**Supplemental Table 1.** Adjusteda models of maternal perfluoroalkyl substance serum concentrations (ng/mL) and absolute gestational weight gain, stratified by under-/normal weight pre-pregnancy BMI and overweight/obese pre-pregnancy BMI, in the Avon Longitudinal Study of Parents and Children sub-study population (N=905).

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| --- | --- | --- | --- | --- | --- | --- | --- | --- |
|  |  | **Mothers of Sons** (N=457) | | | **Mothers of Daughters** (N=448) | | | |
|  | **Model** | **Coeffi-**  **cient**b | **95% CI** | **p-value** | | **Coeffi-**  **cient**b | **95% CI** | **p-value** | |
| PFOA | *Interaction by pre-pregnancy BMI* | | | 0.29 | |  |  | 0.06 | |
|  | Under-/ Normal Weight | -0.01 | -0.12, 0.10 | 0.86 | | 0.03 | -0.09, 0.14 | 0.67 | |
|  | Overweight/ Obese | -0.09 | -0.42, 0.25 | 0.61 | | -0.28 | -0.57, 0.01 | 0.06 | |
| PFOS | *Interaction by pre-pregnancy BMI* | | | 0.02 | |  |  | 0.41 | |
|  | Under-/ Normal Weight | -0.04 | -0.15, 0.08 | 0.54 | | -0.02 | -0.14, 0.11 | 0.77 | |
|  | Overweight/ Obese | -0.12 | -0.40, 0.16 | 0.41 | | -0.12 | -0.36, 0.12 | 0.32 | |
| PFHxS | *Interaction by pre-pregnancy BMI* | | | 0.26 | |  |  | 0.89 | |
|  | Under-/ Normal Weight | -0.03 | -0.11, 0.05 | 0.44 | | 0.03 | -0.04, 0.09 | 0.42 | |
|  | Overweight/ Obese | -0.01 | -0.15, 0.14 | 0.91 | | 0.04 | -0.10, 0.17 | 0.60 | |
| PFNA | *Interaction by pre-pregnancy BMI* | | | 0.14 | |  |  | 0.01 | |
|  | Under-/ Normal Weight | 0.01 | -0.09, 0.12 | 0.82 | | 0.16 | 0.06, 0.26 | 0.002 | |
|  | Overweight/ Obese | -0.11 | -0.40, 0.17 | 0.43 | | -0.12 | -0.37, 0.13 | 0.36 | |

Abbreviations: N, number; CI, confidence interval a Adjusted for maternal education, prenatal smoking, maternal age at delivery, parity, pre-pregnancy BMI, gestational age at delivery, and gestational age at sample  
b Coefficient representing a 10% increase in the PFAS of interest

**Supplemental Table 2.** Adjusteda models of maternal perfluoroalkyl substance serum concentrations (ng/mL) and absolute gestational weight gain, stratified by pre-pregnancy BMI, in the Avon Longitudinal Study of Parents and Children sub-study population (N=905).

|  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- |
|  |  | **Mothers of Sons** (N=457) | | | **Mothers of Daughters** (N=448) | | |
|  | **Model** | **Coeffi-**  **cient**b | **95% CI** | **p-value** | **Coeffi-**  **cient**b | **95% CI** | **p-value** |
| PFOA | Underweight | 0.23 | -0.16, 0.61 | 0.24 | 0.00 | -0.23, 0.24 | 0.99 |
|  | Normal Weight | -0.04 | -0.17, 0.08 | 0.49 | 0.02 | -0.12, 0.17 | 0.75 |
|  | Overweight | 0.00 | -0.35, 0.36 | 0.98 | -0.13 | -0.70, 0.45 | 0.65 |
|  | Obese | 0.01 | -0.79, 0.81 | 0.98 | -0.37 | -0.78, 0.04 | 0.08 |
| PFOS | Underweight | -0.04 | -0.53, 0.45 | 0.87 | 0.04 | -0.28, 0.36 | 0.80 |
|  | Normal Weight | -0.04 | -0.17, 0.09 | 0.55 | -0.03 | -0.17, 0.11 | 0.71 |
|  | Overweight | 0.13 | -0.20, 0.46 | 0.43 | -0.29 | -0.68, 0.11 | 0.15 |
|  | Obese | -0.27 | -0.75, 0.21 | 0.27 | 0.06 | -0.32, 0.43 | 0.76 |
| PFHxS | Underweight | -0.12 | -0.47, 0.22 | 0.48 | 0.03 | -0.11, 0.17 | 0.70 |
|  | Normal Weight | -0.03 | -0.12, 0.07 | 0.58 | 0.03 | -0.05, 0.11 | 0.40 |
|  | Overweight | 0.11 | -0.06, 0.28 | 0.19 | 0.10 | -0.14, 0.35 | 0.40 |
|  | Obese | -0.06 | -0.32, 0.19 | 0.62 | 0.09 | -0.14, 0.31 | 0.45 |
| PFNA | Underweight | 0.20 | -0.20, 0.61 | 0.32 | 0.27 | -0.04, 0.57 | 0.08 |
|  | Normal Weight | -0.01 | -0.12, 0.10 | 0.86 | 0.15 | 0.04, 0.26 | 0.01 |
|  | Overweight | 0.06 | -0.22, 0.35 | 0.66 | -0.23 | -0.53, 0.07 | 0.14 |
|  | Obese | -0.16 | -1.13, 0.81 | 0.74 | -0.51 | -1.42, 0.39 | 0.27 |

Abbreviations: N, number; CI, confidence interval a Adjusted for maternal education, prenatal smoking, maternal age at delivery, parity, pre-pregnancy BMI, gestational age at delivery, and gestational age at sample  
b Coefficient representing a 10% increase in the PFAS of interest

**Supplemental Table 3.** Adjusteda models of maternal perfluoroalkyl substance serum concentrations (ng/mL) and category of IOM recommended gestational weight gain (below or above recommendations versus reference group: adequate weight gain) in the Avon Longitudinal Study of Parents and Children sub-study population (N=905).

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| --- | --- | --- | --- | --- | --- | --- | --- | --- |
|  |  | **Mothers of Sons** (N=457) | | | **Mothers of Daughters** (N=448) | | | |
|  | **Model** | **OR**b | **95% CI** | **p-value** | **OR**b | **95% CI** | **p-value** |
| PFOA | Belowc | 0.98 | 0.92, 1.04 | 0.47 | 1.02 | 0.97, 1.07 | 0.44 |
|  | Aboved | 0.99 | 0.92, 1.06 | 0.77 | 1.00 | 0.96, 1.04 | 0.97 |
| PFOS | Below | 0.99 | 0.93, 1.06 | 0.80 | 1.05 | 1.01, 1.09 | 0.02 |
|  | Above | 0.99 | 0.91, 1.07 | 0.72 | 0.99 | 0.95, 1.04 | 0.74 |
| PFHxS | Below | 0.99 | 0.95, 1.04 | 0.71 | 1.00 | 0.99, 1.02 | 0.61 |
|  | Above | 0.99 | 0.95, 1.04 | 0.69 | 1.02 | 0.99, 1.05 | 0.28 |
| PFNA | Below | 1.02 | 0.97, 1.08 | 0.48 | 1.01 | 0.96, 1.06 | 0.75 |
|  | Above | 1.01 | 0.95, 1.07 | 0.72 | 1.03 | 0.99, 1.07 | 0.14 |

Abbreviations: N, number; OR, odds ratio; CI, confidence interval; IOM, Institute of Medicine a Adjusted for maternal education, prenatal smoking, maternal age at delivery, parity, pre-pregnancy BMI, gestational age at delivery, and gestational age at sample  
b Represents a 10% increase in the PFAS of interest  
c Below recommendations for IOM recommended gestational weight gain  
d Above recommendations for IOM recommended gestational weight gain