

Supplemental Material

Airborne PM_{2.5} Chemical Components and Low Birth Weight in the Northeastern and Mid-Atlantic Regions of the United States

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Supplemental Material, Table S1. Characteristics of births not included in analysis

	Subjects living in counties without monitors but otherwise eligible	Subjects excluded based on criteria other than availability of pollutant data (including births in counties with and without monitors)
Subject Number	4,868,521	1,022,094
Birth Weight (g) [Mean +/- Standard Deviation]	3421.0 +/- 474.8	2567.4 +/- 810.6 (missing for 11,171 observations)
Low Birth Weight (< 2,500g)	120,212 (2.5%)	423,328 (41.4%)
Sex		
Male	2,481,112 (51.0%)	537,989 (52.6%)
Female	2,387,409 (49.0%)	484,105 (47.4%)
Race		
Caucasian	3,774,477 (77.5%)	711,004 (69.6%)
African American	787,846 (16.2%)	253,616 (24.8%)
Other	306,198 (6.3%)	57,474 (5.6%)
Maternal Age		
< 20 years	376,303 (7.7%)	90,989 (8.9%)
20 to 24	985,526 (20.2%)	200,446 (19.6%)
25 to 29	1,255,300 (25.8%)	239,539 (23.4%)
30 to 34	1,357,389 (27.9%)	270,508 (26.5%)
35 to 39	733,206 (15.1%)	171,923 (16.8%)
≥ 40	160,797 (3.3%)	48,689 (4.8%)
Maternal Marital Status		
Married	3,312,950 (68.1%)	616,691 (60.3%)
Single	1,555,571 (32.0%)	405,403 (39.7%)
Maternal Education		
Less than high school	713,789 (14.7%)	177,959 (17.4%)
High school	1,383,804 (28.4%)	300,892 (29.4%)
Some college	1,064,182 (21.9%)	218,191 (21.4%)
College	1,653,608 (34.0%)	307,419 (30.1%)
Unknown	53,138 (1.1%)	17,633 (1.7%)
Maternal Alcohol Consumption During Pregnancy		
Yes	33,528 (0.7%)	7,635 (0.8%)
No	3,695,037 (75.9%)	727,308 (71.2%)
Unknown	1,139,956 (23.4%)	287,151 (28.1%)
Maternal Tobacco Consumption During Pregnancy		
Yes	488,132 (10.0%)	119,121 (11.7%)
No	4,361,384 (89.6%)	895,083 (87.6%)
Unknown	19,005 (0.4%)	7,890 (0.8%)

Supplemental Material, Table S1 (Continued).

	Subjects living in counties without monitors but otherwise eligible	Subjects excluded based on criteria other than availability of pollutant data (including births in counties with and without monitors)
Length of Gestation		
Less than 37 weeks	-	690,835 (67.6%)
37 to 38	1,380,171 (28.4%)	83,812 (8.2%)
39 to 40	2,571,607 (52.8%)	27,388 (2.7%)
41 to 42	785,231 (16.1%)	6,270 (0.6%)
43 to 44	131,512 (2.7%)	1,745 (0.2%)
More than 44	-	66,840 (6.5%)
Missing	-	145,204 (14.2%)
Month Prenatal Care Begin		
First 3 months of pregnancy	3,925,708 (80.6%)	766,431 (75.0%)
4th to 6th months of pregnancy	622,946 (12.8%)	150,417 (14.7%)
7th month of pregnancy or later	142,858 (2.9%)	29,333 (2.9%)
No care	34,360 (0.7%)	23,706 (2.3%)
Unknown	142,649 (2.9%)	52,207 (5.1%)
Birth Order		
First baby	1,590,853 (32.7%)	293,270 (28.7%)
Not first baby	3,247,781 (66.7%)	716,739 (70.1%)
Unknown	29,887 (0.6%)	12,085 (1.2%)
Region		
Connecticut	262,445 (5.4%)	42,150 (4.1%)
Delaware	36,740 (0.8%)	14,238 (1.4%)
Massachusetts	496,394 (10.2%)	86,444 (8.5%)
Maryland and DC	448,176 (9.2%)	105,320 (10.3%)
New Hampshire	74,873 (1.5%)	14,444 (1.4%)
New Jersey	638,518 (13.1%)	138,247 (13.5%)
Manhattan area, New York	920,307 (18.9%)	212,027 (20.7%)
New York other than Manhattan area	384,049 (7.9%)	74,267 (7.3%)
Eastern PA	408,817 (8.4%)	107,474 (10.5%)
Western PA	286,569 (5.9%)	61,874 (6.1%)
Rhode Island	55,937 (1.2%)	14,500 (1.4%)
Virginia	684,951 (14.1%)	118,587 (11.6%)
Vermont	37,144 (0.8%)	5,963 (0.6%)
West Virginia	133,601 (2.7%)	26,559 (2.6%)
Birth Year		
2000	757,935 (15.6%)	124,996 (12.2%)
2001	722,177 (14.8%)	123,682 (12.1%)
2002	629,606 (12.9%)	124,120 (12.1%)
2003	561,124 (11.5%)	126,839 (12.4%)

Supplemental Material, Table S1 (Continued).

	Subjects living in counties without monitors but otherwise eligible	Subjects excluded based on criteria other than availability of pollutant data (including births in counties with and without monitors)
2004	574,729 (11.8%)	128,407 (12.6%)
2005	535,474 (11.0%)	128,551 (12.6%)
2006	541,745 (11.1%)	132,485 (13.0%)
2007	545,728 (11.2%)	133,014 (13.0%)
Birth Season		
Winter	1,155,503 (23.7%)	249,816 (24.4%)
Spring	1,232,265 (25.3%)	256,810 (25.1%)
Summer	1,203,625 (24.7%)	248,630 (24.3%)
Fall	1,277,128 (26.2%)	266,838 (26.1%)

Supplemental Material, Table S2. Summary statistics of gestational pollutant exposures by each region

	All	Connecticut	Delaware	Massachusetts	Maryland and DC	New Hampshire
Number of Infants	1,207,800	33,246	40,412	51,674	111,187	26,314
Number of Counties	49	2	2	2	5	2
PM ₁₀ Total Mass (µg/m ³)	22.3 (4.3)	25.6 (5.9)	23.1 (2.0)	21.3 (2.3)	19.7 (5.7)	17.3 (2.0)
PM _{2.5} Total Mass (µg/m ³)	13.4 (2.1)	12.6 (1.2)	13.9 (1.5)	12.1 (1.2)	14.1 (1.4)	9.3 (0.8)
PM _{2.5} Chemical Components (µg/m ³)						
Aluminum	0.019 (0.01)	0.017 (0.006)	0.022 (0.014)	0.015 (0.008)	0.022 (0.009)	0.013 (0.005)
Ammonium Ion	1.8 (0.4)	1.5 (0.2)	2.1 (0.3)	1.2 (0.1)	1.8 (0.3)	0.9 (0.1)
Arsenic	0.0012 (0.0006)	0.0009 (0.0002)	0.0013 (0.0003)	0.0008 (0.0002)	0.0009 (0.0002)	0.0009 (0.0002)
Cadmium	0.0016 (0.0009)	0.0020 (0.0010)	0.0023 (0.0012)	0.0015 (0.0008)	0.0012 (0.0007)	0.0010 (0.0002)
Calcium	0.046 (0.023)	0.030 (0.003)	0.058 (0.039)	0.032 (0.014)	0.039 (0.008)	0.032 (0.010)
Chlorine	0.037 (0.031)	0.021 (0.012)	0.039 (0.026)	0.050 (0.036)	0.018 (0.014)	0.048 (0.023)
Elemental Carbon	0.801 (0.324)	0.866 (0.1324)	0.661 (0.165)	0.654 (0.165)	0.712 (0.144)	0.491 (0.094)
Lead	0.0049 (0.0027)	0.0029 (0.0009)	0.0038 (0.0011)	0.0026 (0.0007)	0.0037 (0.0011)	0.0030 (0.0005)
Mercury	0.0011 (0.0006)	0.0011 (0.0004)	0.0013 (0.0006)	0.0008 (0.0004)	0.0010 (0.0006)	0.0006 (0.0002)
Nickel	0.0061 (0.0064)	0.0052 (0.0017)	0.0035 (0.0012)	0.0030 (0.0007)	0.0012 (0.0008)	0.0019 (0.0005)
Nitrate	1.8 (0.7)	1.4 (0.2)	2.2 (0.5)	1.1 (0.2)	1.5 (0.5)	0.7 (0.2)
Organic Carbon Matter	3.6 (1.0)	3.3 (0.4)	3.6 (1.1)	3.5 (0.9)	3.5 (1.0)	3.5 (0.9)
Silicon	0.075 (0.030)	0.053 (0.010)	0.102 (0.051)	0.057 (0.028)	0.086 (0.028)	0.058 (0.015)
Sodium Ion	0.154 (0.095)	0.133 (0.028)	0.160 (0.088)	0.163 (0.086)	0.117 (0.083)	0.161 (0.087)
Sulfate	4.1 (0.90)	3.6 (0.6)	4.6 (0.7)	3.0 (0.3)	4.7 (0.8)	2.7 (0.3)
Titanium	0.0042 (0.0018)	0.0030 (0.0012)	0.0058 (0.0029)	0.0035 (0.0018)	0.0053 (0.0023)	0.0029 (0.0007)
Vanadium	0.0043 (0.0026)	0.0088 (0.0040)	0.006 (0.0022)	0.0036 (0.001)	0.0025 (0.0006)	0.0041 (0.0012)
Zinc	0.019 (0.010)	0.011 (0.002)	0.015 (0.009)	0.015 (0.010)	0.014 (0.004)	0.014 (0.004)
CO (ppm)	0.529 (0.194)	0.567 (0.131)	0.429 (0.070)	0.393 (0.112)	0.711 (0.323)	0.523 (0.102)
NO ₂ (ppm)	0.021 (0.007)	0.021 (0.002)	0.019 (0.002)	0.019 (0.003)	0.019 (0.004)	0.010 (0.002)
O ₃ (ppm)	0.023 (0.005)	N.A.	0.025 (0.004)	0.023 (0.004)	0.024 (0.004)	0.032 (0.000)
SO ₂ (ppb)	6.1 (2.5)	4.0 (0.8)	4.7 (1.2)	4.2 (1.4)	5.4 (1.6)	4.0 (1.3)

Supplemental Material, Table S2 (continued).

	New Jersey	Manhattan, New York	New York Other than Manhattan	Eastern Pennsylvania	Western Pennsylvania
Number of Infants	146,508	344,901	82,194	203,428	100,355
Number of Counties	4	3	4	10	6
PM ₁₀ Total Mass (µg/m ³)	27.5 (3.6)	21.5 (2.8)	7.7 (1.3)	23.6 (4.1)	22.6 (4.0)
PM _{2.5} Total Mass (µg/m ³)	12.7 (1.9)	13.8 (1.5)	11.5 (1.9)	14.8 (1.8)	14.7 (1.9)
PM _{2.5} Chemical Components (µg/m ³)					
Aluminum	0.022 (0.015)	0.017 (0.006)	0.013 (0.006)	0.019 (0.008)	0.023 (0.010)
Ammonium Ion	1.7 (0.3)	1.9 (0.2)	1.7 (0.3)	2.2 (0.4)	1.9 (0.4)
Arsenic	0.0010 (0.0002)	0.0009 (0.0002)	0.0012 (0.0005)	0.0014 (0.0004)	0.0022 (0.0008)
Cadmium	0.0020 (0.0008)	0.0013 (0.0005)	0.0009 (0.0003)	0.0020 (0.0009)	0.0021 (0.0009)
Calcium	0.035 (0.017)	0.064 (0.021)	0.051 (0.033)	0.040 (0.011)	0.037 (0.010)
Chlorine	0.025 (0.018)	0.048 (0.029)	0.031 (0.021)	0.037 (0.032)	0.047 (0.051)
Elemental Carbon	0.864 (0.520)	1.013 (0.272)	0.483 (0.160)	0.731 (0.146)	0.854 (0.350)
Lead	0.0043 (0.0015)	0.0047 (0.0013)	0.0065 (0.0038)	0.0051 (0.0016)	0.0088 (0.0040)
Mercury	0.0013 (0.0006)	0.0009 (0.0004)	0.0008 (0.0004)	0.0014 (0.0007)	0.0015 (0.0008)
Nickel	0.0037 (0.0014)	0.0148 (0.0055)	0.0005 (0.0002)	0.0032 (0.0017)	0.0017 (0.0011)
Nitrate	1.7 (0.5)	2.1 (0.4)	1.8 (0.6)	2.5 (0.9)	1.4 (0.4)
Organic Carbon Matter	3.5 (1.3)	3.8 (0.8)	2.9 (0.7)	3.8 (0.9)	3.4 (0.8)
Silicon	0.071 (0.034)	0.074 (0.017)	0.064 (0.024)	0.078 (0.041)	0.085 (0.027)
Sodium Ion	0.149 (0.094)	0.200 (0.112)	0.172 (0.077)	0.128 (0.073)	0.092 (0.036)
Sulfate	4.0 (0.7)	4.1 (0.5)	3.6 (0.7)	4.5 (0.8)	5.0 (1.0)
Titanium	0.0043 (0.0019)	0.0046 (0.0013)	0.0032 (0.0013)	0.0037 (0.0015)	0.0040 (0.0014)
Vanadium	0.0043 (0.0024)	0.0066 (0.0011)	0.0013 (0.0005)	0.0036 (0.0018)	0.0013 (0.0005)
Zinc	0.014 (0.007)	0.029 (0.006)	0.014 (0.006)	0.016 (0.005)	0.024 (0.011)
CO (ppm)	0.599 (0.206)	0.602 (0.112)	0.457 (0.049)	0.438 (0.155)	0.308 (0.126)
NO ₂ (ppm)	0.020 (0.008)	0.028 (0.004)	0.016 (0.002)	0.020 (0.005)	0.014 (0.003)
O ₃ (ppm)	0.028 (0.004)	0.018 (0.003)	0.027 (0.004)	0.022 (0.003)	0.024 (0.003)
SO ₂ (ppb)	4.2 (1.0)	8.1 (2.7)	5.3 (1.7)	5.2 (1.4)	7.4 (2.1)

Supplemental Material, Table S2 (continued).

	Rhode Island	Virginia	Vermont	West Virginia
Number of Infants	31,108	20,399	8,653	7,421
Number of Counties	1	5	1	2
PM ₁₀ Total Mass (µg/m ³)	19.4 (2.6)	26.5 (4.5)	15.0 (3.3)	22.9 (2.1)
PM _{2.5} Total Mass (µg/m ³)	10.9 (1.0)	13.6 (1.3)	9.0 (1.0)	15.3 (1.8)
PM _{2.5} Chemical Components (µg/m ³)				
Aluminum	0.013 (0.004)	0.019 (0.009)	0.013 (0.004)	0.029 (0.015)
Ammonium Ion	1.1 (0.1)	1.7 (0.2)	1.0 (0.1)	1.6 (0.2)
Arsenic	0.0013 (0.0010)	0.0012 (0.0004)	0.0005 (0.0001)	0.0013 (0.0003)
Cadmium	0.0008 (0.0004)	0.0020 (0.0008)	0.0021 (0.0008)	0.0018 (0.0008)
Calcium	0.026 (0.005)	0.024 (0.005)	0.024 (0.004)	0.031 (0.006)
Chlorine	0.039 (0.022)	0.009 (0.004)	0.007 (0.004)	0.014 (0.010)
Elemental Carbon	0.542 (0.067)	0.536 (0.084)	0.321 (0.044)	0.587 (0.066)
Lead	0.0055 (0.0065)	0.0035 (0.0015)	0.0020 (0.0004)	0.0035 (0.0013)
Mercury	0.0007 (0.0004)	0.0014 (0.0005)	0.0012 (0.0004)	0.0015 (0.0006)
Nickel	0.0040 (0.0015)	0.0016 (0.0006)	0.0009 (0.0002)	0.0012 (0.0004)
Nitrate	1.1 (0.2)	1.1 (0.3)	0.8 (0.2)	0.7 (0.2)
Organic Carbon Matter	3.1 (0.7)	4.7 (0.8)	2.7 (0.6)	3.0 (0.4)
Silicon	0.065 (0.020)	0.069 (0.020)	0.057 (0.014)	0.094 (0.023)
Sodium Ion	0.154 (0.026)	0.143 (0.103)	0.123 (0.081)	0.066 (0.016)
Sulfate	3.1 (0.4)	4.9 (0.8)	2.2 (0.4)	5.2 (0.9)
Titanium	0.0031 (0.0008)	0.0034 (0.0014)	0.0024 (0.0009)	0.0032 (0.0008)
Vanadium	0.0063 (0.0023)	0.0016 (0.0006)	0.0011 (0.0002)	0.0014 (0.0009)
Zinc	0.010 (0.002)	0.011 (0.009)	0.006 (0.001)	0.010 (0.001)
CO (ppm)	0.553 (0.093)	0.403 (0.048)	0.490 (0.110)	N.A.
NO ₂ (ppm)	0.017 (0.003)	0.019 (0.002)	0.013 (0.002)	N.A.
O ₃ (ppm)	N.A.	0.031 (0.002)	0.034 (0.002)	0.028 (0.002)
SO ₂ (ppb)	5.0 (1.3)	3.9 (0.5)	2.5 (0.1)	9.7 (0.8)

Supplemental Material, Table S3. Minimum and maximum of Pearson correlations for any region.

Note: The minimum correlation for any region is provided in the top row. The maximum correlation for any region is provided in the bottom row.

	PM _{2.5}	Al	NH ₄ ⁺	As	Cd	Ca	Cl	EC	Pb	Hg	Ni	NO ₃ ⁻	OCM	Si	Na ⁺	SO ₄ ⁼	Ti	V	Zn	CO	NO ₂	O ₃	SO ₂
PM ₁₀	-0.10 0.99	-0.61 0.40	-0.19 0.86	-0.64 0.80	-0.54 0.67	-0.58 0.78	-0.60 0.68	-0.30 0.89	-0.56 0.81	-0.35 0.68	-0.70 0.62	-0.68 0.54	-0.77 0.87	-0.28 0.67	-0.67 0.23	0.08 0.96	-0.59 0.80	-0.59 0.66	-0.67 0.79	-0.53 0.87	-0.67 0.88	0.12 0.77	-0.61 0.63
PM _{2.5}		-0.36 0.54	0.34 0.92	-0.18 0.76	-0.07 0.66	-0.12 0.68	-0.36 0.47	-0.37 0.65	-0.25 0.75	-0.18 0.61	-0.34 0.63	-0.60 0.58	0.35 0.85	0.13 0.58	-0.32 0.44	0.60 0.93	0.19 0.79	-0.13 0.71	-0.58 0.63	-0.43 0.70	-0.48 0.68	-0.73 0.68	-0.50 0.77
Al			-0.21 0.44	-0.57 0.48	-0.77 0.02	-0.19 0.80	-0.40 0.62	-0.43 0.59	-0.54 0.67	-0.74 0.08	-0.41 0.45	-0.49 0.22	-0.31 0.72	-0.24 0.86	-0.49 0.53	-0.23 0.30	-0.66 0.61	-0.49 0.52	-0.41 0.72	-0.84 0.37	-0.56 0.35	0.01 0.74	-0.64 0.31
NH ₄ ⁺				-0.18 0.72	-0.02 0.50	-0.26 0.76	-0.33 0.61	-0.38 0.70	-0.07 0.64	-0.14 0.33	-0.38 0.81	-0.09 0.79	-0.03 0.88	-0.15 0.66	-0.50 0.32	0.51 0.90	0.03 0.72	-0.35 0.69	-0.27 0.65	-0.47 0.62	-0.70 0.70	-0.72 0.56	-0.42 0.70
As					0.08 0.75	-0.32 0.62	-0.28 0.70	-0.78 0.82	0.13 0.98	-0.09 0.74	-0.47 0.63	-0.08 0.70	-0.40 0.76	-0.65 0.57	-0.28 0.44	-0.01 0.57	-0.22 0.62	-0.21 0.68	-0.08 0.86	-0.64 0.88	-0.40 0.86	-0.93 0.26	-0.09 0.54
Cd						-0.26 0.60	-0.65 0.30	-0.72 0.50	-0.13 0.72	-0.16 0.78	-0.61 0.73	-0.15 0.49	-0.25 0.51	-0.48 0.58	-0.36 0.24	-0.04 0.30	-0.12 0.79	-0.24 0.72	-0.35 0.44	-0.41 0.80	-0.23 0.81	-0.80 0.03	-0.09 0.74
Ca							-0.42 0.77	-0.40 0.85	-0.35 0.69	-0.44 0.49	-0.65 0.74	-0.21 0.59	-0.42 0.80	-0.36 0.96	-0.49 0.71	-0.22 0.69	-0.05 0.94	-0.38 0.80	-0.17 0.77	-0.46 0.57	-0.35 0.74	-0.70 0.66	-0.41 0.64
Cl								-0.30 0.78	-0.35 0.72	-0.64 0.23	-0.30 0.71	-0.16 0.75	-0.34 0.60	-0.37 0.67	-0.43 0.40	-0.41 0.27	-0.55 0.52	-0.25 0.64	-0.15 0.87	-0.35 0.68	-0.21 0.71	-0.39 0.76	-0.37 0.80
EC									-0.68 0.81	-0.65 0.41	-0.25 0.83	-0.46 0.71	-0.35 0.86	-0.53 0.76	-0.76 0.82	-0.36 0.50	-0.56 0.75	-0.47 0.80	-0.22 0.81	-0.79 0.84	-0.73 0.93	-0.55 0.91	-0.27 0.71
Pb										-0.31 0.75	-0.65 0.72	-0.05 0.62	-0.14 0.71	-0.48 0.76	-0.26 0.51	0.01 0.47	-0.09 0.73	-0.20 0.85	0.02 0.91	-0.59 0.74	-0.25 0.71	-0.52 0.28	-0.34 0.67
Hg											-0.29 0.54	-0.25 0.45	-0.52 0.27	-0.63 0.43	-0.46 0.23	-0.04 0.37	-0.42 0.41	-0.21 0.55	-0.51 0.30	-0.37 0.65	-0.48 0.61	-0.83 0.65	-0.27 0.57
Ni												-0.23 0.80	0.02 0.69	-0.37 0.49	-0.81 0.55	-0.23 0.62	-0.41 0.67	-0.02 0.99	-0.45 0.61	-0.82 0.80	-0.24 0.87	-0.67 0.98	-0.23 0.65
NO ₃													-0.17 0.67	-0.60 0.46	-0.39 0.69	-0.46 0.20	-0.16 0.51	-0.24 0.76	-0.10 0.81	-0.31 0.91	-0.21 0.94	-0.78 0.28	0.09 0.91
OCM														-0.09 0.83	-0.29 0.68	0.25 0.72	-0.09 0.83	-0.06 0.71	-0.47 0.69	-0.62 0.60	-0.15 0.84	-0.23 0.52	-0.40 0.66
Si															-0.32 0.74	0.00 0.57	0.07 0.88	-0.36 0.58	-0.55 0.79	-0.62 0.65	-0.16 0.62	-0.13 0.69	-0.61 0.71
Na ⁺																-0.29 0.30	-0.22 0.76	-0.78 0.56	-0.66 0.64	-0.69 0.88	-0.67 0.72	-0.49 0.21	-0.32 0.85
SO ₄ ⁼																	0.23 0.67	-0.07 0.61	-0.49 0.41	-0.29 0.31	-0.86 0.47	-0.91 0.73	-0.43 0.44
Ti																		-0.28 0.71	-0.47 0.61	-0.66 0.68	-0.37 0.83	-0.18 0.39	-0.59 0.70
V																			-0.30 0.75	-0.84 0.76	-0.58 0.81	-0.86 0.52	-0.30 0.85
Zn																				-0.51 0.72	-0.30 0.78	-0.65 0.27	-0.14 0.84
CO																					-0.43 0.92	-0.65 0.13	-0.35 0.87
NO ₂																						-0.72 0.29	-0.16 0.89
O ₃																							-0.76 0.66

Supplemental Material, Table S4. Percent change in relative risk of low birth weight from logistic regression model without pollution variables (95% confidence interval)

Category	Risk of Low Birth Weight (%)
Sex	
Male	-35.2 (-36.6, -33.7)**
Female	Reference
Race	
African American	67.0 (62.8, 71.4)**
Other	79.2 (72.6, 86.0)**
Caucasian	Reference
Maternal Age	
< 20 years	6.0 (1.2, 11.1)**
20 to 24	1.9 (-1.7, 5.6)
25 to 29	0.1 (-3.1, 3.4)
35 to 39	7.4 (3.3, 11.6)**
≥ 40	38.9 (30.7, 47.5)**
30 to 34	Reference
Maternal Marital Status	
Unmarried	33.4 (29.7, 37.2)**
Married	Reference
Maternal Education	
Less than high school	9.8 (6.5, 13.2)**
Some College	-11.7 (-14.5, -8.9)**
College	-23.7 (-26.3, -21.0)**
Unknown	5.6 (-4.7, 17.1)
High school	Reference
Maternal Alcohol Consumption During Pregnancy	
Yes	39.6 (20.7, 61.5)**
Unknown	-3.0 (-7.3, 1.5)
No	Reference
Maternal Tobacco Consumption During Pregnancy	
Yes	125.4 (117.9, 133.3)**
Unknown	54.9 (37.2, 74.7)**
No	Reference
Length of Gestation	
37 to 38 Weeks	261.6 (253, 270.5)**
41 to 42	-15.4 (-18.8, -11.9)**
43 to 44	30.0 (21.0, 39.6)**
39 to 40	Reference
Month Prenatal Care Begin	
4th to 6th months of pregnancy	18.0 (14.6, 21.6)**
7th month of pregnancy or later	20.5 (14.4, 27.0)**

Supplemental Material, Table S4 (Continued).

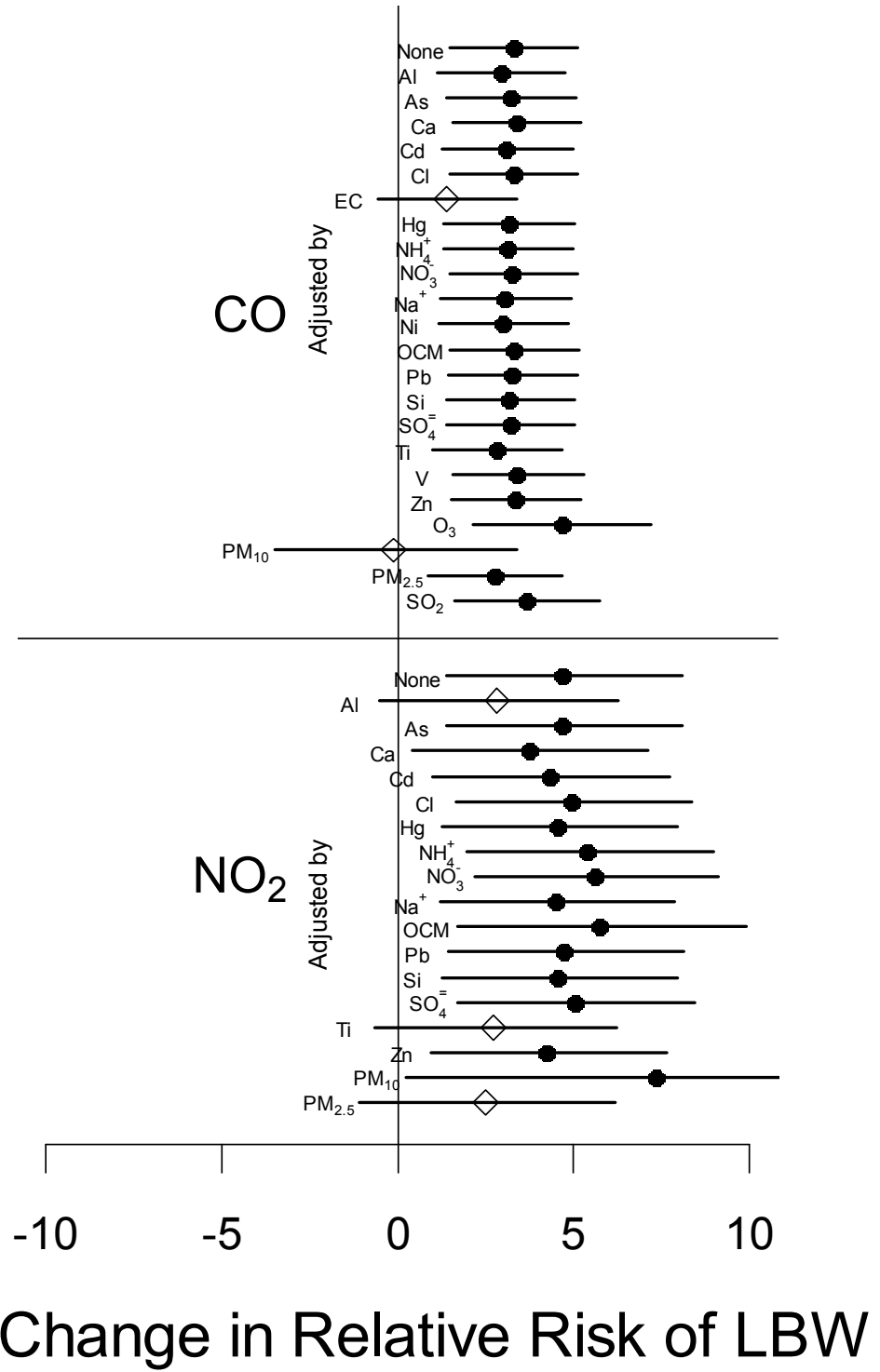
Category	Risk of Low Birth Weight (%)
No care	150.2 (129.1, 173.4)**
Unknown	36.8 (27.8, 46.4)**
First 3 months of pregnancy	Reference
Birth Order	
After first baby	-35.4 (-37.0, -33.8)**
Unknown	-16.8 (-26.9, -5.3)**
First Baby	Reference
Delivery Method	
Vaginal	-20.8 (-23.1, -18.3)**
Unknown	-18.8 (-22.6, -14.8)**
C-Section	Reference
Region	
Delaware	-4.9 (-13.4, 4.4)
Massachusetts	-6.3 (-14.2, 2.3)
Maryland and DC	-5.3 (-12.5, 2.5)
New Hampshire	-21.3 (-30.2, -11.2)**
New Jersey	-6.7 (-13.7, 0.8)*
Manhattan area, New York	10.4 (2.6, 18.7)**
New York other than Manhattan area	-20.4 (-27.2, -12.9)**
Eastern PA	-9.5 (-17.3, -1.0)**
Western PA	-15.5 (-22.3, -8.1)**
Rhode Island	-2.3 (-11.5, 7.9)
Virginia	10.4 (-0.4, 22.5)*
Vermont	-11.8 (-25.9, 4.9)
West Virginia	-6.0 (-18.8, 8.7)
Connecticut	Reference
Birth Year	
2000	7.6 (-5.3, 22.4)
2001	1.9 (-6.4, 10.9)
2002	-2.6 (-9.2, 4.4)
2003	-4.1 (-9.7, 1.9)
2004	-2.3 (-7.9, 3.7)
2005	-1.4 (-6.0, 3.3)
2006	-0.9 (-5.3, 3.8)
2007	Reference
Birth Season	
Winter	3.0 (-3.3, 9.7)
Spring	2.7 (-2.2, 7.9)
Fall	-6.4 (-10.9, -1.6)**
Summer	Reference

Note: * p-value 0.05-0.1, ** p-value <0.05.

Supplemental Material, Figure S1. Percentage change in relative risk of low birth weight per interquartile increment in selected pollutants for gestational exposure with single and two pollutant logistic models. This figure shows effects for pollutants that were not depicted in Figure 1. The point is the central estimate and the vertical line represents the 95% confidence interval. The black circle represents significant associations ($p < 0.05$). The white diamond represents non-significant associations ($p \geq 0.05$).

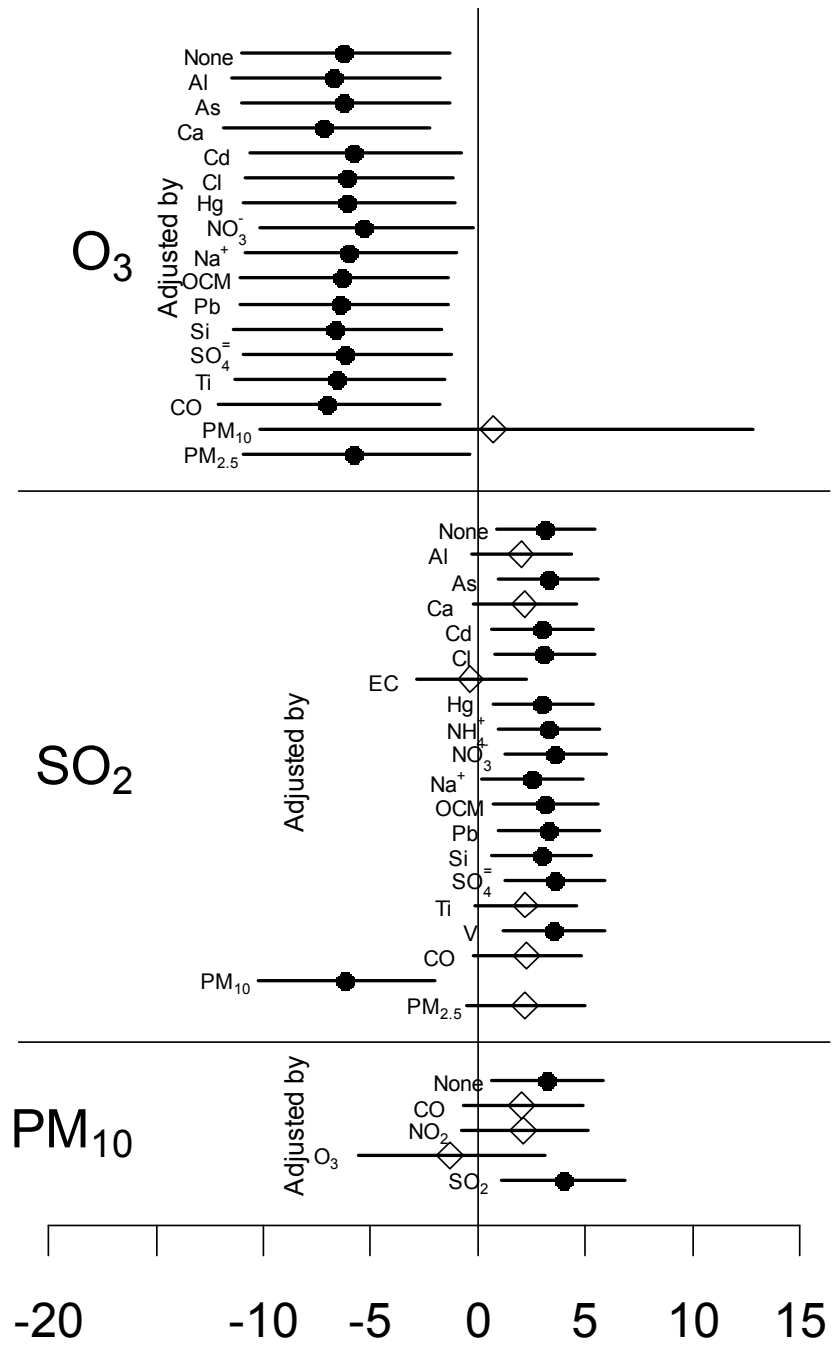
a) Results for CO, and NO₂.

Primary Pollutants



Supplemental Material, Figure S1 b) Results for O₃, NO₂, and PM₁₀.

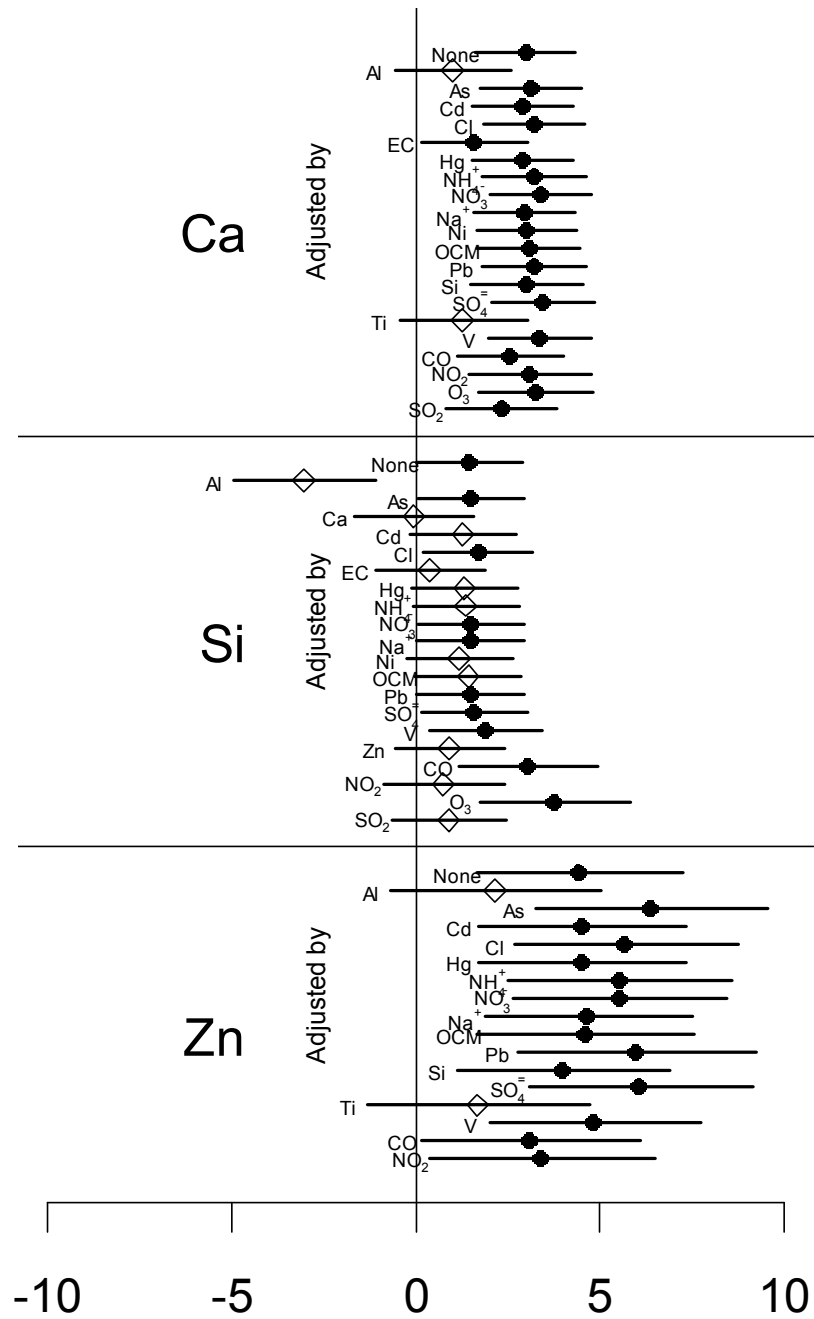
Primary Pollutants



% Change in Relative Risk of LBW

Supplemental Material, Figure S1 c) Results for Calcium, Silicon, and Zinc.

Primary Pollutants



% Change in Relative Risk of LBW