

Pediatric Nutrition Surveillance



2008 Report



U.S. DEPARTMENT OF HEALTH AND HUMAN SERVICES
CENTERS FOR DISEASE CONTROL AND PREVENTION



This report summarizes selected data on child health and nutrition indicators received from states, U.S. territories, and Indian Tribal Organizations that contributed to the Centers for Disease Control and Prevention's (CDC) Pediatric Nutrition Surveillance System.

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This report is available at <http://www.cdc.gov/nccdphp/dnpa/pednss.htm>.

**Division of Nutrition, Physical Activity and Obesity
National Center for Chronic Disease Prevention and Health Promotion
Centers for Disease Control and Prevention**

**4770 Buford Highway NE
Mail Stop K-25
Atlanta, GA 30341-3717
(770) 488-5702**

Pediatric Nutrition Surveillance

The Pediatric Nutrition Surveillance System (PedNSS) is a public health surveillance system that monitors the nutritional status of low-income children in federally funded maternal and child health programs. Data on birthweight, breastfeeding, anemia, short stature, underweight, overweight, and obesity are collected for children who attend public health clinics for routine care, nutrition education, and supplemental food.

The goal of the PedNSS is to collect, analyze, and disseminate surveillance data to guide public health policy and action. PedNSS information is used to set public health priorities and to plan, implement, and evaluate nutrition programs.

Data are collected at the clinic level, aggregated at the state level, and then submitted to the Centers for Disease Control and Prevention (CDC) for analysis. A national nutrition surveillance report is produced by using PedNSS data. Surveillance reports also are produced for each contributor. A *contributor* is defined as a state, U.S. territory, or Indian Tribal Organization (ITO).

In 2008, a total of 52 contributors, including 43 states, the District of Columbia, Puerto Rico, the U.S. Virgin Islands, and 6 ITOs, participated in the PedNSS (Figure 1). These contributors submitted more than 8,165,000 records for children from birth to age 5 years to the system—nearly 3 million more records than in 1999. This increase is due largely to an increase in the number of contributors to the PedNSS.

Fluctuations in the number of contributors or the demographic characteristics of the contributors' populations can affect trends. The number of PedNSS contributors differs slightly from year to year because some

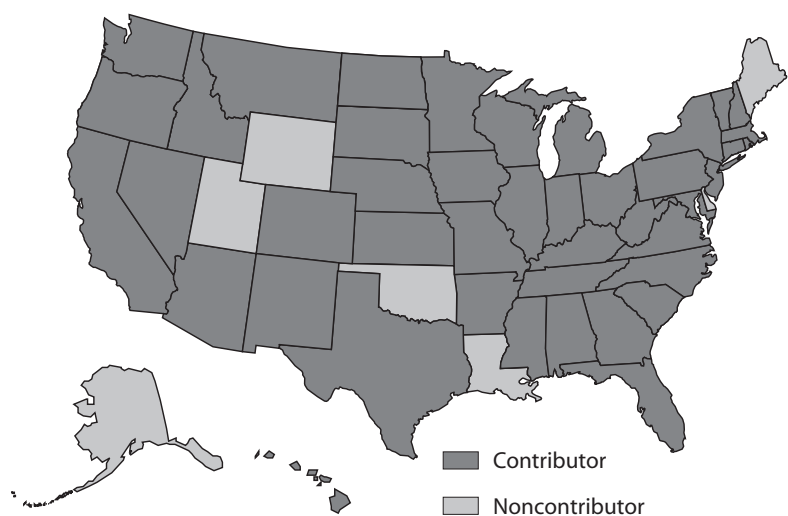
contributors did not provide data every year during the 10-year period from 1999 through 2008 (Table 1).

Data for the 2008 PedNSS were collected from children enrolled in federally funded programs that serve low-income children. These programs include the Special Supplemental Nutrition Program for Women, Infants, and Children (WIC) (85.3%) and other programs (14.7%), such as the Early and Periodic Screening, Diagnosis, and Treatment (EPSDT) program and the Maternal and Child Health Bureau Title V program. This report summarizes 2008 data and highlights data trends from 1999 through 2008.

Demographic Characteristics

Of the children in the 2008 PedNSS, 41.4% were Hispanic, 32.0% were non-Hispanic white, 19.0% were non-Hispanic black, 2.7% were Asian or Pacific Islander, 1.0% were American Indian or Alaska Native, and 3.9% were of multiple or unspecified races and ethnicities.

Figure 1. Contributors* to the 2008 Pediatric Nutrition Surveillance Report for Children Aged <5 Years



* Includes the District of Columbia, Puerto Rico, the U.S. Virgin Islands, and the following Indian Tribal Organizations: Cheyenne River Sioux (SD), Inter Tribal Council of Arizona, Navajo Nation (AZ), Rosebud Sioux (SD), Standing Rock Sioux (ND), and Three Affiliated Tribes (ND).

Table 1. Contributors to the Pediatric Nutrition Surveillance System, 1999–2008*

Contributor	1999	2000	2001	2002	2003	2004	2005	2006	2007	2008
Alabama										
American Samoa										
Arizona										
Arkansas										
California										
Cheyenne River Sioux (SD)										
Chickasaw Nation (OK)										
Colorado										
Connecticut										
District of Columbia										
Florida										
Georgia										
Hawaii										
Idaho										
Illinois										
Indiana										
Inter Tribal Council of Arizona										
Iowa										
Kansas										
Kentucky										
Louisiana										
Maine										
Maryland										
Massachusetts										
Michigan										
Minnesota										
Mississippi										
Missouri										
Montana										
Navajo Nation										
Nebraska										
Nevada										
New Hampshire										
New Jersey										
New Mexico										
New York										
North Carolina										
North Dakota										
Ohio										
Oregon										
Pennsylvania										
Puerto Rico										
Rhode Island										
Rosebud Sioux (SD)										
South Carolina										
South Dakota										
Standing Rock Sioux (ND)										
Tennessee										
Texas										
Three Affiliated Tribes (ND)										
Utah										
Vermont										
U.S. Virgin Islands										
Virginia										
Washington										
West Virginia										
Wichita Caddo Delaware (OK)										
Wisconsin										
Wyoming										
Number of Contributors	46	45	47	48	49	50	49	47	51	52
Total Records Submitted (x 1,000)	5,542	5,019	4,943	5,519	6,359	6,930	7,118	7,599	7,996	8,165

* Shaded blocks indicate years that data were contributed.

From 1999 through 2008, the proportion of Hispanic children in the PedNSS increased from approximately 27.7% to 41.0%. During the same period, the proportion of non-Hispanic white and black children declined. This demographic shift should be taken into consideration when interpreting PedNSS trends. Most children in the 2008 PedNSS were aged less than 2 years (58.7%), with 35.7% aged less than 1 year and 23.0% aged 1 year to less than 2 years. Of all the children, 41.3% were aged 2–5 years. The age distribution of children in the PedNSS has been stable since 1999.

Pediatric Health Indicators

Low Birthweight

Low birthweight (<2,500 grams) is an important determinant of neonatal and postneonatal mortality.¹ Low-birthweight infants who survive are at increased risk for health problems that include neurodevelopmental disabilities and respiratory disorders.² Of the infants in the 2008 PedNSS, 9.0% were low birthweight compared with 8.2% of all U.S. infants.³

In the 2008 PedNSS, the prevalence of low birthweight was higher for black infants (13.1%) than for white (8.5%), Asian or Pacific Islander (8.3%), American Indian or Alaska Native (7.7%), or Hispanic (7.4%) infants. *Healthy People 2010* Objective 16-10a proposes reducing low birthweight to no more than 5% of all live births.⁴ The overall prevalence of low birthweight remained stable from 1999 (8.9%) through 2008 (9.0%) (Figure 2).

High Birthweight

High birthweight (>4,000 grams) puts infants at increased risk for death and birth injuries, such as shoulder

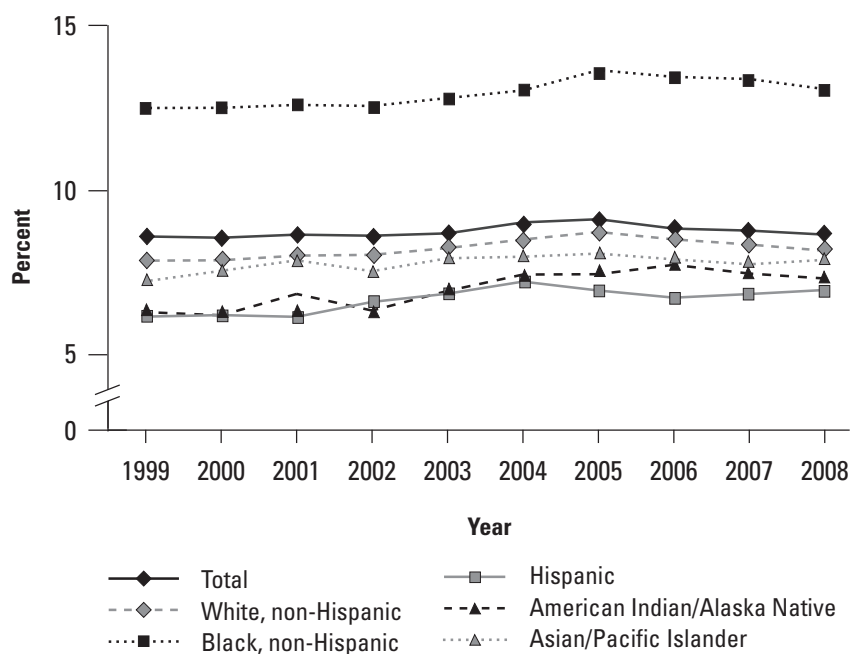
dystocia.⁵ In the 2008 PedNSS, 6.4% of infants had high birthweights compared with 8.4% in 1999. The prevalence was lower than the most recent U.S. rate in 2004 (8.5%).⁶

In 2008, the prevalence of high birthweight was higher for American Indian or Alaska Native (9.1%) infants than for white (7.5%), Hispanic (6.6%), Asian or Pacific Islander (4.5%), or black (4.1%) infants. The largest decreases in high birthweight during the 10-year period occurred among American Indian or Alaska Native (3.3%) and Hispanic (2.5%) infants.

Breastfeeding

The nutritional, immunologic, and economic advantages of breastfeeding are well recognized.⁷ In the 2008 PedNSS, 62.0% of infants were ever breastfed, 26.9% were breastfed for at least 6 months, and 19.1% were breastfed for at least 12 months.

Figure 2. Trends in prevalence of low birthweight,* by race and ethnicity



* Among infants born during the reporting period. Defined as birthweight <2,500 grams.

Healthy People 2010 proposes reducing low birthweight to 5% of all live births.

Source: 2008 National PedNSS Data Table 18D. Available at http://www.cdc.gov/pednss/pednss_tables/tables_numeric.htm.

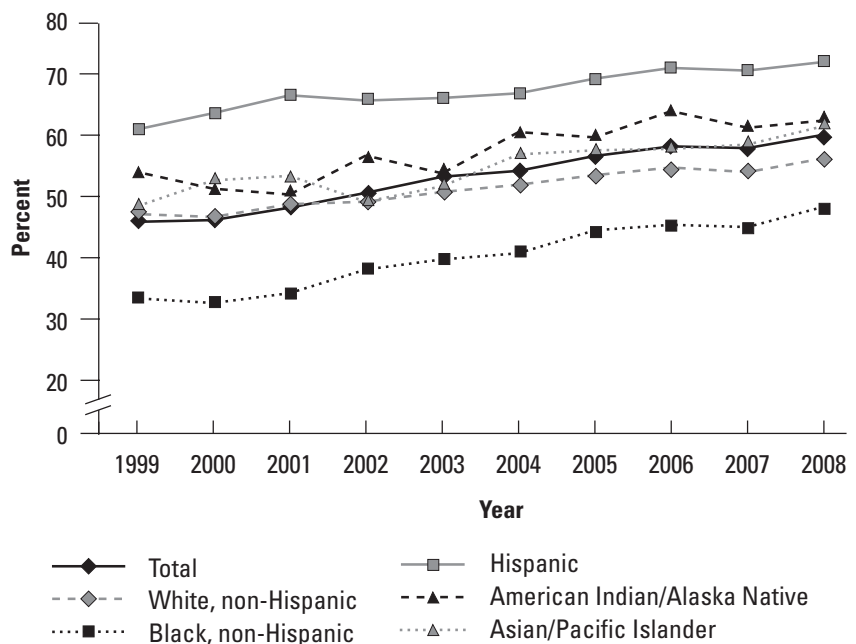
The 2008 PedNSS population failed to achieve the *Healthy People 2010* objectives (16-19, a-c) to increase the proportion of infants ever breastfed to 75.0%, breastfed at 6 months to 50.0%, and breastfed at 1 year to 25.0%.⁴ However, among PedNSS contributors, only Colorado, Hawaii, Idaho, the Navajo Nation, Oregon, and the U.S. Virgin Islands met the *Healthy People 2010* objective for ever breastfeeding, although several other contributors came close (Table 2).

Nationally representative data from the 2005 National Immunization Survey (NIS) indicate that 74.2% of all U.S. infants were ever breastfed, 43.1% were breastfed for 6 months, and 21.4% were breastfed for 12 months.⁸

From 1999 through 2008, the absolute increase in the prevalence of breastfeeding initiation for infants in the PedNSS was 14.2%. The breastfeeding initiation rate was 47.8% in 1999. Improved breastfeeding rates were evident among all racial and ethnic groups (Figure 3). In 2008, Hispanic infants had the highest prevalence of breastfeeding initiation (73.8%), and black infants had the lowest prevalence (50.2%). Data from the NIS indicate that the proportion of infants ever breastfed in the United States increased from 68.3% in 1999 to 74.2% in 2005.⁸

The proportion of infants who were breastfed for at least 6 months was 18.6% in 1999 and 26.9% in 2008, an absolute increase of 8.3%. Increases in infants breastfed for at least 6 months were evident among all racial and ethnic groups. Hispanic infants had the highest prevalence of breastfeeding for at least 6 months (37.9%), and black infants had the lowest

Figure 3. Trends in percentage of infants ever breastfed,* by race and ethnicity



* Among infants born during the reporting period. *Healthy People 2010* proposes increasing the proportion of mothers who breastfeed their babies in the early postpartum period to 75%. Source: 2008 National PedNSS Data Table 19D. Available at http://www.cdc.gov/pednss/pednss_tables/tables_numeric.htm.

prevalence (20.2%). Data from the NIS indicate that the proportion of infants who were breastfed for at least 6 months in the United States increased from 32.6% in 1999 to 43.1% in 2005.

The PedNSS recently began monitoring *exclusive breastfeeding*, defined as an infant receiving only breast milk. In 2008, about one-third (34.6%) of PedNSS contributors reported this supplementary data, which showed that 8.0% of infants were exclusively breastfed for at least 3 months, or 12.9% of infants ever breastfed.

Data from the NIS indicate that 29.6% of infants in the United States were exclusively breastfed for at least 3 months in 2005. Exclusive breastfeeding has a strong protective effect against lower respiratory tract infections, middle ear infections, eczema, and childhood obesity.⁹

Table 2. State-specific prevalence of selected nutrition indicators for children aged <5 years, 2008 Pediatric Nutrition Surveillance System

Contributors	LBW*	HBW†	Ever Breastfed	Breastfed 6 Months	Anemia‡	Short Stature§	Obesity¶
Alabama	12.2	4.3	36.9	NA	18.9	6.3	13.8
Arizona	8.0	6.6	63.8	28.9	14.5	6.7	14.6
Arkansas	9.7	5.8	48.0	11.7	17.6	7.8	13.9
California	6.7	7.6	NA	NA	14.3	5.1	17.3
Cheyenne River Sioux (SD)	9.4	9.4	30.1	NA	13.0	1.3	18.4
Colorado	9.8	4.2	75.3	28.1	11.9	7.9	9.4
Connecticut	9.5	7.0	62.8	24.4	9.1	3.6	15.5
District of Columbia	11.0	5.0	47.1	23.0	30.3	7.7	13.3
Florida	9.7	5.8	69.2	27.3	17.3	4.6	14.1
Georgia	10.3	5.2	53.0	19.7	14.3	6.9	14.8
Hawaii	9.0	6.6	82.8	38.1	13.0	6.4	9.3
Idaho	7.4	7.0	81.6	30.0	12.6	6.8	12.3
Illinois	8.8	6.9	62.1	20.9	12.0	7.6	14.7
Indiana	9.6	6.2	61.5	22.6	15.1	6.5	14.5
Inter Tribal Council of Arizona	7.5	8.3	66.1	27.6	13.4	5.5	23.5
Iowa	8.5	7.9	61.2	20.0	8.1	5.6	15.1
Kansas	8.1	6.4	68.0	20.6	11.4	6.7	13.3
Kentucky	9.8	6.1	36.3	10.8	12.3	6.0	15.7
Maryland	10.3	6.0	58.4	30.0	21.9	6.0	15.7
Massachusetts	8.4	7.7	72.1	27.3	11.7	4.6	16.7
Michigan	9.5	7.2	52.5	15.8	15.7	6.9	13.9
Minnesota	7.4	8.8	72.9	31.4	11.2	4.9	13.4
Mississippi	NA	NA	NA	NA	16.5	10.2	14.6
Missouri	9.2	6.3	55.1	15.4	16.8	6.7	13.9
Montana	8.2	7.4	73.7	32.1	7.6	5.3	12.4
Navajo Nation (AZ)	7.0	6.7	75.6	34.1	8.7	5.0	16.9
Nebraska	8.5	6.7	68.8	22.8	14.3	6.2	13.9
Nevada	8.2	5.9	60.6	25.1	10.1	6.7	12.9
New Hampshire	7.1	9.6	67.0	24.6	12.6	6.2	15.5
New Jersey	9.0	6.2	58.5	33.5	18.8	6.0	17.9
New Mexico	9.8	4.7	70.4	26.7	15.5	7.5	12.0
New York	8.9	6.7	73.8	41.2	12.2	4.2	14.6
North Carolina	9.8	6.5	60.3	21.3	12.5	5.6	15.7
North Dakota	9.0	9.2	58.3	20.1	8.7	4.7	13.8
Ohio	10.5	5.7	46.1	16.1	14.1	6.5	12.2
Oregon	6.7	9.5	91.0	42.3	13.4	5.0	14.7
Pennsylvania	10.1	6.3	45.1	14.8	20.9	6.3	11.5
Puerto Rico	11.4	2.7	54.8	NA	5.6	10.3	17.9
Rhode Island	9.1	7.6	57.1	22.4	17.5	5.9	16.2
Rosebud Sioux (SD)	6.1	9.7	70.3	NA	27.5	1.2	19.2
South Carolina	NA	NA	42.8	NA	18.3	7.4	13.3
South Dakota	7.3	8.0	59.7	19.7	8.4	6.1	16.2
Standing Rock Sioux (ND)	8.4	12.6	35.1	NA	18.9	1.7	25.0
Tennessee	10.1	5.0	40.9	23.0	8.5	6.2	13.8
Texas	8.9	5.6	71.4	40.3	20.1	6.8	16.2
Three Affiliated Tribes (ND)	10.4	8.7	NA	NA	11.6	1.0	19.6
Vermont	8.3	11.0	70.5	31.4	5.7	5.0	13.3
U.S. Virgin Islands	10.6	5.3	88.1	61.1	11.5	5.8	13.6
Virginia	10.0	6.0	61.4	24.7	15.3	6.5	19.0
Washington	7.2	9.5	58.4	39.1	10.7	5.1	14.4
West Virginia	10.7	5.8	42.5	12.3	5.7	5.2	13.5
Wisconsin	8.5	7.6	64.6	27.1	11.0	5.5	13.6
National PedNSS	9.0	6.4	62.0	26.9	14.9	6.0	14.8

Abbreviations: LBW = low birthweight; HBW = high birthweight; NA = not available.

* Defined as birthweight <2,500 grams.

† Defined as birthweight >4,000 grams.

‡ Adjusted for altitude. For children aged 6 months to 2 years: Hemoglobin (Hb) is <11.0 g/dL, or hematocrit (Hct) is <32.9%. For children aged 2–5 years: Hb is <11.1 g/dL, or Hct is <33.0%.

§ Based on the 2000 CDC Growth Chart. Defined as <5th percentile length-for-age for children aged <2 years or height-for-age for children aged 2 years or older.

¶ Based on the 2000 CDC Growth Chart. Defined as ≥95th percentile body mass index (BMI)-for-age for children aged 2 years or older.

Anemia

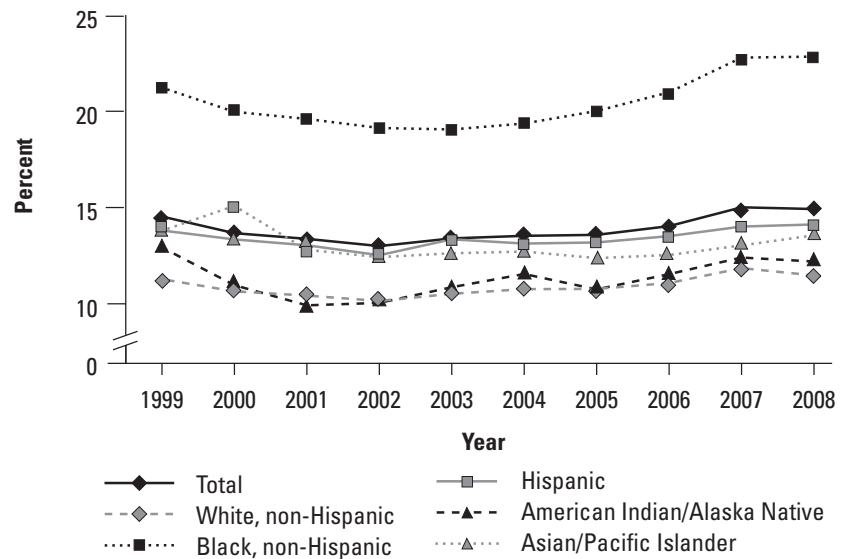
Anemia* (low hemoglobin/hematocrit) is an indicator of iron deficiency, which is associated with developmental delays and behavioral disturbances in children.^{10,11} In the 2008 PedNSS, the prevalence of anemia was 14.9%. The highest prevalence of anemia was among infants aged 6–11 months (17.8%) and children aged 12–17 months (18.2%). The lowest prevalence was among children aged 3–5 years (10.9%).

The overall prevalence of anemia among children in the PedNSS increased slightly from 14.5% in 1999 to 14.9% in 2008. During this 10-year period, the overall prevalence of anemia declined to 13.0% in 2002 but increased in subsequent years.

The prevalence of anemia varied among racial and ethnic groups in the PedNSS. In 2008, the highest prevalence was among black children (22.8%), and the lowest prevalence was among white children (11.5%). From 1999 through 2008, a small absolute increase in the prevalence of anemia (0.2% to 1.6%) occurred among all racial and ethnic groups except Asian or Pacific Islander and American Indian or Alaska Native. The prevalence of anemia among these two groups declined 0.2% and 0.7%, respectively (Figure 4).

For most racial and ethnic groups, prevalence rates were lowest in 2002. From 2002 through 2008, the prevalence of anemia among black children increased 3.7%, the largest increase among all racial and ethnic groups.

Figure 4. Trends in prevalence of anemia* among children aged <5 years, by race and ethnicity



* Defined as hemoglobin concentration or hematocrit level <5th percentile.

Source: CDC. Recommendations to prevent and control iron deficiency in the United States.

MMWR Recommendations and Reports 1998;47(RR-3):1–30.

Source: 2008 National PedNSS Data Table 18D. Available at

http://www.cdc.gov/pednss/pednss_tables/tables_numeric.htm.

Short Stature

Short stature[†] (low length or height for a child's age) may reflect the long-term health and nutritional status of a child or a population.¹³ Although short stature can be associated with short parental stature or low birthweight,¹³ it also can result from growth retardation because of chronic malnutrition, recurrent illness, or both. In the 2008 PedNSS, 6.0% of children from birth to age 5 were of short stature, compared with 3.7% of U.S. children of the same age.¹⁴

Compared with the general population, short stature was considerably higher in the PedNSS population, which may reflect the nutritional risk of children participating in the WIC program. The prevalence

* Children aged 6 months to 2 years are considered anemic if their hemoglobin (Hb) concentration is less than 11.0 g/dL or if their hematocrit (Hct) level is less than 32.9%. Children aged 2–5 years are considered anemic if their Hb concentration is less than 11.1 g/dL or if their Hct level is less than 33.0%. Values are adjusted for altitude. Hb concentration and Hct level are not reported for children younger than 6 months.¹²

† Based on gender-specific percentiles from the 2000 CDC Growth Chart for the United States. For children aged less than 2 years, short stature is less than the 5th percentile for length-for-age. For children aged 2 years or older, short stature is less than the 5th percentile for height-for-age.

of short stature in the 2008 PedNSS was above the expected level (5.0%) and the *Healthy People 2010* objective (19-4) of 5% among low-income children aged less than 5 years.⁵ Twelve contributors achieved the *Healthy People 2010* objective of 5% in 2008 (Table 2).

The prevalence of short stature among children in the PedNSS remained stable from 1999 (5.9%) through 2008 (6.0%). Some variation in short stature was evident among racial and ethnic groups.

Short stature increased among white and Hispanic children and decreased among Asian and Pacific Islander, black, and American Indian or Alaska Native children (Figure 5).

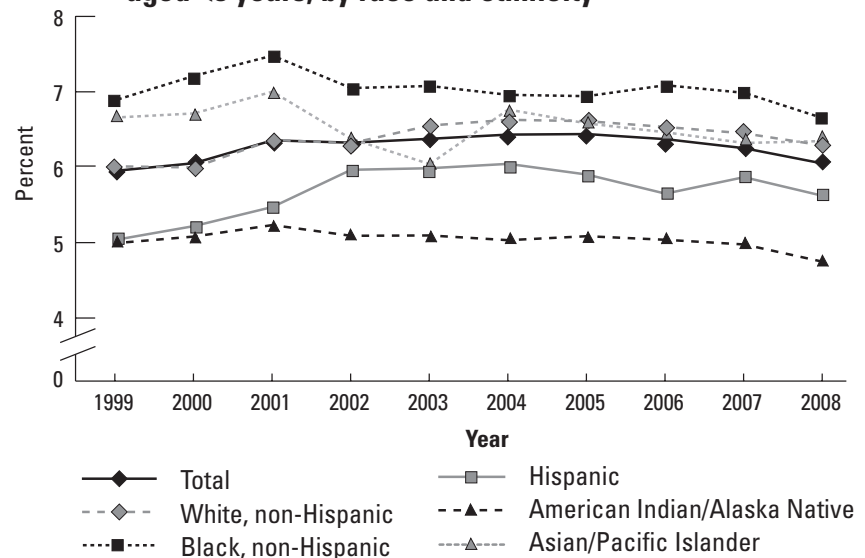
In 2008, the highest prevalence of short stature was among black infants younger than 1 year of age (10.6%), which may reflect the high prevalence of low birthweight among this group (data not shown).

Underweight

Data from contributors on underweight[‡] (low weight-for-length or body mass index[§] [BMI] for age) in children from birth to age 5 years indicate that acute malnutrition was not a public health problem in the PedNSS population. In 2008, the prevalence of underweight (4.5%) was less than the expected level (5.0%). The prevalence of underweight for all U.S. children in this age group was 3.4%.¹⁴

The highest prevalence of underweight in the

Figure 5. Trends in prevalence of short stature* among children aged <5 years, by race and ethnicity



* Defined as <5th percentile length or height-for-age according to the 2000 CDC Growth Charts. *Healthy People 2010* proposes reducing short stature among low-income children aged <5 years to 5%. Source: 2008 National PedNSS Data Table 18D. Available at http://www.cdc.gov/pednss/pednss_tables/tables_numeric.htm.

PedNSS occurred among black (5.8%) and Asian and Pacific Islander (5.7%) children. Black infants aged less than 1 year had an underweight rate of 7.9%, which may reflect the high rate of low birthweight in this group. The overall prevalence of underweight among children in the PedNSS decreased from 5.7% in 1999 to 4.5% in 2008.

Overweight and Obesity

Overweight[¶] and obesity^{**} in young children have increased in recent decades, and the associated health consequences warrant preventive efforts.¹⁵ The Expert Committee on the Prevention, Assessment, and Treatment of Child and Adolescent Overweight and Obesity recommends the use of two cutoff points to screen for overweight and obesity in

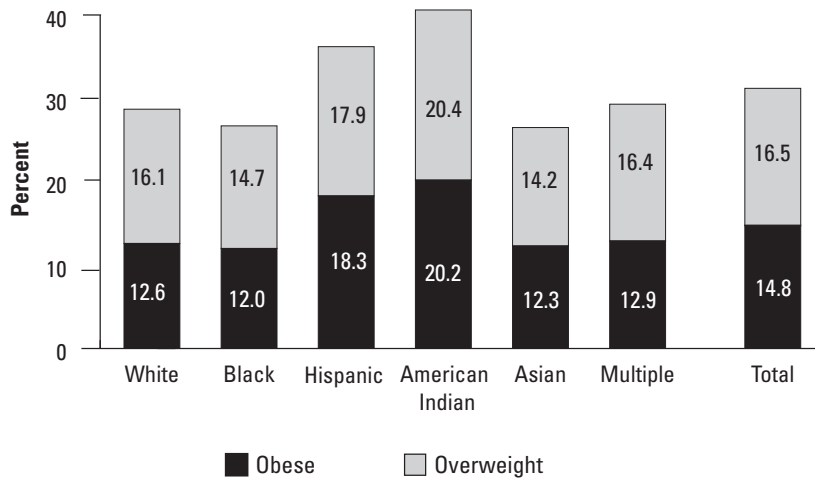
‡ Based on gender-specific percentiles from the 2000 CDC Growth Chart for the United States. For children aged less than 2 years, underweight is less than the 5th percentile for weight-for-length. For children aged 2 years or older, underweight is less than the 5th percentile for BMI-for-age.

§ Body mass index (BMI) is calculated as follows: Weight (kg) ÷ Stature (cm) × 10,000 or Weight (lb) ÷ Stature (in) × 703.

¶ Based on percentiles from the 2000 CDC Growth Chart for the United States. For children aged 2 years or older, overweight is the 85th to the 95th percentile for BMI-for-age.

** Based on gender-specific percentiles from the 2000 CDC Growth Chart for the United States. For children aged 2 years or older, obesity is equal to or greater than the 95th percentile for BMI-for-age.

Figure 6. Prevalence of obesity* and overweight† among children aged 2–5 years, by race and ethnicity

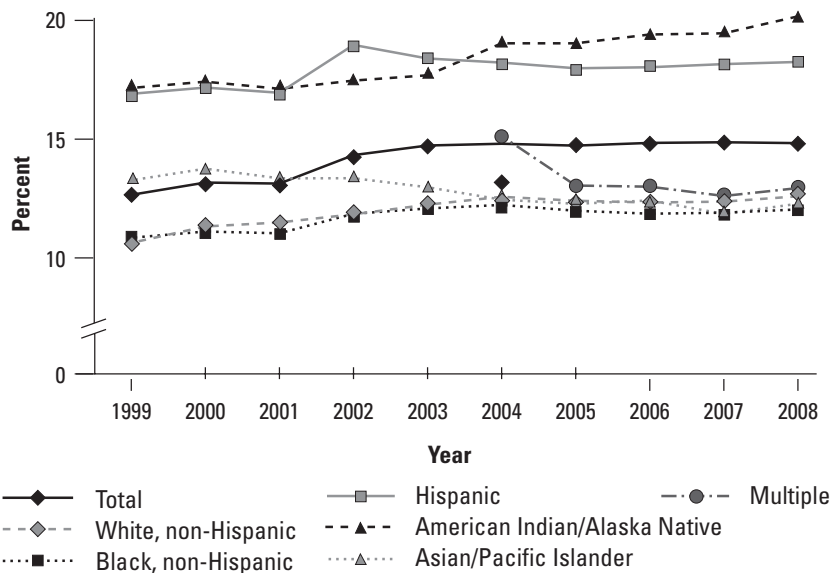


* Defined as ≥ 95 th percentile BMI-for-age according to the 2000 CDC Growth Charts.
 † Defined as >85 th to <95 th percentile BMI-for-age according to the 2000 CDC Growth Charts.
 Source: 2008 National PedNSS Data Table 8D. Available at http://www.cdc.gov/pednss/pednss_tables/tables_numeric.htm.

children aged 2 years or older.¹⁶ Children with a BMI-for-age at or above the 95th percentile are considered obese, and those with a BMI-for-age between the 85th and 95th percentiles are considered overweight.¹⁶

In the 2008 PedNSS, the prevalence of obesity among children aged 2–5 years was 14.8%, compared with 12.4% for U.S. children of a similar age in 2003 through 2006.¹⁷ In the PedNSS, the highest prevalence of obesity was seen among American Indian or Alaska Native (20.2%) and Hispanic (18.3%) children. The lowest prevalence was seen among white (12.6%), black (12.0%), and Asian or Pacific Islander (12.3%) children (Figure 6).

Figure 7. Trends in prevalence of obesity* among children aged 2–5 years, by race and ethnicity



* Defined as ≥ 95 th percentile BMI-for-age according to the 2000 CDC Growth Charts.
 Source: 2008 National PedNSS Data Table 18D. Available at http://www.cdc.gov/pednss/pednss_tables/tables_numeric.htm.

Of particular concern is that the prevalence of obesity among children aged 2–5 years increased from 12.7% in 1999 to 14.8% in 2008 (Figure 7). During this 10-year period, obesity increased among all racial and ethnic groups except Asian or Pacific Islander.

However, overall obesity rates have remained stable since 2003 (14.7%), and this trend was observed among all racial and ethnic groups except American Indian or Alaska Native. This group experienced a 2.5% increase in the prevalence of obesity from 1999 through 2008. Among all contributors, only Colorado, Hawaii, and

Pennsylvania had a prevalence of obesity less than 12.0%, and 6 contributors had a prevalence of obesity greater than or equal to 18.0% (Figure 8).

Although the map shows no clear geographic pattern of obesity prevalence, five ITOs that participated in the PedNSS were among contributors with the highest prevalence of obesity. No contributor had a prevalence of obesity at or less than the expected level of 5.0% (Table 2).

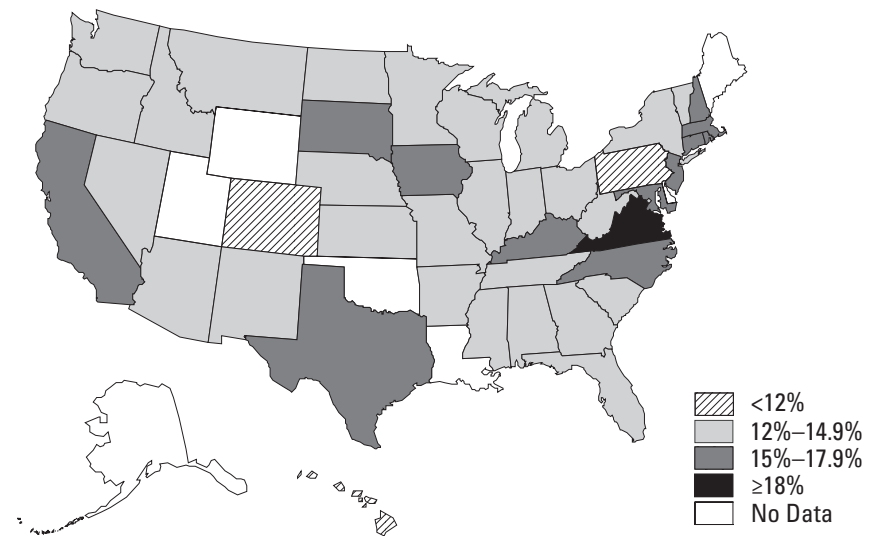
Pediatric Behavioral Indicators

Television Viewing

The PedNSS recently began monitoring the proportion of children aged 2–5 years who view 2 hours or less of television (including videotapes and DVDs) per day. Mothers of children in this age range report data on their children’s television viewing.

To prevent obesity and a variety of other problems during childhood, the Academy of Pediatrics recommends limiting total television viewing time to no more than 1–2 hours per day for children aged 2 years or older and discourages exposure to any television for infants and children younger than 2 years of age.¹⁸

Figure 8. Prevalence of obesity* among children aged 2–5 years, by contributor†



* Defined as ≥95th percentile BMI-for-age according to the 2000 CDC Growth Charts; 5.0% of children are expected to be above the 95th percentile.

† Includes the District of Columbia (12%–14.9%), Puerto Rico (15%–17.9%), the U.S. Virgin Islands (12%–14.9%), and the following ITOs: Cheyenne River Sioux (SD) (≥18%), Inter Tribal Council of Arizona (≥18%), Navajo Nation (AZ) (15%–17.9%), Rosebud Sioux (SD) (≥18%), Standing Rock Sioux (ND) (≥18%), and Three Affiliated Tribes (ND) (≥18%).

Source: 2008 National PedNSS Data Table 6D. Available at http://www.cdc.gov/pednss/pednss_tables/tables_numeric.htm.

In 2008, about 40.4% of PedNSS contributors reported supplementary television viewing data, which indicated that 75.0% of children aged 2–5 years viewed 2 hours or less of television per day. The proportion of children meeting the Academy of Pediatrics’ recommendation varied by race and ethnicity. Rates were lowest among black (66.8%) and Hispanic (70.1%) children and highest among white (82.3%) children.

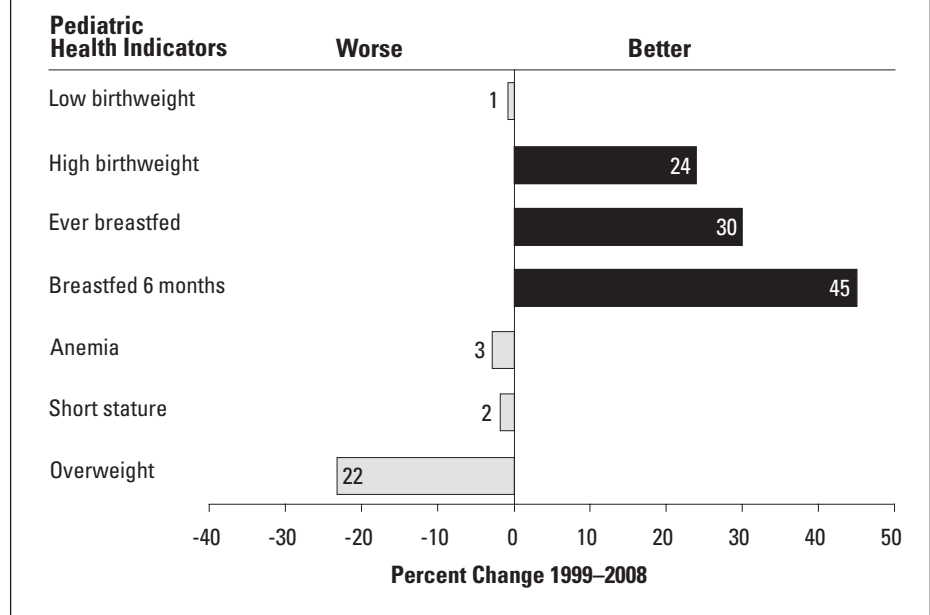
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Advances in nutrition and health indicators were observed in the PedNSS population from 1999 through 2008 (Figure 9). The prevalence of high birthweight decreased, with the greatest improvement occurring among American Indian or Alaska Native and Hispanic children. Substantial improvements occurred in the prevalence of infants ever breastfed. The largest absolute improvement in the prevalence of ever being breastfed occurred among black children. Overall, short stature remained stable during the 10-year period.

The 2008 PedNSS report also indicated areas of concern. Although the low birthweight rate remained stable during the 10-year period, it still remained high. The *Healthy People 2010* objective to reduce the prevalence of low birthweight to 5%⁴ continues to be unmet. The prevalence of anemia stayed about the same, but it remains high among all racial and ethnic groups.

Obesity is a major public health problem that has steadily increased in the United States. There were 2.1% more children aged 2–5 years who were obese in 2008 than in 1999. This change is a relative increase of 22.0%. Although Hispanic and American Indian or Alaska Native children had the highest prevalence of obesity, increases occurred among all racial and ethnic groups except Asian and Pacific Islander. Although overweight and obesity rates increased among children aged 2–5 year during the 10-year period, the prevalence has remained stable since 2003.

Figure 9. Changes in infant and child health status, 1999–2008



While advances have been made in breastfeeding initiation, few contributors achieved the *Healthy People 2010* objective of 75% of infants being ever breastfed.⁴ The prevalence of breastfeeding remained lowest for black infants.

Recommendations

The PedNSS data indicate that national and state public health programs are needed to support the following actions:

- Prevent low birthweight by promoting preconception nutrition care and outreach activities to identify pregnancy in its early stages.
- Foster early entry into comprehensive prenatal care, including the WIC program and the Maternal and Child Health Bureau's Title V program.
- Promote and support breastfeeding initiatives in public health programs, medical care systems, worksites, and communities.

- Identify successful programs and policies to support exclusive breastfeeding, especially among populations with low prevalence.
- Promote adequate dietary iron intake and screening of children at risk for iron deficiency.
- Implement promising approaches to preventing obesity and chronic diseases that have been recommended by CDC's Division of Nutrition, Physical Activity and Obesity. These approaches include
 - > Increasing breastfeeding initiation, duration, and exclusivity.
 - > Increasing physical activity.
 - > Increasing the consumption of fruits and vegetables.
 - > Decreasing the consumption of sugar-sweetened beverages.
 - > Reducing the consumption of high-energy-dense foods (foods high in calories per gram weight).
 - > Decreasing television viewing.

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