

Additional file 4. Sensitivity analyses: associations between birth weight and an inter-quartile range in air pollution metrics, for pregnancy-long exposures (a), without adjustment for the length of gestation

Air pollution metrics	IQR in air pollution metrics (c)	Number of subjects	Low birth weight Odds ratio for an IQR increase in air pollution metrics (c)	95% confidence interval	p value		Mean birth weight (d) Change for an IQR increase in air pollution metrics (c)	95% confidence interval	p value	
Monitoring station measurements, nearest station approach without distance restrictions (b)										
NO ₂	11.87	68,303	0.86	0.77	0.95	0.86	34.83	28.75	40.91	< 0.01
NO _x	27.70	68,303	0.93	0.86	1.01	0.09	24.24	19.50	28.97	< 0.01
NO	17.90	68,303	0.96	0.90	1.03	0.28	19.39	15.11	23.68	< 0.01
CO	0.48	68,303	0.96	0.89	1.04	0.36	21.93	17.10	26.76	< 0.01
PM ₁₀	6.76	68,303	0.94	0.88	1.02	0.13	19.14	14.84	23.44	< 0.01
PM _{2.5}	5.10	61,623	0.94	0.85	1.03	0.17	25.06	19.47	30.65	< 0.01
O ₃	11.50	68,303	1.12	1.01	1.23	0.03	-30.20	-35.99	24.41	< 0.01
Land Use Regression model predictions (b)										
NO ₂	9.34	68,303	0.94	0.86	1.01	0.11	16.90	12.05	21.75	< 0.01
NO _x	25.24	68,303	0.98	0.90	1.05	0.54	10.49	6.08	14.90	< 0.01
CALINE4 predictions (b)										
NO _x	5.65	67,043	0.97	0.91	1.04	0.37	13.93	9.88	17.98	< 0.01
CO	0.08	67,043	0.96	0.89	1.03	0.27	14.85	10.79	18.91	< 0.01
PM _{2.5}	1.36	67,043	0.98	0.92	1.05	0.57	5.42	1.58	9.26	0.01
Traffic density, within buffers of different distances around roads (b)										
50 m	12.91	68,303	1.00	1.00	1.01	0.49	0.01	-0.28	0.29	0.96
75 m	35.91	68,303	1.01	0.99	1.02	0.23	-0.38	-1.34	0.58	0.44
100 m	53.91	68,303	1.02	1.00	1.04	0.07	-0.68	-2.25	0.89	0.40
150 m	74.30	68,303	1.04	1.01	1.07	0.01	-0.36	-2.57	1.85	0.75
200 m	84.33	68,303	1.04	1.00	1.08	0.03	0.42	-2.08	2.91	0.74
250 m	81.34	68,303	1.03	0.99	1.07	0.16	0.93	-1.50	3.36	0.45
300 m	76.57	68,303	1.01	0.98	1.05	0.46	1.32	-1.00	3.65	0.26
Low birth weight										
Mean birth weight (d)										
Air pollution metrics	IQR in air pollution	Number of	Odds ratio for an IQR	95% confide	p value		Change for an IQR increase in air	95% confidence interval	p value	

	metrics (c)	subjects	increase in air pollution metrics (c)	95% confidence interval	95% prediction interval	95% credible interval	pollution metrics (c)	95% credible interval	95% prediction interval	p-value
Distance to the nearest road (b)										
Freeways	1766.80	68,303	1.05	0.96	1.14	0.28	-7.54	-12.52	-2.56	< 0.01
Major roads	253.05	68,303	0.93	0.87	1.00	0.06	-1.57	-5.24	2.10	0.27

a) adjusted for maternal age and poverty using smoothing splines and maternal race/ethnicity, insurance, parity, and gender of the infant as categorical variables

b) the units are parts per million for CO, parts per billion for NO, NO₂, NO_x, and O₃, and µg.m⁻³ for PM₁₀ and PM_{2.5}. Concentrations are averages, across the pregnancy period, derived from daily 24h- mean concentrations for NO₂, NO, NO_x, CO, PM₁₀ and PM_{2.5} and from daily mean concentrations from 10 am to 6 pm for O₃. The unit for traffic density is vehicle number per day/meter. The unit for distance to road is meters

c) IQR stands for inter-quartile range

d) in grams