**Supplemental Material**

Title: Early Life Bisphenol A Exposure and Neurodevelopment at 8 Years of Age: Identifying Windows of Heightened Vulnerability

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**Figure S1.** Adjusted changes in BASC-2, BRIEF, and WISC-IV scores at 8 years of age with 10-fold increases in 8-year, creatinine-standardized urinary BPA concentrations in subset of children (N=197-201) who had a summary variable of the number of BPA exposures in the past 24 hour, in girls and boys.

|  |
| --- |
| **Table S1.** Test battery measuring behavior, executive function, and cognition at 8 years of age. |
| **Assessment** | **Scale** | **Subscales/Description** |
| Behavioral Assessment for Children-21 | Behavioral Symptoms Index | Hyperactivity, aggression, depression, atypicality, withdrawal, attention problems |
| Externalizing Problems | Hyperactivity, aggression |
| Internalizing Problems | Depression, anxiety, somatization |
| Behavior Rating Inventory of Executive Function 2 | Behavioral Regulation Index | Inhibit, shift, emotional control |
| Global Executive Composite | All 8 subscales |
| Metacognition Index | Initiate, working memory, plan/organize, organization of materials, monitor |
| Wechsler Intelligence Scale for Children-IV 2 | Full-Scale IQ | Overall intellectual ability |
| Perceptual Reasoning Index | Interpretation, reasoning, and organization of visual information |
| Processing Speed Index | Speed of mental and graphomotor processing |
| Verbal Comprehension Index | Verbal knowledge, reasoning, and conceptualization |
| 1Reynolds CR, Kamphaus RW. 2004. Behavior Assessment System for Children Manual. 2nd ed. Bloomington, MN:Pearson. |
| 2Strauss E, Sherman EMS, Spreen O. 2006. A Compendium of Neuropsychological Tests. 3rd ed. New York, NY:Oxford University Press. |

**Table S2.** Distributions of creatinine-standardized urinary BPA concentrations (µg/g creatinine) of HOME study mothers (16- and 26-week visits) and children (ages 1, 2, 3, 4, 5, and 8).

|  |  |  |
| --- | --- | --- |
|  |  | **BPA Concentration (µg/g creatinine)** |
| **Visit** | **N** | Minimum | 25th Percentile | 50th Percentile | 75th Percentile | Maximum |
| Maternal 16-week | 384 | <LOD | 1.1 | 1.7 | 3.0 | 46 |
| Maternal 26-week | 369 | 0.4 | 1.3 | 2.0 | 3.2 | 583 |
| Child Year 1 | 278 | 1.5 | 10.1 | 17.9 | 33.1 | 811 |
| Child Year 2 | 234 | 1.1 | 5.9 | 10.4 | 17.9 | 1273 |
| Child Year 3 | 236 | 0.9 | 3.1 | 5.4 | 9.7 | 95 |
| Child Year 4 | 170 | 0.9 | 2.3 | 3.8 | 6.2 | 49 |
| Child Year 5 | 201 | 0.8 | 1.9 | 3.1 | 5.3 | 74 |
| Child Year 8 | 222 | 0.1 | 1.4 | 2.1 | 3.3 | 121 |

LOD (limit of detection) = 0.4 µg/L

**Table S3.** Adjusted differences [95% confidence intervals (CI)] in BASC-2,1 BRIEF,1 and WISC-IV2 scores at 8 years of age with 10-fold increases in prenatal and childhood creatinine-standardized urinary BPA concentrations.

|  |  |  |  |
| --- | --- | --- | --- |
| **Outcome** | **N** | **Visit** | **Estimate** **(95% CI)** |
| Behavioral Symptoms Index | 210 | Prenatal | 1.2 (-2.4, 4.7) |
| 185 | Age 1 | -1.0 (-3.9, 1.8) |
| 165 | Age 2 | -0.3 (-2.2, 1.7) |
| 168 | Age 3 | 1.1 (-2.0, 4.1) |
| 132 | Age 4 | 2.8 (-0.6, 6.3) |
| 161 | Age 5 | 1.1 (-1.8, 3.9) |
| 204 | Age 8  | 3.0 (0.3, 5.8) |
| Externalizing Problems | 210 | Prenatal | 2.5 (-1.4, 6.4) |
| 185 | Age 1 | 0.2 (-2.7, 3.0) |
| 165 | Age 2 | 0.9 (-1.6, 3.3) |
| 168 | Age 3 | 0.6 (-2.4, 3.6) |
| 132 | Age 4 | 0.6 (-3.1, 4.3) |
| 161 | Age 5 | 0.5 (-2.7, 3.7) |
| 204 | Age 8 | 1.9 (-0.8, 4.6) |
| Internalizing Problems | 210 | Prenatal | 0.8 (-2.8, 4.4) |
| 185 | Age 1 | -1.2 (-4.3, 1.9) |
| 165 | Age 2 | -1.4 (-4.4, 1.5) |
| 168 | Age 3 | -1.1 (-4.7, 2.4) |
| 132 | Age 4 | 1.0 (-2.6, 4.6) |
| 161 | Age 5 | -0.8 (-4.0, 2.4) |
| 204 | Age 8 | 2.5 (-0.2, 5.3) |
| Global Executive Composite | 210 | Prenatal | 1.5 (-2.5, 5.6) |
| 185 | Age 1 | -1.3 (-4.5, 1.8) |
| 165 | Age 2 | -0.3 (-3.0, 2.4) |
| 168 | Age 3 | 3.0 (-0.6, 6.6) |
| 132 | Age 4 | 4.1 (0.4, 7.8) |
| 161 | Age 5 | -0.3 (-3.7, 3.0) |
| 204 | Age 8 | 2.9 (-0.8, 6.6) |
| Behavioral Regulation Index | 210 | Prenatal | 2.1 (-1.9, 6.0) |
| 185 | Age 1 | -0.5 (-3.3, 2.3) |
| 165 | Age 2 | 0.3 (-2.0, 2.7) |
| 168 | Age 3 | 3.5 (0.1, 6.9) |
| 132 | Age 4 | 3.2 (-0.4, 6.8) |
| 161 | Age 5 | -1.6 (-4.5, 1.3) |
| 204 | Age 8 | 3.4 (-0.2, 7.1) |
| Metacognition Index | 210 | Prenatal | 1.3 (-3.0, 5.6) |
| 185 | Age 1 | -2.1 (-5.6, 1.3) |
| 165 | Age 2 | -0.9 (-4.0, 2.3) |
| 168 | Age 3 | 2.2 (-1.6, 5.9) |
| 132 | Age 4 | 3.9 (-0.2, 8.1) |
| 161 | Age 5 | 0.4 (-3.2, 4.0) |
| 204 | Age 8 | 2.3 (-1.3, 6.0) |
| Full-Scale IQ | 202 | Prenatal | 0.3 (-5.6, 6.1) |
| 178 | Age 1 | 0.5 (-4.3, 5.4) |
| 159 | Age 2 | 3.2 (-1.4, 7.9) |
| 163 | Age 3 | -2.7 (-9.2, 3.8) |
| 131 | Age 4 | -0.7 (-7.3, 5.9) |
| 159 | Age 5 | 1.6 (-3.5, 6.6) |
| 200 | Age 8 | -5.9 (-10.8, -1.1) |
| Verbal Comprehension Index | 203 | Prenatal | -1.1 (-7.3, 5.1) |
| 179 | Age 1 | -0.4 (-4.9, 4.2) |
| 160 | Age 2 | 1.0 (-4.0, 5.9) |
| 164 | Age 3 | -3.1 (-9.3, 3.2) |
| 131 | Age 4 | -4.0 (-10.0, 2.0) |
| 160 | Age 5 | 0.8 (-4.3, 5.9) |
| 201 | Age 8 | -5.4 (-9.6, -1.2) |
| Perceptual Reasoning Index | 203 | Prenatal | 0.2 (-6.4, 6.8) |
| 179 | Age 1 | 4.7 (-0.6, 10.0) |
| 160 | Age 2 | 2.8 (-2.1, 7.6) |
| 164 | Age 3 | -3.4 (-9.5, 2.6) |
| 131 | Age 4 | -1.6 (-7.6, 4.4) |
| 160 | Age 5 | -1.5 (-6.8, 3.7) |
| 201 | Age 8 | -2.7 (-8.4, 3.0) |
| Processing Speed Index | 203 | Prenatal | 3.4 (-3.1, 9.9) |
| 179 | Age 1 | 0.2 (-4.6, 5.1) |
| 160 | Age 2 | 2.2 (-2.4, 6.7) |
| 164 | Age 3 | -1.1 (-8.2, 6.0) |
| 131 | Age 4 | 1.1 (-6.9, 9.2) |
| 160 | Age 5 | -0.3 (-6.6, 6.0) |
| 201 | Age 8 | -5.8 (-10.9, -0.7) |

1Adjusted for: visit, BPA x visit, child’s sex, child’s race, mother’s education, household income, caregiving environment, marital status, prenatal serum cotinine concentrations, prenatal vitamins, mother’s BDI, and mother’s CAARS.

2Adjusted for: visit, BPA x visit, child’s sex, child’s race, mother’s education, household income, caregiving environment, marital status, prenatal serum cotinine concentrations, prenatal vitamins, and mother’s full-scale IQ.

Higher BASC-2 and BRIEF scores indicate worse behavior or executive function, while higher WISC-IV scores indicate better cognitive abilities.

Abbreviations: BASC-2=Behavioral Assessment for Children-2, BRIEF=Behavior Rating Inventory of Executive Function, WISC-IV=Wechsler Intelligence Scale for Children-IV, BDI=Beck Depression Inventory, CAARS= Conners’ Adult ADHD Rating Scale

**Table S4.** Heterogeneity p-values for BPA x visit and BPA x visit x sex interaction terms from multiple informants model examining association of repeated urinary BPA concentrations during pregnancy, infancy, and childhood with child neurobehavioral outcomes.

|  |  |  |  |
| --- | --- | --- | --- |
| **Assessment** | **Outcome** | **BPA x visit** | **BPA x visit x sex** |
| Behavioral Assessment for Children-2 | Behavioral Symptoms Index | 0.44 | 0.05 |
| Externalizing Problems | 0.92 | 0.02 |
| Internalizing Problems | 0.56 | 0.23 |
| Behavior Rating Inventory of Executive Function | Global Executive Composite | 0.18 | 0.46 |
| Behavioral Regulation Index | 0.16 | 0.17 |
| Metacognition Index | 0.28 | 0.59 |
| Wechsler Intelligence Scale for Children-IV | Full-Scale IQ | 0.27 | 0.74 |
| Verbal Comprehension Index | 0.33 | 0.87 |
| Perceptual Reasoning Index | 0.34 | 0.84 |
| Processing Speed Index | 0.25 | 0.40 |

**Table S5.** Adjusted differences in BASC-2,1 BRIEF,1 and WISC-IV2 scores at 8 years with 10-fold increases in prenatal and childhood creatinine-standardized urinary BPA, in girls and boys.

|  |  |  |  |
| --- | --- | --- | --- |
| **Outcome** | **Visit** | **Girls** | **Boys** |
| **N** | **Estimate (95% CI)** | **N** | **Estimate (95% CI)** |
| Behavioral Symptoms Index | Prenatal | 117 | 3.7 (-1.1, 8.6) | 93 | -1.2 (-5.5, 3.2) |
| Age 1 | 100 | -3.5 (-6.8, -0.1) | 85 | 1.5 (-3.2, 6.2) |
| Age 2 | 83 | 0.7 (-2.0, 3.4) | 82 | -1.1 (-3.9, 1.6) |
| Age 3 | 92 | 1.6 (-1.9, 5.1) | 76 | 0.6 (-4.6, 5.8) |
| Age 4 | 73 | 2.4 (-2.5, 7.3) | 59 | 3.4 (-2.0, 8.9) |
| Age 5 | 91 | 1.6 (-2.0, 5.3) | 70 | 0.0 (-5.0, 5.1) |
| Age 8  | 112 | 1.1 (-2.4, 4.7) | 92 | 5.5 (2.0, 8.9) |
| Externalizing Problems | Prenatal | 117 | 6.2 (0.8, 11.6) | 93 | -0.8 (-5.0, 3.4) |
| Age 1 | 100 | -2.2 (-5.6, 1.2) | 85 | 2.8 (-2.2, 7.8) |
| Age 2 | 83 | 0.7 (-2.8, 4.1) | 82 | 0.9 (-2.7, 4.5) |
| Age 3 | 92 | 2.0 (-1.5, 5.4) | 76 | -1.2 (-6.4, 4.0) |
| Age 4 | 73 | 2.3 (-2.7, 7.3) | 59 | -1.4 (-7.5, 4.6) |
| Age 5 | 91 | 2.7 (-1.0, 6.4) | 70 | -2.8 (-8.9, 3.3) |
| Age 8  | 112 | 0.3 (-3.5, 4.1) | 92 | 3.9 (0.6, 7.2) |
| Internalizing Problems | Prenatal | 117 | 4.1 (-1.6, 9.8) | 93 | -2.2 (-6.2, 1.9) |
| Age 1 | 100 | -2.6 (-7.0, 1.9) | 85 | 0.4 (-3.9, 4.6) |
| Age 2 | 83 | 0.0 (-4.3, 4.3) | 82 | -2.7 (-6.6, 1.1) |
| Age 3 | 92 | -1.5 (-6.7, 3.6) | 76 | -0.4 (-5.0, 4.1) |
| Age 4 | 73 | 1.2 (-3.8, 6.2) | 59 | 0.8 (-4.9, 6.5) |
| Age 5 | 91 | -1.5 (-5.5, 2.5) | 70 | 0.0 (-5.5, 5.6) |
| Age 8  | 112 | 0.6 (-3.2, 4.4) | 92 | 4.9 (1.6, 8.3) |
| Global Executive Composite | Prenatal | 117 | 3.1 (-3.4, 9.7) | 93 | 0.1 (-4.6, 4.8) |
| Age 1 | 100 | -3.3 (-7.6, 1.0) | 85 | 0.8 (-4.4, 6.0) |
| Age 2 | 83 | 0.2 (-3.9, 4.2) | 82 | -0.8 (-4.3, 2.7) |
| Age 3 | 92 | 0.9 (-3.1, 5.0) | 76 | 6.1 (-0.2, 12.5) |
| Age 4 | 73 | 2.8 (-2.7, 8.2) | 59 | 5.8 (0.0, 11.6) |
| Age 5 | 91 | -1.2 (-5.6, 3.1) | 70 | 1.0 (-4.3, 6.3) |
| Age 8  | 112 | 0.4 (-3.2, 4.1) | 92 | 6.0 (0.4, 11.6) |
| Behavioral Regulation Index | Prenatal | 117 | 4.1 (-2.0, 10.3) | 93 | 0.2 (-4.4, 4.8) |
| Age 1 | 100 | -3.1 (-6.7, 0.4) | 85 | 2.6 (-2.0, 7.3) |
| Age 2 | 83 | 1.0 (-1.8, 3.9) | 82 | -0.4 (-3.9, 3.1) |
| Age 3 | 92 | 2.7 (-0.6, 6.0) | 76 | 4.9 (-1.5, 11.3) |
| Age 4 | 73 | 2.7 (-2.1, 7.6) | 59 | 3.6 (-2.2, 9.3) |
| Age 5 | 91 | -1.7 (-5.4, 2.0) | 70 | -1.6 (-6.5, 3.2) |
| Age 8  | 112 | 0.4 (-3.0, 3.8) | 92 | 7.3 (1.9, 12.7) |
| Metacognition Index | Prenatal | 117 | 2.6 (-4.4, 9.7) | 93 | 0.1 (-4.9, 5.1) |
|  | Age 1 | 100 | -3.7 (-8.2, 0.7) | 85 | -0.6 (-6.3, 5.1) |
|  | Age 2 | 83 | -0.8 (-5.6, 4.0) | 82 | -1.0 (-4.9, 3.0) |
|  | Age 3 | 92 | -0.7 (-5.4, 4.0) | 76 | 6.5 (0.3, 12.6) |
|  | Age 4 | 73 | 2.0 (-4.3, 8.3) | 59 | 6.5 (0.6, 12.5) |
|  | Age 5 | 91 | -0.9 (-5.5, 3.7) | 70 | 2.4 (-3.1, 7.9) |
|  | Age 8  | 112 | 0.4 (-3.5, 4.4) | 92 | 4.8 (-0.6, 10.2) |
| Full-Scale IQ | Prenatal | 112 | 2.8 (-6.3, 11.8) | 90 | -1.9 (9.5, 5.6) |
|  | Age 1 | 96 | 4.9 (-0.8, 10.6) | 82 | -4.7 (-12.2, 2.9) |
|  | Age 2 | 79 | 2.6 (-3.6, 8.8) | 80 | 3.8 (-3.2, 10.8) |
|  | Age 3 | 89 | -0.8 (-10.7, 9.1) | 74 | -6.0 (-13.9, 1.8) |
|  | Age 4 | 72 | -0.9 (-9.7, 7.8) | 59 | -0.1 (-10.2, 10.1) |
|  | Age 5 | 90 | 1.6 (-4.1, 7.3) | 69 | 1.8 (-7.8, 11.4) |
|  | Age 8  | 110 | -4.0 (-10.7, 2.8) | 90 | -8.5 (-14.2, -2.7) |
| Verbal Comprehension Index | Prenatal | 112 | 0.5 (-8.1, 9.2) | 91 | -2.5 (-11.5, 6.5) |
|  | Age 1 | 96 | 3.6 (-2.0, 9.2) | 83 | -4.8 (-12.4, 2.8) |
|  | Age 2 | 79 | 0.3 (-7.9, 8.5) | 81 | 1.4 (-4.4, 7.3) |
|  | Age 3 | 89 | -1.6 (-10.6, 7.4) | 75 | -5.6 (-14.1, 3.0) |
|  | Age 4 | 72 | -2.6 (-11.1, 5.8) | 59 | -4.9 (-13.1, 3.3) |
|  | Age 5 | 90 | 4.0 (-2.6, 10.6) | 70 | -3.7 (-12.3, 4.9) |
|  | Age 8  | 110 | -4.4 (-10.5, 1.8) | 91 | -6.9 (-12.2, -1.6) |
| Perceptual Reasoning Index | Prenatal | 112 | 4.3 (-5.9, 14.5) | 91 | -3.5 (-11.5, 4.6) |
|  | Age 1 | 96 | 6.3 (0.8, 11.8) | 83 | 3.2 (-6.6, 13.0) |
|  | Age 2 | 79 | 5.0 (-1.8, 11.8) | 81 | 1.0 (-5.8, 7.8) |
|  | Age 3 | 89 | -4.0 (-12.8, 4.8) | 75 | -3.1 (-10.8, 4.5) |
|  | Age 4 | 72 | -3.1 (-11.2, 5.0) | 59 | 0.5 (-9.0, 10.0) |
|  | Age 5 | 90 | -1.4 (-8.1, 5.3) | 70 | -2.1 (-11.2, 6.9) |
|  | Age 8  | 110 | 0.3 (-6.7, 7.3) | 91 | -6.5 (-14.0, 1.0) |
| Processing Speed Index | Prenatal | 112 | 2.5 (-7.4, 12.4) | 91 | 4.2 (-4.3, 12.6) |
|  | Age 1 | 96 | 1.8 (-4.7, 8.3) | 83 | -1.3 (-8.8, 6.2) |
|  | Age 2 | 79 | -1.4 (-7.7, 4.9) | 81 | 5.3 (-1.8, 12.4) |
|  | Age 3 | 89 | 0.5 (-10.3, 11.3) | 75 | -4.0 (-12.2, 4.3) |
|  | Age 4 | 72 | 3.0 (-8.2, 14.1) | 59 | -1.2 (-13.4, 11.0) |
|  | Age 5 | 90 | -0.9 (-8.0, 6.1) | 70 | 1.3 (-9.9, 12.5) |
|  | Age 8  | 110 | -3.5 (-11.4, 4.5) | 91 | -8.8 (-14.2, -3.5) |

1Adjusted for: visit, BPA x visit, child’s sex x visit, BPA x child’s sex, BPA x visit x child’s sex, child’s race, mother’s education, household income, caregiving environment, marital status, prenatal serum cotinine concentrations, prenatal vitamins, mother’s BDI, and mother’s CAARS.

2Adjusted for: visit, BPA x visit, child’s sex x visit, BPA x child’s sex, BPA x visit x child’s sex, child’s race, mother’s education, household income, caregiving environment, marital status, prenatal serum cotinine concentrations, prenatal vitamins, and mother’s full-scale IQ.

Higher BASC-2 and BRIEF scores indicate worse behavior or executive function, while higher WISC-IV scores indicate better cognitive abilities.

Abbreviations: BASC-2=Behavioral Assessment for Children-2, BRIEF=Behavior Rating Inventory of Executive Function, WISC-IV=Wechsler Intelligence Scale for Children-IV, BDI=Beck Depression Inventory, CAARS= Conners’ Adult ADHD Rating Scale

**Table S6.** Select results of sensitivity analyses for child externalizing behaviors and associations with prenatal and 8-year urinary BPA concentrations.

|  |  |  |  |
| --- | --- | --- | --- |
| **Model** | **N** | **Girls, Prenatal** | **Boys, 8-Year** |
| β (95% CI) | p-value | β (95% CI) | p-value |
| Unadjusted | 228 | 4.1 (-2.6, 10.8) | 0.23 | 1.6 (-2.6, 5.8) | 0.45 |
| Adjusted1 | 228 | 6.2 (0.8, 11.6) | 0.02 | 3.9 (0.6, 7.2) | 0.02 |
| Adjusted1 + log10-creatinine | 228 | 6.2 (1.4, 11.0) | 0.01 | 4.2 (0.6, 7.9) | 0.02 |
| Adjusted1 + year of birth | 228 | 6.4 (0.7, 12.1) | 0.03 | 4.0 (0.8, 7.2) | 0.01 |
| Pre + post adjusted1,2 | 228 | 5.6 (-0.2, 11.3) | 0.06 | 4.3 (0.8, 7.9) | 0.02 |
| Prenatal BPA + canned vegetables1,3 | 228 | 6.3 (0.4, 12.1) | 0.04 | N/A | N/A |
| 8-Year BPA sources1,4 | 223 | N/A | N/A | 4.4 (-0.3, 9.0) | 0.07 |
| 8-Year BPA + canned vegetables1,5 | 222 | N/A | N/A | 4.1 (-0.5, 8.6) | 0.08 |

1Adjusted for child’s sex, child’s race, mother’s education, household income, caregiving environment, marital status, mother’s cotinine, prenatal vitamins, mother’s BDI (Beck Depression Inventory), and mother’s CAARS (Connors’ Adult ADHD Rating Scale).

2Mutually adjusted for prenatal and 8-year BPA.

3Adjusted for frequency of maternal canned vegetable consumption (≤1-3 times per month, 1-3 times per week, ≥4-6 times per week)

4Adjusted for BPA exposure sources in the past 24 hours (canned food, canned beverages, beverages in carton or pouch, and receipt handling).

5Adjusted for number of cans of canned vegetables consumed (0, >0 to <0.5, ≥0.5).

**Table S7.** Adjusted differences in BASC-2,1 BRIEF,1 and WISC-IV2 scores at 8 years with 10-fold increases in prenatal (16- and 26-week) creatinine-standardized urinary BPA, in girls and boys.

|  |  |  |
| --- | --- | --- |
| **Outcome** | **Visit** | **Estimate (95% CI)** |
|  |  | **Girls** | **Boys** |
| Behavioral Symptoms Index | 16-week | 4.1 (0.2, 8.0) | -0.7 (-4.8, 3.4) |
|  | 26-week | -1.7 (-7.2, 3.7) | -0.5 (-3.4, 2.4) |
| Externalizing Problems | 16-week | 3.9 (-0.4, 8.2) | 1.0 (-3.3, 5.3) |
|  | 26-week | 2.5 (-2.0, 7.1) | -1.2 (-4.0, 1.5) |
| Internalizing Problems | 16-week | 4.6 (1.0, 8.1) | 0.4 (-3.6, 4.3) |
|  | 26-week | -1.8 (-7.3, 3.7) | -2.0 (-4.6, 0.5) |
| Global Executive Composite | 16-week | 2.9 (-1.8, 7.5) | 0.4 (-4.7, 5.5) |
|  | 26-week | 0.3 (-5.4, 6.0) | 0.0 (-3.2, 3.2) |
| Behavioral Regulation Index | 16-week | 3.5 (-1.2, 8.2) | 1.2 (-3.6, 6.0) |
|  | 26-week | 0.3 (-4.9, 5.5) | -0.6 (-3.7, 2.5) |
| Metacognition Index | 16-week | 2.4 (-2.4, 7.3) | -0.1 (-5.3, 5.2) |
|  | 26-week | 0.5 (-5.6, 6.7) | 0.3 (-3.0, 3.7) |
| Full-Scale IQ | 16-week | 1.5 (-4.4, 7.4) | 3.5 (-3.2, 10.1) |
|  | 26-week | 0.5 (-7.8, 8.7) | -3.6 (-9.2, 2.0) |
| Verbal Comprehension Index | 16-week | -0.1 (-5.6, 5.4) | 2.6 (-4.0, 9.2) |
|  | 26-week | 0.6 (-7.0, 8.1) | -4.0 (-11.8, 3.8) |
| Perceptual Reasoning Index | 16-week | 3.2 (-2.6, 9.0) | 0.7 (-6.0, 7.4) |
|  | 26-week | -0.1 (-10.0, 9.9) | -3.7 (-8.9, 1.5) |
| Processing Speed Index | 16-week | 1.5 (-5.9, 8.9) | 6.0 (-2.6, 14.5) |
|  | 26-week | 0.6 (-8.2, 9.4) | 0.9 (-4.6, 6.5) |

1Adjusted for: visit, BPA x visit, child’s sex x visit, BPA x child’s sex, BPA x visit x child’s sex, child’s race, mother’s education, household income, caregiving environment, marital status, prenatal serum cotinine concentrations, prenatal vitamins, mother’s BDI, and mother’s CAARS.

2Adjusted for: visit, BPA x visit, child’s sex x visit, BPA x child’s sex, BPA x visit x child’s sex, child’s race, mother’s education, household income, caregiving environment, marital status, prenatal serum cotinine concentrations, prenatal vitamins, and mother’s full-scale IQ.

Higher BASC-2 and BRIEF scores indicate worse behavior or executive function, while higher WISC-IV scores indicate better cognitive abilities.

Abbreviations: BASC-2=Behavioral Assessment for Children-2, BRIEF=Behavior Rating Inventory of Executive Function, WISC-IV=Wechsler Intelligence Scale for Children-IV, BDI=Beck Depression Inventory, CAARS= Conners’ Adult ADHD Rating Scale

**Figure S1.** Adjusted changes in BASC-2,1 BRIEF,1 and WISC-IV2 scores at 8 years of age with 10-fold increases in 8-year, creatinine-standardized urinary BPA concentrations in subset of children (N=197-201) who had a summary variable of the number of BPA exposures3 in the past 24 hour, in girls (**top row**) and boys (**bottom row**).



1Adjusted for: child’s sex, child’s race, mother’s education, household income, caregiving environment, marital status, mother’s cotinine, prenatal vitamins, mother’s BDI, and mother’s CAARS

2Adjusted for: child’s sex, child’s race, mother’s education, household income, caregiving environment, marital status, mother’s cotinine, prenatal vitamins, and mother’s full-scale IQ

3Included consumption of canned food, canned beverages, beverages in carton or pouch, and receipt handling

Higher BASC-2 and BRIEF scores indicate worse behavior or executive function, while higher WISC-IV scores indicate better cognitive abilities.

Abbreviations: BSI=Behavioral Symptom Index, EXT=Externalizing Problems, INZ=Internalizing Problems, GEC=Global Executive Composite, BRI=Behavioral Regulation Index, MI=Metacognition Index, FSIQ=Full-Scale IQ, VCI=Verbal Comprehension Index, PRI=Perceptual Reasoning Index, PSI=Processing Speed Index, BDI=Beck Depression Inventory, CAARS= Conners’ Adult ADHD Rating Scale