

Supplemental Material
**Ambient Ozone Concentrations and the Risk of Perforated and
Nonperforated Appendicitis: A Multicity Case-Crossover Study**

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Supplemental Material, Table S1. P-values for heterogeneity between 12 cities for the main models.

Models	Same-Day P-Value Heterogeneity	1-Day Lag P-Value Heterogeneity	3-Day Average P-Value Heterogeneity	5-Day Average P-Value Heterogeneity	7-Day Average P-Value Heterogeneity
All Appendicitis	0.15	0.49	0.46	0.31	0.89
Appendicitis Phenotype					
Nonperforated	0.16	0.37	0.15	0.08	0.35
Perforated	0.58	0.33	0.14	0.23	0.27

Supplemental Material, Table S2. Odds ratios (95% CI) based on alternative models of the association between ozone exposures and appendicitis adjusted for temperature and humidity in 12 cities of Canada (2004 – 2008).

Model	Same-Day	1-Day Lag	3-Day Average	Cumulative Exposure	
				5-Day Average	7-Day Average
Maximum ozone, temperature and humidity on day of admission ^a					
All Appendicitis	1.00 (0.96, 1.04)	1.03 (1.00, 1.11)	1.03 (0.99, 1.08)	1.04 (0.99, 1.10)	1.07 (1.02, 1.13)
Appendicitis Phenotype					
Nonperforated	1.00 (0.95, 1.06)	1.01 (0.97, 1.05)	1.00 (0.94, 1.06)	0.99 (0.92, 1.07)	1.02 (0.95, 1.09)
Perforated	0.98 (0.93, 1.04)	1.07 (1.01, 1.14)	1.11 (1.01, 1.23)	1.15 (1.04, 1.27)	1.22 (1.09, 1.36)
Maximum ozone, temperature and humidity during the same period as ozone ^a					
All Appendicitis	1.00 (0.96, 1.04)	1.02 (0.99, 1.05)	1.03 (0.99, 1.07)	1.03 (0.97, 1.09)	1.06 (1.00, 1.12)
Appendicitis Phenotype					
Nonperforated	1.00 (0.96, 1.06)	1.00 (0.96, 1.04)	1.00 (0.94, 1.07)	0.99 (0.91, 1.07)	1.01 (0.94, 1.08)
Perforated	0.98 (0.93, 1.04)	1.07 (1.00, 1.14)	1.10 (0.99, 1.21)	1.13 (1.02, 1.27)	1.19 (1.06, 1.35)
24-hour mean ozone, temperature and humidity on day of admission ^a					
All Appendicitis	1.00 (0.97, 1.04)	1.02 (1.00, 1.05)	1.03 (0.99, 1.07)	1.03 (0.99, 1.08)	1.06 (1.02, 1.11)
Appendicitis Phenotype					
Nonperforated	1.00 (0.96, 1.05)	1.01 (0.97, 1.04)	1.00 (0.95, 1.05)	0.99 (0.93, 1.06)	1.02 (0.96, 1.08)
Perforated	0.98 (0.94, 1.03)	1.06 (1.01, 1.12)	1.10 (1.01, 1.19)	1.12 (1.03, 1.23)	1.18 (1.07, 1.30)
10 ppb increase in maximum ozone, temperature and humidity on day of admission ^b					
All Appendicitis	1.00 (0.98, 1.03)	1.02 (1.00, 1.03)	1.02 (0.99, 1.05)	1.02 (0.99, 1.06)	1.05 (1.01, 1.08)
Appendicitis Phenotype					
Nonperforated	1.00 (0.97, 1.03)	1.00 (0.98, 1.03)	1.00 (0.96, 1.04)	1.00 (0.95, 1.04)	1.01 (0.97, 1.06)
Perforated	0.99 (0.95, 1.02)	1.04 (1.01, 1.08)	1.07 (1.01, 1.14)	1.09 (1.02, 1.16)	1.13 (1.05, 1.21)

^aConditional logistic regression model of the odds of appendicitis in association with a 16 ppb increase in the daily maximum ozone concentration or 24-hour mean ozone adjusted for mean temperature and relative humidity as indicated.

^bConditional logistic regression model of the odds of appendicitis in association with a 10 ppb increase in the daily maximum ozone concentration adjusted for mean temperature and relative humidity on day of admission.