**Tables**

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| **Table 1.** Descriptive statistics of the study population (n=18) |
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| Characteristic | Measure |
| Age(years, mean ± SD) | 10.6 ± 1.7 |
| Male n(%) | 13(72.2) |
| *Race/ethnicity* n(%) |  |
|  African American | 5(27.8) |
|  Hispanic | 10(55.6) |
|  White | 3(16.6) |
| Maternal education n(%) |  |
|  <High school | 2(12.5) |
|  High school graduate | 9(56.3) |
|  Some college | 5(31.2) |
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| **Table 2.** Distribution of BC, daily average NO2, and FeNO |
|   |   |   |  |  |  |  |  |  |  |  |
|   |   | N | Mean | SD | IQR | 25th | Median | 75th | Min | Max |
| BC(μg/m3)  | without MI | 90 | 1.6 | 1.4 | 1.1 | 0.8 | 1.1 | 1.9 | 0.2 | 7.0 |
|  | with MI | 90 | 1.4 | 1.2 | 1.0 | 0.7 | 1.0 | 1.6 | 0.2 | 6.2 |
| NO2(ppb) | without MI | 74 | 40.6 | 25.1 | 27.9 | 23.3 | 36.7 | 51.2 | 3.4 | 138.3 |
|  | with MI | 90 | 41.7 | 23.2 | 26.2 | 25.3 | 39.3 | 51.5 | 3.4 | 138.3 |
| FeNO(ppb) |   | 89 | 30.6 | 28.3 | 42.0 | 9.0 | 17.0 | 51.0 | 2.5 | 106.0 |
| Note: BC data were measured 24-hour before buccal sample collection. |   |   |   |   |   |
| Abbreviations: BC, black carbon; NO2, nitrogen dioxide; FeNO, fractional exhaled nitric oxide; MI, multiple imputation; IQR, interquartile range |

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| Lag | Model 1 |  | Model 2 |  | Model 3 |  | Model 4 |  |
| n | Percent change in FeNO (95%CI) | p | n | Percent change in FeNO (95%CI) | p | n | Percent change in FeNO (95%CI) | p | n | Percent change in FeNO (95%CI) | p |
| Lag 0-6h | 89 | 1.1 (1.0 , 1.3) | 0.01 | 89 | 1.1 (1.0 , 1.3) | 0.02 | 89 | 1.1 (1.0 , 1.3) | 0.02 | 73 | 1.2 (1.0 , 1.3) | 0.02 |
| Lag 7-12h | 89 | 1.1 (1.0 , 1.3) | 0.06 | 89 | 1.1 (1.0 , 1.3) | 0.07 | 89 | 1.1 (1.0 , 1.3) | 0.07 | 73 | 1.2 (1.1 , 1.4) | 0.01 |
| Lag 13-24h | 89 | 1.0 (0.9 , 1.1) | 0.55 | 89 | 1.0 (0.9 , 1.1) | 0.55 | 89 | 1.0 (0.9 , 1.1) | 0.54 | 73 | 1.0 (0.9 , 1.1) | 0.91 |
| Lag 0-24h | 89 | 1.0 (1.0 , 1.1) | 0.45 | 89 | 1.0 (0.9 , 1.1) | 0.52 | 89 | 1.0 (0.9 , 1.1) | 0.53 | 73 | 1.0 (0.9 , 1.2) | 0.49 |
| Lag 25-48h | 86 | 1.0 (0.9 , 1.1) | 0.47 | 86 | 1.0 (0.9 , 1.1) | 0.49 | 86 | 1.0 (0.9 , 1.1) | 0.47 | 70 | 1.0 (0.9 , 1.1) | 0.75 |
| Lag 49-72h | 83 | 1.1 (1.0 , 1.2) | 0.06 | 83 | 1.1 (1.0 , 1.3) | 0.09 | 83 | 1.1 (1.0 , 1.3) | 0.09 | 67 | 1.1 (0.9 , 1.2) | 0.44 |
| Lag 73-96h | 80 | 1.1 (1.0 , 1.3) | 0.06 | 80 | 1.1 (1.0 , 1.3) | 0.07 | 80 | 1.1 (1.0 , 1.3) | 0.07 | 64 | 1.1 (0.9 , 1.2) | 0.32 |

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| **Table 3.** Percent changes in FeNO per log-transformed IQR increase in BC at different lag periods |
| Note: All estimates are from linear mixed effect model to reflect percent changes in FeNO per IQR increase in log-transformed BC. The IQR (μg/m3) was 1.8 for lag 0-6h, 1.8 for lag 7-12h, 1.2 for lag 13-24h, 1.1 for lag 0-24h, 1.5 for lag 25-48h, 1.6 for lag 49-72h and 1.3 for lag 73-96h. |
| *a* Model 1 was the unadjusted model |  |  |  |
| *b* Model 2 adjusted for day-of-week and week number when FeNO data were collected |
| *c* Model 3 further adjusted for age, gender and *race/ethnicity* |  |  |
| *d* Model 4 further adjusted for NO2 |  |  |  |  |

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| **Table 4.** Percent Change of DNA Methylation in *NOS3* Gene per log-transformed IQR increase in BC at different lag periods  |
|   |   |   |   |   |   |   |   |   |   |   |   |   |   |
| **Lag period** | ***NOS3* Gene loci** | **Model 1** |  | **Model 2** |  | **Model 3** |  | **Model 4** |  |
| **Difference in % methylation** | **95%CI** | **p** | **Difference in % methylation** | **95%CI** | **p** | **Difference in % methylation** | **95%CI** | **p** | **Difference in % methylation** | **95%CI** | **p** |
| **Lag 0-6h** | **Position 1** | -3.73 | (-6.98 , -0.47) | **0.03** | -3.31 | (-6.75 , 0.13) | 0.06 | -4.90 | (-9.71 , -0.08) | **0.05** | -1.75 | (-4.66 , 1.16) | 0.23 |
|  | **Position 2** | -1.23 | (-4.48 , 2.02) | 0.45 | -0.36 | (-3.79 , 3.08) | 0.84 | 1.75 | (-3.90, 7.39) | 0.54 | 0.37 | (-3.01 , 3.75) | 0.83 |
|  | **Position 3** | -1.70 | (-5.44 , 2.04) | 0.37 | -1.26 | (-5.24 , 2.72) | 0.53 | 1.02 | (-4.26 , 6.29) | 0.70 | 1.59 | (-1.94 , 5.13) | 0.37 |
|  | **Average** | -2.17 | (-4.94 , 0.61) | 0.12 | -1.58 | (-4.52 , 1.36) | 0.29 | -0.70 | (-4.92 , 3.52) | 0.74 | -0.11 | (-2.79 , 2.56) | 0.93 |
| **Lag 7-12h** | **Position 1** | -6.38 | (-9.61 , -3.15) | **<0.01** | -6.51 | (-9.93 , -3.08) | **<0.01** | -7.13 | (-11.76 , -2.50) | **<0.01** | -4.81 | (-7.64 , -1.99) | **<0.01** |
|  | **Position 2** | -4.38 | (-7.70 , -1.06) | **0.01** | -3.92 | (-7.54 , -0.29) | **0.03** | -3.49 | (-9.07 , 2.10) | 0.21 | -2.39 | (-5.98 , 1.19) | 0.19 |
|  | **Position 3** | -4.65 | (-8.49 , -0.80) | **0.02** | -4.40 | (-8.54 , -0.26) | **0.04** | -2.88 | (-8.09 , 2.34) | 0.27 | -2.25 | (-5.94 , 1.44) | 0.23 |
|  | **Average** | -5.31 | (-8.03 , -2.59) | **<0.01** | -5.51 | (-8.40 , -2.61) | **<0.01** | -4.57 | (-8.61 , -0.53) | **0.03** | -3.13 | (-5.84 , -0.43) | **0.02** |
| **Lag 13-24h** | **Position 1** | -6.96 | (-9.78 , -4.14) | **<0.01** | -6.56 | (-9.45 , -3.68) | **<0.01** | -8.12 | (-11.68 , -4.56) | **<0.01** | -4.99 | (-7.8 , -2.17) | **<0.01** |
|  | **Position 2** | -4.47 | (-7.51 , -1.43) | **<0.01** | -4.09 | (-7.20 , -0.98) | **0.01** | -4.05 | (-8.49 , 0.39) | 0.07 | -3.05 | (-6.58 , 0.47) | 0.09 |
|  | **Position 3** | -1.90 | (-5.41 , 1.60) | 0.28 | -1.14 | (-4.74 , 2.46) | 0.53 | 0.43 | (-3.75 , 4.62) | 0.84 | 0.60 | (-3.02 , 4.21) | 0.74 |
|  | **Average** | -4.58 | (-7.02 , -2.14) | **<0.01** | -4.37 | (-6.92 , -1.82) | **<0.01** | -3.31 | (-6.57 , -0.04) | **0.05** | -2.65 | (-5.35 , 0.05) | **0.05** |
| **Lag 0-24h** | **Position 1** | -5.73 | (-8.25 , -3.21) | **<0.01** | -5.44 | (-8.07 , -2.82) | **<0.01** | -6.79 | (-10.27 , -3.31) | **<0.01** | -5.16 | (-8.43 , -1.89) | **<0.01** |
|  | **Position 2** | -3.13 | (-5.73 , -0.53) | **0.02** | -2.71 | (-5.45 , 0.03) | **0.05** | -2.17 | (-6.42 , 2.08) | 0.31 | -2.37 | (-6.45 , 1.7) | 0.25 |
|  | **Position 3** | -2.44 | (-5.46 , 0.58) | 0.11 | -1.96 | (-5.16 , 1.23) | 0.22 | -0.08 | (-4.06 , 3.90) | 0.97 | 0.15 | (-4.1 , 4.4) | 0.94 |
|  | **Average** | -3.67 | (-5.79 , -1.54) | **<0.01** | -3.72 | (-5.97 , -1.46) | **<0.01** | -2.71 | (-5.82 , 0.40) | 0.09 | -2.69 | (-5.82 , 0.44) | 0.09 |
| **Lag 25-48h** | **Position 1** | -1.94 | (-5.35 , 1.48) | 0.26 | -2.25 | (-5.73 , 1.23) | 0.20 | -2.48 | (-6.66 , 1.70) | 0.24 | -3.48 | (-6.38 , -0.57) | **0.02** |
|  | **Position 2** | -0.40 | (-4.06 , 3.26) | 0.83 | -0.44 | (-4.16 , 3.27) | 0.81 | 0.29 | (-4.50 , 5.09) | 0.90 | -0.87 | (-4.45 , 2.71) | 0.63 |
|  | **Position 3** | 1.81 | (-2.13 , 5.76) | 0.36 | 1.36 | (-2.68 , 5.40) | 0.50 | 1.66 | (-2.81 , 6.12) | 0.46 | 1.19 | (-2.49 , 4.87) | 0.52 |
|  | **Average** | -0.50 | (-3.52 , 2.51) | 0.74 | -0.52 | (-3.57 , 2.53) | 0.73 | -0.10 | (-3.69 , 3.48) | 0.95 | -1.37 | (-4.13 , 1.4) | 0.32 |
| **Lag 49-72h** | **Position 1** | 0.02 | (-3.71 , 3.74) | 0.99 | -0.41 | (-4.47 , 3.64) | 0.84 | 0.21 | (-5.3 , 5.72) | 0.94 | 2.81 | (-1.03 , 6.66) | 0.15 |
|  | **Position 2** | 0.17 | (-3.81 , 4.14) | 0.93 | 0.54 | (-3.79 , 4.86) | 0.80 | 4.15 | (-2.13 , 10.43) | 0.19 | 2.24 | (-2.41 , 6.89) | 0.34 |
|  | **Position 3** | -1.87 | (-6.16 , 2.42) | 0.39 | -2.44 | (-7.07 , 2.2) | 0.30 | -0.46 | (-6.35 , 5.43) | 0.87 | 0.47 | (-4.01 , 4.96) | 0.83 |
|  | **Average** | -0.81 | (-4.11 , 2.49) | 0.62 | -0.76 | (-4.3 , 2.79) | 0.67 | 1.32 | (-3.4 , 6.04) | 0.58 | 1.95 | (-1.56 , 5.46) | 0.27 |
| **Lag 73-96h** | **Position 1** | -0.63 | (-4.35 , 3.1) | 0.74 | -0.76 | (-4.61 , 3.1) | 0.69 | -0.39 | (-4.98 , 4.21) | 0.87 | -0.59 | (-4.33 , 3.15) | 0.75 |
|  | **Position 2** | -2.04 | (-5.71 , 1.64) | 0.27 | -1.99 | (-5.82 , 1.84) | 0.30 | -1.50 | (-6.62 , 3.63) | 0.56 | -2.32 | (-6.67 , 2.04) | 0.29 |
|  | **Position 3** | -3.62 | (-7.72 , 0.48) | 0.08 | -4.00 | (-8.25 , 0.24) | 0.06 | -3.60 | (-8.38 , 1.18) | 0.14 | -1.14 | (-5.53 , 3.25) | 0.60 |
|  | **Average** | -2.36 | (-5.44 , 0.71) | 0.13 | -2.45 | (-5.67 , 0.77) | 0.13 | -1.90 | (-5.78 , 1.98) | 0.33 | -1.72 | (-5.13 , 1.68) | 0.31 |

Note: All estimates are from linear mixed effect model to reflect percent changes in methylation per IQR increase in log-transformed BC. The IQR (μg/m3) was 1.8 for lag 0-6h, 1.8 for lag 7-12h, 1.2 for lag 13-24h, 1.1 for lag 0-24h, 1.5 for lag 25-48h, 1.6 for lag 49-72h and 1.3 for lag 73-96h.

*a* Model 1 was the unadjusted model

*b* Model 2 adjusted for day-of-week and week number when buccal cells were collected

*c* Model 3 further adjusted for age, gender and *race/ethnicity*

*d* Model 4 further adjusted for NO