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| **E-TABLE 1.** **Pearson Correlation Coefficients for PM10 Concentrations For Perinatal Exposure Windows by State a** |
|  | **Pre-conception** | **Trimester 1** | **Trimester 2** | **Trimester 3** | **Postnatal Quarter 1** | **Postnatal Quarter 2** | **Postnatal Quarter 3** | **Postnatal Quarter 4** |
|  |  | **------------------------ North Carolina (N Controls = 12,434) b -----------------------** |
| Pre-conception |  | 0.1 | -0.7 | -0.2 | 0.7 | 0.3 | -0.7 | -0.2 |
| Trimester 1  | 0.0 |  | 0.1 | -0.7 | -0.2 | 0.8 | 0.3 | -0.7 |
| Trimester 2 | -0.8 | -0.2 |  | 0.1 | -0.7 | -0.2 | 0.8 | 0.2 |
| Trimester 3 | 0.2 | -0.8 | 0.0 |  | 0.1 | -0.7 | -0.2 | 0.8 |
| Postnatal Quarter 1 | 0.7 | 0.5 | -0.7 | -0.4 |  | 0.0 | -0.7 | 0.1 |
| Postnatal Quarter 2 | -0.3 | 0.6 | 0.4 | -0.5 | 0.1 |  | 0.0 | -0.7 |
| Postnatal Quarter 3 | -0.3 | -0.1 | 0.6 | 0.2 | -0.4 | 0.3 |  | -0.2 |
| Postnatal Quarter 4 | -0.3 | -0.3 | 0.2 | 0.4 | -0.3 | -0.1 | 0.1 |  |
|  | **--------------------------- California (N Controls= 2,232) c --------------------------** |  |
|  PM10 = Particulate Matter (10 microns in diameter or less) |
|  a Controls only |
|  b Correlations for trimester 3 exposure window have fewer NC controls (N Controls = 12,399) |
|  c Correlations for trimester 3 exposure window have fewer CA controls ( N Controls = 2,228) |

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| **E-TABLE 2. Associations for Autism and PM10 (10 µg/m3****increase) by Child Sex** |
|  | **Adjusted Odds Ratios and 95% Confidence Intervals a** |  | **P Value Interaction by Sex d** |
|  | **Boys** |  | **Girls** |  |  |
|  | **n Cases = 828 b** |  | **n Cases = 151 c** |  | **n Cases = 979** |
|  | **n Controls = 7,510 b** |  | **n Controls = 7,156 c** |  | **n Controls = 14,666** |
| Pre-conception | 0.91 (0.78-1.06) |  | 0.99 (0.71-1.38) |  | P = 0.96 |
| Trimester 1 | 0.89 (0.76-1.04) |  | 0.74 (0.50-1.08) |  | P = 0.12 |
| Trimester 2 | 1.00 (0.83-1.19) |  | 0.95 (0.63-1.45) |  | P = 0.81 |
| Trimester 3 | 1.33 (1.09-1.63) |  | 1.46 (0.92-2.32) |  | P = 0.21 |
| Postnatal Quarter 1 | 1.01 (0.82-1.26) |  | 1.52 (0.95-2.44) |  | P = 0.42 |
| Postnatal Quarter 2 | 0.75 (0.60-0.93) |  | 0.63 (0.39-1.03) |  | P = 0.19 |
| Postnatal Quarter 3 | 0.87 (0.70-1.08) |  | 0.85 (0.53-1.38) |  | P = 0.65 |
| Postnatal Quarter 4 | 1.14 (0.93-1.41) |  | 1.52 (0.95-2.45) |  | P = 0.11 |
|  PM10 = Particulate Matter (10 microns in diameter or less) |
|  a  Odds ratios for adjusted models were estimated using logistic generalized additive models (GAMs) and included parametric terms for state, birth year, race/ethnicity (White non-Hispanic, Black non-Hispanic, Asian non-Hispanic, Other race non-Hispanic, Hispanic), maternal education (# of years educated log-transformed), maternal age (log-transformed), Census 2000 block group median household income (categories of $1,000 per year: <35, 35-65, 65-85, >85), Census 2000 block group urbanization (100% urban, <100% urban) and a non-parametric LOESS term for the calendar week of the child’s birth (1-52).  |
|  b Model for boys has fewer observations in trimester 3 (N Cases = 825; N Controls = 7,491) |
|  c Model for girls has fewer controls in trimester 3 (N Controls = 7,136) |
|  d P-value was taken for cross-product term (average PM10 during exposure window\*sex) |

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| **E-TABLE 3. Characteristics of a Random Sample of Children Born in Central North Carolina in 1994 and 1996 (Subset of Study Controls) by Ability to Determine Residential Mobility in Pregnancy**  |
|  | **Traced** |  | **Not Traced** |
|  | **(n = 1,721)** |  | **(n = 3,201)** |
|  | **No.** | **(%)** |  | **No.** | **(%)** |
| Birth year |  |  |  |  |  |
|  1994 | 701 | (41) |  | 1,664 | (52) |
|  1996 | 1,020 | (59) |  | 1,537 | (48) |
| Sex |  |  |  |  |  |
|  Boy | 874 | (51) |  | 1,646 | (51) |
|  Girl | 847 | (49) |  | 1,555 | (49) |
| Race  |  |  |  |  |  |
|  White non-Hispanic | 1,235 | (72) |  | 1,877 | (59) |
|  Black non-Hispanic | 405 | (24) |  | 1,053 | (33) |
|  Asian non-Hispanic | 4 | (0) |  | 21 | (1) |
|  Other non-Hispanic | 31 | (2) |  | 75 | (2) |
|  Hispanic | 46 | (3) |  | 175 | (5) |
| Season of Birth |  |  |  |  |  |
|  Spring (Mar, Apr, May) | 413 | (24) |  | 802 | (25) |
|  Summer (Jun, Jul, Aug) | 452 | (26) |  | 799 | (25) |
|  Fall (Sep, Oct, Nov) | 441 | (26) |  | 791 | (25) |
|  Winter (Dec, Jan, Feb) | 415 | (24) |  | 809 | (25) |
| Maternal education |  |  |  |  |  |
|  < High school | 229 | (13) |  | 729 | (23) |
|  High school degree or some college | 894 | (52) |  | 1,618 | (51) |
|  College degree | 598 | (35) |  | 854 | (27) |
| Maternal age (years) |  |  |  |  |  |
|  < 22 | 306 | (18) |  | 1,024 | (32) |
|  23-34 | 1,110 | (64) |  | 1,950 | (61) |
|  ≥ 35 | 305 | (18) |  | 227 | (7) |
| Married |  |  |  |  |  |
|  Yes | 1,355 | (79) |  | 2,009 | (63) |
|  No | 366 | (21) |  | 1,192 | (37) |
| Tobacco use during pregnancy |  |  |  |  |  |
|  Yes | 224 | (13) |  | 508 | (16) |
|  No | 1,496 | (87) |  | 2,693 | (84) |
| First born |  |  |  |  |  |
|  Yes | 753 | (44) |  | 1,561 | (49) |
|  No | 967 | (56) |  | 1,640 | (51) |
| Median household income per year |  |  |  |  |  |
|  < $35,000 | 411 | (24) |  | 1,368 | (43) |
|  $35,000 - < 65,000 | 1,078 | (63) |  | 1,573 | (49) |
|  $65,000 - < 85,000 | 178 | (10) |  | 206 | (6) |
|  ≥ $85,000 | 54 | (3) |  | 54 | (2) |
| 100% urban |  |  |  |  |  |
|  Yes | 858 | (50) |  | 2,121 | (66) |
|  No | 863 | (50) |  | 1,080 | (34) |