**Supplemental Material**

**Childhood polybrominated diphenyl ether (PBDE) exposure and neurobehavior in children at 8 years**

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**Supplemental Table S1.** Childhood concentrations of PBDEs (ng/g lipid) by age in the original and imputed datasets, HOME Study

|  |  |  |
| --- | --- | --- |
|  | Original Dataset | Imputed Dataset |
|  |  | PercentDetection | Percentile | GM (GSD) |  | Percentile | GM (GSD) |
| *n* | 25th | 50th | 75th | 95th | *n* | 25th | 50th | 75th | 95th |
| 1 Year |  |  |  |  |  |  |  | 208 |  |  |  |  |  |
|  BDE-28 | 56 | 94.6 | 1.3 | 2.2 | 3.5 | 7.9 | 2.2 (2.5) |  | 1.0 | 1.9 | 3.7 | 10.9 | 2.0 (2.9) |
|  BDE-47 | 86 | 100 | 32.0 | 67.9 | 106.2 | 273.9 | 60.5 (2.6) |  | 31.1 | 60.5 | 107.9 | 280.7 | 58.5 (2.6) |
|  BDE-99 | 85 | 100 | 8.6 | 17.5 | 34.2 | 84.6 | 17.3 (2.9) |  | 8.2 | 17.1 | 34.3 | 93.4 | 16.8 (3.0) |
|  BDE-100 | 85 | 98.8 | 5.4 | 10.8 | 19.4 | 42.7 | 10.2 (2.6) |  | 5.4 | 10.7 | 19.5 | 51.9 | 10.4 (2.6) |
|  BDE-153 | 85 | 98.8 | 3.3 | 7.2 | 11.0 | 49.6 | 6.9 (2.8) |  | 3.7 | 7.7 | 15.7 | 55.4 | 8.0 (3.0) |
|  ∑PBDEs | 56 | 100 | 55.1 | 110.5 | 178.1 | 408.1 | 99.4 (2.5) |  | 66.1 | 117.2 | 186.3 | 415.1 | 113.1 (2.3) |
| 2 Years |  |  |  |  |  |  |  | 208 |  |  |  |  |  |
|  BDE-28 | 39 | 87.2 | 1.0 | 1.7 | 2.9 | 5.4 | 1.6 (2.0) |  | 0.9 | 1.6 | 2.9 | 6.9 | 1.6 (2.5) |
|  BDE-47 | 69 | 100 | 30.4 | 47.4 | 86.9 | 187.5 | 52.2 (2.3) |  | 32.6 | 67.1 | 135.2 | 376.9 | 66.2 (2.9) |
|  BDE-99 | 67 | 100 | 6.6 | 12.3 | 24.4 | 69.1 | 12.7 (2.6) |  | 7.7 | 17.0 | 36.9 | 131.4 | 17.2 (3.4) |
|  BDE-100 | 66 | 100 | 5.5 | 10.8 | 20.4 | 34.3 | 10.3 (2.4) |  | 6.8 | 13.7 | 27.7 | 87.8 | 14.0 (2.9) |
|  BDE-153 | 68 | 100 | 4.8 | 7.5 | 15.2 | 42.2 | 8.4 (2.4) |  | 5.9 | 11.2 | 21.4 | 65.8 | 11.4 (2.7) |
|  ∑PBDEs | 39 | 100 | 44.7 | 86.0 | 152.5 | 236.9 | 81.0 (2.1) |  | 71.0 | 128.5 | 236.9 | 580.0 | 131.0 (2.5) |
| 3 Years |  |  |  |  |  |  |  | 208 |  |  |  |  |  |
|  BDE-28 | 34 | 82.4 | 0.8 | 1.3 | 2.3 | 4.7 | 1.4 (2.1) |  | 0.7 | 1.3 | 2.4 | 6.2 | 1.4 (2.6) |
|  BDE-47 | 69 | 100 | 17.7 | 35.8 | 75.0 | 147.8 | 37.8 (2.3) |  | 21.6 | 45.7 | 95.2 | 258.7 | 47.3 (2.8) |
|  BDE-99 | 69 | 100 | 4.1 | 7.4 | 17.0 | 39.4 | 8.6 (2.4) |  | 5.0 | 10.6 | 24.3 | 85.2 | 11.3 (3.3) |
|  BDE-100 | 69 | 98.6 | 4.4 | 8.1 | 14.6 | 29.4 | 8.4 (2.2) |  | 5.3 | 11.7 | 23.8 | 70.7 | 11.7 (2.9) |
|  BDE-153 | 69 | 98.6 | 4.7 | 7.2 | 15.4 | 30.7 | 8.3 (2.3) |  | 5.8 | 12.0 | 22.5 | 67.7 | 12.0 (2.7) |
|  ∑PBDEs | 34 | 100 | 44.0 | 74.7 | 112.6 | 230.0 | 73.4 (2.0) |  | 53.1 | 97.2 | 176.1 | 426.5 | 98.1 (2.5) |
| 5 Years |  |  |  |  |  |  |  | 208 |  |  |  |  |  |
|  BDE-28 | 115 | 68.7 | 0.5 | 0.8 | 1.4 | 4.1 | 0.9 (2.3) |  | 0.5 | 0.9 | 1.5 | 4.6 | 0.9 (2.4) |
|  BDE-47 | 141 | 100 | 15.7 | 30.1 | 56.4 | 167.1 | 32.1 (2.6) |  | 15.3 | 29.6 | 56.4 | 160.1 | 30.8 (2.6) |
|  BDE-99 | 141 | 100 | 3.7 | 6.8 | 16.1 | 52.7 | 7.6 (2.8) |  | 3.6 | 6.8 | 15.3 | 47.6 | 7.3 (2.8) |
|  BDE-100 | 141 | 100 | 4.1 | 8.0 | 16.1 | 33.2 | 8.1 (2.5) |  | 4.1 | 8.0 | 14.7 | 32.1 | 7.8 (2.4) |
|  BDE-153 | 141 | 100 | 6.4 | 10.7 | 17.8 | 48.3 | 11.5 (2.2) |  | 6.3 | 10.7 | 18.2 | 45.7 | 11.1 (2.3) |
|  ∑PBDEs | 115 | 100 | 30.7 | 54.9 | 100.8 | 261.4 | 60.3 (2.4) |  | 36.1 | 62.2 | 107.1 | 261.4 | 64.3 (2.3) |
| 8 Years |  |  |  |  |  |  |  | 208 |  |  |  |  |  |
|  BDE-28 | 185 | 49.7 | 0.4 | 0.6 | 1.2 | 3.1 | 0.8 (2.2) |  | 0.4 | 0.6 | 1.2 | 3.1 | 0.8 (2.2) |
|  BDE-47 | 192 | 99.5 | 10.1 | 18.3 | 39.3 | 106.1 | 20.7 (2.5) |  | 10.1 | 18.3 | 39.0 | 94.1 | 20.3 (2.5) |
|  BDE-99 | 191 | 97.9 | 2.5 | 4.6 | 9.7 | 24.7 | 4.9 (2.7) |  | 2.4 | 4.6 | 9.6 | 24.7 | 4.7 (2.7) |
|  BDE-100 | 191 | 99.5 | 2.5 | 4.5 | 9.1 | 22.2 | 4.9 (2.4) |  | 2.4 | 4.4 | 8.7 | 18.4 | 4.6 (2.4) |
|  BDE-153 | 192 | 100 | 5.5 | 9.5 | 16.0 | 31.5 | 9.7 (2.2) |  | 5.4 | 9.1 | 15.6 | 31.4 | 9.4 (2.2) |
|  ∑PBDEs | 185 | 100 | 25.8 | 42.0 | 74.2 | 204.8 | 45.2 (2.2) |  | 24.4 | 41.2 | 71.1 | 172.5 | 43.6 (2.2) |

Abbreviations: GM, geometric mean; GSD, geometric standard deviation

**Supplemental Table S2.** Pearson correlation matrix for childhood polybrominated diphenyl ether congeners, HOME Studya,b

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
|  | 1 year | 2 years | 3 years | 5 years | 8 years |
|  | BDE-47 | BDE-99 | BDE-100 | BDE-153 | BDE-28 | BDE-47 | BDE-99 | BDE-100 | BDE-153 | BDE-28 | BDE-47 | BDE-99 | BDE-100 | BDE-153 | BDE-28 | BDE-47 | BDE-99 | BDE-100 | BDE-153 | BDE-28 | BDE-47 | BDE-99 | BDE-100 | BDE-153 |
| 1 year | BDE-28 | 0.85† | 0.78† | 0.88† | 0.71† | 0.63† | 0.61† | 0.57† | 0.66† | 0.53† | 0.49\*\* | 0.61† | 0.54† | 0.61† | 0.50† | 0.32 | 0.38\* | 0.32\* | 0.44\*\* | 0.37\* | 0.15 | 0.10 | 0.10 | 0.15 | 0.36\* |
| BDE-47 |  | 0.94† | 0.95† | 0.70† | 0.72† | 0.72† | 0.66† | 0.77† | 0.59† | 0.59† | 0.65† | 0.58† | 0.70† | 0.56† | 0.33\* | 0.45# | 0.38\*\* | 0.54† | 0.52† | 0.05 | 0.21 | 0.12 | 0.25\* | 0.45# |
| BDE-99 |  |  | 0.91† | 0.64† | 0.70† | 0.73† | 0.73† | 0.79† | 0.56† | 0.62† | 0.66† | 0.62† | 0.73† | 0.54† | 0.27\* | 0.40# | 0.34\*\* | 0.53† | 0.52† | -0.03 | 0.10 | 0.73 | 0.16 | 0.39# |
| BDE-100 |  |  |  | 0.84† | 0.65† | 0.66† | 0.62† | 0.77† | 0.72† | 0.52# | 0.62† | 0.57† | 0.69† | 0.69† | 0.30\* | 0.43# | 0.37\*\* | 0.51† | 0.59† | -0.01 | 0.13 | 0.06 | 0.17 | 0.44# |
| BDE-153 |  |  |  |  | 0.45\*\* | 0.34\*\* | 0.32\*\* | 0.48† | 0.81† | 0.22 | 0.35# | 0.33\*\* | 0.41† | 0.77† | 0.17 | 0.33\*\* | 0.29\* | 0.34\*\* | 0.59† | -0.03 | 0.06 |  -0.01 | 0.08 | 0.48† |
| 2 years | BDE-28 |  |  |  |  |  | 0.91† | 0.84† | 0.84† | 0.60† | 0.77† | 0.74† | 0.68† | 0.75† | 0.61† | 0.07 | 0.13 | 0.06 | 0.35 | 0.58# | -0.01 | -0.10 | -0.06 | -0.06 | 0.35\* |
| BDE-47 |  |  |  |  |  |  | 0.95† | 0.94† | 0.61† | 0.78† | 0.82† | 0.78† | 0.87† | 0.60† | 0.09 | 0.35\*\* | 0.33\* | 0.52† | 0.52† | -0.08 | 0.13 | 0.13 | 0.19 | 0.33\* |
| BDE-99 |  |  |  |  |  |  |  | 0.94† | 0.63† | 0.72† | 0.80† | 0.80† | 0.87† | 0.59† | -0.02 | 0.27\* | 0.30\* | 0.47\*\* | 0.47# | -0.14 | 0.05 | 0.10 | 0.15 | 0.30\* |
| BDE-100 |  |  |  |  |  |  |  |  | 0.77† | 0.71† | 0.80† | 0.77† | 0.89† | 0.72† | -0.02 | 0.30\* | 0.30\* | 0.49# | 0.61† | -0.11 | 0.05 | 0.07 | 0.15 | 0.40\*\* |
| BDE-153 |  |  |  |  |  |  |  |  |  | 0.34\* | 0.53† | 0.54† | 0.65† | 0.92† | -0.19 | 0.17 | 0.17 | 0.28\* | 0.74† | -0.11 | -0.08 | -0.05 | 0.03 | 0.58† |
| 3 years | BDE-28 |  |  |  |  |  |  |  |  |  |  | 0.94† | 0.85† | 0.84† | 0.48# | 0.70# | 0.58\*\* | 0.46\* | 0.79† | 0.46\* | 0.51\*\* | 0.62# | 0.61# | 0.60# | 0.21 |
| BDE-47 |  |  |  |  |  |  |  |  |  |  |  | 0.97† | 0.95† | 0.64† | 0.51# | 0.60† | 0.55† | 0.75† | 0.57† | 0.11 | 0.42# | 0.38\*\* | 0.43# | 0.47# |
| BDE-99 |  |  |  |  |  |  |  |  |  |  |  |  | 0.95† | 0.66† | 0.40\*\* | 0.52# | 0.51† | 0.70† | 0.56† | 0.04 | 0.35\*\* | 0.36\*\* | 0.39\*\* | 0.47# |
| BDE-100 |  |  |  |  |  |  |  |  |  |  |  |  |  | 0.75† | 0.31\* | 0.46# | 0.44# | 0.67† | 0.66† | 0.02 | 0.26\* | 0.28\* | 0.34\*\* | 0.52† |
| BDE-153 |  |  |  |  |  |  |  |  |  |  |  |  |  |  | -0.02 | 0.21 | 0.22 | 0.35\*\* | 0.87† | -0.06 | -0.03 | 0.03 | 0.10 | 0.69† |
| 5 years | BDE-28 |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  | 0.90† | 0.83† | 0.83† | 0.46† | 0.53† | 0.66† | 0.62† | 0.70† | 0.48† |
| BDE-47 |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  | 0.95† | 0.92† | 0.49† | 0.50† | 0.73† | 0.65† | 0.77† | 0.51† |
| BDE-99 |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  | 0.90† | 0.47† | 0.47† | 0.71† | 0.69† | 0.78† | 0.47† |
| BDE-100 |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  | 0.66† | 0.41† | 0.62† | 0.58† | 0.73† | 0.62† |
| BDE-153 |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  | 0.23\* | 0.28\*\* | 0.27\*\* | 0.38† | 0.87† |
| 8 years | BDE-28 |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  | 0.78† | 0.73† | 0.76† | 0.47† |
| BDE-47 |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  | 0.94† | 0.93† | 0.43† |
| BDE-99 |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  | 0.92† | 0.43† |
| BDE-100 |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  | 0.55† |
| BDE-153 |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |

\* *p* < 0.05, \*\* *p* < 0.01, # *p* < 0.001, † *p* < 0.0001.

∑PBDEs: Sum of BDE-28, -47, -99, -100, and -153.

a Original, non-imputed data

b Total *n* for each of the pairwise correlations: PBDEs at 1 year (79-114); PBDEs at 2 years (50-91); PBDEs at 3 years (49-92); PBDEs at 5 years (132-164); PBDEs at 8 years (185-192); PBDEs at 1 and 2 years (38-92); PBDEs at 1 and 3 years (37-92); PBDEs at 1 and 5 years (36-70); PBDEs at 1 and 8 years (47-75); PBDEs at 2 and 3 years (30-92); PBDEs at 2 and 5 years (24-56); PBDEs at 2 and 8 years (34-59); PBDEs at 3 and 5 years (24-56); PBDEs at 3 and 8 years (28-59); PBDEs at 5 and 8 years (101-130).

**Supplemental Table S3.** Comparing maternal and child characteristics of participants included (n=208) and excluded (n=182) in the examination of childhood polybrominated diphenyl ethers and neurobehavior children at 8 years, HOME Studya

|  |  |  |
| --- | --- | --- |
|  | **Included** | **Excluded** |
| **n** | **(%)** | **n** | **(%)** |
| Maternal age, years |  |  |  |  |
|  <25 | 59 | (28.5) | 37 | (20.3) |
|  25-34 | 117 | (56.5) | 114 | (62.6) |
|  ≥35 | 31 | (15.0) | 31 | (17.0) |
| Race/ethnicity |  |  |  |  |
|  Non-Hispanic White | 122 | (58.9) | 115 | (65.0) |
|  Non-Hispanic Black and Others | 85 | (40.1) | 62 | (35.0) |
| Family Income |  |  |  |  |
|  <$40,000 | 89 | (43.0) | 64 | (36.2) |
|  $40,000-$79,999 | 65 | (31.4) | 63 | (35.6) |
|  ≥$80,000 | 53 | (25.6) | 50 | (25.6) |
| Maternal Depression |  |  |  |  |
|  Minimal/mild | 185 | (90.2) | 164 | (93.2) |
|  Moderate/severe | 20 | (9.8) | 12 | (6.8) |
| Maternal Smoking |  |  |  |  |
|  None | 171 | (82.6) | 150 | (82.4) |
|  ETS | 19 | (9.2) | 16 | (8.8) |
|  Active | 17 | (8.2) | 16 | (8.8) |
| Home Observation for Measurement of the Environment score |  |  |  |  |
|  ≥40 | 118 | (61.5) | 101 | (71.1) |
|  35-39 | 40 | (20.8) | 24 | (16.9) |
|  <35 | 34 | (17.7) | 17 | (12.0) |
| Marital statusb |  |  |  |  |
|  Married/living with partner | 151 | (73.0) | 153 | (86.4) |
|  Not married, living alone | 56 | (27.1) | 24 | (13.6) |
| Child Sex |  |  |  |  |
|  Male | 93 | (44.7) | 89 | (48.9) |
|  Female | 115 | (55.3) | 93 | (51.1) |
|  |  |  |
| Maternal IQ | Mean (SD) | Mean (SD) |
|  | 105.6 (15.5) | 108.5 (13.1) |
|  |  |  |
| Prenatal BDE-47 (ng/g lipid) | GM (GSD) | GM (GSD) |
|  | 22.1 (2.5) | 18.9 (2.7) |

a Percentages may not add to 100% due to rounding.

b *p* < 0.05

**Supplemental Table S4.** Associations between concentrations of polybrominated diphenyl ethers (ng/g lipid) and WISC FSIQ and BASC-2 Externalizing Problems scores at 8 years by child sex, HOME Studya

|  |  |  |
| --- | --- | --- |
| PBDEs  | FSIQ | Externalizing Problems |
|  | Males | Females |  | Males | Females |
| *p*int | β (95% CI) | β (95% CI) | *p*int | β (95% CI) | β (95% CI) |
| ***BDE-28*** |  |  |  |  |  |  |
|  1 year | 0.722 | -0.9 (-8.1, 6.4) | 0.9 (-6.3, 8.0) | 0.996 | 5.5 (-0.7, 11.6) | 3.3 (-2.5, 9.1) |
|  2 years | 0.460 | 0.4 (-8.6, 9.5) | -1.0 (-10.3, 8.2) | 0.479 | 0.6 (-6.1, 7.3) | 2.5 (-4.2, 9.2) |
|  3 years | 0.704 | -8.7 (-15.8, -1.5) | -7.3 (-14.9, 0.4) | 0.778 | 1.6 (-3.8, 7.0) | -2.1 (-8.2, 4.0) |
|  5 years | 0.737 | -5.4 (-12.4, 1.5) | -3.7 (-10.7, 3.4) | 0.634 | -1.0 (-6.1, 4.1) | -5.6 (-10.9, -0.3) |
|  8 years | 0.435 | -4.3 (-11.3, 2.8) | -0.03 (-8.6, 8.5) | 0.588 | 5.5 (0.2, 10.8) | 3.4 (-2.7, 9.5) |
| ***BDE-47*** |  |  |  |  |  |  |
|  1 year | 0.239 | -2.8 (-9.3, 3.7) | 1.3 (-5.0, 7.6) | 0.630 | 1.0 (-3.9, 5.9) | 0.1 (-4.6, 4.7) |
|  2 years | 0.238 | -4.1 (-10.6, 2.4) | 0.02 (-6.1, 6.1) | 0.606 | -0.1 (-4.6, 4.4) | -1.0 (-5.4, 3.3) |
|  3 years | 0.378 | -5.3 (-11.7, 1.1) | -0.7 (-6.6, 5.3) | 0.718 | 0.1 (-4.8, 5.0) | -1.0 (-5.6, 3.5) |
|  5 years | 0.581 | -4.3 (-9.6, 1.0) | 0.9 (-4.5, 6.3) | 0.878 | 0.3 (-3.6, 4.1) | -1.1 (-4.9, 2.7) |
|  8 years | 0.053\* | -5.6 (-11.0, -0.2) | 0.6 (-5.1, 6.3) | 0.485 | 4.2 (0.4, 8.0)  | 2.6 (-1.5, 6.7) |
| ***BDE-99*** |  |  |  |  |  |  |
|  1 year | 0.158 | -3.5 (-9.6, 2.6) | 0.04 (-6.0, 6.0) | 0.655 | 1.1 (-3.0, 5.3) | 0.8 (-3.3, 4.9) |
|  2 years | 0.191 | -2.9 (-9.5, 3.7) | 0.9 (-5.1, 6.9) | 0.693 | -0.1 (-4.1, 3.9) | -0.5 (-4.2, 3.2) |
|  3 years | 0.345 | -4.8 (-10.9, 1.3) | -0.04 (-5.6, 5.6) | 0.786 | -0.2 (-4.3, 3.8) | -0.9 (-4.7, 2.9) |
|  5 years | 0.587 | -4.3 (-9.5, 0.9) | 1.6 (-3.4, 6.6) | 0.880 | 0.5 (-3.3, 4.4) | -0.4 (-4.1, 3.3) |
|  8 years | 0.025\* | -6.0 (-11.0, -1.0) | 1.4 (-4.0, 6.8) | 0.612 | 2.8 (-0.9, 6.5) | 1.6 (-2.3, 5.5) |
| ***BDE-100*** |  |  |  |  |  |  |
|  1 year | 0.305 | -4.4 (-11.3, 2.5) | -0.4 (-6.8, 6.0) | 0.780 | 1.2 (-4.0, 6.4) | 0.6 (-4.2, 5.5) |
|  2 years | 0.297 | -4.4 (-10.8, 2.0) | -0.3 (-6.2, 5.5) | 0.750 | -1.2 (-6.0, 3.6) | -1.7 (-6.2, 2.9) |
|  3 years | 0.376 | -6.2 (-12.3, -0.1) | -1.7 (-7.3, 3.8) | 0.813 | -0.6 (-5.2, 4.0) | -1.2 (-5.6, 3.1) |
|  5 years | 0.570 | -6.7 (-12.4, -1.0) | -1.3 (-6.9, 4.2) | 0.960 | -0.2 (-4.3, 3.9) | -1.3 (-5.4, 2.9) |
|  8 years | 0.052\* | -5.4 (-11.0, 0.2) | 1.7 (-4.4, 7.8) | 0.658 | 3.3 (-0.9, 7.4) | 2.1 (-2.3, 6.6)  |
| ***BDE-153*** |  |  |  |  |  |  |
|  1 year | 0.971 | -4.9 (-10.9, 1.0) | -2.3 (-8.1, 3.4) | 0.909 | 7.3 (3.1, 11.5) | 1.0 (-3.0, 5.1) |
|  2 years | 0.971 | -6.9 (-13.1, -0.8) | -4.4 (-10.1, 1.4) | 0.979 | 4.8 (0.5, 9.1) | -1.1 (-5.4, 3.1) |
|  3 years | 0.893 | -8.9 (-14.4, -3.4) | -6.7 (-12.2, -1.3) | 0.895 | 4.5 (0.6, 8.5) | -1.3 (-5.2, 2.7) |
|  5 years | 0.889 | -9.3 (-15.1, -3.5) | -7.2 (-13.1, -1.2) | 0.990 | 4.5 (0.4, 8.7) | -1.5 (-5.8, 2.8) |
|  8 years | 0.395 | -6.8 (-12.8, -0.9) | -4.4 (-10.6, 1.9) | 0.005\* | 7.2 (2.9, 11.5) | 1.2 (-3.3, 5.7) |
| ***∑PBDEs*** |  |  |  |  |  |  |
|  1 year | 0.274 | -5.4 (-12.1, 1.4) | -0.04 (-6.5, 6.4) | 0.496 | 3.9 (-0.9, 8.7) | 1.2 (-3.4, 5.8) |
|  2 years | 0.274 | -6.2 (-12.7, 0.3) | -0.9 (-6.9, 5.1) | 0.468 | 1.7 (-2.9, 6.3) | -1.0 (-5.3, 3.3) |
|  3 years | 0.419 | -8.1 (-14.3, -2.0) | -2.4 (-8.1, 3.3) | 0.611 | 1.7 (-2.8, 6.2) | -1.2 (-5.5, 3.1) |
|  5 years | 0.664 | -7.6 (-13.4, -1.7) | -1.2 (-7.1, 4.6) | 0.838 | 1.8 (-2.4, 6.0) | -1.5 (-5.7, 2.8) |
|  8 years | 0.026\* | -7.4 (-13.2, -1.6) | -0.5 (-6.7, 5.8) | 0.123 | 6.0 (1.7, 10.2) | 2.5 (-2.0, 7.0) |

a Adjusted by maternal age, race/ethnicity, marital status, maternal serum cotinine, maternal IQ, child sex, maternal depression, household income, and HOME Score

**Supplemental Table S5.** Estimated score differences and 95% CIs in WISC FSIQ and BASC-2 Externalizing Problems and its subscales at 8 years by a 10-fold increase in childhood polybrominated diphenyl ether concentrations in the non-imputation-based analysis using multiple linear regression, HOME Studya

|  |  |
| --- | --- |
|  | Multiple Linear Regression Modeling |
| PBDEs | FSIQ | Externalizing Problemsb | Hyperactivity | Aggression |
| β (95% CI) | β (95% CI) | β (95% CI) | β (95% CI) |
| ***BDE-28*** |  |  |  |  |
|  1 year | 3.9 (-10.9, 18.7) | 4.5 (-3.2, 12.2) | 0.1 (-8.9, 9.1) | 7.0 (-0.8, 14.8) |
|  2 years | -1.6 (-18.6, 15.4) | -0.1 (-7.1, 6.9) | -5.4 (-13.9, 3.0) | 2.4 (-6.5, 11.3) |
|  3 years | -11.5 (-30.3, 7.2) | -4.5 (-16.0, 7.0) | -4.9 (-14.8, 5.0) | -4.7 (-16.4, 7.0) |
|  5 years | -3.5 (-11.7, 4.7) | -4.4 (-9.6, 0.8) | -5.2 (-10.4, -0.1) | -1.3 (-6.6, 4.0) |
|  8 years | -3.1 (-9.0, 2.7) | 5.2 (0.9, 9.5) | 5.5 (1.0, 9.9) | 4.8 (0.5, 9.0) |
| ***BDE-47*** |  |  |  |  |
|  1 year | -0.2 (-8.9, 8.4) | -1.4 (-7.3, 4.5) | -4.1 (-9.9, 1.7) | 1.9 (-4.0, 7.8) |
|  2 years | -4.8 (-14.0, 4.4) | -1.7 (-8.4, 4.9) | -4.2 (-10.8, 2.5) | 1.5 (-5.4, 8.5) |
|  3 years | -6.4 (-15.2, 2.4) | -1.4 (-7.9, 5.0) | -3.0 (-9.5, 3.5) | 0.9 (-5.9, 7.7) |
|  5 years | -1.4 (-7.5, 4.6) | -0.9 (-5.2, 3.3) | -1.1 (-5.2, 3.0) | 1.5 (-2.8, 5.8) |
|  8 years | -2.1 (-7.1, 2.9) | 3.9 (0.2, 7.6) | 2.6 (-1.2, 6.4) | 4.9 (1.3, 8.5) |
| ***BDE-99*** |  |  |  |  |
|  1 year | -3.0 (-11.0, 5.0) | -0.3 (-5.8, 5.3) | -2.2 (-7.7, 3.2) | 2.0 (-3.6, 7.5) |
|  2 years | -3.4 (-11.9, 5.0) | -1.0 (-7.1, 5.2) | -2.3 (-8.5, 3.9) | 1.2 (-5.3, 7.7) |
|  3 years | -5.8 (-13.9, 2.3) | -1.1 (-7.1, 4.9) | -1.9 (-7.9, 4.2) | 0.5 (-5.8, 6.8) |
|  5 years | -1.2 (-6.8, 4.4) | -0.7 (-4.6, 3.3) | -0.9 (-4.8, 2.9) | 1.5 (-2.4, 5.5) |
|  8 years | -1.7 (-6.5, 3.1) | 2.7 (-0.8, 6.3) | 1.8 (-1.9, 5.4) | 3.8 (0.4, 7.3) |
| ***BDE-100*** |  |  |  |  |
|  1 year | -2.0 (-11.2, 7.3) | -2.0 (-8.1, 4.1) | -4.4 (-10.4, 1.6) | 1.1 (-5.0, 7.3) |
|  2 years | -3.5 (-13.4, 6.4) | -4.3 (-11.1, 2.6) | -5.7 (-12.6, 1.3) | -1.8 (-9.1, 5.4) |
|  3 years | -7.4 (-16.6, 1.9) | -2.9 (-9.7, 3.8) | -4.3 (-11.1, 2.4) | -0.8 (-7.9, 6.4) |
|  5 years | -4.4 (-10.9, 2.2) | -1.5 (-6.1, 3.1) | -1.0 (-5.4, 3.5) | 0.7 (-4.0, 5.3) |
|  8 years | -1.7 (-6.9, 3.5) | 3.1 (-0.7, 7.0) | 2.7 (-1.2, 6.7) | 3.6 (-0.1, 7.4) |
| ***BDE-153*** |  |  |  |  |
|  1 year | -0.5 (-8.9, 7.8) | 0.7 (-4.8, 6.2) | 0.1 (-5.3, 5.6) | 1.4 (-4.1, 6.9) |
|  2 years | -0.7 (-11.2, 9.7) | -3.0 (-10.2, 4.2) | -2.5 (-9.8, 4.8) | -3.0 (-10.6, 4.6) |
|  3 years | -5.6 (-16.1, 4.9) | -2.6 (-9.9, 4.7) | -2.2 (-9.5, 5.2) | -2.8 (-10.5, 4.8) |
|  5 years | -9.6 (-17.0, -2.1) | -1.5 (-6.8, 3.7)  | -0.2 (-5.2, 4.9) | 0.2 (-5.1, 5.4) |
|  8 years | -4.9 (-10.8, 0.9) | 4.6 (0.3, 8.9) | 5.4 (1.0, 9.8) | 3.7 (-0.5, 8.0) |
| ***∑PBDEs*** |  |  |  |  |
|  1 year | -1.4 (-14.6, 11.9) | 2.2 (-4.5, 9.0) | -0.2 (-8.0, 7.6) | 3.7 (-3.2, 10.7) |
|  2 years | 2.4 (-14.7, 19.5) | -0.3 (-6.9, 6.3) | -4.5 (-12.5, 3.5) | 1.6 (-6.8, 10.0) |
|  3 years | -8.1 (-26.9, 10.7) | -5.2 (-16.4, 6.0) | -5.5 (-15.1, 4.2) | -6.1 (-17.4, 5.2) |
|  5 years | -3.4 (-11.4, 4.6) | -2.3 (-7.4, 2.8) | -2.5 (-7.6, 2.6) | 0.4 (-4.7, 5.6) |
|  8 years | -3.7 (-9.5, 2.2) | 4.6 (0.3, 8.9) | 3.8 (-0.7, 8.2) | 5.3 (1.1, 9.5) |

a Adjusted by maternal age, race/ethnicity, marital status, maternal serum cotinine, maternal IQ, child sex, maternal depression, household income, and HOME Score.

b Externalizing Problems: Hyperactivity + Aggression + Conduct Disorder