**Table S1.** Correlation coefficients for PM2.5 estimates averaged across

developmental windows

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
|  | First trimester | Secondtrimester | Thirdtrimester | Pregnancy | First year of life |
| First trimester  | 1.00 |  |  |  |  |
| Second trimester  | 0.03 | 1.00 |  |  |  |
| Third trimester  | -0.17 | 0.23 | 1.00 |  |  |
| Entire pregnancy  | 0.52 | 0.71 | 0.55 | 1.00 |  |
| First year of life  | 0.18 | 0.05 | 0.23 | 0.25 | 1.00 |

**Table S2.** Associations between pre- and postnatal PM2.5 exposure and childhood LDL-C levels, comparing crude and adjusted models

|  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- |
|  | Model 0aβ (95% CI) | Model 1bβ (95% CI) | Model 2cβ (95% CI) | Model 3dβ (95% CI) | Model 4eβ (95% CI) | Model 5fβ (95% CI) |
| First trimester  | 0.92 (-1.10, 2.93) | 1.66 (-0.36, 3.68) | 1.47 (-0.58, 3.53) | 1.60 (-0.98, 4.18) | 1.68 (-0.90, 4.27) | 1.61 (-1.01, 4.23) |
| Second trimester  | 0.29 (-1.72, 2.31) | -0.66 (-2.70, 1.37) | -0.65 (-2.69, 1.39) | -1.47 (-4.03, 1.09) | -1.13 (-3.71, 1.44) | -1.28 (-3.88, 1.31) |
| Third trimester  | 3.14 (1.49, 4.80) | 3.49 (1.77, 5.20) | 3.25 (1.47, 5.03) | 4.32 (1.85, 6.79) | 4.43 (1.97, 6.90 | 4.44 (1.95, 6.93) |
| Entire pregnancy  | 4.42 (1.21, 7.63) | -- | 3.83 (0.53, 7.12) | 3.63 (0.04, 7.23) | 3.73 (0.16, 7.30) | 3.97 (0.33, 7.60) |
| First year of life  | 4.01 (0.27, 7.74) | -- | 2.97 (-0.85, 6.80) | 2.82 (-1.10, 6.73) | 2.91 (-0.98, 6.80) | 2.45 (-1.49, 6.39) |

Abbreviations: CI, confidence interval; HDL, high-density lipoprotein cholesterol; LDL, low-density lipoprotein cholesterol; PM2.5, particulate matter <2.5 µm.

Results are reported per IQR (3.8 μg/m3) increases in PM2.5

aModel 0: Crude model

bModel 1: Trimester-specific mutually adjusted model. Trimester estimates are adjusted for PM2.5 averages during the other trimesters.

cModel 2: Mutually adjusted model. Trimester specific estimates are adjusted for PM2.5 averages during the other trimesters and first year of life PM2.5 concentrations. Pregnancy and first year of life effect estimates are mutually adjusted for exposures in the other exposure window.

dModel 3: Model 2 + minimally sufficient adjustment set (maternal education, maternal age at enrollment, maternal body mass index, child’s age at testing, season of conception, and prenatal environmental tobacco smoke exposure)

eModel 4: Model 3 + adjustment for child sex

fModel 5: Model 3 + adjustment for gestational age

|  |
| --- |
| **Table S3.** Adjusteda associations between IQR (3.8 μg/m3) increases in PM2.5 and quantiles of the outcome distribution. |
|  | 10th %β (95% CI) | 30th %β (95% CI) | 50th %β (95% CI) | 70th %β (95% CI) | 90th %β (95% CI) |
| **Total Cholesterol (mg/dL)** |
| First trimester  | 2.6 (-0.6, 5.9) | 3.0 (-0.3, 6.2) | 2.0 (-1.4, 5.4) | 2.7 (-0.8, 6.1) | 4.7 (-2.7, 12.1) |
| Second trimester  | -1.4 (-5.4, 2.5) | -3.4 (-6.0, -0.9) | -1.4 (-4.4, 1.6) | -1.5 (-6.6, 3.6) | 1.0 (-5.4, 7.4) |
| Third trimester  | -1.1 (-6.1, 3.9) | 1.7 (-1.0, 4.4) | 2.3 (-0.8, 5.4) | 3.0 (-1.8, 7.8) | 8.9 (3.9, 13.9) |
| Entire pregnancy  | -0.8 (-7.7, 6.1) | 1.1 (-2.7, 4.9) | 2.4 (-2.3, 7.2) | 4.2 (-1.0, 9.3) | 13.1 (3.6, 22.5) |
| First year of life  | 1.8 (-4.2, 7.7) | -1.3 (-6.4, 3.8) | -0.8 (-6.6, 5.0) | 2.0 (-3.9, 7.8) | -1.5 (-12.8, 9.8) |
| **LDL Cholesterol (mg/dL)** |  |   |   |   |   |
| First trimester  | 1.7 (-2.0, 5.5) | 1.1 (-1.5, 3.6) | 0.4 (-2.1, 2.8) | 1.2 (-2.2, 4.6) | 4.5 (-1.1, 10.1) |
| Second trimester  | -1.5 (-5.9, 2.8) | -3.4 (-5.5, -1.2) | -1.8 (-4.7, 1.1) | -0.3 (-4.7, 4.2) | -1.8 (-7.5, 3.8) |
| Third trimester  | -0.8 (-5.1, 3.5) | 3.6 (1.0, 6.1) | 2.9 (1.0, 4.8) | 4.8 (0.3, 9.3) | 10.2 (5.6, 14.8) |
| Entire pregnancy  | 1.6 (-3.7, 6.9) | -0.9 (-4.5, 2.7) | 0.9 (-2.7, 4.5) | 6.1 (1.4, 10.9) | 13.6 (4.2, 23) |
| First year of life  | -0.7 (-5.9, 4.5) | 2.3 (-1.4, 5.9) | 3.4 (-0.5, 7.3) | 1.8 (-3.2, 6.9) | -0.3 (-10.5, 9.9) |
| **Non-HDL Cholesterol (mg/dL)** |  |   |   |   |   |
| First trimester  | 1.5 (-1.5, 4.6) | 3.0 (-0.04, 6.1) | 1.1 (-1.7, 3.9) | 1.9 (-1.6, 5.5) | 2.9 (-3.1, 8.9) |
| Second trimester  | -2.6 (-5.8, 0.6) | -4.1 (-7.0, -1.2) | -2.1 (-4.6, 0.4) | -0.7 (-5.2, 3.9) | -0.7 (-6.2, 4.8) |
| Third trimester  | 2.1 (-3.0, 7.3) | 2.3 (-0.4, 5.0) | 2.9 (1.0, 4.8) | 6.0 (1.8, 10.3) | 10.8 (6.2, 15.3) |
| Entire pregnancy  | -1.3 (-6.2, 3.6) | -1.1 (-5.0, 2.7) | 1.2 (-2.5, 4.8) | 6.6 (0.4, 12.7) | 11.6 (3.0, 20.2) |
| First year of life  | 1.8 (-2.2, 5.8) | 2.2 (-2.4, 6.8) | 0.3 (-4.0, 4.6) | 1.9 (-3.2, 6.9) | 1.2 (-7.7, 10.1) |
| **HDL Cholesterol (mg/dL)** |  |   |   |   |   |
| First trimester  | 0.7 (-0.7, 2.0) | 0.7 (-0.4, 1.8) | -0.006 (-1.1, 1.1) | 0.1 (-1.2, 1.5) | -0.1 (-2.1, 1.9) |
| Second trimester  | 1.2 (-0.2, 2.5) | 0.1 (-1, 1.2) | 0.7 (-0.5, 2.0) | 0.5 (-0.9, 1.8) | 0.2 (-2.1, 2.5) |
| Third trimester  | -1.4 (-2.8, -0.02) | -1.0 (-1.9, -0.1) | -0.9 (-2.1, 0.3) | -1.4 (-2.9, 0.1) | -0.5 (-2.4, 1.4) |
| Entire pregnancy  | 0.8 (-1.0, 2.6) | -0.3 (-2.0, 1.4) | 0.02 (-1.6, 1.6) | -1.0 (-3.0, 1.0) | -0.4 (-3.2, 2.4) |
| First year of life  | -1.6 (-4.2, 0.9) | -1.0 (-3.0, 0.9) | -0.2 (-1.8, 1.3) | -0.7 (-2.7, 1.3) | -1.0 (-3.8, 1.8) |
| **Triglycerides (mg/dL)** |  |   |   |   |   |
| First trimester  | 2.3 (0.4, 4.1) | 2.4 (-0.2, 4.9) | 4.9 (1.4, 8.3) | 4.0 (-0.5, 8.4) | 2.4 (-6.3, 11.0) |
| Second trimester  | -1.2 (-3.2, 0.7) | -2.4 (-4.9, 0.1) | -3.9 (-7.2, -0.7) | -5.7 (-9.9, -1.4) | -9.7 (-18.3, -1.2) |
| Third trimester  | 0.1 (-2.0, 2.2) | -1.6 (-4, 0.7) | -2.1 (-5.4, 1.1) | -3.6 (-7.9, 0.7) | 0.8 (-9.3, 11.0) |
| Entire pregnancy  | 1.4 (-1.5, 4.3) | -1.2 (-4.3, 1.9) | -2.8 (-7.4, 1.8) | -4.5 (-11.2, 2.2) | -10.8 (-25.5, 3.9) |
| First year of life  | -1.4 (-5.0, 2.3) | -4.1 (-7.7, -0.5) | -3.7 (-8.9, 1.4) | -2.6 (-10.7, 5.4) | -12.7 (-28.9, 3.4) |

aAdjusted for maternal education, age, body mass index, child’s age at testing, season of conception, prenatal environmental tobacco smoke.

Pregnancy and first year of life models are mutually adjusted for PM2.5 averages during the other window; trimester models are mutually adjusted for other trimester and first year of life PM2.5 concentrations.



**Figure S1.** Directed Acyclic Graph of the relationship between PM2.5 exposure and childhood lipid levels. The minimally sufficient adjustment set is indicated by white circles.



**Figure S2.** Quantile regression estimates for associations between IQR increases in pregnancy PM2.5 exposure and childhood lipid levels (total cholesterol (TC), LDL-C, non-HDL-C, HDL-C, and triglycerides (TG)), stratified by child sex. Results are shown for the 10th, 30th, 50th, 70th, and 90th quantiles. Models are adjusted for maternal education, age, body mass index, child’s age at testing, season of conception, prenatal environmental tobacco smoke exposure, and average PM2.5 concentrations during the first year of life.