Supplemental Material

Ambient Air Pollution and Apnea and Bradycardia in High-Risk Infants on Home Monitors

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Supplemental Material Table 1. Results for GEE unconditional logistic regression analyses examining the association of daily ambient air pollution levels (average of lag 0 and 1) and apnea and bradycardia events in infants on home cardiorespiratory monitors; includes only downloads periods during which the monitor was used 100% of the days, 8/1/1998- 12/31/2002. Apnea analysis includes 1985 subjects, 7066 apnea days, and 71,560 total days; bradycardia analysis includes 3299 subjects, 23,276 bradycardia days, and 97,773 total days.

		Apnea		Bradycardia	
Pollutant	Unit[a]	OR	95% CI	OR	95% CI
8-h ozone	25 ppb	1.030	0.977, 1.086	1.046	1.015, 1.078
1-h nitrogen dioxide	20 ppb	1.011	0.967, 1.056	1.034	1.006, 1.062
1-h carbon monoxide	1 ppm	0.999	0.970, 1.030	1.008	0.990, 1.026
1-h sulfur dioxide	20 ppb	0.986	0.945, 1.030	1.001	0.975, 1.011
24-h oxygenated hydrocarbons	15 ppb	1.009	0.962, 1.058	1.015	0.988, 1.044
24-h PM_{10}	10 $\mu g/m^3$	1.004	0.975, 1.033	0.993	0.975, 1.011
24-h coarse PM	5 $\mu g/m^3$	1.006	0.973, 1.039	1.007	0.987, 1.027
24-h $PM_{2.5}$	10 $\mu g/m^3$	1.006	0.968, 1.045	0.985	0.962, 1.008
24-h $PM_{2.5}$ sulfate	5 $\mu g/m^3$	0.979	0.918, 1.044	0.982	0.947, 1.019
24-h $PM_{2.5}$ elemental carbon	1 $\mu g/m^3$	1.008	0.981, 1.035	1.001	0.985, 1.016
24-h $PM_{2.5}$ organic carbon	2 $\mu g/m^3$	1.005	0.978, 1.032	0.996	0.980, 1.012
24-h $PM_{2.5}$ water-soluble metals	0.03 $\mu g/m^3$	0.969	0.918, 1.022	1.002	0.971, 1.033

Abbreviations: OR, odds ratio; CI, confidence interval; PM, particulate matter

[a] Approximately 1 standard deviation

Supplemental Material Table 2. Results of subgroup analyses examining the association between daily ambient air pollution and apnea and bradycardia events in infants on home monitors, 8/1/1998- 12/31/2002.

		Apnea		Bradycardia	
Pollutant	Analysis[a]	OR	95% CI	OR	95% CI
8-h ozone	Primary analysis	1.036	0.987, 1.088	1.049	1.021, 1.078
	Premature/LBW	1.019	0.955, 1.088	1.028	0.993, 1.064
	Full term/NBW	0.927	0.755, 1.139	1.056	0.921, 1.210
1-h nitrogen dioxide	Primary analysis	1.011	0.972, 1.052	1.025	1.000, 1.050
	Premature/LBW	1.003	0.951, 1.059	1.022	0.991, 1.054
	Full term/NBW	1.053	0.915, 1.213	0.981	0.875, 1.099
1-h carbon monoxide	Primary analysis	0.997	0.971, 1.024	1.000	0.984, 1.016
	Premature/LBW	0.996	0.962, 1.031	0.998	0.978, 1.019
	Full term/NBW	1.050	0.952, 1.158	1.020	0.945, 1.102
1-h sulfur dioxide	Primary analysis	1.002	0.964, 1.042	1.002	0.979, 1.025
	Premature/LBW	0.997	0.947, 1.051	0.984	0.955, 1.013
	Full term/NBW	1.043	0.860, 1.265	1.057	0.961, 1.162
24-h oxygenated hydrocarbons	Primary analysis	1.000	0.958, 1.043	1.010	0.986, 1.035
	Premature/LBW	0.992	0.937, 1.050	1.021	0.990, 1.052
	Full term/NBW	1.002	0.844, 1.188	0.973	0.857, 1.106
24-h PM_{10}	Primary analysis	1.003	0.977, 1.030	0.995	0.980, 1.011
	Premature/LBW	0.991	0.955, 1.028	0.985	0.965, 1.005
	Full term/NBW	1.047	0.946, 1.159	1.038	0.963, 1.118
24-h coarse PM	Primary analysis	1.007	0.977, 1.037	1.005	0.987, 1.023
	Premature/LBW	0.996	0.956, 1.039	0.987	0.965, 1.009
	Full term/NBW	1.003	0.906, 1.111	1.020	0.938, 1.110
24-h $PM_{2.5}$	Primary analysis	1.002	0.968, 1.037	0.990	0.969, 1.011
	Premature/LBW	0.990	0.945, 1.038	0.979	0.953, 1.006
	Full term/NBW	1.104	0.962, 1.268	1.035	0.927, 1.156
24-h $PM_{2.5}$ sulfate	Primary analysis	1.001	0.945, 1.061	0.991	0.959, 1.025
	Premature/LBW	0.984	0.911, 1.062	0.980	0.939, 1.022
	Full term/NBW	1.020	0.797, 1.307	0.996	0.845, 1.174
24-h $PM_{2.5}$ elemental carbon	Primary analysis	0.999	0.975, 1.023	0.999	0.985, 1.013
	Premature/LBW	0.981	0.950, 1.013	0.990	0.972, 1.008
	Full term/NBW	1.045	0.950, 1.148	1.011	0.939, 1.089
24-h $PM_{2.5}$ organic carbon	Primary analysis	1.001	0.977, 1.026	0.997	0.982, 1.011
	Premature/LBW	0.985	0.952, 1.018	0.990	0.972, 1.008
	Full term/NBW	1.091	1.002, 1.186	1.019	0.951, 1.092
24-h $PM_{2.5}$ water-soluble metals	Primary analysis	0.978	0.931, 1.027	0.997	0.970, 1.025
	Premature/LBW	0.960	0.899, 1.025	0.968	0.934, 1.004
	Full term/NBW	0.993	0.823, 1.199	0.973	0.823, 1.151

Abbreviations: OR, odds ratio per standard deviation increase; CI, confidence interval; PM, particulate matter

[a]Primary analysis: entire population; Premature/LBW: infants with gestational age < 37 weeks and birth weight <2500 grams ; Full term/NBW: infants with gestational age > =37 weeks and normal birth weight >=2500 grams.