phytoestrogens_BiomonitoringSummary.html

Urinary Enterodiol

Geometric mean and selected percentiles of urine concentrations (in µg/L) for the U.S. population from the National Health and Nutrition Examination Survey.

	Survey years+	Geometric mean (95% conf. interval)	Selected percentiles (95% confidence interval) 50th	75th	90th	95th	Sample size
Race/ethnicity							
Mexican Americans	99-00	**21.7** (19.5-24.1)	**28.0** (24.7-34.7)	**70.4** (60.8-78.8)	**143** (117-169)	**213** (169-256)	791
	01-02	**30.5** (25.7-36.3)	**34.0** (29.0-39.2)	**75.9** (58.8-89.7)	**159** (119-202)	**244** (192-298)	679
	03-04	**33.1** (26.4-41.6)	**38.7** (31.2-47.6)	**95.2** (78.1-115)	**198** (125-307)	**307** (186-480)	653
	05-06	**38.1** (32.2-45.1)	**40.6** (34.6-47.6)	**102** (86.8-123)	**262** (177-359)	**383** (289-511)	634
	07-08	**28.2** (24.8-32.0)	**29.7** (26.7-33.4)	**70.8** (59.9-83.8)	**173** (139-208)	**305** (207-456)	520
	09-10	**27.9** (24.5-31.7)	**31.1** (28.8-36.7)	**75.5** (66.6-85.5)	**157** (120-192)	**255** (174-408)	604
Non-Hispanic blacks	99-00	**25.8** (21.7-30.7)	**31.2** (24.4-35.9)	**66.0** (50.2-86.7)	**157** (122-193)	**260** (185-336)	608
	01-02	**35.0** (28.9-42.3)	**38.7** (33.2-49.2)	**83.7** (70.0-103)	**169** (132-191)	**225** (175-339)	706
	03-04	**40.4** (34.9-46.7)	**47.1** (40.4-53.7)	**100** (81.3-123)	**212** (157-254)	**293** (232-417)	699
	05-06	**34.7** (30.1-40.1)	**38.4** (32.6-44.7)	**85.1** (70.9-109)	**190** (137-242)	**269** (245-364)	662
	07-08	**34.4** (26.9-44.0)	**38.9** (28.9-48.5)	**95.7** (78.5-126)	**202** (147-252)	**327** (232-514)	562
	09-10	**32.4** (27.3-38.4)	**35.7** (30.4-42.3)	**98.5** (76.2-126)	**211** (178-245)	**307** (221-546)	534
Non-Hispanic whites	99-00	**29.2** (24.0-35.4)	**37.6** (31.3-43.8)	**85.8** (68.3-99.4)	**171** (138-228)	**270** (187-375)	915
	01-02	**35.6** (31.8-40.0)	**40.4** (36.1-44.7)	**89.6** (78.5-101)	**175** (153-198)	**254** (214-337)	1222
	03-04	**39.8** (35.5-44.7)	**45.8** (38.9-54.9)	**109** (95.8-126)	**255** (206-267)	**365** (294-424)	1079
	05-06	**37.3** (31.2-44.6)	**42.6** (37.1-50.1)	**108** (94.0-127)	**243** (219-267)	**371** (285-456)	1039
	07-08	**39.1** (31.5-48.5)	**46.8** (39.3-55.5)	**116** (91.8-140)	**257** (188-369)	**444** (269-839)	993
	09-10	**44.1** (39.0-49.9)	**51.7** (44.2-56.7)	**114** (100-129)	**277** (236-311)	**596** (414-778)	1186

Limit of detection (LOD, see Data Analysis section) for Survey years 99-00, 01-02, 03-04, 05-06, 07-08, and 09-10 are 0.8, 1.5, 0.3, 0.04, 0.04, and 0.04 respectively.
+Not measured after Survey years 2009-2010.

Biomonitoring Summary: **http://www.cdc.gov/biomonitoring/Phytoestrogens_BiomonitoringSummary.html**

Urinary Enterodiol (creatinine corrected)

Geometric mean and selected percentiles of urine concentrations (in µg/g of creatinine) for the U.S. population from the National Health and Nutrition Examination Survey.

	Survey years+	Geometric mean (95% conf. interval)	Selected percentiles (95% confidence interval) 50th	75th	90th	95th	Sample size
Total	99-00	**24.2** (20.3-28.9)	**29.9** (25.0-34.7)	**70.5** (59.6-82.1)	**146** (124-177)	**240** (199-320)	2527
	01-02	**33.5** (30.7-36.7)	**37.6** (33.0-42.1)	**79.2** (72.6-87.3)	**149** (136-164)	**224** (197-250)	2794
	03-04	**37.0** (33.6-40.7)	**41.7** (37.9-45.4)	**95.9** (85.6-106)	**194** (171-213)	**294** (247-368)	2594
	05-06	**36.8** (32.7-41.4)	**41.0** (35.9-46.3)	**103** (94.3-114)	**204** (174-219)	**323** (280-424)	2528
	07-08	**37.0** (32.3-42.3)	**42.1** (36.8-48.1)	**103** (87.1-117)	**224** (164-328)	**395** (292-634)	2424
	09-10	**42.3** (38.9-46.1)	**47.1** (44.9-49.8)	**108** (101-117)	**281** (234-333)	**522** (415-602)	2791
Age group							
6-11 years	99-00	**27.0** (18.6-39.3)	**33.7** (21.8-43.7)	**62.7** (43.0-108)	**168** (81.6-290)	**290** (150-411)	327
	01-02	**38.1** (32.5-44.7)	**39.3** (30.8-53.1)	**78.3** (66.6-103)	**188** (147-244)	**304** (242-389)	396
	03-04	**44.7** (37.4-53.5)	**46.6** (38.5-58.3)	**93.3** (73.9-125)	**177** (128-205)	**215** (181-413)	341
	05-06	**36.6** (28.9-46.4)	**37.8** (32.3-46.5)	**75.6** (60.9-105)	**156** (109-219)	**223** (165-326)	351
	07-08	**47.2** (37.5-59.4)	**48.0** (38.0-65.2)	**86.3** (67.9-178)	**230** (181-297)	**335** (230-854)	360
	09-10	**52.6** (45.0-61.4)	**54.3** (39.8-64.5)	**104** (79.5-139)	**235** (145-335)	**336** (239-413)	370
12-19 years	99-00	**20.1** (16.7-24.2)	**24.1** (19.6-30.1)	**55.1** (42.6-71.7)	**99.5** (91.5-116)	**158** (121-177)	744
	01-02	**27.2** (23.3-31.8)	**28.7** (24.9-34.9)	**62.7** (54.9-71.0)	**104** (84.2-139)	**152** (111-225)	744
	03-04	**33.8** (30.3-37.7)	**34.8** (33.2-38.8)	**67.6** (64.1-73.9)	**130** (107-164)	**221** (138-324)	729
	05-06	**29.0** (25.2-33.3)	**31.4** (27.8-36.1)	**68.8** (57.7-80.7)	**131** (113-160)	**167** (160-216)	693
	07-08	**28.7** (22.3-36.9)	**33.8** (25.1-43.3)	**73.4** (52.9-99.3)	**131** (100-207)	**207** (128-280)	375
	09-10	**35.3** (29.5-42.1)	**37.8** (29.7-44.1)	**81.7** (66.9-101)	**170** (111-303)	**306** (170-763)	447
20 years and older	99-00	**24.7** (20.6-29.5)	**30.6** (26.0-34.8)	**73.0** (62.5-84.5)	**157** (129-184)	**242** (199-344)	1456
	01-02	**34.2** (30.3-38.5)	**39.6** (32.5-45.3)	**84.1** (73.8-93.3)	**152** (136-169)	**224** (193-250)	1654
	03-04	**36.7** (32.5-41.4)	**42.0** (37.1-47.8)	**103** (91.8-111)	**205** (173-239)	**327** (256-431)	1524
	05-06	**38.2** (33.1-44.0)	**43.1** (36.4-49.4)	**111** (96.0-128)	**216** (187-242)	**358** (291-475)	1484
	07-08	**37.5** (32.2-43.7)	**42.5** (36.8-49.9)	**109** (90.7-134)	**242** (167-372)	**447** (328-718)	1689
	09-10	**42.6** (39.0-46.4)	**48.3** (46.0-51.1)	**113** (103-128)	**303** (252-355)	**579** (461-747)	1974
Gender							
Males	99-00	**19.8** (15.4-25.4)	**25.4** (20.0-31.4)	**55.1** (46.4-64.2)	**122** (94.6-168)	**199** (145-282)	1206
	01-02	**28.7** (26.0-31.7)	**31.4** (27.0-36.8)	**71.3** (64.2-78.0)	**136** (114-160)	**212** (179-259)	1375
	03-04	**31.1** (27.5-35.0)	**34.8** (32.3-38.5)	**78.0** (68.8-92.7)	**165** (128-211)	**249** (187-361)	1244
	05-06	**32.5** (26.7-39.5)	**34.2** (29.5-41.1)	**90.9** (75.2-102)	**192** (147-235)	**311** (218-490)	1252
	07-08	**27.9** (23.9-32.6)	**33.0** (28.5-38.6)	**79.3** (72.4-87.1)	**164** (122-234)	**259** (172-499)	1198
	09-10	**34.2** (27.9-42.0)	**39.0** (33.0-45.6)	**80.9** (69.7-103)	**197** (150-253)	**345** (235-494)	1376
Females	99-00	**29.3** (25.0-34.4)	**35.4** (29.5-41.6)	**85.2** (74.5-92.3)	**165** (141-201)	**321** (226-370)	1321
	01-02	**38.9** (34.9-43.3)	**43.9** (39.3-48.7)	**88.3** (74.7-102)	**157** (139-174)	**235** (180-304)	1419
	03-04	**43.6** (38.3-49.7)	**49.0** (43.4-57.7)	**109** (98.8-123)	**215** (178-270)	**377** (278-443)	1350
	05-06	**41.4** (36.1-47.4)	**48.2** (41.8-55.7)	**116** (98.0-131)	**210** (183-231)	**376** (235-470)	1276
	07-08	**48.4** (40.6-57.6)	**53.2** (44.2-62.9)	**128** (105-154)	**300** (215-388)	**529** (372-759)	1226
	09-10	**52.1** (46.7-58.1)	**59.4** (49.4-66.2)	**139** (121-156)	**384** (311-450)	**694** (526-938)	1415

+Not measured after Survey years 2009-2010.

Biomonitoring Summary: http://www.cdc.gov/biomonitoring/Phytoestrogens_BiomonitoringSummary.html

Urinary Enterodiol (creatinine corrected)

Geometric mean and selected percentiles of urine concentrations (in µg/g of creatinine) for the U.S. population from the National Health and Nutrition Examination Survey.

	Survey years+	Geometric mean (95% conf. interval)	Selected percentiles (95% confidence interval) 50th	75th	90th	95th	Sample size
Race/ethnicity							
Mexican Americans	99-00	**19.6** (17.3-22.2)	**23.5** (19.7-28.7)	**60.6** (49.8-77.7)	**134** (114-154)	**193** (154-227)	791
	01-02	**28.7** (24.5-33.7)	**31.0** (27.0-37.3)	**64.1** (55.0-77.5)	**133** (94.4-183)	**223** (143-337)	679
	03-04	**29.9** (23.8-37.4)	**34.0** (26.5-42.8)	**74.1** (62.0-101)	**176** (118-234)	**241** (189-364)	653
	05-06	**34.4** (28.3-41.8)	**35.3** (30.7-40.0)	**84.6** (71.2-110)	**200** (145-271)	**315** (221-515)	634
	07-08	**27.7** (24.5-31.3)	**29.5** (23.9-33.8)	**75.9** (61.3-88.2)	**169** (124-198)	**240** (178-387)	520
	09-10	**29.3** (25.8-33.3)	**33.6** (29.5-38.0)	**72.3** (61.4-82.7)	**157** (116-193)	**265** (193-351)	604
Non-Hispanic blacks	99-00	**16.6** (13.9-19.7)	**18.8** (14.4-22.9)	**47.3** (37.7-55.8)	**113** (85.9-145)	**169** (131-272)	608
	01-02	**24.5** (19.7-30.6)	**27.0** (22.6-33.3)	**57.5** (48.2-73.2)	**117** (92.2-143)	**157** (118-246)	706
	03-04	**28.6** (24.5-33.4)	**30.4** (26.1-36.1)	**68.3** (53.4-87.5)	**126** (96.3-191)	**203** (153-227)	699
	05-06	**24.3** (20.5-28.9)	**25.3** (22.1-30.4)	**68.6** (50.3-86.0)	**125** (110-147)	**190** (139-245)	662
	07-08	**26.6** (20.8-34.0)	**30.0** (23.6-38.0)	**62.9** (51.9-80.8)	**139** (102-191)	**257** (156-459)	562
	09-10	**26.1** (22.1-30.8)	**29.7** (25.5-35.9)	**73.9** (56.7-88.3)	**153** (115-191)	**252** (191-339)	533
Non-Hispanic whites	99-00	**28.6** (24.3-33.6)	**34.4** (28.9-39.3)	**75.8** (65.3-87.2)	**163** (130-197)	**252** (203-363)	915
	01-02	**35.3** (31.6-39.4)	**40.9** (34.3-46.8)	**83.3** (74.7-90.3)	**152** (136-173)	**225** (189-275)	1222
	03-04	**39.3** (34.4-44.8)	**45.5** (38.4-53.0)	**105** (90.2-116)	**202** (168-234)	**299** (244-374)	1079
	05-06	**39.2** (33.3-46.1)	**45.0** (39.4-50.2)	**111** (96.2-124)	**210** (175-235)	**331** (277-439)	1039
	07-08	**40.7** (32.7-50.6)	**46.4** (38.6-56.7)	**109** (86.3-138)	**240** (154-384)	**424** (257-802)	993
	09-10	**49.5** (43.6-56.1)	**53.5** (48.3-59.0)	**123** (106-140)	**325** (252-384)	**572** (414-766)	1186

+Not measured after Survey years 2009-2010.

Biomonitoring Summary: http://www.cdc.gov/biomonitoring/Phytoestrogens_BiomonitoringSummary.html

Urinary Enterolactone

Geometric mean and selected percentiles of urine concentrations (in µg/L) for the U.S. population from the National Health and Nutrition Examination Survey.

	Survey years+	Geometric mean (95% conf. interval)	Selected percentiles (95% confidence interval) 50th	75th	90th	95th	Sample size
Total	99-00	**239** (200-286)	**315** (245-381)	**726** (595-879)	**1970** (1440-2370)	**2800** (2500-3140)	2548
	01-02	**259** (233-287)	**350** (314-389)	**807** (739-873)	**1590** (1440-1820)	**2720** (1870-3430)	2794
	03-04	**298** (265-334)	**395** (331-464)	**900** (819-969)	**1790** (1560-2040)	**2620** (2360-2880)	2594
	05-06	**283** (245-327)	**385** (338-460)	**935** (824-1060)	**1850** (1710-2040)	**2880** (2480-3160)	2528
	07-08	**242** (211-277)	**311** (263-371)	**876** (741-1010)	**1740** (1480-2050)	**2910** (2170-3320)	2424
	09-10	**215** (193-240)	**267** (229-306)	**734** (659-853)	**1760** (1490-2090)	**2690** (2220-3160)	2792
Age group							
6-11 years	99-00	**308** (219-432)	**356** (243-474)	**721** (520-1320)	**1730** (973-2840)	**2840** (1700-3590)	331
	01-02	**288** (245-339)	**329** (271-412)	**680** (566-794)	**1380** (929-1620)	**2200** (1420-2550)	396
	03-04	**384** (287-513)	**414** (299-567)	**926** (589-1190)	**1660** (1140-2280)	**2360** (1700-3440)	341
	05-06	**300** (242-373)	**399** (280-546)	**851** (667-984)	**1390** (1000-1770)	**1910** (1390-2460)	351
	07-08	**255** (203-320)	**314** (247-418)	**706** (547-882)	**1340** (897-1610)	**1730** (1150-2600)	360
	09-10	**255** (206-316)	**275** (209-346)	**666** (552-749)	**1480** (1180-1720)	**1870** (1500-2870)	371
12-19 years	99-00	**250** (191-327)	**317** (242-410)	**672** (454-888)	**1760** (973-2480)	**2920** (1950-4330)	746
	01-02	**267** (231-308)	**321** (255-399)	**729** (617-856)	**1480** (1230-1800)	**2180** (1560-3440)	744
	03-04	**314** (267-369)	**400** (333-468)	**866** (736-1050)	**1690** (1410-2080)	**2620** (2000-2890)	729
	05-06	**292** (245-348)	**393** (350-492)	**877** (681-1010)	**1620** (1470-1800)	**2360** (1780-2960)	693
	07-08	**250** (203-309)	**281** (217-444)	**832** (645-1000)	**1450** (1100-2030)	**2390** (1450-3320)	375
	09-10	**194** (154-244)	**229** (181-318)	**632** (479-735)	**1340** (812-2040)	**2190** (1340-2960)	447
20 years and older	99-00	**230** (193-274)	**310** (242-375)	**734** (599-888)	**2000** (1490-2390)	**2790** (2510-3540)	1471
	01-02	**254** (223-289)	**357** (314-397)	**835** (760-914)	**1660** (1460-1890)	**2840** (1890-3610)	1654
	03-04	**286** (253-324)	**394** (311-465)	**900** (824-960)	**1820** (1560-2060)	**2630** (2350-3100)	1524
	05-06	**280** (238-330)	**379** (332-460)	**958** (843-1110)	**1970** (1760-2310)	**3130** (2540-3570)	1484
	07-08	**239** (205-280)	**311** (258-374)	**923** (746-1090)	**1800** (1480-2370)	**3000** (2210-4030)	1689
	09-10	**215** (189-243)	**272** (228-320)	**768** (666-930)	**1850** (1590-2140)	**2770** (2350-3690)	1974
Gender							
Males	99-00	**254** (212-304)	**351** (266-418)	**778** (579-1050)	**2000** (1580-2400)	**2730** (2430-3350)	1219
	01-02	**262** (233-295)	**340** (314-387)	**873** (769-957)	**1810** (1490-2470)	**3050** (1990-4070)	1375
	03-04	**314** (280-351)	**425** (376-477)	**938** (840-1060)	**1760** (1540-2050)	**2620** (2060-3230)	1244
	05-06	**301** (247-368)	**421** (341-515)	**1000** (854-1150)	**2020** (1730-2330)	**3130** (2660-3340)	1252
	07-08	**245** (215-278)	**321** (261-389)	**882** (714-1030)	**1620** (1420-2050)	**2700** (2000-3360)	1198
	09-10	**210** (173-256)	**254** (207-324)	**718** (583-870)	**1670** (1300-2110)	**2680** (1850-4060)	1377
Females	99-00	**226** (180-284)	**287** (236-339)	**684** (560-799)	**1890** (1200-2460)	**2830** (2100-4330)	1329
	01-02	**255** (226-288)	**357** (298-397)	**759** (680-840)	**1450** (1190-1700)	**2200** (1710-2950)	1419
	03-04	**283** (233-343)	**371** (278-465)	**859** (706-984)	**1810** (1440-2170)	**2630** (2210-3440)	1350
	05-06	**267** (220-324)	**359** (318-445)	**874** (716-1030)	**1770** (1440-2020)	**2660** (2040-3270)	1276
	07-08	**240** (196-293)	**301** (234-394)	**875** (747-1030)	**1870** (1510-2200)	**2920** (2160-3510)	1226
	09-10	**220** (196-247)	**281** (237-325)	**749** (662-868)	**1850** (1520-2220)	**2690** (2350-3200)	1415

Limit of detection (LOD, see Data Analysis section) for Survey years 99-00, 01-02, 03-04, 05-06, 07-08, and 09-10 are 0.6, 1.9, 0.3, 0.1, 0.1, and 0.1 respectively.
+Not measured after Survey years 2009-2010.

Biomonitoring Summary: http://www.cdc.gov/biomonitoring/Phytoestrogens_BiomonitoringSummary.html

Urinary Enterolactone

Geometric mean and selected percentiles of urine concentrations (in µg/L) for the U.S. population from the National Health and Nutrition Examination Survey.

	Survey years+	Geometric mean (95% conf. interval)	Selected percentiles (95% confidence interval) 50th	75th	90th	95th	Sample size
Race/ethnicity							
Mexican Americans	99-00	**212** (169-265)	**281** (230-335)	**631** (539-732)	**1650** (950-2210)	**2690** (2380-3350)	813
	01-02	**275** (221-342)	**347** (312-395)	**778** (671-913)	**1520** (1090-1920)	**2340** (1610-2990)	679
	03-04	**275** (239-316)	**376** (316-435)	**849** (744-958)	**1560** (1320-1860)	**2240** (1860-3100)	653
	05-06	**359** (311-415)	**420** (364-515)	**914** (750-1080)	**1710** (1340-2060)	**2660** (1950-3180)	634
	07-08	**227** (182-283)	**320** (240-385)	**747** (634-876)	**1520** (1300-1740)	**2070** (1650-2840)	520
	09-10	**198** (166-237)	**265** (215-303)	**642** (524-752)	**1290** (981-1640)	**1930** (1380-2280)	604
Non-Hispanic blacks	99-00	**262** (196-349)	**363** (293-440)	**759** (629-925)	**1730** (1000-2420)	**2500** (1870-3280)	605
	01-02	**278** (226-342)	**418** (341-479)	**769** (686-853)	**1450** (1160-1840)	**2000** (1540-2420)	706
	03-04	**328** (285-378)	**437** (362-526)	**942** (768-1110)	**1580** (1360-1820)	**2280** (1880-2640)	699
	05-06	**276** (237-322)	**411** (346-483)	**924** (827-1050)	**1660** (1430-2040)	**2620** (2220-3080)	662
	07-08	**252** (185-343)	**362** (272-452)	**902** (700-1120)	**1820** (1320-2100)	**2350** (1920-3160)	562
	09-10	**187** (140-250)	**267** (180-346)	**777** (543-945)	**1410** (1150-1810)	**1920** (1580-2340)	534
Non-Hispanic whites	99-00	**247** (196-311)	**317** (240-403)	**752** (616-955)	**2040** (1600-2450)	**3000** (2460-3880)	917
	01-02	**267** (235-303)	**357** (307-397)	**834** (750-923)	**1630** (1420-1890)	**2780** (1820-3740)	1222
	03-04	**299** (254-352)	**396** (299-488)	**900** (789-996)	**1810** (1510-2140)	**2680** (2310-3230)	1079
	05-06	**274** (228-329)	**373** (318-460)	**923** (745-1080)	**1800** (1610-2020)	**2910** (2360-3220)	1039
	07-08	**265** (218-322)	**328** (266-409)	**926** (733-1130)	**1790** (1420-2580)	**3030** (2050-4310)	993
	09-10	**236** (210-265)	**293** (244-334)	**765** (660-899)	**1900** (1590-2310)	**2990** (2210-4300)	1186

Limit of detection (LOD, see Data Analysis section) for Survey years 99-00, 01-02, 03-04, 05-06, 07-08, and 09-10 are 0.6, 1.9, 0.3, 0.1, 0.1, and 0.1 respectively.
+Not measured after Survey years 2009-2010.

Biomonitoring Summary: **http://www.cdc.gov/biomonitoring/Phytoestrogens_BiomonitoringSummary.html**

Urinary Enterolactone (creatinine corrected)

Geometric mean and selected percentiles of urine concentrations (in µg/g of creatinine) for the U.S. population from the National Health and Nutrition Examination Survey.

	Survey years+	Geometric mean (95% conf. interval)	Selected percentiles (95% confidence interval) 50th	75th	90th	95th	Sample size
Total	99-00	**218** (184-260)	**284** (247-336)	**733** (613-869)	**1580** (1290-1830)	**2250** (1860-2830)	2548
	01-02	**243** (220-268)	**324** (293-360)	**756** (668-858)	**1430** (1250-1580)	**2120** (1720-2450)	2794
	03-04	**279** (245-317)	**371** (324-430)	**810** (697-911)	**1590** (1350-1910)	**2400** (2000-2890)	2594
	05-06	**276** (237-321)	**382** (329-448)	**856** (775-975)	**1640** (1480-1840)	**2650** (2240-3380)	2528
	07-08	**243** (211-281)	**345** (292-402)	**826** (733-946)	**1650** (1390-2050)	**2730** (2080-3510)	2424
	09-10	**230** (206-258)	**301** (268-342)	**779** (695-882)	**1800** (1540-2090)	**2820** (2400-3420)	2791
Age group							
6-11 years	99-00	**315** (238-416)	**384** (266-435)	**704** (495-1110)	**1580** (1110-2010)	**2100** (1580-3040)	331
	01-02	**327** (274-391)	**349** (263-478)	**738** (603-994)	**1420** (1140-1800)	**2020** (1420-2940)	396
	03-04	**409** (310-540)	**470** (354-632)	**904** (669-1150)	**1480** (1090-2420)	**2300** (1480-2690)	341
	05-06	**331** (268-408)	**459** (325-528)	**778** (637-1010)	**1480** (1130-1750)	**1820** (1430-2510)	351
	07-08	**313** (255-384)	**402** (309-484)	**766** (725-824)	**1310** (1020-1590)	**1650** (1310-2220)	360
	09-10	**346** (283-424)	**416** (323-471)	**753** (607-904)	**1440** (1100-2000)	**2290** (1440-3340)	370
12-19 years	99-00	**169** (133-214)	**210** (172-264)	**486** (371-615)	**1150** (742-1540)	**1850** (1310-2350)	746
	01-02	**206** (178-239)	**255** (223-293)	**619** (466-753)	**1110** (869-1480)	**1500** (1140-2080)	744
	03-04	**235** (202-273)	**285** (255-307)	**631** (533-744)	**1230** (993-1350)	**1510** (1240-2230)	729
	05-06	**216** (184-254)	**297** (255-336)	**627** (514-701)	**1010** (853-1170)	**1410** (1150-1700)	693
	07-08	**192** (149-248)	**273** (197-373)	**540** (477-676)	**936** (708-1220)	**1620** (936-3420)	375
	09-10	**182** (147-226)	**228** (176-295)	**514** (362-809)	**1140** (817-1530)	**1740** (1140-3160)	447
20 years and older	99-00	**217** (181-261)	**288** (249-350)	**785** (653-923)	**1640** (1330-1890)	**2310** (1890-3110)	1471
	01-02	**240** (213-271)	**331** (300-375)	**786** (672-915)	**1460** (1300-1630)	**2180** (1890-2470)	1654
	03-04	**274** (236-318)	**377** (316-448)	**823** (697-937)	**1700** (1430-1980)	**2480** (2040-3100)	1524
	05-06	**281** (236-335)	**399** (326-491)	**942** (831-1040)	**1730** (1570-2200)	**2930** (2350-3530)	1484
	07-08	**246** (210-287)	**350** (291-418)	**906** (784-1040)	**1810** (1420-2360)	**2820** (2320-3570)	1689
	09-10	**229** (203-257)	**300** (271-346)	**828** (727-939)	**1920** (1640-2350)	**3070** (2530-3760)	1974
Gender							
Males	99-00	**199** (170-234)	**263** (228-309)	**664** (490-828)	**1380** (1200-1710)	**2030** (1780-2480)	1219
	01-02	**213** (191-238)	**287** (255-316)	**682** (601-764)	**1350** (1090-1580)	**1980** (1570-2550)	1375
	03-04	**245** (215-280)	**330** (288-372)	**729** (676-808)	**1330** (1160-1580)	**2040** (1590-2380)	1244
	05-06	**243** (196-300)	**336** (279-418)	**800** (707-897)	**1500** (1270-1680)	**2200** (1890-2480)	1252
	07-08	**206** (176-241)	**303** (251-358)	**715** (594-859)	**1410** (1080-1850)	**2140** (1560-3060)	1198
	09-10	**192** (157-235)	**261** (210-310)	**650** (543-766)	**1440** (1170-1670)	**2300** (1540-3220)	1376
Females	99-00	**238** (191-297)	**303** (260-379)	**819** (662-968)	**1720** (1390-2010)	**2550** (1940-3390)	1329
	01-02	**274** (241-312)	**356** (313-407)	**833** (710-1000)	**1490** (1320-1670)	**2150** (1890-2410)	1419
	03-04	**314** (257-385)	**414** (327-510)	**866** (704-1090)	**1840** (1460-2280)	**2840** (2220-3910)	1350
	05-06	**313** (261-375)	**419** (337-529)	**954** (809-1060)	**1840** (1550-2320)	**3100** (2350-4580)	1276
	07-08	**285** (234-346)	**396** (327-469)	**966** (843-1060)	**1910** (1560-2410)	**3040** (2730-3740)	1226
	09-10	**274** (244-309)	**362** (305-416)	**907** (789-1100)	**2200** (1730-2810)	**3570** (2800-4200)	1415

+Not measured after Survey years 2009-2010.

Biomonitoring Summary: http://www.cdc.gov/biomonitoring/Phytoestrogens_BiomonitoringSummary.html

Urinary Enterolactone (creatinine corrected)

Geometric mean and selected percentiles of urine concentrations (in µg/g of creatinine) for the U.S. population from the National Health and Nutrition Examination Survey.

	Survey years+	Geometric mean (95% conf. interval)	Selected percentiles (95% confidence interval) 50th	75th	90th	95th	Sample size
Race/ethnicity							
Mexican Americans	99-00	**194** (165-228)	**254** (225-282)	**605** (519-695)	**1340** (969-1740)	**2100** (1620-2790)	813
	01-02	**259** (213-314)	**362** (296-409)	**730** (586-905)	**1240** (1010-1490)	**1630** (1240-2540)	679
	03-04	**248** (217-282)	**350** (310-403)	**724** (657-826)	**1320** (1020-1560)	**1820** (1460-2170)	653
	05-06	**324** (267-393)	**379** (315-471)	**773** (679-953)	**1560** (1290-1680)	**2060** (1630-2560)	634
	07-08	**223** (185-268)	**312** (267-379)	**733** (642-871)	**1330** (1110-1580)	**1860** (1620-2160)	520
	09-10	**208** (174-249)	**284** (214-322)	**624** (505-728)	**1270** (1090-1460)	**1870** (1460-2130)	604
Non-Hispanic blacks	99-00	**168** (125-226)	**214** (173-274)	**546** (411-732)	**1130** (874-1450)	**1590** (1120-2560)	605
	01-02	**195** (155-245)	**302** (257-331)	**562** (470-629)	**985** (821-1130)	**1490** (1080-1730)	706
	03-04	**233** (197-274)	**303** (276-347)	**621** (512-707)	**1050** (917-1350)	**1550** (1170-2220)	699
	05-06	**193** (167-223)	**286** (252-331)	**630** (556-729)	**1120** (967-1230)	**1490** (1220-1650)	662
	07-08	**195** (144-264)	**291** (191-408)	**659** (564-741)	**1220** (993-1360)	**1480** (1350-2060)	562
	09-10	**150** (113-200)	**256** (183-328)	**539** (457-659)	**927** (757-1160)	**1310** (1000-1720)	533
Non-Hispanic whites	99-00	**241** (194-300)	**323** (279-388)	**828** (674-997)	**1780** (1390-2020)	**2490** (1930-3340)	917
	01-02	**264** (232-301)	**339** (299-393)	**833** (719-944)	**1530** (1340-1880)	**2410** (1940-2800)	1222
	03-04	**294** (246-353)	**399** (326-488)	**836** (707-980)	**1660** (1330-2040)	**2500** (1990-3350)	1079
	05-06	**288** (238-347)	**403** (326-500)	**926** (809-1050)	**1700** (1500-2200)	**2930** (2230-3710)	1039
	07-08	**276** (225-337)	**386** (318-467)	**911** (736-1100)	**1870** (1370-2730)	**2850** (2200-3640)	993
	09-10	**264** (233-299)	**329** (290-385)	**895** (779-1030)	**2140** (1640-2780)	**3420** (2740-3990)	1186

+Not measured after Survey years 2009-2010.

Biomonitoring Summary: http://www.cdc.gov/biomonitoring/Phytoestrogens_BiomonitoringSummary.html

Urinary Equol

Metabolite of Daidzein

Geometric mean and selected percentiles of urine concentrations (in µg/L) for the U.S. population from the National Health and Nutrition Examination Survey.

	Survey years+	Geometric mean (95% conf. interval)	Selected percentiles (95% confidence interval) 50th	75th	90th	95th	Sample size
Total	99-00	**8.37** (7.21-9.72)	**8.02** (6.27-9.90)	**17.2** (15.2-19.8)	**35.0** (28.9-41.6)	**53.7** (40.1-74.2)	2182
	01-02	**9.17** (7.76-10.8)	**9.00** (7.40-10.5)	**19.6** (16.6-23.5)	**42.1** (34.3-51.5)	**73.5** (53.6-89.2)	2794
	03-04	**8.02** (7.07-9.10)	**8.00** (6.80-9.40)	**18.2** (15.2-20.8)	**36.6** (31.3-40.0)	**64.9** (45.4-97.9)	2590
	05-06	**8.40** (7.63-9.24)	**8.61** (7.89-9.17)	**18.1** (16.4-20.4)	**37.6** (33.9-41.8)	**64.5** (54.8-85.3)	2527
	07-08	**7.29** (6.21-8.57)	**7.18** (6.18-8.44)	**15.3** (12.5-18.5)	**30.7** (24.5-43.2)	**65.9** (50.7-131)	2424
	09-10	**7.82** (6.91-8.85)	**7.39** (6.59-8.34)	**17.1** (14.9-18.9)	**38.0** (33.9-42.4)	**68.6** (52.4-95.6)	2792
Age group							
6-11 years	99-00	**10.5** (7.65-14.3)	**11.7** (5.43-18.6)	**24.9** (17.5-29.5)	**34.4** (29.5-53.3)	**56.1** (30.1-149)	272
	01-02	**12.2** (10.2-14.6)	**13.7** (11.1-16.2)	**26.2** (17.9-37.9)	**50.4** (35.0-84.3)	**85.4** (50.4-159)	396
	03-04	**12.4** (9.71-15.8)	**12.1** (8.40-17.8)	**24.4** (20.1-31.2)	**46.7** (33.5-82.3)	**85.8** (44.9-118)	341
	05-06	**13.3** (11.3-15.7)	**13.5** (12.1-16.8)	**26.5** (20.8-34.1)	**45.6** (39.3-69.6)	**70.3** (44.7-144)	351
	07-08	**10.9** (8.38-14.3)	**11.3** (8.60-13.2)	**22.0** (15.8-27.5)	**55.9** (24.2-77.8)	**73.3** (59.5-115)	360
	09-10	**13.4** (9.85-18.4)	**12.7** (9.01-16.7)	**28.5** (22.6-41.8)	**68.0** (45.3-179)	**242** (68.0-598)	371
12-19 years	99-00	**10.9** (8.64-13.8)	**10.8** (8.52-13.4)	**22.3** (16.0-34.9)	**42.9** (34.1-71.3)	**71.6** (48.1-210)	657
	01-02	**10.2** (8.50-12.1)	**10.5** (8.20-12.5)	**20.5** (16.8-24.8)	**43.1** (30.1-56.1)	**70.0** (46.3-99.2)	744
	03-04	**10.6** (8.97-12.4)	**10.5** (8.70-12.2)	**22.6** (19.3-26.4)	**39.9** (34.8-45.1)	**61.9** (45.1-113)	729
	05-06	**11.6** (10.3-13.0)	**11.4** (9.25-12.3)	**23.2** (20.3-28.8)	**46.3** (37.2-64.0)	**81.8** (50.1-146)	693
	07-08	**8.47** (7.19-9.98)	**7.91** (6.79-9.30)	**16.0** (12.8-19.0)	**32.7** (24.5-43.2)	**65.6** (33.6-148)	375
	09-10	**11.4** (8.90-14.6)	**9.60** (7.57-14.1)	**24.6** (19.6-29.6)	**48.0** (35.9-112)	**220** (69.4-701)	447
20 years and older	99-00	**7.79** (6.79-8.94)	**7.43** (5.71-8.85)	**16.0** (13.6-18.1)	**33.1** (24.4-39.7)	**52.2** (36.3-93.9)	1253
	01-02	**8.70** (7.29-10.4)	**8.00** (6.20-10.2)	**18.6** (15.0-22.3)	**41.3** (34.1-47.4)	**73.5** (53.9-89.0)	1654
	03-04	**7.28** (6.37-8.33)	**7.20** (6.00-8.70)	**16.0** (14.2-19.2)	**33.9** (28.2-38.9)	**63.0** (41.3-121)	1520
	05-06	**7.58** (6.82-8.42)	**7.57** (7.01-8.30)	**16.6** (14.9-18.2)	**33.6** (29.1-42.6)	**58.1** (50.6-89.0)	1483
	07-08	**6.82** (5.70-8.17)	**6.75** (5.70-7.98)	**14.3** (11.6-18.3)	**28.9** (23.6-41.9)	**65.8** (47.7-135)	1689
	09-10	**6.97** (6.07-8.00)	**6.72** (5.78-7.75)	**15.0** (13.1-17.1)	**33.2** (28.4-38.3)	**57.7** (44.6-75.4)	1974
Gender							
Males	99-00	**9.15** (7.37-11.4)	**8.44** (6.36-11.2)	**19.0** (15.9-24.0)	**35.6** (29.2-54.8)	**71.3** (39.7-166)	1042
	01-02	**9.41** (7.99-11.1)	**9.20** (7.70-10.8)	**20.1** (16.7-26.1)	**43.1** (32.4-53.1)	**61.7** (51.8-81.5)	1375
	03-04	**8.56** (7.54-9.72)	**8.70** (7.20-10.2)	**19.0** (15.9-21.6)	**38.0** (31.9-44.2)	**72.6** (45.4-100)	1240
	05-06	**9.13** (7.99-10.4)	**9.42** (8.16-10.8)	**20.0** (16.7-23.8)	**39.4** (33.8-45.3)	**63.1** (52.0-88.1)	1252
	07-08	**7.58** (6.40-8.97)	**7.74** (6.62-8.80)	**15.5** (12.5-18.2)	**32.7** (24.5-41.9)	**65.6** (47.7-133)	1198
	09-10	**8.20** (7.14-9.42)	**8.18** (6.86-9.67)	**18.4** (15.2-21.3)	**39.3** (31.4-48.0)	**70.7** (53.4-112)	1377
Females	99-00	**7.70** (6.79-8.75)	**7.57** (5.79-9.04)	**15.6** (12.7-18.9)	**33.6** (26.7-37.7)	**48.2** (37.1-62.9)	1140
	01-02	**8.94** (7.38-10.8)	**8.60** (6.70-10.7)	**19.0** (15.6-22.9)	**41.6** (33.3-51.5)	**79.8** (56.6-122)	1419
	03-04	**7.55** (6.44-8.84)	**7.30** (6.20-9.00)	**16.9** (14.7-19.8)	**33.8** (28.3-40.0)	**60.3** (42.5-116)	1350
	05-06	**7.75** (6.85-8.78)	**7.57** (6.87-8.37)	**16.7** (15.0-18.0)	**35.6** (30.9-43.1)	**69.2** (51.7-125)	1275
	07-08	**7.03** (5.84-8.47)	**6.75** (5.85-7.85)	**15.1** (12.3-19.0)	**30.0** (24.4-48.3)	**76.3** (49.5-163)	1226
	09-10	**7.47** (6.33-8.81)	**6.75** (5.70-7.85)	**15.4** (13.1-18.5)	**36.4** (29.4-45.3)	**65.2** (46.4-130)	1415

Limit of detection (LOD, see Data Analysis section) for Survey years 99-00, 01-02, 03-04, 05-06, 07-08, and 09-10 are 3.0, 3.3, 0.3, 0.06, 0.06, and 0.06 respectively.
+Not measured after Survey years 2009-2010.

Biomonitoring Summary: http://www.cdc.gov/biomonitoring/Phytoestrogens_BiomonitoringSummary.html

Urinary Equol

Metabolite of Daidzein

Geometric mean and selected percentiles of urine concentrations (in µg/L) for the U.S. population from the National Health and Nutrition Examination Survey.

	Survey years+	Geometric mean (95% conf. interval)	Selected percentiles (95% confidence interval) 50th	75th	90th	95th	Sample size
Race/ethnicity							
Mexican Americans	99-00	**5.24** (4.77-5.76)	**4.51** (3.65-5.18)	**9.48** (7.96-10.3)	**18.5** (14.5-22.6)	**30.9** (21.6-48.4)	726
	01-02	**7.22** (6.04-8.62)	**6.50** (4.40-9.10)	**14.2** (11.3-20.1)	**31.4** (21.1-41.0)	**42.4** (38.1-60.2)	679
	03-04	**6.08** (5.08-7.28)	**5.70** (4.70-6.80)	**12.5** (9.80-15.4)	**26.1** (18.1-39.7)	**43.6** (34.3-88.2)	653
	05-06	**6.04** (5.31-6.87)	**6.13** (5.28-7.35)	**13.3** (11.2-14.7)	**25.2** (19.6-33.4)	**47.6** (33.6-67.1)	634
	07-08	**5.52** (5.02-6.07)	**5.15** (4.71-5.86)	**11.4** (10.1-14.0)	**23.2** (20.2-30.3)	**39.9** (30.7-60.9)	520
	09-10	**5.07** (4.51-5.71)	**5.13** (4.45-5.74)	**11.1** (8.72-13.0)	**20.2** (17.1-29.7)	**46.3** (29.7-75.4)	604
Non-Hispanic blacks	99-00	**6.73** (5.20-8.71)	**6.24** (3.86-10.0)	**15.1** (12.7-17.6)	**27.6** (19.4-35.6)	**36.4** (28.9-49.4)	514
	01-02	**7.15** (6.06-8.43)	**6.10** (4.70-7.60)	**14.7** (12.0-18.7)	**30.9** (22.8-41.9)	**45.7** (36.1-90.5)	706
	03-04	**7.35** (6.16-8.79)	**7.90** (6.00-9.60)	**16.5** (14.2-18.3)	**32.0** (25.1-37.5)	**47.0** (37.8-68.2)	696
	05-06	**6.96** (5.89-8.22)	**6.37** (5.44-7.95)	**15.1** (11.7-20.2)	**30.1** (23.8-39.4)	**48.8** (38.7-64.9)	662
	07-08	**6.73** (5.28-8.59)	**6.69** (5.17-8.19)	**15.2** (11.9-18.5)	**31.3** (21.7-50.7)	**72.0** (36.1-402)	562
	09-10	**5.59** (4.98-6.27)	**5.98** (5.37-6.48)	**12.2** (10.8-14.2)	**25.0** (21.6-31.0)	**43.3** (32.4-53.7)	534
Non-Hispanic whites	99-00	**9.26** (7.80-11.0)	**8.98** (6.73-11.9)	**19.0** (16.1-22.8)	**36.2** (30.1-45.4)	**56.1** (42.1-89.4)	758
	01-02	**9.91** (7.95-12.4)	**10.0** (7.30-12.6)	**22.0** (17.4-27.4)	**44.4** (35.1-57.5)	**74.4** (55.1-107)	1222
	03-04	**8.52** (7.26-10.0)	**8.80** (7.10-10.3)	**19.3** (15.4-23.0)	**37.7** (31.7-44.2)	**73.1** (46.7-120)	1078
	05-06	**9.05** (8.08-10.1)	**9.49** (8.47-10.4)	**19.4** (16.6-23.2)	**39.2** (33.9-45.1)	**69.2** (52.2-130)	1038
	07-08	**8.01** (6.45-9.93)	**8.19** (6.59-9.49)	**16.1** (12.5-21.7)	**32.7** (24.1-55.9)	**79.5** (47.7-152)	993
	09-10	**9.45** (8.04-11.1)	**9.15** (7.87-10.2)	**19.3** (17.5-22.4)	**41.3** (35.4-48.7)	**75.4** (52.4-189)	1186

Limit of detection (LOD, see Data Analysis section) for Survey years 99-00, 01-02, 03-04, 05-06, 07-08, and 09-10 are 3.0, 3.3, 0.3, 0.06, 0.06, and 0.06 respectively.
+Not measured after Survey years 2009-2010.

Biomonitoring Summary: **http://www.cdc.gov/biomonitoring/Phytoestrogens_BiomonitoringSummary.html**

Urinary Equol (creatinine corrected)

Geometric mean and selected percentiles of urine concentrations (in µg/g of creatinine) for the U.S. population from the National Health and Nutrition Examination Survey.

	Survey years+	Geometric mean (95% conf. interval)	Selected percentiles (95% confidence interval) 50th	75th	90th	95th	Sample size
Total	99-00	**7.70** (6.82-8.70)	**7.96** (6.87-9.35)	**16.2** (13.2-18.6)	**30.6** (26.9-35.1)	**50.3** (41.8-67.3)	2182
	01-02	**8.60** (7.26-10.2)	**7.98** (6.62-9.76)	**17.6** (14.8-21.8)	**37.8** (30.3-46.3)	**62.6** (50.0-85.0)	2794
	03-04	**7.52** (6.83-8.29)	**7.29** (6.56-8.18)	**14.6** (13.3-15.7)	**27.8** (24.7-31.9)	**50.6** (39.9-75.0)	2590
	05-06	**8.18** (7.33-9.14)	**7.92** (7.01-8.76)	**15.9** (14.2-17.4)	**32.7** (29.9-35.1)	**69.1** (48.4-105)	2527
	07-08	**7.33** (6.34-8.48)	**6.91** (6.13-7.86)	**14.4** (12.2-16.7)	**28.9** (23.5-37.4)	**60.9** (40.5-93.1)	2424
	09-10	**8.38** (7.52-9.33)	**7.70** (6.80-8.69)	**16.6** (15.3-18.1)	**36.3** (30.5-44.5)	**73.4** (54.2-122)	2791
Age group							
6-11 years	99-00	**10.3** (7.83-13.5)	**11.4** (7.46-16.3)	**22.6** (14.7-27.2)	**32.7** (25.5-46.0)	**47.8** (32.7-150)	272
	01-02	**13.9** (11.2-17.2)	**14.0** (10.6-17.0)	**28.8** (19.6-39.8)	**54.4** (34.9-99.8)	**88.2** (56.8-186)	396
	03-04	**13.2** (10.9-15.9)	**13.2** (9.19-17.5)	**24.2** (20.6-28.0)	**41.6** (35.2-64.1)	**93.5** (45.4-117)	341
	05-06	**14.7** (12.6-17.1)	**15.3** (13.8-17.4)	**26.2** (21.2-34.4)	**48.0** (40.6-70.3)	**88.9** (55.4-267)	351
	07-08	**13.4** (10.8-16.6)	**13.1** (10.6-15.2)	**22.6** (16.9-32.8)	**45.2** (28.8-84.4)	**72.8** (45.8-199)	360
	09-10	**18.3** (13.5-24.7)	**15.7** (11.5-19.3)	**42.0** (28.1-54.1)	**84.1** (63.5-183)	**232** (98.4-498)	370
12-19 years	99-00	**7.61** (6.17-9.39)	**8.02** (6.72-9.29)	**14.0** (11.4-20.4)	**27.5** (20.8-38.3)	**47.4** (27.5-149)	657
	01-02	**7.83** (6.68-9.17)	**7.77** (6.29-9.13)	**17.4** (14.9-19.2)	**31.9** (25.3-41.7)	**54.3** (33.0-76.7)	744
	03-04	**7.91** (6.59-9.49)	**8.11** (6.80-9.09)	**14.5** (11.8-17.5)	**30.1** (21.0-38.2)	**40.6** (32.6-66.9)	729
	05-06	**8.61** (7.54-9.83)	**8.03** (7.00-9.21)	**16.3** (13.4-19.0)	**31.8** (25.3-37.6)	**62.0** (37.0-129)	693
	07-08	**6.51** (5.69-7.46)	**5.83** (4.78-6.71)	**12.6** (10.5-16.4)	**28.7** (20.8-35.3)	**50.4** (30.7-72.7)	375
	09-10	**10.7** (8.50-13.5)	**8.95** (7.40-10.3)	**20.6** (15.9-23.3)	**46.3** (31.3-101)	**215** (58.9-919)	447
20 years and older	99-00	**7.45** (6.60-8.41)	**7.63** (6.35-9.22)	**15.3** (12.7-17.7)	**30.8** (25.0-37.2)	**53.2** (41.2-71.8)	1253
	01-02	**8.23** (6.93-9.79)	**7.52** (5.97-9.56)	**16.6** (14.0-20.7)	**36.4** (29.3-42.9)	**58.7** (47.9-85.0)	1654
	03-04	**6.98** (6.30-7.73)	**6.76** (6.05-7.65)	**13.6** (12.5-14.8)	**24.6** (21.9-29.4)	**42.8** (35.7-81.6)	1520
	05-06	**7.60** (6.72-8.59)	**7.43** (6.63-8.21)	**14.1** (12.4-16.4)	**30.1** (23.9-34.9)	**65.9** (42.7-123)	1483
	07-08	**7.00** (5.90-8.31)	**6.64** (5.73-7.57)	**13.2** (11.2-16.2)	**26.4** (21.6-38.4)	**57.7** (38.4-97.0)	1689
	09-10	**7.43** (6.61-8.34)	**6.97** (6.09-8.08)	**15.0** (13.5-16.7)	**29.2** (25.3-34.5)	**54.7** (41.4-75.7)	1974
Gender							
Males	99-00	**7.01** (5.93-8.29)	**7.32** (5.63-8.78)	**13.8** (11.7-17.6)	**29.3** (21.4-41.8)	**54.1** (35.8-81.0)	1042
	01-02	**7.66** (6.39-9.18)	**7.43** (5.81-9.16)	**16.2** (14.0-19.4)	**32.9** (27.9-40.4)	**54.3** (37.8-67.1)	1375
	03-04	**6.71** (6.02-7.47)	**6.63** (5.78-7.29)	**13.3** (11.9-15.5)	**25.7** (23.1-30.3)	**51.1** (37.1-76.7)	1240
	05-06	**7.35** (6.40-8.43)	**7.03** (5.90-8.67)	**14.9** (12.0-18.3)	**31.4** (26.8-34.0)	**57.6** (42.7-83.5)	1252
	07-08	**6.39** (5.52-7.41)	**6.10** (5.28-6.85)	**12.2** (10.6-14.3)	**25.7** (20.4-33.0)	**48.4** (35.3-77.1)	1198
	09-10	**7.49** (6.54-8.59)	**6.90** (5.98-8.20)	**15.7** (14.1-17.3)	**32.4** (25.3-44.1)	**73.4** (44.2-130)	1376
Females	99-00	**8.41** (7.33-9.66)	**8.71** (7.33-10.1)	**17.7** (15.1-20.0)	**31.6** (27.5-37.2)	**46.3** (41.0-56.5)	1140
	01-02	**9.60** (7.99-11.5)	**8.66** (6.97-10.6)	**19.2** (15.7-23.7)	**41.7** (32.3-55.9)	**85.0** (61.7-115)	1419
	03-04	**8.38** (7.39-9.51)	**8.29** (7.03-9.28)	**15.1** (14.0-16.6)	**30.6** (25.0-32.5)	**45.4** (38.7-102)	1350
	05-06	**9.07** (8.04-10.2)	**8.49** (7.90-9.22)	**16.7** (15.3-18.1)	**34.3** (29.9-40.7)	**85.1** (48.4-144)	1275
	07-08	**8.35** (6.98-9.99)	**7.97** (6.83-9.31)	**16.0** (13.4-20.0)	**32.8** (23.7-46.1)	**67.5** (41.6-167)	1226
	09-10	**9.34** (7.98-10.9)	**8.44** (7.24-9.76)	**17.4** (15.1-20.4)	**39.6** (30.7-54.2)	**72.9** (51.6-158)	1415

+Not measured after Survey years 2009-2010.

Biomonitoring Summary: http://www.cdc.gov/biomonitoring/Phytoestrogens_BiomonitoringSummary.html

Urinary Equol (creatinine corrected)

Metabolite of Daidzein

Geometric mean and selected percentiles of urine concentrations (in µg/g of creatinine) for the U.S. population from the National Health and Nutrition Examination Survey.

	Survey years+	Geometric mean (95% conf. interval)	Selected percentiles (95% confidence interval) 50th	75th	90th	95th	Sample size
Race/ethnicity							
Mexican Americans	99-00	**4.89** (4.36-5.47)	**4.73** (3.90-5.27)	**8.85** (8.18-9.91)	**22.3** (16.5-26.8)	**37.1** (25.3-57.6)	726
	01-02	**6.79** (5.82-7.92)	**6.81** (5.55-8.04)	**14.9** (11.7-17.8)	**29.1** (22.9-36.0)	**41.3** (31.4-47.1)	679
	03-04	**5.48** (4.60-6.54)	**4.72** (3.95-5.78)	**10.1** (7.76-13.4)	**24.4** (17.2-30.9)	**35.6** (27.6-102)	653
	05-06	**5.45** (4.84-6.14)	**5.00** (4.37-5.85)	**9.94** (8.80-12.4)	**22.3** (19.3-30.0)	**39.4** (30.0-61.9)	634
	07-08	**5.42** (4.82-6.09)	**4.87** (4.28-5.66)	**10.9** (9.21-12.2)	**20.9** (17.0-26.9)	**34.9** (26.9-60.9)	520
	09-10	**5.33** (4.60-6.18)	**5.00** (4.17-6.16)	**9.49** (8.54-11.2)	**19.6** (15.1-35.6)	**48.5** (30.3-126)	604
Non-Hispanic blacks	99-00	**4.36** (3.41-5.57)	**4.57** (2.94-6.23)	**10.2** (7.96-12.0)	**17.1** (14.8-19.8)	**26.0** (19.6-32.0)	514
	01-02	**5.01** (4.26-5.89)	**4.48** (3.80-5.42)	**11.0** (8.80-13.0)	**22.7** (16.5-29.3)	**35.4** (24.8-46.7)	706
	03-04	**5.23** (4.44-6.16)	**5.28** (4.67-6.10)	**10.3** (8.61-12.3)	**20.2** (17.1-23.8)	**29.4** (23.9-42.3)	696
	05-06	**4.88** (4.11-5.78)	**4.72** (3.55-6.00)	**9.40** (7.54-12.0)	**21.5** (16.8-24.4)	**31.6** (24.4-51.4)	662
	07-08	**5.21** (4.11-6.61)	**4.73** (3.77-6.22)	**9.81** (7.77-12.7)	**19.3** (14.7-28.8)	**50.6** (24.2-314)	562
	09-10	**4.50** (4.03-5.01)	**4.57** (3.80-5.29)	**9.76** (8.00-11.3)	**18.4** (15.6-22.3)	**26.8** (22.8-29.7)	533
Non-Hispanic whites	99-00	**9.13** (7.85-10.6)	**9.51** (7.63-11.2)	**18.0** (15.2-21.6)	**35.4** (29.5-41.3)	**56.5** (46.0-73.0)	758
	01-02	**9.81** (7.93-12.1)	**9.17** (7.06-12.2)	**19.8** (15.4-25.6)	**41.3** (30.7-55.9)	**66.4** (56.8-85.0)	1222
	03-04	**8.40** (7.50-9.41)	**8.17** (7.13-9.19)	**15.6** (14.1-17.1)	**30.6** (25.0-32.8)	**56.8** (38.0-107)	1078
	05-06	**9.51** (8.48-10.7)	**9.17** (8.06-10.5)	**17.1** (15.0-19.4)	**34.5** (31.0-40.6)	**77.7** (48.4-129)	1038
	07-08	**8.33** (6.76-10.3)	**7.94** (6.62-9.61)	**15.7** (12.5-20.4)	**30.7** (23.4-46.1)	**65.2** (38.9-144)	993
	09-10	**10.6** (9.17-12.2)	**9.69** (8.74-10.8)	**20.5** (17.8-22.5)	**44.2** (33.4-60.8)	**84.1** (60.3-187)	1186

+Not measured after Survey years 2009-2010.

Biomonitoring Summary: http://www.cdc.gov/biomonitoring/Phytoestrogens_BiomonitoringSummary.html

Urinary Genistein

Geometric mean and selected percentiles of urine concentrations (in µg/L) for the U.S. population from the National Health and Nutrition Examination Survey.

	Survey years+	Geometric mean (95% conf. interval)	Selected percentiles (95% confidence interval) 50th	75th	90th	95th	Sample size
Total	99-00	**24.4** (19.7-30.3)	**27.0** (22.5-32.8)	**93.6** (75.8-118)	**284** (244-331)	**563** (413-709)	2557
	01-02	**33.0** (30.1-36.2)	**29.0** (26.8-31.8)	**92.5** (77.9-109)	**306** (240-372)	**619** (523-719)	2794
	03-04	**31.1** (29.0-33.3)	**26.2** (23.9-29.7)	**87.8** (78.8-102)	**286** (239-313)	**528** (402-610)	2594
	05-06	**28.7** (25.8-32.0)	**26.0** (20.9-29.7)	**81.0** (73.3-92.4)	**261** (232-308)	**523** (422-591)	2528
	07-08	**31.3** (27.3-35.8)	**25.7** (22.8-28.9)	**89.7** (73.4-109)	**309** (227-411)	**665** (527-999)	2424
	09-10	**32.5** (29.3-36.2)	**28.2** (23.2-33.1)	**102** (88.8-120)	**356** (295-428)	**691** (530-1060)	2792
Age group							
6-11 years	99-00	**27.6** (21.1-36.1)	**31.9** (18.1-42.6)	**104** (67.6-151)	**220** (151-315)	**376** (272-725)	331
	01-02	**39.2** (33.4-46.0)	**31.7** (25.8-39.6)	**94.1** (62.3-158)	**258** (190-426)	**502** (258-830)	396
	03-04	**33.6** (27.8-40.6)	**29.3** (23.1-37.8)	**79.4** (56.7-111)	**193** (146-274)	**351** (207-376)	341
	05-06	**38.6** (29.8-49.9)	**34.6** (25.3-42.5)	**109** (76.6-181)	**367** (252-568)	**629** (367-2390)	351
	07-08	**43.7** (32.6-58.5)	**34.3** (22.1-56.4)	**139** (82.5-194)	**505** (251-763)	**840** (505-2200)	360
	09-10	**46.1** (37.8-56.3)	**38.4** (30.7-46.9)	**167** (96.9-253)	**467** (280-616)	**958** (528-1210)	371
12-19 years	99-00	**43.7** (34.2-55.7)	**45.4** (34.3-60.5)	**138** (93.7-179)	**319** (245-464)	**547** (321-777)	754
	01-02	**34.1** (27.2-42.8)	**29.0** (26.1-32.9)	**90.6** (71.5-113)	**278** (216-363)	**470** (360-687)	744
	03-04	**34.7** (29.3-41.0)	**29.0** (23.4-37.6)	**111** (69.3-141)	**304** (206-376)	**530** (358-671)	729
	05-06	**34.1** (28.8-40.5)	**26.9** (20.5-35.6)	**90.5** (76.1-115)	**307** (209-394)	**486** (372-982)	693
	07-08	**35.2** (28.5-43.5)	**28.4** (23.7-34.5)	**111** (63.7-138)	**279** (160-483)	**538** (320-954)	375
	09-10	**39.2** (29.5-52.0)	**34.4** (23.5-47.1)	**141** (77.0-188)	**373** (242-520)	**620** (445-1160)	447
20 years and older	99-00	**21.9** (17.6-27.2)	**24.0** (21.7-28.4)	**86.2** (67.5-108)	**293** (235-343)	**566** (412-744)	1472
	01-02	**32.1** (28.8-35.8)	**28.8** (25.4-33.4)	**93.4** (77.3-110)	**312** (235-389)	**627** (537-790)	1654
	03-04	**30.2** (27.8-32.8)	**25.9** (22.3-29.8)	**87.8** (77.9-103)	**296** (239-321)	**557** (412-653)	1524
	05-06	**27.0** (23.9-30.6)	**25.0** (19.8-28.8)	**77.4** (66.7-89.5)	**244** (190-308)	**518** (413-591)	1484
	07-08	**29.6** (25.4-34.5)	**24.7** (21.3-28.4)	**84.1** (68.0-98.0)	**278** (207-422)	**671** (512-1150)	1689
	09-10	**30.5** (26.7-34.8)	**26.3** (20.3-31.7)	**97.5** (77.3-115)	**327** (281-425)	**691** (523-1110)	1974
Gender							
Males	99-00	**29.8** (22.2-40.0)	**31.9** (26.3-37.2)	**108** (79.1-151)	**335** (257-440)	**709** (437-981)	1222
	01-02	**32.2** (27.9-37.2)	**29.5** (25.4-33.7)	**91.2** (73.4-103)	**239** (190-331)	**474** (335-719)	1375
	03-04	**33.7** (29.6-38.4)	**27.3** (23.4-33.0)	**92.6** (68.6-124)	**310** (228-351)	**562** (443-653)	1244
	05-06	**32.1** (28.6-36.0)	**29.1** (22.7-33.8)	**90.2** (77.5-101)	**269** (216-340)	**494** (394-591)	1252
	07-08	**33.3** (27.7-40.0)	**26.2** (22.3-31.2)	**98.0** (71.9-119)	**316** (220-477)	**723** (501-1510)	1198
	09-10	**33.5** (29.3-38.2)	**28.8** (23.6-35.5)	**89.8** (74.7-114)	**351** (286-425)	**623** (476-967)	1377
Females	99-00	**20.3** (17.0-24.2)	**23.1** (20.1-26.3)	**84.7** (59.6-105)	**242** (203-288)	**446** (339-619)	1335
	01-02	**33.7** (30.9-36.8)	**28.7** (26.0-32.3)	**97.0** (79.9-118)	**387** (253-500)	**666** (598-807)	1419
	03-04	**28.7** (25.5-32.4)	**25.0** (22.4-28.4)	**85.0** (71.2-106)	**256** (218-308)	**467** (356-620)	1350
	05-06	**25.9** (22.3-29.9)	**22.4** (17.9-27.4)	**74.5** (61.0-87.0)	**246** (195-329)	**526** (398-657)	1276
	07-08	**29.5** (25.1-34.6)	**24.6** (22.2-28.4)	**83.5** (63.7-109)	**296** (194-432)	**661** (448-964)	1226
	09-10	**31.7** (27.6-36.4)	**27.0** (21.8-32.1)	**115** (101-129)	**371** (290-489)	**826** (523-1530)	1415

Limit of detection (LOD, see Data Analysis section) for Survey years 99-00, 01-02, 03-04, 05-06, 07-08, and 09-10 are 0.3, 0.8, 0.3, 1.0, 0.2, and 0.2 respectively.
+Not measured after Survey years 2009-2010.

Biomonitoring Summary: http://www.cdc.gov/biomonitoring/Phytoestrogens_BiomonitoringSummary.html

Urinary Genistein

Geometric mean and selected percentiles of urine concentrations (in µg/L) for the U.S. population from the National Health and Nutrition Examination Survey.

	Survey years+	Geometric mean (95% conf. interval)	Selected percentiles (95% confidence interval) 50th	75th	90th	95th	Sample size
Race/ethnicity							
Mexican Americans	99-00	**31.1** (25.1-38.5)	**30.0** (25.1-37.3)	**117** (82.9-179)	**328** (248-494)	**573** (419-1180)	819
	01-02	**28.3** (22.0-36.4)	**25.6** (19.6-32.5)	**74.8** (48.8-111)	**225** (174-314)	**424** (323-523)	679
	03-04	**31.1** (27.5-35.2)	**25.2** (19.1-32.6)	**83.2** (63.6-120)	**319** (252-537)	**653** (537-851)	653
	05-06	**27.6** (24.4-31.2)	**26.6** (21.5-30.2)	**77.0** (63.3-87.3)	**255** (187-319)	**412** (320-568)	634
	07-08	**30.5** (24.3-38.4)	**24.0** (18.9-30.2)	**86.8** (68.0-123)	**318** (210-414)	**603** (414-1130)	520
	09-10	**28.7** (23.7-34.7)	**24.2** (18.4-32.3)	**84.8** (57.8-120)	**257** (197-327)	**484** (334-623)	604
Non-Hispanic blacks	99-00	**26.7** (19.2-37.0)	**32.9** (24.4-41.5)	**103** (84.8-137)	**257** (213-367)	**495** (329-926)	608
	01-02	**37.6** (27.4-51.6)	**35.3** (23.6-49.5)	**95.5** (71.1-142)	**378** (192-530)	**598** (375-1120)	706
	03-04	**32.3** (24.0-43.4)	**27.4** (18.8-44.9)	**84.8** (60.5-113)	**279** (163-412)	**514** (323-852)	699
	05-06	**31.0** (26.7-36.1)	**27.9** (23.0-34.9)	**92.3** (69.3-106)	**265** (187-355)	**458** (371-643)	662
	07-08	**36.2** (29.3-44.7)	**27.3** (22.6-36.8)	**124** (84.3-157)	**395** (310-530)	**912** (567-1490)	562
	09-10	**33.5** (29.0-38.6)	**27.8** (23.2-36.4)	**99.6** (79.3-120)	**321** (218-392)	**625** (410-1010)	534
Non-Hispanic whites	99-00	**23.6** (19.1-29.3)	**25.6** (21.7-32.0)	**91.4** (68.0-122)	**288** (227-353)	**566** (395-734)	917
	01-02	**30.9** (27.8-34.4)	**27.6** (24.6-30.8)	**89.7** (71.1-105)	**278** (226-365)	**626** (485-755)	1222
	03-04	**30.8** (28.2-33.6)	**26.2** (22.6-31.0)	**93.6** (78.8-112)	**279** (225-313)	**504** (376-610)	1079
	05-06	**26.9** (23.6-30.6)	**23.8** (19.0-29.1)	**77.2** (66.2-87.9)	**244** (198-316)	**518** (391-609)	1039
	07-08	**29.3** (25.2-34.0)	**25.2** (22.1-28.5)	**84.1** (65.8-102)	**235** (182-346)	**620** (446-840)	993
	09-10	**31.9** (27.4-37.2)	**28.3** (21.3-34.6)	**102** (75.4-125)	**334** (280-450)	**691** (501-1060)	1186

Limit of detection (LOD, see Data Analysis section) for Survey years 99-00, 01-02, 03-04, 05-06, 07-08, and 09-10 are 0.3, 0.8, 0.3, 1.0, 0.2, and 0.2 respectively.
+Not measured after Survey years 2009-2010.

Biomonitoring Summary: **http://www.cdc.gov/biomonitoring/Phytoestrogens_BiomonitoringSummary.html**

Urinary Genistein (creatinine corrected)

Metabolite of Daidzein

Geometric mean and selected percentiles of urine concentrations (in µg/g of creatinine) for the U.S. population from the National Health and Nutrition Examination Survey.

	Survey years+	Geometric mean (95% conf. interval)	Selected percentiles (95% confidence interval) 50th	75th	90th	95th	Sample size
Total	99-00	**22.3** (17.7-28.1)	**23.8** (18.8-28.9)	**84.7** (67.2-105)	**222** (182-279)	**381** (334-497)	2557
	01-02	**30.9** (28.5-33.6)	**25.9** (23.4-29.2)	**83.3** (72.2-96.3)	**256** (211-296)	**427** (375-490)	2794
	03-04	**29.1** (27.3-31.0)	**24.5** (21.3-27.4)	**77.7** (67.3-90.9)	**231** (203-279)	**510** (388-619)	2594
	05-06	**28.0** (25.3-31.0)	**23.2** (20.3-26.4)	**72.0** (63.1-85.2)	**242** (197-280)	**577** (406-734)	2528
	07-08	**31.4** (27.3-36.1)	**23.7** (21.0-27.7)	**85.2** (70.3-99.5)	**264** (214-375)	**751** (464-1130)	2424
	09-10	**34.9** (31.6-38.4)	**25.4** (22.8-30.0)	**100** (83.3-124)	**367** (313-424)	**863** (612-1090)	2791
Age group							
6-11 years	99-00	**28.3** (21.1-37.9)	**27.8** (15.8-41.3)	**94.3** (60.5-145)	**209** (148-317)	**490** (279-895)	331
	01-02	**44.5** (37.0-53.5)	**37.9** (29.7-49.0)	**112** (76.5-146)	**252** (173-371)	**504** (252-713)	396
	03-04	**35.8** (29.7-43.0)	**35.4** (24.9-43.2)	**78.6** (60.9-119)	**172** (130-243)	**297** (168-618)	341
	05-06	**42.5** (33.1-54.6)	**34.1** (23.7-41.9)	**138** (89.5-195)	**414** (256-850)	**1040** (429-1590)	351
	07-08	**53.5** (41.5-69.0)	**44.2** (33.0-63.9)	**149** (83.2-224)	**451** (236-937)	**940** (411-1800)	360
	09-10	**62.8** (52.5-75.1)	**47.8** (36.7-63.0)	**200** (144-249)	**493** (405-644)	**875** (551-1140)	370
12-19 years	99-00	**29.4** (22.3-38.8)	**32.0** (23.8-41.6)	**83.2** (64.1-104)	**184** (130-295)	**336** (184-816)	754
	01-02	**26.3** (21.3-32.5)	**21.0** (17.8-26.5)	**66.2** (47.9-91.5)	**200** (149-298)	**321** (261-435)	744
	03-04	**25.9** (21.8-30.9)	**21.8** (17.0-29.1)	**65.6** (51.0-83.1)	**201** (145-313)	**366** (297-455)	729
	05-06	**25.3** (22.1-29.0)	**19.6** (16.4-24.0)	**76.5** (51.4-91.6)	**164** (130-249)	**368** (213-520)	693
	07-08	**27.1** (23.1-31.7)	**23.7** (17.8-29.3)	**77.7** (56.2-95.3)	**159** (125-264)	**324** (214-568)	375
	09-10	**36.8** (28.5-47.7)	**27.6** (20.4-40.1)	**102** (67.5-174)	**371** (234-455)	**848** (424-1100)	447
20 years and older	99-00	**20.6** (16.3-26.2)	**21.6** (17.7-26.2)	**83.1** (64.9-107)	**234** (190-287)	**381** (325-562)	1472
	01-02	**30.4** (27.6-33.4)	**24.8** (21.9-30.0)	**83.1** (68.5-99.0)	**269** (208-328)	**435** (374-518)	1654
	03-04	**28.9** (26.7-31.3)	**24.0** (20.1-27.4)	**78.5** (66.1-92.9)	**253** (209-302)	**542** (399-673)	1524
	05-06	**27.1** (24.3-30.3)	**23.0** (19.7-26.8)	**70.3** (61.2-81.3)	**233** (184-275)	**575** (349-762)	1484
	07-08	**30.4** (25.8-35.8)	**22.8** (19.9-25.9)	**81.2** (63.2-99.5)	**263** (205-423)	**842** (464-1310)	1689
	09-10	**32.5** (28.9-36.5)	**23.1** (20.5-28.2)	**91.9** (72.8-116)	**340** (295-409)	**863** (590-1150)	1974
Gender							
Males	99-00	**23.3** (16.8-32.3)	**23.8** (17.5-32.2)	**86.2** (64.7-115)	**236** (178-330)	**523** (323-889)	1222
	01-02	**26.2** (23.1-29.8)	**22.0** (19.4-26.0)	**67.6** (57.4-78.1)	**186** (144-237)	**350** (278-418)	1375
	03-04	**26.4** (22.8-30.5)	**21.5** (17.3-26.2)	**70.0** (51.1-90.5)	**203** (159-235)	**415** (346-600)	1244
	05-06	**25.8** (23.4-28.4)	**22.8** (19.3-26.4)	**65.0** (54.6-82.2)	**207** (154-261)	**431** (305-628)	1252
	07-08	**28.1** (23.4-33.7)	**20.9** (17.6-24.8)	**76.1** (58.9-92.9)	**249** (174-369)	**634** (370-1130)	1198
	09-10	**30.6** (27.3-34.3)	**23.5** (20.7-27.5)	**78.7** (63.0-101)	**313** (241-370)	**631** (453-1020)	1376
Females	99-00	**21.3** (17.5-26.0)	**23.2** (17.5-29.3)	**83.1** (57.2-106)	**211** (154-283)	**357** (283-398)	1335
	01-02	**36.2** (32.8-39.9)	**29.6** (25.2-34.3)	**107** (88.4-129)	**321** (269-355)	**547** (427-729)	1419
	03-04	**31.9** (28.7-35.5)	**27.1** (23.6-31.6)	**87.1** (71.1-102)	**278** (209-324)	**548** (363-763)	1350
	05-06	**30.3** (25.8-35.5)	**23.5** (19.8-29.1)	**81.3** (67.4-104)	**271** (208-406)	**658** (444-894)	1276
	07-08	**35.0** (30.1-40.8)	**27.7** (23.0-34.7)	**95.6** (80.3-107)	**290** (220-506)	**842** (506-1350)	1226
	09-10	**39.6** (35.2-44.5)	**29.4** (23.9-35.5)	**131** (101-151)	**430** (340-542)	**944** (670-1540)	1415

+Not measured after Survey years 2009-2010.

Biomonitoring Summary: http://www.cdc.gov/biomonitoring/Phytoestrogens_BiomonitoringSummary.html

Urinary Genistein (creatinine corrected)

Geometric mean and selected percentiles of urine concentrations (in µg/g of creatinine) for the U.S. population from the National Health and Nutrition Examination Survey.

	Survey years+	Geometric mean (95% conf. interval)	Selected percentiles (95% confidence interval) 50th	75th	90th	95th	Sample size
Race/ethnicity							
Mexican Americans	99-00	**28.4** (23.3-34.7)	**27.9** (22.5-35.0)	**109** (91.5-137)	**257** (209-380)	**562** (257-981)	819
	01-02	**26.6** (21.6-32.9)	**21.0** (16.1-28.9)	**61.6** (50.6-76.8)	**205** (147-270)	**372** (271-479)	679
	03-04	**28.0** (24.8-31.8)	**23.5** (18.5-28.1)	**69.2** (52.3-92.8)	**254** (187-390)	**608** (417-764)	653
	05-06	**24.9** (22.1-28.0)	**21.7** (17.8-23.8)	**72.4** (56.2-90.2)	**202** (140-274)	**338** (275-648)	634
	07-08	**30.0** (23.2-38.8)	**22.5** (16.5-30.5)	**88.3** (55.4-127)	**287** (210-373)	**583** (385-921)	520
	09-10	**30.1** (25.4-35.7)	**23.2** (19.0-30.5)	**79.2** (60.6-108)	**262** (192-353)	**601** (371-818)	604
Non-Hispanic blacks	99-00	**17.1** (12.4-23.7)	**19.5** (15.7-26.1)	**59.5** (43.1-93.7)	**179** (132-245)	**299** (222-446)	608
	01-02	**26.4** (19.3-36.1)	**22.7** (16.4-33.6)	**69.4** (42.2-115)	**217** (139-317)	**384** (217-747)	706
	03-04	**22.8** (18.1-28.8)	**19.6** (14.3-27.1)	**55.0** (39.6-78.1)	**182** (107-240)	**311** (210-514)	699
	05-06	**21.7** (18.8-25.1)	**18.6** (14.9-21.6)	**55.3** (42.6-78.7)	**157** (124-235)	**351** (235-543)	662
	07-08	**28.0** (22.5-34.9)	**20.8** (15.9-25.9)	**91.2** (63.7-112)	**252** (184-413)	**668** (310-1530)	562
	09-10	**26.9** (23.7-30.6)	**19.5** (17.6-23.1)	**78.0** (58.1-107)	**245** (158-341)	**505** (341-879)	533
Non-Hispanic whites	99-00	**23.2** (18.5-29.0)	**24.9** (19.0-31.7)	**86.1** (68.4-105)	**232** (178-295)	**381** (325-523)	917
	01-02	**30.6** (28.2-33.2)	**25.4** (22.7-29.5)	**82.0** (68.3-96.3)	**248** (207-320)	**427** (365-518)	1222
	03-04	**30.4** (27.9-33.0)	**26.2** (21.5-31.4)	**79.6** (69.1-99.6)	**238** (195-321)	**534** (352-688)	1079
	05-06	**28.2** (25.1-31.8)	**23.5** (19.8-29.0)	**71.7** (58.9-89.6)	**242** (192-305)	**615** (423-802)	1039
	07-08	**30.5** (25.8-36.0)	**23.7** (20.2-28.3)	**80.1** (63.4-96.6)	**256** (185-369)	**651** (412-1010)	993
	09-10	**35.8** (31.2-41.0)	**25.6** (22.5-32.7)	**107** (78.5-140)	**398** (304-448)	**881** (576-1300)	1186

+Not measured after Survey years 2009-2010.

Biomonitoring Summary: http://www.cdc.gov/biomonitoring/Phytoestrogens_BiomonitoringSummary.html

Urinary O-Desmethylangolensin

Metabolite of Daidzein

Geometric mean and selected percentiles of urine concentrations (in µg/L) for the U.S. population from the National Health and Nutrition Examination Survey.

	Survey years+	Geometric mean (95% conf. interval)	Selected percentiles (95% confidence interval) 50th	75th	90th	95th	Sample size
Total	99-00	**4.39** (3.37-5.73)	**4.98** (3.65-6.77)	**22.7** (18.7-30.1)	**100** (74.8-141)	**222** (182-250)	2271
	01-02	**4.08** (3.53-4.73)	**3.30** (2.70-4.20)	**19.8** (16.7-24.6)	**96.0** (70.1-135)	**260** (161-437)	2794
	03-04	**4.91** (4.34-5.55)	**4.60** (4.00-5.20)	**23.6** (18.6-27.2)	**95.9** (70.7-122)	**230** (185-342)	2581
	05-06	**4.71** (4.17-5.31)	**3.80** (3.10-4.30)	**22.5** (19.7-26.6)	**101** (86.4-124)	**266** (200-385)	2528
	07-08	**4.65** (4.02-5.39)	**3.40** (2.90-4.20)	**23.0** (17.9-29.8)	**132** (98.2-181)	**328** (236-501)	2424
	09-10	**4.73** (4.08-5.48)	**3.60** (2.90-4.30)	**21.8** (16.8-28.4)	**125** (99.2-156)	**394** (237-615)	2792
Age group							
6-11 years	99-00	**5.60** (3.85-8.15)	**7.52** (3.43-15.2)	**36.2** (20.3-45.0)	**78.7** (43.4-191)	**176** (74.8-264)	287
	01-02	**6.19** (4.51-8.49)	**5.90** (3.80-9.30)	**26.9** (15.7-52.1)	**122** (61.5-215)	**281** (161-466)	396
	03-04	**6.33** (4.30-9.30)	**6.10** (3.50-10.6)	**24.0** (17.0-33.8)	**70.8** (51.4-122)	**138** (80.9-256)	341
	05-06	**7.20** (5.20-9.96)	**6.20** (4.00-11.0)	**37.8** (24.2-55.2)	**145** (83.9-295)	**386** (201-516)	351
	07-08	**7.50** (5.43-10.4)	**5.40** (3.90-9.70)	**34.5** (16.5-52.6)	**133** (79.9-275)	**490** (133-3020)	360
	09-10	**7.85** (6.20-9.94)	**7.00** (4.30-11.7)	**34.9** (27.7-49.6)	**153** (89.1-199)	**263** (167-467)	371
12-19 years	99-00	**6.04** (3.76-9.70)	**7.60** (5.13-13.5)	**36.6** (22.0-57.3)	**107** (63.4-165)	**194** (107-238)	667
	01-02	**5.92** (4.46-7.87)	**5.20** (3.70-7.60)	**33.6** (18.0-56.8)	**125** (91.2-172)	**299** (172-435)	744
	03-04	**6.37** (4.95-8.18)	**5.30** (3.80-8.10)	**33.9** (18.2-50.5)	**110** (82.2-198)	**257** (175-415)	729
	05-06	**8.50** (6.48-11.2)	**8.10** (5.50-11.6)	**41.3** (33.6-49.6)	**105** (80.2-213)	**385** (139-829)	693
	07-08	**4.74** (3.00-7.48)	**3.80** (2.20-7.20)	**20.6** (11.2-34.6)	**105** (29.5-357)	**328** (78.1-638)	375
	09-10	**6.40** (4.93-8.31)	**5.30** (4.00-7.70)	**26.8** (16.6-47.8)	**117** (77.8-165)	**377** (156-965)	447
20 years and older	99-00	**4.05** (3.12-5.26)	**4.46** (3.31-5.64)	**19.8** (16.0-26.5)	**101** (80.8-150)	**228** (179-259)	1317
	01-02	**3.65** (3.08-4.32)	**2.80** (2.30-3.70)	**17.0** (13.9-22.4)	**81.5** (63.0-128)	**260** (135-526)	1654
	03-04	**4.56** (4.02-5.17)	**4.40** (3.60-4.90)	**22.0** (17.8-25.6)	**94.0** (67.6-131)	**230** (187-398)	1511
	05-06	**4.09** (3.51-4.77)	**3.20** (2.60-4.00)	**17.9** (14.9-22.3)	**91.2** (72.3-124)	**248** (182-302)	1484
	07-08	**4.41** (3.72-5.22)	**3.20** (2.40-4.20)	**23.0** (17.5-30.7)	**133** (93.3-187)	**320** (206-589)	1689
	09-10	**4.28** (3.59-5.11)	**3.00** (2.40-3.90)	**19.3** (14.9-27.0)	**127** (95.2-159)	**438** (225-681)	1974
Gender							
Males	99-00	**4.97** (3.71-6.66)	**5.62** (4.12-8.73)	**29.1** (19.8-42.9)	**121** (74.1-190)	**235** (177-332)	1087
	01-02	**3.81** (3.08-4.71)	**3.30** (2.60-4.50)	**17.4** (13.2-24.6)	**82.8** (58.4-116)	**194** (123-324)	1375
	03-04	**4.90** (3.93-6.12)	**4.60** (3.40-5.50)	**23.0** (16.6-30.1)	**92.9** (70.7-129)	**222** (159-332)	1240
	05-06	**4.93** (4.13-5.89)	**4.00** (3.40-5.50)	**22.3** (16.7-28.1)	**90.8** (63.5-137)	**235** (171-311)	1252
	07-08	**4.49** (3.67-5.49)	**3.10** (2.50-4.10)	**22.1** (14.5-33.7)	**117** (81.4-194)	**293** (195-589)	1198
	09-10	**4.39** (3.46-5.59)	**3.30** (2.40-4.40)	**18.1** (14.5-24.3)	**99.2** (65.2-142)	**293** (153-615)	1377
Females	99-00	**3.92** (2.97-5.16)	**4.22** (3.18-5.51)	**19.4** (14.1-26.1)	**83.8** (61.1-114)	**192** (123-250)	1184
	01-02	**4.36** (3.64-5.23)	**3.40** (2.50-4.60)	**21.3** (16.8-29.2)	**107** (70.6-199)	**394** (230-746)	1419
	03-04	**4.91** (4.26-5.66)	**4.60** (3.90-5.50)	**23.9** (18.1-27.4)	**99.3** (63.5-155)	**283** (160-433)	1341
	05-06	**4.50** (3.90-5.20)	**3.30** (2.70-4.30)	**22.8** (17.9-28.3)	**121** (83.2-168)	**284** (182-499)	1276
	07-08	**4.82** (4.03-5.75)	**3.90** (2.90-5.30)	**24.6** (18.1-33.9)	**137** (99.3-195)	**362** (236-468)	1226
	09-10	**5.09** (4.19-6.18)	**3.90** (2.70-5.00)	**28.5** (18.4-42.8)	**152** (110-230)	**494** (309-766)	1415

Limit of detection (LOD, see Data Analysis section) for Survey years 99-00, 01-02, 03-04, 05-06, 07-08, and 09-10 are 0.2, 0.4, 0.2, 0.2, 0.2, and 0.2 respectively.
+Not measured after Survey years 2009-2010.

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Urinary O-Desmethylangolensin

Metabolite of Daidzein

Geometric mean and selected percentiles of urine concentrations (in µg/L) for the U.S. population from the National Health and Nutrition Examination Survey.

	Survey years+	Geometric mean (95% conf. interval)	Selected percentiles (95% confidence interval) 50th	75th	90th	95th	Sample size
Race/ethnicity							
Mexican Americans	99-00	**2.41** (1.55-3.73)	**2.14** (1.31-3.37)	**21.0** (10.6-30.5)	**97.6** (59.7-140)	**191** (122-320)	721
	01-02	**2.44** (1.51-3.94)	**1.40** (.500-3.40)	**13.1** (5.80-27.6)	**66.4** (33.5-102)	**152** (75.8-265)	679
	03-04	**2.54** (1.86-3.48)	**1.90** (1.00-3.40)	**14.4** (9.00-18.1)	**62.3** (40.3-99.5)	**146** (99.5-254)	652
	05-06	**3.04** (2.29-4.05)	**2.10** (1.40-2.90)	**14.5** (8.20-24.7)	**62.8** (39.1-104)	**158** (87.0-246)	634
	07-08	**3.16** (2.40-4.15)	**2.50** (1.50-3.30)	**14.7** (10.5-20.7)	**84.9** (52.1-152)	**211** (159-340)	520
	09-10	**3.44** (2.78-4.27)	**2.70** (2.10-3.50)	**15.2** (10.6-21.2)	**93.1** (63.5-114)	**216** (127-294)	604
Non-Hispanic blacks	99-00	**5.74** (4.55-7.24)	**8.71** (5.82-10.9)	**33.5** (22.1-52.4)	**108** (78.3-156)	**192** (149-255)	538
	01-02	**5.35** (4.00-7.14)	**5.30** (2.90-7.30)	**32.7** (22.0-52.4)	**128** (75.9-216)	**308** (150-436)	706
	03-04	**5.49** (4.05-7.46)	**4.20** (3.30-6.10)	**26.1** (13.4-49.0)	**117** (86.2-166)	**221** (177-354)	698
	05-06	**5.83** (4.49-7.58)	**4.90** (3.90-6.30)	**32.6** (21.2-46.7)	**110** (72.4-189)	**297** (162-398)	662
	07-08	**6.63** (4.50-9.75)	**5.80** (3.90-9.10)	**40.8** (23.6-63.3)	**183** (119-230)	**347** (199-822)	562
	09-10	**5.03** (3.75-6.74)	**4.30** (2.90-6.00)	**27.0** (16.7-35.9)	**120** (80.5-168)	**293** (168-464)	534
Non-Hispanic whites	99-00	**4.50** (3.26-6.22)	**4.99** (3.43-7.10)	**22.5** (17.1-34.4)	**103** (72.0-152)	**228** (177-259)	826
	01-02	**4.13** (3.43-4.96)	**3.40** (2.60-4.40)	**17.9** (15.5-23.8)	**98.7** (67.4-153)	**260** (153-526)	1222
	03-04	**5.27** (4.63-5.99)	**5.30** (4.40-6.00)	**24.2** (18.8-28.5)	**99.5** (67.6-149)	**246** (183-409)	1070
	05-06	**4.72** (4.09-5.45)	**3.80** (3.20-4.70)	**21.9** (17.5-27.6)	**97.7** (72.3-142)	**246** (181-363)	1039
	07-08	**4.67** (3.88-5.62)	**3.50** (2.80-4.60)	**21.3** (16.9-27.8)	**113** (79.9-193)	**357** (193-628)	993
	09-10	**4.95** (4.20-5.84)	**3.70** (2.90-4.50)	**20.4** (16.0-30.1)	**139** (97.5-156)	**471** (206-766)	1186

Limit of detection (LOD, see Data Analysis section) for Survey years 99-00, 01-02, 03-04, 05-06, 07-08, and 09-10 are 0.2, 0.4, 0.2, 0.2, 0.2, and 0.2 respectively.
+Not measured after Survey years 2009-2010.

Biomonitoring Summary: **http://www.cdc.gov/biomonitoring/Phytoestrogens_BiomonitoringSummary.html**

Urinary O-Desmethylangolensin (creatinine corrected)

Metabolite of Daidzein

Geometric mean and selected percentiles of urine concentrations (in µg/g of creatinine) for the U.S. population from the National Health and Nutrition Examination Survey.

	Survey years+	Geometric mean (95% conf. interval)	Selected percentiles (95% confidence interval) 50th	75th	90th	95th	Sample size
Total	99-00	**4.03** (2.97-5.45)	**4.44** (3.10-6.35)	**21.8** (15.3-31.6)	**90.4** (62.9-122)	**167** (140-218)	2271
	01-02	**3.83** (3.32-4.43)	**3.24** (2.55-4.12)	**18.9** (16.1-23.2)	**85.2** (65.1-117)	**281** (149-412)	2794
	03-04	**4.58** (4.20-5.01)	**4.09** (3.53-4.59)	**19.6** (17.4-22.6)	**92.9** (76.5-120)	**201** (183-261)	2581
	05-06	**4.59** (4.04-5.21)	**3.70** (3.12-4.42)	**20.7** (18.4-22.8)	**95.6** (78.0-129)	**215** (180-325)	2528
	07-08	**4.68** (4.04-5.41)	**3.51** (3.06-4.02)	**22.5** (16.7-30.5)	**125** (94.8-164)	**350** (199-523)	2424
	09-10	**5.07** (4.38-5.87)	**3.78** (3.06-4.61)	**23.6** (19.3-29.7)	**138** (101-185)	**433** (285-547)	2791
Age group							
6-11 years	99-00	**6.00** (4.04-8.91)	**7.15** (3.94-16.6)	**28.8** (14.3-45.0)	**83.3** (45.0-167)	**179** (88.2-262)	287
	01-02	**7.03** (5.05-9.77)	**6.49** (4.24-11.6)	**29.9** (16.3-54.1)	**101** (75.3-199)	**305** (134-464)	396
	03-04	**6.73** (4.55-9.97)	**5.97** (4.09-8.28)	**27.7** (15.6-42.3)	**86.1** (45.2-135)	**149** (84.3-189)	341
	05-06	**7.93** (5.73-11.0)	**7.15** (3.90-11.3)	**40.9** (27.5-55.9)	**164** (85.8-280)	**346** (215-497)	351
	07-08	**9.20** (6.70-12.6)	**6.81** (5.05-10.7)	**31.1** (20.1-58.9)	**164** (100-296)	**465** (175-2310)	360
	09-10	**10.7** (8.43-13.6)	**9.58** (5.71-13.9)	**43.0** (31.3-63.3)	**201** (111-260)	**330** (226-478)	370
12-19 years	99-00	**4.13** (2.33-7.35)	**5.71** (2.82-11.5)	**26.0** (14.7-44.4)	**71.4** (40.8-122)	**122** (75.2-262)	667
	01-02	**4.57** (3.44-6.07)	**3.88** (2.82-5.32)	**26.0** (18.0-35.9)	**95.0** (61.4-129)	**259** (129-331)	744
	03-04	**4.76** (3.71-6.11)	**4.26** (3.13-5.97)	**22.8** (14.3-39.2)	**86.4** (49.0-149)	**185** (101-261)	729
	05-06	**6.30** (4.89-8.13)	**5.69** (3.44-8.40)	**28.0** (22.5-37.1)	**89.0** (58.5-138)	**258** (103-686)	693
	07-08	**3.64** (2.28-5.83)	**2.99** (1.91-5.69)	**18.3** (7.73-24.0)	**75.3** (21.4-200)	**199** (69.4-664)	375
	09-10	**6.02** (4.74-7.65)	**5.71** (3.30-7.53)	**23.6** (16.0-36.8)	**109** (59.2-189)	**287** (132-558)	447
20 years and older	99-00	**3.82** (2.84-5.13)	**3.90** (2.69-5.73)	**20.2** (12.9-29.2)	**96.5** (61.8-133)	**172** (140-252)	1317
	01-02	**3.46** (2.95-4.04)	**2.74** (2.03-3.64)	**16.8** (13.7-20.3)	**78.9** (58.2-124)	**281** (143-467)	1654
	03-04	**4.35** (3.96-4.78)	**3.75** (3.23-4.35)	**18.6** (15.7-22.6)	**95.2** (76.5-131)	**228** (192-284)	1511
	05-06	**4.10** (3.51-4.79)	**3.35** (2.57-4.30)	**17.4** (14.0-20.6)	**89.3** (64.5-140)	**197** (160-332)	1484
	07-08	**4.52** (3.82-5.36)	**3.13** (2.55-3.92)	**22.7** (16.1-32.4)	**130** (89.1-183)	**353** (189-641)	1689
	09-10	**4.56** (3.83-5.42)	**3.29** (2.42-4.07)	**21.2** (16.2-26.8)	**139** (95.3-212)	**437** (246-634)	1974
Gender							
Males	99-00	**3.95** (2.79-5.58)	**4.50** (2.88-6.50)	**24.5** (13.8-40.5)	**96.5** (62.4-122)	**210** (125-265)	1087
	01-02	**3.10** (2.48-3.86)	**2.87** (2.00-3.96)	**15.0** (10.4-19.7)	**60.7** (41.5-90.2)	**154** (96.4-301)	1375
	03-04	**3.83** (3.10-4.73)	**3.33** (2.41-4.35)	**15.6** (13.9-18.9)	**76.2** (51.1-99.5)	**193** (124-255)	1240
	05-06	**3.97** (3.33-4.72)	**3.49** (2.73-4.33)	**17.7** (14.1-21.4)	**68.3** (55.8-85.8)	**165** (140-216)	1252
	07-08	**3.79** (3.10-4.63)	**2.79** (2.33-3.49)	**18.2** (12.4-25.7)	**86.7** (59.2-153)	**264** (139-432)	1198
	09-10	**4.02** (3.10-5.19)	**3.19** (2.13-4.58)	**17.3** (12.3-21.7)	**86.2** (59.8-137)	**317** (140-485)	1376
Females	99-00	**4.10** (3.00-5.61)	**4.17** (2.91-6.35)	**20.4** (14.4-27.2)	**86.0** (49.1-145)	**155** (100-205)	1184
	01-02	**4.68** (3.87-5.68)	**3.74** (2.77-4.88)	**26.8** (18.7-34.0)	**111** (70.3-205)	**399** (175-739)	1419
	03-04	**5.45** (4.71-6.30)	**4.82** (4.09-5.92)	**24.3** (19.6-28.9)	**106** (78.5-163)	**255** (193-343)	1341
	05-06	**5.27** (4.56-6.09)	**4.00** (3.07-5.49)	**24.1** (19.8-31.1)	**140** (96.8-166)	**325** (197-613)	1276
	07-08	**5.72** (4.75-6.88)	**4.23** (3.33-5.71)	**29.0** (20.4-43.2)	**164** (105-213)	**394** (212-743)	1226
	09-10	**6.35** (5.34-7.57)	**4.42** (3.46-5.79)	**34.1** (25.4-43.5)	**199** (139-248)	**504** (350-761)	1415

+Not measured after Survey years 2009-2010.

Biomonitoring Summary: http://www.cdc.gov/biomonitoring/Phytoestrogens_BiomonitoringSummary.html

Urinary O-Desmethylangolensin (creatinine corrected)

Metabolite of Daidzein

Geometric mean and selected percentiles of urine concentrations (in µg/g of creatinine) for the U.S. population from the National Health and Nutrition Examination Survey.

	Survey years+	Geometric mean (95% conf. interval)	Selected percentiles (95% confidence interval) 50th	75th	90th	95th	Sample size
Race/ethnicity							
Mexican Americans	99-00	**2.19** (1.49-3.24)	**1.88** (1.15-3.10)	**16.6** (11.3-25.8)	**71.2** (52.3-113)	**136** (90.5-251)	721
	01-02	**2.30** (1.48-3.57)	**1.45** (.769-3.37)	**11.8** (4.91-23.6)	**46.7** (31.4-87.8)	**108** (54.7-218)	679
	03-04	**2.30** (1.68-3.15)	**1.65** (.845-3.06)	**13.2** (6.63-21.2)	**51.6** (36.9-75.4)	**125** (84.1-165)	652
	05-06	**2.75** (1.92-3.93)	**1.69** (1.04-2.99)	**12.8** (7.27-24.9)	**53.0** (33.3-93.2)	**135** (72.6-204)	634
	07-08	**3.10** (2.26-4.27)	**2.22** (1.42-3.32)	**16.0** (8.84-23.8)	**82.0** (45.8-145)	**215** (98.9-467)	520
	09-10	**3.62** (2.92-4.50)	**2.71** (1.82-4.92)	**13.5** (10.8-19.6)	**76.5** (54.2-128)	**226** (113-461)	604
Non-Hispanic blacks	99-00	**3.65** (2.90-4.60)	**5.22** (3.59-6.75)	**23.8** (17.6-32.1)	**67.1** (52.1-79.7)	**116** (81.9-239)	538
	01-02	**3.75** (2.76-5.10)	**3.57** (2.14-5.48)	**22.8** (14.5-30.4)	**78.5** (46.5-175)	**218** (98.5-339)	706
	03-04	**3.89** (3.03-4.99)	**3.12** (1.96-4.96)	**16.9** (11.3-26.7)	**80.0** (58.6-104)	**159** (120-255)	698
	05-06	**4.09** (3.13-5.34)	**4.22** (2.49-5.71)	**20.1** (13.5-24.5)	**69.9** (44.8-151)	**225** (90.2-369)	662
	07-08	**5.13** (3.47-7.57)	**4.22** (2.84-7.71)	**27.0** (15.6-44.5)	**133** (81.9-182)	**308** (164-485)	562
	09-10	**4.06** (3.11-5.28)	**3.61** (2.41-5.07)	**22.4** (12.9-30.2)	**95.1** (59.2-142)	**208** (133-418)	533
Non-Hispanic whites	99-00	**4.42** (3.12-6.27)	**4.68** (3.05-7.23)	**22.3** (15.3-37.9)	**102** (57.6-148)	**177** (140-215)	826
	01-02	**4.08** (3.41-4.89)	**3.51** (2.45-4.57)	**21.2** (16.3-27.4)	**96.4** (69.8-126)	**300** (153-464)	1222
	03-04	**5.18** (4.70-5.70)	**4.58** (3.89-5.39)	**21.6** (17.4-27.7)	**103** (77.7-149)	**225** (185-271)	1070
	05-06	**4.96** (4.33-5.69)	**3.97** (3.26-4.67)	**21.5** (17.3-26.2)	**101** (74.5-142)	**227** (183-332)	1039
	07-08	**4.86** (4.00-5.91)	**3.85** (3.06-4.57)	**22.2** (15.1-32.4)	**124** (84.2-180)	**355** (175-728)	993
	09-10	**5.55** (4.77-6.47)	**3.88** (3.19-4.87)	**23.8** (19.2-32.5)	**146** (97.6-248)	**461** (330-739)	1186

+Not measured after Survey years 2009-2010.

Biomonitoring Summary: http://www.cdc.gov/biomonitoring/Phytoestrogens_BiomonitoringSummary.html

Urinary 2-Hydroxyfluorene

Metabolite of Fluorene

Geometric mean and selected percentiles of urine concentrations (in ng/L) for the U.S. population from the National Health and Nutrition Examination Survey.

	Survey years	Geometric mean (95% conf. interval)	Selected percentiles (95% confidence interval) 50th	75th	90th	95th	Sample size
Total	03-04	**304** (262-354)	**280** (242-319)	**679** (561-815)	**1850** (1430-2190)	**2670** (2230-3130)	2521
	05-06	**316** (297-338)	**272** (243-296)	**661** (605-743)	**2060** (1600-2420)	**3150** (2670-3730)	2431
	07-08	**303** (271-338)	**259** (231-293)	**618** (489-817)	**1630** (1340-2020)	**2510** (2100-2890)	2581
Age group							
6-11 years	03-04	**209** (183-239)	**228** (189-259)	**341** (295-411)	**576** (423-728)	**763** (613-827)	338
	05-06	**201** (184-221)	**195** (170-223)	**352** (306-402)	**497** (436-618)	**709** (536-833)	343
	07-08	**233** (205-264)	**239** (194-280)	**400** (326-454)	**620** (484-714)	**851** (695-1000)	382
12-19 years	03-04	**281** (245-321)	**292** (259-323)	**502** (445-601)	**1000** (753-1320)	**1480** (1320-1930)	707
	05-06	**283** (258-311)	**272** (247-300)	**482** (425-540)	**1080** (843-1250)	**1750** (1100-2820)	670
	07-08	**287** (243-339)	**255** (217-293)	**541** (434-631)	**963** (774-1350)	**1510** (1050-2120)	395
20 years and older	03-04	**323** (272-383)	**290** (247-334)	**832** (653-1020)	**2090** (1680-2460)	**2920** (2410-3650)	1476
	05-06	**340** (311-371)	**284** (252-317)	**813** (705-917)	**2410** (1880-2820)	**3460** (2820-4160)	1418
	07-08	**314** (276-357)	**267** (231-306)	**699** (518-1020)	**1790** (1470-2220)	**2700** (2190-3270)	1804
Gender							
Males	03-04	**385** (333-446)	**338** (300-415)	**900** (739-1150)	**2120** (1770-2450)	**2930** (2490-3390)	1213
	05-06	**376** (345-410)	**332** (302-364)	**823** (658-1030)	**2160** (1660-2570)	**3120** (2570-3560)	1213
	07-08	**366** (334-402)	**306** (280-348)	**756** (613-983)	**1740** (1430-2130)	**2650** (2130-3270)	1280
Females	03-04	**243** (204-290)	**226** (184-269)	**490** (405-617)	**1400** (907-1930)	**2310** (1740-3070)	1308
	05-06	**268** (234-307)	**227** (199-270)	**528** (445-638)	**1910** (1020-2830)	**3180** (2180-4590)	1218
	07-08	**252** (219-289)	**216** (192-236)	**505** (387-629)	**1470** (1050-1960)	**2330** (1770-2840)	1301
Race/ethnicity							
Mexican Americans	03-04	**248** (215-286)	**235** (203-293)	**502** (412-580)	**1100** (771-1330)	**1640** (1250-2240)	629
	05-06	**233** (200-271)	**216** (180-247)	**413** (334-488)	**901** (704-1080)	**1360** (1060-1950)	615
	07-08	**248** (226-273)	**240** (215-261)	**418** (355-496)	**801** (643-979)	**1300** (933-1680)	523
Non-Hispanic blacks	03-04	**432** (361-516)	**381** (317-462)	**856** (702-1270)	**2200** (1830-2610)	**2960** (2350-4460)	684
	05-06	**404** (346-471)	**330** (307-377)	**805** (626-1090)	**2190** (1610-2930)	**3160** (2530-4330)	657
	07-08	**387** (333-450)	**325** (281-403)	**879** (724-1040)	**1940** (1500-2550)	**3170** (2290-5120)	590
Non-Hispanic whites	03-04	**308** (255-372)	**280** (233-332)	**728** (554-898)	**1940** (1540-2390)	**2920** (2400-3500)	1045
	05-06	**319** (290-350)	**270** (237-315)	**705** (626-829)	**2180** (1700-2540)	**3390** (2670-4250)	972
	07-08	**307** (261-362)	**257** (221-308)	**629** (452-995)	**1720** (1260-2190)	**2580** (2070-3020)	1070

Limit of detection (LOD, see Data Analysis section) for Survey years 03-04, 05-06, and 07-08 are 5.0, 5.0, and 5.0 respectively.

Biomonitoring Summary: http://www.cdc.gov/biomonitoring/Fluorene_BiomonitoringSummary.html
Factsheet: http://www.cdc.gov/biomonitoring/PAHs_FactSheet.html

Urinary 2-Hydroxyfluorene (creatinine corrected)

Metabolite of Fluorene

Geometric mean and selected percentiles of urine concentrations (in ng/g of creatinine) for the U.S. population from the National Health and Nutrition Examination Survey.

	Survey years	Geometric mean (95% conf. interval)	Selected percentiles (95% confidence interval) 50th	75th	90th	95th	Sample size
Total	03-04	**286** (256-320)	**221** (200-249)	**495** (429-629)	**1510** (1150-1800)	**2070** (1850-2390)	2521
	05-06	**308** (288-330)	**227** (209-245)	**567** (509-658)	**1730** (1540-1850)	**2450** (2020-2930)	2431
	07-08	**304** (272-339)	**234** (211-260)	**526** (403-711)	**1500** (1140-1780)	**2150** (1850-2500)	2581
Age group							
6-11 years	03-04	**221** (199-246)	**217** (188-238)	**305** (270-356)	**462** (370-535)	**695** (465-807)	338
	05-06	**224** (207-243)	**219** (197-254)	**320** (288-365)	**451** (384-523)	**527** (450-720)	343
	07-08	**287** (255-324)	**262** (240-292)	**407** (355-503)	**721** (555-849)	**864** (757-956)	382
12-19 years	03-04	**213** (189-240)	**189** (172-211)	**310** (275-377)	**649** (512-778)	**937** (762-1320)	707
	05-06	**214** (201-227)	**189** (178-197)	**286** (266-320)	**607** (516-769)	**1190** (803-1430)	670
	07-08	**223** (200-249)	**204** (176-236)	**351** (270-419)	**592** (504-683)	**900** (683-1080)	395
20 years and older	03-04	**310** (274-350)	**233** (203-269)	**659** (494-835)	**1730** (1420-1940)	**2310** (1930-2590)	1476
	05-06	**339** (313-367)	**241** (216-262)	**754** (629-891)	**1870** (1750-2110)	**2830** (2250-3200)	1418
	07-08	**321** (282-365)	**234** (210-269)	**633** (438-873)	**1650** (1360-2060)	**2390** (2090-2690)	1804
Gender							
Males	03-04	**302** (271-337)	**242** (218-272)	**635** (494-758)	**1510** (1200-1700)	**1940** (1700-2310)	1213
	05-06	**302** (278-328)	**233** (212-259)	**610** (510-744)	**1480** (1240-1680)	**1920** (1680-2390)	1213
	07-08	**308** (283-336)	**239** (218-261)	**615** (464-764)	**1480** (1200-1640)	**2120** (1780-2390)	1280
Females	03-04	**271** (235-314)	**208** (183-244)	**415** (352-521)	**1530** (991-1890)	**2220** (1730-2590)	1308
	05-06	**314** (284-347)	**217** (198-247)	**526** (437-622)	**1900** (1680-2240)	**2930** (2310-3280)	1218
	07-08	**300** (257-350)	**225** (201-265)	**461** (347-683)	**1510** (929-2100)	**2250** (1630-2770)	1301
Race/ethnicity							
Mexican Americans	03-04	**224** (197-255)	**198** (178-227)	**370** (306-432)	**745** (562-1030)	**1200** (745-1730)	629
	05-06	**210** (190-232)	**179** (155-205)	**294** (250-368)	**624** (439-834)	**1000** (720-1190)	615
	07-08	**244** (216-275)	**214** (187-238)	**364** (301-438)	**718** (582-824)	**958** (775-1480)	523
Non-Hispanic blacks	03-04	**308** (259-365)	**249** (210-305)	**609** (430-803)	**1430** (939-1870)	**1880** (1430-2500)	684
	05-06	**284** (250-322)	**222** (202-245)	**502** (350-714)	**1230** (941-1760)	**1880** (1510-2440)	657
	07-08	**299** (254-351)	**237** (198-287)	**602** (468-768)	**1370** (1050-1910)	**2220** (1570-2990)	590
Non-Hispanic whites	03-04	**304** (266-349)	**226** (199-261)	**581** (449-796)	**1630** (1410-1940)	**2310** (1940-2540)	1045
	05-06	**335** (307-366)	**242** (216-270)	**687** (561-806)	**1840** (1650-2060)	**2800** (2070-3260)	972
	07-08	**319** (274-372)	**238** (205-290)	**579** (393-841)	**1620** (1180-2090)	**2340** (1940-2640)	1070

Biomonitoring Summary: http://www.cdc.gov/biomonitoring/Fluorene_BiomonitoringSummary.html
Factsheet: http://www.cdc.gov/biomonitoring/PAHs_FactSheet.html

Urinary 3-Hydroxyfluorene

Metabolite of Fluorene

Geometric mean and selected percentiles of urine concentrations (in ng/L) for the U.S. population from the National Health and Nutrition Examination Survey.

	Survey years	Geometric mean (95% conf. interval)	Selected percentiles (95% confidence interval) 50th	75th	90th	95th	Sample size
Total	01-02	**134** (115-155)	**111** (96.0-126)	**253** (207-349)	**959** (666-1300)	**1620** (1390-1900)	2745
	03-04	**126** (108-148)	**103** (90.4-118)	**302** (231-404)	**1090** (934-1270)	**1740** (1400-2070)	2502
	05-06	**124** (115-134)	**99.1** (88.5-110)	**304** (268-365)	**1060** (830-1210)	**1780** (1500-1910)	2398
	07-08	**116** (103-132)	**92.9** (85.7-100)	**258** (203-341)	**821** (681-1050)	**1380** (1170-1630)	2581
Age group							
6-11 years	01-02	**106** (94.8-119)	**106** (91.0-124)	**174** (145-200)	**287** (235-358)	**385** (306-455)	387
	03-04	**89.2** (77.3-103)	**92.3** (79.7-103)	**151** (113-172)	**238** (184-331)	**343** (241-423)	336
	05-06	**81.7** (73.6-90.7)	**80.6** (68.3-98.9)	**140** (122-174)	**235** (189-272)	**287** (242-345)	336
	07-08	**98.0** (85.8-112)	**94.2** (84.3-106)	**178** (149-198)	**302** (239-332)	**458** (247-752)	382
12-19 years	01-02	**129** (103-161)	**113** (97.0-137)	**222** (177-266)	**542** (325-1070)	**1210** (680-2130)	733
	03-04	**116** (100-134)	**114** (94.7-133)	**214** (181-269)	**476** (317-748)	**924** (609-1410)	701
	05-06	**119** (107-133)	**112** (94.4-126)	**212** (181-229)	**588** (436-659)	**986** (609-1800)	661
	07-08	**114** (95.5-136)	**93.7** (77.4-114)	**218** (168-258)	**494** (341-740)	**830** (725-1020)	400
20 years and older	01-02	**138** (119-161)	**111** (94.0-129)	**311** (228-429)	**1130** (823-1400)	**1850** (1470-2080)	1625
	03-04	**134** (112-160)	**105** (86.5-125)	**408** (300-537)	**1240** (1050-1480)	**1910** (1620-2290)	1465
	05-06	**131** (118-145)	**101** (86.2-117)	**394** (308-448)	**1220** (968-1510)	**1900** (1620-2050)	1401
	07-08	**119** (103-138)	**91.4** (83.5-100)	**302** (205-449)	**992** (745-1200)	**1550** (1230-1820)	1799
Gender							
Males	01-02	**163** (137-194)	**134** (115-155)	**352** (242-481)	**1110** (721-1500)	**1850** (1390-2190)	1346
	03-04	**165** (140-194)	**133** (108-162)	**458** (313-681)	**1270** (1030-1530)	**1920** (1580-2120)	1205
	05-06	**155** (138-174)	**127** (118-136)	**420** (304-510)	**1130** (887-1330)	**1810** (1440-2050)	1196
	07-08	**146** (131-162)	**115** (103-132)	**330** (262-450)	**944** (748-1190)	**1530** (1160-1940)	1284
Females	01-02	**111** (95.0-130)	**94.0** (83.0-108)	**204** (169-250)	**796** (498-1040)	**1390** (1250-1670)	1399
	03-04	**98.2** (81.2-119)	**80.5** (66.7-101)	**195** (163-272)	**842** (530-1200)	**1590** (1180-1800)	1297
	05-06	**99.9** (87.0-115)	**78.2** (68.3-88.3)	**225** (176-278)	**961** (558-1390)	**1720** (1300-2020)	1202
	07-08	**93.9** (81.2-109)	**77.2** (70.4-83.8)	**192** (134-276)	**688** (457-1090)	**1280** (1030-1590)	1297
Race/ethnicity							
Mexican Americans	01-02	**108** (87.1-134)	**99.0** (81.0-119)	**190** (144-255)	**476** (302-641)	**718** (476-1140)	662
	03-04	**93.4** (79.6-110)	**83.4** (67.0-96.9)	**190** (150-252)	**520** (388-726)	**1030** (688-1320)	622
	05-06	**82.5** (71.0-95.8)	**71.8** (60.2-83.9)	**143** (116-173)	**435** (265-716)	**763** (565-1020)	596
	07-08	**90.4** (79.6-103)	**81.2** (74.5-92.4)	**160** (136-192)	**363** (259-513)	**674** (454-1180)	529
Non-Hispanic blacks	01-02	**203** (169-244)	**162** (135-188)	**449** (308-830)	**1420** (1130-1780)	**2350** (1520-3000)	692
	03-04	**195** (157-242)	**160** (124-187)	**482** (303-827)	**1460** (1070-1800)	**2110** (1580-2830)	683
	05-06	**170** (143-202)	**134** (121-149)	**345** (246-558)	**1300** (929-1760)	**1880** (1550-2370)	652
	07-08	**164** (142-190)	**133** (112-157)	**393** (303-494)	**1290** (963-1420)	**1770** (1330-2660)	587
Non-Hispanic whites	01-02	**130** (108-157)	**108** (93.0-127)	**246** (202-352)	**948** (621-1320)	**1620** (1320-1990)	1207
	03-04	**129** (106-155)	**105** (87.6-124)	**313** (237-464)	**1200** (1010-1410)	**1870** (1430-2220)	1035
	05-06	**123** (111-137)	**96.8** (85.4-112)	**343** (275-420)	**1060** (760-1260)	**1870** (1390-2050)	966
	07-08	**118** (98.0-141)	**91.6** (81.6-103)	**274** (195-403)	**857** (646-1190)	**1370** (1050-1740)	1066

Limit of detection (LOD, see Data Analysis section) for Survey years 01-02, 03-04, 05-06 and 07-08 are 2.0, 5.0, 5.0 and 5.0 respectively.

Biomonitoring Summary: http://www.cdc.gov/biomonitoring/Fluorene_BiomonitoringSummary.html
Factsheet: http://www.cdc.gov/biomonitoring/PAHs_FactSheet.html

Urinary 3-Hydroxyfluorene (creatinine corrected)

Metabolite of Fluorene

Geometric mean and selected percentiles of urine concentrations (in ng/g of creatinine) for the U.S. population from the National Health and Nutrition Examination Survey.

	Survey years	Geometric mean (95% conf. interval)	Selected percentiles (95% confidence interval) 50th	75th	90th	95th	Sample size
Total	01-02	**125** (108-144)	**94.4** (83.3-106)	**220** (174-303)	**754** (622-873)	**1060** (909-1290)	2745
	03-04	**119** (106-134)	**86.6** (76.8-97.3)	**256** (201-337)	**856** (668-1060)	**1330** (1130-1590)	2502
	05-06	**121** (111-131)	**84.5** (77.5-93.4)	**245** (203-297)	**930** (806-1020)	**1280** (1150-1400)	2398
	07-08	**117** (104-132)	**84.6** (76.8-98.5)	**226** (177-310)	**789** (601-1000)	**1230** (1040-1410)	2581
Age group							
6-11 years	01-02	**119** (103-137)	**110** (96.7-121)	**153** (135-197)	**265** (206-377)	**382** (254-631)	387
	03-04	**94.6** (84.3-106)	**92.4** (83.1-98.5)	**130** (115-154)	**202** (168-282)	**311** (197-435)	336
	05-06	**90.7** (82.6-99.6)	**90.3** (80.1-99.7)	**130** (119-142)	**210** (167-242)	**290** (237-353)	336
	07-08	**120** (105-138)	**108** (92.3-127)	**186** (150-215)	**330** (231-401)	**419** (304-918)	382
12-19 years	01-02	**99.3** (81.6-121)	**81.9** (74.2-92.6)	**144** (109-197)	**390** (214-700)	**711** (372-1380)	733
	03-04	**88.1** (78.0-99.6)	**79.0** (72.5-83.2)	**137** (114-170)	**319** (225-440)	**586** (356-880)	701
	05-06	**90.1** (84.3-96.3)	**73.8** (70.0-81.7)	**133** (112-153)	**381** (323-426)	**618** (437-819)	661
	07-08	**88.5** (78.9-99.2)	**74.8** (65.2-84.6)	**141** (118-185)	**317** (242-449)	**515** (338-656)	400
20 years and older	01-02	**131** (113-151)	**94.4** (81.0-108)	**279** (195-367)	**862** (727-923)	**1210** (1010-1350)	1625
	03-04	**128** (113-146)	**88.2** (76.8-104)	**364** (242-484)	**1020** (828-1240)	**1500** (1290-1710)	1465
	05-06	**131** (119-144)	**85.9** (77.1-98.5)	**334** (251-476)	**1020** (931-1180)	**1380** (1220-1550)	1401
	07-08	**122** (106-142)	**83.9** (76.0-99.9)	**276** (186-389)	**926** (710-1110)	**1320** (1150-1500)	1799
Gender							
Males	01-02	**132** (111-156)	**100** (88.5-117)	**260** (194-361)	**745** (560-914)	**1130** (862-1380)	1346
	03-04	**129** (114-147)	**95.8** (82.5-111)	**338** (226-456)	**833** (672-1010)	**1220** (980-1510)	1205
	05-06	**125** (112-139)	**92.4** (84.3-103)	**272** (215-404)	**784** (660-936)	**1100** (874-1310)	1196
	07-08	**123** (111-136)	**92.3** (80.8-105)	**282** (227-354)	**791** (675-969)	**1110** (989-1330)	1284
Females	01-02	**119** (104-136)	**88.9** (78.6-103)	**179** (156-227)	**777** (604-888)	**1030** (923-1270)	1399
	03-04	**110** (93.4-129)	**81.7** (69.5-91.5)	**183** (132-285)	**920** (488-1270)	**1460** (1130-1750)	1297
	05-06	**117** (105-130)	**77.6** (71.9-90.2)	**203** (160-290)	**1040** (836-1240)	**1400** (1220-1780)	1202
	07-08	**112** (95.7-131)	**82.1** (72.7-96.8)	**180** (132-265)	**789** (450-1140)	**1240** (1050-1500)	1297
Race/ethnicity							
Mexican Americans	01-02	**101** (84.2-121)	**84.0** (74.8-97.2)	**159** (124-214)	**364** (227-598)	**604** (357-1230)	662
	03-04	**84.8** (73.1-98.4)	**68.8** (60.0-80.2)	**170** (119-213)	**353** (319-435)	**668** (353-1050)	622
	05-06	**74.0** (66.0-83.1)	**59.9** (52.5-69.7)	**112** (88.0-136)	**282** (217-410)	**585** (320-763)	596
	07-08	**88.1** (75.3-103)	**72.7** (62.2-84.1)	**141** (107-184)	**366** (232-536)	**568** (397-722)	529
Non-Hispanic blacks	01-02	**143** (118-173)	**110** (90.7-133)	**316** (186-525)	**849** (622-1230)	**1240** (882-1430)	692
	03-04	**139** (113-169)	**106** (93.1-118)	**328** (211-488)	**961** (580-1310)	**1310** (961-1770)	683
	05-06	**119** (103-138)	**87.4** (78.4-97.0)	**214** (154-388)	**711** (523-1000)	**1100** (838-1380)	652
	07-08	**128** (109-150)	**94.1** (82.2-110)	**309** (204-433)	**829** (715-981)	**1310** (981-1640)	587
Non-Hispanic whites	01-02	**128** (108-152)	**94.7** (83.4-109)	**223** (171-323)	**816** (642-914)	**1150** (910-1410)	1207
	03-04	**127** (110-146)	**89.8** (79.1-104)	**311** (212-418)	**980** (768-1180)	**1460** (1270-1700)	1035
	05-06	**130** (117-144)	**91.1** (81.0-104)	**290** (229-426)	**973** (836-1180)	**1380** (1130-1570)	966
	07-08	**122** (103-145)	**89.3** (76.2-108)	**244** (166-377)	**895** (579-1110)	**1250** (1080-1470)	1066

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Factsheet: http://www.cdc.gov/biomonitoring/PAHs_FactSheet.html

Urinary 9-Hydroxyfluorene

Metabolite of Fluorene

Geometric mean and selected percentiles of urine concentrations (in ng/L) for the U.S. population from the National Health and Nutrition Examination Survey.

	Survey years	Geometric mean (95% conf. interval)	Selected percentiles (95% confidence interval) 50th	75th	90th	95th	Sample size
Total	03-04	**267** (234-305)	**269** (233-313)	**541** (463-620)	**929** (839-1060)	**1390** (1130-1600)	2504
	05-06	**308** (289-328)	**300** (271-325)	**609** (563-652)	**1270** (1090-1420)	**1820** (1560-2110)	2422
	07-08	**337** (310-367)	**327** (295-367)	**677** (582-769)	**1300** (1060-1490)	**1960** (1670-2420)	2608
Age group							
6-11 years	03-04	**209** (184-238)	**216** (173-240)	**331** (267-458)	**594** (446-809)	**853** (553-1500)	333
	05-06	**184** (162-209)	**190** (153-210)	**324** (261-397)	**657** (448-783)	**823** (671-1220)	342
	07-08	**242** (208-282)	**229** (196-280)	**449** (326-580)	**791** (565-1040)	**1090** (787-1610)	389
12-19 years	03-04	**253** (216-297)	**271** (215-324)	**506** (413-560)	**894** (773-988)	**1210** (929-1510)	698
	05-06	**266** (245-290)	**278** (253-314)	**528** (454-574)	**842** (738-1020)	**1290** (1070-1510)	668
	07-08	**308** (255-371)	**295** (241-374)	**583** (459-736)	**1050** (829-1290)	**1400** (1080-1870)	401
20 years and older	03-04	**277** (240-320)	**279** (237-335)	**583** (476-656)	**979** (842-1140)	**1490** (1140-1770)	1473
	05-06	**335** (309-363)	**323** (292-349)	**653** (593-729)	**1360** (1180-1610)	**1950** (1650-2530)	1412
	07-08	**355** (323-390)	**352** (311-384)	**716** (629-835)	**1410** (1170-1670)	**2160** (1770-2780)	1818
Gender							
Males	03-04	**330** (291-374)	**330** (285-372)	**632** (583-709)	**1090** (898-1370)	**1720** (1360-2250)	1208
	05-06	**355** (325-387)	**334** (296-387)	**693** (608-783)	**1310** (1150-1620)	**2000** (1670-2560)	1208
	07-08	**401** (365-441)	**394** (356-442)	**778** (661-897)	**1420** (1260-1580)	**2120** (1770-2820)	1294
Females	03-04	**218** (188-253)	**226** (191-253)	**439** (357-521)	**833** (697-973)	**1100** (955-1310)	1296
	05-06	**269** (242-299)	**257** (230-297)	**503** (426-580)	**1090** (845-1400)	**1610** (1400-1920)	1214
	07-08	**286** (260-313)	**271** (246-299)	**557** (474-671)	**1110** (914-1400)	**1830** (1400-2400)	1314
Race/ethnicity							
Mexican Americans	03-04	**229** (200-261)	**232** (197-274)	**435** (362-492)	**773** (561-1010)	**1030** (849-1170)	614
	05-06	**232** (204-264)	**221** (186-262)	**407** (361-435)	**738** (596-840)	**1030** (788-1470)	614
	07-08	**267** (246-288)	**259** (236-285)	**476** (430-515)	**859** (732-1100)	**1470** (1070-1980)	532
Non-Hispanic blacks	03-04	**380** (311-465)	**357** (291-475)	**709** (559-825)	**1260** (1080-1600)	**1880** (1560-2330)	679
	05-06	**416** (360-481)	**406** (366-450)	**716** (593-943)	**1430** (1010-2250)	**2310** (1590-3410)	655
	07-08	**426** (376-482)	**423** (356-477)	**817** (693-978)	**1490** (1200-1950)	**2260** (1870-3040)	597
Non-Hispanic whites	03-04	**266** (226-313)	**266** (228-324)	**558** (453-659)	**939** (824-1130)	**1450** (1090-1770)	1048
	05-06	**306** (279-335)	**296** (257-331)	**613** (548-669)	**1290** (1150-1450)	**1730** (1530-2140)	966
	07-08	**345** (302-394)	**338** (286-398)	**700** (564-849)	**1380** (1030-1690)	**2040** (1570-2650)	1080

Limit of detection (LOD, see Data Analysis section) for Survey years 03-04, 05-06, and 07-08 are 5.0, 5.0, and 5.0 respectively.

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Factsheet: http://www.cdc.gov/biomonitoring/PAHs_FactSheet.html

Urinary 9-Hydroxyfluorene (creatinine corrected)

Metabolite of Fluorene

Geometric mean and selected percentiles of urine concentrations (in ng/g of creatinine) for the U.S. population from the National Health and Nutrition Examination Survey.

	Survey years	Geometric mean (95% conf. interval)	Selected percentiles (95% confidence interval) 50th	75th	90th	95th	Sample size
Total	03-04	**252** (230-276)	**233** (205-266)	**412** (371-461)	**729** (609-905)	**1100** (918-1390)	2504
	05-06	**301** (281-322)	**270** (252-290)	**511** (460-575)	**1040** (908-1230)	**1510** (1360-1750)	2422
	07-08	**339** (309-372)	**303** (277-333)	**562** (493-645)	**1110** (908-1300)	**1660** (1430-1960)	2608
Age group							
6-11 years	03-04	**223** (200-247)	**208** (176-264)	**343** (299-389)	**548** (433-689)	**866** (533-958)	333
	05-06	**205** (180-234)	**195** (176-209)	**309** (272-371)	**590** (402-668)	**866** (620-1300)	342
	07-08	**298** (256-346)	**280** (249-331)	**463** (399-576)	**817** (576-1130)	**1130** (862-1230)	389
12-19 years	03-04	**192** (172-215)	**182** (161-200)	**323** (286-360)	**484** (412-696)	**738** (571-1110)	698
	05-06	**201** (183-220)	**194** (173-223)	**325** (283-343)	**511** (397-666)	**848** (521-941)	668
	07-08	**239** (204-280)	**235** (190-283)	**381** (312-462)	**596** (479-722)	**768** (660-1090)	401
20 years and older	03-04	**267** (242-294)	**243** (219-280)	**446** (392-490)	**788** (641-994)	**1280** (991-1560)	1473
	05-06	**336** (314-358)	**304** (284-323)	**573** (506-650)	**1200** (1000-1360)	**1720** (1490-1900)	1412
	07-08	**363** (330-399)	**314** (293-351)	**618** (533-738)	**1200** (1030-1450)	**1770** (1570-2040)	1818
Gender							
Males	03-04	**260** (238-283)	**236** (209-269)	**429** (382-480)	**739** (591-952)	**1300** (916-1800)	1208
	05-06	**286** (266-308)	**258** (235-291)	**498** (422-576)	**993** (858-1180)	**1410** (1240-1730)	1208
	07-08	**338** (308-372)	**303** (269-338)	**575** (516-626)	**1150** (987-1300)	**1690** (1420-1940)	1294
Females	03-04	**244** (217-275)	**227** (198-269)	**396** (342-467)	**717** (569-905)	**1020** (905-1280)	1296
	05-06	**316** (287-348)	**278** (253-303)	**532** (466-623)	**1100** (840-1370)	**1610** (1360-1840)	1214
	07-08	**340** (306-377)	**303** (274-335)	**555** (451-683)	**1030** (852-1330)	**1620** (1330-2040)	1314
Race/ethnicity							
Mexican Americans	03-04	**209** (188-232)	**195** (181-209)	**335** (293-379)	**541** (447-722)	**793** (569-1440)	614
	05-06	**208** (194-224)	**201** (180-220)	**304** (270-342)	**502** (425-584)	**663** (527-919)	614
	07-08	**260** (236-285)	**244** (226-259)	**388** (348-419)	**654** (527-858)	**1160** (775-1640)	532
Non-Hispanic blacks	03-04	**272** (226-326)	**258** (208-307)	**463** (349-568)	**777** (628-920)	**1040** (863-1300)	679
	05-06	**293** (258-332)	**261** (230-297)	**449** (377-554)	**851** (635-1080)	**1480** (925-2070)	655
	07-08	**331** (289-379)	**293** (257-333)	**542** (489-620)	**990** (805-1250)	**1550** (1160-2470)	597
Non-Hispanic whites	03-04	**263** (235-295)	**244** (211-287)	**439** (387-490)	**773** (607-1020)	**1290** (967-1700)	1048
	05-06	**323** (296-353)	**293** (266-322)	**570** (496-650)	**1180** (962-1360)	**1630** (1370-1840)	966
	07-08	**359** (316-407)	**314** (280-366)	**605** (497-750)	**1170** (935-1420)	**1740** (1460-2040)	1080

Biomonitoring Summary: http://www.cdc.gov/biomonitoring/Fluorene_BiomonitoringSummary.html
Factsheet: http://www.cdc.gov/biomonitoring/PAHs_FactSheet.html

Urinary 1-Hydroxyphenanthrene

Metabolite of Phenanthrene

Geometric mean and selected percentiles of urine concentrations (in ng/L) for the U.S. population from the National Health and Nutrition Examination Survey.

	Survey years	Geometric mean (95% conf. interval)	Selected percentiles (95% confidence interval) 50th	75th	90th	95th	Sample size
Total	01-02	**140** (125-158)	**141** (130-154)	**266** (229-312)	**476** (426-539)	**684** (581-763)	2741
	03-04	**156** (140-173)	**166** (150-179)	**287** (263-321)	**464** (423-508)	**625** (538-745)	2496
	05-06	**152** (143-161)	**151** (138-163)	**275** (257-303)	**493** (428-549)	**669** (580-852)	2449
	07-08	**139** (130-149)	**140** (127-154)	**252** (228-272)	**442** (402-481)	**683** (577-760)	2608
Age group							
6-11 years	01-02	**119** (104-137)	**121** (98.0-142)	**228** (182-249)	**357** (265-501)	**501** (367-661)	387
	03-04	**138** (124-154)	**131** (111-161)	**222** (200-275)	**397** (304-500)	**615** (384-916)	328
	05-06	**111** (101-123)	**110** (96.9-121)	**176** (150-240)	**320** (251-375)	**381** (329-540)	345
	07-08	**121** (105-139)	**120** (96.5-154)	**200** (174-235)	**334** (247-401)	**405** (278-557)	389
12-19 years	01-02	**133** (110-162)	**131** (110-153)	**238** (198-303)	**431** (376-546)	**579** (439-820)	733
	03-04	**158** (141-178)	**171** (138-193)	**300** (262-333)	**470** (437-537)	**654** (563-745)	692
	05-06	**144** (132-157)	**154** (130-175)	**260** (236-286)	**425** (383-496)	**666** (496-845)	677
	07-08	**136** (122-152)	**144** (128-164)	**219** (199-283)	**374** (315-415)	**503** (392-607)	401
20 years and older	01-02	**145** (127-164)	**145** (133-164)	**274** (237-329)	**499** (440-565)	**713** (595-819)	1621
	03-04	**157** (141-176)	**167** (152-182)	**296** (264-337)	**469** (430-513)	**625** (534-783)	1476
	05-06	**159** (147-172)	**156** (141-172)	**287** (265-328)	**516** (438-615)	**744** (580-996)	1427
	07-08	**142** (132-153)	**141** (125-158)	**258** (241-280)	**470** (417-531)	**733** (622-856)	1818
Gender							
Males	01-02	**150** (133-169)	**145** (132-164)	**284** (235-348)	**501** (424-593)	**713** (575-845)	1344
	03-04	**176** (161-194)	**182** (167-198)	**321** (283-363)	**492** (459-536)	**662** (541-929)	1196
	05-06	**169** (156-183)	**166** (153-180)	**289** (265-334)	**519** (438-593)	**791** (562-1080)	1222
	07-08	**153** (140-167)	**152** (137-171)	**268** (251-292)	**448** (406-488)	**722** (566-813)	1294
Females	01-02	**132** (115-152)	**137** (121-151)	**254** (221-297)	**464** (390-520)	**654** (538-769)	1397
	03-04	**138** (122-156)	**144** (126-164)	**263** (240-294)	**430** (404-469)	**589** (489-680)	1300
	05-06	**137** (123-152)	**136** (117-153)	**260** (234-297)	**460** (391-553)	**648** (540-809)	1227
	07-08	**128** (120-136)	**128** (117-139)	**230** (205-258)	**432** (373-500)	**663** (527-740)	1314
Race/ethnicity							
Mexican Americans	01-02	**117** (90.8-152)	**116** (88.0-147)	**214** (157-306)	**369** (254-583)	**549** (342-847)	664
	03-04	**138** (120-158)	**152** (129-175)	**246** (213-291)	**413** (311-492)	**518** (352-896)	611
	05-06	**125** (104-151)	**129** (107-151)	**223** (174-276)	**376** (298-460)	**523** (399-617)	621
	07-08	**118** (108-129)	**108** (103-119)	**194** (172-216)	**341** (271-437)	**491** (417-738)	532
Non-Hispanic blacks	01-02	**150** (127-179)	**145** (126-170)	**287** (243-327)	**493** (423-629)	**713** (568-975)	690
	03-04	**182** (152-217)	**178** (149-212)	**346** (274-418)	**552** (459-645)	**797** (606-1050)	679
	05-06	**162** (148-177)	**155** (141-173)	**307** (259-349)	**517** (408-695)	**753** (545-1110)	658
	07-08	**142** (129-158)	**141** (128-163)	**264** (234-302)	**448** (401-511)	**613** (522-722)	597
Non-Hispanic whites	01-02	**144** (125-166)	**144** (131-162)	**276** (241-330)	**489** (436-552)	**661** (550-793)	1204
	03-04	**159** (140-180)	**168** (151-186)	**296** (265-330)	**475** (421-539)	**641** (528-843)	1046
	05-06	**156** (143-170)	**155** (137-173)	**279** (251-322)	**500** (414-606)	**743** (570-1050)	982
	07-08	**146** (133-159)	**149** (132-174)	**261** (235-292)	**453** (405-503)	**725** (590-836)	1080

Limit of detection (LOD, see Data Analysis section) for Survey years 01-02, 03-04, 05-06 and 07-08 are 3.5, 5.0, 5.0 and 5.0 respectively.

Biomonitoring Summary: http://www.cdc.gov/biomonitoring/Phenanthrene_BiomonitoringSummary.html
Factsheet: http://www.cdc.gov/biomonitoring/PAHs_FactSheet.html

Urinary 1-Hydroxyphenanthrene (creatinine corrected)

Metabolite of Phenanthrene

Geometric mean and selected percentiles of urine concentrations (in ng/g of creatinine) for the U.S. population from the National Health and Nutrition Examination Survey.

	Survey years	Geometric mean (95% conf. interval)	Selected percentiles (95% confidence interval) 50th	75th	90th	95th	Sample size
Total	01-02	**132** (118-147)	**125** (113-141)	**210** (191-231)	**344** (310-385)	**464** (404-539)	2741
	03-04	**146** (138-155)	**141** (133-150)	**222** (205-244)	**352** (330-384)	**487** (416-546)	2496
	05-06	**147** (138-157)	**140** (130-148)	**229** (211-247)	**372** (339-406)	**502** (446-600)	2449
	07-08	**140** (130-151)	**137** (124-151)	**221** (207-236)	**345** (319-372)	**457** (407-522)	2608
Age group							
6-11 years	01-02	**133** (116-153)	**126** (110-147)	**188** (165-225)	**344** (245-437)	**467** (364-598)	387
	03-04	**145** (129-163)	**138** (121-155)	**205** (169-240)	**315** (244-456)	**477** (313-803)	328
	05-06	**124** (114-134)	**115** (103-133)	**191** (162-210)	**275** (230-340)	**368** (321-396)	345
	07-08	**149** (132-169)	**139** (127-158)	**221** (191-264)	**334** (275-410)	**424** (332-796)	389
12-19 years	01-02	**103** (87.9-121)	**97.3** (81.4-117)	**158** (131-192)	**240** (198-322)	**354** (235-531)	733
	03-04	**119** (108-130)	**115** (101-131)	**176** (157-197)	**275** (230-331)	**345** (269-496)	692
	05-06	**108** (97.5-119)	**108** (95.9-116)	**163** (148-180)	**268** (199-330)	**372** (262-609)	677
	07-08	**106** (94.9-117)	**106** (90.0-116)	**158** (147-171)	**243** (197-303)	**324** (250-407)	401
20 years and older	01-02	**137** (122-153)	**132** (117-145)	**223** (200-243)	**351** (319-395)	**476** (421-541)	1621
	03-04	**151** (142-161)	**147** (134-157)	**237** (212-254)	**365** (335-397)	**500** (422-580)	1476
	05-06	**158** (147-170)	**151** (137-163)	**244** (224-265)	**397** (362-420)	**554** (478-666)	1427
	07-08	**145** (135-157)	**142** (127-156)	**229** (214-251)	**354** (336-383)	**495** (420-560)	1818
Gender							
Males	01-02	**122** (108-137)	**116** (104-131)	**194** (173-218)	**321** (262-395)	**455** (348-642)	1344
	03-04	**138** (131-146)	**130** (117-143)	**201** (187-227)	**335** (301-391)	**437** (392-550)	1196
	05-06	**135** (126-145)	**125** (117-132)	**208** (187-229)	**341** (300-385)	**498** (391-634)	1222
	07-08	**129** (117-141)	**126** (112-141)	**207** (191-223)	**327** (290-344)	**410** (354-487)	1294
Females	01-02	**142** (125-160)	**136** (118-156)	**226** (199-256)	**355** (323-399)	**473** (421-541)	1397
	03-04	**154** (142-168)	**150** (138-160)	**241** (212-269)	**364** (323-425)	**505** (418-635)	1300
	05-06	**160** (149-172)	**152** (136-166)	**251** (229-275)	**398** (367-428)	**509** (435-638)	1227
	07-08	**152** (140-165)	**148** (133-162)	**231** (213-262)	**373** (329-411)	**478** (409-577)	1314
Race/ethnicity							
Mexican Americans	01-02	**110** (88.6-136)	**101** (85.5-131)	**162** (138-203)	**275** (187-452)	**400** (268-755)	664
	03-04	**124** (111-140)	**122** (107-136)	**183** (159-242)	**304** (246-392)	**392** (318-437)	611
	05-06	**112** (99.2-126)	**109** (87.1-129)	**170** (145-201)	**259** (228-307)	**353** (297-414)	621
	07-08	**115** (102-129)	**107** (96.7-118)	**159** (143-183)	**287** (218-344)	**424** (324-520)	532
Non-Hispanic blacks	01-02	**106** (88.7-127)	**102** (92.4-111)	**172** (141-203)	**274** (224-356)	**384** (308-598)	690
	03-04	**129** (112-148)	**126** (108-143)	**199** (173-242)	**337** (272-400)	**428** (374-522)	679
	05-06	**114** (106-121)	**107** (98.6-114)	**179** (163-189)	**301** (229-370)	**449** (321-771)	658
	07-08	**111** (98.8-124)	**109** (90.0-126)	**181** (153-201)	**293** (257-338)	**385** (338-446)	597
Non-Hispanic whites	01-02	**142** (126-161)	**137** (119-153)	**228** (206-247)	**363** (321-406)	**476** (411-552)	1204
	03-04	**157** (146-168)	**150** (140-159)	**241** (216-256)	**372** (335-424)	**515** (426-658)	1046
	05-06	**164** (152-176)	**154** (141-165)	**247** (228-268)	**398** (366-428)	**554** (466-739)	982
	07-08	**152** (139-166)	**152** (135-167)	**236** (217-258)	**354** (330-383)	**464** (407-551)	1080

Biomonitoring Summary: http://www.cdc.gov/biomonitoring/Phenanthrene_BiomonitoringSummary.html
Factsheet: http://www.cdc.gov/biomonitoring/PAHs_FactSheet.html

Urinary 2-Hydroxyphenanthrene

Metabolite of Phenanthrene

Geometric mean and selected percentiles of urine concentrations (in ng/L) for the U.S. population from the National Health and Nutrition Examination Survey.

	Survey years	Geometric mean (95% conf. interval)	Selected percentiles (95% confidence interval) 50th	75th	90th	95th	Sample size
Total	01-02	**54.0** (46.0-63.5)	**58.0** (50.0-68.0)	**117** (102-140)	**240** (201-271)	**332** (299-377)	2742
	03-04	**59.3** (52.5-66.9)	**62.2** (55.4-69.7)	**117** (105-129)	**206** (180-235)	**291** (252-336)	2512
	05-06	**65.3** (60.9-70.0)	**63.3** (58.5-68.6)	**126** (111-139)	**234** (203-254)	**314** (282-383)	2410
	07-08	**63.6** (58.8-68.7)	**62.9** (58.0-68.7)	**117** (104-130)	**204** (184-223)	**300** (256-367)	2572
Age group							
6-11 years	01-02	**40.5** (34.3-47.7)	**46.0** (37.0-57.0)	**87.0** (71.0-101)	**170** (133-207)	**257** (195-320)	387
	03-04	**45.3** (40.0-51.3)	**48.1** (41.9-56.8)	**72.7** (63.2-89.4)	**135** (104-176)	**225** (136-299)	337
	05-06	**42.1** (38.4-46.1)	**40.1** (36.4-47.2)	**70.4** (58.1-83.2)	**110** (89.2-132)	**152** (112-213)	341
	07-08	**48.1** (41.8-55.4)	**46.4** (41.7-54.6)	**80.3** (68.2-95.4)	**144** (98.8-184)	**184** (122-229)	382
12-19 years	01-02	**49.5** (37.3-65.7)	**52.0** (41.0-68.0)	**108** (93.0-122)	**210** (145-270)	**281** (214-524)	733
	03-04	**58.0** (50.7-66.2)	**62.5** (54.5-71.6)	**104** (88.8-132)	**198** (166-215)	**258** (199-318)	707
	05-06	**60.4** (55.4-65.8)	**62.4** (56.3-67.1)	**114** (93.8-133)	**175** (156-195)	**250** (198-291)	664
	07-08	**59.4** (52.9-66.7)	**60.5** (51.5-67.0)	**97.4** (81.2-121)	**160** (133-204)	**223** (175-264)	398
20 years and older	01-02	**56.8** (48.1-66.9)	**60.0** (52.0-73.0)	**126** (104-152)	**249** (207-292)	**342** (308-398)	1622
	03-04	**61.5** (53.7-70.4)	**64.9** (57.2-73.5)	**125** (111-138)	**216** (187-250)	**310** (259-389)	1468
	05-06	**69.6** (63.6-76.2)	**67.3** (61.5-75.3)	**137** (118-154)	**251** (215-280)	**348** (298-446)	1405
	07-08	**66.2** (60.8-72.1)	**65.9** (60.4-71.2)	**123** (109-136)	**218** (195-251)	**334** (272-412)	1792
Gender							
Males	01-02	**62.1** (53.3-72.5)	**67.0** (58.0-80.0)	**136** (109-161)	**274** (245-303)	**367** (329-414)	1345
	03-04	**72.3** (64.4-81.3)	**71.6** (65.8-83.3)	**138** (123-150)	**240** (200-279)	**337** (279-428)	1211
	05-06	**76.5** (70.3-83.3)	**72.9** (67.4-81.3)	**141** (122-156)	**254** (219-296)	**383** (289-555)	1204
	07-08	**75.8** (70.3-81.8)	**73.5** (67.6-81.4)	**136** (126-149)	**229** (199-256)	**354** (276-408)	1277
Females	01-02	**47.4** (39.1-57.5)	**50.0** (41.0-60.0)	**105** (88.0-129)	**200** (171-240)	**294** (236-357)	1397
	03-04	**49.0** (42.4-56.6)	**52.5** (45.3-58.7)	**95.4** (84.1-110)	**166** (146-202)	**247** (202-291)	1301
	05-06	**56.0** (50.2-62.5)	**54.4** (49.5-61.0)	**107** (94.7-125)	**206** (173-245)	**275** (248-343)	1206
	07-08	**53.7** (48.9-59.0)	**53.0** (48.9-59.2)	**97.0** (87.0-111)	**173** (146-207)	**280** (206-327)	1295
Race/ethnicity							
Mexican Americans	01-02	**46.8** (32.7-66.8)	**51.0** (36.0-73.0)	**97.0** (72.0-140)	**191** (122-332)	**303** (187-652)	665
	03-04	**53.9** (46.7-62.1)	**60.1** (50.8-68.6)	**104** (89.5-115)	**164** (144-187)	**200** (187-219)	627
	05-06	**54.6** (45.0-66.3)	**56.2** (47.1-67.7)	**96.2** (84.4-108)	**164** (120-202)	**213** (175-294)	612
	07-08	**58.2** (53.9-62.7)	**59.3** (50.8-63.0)	**98.6** (92.5-113)	**167** (141-193)	**252** (192-395)	528
Non-Hispanic blacks	01-02	**71.1** (58.0-87.1)	**74.0** (66.0-90.0)	**152** (124-182)	**262** (217-311)	**374** (284-560)	690
	03-04	**81.2** (68.1-96.7)	**73.4** (61.8-101)	**158** (125-199)	**280** (219-374)	**390** (289-574)	678
	05-06	**77.3** (69.0-86.6)	**75.3** (65.8-83.5)	**141** (114-172)	**267** (202-340)	**363** (275-546)	641
	07-08	**72.8** (65.2-81.3)	**70.7** (62.6-80.2)	**127** (115-149)	**251** (206-284)	**367** (284-455)	597
Non-Hispanic whites	01-02	**53.1** (43.6-64.6)	**57.0** (48.0-68.0)	**117** (99.0-144)	**242** (199-286)	**333** (303-385)	1204
	03-04	**58.2** (50.1-67.7)	**60.7** (52.5-71.0)	**115** (97.9-133)	**209** (172-255)	**299** (251-351)	1044
	05-06	**65.2** (59.4-71.5)	**63.7** (57.0-70.4)	**130** (109-144)	**244** (206-261)	**343** (282-439)	974
	07-08	**63.3** (56.6-70.8)	**64.0** (56.4-71.1)	**121** (102-135)	**203** (174-234)	**298** (238-410)	1050

Limit of detection (LOD, see Data Analysis section) for Survey years 01-02, 03-04, 05-06 and 07-08 are 3.2, 5.0, 5.0 and 5.0 respectively.

Biomonitoring Summary: http://www.cdc.gov/biomonitoring/Phenanthrene_BiomonitoringSummary.html
Factsheet: http://www.cdc.gov/biomonitoring/PAHs_FactSheet.html

Urinary 2-Hydroxyphenanthrene (creatinine corrected)

Metabolite of Phenanthrene

Geometric mean and selected percentiles of urine concentrations (in ng/g of creatinine) for the U.S. population from the National Health and Nutrition Examination Survey.

	Survey years	Geometric mean (95% conf. interval)	Selected percentiles (95% confidence interval) 50th	75th	90th	95th	Sample size
Total	01-02	**50.6** (43.3-59.2)	**52.5** (46.4-59.6)	**91.4** (78.7-108)	**164** (138-200)	**233** (206-275)	2742
	03-04	**55.4** (51.1-60.0)	**52.3** (48.8-55.8)	**85.8** (79.4-97.0)	**150** (128-174)	**212** (180-252)	2512
	05-06	**63.1** (58.9-67.5)	**57.0** (53.3-61.9)	**101** (92.8-110)	**178** (157-194)	**245** (209-295)	2410
	07-08	**64.0** (58.9-69.4)	**60.3** (55.3-66.5)	**98.2** (87.5-108)	**163** (151-179)	**229** (199-248)	2572
Age group							
6-11 years	01-02	**45.3** (38.8-52.8)	**50.0** (40.0-57.8)	**85.9** (69.6-100)	**144** (105-217)	**234** (138-397)	387
	03-04	**47.9** (43.6-52.7)	**46.6** (41.0-51.4)	**66.3** (60.3-72.8)	**106** (81.0-125)	**183** (108-295)	337
	05-06	**45.9** (42.0-50.1)	**43.6** (38.4-48.7)	**65.8** (56.1-85.2)	**101** (85.4-110)	**116** (101-135)	341
	07-08	**59.7** (51.2-69.4)	**56.5** (49.4-65.2)	**85.1** (73.1-107)	**134** (105-187)	**187** (121-437)	382
12-19 years	01-02	**38.4** (29.6-49.7)	**38.5** (30.6-48.7)	**64.9** (52.4-84.0)	**117** (86.7-167)	**173** (128-305)	733
	03-04	**43.6** (39.3-48.5)	**40.8** (37.7-45.0)	**70.6** (55.8-84.7)	**106** (88.2-123)	**127** (115-176)	707
	05-06	**44.5** (39.9-49.7)	**42.7** (38.9-47.1)	**66.1** (58.0-73.7)	**111** (80.0-129)	**146** (115-232)	664
	07-08	**46.1** (42.0-50.5)	**47.0** (39.7-53.0)	**69.7** (62.0-78.0)	**100** (83.0-113)	**127** (105-188)	398
20 years and older	01-02	**53.7** (46.2-62.4)	**55.6** (49.4-62.7)	**94.6** (84.1-112)	**173** (145-201)	**241** (209-287)	1622
	03-04	**58.7** (53.6-64.2)	**54.8** (50.7-60.9)	**91.6** (83.5-105)	**164** (139-182)	**227** (183-291)	1468
	05-06	**69.1** (64.1-74.6)	**63.6** (58.4-67.8)	**111** (102-123)	**191** (168-216)	**267** (232-316)	1405
	07-08	**67.8** (62.4-73.8)	**64.1** (57.6-71.6)	**105** (95.5-119)	**177** (160-194)	**239** (211-255)	1792
Gender							
Males	01-02	**50.4** (43.3-58.5)	**52.5** (47.2-59.2)	**91.4** (78.6-103)	**176** (140-208)	**245** (206-349)	1345
	03-04	**56.6** (52.5-61.0)	**52.3** (48.1-57.1)	**84.7** (79.2-96.4)	**157** (132-180)	**227** (184-284)	1211
	05-06	**61.2** (56.7-65.9)	**55.7** (50.0-59.3)	**102** (89.3-111)	**161** (137-194)	**244** (190-310)	1204
	07-08	**64.0** (59.3-69.1)	**59.8** (55.3-64.1)	**99.7** (90.5-108)	**172** (152-191)	**229** (211-243)	1277
Females	01-02	**50.9** (42.7-60.7)	**52.8** (45.5-61.0)	**91.6** (75.0-115)	**158** (133-183)	**214** (200-245)	1397
	03-04	**54.3** (48.7-60.5)	**52.3** (47.0-57.2)	**88.1** (76.4-101)	**146** (118-179)	**202** (175-246)	1301
	05-06	**65.0** (60.0-70.3)	**60.5** (55.1-65.3)	**101** (91.6-113)	**184** (165-201)	**256** (224-312)	1206
	07-08	**63.9** (57.8-70.7)	**61.5** (54.0-69.3)	**95.8** (83.7-115)	**159** (140-189)	**229** (186-256)	1295
Race/ethnicity							
Mexican Americans	01-02	**43.7** (31.9-59.8)	**44.0** (34.3-58.8)	**80.8** (59.8-115)	**146** (103-245)	**245** (144-394)	665
	03-04	**48.8** (42.5-55.9)	**50.1** (42.4-58.8)	**79.5** (68.2-86.1)	**124** (96.2-149)	**155** (127-206)	627
	05-06	**48.7** (43.0-55.2)	**46.0** (39.4-56.2)	**75.1** (62.9-85.8)	**111** (94.5-138)	**146** (121-178)	612
	07-08	**56.7** (51.1-62.8)	**55.0** (47.7-62.2)	**83.7** (76.2-90.4)	**133** (107-180)	**198** (145-233)	528
Non-Hispanic blacks	01-02	**50.2** (40.5-62.2)	**49.7** (44.3-56.0)	**87.7** (72.6-103)	**174** (127-224)	**257** (178-459)	690
	03-04	**57.6** (49.8-66.7)	**53.1** (45.7-63.5)	**90.3** (77.9-117)	**152** (128-186)	**218** (173-348)	678
	05-06	**54.3** (49.7-59.3)	**47.7** (45.4-51.3)	**84.8** (71.3-97.8)	**150** (116-192)	**211** (167-298)	641
	07-08	**56.6** (50.4-63.6)	**51.2** (46.6-55.9)	**95.5** (77.7-107)	**154** (136-178)	**212** (188-232)	597
Non-Hispanic whites	01-02	**52.5** (43.8-62.9)	**54.8** (47.7-61.9)	**92.7** (80.5-113)	**170** (140-204)	**233** (202-293)	1204
	03-04	**57.1** (51.7-63.0)	**52.9** (49.1-57.2)	**88.5** (79.2-102)	**159** (128-187)	**237** (180-295)	1044
	05-06	**67.9** (62.6-73.7)	**60.9** (56.5-66.5)	**111** (101-123)	**191** (162-224)	**274** (231-323)	974
	07-08	**65.9** (59.4-73.3)	**62.8** (55.1-72.0)	**100** (87.2-119)	**166** (147-190)	**229** (197-252)	1050

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Factsheet: http://www.cdc.gov/biomonitoring/PAHs_FactSheet.html

Urinary 3-Hydroxyphenanthrene

Metabolite of Phenanthrene

Geometric mean and selected percentiles of urine concentrations (in ng/L) for the U.S. population from the National Health and Nutrition Examination Survey.

	Survey years	Geometric mean (95% conf. interval)	Selected percentiles (95% confidence interval) 50th	75th	90th	95th	Sample size
Total	01-02	**105** (92.5-118)	**105** (92.0-118)	**200** (179-225)	**401** (336-480)	**649** (542-747)	2741
	03-04	**115** (104-128)	**118** (107-129)	**219** (201-237)	**424** (351-487)	**647** (509-788)	2426
	05-06	**103** (96.1-109)	**99.8** (90.3-107)	**200** (185-210)	**399** (365-429)	**593** (463-746)	2448
	07-08	**97.6** (91.6-104)	**97.8** (90.9-106)	**178** (164-195)	**319** (283-353)	**490** (426-557)	2601
Age group							
6-11 years	01-02	**105** (91.1-122)	**109** (82.0-138)	**195** (160-231)	**298** (245-346)	**412** (319-545)	387
	03-04	**116** (99.9-134)	**107** (93.0-135)	**205** (170-223)	**333** (241-435)	**472** (322-881)	325
	05-06	**89.6** (79.6-101)	**84.0** (72.6-103)	**154** (123-176)	**245** (193-316)	**316** (245-569)	345
	07-08	**100** (85.9-117)	**102** (83.4-126)	**175** (144-183)	**251** (194-328)	**348** (239-862)	389
12-19 years	01-02	**104** (87.3-125)	**107** (90.0-122)	**201** (165-231)	**329** (255-445)	**459** (331-631)	733
	03-04	**120** (103-141)	**127** (107-149)	**221** (195-262)	**366** (327-424)	**564** (391-730)	677
	05-06	**105** (96.5-113)	**104** (97.3-116)	**193** (166-217)	**323** (275-383)	**453** (377-604)	676
	07-08	**103** (92.9-114)	**103** (89.5-116)	**173** (146-195)	**293** (246-352)	**371** (323-436)	401
20 years and older	01-02	**105** (91.7-119)	**105** (89.0-118)	**201** (180-231)	**433** (366-515)	**683** (597-806)	1621
	03-04	**114** (103-128)	**118** (105-130)	**221** (203-243)	**450** (353-505)	**696** (511-885)	1424
	05-06	**104** (95.3-113)	**101** (89.6-113)	**206** (188-223)	**419** (384-466)	**657** (481-832)	1427
	07-08	**96.5** (89.3-104)	**96.9** (87.3-106)	**183** (163-201)	**331** (285-393)	**535** (432-624)	1811
Gender							
Males	01-02	**122** (107-138)	**117** (106-132)	**224** (188-278)	**474** (372-597)	**734** (597-1010)	1344
	03-04	**137** (122-154)	**135** (119-157)	**251** (221-287)	**487** (398-579)	**754** (606-913)	1167
	05-06	**125** (114-137)	**119** (107-136)	**227** (204-261)	**427** (395-491)	**768** (520-951)	1222
	07-08	**117** (109-127)	**115** (103-130)	**209** (191-229)	**352** (322-390)	**557** (462-674)	1290
Females	01-02	**90.8** (77.7-106)	**93.0** (80.0-108)	**184** (155-207)	**328** (291-399)	**518** (434-649)	1397
	03-04	**97.7** (86.5-110)	**100** (86.6-114)	**193** (170-210)	**351** (287-445)	**531** (447-647)	1259
	05-06	**84.6** (75.6-94.5)	**82.4** (73.1-92.5)	**159** (143-176)	**363** (285-404)	**480** (421-577)	1226
	07-08	**81.9** (76.8-87.3)	**81.7** (74.7-91.0)	**148** (134-173)	**272** (237-326)	**439** (355-501)	1311
Race/ethnicity							
Mexican Americans	01-02	**83.5** (64.1-109)	**84.0** (64.0-111)	**144** (117-198)	**259** (193-430)	**454** (253-1140)	664
	03-04	**92.7** (81.3-106)	**92.8** (84.1-111)	**164** (133-204)	**317** (236-374)	**436** (338-501)	576
	05-06	**77.0** (64.1-92.5)	**74.8** (60.0-90.8)	**138** (110-162)	**260** (191-312)	**366** (299-471)	620
	07-08	**79.1** (71.4-87.7)	**75.3** (66.4-85.2)	**133** (118-154)	**250** (176-330)	**414** (302-511)	529
Non-Hispanic blacks	01-02	**145** (122-172)	**135** (120-163)	**281** (228-346)	**516** (414-684)	**957** (609-1410)	690
	03-04	**166** (141-195)	**159** (137-193)	**313** (249-399)	**542** (458-670)	**798** (579-1200)	686
	05-06	**138** (120-159)	**125** (113-147)	**260** (211-329)	**466** (365-671)	**716** (491-1100)	658
	07-08	**129** (115-145)	**129** (112-148)	**237** (205-266)	**427** (349-514)	**657** (514-839)	596
Non-Hispanic whites	01-02	**104** (90.8-120)	**106** (92.0-120)	**199** (177-224)	**401** (331-495)	**649** (518-747)	1204
	03-04	**114** (100-129)	**117** (104-128)	**220** (201-237)	**440** (332-509)	**702** (505-915)	1010
	05-06	**101** (93.6-110)	**101** (89.3-112)	**200** (181-213)	**402** (368-434)	**657** (449-829)	982
	07-08	**97.0** (87.7-107)	**97.9** (87.3-111)	**179** (155-202)	**315** (270-355)	**468** (371-590)	1077

Limit of detection (LOD, see Data Analysis section) for Survey years 01-02, 03-04, 05-06 and 07-08 are 3.6, 5.0, 5.0 and 5.0 respectively.

Biomonitoring Summary: http://www.cdc.gov/biomonitoring/Phenanthrene_BiomonitoringSummary.html
Factsheet: http://www.cdc.gov/biomonitoring/PAHs_FactSheet.html

Urinary 3-Hydroxyphenanthrene (creatinine corrected)

Metabolite of Phenanthrene

Geometric mean and selected percentiles of urine concentrations (in ng/g of creatinine) for the U.S. population from the National Health and Nutrition Examination Survey.

	Survey years	Geometric mean (95% conf. interval)	Selected percentiles (95% confidence interval) 50th	75th	90th	95th	Sample size
Total	01-02	**98.0** (87.4-110)	**86.5** (78.8-97.1)	**158** (142-174)	**299** (252-342)	**428** (365-621)	2741
	03-04	**108** (101-115)	**99.5** (91.9-106)	**172** (158-189)	**321** (273-363)	**497** (406-566)	2426
	05-06	**99.5** (93.6-106)	**88.1** (83.8-93.5)	**164** (151-175)	**326** (273-364)	**443** (402-525)	2448
	07-08	**98.1** (91.3-106)	**91.3** (81.8-100)	**159** (141-174)	**273** (246-301)	**380** (333-442)	2601
Age group							
6-11 years	01-02	**118** (103-135)	**114** (94.9-131)	**173** (150-201)	**289** (238-368)	**410** (308-544)	387
	03-04	**124** (110-138)	**119** (110-129)	**165** (145-202)	**283** (231-402)	**484** (269-710)	325
	05-06	**99.6** (89.4-111)	**93.5** (85.7-107)	**146** (118-165)	**232** (171-292)	**292** (232-352)	345
	07-08	**123** (107-142)	**120** (105-143)	**183** (159-200)	**230** (201-382)	**382** (222-948)	389
12-19 years	01-02	**81.1** (70.1-93.8)	**78.0** (66.7-89.4)	**116** (96.5-144)	**205** (153-275)	**283** (198-511)	733
	03-04	**90.3** (81.5-100)	**84.9** (76.1-93.9)	**139** (116-160)	**212** (193-231)	**295** (225-429)	677
	05-06	**78.2** (70.9-86.3)	**72.5** (66.7-82.1)	**111** (98.8-121)	**183** (141-262)	**291** (211-465)	676
	07-08	**80.0** (73.6-86.9)	**74.4** (67.0-87.5)	**117** (110-126)	**188** (151-223)	**243** (213-284)	401
20 years and older	01-02	**98.9** (88.3-111)	**85.3** (78.3-96.6)	**164** (147-183)	**320** (273-356)	**488** (379-774)	1621
	03-04	**109** (102-117)	**99.1** (91.7-106)	**180** (161-198)	**343** (282-385)	**523** (417-608)	1424
	05-06	**103** (96.3-111)	**90.3** (84.4-97.8)	**177** (161-200)	**350** (319-387)	**506** (426-538)	1427
	07-08	**98.8** (91.2-107)	**90.3** (80.2-100)	**163** (140-184)	**290** (262-321)	**388** (338-464)	1811
Gender							
Males	01-02	**98.6** (87.7-111)	**87.1** (79.5-98.2)	**159** (138-188)	**310** (245-368)	**505** (356-761)	1344
	03-04	**107** (98.2-116)	**99.2** (87.4-109)	**169** (154-184)	**305** (261-343)	**491** (383-592)	1167
	05-06	**100** (92.6-109)	**89.2** (81.5-97.0)	**166** (147-184)	**326** (260-365)	**430** (364-553)	1222
	07-08	**98.9** (91.2-107)	**91.3** (81.3-101)	**166** (146-184)	**288** (263-310)	**382** (321-449)	1290
Females	01-02	**97.5** (84.9-112)	**86.4** (76.9-100)	**158** (139-178)	**292** (245-333)	**410** (352-583)	1397
	03-04	**109** (99.6-119)	**100** (88.9-110)	**176** (155-202)	**328** (265-398)	**497** (380-594)	1259
	05-06	**98.7** (91.6-106)	**87.3** (80.4-95.1)	**160** (144-177)	**332** (284-375)	**446** (393-518)	1226
	07-08	**97.4** (89.6-106)	**90.9** (79.4-102)	**150** (131-181)	**262** (223-305)	**377** (299-446)	1311
Race/ethnicity							
Mexican Americans	01-02	**78.2** (62.4-98.0)	**70.8** (56.2-87.4)	**130** (92.9-171)	**224** (173-321)	**333** (224-656)	664
	03-04	**83.8** (75.1-93.6)	**79.5** (72.9-87.0)	**137** (111-165)	**224** (188-274)	**305** (247-406)	576
	05-06	**68.8** (61.0-77.7)	**61.3** (51.5-73.2)	**96.9** (82.9-122)	**175** (159-206)	**291** (200-387)	620
	07-08	**77.1** (68.5-86.7)	**71.6** (63.1-78.8)	**113** (99.6-133)	**200** (160-227)	**275** (230-334)	529
Non-Hispanic blacks	01-02	**102** (85.8-122)	**91.9** (79.8-108)	**160** (133-202)	**296** (234-475)	**673** (347-1260)	690
	03-04	**118** (103-135)	**106** (90.5-126)	**186** (156-219)	**357** (257-439)	**505** (384-772)	686
	05-06	**97.0** (86.6-109)	**85.7** (77.3-94.1)	**141** (125-172)	**271** (217-366)	**443** (283-623)	658
	07-08	**101** (88.7-114)	**91.3** (80.9-104)	**176** (143-208)	**297** (238-360)	**411** (344-512)	596
Non-Hispanic whites	01-02	**103** (91.5-117)	**89.4** (80.2-102)	**167** (148-193)	**324** (272-368)	**447** (365-738)	1204
	03-04	**112** (104-121)	**103** (96.9-108)	**183** (160-200)	**346** (278-402)	**544** (417-656)	1010
	05-06	**106** (98.8-114)	**93.6** (86.4-102)	**178** (160-206)	**348** (317-387)	**506** (416-551)	982
	07-08	**101** (91.1-112)	**96.5** (83.5-107)	**163** (137-190)	**280** (243-317)	**378** (316-447)	1077

Biomonitoring Summary: http://www.cdc.gov/biomonitoring/Phenanthrene_BiomonitoringSummary.html
Factsheet: http://www.cdc.gov/biomonitoring/PAHs_FactSheet.html

Urinary 4-Hydroxyphenanthrene

Metabolite of Phenanthrene

Geometric mean and selected percentiles of urine concentrations (in ng/L) for the U.S. population from the National Health and Nutrition Examination Survey.

	Survey years+	Geometric mean (95% conf. interval)	Selected percentiles (95% confidence interval) 50th	75th	90th	95th	Sample size
Total	03-04	**25.1** (22.6-27.9)	**25.9** (22.5-29.6)	**53.7** (47.4-59.7)	**96.8** (85.0-116)	**152** (118-176)	2443
	05-06	**29.3** (26.7-32.2)	**29.2** (25.1-31.8)	**56.9** (50.1-66.1)	**108** (93.1-124)	**157** (134-176)	2131
Age group							
6-11 years	03-04	**25.2** (22.3-28.4)	**26.3** (22.8-30.0)	**45.7** (38.6-53.3)	**95.5** (61.7-137)	**138** (95.1-202)	321
	05-06	**20.4** (17.7-23.4)	**20.2** (17.6-23.8)	**35.1** (27.4-41.6)	**59.6** (43.3-93.0)	**96.1** (62.2-155)	307
12-19 years	03-04	**23.7** (20.3-27.6)	**25.8** (20.5-31.4)	**49.9** (45.2-53.0)	**77.4** (67.2-95.1)	**123** (94.6-142)	683
	05-06	**26.6** (23.0-30.8)	**27.6** (22.4-31.2)	**50.9** (43.5-56.8)	**79.4** (71.1-89.9)	**108** (89.9-140)	568
20 years and older	03-04	**25.3** (22.4-28.6)	**25.8** (22.4-29.5)	**54.8** (48.6-61.9)	**101** (87.1-120)	**163** (117-197)	1439
	05-06	**31.1** (28.1-34.3)	**30.7** (26.4-33.7)	**62.9** (52.6-75.1)	**119** (97.1-140)	**165** (138-188)	1256
Gender							
Males	03-04	**30.0** (26.5-34.0)	**29.6** (25.5-35.1)	**60.4** (53.4-68.7)	**110** (90.6-130)	**169** (118-211)	1180
	05-06	**31.9** (28.6-35.5)	**30.7** (25.0-36.8)	**60.3** (49.7-72.7)	**111** (92.3-134)	**153** (119-226)	1064
Females	03-04	**21.1** (18.7-23.8)	**21.3** (18.3-25.3)	**46.5** (41.6-53.3)	**88.4** (73.5-103)	**136** (106-157)	1263
	05-06	**27.1** (23.4-31.4)	**26.6** (22.7-31.1)	**54.0** (41.9-66.9)	**107** (82.6-140)	**165** (120-189)	1067
Race/ethnicity							
Mexican Americans	03-04	**23.5** (20.9-26.3)	**24.4** (21.4-29.4)	**46.1** (40.1-53.0)	**80.5** (60.9-94.1)	**99.7** (80.2-154)	607
	05-06	**24.5** (20.3-29.6)	**24.8** (20.2-31.3)	**43.7** (37.2-54.5)	**81.2** (62.8-94.4)	**112** (82.6-134)	466
Non-Hispanic blacks	03-04	**35.4** (29.6-42.3)	**37.1** (29.8-46.1)	**71.4** (60.3-83.3)	**123** (104-145)	**167** (133-215)	657
	05-06	**36.8** (31.8-42.5)	**33.6** (29.7-42.0)	**66.0** (56.0-80.5)	**130** (98.0-168)	**190** (133-276)	612
Non-Hispanic whites	03-04	**24.4** (21.5-27.7)	**25.2** (21.8-29.1)	**51.5** (45.1-58.5)	**97.9** (77.4-127)	**163** (113-202)	1021
	05-06	**28.6** (25.2-32.4)	**28.6** (24.5-31.9)	**55.5** (47.3-69.3)	**108** (90.9-136)	**163** (134-188)	890

Limit of detection (LOD, see Data Analysis section) for Survey years 03-04 and 05-06 are 5.0 and 5.0 respectively.
+Not measured in Survey years 2007-2008 because of potential interferences that would affect the quality of the results.

Biomonitoring Summary: http://www.cdc.gov/biomonitoring/Phenanthrene_BiomonitoringSummary.html
Factsheet: http://www.cdc.gov/biomonitoring/PAHs_FactSheet.html

Urinary 4-Hydroxyphenanthrene (creatinine corrected)

Metabolite of Phenanthrene

Geometric mean and selected percentiles of urine concentrations (in ng/g of creatinine) for the U.S. population from the National Health and Nutrition Examination Survey.

	Survey years+	Geometric mean (95% conf. interval)	Selected percentiles (95% confidence interval) 50th	75th	90th	95th	Sample size
Total	03-04	**23.3** (21.7-25.0)	**22.7** (20.5-24.9)	**42.0** (38.6-44.6)	**74.3** (66.3-85.4)	**114** (102-130)	2443
	05-06	**28.9** (26.6-31.4)	**26.9** (24.1-29.4)	**48.4** (43.9-53.7)	**88.3** (77.5-102)	**127** (106-145)	2131
Age group							
6-11 years	03-04	**26.3** (23.7-29.2)	**24.8** (21.6-28.6)	**43.3** (35.2-48.8)	**72.9** (56.3-113)	**126** (79.3-173)	321
	05-06	**22.9** (19.8-26.5)	**21.7** (20.0-24.8)	**36.2** (27.8-43.7)	**50.0** (42.7-79.3)	**79.3** (50.0-98.3)	307
12-19 years	03-04	**17.7** (15.9-19.8)	**16.7** (15.7-18.4)	**31.4** (26.0-37.1)	**47.9** (40.7-54.1)	**61.7** (51.7-86.0)	683
	05-06	**20.1** (18.2-22.2)	**19.0** (16.5-22.9)	**30.0** (28.3-33.0)	**48.7** (41.0-63.5)	**79.4** (53.8-98.2)	568
20 years and older	03-04	**24.0** (22.0-26.2)	**23.3** (21.1-25.4)	**43.5** (39.4-48.1)	**79.0** (66.8-100)	**121** (104-138)	1439
	05-06	**31.4** (29.0-34.1)	**29.4** (26.9-32.4)	**54.6** (48.0-61.6)	**102** (86.4-109)	**139** (115-166)	1256
Gender							
Males	03-04	**23.4** (21.6-25.4)	**22.7** (20.3-24.9)	**40.9** (35.9-45.7)	**72.7** (61.5-86.8)	**112** (100-126)	1180
	05-06	**26.1** (23.8-28.7)	**24.1** (22.2-28.2)	**44.3** (40.0-51.1)	**74.3** (61.6-87.7)	**102** (87.3-120)	1064
Females	03-04	**23.2** (21.2-25.5)	**22.8** (19.7-26.0)	**42.5** (38.3-46.2)	**75.1** (63.4-94.0)	**119** (93.1-139)	1263
	05-06	**31.8** (28.7-35.3)	**28.9** (25.8-31.8)	**54.2** (46.0-63.2)	**103** (85.4-127)	**145** (119-174)	1067
Race/ethnicity							
Mexican Americans	03-04	**21.2** (18.8-23.8)	**20.7** (19.1-22.9)	**35.9** (29.8-40.7)	**59.0** (43.3-87.5)	**83.4** (60.9-139)	607
	05-06	**22.5** (20.1-25.3)	**21.6** (18.8-27.1)	**34.7** (31.4-41.5)	**54.5** (48.2-61.6)	**81.3** (59.8-86.1)	466
Non-Hispanic blacks	03-04	**25.0** (21.6-28.9)	**25.3** (23.1-28.8)	**42.0** (37.4-51.4)	**75.0** (61.6-87.9)	**102** (79.2-137)	657
	05-06	**25.8** (23.0-29.0)	**24.5** (22.0-26.8)	**39.4** (36.2-44.7)	**68.5** (59.8-88.6)	**103** (80.0-146)	612
Non-Hispanic whites	03-04	**23.7** (21.5-26.2)	**22.4** (19.4-25.4)	**43.6** (38.8-47.3)	**82.2** (68.5-101)	**126** (103-143)	1021
	05-06	**30.5** (27.3-34.1)	**28.5** (25.0-31.6)	**53.0** (45.5-61.5)	**102** (83.0-115)	**138** (112-174)	890

+ Not measured in Survey years 2007-2008 because of potential interferences that would affect the quality of the results.

Biomonitoring Summary: http://www.cdc.gov/biomonitoring/Phenanthrene_BiomonitoringSummary.html
Factsheet: http://www.cdc.gov/biomonitoring/PAHs_FactSheet.html

Urinary 1-Hydroxypyrene

Metabolite of Pyrene

Geometric mean and selected percentiles of urine concentrations (in ng/L) for the U.S. population from the National Health and Nutrition Examination Survey.

	Survey years	Geometric mean (95% conf. interval)	Selected percentiles (95% confidence interval) 50th	75th	90th	95th	Sample size
Total	03-04	**89.2** (79.8-99.7)	**91.3** (83.5-98.8)	**189** (168-208)	**389** (345-459)	**569** (493-676)	2515
	05-06	**98.3** (91.0-106)	**94.0** (85.5-102)	**206** (181-227)	**440** (373-521)	**673** (585-829)	2415
	07-08	**118** (108-129)	**118** (107-133)	**233** (208-263)	**439** (392-487)	**675** (543-844)	2581
Age group							
6-11 years	03-04	**112** (96.9-130)	**119** (99.0-143)	**193** (163-229)	**351** (233-484)	**514** (336-680)	333
	05-06	**103** (91.3-117)	**99.8** (91.7-105)	**170** (139-206)	**342** (222-413)	**469** (353-786)	342
	07-08	**146** (127-168)	**149** (131-171)	**231** (203-288)	**395** (293-557)	**569** (395-1060)	387
12-19 years	03-04	**119** (103-137)	**115** (98.0-145)	**244** (213-274)	**506** (359-608)	**705** (636-788)	705
	05-06	**118** (104-134)	**108** (93.2-132)	**218** (179-266)	**409** (332-557)	**837** (481-992)	667
	07-08	**149** (130-170)	**145** (118-165)	**282** (228-343)	**452** (399-515)	**614** (476-843)	401
20 years and older	03-04	**82.8** (73.0-93.8)	**83.8** (75.6-92.4)	**177** (155-203)	**387** (337-437)	**553** (483-644)	1477
	05-06	**94.9** (86.3-104)	**89.1** (79.8-100)	**208** (173-245)	**476** (368-563)	**677** (563-913)	1406
	07-08	**111** (100-123)	**114** (95.7-129)	**226** (199-258)	**446** (370-506)	**719** (525-904)	1793
Gender							
Males	03-04	**108** (96.0-122)	**111** (98.7-121)	**227** (197-265)	**459** (387-518)	**644** (526-811)	1214
	05-06	**114** (104-125)	**108** (98.4-119)	**235** (196-279)	**465** (386-585)	**793** (634-980)	1208
	07-08	**134** (120-150)	**131** (113-155)	**260** (229-293)	**474** (409-560)	**748** (554-956)	1279
Females	03-04	**74.0** (64.3-85.1)	**75.3** (66.3-83.9)	**158** (143-173)	**334** (258-407)	**502** (389-604)	1301
	05-06	**84.8** (74.5-96.5)	**80.0** (69.8-89.9)	**173** (148-213)	**421** (313-521)	**617** (534-677)	1207
	07-08	**105** (94.7-116)	**111** (92.6-123)	**213** (194-227)	**387** (342-444)	**580** (486-769)	1302
Race/ethnicity							
Mexican Americans	03-04	**89.4** (78.6-102)	**92.4** (79.8-113)	**173** (153-191)	**331** (281-415)	**495** (404-548)	623
	05-06	**95.6** (81.0-113)	**92.3** (80.1-112)	**179** (149-220)	**332** (261-455)	**490** (367-756)	611
	07-08	**119** (110-129)	**117** (104-132)	**196** (170-230)	**380** (289-494)	**593** (485-755)	531
Non-Hispanic blacks	03-04	**128** (105-155)	**126** (108-153)	**296** (226-355)	**553** (400-669)	**699** (564-935)	681
	05-06	**116** (98.5-137)	**108** (91.0-124)	**230** (185-332)	**517** (401-639)	**743** (559-1060)	653
	07-08	**136** (122-153)	**142** (122-160)	**282** (250-320)	**548** (480-610)	**752** (617-871)	592
Non-Hispanic whites	03-04	**84.8** (73.5-97.9)	**85.4** (75.6-97.3)	**182** (156-214)	**386** (336-462)	**566** (470-749)	1050
	05-06	**94.9** (85.4-106)	**91.3** (80.3-104)	**203** (170-235)	**399** (351-538)	**677** (563-899)	968
	07-08	**116** (102-131)	**117** (102-136)	**235** (198-287)	**436** (364-500)	**719** (473-981)	1059

Limit of detection (LOD, see Data Analysis section) for Survey years 03-04, 05-06, and 07-08 are 5.0, 5.0, and 5.0 respectively.

Biomonitoring Summary: http://www.cdc.gov/biomonitoring/Pyrene_BiomonitoringSummary.html
Factsheet: http://www.cdc.gov/biomonitoring/PAHs_FactSheet.html

Urinary 1-Hydroxypyrene (creatinine corrected)

Metabolite of Pyrene

Geometric mean and selected percentiles of urine concentrations (in ng/g of creatinine) for the U.S. population from the National Health and Nutrition Examination Survey.

	Survey years	Geometric mean (95% conf. interval)	Selected percentiles (95% confidence interval) 50th	75th	90th	95th	Sample size
Total	03-04	**83.4** (77.4-90.0)	**79.9** (72.6-86.9)	**149** (133-167)	**279** (236-343)	**424** (352-474)	2515
	05-06	**95.1** (89.1-102)	**85.5** (81.0-91.1)	**173** (161-184)	**338** (292-371)	**492** (427-550)	2415
	07-08	**119** (110-129)	**113** (103-127)	**200** (180-224)	**364** (321-411)	**527** (467-587)	2581
Age group							
6-11 years	03-04	**119** (102-138)	**112** (98.2-137)	**185** (156-225)	**336** (227-440)	**475** (336-566)	333
	05-06	**115** (102-128)	**105** (94.7-116)	**181** (145-217)	**285** (242-385)	**407** (308-517)	342
	07-08	**180** (156-206)	**171** (145-197)	**255** (233-316)	**457** (329-593)	**604** (457-1320)	387
12-19 years	03-04	**89.4** (77.7-103)	**81.6** (74.3-93.0)	**146** (123-187)	**269** (196-364)	**364** (251-611)	705
	05-06	**88.7** (78.7-99.9)	**80.9** (73.8-92.3)	**146** (115-176)	**250** (199-358)	**400** (252-682)	667
	07-08	**116** (105-127)	**112** (98.3-127)	**178** (154-202)	**301** (245-349)	**405** (321-558)	401
20 years and older	03-04	**79.1** (73.2-85.4)	**73.5** (66.7-82.3)	**142** (127-160)	**278** (236-331)	**424** (349-472)	1477
	05-06	**94.1** (87.1-102)	**82.5** (75.8-89.3)	**177** (163-194)	**352** (294-397)	**502** (444-558)	1406
	07-08	**114** (105-125)	**106** (95.3-124)	**194** (173-217)	**364** (317-415)	**510** (456-591)	1793
Gender							
Males	03-04	**84.8** (77.3-93.1)	**82.8** (72.7-91.0)	**163** (145-175)	**290** (241-352)	**416** (353-513)	1214
	05-06	**91.6** (84.3-99.6)	**84.6** (76.9-95.5)	**169** (152-182)	**308** (268-364)	**492** (426-589)	1208
	07-08	**113** (102-125)	**109** (94.3-124)	**193** (176-214)	**379** (308-440)	**549** (456-629)	1279
Females	03-04	**82.1** (73.5-91.7)	**78.3** (69.2-86.8)	**137** (119-165)	**274** (215-350)	**440** (313-479)	1301
	05-06	**98.7** (91.7-106)	**86.8** (78.5-92.8)	**175** (156-195)	**345** (295-390)	**482** (395-558)	1207
	07-08	**125** (114-137)	**119** (104-135)	**203** (179-238)	**348** (302-405)	**503** (425-619)	1302
Race/ethnicity							
Mexican Americans	03-04	**81.2** (73.9-89.2)	**80.9** (70.4-91.7)	**146** (122-167)	**247** (221-301)	**372** (321-460)	623
	05-06	**84.9** (76.4-94.2)	**78.4** (67.7-91.2)	**132** (118-145)	**237** (203-287)	**374** (279-482)	611
	07-08	**116** (107-125)	**105** (96.5-116)	**173** (156-188)	**296** (250-367)	**501** (395-629)	531
Non-Hispanic blacks	03-04	**91.0** (77.7-107)	**92.4** (76.6-106)	**173** (145-211)	**315** (227-433)	**451** (301-680)	681
	05-06	**81.2** (70.7-93.2)	**74.9** (65.6-84.8)	**140** (113-173)	**295** (206-403)	**477** (324-643)	653
	07-08	**106** (93.1-121)	**104** (93.4-123)	**201** (162-249)	**352** (302-464)	**537** (384-662)	592
Non-Hispanic whites	03-04	**83.3** (75.4-92.0)	**77.9** (69.1-86.8)	**148** (127-174)	**287** (241-360)	**438** (360-506)	1050
	05-06	**99.3** (91.2-108)	**90.6** (82.2-99.5)	**188** (169-200)	**358** (305-395)	**495** (427-555)	968
	07-08	**120** (108-134)	**113** (97.7-135)	**206** (178-237)	**379** (300-438)	**510** (438-617)	1059

Biomonitoring Summary: http://www.cdc.gov/biomonitoring/Pyrene_BiomonitoringSummary.html
Factsheet: http://www.cdc.gov/biomonitoring/PAHs_FactSheet.html

Urinary 1-Hydroxynaphthalene (1-Naphthol)

Metabolite of Naphthalene

Geometric mean and selected percentiles of urine concentrations (in ng/L) for the U.S. population from the National Health and Nutrition Examination Survey.

	Survey years	Geometric mean (95% conf. interval)	Selected percentiles (95% confidence interval) 50th	75th	90th	95th	Sample size
Total	03-04	**2680** (2360-3050)	**2260** (1980-2650)	**7660** (6270-9420)	**18500** (15500-20900)	**26100** (23000-33600)	2595
	05-06	**2640** (2390-2920)	**1940** (1690-2240)	**8450** (7050-9980)	**29900** (23200-37100)	**48100** (41300-65600)	2385
	07-08	**2580** (2190-3030)	**1980** (1750-2280)	**6870** (5000-8760)	**17300** (13000-22200)	**29200** (22200-41100)	2495
Age group							
6-11 years	03-04	**1540** (1360-1750)	**1330** (1110-1680)	**2790** (2180-3520)	**5770** (4110-8200)	**10500** (5870-17000)	340
	05-06	**1190** (1010-1400)	**1030** (775-1280)	**2150** (1690-2730)	**8100** (3870-10700)	**11000** (7290-44100)	336
	07-08	**1540** (1280-1850)	**1500** (1220-1680)	**3090** (2170-3800)	**5940** (4160-9290)	**9360** (4680-14300)	370
12-19 years	03-04	**1960** (1680-2280)	**1670** (1500-1970)	**4190** (3100-5400)	**10500** (8430-14300)	**20900** (13500-26100)	727
	05-06	**1710** (1490-1960)	**1360** (1110-1700)	**3760** (3100-4370)	**14100** (9090-23500)	**25800** (12400-46200)	655
	07-08	**1830** (1490-2260)	**1510** (1190-2010)	**4030** (2550-5750)	**10000** (6700-13500)	**14800** (12000-21300)	386
20 years and older	03-04	**3020** (2580-3520)	**2650** (2200-3200)	**9420** (7320-11500)	**20500** (16500-23400)	**29400** (23400-37400)	1528
	05-06	**3100** (2740-3510)	**2330** (2030-2820)	**10500** (8180-13300)	**34500** (26700-43400)	**55100** (42200-80400)	1394
	07-08	**2880** (2370-3490)	**2260** (1830-2800)	**8200** (6010-10700)	**19600** (15000-25500)	**33000** (23600-54900)	1739
Gender							
Males	03-04	**3170** (2820-3560)	**2840** (2370-3390)	**8790** (7130-11000)	**19600** (16100-22200)	**25800** (22500-30600)	1243
	05-06	**2970** (2620-3350)	**2370** (1980-2970)	**8760** (7140-10700)	**28900** (21700-33000)	**44100** (36000-52300)	1197
	07-08	**2940** (2580-3360)	**2370** (2050-2930)	**7750** (5870-9830)	**15900** (13800-21300)	**28200** (21400-36800)	1239
Females	03-04	**2290** (1940-2720)	**1840** (1500-2310)	**6380** (4450-8810)	**17900** (14000-21500)	**28500** (21500-37400)	1352
	05-06	**2360** (2010-2770)	**1590** (1420-1820)	**7350** (5570-10200)	**33600** (21600-43900)	**56800** (41600-101E3)	1188
	07-08	**2270** (1850-2790)	**1580** (1320-1970)	**5310** (4030-7760)	**17700** (11900-24800)	**32000** (21300-78900)	1256
Race/ethnicity							
Mexican Americans	03-04	**1950** (1720-2190)	**1650** (1370-2040)	**4380** (3520-5300)	**11600** (9040-15500)	**20100** (14900-22500)	651
	05-06	**1540** (1290-1830)	**1290** (1090-1550)	**3710** (2680-4430)	**11800** (8100-15600)	**22200** (15200-34000)	607
	07-08	**1610** (1380-1890)	**1480** (1230-1660)	**3380** (2590-4040)	**8750** (6120-11900)	**16100** (8190-29400)	505
Non-Hispanic blacks	03-04	**3340** (2800-3990)	**2650** (2190-3460)	**7840** (6520-10800)	**20800** (17000-28600)	**34700** (25400-48900)	695
	05-06	**3420** (2830-4140)	**2670** (2200-3430)	**11900** (9120-14600)	**29900** (24400-41000)	**56400** (42800-71600)	641
	07-08	**2880** (2480-3350)	**2410** (2120-2910)	**8150** (5310-10700)	**19300** (13700-27100)	**31600** (21300-42400)	574
Non-Hispanic whites	03-04	**2800** (2410-3250)	**2310** (1930-2840)	**8630** (6820-11000)	**19900** (15900-22600)	**27600** (23400-35100)	1084
	05-06	**2720** (2300-3210)	**1980** (1560-2430)	**8660** (6730-11300)	**32500** (22600-42200)	**51300** (41000-85500)	952
	07-08	**2790** (2230-3500)	**2080** (1740-2690)	**7520** (4970-10400)	**18700** (12600-26900)	**32200** (22500-62000)	1022

Limit of detection (LOD, see Data Analysis section) for Survey years 03-04, 05-06, and 07-08 are 46.7, 47.9, and 44.7 respectively.

Biomonitoring Summary: http://www.cdc.gov/biomonitoring/Naphthalene_BiomonitoringSummary.html
Factsheet: http://www.cdc.gov/biomonitoring/PAHs_FactSheet.html

Urinary 1-Hydroxynaphthalene (1-Naphthol) (creatinine corrected)

Metabolite of Naphthalene

Geometric mean and selected percentiles of urine concentrations (in ng/g of creatinine) for the U.S. population from the National Health and Nutrition Examination Survey.

	Survey years	Geometric mean (95% conf. interval)	Selected percentiles (95% confidence interval) 50th	75th	90th	95th	Sample size
Total	03-04	**2520** (2280-2790)	**2100** (1870-2400)	**6560** (5430-8180)	**15100** (13500-17400)	**21800** (18200-25400)	2595
	05-06	**2560** (2290-2860)	**1790** (1570-2060)	**7570** (5890-9400)	**24700** (20400-31000)	**39600** (34100-53000)	2385
	07-08	**2590** (2190-3060)	**1980** (1660-2400)	**6250** (4690-8220)	**16100** (13600-18800)	**25300** (20900-32800)	2495
Age group							
6-11 years	03-04	**1630** (1430-1860)	**1360** (1180-1740)	**2770** (2260-3200)	**5690** (3990-8950)	**10200** (5690-16400)	340
	05-06	**1300** (1090-1550)	**1090** (938-1330)	**2210** (1990-2810)	**6150** (3330-10300)	**10300** (6820-28000)	336
	07-08	**1870** (1560-2240)	**1670** (1350-2150)	**3310** (2610-4650)	**7360** (5130-8830)	**9990** (8060-11300)	370
12-19 years	03-04	**1470** (1260-1710)	**1200** (1020-1390)	**2840** (2490-4080)	**7560** (5470-9120)	**10800** (9120-13400)	727
	05-06	**1290** (1140-1450)	**995** (854-1100)	**2700** (2270-3350)	**8760** (5830-10800)	**12500** (9370-19600)	655
	07-08	**1390** (1180-1640)	**1130** (833-1580)	**3210** (2020-3630)	**6950** (4790-8410)	**9930** (7840-11900)	386
20 years and older	03-04	**2900** (2590-3250)	**2520** (2120-3060)	**8210** (6450-9810)	**16900** (14400-19800)	**24200** (20000-27200)	1528
	05-06	**3080** (2720-3500)	**2320** (1910-2720)	**10100** (7670-13900)	**29800** (23900-34100)	**46400** (39100-57300)	1394
	07-08	**2960** (2430-3600)	**2360** (1880-2770)	**7420** (5750-10200)	**18500** (14900-22600)	**27900** (22300-45000)	1739
Gender							
Males	03-04	**2490** (2250-2750)	**2140** (1860-2590)	**6560** (5500-8010)	**13500** (12300-14400)	**18300** (16600-20700)	1243
	05-06	**2380** (2110-2680)	**1890** (1590-2210)	**6450** (4940-9210)	**19200** (16100-22400)	**31700** (22100-38400)	1197
	07-08	**2480** (2210-2770)	**2070** (1740-2390)	**6170** (5070-7520)	**13800** (11900-16000)	**20700** (16700-24000)	1239
Females	03-04	**2560** (2220-2950)	**2040** (1730-2440)	**6680** (5000-8850)	**17500** (13500-21700)	**24700** (19800-30600)	1352
	05-06	**2750** (2370-3190)	**1750** (1460-2060)	**8050** (6080-11800)	**31500** (24700-39500)	**54100** (40800-64500)	1188
	07-08	**2700** (2130-3430)	**1940** (1580-2500)	**6310** (4290-9330)	**18900** (13800-23700)	**32800** (22300-104E3)	1256
Race/ethnicity							
Mexican Americans	03-04	**1750** (1590-1930)	**1500** (1260-1690)	**3240** (2900-4250)	**8550** (7150-12000)	**17500** (13500-21400)	651
	05-06	**1370** (1150-1640)	**1080** (940-1380)	**2830** (2130-3820)	**9500** (5950-12600)	**18800** (12000-21600)	607
	07-08	**1590** (1290-1950)	**1290** (1030-1620)	**3100** (2240-5050)	**7580** (5420-10600)	**11800** (7860-26100)	505
Non-Hispanic blacks	03-04	**2370** (2020-2780)	**2000** (1560-2420)	**5900** (4440-7070)	**13800** (8930-18700)	**21100** (17100-27800)	695
	05-06	**2400** (1990-2890)	**1980** (1520-2510)	**7170** (5280-8850)	**20600** (15400-29200)	**39200** (29200-54300)	641
	07-08	**2220** (1870-2640)	**1870** (1470-2410)	**6050** (4340-7940)	**13600** (10600-17000)	**21300** (14100-31800)	574
Non-Hispanic whites	03-04	**2770** (2460-3120)	**2350** (1940-2900)	**8030** (6330-9260)	**16600** (14400-18500)	**23600** (20000-26600)	1084
	05-06	**2840** (2400-3360)	**1990** (1600-2540)	**8650** (5940-12600)	**28200** (20800-35000)	**43100** (38400-59000)	952
	07-08	**2900** (2330-3610)	**2160** (1710-2780)	**7300** (5000-10200)	**18400** (14800-22300)	**27300** (22300-50800)	1022

Biomonitoring Summary: http://www.cdc.gov/biomonitoring/Naphthalene_BiomonitoringSummary.html
Factsheet: http://www.cdc.gov/biomonitoring/PAHs_FactSheet.html

Urinary 2-Hydroxynaphthalene (2-Naphthol)

Metabolite of Naphthalene

Geometric mean and selected percentiles of urine concentrations (in ng/L) for the U.S. population from the National Health and Nutrition Examination Survey.

	Survey years	Geometric mean (95% conf. interval)	Selected percentiles (95% confidence interval) 50th	75th	90th	95th	Sample size
Total	01-02	**2470** (2110-2890)	**2280** (1930-2670)	**5680** (4580-6830)	**14700** (12800-19500)	**26000** (22500-29700)	2748
	03-04	**3180** (2760-3670)	**2960** (2500-3500)	**7500** (6190-9690)	**17300** (14500-22100)	**25800** (22600-27700)	2575
	05-06	**3630** (3350-3920)	**3440** (3110-3800)	**8550** (7840-9420)	**20200** (17000-24100)	**33100** (28600-38200)	2446
	07-08	**3830** (3370-4360)	**3660** (3240-4120)	**8460** (6670-10300)	**17300** (14800-21900)	**26700** (23100-30800)	2530
Age group							
6-11 years	01-02	**1690** (1560-1840)	**1700** (1400-1950)	**3010** (2580-3470)	**5410** (3890-6700)	**7720** (6300-9540)	387
	03-04	**2110** (1800-2470)	**2140** (1790-2590)	**3570** (3140-4380)	**5580** (5050-6380)	**9710** (5230-20000)	339
	05-06	**2160** (1940-2410)	**2090** (1950-2330)	**3960** (3090-4460)	**5640** (5000-9680)	**10600** (7200-13300)	345
	07-08	**2700** (2380-3060)	**2590** (2140-2950)	**4660** (4050-5230)	**8720** (5910-10700)	**11500** (9160-14800)	375
12-19 years	01-02	**2220** (1700-2900)	**2150** (1740-2530)	**4390** (3150-6110)	**11000** (6990-20400)	**22500** (13900-28400)	735
	03-04	**3040** (2680-3460)	**2910** (2510-3500)	**5290** (4670-6590)	**12400** (8530-16800)	**17600** (15100-25900)	721
	05-06	**3460** (3030-3950)	**3290** (2860-3780)	**6750** (5870-7490)	**14500** (10300-20800)	**23900** (14700-33100)	677
	07-08	**4290** (3480-5280)	**4340** (3730-5310)	**8740** (6570-10800)	**17100** (13000-22500)	**24000** (19600-29700)	387
20 years and older	01-02	**2620** (2220-3100)	**2440** (1940-2950)	**6380** (5110-8110)	**17600** (14000-21100)	**28100** (23300-33700)	1626
	03-04	**3360** (2860-3960)	**3180** (2590-3960)	**8770** (7210-11300)	**19200** (16000-23200)	**26600** (23400-28800)	1515
	05-06	**3880** (3510-4290)	**3770** (3250-4330)	**9580** (8770-10600)	**23000** (18600-28800)	**37000** (29200-39500)	1424
	07-08	**3910** (3410-4500)	**3680** (3200-4320)	**9170** (6820-11000)	**18500** (15100-23600)	**28600** (23800-33500)	1768
Gender							
Males	01-02	**2750** (2360-3210)	**2510** (2090-2970)	**6060** (4820-7810)	**16900** (11900-23000)	**28100** (20800-35600)	1349
	03-04	**3520** (3090-4010)	**3370** (2910-3880)	**8520** (6960-10500)	**18400** (15300-22600)	**26100** (22200-27900)	1233
	05-06	**4020** (3650-4440)	**3850** (3250-4340)	**9490** (7840-11300)	**19700** (16700-23100)	**32900** (25500-38200)	1221
	07-08	**4250** (3770-4780)	**4200** (3740-4520)	**9300** (7350-10800)	**17500** (14500-22700)	**26000** (20900-32600)	1256
Females	01-02	**2220** (1860-2660)	**2060** (1650-2480)	**5240** (3890-6440)	**13900** (12300-17700)	**25300** (19700-28300)	1399
	03-04	**2890** (2420-3450)	**2600** (2140-3160)	**6800** (5140-9210)	**16600** (12700-21300)	**23900** (22100-27600)	1342
	05-06	**3280** (2830-3800)	**3180** (2640-3600)	**7830** (6770-9000)	**21300** (14500-29200)	**35000** (26700-39600)	1225
	07-08	**3470** (2990-4030)	**3180** (2650-3740)	**7630** (5970-10000)	**17100** (13600-21900)	**26700** (21600-30800)	1274
Race/ethnicity							
Mexican Americans	01-02	**2700** (2360-3080)	**2710** (2350-3260)	**5140** (4360-6150)	**9640** (8150-10600)	**14300** (10400-18700)	665
	03-04	**3130** (2710-3630)	**3110** (2570-3850)	**6740** (5600-8280)	**14500** (10400-15600)	**18000** (15500-20500)	648
	05-06	**4520** (4120-4960)	**4790** (4130-5430)	**8960** (7840-9810)	**17300** (12400-23300)	**28700** (20000-32600)	621
	07-08	**4690** (4070-5410)	**4500** (3930-5580)	**8600** (6770-11300)	**16400** (12600-20900)	**24000** (19100-29700)	515
Non-Hispanic blacks	01-02	**3970** (3470-4540)	**3460** (3100-4020)	**9290** (6820-13200)	**22800** (16000-29100)	**33000** (25900-38700)	692
	03-04	**4690** (3830-5750)	**4290** (3250-5540)	**10300** (7670-13100)	**21200** (17300-26100)	**30100** (22300-40600)	690
	05-06	**4990** (4410-5650)	**4630** (3930-5620)	**11600** (9370-14300)	**22600** (20000-26900)	**31900** (27600-38500)	657
	07-08	**4900** (4420-5440)	**4810** (4330-5190)	**10100** (8050-12300)	**22100** (17200-26300)	**28600** (25000-36600)	587
Non-Hispanic whites	01-02	**2190** (1760-2720)	**1910** (1610-2420)	**4970** (3710-6780)	**14100** (10700-20200)	**25900** (20700-30000)	1207
	03-04	**3080** (2580-3670)	**2660** (2200-3530)	**7640** (5890-10400)	**18000** (14600-22900)	**26100** (22900-27900)	1072
	05-06	**3250** (2900-3640)	**2980** (2710-3330)	**7900** (6690-9360)	**19300** (15800-24700)	**34000** (25500-38300)	980
	07-08	**3600** (2980-4350)	**3340** (2620-4170)	**8040** (5730-10700)	**17100** (11800-23800)	**26400** (20400-35600)	1043

Limit of detection (LOD, see Data Analysis section) for Survey years 01-02, 03-04, 05-06 and 07-08 are 2.4, 31.1, 13.2 and 42.0 respectively.

Biomonitoring Summary: http://www.cdc.gov/biomonitoring/Naphthalene_BiomonitoringSummary.html
Factsheet: http://www.cdc.gov/biomonitoring/PAHs_FactSheet.html

Urinary 2-Hydroxynaphthalene (2-Naphthol) (creatinine corrected)

Metabolite of Naphthalene

Geometric mean and selected percentiles of urine concentrations (in ng/g of creatinine) for the U.S. population from the National Health and Nutrition Examination Survey.

	Survey years	Geometric mean (95% conf. interval)	Selected percentiles (95% confidence interval) 50th	75th	90th	95th	Sample size
Total	01-02	**2310** (1980-2680)	**1940** (1670-2300)	**4730** (3820-5860)	**11500** (9980-13100)	**16700** (14100-19200)	2748
	03-04	**2990** (2670-3340)	**2560** (2200-2970)	**6340** (5010-7870)	**14100** (11800-16300)	**19900** (16000-23800)	2575
	05-06	**3520** (3290-3770)	**3080** (2670-3400)	**7240** (6450-8270)	**17000** (14800-18800)	**23900** (21900-27200)	2446
	07-08	**3860** (3440-4330)	**3440** (3040-3910)	**7100** (6010-8630)	**15300** (12900-18300)	**20700** (18800-23900)	2530
Age group							
6-11 years	01-02	**1890** (1740-2070)	**1830** (1720-1940)	**3110** (2510-3470)	**5040** (4380-5540)	**6490** (5270-12400)	387
	03-04	**2240** (1890-2650)	**2040** (1660-2440)	**3540** (2840-3910)	**5950** (4140-8510)	**8720** (7560-12000)	339
	05-06	**2400** (2100-2750)	**2270** (2000-2580)	**3680** (3150-4430)	**6100** (4840-7040)	**7820** (6310-13800)	345
	07-08	**3330** (2980-3730)	**3380** (2900-3710)	**5230** (4320-6780)	**8000** (6790-9920)	**10500** (8000-14500)	375
12-19 years	01-02	**1720** (1350-2190)	**1510** (1340-1830)	**2750** (2080-4070)	**7180** (4070-10900)	**11100** (7860-17400)	735
	03-04	**2280** (2060-2520)	**2030** (1770-2350)	**3780** (3200-4470)	**7840** (6130-9110)	**10500** (9100-12500)	721
	05-06	**2590** (2370-2840)	**2310** (2030-2620)	**4580** (3990-5020)	**8470** (6980-10500)	**11900** (10100-15200)	677
	07-08	**3300** (2740-3960)	**3130** (2430-4080)	**5730** (4880-6790)	**9850** (7560-12000)	**12500** (9910-18600)	387
20 years and older	01-02	**2480** (2130-2880)	**2080** (1680-2600)	**5630** (4460-6940)	**12400** (10900-13900)	**17700** (15200-20600)	1626
	03-04	**3230** (2870-3640)	**2910** (2360-3410)	**7540** (6200-9100)	**15600** (13100-17900)	**21800** (17200-24000)	1515
	05-06	**3870** (3590-4170)	**3400** (3080-3750)	**9200** (7930-10500)	**19000** (17400-21200)	**27200** (22300-29700)	1424
	07-08	**4020** (3550-4550)	**3470** (3070-4040)	**7750** (6170-9830)	**17500** (13900-19800)	**22700** (20200-25500)	1768
Gender							
Males	01-02	**2230** (1900-2610)	**1860** (1630-2100)	**4790** (3510-6120)	**11400** (8950-14300)	**15800** (13100-19200)	1349
	03-04	**2770** (2500-3060)	**2360** (2130-2810)	**6300** (5080-7360)	**12800** (11300-14600)	**16400** (14600-18300)	1233
	05-06	**3230** (3000-3480)	**2830** (2530-3140)	**6750** (5620-8100)	**13800** (12300-16200)	**18900** (17400-21200)	1221
	07-08	**3580** (3240-3950)	**3130** (2700-3570)	**6790** (5790-8100)	**14400** (12200-17200)	**19600** (18300-20900)	1256
Females	01-02	**2380** (2050-2770)	**1990** (1660-2560)	**4730** (3790-6000)	**11500** (10300-12800)	**17400** (13700-21500)	1399
	03-04	**3210** (2760-3730)	**2680** (2200-3260)	**6430** (4740-8580)	**16000** (11500-19900)	**22500** (18100-25000)	1342
	05-06	**3830** (3390-4330)	**3210** (2720-3760)	**8080** (6430-9740)	**20800** (17000-24700)	**29000** (24900-34200)	1225
	07-08	**4150** (3570-4830)	**3590** (3190-4180)	**7400** (5880-9630)	**16800** (12900-20000)	**22700** (20000-25500)	1274
Race/ethnicity							
Mexican Americans	01-02	**2520** (2230-2850)	**2350** (2010-2950)	**4650** (3970-5210)	**7320** (6050-8090)	**12000** (7820-15300)	665
	03-04	**2830** (2440-3280)	**2570** (2200-3230)	**5000** (4100-5940)	**10300** (6790-13000)	**13300** (11000-15500)	648
	05-06	**4050** (3770-4350)	**4030** (3650-4360)	**7050** (6300-8050)	**12600** (9530-15100)	**17400** (13400-20600)	621
	07-08	**4580** (3970-5280)	**4370** (3550-5020)	**7590** (6300-9380)	**14200** (11600-16400)	**19100** (16000-24700)	515
Non-Hispanic blacks	01-02	**2790** (2390-3270)	**2410** (2040-2770)	**5980** (4840-6980)	**11600** (9090-15300)	**17400** (12200-23400)	692
	03-04	**3320** (2700-4090)	**3060** (2310-3860)	**7050** (5140-9410)	**12800** (10200-16500)	**19000** (15700-23400)	690
	05-06	**3510** (3160-3890)	**3100** (2590-3530)	**6710** (5330-8040)	**12300** (10300-16100)	**19700** (16100-25000)	657
	07-08	**3800** (3470-4150)	**3450** (3080-3900)	**6730** (5560-8410)	**13100** (11300-14900)	**19200** (14800-26500)	587
Non-Hispanic whites	01-02	**2160** (1780-2620)	**1740** (1440-2180)	**4340** (3320-6090)	**11900** (9930-14300)	**16900** (13800-20600)	1207
	03-04	**3040** (2660-3460)	**2480** (2110-3020)	**7170** (5100-8950)	**15500** (13300-17600)	**21800** (17100-24000)	1072
	05-06	**3400** (3080-3760)	**2730** (2390-3260)	**7450** (6100-9650)	**17900** (15300-20700)	**24900** (21200-29000)	980
	07-08	**3750** (3180-4430)	**3280** (2600-4080)	**6910** (5530-9510)	**16800** (12800-19800)	**22200** (19400-25500)	1043

Biomonitoring Summary: http://www.cdc.gov/biomonitoring/Naphthalene_BiomonitoringSummary.html
Factsheet: http://www.cdc.gov/biomonitoring/PAHs_FactSheet.html

Blood 1,1,1-Trichloroethane (Methyl chloroform)

Geometric mean and selected percentiles of whole blood concentrations (in ng/mL) for the U.S. population from the National Health and Nutrition Examination Survey.

	Survey years	Geometric mean (95% conf. interval)	Selected percentiles (95% confidence interval) 50th	75th	90th	95th	Sample size
Total	03-04	*	**< LOD**	**< LOD**	**< LOD**	**< LOD**	1345
	05-06	*	**< LOD**	**< LOD**	**< LOD**	**< LOD**	3085
Age group							
12-19 years	05-06	*	**< LOD**	**< LOD**	**< LOD**	**< LOD**	911
20-59 years	03-04	*	**< LOD**	**< LOD**	**< LOD**	**< LOD**	1345
	05-06	*	**< LOD**	**< LOD**	**< LOD**	**< LOD**	1524
60 years and older	05-06	*	**< LOD**	**< LOD**	**< LOD**	**.014** (<LOD-.021)	650
Gender							
Males	03-04	*	**< LOD**	**< LOD**	**< LOD**	**< LOD**	660
	05-06	*	**< LOD**	**< LOD**	**< LOD**	**< LOD**	1464
Females	03-04	*	**< LOD**	**< LOD**	**< LOD**	**< LOD**	685
	05-06	*	**< LOD**	**< LOD**	**< LOD**	**< LOD**	1621
Race/ethnicity							
Mexican Americans	03-04	*	**< LOD**	**< LOD**	**< LOD**	**< LOD**	267
	05-06	*	**< LOD**	**< LOD**	**< LOD**	**< LOD**	762
Non-Hispanic blacks	03-04	*	**< LOD**	**< LOD**	**< LOD**	**< LOD**	289
	05-06	*	**< LOD**	**< LOD**	**< LOD**	**< LOD**	791
Non-Hispanic whites	03-04	*	**< LOD**	**< LOD**	**< LOD**	**< LOD**	688
	05-06	*	**< LOD**	**< LOD**	**< LOD**	**< LOD**	1303

Limit of detection (LOD, see Data Analysis section) for Survey years 03-04 and 05-06 are 0.048 and 0.01 respectively.
< LOD means less than the limit of detection, which may vary for some chemicals by year and by individual sample.
* Not calculated: proportion of results below limit of detection was too high to provide a valid result.

Biomonitoring Summary: http://www.cdc.gov/biomonitoring/OtherHalogenatedSolvents_BiomonitoringSummary.html

Blood 1,1,2,2-Tetrachloroethane

Geometric mean and selected percentiles of whole blood concentrations (in ng/mL) for the U.S. population from the National Health and Nutrition Examination Survey.

	Survey years	Geometric mean (95% conf. interval)	Selected percentiles (95% confidence interval) 50th	75th	90th	95th	Sample size
Total	03-04	*	< LOD	< LOD	< LOD	< LOD	1235
	05-06	*	< LOD	< LOD	< LOD	< LOD	3131
Age group							
12-19 years	05-06	*	< LOD	< LOD	< LOD	< LOD	924
20-59 years	03-04	*	< LOD	< LOD	< LOD	< LOD	1235
	05-06	*	< LOD	< LOD	< LOD	< LOD	1542
60 years and older	05-06	*	< LOD	< LOD	< LOD	< LOD	665
Gender							
Males	03-04	*	< LOD	< LOD	< LOD	< LOD	613
	05-06	*	< LOD	< LOD	< LOD	< LOD	1484
Females	03-04	*	< LOD	< LOD	< LOD	< LOD	622
	05-06	*	< LOD	< LOD	< LOD	< LOD	1647
Race/ethnicity							
Mexican Americans	03-04	*	< LOD	< LOD	< LOD	< LOD	250
	05-06	*	< LOD	< LOD	< LOD	< LOD	753
Non-Hispanic blacks	03-04	*	< LOD	< LOD	< LOD	< LOD	282
	05-06	*	< LOD	< LOD	< LOD	< LOD	823
Non-Hispanic whites	03-04	*	< LOD	< LOD	< LOD	< LOD	606
	05-06	*	< LOD	< LOD	< LOD	< LOD	1323

Limit of detection (LOD, see Data Analysis section) for Survey years 03-04 and 05-06 are 0.01 and 0.01 respectively.
< LOD means less than the limit of detection, which may vary for some chemicals by year and by individual sample.
* Not calculated: proportion of results below limit of detection was too high to provide a valid result.

Biomonitoring Summary: http://www.cdc.gov/biomonitoring/OtherHalogenatedSolvents_BiomonitoringSummary.html

Blood 1,1,2-Trichloroethane

Geometric mean and selected percentiles of whole blood concentrations (in ng/mL) for the U.S. population from the National Health and Nutrition Examination Survey.

	Survey years	Geometric mean (95% conf. interval)	Selected percentiles (95% confidence interval) 50th	75th	90th	95th	Sample size
Total	03-04	*	< LOD	< LOD	< LOD	< LOD	1354
	05-06	*	< LOD	< LOD	< LOD	< LOD	3165
Age group							
12-19 years	05-06	*	< LOD	< LOD	< LOD	< LOD	936
20-59 years	03-04	*	< LOD	< LOD	< LOD	< LOD	1354
	05-06	*	< LOD	< LOD	< LOD	< LOD	1556
60 years and older	05-06	*	< LOD	< LOD	< LOD	< LOD	673
Gender							
Males	03-04	*	< LOD	< LOD	< LOD	< LOD	664
	05-06	*	< LOD	< LOD	< LOD	< LOD	1499
Females	03-04	*	< LOD	< LOD	< LOD	< LOD	690
	05-06	*	< LOD	< LOD	< LOD	< LOD	1666
Race/ethnicity							
Mexican Americans	03-04	*	< LOD	< LOD	< LOD	< LOD	267
	05-06	*	< LOD	< LOD	< LOD	< LOD	777
Non-Hispanic blacks	03-04	*	< LOD	< LOD	< LOD	< LOD	297
	05-06	*	< LOD	< LOD	< LOD	< LOD	824
Non-Hispanic whites	03-04	*	< LOD	< LOD	< LOD	< LOD	686
	05-06	*	< LOD	< LOD	< LOD	< LOD	1331

Limit of detection (LOD, see Data Analysis section) for Survey years 03-04 and 05-06 are 0.01 and 0.01 respectively.
< LOD means less than the limit of detection, which may vary for some chemicals by year and by individual sample.
* Not calculated: proportion of results below limit of detection was too high to provide a valid result.

Biomonitoring Summary: http://www.cdc.gov/biomonitoring/OtherHalogenatedSolvents_BiomonitoringSummary.html

Blood 1,1-Dichloroethane

Geometric mean and selected percentiles of whole blood concentrations (in ng/mL) for the U.S. population from the National Health and Nutrition Examination Survey.

	Survey years	Geometric mean (95% conf. interval)	Selected percentiles (95% confidence interval) 50th	75th	90th	95th	Sample size
Total	03-04	*	< LOD	< LOD	< LOD	< LOD	1367
	05-06	*	< LOD	< LOD	< LOD	< LOD	3193
Age group							
12-19 years	05-06	*	< LOD	< LOD	< LOD	< LOD	941
20-59 years	03-04	*	< LOD	< LOD	< LOD	< LOD	1367
	05-06	*	< LOD	< LOD	< LOD	< LOD	1569
60 years and older	05-06	*	< LOD	< LOD	< LOD	< LOD	683
Gender							
Males	03-04	*	< LOD	< LOD	< LOD	< LOD	670
	05-06	*	< LOD	< LOD	< LOD	< LOD	1510
Females	03-04	*	< LOD	< LOD	< LOD	< LOD	697
	05-06	*	< LOD	< LOD	< LOD	< LOD	1683
Race/ethnicity							
Mexican Americans	03-04	*	< LOD	< LOD	< LOD	< LOD	267
	05-06	*	< LOD	< LOD	< LOD	< LOD	778
Non-Hispanic blacks	03-04	*	< LOD	< LOD	< LOD	< LOD	300
	05-06	*	< LOD	< LOD	< LOD	< LOD	832
Non-Hispanic whites	03-04	*	< LOD	< LOD	< LOD	< LOD	695
	05-06	*	< LOD	< LOD	< LOD	< LOD	1347

Limit of detection (LOD, see Data Analysis section) for Survey years 03-04 and 05-06 are 0.01 and 0.01 respectively.
< LOD means less than the limit of detection, which may vary for some chemicals by year and by individual sample.
* Not calculated: proportion of results below limit of detection was too high to provide a valid result.

Biomonitoring Summary: http://www.cdc.gov/biomonitoring/OtherHalogenatedSolvents_BiomonitoringSummary.html

Blood 1,1 - Dichloroethene (Vinylidene chloride)

Geometric mean and selected percentiles of whole blood concentrations (in ng/mL) for the U.S. population from the National Health and Nutrition Examination Survey.

	Survey years	Geometric mean (95% conf. interval)	Selected percentiles (95% confidence interval) 50th	75th	90th	95th	Sample size
Total	03-04	*	< LOD	< LOD	< LOD	< LOD	1367
	05-06	*	< LOD	< LOD	< LOD	< LOD	3163
Age group							
12-19 years	05-06	*	< LOD	< LOD	< LOD	< LOD	931
20-59 years	03-04	*	< LOD	< LOD	< LOD	< LOD	1367
	05-06	*	< LOD	< LOD	< LOD	< LOD	1555
60 years and older	05-06	*	< LOD	< LOD	< LOD	< LOD	677
Gender							
Males	03-04	*	< LOD	< LOD	< LOD	< LOD	670
	05-06	*	< LOD	< LOD	< LOD	< LOD	1502
Females	03-04	*	< LOD	< LOD	< LOD	< LOD	697
	05-06	*	< LOD	< LOD	< LOD	< LOD	1661
Race/ethnicity							
Mexican Americans	03-04	*	< LOD	< LOD	< LOD	< LOD	267
	05-06	*	< LOD	< LOD	< LOD	< LOD	774
Non-Hispanic blacks	03-04	*	< LOD	< LOD	< LOD	< LOD	300
	05-06	*	< LOD	< LOD	< LOD	< LOD	823
Non-Hispanic whites	03-04	*	< LOD	< LOD	< LOD	< LOD	695
	05-06	*	< LOD	< LOD	< LOD	< LOD	1332

Limit of detection (LOD, see Data Analysis section) for Survey years 03-04 and 05-06 are 0.009 and 0.009 respectively.
< LOD means less than the limit of detection, which may vary for some chemicals by year and by individual sample.
* Not calculated: proportion of results below limit of detection was too high to provide a valid result.

Biomonitoring Summary: **http://www.cdc.gov/biomonitoring/OtherHalogenatedSolvents_BiomonitoringSummary.html**

Blood 1,2-Dibromo-3-chloropropane (DBCP)

Geometric mean and selected percentiles of whole blood concentrations (in ng/mL) for the U.S. population from the National Health and Nutrition Examination Survey.

	Survey years	Geometric mean (95% conf. interval)	Selected percentiles (95% confidence interval) 50th	75th	90th	95th	Sample size
Total	03-04	*	< LOD	< LOD	< LOD	< LOD	1170
	05-06	*	< LOD	< LOD	< LOD	< LOD	2998
Age group							
12-19 years	05-06	*	< LOD	< LOD	< LOD	< LOD	875
20-59 years	03-04	*	< LOD	< LOD	< LOD	< LOD	1170
	05-06	*	< LOD	< LOD	< LOD	< LOD	1485
60 years and older	05-06	*	< LOD	< LOD	< LOD	< LOD	638
Gender							
Males	03-04	*	< LOD	< LOD	< LOD	< LOD	568
	05-06	*	< LOD	< LOD	< LOD	< LOD	1409
Females	03-04	*	< LOD	< LOD	< LOD	< LOD	602
	05-06	*	< LOD	< LOD	< LOD	< LOD	1589
Race/ethnicity							
Mexican Americans	03-04	*	< LOD	< LOD	< LOD	< LOD	234
	05-06	*	< LOD	< LOD	< LOD	< LOD	752
Non-Hispanic blacks	03-04	*	< LOD	< LOD	< LOD	< LOD	239
	05-06	*	< LOD	< LOD	< LOD	< LOD	737
Non-Hispanic whites	03-04	*	< LOD	< LOD	< LOD	< LOD	603
	05-06	*	< LOD	< LOD	< LOD	< LOD	1287

Limit of detection (LOD, see Data Analysis section) for Survey years 03-04 and 05-06 are 0.1 and 0.1 respectively.
< LOD means less than the limit of detection, which may vary for some chemicals by year and by individual sample.
* Not calculated: proportion of results below limit of detection was too high to provide a valid result.

Biomonitoring Summary: http://www.cdc.gov/biomonitoring/DBCP_BiomonitoringSummary.html

Blood 1,2-Dichlorobenzene (*o*-Dichlorobenzene)

Geometric mean and selected percentiles of whole blood concentrations (in ng/mL) for the U.S. population from the National Health and Nutrition Examination Survey.

	Survey years	Geometric mean (95% conf. interval)	Selected percentiles (95% confidence interval) 50th	75th	90th	95th	Sample size
Total	03-04	*	< LOD	< LOD	< LOD	< LOD	1327
	05-06	*	< LOD	< LOD	< LOD	< LOD	3083
Age group							
12-19 years	05-06	*	< LOD	< LOD	< LOD	< LOD	921
20-59 years	03-04	*	< LOD	< LOD	< LOD	< LOD	1327
	05-06	*	< LOD	< LOD	< LOD	< LOD	1523
60 years and older	05-06	*	< LOD	< LOD	< LOD	< LOD	639
Gender							
Males	03-04	*	< LOD	< LOD	< LOD	< LOD	647
	05-06	*	< LOD	< LOD	< LOD	< LOD	1457
Females	03-04	*	< LOD	< LOD	< LOD	< LOD	680
	05-06	*	< LOD	< LOD	< LOD	< LOD	1626
Race/ethnicity							
Mexican Americans	03-04	*	< LOD	< LOD	< LOD	< LOD	250
	05-06	*	< LOD	< LOD	< LOD	< LOD	766
Non-Hispanic blacks	03-04	*	< LOD	< LOD	< LOD	< LOD	291
	05-06	*	< LOD	< LOD	< LOD	< LOD	801
Non-Hispanic whites	03-04	*	< LOD	< LOD	< LOD	< LOD	682
	05-06	*	< LOD	< LOD	< LOD	< LOD	1288

Limit of detection (LOD, see Data Analysis section) for Survey years 03-04 and 05-06 are 0.1 and 0.1 respectively.
< LOD means less than the limit of detection, which may vary for some chemicals by year and by individual sample.
* Not calculated: proportion of results below limit of detection was too high to provide a valid result.

Biomonitoring Summary: http://www.cdc.gov/biomonitoring/Chlorobenzenes_BiomonitoringSummary.html

Blood 1,2-Dichloroethane (Ethylene dichloride)

Geometric mean and selected percentiles of whole blood concentrations (in ng/mL) for the U.S. population from the National Health and Nutrition Examination Survey.

	Survey years	Geometric mean (95% conf. interval)	Selected percentiles (95% confidence interval) 50th	75th	90th	95th	Sample size
Total	03-04	*	< LOD	< LOD	< LOD	< LOD	1346
	05-06	*	< LOD	< LOD	< LOD	< LOD	3082
Age group							
12-19 years	05-06	*	< LOD	< LOD	< LOD	< LOD	906
20-59 years	03-04	*	< LOD	< LOD	< LOD	< LOD	1346
	05-06	*	< LOD	< LOD	< LOD	< LOD	1520
60 years and older	05-06	*	< LOD	< LOD	< LOD	< LOD	656
Gender							
Males	03-04	*	< LOD	< LOD	< LOD	< LOD	661
	05-06	*	< LOD	< LOD	< LOD	< LOD	1452
Females	03-04	*	< LOD	< LOD	< LOD	< LOD	685
	05-06	*	< LOD	< LOD	< LOD	< LOD	1630
Race/ethnicity							
Mexican Americans	03-04	*	< LOD	< LOD	< LOD	< LOD	267
	05-06	*	< LOD	< LOD	< LOD	< LOD	763
Non-Hispanic blacks	03-04	*	< LOD	< LOD	< LOD	< LOD	289
	05-06	*	< LOD	< LOD	< LOD	< LOD	795
Non-Hispanic whites	03-04	*	< LOD	< LOD	< LOD	< LOD	689
	05-06	*	< LOD	< LOD	< LOD	< LOD	1297

Limit of detection (LOD, see Data Analysis section) for Survey years 03-04 and 05-06 are 0.01 and 0.01 respectively.
< LOD means less than the limit of detection, which may vary for some chemicals by year and by individual sample.
* Not calculated: proportion of results below limit of detection was too high to provide a valid result.

Biomonitoring Summary: **http://www.cdc.gov/biomonitoring/OtherHalogenatedSolvents_BiomonitoringSummary.html**

Blood *cis*-1,2-Dichloroethene

Geometric mean and selected percentiles of whole blood concentrations (in ng/mL) for the U.S. population from the National Health and Nutrition Examination Survey.

	Survey years	Geometric mean (95% conf. interval)	Selected percentiles (95% confidence interval) 50th	75th	90th	95th	Sample size
Total	03-04	*	< LOD	< LOD	< LOD	< LOD	1366
	05-06	*	< LOD	< LOD	< LOD	< LOD	3140
Age group							
12-19 years	05-06	*	< LOD	< LOD	< LOD	< LOD	924
20-59 years	03-04	*	< LOD	< LOD	< LOD	< LOD	1366
	05-06	*	< LOD	< LOD	< LOD	< LOD	1539
60 years and older	05-06	*	< LOD	< LOD	< LOD	< LOD	677
Gender							
Males	03-04	*	< LOD	< LOD	< LOD	< LOD	669
	05-06	*	< LOD	< LOD	< LOD	< LOD	1481
Females	03-04	*	< LOD	< LOD	< LOD	< LOD	697
	05-06	*	< LOD	< LOD	< LOD	< LOD	1659
Race/ethnicity							
Mexican Americans	03-04	*	< LOD	< LOD	< LOD	< LOD	267
	05-06	*	< LOD	< LOD	< LOD	< LOD	757
Non-Hispanic blacks	03-04	*	< LOD	< LOD	< LOD	< LOD	300
	05-06	*	< LOD	< LOD	< LOD	< LOD	822
Non-Hispanic whites	03-04	*	< LOD	< LOD	< LOD	< LOD	694
	05-06	*	< LOD	< LOD	< LOD	< LOD	1329

Limit of detection (LOD, see Data Analysis section) for Survey years 03-04 and 05-06 are 0.01 and 0.01 respectively.
< LOD means less than the limit of detection, which may vary for some chemicals by year and by individual sample.
* Not calculated: proportion of results below limit of detection was too high to provide a valid result.

Biomonitoring Summary: **http://www.cdc.gov/biomonitoring/OtherHalogenatedSolvents_BiomonitoringSummary.html**

Blood *trans*-1,2-Dichloroethene

Geometric mean and selected percentiles of whole blood concentrations (in ng/mL) for the U.S. population from the National Health and Nutrition Examination Survey.

	Survey years	Geometric mean (95% conf. interval)	Selected percentiles (95% confidence interval) 50th	75th	90th	95th	Sample size
Total	03-04	*	< LOD	< LOD	< LOD	< LOD	1367
	05-06	*	< LOD	< LOD	< LOD	< LOD	3193
Age group							
12-19 years	05-06	*	< LOD	< LOD	< LOD	< LOD	941
20-59 years	03-04	*	< LOD	< LOD	< LOD	< LOD	1367
	05-06	*	< LOD	< LOD	< LOD	< LOD	1569
60 years and older	05-06	*	< LOD	< LOD	< LOD	< LOD	683
Gender							
Males	03-04	*	< LOD	< LOD	< LOD	< LOD	670
	05-06	*	< LOD	< LOD	< LOD	< LOD	1511
Females	03-04	*	< LOD	< LOD	< LOD	< LOD	697
	05-06	*	< LOD	< LOD	< LOD	< LOD	1682
Race/ethnicity							
Mexican Americans	03-04	*	< LOD	< LOD	< LOD	< LOD	267
	05-06	*	< LOD	< LOD	< LOD	< LOD	779
Non-Hispanic blacks	03-04	*	< LOD	< LOD	< LOD	< LOD	300
	05-06	*	< LOD	< LOD	< LOD	< LOD	832
Non-Hispanic whites	03-04	*	< LOD	< LOD	< LOD	< LOD	695
	05-06	*	< LOD	< LOD	< LOD	< LOD	1346

Limit of detection (LOD, see Data Analysis section) for Survey years 03-04 and 05-06 are 0.01 and 0.01 respectively.
< LOD means less than the limit of detection, which may vary for some chemicals by year and by individual sample.
* Not calculated: proportion of results below limit of detection was too high to provide a valid result.

Biomonitoring Summary: **http://www.cdc.gov/biomonitoring/OtherHalogenatedSolvents_BiomonitoringSummary.html**

Blood 1,2-Dichloropropane

Geometric mean and selected percentiles of whole blood concentrations (in ng/mL) for the U.S. population from the National Health and Nutrition Examination Survey.

	Survey years	Geometric mean (95% conf. interval)	Selected percentiles (95% confidence interval) 50th	75th	90th	95th	Sample size
Total	03-04	*	< LOD	< LOD	< LOD	< LOD	1364
	05-06	*	< LOD	< LOD	< LOD	< LOD	3120
Age group							
12-19 years	05-06	*	< LOD	< LOD	< LOD	< LOD	918
20-59 years	03-04	*	< LOD	< LOD	< LOD	< LOD	1364
	05-06	*	< LOD	< LOD	< LOD	< LOD	1536
60 years and older	05-06	*	< LOD	< LOD	< LOD	< LOD	666
Gender							
Males	03-04	*	< LOD	< LOD	< LOD	< LOD	667
	05-06	*	< LOD	< LOD	< LOD	< LOD	1478
Females	03-04	*	< LOD	< LOD	< LOD	< LOD	697
	05-06	*	< LOD	< LOD	< LOD	< LOD	1642
Race/ethnicity							
Mexican Americans	03-04	*	< LOD	< LOD	< LOD	< LOD	267
	05-06	*	< LOD	< LOD	< LOD	< LOD	755
Non-Hispanic blacks	03-04	*	< LOD	< LOD	< LOD	< LOD	300
	05-06	*	< LOD	< LOD	< LOD	< LOD	811
Non-Hispanic whites	03-04	*	< LOD	< LOD	< LOD	< LOD	692
	05-06	*	< LOD	< LOD	< LOD	< LOD	1322

Limit of detection (LOD, see Data Analysis section) for Survey years 03-04 and 05-06 are 0.008 and 0.008 respectively.
< LOD means less than the limit of detection, which may vary for some chemicals by year and by individual sample.
* Not calculated: proportion of results below limit of detection was too high to provide a valid result.

Biomonitoring Summary: **http://www.cdc.gov/biomonitoring/OtherHalogenatedSolvents_BiomonitoringSummary.html**

Blood 1,3-Dichlorobenzene (*m*-Dichlorobenzene)

Geometric mean and selected percentiles of whole blood concentrations (in ng/mL) for the U.S. population from the National Health and Nutrition Examination Survey.

	Survey years	Geometric mean (95% conf. interval)	Selected percentiles (95% confidence interval) 50th	75th	90th	95th	Sample size
Total	03-04	*	< LOD	< LOD	< LOD	< LOD	1334
	05-06	*	< LOD	< LOD	< LOD	< LOD	3148
Age group							
12-19 years	05-06	*	< LOD	< LOD	< LOD	< LOD	928
20-59 years	03-04	*	< LOD	< LOD	< LOD	< LOD	1334
	05-06	*	< LOD	< LOD	< LOD	< LOD	1545
60 years and older	05-06	*	< LOD	< LOD	< LOD	< LOD	675
Gender							
Males	03-04	*	< LOD	< LOD	< LOD	< LOD	659
	05-06	*	< LOD	< LOD	< LOD	< LOD	1491
Females	03-04	*	< LOD	< LOD	< LOD	< LOD	675
	05-06	*	< LOD	< LOD	< LOD	< LOD	1657
Race/ethnicity							
Mexican Americans	03-04	*	< LOD	< LOD	< LOD	< LOD	266
	05-06	*	< LOD	< LOD	< LOD	< LOD	774
Non-Hispanic blacks	03-04	*	< LOD	< LOD	< LOD	< LOD	279
	05-06	*	< LOD	< LOD	< LOD	< LOD	809
Non-Hispanic whites	03-04	*	< LOD	< LOD	< LOD	< LOD	686
	05-06	*	< LOD	< LOD	< LOD	< LOD	1330

Limit of detection (LOD, see Data Analysis section) for Survey years 03-04 and 05-06 are 0.05 and 0.05 respectively.
< LOD means less than the limit of detection, which may vary for some chemicals by year and by individual sample.
* Not calculated: proportion of results below limit of detection was too high to provide a valid result.

Biomonitoring Summary: http://www.cdc.gov/biomonitoring/Chlorobenzenes_BiomonitoringSummary.html

Blood 1,4-Dichlorobenzene (Paradichlorobenzene)

Geometric mean and selected percentiles of whole blood concentrations (in ng/mL) for the U.S. population from the National Health and Nutrition Examination Survey.

	Survey years	Geometric mean (95% conf. interval)	Selected percentiles (95% confidence interval) 50th	75th	90th	95th	Sample size
Total	01-02	*	**< LOD**	**.300** (.190-.550)	**1.19** (.610-2.90)	**4.10** (1.40-7.60)	807
	03-04	*	**< LOD**	**.320** (.250-.400)	**1.10** (.710-1.60)	**3.30** (1.70-5.10)	1322
	05-06	*	**.085** (.085-.085)	**.218** (.180-.260)	**.917** (.643-1.31)	**3.59** (1.80-5.50)	3126
Age group							
12-19 years	05-06	*	**.085** (.085-.085)	**.220** (.160-.280)	**.960** (.560-2.00)	**4.27** (2.37-6.10)	926
20-59 years	01-02	*	**< LOD**	**.300** (.190-.550)	**1.19** (.610-2.90)	**4.10** (1.40-7.60)	807
	03-04	*	**< LOD**	**.320** (.250-.400)	**1.10** (.710-1.60)	**3.30** (1.70-5.10)	1322
	05-06	*	**.085** (.085-.085)	**.220** (.170-.260)	**.910** (.540-1.50)	**3.77** (1.50-7.33)	1537
60 years and older	05-06	*	**.085** (.085-.085)	**.207** (.158-.313)	**.877** (.525-1.80)	**3.06** (1.50-4.20)	663
Gender							
Males	01-02	*	**< LOD**	**.270** (.180-.530)	**.900** (.570-2.90)	**3.60** (1.10-7.20)	390
	03-04	*	**< LOD**	**.320** (.250-.380)	**.770** (.580-1.20)	**1.90** (1.20-4.00)	651
	05-06	*	**.085** (.085-.085)	**.230** (.188-.290)	**.950** (.603-1.50)	**3.50** (1.50-7.20)	1479
Females	01-02	*	**< LOD**	**.360** (.190-.620)	**1.20** (.620-3.90)	**4.10** (1.68-8.30)	417
	03-04	*	**< LOD**	**.350** (.220-.450)	**1.40** (.810-2.10)	**4.10** (2.20-5.90)	671
	05-06	*	**.085** (.085-.085)	**.180** (.140-.240)	**.865** (.522-1.70)	**3.59** (2.10-5.18)	1647
Race/ethnicity							
Mexican Americans	01-02	**.331** (.246-.446)	**.180** (<LOD-.260)	**.790** (.400-1.30)	**6.00** (1.30-16.0)	**16.0** (6.20-33.0)	217
	03-04	**.381** (.256-.566)	**.210** (.140-.400)	**.730** (.370-2.90)	**6.20** (2.90-9.30)	**10.0** (6.30-19.0)	262
	05-06	**.412** (.309-.549)	**.210** (.150-.290)	**1.20** (.680-2.97)	**8.80** (3.80-16.0)	**16.0** (8.10-33.0)	772
Non-Hispanic blacks	01-02	**.558** (.376-.827)	**.360** (.260-.560)	**1.80** (.710-3.90)	**6.30** (1.40-29.0)	**15.0** (3.60-51.0)	136
	03-04	**.423** (.292-.613)	**.340** (.200-.480)	**.980** (.550-1.50)	**4.10** (1.60-9.20)	**11.0** (2.50-19.0)	297
	05-06	**.381** (.272-.532)	**.230** (.160-.330)	**.860** (.500-1.70)	**5.24** (2.00-11.5)	**12.7** (8.41-21.0)	805
Non-Hispanic whites	01-02	*	**< LOD**	**.200** (<LOD-.380)	**.570** (.300-1.20)	**1.19** (.570-3.70)	396
	03-04	*	**< LOD**	**.200** (.160-.260)	**.490** (.370-.720)	**.940** (.690-2.00)	658
	05-06	*	**.085** (.085-.085)	**.134** (.085-.180)	**.438** (.260-.670)	**1.16** (.520-2.30)	1319

Limit of detection (LOD, see Data Analysis section) for Survey years 01-02, 03-04, and 05-06 are 0.12, 0.12, and 0.011 respectively.
< LOD means less than the limit of detection, which may vary for some chemicals by year and by individual sample.
* Not calculated: proportion of results below limit of detection was too high to provide a valid result.

Biomonitoring Summary: http://www.cdc.gov/biomonitoring/Chlorobenzenes_BiomonitoringSummary.html

Blood 2,5-Dimethylfuran

Geometric mean and selected percentiles of whole blood concentrations (in ng/mL) for the U.S. population from the National Health and Nutrition Examination Survey.

	Survey years	Geometric mean (95% conf. interval)	Selected percentiles (95% confidence interval) 50th	75th	90th	95th	Sample size
Total	03-04	*	**< LOD**	**.016** (<LOD-.032)	**.100** (.083-.110)	**.140** (.120-.180)	1213
	05-06	*	**< LOD**	**< LOD**	**.100** (.069-.120)	**.160** (.130-.180)	3160
Age group							
12-19 years	05-06	*	**< LOD**	**< LOD**	**.013** (<LOD-.029)	**.049** (.020-.069)	930
20-59 years	03-04	*	**< LOD**	**.016** (<LOD-.032)	**.100** (.083-.110)	**.140** (.120-.180)	1213
	05-06	*	**< LOD**	**.013** (<LOD-.035)	**.120** (.097-.144)	**.170** (.140-.210)	1553
60 years and older	05-06	*	**< LOD**	**< LOD**	**.069** (.027-.100)	**.140** (.106-.160)	677
Gender							
Males	03-04	*	**< LOD**	**.019** (<LOD-.034)	**.094** (.071-.110)	**.130** (.110-.190)	598
	05-06	*	**< LOD**	**< LOD**	**.110** (.079-.130)	**.160** (.130-.190)	1490
Females	03-04	*	**< LOD**	**.012** (<LOD-.048)	**.110** (.071-.120)	**.150** (.120-.210)	615
	05-06	*	**< LOD**	**< LOD**	**.094** (.062-.120)	**.158** (.120-.180)	1670
Race/ethnicity							
Mexican Americans	03-04	*	**< LOD**	**< LOD**	**.012** (<LOD-.020)	**.038** (.013-.054)	237
	05-06	*	**< LOD**	**< LOD**	**.015** (<LOD-.029)	**.033** (.020-.055)	778
Non-Hispanic blacks	03-04	*	**< LOD**	**.042** (.019-.063)	**.110** (.079-.170)	**.170** (.099-.220)	258
	05-06	*	**< LOD**	**.012** (<LOD-.030)	**.085** (.058-.110)	**.130** (.095-.180)	825
Non-Hispanic whites	03-04	*	**< LOD**	**.021** (<LOD-.043)	**.110** (.087-.120)	**.150** (.120-.200)	624
	05-06	*	**< LOD**	**< LOD**	**.118** (.091-.140)	**.170** (.140-.230)	1325

Limit of detection (LOD, see Data Analysis section) for Survey years 03-04 and 05-06 are 0.012 and 0.011 respectively.
< LOD means less than the limit of detection, which may vary for some chemicals by year and by individual sample.
* Not calculated: proportion of results below limit of detection was too high to provide a valid result.

Biomonitoring Summary: http://www.cdc.gov/biomonitoring/2,5-Dimethylfuran_BiomonitoringSummary.html

Blood Benzene

Geometric mean and selected percentiles of whole blood concentrations (in ng/mL) for the U.S. population from the National Health and Nutrition Examination Survey.

	Survey years	Geometric mean (95% conf. interval)	Selected percentiles (95% confidence interval) 50th	75th	90th	95th	Sample size
Total	01-02	*	**.030** (<LOD-.050)	**.100** (.060-.140)	**.190** (.140-.290)	**.320** (.190-.480)	837
	03-04	*	**.027** (.025-.031)	**.064** (.050-.084)	**.170** (.150-.190)	**.260** (.210-.320)	1345
	05-06	*	**.026** (<LOD-.030)	**.056** (.047-.072)	**.220** (.157-.260)	**.310** (.264-.370)	3091
Age group							
12-19 years	05-06	*	**.024** (<LOD-.028)	**.039** (.031-.056)	**.089** (.066-.110)	**.120** (.092-.180)	912
20-59 years	01-02	*	**.030** (<LOD-.050)	**.100** (.060-.140)	**.190** (.140-.290)	**.320** (.190-.480)	837
	03-04	*	**.027** (.025-.031)	**.064** (.050-.084)	**.170** (.150-.190)	**.260** (.210-.320)	1345
	05-06	*	**.028** (.025-.032)	**.072** (.053-.100)	**.240** (.200-.290)	**.340** (.300-.390)	1513
60 years and older	05-06	*	**< LOD**	**.042** (.036-.048)	**.180** (.100-.230)	**.270** (.200-.340)	666
Gender							
Males	01-02	*	**.030** (<LOD-.050)	**.110** (.060-.160)	**.230** (.150-.370)	**.370** (.210-.510)	403
	03-04	**.039** (.035-.043)	**.030** (.027-.035)	**.069** (.053-.084)	**.160** (.140-.180)	**.240** (.190-.320)	654
	05-06	*	**.028** (.025-.032)	**.066** (.051-.083)	**.230** (.165-.280)	**.330** (.260-.440)	1459
Females	01-02	*	**.030** (<LOD-.050)	**.100** (.060-.130)	**.180** (.120-.240)	**.250** (.170-.330)	434
	03-04	*	**.025** (<LOD-.029)	**.057** (.040-.090)	**.180** (.150-.220)	**.290** (.220-.420)	691
	05-06	*	**.024** (<LOD-.028)	**.049** (.040-.067)	**.200** (.150-.230)	**.290** (.250-.340)	1632
Race/ethnicity							
Mexican Americans	01-02	*	**.030** (<LOD-.070)	**.070** (.030-.170)	**.140** (.060-.360)	**.230** (.130-.370)	227
	03-04	*	**.027** (<LOD-.035)	**.041** (.034-.057)	**.077** (.058-.110)	**.130** (.084-.320)	254
	05-06	*	**< LOD**	**.036** (.031-.045)	**.060** (.048-.086)	**.096** (.072-.140)	744
Non-Hispanic blacks	01-02	*	**< LOD**	**.060** (<LOD-.160)	**.180** (.090-.300)	**.250** (.160-.480)	137
	03-04	**.043** (.033-.058)	**.029** (<LOD-.054)	**.092** (.055-.140)	**.210** (.140-.290)	**.320** (.240-.460)	302
	05-06	*	**.026** (<LOD-.034)	**.077** (.051-.110)	**.180** (.150-.221)	**.280** (.220-.360)	812
Non-Hispanic whites	01-02	*	**.030** (<LOD-.060)	**.110** (.070-.160)	**.210** (.140-.340)	**.330** (.190-.510)	411
	03-04	*	**.028** (.025-.033)	**.068** (.053-.088)	**.180** (.150-.200)	**.280** (.210-.330)	687
	05-06	*	**.027** (<LOD-.031)	**.069** (.049-.091)	**.240** (.190-.280)	**.330** (.270-.390)	1309

Limit of detection (LOD, see Data Analysis section) for Survey years 01-02, 03-04, and 05-06 are 0.024, 0.024, and 0.024 respectively.
< LOD means less than the limit of detection, which may vary for some chemicals by year and by individual sample.
* Not calculated: proportion of results below limit of detection was too high to provide a valid result.

Biomonitoring Summary: **http://www.cdc.gov/biomonitoring/Benzene_BiomonitoringSummary.html**

Blood Chlorobenzene (Monochlorobenzene)

Geometric mean and selected percentiles of whole blood concentrations (in ng/mL) for the U.S. population from the National Health and Nutrition Examination Survey.

	Survey years	Geometric mean (95% conf. interval)	Selected percentiles (95% confidence interval) 50th	75th	90th	95th	Sample size
Total	03-04	*	< LOD	< LOD	< LOD	< LOD	1366
	05-06	*	< LOD	< LOD	< LOD	< LOD	3072
Age group							
12-19 years	05-06	*	< LOD	< LOD	< LOD	< LOD	910
20-59 years	03-04	*	< LOD	< LOD	< LOD	< LOD	1366
	05-06	*	< LOD	< LOD	< LOD	< LOD	1495
60 years and older	05-06	*	< LOD	< LOD	< LOD	< LOD	667
Gender							
Males	03-04	*	< LOD	< LOD	< LOD	< LOD	669
	05-06	*	< LOD	< LOD	< LOD	< LOD	1453
Females	03-04	*	< LOD	< LOD	< LOD	< LOD	697
	05-06	*	< LOD	< LOD	< LOD	< LOD	1619
Race/ethnicity							
Mexican Americans	03-04	*	< LOD	< LOD	< LOD	< LOD	267
	05-06	*	< LOD	< LOD	< LOD	< LOD	740
Non-Hispanic blacks	03-04	*	< LOD	< LOD	< LOD	< LOD	300
	05-06	*	< LOD	< LOD	< LOD	< LOD	817
Non-Hispanic whites	03-04	*	< LOD	< LOD	< LOD	< LOD	694
	05-06	*	< LOD	< LOD	< LOD	< LOD	1287

Limit of detection (LOD, see Data Analysis section) for Survey years 03-04 and 05-06 are 0.011 and 0.011 respectively.
< LOD means less than the limit of detection, which may vary for some chemicals by year and by individual sample.
* Not calculated: proportion of results below limit of detection was too high to provide a valid result.

Biomonitoring Summary: http://www.cdc.gov/biomonitoring/Chlorobenzenes_BiomonitoringSummary.html

Blood Dibromomethane

Geometric mean and selected percentiles of whole blood concentrations (in ng/mL) for the U.S. population from the National Health and Nutrition Examination Survey.

	Survey years	Geometric mean (95% conf. interval)	Selected percentiles (95% confidence interval) 50th	75th	90th	95th	Sample size
Total	03-04	*	< LOD	< LOD	< LOD	< LOD	1355
	05-06	*	< LOD	< LOD	< LOD	< LOD	3152
Age group							
12-19 years	05-06	*	< LOD	< LOD	< LOD	< LOD	929
20-59 years	03-04	*	< LOD	< LOD	< LOD	< LOD	1355
	05-06	*	< LOD	< LOD	< LOD	< LOD	1554
60 years and older	05-06	*	< LOD	< LOD	< LOD	< LOD	669
Gender							
Males	03-04	*	< LOD	< LOD	< LOD	< LOD	666
	05-06	*	< LOD	< LOD	< LOD	< LOD	1494
Females	03-04	*	< LOD	< LOD	< LOD	< LOD	689
	05-06	*	< LOD	< LOD	< LOD	< LOD	1658
Race/ethnicity							
Mexican Americans	03-04	*	< LOD	< LOD	< LOD	< LOD	267
	05-06	*	< LOD	< LOD	< LOD	< LOD	778
Non-Hispanic blacks	03-04	*	< LOD	< LOD	< LOD	< LOD	292
	05-06	*	< LOD	< LOD	< LOD	< LOD	816
Non-Hispanic whites	03-04	*	< LOD	< LOD	< LOD	< LOD	693
	05-06	*	< LOD	< LOD	< LOD	< LOD	1324

Limit of detection (LOD, see Data Analysis section) for Survey years 03-04 and 05-06 are 0.03 and 0.03 respectively.
< LOD means less than the limit of detection, which may vary for some chemicals by year and by individual sample.
* Not calculated: proportion of results below limit of detection was too high to provide a valid result.

Biomonitoring Summary: **http://www.cdc.gov/biomonitoring/OtherHalogenatedSolvents_BiomonitoringSummary.html**

Blood Dichloromethane (Methylene chloride)

Geometric mean and selected percentiles of whole blood concentrations (in ng/mL) for the U.S. population from the National Health and Nutrition Examination Survey.

	Survey years	Geometric mean (95% conf. interval)	Selected percentiles (95% confidence interval) 50th	75th	90th	95th	Sample size
Total	03-04	*	< LOD	< LOD	< LOD	< LOD	1165
	05-06	*	< LOD	< LOD	< LOD	< LOD	2852
Age group							
12-19 years	05-06	*	< LOD	< LOD	< LOD	< LOD	837
20-59 years	03-04	*	< LOD	< LOD	< LOD	< LOD	1165
	05-06	*	< LOD	< LOD	< LOD	< LOD	1400
60 years and older	05-06	*	< LOD	< LOD	< LOD	< LOD	615
Gender							
Males	03-04	*	< LOD	< LOD	< LOD	< LOD	568
	05-06	*	< LOD	< LOD	< LOD	< LOD	1338
Females	03-04	*	< LOD	< LOD	< LOD	< LOD	597
	05-06	*	< LOD	< LOD	< LOD	< LOD	1514
Race/ethnicity							
Mexican Americans	03-04	*	< LOD	< LOD	< LOD	< LOD	225
	05-06	*	< LOD	< LOD	< LOD	< LOD	731
Non-Hispanic blacks	03-04	*	< LOD	< LOD	< LOD	< LOD	245
	05-06	*	< LOD	< LOD	< LOD	< LOD	729
Non-Hispanic whites	03-04	*	< LOD	< LOD	< LOD	< LOD	607
	05-06	*	< LOD	< LOD	< LOD	< LOD	1186

Limit of detection (LOD, see Data Analysis section) for Survey years 03-04 and 05-06 are 0.07 and 0.25 respectively.
< LOD means less than the limit of detection, which may vary for some chemicals by year and by individual sample.
* Not calculated: proportion of results below limit of detection was too high to provide a valid result.

Biomonitoring Summary: http://www.cdc.gov/biomonitoring/HalogenatedSolvents_BiomonitoringSummary.html

Blood Ethylbenzene

Geometric mean and selected percentiles of whole blood concentrations (in ng/mL) for the U.S. population from the National Health and Nutrition Examination Survey.

	Survey years	Geometric mean (95% conf. interval)	Selected percentiles (95% confidence interval) 50th	75th	90th	95th	Sample size
Total	01-02	**.034** (.029-.039)	**.030** (.030-.040)	**.050** (.050-.070)	**.090** (.070-.120)	**.140** (.090-.180)	879
	03-04	**.035** (.033-.037)	**.032** (.030-.036)	**.053** (.048-.057)	**.083** (.077-.088)	**.110** (.098-.120)	1299
	05-06	**.038** (.036-.041)	**.035** (.033-.037)	**.059** (.052-.067)	**.100** (.093-.114)	**.140** (.122-.160)	3119
Age group							
12-19 years	05-06	**.032** (.030-.034)	**.031** (.029-.033)	**.046** (.042-.049)	**.070** (.058-.085)	**.096** (.075-.120)	909
20-59 years	01-02	**.034** (.029-.039)	**.030** (.030-.040)	**.050** (.050-.070)	**.090** (.070-.120)	**.140** (.090-.180)	879
	03-04	**.035** (.033-.037)	**.032** (.030-.036)	**.053** (.048-.057)	**.083** (.077-.088)	**.110** (.098-.120)	1299
	05-06	**.040** (.037-.043)	**.037** (.034-.039)	**.062** (.054-.073)	**.110** (.098-.126)	**.150** (.130-.180)	1539
60 years and older	05-06	**.037** (.033-.040)	**.033** (.030-.036)	**.056** (.046-.068)	**.098** (.090-.110)	**.130** (.110-.160)	671
Gender							
Males	01-02	**.035** (.029-.041)	**.030** (<LOD-.040)	**.060** (.040-.070)	**.100** (.070-.150)	**.150** (.090-.220)	419
	03-04	**.037** (.034-.041)	**.036** (.031-.040)	**.057** (.051-.065)	**.086** (.078-.099)	**.110** (.094-.130)	625
	05-06	**.042** (.039-.044)	**.038** (.036-.041)	**.067** (.057-.074)	**.114** (.099-.131)	**.160** (.136-.180)	1474
Females	01-02	**.033** (.028-.038)	**.030** (.030-.040)	**.050** (.040-.060)	**.080** (.060-.120)	**.130** (.070-.180)	460
	03-04	**.032** (.030-.034)	**.030** (.027-.033)	**.048** (.041-.053)	**.081** (.071-.089)	**.100** (.091-.120)	674
	05-06	**.035** (.032-.038)	**.032** (.029-.035)	**.052** (.047-.061)	**.093** (.081-.103)	**.120** (.106-.150)	1645
Race/ethnicity							
Mexican Americans	01-02	*	**.030** (<LOD-.040)	**.040** (.040-.060)	**.070** (.050-.110)	**.120** (.070-.210)	220
	03-04	**.031** (.027-.036)	**.029** (<LOD-.035)	**.044** (.035-.048)	**.064** (.051-.074)	**.091** (.066-.170)	253
	05-06	**.032** (.028-.036)	**.030** (.026-.036)	**.047** (.039-.057)	**.072** (.051-.093)	**.086** (.073-.120)	752
Non-Hispanic blacks	01-02	**.032** (.027-.038)	**.030** (<LOD-.040)	**.050** (.030-.070)	**.080** (.060-.130)	**.130** (.070-.240)	159
	03-04	**.032** (.027-.038)	**.030** (<LOD-.037)	**.050** (.037-.066)	**.079** (.065-.100)	**.110** (.084-.130)	281
	05-06	**.037** (.035-.040)	**.034** (.030-.038)	**.057** (.052-.064)	**.095** (.085-.100)	**.120** (.104-.140)	809
Non-Hispanic whites	01-02	**.035** (.029-.043)	**.030** (<LOD-.040)	**.060** (.050-.070)	**.090** (.070-.140)	**.150** (.090-.190)	432
	03-04	**.036** (.034-.038)	**.034** (.030-.038)	**.055** (.050-.061)	**.087** (.081-.092)	**.110** (.098-.130)	669
	05-06	**.039** (.037-.042)	**.036** (.033-.038)	**.061** (.053-.072)	**.110** (.095-.120)	**.150** (.125-.180)	1326

Limit of detection (LOD, see Data Analysis section) for Survey years 01-02, 03-04, and 05-06 are 0.024, 0.024, and 0.024 respectively.
< LOD means less than the limit of detection, which may vary for some chemicals by year and by individual sample.
* Not calculated: proportion of results below limit of detection was too high to provide a valid result.

Biomonitoring Summary: http://www.cdc.gov/biomonitoring/Ethylbenzene_BiomonitoringSummary.html

Blood Hexachloroethane

Geometric mean and selected percentiles of whole blood concentrations (in ng/mL) for the U.S. population from the National Health and Nutrition Examination Survey.

	Survey years	Geometric mean (95% conf. interval)	Selected percentiles (95% confidence interval) 50th	75th	90th	95th	Sample size
Total	03-04	*	< LOD	< LOD	< LOD	< LOD	1366
	05-06	*	< LOD	< LOD	< LOD	< LOD	3155
Age group							
12-19 years	05-06	*	< LOD	< LOD	< LOD	< LOD	930
20-59 years	03-04	*	< LOD	< LOD	< LOD	< LOD	1366
	05-06	*	< LOD	< LOD	< LOD	< LOD	1547
60 years and older	05-06	*	< LOD	< LOD	< LOD	< LOD	678
Gender							
Males	03-04	*	< LOD	< LOD	< LOD	< LOD	669
	05-06	*	< LOD	< LOD	< LOD	< LOD	1495
Females	03-04	*	< LOD	< LOD	< LOD	< LOD	697
	05-06	*	< LOD	< LOD	< LOD	< LOD	1660
Race/ethnicity							
Mexican Americans	03-04	*	< LOD	< LOD	< LOD	< LOD	267
	05-06	*	< LOD	< LOD	< LOD	< LOD	758
Non-Hispanic blacks	03-04	*	< LOD	< LOD	< LOD	< LOD	300
	05-06	*	< LOD	< LOD	< LOD	< LOD	830
Non-Hispanic whites	03-04	*	< LOD	< LOD	< LOD	< LOD	694
	05-06	*	< LOD	< LOD	< LOD	< LOD	1335

Limit of detection (LOD, see Data Analysis section) for Survey years 03-04 and 05-06 are 0.011 and 0.011 respectively.
< LOD means less than the limit of detection, which may vary for some chemicals by year and by individual sample.
* Not calculated: proportion of results below limit of detection was too high to provide a valid result.

Biomonitoring Summary: **http://www.cdc.gov/biomonitoring/Hexachloroethane_BiomonitoringSummary.html**

Blood Methyl-*tert*-butyl ether (MTBE)

Geometric mean and selected percentiles of whole blood concentrations (in pg/mL) for the U.S. population from the National Health and Nutrition Examination Survey.

	Survey years	Geometric mean (95% conf. interval)	Selected percentiles (95% confidence interval) 50th	75th	90th	95th	Sample size
Total	01-02	**16.4** (4.77-56.7)	**27.7** (7.29-64.9)	**73.8** (35.5-127)	**132** (64.0-278)	**188** (109-339)	672
	03-04	**11.0** (5.98-20.1)	**10.0** (4.60-25.1)	**45.0** (16.0-98.0)	**110** (70.0-180)	**170** (110-340)	1307
	05-06	**6.16** (2.94-12.9)	**4.60** (1.80-15.0)	**20.0** (5.20-73.0)	**75.0** (22.0-140)	**110** (49.0-250)	3080
Age group							
12-19 years	05-06	**5.85** (2.61-13.1)	**4.20** (1.40-18.0)	**18.0** (4.60-75.0)	**70.0** (18.0-140)	**110** (62.0-180)	911
20-59 years	01-02	**16.4** (4.77-56.7)	**27.7** (7.29-64.9)	**73.8** (35.5-127)	**132** (64.0-278)	**188** (109-339)	672
	03-04	**11.0** (5.98-20.1)	**10.0** (4.60-25.1)	**45.0** (16.0-98.0)	**110** (70.0-180)	**170** (110-340)	1307
	05-06	**6.26** (3.05-12.9)	**4.80** (2.00-14.0)	**20.0** (5.50-70.0)	**71.0** (21.0-150)	**110** (46.0-250)	1512
60 years and older	05-06	**6.00** (2.67-13.5)	**3.80** (1.60-14.0)	**22.0** (4.00-94.0)	**86.0** (19.0-180)	**120** (55.0-290)	657
Gender							
Males	01-02	**16.9** (4.96-57.7)	**27.9** (6.82-64.6)	**75.0** (35.5-131)	**132** (54.9-307)	**167** (109-417)	334
	03-04	**12.2** (6.29-23.6)	**11.0** (4.80-29.0)	**55.0** (18.0-110)	**130** (79.0-200)	**200** (110-470)	641
	05-06	**6.24** (3.07-12.7)	**4.60** (1.90-15.0)	**20.0** (5.90-69.0)	**73.0** (25.0-120)	**110** (52.0-230)	1462
Females	01-02	**16.0** (4.12-61.8)	**26.6** (5.93-74.6)	**72.7** (32.6-132)	**142** (73.5-255)	**194** (92.3-336)	338
	03-04	**9.88** (5.62-17.4)	**8.90** (4.30-23.0)	**38.0** (14.0-85.0)	**94.0** (58.0-160)	**140** (90.0-250)	666
	05-06	**6.08** (2.81-13.1)	**4.50** (1.70-14.0)	**19.0** (4.90-79.0)	**76.0** (20.0-160)	**110** (48.0-250)	1618
Race/ethnicity							
Mexican Americans	01-02	**23.3** (4.96-110)	**33.4** (2.92-187)	**91.3** (26.1-255)	**225** (80.6-339)	**273** (182-358)	166
	03-04	**11.6** (5.35-25.3)	**12.0** (3.80-29.0)	**32.0** (14.0-80.0)	**80.0** (38.0-190)	**160** (74.0-220)	245
	05-06	**7.61** (2.99-19.3)	**5.40** (2.00-33.0)	**30.0** (4.60-90.0)	**67.0** (26.0-190)	**100** (45.0-330)	735
Non-Hispanic blacks	01-02	**14.9** (6.11-36.4)	**26.4** (3.11-55.6)	**52.6** (30.0-86.8)	**87.4** (38.6-155)	**120** (70.0-155)	119
	03-04	**9.63** (4.83-19.2)	**10.0** (3.50-28.0)	**32.8** (11.0-85.0)	**77.0** (36.0-160)	**140** (61.0-210)	285
	05-06	**9.14** (3.16-26.5)	**5.70** (1.80-50.0)	**48.0** (5.00-150)	**120** (46.0-280)	**180** (88.0-460)	820
Non-Hispanic whites	01-02	**16.0** (4.13-62.4)	**27.9** (4.71-74.6)	**72.7** (33.3-132)	**132** (59.6-249)	**165** (92.8-366)	333
	03-04	**11.5** (5.51-23.8)	**11.0** (4.00-33.5)	**59.0** (14.0-120)	**120** (73.0-230)	**180** (110-430)	673
	05-06	**5.55** (2.47-12.5)	**4.00** (<LOD-15.0)	**16.0** (4.30-75.0)	**70.0** (15.0-150)	**110** (40.0-250)	1291

Limit of detection (LOD, see Data Analysis section) for Survey years 01-02, 03-04, and 05-06 are 0.232, 2.0, and 1.4 respectively.
< LOD means less than the limit of detection, which may vary for some chemicals by year and by individual sample.

Biomonitoring Summary: http://www.cdc.gov/biomonitoring/MTBE_BiomonitoringSummary.html

Blood Nitrobenzene

Geometric mean and selected percentiles of whole blood concentrations (in ng/mL) for the U.S. population from the National Health and Nutrition Examination Survey.

	Survey years	Geometric mean (95% conf. interval)	Selected percentiles (95% confidence interval) 50th	75th	90th	95th	Sample size
Total	03-04	*	< LOD	< LOD	< LOD	< LOD	1066
	05-06	*	< LOD	< LOD	< LOD	< LOD	3144
Age group							
12-19 years	05-06	*	< LOD	< LOD	< LOD	< LOD	926
20-59 years	03-04	*	< LOD	< LOD	< LOD	< LOD	1066
	05-06	*	< LOD	< LOD	< LOD	< LOD	1549
60 years and older	05-06	*	< LOD	< LOD	< LOD	< LOD	669
Gender							
Males	03-04	*	< LOD	< LOD	< LOD	< LOD	529
	05-06	*	< LOD	< LOD	< LOD	< LOD	1491
Females	03-04	*	< LOD	< LOD	< LOD	< LOD	537
	05-06	*	< LOD	< LOD	< LOD	< LOD	1653
Race/ethnicity							
Mexican Americans	03-04	*	< LOD	< LOD	< LOD	< LOD	206
	05-06	*	< LOD	< LOD	< LOD	< LOD	773
Non-Hispanic blacks	03-04	*	< LOD	< LOD	< LOD	< LOD	205
	05-06	*	< LOD	< LOD	< LOD	< LOD	816
Non-Hispanic whites	03-04	*	< LOD	< LOD	< LOD	< LOD	564
	05-06	*	< LOD	< LOD	< LOD	< LOD	1322

Limit of detection (LOD, see Data Analysis section) for Survey years 03-04 and 05-06 are 0.3 and 0.3 respectively.
< LOD means less than the limit of detection, which may vary for some chemicals by year and by individual sample.
* Not calculated: proportion of results below limit of detection was too high to provide a valid result.

Biomonitoring Summary: http://www.cdc.gov/biomonitoring/Nitrobenzene_BiomonitoringSummary.html

Blood Styrene

Geometric mean and selected percentiles of whole blood concentrations (in ng/mL) for the U.S. population from the National Health and Nutrition Examination Survey.

	Survey years	Geometric mean (95% conf. interval)	Selected percentiles (95% confidence interval) 50th	75th	90th	95th	Sample size
Total	01-02	*	**< LOD**	**.080** (.050-.100)	**.130** (.090-.200)	**.200** (.140-.260)	950
	03-04	*	**< LOD**	**.050** (.044-.061)	**.089** (.081-.097)	**.120** (.110-.130)	1245
	05-06	*	**< LOD**	**.047** (.042-.056)	**.099** (.086-.113)	**.135** (.120-.160)	2808
Age group							
12-19 years	05-06	*	**< LOD**	**.039** (.031-.049)	**.058** (.050-.071)	**.072** (.059-.089)	827
20-59 years	01-02	*	**< LOD**	**.080** (.050-.100)	**.130** (.090-.200)	**.200** (.140-.260)	950
	03-04	*	**< LOD**	**.050** (.044-.061)	**.089** (.081-.097)	**.120** (.110-.130)	1245
	05-06	*	**< LOD**	**.051** (.044-.065)	**.110** (.094-.120)	**.150** (.120-.180)	1380
60 years and older	05-06	*	**< LOD**	**.041** (.033-.055)	**.083** (.072-.110)	**.130** (.100-.150)	601
Gender							
Males	01-02	*	**< LOD**	**.080** (.050-.110)	**.140** (.100-.230)	**.220** (.140-.340)	445
	03-04	*	**< LOD**	**.056** (.045-.068)	**.089** (.081-.100)	**.120** (.095-.150)	608
	05-06	*	**< LOD**	**.052** (.043-.067)	**.110** (.096-.120)	**.142** (.120-.170)	1326
Females	01-02	*	**< LOD**	**.070** (.050-.100)	**.120** (.090-.180)	**.180** (.120-.260)	505
	03-04	*	**< LOD**	**.048** (.040-.060)	**.090** (.074-.100)	**.110** (.097-.140)	637
	05-06	*	**< LOD**	**.045** (.038-.052)	**.087** (.077-.100)	**.129** (.107-.150)	1482
Race/ethnicity							
Mexican Americans	01-02	*	**< LOD**	**.050** (.030-.070)	**.090** (.070-.110)	**.120** (.090-.470)	225
	03-04	*	**< LOD**	**< LOD**	**.049** (.033-.066)	**.062** (.048-.100)	241
	05-06	*	**< LOD**	**.035** (<LOD-.047)	**.060** (.042-.092)	**.092** (.064-.110)	603
Non-Hispanic blacks	01-02	*	**.040** (<LOD-.080)	**.100** (.040-.180)	**.180** (.110-.350)	**.300** (.170-1.00)	192
	03-04	*	**< LOD**	**.060** (.047-.077)	**.100** (.077-.130)	**.130** (.110-.160)	264
	05-06	*	**< LOD**	**.056** (.047-.064)	**.100** (.079-.120)	**.145** (.115-.180)	781
Non-Hispanic whites	01-02	*	**.030** (<LOD-.050)	**.080** (.050-.110)	**.130** (.090-.210)	**.200** (.130-.260)	462
	03-04	*	**< LOD**	**.056** (.046-.067)	**.096** (.083-.110)	**.130** (.110-.140)	646
	05-06	*	**< LOD**	**.049** (.043-.058)	**.103** (.087-.120)	**.140** (.120-.174)	1217

Limit of detection (LOD, see Data Analysis section) for Survey years 01-02, 03-04, and 05-06 are 0.03, 0.03, and 0.03 respectively.
< LOD means less than the limit of detection, which may vary for some chemicals by year and by individual sample.
* Not calculated: proportion of results below limit of detection was too high to provide a valid result.

Biomonitoring Summary: **http://www.cdc.gov/biomonitoring/Styrene_BiomonitoringSummary.html**

Blood Tetrachloroethene (Perchloroethylene)

Geometric mean and selected percentiles of whole blood concentrations (in ng/mL) for the U.S. population from the National Health and Nutrition Examination Survey.

	Survey years	Geometric mean (95% conf. interval)	Selected percentiles (95% confidence interval) 50th	75th	90th	95th	Sample size
Total	01-02	*	**< LOD**	**.050** (<LOD-.060)	**.100** (.070-.150)	**.190** (.130-.260)	978
	03-04	*	**< LOD**	**< LOD**	**.076** (.060-.097)	**.140** (.091-.300)	1317
	05-06	*	**< LOD**	**< LOD**	**.070** (.056-.088)	**.126** (.098-.170)	2940
Age group							
12-19 years	05-06	*	**< LOD**	**< LOD**	**.049** (<LOD-.062)	**.079** (.057-.106)	865
20-59 years	01-02	*	**< LOD**	**.050** (<LOD-.060)	**.100** (.070-.150)	**.190** (.130-.260)	978
	03-04	*	**< LOD**	**< LOD**	**.076** (.060-.097)	**.140** (.091-.300)	1317
	05-06	*	**< LOD**	**< LOD**	**.074** (.056-.100)	**.130** (.098-.199)	1458
60 years and older	05-06	*	**< LOD**	**< LOD**	**.071** (.054-.092)	**.113** (.092-.190)	617
Gender							
Males	01-02	*	**< LOD**	**.050** (<LOD-.060)	**.110** (.070-.170)	**.210** (.170-.340)	457
	03-04	*	**< LOD**	**< LOD**	**.082** (.060-.140)	**.230** (.097-.410)	639
	05-06	*	**< LOD**	**< LOD**	**.085** (.062-.126)	**.172** (.113-.300)	1404
Females	01-02	*	**< LOD**	**.050** (<LOD-.060)	**.100** (.070-.140)	**.150** (.100-.220)	521
	03-04	*	**< LOD**	**< LOD**	**.069** (.050-.091)	**.120** (.085-.180)	678
	05-06	*	**< LOD**	**< LOD**	**.056** (.049-.071)	**.090** (.070-.130)	1536
Race/ethnicity							
Mexican Americans	01-02	*	**< LOD**	**< LOD**	**.060** (<LOD-.070)	**.070** (.060-.230)	226
	03-04	*	**< LOD**	**< LOD**	**.049** (<LOD-.097)	**.100** (.054-.180)	248
	05-06	*	**< LOD**	**< LOD**	**.069** (.056-.074)	**.130** (.073-.284)	713
Non-Hispanic blacks	01-02	*	**< LOD**	**< LOD**	**.070** (.050-.110)	**.110** (.060-.190)	195
	03-04	*	**< LOD**	**< LOD**	**.086** (.050-.220)	**.220** (.082-.360)	284
	05-06	*	**< LOD**	**< LOD**	**.074** (.057-.112)	**.120** (.069-.280)	776
Non-Hispanic whites	01-02	*	**< LOD**	**.050** (<LOD-.070)	**.110** (.090-.170)	**.210** (.150-.260)	487
	03-04	*	**< LOD**	**< LOD**	**.072** (.060-.091)	**.140** (.085-.330)	686
	05-06	*	**< LOD**	**< LOD**	**.070** (.053-.090)	**.130** (.092-.180)	1229

Limit of detection (LOD, see Data Analysis section) for Survey years 01-02, 03-04, and 05-06 are 0.048, 0.048, and 0.048 respectively.
< LOD means less than the limit of detection, which may vary for some chemicals by year and by individual sample.
* Not calculated: proportion of results below limit of detection was too high to provide a valid result.

Biomonitoring Summary: **http://www.cdc.gov/biomonitoring/HalogenatedSolvents_BiomonitoringSummary.html**

Blood Tetrachloromethane (Carbon tetrachloride)

Geometric mean and selected percentiles of whole blood concentrations (in ng/mL) for the U.S. population from the National Health and Nutrition Examination Survey.

	Survey years	Geometric mean (95% conf. interval)	Selected percentiles (95% confidence interval) 50th	75th	90th	95th	Sample size
Total	01-02	*	**< LOD**	**.010** (<LOD-.010)	**.010** (<LOD-.140)	**.020** (.010-.050)	742
	03-04	*	**< LOD**	**< LOD**	**< LOD**	**< LOD**	1362
	05-06	*	**< LOD**	**< LOD**	**< LOD**	**< LOD**	2979
Age group							
12-19 years	05-06	*	**< LOD**	**< LOD**	**< LOD**	**< LOD**	882
20-59 years	01-02	*	**< LOD**	**.010** (<LOD-.010)	**.010** (<LOD-.140)	**.020** (.010-.050)	742
	03-04	*	**< LOD**	**< LOD**	**< LOD**	**< LOD**	1362
	05-06	*	**< LOD**	**< LOD**	**< LOD**	**< LOD**	1476
60 years and older	05-06	*	**< LOD**	**< LOD**	**< LOD**	**< LOD**	621
Gender							
Males	01-02	*	**< LOD**	**.010** (<LOD-.010)	**.010** (<LOD-.140)	**.010** (.010-.040)	364
	03-04	*	**< LOD**	**< LOD**	**< LOD**	**< LOD**	667
	05-06	*	**< LOD**	**< LOD**	**< LOD**	**< LOD**	1419
Females	01-02	*	**< LOD**	**.010** (<LOD-.010)	**.010** (<LOD-.090)	**.040** (.010-.080)	378
	03-04	*	**< LOD**	**< LOD**	**< LOD**	**< LOD**	695
	05-06	*	**< LOD**	**< LOD**	**< LOD**	**< LOD**	1560
Race/ethnicity							
Mexican Americans	01-02	*	**< LOD**	**< LOD**	**.010** (<LOD-.750)	**.020** (.010-.050)	193
	03-04	*	**< LOD**	**< LOD**	**< LOD**	**< LOD**	266
	05-06	*	**< LOD**	**< LOD**	**< LOD**	**< LOD**	740
Non-Hispanic blacks	01-02	*	**< LOD**	**.010** (<LOD-.010)	**.010** (<LOD-.020)	**.010** (<LOD-.020)	132
	03-04	*	**< LOD**	**< LOD**	**< LOD**	**< LOD**	299
	05-06	*	**< LOD**	**< LOD**	**< LOD**	**< LOD**	779
Non-Hispanic whites	01-02	*	**< LOD**	**.010** (<LOD-.010)	**.010** (<LOD-.140)	**.030** (.010-.080)	366
	03-04	*	**< LOD**	**< LOD**	**< LOD**	**< LOD**	692
	05-06	*	**< LOD**	**< LOD**	**< LOD**	**< LOD**	1237

Limit of detection (LOD, see Data Analysis section) for Survey years 01-02, 03-04, and 05-06 are 0.01, 0.005, and 0.005 respectively.
< LOD means less than the limit of detection, which may vary for some chemicals by year and by individual sample.
* Not calculated: proportion of results below limit of detection was too high to provide a valid result.

Biomonitoring Summary: **http://www.cdc.gov/biomonitoring/OtherHalogenatedSolvents_BiomonitoringSummary.html**

Blood Toluene

Geometric mean and selected percentiles of whole blood concentrations (in ng/mL) for the U.S. population from the National Health and Nutrition Examination Survey.

	Survey years	Geometric mean (95% conf. interval)	Selected percentiles (95% confidence interval) 50th	75th	90th	95th	Sample size
Total	01-02	**.156** (.122-.198)	**.160** (.120-.220)	**.340** (.260-.430)	**.670** (.480-.950)	**1.06** (.700-1.43)	954
	03-04	**.114** (.100-.129)	**.096** (.087-.110)	**.220** (.180-.260)	**.430** (.380-.550)	**.680** (.560-.880)	1336
	05-06	**.137** (.123-.152)	**.120** (.110-.130)	**.230** (.200-.262)	**.550** (.481-.640)	**.814** (.702-.937)	3050
Age group							
12-19 years	05-06	**.110** (.098-.122)	**.100** (.094-.120)	**.170** (.150-.180)	**.280** (.240-.310)	**.400** (.300-.610)	907
20-59 years	01-02	**.156** (.122-.198)	**.160** (.120-.220)	**.340** (.260-.430)	**.670** (.480-.950)	**1.06** (.700-1.43)	954
	03-04	**.114** (.100-.129)	**.096** (.087-.110)	**.220** (.180-.260)	**.430** (.380-.550)	**.680** (.560-.880)	1336
	05-06	**.147** (.133-.163)	**.120** (.110-.137)	**.260** (.210-.340)	**.594** (.505-.720)	**.900** (.730-1.10)	1505
60 years and older	05-06	**.124** (.100-.154)	**.114** (.097-.138)	**.190** (.167-.230)	**.520** (.370-.600)	**.720** (.600-.814)	638
Gender							
Males	01-02	**.165** (.130-.209)	**.170** (.120-.230)	**.360** (.260-.520)	**.780** (.580-1.06)	**1.22** (.850-1.43)	450
	03-04	**.128** (.112-.148)	**.110** (.096-.130)	**.250** (.190-.310)	**.500** (.380-.660)	**.730** (.590-1.10)	647
	05-06	**.152** (.139-.166)	**.130** (.120-.140)	**.280** (.240-.330)	**.640** (.550-.720)	**.920** (.790-1.10)	1441
Females	01-02	**.147** (.114-.190)	**.150** (.110-.220)	**.320** (.240-.390)	**.550** (.400-.740)	**.810** (.530-1.63)	504
	03-04	**.101** (.086-.118)	**.085** (.070-.100)	**.190** (.150-.230)	**.410** (.340-.500)	**.580** (.480-.750)	689
	05-06	**.124** (.107-.144)	**.110** (.097-.130)	**.190** (.170-.230)	**.470** (.380-.550)	**.690** (.550-.880)	1609
Race/ethnicity							
Mexican Americans	01-02	**.136** (.106-.176)	**.140** (.080-.210)	**.270** (.210-.340)	**.550** (.400-.980)	**.990** (.500-1.30)	219
	03-04	**.084** (.074-.096)	**.076** (.064-.091)	**.120** (.100-.170)	**.280** (.170-.410)	**.400** (.310-.620)	253
	05-06	**.110** (.097-.125)	**.110** (.096-.120)	**.160** (.140-.170)	**.240** (.220-.290)	**.340** (.290-.460)	737
Non-Hispanic blacks	01-02	**.137** (.089-.210)	**.150** (.070-.200)	**.310** (.200-.460)	**.690** (.390-1.19)	**1.15** (.660-1.69)	194
	03-04	**.105** (.077-.144)	**.095** (.070-.130)	**.200** (.130-.330)	**.440** (.290-.620)	**.620** (.480-.710)	297
	05-06	**.139** (.120-.161)	**.120** (.099-.140)	**.230** (.190-.290)	**.450** (.370-.550)	**.670** (.550-.830)	796
Non-Hispanic whites	01-02	**.165** (.125-.217)	**.170** (.120-.240)	**.350** (.270-.450)	**.710** (.450-1.12)	**1.14** (.710-1.63)	467
	03-04	**.123** (.110-.139)	**.100** (.092-.120)	**.240** (.210-.280)	**.500** (.400-.590)	**.750** (.590-.940)	685
	05-06	**.144** (.125-.166)	**.130** (.110-.140)	**.260** (.210-.330)	**.600** (.510-.710)	**.880** (.760-.990)	1291

Limit of detection (LOD, see Data Analysis section) for Survey years 01-02, 03-04, and 05-06 are 0.025, 0.025, and 0.025 respectively.
< LOD means less than the limit of detection, which may vary for some chemicals by year and by individual sample.

Biomonitoring Summary: http://www.cdc.gov/biomonitoring/Toluene_BiomonitoringSummary.html

Blood Trichloroethene (Trichloroethylene)

Geometric mean and selected percentiles of whole blood concentrations (in ng/mL) for the U.S. population from the National Health and Nutrition Examination Survey.

	Survey years	Geometric mean (95% conf. interval)	Selected percentiles (95% confidence interval) 50th	75th	90th	95th	Sample size
Total	01-02	*	< LOD	< LOD	< LOD	< LOD	922
	03-04	*	< LOD	< LOD	< LOD	< LOD	1228
	05-06	*	< LOD	< LOD	< LOD	< LOD	3178
Age group							
12-19 years	05-06	*	< LOD	< LOD	< LOD	< LOD	937
20-59 years	01-02	*	< LOD	< LOD	< LOD	< LOD	922
	03-04	*	< LOD	< LOD	< LOD	< LOD	1228
	05-06	*	< LOD	< LOD	< LOD	< LOD	1562
60 years and older	05-06	*	< LOD	< LOD	< LOD	< LOD	679
Gender							
Males	01-02	*	< LOD	< LOD	< LOD	< LOD	434
	03-04	*	< LOD	< LOD	< LOD	< LOD	604
	05-06	*	< LOD	< LOD	< LOD	< LOD	1504
Females	01-02	*	< LOD	< LOD	< LOD	< LOD	488
	03-04	*	< LOD	< LOD	< LOD	< LOD	624
	05-06	*	< LOD	< LOD	< LOD	< LOD	1674
Race/ethnicity							
Mexican Americans	01-02	*	< LOD	< LOD	< LOD	< LOD	228
	03-04	*	< LOD	< LOD	< LOD	< LOD	224
	05-06	*	< LOD	< LOD	< LOD	< LOD	773
Non-Hispanic blacks	01-02	*	< LOD	< LOD	< LOD	< LOD	191
	03-04	*	< LOD	< LOD	< LOD	< LOD	266
	05-06	*	< LOD	< LOD	< LOD	< LOD	828
Non-Hispanic whites	01-02	*	< LOD	< LOD	< LOD	< LOD	441
	03-04	*	< LOD	< LOD	< LOD	< LOD	644
	05-06	*	< LOD	< LOD	< LOD	< LOD	1341

Limit of detection (LOD, see Data Analysis section) for Survey years 01-02, 03-04, and 05-06 are 0.012, 0.012, and 0.012 respectively.
< LOD means less than the limit of detection, which may vary for some chemicals by year and by individual sample.
* Not calculated: proportion of results below limit of detection was too high to provide a valid result.

Biomonitoring Summary: http://www.cdc.gov/biomonitoring/HalogenatedSolvents_BiomonitoringSummary.html

Blood *m*- and *p*-Xylene

Geometric mean and selected percentiles of whole blood concentrations (in ng/mL) for the U.S. population from the National Health and Nutrition Examination Survey.

	Survey years	Geometric mean (95% conf. interval)	Selected percentiles (95% confidence interval) 50th	75th	90th	95th	Sample size
Total	01-02	**.156** (.124-.198)	**.150** (.110-.200)	**.280** (.190-.430)	**.500** (.370-.690)	**.670** (.500-.890)	962
	03-04	**.136** (.123-.150)	**.130** (.120-.150)	**.200** (.190-.210)	**.280** (.260-.300)	**.340** (.310-.400)	1346
	05-06	**.132** (.122-.143)	**.120** (.110-.130)	**.190** (.170-.210)	**.301** (.270-.330)	**.410** (.360-.450)	3133
Age group							
12-19 years	05-06	**.118** (.106-.130)	**.120** (.110-.120)	**.160** (.150-.170)	**.220** (.190-.270)	**.330** (.240-.380)	923
20-59 years	01-02	**.156** (.124-.198)	**.150** (.110-.200)	**.280** (.190-.430)	**.500** (.370-.690)	**.670** (.500-.890)	962
	03-04	**.136** (.123-.150)	**.130** (.120-.150)	**.200** (.190-.210)	**.280** (.260-.300)	**.340** (.310-.400)	1346
	05-06	**.137** (.127-.147)	**.130** (.120-.140)	**.200** (.180-.220)	**.320** (.280-.350)	**.430** (.360-.480)	1542
60 years and older	05-06	**.126** (.112-.142)	**.120** (.100-.130)	**.184** (.150-.220)	**.303** (.240-.360)	**.400** (.335-.463)	668
Gender							
Males	01-02	**.155** (.121-.200)	**.140** (.110-.190)	**.280** (.180-.440)	**.510** (.350-.700)	**.700** (.500-.890)	455
	03-04	**.149** (.134-.166)	**.140** (.130-.170)	**.220** (.200-.230)	**.290** (.270-.320)	**.380** (.300-.490)	654
	05-06	**.145** (.135-.157)	**.130** (.130-.147)	**.220** (.190-.240)	**.340** (.310-.370)	**.460** (.430-.490)	1480
Females	01-02	**.157** (.124-.199)	**.150** (.110-.220)	**.270** (.190-.410)	**.480** (.360-.650)	**.650** (.460-.890)	507
	03-04	**.124** (.112-.138)	**.130** (.110-.140)	**.180** (.160-.200)	**.270** (.240-.300)	**.340** (.290-.390)	692
	05-06	**.120** (.109-.132)	**.110** (.100-.123)	**.170** (.151-.197)	**.260** (.220-.320)	**.340** (.300-.420)	1653
Race/ethnicity							
Mexican Americans	01-02	**.134** (.097-.184)	**.130** (.090-.180)	**.240** (.150-.370)	**.400** (.290-.540)	**.540** (.380-1.10)	223
	03-04	**.132** (.109-.160)	**.120** (.110-.150)	**.180** (.140-.230)	**.250** (.220-.320)	**.360** (.260-.490)	257
	05-06	**.108** (.093-.125)	**.110** (.098-.120)	**.150** (.130-.170)	**.220** (.170-.290)	**.270** (.220-.370)	755
Non-Hispanic blacks	01-02	**.147** (.107-.202)	**.140** (.090-.220)	**.280** (.160-.460)	**.470** (.330-.850)	**.590** (.420-1.08)	198
	03-04	**.117** (.094-.146)	**.120** (.099-.140)	**.170** (.140-.220)	**.270** (.210-.330)	**.330** (.260-.450)	297
	05-06	**.131** (.120-.144)	**.120** (.110-.140)	**.190** (.170-.210)	**.280** (.250-.320)	**.350** (.320-.392)	823
Non-Hispanic whites	01-02	**.163** (.124-.214)	**.160** (.110-.220)	**.300** (.190-.480)	**.520** (.370-.740)	**.700** (.510-.960)	468
	03-04	**.141** (.128-.155)	**.140** (.130-.150)	**.210** (.190-.220)	**.290** (.270-.310)	**.350** (.330-.400)	690
	05-06	**.136** (.125-.147)	**.130** (.120-.140)	**.200** (.180-.220)	**.324** (.280-.350)	**.430** (.368-.480)	1323

Limit of detection (LOD, see Data Analysis section) for Survey years 01-02, 03-04, and 05-06 are 0.034, 0.034, and 0.034 respectively.
< LOD means less than the limit of detection, which may vary for some chemicals by year and by individual sample.

Biomonitoring Summary: http://www.cdc.gov/biomonitoring/Xylenes_BiomonitoringSummary.html

Blood *o*-Xylene

Geometric mean and selected percentiles of whole blood concentrations (in ng/mL) for the U.S. population from the National Health and Nutrition Examination Survey.

	Survey years	Geometric mean (95% conf. interval)	Selected percentiles (95% confidence interval) 50th	75th	90th	95th	Sample size
Total	01-02	*	**< LOD**	**.070** (.050-.080)	**.100** (.080-.130)	**.130** (.110-.180)	981
	03-04	*	**< LOD**	**.051** (<LOD-.057)	**.072** (.066-.079)	**.090** (.081-.097)	1365
	05-06	**.037** (.034-.040)	**.035** (.032-.039)	**.053** (.047-.061)	**.083** (.072-.094)	**.110** (.094-.120)	3153
Age group							
12-19 years	05-06	**.032** (.030-.034)	**.031** (.029-.034)	**.044** (.040-.049)	**.062** (.053-.075)	**.088** (.072-.100)	929
20-59 years	01-02	*	**< LOD**	**.070** (.050-.080)	**.100** (.080-.130)	**.130** (.110-.180)	981
	03-04	*	**< LOD**	**.051** (<LOD-.057)	**.072** (.066-.079)	**.090** (.081-.097)	1365
	05-06	**.038** (.034-.041)	**.036** (.032-.039)	**.055** (.048-.062)	**.083** (.073-.094)	**.110** (.093-.120)	1547
60 years and older	05-06	**.038** (.033-.044)	**.036** (.032-.042)	**.054** (.046-.065)	**.092** (.065-.115)	**.115** (.094-.150)	677
Gender							
Males	01-02	*	**< LOD**	**.070** (.050-.090)	**.110** (.080-.140)	**.150** (.110-.180)	465
	03-04	*	**< LOD**	**.057** (.050-.060)	**.074** (.068-.084)	**.096** (.084-.110)	667
	05-06	**.040** (.036-.045)	**.038** (.033-.041)	**.058** (.050-.070)	**.092** (.082-.100)	**.120** (.100-.140)	1487
Females	01-02	*	**< LOD**	**.060** (.050-.080)	**.100** (.070-.130)	**.120** (.100-.180)	516
	03-04	*	**< LOD**	**< LOD**	**.067** (.059-.076)	**.085** (.074-.095)	698
	05-06	**.034** (.032-.037)	**.034** (.031-.036)	**.049** (.044-.054)	**.072** (.060-.086)	**.094** (.078-.110)	1666
Race/ethnicity							
Mexican Americans	01-02	*	**< LOD**	**.060** (<LOD-.080)	**.090** (.080-.110)	**.120** (.090-.270)	227
	03-04	*	**< LOD**	**.052** (<LOD-.067)	**.074** (.067-.080)	**.100** (.075-.130)	265
	05-06	**.030** (.027-.033)	**.029** (.026-.031)	**.040** (.036-.045)	**.057** (.050-.069)	**.079** (.062-.097)	777
Non-Hispanic blacks	01-02	*	**< LOD**	**.050** (<LOD-.070)	**.100** (.080-.110)	**.110** (.100-.160)	197
	03-04	*	**< LOD**	**< LOD**	**.065** (.055-.078)	**.084** (.068-.100)	301
	05-06	**.035** (.033-.038)	**.034** (.031-.038)	**.049** (.045-.054)	**.073** (.064-.077)	**.088** (.078-.100)	824
Non-Hispanic whites	01-02	*	**< LOD**	**.070** (.050-.090)	**.110** (.080-.140)	**.140** (.110-.180)	483
	03-04	*	**< LOD**	**.052** (<LOD-.058)	**.073** (.066-.082)	**.090** (.081-.100)	694
	05-06	**.039** (.035-.043)	**.037** (.033-.041)	**.056** (.049-.064)	**.087** (.074-.100)	**.110** (.096-.130)	1319

Limit of detection (LOD, see Data Analysis section) for Survey years 01-02, 03-04, and 05-06 are 0.049, 0.049, and 0.024 respectively.
< LOD means less than the limit of detection, which may vary for some chemicals by year and by individual sample.
* Not calculated: proportion of results below limit of detection was too high to provide a valid result.

Biomonitoring Summary: **http://www.cdc.gov/biomonitoring/Xylenes_BiomonitoringSummary.html**

Adult Cigarette Smokers and Nonsmokers: Analysis of Select Chemicals in a Special Sample

Statement of need

The Family Smoking Prevention and Tobacco Control Act of 2009 gave the Food and Drug Administration regulatory authority over tobacco products. In Section 907(a), the Act states that the Secretary of Health and Human Services shall establish tobacco product standards. These product standards will include provisions for the testing of tobacco products. To determine the effectiveness of these product standards, surveillance systems need to be in place before the standards are enacted to determine their impact on exposure among people who continue to use tobacco products. NHANES is an ideal source of human samples for assessing smokers in multiple locations around the country. NHANES will provide a robust dataset for identifying changes in exposure of smokers that follow enactment of tobacco product standards.

Special Sample in NHANES

Beginning with the NHANES 2011-2012 survey period, a Special Sample was selected to allow measurement of certain groups of chemicals that are associated with tobacco smoke exposure. The Special Sample consisted of adults (defined as ages 20 years and older) in the representative sample for that chemical group as well as all adults who reported that they were currently cigarette smokers. Adult cigarette smokers were included if they answered "Yes" to the following question: "Have you smoked at least 100 cigarettes in your life?" and then, confirmed that they smoke every day (SMQ020=1 and SMQ040=1 in the Smoking-Cigarette Use questionnaire, SMQ_G, available at: http://www.cdc.gov/nchs/nhanes/nhanes2011-2012/SMQ_G.htm).

Special Sample in the *Updated Tables*

We categorized as smokers those participants with serum cotinine concentrations greater than 10 ng/mL. There were 4.17% (weighted) of the total sample without a serum cotinine concentration. For those participants, we used their responses to the Smoking-Cigarette Use (SMQ_G) questionnaire: "Have you smoked at least 100 cigarettes in your life?" (SMQ020=1), and then, confirmed that they smoke every day (SMQ040=1) or that they smoke some days (SMQ040=2). We excluded any adult who reported that they did not smoke cigarettes but used any of the following non-cigarette tobacco products: cigars; pipes; chewing tobacco; snuff; or nicotine patch, gum or other replacement product. This resulted in exclusion of 2.47% (weighted) from the cigarette smokers in the Special Sample for NHANES 2011-2012. The nonsmoker category was comprised of the remaining adults in the Special Sample who were not categorized as smokers of any tobacco products.

In the data tables, results of the chemical measurements are displayed separately for adult cigarette smokers and nonsmokers. Each data table displays geometric mean and selected percentiles by three categories: total; age group (20-49 years, 50 years and older), and gender (male, female). Racial/ethnic categories are not presented because the sample sizes were too small in one or more of the categories. Future *Updated Tables* will present data tables for additional chemical groups that were measured in the Special Sample.

Urinary Antimony

Geometric mean and selected percentiles of urine concentrations (in µg/L) for the U.S. adult population from the National Health and Nutrition Examination Survey by smoking status.

	Survey years	Geometric mean (95% conf. interval)	Selected percentiles (95% confidence interval) 50th	75th	90th	95th	Sample size
Cigarette Smokers							
Total	11-12	**.062** (.053-.072)	**.056** (.043-.071)	**.099** (.084-.115)	**.168** (.142-.194)	**.233** (.178-.301)	897
Age group							
20-49 years	11-12	**.066** (.059-.075)	**.062** (.051-.072)	**.109** (.091-.121)	**.175** (.149-.206)	**.239** (.194-.293)	537
50 years and older	11-12	*	**.046** (<LOD-.066)	**.090** (.063-.114)	**.156** (.110-.233)	**.233** (.134-.406)	360
Gender							
Males	11-12	**.066** (.055-.078)	**.059** (.043-.077)	**.110** (.089-.129)	**.169** (.148-.224)	**.270** (.180-.406)	539
Females	11-12	**.057** (.049-.067)	**.053** (<LOD-.066)	**.089** (.070-.114)	**.155** (.115-.194)	**.207** (.149-.264)	358
Nonsmokers							
Total	11-12	*	**.042** (<LOD-.048)	**.072** (.063-.081)	**.120** (.103-.140)	**.167** (.149-.208)	1332
Age group							
20-49 years	11-12	*	**.046** (<LOD-.052)	**.078** (.066-.091)	**.137** (.118-.156)	**.179** (.156-.268)	666
50 years and older	11-12	*	**< LOD**	**.063** (.054-.075)	**.103** (.091-.122)	**.149** (.117-.196)	666
Gender							
Males	11-12	*	**.048** (<LOD-.054)	**.081** (.069-.089)	**.135** (.103-.158)	**.185** (.149-.287)	631
Females	11-12	*	**< LOD**	**.064** (.057-.074)	**.116** (.094-.127)	**.157** (.125-.184)	701

Tobacco product users who did not smoke cigarettes were excluded. See Adult Cigarette Smokers and Nonsmokers: Analysis of Select Chemicals in a Special Sample.
Limit of detection (LOD, see Data Analysis section) for Survey year 11-12 is 0.041.
< LOD means less than the limit of detection, which may vary for some chemicals by year and by individual sample.
* Not calculated: proportion of results below limit of detection was too high to provide a valid result.

Urinary Antimony (creatinine corrected)

Geometric mean and selected percentiles of urine concentrations (in µg/g of creatinine) for the U.S. adult population from the National Health and Nutrition Examination Survey by smoking status.

	Survey years	Geometric mean (95% conf. interval)	Selected percentiles (95% confidence interval) 50th	75th	90th	95th	Sample size
Cigarette Smokers							
Total	11-12	*	**.063** (<LOD-.070)	**.101** (.093-.118)	**.171** (.141-.207)	**.242** (.181-.290)	897
Age group							
20-49 years	11-12	*	**.065** (<LOD-.071)	**.101** (.090-.117)	**.171** (.133-.207)	**.242** (.175-.306)	537
50 years and older	11-12	*	**< LOD**	**.097** (.076-.138)	**.171** (.138-.215)	**.256** (.168-.344)	360
Gender							
Males	11-12	*	**.058** (<LOD-.064)	**.096** (.083-.118)	**.171** (.134-.242)	**.261** (.171-.351)	539
Females	11-12	*	**< LOD**	**.107** (.094-.137)	**.171** (.141-.200)	**.207** (.161-.344)	358
Nonsmokers							
Total	11-12	*	**.055** (.050-.059)	**.088** (.075-.100)	**.149** (.126-.170)	**.214** (.175-.240)	1331
Age group							
20-49 years	11-12	*	**.055** (.048-.060)	**.088** (.071-.107)	**.161** (.126-.207)	**.224** (.175-.297)	665
50 years and older	11-12	*	**.056** (<LOD-.061)	**.088** (.074-.101)	**.132** (.118-.155)	**.183** (.152-.224)	666
Gender							
Males	11-12	*	**.047** (.040-.049)	**.066** (.061-.073)	**.108** (.089-.126)	**.151** (.125-.186)	630
Females	11-12	*	**.065** (<LOD-.071)	**.104** (.088-.116)	**.171** (.143-.207)	**.224** (.181-.284)	701

Tobacco product users who did not smoke cigarettes were excluded. See Adult Cigarette Smokers and Nonsmokers: Analysis of Select Chemicals in a Special Sample.
< LOD means less than the limit of detection for the urine levels not corrected for creatinine.
* Not calculated: proportion of results below limit of detection was too high to provide a valid result.

Urinary Total Arsenic

Geometric mean and selected percentiles of urine concentrations (in µg As/L) for the U.S. adult population from the National Health and Nutrition Examination Survey by smoking status.

	Survey years	Geometric mean (95% conf. interval)	Selected percentiles (95% confidence interval) 50th	75th	90th	95th	Sample size
Cigarette Smokers							
Total	11-12	**6.24** (5.04-7.72)	**5.68** (4.32-6.93)	**12.4** (9.40-17.2)	**30.5** (19.9-39.8)	**49.8** (33.2-111)	897
Age group							
20-49 years	11-12	**6.32** (5.10-7.83)	**5.80** (4.38-7.62)	**12.7** (9.76-16.8)	**26.8** (20.3-34.9)	**44.5** (32.0-82.1)	537
50 years and older	11-12	**6.09** (4.56-8.14)	**4.72** (3.96-6.40)	**12.0** (7.60-19.7)	**35.9** (15.1-121)	**80.5** (29.0-144)	360
Gender							
Males	11-12	**6.56** (5.18-8.32)	**5.71** (4.13-8.26)	**14.3** (9.48-19.9)	**33.2** (21.1-44.1)	**45.1** (39.8-91.1)	539
Females	11-12	**5.85** (4.71-7.27)	**5.51** (3.97-6.74)	**11.5** (7.58-15.9)	**26.2** (15.9-49.8)	**62.1** (22.4-211)	358
Nonsmokers							
Total	11-12	**7.35** (6.24-8.64)	**6.57** (5.34-7.99)	**14.1** (11.4-18.7)	**34.2** (25.9-42.2)	**55.2** (42.2-82.0)	1332
Age group							
20-49 years	11-12	**7.41** (6.29-8.72)	**6.59** (5.42-7.86)	**13.7** (11.2-18.6)	**35.7** (25.0-45.6)	**54.9** (46.3-83.2)	666
50 years and older	11-12	**7.28** (5.89-9.00)	**6.57** (5.05-8.86)	**14.4** (10.5-20.5)	**34.2** (21.1-50.6)	**55.8** (35.8-82.8)	666
Gender							
Males	11-12	**8.26** (6.65-10.3)	**7.43** (5.83-10.1)	**16.0** (11.9-21.2)	**34.2** (25.6-42.2)	**54.2** (39.0-82.8)	631
Females	11-12	**6.69** (5.73-7.80)	**5.75** (5.01-7.26)	**13.0** (10.2-17.5)	**32.8** (24.4-45.9)	**55.3** (44.5-84.3)	701

Tobacco product users who did not smoke cigarettes were excluded. See Adult Cigarette Smokers and Nonsmokers: Analysis of Select Chemicals in a Special Sample.
Limit of detection (LOD, see Data Analysis section) for Survey year 11-12 is 1.25.

Urinary Total Arsenic (creatinine corrected)

Geometric mean and selected percentiles of urine concentrations (in µg As/g of creatinine) for the U.S. adult population from the National Health and Nutrition Examination Survey by smoking status.

	Survey years	Geometric mean (95% conf. interval)	Selected percentiles (95% confidence interval) 50th	75th	90th	95th	Sample size
Cigarette Smokers							
Total	11-12	**6.80** (5.96-7.76)	**5.52** (4.70-6.84)	**10.6** (9.08-13.6)	**22.8** (19.1-30.8)	**43.6** (24.7-91.3)	897
Age group							
20-49 years	11-12	**6.47** (5.64-7.43)	**5.31** (4.42-6.87)	**10.2** (8.48-12.4)	**21.7** (15.2-29.5)	**38.6** (21.7-103)	537
50 years and older	11-12	**7.39** (5.99-9.12)	**5.85** (4.82-7.24)	**12.4** (8.78-19.5)	**26.1** (19.6-50.6)	**70.5** (20.4-98.0)	360
Gender							
Males	11-12	**6.34** (5.45-7.38)	**5.18** (4.63-6.45)	**10.3** (8.27-13.5)	**20.7** (15.6-26.5)	**30.7** (21.7-70.5)	539
Females	11-12	**7.43** (6.13-9.00)	**5.88** (4.42-7.48)	**10.9** (8.54-14.2)	**27.8** (16.4-58.2)	**65.0** (24.5-119)	358
Nonsmokers							
Total	11-12	**8.49** (7.33-9.83)	**7.17** (6.16-8.59)	**16.2** (12.9-20.3)	**33.7** (28.2-43.8)	**52.8** (40.5-71.6)	1331
Age group							
20-49 years	11-12	**7.96** (6.87-9.24)	**6.87** (5.54-8.50)	**15.2** (11.4-20.8)	**31.6** (25.8-39.4)	**46.5** (33.7-70.1)	665
50 years and older	11-12	**9.09** (7.29-11.3)	**7.57** (6.12-9.71)	**18.2** (12.8-24.6)	**37.5** (27.9-52.8)	**53.5** (37.5-94.6)	666
Gender							
Males	11-12	**7.20** (5.82-8.89)	**6.29** (5.01-8.07)	**13.9** (10.6-17.2)	**31.2** (20.2-41.9)	**48.7** (32.8-69.6)	630
Females	11-12	**9.69** (8.61-10.9)	**7.96** (6.87-9.31)	**19.1** (13.9-24.4)	**38.2** (28.7-48.6)	**63.6** (45.9-86.7)	701

Tobacco product users who did not smoke cigarettes were excluded. See Adult Cigarette Smokers and Nonsmokers: Analysis of Select Chemicals in a Special Sample.

Urinary Arsenic (V) acid

Geometric mean and selected percentiles of urine concentrations (in µg As/L) for the U.S. adult population from the National Health and Nutrition Examination Survey by smoking status.

	Survey years	Geometric mean (95% conf. interval)	Selected percentiles (95% confidence interval) 50th	75th	90th	95th	Sample size
Cigarette Smokers							
Total	11-12	*	**< LOD**	**< LOD**	**< LOD**	**< LOD**	892
Age group							
20-49 years	11-12	*	**< LOD**	**< LOD**	**< LOD**	**.870** (<LOD-2.11)	536
50 years and older	11-12	*	**< LOD**	**< LOD**	**< LOD**	**< LOD**	356
Gender							
Males	11-12	*	**< LOD**	**< LOD**	**< LOD**	**< LOD**	536
Females	11-12	*	**< LOD**	**< LOD**	**< LOD**	**< LOD**	356
Nonsmokers							
Total	11-12	*	**< LOD**	**< LOD**	**< LOD**	**< LOD**	1332
Age group							
20-49 years	11-12	*	**< LOD**	**< LOD**	**< LOD**	**< LOD**	666
50 years and older	11-12	*	**< LOD**	**< LOD**	**< LOD**	**< LOD**	666
Gender							
Males	11-12	*	**< LOD**	**< LOD**	**< LOD**	**.890** (<LOD-1.08)	631
Females	11-12	*	**< LOD**	**< LOD**	**< LOD**	**< LOD**	701

Tobacco product users who did not smoke cigarettes were excluded. See Adult Cigarette Smokers and Nonsmokers: Analysis of Select Chemicals in a Special Sample.
Limit of detection (LOD, see Data Analysis section) for Survey year 11-12 is 0.87.
< LOD means less than the limit of detection, which may vary for some chemicals by year and by individual sample.
* Not calculated: proportion of results below limit of detection was too high to provide a valid result.

Urinary Arsenic (V) acid (creatinine corrected)

Geometric mean and selected percentiles of urine concentrations (in µg As/g of creatinine) for the U.S. adult population from the National Health and Nutrition Examination Survey by smoking status.

	Survey years	Geometric mean (95% conf. interval)	Selected percentiles (95% confidence interval) 50th	75th	90th	95th	Sample size
Cigarette Smokers							
Total	11-12	*	**< LOD**	**< LOD**	**< LOD**	**< LOD**	892
Age group							
20-49 years	11-12	*	**< LOD**	**< LOD**	**< LOD**	**< LOD**	536
50 years and older	11-12	*	**< LOD**	**< LOD**	**< LOD**	**< LOD**	356
Gender							
Males	11-12	*	**< LOD**	**< LOD**	**< LOD**	**3.44** (<LOD-3.65)	536
Females	11-12	*	**< LOD**	**< LOD**	**< LOD**	**< LOD**	356
Nonsmokers							
Total	11-12	*	**< LOD**	**< LOD**	**< LOD**	**< LOD**	1331
Age group							
20-49 years	11-12	*	**< LOD**	**< LOD**	**< LOD**	**2.95** (<LOD-4.77)	665
50 years and older	11-12	*	**< LOD**	**< LOD**	**< LOD**	**< LOD**	666
Gender							
Males	11-12	*	**< LOD**	**< LOD**	**< LOD**	**< LOD**	630
Females	11-12	*	**< LOD**	**< LOD**	**< LOD**	**< LOD**	701

Tobacco product users who did not smoke cigarettes were excluded. See Adult Cigarette Smokers and Nonsmokers: Analysis of Select Chemicals in a Special Sample.
< LOD means less than the limit of detection for the urine levels not corrected for creatinine.
* Not calculated: proportion of results below limit of detection was too high to provide a valid result.

Urinary Arsenobetaine

Geometric mean and selected percentiles of urine concentrations (in µg As/L) for the U.S. adult population from the National Health and Nutrition Examination Survey by smoking status.

	Survey years	Geometric mean (95% conf. interval)	Selected percentiles (95% confidence interval) 50th	75th	90th	95th	Sample size
Cigarette Smokers							
Total	11-12	*	**< LOD**	**3.44** (1.87-4.77)	**14.6** (8.72-23.6)	**26.6** (17.7-75.0)	892
Age group							
20-49 years	11-12	*	**< LOD**	**2.82** (1.79-4.49)	**14.6** (7.50-24.2)	**25.9** (15.6-51.6)	536
50 years and older	11-12	*	**< LOD**	**4.18** (1.27-8.18)	**15.3** (7.70-46.5)	**46.5** (9.98-114)	356
Gender							
Males	11-12	*	**< LOD**	**3.56** (1.58-5.52)	**13.7** (8.77-22.6)	**25.9** (16.7-56.8)	536
Females	11-12	*	**< LOD**	**3.21** (1.87-5.33)	**14.9** (6.74-25.7)	**30.1** (11.9-138)	356
Nonsmokers							
Total	11-12	*	**< LOD**	**5.84** (4.37-7.42)	**18.7** (13.3-26.2)	**36.9** (24.0-59.6)	1332
Age group							
20-49 years	11-12	*	**< LOD**	**4.98** (3.19-6.54)	**18.7** (10.6-23.6)	**36.9** (24.1-53.1)	666
50 years and older	11-12	*	**1.55** (<LOD-2.34)	**7.21** (3.94-10.5)	**18.6** (11.6-35.2)	**38.8** (19.2-68.3)	666
Gender							
Males	11-12	*	**1.29** (<LOD-2.08)	**6.00** (3.83-8.40)	**19.4** (11.6-30.6)	**36.9** (23.3-63.3)	631
Females	11-12	*	**< LOD**	**5.81** (4.06-7.39)	**18.7** (13.1-23.6)	**36.9** (23.2-58.3)	701

Tobacco product users who did not smoke cigarettes were excluded. See Adult Cigarette Smokers and Nonsmokers: Analysis of Select Chemicals in a Special Sample.
Limit of detection (LOD, see Data Analysis section) for Survey year 11-12 is 1.19.
< LOD means less than the limit of detection, which may vary for some chemicals by year and by individual sample.
* Not calculated: proportion of results below limit of detection was too high to provide a valid result.

Urinary Arsenobetaine (creatinine corrected)

Geometric mean and selected percentiles of urine concentrations (in µg As/g of creatinine) for the U.S. adult population from the National Health and Nutrition Examination Survey by smoking status.

	Survey years	Geometric mean (95% conf. interval)	Selected percentiles (95% confidence interval) 50th	75th	90th	95th	Sample size
Cigarette Smokers							
Total	11-12	*	**< LOD**	**4.42** (3.36-5.38)	**13.1** (10.2-18.8)	**29.1** (16.5-65.5)	892
Age group							
20-49 years	11-12	*	**< LOD**	**4.42** (3.08-5.38)	**11.6** (6.68-21.5)	**26.8** (11.5-52.8)	536
50 years and older	11-12	*	**1.79** (<LOD-2.29)	**4.67** (2.85-9.20)	**15.4** (11.9-39.6)	**56.0** (13.0-82.1)	356
Gender							
Males	11-12	*	**1.31** (<LOD-1.59)	**4.42** (2.83-4.94)	**12.3** (6.67-13.4)	**18.0** (12.8-51.4)	536
Females	11-12	*	**< LOD**	**4.67** (2.90-8.27)	**16.9** (8.09-30.3)	**33.4** (16.5-82.1)	356
Nonsmokers							
Total	11-12	*	**< LOD**	**7.31** (5.06-10.0)	**21.7** (14.1-33.8)	**39.6** (27.7-46.8)	1331
Age group							
20-49 years	11-12	*	**< LOD**	**6.02** (4.00-10.0)	**16.7** (14.6-23.7)	**33.7** (21.7-42.6)	665
50 years and older	11-12	*	**< LOD**	**8.07** (4.79-13.2)	**26.1** (14.1-42.6)	**43.4** (26.1-76.9)	666
Gender							
Males	11-12	*	**< LOD**	**4.96** (3.23-9.10)	**19.9** (10.2-30.1)	**35.7** (20.7-52.1)	630
Females	11-12	*	**< LOD**	**8.55** (6.48-11.9)	**23.9** (16.6-36.9)	**41.4** (29.3-66.4)	701

Tobacco product users who did not smoke cigarettes were excluded. See Adult Cigarette Smokers and Nonsmokers: Analysis of Select Chemicals in a Special Sample.
< LOD means less than the limit of detection for the urine levels not corrected for creatinine.
* Not calculated: proportion of results below limit of detection was too high to provide a valid result.

Urinary Arsenocholine

Geometric mean and selected percentiles of urine concentrations (in µg As/L) for the U.S. adult population from the National Health and Nutrition Examination Survey by smoking status.

	Survey years	Geometric mean (95% conf. interval)	Selected percentiles (95% confidence interval) 50th	75th	90th	95th	Sample size
Cigarette Smokers							
Total	11-12	*	**< LOD**	**< LOD**	**< LOD**	**< LOD**	892
Age group							
20-49 years	11-12	*	**< LOD**	**< LOD**	**< LOD**	**< LOD**	536
50 years and older	11-12	*	**< LOD**	**< LOD**	**< LOD**	**< LOD**	356
Gender							
Males	11-12	*	**< LOD**	**< LOD**	**< LOD**	**.550** (<LOD-4.53)	536
Females	11-12	*	**< LOD**	**< LOD**	**< LOD**	**< LOD**	356
Nonsmokers							
Total	11-12	*	**< LOD**	**< LOD**	**< LOD**	**< LOD**	1332
Age group							
20-49 years	11-12	*	**< LOD**	**< LOD**	**< LOD**	**< LOD**	666
50 years and older	11-12	*	**< LOD**	**< LOD**	**< LOD**	**< LOD**	666
Gender							
Males	11-12	*	**< LOD**	**< LOD**	**< LOD**	**< LOD**	631
Females	11-12	*	**< LOD**	**< LOD**	**< LOD**	**< LOD**	701

Tobacco product users who did not smoke cigarettes were excluded. See Adult Cigarette Smokers and Nonsmokers: Analysis of Select Chemicals in a Special Sample.
Limit of detection (LOD, see Data Analysis section) for Survey year 11-12 is 0.28.
< LOD means less than the limit of detection, which may vary for some chemicals by year and by individual sample.
* Not calculated: proportion of results below limit of detection was too high to provide a valid result.

Urinary Arsenocholine (creatinine corrected)

Geometric mean and selected percentiles of urine concentrations (in µg As/g of creatinine) for the U.S. adult population from the National Health and Nutrition Examination Survey by smoking status.

	Survey years	Geometric mean (95% conf. interval)	Selected percentiles (95% confidence interval) 50th	75th	90th	95th	Sample size
Cigarette Smokers							
Total	11-12	*	**< LOD**	**< LOD**	**< LOD**	**< LOD**	892
Age group							
20-49 years	11-12	*	**< LOD**	**< LOD**	**< LOD**	**< LOD**	536
50 years and older	11-12	*	**< LOD**	**< LOD**	**< LOD**	**< LOD**	356
Gender							
Males	11-12	*	**< LOD**	**< LOD**	**< LOD**	**< LOD**	536
Females	11-12	*	**< LOD**	**< LOD**	**< LOD**	**< LOD**	356
Nonsmokers							
Total	11-12	*	**< LOD**	**< LOD**	**< LOD**	**< LOD**	1331
Age group							
20-49 years	11-12	*	**< LOD**	**< LOD**	**< LOD**	**< LOD**	665
50 years and older	11-12	*	**< LOD**	**< LOD**	**< LOD**	**< LOD**	666
Gender							
Males	11-12	*	**< LOD**	**< LOD**	**< LOD**	**.625** (<LOD-.769)	630
Females	11-12	*	**< LOD**	**< LOD**	**< LOD**	**< LOD**	701

Tobacco product users who did not smoke cigarettes were excluded. See Adult Cigarette Smokers and Nonsmokers: Analysis of Select Chemicals in a Special Sample.
< LOD means less than the limit of detection for the urine levels not corrected for creatinine.
* Not calculated: proportion of results below limit of detection was too high to provide a valid result.

Urinary Arsenous (III) acid

Geometric mean and selected percentiles of urine concentrations (in µg As/L) for the U.S. adult population from the National Health and Nutrition Examination Survey by smoking status.

	Survey years	Geometric mean (95% conf. interval)	Selected percentiles (95% confidence interval) 50th	75th	90th	95th	Sample size
Cigarette Smokers							
Total	11-12	*	**< LOD**	**< LOD**	**.780** (.640-1.01)	**1.08** (.810-1.48)	892
Age group							
20-49 years	11-12	*	**< LOD**	**.520** (<LOD-.690)	**.970** (.680-1.27)	**1.29** (1.00-1.60)	536
50 years and older	11-12	*	**< LOD**	**< LOD**	**.520** (<LOD-.790)	**.670** (.530-.790)	356
Gender							
Males	11-12	*	**< LOD**	**.530** (<LOD-.690)	**.970** (.690-1.31)	**1.39** (.990-1.78)	536
Females	11-12	*	**< LOD**	**< LOD**	**.560** (<LOD-.720)	**.690** (.530-1.08)	356
Nonsmokers							
Total	11-12	*	**< LOD**	**.490** (<LOD-.580)	**.820** (.740-.920)	**1.07** (.930-1.21)	1332
Age group							
20-49 years	11-12	*	**< LOD**	**.580** (.490-.710)	**.890** (.810-1.08)	**1.27** (1.05-1.56)	666
50 years and older	11-12	*	**< LOD**	**< LOD**	**.700** (.550-.830)	**.920** (.700-1.12)	666
Gender							
Males	11-12	*	**< LOD**	**.590** (.500-.700)	**.960** (.840-1.11)	**1.18** (1.08-1.47)	631
Females	11-12	*	**< LOD**	**< LOD**	**.740** (.560-.810)	**.860** (.800-.990)	701

Tobacco product users who did not smoke cigarettes were excluded. See Adult Cigarette Smokers and Nonsmokers: Analysis of Select Chemicals in a Special Sample.
Limit of detection (LOD, see Data Analysis section) for Survey year 11-12 is 0.48.
< LOD means less than the limit of detection, which may vary for some chemicals by year and by individual sample.
* Not calculated: proportion of results below limit of detection was too high to provide a valid result.

Urinary Arsenous (III) acid (creatinine corrected)

Geometric mean and selected percentiles of urine concentrations (in µg As/g of creatinine) for the U.S. adult population from the National Health and Nutrition Examination Survey by smoking status.

	Survey years	Geometric mean (95% conf. interval)	Selected percentiles (95% confidence interval) 50th	75th	90th	95th	Sample size
Cigarette Smokers							
Total	11-12	*	**< LOD**	**.762** (<LOD-.895)	**1.37** (1.00-1.79)	**1.89** (1.42-2.13)	892
Age group							
20-49 years	11-12	*	**< LOD**	**.756** (.587-.946)	**1.42** (1.00-1.89)	**2.00** (1.36-2.83)	536
50 years and older	11-12	*	**< LOD**	**< LOD**	**1.31** (.919-1.55)	**1.55** (1.31-2.13)	356
Gender							
Males	11-12	*	**< LOD**	**.723** (.567-.842)	**1.35** (.911-1.79)	**1.89** (1.31-2.83)	536
Females	11-12	*	**< LOD**	**< LOD**	**1.37** (1.00-1.70)	**1.74** (1.37-2.13)	356
Nonsmokers							
Total	11-12	*	**< LOD**	**< LOD**	**1.36** (1.21-1.51)	**1.81** (1.55-2.00)	1331
Age group							
20-49 years	11-12	*	**< LOD**	**.810** (<LOD-.919)	**1.48** (1.17-1.81)	**1.95** (1.61-2.43)	665
50 years and older	11-12	*	**< LOD**	**< LOD**	**1.26** (<LOD-1.42)	**1.67** (1.36-2.00)	666
Gender							
Males	11-12	*	**< LOD**	**.654** (<LOD-.708)	**1.01** (.850-1.17)	**1.48** (1.17-1.67)	630
Females	11-12	*	**< LOD**	**< LOD**	**1.51** (<LOD-1.81)	**2.13** (1.64-2.62)	701

Tobacco product users who did not smoke cigarettes were excluded. See Adult Cigarette Smokers and Nonsmokers: Analysis of Select Chemicals in a Special Sample.
< LOD means less than the limit of detection for the urine levels not corrected for creatinine.
* Not calculated: proportion of results below limit of detection was too high to provide a valid result.

Urinary Dimethylarsinic acid

Metabolite of Arsenic

Geometric mean and selected percentiles of urine concentrations (in µg As/L) for the U.S. adult population from the National Health and Nutrition Examination Survey by smoking status.

	Survey years	Geometric mean (95% conf. interval)	Selected percentiles (95% confidence interval) 50th	75th	90th	95th	Sample size
Cigarette Smokers							
Total	11-12	**3.27** (2.92-3.67)	**2.93** (2.57-3.30)	**5.83** (4.57-7.23)	**9.97** (7.89-13.4)	**14.9** (10.5-23.3)	892
Age group							
20-49 years	11-12	**3.26** (2.86-3.73)	**3.12** (2.62-3.84)	**5.84** (4.70-7.23)	**9.11** (7.23-10.9)	**12.4** (9.35-15.6)	536
50 years and older	11-12	**3.29** (2.77-3.91)	**2.60** (2.44-3.05)	**5.67** (3.97-9.85)	**11.8** (6.59-28.8)	**20.2** (9.97-30.1)	356
Gender							
Males	11-12	**3.45** (3.07-3.87)	**3.05** (2.64-3.75)	**6.21** (4.68-8.84)	**10.9** (9.35-14.9)	**16.7** (11.5-30.1)	536
Females	11-12	**3.07** (2.67-3.53)	**2.76** (2.34-3.29)	**4.85** (4.01-6.73)	**9.11** (6.93-11.8)	**11.8** (8.92-20.2)	356
Nonsmokers							
Total	11-12	**3.57** (3.27-3.90)	**3.44** (3.00-3.87)	**5.96** (5.27-6.85)	**10.1** (8.64-12.1)	**14.6** (12.2-17.2)	1332
Age group							
20-49 years	11-12	**3.74** (3.34-4.19)	**3.58** (3.19-4.14)	**6.78** (5.75-7.68)	**10.8** (9.32-12.7)	**16.2** (12.3-19.2)	666
50 years and older	11-12	**3.40** (3.09-3.75)	**3.15** (2.87-3.66)	**5.50** (4.52-6.61)	**9.02** (7.49-11.1)	**14.0** (9.93-17.8)	666
Gender							
Males	11-12	**4.04** (3.60-4.52)	**3.93** (3.34-4.67)	**6.54** (5.50-7.84)	**11.3** (8.90-13.7)	**16.2** (13.2-17.8)	631
Females	11-12	**3.24** (2.94-3.57)	**2.97** (2.61-3.44)	**5.52** (4.61-6.24)	**9.52** (8.10-10.9)	**14.0** (10.7-17.5)	701

Tobacco product users who did not smoke cigarettes were excluded. See Adult Cigarette Smokers and Nonsmokers: Analysis of Select Chemicals in a Special Sample.
Limit of detection (LOD, see Data Analysis section) for Survey year 11-12 is 1.8.

Urinary Dimethylarsinic acid (creatinine corrected)

Metabolite of Arsenic

Geometric mean and selected percentiles of urine concentrations (in µg As/g of creatinine) for the U.S. adult population from the National Health and Nutrition Examination Survey by smoking status.

	Survey years	Geometric mean (95% conf. interval)	Selected percentiles (95% confidence interval) 50th	75th	90th	95th	Sample size
Cigarette Smokers							
Total	11-12	**3.56** (3.32-3.81)	**3.33** (3.10-3.70)	**5.77** (5.08-6.35)	**8.47** (7.45-10.1)	**10.6** (9.38-12.7)	892
Age group							
20-49 years	11-12	**3.34** (3.05-3.67)	**3.18** (2.77-3.67)	**5.25** (4.45-6.05)	**7.47** (6.33-9.17)	**9.49** (7.47-12.6)	536
50 years and older	11-12	**3.95** (3.48-4.48)	**3.74** (3.14-4.23)	**6.83** (4.88-7.94)	**10.1** (7.00-20.2)	**13.0** (10.1-23.8)	356
Gender							
Males	11-12	**3.34** (3.12-3.56)	**3.12** (2.82-3.34)	**5.29** (4.61-6.33)	**8.66** (7.30-10.1)	**10.6** (8.55-13.0)	536
Females	11-12	**3.86** (3.41-4.37)	**3.74** (3.20-4.27)	**6.04** (4.78-7.00)	**8.10** (6.83-9.58)	**11.7** (8.10-20.7)	356
Nonsmokers							
Total	11-12	**4.13** (3.89-4.38)	**3.88** (3.58-4.20)	**6.35** (5.63-7.32)	**10.7** (9.66-12.2)	**14.8** (12.8-16.2)	1331
Age group							
20-49 years	11-12	**4.02** (3.74-4.31)	**3.91** (3.50-4.30)	**6.52** (5.77-7.38)	**10.6** (9.42-12.4)	**14.1** (11.9-15.9)	665
50 years and older	11-12	**4.25** (3.86-4.68)	**3.85** (3.46-4.39)	**6.08** (5.29-7.47)	**11.3** (9.37-12.8)	**15.4** (11.9-19.7)	666
Gender							
Males	11-12	**3.51** (3.18-3.89)	**3.31** (3.03-3.74)	**5.31** (4.51-6.22)	**8.70** (7.12-10.0)	**12.8** (9.37-15.8)	630
Females	11-12	**4.69** (4.43-4.97)	**4.54** (4.23-4.70)	**7.61** (7.00-8.60)	**11.9** (10.5-14.0)	**15.9** (14.0-17.3)	701

Tobacco product users who did not smoke cigarettes were excluded. See Adult Cigarette Smokers and Nonsmokers: Analysis of Select Chemicals in a Special Sample.

Urinary Monomethylarsonic acid

Metabolite of Arsenic

Geometric mean and selected percentiles of urine concentrations (in µg As/L) for the U.S. adult population from the National Health and Nutrition Examination Survey by smoking status.

	Survey years	Geometric mean (95% conf. interval)	Selected percentiles (95% confidence interval) 50th	75th	90th	95th	Sample size
Cigarette Smokers							
Total	11-12	*	**< LOD**	**< LOD**	**1.42** (1.14-1.82)	**2.02** (1.50-2.18)	892
Age group							
20-49 years	11-12	*	**< LOD**	**.920** (<LOD-1.07)	**1.61** (1.29-2.02)	**2.12** (1.56-2.38)	536
50 years and older	11-12	*	**< LOD**	**< LOD**	**1.12** (.950-1.44)	**1.45** (1.12-1.88)	356
Gender							
Males	11-12	*	**< LOD**	**.960** (<LOD-1.14)	**1.67** (1.38-2.12)	**2.13** (1.73-2.40)	536
Females	11-12	*	**< LOD**	**< LOD**	**1.11** (1.01-1.38)	**1.52** (1.11-2.02)	356
Nonsmokers							
Total	11-12	*	**< LOD**	**< LOD**	**1.36** (1.18-1.57)	**1.85** (1.58-2.07)	1332
Age group							
20-49 years	11-12	*	**< LOD**	**.950** (<LOD-1.09)	**1.58** (1.30-1.88)	**2.04** (1.85-2.48)	666
50 years and older	11-12	*	**< LOD**	**< LOD**	**1.13** (.970-1.41)	**1.53** (1.28-1.79)	666
Gender							
Males	11-12	*	**< LOD**	**1.00** (<LOD-1.25)	**1.60** (1.29-1.89)	**2.07** (1.85-2.56)	631
Females	11-12	*	**< LOD**	**< LOD**	**1.15** (.990-1.42)	**1.55** (1.42-1.83)	701

Tobacco product users who did not smoke cigarettes were excluded. See Adult Cigarette Smokers and Nonsmokers: Analysis of Select Chemicals in a Special Sample.
Limit of detection (LOD, see Data Analysis section) for Survey year 11-12 is 0.89.
< LOD means less than the limit of detection, which may vary for some chemicals by year and by individual sample.
* Not calculated: proportion of results below limit of detection was too high to provide a valid result.

Urinary Monomethylarsonic acid (creatinine corrected)

Metabolite of Arsenic

Geometric mean and selected percentiles of urine concentrations (in µg As/g of creatinine) for the U.S. adult population from the National Health and Nutrition Examination Survey by smoking status.

	Survey years	Geometric mean (95% conf. interval)	Selected percentiles (95% confidence interval) 50th	75th	90th	95th	Sample size
Cigarette Smokers							
Total	11-12	*	**< LOD**	**< LOD**	**2.42** (2.02-2.89)	**3.50** (2.63-3.71)	892
Age group							
20-49 years	11-12	*	**< LOD**	**1.26** (<LOD-1.54)	**2.52** (1.75-3.32)	**3.71** (2.45-4.20)	536
50 years and older	11-12	*	**< LOD**	**< LOD**	**2.17** (1.91-2.63)	**2.92** (2.42-3.50)	356
Gender							
Males	11-12	*	**< LOD**	**1.21** (<LOD-1.37)	**2.17** (1.47-2.89)	**3.50** (2.17-3.71)	536
Females	11-12	*	**< LOD**	**< LOD**	**2.42** (2.10-2.92)	**3.15** (2.42-3.94)	356
Nonsmokers							
Total	11-12	*	**< LOD**	**< LOD**	**2.25** (1.95-2.52)	**2.74** (2.42-3.50)	1331
Age group							
20-49 years	11-12	*	**< LOD**	**1.43** (<LOD-1.60)	**2.33** (1.91-2.74)	**3.15** (2.52-3.94)	665
50 years and older	11-12	*	**< LOD**	**< LOD**	**2.25** (1.85-2.52)	**2.63** (2.33-3.32)	666
Gender							
Males	11-12	*	**< LOD**	**1.07** (<LOD-1.17)	**1.68** (1.43-1.80)	**2.13** (1.80-2.42)	630
Females	11-12	*	**< LOD**	**< LOD**	**2.63** (2.33-2.86)	**3.50** (2.69-4.85)	701

Tobacco product users who did not smoke cigarettes were excluded. See Adult Cigarette Smokers and Nonsmokers: Analysis of Select Chemicals in a Special Sample.
< LOD means less than the limit of detection for the urine levels not corrected for creatinine.
* Not calculated: proportion of results below limit of detection was too high to provide a valid result.

Urinary Trimethylarsine oxide

Geometric mean and selected percentiles of urine concentrations (in µg As/L) for the U.S. adult population from the National Health and Nutrition Examination Survey by smoking status.

	Survey years	Geometric mean (95% conf. interval)	Selected percentiles (95% confidence interval) 50th	75th	90th	95th	Sample size
Cigarette Smokers							
Total	11-12	*	**< LOD**	**< LOD**	**< LOD**	**< LOD**	892
Age group							
20-49 years	11-12	*	**< LOD**	**< LOD**	**< LOD**	**< LOD**	536
50 years and older	11-12	*	**< LOD**	**< LOD**	**< LOD**	**< LOD**	356
Gender							
Males	11-12	*	**< LOD**	**< LOD**	**< LOD**	**< LOD**	536
Females	11-12	*	**< LOD**	**< LOD**	**< LOD**	**< LOD**	356
Nonsmokers							
Total	11-12	*	**< LOD**	**< LOD**	**< LOD**	**< LOD**	1332
Age group							
20-49 years	11-12	*	**< LOD**	**< LOD**	**< LOD**	**< LOD**	666
50 years and older	11-12	*	**< LOD**	**< LOD**	**< LOD**	**< LOD**	666
Gender							
Males	11-12	*	**< LOD**	**< LOD**	**< LOD**	**< LOD**	631
Females	11-12	*	**< LOD**	**< LOD**	**< LOD**	**< LOD**	701

Tobacco product users who did not smoke cigarettes were excluded. See Adult Cigarette Smokers and Nonsmokers: Analysis of Select Chemicals in a Special Sample.
Limit of detection (LOD, see Data Analysis section) for Survey year 11-12 is 0.25.
< LOD means less than the limit of detection, which may vary for some chemicals by year and by individual sample.
* Not calculated: proportion of results below limit of detection was too high to provide a valid result.

Urinary Trimethylarsine oxide (creatinine corrected)

Geometric mean and selected percentiles of urine concentrations (in µg As/g of creatinine) for the U.S. adult population from the National Health and Nutrition Examination Survey by smoking status.

	Survey years	Geometric mean (95% conf. interval)	Selected percentiles (95% confidence interval) 50th	75th	90th	95th	Sample size
Cigarette Smokers							
Total	11-12	*	**< LOD**	**< LOD**	**< LOD**	**< LOD**	892
Age group							
20-49 years	11-12	*	**< LOD**	**< LOD**	**< LOD**	**< LOD**	536
50 years and older	11-12	*	**< LOD**	**< LOD**	**< LOD**	**< LOD**	356
Gender							
Males	11-12	*	**< LOD**	**< LOD**	**< LOD**	**< LOD**	536
Females	11-12	*	**< LOD**	**< LOD**	**< LOD**	**< LOD**	356
Nonsmokers							
Total	11-12	*	**< LOD**	**< LOD**	**< LOD**	**< LOD**	1331
Age group							
20-49 years	11-12	*	**< LOD**	**< LOD**	**< LOD**	**< LOD**	665
50 years and older	11-12	*	**< LOD**	**< LOD**	**< LOD**	**< LOD**	666
Gender							
Males	11-12	*	**< LOD**	**< LOD**	**< LOD**	**< LOD**	630
Females	11-12	*	**< LOD**	**< LOD**	**< LOD**	**< LOD**	701

Tobacco product users who did not smoke cigarettes were excluded. See Adult Cigarette Smokers and Nonsmokers: Analysis of Select Chemicals in a Special Sample.
< LOD means less than the limit of detection for the urine levels not corrected for creatinine.
* Not calculated: proportion of results below limit of detection was too high to provide a valid result.

Urinary Barium

Geometric mean and selected percentiles of urine concentrations (in µg/L) for the U.S. adult population from the National Health and Nutrition Examination Survey by smoking status.

	Survey years	Geometric mean (95% conf. interval)	Selected percentiles (95% confidence interval) 50th	75th	90th	95th	Sample size
Cigarette Smokers							
Total	11-12	**1.17** (1.06-1.29)	**1.28** (1.08-1.40)	**2.36** (1.98-2.77)	**3.78** (3.28-4.25)	**5.19** (3.98-6.20)	897
Age group							
20-49 years	11-12	**1.24** (1.13-1.37)	**1.35** (1.04-1.54)	**2.55** (1.98-3.22)	**3.88** (3.37-4.26)	**4.97** (3.98-6.52)	537
50 years and older	11-12	**1.06** (.901-1.25)	**1.26** (.930-1.41)	**2.20** (1.89-2.43)	**3.41** (2.65-5.19)	**5.34** (3.49-10.5)	360
Gender							
Males	11-12	**1.27** (1.07-1.49)	**1.34** (.990-1.71)	**2.51** (1.89-3.25)	**3.92** (3.28-5.49)	**5.80** (3.96-9.25)	539
Females	11-12	**1.06** (.949-1.18)	**1.11** (.930-1.39)	**2.33** (1.89-2.55)	**3.28** (2.55-3.88)	**4.35** (3.78-5.52)	358
Nonsmokers							
Total	11-12	**1.12** (1.03-1.22)	**1.18** (1.06-1.28)	**2.20** (1.98-2.46)	**3.85** (3.45-4.29)	**5.13** (4.59-5.57)	1332
Age group							
20-49 years	11-12	**1.16** (1.04-1.28)	**1.21** (1.08-1.40)	**2.24** (1.94-2.60)	**3.74** (3.26-4.31)	**4.68** (4.34-5.52)	666
50 years and older	11-12	**1.08** (.961-1.21)	**1.09** (.890-1.29)	**2.17** (1.77-2.53)	**3.93** (3.01-5.13)	**5.46** (4.62-7.13)	666
Gender							
Males	11-12	**1.23** (1.08-1.41)	**1.28** (1.14-1.42)	**2.25** (1.94-2.71)	**3.93** (3.45-4.40)	**5.96** (4.40-7.62)	631
Females	11-12	**1.03** (.920-1.16)	**1.06** (.910-1.19)	**2.16** (1.61-2.57)	**3.63** (3.20-4.05)	**5.05** (3.96-5.52)	701

Tobacco product users who did not smoke cigarettes were excluded. See Adult Cigarette Smokers and Nonsmokers: Analysis of Select Chemicals in a Special Sample.
Limit of detection (LOD, see Data Analysis section) for Survey year 11-12 is 0.1.

Urinary Barium (creatinine corrected)

Geometric mean and selected percentiles of urine concentrations (in µg/g of creatinine) for the U.S. adult population from the National Health and Nutrition Examination Survey by smoking status.

	Survey years	Geometric mean (95% conf. interval)	Selected percentiles (95% confidence interval) 50th	75th	90th	95th	Sample size
Cigarette Smokers							
Total	11-12	**1.28** (1.11-1.47)	**1.32** (1.15-1.48)	**2.14** (1.86-2.81)	**4.17** (3.00-5.76)	**6.20** (4.30-7.36)	897
Age group							
20-49 years	11-12	**1.27** (1.08-1.49)	**1.28** (1.04-1.43)	**2.22** (1.70-2.92)	**4.30** (2.92-5.76)	**5.76** (4.13-7.22)	537
50 years and older	11-12	**1.29** (1.12-1.48)	**1.42** (1.30-1.55)	**2.00** (1.89-2.78)	**3.89** (3.12-6.66)	**6.66** (3.43-7.36)	360
Gender							
Males	11-12	**1.22** (1.05-1.42)	**1.30** (1.06-1.47)	**2.03** (1.78-2.71)	**3.73** (2.71-5.76)	**5.76** (3.46-8.39)	539
Females	11-12	**1.34** (1.09-1.66)	**1.35** (1.15-1.69)	**2.19** (1.74-3.62)	**4.81** (2.89-6.66)	**6.41** (3.89-10.5)	358
Nonsmokers							
Total	11-12	**1.29** (1.18-1.41)	**1.30** (1.16-1.43)	**2.28** (1.98-2.70)	**3.83** (3.49-4.26)	**5.89** (4.37-8.32)	1331
Age group							
20-49 years	11-12	**1.24** (1.09-1.41)	**1.27** (1.10-1.44)	**2.04** (1.75-2.40)	**3.57** (3.06-4.12)	**5.17** (3.85-6.84)	665
50 years and older	11-12	**1.35** (1.21-1.50)	**1.35** (1.17-1.54)	**2.64** (2.15-2.96)	**4.23** (3.48-5.11)	**6.83** (4.77-9.68)	666
Gender							
Males	11-12	**1.07** (.958-1.21)	**1.04** (.893-1.19)	**1.86** (1.64-2.10)	**3.20** (2.71-3.66)	**4.26** (3.48-5.89)	630
Females	11-12	**1.50** (1.35-1.65)	**1.46** (1.36-1.55)	**2.69** (2.27-3.09)	**4.71** (3.56-5.68)	**6.84** (5.11-9.00)	701

Tobacco product users who did not smoke cigarettes were excluded. See Adult Cigarette Smokers and Nonsmokers: Analysis of Select Chemicals in a Special Sample.

Urinary Cadmium

Geometric mean and selected percentiles of urine concentrations (in µg/L) for the U.S. adult population from the National Health and Nutrition Examination Survey by smoking status.

	Survey years	Geometric mean (95% conf. interval)	Selected percentiles (95% confidence interval) 50th	75th	90th	95th	Sample size
Cigarette Smokers							
Total	11-12	**.308** (.265-.358)	**.346** (.282-.419)	**.670** (.559-.783)	**1.29** (1.03-1.58)	**1.85** (1.56-2.33)	897
Age group							
20-49 years	11-12	**.221** (.184-.266)	**.250** (.190-.298)	**.521** (.391-.607)	**.840** (.684-1.10)	**1.27** (1.01-1.49)	537
50 years and older	11-12	**.533** (.470-.606)	**.540** (.450-.629)	**1.02** (.783-1.33)	**1.85** (1.52-2.53)	**3.50** (2.07-4.26)	360
Gender							
Males	11-12	**.312** (.264-.369)	**.362** (.296-.421)	**.684** (.552-.834)	**1.31** (1.02-1.69)	**1.69** (1.27-2.09)	539
Females	11-12	**.303** (.246-.373)	**.323** (.259-.443)	**.643** (.523-.722)	**1.25** (.783-1.98)	**2.05** (1.24-2.50)	358
Nonsmokers							
Total	11-12	**.172** (.157-.188)	**.175** (.161-.189)	**.308** (.279-.348)	**.607** (.518-.674)	**.834** (.732-1.02)	1332
Age group							
20-49 years	11-12	**.128** (.113-.146)	**.132** (.111-.150)	**.231** (.185-.278)	**.458** (.338-.578)	**.630** (.543-.795)	666
50 years and older	11-12	**.235** (.212-.261)	**.228** (.217-.258)	**.392** (.330-.456)	**.759** (.607-.872)	**1.05** (.834-1.52)	666
Gender							
Males	11-12	**.165** (.150-.182)	**.169** (.156-.185)	**.280** (.245-.330)	**.525** (.412-.630)	**.822** (.595-.873)	631
Females	11-12	**.178** (.158-.200)	**.183** (.148-.206)	**.334** (.294-.392)	**.640** (.575-.765)	**.923** (.780-1.33)	701

Tobacco product users who did not smoke cigarettes were excluded. See Adult Cigarette Smokers and Nonsmokers: Analysis of Select Chemicals in a Special Sample.
Limit of detection (LOD, see Data Analysis section) for Survey year 11-12 is 0.056.

Urinary Cadmium (creatinine corrected)

Geometric mean and selected percentiles of urine concentrations (in µg/g of creatinine) for the U.S. adult population from the National Health and Nutrition Examination Survey by smoking status.

	Survey years	Geometric mean (95% conf. interval)	Selected percentiles (95% confidence interval) 50th	75th	90th	95th	Sample size
Cigarette Smokers							
Total	11-12	**.336** (.295-.383)	**.350** (.307-.416)	**.631** (.551-.735)	**1.13** (1.00-1.28)	**1.48** (1.30-1.72)	897
Age group							
20-49 years	11-12	**.227** (.199-.258)	**.235** (.211-.258)	**.416** (.342-.460)	**.631** (.551-.724)	**.935** (.727-1.14)	537
50 years and older	11-12	**.647** (.581-.720)	**.594** (.524-.746)	**1.05** (.850-1.27)	**1.68** (1.38-1.86)	**2.08** (1.72-2.24)	360
Gender							
Males	11-12	**.302** (.254-.359)	**.333** (.262-.413)	**.565** (.470-.675)	**.932** (.706-1.19)	**1.26** (.907-1.72)	539
Females	11-12	**.385** (.332-.446)	**.367** (.327-.466)	**.735** (.594-.873)	**1.34** (1.06-1.68)	**1.72** (1.38-2.45)	358
Nonsmokers							
Total	11-12	**.199** (.183-.216)	**.188** (.177-.211)	**.352** (.317-.394)	**.562** (.503-.633)	**.845** (.622-1.01)	1331
Age group							
20-49 years	11-12	**.138** (.124-.154)	**.133** (.121-.150)	**.222** (.195-.268)	**.384** (.308-.470)	**.538** (.421-.741)	665
50 years and older	11-12	**.294** (.271-.318)	**.296** (.258-.328)	**.459** (.424-.521)	**.713** (.583-.917)	**1.03** (.870-1.16)	666
Gender							
Males	11-12	**.144** (.127-.162)	**.139** (.124-.157)	**.228** (.188-.289)	**.406** (.324-.524)	**.542** (.463-.678)	630
Females	11-12	**.257** (.233-.284)	**.270** (.241-.286)	**.442** (.396-.473)	**.660** (.563-.871)	**1.00** (.860-1.16)	701

Tobacco product users who did not smoke cigarettes were excluded. See Adult Cigarette Smokers and Nonsmokers: Analysis of Select Chemicals in a Special Sample.

Urinary Cesium

Geometric mean and selected percentiles of urine concentrations (in µg/L) for the U.S. adult population from the National Health and Nutrition Examination Survey by smoking status.

	Survey years	Geometric mean (95% conf. interval)	Selected percentiles (95% confidence interval) 50th	75th	90th	95th	Sample size
Cigarette Smokers							
Total	11-12	**3.75** (3.47-4.06)	**4.04** (3.60-4.52)	**6.38** (5.94-6.68)	**8.77** (7.81-9.96)	**11.1** (9.24-11.9)	897
Age group							
20-49 years	11-12	**3.71** (3.41-4.03)	**4.14** (3.61-4.55)	**6.41** (5.70-7.00)	**8.56** (7.54-10.5)	**10.8** (7.81-11.9)	537
50 years and older	11-12	**3.82** (3.40-4.30)	**4.03** (3.39-4.53)	**6.37** (5.60-6.97)	**9.33** (7.92-10.8)	**11.2** (9.11-11.4)	360
Gender							
Males	11-12	**3.90** (3.63-4.19)	**4.28** (3.56-5.13)	**6.89** (6.34-7.18)	**8.56** (7.81-10.6)	**11.2** (8.27-11.9)	539
Females	11-12	**3.57** (3.05-4.18)	**3.98** (3.42-4.25)	**5.91** (4.79-6.63)	**9.20** (6.73-11.0)	**11.0** (7.19-13.1)	358
Nonsmokers							
Total	11-12	**3.88** (3.66-4.11)	**4.11** (3.90-4.42)	**6.38** (5.96-6.89)	**9.08** (8.57-9.44)	**10.6** (9.76-11.4)	1331
Age group							
20-49 years	11-12	**3.69** (3.38-4.03)	**3.97** (3.72-4.43)	**6.41** (5.83-6.99)	**9.08** (8.15-9.48)	**10.5** (9.48-11.4)	666
50 years and older	11-12	**4.09** (3.81-4.38)	**4.28** (3.90-4.59)	**6.26** (5.73-7.10)	**8.87** (8.06-10.2)	**10.6** (9.44-13.0)	665
Gender							
Males	11-12	**4.46** (4.19-4.75)	**4.78** (4.31-5.21)	**6.76** (6.24-7.42)	**9.18** (8.51-9.88)	**10.8** (9.48-12.8)	630
Females	11-12	**3.47** (3.21-3.75)	**3.62** (3.41-3.90)	**5.93** (5.31-6.76)	**8.62** (7.79-9.48)	**10.4** (9.48-11.7)	701

Tobacco product users who did not smoke cigarettes were excluded. See Adult Cigarette Smokers and Nonsmokers: Analysis of Select Chemicals in a Special Sample.
Limit of detection (LOD, see Data Analysis section) for Survey year 11-12 is 0.12.

Urinary Cesium (creatinine corrected)

Geometric mean and selected percentiles of urine concentrations (in µg/g of creatinine) for the U.S. adult population from the National Health and Nutrition Examination Survey by smoking status.

	Survey years	Geometric mean (95% conf. interval)	Selected percentiles (95% confidence interval) 50th	75th	90th	95th	Sample size
Cigarette Smokers							
Total	11-12	**4.09** (3.73-4.49)	**3.94** (3.69-4.30)	**5.55** (5.27-5.94)	**8.27** (6.59-10.2)	**10.6** (7.74-14.4)	897
Age group							
20-49 years	11-12	**3.80** (3.41-4.23)	**3.71** (3.35-4.15)	**5.29** (4.53-5.82)	**7.89** (5.76-10.2)	**10.2** (7.48-14.4)	537
50 years and older	11-12	**4.64** (4.28-5.02)	**4.47** (4.09-4.88)	**6.10** (5.55-6.84)	**9.36** (7.16-11.5)	**11.5** (7.41-32.4)	360
Gender							
Males	11-12	**3.77** (3.37-4.22)	**3.70** (3.26-4.19)	**4.98** (4.47-5.62)	**6.49** (5.67-9.89)	**10.2** (6.15-14.4)	539
Females	11-12	**4.53** (4.12-4.98)	**4.32** (4.09-4.70)	**6.62** (5.55-7.77)	**9.27** (7.77-11.5)	**11.5** (8.29-15.0)	358
Nonsmokers							
Total	11-12	**4.48** (4.22-4.75)	**4.43** (4.20-4.74)	**6.16** (5.71-6.64)	**8.22** (7.43-8.92)	**10.2** (8.63-11.9)	1330
Age group							
20-49 years	11-12	**3.97** (3.78-4.16)	**4.00** (3.69-4.28)	**5.57** (5.09-5.85)	**6.88** (6.47-7.35)	**8.10** (7.43-8.73)	665
50 years and older	11-12	**5.11** (4.63-5.63)	**4.88** (4.33-5.61)	**7.19** (5.92-8.22)	**9.48** (8.25-10.7)	**12.1** (10.2-13.5)	665
Gender							
Males	11-12	**3.88** (3.57-4.21)	**3.75** (3.51-4.22)	**5.23** (4.71-6.07)	**7.64** (6.43-8.48)	**8.53** (8.01-10.2)	629
Females	11-12	**5.02** (4.77-5.29)	**4.98** (4.76-5.20)	**6.62** (6.25-7.17)	**8.70** (8.10-9.98)	**11.9** (9.47-13.5)	701

Tobacco product users who did not smoke cigarettes were excluded. See Adult Cigarette Smokers and Nonsmokers: Analysis of Select Chemicals in a Special Sample.

Urinary Cobalt

Geometric mean and selected percentiles of urine concentrations (in µg/L) for the U.S. adult population from the National Health and Nutrition Examination Survey by smoking status.

	Survey years	Geometric mean (95% conf. interval)	Selected percentiles (95% confidence interval) 50th	75th	90th	95th	Sample size
Cigarette Smokers							
Total	11-12	**.313** (.290-.338)	**.306** (.281-.335)	**.546** (.487-.593)	**.888** (.800-.966)	**1.20** (.949-1.56)	896
Age group							
20-49 years	11-12	**.319** (.292-.349)	**.314** (.285-.341)	**.547** (.457-.605)	**.949** (.682-1.20)	**1.28** (.949-1.71)	536
50 years and older	11-12	**.303** (.268-.344)	**.291** (.244-.374)	**.518** (.433-.606)	**.835** (.668-1.00)	**1.07** (.872-1.72)	360
Gender							
Males	11-12	**.288** (.259-.320)	**.291** (.254-.311)	**.516** (.430-.547)	**.682** (.603-.827)	**.943** (.773-1.00)	538
Females	11-12	**.347** (.316-.382)	**.338** (.308-.383)	**.626** (.486-.735)	**1.10** (.846-1.49)	**1.54** (1.14-2.02)	358
Nonsmokers							
Total	11-12	**.306** (.284-.328)	**.304** (.286-.327)	**.482** (.455-.515)	**.810** (.695-.979)	**1.23** (1.03-1.56)	1332
Age group							
20-49 years	11-12	**.317** (.294-.341)	**.331** (.304-.362)	**.535** (.474-.593)	**.858** (.721-1.03)	**1.32** (.963-1.61)	666
50 years and older	11-12	**.294** (.268-.322)	**.284** (.261-.306)	**.447** (.401-.482)	**.752** (.588-.982)	**1.16** (.810-1.62)	666
Gender							
Males	11-12	**.300** (.277-.324)	**.304** (.284-.331)	**.433** (.380-.488)	**.656** (.546-.721)	**.811** (.721-.963)	631
Females	11-12	**.310** (.281-.343)	**.310** (.277-.352)	**.535** (.471-.588)	**1.06** (.736-1.35)	**1.49** (1.16-1.82)	701

Tobacco product users who did not smoke cigarettes were excluded. See Adult Cigarette Smokers and Nonsmokers: Analysis of Select Chemicals in a Special Sample.
Limit of detection (LOD, see Data Analysis section) for Survey year 11-12 is 0.048.

Urinary Cobalt (creatinine corrected)

Geometric mean and selected percentiles of urine concentrations (in µg/g of creatinine) for the U.S. adult population from the National Health and Nutrition Examination Survey by smoking status.

	Survey years	Geometric mean (95% conf. interval)	Selected percentiles (95% confidence interval) 50th	75th	90th	95th	Sample size
Cigarette Smokers							
Total	11-12	**.340** (.307-.377)	**.329** (.290-.364)	**.505** (.464-.549)	**.756** (.665-.850)	**1.16** (.888-1.56)	896
Age group							
20-49 years	11-12	**.324** (.285-.369)	**.307** (.261-.364)	**.474** (.430-.549)	**.757** (.662-.890)	**1.23** (.782-1.92)	536
50 years and older	11-12	**.368** (.335-.403)	**.345** (.329-.400)	**.529** (.490-.573)	**.732** (.622-.943)	**1.05** (.856-1.50)	360
Gender							
Males	11-12	**.276** (.253-.301)	**.266** (.235-.294)	**.406** (.364-.465)	**.564** (.487-.660)	**.665** (.541-.898)	538
Females	11-12	**.441** (.373-.521)	**.418** (.339-.504)	**.644** (.570-.733)	**1.13** (.783-1.56)	**1.79** (1.00-2.35)	358
Nonsmokers							
Total	11-12	**.353** (.335-.372)	**.328** (.303-.342)	**.511** (.466-.564)	**.845** (.710-1.07)	**1.27** (1.07-1.58)	1331
Age group							
20-49 years	11-12	**.340** (.319-.363)	**.305** (.278-.339)	**.496** (.453-.569)	**.944** (.750-1.10)	**1.27** (1.07-1.58)	665
50 years and older	11-12	**.367** (.336-.402)	**.340** (.304-.390)	**.513** (.451-.593)	**.777** (.600-1.16)	**1.30** (.845-2.13)	666
Gender							
Males	11-12	**.261** (.244-.279)	**.241** (.226-.254)	**.339** (.316-.381)	**.479** (.423-.593)	**.637** (.511-1.03)	630
Females	11-12	**.449** (.418-.484)	**.423** (.400-.458)	**.638** (.594-.711)	**1.10** (.957-1.30)	**1.58** (1.18-2.24)	701

Tobacco product users who did not smoke cigarettes were excluded. See Adult Cigarette Smokers and Nonsmokers: Analysis of Select Chemicals in a Special Sample.

Urinary Lead

Geometric mean and selected percentiles of urine concentrations (in µg/L) for the U.S. adult population from the National Health and Nutrition Examination Survey by smoking status.

	Survey years	Geometric mean (95% conf. interval)	Selected percentiles (95% confidence interval) 50th	75th	90th	95th	Sample size
Cigarette Smokers							
Total	11-12	**.474** (.405-.556)	**.450** (.400-.530)	**.890** (.740-1.02)	**1.57** (1.15-2.01)	**2.54** (1.73-4.60)	897
Age group							
20-49 years	11-12	**.417** (.353-.492)	**.410** (.340-.500)	**.780** (.640-1.00)	**1.19** (1.03-1.62)	**1.78** (1.36-3.07)	537
50 years and older	11-12	**.589** (.470-.738)	**.520** (.430-.650)	**1.02** (.700-1.58)	**1.92** (1.47-2.97)	**4.11** (1.82-4.99)	360
Gender							
Males	11-12	**.552** (.452-.675)	**.570** (.440-.710)	**1.01** (.840-1.27)	**1.82** (1.46-2.62)	**3.07** (1.76-4.99)	539
Females	11-12	**.392** (.334-.460)	**.380** (.320-.440)	**.670** (.500-.840)	**1.15** (.810-1.47)	**1.58** (1.15-2.56)	358
Nonsmokers							
Total	11-12	**.361** (.333-.391)	**.380** (.340-.400)	**.650** (.580-.710)	**1.02** (.900-1.16)	**1.34** (1.21-1.55)	1332
Age group							
20-49 years	11-12	**.302** (.271-.338)	**.300** (.260-.350)	**.570** (.510-.650)	**.960** (.820-1.14)	**1.26** (1.05-1.38)	666
50 years and older	11-12	**.435** (.390-.487)	**.430** (.380-.480)	**.720** (.600-.810)	**1.11** (.920-1.36)	**1.61** (1.28-2.16)	666
Gender							
Males	11-12	**.425** (.384-.471)	**.420** (.390-.450)	**.720** (.640-.810)	**1.11** (.940-1.33)	**1.53** (1.16-1.90)	631
Females	11-12	**.316** (.284-.353)	**.320** (.300-.370)	**.580** (.500-.670)	**.960** (.820-1.15)	**1.32** (1.05-1.38)	701

Tobacco product users who did not smoke cigarettes were excluded. See Adult Cigarette Smokers and Nonsmokers: Analysis of Select Chemicals in a Special Sample.
Limit of detection (LOD, see Data Analysis section) for Survey year 11-12 is 0.08.

Urinary Lead (creatinine corrected)

Geometric mean and selected percentiles of urine concentrations (in µg/g of creatinine) for the U.S. adult population from the National Health and Nutrition Examination Survey by smoking status.

	Survey years	Geometric mean (95% conf. interval)	Selected percentiles (95% confidence interval) 50th	75th	90th	95th	Sample size
Cigarette Smokers							
Total	11-12	**.518** (.465-.576)	**.496** (.435-.534)	**.806** (.681-.956)	**1.24** (1.09-1.75)	**2.00** (1.24-4.00)	897
Age group							
20-49 years	11-12	**.427** (.385-.473)	**.386** (.358-.402)	**.593** (.520-.765)	**1.10** (.833-1.32)	**1.53** (1.12-2.76)	537
50 years and older	11-12	**.714** (.603-.846)	**.684** (.578-.806)	**1.01** (.857-1.22)	**1.75** (1.14-3.62)	**2.15** (1.32-4.53)	360
Gender							
Males	11-12	**.534** (.472-.604)	**.500** (.428-.590)	**.833** (.712-1.05)	**1.46** (1.12-1.93)	**2.17** (1.51-3.70)	539
Females	11-12	**.498** (.435-.570)	**.493** (.421-.527)	**.750** (.614-.867)	**1.21** (.867-1.38)	**1.53** (1.18-3.67)	358
Nonsmokers							
Total	11-12	**.417** (.386-.451)	**.407** (.378-.431)	**.652** (.583-.704)	**.939** (.826-1.11)	**1.46** (1.20-1.64)	1331
Age group							
20-49 years	11-12	**.326** (.289-.367)	**.314** (.268-.374)	**.510** (.448-.591)	**.728** (.656-.929)	**.939** (.750-1.16)	665
50 years and older	11-12	**.544** (.489-.606)	**.488** (.431-.558)	**.759** (.680-.812)	**1.26** (1.04-1.60)	**1.71** (1.47-2.12)	666
Gender							
Males	11-12	**.372** (.325-.424)	**.367** (.319-.419)	**.543** (.483-.630)	**.826** (.694-1.01)	**1.21** (.916-1.65)	630
Females	11-12	**.458** (.419-.501)	**.441** (.400-.509)	**.710** (.644-.765)	**1.05** (.905-1.29)	**1.59** (1.22-1.71)	701

Tobacco product users who did not smoke cigarettes were excluded. See Adult Cigarette Smokers and Nonsmokers: Analysis of Select Chemicals in a Special Sample.

Urinary Manganese

Geometric mean and selected percentiles of urine concentrations (in µg/L) for the U.S. adult population from the National Health and Nutrition Examination Survey by smoking status.

	Survey years	Geometric mean (95% conf. interval)	Selected percentiles (95% confidence interval) 50th	75th	90th	95th	Sample size
Cigarette Smokers							
Total	11-12	**.123** (.112-.135)	**.120** (.100-.140)	**.200** (.190-.220)	**.290** (.260-.330)	**.370** (.300-.630)	897
Age group							
20-49 years	11-12	**.131** (.116-.149)	**.130** (.100-.160)	**.220** (.200-.250)	**.320** (.260-.450)	**.520** (.300-.660)	537
50 years and older	11-12	**.110** (.098-.123)	**.110** (.080-.130)	**.170** (.150-.210)	**.260** (.220-.280)	**.300** (.270-.350)	360
Gender							
Males	11-12	**.113** (.099-.129)	**.110** (.080-.140)	**.180** (.160-.220)	**.260** (.240-.300)	**.350** (.300-.370)	539
Females	11-12	**.136** (.119-.156)	**.140** (.110-.170)	**.230** (.180-.280)	**.320** (.260-.620)	**.600** (.280-.920)	358
Nonsmokers							
Total	11-12	**.122** (.110-.136)	**.120** (.100-.140)	**.190** (.180-.220)	**.280** (.250-.300)	**.350** (.300-.410)	1332
Age group							
20-49 years	11-12	**.122** (.108-.139)	**.120** (.100-.140)	**.190** (.170-.220)	**.280** (.250-.320)	**.360** (.300-.460)	666
50 years and older	11-12	**.122** (.110-.135)	**.130** (.100-.150)	**.190** (.170-.220)	**.270** (.240-.300)	**.340** (.290-.400)	666
Gender							
Males	11-12	**.123** (.110-.138)	**.130** (.100-.150)	**.190** (.170-.220)	**.270** (.250-.300)	**.340** (.290-.400)	631
Females	11-12	**.121** (.108-.136)	**.120** (.100-.140)	**.190** (.170-.230)	**.280** (.250-.300)	**.360** (.300-.490)	701

Tobacco product users who did not smoke cigarettes were excluded. See Adult Cigarette Smokers and Nonsmokers: Analysis of Select Chemicals in a Special Sample.
Limit of detection (LOD, see Data Analysis section) for Survey year 11-12 is 0.08.

Urinary Manganese (creatinine corrected)

Geometric mean and selected percentiles of urine concentrations (in µg/g of creatinine) for the U.S. adult population from the National Health and Nutrition Examination Survey by smoking status.

	Survey years	Geometric mean (95% conf. interval)	Selected percentiles (95% confidence interval) 50th	75th	90th	95th	Sample size
Cigarette Smokers							
Total	11-12	**.134** (.116-.155)	**.127** (.116-.139)	**.238** (.195-.290)	**.384** (.318-.463)	**.529** (.397-.643)	897
Age group							
20-49 years	11-12	**.135** (.110-.165)	**.123** (.104-.144)	**.271** (.192-.315)	**.413** (.335-.529)	**.532** (.458-1.00)	537
50 years and older	11-12	**.133** (.121-.147)	**.128** (.117-.150)	**.217** (.184-.286)	**.318** (.286-.387)	**.471** (.356-.583)	360
Gender							
Males	11-12	**.109** (.092-.130)	**.106** (.089-.124)	**.188** (.150-.221)	**.318** (.250-.383)	**.423** (.328-.529)	539
Females	11-12	**.173** (.146-.205)	**.178** (.136-.214)	**.300** (.234-.378)	**.471** (.388-.587)	**.882** (.480-1.33)	358
Nonsmokers							
Total	11-12	**.141** (.127-.156)	**.139** (.119-.151)	**.234** (.200-.281)	**.410** (.373-.512)	**.571** (.519-.625)	1331
Age group							
20-49 years	11-12	**.131** (.118-.146)	**.130** (.112-.145)	**.213** (.190-.248)	**.405** (.343-.519)	**.625** (.438-1.10)	665
50 years and older	11-12	**.152** (.135-.172)	**.144** (.125-.169)	**.256** (.208-.324)	**.426** (.364-.518)	**.550** (.512-.605)	666
Gender							
Males	11-12	**.107** (.095-.121)	**.108** (.094-.119)	**.170** (.154-.182)	**.300** (.218-.364)	**.385** (.341-.500)	630
Females	11-12	**.176** (.157-.197)	**.161** (.143-.200)	**.295** (.254-.343)	**.519** (.426-.597)	**.667** (.570-1.21)	701

Tobacco product users who did not smoke cigarettes were excluded. See Adult Cigarette Smokers and Nonsmokers: Analysis of Select Chemicals in a Special Sample.

Urinary Molybdenum

Geometric mean and selected percentiles of urine concentrations (in µg/L) for the U.S. adult population from the National Health and Nutrition Examination Survey by smoking status.

	Survey years	Geometric mean (95% conf. interval)	Selected percentiles (95% confidence interval) 50th	75th	90th	95th	Sample size
Cigarette Smokers							
Total	11-12	**32.7** (28.5-37.4)	**36.6** (31.1-41.8)	**66.8** (58.2-76.8)	**108** (88.1-126)	**140** (120-162)	897
Age group							
20-49 years	11-12	**35.7** (30.9-41.1)	**38.8** (31.1-48.3)	**70.2** (59.4-82.6)	**111** (83.6-132)	**140** (120-162)	537
50 years and older	11-12	**28.2** (23.8-33.4)	**32.6** (26.8-38.2)	**60.7** (52.5-73.1)	**95.3** (74.2-135)	**137** (93.1-184)	360
Gender							
Males	11-12	**35.4** (29.9-41.8)	**38.0** (31.4-47.2)	**73.8** (59.0-88.1)	**111** (85.1-140)	**137** (111-179)	539
Females	11-12	**29.6** (24.7-35.4)	**32.1** (27.6-38.8)	**58.9** (49.9-72.2)	**96.5** (78.1-118)	**140** (97.1-183)	358
Nonsmokers							
Total	11-12	**35.0** (32.8-37.4)	**38.0** (34.5-40.8)	**63.7** (60.4-68.7)	**99.7** (93.3-107)	**134** (115-143)	1332
Age group							
20-49 years	11-12	**35.9** (32.1-40.1)	**40.8** (37.3-44.9)	**68.0** (61.8-75.9)	**102** (94.2-113)	**133** (108-150)	666
50 years and older	11-12	**34.1** (31.7-36.6)	**34.2** (31.2-38.8)	**57.8** (53.8-64.6)	**98.0** (82.5-109)	**137** (109-144)	666
Gender							
Males	11-12	**42.4** (38.8-46.3)	**44.7** (39.7-52.0)	**71.2** (65.0-77.1)	**108** (97.6-130)	**140** (108-150)	631
Females	11-12	**30.1** (27.2-33.2)	**31.6** (28.8-34.6)	**58.4** (49.4-64.4)	**86.8** (79.8-101)	**121** (102-154)	701

Tobacco product users who did not smoke cigarettes were excluded. See Adult Cigarette Smokers and Nonsmokers: Analysis of Select Chemicals in a Special Sample.
Limit of detection (LOD, see Data Analysis section) for Survey year 11-12 is 0.99.

Urinary Molybdenum (creatinine corrected)

Geometric mean and selected percentiles of urine concentrations (in µg/g of creatinine) for the U.S. adult population from the National Health and Nutrition Examination Survey by smoking status.

	Survey years	Geometric mean (95% conf. interval)	Selected percentiles (95% confidence interval) 50th	75th	90th	95th	Sample size
Cigarette Smokers							
Total	11-12	**35.6** (33.7-37.7)	**35.7** (32.8-40.0)	**54.4** (51.6-57.9)	**79.1** (73.4-87.1)	**104** (87.1-119)	897
Age group							
20-49 years	11-12	**36.5** (33.7-39.5)	**35.6** (32.7-40.7)	**53.4** (48.9-57.9)	**76.3** (66.8-89.5)	**96.0** (82.4-113)	537
50 years and older	11-12	**34.2** (30.6-38.2)	**36.9** (29.1-43.9)	**56.1** (50.7-62.8)	**79.6** (71.3-108)	**108** (84.4-128)	360
Gender							
Males	11-12	**34.2** (30.7-38.2)	**36.0** (32.3-41.6)	**55.4** (48.5-58.5)	**73.4** (63.5-77.9)	**82.4** (76.1-91.7)	539
Females	11-12	**37.5** (34.4-40.9)	**35.6** (32.9-38.8)	**53.5** (51.0-61.3)	**96.0** (70.6-108)	**128** (96.0-157)	358
Nonsmokers							
Total	11-12	**40.4** (38.7-42.2)	**39.4** (37.3-43.3)	**60.7** (56.8-63.7)	**85.6** (79.9-91.6)	**118** (98.8-142)	1331
Age group							
20-49 years	11-12	**38.5** (36.8-40.3)	**37.7** (35.3-40.1)	**57.3** (52.2-61.1)	**77.5** (71.6-85.6)	**107** (87.7-148)	665
50 years and older	11-12	**42.6** (39.6-45.8)	**41.6** (37.3-46.3)	**62.9** (56.4-71.6)	**91.9** (85.5-104)	**118** (103-148)	666
Gender							
Males	11-12	**36.9** (33.9-40.1)	**36.7** (33.3-41.6)	**52.2** (48.2-59.2)	**80.6** (69.6-87.1)	**92.5** (84.9-114)	630
Females	11-12	**43.5** (40.7-46.6)	**42.0** (38.5-45.4)	**65.5** (61.3-69.6)	**95.1** (85.5-105)	**148** (104-165)	701

Tobacco product users who did not smoke cigarettes were excluded. See Adult Cigarette Smokers and Nonsmokers: Analysis of Select Chemicals in a Special Sample.

Urinary Strontium

Geometric mean and selected percentiles of urine concentrations (in µg/L) for the U.S. adult population from the National Health and Nutrition Examination Survey by smoking status.

	Survey years	Geometric mean (95% conf. interval)	Selected percentiles (95% confidence interval) 50th	75th	90th	95th	Sample size
Cigarette Smokers							
Total	11-12	**91.8** (79.8-106)	**97.2** (81.5-114)	**181** (145-214)	**281** (255-318)	**346** (315-374)	895
Age group							
20-49 years	11-12	**96.5** (86.1-108)	**98.3** (88.7-112)	**197** (156-228)	**286** (256-342)	**346** (281-395)	537
50 years and older	11-12	**84.6** (67.4-106)	**96.2** (67.0-128)	**156** (129-184)	**255** (185-312)	**338** (283-401)	358
Gender							
Males	11-12	**98.4** (83.6-116)	**102** (88.6-123)	**180** (150-228)	**306** (267-329)	**365** (312-396)	538
Females	11-12	**84.2** (71.2-99.6)	**90.6** (69.3-106)	**181** (123-214)	**258** (203-342)	**342** (250-491)	357
Nonsmokers							
Total	11-12	**82.4** (76.7-88.5)	**83.7** (77.0-91.9)	**157** (151-169)	**234** (213-252)	**293** (263-355)	1331
Age group							
20-49 years	11-12	**85.4** (78.1-93.4)	**90.7** (79.7-108)	**173** (155-189)	**239** (218-262)	**282** (249-325)	666
50 years and older	11-12	**79.2** (72.3-86.8)	**76.8** (66.7-88.1)	**147** (130-156)	**225** (183-276)	**325** (234-379)	665
Gender							
Males	11-12	**94.5** (84.1-106)	**99.4** (89.4-110)	**167** (154-184)	**249** (195-297)	**297** (252-378)	630
Females	11-12	**73.9** (68.4-79.8)	**75.4** (66.1-80.0)	**151** (133-160)	**225** (204-259)	**276** (255-327)	701

Tobacco product users who did not smoke cigarettes were excluded. See Adult Cigarette Smokers and Nonsmokers: Analysis of Select Chemicals in a Special Sample.
Limit of detection (LOD, see Data Analysis section) for Survey year 11-12 is 2.5.

Urinary Strontium (creatinine corrected)

Geometric mean and selected percentiles of urine concentrations (in µg/g of creatinine) for the U.S. adult population from the National Health and Nutrition Examination Survey by smoking status.

	Survey years	Geometric mean (95% conf. interval)	Selected percentiles (95% confidence interval) 50th	75th	90th	95th	Sample size
Cigarette Smokers							
Total	11-12	**100** (85.8-117)	**106** (84.2-125)	**170** (140-192)	**253** (201-333)	**367** (240-614)	895
Age group							
20-49 years	11-12	**98.8** (85.9-114)	**101** (84.8-126)	**164** (140-188)	**246** (198-305)	**333** (241-431)	537
50 years and older	11-12	**102** (82.6-127)	**110** (81.3-131)	**180** (140-208)	**314** (211-375)	**398** (192-811)	358
Gender							
Males	11-12	**95.2** (83.7-108)	**99.4** (78.7-120)	**158** (133-187)	**240** (201-267)	**333** (253-367)	538
Females	11-12	**107** (81.5-140)	**109** (84.8-134)	**187** (132-246)	**279** (185-706)	**427** (211-939)	357
Nonsmokers							
Total	11-12	**95.1** (89.2-101)	**97.6** (92.4-106)	**150** (139-163)	**232** (213-254)	**313** (272-341)	1330
Age group							
20-49 years	11-12	**91.5** (83.4-100)	**98.6** (85.0-112)	**136** (128-148)	**216** (178-245)	**258** (241-293)	665
50 years and older	11-12	**99.0** (89.8-109)	**97.3** (90.7-113)	**163** (145-196)	**249** (220-318)	**350** (313-372)	665
Gender							
Males	11-12	**82.0** (74.6-90.0)	**87.9** (81.7-92.0)	**129** (115-141)	**176** (150-209)	**232** (180-277)	629
Females	11-12	**107** (100-114)	**112** (100-120)	**178** (154-204)	**272** (239-313)	**346** (293-372)	701

Tobacco product users who did not smoke cigarettes were excluded. See Adult Cigarette Smokers and Nonsmokers: Analysis of Select Chemicals in a Special Sample.

Urinary Thallium

Geometric mean and selected percentiles of urine concentrations (in µg/L) for the U.S. adult population from the National Health and Nutrition Examination Survey by smoking status.

	Survey years	Geometric mean (95% conf. interval)	Selected percentiles (95% confidence interval) 50th	75th	90th	95th	Sample size
Cigarette Smokers							
Total	11-12	**.138** (.125-.153)	**.148** (.132-.162)	**.235** (.216-.266)	**.358** (.288-.419)	**.438** (.364-.524)	897
Age group							
20-49 years	11-12	**.147** (.133-.163)	**.160** (.145-.178)	**.257** (.222-.299)	**.370** (.299-.446)	**.446** (.336-.524)	537
50 years and older	11-12	**.125** (.107-.146)	**.134** (.112-.152)	**.208** (.175-.230)	**.311** (.230-.409)	**.409** (.261-.541)	360
Gender							
Males	11-12	**.143** (.128-.159)	**.148** (.131-.165)	**.236** (.217-.278)	**.336** (.286-.454)	**.473** (.322-.535)	539
Females	11-12	**.133** (.113-.158)	**.146** (.122-.164)	**.235** (.186-.276)	**.366** (.245-.446)	**.408** (.366-.503)	358
Nonsmokers							
Total	11-12	**.148** (.137-.159)	**.158** (.142-.170)	**.249** (.223-.278)	**.349** (.319-.377)	**.419** (.372-.519)	1332
Age group							
20-49 years	11-12	**.160** (.144-.178)	**.174** (.160-.202)	**.284** (.248-.324)	**.377** (.346-.419)	**.443** (.387-.522)	666
50 years and older	11-12	**.136** (.124-.148)	**.140** (.125-.152)	**.204** (.181-.245)	**.292** (.260-.341)	**.361** (.301-.543)	666
Gender							
Males	11-12	**.171** (.155-.190)	**.174** (.156-.206)	**.278** (.237-.319)	**.361** (.334-.385)	**.412** (.372-.495)	631
Females	11-12	**.131** (.120-.143)	**.138** (.127-.149)	**.227** (.196-.258)	**.322** (.289-.376)	**.433** (.330-.535)	701

Tobacco product users who did not smoke cigarettes were excluded. See Adult Cigarette Smokers and Nonsmokers: Analysis of Select Chemicals in a Special Sample.
Limit of detection (LOD, see Data Analysis section) for Survey year 11-12 is 0.02.

Urinary Thallium (creatinine corrected)

Geometric mean and selected percentiles of urine concentrations (in µg/g of creatinine) for the U.S. adult population from the National Health and Nutrition Examination Survey by smoking status.

	Survey years	Geometric mean (95% conf. interval)	Selected percentiles (95% confidence interval) 50th	75th	90th	95th	Sample size
Cigarette Smokers							
Total	11-12	**.151** (.136-.168)	**.150** (.135-.161)	**.210** (.188-.236)	**.292** (.237-.368)	**.375** (.278-.741)	897
Age group							
20-49 years	11-12	**.151** (.132-.173)	**.149** (.133-.163)	**.205** (.178-.248)	**.288** (.229-.375)	**.364** (.283-.741)	537
50 years and older	11-12	**.151** (.135-.169)	**.153** (.123-.171)	**.224** (.179-.243)	**.308** (.232-.416)	**.410** (.257-.489)	360
Gender							
Males	11-12	**.138** (.121-.158)	**.132** (.119-.147)	**.179** (.154-.214)	**.259** (.204-.348)	**.301** (.237-.741)	539
Females	11-12	**.169** (.154-.186)	**.174** (.163-.188)	**.235** (.202-.292)	**.320** (.280-.457)	**.457** (.294-.593)	358
Nonsmokers							
Total	11-12	**.171** (.159-.183)	**.167** (.157-.181)	**.236** (.219-.257)	**.338** (.314-.366)	**.438** (.376-.503)	1331
Age group							
20-49 years	11-12	**.172** (.159-.186)	**.171** (.157-.186)	**.234** (.211-.249)	**.333** (.294-.382)	**.411** (.343-.537)	665
50 years and older	11-12	**.169** (.153-.187)	**.165** (.152-.179)	**.237** (.205-.280)	**.345** (.300-.425)	**.476** (.351-.532)	666
Gender							
Males	11-12	**.149** (.138-.161)	**.152** (.136-.160)	**.208** (.182-.232)	**.289** (.235-.332)	**.333** (.291-.398)	630
Females	11-12	**.190** (.178-.204)	**.185** (.170-.200)	**.267** (.240-.290)	**.403** (.348-.430)	**.482** (.411-.557)	701

Tobacco product users who did not smoke cigarettes were excluded. See Adult Cigarette Smokers and Nonsmokers: Analysis of Select Chemicals in a Special Sample.

Urinary Tin

Geometric mean and selected percentiles of urine concentrations (in µg/L) for the U.S. adult population from the National Health and Nutrition Examination Survey by smoking status.

	Survey years	Geometric mean (95% conf. interval)	Selected percentiles (95% confidence interval) 50th	75th	90th	95th	Sample size
Cigarette Smokers							
Total	11-12	**.607** (.511-.722)	**.530** (.430-.640)	**1.09** (.870-1.42)	**2.60** (1.62-4.14)	**4.53** (3.04-6.85)	897
Age group							
20-49 years	11-12	**.602** (.494-.734)	**.490** (.380-.640)	**1.11** (.790-1.55)	**2.60** (1.78-4.22)	**4.53** (2.95-8.30)	537
50 years and older	11-12	**.616** (.526-.721)	**.570** (.500-.690)	**1.04** (.900-1.24)	**2.59** (1.47-3.86)	**4.46** (3.04-6.85)	360
Gender							
Males	11-12	**.565** (.468-.681)	**.500** (.420-.600)	**.930** (.760-1.27)	**2.12** (1.41-3.39)	**4.04** (2.73-5.80)	539
Females	11-12	**.665** (.540-.819)	**.600** (.470-.690)	**1.26** (.940-1.61)	**2.98** (1.62-6.20)	**6.85** (2.98-10.5)	358
Nonsmokers							
Total	11-12	**.585** (.527-.650)	**.500** (.450-.570)	**1.00** (.880-1.19)	**2.56** (2.10-3.44)	**4.71** (3.44-6.50)	1332
Age group							
20-49 years	11-12	**.487** (.441-.537)	**.410** (.370-.480)	**.810** (.740-.960)	**2.00** (1.40-2.47)	**3.21** (2.13-4.88)	666
50 years and older	11-12	**.712** (.603-.842)	**.580** (.460-.720)	**1.23** (.990-1.63)	**3.56** (2.35-4.74)	**5.97** (3.62-9.43)	666
Gender							
Males	11-12	**.609** (.524-.707)	**.520** (.470-.580)	**.990** (.790-1.22)	**3.19** (1.82-4.22)	**6.10** (3.20-9.43)	631
Females	11-12	**.567** (.500-.642)	**.470** (.410-.580)	**1.03** (.850-1.26)	**2.25** (2.03-2.99)	**4.07** (2.62-4.74)	701

Tobacco product users who did not smoke cigarettes were excluded. See Adult Cigarette Smokers and Nonsmokers: Analysis of Select Chemicals in a Special Sample.
Limit of detection (LOD, see Data Analysis section) for Survey year 11-12 is 0.22.

Urinary Tin (creatinine corrected)

Geometric mean and selected percentiles of urine concentrations (in µg/g of creatinine) for the U.S. adult population from the National Health and Nutrition Examination Survey by smoking status.

	Survey years	Geometric mean (95% conf. interval)	Selected percentiles (95% confidence interval) 50th	75th	90th	95th	Sample size
Cigarette Smokers							
Total	11-12	**.663** (.576-.762)	**.571** (.488-.664)	**1.06** (.867-1.36)	**2.38** (2.00-2.81)	**4.15** (2.89-5.50)	897
Age group							
20-49 years	11-12	**.617** (.523-.727)	**.554** (.458-.673)	**.962** (.780-1.36)	**2.20** (1.68-2.66)	**4.02** (2.38-7.86)	537
50 years and older	11-12	**.747** (.632-.882)	**.588** (.489-.709)	**1.26** (.872-1.67)	**2.81** (1.78-4.09)	**4.93** (2.81-8.49)	360
Gender							
Males	11-12	**.546** (.479-.621)	**.488** (.411-.596)	**.877** (.694-1.03)	**1.86** (1.24-2.29)	**2.64** (2.05-3.90)	539
Females	11-12	**.844** (.673-1.06)	**.683** (.545-.821)	**1.41** (1.03-2.20)	**3.10** (2.38-4.93)	**5.14** (3.74-11.2)	358
Nonsmokers							
Total	11-12	**.677** (.611-.751)	**.603** (.548-.671)	**1.11** (.970-1.31)	**2.48** (1.95-2.99)	**4.45** (2.99-5.35)	1331
Age group							
20-49 years	11-12	**.525** (.470-.586)	**.487** (.434-.539)	**.867** (.755-.975)	**1.55** (1.20-2.28)	**3.04** (1.95-4.43)	665
50 years and older	11-12	**.890** (.774-1.02)	**.769** (.650-.897)	**1.64** (1.22-1.95)	**2.86** (2.50-4.51)	**5.55** (3.43-7.26)	666
Gender							
Males	11-12	**.532** (.442-.640)	**.459** (.390-.563)	**.818** (.640-1.15)	**2.11** (1.15-3.63)	**4.04** (2.11-6.27)	630
Females	11-12	**.821** (.723-.931)	**.743** (.624-.867)	**1.28** (1.10-1.60)	**2.56** (2.21-3.22)	**4.50** (3.04-6.07)	701

Tobacco product users who did not smoke cigarettes were excluded. See Adult Cigarette Smokers and Nonsmokers: Analysis of Select Chemicals in a Special Sample.

Urinary Tungsten

Geometric mean and selected percentiles of urine concentrations (in µg/L) for the U.S. adult population from the National Health and Nutrition Examination Survey by smoking status.

	Survey years	Geometric mean (95% conf. interval)	Selected percentiles (95% confidence interval) 50th	75th	90th	95th	Sample size
Cigarette Smokers							
Total	11-12	**.075** (.063-.089)	**.073** (.062-.083)	**.143** (.113-.195)	**.286** (.202-.428)	**.463** (.283-.838)	889
Age group							
20-49 years	11-12	**.082** (.066-.103)	**.080** (.068-.094)	**.158** (.116-.220)	**.354** (.196-.611)	**.611** (.294-.995)	530
50 years and older	11-12	**.064** (.056-.074)	**.063** (.049-.074)	**.120** (.092-.161)	**.235** (.161-.290)	**.298** (.243-.449)	359
Gender							
Males	11-12	**.080** (.063-.101)	**.075** (.063-.095)	**.146** (.116-.204)	**.290** (.183-.615)	**.611** (.235-.838)	536
Females	11-12	**.069** (.058-.082)	**.066** (.053-.082)	**.138** (.100-.194)	**.286** (.195-.375)	**.412** (.298-.496)	353
Nonsmokers							
Total	11-12	**.065** (.058-.072)	**.058** (.053-.064)	**.118** (.101-.140)	**.238** (.190-.318)	**.370** (.277-.484)	1324
Age group							
20-49 years	11-12	**.072** (.061-.086)	**.067** (.055-.084)	**.132** (.114-.177)	**.277** (.193-.405)	**.437** (.277-.655)	661
50 years and older	11-12	**.057** (.052-.063)	**.053** (.047-.058)	**.097** (.086-.113)	**.204** (.170-.225)	**.307** (.216-.426)	663
Gender							
Males	11-12	**.074** (.065-.085)	**.068** (.058-.083)	**.140** (.117-.168)	**.283** (.200-.388)	**.426** (.268-.522)	626
Females	11-12	**.058** (.052-.064)	**.052** (.047-.058)	**.101** (.085-.121)	**.220** (.158-.274)	**.307** (.220-.440)	698

Tobacco product users who did not smoke cigarettes were excluded. See Adult Cigarette Smokers and Nonsmokers: Analysis of Select Chemicals in a Special Sample.
Limit of detection (LOD, see Data Analysis section) for Survey year 11-12 is 0.026.

Urinary Tungsten (creatinine corrected)

Geometric mean and selected percentiles of urine concentrations (in µg/g of creatinine) for the U.S. adult population from the National Health and Nutrition Examination Survey by smoking status.

	Survey years	Geometric mean (95% conf. interval)	Selected percentiles (95% confidence interval) 50th	75th	90th	95th	Sample size
Cigarette Smokers							
Total	11-12	**.081** (.072-.092)	**.078** (.074-.086)	**.128** (.113-.140)	**.223** (.152-.343)	**.365** (.229-.658)	889
Age group							
20-49 years	11-12	**.084** (.071-.098)	**.085** (.074-.095)	**.130** (.113-.150)	**.241** (.143-.431)	**.374** (.231-.682)	530
50 years and older	11-12	**.078** (.070-.087)	**.074** (.069-.084)	**.121** (.104-.129)	**.193** (.162-.208)	**.262** (.208-.288)	359
Gender							
Males	11-12	**.077** (.064-.093)	**.077** (.065-.092)	**.118** (.098-.140)	**.188** (.129-.378)	**.370** (.172-.652)	536
Females	11-12	**.087** (.073-.104)	**.086** (.071-.102)	**.140** (.120-.163)	**.229** (.180-.293)	**.343** (.229-.733)	353
Nonsmokers							
Total	11-12	**.075** (.067-.084)	**.067** (.064-.075)	**.126** (.104-.148)	**.225** (.175-.282)	**.343** (.244-.478)	1323
Age group							
20-49 years	11-12	**.078** (.067-.091)	**.072** (.062-.081)	**.128** (.103-.170)	**.247** (.181-.374)	**.391** (.244-.647)	660
50 years and older	11-12	**.072** (.065-.079)	**.065** (.061-.074)	**.122** (.099-.135)	**.194** (.160-.238)	**.261** (.208-.366)	663
Gender							
Males	11-12	**.065** (.056-.075)	**.061** (.055-.067)	**.108** (.087-.131)	**.183** (.138-.263)	**.272** (.174-.470)	625
Females	11-12	**.084** (.077-.092)	**.075** (.069-.080)	**.142** (.117-.164)	**.244** (.200-.334)	**.391** (.267-.544)	698

Tobacco product users who did not smoke cigarettes were excluded. See Adult Cigarette Smokers and Nonsmokers: Analysis of Select Chemicals in a Special Sample.

Urinary Uranium

Geometric mean and selected percentiles of urine concentrations (in µg/L) for the U.S. adult population from the National Health and Nutrition Examination Survey by smoking status.

	Survey years	Geometric mean (95% conf. interval)	Selected percentiles (95% confidence interval) 50th	75th	90th	95th	Sample size
Cigarette Smokers							
Total	11-12	**.007** (.006-.009)	**.007** (.006-.008)	**.013** (.010-.017)	**.025** (.020-.033)	**.034** (.026-.046)	897
Age group							
20-49 years	11-12	**.007** (.006-.009)	**.007** (.005-.009)	**.014** (.011-.017)	**.024** (.020-.032)	**.035** (.025-.061)	537
50 years and older	11-12	**.007** (.006-.009)	**.007** (.005-.007)	**.013** (.008-.017)	**.025** (.017-.034)	**.034** (.026-.040)	360
Gender							
Males	11-12	**.008** (.006-.009)	**.007** (.006-.008)	**.013** (.010-.017)	**.026** (.017-.040)	**.037** (.023-.069)	539
Females	11-12	**.007** (.006-.008)	**.007** (.005-.009)	**.013** (.009-.019)	**.024** (.019-.028)	**.028** (.021-.036)	358
Nonsmokers							
Total	11-12	**.005** (.005-.006)	**.005** (.004-.006)	**.009** (.007-.011)	**.016** (.013-.021)	**.025** (.019-.035)	1332
Age group							
20-49 years	11-12	**.005** (.005-.006)	**.005** (.004-.006)	**.009** (.007-.010)	**.015** (.011-.020)	**.021** (.015-.031)	666
50 years and older	11-12	**.006** (.005-.007)	**.005** (.004-.006)	**.011** (.007-.014)	**.017** (.014-.025)	**.028** (.019-.043)	666
Gender							
Males	11-12	**.006** (.005-.007)	**.006** (.004-.007)	**.010** (.007-.013)	**.016** (.013-.022)	**.023** (.017-.039)	631
Females	11-12	**.005** (.005-.006)	**.005** (.004-.006)	**.009** (.007-.011)	**.016** (.012-.024)	**.027** (.019-.043)	701

Tobacco product users who did not smoke cigarettes were excluded. See Adult Cigarette Smokers and Nonsmokers: Analysis of Select Chemicals in a Special Sample.
Limit of detection (LOD, see Data Analysis section) for Survey year 11-12 is 0.003.

Urinary Uranium (creatinine corrected)

Geometric mean and selected percentiles of urine concentrations (in µg/g of creatinine) for the U.S. adult population from the National Health and Nutrition Examination Survey by smoking status.

	Survey years	Geometric mean (95% conf. interval)	Selected percentiles (95% confidence interval) 50th	75th	90th	95th	Sample size
Cigarette Smokers							
Total	11-12	**.008** (.007-.009)	**.007** (.007-.009)	**.013** (.011-.016)	**.022** (.019-.027)	**.031** (.022-.073)	897
Age group							
20-49 years	11-12	**.008** (.006-.009)	**.007** (.006-.009)	**.013** (.009-.016)	**.021** (.019-.027)	**.030** (.021-.083)	537
50 years and older	11-12	**.008** (.007-.010)	**.007** (.006-.010)	**.014** (.011-.018)	**.022** (.018-.031)	**.038** (.021-.073)	360
Gender							
Males	11-12	**.007** (.006-.009)	**.007** (.005-.008)	**.013** (.008-.016)	**.020** (.014-.027)	**.028** (.020-.083)	539
Females	11-12	**.009** (.008-.010)	**.008** (.007-.010)	**.014** (.011-.018)	**.025** (.021-.030)	**.041** (.024-.058)	358
Nonsmokers							
Total	11-12	**.006** (.005-.007)	**.006** (.005-.007)	**.010** (.008-.013)	**.019** (.013-.027)	**.028** (.021-.035)	1331
Age group							
20-49 years	11-12	**.006** (.005-.006)	**.005** (.005-.006)	**.009** (.007-.011)	**.018** (.012-.025)	**.027** (.020-.029)	665
50 years and older	11-12	**.007** (.006-.008)	**.007** (.006-.008)	**.012** (.009-.014)	**.019** (.014-.032)	**.033** (.021-.051)	666
Gender							
Males	11-12	**.005** (.004-.006)	**.005** (.004-.006)	**.008** (.007-.010)	**.013** (.010-.017)	**.019** (.013-.030)	630
Females	11-12	**.008** (.006-.009)	**.007** (.006-.008)	**.013** (.010-.016)	**.022** (.018-.028)	**.033** (.027-.040)	701

Tobacco product users who did not smoke cigarettes were excluded. See Adult Cigarette Smokers and Nonsmokers: Analysis of Select Chemicals in a Special Sample.

Urinary Nitrate

Geometric mean and selected percentiles of urine concentrations (in mg/L) for the U.S. adult population from the National Health and Nutrition Examination Survey by smoking status.

	Survey years	Geometric mean (95% conf. interval)	Selected percentiles (95% confidence interval) 50th	75th	90th	95th	Sample size
Cigarette Smokers							
Total	11-12	**46.8** (43.3-50.5)	**50.0** (45.8-52.7)	**80.4** (69.5-91.3)	**119** (107-140)	**152** (124-184)	889
Age group							
20-49 years	11-12	**48.2** (43.8-52.9)	**52.2** (47.6-57.2)	**80.2** (69.0-93.4)	**117** (97.9-152)	**153** (118-192)	532
50 years and older	11-12	**44.5** (39.5-50.2)	**45.8** (37.7-52.1)	**82.8** (60.6-94.8)	**123** (104-140)	**146** (109-173)	357
Gender							
Males	11-12	**48.4** (43.9-53.4)	**51.7** (45.1-57.9)	**84.2** (71.6-94.7)	**121** (107-140)	**152** (121-184)	536
Females	11-12	**44.7** (39.4-50.7)	**47.9** (41.6-53.4)	**73.5** (64.5-91.7)	**114** (93.4-149)	**149** (111-190)	353
Nonsmokers							
Total	11-12	**39.5** (36.8-42.5)	**41.7** (39.2-45.1)	**68.0** (63.2-73.5)	**103** (95.5-114)	**135** (115-162)	1309
Age group							
20-49 years	11-12	**43.0** (38.8-47.7)	**45.1** (41.2-49.1)	**73.5** (65.8-83.3)	**114** (97.9-124)	**144** (115-180)	655
50 years and older	11-12	**36.1** (32.5-40.1)	**38.7** (34.2-43.3)	**60.8** (54.0-70.9)	**93.7** (83.3-108)	**120** (102-148)	654
Gender							
Males	11-12	**46.6** (42.4-51.3)	**46.4** (42.5-53.0)	**74.9** (66.6-80.3)	**112** (92.6-135)	**155** (112-175)	625
Females	11-12	**34.6** (31.8-37.7)	**36.8** (32.2-41.5)	**60.5** (55.6-68.4)	**99.3** (89.6-113)	**119** (113-138)	684

Tobacco product users who did not smoke cigarettes were excluded. See Adult Cigarette Smokers and Nonsmokers: Analysis of Select Chemicals in a Special Sample.
Limit of detection (LOD, see Data Analysis section) for Survey year 11-12 is 0.7.

Urinary Nitrate (creatinine corrected)

Geometric mean and selected percentiles of urine concentrations (in mg/g of creatinine) for the U.S. adult population from the National Health and Nutrition Examination Survey by smoking status.

	Survey years	Geometric mean (95% conf. interval)	Selected percentiles (95% confidence interval) 50th	75th	90th	95th	Sample size
Cigarette Smokers							
Total	11-12	**51.3** (46.7-56.2)	**49.5** (43.9-56.0)	**70.6** (63.1-80.9)	**95.0** (83.0-123)	**133** (102-165)	889
Age group							
20-49 years	11-12	**49.6** (44.6-55.1)	**45.7** (41.2-52.1)	**65.3** (56.6-74.6)	**89.1** (76.0-133)	**136** (95.6-231)	532
50 years and older	11-12	**54.1** (48.7-60.1)	**57.2** (51.3-61.0)	**81.1** (66.2-87.6)	**101** (87.7-112)	**112** (91.5-144)	357
Gender							
Males	11-12	**47.1** (42.6-52.0)	**45.0** (41.5-48.8)	**61.5** (55.6-68.8)	**87.2** (73.9-102)	**102** (87.2-200)	536
Females	11-12	**57.0** (50.7-64.1)	**58.8** (46.6-67.4)	**80.9** (68.6-87.7)	**108** (86.3-149)	**144** (107-245)	353
Nonsmokers							
Total	11-12	**46.0** (43.2-48.9)	**44.0** (41.1-46.6)	**66.8** (59.7-72.5)	**105** (89.1-119)	**143** (117-162)	1308
Age group							
20-49 years	11-12	**46.5** (43.0-50.2)	**43.1** (39.1-47.5)	**63.8** (57.4-71.1)	**106** (84.9-131)	**150** (107-173)	654
50 years and older	11-12	**45.4** (41.3-49.9)	**45.1** (41.1-50.3)	**68.0** (57.8-83.3)	**99.4** (85.4-119)	**140** (109-151)	654
Gender							
Males	11-12	**40.7** (38.2-43.3)	**39.3** (36.6-42.0)	**55.3** (51.5-60.9)	**81.9** (69.6-97.6)	**105** (84.9-114)	624
Females	11-12	**50.7** (46.0-55.9)	**47.9** (43.7-53.7)	**76.5** (68.0-86.4)	**126** (102-150)	**154** (137-180)	684

Tobacco product users who did not smoke cigarettes were excluded. See Adult Cigarette Smokers and Nonsmokers: Analysis of Select Chemicals in a Special Sample.

Urinary Perchlorate

Geometric mean and selected percentiles of urine concentrations (in µg/L) for the U.S. adult population from the National Health and Nutrition Examination Survey by smoking status.

	Survey years	Geometric mean (95% conf. interval)	Selected percentiles (95% confidence interval) 50th	75th	90th	95th	Sample size
Cigarette Smokers							
Total	11-12	**2.55** (2.31-2.80)	**2.70** (2.34-3.15)	**4.75** (4.02-5.64)	**7.65** (7.36-8.49)	**10.4** (8.54-14.7)	889
Age group							
20-49 years	11-12	**2.58** (2.26-2.94)	**2.75** (2.18-3.24)	**4.73** (3.96-5.62)	**8.34** (7.32-9.15)	**11.7** (8.34-21.6)	532
50 years and older	11-12	**2.49** (2.15-2.90)	**2.59** (1.98-3.38)	**4.87** (3.57-6.44)	**7.42** (5.80-9.45)	**10.0** (7.49-12.7)	357
Gender							
Males	11-12	**2.75** (2.41-3.13)	**2.96** (2.35-3.41)	**5.50** (4.46-6.33)	**8.34** (6.85-11.7)	**12.7** (8.34-22.2)	536
Females	11-12	**2.31** (2.01-2.67)	**2.55** (2.17-2.99)	**4.10** (3.46-4.75)	**7.42** (4.68-9.52)	**9.44** (7.65-11.4)	353
Nonsmokers							
Total	11-12	**2.96** (2.77-3.17)	**2.98** (2.74-3.26)	**5.36** (4.98-5.76)	**9.11** (8.30-10.4)	**12.8** (10.9-14.7)	1309
Age group							
20-49 years	11-12	**2.91** (2.62-3.23)	**2.95** (2.44-3.47)	**5.46** (4.74-6.48)	**9.19** (8.04-10.8)	**12.1** (9.78-16.8)	655
50 years and older	11-12	**3.02** (2.67-3.42)	**3.00** (2.54-3.44)	**5.21** (4.24-6.08)	**8.64** (7.40-10.9)	**14.4** (10.3-20.8)	654
Gender							
Males	11-12	**3.35** (3.06-3.68)	**3.41** (2.99-3.67)	**5.65** (5.03-6.83)	**10.3** (8.48-10.8)	**13.3** (10.8-18.1)	625
Females	11-12	**2.68** (2.44-2.94)	**2.63** (2.39-2.95)	**5.00** (4.00-5.97)	**8.46** (7.99-9.48)	**12.6** (10.7-15.1)	684

Tobacco product users who did not smoke cigarettes were excluded. See Adult Cigarette Smokers and Nonsmokers: Analysis of Select Chemicals in a Special Sample.
Limit of detection (LOD, see Data Analysis section) for Survey year 11-12 is 0.05.

Urinary Perchlorate (creatinine corrected)

Geometric mean and selected percentiles of urine concentrations (in µg/g of creatinine) for the U.S. adult population from the National Health and Nutrition Examination Survey by smoking status.

	Survey years	Geometric mean (95% conf. interval)	Selected percentiles (95% confidence interval) 50th	75th	90th	95th	Sample size
Cigarette Smokers							
Total	11-12	**2.79** (2.55-3.06)	**2.61** (2.33-2.88)	**4.45** (3.97-4.75)	**7.45** (6.56-7.61)	**9.88** (7.51-19.9)	889
Age group							
20-49 years	11-12	**2.66** (2.33-3.03)	**2.44** (2.13-2.86)	**4.22** (3.76-4.73)	**7.32** (5.54-8.76)	**10.2** (6.94-43.9)	532
50 years and older	11-12	**3.03** (2.77-3.31)	**2.78** (2.57-3.08)	**4.63** (4.00-5.16)	**7.45** (5.14-9.42)	**9.27** (7.50-12.2)	357
Gender							
Males	11-12	**2.67** (2.31-3.09)	**2.33** (2.11-2.70)	**4.22** (3.67-4.86)	**7.45** (5.27-9.22)	**11.0** (7.22-49.1)	536
Females	11-12	**2.95** (2.65-3.28)	**2.88** (2.50-3.29)	**4.63** (3.87-4.98)	**7.32** (5.98-8.67)	**9.16** (7.50-11.7)	353
Nonsmokers							
Total	11-12	**3.44** (3.20-3.69)	**3.36** (3.02-3.64)	**5.83** (5.49-6.09)	**9.46** (8.03-11.1)	**14.8** (10.2-18.5)	1308
Age group							
20-49 years	11-12	**3.14** (2.83-3.48)	**2.95** (2.55-3.44)	**5.55** (4.52-6.36)	**9.20** (7.49-10.4)	**12.0** (9.81-15.9)	654
50 years and older	11-12	**3.80** (3.36-4.29)	**3.65** (3.31-4.06)	**6.08** (5.25-6.91)	**10.0** (7.86-14.9)	**16.9** (11.1-23.6)	654
Gender							
Males	11-12	**2.92** (2.68-3.17)	**2.90** (2.55-3.11)	**4.53** (4.07-5.16)	**6.83** (6.07-8.19)	**11.6** (7.21-17.4)	624
Females	11-12	**3.93** (3.53-4.36)	**3.85** (3.23-4.72)	**6.53** (6.08-7.49)	**10.3** (9.22-13.9)	**16.2** (11.8-19.2)	684

Tobacco product users who did not smoke cigarettes were excluded. See Adult Cigarette Smokers and Nonsmokers: Analysis of Select Chemicals in a Special Sample.

Urinary Thiocyanate

Geometric mean and selected percentiles of urine concentrations (in mg/L) for the U.S. adult population from the National Health and Nutrition Examination Survey by smoking status.

	Survey years	Geometric mean (95% conf. interval)	Selected percentiles (95% confidence interval) 50th	75th	90th	95th	Sample size
Cigarette Smokers							
Total	11-12	**4.10** (3.58-4.69)	**4.60** (3.98-5.37)	**7.16** (6.43-8.09)	**11.2** (9.43-12.7)	**14.6** (12.7-16.2)	869
Age group							
20-49 years	11-12	**4.18** (3.72-4.69)	**4.67** (4.15-5.05)	**7.38** (6.43-8.20)	**11.7** (10.2-13.3)	**15.9** (12.7-17.8)	518
50 years and older	11-12	**3.98** (3.24-4.90)	**4.38** (3.37-5.94)	**6.90** (5.48-8.14)	**9.94** (7.67-13.5)	**12.8** (9.50-15.3)	351
Gender							
Males	11-12	**4.03** (3.26-4.98)	**4.51** (3.30-6.14)	**7.23** (6.43-8.59)	**11.1** (8.99-13.4)	**14.5** (11.8-17.8)	525
Females	11-12	**4.19** (3.81-4.61)	**4.71** (4.31-5.37)	**6.83** (6.12-7.95)	**11.3** (8.53-13.1)	**15.3** (11.9-18.2)	344
Nonsmokers							
Total	11-12	**.795** (.737-.858)	**.875** (.819-.929)	**1.56** (1.41-1.74)	**2.54** (2.23-2.92)	**3.23** (2.97-3.57)	1319
Age group							
20-49 years	11-12	**.855** (.777-.940)	**.927** (.854-1.00)	**1.71** (1.50-1.92)	**2.67** (2.29-3.17)	**3.43** (3.01-4.36)	659
50 years and older	11-12	**.736** (.666-.814)	**.833** (.726-.897)	**1.44** (1.21-1.68)	**2.39** (1.94-2.90)	**2.92** (2.39-3.86)	660
Gender							
Males	11-12	**.968** (.865-1.08)	**1.01** (.913-1.20)	**1.90** (1.57-2.20)	**2.79** (2.31-3.25)	**3.43** (2.94-4.10)	628
Females	11-12	**.681** (.600-.773)	**.727** (.603-.843)	**1.36** (1.21-1.50)	**2.27** (1.97-2.54)	**3.17** (2.52-3.32)	691

Tobacco product users who did not smoke cigarettes were excluded. See Adult Cigarette Smokers and Nonsmokers: Analysis of Select Chemicals in a Special Sample.
Limit of detection (LOD, see Data Analysis section) for Survey year 11-12 is 0.02.

Urinary Thiocyanate (creatinine corrected)

Geometric mean and selected percentiles of urine concentrations (in mg/g of creatinine) for the U.S. adult population from the National Health and Nutrition Examination Survey by smoking status.

	Survey years	Geometric mean (95% conf. interval)	Selected percentiles (95% confidence interval) 50th	75th	90th	95th	Sample size
Cigarette Smokers							
Total	11-12	**4.53** (4.02-5.10)	**5.04** (4.38-5.47)	**8.28** (7.42-10.0)	**14.4** (11.6-15.7)	**16.7** (15.3-18.9)	869
Age group							
20-49 years	11-12	**4.35** (3.87-4.89)	**4.84** (3.82-5.47)	**7.98** (7.54-8.91)	**14.0** (11.1-16.1)	**16.7** (14.2-19.9)	518
50 years and older	11-12	**4.81** (4.06-5.71)	**5.28** (4.43-6.84)	**8.84** (7.11-12.1)	**15.3** (10.5-17.2)	**16.6** (15.3-18.3)	351
Gender							
Males	11-12	**3.81** (3.28-4.43)	**4.20** (3.64-5.06)	**7.30** (6.54-7.77)	**11.1** (9.41-12.5)	**14.3** (12.3-15.6)	525
Females	11-12	**5.62** (4.64-6.81)	**5.82** (4.69-8.05)	**11.1** (8.53-14.6)	**16.7** (14.0-18.9)	**19.2** (16.7-24.0)	344
Nonsmokers							
Total	11-12	**.933** (.881-.988)	**.976** (.905-1.10)	**1.69** (1.54-1.84)	**2.70** (2.34-2.99)	**3.29** (3.02-3.89)	1318
Age group							
20-49 years	11-12	**.938** (.864-1.02)	**1.01** (.902-1.10)	**1.67** (1.46-1.84)	**2.51** (2.18-2.91)	**3.02** (2.91-3.18)	658
50 years and older	11-12	**.927** (.852-1.01)	**.965** (.830-1.18)	**1.72** (1.46-1.99)	**2.91** (2.16-3.37)	**3.76** (3.16-4.33)	660
Gender							
Males	11-12	**.865** (.782-.956)	**.941** (.743-1.09)	**1.56** (1.28-1.87)	**2.66** (2.09-2.96)	**3.37** (2.67-4.05)	627
Females	11-12	**.990** (.910-1.08)	**1.05** (.936-1.17)	**1.75** (1.59-1.91)	**2.86** (2.41-3.03)	**3.29** (2.97-3.96)	691

Tobacco product users who did not smoke cigarettes were excluded. See Adult Cigarette Smokers and Nonsmokers: Analysis of Select Chemicals in a Special Sample.

Urinary 2-Hydroxyfluorene

Metabolite of Fluorene

Geometric mean and selected percentiles of urine concentrations (in ng/L) for the U.S. adult population from the National Health and Nutrition Examination Survey by smoking status.

	Survey years	Geometric mean (95% conf. interval)	Selected percentiles (95% confidence interval) 50th	75th	90th	95th	Sample size
Cigarette Smokers							
Total	11-12	**1160** (1030-1300)	**1310** (1100-1420)	**2320** (2110-2540)	**4090** (3380-4430)	**5600** (4340-6250)	890
Age group							
20-49 years	11-12	**1070** (898-1280)	**1220** (1030-1410)	**2260** (1820-2520)	**3550** (2750-4210)	**4460** (4140-5330)	534
50 years and older	11-12	**1310** (1160-1480)	**1380** (1030-1850)	**2520** (2210-3360)	**4900** (3430-6100)	**6170** (5530-6960)	356
Gender							
Males	11-12	**1130** (945-1350)	**1330** (1010-1500)	**2420** (2080-3020)	**4200** (3360-5840)	**5990** (4090-7490)	535
Females	11-12	**1190** (1070-1330)	**1270** (1100-1380)	**2300** (2090-2490)	**3430** (2780-4140)	**4210** (3760-4900)	355
Nonsmokers							
Total	11-12	**164** (153-176)	**158** (147-174)	**298** (269-326)	**580** (478-622)	**768** (623-966)	1324
Age group							
20-49 years	11-12	**181** (163-201)	**178** (157-204)	**346** (309-386)	**623** (523-715)	**906** (694-1400)	663
50 years and older	11-12	**148** (131-167)	**143** (125-162)	**254** (216-298)	**441** (345-590)	**622** (457-915)	661
Gender							
Males	11-12	**200** (178-226)	**202** (164-224)	**342** (300-398)	**623** (521-728)	**945** (690-1460)	629
Females	11-12	**140** (129-151)	**141** (124-148)	**258** (227-288)	**458** (386-567)	**644** (547-798)	695

Tobacco product users who did not smoke cigarettes were excluded. See Adult Cigarette Smokers and Nonsmokers: Analysis of Select Chemicals in a Special Sample.
Limit of detection (LOD, see Data Analysis section) for Survey year 11-12 is 10.0.

Biomonitoring Summary: http://www.cdc.gov/biomonitoring/Fluorene_BiomonitoringSummary.html
Factsheet: http://www.cdc.gov/biomonitoring/PAHs_FactSheet.html

Urinary 2-Hydroxyfluorene (creatinine corrected)

Metabolite of Fluorene

Geometric mean and selected percentiles of urine concentrations (in ng/g of creatinine) for the U.S. adult population from the National Health and Nutrition Examination Survey by smoking status.

	Survey years	Geometric mean (95% conf. interval)	Selected percentiles (95% confidence interval) 50th	75th	90th	95th	Sample size
Cigarette Smokers							
Total	11-12	**1260** (1140-1400)	**1370** (1300-1460)	**2220** (1950-2520)	**3170** (2930-3560)	**3890** (3380-4670)	890
Age group							
20-49 years	11-12	**1100** (968-1250)	**1190** (1060-1300)	**1900** (1700-2150)	**2920** (2460-3290)	**3850** (3210-4390)	534
50 years and older	11-12	**1590** (1430-1770)	**1800** (1420-2040)	**2710** (2300-3040)	**3540** (2950-4110)	**3940** (3380-5170)	356
Gender							
Males	11-12	**1090** (950-1260)	**1210** (1060-1320)	**1890** (1550-2170)	**2820** (2310-3440)	**3540** (2800-4110)	535
Females	11-12	**1520** (1320-1750)	**1700** (1400-1950)	**2700** (2080-3040)	**3560** (3090-3940)	**4390** (3630-4840)	355
Nonsmokers							
Total	11-12	**190** (178-203)	**173** (165-182)	**265** (248-291)	**445** (372-484)	**637** (476-865)	1323
Age group							
20-49 years	11-12	**195** (178-212)	**177** (166-189)	**275** (238-309)	**467** (365-522)	**652** (471-961)	662
50 years and older	11-12	**185** (167-206)	**168** (146-192)	**260** (227-298)	**423** (348-459)	**610** (442-865)	661
Gender							
Males	11-12	**175** (156-196)	**153** (137-174)	**249** (207-281)	**423** (318-505)	**553** (426-1240)	628
Females	11-12	**204** (193-215)	**185** (171-200)	**282** (253-310)	**454** (381-511)	**702** (471-853)	695

Tobacco product users who did not smoke cigarettes were excluded. See Adult Cigarette Smokers and Nonsmokers: Analysis of Select Chemicals in a Special Sample.

Biomonitoring Summary: http://www.cdc.gov/biomonitoring/Fluorene_BiomonitoringSummary.html
Factsheet: http://www.cdc.gov/biomonitoring/PAHs_FactSheet.html

Urinary 3-Hydroxyfluorene

Metabolite of Fluorene

Geometric mean and selected percentiles of urine concentrations (in ng/L) for the U.S. adult population from the National Health and Nutrition Examination Survey by smoking status.

	Survey years	Geometric mean (95% conf. interval)	Selected percentiles (95% confidence interval) 50th	75th	90th	95th	Sample size
Cigarette Smokers							
Total	11-12	**605** (532-689)	**681** (534-801)	**1270** (1130-1510)	**2220** (1930-2620)	**2910** (2510-3220)	890
Age group							
20-49 years	11-12	**568** (465-693)	**660** (496-823)	**1210** (1060-1410)	**2050** (1710-2630)	**2790** (2130-3190)	534
50 years and older	11-12	**674** (581-782)	**693** (534-936)	**1480** (1130-1750)	**2420** (1790-3040)	**3040** (2500-4060)	356
Gender							
Males	11-12	**602** (496-730)	**684** (517-886)	**1550** (1190-1790)	**2470** (1930-3040)	**3040** (2390-4560)	535
Females	11-12	**610** (547-680)	**660** (522-765)	**1160** (970-1280)	**1850** (1400-2420)	**2620** (1810-3330)	355
Nonsmokers							
Total	11-12	**57.7** (52.9-63.0)	**58.0** (53.0-61.0)	**104** (94.0-117)	**194** (169-213)	**289** (230-377)	1320
Age group							
20-49 years	11-12	**64.0** (57.0-71.9)	**62.0** (56.0-74.0)	**125** (116-147)	**229** (199-273)	**347** (267-463)	662
50 years and older	11-12	**51.6** (45.1-59.1)	**53.0** (45.0-59.0)	**82.0** (68.0-102)	**147** (115-195)	**214** (156-351)	658
Gender							
Males	11-12	**70.4** (61.4-80.8)	**63.0** (59.0-72.0)	**124** (104-153)	**230** (187-302)	**346** (240-818)	628
Females	11-12	**49.1** (44.5-54.3)	**51.0** (47.0-56.0)	**88.0** (79.0-99.0)	**164** (147-176)	**229** (184-289)	692

Tobacco product users who did not smoke cigarettes were excluded. See Adult Cigarette Smokers and Nonsmokers: Analysis of Select Chemicals in a Special Sample.
Limit of detection (LOD, see Data Analysis section) for Survey year 11-12 is 10.0.

Biomonitoring Summary: http://www.cdc.gov/biomonitoring/Fluorene_BiomonitoringSummary.html
Factsheet: http://www.cdc.gov/biomonitoring/PAHs_FactSheet.html

Urinary 3-Hydroxyfluorene (creatinine corrected)

Metabolite of Fluorene

Geometric mean and selected percentiles of urine concentrations (in ng/g of creatinine) for the U.S. adult population from the National Health and Nutrition Examination Survey by smoking status.

	Survey years	Geometric mean (95% conf. interval)	Selected percentiles (95% confidence interval) 50th	75th	90th	95th	Sample size
Cigarette Smokers							
Total	11-12	**662** (595-738)	**760** (679-826)	**1200** (1100-1350)	**1760** (1470-2050)	**2060** (2000-2260)	890
Age group							
20-49 years	11-12	**583** (510-667)	**642** (568-728)	**1130** (978-1230)	**1660** (1330-2040)	**2050** (1710-2330)	534
50 years and older	11-12	**819** (717-937)	**964** (826-1070)	**1350** (1080-1650)	**1910** (1560-2060)	**2060** (1680-2420)	356
Gender							
Males	11-12	**583** (508-669)	**637** (568-736)	**1080** (940-1200)	**1600** (1250-2050)	**2050** (1500-2140)	535
Females	11-12	**777** (652-926)	**936** (796-1080)	**1330** (1120-1650)	**1940** (1420-2410)	**2320** (2040-2420)	355
Nonsmokers							
Total	11-12	**66.9** (62.0-72.1)	**59.3** (54.6-65.3)	**100** (90.6-107)	**172** (147-207)	**251** (201-311)	1319
Age group							
20-49 years	11-12	**68.8** (62.4-75.9)	**59.1** (54.0-67.3)	**103** (83.2-122)	**183** (148-242)	**251** (194-328)	661
50 years and older	11-12	**64.8** (56.9-73.8)	**60.5** (50.2-69.1)	**94.6** (87.5-105)	**167** (135-182)	**249** (170-372)	658
Gender							
Males	11-12	**61.4** (53.6-70.3)	**51.9** (48.8-58.8)	**87.7** (77.8-101)	**149** (117-192)	**233** (151-535)	627
Females	11-12	**71.6** (65.5-78.3)	**66.7** (57.6-75.8)	**107** (95.5-126)	**193** (155-239)	**251** (217-300)	692

Tobacco product users who did not smoke cigarettes were excluded. See Adult Cigarette Smokers and Nonsmokers: Analysis of Select Chemicals in a Special Sample.

Biomonitoring Summary: http://www.cdc.gov/biomonitoring/Fluorene_BiomonitoringSummary.html
Factsheet: http://www.cdc.gov/biomonitoring/PAHs_FactSheet.html

Urinary 9-Hydroxyfluorene

Metabolite of Fluorene

Geometric mean and selected percentiles of urine concentrations (in ng/L) for the U.S. adult population from the National Health and Nutrition Examination Survey by smoking status.

	Survey years	Geometric mean (95% conf. interval)	Selected percentiles (95% confidence interval) 50th	75th	90th	95th	Sample size
Cigarette Smokers							
Total	11-12	**609** (554-670)	**658** (600-711)	**1210** (1030-1330)	**1960** (1640-2560)	**3100** (2410-3730)	890
Age group							
20-49 years	11-12	**565** (495-644)	**621** (516-664)	**1100** (915-1230)	**1750** (1460-2400)	**2590** (1970-3680)	534
50 years and older	11-12	**691** (594-804)	**801** (603-901)	**1370** (1150-1510)	**2470** (1730-2840)	**3460** (2470-4020)	356
Gender							
Males	11-12	**602** (527-689)	**658** (526-781)	**1190** (972-1420)	**2370** (1570-3460)	**3460** (2340-4020)	535
Females	11-12	**618** (531-719)	**650** (539-750)	**1210** (917-1360)	**1740** (1440-2450)	**2590** (1790-3730)	355
Nonsmokers							
Total	11-12	**207** (191-224)	**203** (186-222)	**385** (340-419)	**795** (664-913)	**1230** (945-1420)	1324
Age group							
20-49 years	11-12	**217** (190-247)	**224** (191-260)	**409** (372-459)	**893** (710-1080)	**1310** (1080-1350)	663
50 years and older	11-12	**197** (168-231)	**183** (141-236)	**340** (297-386)	**711** (524-909)	**988** (728-1780)	661
Gender							
Males	11-12	**247** (218-280)	**248** (208-286)	**436** (388-524)	**879** (694-1070)	**1310** (1010-1780)	629
Females	11-12	**179** (161-199)	**180** (157-197)	**325** (291-384)	**712** (495-877)	**1150** (775-1610)	695

Tobacco product users who did not smoke cigarettes were excluded. See Adult Cigarette Smokers and Nonsmokers: Analysis of Select Chemicals in a Special Sample.
Limit of detection (LOD, see Data Analysis section) for Survey year 11-12 is 10.0.

Biomonitoring Summary: http://www.cdc.gov/biomonitoring/Fluorene_BiomonitoringSummary.html
Factsheet: http://www.cdc.gov/biomonitoring/PAHs_FactSheet.html

Urinary 9-Hydroxyfluorene (creatinine corrected)

Metabolite of Fluorene

Geometric mean and selected percentiles of urine concentrations (in ng/g of creatinine) for the U.S. adult population from the National Health and Nutrition Examination Survey by smoking status.

	Survey years	Geometric mean (95% conf. interval)	Selected percentiles (95% confidence interval) 50th	75th	90th	95th	Sample size
Cigarette Smokers							
Total	11-12	**666** (592-751)	**664** (606-738)	**1150** (1040-1290)	**1850** (1600-2110)	**2630** (1990-3640)	890
Age group							
20-49 years	11-12	**580** (496-678)	**556** (495-630)	**961** (829-1130)	**1600** (1250-1950)	**2630** (1600-4950)	534
50 years and older	11-12	**841** (725-974)	**900** (804-1040)	**1410** (1150-1660)	**2010** (1610-2570)	**2570** (2010-2970)	356
Gender							
Males	11-12	**583** (496-686)	**597** (541-672)	**1040** (866-1140)	**1510** (1320-1990)	**2260** (1710-3030)	535
Females	11-12	**787** (710-871)	**763** (658-925)	**1360** (1150-1600)	**2010** (1710-2630)	**2700** (2010-3890)	355
Nonsmokers							
Total	11-12	**240** (220-261)	**218** (196-243)	**366** (330-420)	**700** (573-828)	**959** (805-1130)	1323
Age group							
20-49 years	11-12	**233** (212-257)	**210** (186-239)	**366** (326-407)	**646** (542-901)	**1080** (788-1160)	662
50 years and older	11-12	**247** (216-283)	**230** (193-275)	**367** (324-474)	**704** (536-917)	**921** (783-1080)	661
Gender							
Males	11-12	**215** (194-239)	**192** (178-212)	**316** (281-368)	**621** (400-917)	**917** (620-1260)	628
Females	11-12	**261** (234-292)	**245** (208-290)	**404** (353-490)	**750** (585-914)	**986** (914-1140)	695

Tobacco product users who did not smoke cigarettes were excluded. See Adult Cigarette Smokers and Nonsmokers: Analysis of Select Chemicals in a Special Sample.

Biomonitoring Summary: http://www.cdc.gov/biomonitoring/Fluorene_BiomonitoringSummary.html
Factsheet: http://www.cdc.gov/biomonitoring/PAHs_FactSheet.html

Urinary 1-Hydroxyphenanthrene

Metabolite of Phenanthrene

Geometric mean and selected percentiles of urine concentrations (in ng/L) for the U.S. adult population from the National Health and Nutrition Examination Survey by smoking status.

	Survey years	Geometric mean (95% conf. interval)	Selected percentiles (95% confidence interval) 50th	75th	90th	95th	Sample size
Cigarette Smokers							
Total	11-12	**198** (179-218)	**208** (178-239)	**383** (324-433)	**589** (526-709)	**758** (671-888)	890
Age group							
20-49 years	11-12	**195** (168-226)	**210** (167-247)	**378** (319-420)	**589** (512-688)	**709** (550-875)	534
50 years and older	11-12	**202** (181-225)	**206** (163-264)	**408** (308-459)	**687** (466-823)	**809** (547-1170)	356
Gender							
Males	11-12	**190** (170-213)	**208** (168-238)	**391** (328-439)	**594** (507-756)	**758** (665-864)	535
Females	11-12	**207** (179-240)	**208** (177-247)	**378** (282-459)	**580** (445-907)	**790** (556-1170)	355
Nonsmokers							
Total	11-12	**115** (107-124)	**114** (104-125)	**214** (195-235)	**363** (307-443)	**535** (428-639)	1324
Age group							
20-49 years	11-12	**121** (108-135)	**127** (107-141)	**242** (209-258)	**428** (330-495)	**544** (451-629)	663
50 years and older	11-12	**110** (95.7-125)	**104** (91.0-122)	**193** (173-219)	**322** (271-386)	**466** (340-851)	661
Gender							
Males	11-12	**128** (115-142)	**130** (110-143)	**231** (201-262)	**365** (304-450)	**498** (384-774)	629
Females	11-12	**106** (95.4-118)	**103** (94.0-110)	**198** (174-238)	**356** (289-461)	**540** (371-639)	695

Tobacco product users who did not smoke cigarettes were excluded. See Adult Cigarette Smokers and Nonsmokers: Analysis of Select Chemicals in a Special Sample.
Limit of detection (LOD, see Data Analysis section) for Survey year 11-12 is 10.0.

Biomonitoring Summary: http://www.cdc.gov/biomonitoring/Phenanthrene_BiomonitoringSummary.html
Factsheet: http://www.cdc.gov/biomonitoring/PAHs_FactSheet.html

Urinary 1-Hydroxyphenanthrene (creatinine corrected)

Metabolite of Phenanthrene

Geometric mean and selected percentiles of urine concentrations (in ng/g of creatinine) for the U.S. adult population from the National Health and Nutrition Examination Survey by smoking status.

	Survey years	Geometric mean (95% conf. interval)	Selected percentiles (95% confidence interval) 50th	75th	90th	95th	Sample size
Cigarette Smokers							
Total	11-12	**216** (200-234)	**212** (194-247)	**321** (292-360)	**488** (426-543)	**583** (528-609)	890
Age group							
20-49 years	11-12	**200** (185-217)	**197** (178-220)	**301** (270-340)	**423** (365-479)	**518** (465-628)	534
50 years and older	11-12	**245** (219-275)	**249** (212-273)	**383** (300-491)	**543** (448-583)	**583** (543-733)	356
Gender							
Males	11-12	**184** (169-201)	**181** (165-206)	**280** (247-303)	**377** (347-420)	**491** (392-531)	535
Females	11-12	**264** (243-287)	**270** (232-300)	**416** (326-481)	**543** (500-600)	**640** (543-859)	355
Nonsmokers							
Total	11-12	**134** (123-145)	**125** (113-134)	**200** (177-217)	**335** (270-393)	**497** (384-655)	1323
Age group							
20-49 years	11-12	**130** (119-142)	**122** (108-133)	**194** (167-216)	**313** (244-393)	**473** (351-598)	662
50 years and older	11-12	**138** (122-155)	**127** (111-143)	**201** (174-223)	**340** (272-463)	**503** (372-683)	661
Gender							
Males	11-12	**111** (102-122)	**100** (91.4-110)	**152** (136-174)	**260** (195-367)	**393** (260-598)	628
Females	11-12	**154** (137-174)	**143** (126-162)	**221** (201-254)	**357** (305-495)	**562** (453-831)	695

Tobacco product users who did not smoke cigarettes were excluded. See Adult Cigarette Smokers and Nonsmokers: Analysis of Select Chemicals in a Special Sample.

Biomonitoring Summary: http://www.cdc.gov/biomonitoring/Phenanthrene_BiomonitoringSummary.html
Factsheet: http://www.cdc.gov/biomonitoring/PAHs_FactSheet.html

Urinary 2-Hydroxyphenanthrene

Metabolite of Phenanthrene

Geometric mean and selected percentiles of urine concentrations (in ng/L) for the U.S. adult population from the National Health and Nutrition Examination Survey by smoking status.

	Survey years	Geometric mean (95% conf. interval)	Selected percentiles (95% confidence interval) 50th	75th	90th	95th	Sample size
Cigarette Smokers							
Total	11-12	**113** (105-121)	**109** (103-130)	**210** (193-228)	**334** (301-364)	**413** (374-466)	889
Age group							
20-49 years	11-12	**109** (96.8-122)	**108** (99.0-126)	**204** (178-228)	**303** (248-357)	**399** (341-457)	534
50 years and older	11-12	**120** (109-133)	**121** (95.0-151)	**219** (202-263)	**366** (301-413)	**448** (369-498)	355
Gender							
Males	11-12	**118** (108-129)	**130** (105-149)	**224** (202-248)	**360** (287-379)	**435** (374-503)	535
Females	11-12	**106** (94.4-120)	**106** (89.0-121)	**190** (151-219)	**266** (232-357)	**380** (288-481)	354
Nonsmokers							
Total	11-12	**53.9** (50.1-58.0)	**52.0** (49.0-57.0)	**95.0** (84.0-105)	**175** (148-202)	**264** (196-313)	1321
Age group							
20-49 years	11-12	**58.6** (53.3-64.5)	**62.0** (53.0-68.0)	**107** (96.0-122)	**187** (167-223)	**266** (210-334)	663
50 years and older	11-12	**49.1** (42.6-56.6)	**47.0** (41.0-55.0)	**82.0** (67.0-95.0)	**139** (113-226)	**259** (141-348)	658
Gender							
Males	11-12	**66.5** (58.9-75.1)	**66.0** (55.0-78.0)	**119** (101-128)	**198** (168-251)	**277** (209-377)	628
Females	11-12	**45.5** (41.9-49.3)	**46.0** (43.0-49.0)	**75.0** (67.0-93.0)	**141** (112-186)	**232** (156-303)	693

Tobacco product users who did not smoke cigarettes were excluded. See Adult Cigarette Smokers and Nonsmokers: Analysis of Select Chemicals in a Special Sample.
Limit of detection (LOD, see Data Analysis section) for Survey year 11-12 is 10.0.

Biomonitoring Summary: http://www.cdc.gov/biomonitoring/Phenanthrene_BiomonitoringSummary.html
Factsheet: http://www.cdc.gov/biomonitoring/PAHs_FactSheet.html

Urinary 2-Hydroxyphenanthrene (creatinine corrected)

Metabolite of Phenanthrene

Geometric mean and selected percentiles of urine concentrations (in ng/g of creatinine) for the U.S. adult population from the National Health and Nutrition Examination Survey by smoking status.

	Survey years	Geometric mean (95% conf. interval)	Selected percentiles (95% confidence interval) 50th	75th	90th	95th	Sample size
Cigarette Smokers							
Total	11-12	**123** (114-133)	**126** (116-133)	**192** (169-207)	**288** (245-321)	**356** (303-412)	889
Age group							
20-49 years	11-12	**112** (103-121)	**109** (103-116)	**175** (154-192)	**258** (221-290)	**327** (258-529)	534
50 years and older	11-12	**146** (130-164)	**146** (131-159)	**215** (183-271)	**318** (243-356)	**376** (309-472)	355
Gender							
Males	11-12	**114** (104-126)	**116** (101-128)	**175** (148-193)	**264** (206-327)	**385** (242-442)	535
Females	11-12	**135** (122-150)	**141** (123-153)	**218** (189-245)	**303** (247-336)	**356** (303-529)	354
Nonsmokers							
Total	11-12	**62.4** (57.9-67.3)	**57.9** (54.5-60.6)	**91.4** (79.2-100)	**153** (120-179)	**207** (162-282)	1320
Age group							
20-49 years	11-12	**63.0** (58.8-67.5)	**59.5** (54.5-63.5)	**90.0** (81.2-99.1)	**144** (114-170)	**185** (162-291)	662
50 years and older	11-12	**61.7** (54.2-70.1)	**56.7** (48.7-64.8)	**92.3** (72.6-105)	**156** (120-203)	**218** (156-303)	658
Gender							
Males	11-12	**57.9** (52.3-64.2)	**53.3** (49.1-56.7)	**78.7** (66.5-101)	**145** (109-182)	**184** (144-281)	627
Females	11-12	**66.2** (60.3-72.7)	**61.7** (57.1-68.3)	**93.1** (84.2-103)	**156** (116-193)	**226** (163-292)	693

Tobacco product users who did not smoke cigarettes were excluded. See Adult Cigarette Smokers and Nonsmokers: Analysis of Select Chemicals in a Special Sample.

Biomonitoring Summary: http://www.cdc.gov/biomonitoring/Phenanthrene_BiomonitoringSummary.html
Factsheet: http://www.cdc.gov/biomonitoring/PAHs_FactSheet.html

Urinary 3-Hydroxyphenanthrene

Metabolite of Phenanthrene

Geometric mean and selected percentiles of urine concentrations (in ng/L) for the U.S. adult population from the National Health and Nutrition Examination Survey by smoking status.

	Survey years	Geometric mean (95% conf. interval)	Selected percentiles (95% confidence interval) 50th	75th	90th	95th	Sample size
Cigarette Smokers							
Total	11-12	**140** (125-157)	**146** (124-164)	**273** (230-328)	**517** (444-550)	**635** (572-698)	890
Age group							
20-49 years	11-12	**137** (117-160)	**141** (116-167)	**268** (211-324)	**510** (400-576)	**637** (563-691)	534
50 years and older	11-12	**145** (130-163)	**152** (127-183)	**286** (223-375)	**525** (422-633)	**633** (495-784)	356
Gender							
Males	11-12	**146** (128-166)	**162** (130-185)	**315** (264-377)	**550** (525-625)	**698** (625-790)	535
Females	11-12	**133** (116-152)	**129** (113-153)	**256** (198-286)	**389** (323-480)	**504** (401-649)	355
Nonsmokers							
Total	11-12	**48.8** (44.8-53.2)	**48.0** (44.0-54.0)	**90.0** (81.0-100)	**170** (139-202)	**245** (202-296)	1323
Age group							
20-49 years	11-12	**53.6** (47.8-60.1)	**56.0** (47.0-64.0)	**109** (90.0-128)	**190** (166-215)	**284** (206-372)	663
50 years and older	11-12	**44.1** (37.8-51.5)	**43.0** (34.0-54.0)	**76.0** (63.0-91.0)	**135** (101-186)	**221** (146-265)	660
Gender							
Males	11-12	**59.7** (51.6-69.0)	**59.0** (48.0-68.0)	**111** (91.0-135)	**195** (162-251)	**285** (211-393)	629
Females	11-12	**41.5** (38.0-45.3)	**40.0** (37.0-45.0)	**80.0** (65.0-87.0)	**135** (105-175)	**206** (173-217)	694

Tobacco product users who did not smoke cigarettes were excluded. See Adult Cigarette Smokers and Nonsmokers: Analysis of Select Chemicals in a Special Sample.
Limit of detection (LOD, see Data Analysis section) for Survey year 11-12 is 10.0.

Biomonitoring Summary: http://www.cdc.gov/biomonitoring/Phenanthrene_BiomonitoringSummary.html
Factsheet: http://www.cdc.gov/biomonitoring/PAHs_FactSheet.html

Urinary 3-Hydroxyphenanthrene (creatinine corrected)

Metabolite of Phenanthrene

Geometric mean and selected percentiles of urine concentrations (in ng/g of creatinine) for the U.S. adult population from the National Health and Nutrition Examination Survey by smoking status.

	Survey years	Geometric mean (95% conf. interval)	Selected percentiles (95% confidence interval) 50th	75th	90th	95th	Sample size
Cigarette Smokers							
Total	11-12	**153** (144-163)	**160** (147-173)	**255** (229-280)	**370** (347-410)	**460** (416-497)	890
Age group							
20-49 years	11-12	**140** (129-153)	**145** (128-162)	**230** (208-255)	**353** (296-387)	**416** (361-525)	534
50 years and older	11-12	**177** (160-195)	**193** (161-222)	**300** (255-346)	**427** (348-446)	**474** (407-560)	356
Gender							
Males	11-12	**142** (132-152)	**153** (130-162)	**229** (214-250)	**354** (324-406)	**460** (405-474)	535
Females	11-12	**169** (149-191)	**176** (151-204)	**278** (245-327)	**391** (361-421)	**466** (410-667)	355
Nonsmokers							
Total	11-12	**56.6** (52.3-61.3)	**52.2** (48.6-56.1)	**82.8** (75.0-95.2)	**148** (121-168)	**203** (157-300)	1322
Age group							
20-49 years	11-12	**57.7** (53.2-62.6)	**52.2** (47.7-57.8)	**82.6** (74.9-95.1)	**150** (118-171)	**201** (163-250)	662
50 years and older	11-12	**55.5** (48.5-63.5)	**52.2** (44.5-60.0)	**82.8** (69.8-102)	**143** (110-172)	**208** (147-338)	660
Gender							
Males	11-12	**52.0** (46.2-58.5)	**48.0** (42.0-54.2)	**76.7** (63.7-93.6)	**139** (107-164)	**185** (140-269)	628
Females	11-12	**60.6** (54.9-66.9)	**55.8** (51.0-61.6)	**87.0** (76.3-105)	**149** (124-178)	**231** (153-334)	694

Tobacco product users who did not smoke cigarettes were excluded. See Adult Cigarette Smokers and Nonsmokers: Analysis of Select Chemicals in a Special Sample.

Biomonitoring Summary: http://www.cdc.gov/biomonitoring/Phenanthrene_BiomonitoringSummary.html
Factsheet: http://www.cdc.gov/biomonitoring/PAHs_FactSheet.html

Urinary 4-Hydroxyphenanthrene

Metabolite of Phenanthrene

Geometric mean and selected percentiles of urine concentrations (in ng/L) for the U.S. adult population from the National Health and Nutrition Examination Survey by smoking status.

	Survey years	Geometric mean (95% conf. interval)	Selected percentiles (95% confidence interval) 50th	75th	90th	95th	Sample size
Cigarette Smokers							
Total	11-12	**38.2** (35.2-41.5)	**42.0** (35.0-46.0)	**75.0** (67.0-82.0)	**116** (102-137)	**148** (134-178)	879
Age group							
20-49 years	11-12	**36.3** (32.4-40.7)	**36.0** (31.0-46.0)	**73.0** (61.0-82.0)	**107** (98.0-125)	**144** (115-182)	529
50 years and older	11-12	**41.6** (36.8-46.9)	**46.0** (39.0-51.0)	**77.0** (66.0-99.0)	**132** (114-148)	**156** (126-202)	350
Gender							
Males	11-12	**35.1** (30.6-40.2)	**35.0** (31.0-44.0)	**74.0** (63.0-83.0)	**121** (100-148)	**154** (126-189)	529
Females	11-12	**42.5** (37.1-48.6)	**48.0** (39.0-53.0)	**76.0** (63.0-90.0)	**110** (96.0-146)	**147** (117-182)	350
Nonsmokers							
Total	11-12	**17.7** (16.5-19.0)	**16.0** (15.0-17.0)	**30.0** (27.0-34.0)	**57.0** (45.0-72.0)	**84.0** (74.0-97.0)	1320
Age group							
20-49 years	11-12	**19.6** (17.5-22.0)	**18.0** (15.0-22.0)	**35.0** (31.0-41.0)	**67.0** (50.0-82.0)	**90.0** (72.0-117)	662
50 years and older	11-12	**15.8** (14.0-17.8)	**14.0** (12.0-17.0)	**26.0** (23.0-29.0)	**40.0** (34.0-62.0)	**81.0** (44.0-134)	658
Gender							
Males	11-12	**19.8** (17.6-22.3)	**20.0** (16.0-23.0)	**34.0** (30.0-38.0)	**63.0** (45.0-81.0)	**84.0** (68.0-107)	627
Females	11-12	**16.1** (14.7-17.7)	**14.0** (12.0-16.0)	**26.0** (22.0-31.0)	**49.0** (40.0-73.0)	**84.0** (62.0-121)	693

Tobacco product users who did not smoke cigarettes were excluded. See Adult Cigarette Smokers and Nonsmokers: Analysis of Select Chemicals in a Special Sample.
Limit of detection (LOD, see Data Analysis section) for Survey year 11-12 is 10.0.

Biomonitoring Summary: http://www.cdc.gov/biomonitoring/Phenanthrene_BiomonitoringSummary.html
Factsheet: http://www.cdc.gov/biomonitoring/PAHs_FactSheet.html

Urinary 4-Hydroxyphenanthrene (creatinine corrected)

Metabolite of Phenanthrene

Geometric mean and selected percentiles of urine concentrations (in ng/g of creatinine) for the U.S. adult population from the National Health and Nutrition Examination Survey by smoking status.

	Survey years	Geometric mean (95% conf. interval)	Selected percentiles (95% confidence interval) 50th	75th	90th	95th	Sample size
Cigarette Smokers							
Total	11-12	**41.6** (37.5-46.1)	**43.5** (39.6-46.7)	**75.8** (62.4-91.1)	**124** (103-144)	**147** (135-159)	879
Age group							
20-49 years	11-12	**37.2** (33.0-42.1)	**39.4** (35.4-43.4)	**62.9** (55.2-76.9)	**112** (90.7-130)	**135** (121-175)	529
50 years and older	11-12	**50.0** (43.6-57.5)	**53.8** (45.2-61.2)	**91.1** (76.5-105)	**143** (96.2-158)	**154** (136-188)	350
Gender							
Males	11-12	**34.0** (29.4-39.3)	**37.6** (33.8-41.8)	**58.5** (51.9-67.2)	**96.2** (78.7-107)	**121** (92.4-159)	529
Females	11-12	**53.6** (46.1-62.2)	**58.9** (45.7-62.9)	**103** (75.0-124)	**143** (121-154)	**159** (144-210)	350
Nonsmokers							
Total	11-12	**20.4** (19.1-21.9)	**19.7** (18.5-21.0)	**30.2** (26.5-33.3)	**50.7** (41.8-65.0)	**79.6** (51.9-111)	1319
Age group							
20-49 years	11-12	**21.0** (19.2-22.9)	**20.3** (18.6-22.2)	**30.9** (26.3-35.1)	**51.3** (43.9-66.7)	**80.5** (54.6-117)	661
50 years and older	11-12	**19.8** (17.8-22.1)	**18.6** (17.7-21.0)	**29.6** (25.5-32.4)	**48.8** (37.3-65.0)	**79.6** (47.3-111)	658
Gender							
Males	11-12	**17.3** (16.0-18.7)	**17.2** (15.8-18.2)	**25.1** (23.3-27.2)	**39.7** (31.7-51.5)	**56.4** (39.1-111)	626
Females	11-12	**23.4** (21.3-25.7)	**22.2** (20.3-24.5)	**34.5** (29.6-38.5)	**55.3** (47.3-79.6)	**88.8** (56.5-148)	693

Tobacco product users who did not smoke cigarettes were excluded. See Adult Cigarette Smokers and Nonsmokers: Analysis of Select Chemicals in a Special Sample.

Biomonitoring Summary: http://www.cdc.gov/biomonitoring/Phenanthrene_BiomonitoringSummary.html
Factsheet: http://www.cdc.gov/biomonitoring/PAHs_FactSheet.html

Urinary 1-Hydroxypyrene

Metabolite of Pyrene

Geometric mean and selected percentiles of urine concentrations (in ng/L) for the U.S. adult population from the National Health and Nutrition Examination Survey by smoking status.

	Survey years	Geometric mean (95% conf. interval)	Selected percentiles (95% confidence interval) 50th	75th	90th	95th	Sample size
Cigarette Smokers							
Total	11-12	**243** (213-278)	**243** (204-289)	**493** (412-566)	**820** (698-1010)	**1230** (918-1620)	889
Age group							
20-49 years	11-12	**247** (204-300)	**243** (204-303)	**493** (383-627)	**831** (674-1180)	**1230** (774-2010)	533
50 years and older	11-12	**237** (209-269)	**238** (166-303)	**489** (384-543)	**785** (603-1120)	**1120** (773-1530)	356
Gender							
Males	11-12	**238** (204-279)	**239** (202-295)	**518** (445-628)	**866** (773-1080)	**1230** (1020-1380)	535
Females	11-12	**250** (211-295)	**243** (199-295)	**436** (342-549)	**730** (536-1210)	**1180** (620-2520)	354
Nonsmokers							
Total	11-12	**82.8** (76.4-89.7)	**85.0** (78.0-94.0)	**151** (138-174)	**271** (232-310)	**406** (327-450)	1322
Age group							
20-49 years	11-12	**99.0** (87.7-112)	**101** (92.0-114)	**195** (168-227)	**319** (278-376)	**447** (349-501)	663
50 years and older	11-12	**68.0** (60.5-76.5)	**71.0** (58.0-85.0)	**121** (100-135)	**193** (167-213)	**303** (205-424)	659
Gender							
Males	11-12	**93.9** (84.9-104)	**96.0** (86.0-109)	**175** (145-198)	**304** (231-415)	**450** (334-599)	628
Females	11-12	**74.8** (67.9-82.3)	**75.0** (65.0-85.0)	**136** (121-158)	**248** (198-302)	**350** (280-415)	694

Tobacco product users who did not smoke cigarettes were excluded. See Adult Cigarette Smokers and Nonsmokers: Analysis of Select Chemicals in a Special Sample.
Limit of detection (LOD, see Data Analysis section) for Survey year 11-12 is 10.0.

Biomonitoring Summary: http://www.cdc.gov/biomonitoring/Pyrene_BiomonitoringSummary.html
Factsheet: http://www.cdc.gov/biomonitoring/PAHs_FactSheet.html

Urinary 1-Hydroxypyrene (creatinine corrected)

Metabolite of Pyrene

Geometric mean and selected percentiles of urine concentrations (in ng/g of creatinine) for the U.S. adult population from the National Health and Nutrition Examination Survey by smoking status.

	Survey years	Geometric mean (95% conf. interval)	Selected percentiles (95% confidence interval) 50th	75th	90th	95th	Sample size
Cigarette Smokers							
Total	11-12	**266** (246-289)	**271** (256-289)	**435** (392-466)	**688** (561-804)	**904** (711-1070)	889
Age group							
20-49 years	11-12	**254** (226-285)	**256** (219-288)	**417** (374-482)	**700** (522-869)	**959** (589-1300)	533
50 years and older	11-12	**288** (261-318)	**301** (264-350)	**450** (385-561)	**662** (572-883)	**899** (744-1070)	356
Gender							
Males	11-12	**231** (212-251)	**233** (208-260)	**385** (340-418)	**542** (482-678)	**804** (580-993)	535
Females	11-12	**319** (277-367)	**330** (290-385)	**493** (411-646)	**769** (587-966)	**959** (646-1270)	354
Nonsmokers							
Total	11-12	**96.8** (90.8-103)	**92.6** (88.1-100)	**149** (140-162)	**243** (211-271)	**335** (280-438)	1321
Age group							
20-49 years	11-12	**107** (99.6-114)	**105** (94.2-114)	**163** (147-183)	**252** (225-278)	**313** (270-371)	662
50 years and older	11-12	**87.1** (77.6-97.8)	**84.7** (74.6-90.9)	**126** (113-146)	**218** (182-280)	**371** (224-569)	659
Gender							
Males	11-12	**82.1** (74.1-90.9)	**80.8** (72.3-86.1)	**122** (109-135)	**206** (163-279)	**298** (225-478)	627
Females	11-12	**111** (101-120)	**104** (94.2-119)	**169** (154-183)	**258** (224-295)	**371** (307-460)	694

Tobacco product users who did not smoke cigarettes were excluded. See Adult Cigarette Smokers and Nonsmokers: Analysis of Select Chemicals in a Special Sample.

Biomonitoring Summary: http://www.cdc.gov/biomonitoring/Pyrene_BiomonitoringSummary.html
Factsheet: http://www.cdc.gov/biomonitoring/PAHs_FactSheet.html

Urinary 1-Hydroxynapthalene (1-Naphthol)

Metabolite of Naphthalene

Geometric mean and selected percentiles of urine concentrations (in µg/L) for the U.S. adult population from the National Health and Nutrition Examination Survey by smoking status.

	Survey years	Geometric mean (95% conf. interval)	Selected percentiles (95% confidence interval) 50th	75th	90th	95th	Sample size
Cigarette Smokers							
Total	11-12	**9.59** (8.38-11.0)	**10.7** (8.57-12.1)	**20.1** (17.5-22.4)	**33.6** (28.2-37.1)	**42.6** (35.7-49.0)	890
Age group							
20-49 years	11-12	**8.75** (7.31-10.5)	**10.2** (7.81-11.9)	**18.6** (15.0-21.7)	**29.1** (23.5-36.4)	**37.1** (32.7-48.4)	534
50 years and older	11-12	**11.2** (9.78-12.7)	**11.8** (8.54-14.7)	**22.7** (18.5-26.0)	**38.8** (27.0-43.3)	**44.5** (38.8-147)	356
Gender							
Males	11-12	**9.21** (7.46-11.4)	**10.9** (8.66-12.5)	**21.3** (17.5-24.2)	**35.7** (26.6-42.6)	**43.3** (36.5-49.0)	535
Females	11-12	**10.1** (9.01-11.3)	**10.1** (8.08-12.1)	**18.5** (15.8-21.4)	**32.7** (23.5-35.9)	**41.0** (35.1-58.5)	355
Nonsmokers							
Total	11-12	**1.19** (1.09-1.29)	**1.09** (.976-1.20)	**2.36** (2.13-2.50)	**5.46** (4.58-6.63)	**10.3** (7.49-12.4)	1324
Age group							
20-49 years	11-12	**1.03** (.956-1.12)	**.967** (.833-1.10)	**1.94** (1.79-2.35)	**4.76** (3.48-6.39)	**8.63** (6.63-11.9)	663
50 years and older	11-12	**1.38** (1.19-1.60)	**1.25** (.976-1.60)	**2.58** (2.20-2.96)	**5.83** (4.60-7.74)	**11.6** (8.99-16.0)	661
Gender							
Males	11-12	**1.35** (1.19-1.54)	**1.21** (.989-1.51)	**2.53** (2.26-2.89)	**5.82** (5.03-6.96)	**10.4** (6.77-19.2)	629
Females	11-12	**1.07** (.913-1.25)	**.976** (.860-1.14)	**2.07** (1.82-2.50)	**4.97** (3.42-7.26)	**10.3** (5.83-12.9)	695

Tobacco product users who did not smoke cigarettes were excluded. See Adult Cigarette Smokers and Nonsmokers: Analysis of Select Chemicals in a Special Sample.
Limit of detection (LOD, see Data Analysis section) for Survey year 11-12 is 0.044.

Biomonitoring Summary: http://www.cdc.gov/biomonitoring/Naphthalene_BiomonitoringSummary.html
Factsheet: http://www.cdc.gov/biomonitoring/PAHs_FactSheet.html

Urinary 1-Hydroxynapthalene (1-Naphthol) (creatinine corrected)

Metabolite of Naphthalene

Geometric mean and selected percentiles of urine concentrations (in µg/g of creatinine) for the U.S. adult population from the National Health and Nutrition Examination Survey by smoking status.

	Survey years	Geometric mean (95% conf. interval)	Selected percentiles (95% confidence interval) 50th	75th	90th	95th	Sample size
Cigarette Smokers							
Total	11-12	**10.5** (9.06-12.1)	**12.0** (9.83-13.1)	**18.4** (15.8-20.0)	**29.1** (24.0-36.4)	**38.8** (32.3-46.1)	890
Age group							
20-49 years	11-12	**8.99** (7.66-10.5)	**9.39** (8.04-12.0)	**15.6** (13.7-18.3)	**24.8** (20.1-31.3)	**36.6** (29.3-39.0)	534
50 years and older	11-12	**13.6** (11.4-16.2)	**13.6** (13.0-17.2)	**20.3** (17.6-26.3)	**34.7** (25.3-42.2)	**42.2** (29.6-298)	356
Gender							
Males	11-12	**8.92** (7.41-10.7)	**9.46** (8.27-11.8)	**14.3** (13.1-18.1)	**22.2** (18.8-26.6)	**31.3** (23.3-38.8)	535
Females	11-12	**12.8** (10.6-15.5)	**14.2** (12.6-15.8)	**20.7** (18.6-28.4)	**36.4** (28.7-41.9)	**44.0** (36.6-50.3)	355
Nonsmokers							
Total	11-12	**1.37** (1.25-1.51)	**1.17** (1.05-1.32)	**2.43** (2.03-2.90)	**5.39** (4.56-6.86)	**9.93** (7.86-12.4)	1323
Age group							
20-49 years	11-12	**1.11** (1.00-1.24)	**.987** (.849-1.13)	**1.90** (1.69-2.31)	**3.62** (3.16-4.97)	**6.62** (5.19-8.79)	662
50 years and older	11-12	**1.73** (1.51-1.98)	**1.49** (1.18-1.76)	**3.06** (2.45-4.07)	**7.51** (5.54-10.6)	**15.8** (9.93-19.1)	661
Gender							
Males	11-12	**1.18** (1.03-1.34)	**.963** (.800-1.18)	**1.94** (1.68-2.45)	**4.08** (3.18-6.65)	**8.60** (6.62-12.2)	628
Females	11-12	**1.56** (1.35-1.80)	**1.39** (1.17-1.65)	**2.88** (2.27-3.42)	**5.91** (5.19-7.40)	**10.5** (7.80-13.6)	695

Tobacco product users who did not smoke cigarettes were excluded. See Adult Cigarette Smokers and Nonsmokers: Analysis of Select Chemicals in a Special Sample.

Biomonitoring Summary: http://www.cdc.gov/biomonitoring/Naphthalene_BiomonitoringSummary.html
Factsheet: http://www.cdc.gov/biomonitoring/PAHs_FactSheet.html

Urinary 2-Hydroxynapthalene (2-Naphthol)

Metabolite of Naphthalene

Geometric mean and selected percentiles of urine concentrations (in µg/L) for the U.S. adult population from the National Health and Nutrition Examination Survey by smoking status.

	Survey years	Geometric mean (95% conf. interval)	Selected percentiles (95% confidence interval) 50th	75th	90th	95th	Sample size
Cigarette Smokers							
Total	11-12	**12.4** (11.0-13.8)	**13.1** (11.7-14.8)	**24.4** (20.9-27.7)	**36.8** (32.4-45.1)	**48.9** (44.6-51.6)	890
Age group							
20-49 years	11-12	**12.2** (10.4-14.3)	**13.5** (10.9-16.0)	**24.1** (20.3-28.2)	**33.2** (30.0-43.4)	**46.2** (34.4-51.2)	534
50 years and older	11-12	**12.7** (11.1-14.5)	**12.7** (10.6-15.8)	**25.0** (19.8-30.2)	**44.6** (36.1-51.1)	**54.1** (36.6-85.2)	356
Gender							
Males	11-12	**11.9** (10.1-14.0)	**13.0** (11.2-15.5)	**25.6** (21.3-28.7)	**41.5** (31.2-51.1)	**51.2** (36.6-60.6)	535
Females	11-12	**13.0** (11.7-14.4)	**13.3** (10.9-15.0)	**23.6** (19.8-27.5)	**36.1** (29.1-45.6)	**45.6** (35.9-52.8)	355
Nonsmokers							
Total	11-12	**3.17** (2.87-3.51)	**3.22** (2.81-3.72)	**6.35** (5.53-7.35)	**13.1** (11.0-15.2)	**19.3** (15.8-21.6)	1324
Age group							
20-49 years	11-12	**3.73** (3.20-4.34)	**3.95** (3.19-4.53)	**8.19** (6.31-10.4)	**15.3** (12.0-19.1)	**21.1** (17.9-24.2)	663
50 years and older	11-12	**2.67** (2.33-3.05)	**2.54** (2.28-3.22)	**5.27** (4.37-6.05)	**10.5** (8.44-11.5)	**15.0** (11.5-20.0)	661
Gender							
Males	11-12	**3.40** (3.07-3.76)	**3.48** (2.99-4.07)	**6.26** (5.42-7.04)	**11.5** (10.7-14.4)	**16.9** (14.3-22.5)	629
Females	11-12	**3.01** (2.58-3.50)	**2.91** (2.47-3.74)	**6.61** (5.29-8.56)	**13.6** (11.3-16.6)	**20.5** (16.6-21.8)	695

Tobacco product users who did not smoke cigarettes were excluded. See Adult Cigarette Smokers and Nonsmokers: Analysis of Select Chemicals in a Special Sample.
Limit of detection (LOD, see Data Analysis section) for Survey year 11-12 is 0.042.

Biomonitoring Summary: http://www.cdc.gov/biomonitoring/Naphthalene_BiomonitoringSummary.html
Factsheet: http://www.cdc.gov/biomonitoring/PAHs_FactSheet.html

Urinary 2-Hydroxynapthalene (2-Naphthol) (creatinine corrected)

Metabolite of Naphthalene

Geometric mean and selected percentiles of urine concentrations (in µg/g of creatinine) for the U.S. adult population from the National Health and Nutrition Examination Survey by smoking status.

	Survey years	Geometric mean (95% conf. interval)	Selected percentiles (95% confidence interval) 50th	75th	90th	95th	Sample size
Cigarette Smokers							
Total	11-12	**13.5** (12.3-14.8)	**14.3** (13.2-15.5)	**21.0** (19.1-22.7)	**28.7** (24.8-32.6)	**34.6** (30.0-39.4)	890
Age group							
20-49 years	11-12	**12.5** (11.2-14.0)	**13.0** (11.3-14.5)	**19.2** (17.6-20.8)	**26.9** (22.6-30.8)	**33.2** (28.0-41.3)	534
50 years and older	11-12	**15.4** (13.9-17.1)	**17.6** (14.9-18.6)	**23.6** (21.4-25.5)	**31.4** (25.8-35.7)	**35.7** (29.0-41.3)	356
Gender							
Males	11-12	**11.5** (10.2-12.9)	**12.4** (10.9-13.5)	**18.1** (15.4-19.6)	**23.7** (20.1-28.6)	**29.0** (23.6-35.7)	535
Females	11-12	**16.6** (14.7-18.7)	**18.1** (15.2-20.2)	**24.2** (21.4-28.5)	**33.2** (27.7-39.4)	**39.4** (34.5-43.0)	355
Nonsmokers							
Total	11-12	**3.69** (3.46-3.93)	**3.42** (3.13-3.84)	**6.50** (5.74-7.24)	**11.9** (10.0-12.6)	**15.5** (13.5-17.9)	1323
Age group							
20-49 years	11-12	**4.02** (3.58-4.53)	**3.82** (3.21-4.31)	**7.35** (6.22-8.90)	**12.8** (11.6-13.7)	**16.6** (14.6-20.1)	662
50 years and older	11-12	**3.35** (2.99-3.76)	**3.18** (2.54-3.57)	**5.72** (4.64-6.86)	**9.63** (8.40-11.5)	**13.0** (10.0-17.3)	661
Gender							
Males	11-12	**2.97** (2.69-3.27)	**2.79** (2.48-3.23)	**4.81** (4.17-5.74)	**8.72** (7.23-9.62)	**12.1** (9.22-14.6)	628
Females	11-12	**4.38** (3.95-4.86)	**4.18** (3.44-5.03)	**7.66** (7.15-8.92)	**13.2** (12.1-15.5)	**17.9** (15.8-20.5)	695

Tobacco product users who did not smoke cigarettes were excluded. See Adult Cigarette Smokers and Nonsmokers: Analysis of Select Chemicals in a Special Sample.

Biomonitoring Summary: http://www.cdc.gov/biomonitoring/Naphthalene_BiomonitoringSummary.html
Factsheet: http://www.cdc.gov/biomonitoring/PAHs_FactSheet.html

Urinary N-Acetyl-S-(benzyl)-L-cysteine

Metabolite of Toluene

Geometric mean and selected percentiles of urine concentrations (in µg/L) for the U.S. adult population from the National Health and Nutrition Examination Survey by smoking status.

	Survey years	Geometric mean (95% conf. interval)	Selected percentiles (95% confidence interval) 50th	75th	90th	95th	Sample size
Cigarette Smokers							
Total	11-12	**6.47** (5.58-7.51)	**6.47** (5.44-7.59)	**13.2** (11.0-16.9)	**25.8** (18.2-38.7)	**41.8** (28.8-83.4)	889
Age group							
20-49 years	11-12	**6.78** (5.74-8.01)	**6.47** (5.39-8.37)	**13.6** (11.2-17.3)	**29.9** (17.1-45.3)	**44.5** (25.9-132)	532
50 years and older	11-12	**6.00** (5.06-7.10)	**5.92** (4.93-7.28)	**12.4** (9.09-17.3)	**22.5** (18.2-28.7)	**33.9** (25.6-51.5)	357
Gender							
Males	11-12	**6.85** (5.73-8.18)	**7.09** (5.88-8.37)	**14.8** (11.2-17.3)	**28.8** (18.2-42.8)	**42.0** (28.8-114)	536
Females	11-12	**6.04** (5.02-7.26)	**5.92** (4.89-6.99)	**11.9** (8.55-17.0)	**20.7** (16.1-34.4)	**40.5** (22.5-60.3)	353
Nonsmokers							
Total	11-12	**6.45** (5.91-7.05)	**6.32** (5.95-6.96)	**11.8** (10.1-13.8)	**23.2** (19.0-29.0)	**37.0** (29.5-53.9)	1308
Age group							
20-49 years	11-12	**6.55** (5.72-7.50)	**6.24** (5.35-8.01)	**12.3** (10.0-16.2)	**27.5** (18.8-34.2)	**40.5** (33.1-54.9)	655
50 years and older	11-12	**6.35** (5.76-7.00)	**6.53** (5.91-7.16)	**10.9** (9.83-13.4)	**20.1** (17.5-25.4)	**32.7** (25.3-39.7)	653
Gender							
Males	11-12	**6.96** (6.24-7.76)	**6.86** (6.21-7.82)	**12.2** (10.1-14.0)	**22.0** (17.6-32.6)	**39.5** (24.2-72.4)	625
Females	11-12	**6.07** (5.40-6.83)	**6.05** (5.35-6.81)	**11.8** (9.46-15.9)	**24.4** (19.1-29.7)	**35.9** (29.5-53.9)	683

Tobacco product users who did not smoke cigarettes were excluded. See Adult Cigarette Smokers and Nonsmokers: Analysis of Select Chemicals in a Special Sample.
Limit of detection (LOD, see Data Analysis section) for Survey year 11-12 is 0.5.

Urinary N-Acetyl-S-(benzyl)-L-cysteine (creatinine corrected)

Metabolite of Toluene

Geometric mean and selected percentiles of concentrations (in µg/g of creatinine) for the U.S. adult population from the National Health and Nutrition Examination Survey by smoking status.

	Survey years	Geometric mean (95% conf. interval)	Selected percentiles (95% confidence interval) 50th	75th	90th	95th	Sample size
Cigarette Smokers							
Total	11-12	**7.10** (6.51-7.73)	**6.26** (5.79-7.08)	**11.5** (9.67-13.3)	**20.4** (15.4-25.2)	**32.0** (20.6-52.9)	889
Age group							
20-49 years	11-12	**6.98** (6.08-8.02)	**6.30** (5.49-7.11)	**9.83** (8.70-12.4)	**20.6** (13.6-32.0)	**32.0** (16.5-138)	532
50 years and older	11-12	**7.29** (6.52-8.15)	**6.12** (5.79-7.99)	**14.9** (10.5-15.3)	**19.7** (16.2-23.8)	**29.3** (23.1-47.7)	357
Gender							
Males	11-12	**6.65** (5.86-7.55)	**5.91** (5.34-7.02)	**9.71** (8.82-12.6)	**20.4** (13.8-30.4)	**30.4** (16.7-138)	536
Females	11-12	**7.70** (6.70-8.85)	**7.11** (5.66-7.63)	**12.9** (10.6-15.2)	**21.0** (16.5-27.6)	**40.0** (24.9-51.8)	353
Nonsmokers							
Total	11-12	**7.50** (6.89-8.16)	**6.72** (6.23-7.47)	**12.7** (11.1-14.0)	**23.0** (19.0-26.2)	**39.4** (27.4-49.1)	1307
Age group							
20-49 years	11-12	**7.08** (6.45-7.76)	**6.39** (5.90-6.82)	**11.7** (10.0-13.7)	**19.7** (17.0-24.5)	**31.8** (23.2-44.7)	654
50 years and older	11-12	**7.99** (7.24-8.82)	**7.30** (6.59-7.96)	**13.5** (11.3-16.0)	**26.1** (18.2-37.3)	**44.1** (31.0-55.5)	653
Gender							
Males	11-12	**6.06** (5.51-6.68)	**5.56** (5.20-5.86)	**8.56** (7.89-10.0)	**17.0** (12.7-20.6)	**26.5** (18.2-39.6)	624
Females	11-12	**8.90** (7.90-10.0)	**8.11** (7.11-9.37)	**15.3** (13.0-17.6)	**26.1** (22.8-31.8)	**44.7** (31.0-55.3)	683

Tobacco product users who did not smoke cigarettes were excluded. See Adult Cigarette Smokers and Nonsmokers: Analysis of Select Chemicals in a Special Sample.

Urinary N-Acetyl-S-(2-carbamoyl-2-hydroxyethyl)-L-cysteine

Metabolite of Acrylamide

Geometric mean and selected percentiles of urine concentrations (in µg/L) for the U.S. adult population from the National Health and Nutrition Examination Survey by smoking status.

	Survey years	Geometric mean (95% conf. interval)	Selected percentiles (95% confidence interval) 50th	75th	90th	95th	Sample size
Cigarette Smokers							
Total	11-12	**28.4** (25.2-32.0)	**27.5** (24.1-34.2)	**53.8** (47.2-61.8)	**98.1** (73.2-132)	**138** (98.9-169)	889
Age group							
20-49 years	11-12	**29.8** (25.0-35.6)	**31.7** (23.9-38.8)	**54.8** (47.2-70.9)	**106** (73.6-142)	**142** (101-222)	532
50 years and older	11-12	**26.2** (21.8-31.4)	**25.4** (18.8-31.4)	**47.5** (38.5-62.7)	**80.7** (64.2-116)	**129** (70.6-154)	357
Gender							
Males	11-12	**28.5** (24.3-33.5)	**28.6** (23.5-37.9)	**53.8** (46.5-63.8)	**98.9** (72.6-131)	**138** (98.2-154)	536
Females	11-12	**28.3** (24.5-32.7)	**25.4** (23.9-31.1)	**52.4** (42.6-66.5)	**94.3** (57.7-142)	**142** (72.9-222)	353
Nonsmokers							
Total	11-12	**12.9** (12.2-13.7)	**12.3** (11.0-13.8)	**19.9** (18.6-21.2)	**30.5** (28.3-33.3)	**41.5** (34.8-50.9)	1308
Age group							
20-49 years	11-12	**13.6** (12.3-15.0)	**12.8** (10.8-15.0)	**21.2** (18.6-24.7)	**33.2** (28.0-43.3)	**50.7** (34.8-74.9)	655
50 years and older	11-12	**12.2** (11.3-13.2)	**11.9** (10.6-13.5)	**18.7** (16.7-20.5)	**29.1** (23.2-32.9)	**35.8** (28.3-50.6)	653
Gender							
Males	11-12	**14.4** (13.4-15.6)	**14.4** (13.0-15.5)	**21.6** (20.2-24.1)	**31.8** (28.9-36.2)	**39.7** (34.4-52.5)	625
Females	11-12	*	**10.4** (<LOD-12.3)	**18.0** (16.4-19.8)	**28.2** (23.7-34.5)	**43.3** (30.4-56.5)	683

Tobacco product users who did not smoke cigarettes were excluded. See Adult Cigarette Smokers and Nonsmokers: Analysis of Select Chemicals in a Special Sample.
Limit of detection (LOD, see Data Analysis section) for Survey year 11-12 is 9.4.
< LOD means less than the limit of detection, which may vary for some chemicals by year and by individual sample.
* Not calculated: proportion of results below limit of detection was too high to provide a valid result.

Urinary N-Acetyl-S-(2-carbamoyl-2-hydroxyethyl)-L-cysteine (creatinine corrected)

Metabolite of Acrylamide

Geometric mean and selected percentiles of concentrations (in µg/g of creatinine) for the U.S. adult population from the National Health and Nutrition Examination Survey by smoking status.

	Survey years	Geometric mean (95% conf. interval)	Selected percentiles (95% confidence interval) 50th	75th	90th	95th	Sample size
Cigarette Smokers							
Total	11-12	**31.1** (28.0-34.6)	**32.1** (28.0-36.9)	**44.6** (40.2-51.7)	**64.6** (57.9-71.3)	**78.3** (71.0-84.4)	889
Age group							
20-49 years	11-12	**30.7** (27.0-35.0)	**32.1** (27.7-36.3)	**44.0** (39.1-54.8)	**68.9** (55.4-83.4)	**84.4** (71.0-98.0)	532
50 years and older	11-12	**31.8** (27.7-36.5)	**32.1** (27.7-40.2)	**46.2** (39.1-53.8)	**60.7** (48.4-72.6)	**72.6** (53.2-95.4)	357
Gender							
Males	11-12	**27.7** (24.7-31.1)	**28.0** (25.5-32.0)	**39.1** (34.1-44.3)	**54.7** (46.2-61.2)	**68.1** (57.3-81.5)	536
Females	11-12	*	**38.1** (<LOD-42.8)	**53.2** (44.0-61.8)	**71.3** (60.7-84.4)	**84.4** (71.0-95.4)	353
Nonsmokers							
Total	11-12	**15.0** (14.1-15.9)	**15.1** (14.1-16.2)	**21.0** (20.2-23.1)	**28.9** (27.7-31.7)	**37.3** (32.0-50.9)	1307
Age group							
20-49 years	11-12	**14.6** (13.5-15.8)	**14.1** (13.6-15.2)	**20.8** (19.0-23.2)	**31.7** (27.0-38.9)	**41.8** (32.1-64.8)	654
50 years and older	11-12	**15.4** (14.2-16.7)	**15.9** (14.4-17.1)	**21.5** (19.9-23.8)	**27.7** (24.9-30.9)	**32.1** (28.6-41.3)	653
Gender							
Males	11-12	**12.5** (11.7-13.5)	**13.0** (12.0-14.1)	**16.6** (15.3-18.0)	**23.5** (20.7-25.6)	**28.5** (24.9-34.3)	624
Females	11-12	*	**17.3** (16.5-18.5)	**24.6** (22.8-27.0)	**33.3** (29.2-40.4)	**50.6** (36.5-64.8)	683

Tobacco product users who did not smoke cigarettes were excluded. See Adult Cigarette Smokers and Nonsmokers: Analysis of Select Chemicals in a Special Sample.

< LOD means less than the limit of detection for the urine levels not corrected for creatinine.

* Not calculated: proportion of results below limit of detection was too high to provide a valid result.

Urinary N-Acetyl-S-(2-carbamoylethyl)-L-cysteine

Metabolite of Acrylamide

Geometric mean and selected percentiles of urine concentrations (in µg/L) for the U.S. adult population from the National Health and Nutrition Examination Survey by smoking status.

	Survey years	Geometric mean (95% conf. interval)	Selected percentiles (95% confidence interval) 50th	75th	90th	95th	Sample size
Cigarette Smokers							
Total	11-12	**111** (95.0-129)	**119** (89.5-142)	**225** (196-256)	**397** (297-507)	**507** (370-686)	889
Age group							
20-49 years	11-12	**119** (95.8-147)	**129** (101-161)	**254** (195-305)	**420** (344-524)	**541** (420-880)	532
50 years and older	11-12	**98.6** (82.1-118)	**86.9** (80.2-138)	**201** (149-243)	**303** (254-400)	**407** (324-529)	357
Gender							
Males	11-12	**116** (95.3-142)	**131** (106-151)	**256** (215-276)	**422** (341-519)	**530** (398-982)	536
Females	11-12	**104** (90.0-120)	**101** (82.1-129)	**197** (160-243)	**348** (251-420)	**420** (316-880)	353
Nonsmokers							
Total	11-12	**36.5** (33.8-39.3)	**37.6** (34.9-40.5)	**64.3** (60.9-68.0)	**112** (99.7-121)	**157** (137-192)	1308
Age group							
20-49 years	11-12	**38.9** (33.9-44.6)	**41.4** (35.1-47.0)	**71.1** (61.4-78.5)	**127** (101-170)	**193** (141-299)	655
50 years and older	11-12	**34.0** (31.5-36.8)	**35.3** (32.5-38.8)	**59.7** (54.8-64.3)	**92.6** (78.8-116)	**129** (103-145)	653
Gender							
Males	11-12	**46.5** (43.6-49.7)	**48.6** (42.8-53.4)	**76.8** (69.6-82.7)	**129** (112-142)	**161** (143-183)	625
Females	11-12	**30.0** (26.9-33.4)	**30.7** (28.7-32.6)	**55.2** (49.0-59.7)	**97.0** (84.0-111)	**145** (101-257)	683

Tobacco product users who did not smoke cigarettes were excluded. See Adult Cigarette Smokers and Nonsmokers: Analysis of Select Chemicals in a Special Sample.
Limit of detection (LOD, see Data Analysis section) for Survey year 11-12 is 2.2.

Urinary N-Acetyl-S-(2-carbamoylethyl)-L-cysteine (creatinine corrected)

Metabolite of Acrylamide

Geometric mean and selected percentiles of concentrations (in µg/g of creatinine) for the U.S. adult population from the National Health and Nutrition Examination Survey by smoking status.

	Survey years	Geometric mean (95% conf. interval)	Selected percentiles (95% confidence interval) 50th	75th	90th	95th	Sample size
Cigarette Smokers							
Total	11-12	**121** (110-134)	**128** (115-140)	**180** (162-198)	**253** (229-325)	**337** (278-400)	889
Age group							
20-49 years	11-12	**122** (106-140)	**131** (115-145)	**184** (155-218)	**282** (222-335)	**357** (300-429)	532
50 years and older	11-12	**120** (108-134)	**124** (106-144)	**175** (149-199)	**235** (178-282)	**282** (235-353)	357
Gender							
Males	11-12	**113** (101-127)	**118** (100-138)	**175** (153-186)	**230** (191-278)	**327** (238-434)	536
Females	11-12	**132** (115-152)	**136** (117-161)	**192** (161-235)	**286** (233-343)	**343** (282-398)	353
Nonsmokers							
Total	11-12	**42.4** (39.9-44.9)	**41.8** (39.0-44.9)	**61.2** (57.8-63.5)	**88.1** (79.2-100)	**118** (106-131)	1307
Age group							
20-49 years	11-12	**42.0** (38.1-46.2)	**40.1** (36.6-44.0)	**59.6** (55.8-63.8)	**91.0** (75.6-113)	**128** (98.1-173)	654
50 years and older	11-12	**42.8** (39.3-46.6)	**43.6** (38.9-48.5)	**61.5** (56.7-65.6)	**84.8** (72.9-105)	**112** (90.4-155)	653
Gender							
Males	11-12	**40.5** (38.0-43.2)	**39.0** (35.6-42.1)	**60.4** (52.6-64.3)	**82.5** (75.6-91.0)	**108** (93.8-116)	624
Females	11-12	**43.9** (40.4-47.8)	**44.6** (40.0-47.9)	**62.1** (57.7-65.3)	**91.6** (76.8-113)	**128** (97.3-162)	683

Tobacco product users who did not smoke cigarettes were excluded. See Adult Cigarette Smokers and Nonsmokers: Analysis of Select Chemicals in a Special Sample.

Urinary N-Acetyl-S-(2-carboxyethyl)-L-cysteine

Metabolite of Acrolein

Geometric mean and selected percentiles of urine concentrations (in µg/L) for the U.S. adult population from the National Health and Nutrition Examination Survey by smoking status.

	Survey years	Geometric mean (95% conf. interval)	Selected percentiles (95% confidence interval) 50th	75th	90th	95th	Sample size
Cigarette Smokers							
Total	11-12	**228** (203-256)	**245** (212-273)	**430** (382-477)	**769** (642-935)	**1030** (869-1320)	889
Age group							
20-49 years	11-12	**202** (176-232)	**221** (195-252)	**377** (332-426)	**654** (598-745)	**886** (743-1020)	532
50 years and older	11-12	**277** (235-326)	**282** (212-373)	**551** (430-664)	**974** (598-1320)	**1310** (956-1810)	357
Gender							
Males	11-12	**232** (200-268)	**258** (208-287)	**453** (403-546)	**855** (636-1130)	**1240** (956-1450)	536
Females	11-12	**223** (197-251)	**224** (182-294)	**385** (332-455)	**692** (527-869)	**929** (706-1130)	353
Nonsmokers							
Total	11-12	**80.6** (74.3-87.5)	**86.7** (79.2-94.7)	**155** (143-170)	**260** (236-296)	**367** (310-448)	1308
Age group							
20-49 years	11-12	**73.7** (65.2-83.4)	**82.4** (73.1-93.2)	**144** (128-161)	**256** (217-284)	**320** (262-411)	655
50 years and older	11-12	**88.8** (80.7-97.8)	**94.6** (82.0-104)	**173** (148-192)	**302** (236-350)	**459** (317-528)	653
Gender							
Males	11-12	**109** (99.6-120)	**110** (97.1-127)	**191** (164-217)	**320** (273-367)	**448** (349-483)	625
Females	11-12	**63.1** (56.4-70.7)	**65.5** (53.3-81.0)	**128** (114-147)	**220** (187-245)	**284** (242-359)	683

Tobacco product users who did not smoke cigarettes were excluded. See Adult Cigarette Smokers and Nonsmokers: Analysis of Select Chemicals in a Special Sample.
Limit of detection (LOD, see Data Analysis section) for Survey year 11-12 is 8.0.

Urinary N-Acetyl-S-(2-carboxyethyl)-L-cysteine (creatinine corrected)

Metabolite of Acrolein

Geometric mean and selected percentiles of concentrations (in µg/g of creatinine) for the U.S. adult population from the National Health and Nutrition Examination Survey by smoking status.

	Survey years	Geometric mean (95% conf. interval)	Selected percentiles (95% confidence interval) 50th	75th	90th	95th	Sample size
Cigarette Smokers							
Total	11-12	**250** (224-278)	**254** (226-285)	**410** (373-447)	**607** (492-757)	**815** (656-966)	889
Age group							
20-49 years	11-12	**208** (187-232)	**206** (181-228)	**353** (307-394)	**489** (443-532)	**640** (509-840)	532
50 years and older	11-12	**337** (289-393)	**338** (290-395)	**512** (397-636)	**757** (559-1070)	**966** (607-1510)	357
Gender							
Males	11-12	**225** (197-257)	**228** (202-251)	**368** (306-423)	**510** (431-618)	**634** (540-757)	536
Females	11-12	**284** (256-315)	**291** (254-335)	**455** (419-540)	**749** (542-933)	**948** (749-1070)	353
Nonsmokers							
Total	11-12	**93.6** (87.6-100)	**92.1** (85.1-101)	**143** (132-154)	**206** (190-235)	**278** (251-308)	1307
Age group							
20-49 years	11-12	**79.5** (73.6-85.8)	**78.6** (72.5-85.3)	**119** (107-136)	**176** (153-194)	**202** (190-226)	654
50 years and older	11-12	**112** (102-122)	**107** (102-114)	**167** (152-188)	**277** (221-300)	**351** (300-404)	653
Gender							
Males	11-12	**94.9** (87.5-103)	**88.8** (80.4-102)	**138** (122-154)	**203** (173-277)	**300** (221-351)	624
Females	11-12	**92.6** (84.9-101)	**96.8** (82.8-105)	**146** (132-162)	**206** (193-235)	**269** (221-308)	683

Tobacco product users who did not smoke cigarettes were excluded. See Adult Cigarette Smokers and Nonsmokers: Analysis of Select Chemicals in a Special Sample.

Urinary N-Acetyl-S-(3-hydroxypropyl)-L-cysteine

Metabolite of Acrolein

Geometric mean and selected percentiles of urine concentrations (in µg/L) for the U.S. adult population from the National Health and Nutrition Examination Survey by smoking status.

	Survey years	Geometric mean (95% conf. interval)	Selected percentiles (95% confidence interval) 50th	75th	90th	95th	Sample size
Cigarette Smokers							
Total	11-12	**1090** (968-1230)	**1090** (952-1350)	**2360** (1920-2800)	**3950** (3550-4250)	**5070** (4360-5840)	889
Age group							
20-49 years	11-12	**999** (857-1170)	**982** (786-1250)	**2100** (1760-2710)	**3610** (3090-4100)	**4570** (4100-5020)	532
50 years and older	11-12	**1260** (1060-1500)	**1360** (1030-1730)	**2670** (2080-3310)	**4800** (3850-5770)	**5840** (4830-6220)	357
Gender							
Males	11-12	**1090** (917-1300)	**1110** (938-1470)	**2530** (2080-3110)	**4100** (3550-4360)	**5400** (4060-6220)	536
Females	11-12	**1090** (1000-1180)	**1060** (898-1210)	**2040** (1770-2630)	**3570** (2940-4730)	**4830** (3670-5600)	353
Nonsmokers							
Total	11-12	**224** (208-241)	**226** (210-245)	**413** (382-450)	**715** (616-873)	**1060** (916-1230)	1308
Age group							
20-49 years	11-12	**239** (211-270)	**249** (216-282)	**434** (391-490)	**768** (579-951)	**1080** (844-1270)	655
50 years and older	11-12	**208** (185-235)	**211** (186-229)	**382** (304-465)	**672** (524-919)	**1040** (852-1270)	653
Gender							
Males	11-12	**294** (271-318)	**297** (277-320)	**480** (410-516)	**872** (724-919)	**1130** (919-1240)	625
Females	11-12	**179** (161-200)	**178** (157-196)	**341** (288-411)	**616** (524-817)	**1000** (654-1430)	683

Tobacco product users who did not smoke cigarettes were excluded. See Adult Cigarette Smokers and Nonsmokers: Analysis of Select Chemicals in a Special Sample.
Limit of detection (LOD, see Data Analysis section) for Survey year 11-12 is 13.0.

Urinary N-Acetyl-S-(3-hydroxypropyl)-L-cysteine (creatinine corrected)

Metabolite of Acrolein

Geometric mean and selected percentiles of concentrations (in µg/g of creatinine) for the U.S. adult population from the National Health and Nutrition Examination Survey by smoking status.

	Survey years	Geometric mean (95% conf. interval)	Selected percentiles (95% confidence interval) 50th	75th	90th	95th	Sample size
Cigarette Smokers							
Total	11-12	**1200** (1070-1330)	**1220** (1030-1440)	**2350** (2000-2730)	**3780** (3030-4700)	**4790** (3950-5910)	889
Age group							
20-49 years	11-12	**1030** (901-1180)	**1030** (838-1210)	**1840** (1620-2260)	**3240** (2740-4220)	**4540** (3430-5760)	532
50 years and older	11-12	**1540** (1320-1790)	**1750** (1410-2110)	**2990** (2440-3360)	**4120** (3030-6230)	**5310** (3780-7420)	357
Gender							
Males	11-12	**1060** (939-1200)	**1040** (943-1230)	**1840** (1600-2240)	**3070** (2600-3890)	**4540** (3070-5420)	536
Females	11-12	**1390** (1180-1640)	**1510** (1220-1840)	**2990** (2400-3380)	**4120** (3060-5760)	**5590** (4040-7530)	353
Nonsmokers							
Total	11-12	**260** (244-277)	**242** (223-259)	**390** (365-415)	**641** (585-711)	**865** (748-1010)	1307
Age group							
20-49 years	11-12	**258** (234-284)	**234** (212-259)	**389** (346-449)	**643** (553-815)	**880** (693-1080)	654
50 years and older	11-12	**262** (233-294)	**250** (221-275)	**390** (324-457)	**624** (521-785)	**844** (704-1110)	653
Gender							
Males	11-12	**256** (237-276)	**245** (224-260)	**375** (326-418)	**589** (514-664)	**740** (638-843)	624
Females	11-12	**263** (242-286)	**237** (212-271)	**407** (373-460)	**687** (585-837)	**1010** (828-1180)	683

Tobacco product users who did not smoke cigarettes were excluded. See Adult Cigarette Smokers and Nonsmokers: Analysis of Select Chemicals in a Special Sample.

Urinary N-Acetyl-S-(2-cyanoethyl)-L-cysteine

Metabolite of Acrylonitrile

Geometric mean and selected percentiles of urine concentrations (in µg/L) for the U.S. adult population from the National Health and Nutrition Examination Survey by smoking status.

	Survey years	Geometric mean (95% conf. interval)	Selected percentiles (95% confidence interval) 50th	75th	90th	95th	Sample size
Cigarette Smokers							
Total	11-12	**122** (106-141)	**140** (119-166)	**277** (240-310)	**504** (439-580)	**717** (513-827)	889
Age group							
20-49 years	11-12	**114** (90.4-143)	**132** (105-172)	**265** (214-306)	**515** (372-717)	**717** (467-888)	532
50 years and older	11-12	**137** (118-159)	**146** (125-184)	**306** (232-344)	**481** (384-699)	**705** (439-846)	357
Gender							
Males	11-12	**123** (98.8-153)	**156** (131-183)	**306** (261-355)	**552** (463-745)	**780** (608-858)	536
Females	11-12	**121** (104-140)	**128** (116-146)	**240** (201-277)	**403** (289-652)	**652** (344-786)	353
Nonsmokers							
Total	11-12	**1.50** (1.35-1.67)	**1.33** (1.22-1.45)	**2.35** (2.16-2.52)	**4.81** (3.79-5.80)	**12.1** (7.05-18.2)	1308
Age group							
20-49 years	11-12	**1.67** (1.38-2.02)	**1.45** (1.25-1.65)	**2.49** (2.23-3.00)	**5.84** (4.64-10.3)	**13.4** (7.05-79.9)	655
50 years and older	11-12	**1.34** (1.18-1.53)	**1.23** (1.07-1.36)	**2.19** (1.83-2.44)	**3.65** (3.03-4.36)	**6.84** (3.89-10.6)	653
Gender							
Males	11-12	**1.90** (1.65-2.20)	**1.64** (1.44-1.85)	**2.96** (2.53-3.24)	**7.05** (4.06-12.4)	**14.7** (8.19-58.5)	625
Females	11-12	**1.24** (1.06-1.45)	**1.19** (1.02-1.26)	**1.90** (1.74-2.09)	**3.55** (2.95-4.36)	**6.84** (3.97-10.8)	683

Tobacco product users who did not smoke cigarettes were excluded. See Adult Cigarette Smokers and Nonsmokers: Analysis of Select Chemicals in a Special Sample.
Limit of detection (LOD, see Data Analysis section) for Survey year 11-12 is 0.5.

Urinary N-Acetyl-S-(2-cyanoethyl)-L-cysteine (creatinine corrected)

Metabolite of Acrylonitrile

Geometric mean and selected percentiles of concentrations (in µg/g of creatinine) for the U.S. adult population from the National Health and Nutrition Examination Survey by smoking status.

	Survey years	Geometric mean (95% conf. interval)	Selected percentiles (95% confidence interval) 50th	75th	90th	95th	Sample size
Cigarette Smokers							
Total	11-12	**134** (118-151)	**166** (147-181)	**263** (238-294)	**411** (342-462)	**537** (442-614)	889
Age group							
20-49 years	11-12	**117** (97.8-141)	**145** (124-165)	**236** (213-275)	**364** (296-442)	**503** (364-637)	532
50 years and older	11-12	**167** (147-190)	**204** (171-233)	**300** (247-356)	**453** (346-522)	**542** (458-641)	357
Gender							
Males	11-12	**120** (102-140)	**146** (126-166)	**231** (209-264)	**359** (323-435)	**473** (414-622)	536
Females	11-12	**154** (125-190)	**202** (161-230)	**294** (269-317)	**453** (342-565)	**565** (453-657)	353
Nonsmokers							
Total	11-12	**1.75** (1.57-1.94)	**1.48** (1.32-1.62)	**2.32** (2.03-2.62)	**4.43** (3.48-5.84)	**8.86** (6.48-14.2)	1307
Age group							
20-49 years	11-12	**1.80** (1.51-2.14)	**1.49** (1.29-1.70)	**2.41** (2.10-2.72)	**5.29** (3.56-7.88)	**13.9** (6.06-54.1)	654
50 years and older	11-12	**1.69** (1.50-1.90)	**1.48** (1.32-1.62)	**2.19** (1.88-2.64)	**3.74** (2.87-5.46)	**6.90** (4.34-13.9)	653
Gender							
Males	11-12	**1.66** (1.44-1.90)	**1.36** (1.21-1.53)	**2.03** (1.80-2.57)	**4.95** (3.05-8.86)	**13.7** (6.48-25.7)	624
Females	11-12	**1.82** (1.58-2.10)	**1.56** (1.45-1.71)	**2.51** (2.16-2.81)	**4.41** (3.39-5.64)	**7.07** (4.86-23.6)	683

Tobacco product users who did not smoke cigarettes were excluded. See Adult Cigarette Smokers and Nonsmokers: Analysis of Select Chemicals in a Special Sample.

Urinary N-Acetyl-S-(1,2-dichlorovinyl)-L-cysteine

Metabolite of Trichloroethene

Geometric mean and selected percentiles of urine concentrations (in µg/L) for the U.S. adult population from the National Health and Nutrition Examination Survey by smoking status.

	Survey years	Geometric mean (95% conf. interval)	Selected percentiles (95% confidence interval) 50th	75th	90th	95th	Sample size
Cigarette Smokers							
Total	11-12	*	**< LOD**	**< LOD**	**< LOD**	**< LOD**	889
Age group							
20-49 years	11-12	*	**< LOD**	**< LOD**	**< LOD**	**< LOD**	532
50 years and older	11-12	*	**< LOD**	**< LOD**	**< LOD**	**< LOD**	357
Gender							
Males	11-12	*	**< LOD**	**< LOD**	**< LOD**	**< LOD**	536
Females	11-12	*	**< LOD**	**< LOD**	**< LOD**	**< LOD**	353
Nonsmokers							
Total	11-12	*	**< LOD**	**< LOD**	**< LOD**	**< LOD**	1308
Age group							
20-49 years	11-12	*	**< LOD**	**< LOD**	**< LOD**	**< LOD**	655
50 years and older	11-12	*	**< LOD**	**< LOD**	**< LOD**	**< LOD**	653
Gender							
Males	11-12	*	**< LOD**	**< LOD**	**< LOD**	**< LOD**	625
Females	11-12	*	**< LOD**	**< LOD**	**< LOD**	**< LOD**	683

Tobacco product users who did not smoke cigarettes were excluded. See Adult Cigarette Smokers and Nonsmokers: Analysis of Select Chemicals in a Special Sample.
Limit of detection (LOD, see Data Analysis section) for Survey year 11-12 is 12.6.
< LOD means less than the limit of detection, which may vary for some chemicals by year and by individual sample.
* Not calculated: proportion of results below limit of detection was too high to provide a valid result.

Urinary N-Acetyl-S-(1,2-dichlorovinyl)-L-cysteine (creatinine corrected)

Metabolite of Trichloroethene

Geometric mean and selected percentiles of concentrations (in µg/g of creatinine) for the U.S. adult population from the National Health and Nutrition Examination Survey by smoking status.

	Survey years	Geometric mean (95% conf. interval)	Selected percentiles (95% confidence interval) 50th	75th	90th	95th	Sample size
Cigarette Smokers							
Total	11-12	*	< LOD	< LOD	< LOD	< LOD	889
Age group							
20-49 years	11-12	*	< LOD	< LOD	< LOD	< LOD	532
50 years and older	11-12	*	< LOD	< LOD	< LOD	< LOD	357
Gender							
Males	11-12	*	< LOD	< LOD	< LOD	< LOD	536
Females	11-12	*	< LOD	< LOD	< LOD	< LOD	353
Nonsmokers							
Total	11-12	*	< LOD	< LOD	< LOD	< LOD	1307
Age group							
20-49 years	11-12	*	< LOD	< LOD	< LOD	< LOD	654
50 years and older	11-12	*	< LOD	< LOD	< LOD	< LOD	653
Gender							
Males	11-12	*	< LOD	< LOD	< LOD	< LOD	624
Females	11-12	*	< LOD	< LOD	< LOD	< LOD	683

Tobacco product users who did not smoke cigarettes were excluded. See Adult Cigarette Smokers and Nonsmokers: Analysis of Select Chemicals in a Special Sample.
< LOD means less than the limit of detection for the urine levels not corrected for creatinine.
* Not calculated: proportion of results below limit of detection was too high to provide a valid result.

Urinary N-Acetyl-S-(2,2-dichlorovinyl)-L-cysteine

Metabolite of Trichloroethene

Geometric mean and selected percentiles of urine concentrations (in µg/L) for the U.S. adult population from the National Health and Nutrition Examination Survey by smoking status.

	Survey years	Geometric mean (95% conf. interval)	Selected percentiles (95% confidence interval) 50th	75th	90th	95th	Sample size
Cigarette Smokers							
Total	11-12	*	**< LOD**	**< LOD**	**< LOD**	**< LOD**	889
Age group							
20-49 years	11-12	*	**< LOD**	**< LOD**	**< LOD**	**< LOD**	532
50 years and older	11-12	*	**< LOD**	**< LOD**	**< LOD**	**< LOD**	357
Gender							
Males	11-12	*	**< LOD**	**< LOD**	**< LOD**	**< LOD**	536
Females	11-12	*	**< LOD**	**< LOD**	**< LOD**	**< LOD**	353
Nonsmokers							
Total	11-12	*	**< LOD**	**< LOD**	**< LOD**	**< LOD**	1308
Age group							
20-49 years	11-12	*	**< LOD**	**< LOD**	**< LOD**	**< LOD**	655
50 years and older	11-12	*	**< LOD**	**< LOD**	**< LOD**	**< LOD**	653
Gender							
Males	11-12	*	**< LOD**	**< LOD**	**< LOD**	**< LOD**	625
Females	11-12	*	**< LOD**	**< LOD**	**< LOD**	**< LOD**	683

Tobacco product users who did not smoke cigarettes were excluded. See Adult Cigarette Smokers and Nonsmokers: Analysis of Select Chemicals in a Special Sample.
Limit of detection (LOD, see Data Analysis section) for Survey year 11-12 is 6.5.
< LOD means less than the limit of detection, which may vary for some chemicals by year and by individual sample.
* Not calculated: proportion of results below limit of detection was too high to provide a valid result.

Urinary N-Acetyl-S-(2,2-dichlorovinyl)-L-cysteine (creatinine corrected)

Metabolite of Trichloroethene

Geometric mean and selected percentiles of concentrations (in µg/g of creatinine) for the U.S. adult population from the National Health and Nutrition Examination Survey by smoking status.

	Survey years	Geometric mean (95% conf. interval)	Selected percentiles (95% confidence interval) 50th	75th	90th	95th	Sample size
Cigarette Smokers							
Total	11-12	*	**< LOD**	**< LOD**	**< LOD**	**< LOD**	889
Age group							
20-49 years	11-12	*	**< LOD**	**< LOD**	**< LOD**	**< LOD**	532
50 years and older	11-12	*	**< LOD**	**< LOD**	**< LOD**	**< LOD**	357
Gender							
Males	11-12	*	**< LOD**	**< LOD**	**< LOD**	**< LOD**	536
Females	11-12	*	**< LOD**	**< LOD**	**< LOD**	**< LOD**	353
Nonsmokers							
Total	11-12	*	**< LOD**	**< LOD**	**< LOD**	**< LOD**	1307
Age group							
20-49 years	11-12	*	**< LOD**	**< LOD**	**< LOD**	**< LOD**	654
50 years and older	11-12	*	**< LOD**	**< LOD**	**< LOD**	**< LOD**	653
Gender							
Males	11-12	*	**< LOD**	**< LOD**	**< LOD**	**< LOD**	624
Females	11-12	*	**< LOD**	**< LOD**	**< LOD**	**< LOD**	683

Tobacco product users who did not smoke cigarettes were excluded. See Adult Cigarette Smokers and Nonsmokers: Analysis of Select Chemicals in a Special Sample.
< LOD means less than the limit of detection for the urine levels not corrected for creatinine.
* Not calculated: proportion of results below limit of detection was too high to provide a valid result.

Urinary N-Acetyl-S-(dimethylphenyl)-L-cysteine

Metabolite of Xylene

Geometric mean and selected percentiles of urine concentrations (in µg/L) for the U.S. adult population from the National Health and Nutrition Examination Survey by smoking status.

	Survey years	Geometric mean (95% conf. interval)	Selected percentiles (95% confidence interval) 50th	75th	90th	95th	Sample size
Cigarette Smokers							
Total	11-12	*	< LOD	< LOD	< LOD	< LOD	889
Age group							
20-49 years	11-12	*	< LOD	< LOD	< LOD	< LOD	532
50 years and older	11-12	*	< LOD	< LOD	< LOD	< LOD	357
Gender							
Males	11-12	*	< LOD	< LOD	< LOD	< LOD	536
Females	11-12	*	< LOD	< LOD	< LOD	< LOD	353
Nonsmokers							
Total	11-12	*	< LOD	< LOD	< LOD	< LOD	1308
Age group							
20-49 years	11-12	*	< LOD	< LOD	< LOD	< LOD	655
50 years and older	11-12	*	< LOD	< LOD	< LOD	< LOD	653
Gender							
Males	11-12	*	< LOD	< LOD	< LOD	< LOD	625
Females	11-12	*	< LOD	< LOD	< LOD	< LOD	683

Tobacco product users who did not smoke cigarettes were excluded. See Adult Cigarette Smokers and Nonsmokers: Analysis of Select Chemicals in a Special Sample.
Limit of detection (LOD, see Data Analysis section) for Survey year 11-12 is 0.5.
< LOD means less than the limit of detection, which may vary for some chemicals by year and by individual sample.
* Not calculated: proportion of results below limit of detection was too high to provide a valid result.

Urinary N-Acetyl-S-(dimethylphenyl)-L-cysteine (creatinine corrected)

Metabolite of Xylene

Geometric mean and selected percentiles of concentrations (in µg/g of creatinine) for the U.S. adult population from the National Health and Nutrition Examination Survey by smoking status.

	Survey years	Geometric mean (95% conf. interval)	Selected percentiles (95% confidence interval) 50th	75th	90th	95th	Sample size
Cigarette Smokers							
Total	11-12	*	< LOD	< LOD	< LOD	< LOD	889
Age group							
20-49 years	11-12	*	< LOD	< LOD	< LOD	< LOD	532
50 years and older	11-12	*	< LOD	< LOD	< LOD	< LOD	357
Gender							
Males	11-12	*	< LOD	< LOD	< LOD	< LOD	536
Females	11-12	*	< LOD	< LOD	< LOD	< LOD	353
Nonsmokers							
Total	11-12	*	< LOD	< LOD	< LOD	< LOD	1307
Age group							
20-49 years	11-12	*	< LOD	< LOD	< LOD	< LOD	654
50 years and older	11-12	*	< LOD	< LOD	< LOD	< LOD	653
Gender							
Males	11-12	*	< LOD	< LOD	< LOD	< LOD	624
Females	11-12	*	< LOD	< LOD	< LOD	< LOD	683

Tobacco product users who did not smoke cigarettes were excluded. See Adult Cigarette Smokers and Nonsmokers: Analysis of Select Chemicals in a Special Sample.
< LOD means less than the limit of detection for the urine levels not corrected for creatinine.
* Not calculated: proportion of results below limit of detection was too high to provide a valid result.

Urinary N-Acetyl-S-(N-methylcarbamoyl)-L-cysteine

Metabolite of N,N-Dimethylformamide

Geometric mean and selected percentiles of urine concentrations (in µg/L) for the U.S. adult population from the National Health and Nutrition Examination Survey by smoking status.

	Survey years	Geometric mean (95% conf. interval)	Selected percentiles (95% confidence interval) 50th	75th	90th	95th	Sample size
Cigarette Smokers							
Total	11-12	**415** (364-473)	**419** (357-496)	**763** (665-910)	**1250** (1080-1520)	**1810** (1360-2050)	889
Age group							
20-49 years	11-12	**382** (330-441)	**404** (341-482)	**720** (623-886)	**1140** (939-1360)	**1360** (1140-1830)	532
50 years and older	11-12	**478** (402-568)	**491** (353-626)	**842** (700-1080)	**1800** (1310-2040)	**2230** (1390-3210)	357
Gender							
Males	11-12	**405** (339-484)	**419** (323-514)	**842** (670-1000)	**1360** (1050-1830)	**1830** (1250-2280)	536
Females	11-12	**429** (384-478)	**429** (366-530)	**742** (620-918)	**1230** (898-1470)	**1470** (1230-2020)	353
Nonsmokers							
Total	11-12	**109** (102-116)	**111** (106-122)	**213** (198-231)	**359** (311-406)	**468** (402-553)	1308
Age group							
20-49 years	11-12	**95.7** (84.6-108)	**98.9** (90.8-108)	**185** (164-213)	**329** (268-379)	**468** (319-560)	655
50 years and older	11-12	**125** (116-135)	**129** (123-140)	**242** (215-285)	**375** (335-418)	**468** (418-612)	653
Gender							
Males	11-12	**127** (117-138)	**133** (117-150)	**230** (208-242)	**351** (303-402)	**464** (375-529)	625
Females	11-12	**96.2** (88.2-105)	**95.7** (90.0-105)	**195** (176-222)	**359** (296-430)	**484** (406-588)	683

Tobacco product users who did not smoke cigarettes were excluded. See Adult Cigarette Smokers and Nonsmokers: Analysis of Select Chemicals in a Special Sample.
Limit of detection (LOD, see Data Analysis section) for Survey year 11-12 is 5.5.

Urinary N-Acetyl-S-(N-methylcarbamoyl)-L-cysteine (creatinine corrected)

Metabolite of N,N-Dimethylformamide

Geometric mean and selected percentiles of concentrations (in µg/g of creatinine) for the U.S. adult population from the National Health and Nutrition Examination Survey by smoking status.

	Survey years	Geometric mean (95% conf. interval)	Selected percentiles (95% confidence interval) 50th	75th	90th	95th	Sample size
Cigarette Smokers							
Total	11-12	**455** (390-531)	**470** (423-564)	**753** (641-891)	**1060** (950-1240)	**1300** (1080-1490)	889
Age group							
20-49 years	11-12	**393** (336-460)	**408** (319-486)	**635** (514-783)	**950** (811-1090)	**1190** (1000-1410)	532
50 years and older	11-12	**581** (497-678)	**631** (521-741)	**942** (752-1020)	**1290** (969-1470)	**1400** (1070-1620)	357
Gender							
Males	11-12	**393** (332-466)	**408** (334-489)	**635** (511-746)	**927** (712-1200)	**1060** (809-1450)	536
Females	11-12	**547** (471-634)	**595** (512-681)	**942** (795-1030)	**1190** (1020-1450)	**1400** (1190-1610)	353
Nonsmokers							
Total	11-12	**126** (119-134)	**128** (119-137)	**212** (196-227)	**320** (299-337)	**382** (352-455)	1307
Age group							
20-49 years	11-12	**103** (93.6-114)	**106** (97.5-116)	**171** (157-185)	**245** (218-292)	**337** (265-376)	654
50 years and older	11-12	**157** (145-170)	**153** (133-178)	**268** (227-299)	**369** (326-398)	**469** (392-590)	653
Gender							
Males	11-12	**110** (101-120)	**116** (100-130)	**175** (166-195)	**268** (226-296)	**335** (280-414)	624
Females	11-12	**141** (132-151)	**139** (129-154)	**240** (216-272)	**352** (320-376)	**398** (377-476)	683

Tobacco product users who did not smoke cigarettes were excluded. See Adult Cigarette Smokers and Nonsmokers: Analysis of Select Chemicals in a Special Sample.

Urinary N-Acetyl-S-(3,4-dihydroxybutyl)-L-cysteine

Metabolite of 1,3-Butadiene

Geometric mean and selected percentiles of urine concentrations (in µg/L) for the U.S. adult population from the National Health and Nutrition Examination Survey by smoking status.

	Survey years	Geometric mean (95% conf. interval)	Selected percentiles (95% confidence interval) 50th	75th	90th	95th	Sample size
Cigarette Smokers							
Total	11-12	**333** (293-378)	**364** (312-407)	**590** (534-665)	**973** (854-1180)	**1220** (989-1550)	889
Age group							
20-49 years	11-12	**337** (290-392)	**381** (317-420)	**585** (500-708)	**971** (788-1150)	**1220** (953-1550)	532
50 years and older	11-12	**327** (283-377)	**341** (278-417)	**608** (503-725)	**983** (841-1240)	**1240** (973-1460)	357
Gender							
Males	11-12	**357** (306-416)	**391** (355-428)	**656** (538-821)	**1180** (844-1460)	**1460** (1070-1790)	536
Females	11-12	**305** (265-352)	**312** (258-400)	**554** (445-622)	**855** (635-956)	**956** (813-1140)	353
Nonsmokers							
Total	11-12	**231** (215-248)	**258** (229-272)	**416** (397-439)	**599** (553-633)	**730** (666-785)	1308
Age group							
20-49 years	11-12	**228** (204-256)	**253** (220-299)	**426** (384-476)	**617** (553-679)	**721** (672-771)	655
50 years and older	11-12	**235** (217-254)	**262** (228-272)	**403** (356-438)	**576** (513-647)	**764** (599-808)	653
Gender							
Males	11-12	**292** (268-319)	**327** (286-375)	**466** (424-530)	**637** (565-697)	**756** (672-848)	625
Females	11-12	**192** (175-210)	**206** (186-222)	**338** (312-373)	**541** (501-585)	**713** (585-792)	683

Tobacco product users who did not smoke cigarettes were excluded. See Adult Cigarette Smokers and Nonsmokers: Analysis of Select Chemicals in a Special Sample.
Limit of detection (LOD, see Data Analysis section) for Survey year 11-12 is 5.0.

Urinary N-Acetyl-S-(3,4-dihydroxybutyl)-L-cysteine (creatinine corrected)

Metabolite of 1,3-Butadiene

Geometric mean and selected percentiles of concentrations (in µg/g of creatinine) for the U.S. adult population from the National Health and Nutrition Examination Survey by smoking status.

	Survey years	Geometric mean (95% conf. interval)	Selected percentiles (95% confidence interval) 50th	75th	90th	95th	Sample size
Cigarette Smokers							
Total	11-12	**365** (340-392)	**361** (344-377)	**468** (431-529)	**653** (565-714)	**750** (666-827)	889
Age group							
20-49 years	11-12	**347** (322-374)	**333** (311-356)	**439** (404-498)	**625** (549-714)	**737** (666-819)	532
50 years and older	11-12	**397** (359-439)	**395** (365-439)	**500** (457-564)	**655** (564-771)	**805** (639-866)	357
Gender							
Males	11-12	**347** (320-375)	**349** (323-374)	**452** (414-492)	**588** (507-714)	**750** (588-866)	536
Females	11-12	**390** (358-424)	**376** (344-432)	**504** (441-600)	**661** (623-714)	**771** (711-820)	353
Nonsmokers							
Total	11-12	**269** (257-281)	**267** (252-279)	**343** (329-356)	**443** (420-455)	**514** (462-554)	1307
Age group							
20-49 years	11-12	**246** (231-263)	**241** (225-263)	**310** (292-334)	**390** (350-431)	**460** (415-529)	654
50 years and older	11-12	**295** (279-312)	**289** (269-317)	**378** (355-410)	**473** (445-514)	**543** (488-609)	653
Gender							
Males	11-12	**254** (241-268)	**250** (235-266)	**329** (310-349)	**413** (390-430)	**475** (410-610)	624
Females	11-12	**281** (265-297)	**278** (263-298)	**352** (335-374)	**456** (433-504)	**529** (476-557)	683

Tobacco product users who did not smoke cigarettes were excluded. See Adult Cigarette Smokers and Nonsmokers: Analysis of Select Chemicals in a Special Sample.

Urinary N-Acetyl-S-(2-hydroxy-3-butenyl)-L-cysteine

Metabolite of 1,3-Butadiene

Geometric mean and selected percentiles of urine concentrations (in µg/L) for the U.S. adult population from the National Health and Nutrition Examination Survey by smoking status.

	Survey years	Geometric mean (95% conf. interval)	Selected percentiles (95% confidence interval) 50th	75th	90th	95th	Sample size
Cigarette Smokers							
Total	11-12	*	**1.04** (.805-1.21)	**2.81** (2.20-3.85)	**6.22** (5.18-7.75)	**8.99** (7.71-10.0)	889
Age group							
20-49 years	11-12	*	**.793** (<LOD-1.07)	**2.63** (1.94-3.39)	**6.07** (3.82-8.53)	**8.56** (6.91-9.88)	532
50 years and older	11-12	**1.51** (1.26-1.80)	**1.30** (1.07-1.60)	**3.10** (2.21-4.92)	**7.71** (5.02-9.23)	**9.43** (7.79-12.7)	357
Gender							
Males	11-12	*	**.904** (.708-1.19)	**2.63** (1.82-4.60)	**6.22** (4.87-9.09)	**9.43** (7.67-10.1)	536
Females	11-12	**1.37** (1.18-1.59)	**1.13** (.820-1.47)	**2.96** (2.33-3.96)	**6.32** (5.12-7.44)	**7.95** (7.07-11.1)	353
Nonsmokers							
Total	11-12	*	**< LOD**	**< LOD**	**< LOD**	**< LOD**	1308
Age group							
20-49 years	11-12	*	**< LOD**	**< LOD**	**< LOD**	**< LOD**	655
50 years and older	11-12	*	**< LOD**	**< LOD**	**< LOD**	**< LOD**	653
Gender							
Males	11-12	*	**< LOD**	**< LOD**	**< LOD**	**< LOD**	625
Females	11-12	*	**< LOD**	**< LOD**	**< LOD**	**< LOD**	683

Tobacco product users who did not smoke cigarettes were excluded. See Adult Cigarette Smokers and Nonsmokers: Analysis of Select Chemicals in a Special Sample.
Limit of detection (LOD, see Data Analysis section) for Survey year 11-12 is 0.7.
< LOD means less than the limit of detection, which may vary for some chemicals by year and by individual sample.
* Not calculated: proportion of results below limit of detection was too high to provide a valid result.

Urinary N-Acetyl-S-(2-hydroxy-3-butenyl)-L-cysteine (creatinine corrected)

Metabolite of 1,3-Butadiene

Geometric mean and selected percentiles of concentrations (in µg/g of creatinine) for the U.S. adult population from the National Health and Nutrition Examination Survey by smoking status.

	Survey years	Geometric mean (95% conf. interval)	Selected percentiles (95% confidence interval) 50th	75th	90th	95th	Sample size
Cigarette Smokers							
Total	11-12	*	**1.50** (1.16-1.90)	**3.06** (2.73-3.72)	**5.68** (4.54-6.91)	**7.84** (5.66-11.0)	889
Age group							
20-49 years	11-12	*	**1.25** (<LOD-1.77)	**2.84** (2.36-3.36)	**5.30** (3.77-6.45)	**6.91** (5.75-9.68)	532
50 years and older	11-12	**1.83** (1.49-2.25)	**1.68** (1.40-2.37)	**3.75** (2.91-4.74)	**6.86** (4.32-10.3)	**8.30** (5.61-15.0)	357
Gender							
Males	11-12	*	**1.26** (.934-1.63)	**2.75** (1.93-3.26)	**4.83** (3.54-5.68)	**6.34** (4.51-10.4)	536
Females	11-12	**1.75** (1.37-2.23)	**1.90** (1.22-2.69)	**3.77** (2.92-5.30)	**6.86** (5.30-8.30)	**8.56** (6.73-13.0)	353
Nonsmokers							
Total	11-12	*	**< LOD**	**< LOD**	**< LOD**	**< LOD**	1307
Age group							
20-49 years	11-12	*	**< LOD**	**< LOD**	**< LOD**	**< LOD**	654
50 years and older	11-12	*	**< LOD**	**< LOD**	**< LOD**	**< LOD**	653
Gender							
Males	11-12	*	**< LOD**	**< LOD**	**< LOD**	**< LOD**	624
Females	11-12	*	**< LOD**	**< LOD**	**< LOD**	**< LOD**	683

Tobacco product users who did not smoke cigarettes were excluded. See Adult Cigarette Smokers and Nonsmokers: Analysis of Select Chemicals in a Special Sample.
< LOD means less than the limit of detection for the urine levels not corrected for creatinine.
* Not calculated: proportion of results below limit of detection was too high to provide a valid result.

Urinary N-Acetyl-S-(4-hydroxy-2-butenyl)-L-cysteine

Metabolite of 1,3-Butadiene

Geometric mean and selected percentiles of urine concentrations (in µg/L) for the U.S. adult population from the National Health and Nutrition Examination Survey by smoking status.

	Survey years	Geometric mean (95% conf. interval)	Selected percentiles (95% confidence interval) 50th	75th	90th	95th	Sample size
Cigarette Smokers							
Total	11-12	**57.5** (51.3-64.6)	**64.0** (54.6-77.0)	**121** (107-144)	**204** (184-228)	**257** (230-286)	889
Age group							
20-49 years	11-12	**51.6** (43.7-60.8)	**56.2** (45.6-71.5)	**106** (91.1-120)	**179** (150-208)	**226** (191-285)	532
50 years and older	11-12	**69.0** (58.7-81.2)	**83.3** (63.0-97.8)	**163** (115-190)	**230** (189-280)	**286** (219-423)	357
Gender							
Males	11-12	**55.4** (46.2-66.4)	**62.5** (46.7-77.3)	**142** (108-164)	**219** (186-266)	**285** (228-343)	536
Females	11-12	**60.3** (54.3-67.1)	**68.8** (56.2-81.2)	**117** (92.7-134)	**184** (153-204)	**223** (189-265)	353
Nonsmokers							
Total	11-12	**6.99** (6.32-7.73)	**7.31** (6.82-7.98)	**13.4** (12.5-14.4)	**21.8** (19.8-23.6)	**28.3** (25.7-31.2)	1308
Age group							
20-49 years	11-12	**7.04** (5.98-8.31)	**7.56** (6.48-8.80)	**13.6** (12.2-15.8)	**22.9** (20.6-26.0)	**36.2** (26.0-48.9)	655
50 years and older	11-12	**6.93** (6.25-7.68)	**7.13** (6.58-7.98)	**13.3** (11.2-14.4)	**20.2** (18.1-22.5)	**25.2** (21.6-28.9)	653
Gender							
Males	11-12	**9.13** (8.33-10.0)	**9.56** (8.52-10.7)	**14.7** (13.6-16.5)	**23.4** (20.3-27.7)	**29.9** (26.7-39.4)	625
Females	11-12	**5.63** (4.83-6.56)	**5.83** (4.89-6.78)	**11.3** (10.1-13.1)	**19.9** (16.6-23.2)	**25.7** (21.8-31.2)	683

Tobacco product users who did not smoke cigarettes were excluded. See Adult Cigarette Smokers and Nonsmokers: Analysis of Select Chemicals in a Special Sample.
Limit of detection (LOD, see Data Analysis section) for Survey year 11-12 is 0.6.

Urinary N-Acetyl-S-(4-hydroxy-2-butenyl)-L-cysteine (creatinine corrected)

Metabolite of 1,3-Butadiene

Geometric mean and selected percentiles of concentrations (in µg/g of creatinine) for the U.S. adult population from the National Health and Nutrition Examination Survey by smoking status.

	Survey years	Geometric mean (95% conf. interval)	Selected percentiles (95% confidence interval) 50th	75th	90th	95th	Sample size
Cigarette Smokers							
Total	11-12	**63.1** (55.1-72.2)	**70.9** (58.4-82.8)	**127** (105-146)	**196** (166-232)	**255** (208-306)	889
Age group							
20-49 years	11-12	**53.1** (44.9-62.8)	**58.9** (45.6-70.9)	**102** (78.6-131)	**164** (138-182)	**209** (168-279)	532
50 years and older	11-12	**83.9** (71.9-97.9)	**94.4** (76.8-113)	**151** (135-178)	**244** (171-309)	**271** (227-371)	357
Gender							
Males	11-12	**53.8** (46.1-62.8)	**59.5** (50.0-71.6)	**101** (80.5-125)	**164** (138-184)	**202** (164-245)	536
Females	11-12	**77.0** (63.6-93.1)	**92.1** (68.0-112)	**148** (132-176)	**243** (179-294)	**299** (243-371)	353
Nonsmokers							
Total	11-12	**8.12** (7.41-8.89)	**7.90** (7.09-8.78)	**12.5** (11.7-13.6)	**18.7** (16.8-21.1)	**23.9** (21.1-27.5)	1307
Age group							
20-49 years	11-12	**7.61** (6.64-8.71)	**7.49** (6.07-8.86)	**12.2** (10.5-13.7)	**17.7** (15.3-20.2)	**24.6** (18.7-33.7)	654
50 years and older	11-12	**8.71** (7.95-9.54)	**8.10** (7.55-9.08)	**12.7** (11.8-14.0)	**19.8** (16.2-22.3)	**22.6** (19.8-25.6)	653
Gender							
Males	11-12	**7.95** (7.32-8.63)	**7.70** (7.06-8.48)	**12.1** (10.9-13.3)	**18.1** (15.4-20.1)	**22.1** (19.1-24.1)	624
Females	11-12	**8.26** (7.23-9.43)	**8.03** (6.71-9.42)	**12.6** (11.6-14.1)	**19.7** (16.2-23.9)	**25.3** (21.4-34.9)	683

Tobacco product users who did not smoke cigarettes were excluded. See Adult Cigarette Smokers and Nonsmokers: Analysis of Select Chemicals in a Special Sample.

Urinary N-Acetyl-S-(1-hydroxymethyl-2-propenyl)-L-cysteine

Metabolite of 1,3-Butadiene

Geometric mean and selected percentiles of urine concentrations (in µg/L) for the U.S. adult population from the National Health and Nutrition Examination Survey by smoking status.

	Survey years	Geometric mean (95% conf. interval)	Selected percentiles (95% confidence interval) 50th	75th	90th	95th	Sample size
Cigarette Smokers							
Total	11-12	*	< LOD	< LOD	< LOD	< LOD	889
Age group							
20-49 years	11-12	*	< LOD	< LOD	< LOD	< LOD	532
50 years and older	11-12	*	< LOD	< LOD	< LOD	< LOD	357
Gender							
Males	11-12	*	< LOD	< LOD	< LOD	< LOD	536
Females	11-12	*	< LOD	< LOD	< LOD	< LOD	353
Nonsmokers							
Total	11-12	*	< LOD	< LOD	< LOD	< LOD	1308
Age group							
20-49 years	11-12	*	< LOD	< LOD	< LOD	< LOD	655
50 years and older	11-12	*	< LOD	< LOD	< LOD	< LOD	653
Gender							
Males	11-12	*	< LOD	< LOD	< LOD	< LOD	625
Females	11-12	*	< LOD	< LOD	< LOD	< LOD	683

Tobacco product users who did not smoke cigarettes were excluded. See Adult Cigarette Smokers and Nonsmokers: Analysis of Select Chemicals in a Special Sample.
Limit of detection (LOD, see Data Analysis section) for Survey year 11-12 is 0.7.
< LOD means less than the limit of detection, which may vary for some chemicals by year and by individual sample.
* Not calculated: proportion of results below limit of detection was too high to provide a valid result.

Urinary N-Acetyl-S-(1-hydroxymethyl-2-propenyl)-L-cysteine (creatinine corrected)

Metabolite of 1,3-Butadiene

Geometric mean and selected percentiles of concentrations (in µg/g of creatinine) for the U.S. adult population from the National Health and Nutrition Examination Survey by smoking status.

	Survey years	Geometric mean (95% conf. interval)	Selected percentiles (95% confidence interval) 50th	75th	90th	95th	Sample size
Cigarette Smokers							
Total	11-12	*	< LOD	< LOD	< LOD	< LOD	889
Age group							
20-49 years	11-12	*	< LOD	< LOD	< LOD	< LOD	532
50 years and older	11-12	*	< LOD	< LOD	< LOD	< LOD	357
Gender							
Males	11-12	*	< LOD	< LOD	< LOD	< LOD	536
Females	11-12	*	< LOD	< LOD	< LOD	< LOD	353
Nonsmokers							
Total	11-12	*	< LOD	< LOD	< LOD	< LOD	1307
Age group							
20-49 years	11-12	*	< LOD	< LOD	< LOD	< LOD	654
50 years and older	11-12	*	< LOD	< LOD	< LOD	< LOD	653
Gender							
Males	11-12	*	< LOD	< LOD	< LOD	< LOD	624
Females	11-12	*	< LOD	< LOD	< LOD	< LOD	683

Tobacco product users who did not smoke cigarettes were excluded. See Adult Cigarette Smokers and Nonsmokers: Analysis of Select Chemicals in a Special Sample.
< LOD means less than the limit of detection for the urine levels not corrected for creatinine.
* Not calculated: proportion of results below limit of detection was too high to provide a valid result.

Urinary N-Acetyl-S-(2-hydroxyethyl)-L-cysteine

Metabolite of Acrylonitrile, Ethylene oxide, and Vinyl chloride

Geometric mean and selected percentiles of urine concentrations (in µg/L) for the U.S. adult population from the National Health and Nutrition Examination Survey by smoking status.

	Survey years	Geometric mean (95% conf. interval)	Selected percentiles (95% confidence interval) 50th	75th	90th	95th	Sample size
Cigarette Smokers							
Total	11-12	**1.97** (1.74-2.22)	**2.00** (1.71-2.19)	**3.96** (3.37-4.81)	**7.86** (5.88-10.2)	**12.5** (9.56-14.4)	889
Age group							
20-49 years	11-12	**2.06** (1.79-2.38)	**2.14** (1.77-2.41)	**3.94** (3.37-4.96)	**7.86** (5.49-11.7)	**12.4** (9.23-13.9)	532
50 years and older	11-12	**1.81** (1.45-2.26)	**1.58** (1.20-2.23)	**4.01** (2.63-5.65)	**8.76** (4.97-14.7)	**14.4** (6.18-27.5)	357
Gender							
Males	11-12	**1.71** (1.46-2.01)	**1.49** (1.24-1.84)	**3.37** (2.50-4.23)	**8.82** (5.53-12.5)	**12.6** (6.69-20.2)	536
Females	11-12	**2.33** (2.07-2.63)	**2.50** (2.19-2.94)	**4.58** (3.82-5.28)	**7.76** (5.74-10.9)	**10.9** (7.88-14.7)	353
Nonsmokers							
Total	11-12	*	**< LOD**	**.934** (.830-1.06)	**1.56** (1.33-1.74)	**2.10** (1.77-2.67)	1308
Age group							
20-49 years	11-12	*	**< LOD**	**1.02** (.861-1.14)	**1.65** (1.45-2.00)	**2.67** (1.98-3.66)	655
50 years and older	11-12	*	**< LOD**	**.873** (.669-1.09)	**1.33** (1.09-1.73)	**1.75** (1.42-2.50)	653
Gender							
Males	11-12	*	**< LOD**	**.896** (.748-1.13)	**1.51** (1.32-1.74)	**1.85** (1.63-3.04)	625
Females	11-12	*	**< LOD**	**.960** (.818-1.07)	**1.56** (1.23-1.98)	**2.42** (1.75-2.81)	683

Tobacco product users who did not smoke cigarettes were excluded. See Adult Cigarette Smokers and Nonsmokers: Analysis of Select Chemicals in a Special Sample.
Limit of detection (LOD, see Data Analysis section) for Survey year 11-12 is 0.6.
< LOD means less than the limit of detection, which may vary for some chemicals by year and by individual sample.
* Not calculated: proportion of results below limit of detection was too high to provide a valid result.

Urinary N-Acetyl-S-(2-hydroxyethyl)-L-cysteine (creatinine corrected)

Metabolite of Acrylonitrile, Ethylene oxide, and Vinyl chloride

Geometric mean and selected percentiles of concentrations (in µg/g of creatinine) for the U.S. adult population from the National Health and Nutrition Examination Survey by smoking status.

	Survey years	Geometric mean (95% conf. interval)	Selected percentiles (95% confidence interval) 50th	75th	90th	95th	Sample size
Cigarette Smokers							
Total	11-12	**2.15** (1.87-2.48)	**2.24** (1.77-2.64)	**4.25** (3.26-5.35)	**7.76** (5.82-8.71)	**11.6** (7.83-15.4)	889
Age group							
20-49 years	11-12	**2.13** (1.90-2.38)	**2.36** (1.71-2.70)	**4.12** (3.60-4.73)	**6.80** (5.82-7.83)	**8.86** (7.76-14.1)	532
50 years and older	11-12	**2.20** (1.72-2.81)	**2.15** (1.55-2.85)	**4.66** (2.57-7.59)	**8.54** (5.13-13.1)	**11.7** (5.69-18.3)	357
Gender							
Males	11-12	**1.66** (1.45-1.91)	**1.54** (1.33-1.99)	**3.27** (2.70-3.81)	**5.69** (4.81-6.58)	**6.92** (5.74-8.54)	536
Females	11-12	**2.98** (2.47-3.59)	**2.99** (2.39-3.32)	**5.47** (4.31-7.76)	**11.3** (7.59-13.8)	**13.1** (7.89-19.0)	353
Nonsmokers							
Total	11-12	*	**< LOD**	**1.25** (1.14-1.46)	**1.98** (1.72-2.36)	**2.79** (2.30-3.26)	1307
Age group							
20-49 years	11-12	*	**< LOD**	**1.29** (1.15-1.50)	**2.02** (1.78-2.50)	**2.77** (2.31-3.26)	654
50 years and older	11-12	*	**< LOD**	**1.24** (1.08-1.43)	**1.93** (1.60-2.30)	**2.79** (2.22-3.23)	653
Gender							
Males	11-12	*	**< LOD**	**.930** (.815-1.08)	**1.46** (1.18-1.70)	**1.84** (1.62-2.27)	624
Females	11-12	*	**< LOD**	**1.57** (1.41-1.77)	**2.38** (2.06-2.98)	**3.25** (2.50-3.86)	683

Tobacco product users who did not smoke cigarettes were excluded. See Adult Cigarette Smokers and Nonsmokers: Analysis of Select Chemicals in a Special Sample.

< LOD means less than the limit of detection for the urine levels not corrected for creatinine.

* Not calculated: proportion of results below limit of detection was too high to provide a valid result.

Urinary N-Acetyl-S-(2-hydroxypropyl)-L-cysteine

Metabolite of Propylene oxide

Geometric mean and selected percentiles of urine concentrations (in µg/L) for the U.S. adult population from the National Health and Nutrition Examination Survey by smoking status.

	Survey years	Geometric mean (95% conf. interval)	Selected percentiles (95% confidence interval) 50th	75th	90th	95th	Sample size
Cigarette Smokers							
Total	11-12	**105** (91.4-121)	**110** (97.3-124)	**221** (195-239)	**370** (306-416)	**552** (401-731)	889
Age group							
20-49 years	11-12	**98.7** (83.2-117)	**110** (101-117)	**207** (175-244)	**354** (275-401)	**492** (354-784)	532
50 years and older	11-12	**117** (90.7-150)	**112** (82.9-172)	**229** (195-292)	**416** (284-611)	**611** (388-1390)	357
Gender							
Males	11-12	**104** (86.5-125)	**111** (94.5-130)	**232** (184-259)	**375** (292-462)	**498** (395-727)	536
Females	11-12	**107** (93.8-121)	**110** (91.8-127)	**216** (194-235)	**359** (259-552)	**552** (292-826)	353
Nonsmokers							
Total	11-12	**52.6** (47.4-58.3)	**48.1** (44.1-54.7)	**91.8** (81.4-106)	**190** (155-230)	**509** (289-717)	1308
Age group							
20-49 years	11-12	**55.8** (49.5-63.0)	**52.6** (45.8-58.8)	**99.7** (84.9-122)	**194** (153-293)	**406** (199-810)	655
50 years and older	11-12	**49.2** (41.1-58.9)	**45.2** (38.0-53.1)	**85.5** (68.7-105)	**189** (134-307)	**523** (192-947)	653
Gender							
Males	11-12	**59.1** (51.6-67.7)	**57.0** (47.4-65.4)	**93.1** (76.3-119)	**155** (134-215)	**268** (188-640)	625
Females	11-12	**47.8** (41.1-55.5)	**41.1** (33.9-48.9)	**91.2** (73.5-114)	**225** (171-349)	**550** (306-879)	683

Tobacco product users who did not smoke cigarettes were excluded. See Adult Cigarette Smokers and Nonsmokers: Analysis of Select Chemicals in a Special Sample.
Limit of detection (LOD, see Data Analysis section) for Survey year 11-12 is 1.3.

Urinary N-Acetyl-S-(2-hydroxypropyl)-L-cysteine (creatinine corrected)

Metabolite of Propylene oxide

Geometric mean and selected percentiles of concentrations (in µg/g of creatinine) for the U.S. adult population from the National Health and Nutrition Examination Survey by smoking status.

	Survey years	Geometric mean (95% conf. interval)	Selected percentiles (95% confidence interval) 50th	75th	90th	95th	Sample size
Cigarette Smokers							
Total	11-12	**115** (99.4-134)	**118** (99.5-135)	**203** (167-245)	**326** (275-399)	**457** (332-617)	889
Age group							
20-49 years	11-12	**102** (90.6-114)	**107** (87.9-121)	**188** (154-216)	**296** (241-366)	**395** (298-438)	532
50 years and older	11-12	**142** (110-182)	**138** (106-172)	**226** (172-312)	**393** (266-617)	**589** (303-1450)	357
Gender							
Males	11-12	**101** (85.1-120)	**102** (84.5-125)	**162** (138-201)	**261** (212-358)	**368** (262-574)	536
Females	11-12	**136** (116-160)	**139** (120-176)	**256** (207-298)	**393** (298-519)	**519** (346-617)	353
Nonsmokers							
Total	11-12	**61.0** (54.8-67.9)	**50.8** (47.4-55.0)	**88.0** (77.1-97.6)	**174** (148-227)	**529** (304-963)	1307
Age group							
20-49 years	11-12	**60.2** (54.0-67.1)	**50.8** (48.3-55.2)	**93.6** (79.1-104)	**168** (136-306)	**396** (186-943)	654
50 years and older	11-12	**61.9** (51.8-74.0)	**51.5** (46.1-57.7)	**82.6** (71.2-99.1)	**181** (129-390)	**630** (181-1910)	653
Gender							
Males	11-12	**51.4** (45.6-58.0)	**48.7** (43.8-52.6)	**75.1** (63.1-81.5)	**113** (96.5-144)	**227** (133-453)	624
Females	11-12	**70.1** (58.1-84.5)	**54.6** (46.8-63.9)	**105** (88.7-134)	**304** (171-474)	**943** (313-2260)	683

Tobacco product users who did not smoke cigarettes were excluded. See Adult Cigarette Smokers and Nonsmokers: Analysis of Select Chemicals in a Special Sample.

Urinary N-Acetyl-S-(3-hydroxypropyl-1-methyl)-L-cysteine

Metabolite of Crotonaldehyde

Geometric mean and selected percentiles of urine concentrations (in µg/L) for the U.S. adult population from the National Health and Nutrition Examination Survey by smoking status.

	Survey years	Geometric mean (95% conf. interval)	Selected percentiles (95% confidence interval) 50th	75th	90th	95th	Sample size
Cigarette Smokers							
Total	11-12	**1790** (1620-1980)	**2000** (1630-2330)	**3810** (3170-4370)	**6920** (5460-7500)	**7910** (7610-8720)	889
Age group							
20-49 years	11-12	**1610** (1390-1860)	**1670** (1300-2250)	**3380** (2810-4020)	**5500** (4510-6920)	**7710** (6300-8880)	532
50 years and older	11-12	**2140** (1810-2510)	**2490** (1860-2970)	**4460** (3840-5410)	**7540** (6790-7830)	**8720** (7500-9650)	357
Gender							
Males	11-12	**1760** (1510-2050)	**2050** (1370-2610)	**4020** (3210-4460)	**7000** (5350-7760)	**8130** (7680-9120)	536
Females	11-12	**1830** (1680-1990)	**2000** (1680-2220)	**3570** (2970-4190)	**6410** (4780-7500)	**7910** (6990-8880)	353
Nonsmokers							
Total	11-12	**334** (315-354)	**342** (310-369)	**587** (528-631)	**917** (834-1020)	**1260** (991-1890)	1308
Age group							
20-49 years	11-12	**331** (299-367)	**341** (295-385)	**604** (524-679)	**939** (834-1040)	**1120** (984-1680)	655
50 years and older	11-12	**337** (310-367)	**343** (291-411)	**553** (491-641)	**889** (790-1030)	**1390** (892-2120)	653
Gender							
Males	11-12	**407** (379-436)	**422** (366-467)	**659** (600-706)	**992** (889-1080)	**1390** (1030-1680)	625
Females	11-12	**285** (258-315)	**276** (241-312)	**495** (466-553)	**857** (651-1050)	**1150** (809-2490)	683

Tobacco product users who did not smoke cigarettes were excluded. See Adult Cigarette Smokers and Nonsmokers: Analysis of Select Chemicals in a Special Sample.
Limit of detection (LOD, see Data Analysis section) for Survey year 11-12 is 2.0.

Urinary N-Acetyl-S-(3-hydroxypropyl-1-methyl)-L-cysteine (creatinine corrected)

Metabolite of Crotonaldehyde

Geometric mean and selected percentiles of concentrations (in µg/g of creatinine) for the U.S. adult population from the National Health and Nutrition Examination Survey by smoking status.

	Survey years	Geometric mean (95% conf. interval)	Selected percentiles (95% confidence interval) 50th	75th	90th	95th	Sample size
Cigarette Smokers							
Total	11-12	**1960** (1720-2240)	**2160** (1800-2420)	**3970** (3460-4840)	**6470** (5410-7880)	**8060** (6620-9140)	889
Age group							
20-49 years	11-12	**1650** (1380-1980)	**1700** (1370-2020)	**3360** (2670-4140)	**5920** (5230-7250)	**8060** (5920-9070)	532
50 years and older	11-12	**2600** (2250-2990)	**2890** (2580-3310)	**5000** (3830-5820)	**7020** (5710-9130)	**8380** (5870-	357
Gender							
Males	11-12	**1710** (1490-1960)	**1850** (1440-2230)	**3250** (2670-3830)	**5820** (4560-6780)	**7720** (5820-9130)	536
Females	11-12	**2330** (1940-2800)	**2710** (2110-3280)	**5210** (3780-5870)	**7100** (5710-9070)	**9140** (7250-	353
Nonsmokers							
Total	11-12	**388** (362-416)	**359** (325-389)	**514** (479-553)	**744** (674-923)	**1080** (914-1360)	1307
Age group							
20-49 years	11-12	**357** (322-395)	**309** (287-339)	**467** (412-558)	**730** (616-956)	**1210** (760-1730)	654
50 years and older	11-12	**424** (396-455)	**393** (362-429)	**536** (493-601)	**796** (712-934)	**1060** (923-1300)	653
Gender							
Males	11-12	**353** (332-375)	**329** (297-363)	**483** (429-530)	**711** (606-770)	**938** (712-1080)	624
Females	11-12	**418** (379-461)	**372** (343-412)	**531** (486-591)	**859** (706-1060)	**1330** (932-2490)	683

Tobacco product users who did not smoke cigarettes were excluded. See Adult Cigarette Smokers and Nonsmokers: Analysis of Select Chemicals in a Special Sample.

Urinary N-Acetyl-S-(phenyl)-L-cysteine

Metabolite of Benzene

Geometric mean and selected percentiles of urine concentrations (in µg/L) for the U.S. adult population from the National Health and Nutrition Examination Survey by smoking status.

	Survey years	Geometric mean (95% conf. interval)	Selected percentiles (95% confidence interval) 50th	75th	90th	95th	Sample size
Cigarette Smokers							
Total	11-12	*	**.647** (<LOD-.778)	**1.23** (1.05-1.40)	**2.04** (1.69-2.75)	**3.11** (2.08-3.76)	889
Age group							
20-49 years	11-12	*	**.647** (<LOD-.759)	**1.25** (1.05-1.47)	**2.22** (1.69-3.04)	**3.11** (1.84-3.86)	532
50 years and older	11-12	*	**.638** (<LOD-.890)	**1.14** (.921-1.42)	**1.74** (1.42-2.86)	**3.24** (1.78-3.78)	357
Gender							
Males	11-12	*	**.699** (<LOD-.908)	**1.29** (1.11-1.48)	**2.86** (1.63-3.58)	**3.58** (2.49-4.13)	536
Females	11-12	*	**< LOD**	**1.10** (.921-1.38)	**1.69** (1.30-2.34)	**2.16** (1.70-2.67)	353
Nonsmokers							
Total	11-12	*	**< LOD**	**.966** (.893-1.10)	**1.85** (1.56-2.36)	**3.08** (2.18-3.79)	1308
Age group							
20-49 years	11-12	*	**< LOD**	**1.09** (.923-1.30)	**2.18** (1.73-2.75)	**3.31** (2.41-3.96)	655
50 years and older	11-12	*	**< LOD**	**.902** (.779-1.03)	**1.51** (1.24-2.51)	**2.84** (1.42-4.02)	653
Gender							
Males	11-12	*	**.648** (<LOD-.780)	**1.21** (.965-1.31)	**1.82** (1.51-2.92)	**3.49** (1.73-7.93)	625
Females	11-12	*	**< LOD**	**.822** (.664-.965)	**1.91** (1.31-2.53)	**2.84** (1.83-3.50)	683

Tobacco product users who did not smoke cigarettes were excluded. See Adult Cigarette Smokers and Nonsmokers: Analysis of Select Chemicals in a Special Sample.
Limit of detection (LOD, see Data Analysis section) for Survey year 11-12 is 0.6.
< LOD means less than the limit of detection, which may vary for some chemicals by year and by individual sample.
* Not calculated: proportion of results below limit of detection was too high to provide a valid result.

Urinary N-Acetyl-S-(phenyl)-L-cysteine (creatinine corrected)

Metabolite of Benzene

Geometric mean and selected percentiles of concentrations (in µg/g of creatinine) for the U.S. adult population from the National Health and Nutrition Examination Survey by smoking status.

	Survey years	Geometric mean (95% conf. interval)	Selected percentiles (95% confidence interval) 50th	75th	90th	95th	Sample size
Cigarette Smokers							
Total	11-12	*	**< LOD**	**1.35** (1.18-1.57)	**2.23** (1.86-2.49)	**2.51** (2.37-2.83)	889
Age group							
20-49 years	11-12	*	**< LOD**	**1.33** (1.03-1.77)	**2.23** (1.78-2.49)	**2.55** (2.25-3.03)	532
50 years and older	11-12	*	**< LOD**	**1.37** (1.21-1.56)	**2.13** (1.59-2.36)	**2.36** (1.93-2.65)	357
Gender							
Males	11-12	*	**.778** (<LOD-.902)	**1.29** (.968-1.63)	**2.23** (1.77-2.49)	**2.49** (1.92-2.98)	536
Females	11-12	*	**< LOD**	**1.41** (1.24-1.63)	**2.12** (1.70-2.49)	**2.63** (2.23-3.03)	353
Nonsmokers							
Total	11-12	*	**.783** (<LOD-.815)	**1.26** (1.15-1.37)	**2.03** (1.77-2.55)	**3.26** (2.59-4.15)	1307
Age group							
20-49 years	11-12	*	**.800** (<LOD-.865)	**1.29** (1.15-1.46)	**2.36** (1.84-2.79)	**3.26** (2.55-4.71)	654
50 years and older	11-12	*	**.771** (<LOD-.847)	**1.25** (1.06-1.46)	**1.93** (1.67-2.36)	**2.83** (1.98-4.81)	653
Gender							
Males	11-12	*	**.642** (<LOD-.719)	**1.03** (.885-1.12)	**1.67** (1.34-2.04)	**2.53** (1.84-3.80)	624
Females	11-12	*	**< LOD**	**1.51** (1.27-1.70)	**2.36** (1.93-3.21)	**3.86** (2.73-4.81)	683

Tobacco product users who did not smoke cigarettes were excluded. See Adult Cigarette Smokers and Nonsmokers: Analysis of Select Chemicals in a Special Sample.
< LOD means less than the limit of detection for the urine levels not corrected for creatinine.
* Not calculated: proportion of results below limit of detection was too high to provide a valid result.

Urinary *t,t*-Muconic acid

Metabolite of Benzene

Geometric mean and selected percentiles of urine concentrations (in µg/L) for the U.S. adult population from the National Health and Nutrition Examination Survey by smoking status.

	Survey years	Geometric mean (95% conf. interval)	Selected percentiles (95% confidence interval) 50th	75th	90th	95th	Sample size
Cigarette Smokers							
Total	11-12	**121** (111-131)	**116** (101-126)	**254** (215-285)	**450** (377-533)	**651** (502-1050)	889
Age group							
20-49 years	11-12	**116** (104-128)	**109** (90.8-130)	**242** (201-288)	**483** (353-615)	**676** (500-1160)	532
50 years and older	11-12	**130** (110-154)	**126** (101-175)	**269** (203-315)	**429** (322-538)	**571** (455-1260)	357
Gender							
Males	11-12	**122** (108-138)	**118** (98.5-151)	**264** (226-299)	**442** (333-538)	**622** (457-1160)	536
Females	11-12	**119** (104-136)	**113** (92.9-123)	**217** (173-299)	**455** (361-615)	**692** (430-1340)	353
Nonsmokers							
Total	11-12	**63.4** (57.3-70.1)	**59.2** (50.6-68.6)	**124** (109-140)	**265** (235-298)	**403** (352-488)	1308
Age group							
20-49 years	11-12	**63.8** (57.4-71.0)	**56.3** (48.6-67.7)	**128** (115-156)	**297** (254-358)	**426** (357-676)	655
50 years and older	11-12	**62.9** (54.2-73.0)	**60.9** (51.4-71.2)	**118** (98.0-151)	**228** (167-285)	**367** (265-425)	653
Gender							
Males	11-12	**78.4** (69.2-88.7)	**74.6** (63.0-85.7)	**148** (126-159)	**290** (265-364)	**528** (348-770)	625
Females	11-12	**53.4** (48.2-59.2)	**49.2** (41.7-53.4)	**105** (85.8-125)	**246** (195-259)	**368** (259-418)	683

Tobacco product users who did not smoke cigarettes were excluded. See Adult Cigarette Smokers and Nonsmokers: Analysis of Select Chemicals in a Special Sample.
Limit of detection (LOD, see Data Analysis section) for Survey year 11-12 is 20.0.

Urinary *t,t*-Muconic acid (creatinine corrected)

Metabolite of Benzene

Geometric mean and selected percentiles of concentrations (in µg/g of creatinine) for the U.S. adult population from the National Health and Nutrition Examination Survey by smoking status.

	Survey years	Geometric mean (95% conf. interval)	Selected percentiles (95% confidence interval) 50th	75th	90th	95th	Sample size
Cigarette Smokers							
Total	11-12	**132** (117-150)	**128** (112-155)	**232** (215-263)	**403** (335-478)	**610** (478-719)	889
Age group							
20-49 years	11-12	**119** (104-137)	**112** (90.0-131)	**228** (183-275)	**442** (347-508)	**600** (469-688)	532
50 years and older	11-12	**158** (137-183)	**170** (129-192)	**234** (215-268)	**351** (319-453)	**629** (373-1140)	357
Gender							
Males	11-12	**119** (103-137)	**122** (99.6-144)	**220** (192-239)	**335** (278-400)	**498** (403-600)	536
Females	11-12	**152** (128-180)	**162** (111-188)	**254** (212-324)	**508** (344-629)	**674** (549-985)	353
Nonsmokers							
Total	11-12	**73.8** (67.1-81.1)	**69.0** (61.1-78.5)	**128** (110-143)	**260** (211-309)	**413** (319-505)	1307
Age group							
20-49 years	11-12	**69.2** (62.0-77.2)	**62.2** (56.4-72.1)	**133** (108-152)	**270** (193-331)	**413** (324-479)	654
50 years and older	11-12	**79.2** (69.4-90.3)	**78.4** (63.0-86.6)	**128** (105-158)	**230** (196-310)	**437** (278-616)	653
Gender							
Males	11-12	**68.5** (60.5-77.6)	**63.2** (55.6-74.7)	**109** (97.2-131)	**235** (185-278)	**363** (319-446)	624
Females	11-12	**78.3** (70.0-87.7)	**75.6** (63.0-86.0)	**144** (119-167)	**278** (210-349)	**447** (310-596)	683

Tobacco product users who did not smoke cigarettes were excluded. See Adult Cigarette Smokers and Nonsmokers: Analysis of Select Chemicals in a Special Sample.

Urinary N-Acetyl-S-(phenyl-2-hydroxyethyl)-L-cysteine**

Metabolite of Styrene

Geometric mean and selected percentiles of urine concentrations (in µg/L) for the U.S. adult population from the National Health and Nutrition Examination Survey by smoking status.

	Survey years	Geometric mean (95% conf. interval)	Selected percentiles (95% confidence interval) 50th	75th	90th	95th	Sample size
Cigarette Smokers							
Total	11-12	**1.21** (1.04-1.41)	**1.04** (.840-1.25)	**2.23** (1.75-2.79)	**4.37** (3.20-6.16)	**6.26** (5.05-8.62)	889
Age group							
20-49 years	11-12	**1.16** (.997-1.35)	**.957** (.807-1.14)	**2.09** (1.43-2.57)	**4.37** (2.88-6.16)	**6.26** (4.34-10.2)	532
50 years and older	11-12	**1.29** (1.07-1.57)	**1.25** (.813-1.51)	**2.56** (1.88-3.20)	**4.34** (3.20-6.31)	**6.34** (4.37-9.02)	357
Gender							
Males	11-12	**1.33** (1.08-1.63)	**1.16** (.840-1.48)	**2.57** (2.07-3.20)	**5.53** (3.54-6.85)	**7.23** (4.72-17.2)	536
Females	11-12	**1.08** (.950-1.22)	**.943** (.772-1.16)	**1.76** (1.38-2.27)	**3.44** (2.59-4.59)	**5.22** (3.26-7.92)	353
Nonsmokers							
Total	11-12	*	**< LOD**	**< LOD**	**1.35** (1.15-1.63)	**1.87** (1.63-2.16)	1308
Age group							
20-49 years	11-12	*	**< LOD**	**.791** (<LOD-.898)	**1.56** (1.24-1.69)	**1.95** (1.80-2.41)	655
50 years and older	11-12	*	**< LOD**	**< LOD**	**1.28** (.979-1.61)	**1.75** (1.32-1.93)	653
Gender							
Males	11-12	*	**< LOD**	**.803** (<LOD-.906)	**1.60** (1.17-1.87)	**1.93** (1.64-2.67)	625
Females	11-12	*	**< LOD**	**< LOD**	**1.28** (1.06-1.47)	**1.73** (1.38-2.13)	683

Tobacco product users who did not smoke cigarettes were excluded. See Adult Cigarette Smokers and Nonsmokers: Analysis of Select Chemicals in a Special Sample.
Limit of detection (LOD, see Data Analysis section) for Survey year 11-12 is 0.7.
< LOD means less than the limit of detection, which may vary for some chemicals by year and by individual sample.
* Not calculated: proportion of results below limit of detection was too high to provide a valid result.
**Concentrations of N-Acetyl-S-(1-phenyl- + (2-phenyl-2-hydroxyethyl)-L-cysteine were measured together and are reported as N-Acetyl-S-(phenyl-2-hydroxyethyl)-L-cysteine.

Urinary N-Acetyl-S-(phenyl-2-hydroxyethyl)-L-cysteine (creatinine corrected)**

Metabolite of Styrene

Geometric mean and selected percentiles of concentrations (in µg/g of creatinine) for the U.S. adult population from the National Health and Nutrition Examination Survey by smoking status.

	Survey years	Geometric mean (95% conf. interval)	Selected percentiles (95% confidence interval) 50th	75th	90th	95th	Sample size
Cigarette Smokers							
Total	11-12	**1.33** (1.18-1.48)	**1.28** (1.15-1.44)	**2.43** (1.93-2.75)	**3.75** (3.10-4.16)	**4.64** (4.06-6.42)	889
Age group							
20-49 years	11-12	**1.20** (1.04-1.38)	**1.15** (.940-1.44)	**2.06** (1.82-2.54)	**3.39** (2.91-4.28)	**4.61** (3.73-7.53)	532
50 years and older	11-12	**1.57** (1.39-1.78)	**1.44** (1.26-1.72)	**2.74** (2.03-3.24)	**4.02** (3.30-4.28)	**4.85** (4.05-6.42)	357
Gender							
Males	11-12	**1.29** (1.12-1.48)	**1.19** (1.07-1.33)	**2.06** (1.82-2.75)	**3.73** (2.95-4.13)	**4.33** (3.82-9.42)	536
Females	11-12	**1.38** (1.20-1.57)	**1.41** (1.20-1.65)	**2.52** (2.20-2.74)	**3.98** (3.09-4.61)	**4.75** (4.02-6.42)	353
Nonsmokers							
Total	11-12	*	**< LOD**	**< LOD**	**1.90** (1.77-2.06)	**2.61** (2.15-3.30)	1307
Age group							
20-49 years	11-12	*	**< LOD**	**1.15** (<LOD-1.34)	**1.96** (1.65-2.36)	**2.75** (2.15-3.81)	654
50 years and older	11-12	*	**< LOD**	**< LOD**	**1.83** (1.71-2.05)	**2.25** (1.98-3.54)	653
Gender							
Males	11-12	*	**< LOD**	**.901** (<LOD-1.01)	**1.33** (1.18-1.50)	**1.77** (1.46-2.15)	624
Females	11-12	*	**< LOD**	**< LOD**	**2.15** (1.91-2.62)	**3.30** (2.44-4.13)	683

Tobacco product users who did not smoke cigarettes were excluded. See Adult Cigarette Smokers and Nonsmokers: Analysis of Select Chemicals in a Special Sample.

< LOD means less than the limit of detection for the urine levels not corrected for creatinine.

* Not calculated: proportion of results below limit of detection was too high to provide a valid result.

**Concentrations of N-Acetyl-S-(1-phenyl- + (2-phenyl-2-hydroxyethyl)-L-cysteine were measured together and are reported as N-Acetyl-S-(phenyl-2-hydroxyethyl)-L-cysteine.

Urinary N-Acetyl-S-(*n*-propyl)-L-cysteine

Metabolite of 1-Bromopropane

Geometric mean and selected percentiles of urine concentrations (in µg/L) for the U.S. adult population from the National Health and Nutrition Examination Survey by smoking status.

	Survey years	Geometric mean (95% conf. interval)	Selected percentiles (95% confidence interval) 50th	75th	90th	95th	Sample size
Cigarette Smokers							
Total	11-12	**3.85** (3.23-4.58)	**2.93** (2.33-3.88)	**9.54** (6.79-13.5)	**24.6** (18.6-45.1)	**64.8** (29.9-105)	882
Age group							
20-49 years	11-12	**4.13** (3.29-5.18)	**3.45** (2.33-4.79)	**9.80** (7.05-14.9)	**24.3** (17.0-56.8)	**64.8** (24.3-105)	530
50 years and older	11-12	**3.41** (2.43-4.79)	**2.52** (1.71-3.70)	**7.66** (3.89-18.2)	**25.1** (18.2-52.7)	**68.7** (21.7-163)	352
Gender							
Males	11-12	**3.96** (2.99-5.24)	**2.88** (2.17-4.24)	**10.4** (5.69-18.6)	**29.9** (18.1-78.6)	**105** (28.4-177)	531
Females	11-12	**3.72** (3.25-4.26)	**3.03** (2.27-4.13)	**8.55** (6.62-11.6)	**22.8** (15.4-28.4)	**45.1** (24.6-68.7)	351
Nonsmokers							
Total	11-12	**4.80** (4.24-5.43)	**4.40** (3.85-5.22)	**12.2** (10.4-14.9)	**30.0** (24.6-39.2)	**56.1** (35.7-78.6)	1266
Age group							
20-49 years	11-12	**5.18** (4.47-6.01)	**4.82** (3.71-5.91)	**13.2** (10.4-17.5)	**32.4** (24.1-43.5)	**64.4** (36.1-94.2)	640
50 years and older	11-12	**4.41** (3.48-5.59)	**4.23** (3.11-5.41)	**10.5** (8.49-15.7)	**27.4** (18.6-39.2)	**43.7** (27.4-72.9)	626
Gender							
Males	11-12	**5.35** (4.57-6.27)	**4.98** (4.04-6.19)	**12.5** (10.3-15.5)	**33.3** (24.4-45.7)	**60.9** (31.1-84.4)	604
Females	11-12	**4.39** (3.78-5.10)	**4.11** (3.27-5.08)	**11.8** (9.69-15.9)	**28.7** (20.8-39.7)	**45.2** (33.5-69.4)	662

Tobacco product users who did not smoke cigarettes were excluded. See Adult Cigarette Smokers and Nonsmokers: Analysis of Select Chemicals in a Special Sample.
Limit of detection (LOD, see Data Analysis section) for Survey year 11-12 is 1.2.

Urinary N-Acetyl-S-(*n*-propyl)-L-cysteine (creatinine corrected)

Metabolite of 1-Bromopropane

Geometric mean and selected percentiles of concentrations (in µg/g of creatinine) for the U.S. adult population from the National Health and Nutrition Examination Survey by smoking status.

	Survey years	Geometric mean (95% conf. interval)	Selected percentiles (95% confidence interval) 50th	75th	90th	95th	Sample size
Cigarette Smokers							
Total	11-12	**4.22** (3.72-4.80)	**4.05** (3.24-4.84)	**8.60** (7.75-9.61)	**26.3** (15.3-37.8)	**62.0** (31.9-87.5)	882
Age group							
20-49 years	11-12	**4.26** (3.65-4.97)	**4.31** (3.13-5.00)	**8.82** (7.67-11.3)	**23.9** (13.5-37.3)	**48.5** (23.9-87.5)	530
50 years and older	11-12	**4.16** (3.00-5.77)	**3.61** (2.23-6.05)	**7.55** (6.05-12.0)	**36.1** (11.0-71.6)	**71.6** (30.3-92.8)	352
Gender							
Males	11-12	**3.84** (3.14-4.69)	**3.79** (2.93-4.68)	**8.28** (6.09-12.2)	**25.3** (12.9-51.2)	**62.0** (22.0-87.5)	531
Females	11-12	**4.75** (3.92-5.75)	**4.47** (2.93-6.06)	**8.71** (7.32-12.0)	**28.1** (13.0-47.7)	**48.5** (33.8-92.8)	351
Nonsmokers							
Total	11-12	**5.56** (4.92-6.28)	**5.31** (4.54-6.00)	**14.0** (12.1-16.6)	**36.0** (26.4-46.1)	**51.8** (41.3-65.2)	1265
Age group							
20-49 years	11-12	**5.62** (4.97-6.35)	**5.31** (4.30-6.39)	**15.6** (12.8-21.1)	**36.4** (29.2-46.5)	**52.6** (41.6-65.3)	639
50 years and older	11-12	**5.49** (4.34-6.94)	**5.31** (4.14-7.00)	**12.6** (9.63-17.8)	**32.7** (21.0-44.4)	**49.9** (32.7-71.8)	626
Gender							
Males	11-12	**4.63** (3.97-5.41)	**4.26** (3.53-5.50)	**11.1** (8.72-14.0)	**32.7** (20.9-37.9)	**46.1** (32.7-61.5)	603
Females	11-12	**6.44** (5.33-7.78)	**6.35** (4.81-8.17)	**17.0** (12.7-24.7)	**37.1** (29.3-50.3)	**60.9** (43.8-80.0)	662

Tobacco product users who did not smoke cigarettes were excluded. See Adult Cigarette Smokers and Nonsmokers: Analysis of Select Chemicals in a Special Sample.

Urinary N-Acetyl-S-(trichlorovinyl)-L-cysteine

Metabolite of Tetrachloroethene

Geometric mean and selected percentiles of urine concentrations (in µg/L) for the U.S. adult population from the National Health and Nutrition Examination Survey by smoking status.

	Survey years	Geometric mean (95% conf. interval)	Selected percentiles (95% confidence interval) 50th	75th	90th	95th	Sample size
Cigarette Smokers							
Total	11-12	*	**< LOD**	**< LOD**	**< LOD**	**< LOD**	889
Age group							
20-49 years	11-12	*	**< LOD**	**< LOD**	**< LOD**	**< LOD**	532
50 years and older	11-12	*	**< LOD**	**< LOD**	**< LOD**	**< LOD**	357
Gender							
Males	11-12	*	**< LOD**	**< LOD**	**< LOD**	**< LOD**	536
Females	11-12	*	**< LOD**	**< LOD**	**< LOD**	**< LOD**	353
Nonsmokers							
Total	11-12	*	**< LOD**	**< LOD**	**< LOD**	**< LOD**	1308
Age group							
20-49 years	11-12	*	**< LOD**	**< LOD**	**< LOD**	**< LOD**	655
50 years and older	11-12	*	**< LOD**	**< LOD**	**< LOD**	**< LOD**	653
Gender							
Males	11-12	*	**< LOD**	**< LOD**	**< LOD**	**< LOD**	625
Females	11-12	*	**< LOD**	**< LOD**	**< LOD**	**< LOD**	683

Tobacco product users who did not smoke cigarettes were excluded. See Adult Cigarette Smokers and Nonsmokers: Analysis of Select Chemicals in a Special Sample.
Limit of detection (LOD, see Data Analysis section) for Survey year 11-12 is 3.0.
< LOD means less than the limit of detection, which may vary for some chemicals by year and by individual sample.
* Not calculated: proportion of results below limit of detection was too high to provide a valid result.

Urinary N-Acetyl-S-(trichlorovinyl)-L-cysteine (creatinine corrected)

Metabolite of Tetrachloroethene

Geometric mean and selected percentiles of concentrations (in µg/g of creatinine) for the U.S. adult population from the National Health and Nutrition Examination Survey by smoking status.

	Survey years	Geometric mean (95% conf. interval)	Selected percentiles (95% confidence interval) 50th	75th	90th	95th	Sample size
Cigarette Smokers							
Total	11-12	*	**< LOD**	**< LOD**	**< LOD**	**< LOD**	889
Age group							
20-49 years	11-12	*	**< LOD**	**< LOD**	**< LOD**	**< LOD**	532
50 years and older	11-12	*	**< LOD**	**< LOD**	**< LOD**	**< LOD**	357
Gender							
Males	11-12	*	**< LOD**	**< LOD**	**< LOD**	**< LOD**	536
Females	11-12	*	**< LOD**	**< LOD**	**< LOD**	**< LOD**	353
Nonsmokers							
Total	11-12	*	**< LOD**	**< LOD**	**< LOD**	**< LOD**	1307
Age group							
20-49 years	11-12	*	**< LOD**	**< LOD**	**< LOD**	**< LOD**	654
50 years and older	11-12	*	**< LOD**	**< LOD**	**< LOD**	**< LOD**	653
Gender							
Males	11-12	*	**< LOD**	**< LOD**	**< LOD**	**< LOD**	624
Females	11-12	*	**< LOD**	**< LOD**	**< LOD**	**< LOD**	683

Tobacco product users who did not smoke cigarettes were excluded. See Adult Cigarette Smokers and Nonsmokers: Analysis of Select Chemicals in a Special Sample.
< LOD means less than the limit of detection for the urine levels not corrected for creatinine.
* Not calculated: proportion of results below limit of detection was too high to provide a valid result.

Urinary 2-Aminothiazoline-4-carboxylic acid

Metabolite of Cyanide

Geometric mean and selected percentiles of urine concentrations (in µg/L) for the U.S. adult population from the National Health and Nutrition Examination Survey by smoking status.

	Survey years	Geometric mean (95% conf. interval)	Selected percentiles (95% confidence interval) 50th	75th	90th	95th	Sample size
Cigarette Smokers							
Total	11-12	**117** (101-137)	**136** (116-154)	**251** (215-303)	**439** (342-515)	**608** (491-759)	889
Age group							
20-49 years	11-12	**115** (95.3-139)	**136** (108-165)	**235** (197-306)	**439** (327-515)	**560** (439-730)	532
50 years and older	11-12	**121** (96.2-153)	**132** (99.4-162)	**274** (175-342)	**487** (327-669)	**716** (487-926)	357
Gender							
Males	11-12	**88.2** (73.3-106)	**99.4** (78.7-122)	**187** (163-228)	**309** (246-381)	**403** (304-730)	536
Females	11-12	**168** (141-200)	**173** (155-207)	**335** (252-439)	**551** (446-689)	**751** (531-997)	353
Nonsmokers							
Total	11-12	**95.9** (88.2-104)	**102** (95.2-108)	**184** (170-209)	**323** (282-364)	**433** (364-501)	1308
Age group							
20-49 years	11-12	**92.8** (83.1-104)	**99.3** (82.8-106)	**180** (157-212)	**314** (270-391)	**461** (349-534)	655
50 years and older	11-12	**99.5** (90.1-110)	**108** (94.6-125)	**192** (176-220)	**331** (293-363)	**414** (356-501)	653
Gender							
Males	11-12	**80.3** (72.5-89.0)	**81.0** (70.0-96.2)	**147** (132-175)	**264** (217-378)	**407** (271-501)	625
Females	11-12	**111** (98.4-124)	**121** (103-147)	**218** (191-257)	**342** (312-363)	**475** (397-531)	683

Tobacco product users who did not smoke cigarettes were excluded. See Adult Cigarette Smokers and Nonsmokers: Analysis of Select Chemicals in a Special Sample.
Limit of detection (LOD, see Data Analysis section) for Survey year 11-12 is 15.0.

Urinary 2-Aminothiazoline-4-carboxylic acid (creatinine corrected)

Metabolite of Cyanide

Geometric mean and selected percentiles of concentrations (in µg/g of creatinine) for the U.S. adult population from the National Health and Nutrition Examination Survey by smoking status.

	Survey years	Geometric mean (95% conf. interval)	Selected percentiles (95% confidence interval) 50th	75th	90th	95th	Sample size
Cigarette Smokers							
Total	11-12	**129** (116-143)	**138** (118-157)	**246** (220-286)	**411** (363-446)	**514** (440-608)	889
Age group							
20-49 years	11-12	**119** (105-134)	**131** (114-155)	**224** (203-260)	**360** (285-406)	**412** (363-514)	532
50 years and older	11-12	**148** (125-174)	**141** (116-185)	**327** (252-399)	**477** (439-616)	**623** (477-765)	357
Gender							
Males	11-12	**85.7** (75.9-96.8)	**91.1** (81.1-101)	**151** (133-167)	**266** (207-327)	**393** (286-477)	536
Females	11-12	**214** (193-237)	**220** (203-251)	**363** (307-409)	**495** (440-575)	**640** (450-868)	353
Nonsmokers							
Total	11-12	**111** (102-121)	**120** (109-132)	**217** (195-233)	**348** (316-369)	**418** (372-489)	1307
Age group							
20-49 years	11-12	**100** (91.0-110)	**107** (93.3-118)	**193** (169-209)	**313** (260-350)	**373** (339-411)	654
50 years and older	11-12	**125** (114-138)	**132** (118-148)	**240** (220-279)	**372** (333-415)	**489** (418-546)	653
Gender							
Males	11-12	**69.8** (61.1-79.8)	**68.6** (57.5-77.9)	**123** (109-143)	**225** (180-279)	**319** (250-407)	624
Females	11-12	**162** (147-179)	**170** (153-189)	**274** (236-308)	**374** (350-420)	**478** (400-546)	683

Tobacco product users who did not smoke cigarettes were excluded. See Adult Cigarette Smokers and Nonsmokers: Analysis of Select Chemicals in a Special Sample.

Urinary Mandelic acid

Metabolite of Styrene

Geometric mean and selected percentiles of urine concentrations (in µg/L) for the U.S. adult population from the National Health and Nutrition Examination Survey by smoking status.

	Survey years	Geometric mean (95% conf. interval)	Selected percentiles (95% confidence interval) 50th	75th	90th	95th	Sample size
Cigarette Smokers							
Total	11-12	**283** (244-330)	**283** (255-351)	**499** (454-597)	**899** (737-1000)	**1200** (969-1420)	889
Age group							
20-49 years	11-12	**278** (228-340)	**287** (252-373)	**501** (437-607)	**890** (677-1070)	**1200** (958-1610)	532
50 years and older	11-12	**292** (260-328)	**268** (242-336)	**483** (449-597)	**929** (661-1050)	**1200** (953-1270)	357
Gender							
Males	11-12	**298** (242-366)	**319** (263-374)	**630** (479-720)	**1010** (835-1250)	**1390** (1130-1610)	536
Females	11-12	**266** (237-299)	**261** (236-297)	**455** (390-493)	**662** (536-806)	**850** (705-1060)	353
Nonsmokers							
Total	11-12	**129** (118-142)	**139** (121-157)	**236** (196-269)	**355** (312-395)	**465** (396-534)	1308
Age group							
20-49 years	11-12	**139** (122-158)	**151** (131-179)	**264** (227-297)	**388** (322-449)	**530** (420-657)	655
50 years and older	11-12	**120** (109-131)	**131** (108-147)	**196** (174-236)	**339** (258-360)	**415** (355-490)	653
Gender							
Males	11-12	**161** (148-175)	**169** (142-191)	**260** (230-300)	**377** (315-452)	**505** (388-672)	625
Females	11-12	**108** (95.6-123)	**117** (99.8-138)	**193** (168-238)	**340** (279-408)	**449** (366-504)	683

Tobacco product users who did not smoke cigarettes were excluded. See Adult Cigarette Smokers and Nonsmokers: Analysis of Select Chemicals in a Special Sample.
Limit of detection (LOD, see Data Analysis section) for Survey year 11-12 is 12.0.

Urinary Mandelic acid (creatinine corrected)

Metabolite of Styrene

Geometric mean and selected percentiles of concentrations (in µg/g of creatinine) for the U.S. adult population from the National Health and Nutrition Examination Survey by smoking status.

	Survey years	Geometric mean (95% conf. interval)	Selected percentiles (95% confidence interval) 50th	75th	90th	95th	Sample size
Cigarette Smokers							
Total	11-12	**311** (280-345)	**311** (282-328)	**475** (432-531)	**723** (610-835)	**882** (785-1060)	889
Age group							
20-49 years	11-12	**287** (256-321)	**286** (244-321)	**443** (420-483)	**701** (609-787)	**836** (769-968)	532
50 years and older	11-12	**355** (318-396)	**334** (316-384)	**516** (438-608)	**785** (541-1130)	**968** (686-1160)	357
Gender							
Males	11-12	**289** (252-332)	**280** (243-319)	**440** (405-488)	**736** (552-835)	**882** (736-1150)	536
Females	11-12	**340** (303-382)	**330** (313-381)	**531** (427-609)	**675** (608-880)	**880** (675-968)	353
Nonsmokers							
Total	11-12	**150** (141-160)	**147** (137-158)	**198** (185-222)	**284** (257-316)	**361** (324-400)	1307
Age group							
20-49 years	11-12	**150** (140-161)	**147** (138-156)	**194** (184-222)	**271** (245-317)	**361** (285-410)	654
50 years and older	11-12	**151** (138-164)	**147** (131-165)	**200** (176-240)	**295** (256-326)	**361** (305-471)	653
Gender							
Males	11-12	**140** (134-147)	**137** (126-146)	**180** (165-197)	**238** (224-264)	**308** (268-354)	624
Females	11-12	**159** (145-174)	**158** (145-173)	**222** (199-241)	**317** (269-361)	**385** (352-454)	683

Tobacco product users who did not smoke cigarettes were excluded. See Adult Cigarette Smokers and Nonsmokers: Analysis of Select Chemicals in a Special Sample.

Urinary 2-Methylhippuric acid

Metabolite of Xylene

Geometric mean and selected percentiles of urine concentrations (in µg/L) for the U.S. adult population from the National Health and Nutrition Examination Survey by smoking status.

	Survey years	Geometric mean (95% conf. interval)	Selected percentiles (95% confidence interval) 50th	75th	90th	95th	Sample size
Cigarette Smokers							
Total	11-12	**99.4** (87.4-113)	**105** (94.6-114)	**181** (163-209)	**287** (250-369)	**408** (337-434)	889
Age group							
20-49 years	11-12	**94.5** (81.6-109)	**105** (93.9-112)	**175** (155-198)	**276** (222-353)	**407** (264-453)	532
50 years and older	11-12	**108** (95.0-123)	**104** (88.1-137)	**192** (169-217)	**324** (238-398)	**423** (366-477)	357
Gender							
Males	11-12	**105** (85.8-129)	**113** (96.2-142)	**208** (174-250)	**353** (253-408)	**408** (308-475)	536
Females	11-12	**92.6** (84.7-101)	**94.6** (89.1-104)	**157** (133-176)	**232** (203-275)	**327** (242-426)	353
Nonsmokers							
Total	11-12	**25.9** (23.0-29.0)	**24.9** (21.4-27.4)	**55.0** (46.5-64.8)	**109** (95.2-138)	**170** (129-211)	1308
Age group							
20-49 years	11-12	**28.3** (24.9-32.1)	**25.9** (22.5-29.9)	**62.0** (48.6-72.4)	**114** (95.2-146)	**170** (127-211)	655
50 years and older	11-12	**23.5** (19.9-27.7)	**23.4** (18.6-27.5)	**49.6** (38.8-62.3)	**107** (77.3-149)	**170** (113-224)	653
Gender							
Males	11-12	**31.0** (24.8-38.9)	**27.3** (20.9-34.8)	**65.1** (43.8-86.8)	**147** (91.9-188)	**200** (116-580)	625
Females	11-12	**22.3** (19.4-25.7)	**22.4** (19.7-25.6)	**49.0** (39.6-58.0)	**98.7** (74.9-111)	**138** (107-172)	683

Tobacco product users who did not smoke cigarettes were excluded. See Adult Cigarette Smokers and Nonsmokers: Analysis of Select Chemicals in a Special Sample.
Limit of detection (LOD, see Data Analysis section) for Survey year 11-12 is 5.0.

Urinary 2-Methylhippuric acid (creatinine corrected)

Metabolite of Xylene

Geometric mean and selected percentiles of concentrations (in µg/g of creatinine) for the U.S. adult population from the National Health and Nutrition Examination Survey by smoking status.

	Survey years	Geometric mean (95% conf. interval)	Selected percentiles (95% confidence interval) 50th	75th	90th	95th	Sample size
Cigarette Smokers							
Total	11-12	**109** (96.5-123)	**116** (99.3-134)	**199** (175-229)	**330** (252-374)	**382** (339-440)	889
Age group							
20-49 years	11-12	**97.4** (83.6-113)	**95.4** (80.8-112)	**193** (160-211)	**324** (232-357)	**377** (339-438)	532
50 years and older	11-12	**131** (119-145)	**142** (124-157)	**214** (182-248)	**332** (252-398)	**423** (330-486)	357
Gender							
Males	11-12	**102** (86.0-122)	**101** (85.6-126)	**177** (139-226)	**332** (201-376)	**374** (339-409)	536
Females	11-12	**118** (97.2-144)	**138** (104-159)	**229** (186-270)	**330** (270-398)	**416** (324-533)	353
Nonsmokers							
Total	11-12	**30.1** (27.0-33.6)	**28.0** (24.1-32.6)	**59.6** (52.1-65.5)	**110** (97.2-130)	**156** (134-197)	1307
Age group							
20-49 years	11-12	**30.6** (27.4-34.1)	**28.5** (26.1-32.3)	**58.5** (47.5-68.4)	**96.9** (85.6-117)	**146** (100-201)	654
50 years and older	11-12	**29.5** (25.7-34.0)	**28.0** (21.7-35.4)	**60.8** (51.8-72.3)	**132** (110-141)	**159** (142-201)	653
Gender							
Males	11-12	**27.1** (22.2-33.0)	**26.1** (21.8-31.7)	**54.6** (41.8-71.5)	**94.8** (79.2-123)	**140** (98.9-175)	624
Females	11-12	**32.7** (29.4-36.5)	**30.4** (26.7-36.0)	**62.5** (54.5-69.5)	**133** (109-140)	**175** (146-204)	683

Tobacco product users who did not smoke cigarettes were excluded. See Adult Cigarette Smokers and Nonsmokers: Analysis of Select Chemicals in a Special Sample.

Urinary 3-and 4-Methylhippuric acid

Metabolite of Xylene

Geometric mean and selected percentiles of urine concentrations (in µg/L) for the U.S. adult population from the National Health and Nutrition Examination Survey by smoking status.

	Survey years	Geometric mean (95% conf. interval)	Selected percentiles (95% confidence interval) 50th	75th	90th	95th	Sample size
Cigarette Smokers							
Total	11-12	**668** (576-775)	**715** (601-866)	**1320** (1140-1510)	**2080** (1960-2400)	**2850** (2380-3410)	889
Age group							
20-49 years	11-12	**616** (520-731)	**711** (585-866)	**1260** (1080-1410)	**1920** (1700-2290)	**2590** (2080-2960)	532
50 years and older	11-12	**763** (656-886)	**722** (590-1020)	**1500** (1160-1970)	**2400** (1900-3930)	**3610** (2400-4710)	357
Gender							
Males	11-12	**693** (548-877)	**854** (599-983)	**1500** (1200-1770)	**2270** (1880-2960)	**3170** (2070-3940)	536
Females	11-12	**637** (575-706)	**658** (590-810)	**1090** (994-1250)	**1970** (1490-2400)	**2430** (2060-2860)	353
Nonsmokers							
Total	11-12	**173** (158-189)	**165** (144-192)	**372** (311-467)	**789** (688-952)	**1330** (1170-1470)	1308
Age group							
20-49 years	11-12	**172** (150-197)	**159** (137-196)	**376** (304-467)	**789** (683-967)	**1290** (949-1560)	655
50 years and older	11-12	**174** (151-200)	**168** (132-208)	**359** (291-506)	**789** (609-1070)	**1370** (1030-1590)	653
Gender							
Males	11-12	**203** (167-247)	**187** (143-229)	**399** (298-578)	**941** (694-1230)	**1450** (1030-1660)	625
Females	11-12	**152** (134-171)	**148** (126-166)	**353** (276-462)	**730** (609-897)	**1210** (846-1470)	683

Tobacco product users who did not smoke cigarettes were excluded. See Adult Cigarette Smokers and Nonsmokers: Analysis of Select Chemicals in a Special Sample.
Limit of detection (LOD, see Data Analysis section) for Survey year 11-12 is 8.0.

Urinary 3-and 4-Methylhippuric acid (creatinine corrected)

Metabolite of Xylene

Geometric mean and selected percentiles of concentrations (in µg/g of creatinine) for the U.S. adult population from the National Health and Nutrition Examination Survey by smoking status.

	Survey years	Geometric mean (95% conf. interval)	Selected percentiles (95% confidence interval) 50th	75th	90th	95th	Sample size
Cigarette Smokers							
Total	11-12	**732** (647-828)	**800** (738-854)	**1300** (1110-1550)	**1990** (1690-2170)	**2260** (2050-2510)	889
Age group							
20-49 years	11-12	**635** (551-732)	**656** (547-806)	**1160** (1040-1320)	**1960** (1520-2060)	**2170** (2000-2490)	532
50 years and older	11-12	**927** (831-1030)	**971** (850-1110)	**1550** (1210-1750)	**2050** (1690-2570)	**2470** (1960-2890)	357
Gender							
Males	11-12	**673** (558-812)	**739** (583-870)	**1110** (933-1320)	**1730** (1380-2050)	**2080** (1880-2380)	536
Females	11-12	**813** (688-961)	**952** (795-1080)	**1580** (1300-1770)	**2080** (1940-2250)	**2470** (2050-3140)	353
Nonsmokers							
Total	11-12	**201** (187-215)	**164** (148-188)	**388** (342-452)	**767** (707-803)	**1060** (922-1210)	1307
Age group							
20-49 years	11-12	**186** (170-203)	**154** (137-184)	**374** (310-416)	**620** (545-733)	**776** (696-960)	654
50 years and older	11-12	**218** (197-243)	**169** (149-193)	**460** (342-578)	**942** (798-1060)	**1290** (1030-1520)	653
Gender							
Males	11-12	**177** (151-207)	**147** (120-180)	**338** (247-462)	**647** (530-739)	**841** (675-1140)	624
Females	11-12	**223** (206-240)	**179** (161-206)	**447** (374-540)	**853** (770-1020)	**1290** (960-1520)	683

Tobacco product users who did not smoke cigarettes were excluded. See Adult Cigarette Smokers and Nonsmokers: Analysis of Select Chemicals in a Special Sample.

Urinary Phenylglyoxylic acid

Metabolite of Ethylbenzene and Styrene

Geometric mean and selected percentiles of urine concentrations (in µg/L) for the U.S. adult population from the National Health and Nutrition Examination Survey by smoking status.

	Survey years	Geometric mean (95% conf. interval)	Selected percentiles (95% confidence interval) 50th	75th	90th	95th	Sample size
Cigarette Smokers							
Total	11-12	**309** (274-348)	**347** (304-387)	**554** (479-660)	**900** (768-1040)	**1140** (973-1530)	889
Age group							
20-49 years	11-12	**304** (259-358)	**355** (292-407)	**571** (459-710)	**900** (743-1060)	**1120** (900-1280)	532
50 years and older	11-12	**316** (273-365)	**333** (254-424)	**530** (462-664)	**911** (673-1530)	**1530** (782-1730)	357
Gender							
Males	11-12	**323** (274-382)	**383** (323-424)	**631** (501-782)	**1060** (831-1310)	**1340** (1000-1730)	536
Females	11-12	**291** (262-323)	**316** (274-355)	**505** (447-616)	**771** (664-879)	**991** (771-1120)	353
Nonsmokers							
Total	11-12	**160** (146-175)	**184** (168-197)	**298** (268-325)	**425** (392-468)	**566** (478-655)	1308
Age group							
20-49 years	11-12	**160** (142-180)	**186** (160-211)	**312** (276-359)	**464** (413-562)	**630** (540-732)	655
50 years and older	11-12	**160** (144-177)	**178** (160-198)	**278** (240-312)	**394** (366-431)	**486** (420-596)	653
Gender							
Males	11-12	**195** (172-221)	**217** (190-252)	**338** (306-377)	**464** (419-559)	**573** (540-598)	625
Females	11-12	**136** (124-150)	**145** (134-164)	**240** (220-275)	**392** (342-438)	**524** (397-712)	683

Tobacco product users who did not smoke cigarettes were excluded. See Adult Cigarette Smokers and Nonsmokers: Analysis of Select Chemicals in a Special Sample.
Limit of detection (LOD, see Data Analysis section) for Survey year 11-12 is 12.0.

Urinary Phenylglyoxylic acid (creatinine corrected)

Metabolite of Ethylbenzene and Styrene

Geometric mean and selected percentiles of concentrations (in µg/g of creatinine) for the U.S. adult population from the National Health and Nutrition Examination Survey by smoking status.

	Survey years	Geometric mean (95% conf. interval)	Selected percentiles (95% confidence interval) 50th	75th	90th	95th	Sample size
Cigarette Smokers							
Total	11-12	**338** (306-374)	**350** (306-397)	**507** (444-573)	**681** (579-767)	**782** (679-959)	889
Age group							
20-49 years	11-12	**313** (281-350)	**313** (266-386)	**476** (407-536)	**620** (544-699)	**749** (630-841)	532
50 years and older	11-12	**384** (338-436)	**400** (374-429)	**579** (473-712)	**726** (583-874)	**874** (716-1120)	357
Gender							
Males	11-12	**314** (285-346)	**322** (283-383)	**481** (407-528)	**600** (536-717)	**731** (590-874)	536
Females	11-12	**371** (319-432)	**379** (295-470)	**562** (461-670)	**726** (630-841)	**841** (716-1120)	353
Nonsmokers							
Total	11-12	**186** (172-200)	**194** (178-209)	**255** (240-271)	**329** (313-354)	**394** (357-420)	1307
Age group							
20-49 years	11-12	**172** (160-186)	**175** (159-197)	**235** (225-255)	**303** (276-331)	**362** (321-417)	654
50 years and older	11-12	**201** (186-217)	**209** (193-228)	**277** (259-291)	**357** (329-379)	**407** (367-448)	653
Gender							
Males	11-12	**169** (155-185)	**169** (158-188)	**228** (219-236)	**310** (278-331)	**360** (329-400)	624
Females	11-12	**200** (184-216)	**206** (194-227)	**273** (252-290)	**346** (318-394)	**407** (358-472)	683

Tobacco product users who did not smoke cigarettes were excluded. See Adult Cigarette Smokers and Nonsmokers: Analysis of Select Chemicals in a Special Sample.

Urinary 2-Thioxothiazolidine-4-carboxylic acid

Metabolite of Carbon disulfide

Geometric mean and selected percentiles of urine concentrations (in µg/L) for the U.S. adult population from the National Health and Nutrition Examination Survey by smoking status.

	Survey years	Geometric mean (95% conf. interval)	Selected percentiles (95% confidence interval) 50th	75th	90th	95th	Sample size
Cigarette Smokers							
Total	11-12	**11.4** (9.99-12.9)	**10.0** (8.04-12.1)	**24.0** (19.7-26.8)	**50.5** (41.7-63.8)	**84.5** (61.2-183)	889
Age group							
20-49 years	11-12	**11.0** (9.26-13.2)	**10.0** (7.54-12.9)	**23.3** (14.8-29.3)	**42.9** (33.7-63.8)	**84.0** (63.8-145)	532
50 years and older	11-12	**11.9** (9.84-14.4)	**9.92** (7.55-13.1)	**26.3** (18.4-33.9)	**61.2** (35.8-89.6)	**140** (61.2-399)	357
Gender							
Males	11-12	**11.7** (10.4-13.2)	**10.7** (9.01-12.2)	**24.0** (18.2-35.3)	**53.4** (42.5-69.7)	**93.3** (61.2-183)	536
Females	11-12	**11.0** (9.07-13.3)	**8.93** (6.86-12.4)	**23.8** (14.8-26.3)	**47.5** (32.5-69.3)	**84.5** (38.7-317)	353
Nonsmokers							
Total	11-12	**8.83** (7.94-9.82)	**6.91** (6.12-7.68)	**18.7** (14.9-22.6)	**56.3** (38.4-71.0)	**115** (77.0-144)	1308
Age group							
20-49 years	11-12	**8.87** (7.60-10.3)	**6.67** (5.20-8.51)	**18.9** (13.1-27.6)	**62.3** (37.1-98.4)	**115** (71.0-157)	655
50 years and older	11-12	**8.78** (7.65-10.1)	**6.95** (6.18-7.86)	**18.3** (13.0-23.6)	**48.8** (34.0-60.7)	**104** (60.2-176)	653
Gender							
Males	11-12	**11.4** (9.61-13.5)	**8.14** (7.07-10.3)	**27.7** (20.5-32.3)	**77.0** (53.2-135)	**176** (100-244)	625
Females	11-12	**7.20** (6.61-7.84)	**5.65** (4.68-6.44)	**13.2** (11.0-17.0)	**37.0** (27.9-46.0)	**74.2** (52.5-103)	683

Tobacco product users who did not smoke cigarettes were excluded. See Adult Cigarette Smokers and Nonsmokers: Analysis of Select Chemicals in a Special Sample.
Limit of detection (LOD, see Data Analysis section) for Survey year 11-12 is 3.5.

Urinary 2-Thioxothiazolidine-4-carboxylic acid (creatinine corrected)

Metabolite of Carbon disulfide

Geometric mean and selected percentiles of concentrations (in µg/g of creatinine) for the U.S. adult population from the National Health and Nutrition Examination Survey by smoking status.

	Survey years	Geometric mean (95% conf. interval)	Selected percentiles (95% confidence interval) 50th	75th	90th	95th	Sample size
Cigarette Smokers							
Total	11-12	**12.5** (11.1-14.0)	**11.0** (9.01-12.7)	**20.7** (17.1-25.9)	**58.6** (40.5-75.1)	**93.8** (75.1-135)	889
Age group							
20-49 years	11-12	**11.4** (10.3-12.6)	**10.0** (8.35-12.4)	**18.3** (16.3-23.5)	**42.4** (37.8-54.3)	**81.6** (54.3-146)	532
50 years and older	11-12	**14.5** (11.7-17.8)	**11.7** (9.17-15.2)	**25.0** (19.0-44.9)	**75.1** (28.1-89.5)	**93.8** (75.1-179)	357
Gender							
Males	11-12	**11.3** (10.1-12.7)	**9.55** (8.13-12.4)	**20.0** (15.8-26.3)	**47.0** (38.4-60.2)	**81.5** (59.5-118)	536
Females	11-12	**14.0** (12.0-16.3)	**11.9** (9.26-13.4)	**23.5** (18.5-29.3)	**75.1** (39.4-89.5)	**93.8** (58.6-334)	353
Nonsmokers							
Total	11-12	**10.3** (9.13-11.5)	**8.26** (7.19-9.46)	**20.3** (17.6-23.3)	**54.8** (43.7-69.2)	**108** (79.5-170)	1307
Age group							
20-49 years	11-12	**9.57** (8.16-11.2)	**7.68** (6.50-9.19)	**19.4** (13.8-28.4)	**53.7** (33.8-84.5)	**107** (57.9-153)	654
50 years and older	11-12	**11.0** (9.45-12.9)	**9.08** (7.42-10.3)	**21.6** (17.8-24.1)	**55.7** (41.0-73.2)	**136** (69.2-222)	653
Gender							
Males	11-12	**9.90** (8.36-11.7)	**7.75** (5.99-10.2)	**21.7** (18.4-27.6)	**55.7** (41.0-82.0)	**135** (57.9-234)	624
Females	11-12	**10.5** (9.29-12.0)	**8.96** (7.21-10.1)	**19.0** (14.3-24.8)	**51.4** (39.7-67.3)	**107** (73.2-158)	683

Tobacco product users who did not smoke cigarettes were excluded. See Adult Cigarette Smokers and Nonsmokers: Analysis of Select Chemicals in a Special Sample.

Special Analysis of Pooled Samples for Select Chemicals

Important Notice to the *Updated Tables*, *July 2014*: Pooled Sample Data Tables have been Withdrawn as of July 18, 2014

Data tables for the chemicals measured in pooled samples for NHANES 2005-2006 and 2007-2008 have been withdrawn as of July 18, 2014, because of misspecification of the pooled-sample weights. When corrections are completed and the data files are available from NHANES, pooled sample data tables will be provided in a future *Updated Tables*.

The chemical groups affected by the NHANES data withdrawal are the following:

- organochlorine pesticides and metabolites (2005-2006 and 2007-2008);
- polybrominated diphenyl ethers and PBB 153 (2005-2006 and 2007-2008);
- polybrominated dibenzo-*p*-dioxins and dibenzofurans (2005-2006);
- polychlorinated dibenzo-*p*-dioxins and dibenzofurans (2005-2006);
- coplanar polychlorinated biphenyls (PCBs) (2005-2006);
- mono-*ortho*-substituted PCBs (2005-2006 and 2007-2008);
- non-dioxin-like PCBs (2005-2006 and 2007-2008).

The data and data tables presenting individual sample results for these chemicals prior to NHANES 2005 are not affected by the sample weight issue and are available in the *Fourth National Report on Human Exposure to Environmental Chemicals*, *2009*, at: http://www.cdc.gov/exposurereport/.

Appendix C. References for Biomonitoring Analytical Methods

Tobacco Smoke

Cotinine

Bernert JT, McGuffey JE, Morrison MA, Pirkle JL. Comparison of serum and salivary cotinine measurements by a sensitive high-performance liquid chromatography/tandem mass spectrometry method as an indicator of exposure to tobacco smoke among smokers and nonsmokers. J Anal Toxicol 2000;24:333-9.

Bernert JT, Turner WE, Pirkle JL, Sosnoff CS, Akins JR, Waldrep MK, et al. Development and validation of sensitive method for determination of serum cotinine in smokers and nonsmokers by liquid chromatography/atmospheric pressure ionization tandem mass spectrometry. Clin Chem 1997;43:2281-91.

NNAL

Xia Y, Bernert JT. Stability of the tobacco-specific nitrosamine 4-(methylnitrosamino)-1-(3-pyridyl)-1-butanol (NNAL) in urine samples stored at various temperatures. J Anal Toxicol 2010:34:411-5.

Xia Y, McGuffey JE, Bhattacharyya S, Sellergren B, Yilmaz E, Wang L, et al. Analysis of the tobacco-specific nitrosamine 4-(methylnitrosamino)-1-(3-pyridyl)-1-butanol in urine by extraction on a molecularly imprinted polymer column and liquid chromatography/ atmospheric pressure ionization tandem mass spectrometry. Anal Chem. 2005;77(23):7639-45.

Environmental Phenols

Ye X, Kuklenyik Z, Needham LL, Calafat AM. Automated on-line column-switching HPLC-MS/MS method with peak focusing for the determination of nine environmental phenols in urine. Anal Chem 2005;77:5407-13.

Fungicides and Metabolites

Bravo R, Caltabiano LM, Fernandez C, Smith KD, Gallegos M, Whitehead RD, et al. Quantification of phenolic metabolites of environmental chemicals in human urine using gas chromatography-tandem mass spectrometry and isotope dilution quantification. J Chromatog B 2005;820(2):229-36.

Hill RH Jr, Shealy DB, Head SL, Williams CC, Bailey SL, Gregg M, et al. Determination of pesticide metabolites in human urine using isotope dilution technique and tandem mass spectrometry. J Anal Toxicol 1995;19(5):323-9.

Montesano MA, Olsson AO, Kuklenyik P, Needham LL, Bradman AS, Barr DB. Method for determination of acephate, methamidophos, omethoate, dimethoate, ethylenethiourea and propylenethiourea in human urine using high-performance liquid chromatography-atmospheric pressure chemical ionization tandem mass spectrometry. J Expo Sci Environ Epidemiol. 2007;17(4):321-30.

Herbicides and Metabolites

2,4-D and 2,4,5-T

Davis MD, Wade EL, Restrepo PR, Roman-Esteva W, Bravo R, Kuklenyik P, Calafat AM. Semi-automated solid phase extraction method for the mass spectrometric quantification of 12 specific metabolites of organophosphorus pesticides, synthetic pyrethroids, and select herbicides in human urine. J Chromatogr B 2013;929:18-26. (NHANES 2007-2008 and later)

Olsson AO, Baker SE, Nguyen JV, Romanoff LC, Udunka SO, Walker RD, et al. A liquid chromatography-tandem mass spectrometry multiresidue method for quantification of specific metabolites of organophosphorus pesticides, synthetic pyrethroids, selected herbicides, and DEET in human urine. Anal Chem 2004;76(9):2453-61. (NHANES 1999-2004)

Sulfonylurea Herbicides

Nguyen JV, Olsson AO, Bravo R, Needham LL, Barr DB. Quantification of atrazine, phenylurea, and sulfonylurea herbicide metabolites in urine by high-performance liquid chromatography-tandem mass spectrometry. J Anal Toxicol. 2007;31(4):181-6.

Baker SE, Olsson AO, Needham LL, Barr DB. High-performance liquid chromatography-tandem mass spectrometry method for quantifying sulfonylurea herbicides in human urine: reconsidering the validation process. Anal Bioanal Chem 2005; 383:963-76**.**

Insecticides and Pesticides

Carbamate Pesticide Metabolites

Bravo R, Caltabiano LM, Fernandez C, Smith KD, Gallegos M, Whitehead RD, et al. Quantification of phenolic metabolites of environmental chemicals in human urine using gas chromatography-tandem mass spectrometry and isotope dilution quantification. J Chromatog B 2005;820(2):229-36.

Hill RH Jr, Shealy DB, Head SL, Williams CC, Bailey SL, Gregg M, et al. Determination of pesticide metabolites in human urine using isotope dilution technique and tandem mass spectrometry. J Anal Toxicol 1995;19(5):323-9.

Organochlorine Pesticides and Metabolites

Ye X, Kuklenyik Z, Needham LL, Calafat AM. Automated on-line column-switching HPLC-MS/MS method with peak focusing for the determination of nine environmental phenols in urine. Anal Chem 2005;77:5407-13.

Other Pesticide Metabolites (2,4- and 2,5-Dichlorophenol)

Ye X, Kuklenyik Z, Needham LL, Calafat AM. Automated on-line column-switching HPLC-MS/MS method with peak focusing for the determination of nine environmental phenols in urine. Anal Chem 2005;77:5407-13.

Organophosphorus Insecticides: Specific Metabolites

Davis MD, Wade EL, Restrepo PR, Roman-Esteva W, Bravo R, Kuklenyik P, Calafat AM. Semi-automated solid phase extraction method for the mass spectrometric quantification of 12 specific metabolites of organophosphorus pesticides, synthetic pyrethroids, and select herbicides in human urine. J Chromatogr B 2013;929:18-26. (NHANES 2007-2008 and later)

Olsson AO, Baker SE, Nguyen JV, Romanoff LC, Udunka SO, Walker RD, et al. A liquid chromatography-tandem mass spectrometry multiresidue method for quantification of specific metabolites of organophosphorus pesticides, synthetic pyrethroids, selected herbicides, and DEET in human urine. Anal Chem 2004;76(9):2453-61. (NHANES 1999-2004)

Organophosphorus Insecticides: Dialkyl Phosphate Metabolites

Bravo R, Caltabiano LM, Weerasekera G, Whitehead RD, Fernandez C, Needham LL, et al. Measurement of dialkyl phosphate metabolites of organophosphorus pesticides in human urine using lyophilization with gas chromatography-tandem mass spectrometry and isotope dilution quantification. J Expo Anal Environ Epidemiol 2004;14:249-59.

Pyrethroid Metabolites

Davis MD, Wade EL, Restrepo PR, Roman-Esteva W, Bravo R, Kuklenyik P, Calafat AM. Semi-automated solid phase extraction method for the mass spectrometric quantification of 12 specific metabolites of organophosphorus pesticides, synthetic pyrethroids, and select herbicides in human urine. J Chromatogr B 2013;929:18-26. (NHANES 2007-2008 and later)

Olsson AO, Baker SE, Nguyen JV, Romanoff LC, Udunka SO, Walker RD, et al. A liquid chromatography-tandem mass spectrometry multiresidue method for quantification of specific metabolites of organophosphorus pesticides, synthetic pyrethroids, selected herbicides, and DEET in human urine. Anal Chem 2004;76(9):2453-61. (NHANES 1999-2002)

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Volatile Organic Compounds (VOCs), including Disinfection By-Products

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Volatile Organic Compound (VOC) Metabolites

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Appendix D. Limit of Detection Table

The analytical limit of detection (LOD) for each of the different chemical measurements is presented in the table below. The LOD is the concentration at which the measurement has a 95% probability of being greater than zero (Taylor, 1987). As analytical methods improve, LODs will often change. For this reason, LOD results are reported by survey periods (e.g., 1999-2000, 2001-2002, etc.).

Reference: Taylor JK. Quality Assurance of Chemical Measurements. Chelsea (MI): Lewis Publishing. 1987.

Chemical	Matrix	Units	1999-2000	2001-2002	2003-2004	2005-2006	2007-2008	2009-2010	2011-2012
Tobacco Smoke									
Cotinine	serum	ng/mL	0.05	0.05	0.015	0.015	0.015	0.015	0.015
NNAL	urine	pg/mL					1.0	0.6	0.6
Disinfection By-Products									
Bromodichloromethane	blood	pg/mL		0.233	0.62	0.62			
Dibromochloromethane	blood	pg/mL		0.271	0.62	0.62			
Tribromomethane (Bromoform)	blood	pg/mL		0.596	1.5	1.0			
Trichloromethane (Chloroform)	blood	pg/mL		2.37	2.11	2.1			
Environmental Phenols									
Benzophenone-3	urine	µg/L			0.3	0.4	0.4	0.4	
Bisphenol A	urine	µg/L			0.4	0.4	0.4	0.4	
4-*tert*-Octylphenol	urine	µg/L				0.2	0.2	0.2	
Triclosan	urine	µg/L			2.3	2.3	2.3	2.3	
Fungicides and Metabolites									
ortho-Phenylphenol	urine	µg/L			0.1	0.1	0.1	0.2	
Ethylene thiourea	urine	µg/L			0.1	0.24			
Pentachlorophenol	urine	µg/L			0.5				
Propylene thiourea	urine	µg/L			0.1	0.37			
Herbicides and Metabolites									
2,4-Dichlorophenoxyacetic acid	urine	µg/L	0.89	0.2	0.1		0.4		
2,4,5-Trichlorophenoxyacetic acid	urine	µg/L	1.1	0.1	0.1		0.1		

Chemical	Matrix	Units	1999-2000	2001-2002	2003-2004	2005-2006	2007-2008	2009-2010	2011-2012
Sulfonlyurea Herbicides									
Bensulfuron-methyl	urine	µg/L			0.05	0.05	0.05		
Chlorsulfuron	urine	µg/L			0.06	0.06	0.06		
Ethametsulfuron-methyl	urine	µg/L			0.1	0.1	0.1		
Foramsulfuron	urine	µg/L			0.05	0.05	0.05		
Halosulfuron	urine	µg/L			0.1	0.1	0.1		
Mesosulfuron-methyl	urine	µg/L			0.06	0.06	0.06		
Metsulfuron-methyl	urine	µg/L			0.05	0.05	0.05		
Nicosulfuron	urine	µg/L			0.1	0.1	0.1		
Oxasulfuron	urine	µg/L			0.06	0.06	0.06		
Primisulfuron-methyl	urine	µg/L			0.07	0.07	0.07		
Prosulfuron	urine	µg/L			0.05	0.05	0.05		
Rimsulfuron	urine	µg/L			0.05	0.05	0.05		
Sulfometuron-methyl	urine	µg/L			0.05	0.05	0.05		
Sulfosulfuron	urine	µg/L			0.1	0.1	0.1		
Thifensulfuron-methyl	urine	µg/L			0.08	0.08	0.08		
Triasulfuron	urine	µg/L			0.07	0.07	0.07		
Triflusulfuron-methyl	urine	µg/L			0.05	0.05	0.05		
Carbamate Pesticide Metabolites									
Carbofuranphenol	urine	µg/L	0.4	0.4	0.4				
2-isopropoxyphenol	urine	µg/L	1.1	0.4	0.4				
Organochlorine Pesticides and Metabolites									
2,4,5-Trichlorophenol	urine	µg/L			0.1	0.1	0.1	0.1	
2,4,6-Trichlorophenol	urine	µg/L			0.5	0.5	0.5	0.5	
Other Pesticides and Metabolites									
2,4-Dichlorophenol	urine	µg/L			0.17	0.2	0.2	0.2	
2,5-Dichlorophenol	urine	µg/L			0.12	0.2	0.2	0.2	

Chemical	Matrix	Units	1999-2000	2001-2002	2003-2004	2005-2006	2007-2008	2009-2010	2011-2012
Organophosphorus Insecticides:Specific Metabolites									
Acephate	urine	µg/L			0.1	0.25			
Dimethoate	urine	µg/L			0.1	0.25			
Methamidophos	urine	µg/L			0.1	0.37			
Omethoate	urine	µg/L			0.1	0.14			
Malathion dicarboxylic acid	urine	µg/L	2.64				0.5		
2-Isopropyl-4-methyl-pyrimidinol	urine	µg/L	7.2	0.7			0.1		
para-Nitrophenol	urine	µg/L	0.8	0.1			0.1		
3,5,6-Trichlor-2-pyridinol	urine	µg/L	0.4	0.4			0.1		
Organophosphorus Insecticides:Dialkyl Phosphate Metabolites									
Diethylphosphate (DEP)	urine	µg/L	0.2	0.2	0.1	0.37	0.37		
Dimethylphosphate (DMP)	urine	µg/L	0.58	0.5	0.5	0.47	0.47		
Diethylthiophosphate (DETP)	urine	µg/L	0.09	0.1	0.2	0.56	0.56		
Dimethylthiophosphate (DMTP)	urine	µg/L	0.18	0.4	0.5	0.55	0.55		
Diethyldithiophosphate (DEDTP)	urine	µg/L	0.05	0.1	0.1	0.39	0.39		
Dimethyldithiophosphate (DMDTP)	urine	µg/L	0.08	0.1	0.1	0.51	0.51		
Pyrethroid Metabolites									
trans-Dichlorovinyl-dimethylcyclopropane carboxylic acid	urine	µg/L	0.1	0.1			0.6		
cis-Dibromovinyl-dimethylcyclopropane carboxylic acid	urine	µg/L	0.1	0.1			0.5		
4-Fluoro-3-phenoxy-benzoic acid	urine	µg/L	0.2	0.2			0.1		
3-Phenoxybenzoic acid	urine	µg/L	0.1	0.1			0.1		

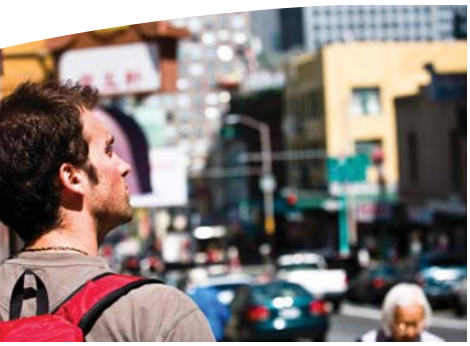
Chemical	Matrix	Units	1999-2000	2001-2002	2003-2004	2005-2006	2007-2008	2009-2010	2011-2012
Metals and Metalloids									
Antimony	urine	µg/L	0.04	0.04	0.07	0.032	0.032	0.032	
Arsenic, Total	urine	µg/L			0.74	0.74	0.74	0.74	
Arsenic (V) Acid	urine	µg As/L			1.0	1.0	1.0	1.0	
Arsenobetaine	urine	µg As/L			0.4	0.4	0.4	0.4	
Arsenocholine	urine	µg As/L			0.6	0.6	0.6	0.6	
Arsenous (III) Acid	urine	µg As/L			1.2	1.2	1.2	1.2	
Dimethylarsinic Acid	urine	µg As/L			1.7	1.7	1.7	1.7	
Monomethylarsonic Acid	urine	µg As/L			0.9	0.9	0.9	0.9	
Trimethylarsine oxide	urine	µg As/L			1.0	1.0	1.0	1.0	
Barium	urine	µg/L	0.12	0.12	0.31	0.12	0.12	0.12	
Beryllium	urine	µg/L	0.13	0.13	0.13	0.072	0.072	0.072	
Cadmium	blood	µg/L	0.3	0.3	0.14	0.2	0.2	0.2	0.16
Cadmium	urine	µg/L	0.06	0.06	0.06	0.042	0.042	0.042	
Cesium	urine	µg/L	0.14	0.14	0.2	0.066	0.066	0.066	
Cobalt	urine	µg/L	0.07	0.07	0.08	0.041	0.041	0.041	
Copper	serum	µg/dL							
Lead	blood	µg/dL	0.3	0.3	0.28	0.25	0.25	0.25	0.25
Lead	urine	µg/L	0.1	0.1	0.33	0.1	0.1	0.1	
Manganese	blood	µg/L							1.06
Manganese	urine	µg/dL							
Mercury, Total	blood	µg/L			0.2	0.33	0.33	0.33	0.16
Mercury, Inorganic	blood	µg/L			0.42	0.4	0.35	0.35	0.27
Mercury, Ethyl	blood	µg/L							0.16
Mercury, Methyl	blood	µg/L							0.12
Mercury	urine	µg/L			0.14	0.11	0.08	0.08	
Molybdenum	urine	µg/L	0.8	0.8	1.5	0.92	0.92	0.92	
Platinum	urine	µg/L	0.04	0.04	0.07	0.009	0.009	0.009	
Selenium	blood	µg/L							30.0
Selenium	serum	µg/L							
Strontium	urine	µg/L							
Thallium	urine	µg/L	0.02	0.02	0.02	0.015	0.015	0.015	
Tin	urine	µg/L							
Tungsten	urine	µg/L	0.04	0.04	0.04	0.021	0.021	0.021	
Uranium	urine	µg/L	0.004	0.004	0.005	0.002	0.002	0.0017	
Zinc	serum	µg/dL							

Chemical	Matrix	Units	1999-2000	2001-2002	2003-2004	2005-2006	2007-2008	2009-2010	2011-2012
Parabens									
Butyl paraben	urine	µg/L				0.2	0.2	0.2	
Ethyl paraben	urine	µg/L				1.0	1.0	1.0	
Methyl paraben	urine	µg/L				1.0	1.0	1.0	
n-Propyl paraben	urine	µg/L				0.2	0.2	0.2	
Perchlorate and Other Anions									
Nitrate	urine	mg/L		0.7		0.7	0.7		0.7
Perchlorate	urine	µg/L		0.05	0.05	0.05	0.05		0.05
Thiocyananate	urine	mg/L		0.02		0.02	0.02		0.02
Perfluorinated Compounds									
Perfluorobutane sulfonic acid (PFBuS)	serum	µg/L			0.4	0.1	0.1	0.1	
Perfluorodecanoic acid (PFDeA)	serum	µg/L	0.2		0.3	0.2	0.2	0.1	
Perfluorododecanoic acid (PFDoA)	serum	µg/L	0.2		1.0	0.2	0.2	0.1	
Perfluoroheptanoic acid (PFHpA)	serum	µg/L	0.4		0.3	0.4	0.4	0.1	
Perfluorohexane sulfonic acid (PFHxS)	serum	µg/L	0.1		0.3	0.1	0.1	0.1	
Perfluorononanoic acid (PFNA)	serum	µg/L	0.1		0.1	0.1	0.1	0.1	
Perfluorooctanoic acid (PFOA)	serum	µg/L	0.1		0.1	0.1	0.1	0.1	
Perfluorooctane sulfonic acid (PFOS)	serum	µg/L	0.2		0.4	0.2	0.2	0.2	
Perfluorooctane sulfonamide (PFOSA)	serum	µg/L	0.05		0.2	0.1	0.1	0.1	
2-(N-Ethyl-perfluorooctane sulfonamido)	serum	µg/L	0.2		0.4	0.2	0.2	0.1	
2-(N-Methyl-perfluorooctane sulfonamido)	serum	µg/L	0.2		0.5	0.2	0.2	0.1	
Perfluoroundecanoic acid (PFUA)	serum	µg/L	0.2		0.3	0.2	0.2	0.1	
Phthalate and Phthalate Alternatives Metabolites									
Mono-benzyl phthalate (MBzP)	urine	µg/L	0.576	0.216	0.072	0.216	0.216	0.216	
Mono-isobutyl phthalate (MiBP)	urine	µg/L		1.0	0.3	0.3	0.3	0.2	
Mono-*n*-butyl phthalate (MnBP)	urine	µg/L	0.9	1.1	0.4	0.6	0.6	0.4	
Mono-cyclohexyl phthalate (MCHP)	urine	µg/L	1.81	0.603	0.402	0.603	0.603	0.402	
Mono-ethyl phthalate (MEP)	urine	µg/L	0.792	0.594	0.264	0.528	0.462	0.396	
Mono-2-ethylhexyl phthalate (MEHP)	urine	µg/L	1.2	1.0	0.9	1.2	1.1	0.5	
Mono-(2-ethyl-5-hydroxyhexyl) phthalate	urine	µg/L		1.0	0.3	0.7	0.7	0.2	
Mono-(2-ethyl-5-oxohexyl) phthalate	urine	µg/L		1.1	0.5	0.7	0.6	0.2	
Mono-(2-ethyl-5-carboxypentyl) phthalate (MECPP)	urine	µg/L			0.3	0.6	0.5	0.2	
Mono-(carboxynonyl) phthalate (MCNP)	urine	µg/L				0.6	0.5	0.2	
Mono-isononyl phthalate (MiNP)	urine	µg/L	1.23	1.23	1.54	1.23	1.23	0.77	
Mono-(carboxyoctyl) phthalate (MCOP)	urine	µg/L				0.7	0.7	0.2	
Mono-methyl phthalate (MMP)	urine	µg/L		0.2	1.0	1.1	1.1	0.5	
Mono-(3-carboxypropyl) phthalate	urine	µg/L		0.4	0.2	0.2	0.2	0.2	
Mono-*n*-octyl phthalate (MOP)	urine	µg/L	1.51	1.68	1.68	1.85	1.85	0.84	
Cyclohexane-1,2-dicarboxylic acid monohydroxy isononyl ester	urine	µg/L							

Chemical	Matrix	Units	1999-2000	2001-2002	2003-2004	2005-2006	2007-2008	2009-2010	2011-2012
Phytoestrogens and Metabolites									
Urinary Daidzein	urine	µg/L	0.5	1.6	0.3	0.4	0.4	0.4	
Urinary Enterodiol	urine	µg/L	0.8	1.5	0.3	0.04	0.04	0.04	
Urinary Enterolactone	urine	µg/L	0.6	1.9	0.3	0.1	0.1	0.1	
Urinary Equol	urine	µg/L	3.0	3.3	0.3	0.06	0.06	0.6	
Urinary Genistein	urine	µg/L	0.3	0.8	0.3	1.0	0.2	0.2	
Urinary O-Desmethylangolensin	urine	µg/L	0.2	0.4	0.2	0.2	0.2	0.2	
Polycyclic Aromatic Hydrocarbon Metabolites									
2-Hydroxyfluorene	urine	ng/L			5.0	5.0	5.0		10.0
3-Hydroxyfluorene	urine	ng/L		2.0	5.0	5.0	5.0		10.0
9-Hydroxyfluorene	urine	ng/L			5.0	5.0	5.0		10.0
1-Hydroxyphenanthrene	urine	ng/L		3.5	5.0	5.0	5.0		10.0
2-Hydroxyphenanthrene	urine	ng/L		3.2	5.0	5.0	5.0		10.0
3-Hydroxyphenanthrene	urine	ng/L		3.6	5.0	5.0	5.0		10.0
4-Hydroxyphenanthrene	urine	ng/L			5.0	5.0			10.0
1-Hydroxypyrene	urine	ng/L			5.0	5.0	5.0		10.0
1-Hydroxynaphthalene (1-Naphthol)	urine	µg/L			0.047	0.048	0.045		0.044
2-Hydroxynaphthalene (2-Naphthol)	urine	µg/L		0.002	0.031	0.013	0.042		0.042

Chemical	Matrix	Units	1999-2000	2001-2002	2003-2004	2005-2006	2007-2008	2009-2010	2011-2012
Volatile Organic Compounds (VOCs)									
1,1,1-Trichloroethane (Methyl chloroform)	blood	ng/mL			0.048	0.01			
1,1,2,2-Tetrachloroethane	blood	ng/mL			0.05	0.01			
1,1,2-Trichloroethane	blood	ng/mL			0.01	0.01			
1,1-Dichloroethane	blood	ng/mL			0.01	0.01			
1,1-Dichloroethene (Vinylidene chloride)	blood	ng/mL			0.009	0.009			
1,2-Dibromo-3-chloropropane (DBCP)	blood	ng/mL			0.1	0.1			
1,2-Dichlorobenzene	blood	ng/mL			0.1	0.1			
1,2-Dichloroethane (Ethylene dichloride)	blood	ng/mL			0.01	0.01			
cis-1,2-Dichloroethene	blood	ng/mL			0.01	0.01			
trans-1,2-Dichloroethene	blood	ng/mL			0.01	0.01			
1,2-Dichloropropane	blood	ng/mL			0.008	0.008			
1,3-Dichlorobenzene	blood	ng/mL			0.05	0.05			
1,4-Dichlorobenzene (Paradichlorobenzene)	blood	ng/mL		0.12	0.12	0.011			
2,5-Dimethylfuran	blood	ng/mL			0.012	0.011			
Benzene	blood	ng/mL		0.024	0.024	0.024			
Chlorobenzene	blood	ng/mL			0.011	0.011			
Dibromomethane	blood	ng/mL			0.03	0.03			
Dichloromethane (Methylene chloride)	blood	ng/mL			0.07	0.25			
Ethylbenzene	blood	ng/mL		0.024	0.024	0.024			
Hexachloroethane	blood	ng/mL			0.011	0.011			
Methyl-*tert*-butyl ether (MTBE)	blood	pg/mL		0.232	2.0	1.4			
Nitrobenzene	blood	ng/mL			0.3	0.3			
Styrene	blood	ng/mL		0.03	0.03	0.03			
Tetrachloroethene (Perchloroethylene)	blood	ng/mL		0.048	0.048	0.048			
Tetrachloromethane (Carbon tetrachloride)	blood	ng/mL		0.01	0.005	0.005			
Toluene	blood	ng/mL		0.025	0.025	0.025			
Trichloroethene (Trichloroethylene)	blood	ng/mL		0.012	0.012	0.012			
m-/*p*-Xylene	blood	ng/mL		0.340	0.034	0.034			
o-Xylene	blood	ng/mL		0.049	0.049	0.024			

Chemical	Matrix	Units	1999-2000	2001-2002	2003-2004	2005-2006	2007-2008	2009-2010	2011-2012
Volatile Organic Compound (VOC) Metabolites	urine	µg/L							
N-Acetyl-S-(2-carbamoylethyl)-L-cysteine	urine	µg/L							2.2
N-Acetyl-S-(N-methylcarbamoyl)-L-cysteine	urine	µg/L							5.5
2-Aminothiazoline-4-carboxylic acid	urine	µg/L							15.0
N-Acetyl-S-(benzyl)-L-cysteine	urine	µg/L							0.5
N-Acetyl-S-(n-propyl)-L-cysteine	urine	µg/L							1.2
N-Acetyl-S-(2-carboxyethyl)-L-cysteine	urine	µg/L							8.0
N-Acetyl-S-(2-cyanoethyl)-L-cysteine	urine	µg/L							0.5
N-Acetyl-S-(1,2-dichlorovinyl)-L-cysteine	urine	µg/L							12.6
N-Acetyl-S-(2,2-dichlorovinyl)-L-cysteine	urine	µg/L							6.5
N-Acetyl-S-(3,4-dihydroxybutyl)-L-cysteine	urine	µg/L							5.0
N-Acetyl-S-(dimethylphenyl)-L-cysteine	urine	µg/L							0.5
N-Acetyl-S-(2-carbamoyl-2-hydroxyethyl)-L-cysteine	urine	µg/L							9.4
N-Acetyl-S-(2-hydroxyethyl)-L-cysteine	urine	µg/L							0.6
N-Acetyl-S-(3-hydroxypropyl)-L-cysteine	urine	µg/L							13.0
N-Acetyl-S-(2-hydroxypropyl)-L-cysteine	urine	µg/L							1.3
N-Acetyl-S-(3-hydroxypropyl-1-methyl)-L-cysteine	urine	µg/L							2.0
Mandelic acid	urine	µg/L							12.0
2-Methylhippuric acid	urine	µg/L							5.0
3-Methylhippuric acid & 4-Methylhippuric acid	urine	µg/L							8.0
N-Acetyl-S-(1-hydroxymethyl-2-propenyl)-L-cysteine	urine	µg/L							0.7
N-Acetyl-S-(2-hydroxy-3-butenyl)-L-cysteine	urine	µg/L							0.7
N-Acetyl-S-(4-hydroxy-2-butenyl)-L-cysteine	urine	µg/L							0.6
t,t-Muconic acid	urine	µg/L							20.0
N-Acetyl-S-(phenyl-2-hydroxyethyl)-L-cysteine	urine	µg/L							0.7
Phenylglyoxylic acid	urine	µg/L							12.0
N-Acetyl-S-(phenyl)-L-cysteine	urine	µg/L							0.6
N-Acetyl-S-(trichlorovinyl)-L-cysteine	urine	µg/L							3.0
2-Thioxothiazolidine-4-carboxylic acid	urine	µg/L							3.5



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