**Prenatal Concentrations of Perfluoroalkyl Substances and Bone Health in British Girls at Age 17**

**(Supplementary Material)**

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**Supplemental Table 1. Regression coefficients for the association between maternal serum PFAS concentrations (ng/mL) during pregnancy and daughter’s physiological characteristics at 17 years of age (n=221)**

|  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- |
|  | Total Fat Mass (g) | | Total Lean Mass (g) | | Height (cm) | |
|  | β | 95% CI | β | 95% CI | β | 95% CI |
| PFOS a | -56.00 | (-192.76, 80.75) | -75.61 | (-131.12, -20.10) | -0.11 | (-0.19, -0.02) |
| PFOA a | 105.88 | (-621.59, 833.34) | -23.95 | (-323.77, 275.87) | -0.60 | (-1.06, -0.14) |
| PFHxS a | -61.45 | (-297.22, 174.31) | -99.91 | (-196.18, -3.63) | -0.09 | (-0.24, 0.06) |
| PFNAa | -4229.72 | (-10050.00, 1591.01) | -1119.89 | (-3535.31, 1285.53) | -5.20 | (-8.88, -1.52) |

a Adjusted for maternal pre-pregnancy BMI, maternal education, maternal age at delivery, gestational age at sample collection, and ever breastfed status at 15 months

**Supplemental Table 2. Mean and standard deviation of plasma concentrations of β-C-telopeptides of type I collagen (CTX) at 15 years of age and a tibial peripheral quantitative computerized topography measures at 17 years of age**

|  |  |  |  |
| --- | --- | --- | --- |
|  | N | Mean | SD |
| CTX (ng/mL) | 120 | 0.66 | 0.25 |
| Cortical Bone Area (cm2) | 230 | 271.02 | 36.26 |
| Cortical Bone Mineral Content(mg) | 230 | 307.79 | 41.43 |
| Cortical Bone Mineral Density (mg.cm-2) | 230 | 1135.72 | 24.95 |
| Periosteal Circumference (mm) | 230 | 68.45 | 4.49 |
| Cortical Thickness (mm) | 230 | 5.20 | 0.58 |
| Endosteal Circumference (mm) | 230 | 35.76 | 4.55 |
| Total Hip Bone Mineral Density (g/cm2) | 244 | 1.06 | 0.13 |
| Total Femoral Neck Bone Mineral Density (g/cm2) | 250 | 1.05 | 0.13 |

**Supplemental Table 3. Regression coefficients (β) for the association between maternal PFAS concentration (ng/mL) and β-C-telopeptides of type I collagen in daughters at 15 years of age (n=116)**

|  |  |  |
| --- | --- | --- |
|  | β-C-telopeptides of type I collagen (ng/mL) | |
|  | β | 95% CI |
| PFOS |  |  |
| Model 1a | -0.003 | (-0.008, 0.002) |
| PFOA |  |  |
| Model 1a | -0.013 | (-0.039, 0.012) |
| PFHxS |  |  |
| Model 1a | -0.004 | (-0.011, 0.003) |
| PFNA |  |  |
| Model 1a | -0.123 | (-0.397, 0.149) |

**Supplemental Table 4. Regression coefficients (β) for the association between maternal PFAS concentration (ng/mL) and tibial peripheral quantitative computerized topography measures in daughters at 17 years of age (n=222)**

|  |  |  |  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
|  | Cortical Bone Area (cm^2) | | Cortical Bone Mineral Content(mg) | | Cortical Bone Mineral Density (mg.cm^-2) | | Periosteal Circumference (mm) | | Cortical thickness (mm) | | Endosteal Circumference (mm) | |
|  | β | 95% CI | β | 95% CI | β | 95% CI | β | 95% CI | β | 95% CI | β | 95% CI |
| PFOS |  |  |  |  |  |  |  |  |  |  |  |  |
| Model 1a | -0.11 | (-0.62, 0.41) | -0.19 | (-0.78, 0.41) | -0.24 | (-0.53, 0.06) | -0.01 | (-0.08, 0.06) | 0.001 | (-0.01, 0.01) | 0.004 | (-0.07, 0.07) |
| PFOA |  |  |  |  |  |  |  |  |  |  |  |  |
| Model 1a | 0.14 | (-2.57, 2.85) | -0.12 | (-3.23, 2.99) | -1.03 | (-2.59, 0.53) | -0.01 | (-0.36, 0.35) | 0.004 | (-0.04, 0.05) | -0.03 | (-0.40, 0.33) |
| PFHxS |  |  |  |  |  |  |  |  |  |  |  |  |
| Model 1a | -0.06 | (-0.95, 0.81) | -0.05 | (-1.06, 0.95) | 0.07 | (-0.44, 0.58) | -0.01 | (-0.13, 0.10) | 0.000 | (-0.01, 0.01) | -0.02 | (-0.13, 0.10) |
| PFNA |  |  |  |  |  |  |  |  |  |  |  |  |
| Model 1a | -6.51 | (-27.28, 14.26) | -9.99 | (-33.78, 13.80) | -10.19 | (-22.13, 1.75) | -1.87 | (-4.56, 0.83) | 0.048 | (-0.28, 0.38) | -2.16 | (-4.95, 0.62) |
| a Adjusted for age at clinic visit, maternal education, and gestational age at sample collection | | | | | | | | | | | | |

**Supplemental Table 5. Regression coefficients (β) for the association between maternal PFAS concentration (ng/mL) and measures from dual energy X-ray absorptiometry (DXA) of the hip in daughters at 17 years of age (n=222)**

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
|  | Total hip bone mineral density (g/cm2) (n=236) | | Total femoral neck bone mineral density (g/cm2) (n=242) | |
|  | β | 95% CI | β | 95% CI |
| PFOS |  |  |  |  |
| Model 1a | -0.001 | (-0.003, 0.001) | -0.001 | (-0.003, 0.001) |
| PFOA |  |  |  |  |
| Model 1a | -0.003 | (-0.012, 0.006) | -0.003 | (-0.013, 0.006) |
| PFHxS |  |  |  |  |
| Model 1a | 0.000 | (-0.003, 0.003) | -0.001 | (-0.004, 0.002) |
| PFNA |  |  |  |  |
| Model 1a | 0.012 | (-0.059, 0.083) | -0.023 | (-0.095, 0.050) |

a Adjusted for age at clinic visit, maternal education, and gestational age at sample collection