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| **Supplementary Table 1. Natural Direct, Natural Indirect, and Total Effects of Maternal Pre-Pregnancy Overweight/Obesity on Child’s Overweight/Obesity for Measures of Birth Anthropometry and in the Presence of Multiple Mediators among Offspring Born Full-Terma,b** |
|  | **Birth anthropometry** | **Birth anthropometry + gestational weight gain** | **Birth anthropometry + gestational diabetes** | **Birth anthropometry + hypertensive disorders of pregnancy** |
|  | **OR (95% CI)** | **Percent Mediated** | **OR (95% CI)** | **Percent Mediated** | **OR (95% CI)** | **Percent Mediated** | **OR (95% CI)** | **Percent Mediated** |
| **Birthweight** |  |  |  |  |  |  |  |  |
|  Natural direct effect | 1.63 (1.27, 2.08) | 16.20% | 1.65 (1.28, 2.10) | 14.68% | 1.62 (1.26, 2.04) | 16.99% | 1.61 (1.25, 2.06) | 19.08% |
|  Natural indirect effect | 1.07 (1.03, 1.12) | 1.07 (1.02, 1.12) | 1.08 (1.03, 1.12) | 1.09 (1.03, 1.15) |
|  Total effect | 1.75 (1.37, 2.24) | 1.76 (1.37, 2.24) | 1.75 (1.36, 2.20) | 1.75 (1.36, 2.24) |
| **Birth Length** |  |  |  |  |  |  |  |  |
|  Natural direct effect | 1.73 (1.37, 2.22) | 4.22% | 1.76 (1.38, 2.24) | 1.43% | 1.72 (1.33, 2.20) | 5.55% | 1.72 (1.35, 2.18) | 6.61% |
|  Natural indirect effect | 1.02 (1.00, 1.04) | 1.01 (0.97, 1.04) | 1.02 (1.00, 1.05) | 1.03 (0.99, 1.07) |
|  Total effect | 1.77 (1.39, 2.25) | 1.77 (1.39, 2.26) | 1.76 (1.36, 2.25) | 1.77 (1.39, 2.24) |
| **Birth Head Circumference** |  |  |  |  |  |  |  |  |
|  Natural direct effect | 1.66 (1.28, 2.13) | 9.81% | 1.68 (1.31, 2.15) | 7.23% | 1.63 (1.27, 2.09) | 11.68% | 1.64 (1.26, 2.08) | 12.50% |
|  Natural indirect effect | 1.04 (1.01, 1.07) | 1.03 (0.99, 1.08) | 1.05 (1.01, 1.09) | 1.06 (1.01, 1.10) |
|  Total effect | 1.73 (1.33, 2.22) | 1.74 (1.36, 2.21) | 1.71 (1.34, 2.19) | 1.73 (1.33, 2.19) |
| **Birth Ponderal Index** |  |  |  |  |  |  |  |  |
|  Natural direct effect | 1.75 (1.36, 2.24) | 3.13% | 1.77 (1.37, 2.25) | 1.17% | 1.74 (1.3, 2.20) | 4.05% | 1.72 (1.33, 2.18) | 7.08% |
|  Natural indirect effect | 1.01 (0.99, 1.03) | 1.01 (0.97, 1.04) | 1.02 (0.99, 1.04) | 1.03 (0.99, 1.07) |
|  Total effect | 1.77 (1.36, 2.27) | 1.77 (1.38, 2.26) | 1.77 (1.38, 2.24) | 1.77 (1.38, 2.24) |
| **Small-for-Gestational-Age** |  |  |  |  |  |  |  |  |
|  Natural direct effect | 1.64 (1.25, 2.12) | 3.62% | 1.68 (1.29, 2.15) | 0.37% | 1.63 (1.24, 2.09) | 5.29% | 1.63 (1.26, 2.08) | 6.20% |
|  Natural indirect effect | 1.01 (1.00, 1.03) | 1.00 (0.97, 1.04) | 1.02 (0.99, 1.05) | 1.03 (0.98, 1.07) |
|  Total effect | 1.66 (1.27, 2.15) | 1.68 (1.30, 2.15) | 1.66 (1.27, 2.13) | 1.67 (1.30, 2.13) |
| **Large-for-Gestational-Age** |  |  |  |  |  |  |  |  |
|  Natural direct effect | 1.81 (1.38, 2.38) | 4.96% | 1.85 (1.42, 2.40) | 1.64% | 1.80 (1.37, 2.35) | 6.75% | -- | -- |
|  Natural indirect effect | 1.02 (0.99, 1.06) | 1.01 (0.96, 1.06) | 1.03 (0.99, 1.07) | -- |
|  Total effect | 1.86 (1.41, 2.39) | 1.87 (1.43, 2.41) | 1.86 (1.42, 2.41) | -- |
| *aModel adjusted for maternal & child sociodemographics (maternal age, maternal education, maternal insurance, maternal smoking, first birth, child’s sex, and child’s age)**b**n=3661 mother-child dyads with children born full-term (≥37 weeks) examined using imputation-based methods, which fit a working model for the outcome mean* |

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| **Supplementary Table 2. Natural Direct, Natural Indirect, and Total Effects of Maternal Pre-Pregnancy *Obesity* on Child’s *Obesity* for Measures of Birth Anthropometry and in the Presence of Multiple Mediatorsa,b** |
|  | **Birth anthropometry** | **Birth anthropometry + gestational weight gain** | **Birth anthropometry + gestational diabetes** | **Birth anthropometry + hypertensive disorders of pregnancy** |
|  | **OR (95% CI)** | **Percent Mediated** | **OR (95% CI)** | **Percent Mediated** | **OR (95% CI)** | **Percent Mediated** | **OR (95% CI)** | **Percent Mediated** |
| **Birthweight** |  |  |  |  |  |  |  |  |
|  Natural direct effect | 2.91 (1.95, 4.17) | 15.79% | 3.07 (2.07, 4.40) | 9.73% | 2.89 (1.92, 4.15) | 16.39% | 2.84 (1.86, 4.16) | 18.56% |
|  Natural indirect effect | 1.12 (1.04, 1.20) | 1.07 (0.97, 1.18) | 1.13 (1.04, 1.22) | 1.15 (1.03, 1.27) |
|  Total effect | 3.27 (2.20, 4.64) | 3.29 (2.23, 4.68) | 3.26 (2.18, 4.63) | 3.26 (2.15, 4.71) |
| **Birth Length** |  |  |  |  |  |  |  |  |
|  Natural direct effect | 3.08 (2.11, 4.38) | 6.27% | 3.25 (2.21, 4.67) | -- | 3.06 (2.10, 4.44) | 7.33% | 3.01 (2.04, 4.33) | 8.70% |
|  Natural indirect effect | 1.05 (1.00, 1.09) | 1.00 (0.93, 1.07) | 1.05 (0.99, 1.12) | 1.06 (0.98, 1.15) |
|  Total effect | 3.22 (2.21, 4.55) | 3.25 (2.22, 4.64) | 3.22 (2.21, 4.64) | 3.21 (2.18, 4.59) |
| **Birth Head Circumference** |  |  |  |  |  |  |  |  |
|  Natural direct effect | 3.11 (2.10, 4.42) | 5.35% | 3.29 (2.26, 4.62) | -- | 3.03 (2.02, 4.45) | 6.95% | 3.08 (2.06, 4.43) | 6.34% |
|  Natural indirect effect | 1.04 (0.99, 1.09) | 0.99 (0.91, 1.06) | 1.05 (0.98, 1.12) | 1.05 (0.96, 1.13) |
|  Total effect | 3.23 (2.19, 4.57) | 3.24 (2.23, 4.54) | 3.18 (2.12, 4.64) | 3.22 (2.15, 4.6) |
| **Birth Ponderal Index** |  |  |  |  |  |  |  |  |
|  Natural direct effect | 3.26 (2.21, 4.51) | 2.28% | 3.42 (2.30, 4.87) | -- | 3.24 (2.19, 4.57) | 3.00% | 3.2 (2.17, 4.55) | 4.87% |
|  Natural indirect effect | 1.02 (0.98, 1.05) | 0.97 (0.91, 1.04) | 1.02 (0.98, 1.07) | 1.04 (0.96, 1.11) |
|  Total effect | 3.31 (2.25, 4.59) | 3.31 (2.23, 4.75) | 3.31 (2.24, 4.67) | 3.31 (2.24, 4.7) |
| **Small-for-Gestational-Age** |  |  |  |  |  |  |  |  |
|  Natural direct effect | 3.12 (2.08, 4.40) | 4.03% | 3.34 (2.22, 4.82) | -- | 3.07 (2.06, 4.42) | 5.81% | 3.07 (2.01, 4.51) | 6.76% |
|  Natural indirect effect | 1.03 (0.99, 1.06) | 0.96 (0.90, 1.04) | 1.04 (0.99, 1.10) | 1.05 (0.96, 1.14) |
|  Total effect | 3.21 (2.14, 4.52) | 3.22 (2.14, 4.69) | 3.20 (2.14, 4.61) | 3.22 (2.10, 4.74) |
| **Large-for-Gestational-Age** |  |  |  |  |  |  |  |  |
|  Natural direct effect | 3.26 (2.10, 4.83) | 5.61% | 3.50 (2.31, 5.13) | -- | 3.20 (2.11, 4.72) | 8.02% | 3.17 (2.05, 4.71) | 9.90% |
|  Natural indirect effect | 1.04 (0.98, 1.11) | 0.98 (0.88, 1.07) | 1.06 (0.98, 1.14) | 1.08 (0.98, 1.18) |
|  Total effect | 3.39 (2.19, 5.01) | 3.41 (2.27, 4.96) | 3.39 (2.25, 4.99) | 3.41 (2.21, 5.04) |
| *aModel adjusted for maternal & child sociodemographics (maternal age, maternal education, maternal insurance, maternal smoking, first birth, child’s sex, and child’s age)**bn=2820 obese or normal weight mother-children dyads examined using imputation-based methods, which fit a working model for the outcome mean* |

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| **Supplementary Table 3. Natural Direct, Natural Indirect, and Total Effects of Maternal Pre-Pregnancy Overweight/Obesity on Child’s Overweight/Obesity for Measures of Birth Anthropometry and in the Presence of Multiple Mediators among African Americansa,b** |
|  | **Birth anthropometry** | **Birth anthropometry + gestational weight gain** | **Birth anthropometry + gestational diabetes** | **Birth anthropometry + hypertensive disorders of pregnancy** |
|  | **OR (95% CI)** | **Percent Mediated** | **OR (95% CI)** | **Percent Mediated** | **OR (95% CI)** | **Percent Mediated** | **OR (95% CI)** | **Percent Mediated** |
| **Birthweight** |  |  |  |  |  |  |  |  |
|  Natural direct effect | 1.68 (1.33, 2.10) | 12.60% | 1.68 (1.32, 2.12) | 12.79% | 1.68 (1.33, 2.10) | 13.01% | 1.66 (1.31, 2.09) | 14.44% |
|  Natural indirect effect | 1.06 (1.02, 1.09) | 1.06 (1.01, 1.11) | 1.06 (1.02, 1.10) | 1.07 (1.02, 1.12) |
|  Total effect | 1.78 (1.40, 2.22) | 1.78 (1.40, 2.24) | 1.78 (1.41, 2.22) | 1.78 (1.40, 2.22) |
| **Birth Length** |  |  |  |  |  |  |  |  |
|  Natural direct effect | 1.74 (1.39, 2.20) | 4.05% | 1.76 (1.39, 2.20) | 2.76% | 1.73 (1.38, 2.16) | 4.78% | 1.73 (1.36, 2.17) | 5.48% |
|  Natural indirect effect | 1.02 (1.00, 1.04) | 1.01 (0.98, 1.05) | 1.02 (0.99, 1.05) | 1.02 (0.99, 1.06) |
|  Total effect | 1.77 (1.42, 2.24) | 1.78 (1.41, 2.23) | 1.77 (1.41, 2.20) | 1.77 (1.40, 2.22) |
| **Birth Head Circumference** |  |  |  |  |  |  |  |  |
|  Natural direct effect | 1.71 (1.35, 2.14) | 6.11% | 1.71 (1.36, 2.13) | 5.13% | 1.69 (1.33, 2.15) | 6.94% | 1.7 (1.33, 2.14) | 7.22% |
|  Natural indirect effect | 1.03 (1.00, 1.05) | 1.02 (0.98, 1.06) | 1.03 (1.00, 1.06) | 1.03 (0.99, 1.07) |
|  Total effect | 1.75 (1.39, 2.19) | 1.75 (1.40, 2.17) | 1.74 (1.37, 2.22) | 1.75 (1.37, 2.2) |
| **Birth Ponderal Index** |  |  |  |  |  |  |  |  |
|  Natural direct effect | 1.76 (1.38, 2.21) | 1.83% | 1.77 (1.39, 2.23) | 0.49% | 1.76 (1.39, 2.20) | 2.62% | 1.75 (1.38, 2.19) | 4.09% |
|  Natural indirect effect | 1.01 (0.99, 1.02) | 1.00 (0.97, 1.03) | 1.01 (0.99, 1.03) | 1.02 (0.98, 1.05) |
|  Total effect | 1.78 (1.39, 2.23) | 1.78 (1.40, 2.23) | 1.78 (1.40, 2.22) | 1.78 (1.40, 2.22) |
| **Small-for-Gestational-Age** |  |  |  |  |  |  |  |  |
|  Natural direct effect | 1.72 (1.34, 2.16) | 1.84% | 1.74 (1.37, 2.2) | 0.22% | 1.71 (1.34, 2.20) | 2.97% | 1.72 (1.34, 2.20) | 3.43% |
|  Natural indirect effect | 1.01 (0.99, 1.02) | 1.00 (0.97, 1.04) | 1.01 (0.99, 1.04) | 1.01 (0.98, 1.05) |
|  Total effect | 1.73 (1.35, 2.18) | 1.74 (1.38, 2.2) | 1.73 (1.36, 2.23) | 1.74 (1.36, 2.23) |
| **Large-for-Gestational-Age** |  |  |  |  |  |  |  |  |
|  Natural direct effect | 1.83 (1.41, 2.33) | 3.98% | 1.85 (1.44, 2.38) | 2.23% | 1.82 (1.40, 2.35) | 5.18% | -- | -- |
|  Natural indirect effect | 1.02 (0.99, 1.05) | 1.01 (0.97, 1.05) | 1.02 (0.99, 1.06) | -- |
|  Total effect | 1.87 (1.44, 2.37) | 1.87 (1.45, 2.40) | 1.87 (1.43, 2.41) | -- |
| *aModel adjusted for maternal & child sociodemographics (maternal age, maternal education, maternal insurance, maternal smoking, first birth, child’s sex, and child’s age)**b n=2376 African American mother-child dyads examined using imputation-based methods, which fit a working model for the outcome mean* |