**Supplemental Material**

**Polybrominated diphenyl ether (PBDE) exposure and thyroid hormones in children at age 3 years**

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**Supplemental Table S1.** Postnatal PBDE measurements in the HOME Study by availability for 162 children included in the study

|  |  |  |  |
| --- | --- | --- | --- |
|  | Visit | | |
|  | 1 year | 2 years | 3 years |
| Measured | 77 (48%) | 71 (44%) | 71 (44%) |
| Follow-up visit completed, but limited serum available | 80 (49%) | 80 (49%) | 86 (53%) |
| No follow-up visit completed | 5 (3%) | 11 (7%) | 5 (3%) |

**Supplemental Table S2.** Comparing maternal and child characteristics of participants included (n=162) and excluded (n=228) in the examination of polybrominated diphenyl ethers (PBDEs) and thyroid hormones in children at age 3 years, HOME Studya

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
|  | **Included** | | **Excluded** | |
| **n** | **(%)** | **n** | **(%)** |
| Maternal age, yearsb |  |  |  |  |
| <25 | 28 | (17.3) | 68 | (30.0) |
| 25-34 | 108 | (66.7) | 123 | (54.2) |
| ≥35 | 26 | (16.1) | 36 | (15.9) |
| Race/ethnicityb |  |  |  |  |
| Non-Hispanic White | 115 | (71.0) | 122 | (55.0) |
| Non-Hispanic Black and Others | 47 | (29.0) | 100 | (45.0) |
| Educationb |  |  |  |  |
| High school or less | 32 | (19.8) | 68 | (30.6) |
| Some college or 2 year degree | 33 | (20.4) | 60 | (27.0) |
| Bachelor’s | 60 | (37.0) | 50 | (22.5) |
| Graduate or professional | 37 | (22.8) | 44 | (19.8) |
| Parity |  |  |  |  |
| Nulliparous | 75 | (46.3) | 96 | (42.7) |
| Primiparous | 53 | (32.7) | 71 | (31.6) |
| Multiparous | 34 | (21.0) | 58 | (25.8) |
| Maternal Vitamin Useb |  |  |  |  |
| Daily | 135 | (83.3) | 159 | (71.6) |
| <Daily | 20 | (12.4) | 43 | (19.4) |
| Never | 7 | (4.3) | 20 | (9.0) |
| Maternal alcohol consumption |  |  |  |  |
| Never | 84 | (51.9) | 132 | (59.5) |
| <1 per month | 54 | (33.3) | 61 | (27.5) |
| >1 per month | 24 | (14.8) | 29 | (13.1) |
| Maternal Smokingb |  |  |  |  |
| None | 142 | (87.7) | 179 | (78.9) |
| ETS | 8 | (4.9) | 27 | (11.9) |
| Active | 12 | (7.4) | 21 | (9.3) |
| Maternal BMI |  |  |  |  |
| Underweight/Normal | 68 | (42.0) | 97 | (42.7) |
| Overweight | 57 | (35.2) | 71 | (31.3) |
| Obese | 37 | (22.8) | 59 | (26.0) |
| Child Sex |  |  |  |  |
| Male | 76 | (46.9) | 106 | (46.5) |
| Female | 86 | (53.1) | 122 | (53.5) |
|  |  | |  | |
|  | Mean (SD) | | Mean (SD) | |
| Maternal Serum ∑PCBs (ng/g lipid) | 53.0 (30.3) | | 53.0 (49.5) | |
| Maternal Blood Lead (ug/dL)b | 0.68 (0.31) | | 0.77 (0.35) | |
| Maternal Serum BDE-47 (ng/g lipid) | 43.9 (114.2) | | 31.9 (46.7) | |

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

b *p* < 0.05

**Supplemental Table S3.** β-coefficients and 95% CIs from multiple informant models for associations of PBDEs (ng/g lipid) and total and free T3 at age 3 years, HOME Study

|  |  |  |
| --- | --- | --- |
| PBDEs | TT3 | FT3 |
| β (95% CI) | β (95% CI) |
| ***BDE-28*** |  |  |
| Prenatal | -3.74 (-17.67, 10.19) | 0.17 (-0.06, 0.40) |
| 1 year | 12.79 (-5.49, 31.07) | -0.13 (-0.42, 0.16) |
| 2 years | 38.40 (-9.31, 86.11) | 2.53 (-0.81, 5.88) |
| 3 years | -20.94 (-50.28, 8.40) | -0.15 (-0.71, 0.41) |
|  |  |  |
| ***BDE-47*** |  |  |
| Prenatal | -2.92 (-13.94, 8.11) | 0.19 (-0.01, 0.39) |
| 1 year | -19.44 (-37.65, -1.23) | -0.26 (-0.67, 0.15) |
| 2 years | -13.58 (-41.39, 14.22) | 0.07 (-0.31, 0.46) |
| 3 years | -21.14 (-43.70, 1.42) | 0.11 (-0.15, 0.37) |
|  |  |  |
| ***BDE-99*** |  |  |
| Prenatal | -0.77 (-10.38, 8.85) | 0.26 (0.06, 0.45) |
| 1 year | -3.39 (-23.43, 16.65) | 0.06 (-0.16, 0.28) |
| 2 years | -11.85 (-32.44, 8.75) | 0.16 (-0.12, 0.43) |
| 3 years | -18.17 (-36.43, 0.09) | 0.14 (-0.07, 0.35) |
|  |  |  |
| ***BDE-100*** |  |  |
| Prenatal | -2.92 (-12.99, 7.15) | 0.17 (-0.03, 0.36) |
| 1 year | -4.23 (-26.93, 18.47) | -0.15 (-0.45, 0.15) |
| 2 years | -6.83 (-28.08, 14.43) | -0.003 (-0.32, 0.31) |
| 3 years | -12.34 (-31.60, 6.92) | 0.04 (-0.22, 0.29) |
|  |  |  |
| ***BDE-153*** |  |  |
| Prenatal | -4.83 (-15.34, 5.67) | 0.02 (-0.17, 0.21) |
| 1 year | -4.58 (-23.40, 14.25) | -0.13 (-0.35, 0.10) |
| 2 years | -9.97 (-22.91, 2.96) | 0.02 (-0.21, 0.25) |
| 3 years | -12.20 (-25.79, 1.38) | 0.01 (-0.22, 0.25) |
|  |  |  |
| ***∑PBDEs*** |  |  |
| Prenatal | -1.21 (-13.32, 10.90) | 0.25 (0.07, 0.43) |
| 1 year | 1.83 (-24.13, 27.78) | -0.16 (-0.60, 0.28) |
| 2 years | 14.27 (-20.67, 49.21) | 0.66 (-0.11, 1.42) |
| 3 years | -20.17 (-45.11, 4.76) | -0.06 (-0.53, 0.41) |

Units: TT3 (ng/dL), FT3 (pg/mL)

a PBDEs were log10-transformed

b Adjusted by maternal age, race/ethnicity, education, smoking status during pregnancy, alcohol consumption during pregnancy, vitamin use, maternal BMI, parity, maternal serum ∑PCBs, and child sex.

**Supplemental Table S4.** β-coefficients and 95% CIs from multiple informant models for associations of PBDEs (ng/g lipid) and thyroid hormones at age 3 years using imputed data, HOME Study

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| PBDEs | lnTSH | TT4 | TT3 | FT4 | FT3 |
| β (95% CI) | β (95% CI) | β (95% CI) | β (95% CI) | β (95% CI) |
| ***BDE-28*** |  |  |  |  |  |
| Prenatal | -0.20 (-0.39, 0.001) | -0.06 (-0.60, 0.48) | -1.64 (-14.17, 10.89) | -0.003 (-0.05, 0.05) | 0.13 (-0.11, 0.38) |
| 1 year | -0.05 (-0.25, 0.15) | -0.12 (-0.68, 0.44) | 2.04 (-10.58, 14.65) | -0.005 (-0.06, 0.05) | -0.003 (-0.25, 0.24) |
| 2 years | 0.06 (-0.19, 0.32) | -0.07 (-0.81, 0.66) | 3.42 (-14.12, 20.96) | 0.01 (-0.06, 0.07) | 0.07 (-0.26, 0.39) |
| 3 years | 0.15 (-0.07, 0.38) | -0.29 (-0.94, 0.35) | -2.12 (-17.64, 13.40) | -0.001 (-0.06, 0.06) | -0.01 (-0.31, 0.28) |
|  |  |  |  |  |  |
| ***BDE-47*** |  |  |  |  |  |
| Prenatal | -0.20 (-0.38, -0.03) | 0.11 (-0.37, 0.58) | -0.88 (-11.58, 9.83) | -0.01 (-0.05, 0.04) | 0.14 (-0.07, 0.35) |
| 1 year | 0.07 (-0.15, 0.29) | 0.12 (-0.58, 0.81) | -8.20 (-25.74, 9.35) | 0.02 (-0.05, 0.08) | -0.06 (-0.43, 0.31) |
| 2 years | 0.11 (-0.11, 0.33) | 0.03 (-0.62, 0.69) | -11.23 (-27.64, 5.18) | 0.003 (-0.06, 0.06) | -0.03 (-0.37, 0.32) |
| 3 years | 0.05 (-0.16, 0.26) | -0.12 (-0.76, 0.52) | -14.93 (-31.57, 1.72) | -0.01 (-0.07, 0.05) | -0.05 (-0.39, 0.30) |
|  |  |  |  |  |  |
| ***BDE-99*** |  |  |  |  |  |
| Prenatal | -0.15 (-0.32, 0.01) | 0.10 (-0.36, 0.55) | 1.18 (-9.05, 11.41) | -0.002 (-0.04, 0.04) | 0.18 (-0.02, 0.38) |
| 1 year | 0.06 (-0.14, 0.26) | 0.01 (-0.58, 0.59) | -3.23 (-17.59, 11.13) | 0.01 (-0.05, 0.06) | 0.03 (-0.26, 0.32) |
| 2 years | 0.07 (-0.12, 0.26) | -0.02 (-0.59, 0.54) | -7.26 (-20.39, 5.87) | -0.004 (-0.05, 0.05) | 0.01 (-0.01, 0.04) |
| 3 years | 0.03 (-0.16, 0.21) | -0.13 (-0.68, 0.42) | -9.20 (-23.24, 4.83) | 0.03 (-0.02, 0.07) | -0.01 (-0.29, 0.28) |
|  |  |  |  |  |  |
| ***BDE-100*** |  |  |  |  |  |
| Prenatal | -0.22 (-0.39, -0.05**)** | 0.14 (-0.33, 0.61) | -1.26 (-11.76, 9.24) | -0.02 (-0.06, 0.02) | 0.13 (-0.07, 0.33) |
| 1 year | -0.01 (-0.23, 0.22) | -0.07 (-0.74, 0.60) | -3.19 (-18.12, 11.74) | -0.01 (-0.07, 0.05) | -0.05 (-0.35, 0.26) |
| 2 years | 0.05 (-0.16, 0.26) | -0.09 (-0.73, 0.54) | -6.66 (-21.38, 8.07) | -0.01 (-0.07, 0.05) | -0.07 (-0.39, 0.24) |
| 3 years | 0.05 (-0.16, 0.25) | -0.19 (-0.80, 0.41) | -9.12 (-23.79, 5.56) | -0.02 (-0.07, 0.04) | -0.07 (-0.38, 0.25) |
|  |  |  |  |  |  |
| ***BDE-153*** |  |  |  |  |  |
| Prenatal | -0.20 (-0.36, -0.03) | 0.15 (-0.31, 0.62) | -4.08 (-14.79, 6.62) | -0.03 (-0.08, 0.01) | 0.02 (-0.19, 0.23) |
| 1 year | -0.09 (-0.28, 0.09) | 0.04 (-0.47, 0.55) | -2.40 (-13.90, 9.09) | -0.01 (-0.06, 0.04) | -0.04 (-0.27, 0.19) |
| 2 years | -0.05 (-0.26, 0.16) | 0.07 (-0.50, 0.63) | -3.96 (-16.98, 9.06) | -0.01 (-0.07, 0.04) | -0.04 (-0.31, 0.23) |
| 3 years | -0.04 (-0.24, 0.16) | 0.11 (-0.44, 0.66) | -4.83 (-17.52, 7.87) | -0.02 (-0.07, 0.04) | -0.05 (-0.30, 0.21) |
|  |  |  |  |  |  |
| ***∑PBDEs*** |  |  |  |  |  |
| Prenatal | -0.24 (-0.42, -0.05) | 0.07 (-0.43, 0.58) | -2.16 (-13.35, 9.02) | -0.01 (-0.06, 0.03) | 0.14 (-0.08, 0.36) |
| 1 year | 0.03 (-0.21, 0.26) | 0.07 (-0.66, 0.79) | -8.39 (-26.47, 9.68) | 0.01 (-0.06, 0.08) | -0.05 (-0.43, 0.32) |
| 2 years | 0.06 (-0.17, 0.29) | -0.01 (-0.71, 0.68) | -12.88 (-30.03, 4.28) | -0.01 (-0.07, 0.06) | -0.06 (-0.42, 0.30) |
| 3 years | 0.01 (-0.20, 0.23) | -0.16 (-0.82, 0.50) | -15.20 (-32.14, 1.75) | -0.02 (-0.08, 0.04) | -0.08 (-0.44, 0.28) |

Units: TSH (uIU/mL), TT4 (µg/dL), TT3 and FT4 (ng/dL), FT3 (pg/mL)

a PBDEs were log10-transformed

b Adjusted by maternal age, race/ethnicity, education, smoking status during pregnancy, alcohol consumption during pregnancy, vitamin use, maternal BMI, parity, maternal serum ∑PCBs, and child sex.