

Table S1. Associations between air pollutants and PCVs at night due to asthma attack (OBC adds in multi-pollutant model)

	Unit increment	April through June			July and August			September through November			December through March			Annual effects		
		(Spring)			(Summer)			(Fall)			(Winter)			OR	95% CI	
		OR	95% CI		OR	95% CI		OR	95% CI		OR	95% CI				
Concentration on the same day as a primary care visit																
PM _{2.5}	10 µg/m ³	0.934	0.838	1.042	0.927	0.766	1.123	0.869	0.746	1.013	1.168	0.945	1.442	0.972	0.907	1.041
NO ₂	10 ppb	0.979	0.665	1.441	1.055	0.565	1.971	1.168	0.796	1.712	0.725	0.416	1.263	1.019	0.843	1.232
Ozone	10 ppb	1.025	0.888	1.184	1.152	0.982	1.351	1.040	0.848	1.277	0.846	0.571	1.252	1.065	0.980	1.157
OBC	0.1 µg/m ³	1.003	0.951	1.058	0.947	0.870	1.031	1.069	0.998	1.146	0.969	0.909	1.034	1.004	0.975	1.034
Atmospheric pressure	1 hPa	1.027*	1.001	1.054	0.990	0.953	1.028	1.014	0.985	1.042	1.003	0.969	1.039	1.016*	1.002	1.031
Temperature	1 °C	1.095*	1.043	1.150	1.221*	1.051	1.420	1.001	0.963	1.04	0.997	0.935	1.062	1.030*	1.004	1.056
Relative humidity	10%	0.978	0.822	1.165	1.230	0.819	1.849	0.764	0.610	0.958	0.964	0.754	1.231	0.957	0.859	1.066
Wind speed	1 m/sec	0.895	0.733	1.093	0.729*	0.550	0.968	1.017	0.837	1.236	0.826	0.638	1.068	0.909	0.819	1.009
Hours of daylight	1 h	0.972	0.935	1.009	0.996	0.930	1.067	0.946	0.909	0.985	1.006	0.951	1.064	0.978	0.957	1.000

Table S1. Continued

	Unit increment	April through June			July and August			September through November			December through March			Annual effects		
		(Spring)			(Summer)			(Fall)			(Winter)			OR	95% CI	
		OR	95% CI		OR	95% CI		OR	95% CI		OR	95% CI				
Concentration on the day before a primary care visit																
PM _{2.5}	10 µg/m ³	0.945	0.841	1.062	1.167	0.968	1.406	1.039	0.894	1.209	1.203	0.988	1.463	1.027	0.957	1.102
NO ₂	10 ppb	1.143	0.790	1.652	0.754	0.371	1.531	1.252	0.847	1.852	0.876	0.496	1.548	0.997	0.818	1.215
Ozone	10 ppb	1.168*	1.011	1.350	1.085	0.926	1.272	0.959	0.782	1.176	1.196	0.793	1.802	1.115*	1.025	1.212
OBC	0.1 µg/m ³	1.005	0.952	1.061	1.007	0.922	1.099	0.947	0.881	1.018	0.982	0.920	1.048	0.992	0.962	1.023
Atmospheric pressure	1 hPa	1.027	1.000	1.054	1.022	0.985	1.060	0.996	0.969	1.023	1.034	0.999	1.071	1.017*	1.003	1.032
Temperature	1 °C	1.102*	1.049	1.157	1.081	0.921	1.268	0.976	0.938	1.015	0.970	0.912	1.032	1.017	0.992	1.043
Relative humidity	10%	1.006	0.839	1.206	1.031	0.686	1.551	0.905	0.733	1.118	1.149	0.897	1.472	0.994	0.893	1.107
Wind speed	1 m/sec	0.972	0.800	1.181	1.010	0.777	1.313	0.866	0.715	1.050	1.111	0.884	1.397	0.977	0.886	1.078
Hours of daylight	1 h	0.994	0.956	1.033	0.987	0.923	1.056	0.995	0.954	1.038	0.985	0.931	1.042	0.993	0.971	1.016

Table S1. Continued

	Unit increment	April through June			July and August			September through November			December through March			Annual effects		
		(Spring)			(Summer)			(Fall)			(Winter)					
		OR	95% CI		OR	95% CI		OR	95% CI		OR	95% CI		OR	95% CI	
3-day mean concentration before a primary care visit																
PM _{2.5}	10 µg/m ³	0.942	0.811	1.095	1.147	0.887	1.483	0.979	0.815	1.176	1.253	0.956	1.643	1.001	0.917	1.092
NO ₂	10 ppb	0.957	0.586	1.562	0.656	0.211	2.035	1.252	0.756	2.074	0.695	0.341	1.418	0.924	0.715	1.193
Ozone	10 ppb	1.222	1.008	1.480	1.128	0.9	1.414	0.970	0.736	1.278	1.215	0.710	2.079	1.155	1.036	1.288
OBC	0.1 µg/m ³	1.025	0.947	1.110	0.963	0.856	1.083	0.953	0.869	1.046	0.962	0.883	1.048	0.988	0.949	1.029
Atmospheric pressure	1 hPa	1.026	0.994	1.059	1.015	0.966	1.067	0.995	0.961	1.030	1.027	0.979	1.077	1.016	0.999	1.034
Temperature	1 °C	1.119	1.058	1.183	1.072	0.887	1.296	0.982	0.940	1.026	1.008	0.934	1.087	1.035	1.007	1.065
Relative humidity	10%	0.951	0.749	1.206	1.162	0.686	1.967	0.781	0.581	1.051	1.157	0.784	1.706	0.962	0.830	1.116
Wind speed	1 m/sec	0.973	0.730	1.298	0.845	0.543	1.318	0.750	0.560	1.004	0.957	0.627	1.460	0.891	0.766	1.036
Hours of daylight	1 h	0.991	0.931	1.055	1.031	0.929	1.145	0.947	0.893	1.005	0.973	0.890	1.064	0.979	0.947	1.013

Multi-pollutant model is a model which simultaneously assessed the associations between PCVs at night due to asthma attack and increment of PM_{2.5}, NO₂, ozone and OBC. Associations are shown as odds ratios (ORs) and their 95% confidence intervals (CIs) per unit increment of each parameter.

NO₂: nitrogen dioxide; OBC: optical black carbon; PCV: primary care visit; PM: particulate matter; Bold and *: p<0.05