

## Supplemental Tables

Supplemental Table 1. Exposure Model Parameters

Parameter	PAH456	EC	NO <sub>2</sub>
Central site (Garland) 24-hour concentration	X	X	
Fresno fixed site* average 24-hour concentration (n=4)			X
Mean relative humidity for lag days 1-3	X	X	
Mean 24-hour temperature on lag day 1	X		
Mean wind speed for lag days 1-7	X		X
Mean wind speed for lag days 1-5		X	
Atmospheric stability parameter** for 24-hour period		X	X
Atmospheric stability parameter** for lag days 1-4	X		
Distance to nearest freeway			X
Monthly average Caline4 dispersion model average EC from local traffic		X	
Area of railyard within 1-km radius buffer		X	
Distance to nearest class 1 rail line	X	X	
Distance to nearest class 3, 4, or 5 rail line			X
Area of urban land use within 1-km radius buffer	X		
Area of open land use within 1-km radius buffer			X

\*The Fresno fixed air monitoring sites are Garland, Clovis, Sierra Sky Park, and Fresno-Pacific University.

\*\*The stability parameter is the difference between the 850mb temperature in the 12Z Oakland, CA sounding and the minimum 24-hour Fresno Airport surface temperature, which is a measure of the atmospheric inversion strength.

1 Supplemental Table 2: Pollutant Concentrations

Pollutant	Exposure period	N	Mean	Median	IQR
EC ( $\mu\text{g}/\text{m}^3$ )	1-Day Lag	294	0.64	0.49	0.47
	1-Week Avg	294	0.67	0.58	0.37
	1-Month Avg	298	0.65	0.58	0.34
	3-Month Avg	298	0.66	0.61	0.31
	6-Month Avg	295	0.68	0.64	0.23
	1-year Avg	287	0.69	0.70	0.12
	NO <sub>2</sub> (ppb)	1-Day Lag	296	6.98	5.07
1-Week Avg		298	7.19	6.01	6.04
1-Month Avg		298	7.17	6.65	6.46
3-Month Avg		298	7.30	6.88	6.20
6-Month Avg		295	7.48	7.38	3.42
1-year Avg		286	7.60	7.71	1.74
PAH456 ( $\text{ng}/\text{m}^3$ )		1-Day Lag	299	9.20	7.40
	1-Week Avg	274	9.31	7.41	6.99
	1-Month Avg	266	9.29	7.90	8.15
	3-Month Avg	256	9.31	8.52	7.90
	6-Month Avg	258	9.23	8.82	4.42
	1-year Avg	287	9.24	9.36	0.71
	PM <sub>2.5</sub> ( $\mu\text{g}/\text{m}^3$ )	1-Day Lag	299	13.04	10.48
1-Week Avg		299	13.08	11.79	7.63
1-Month Avg		299	12.98	11.71	7.01
3-Month Avg		299	13.10	13.20	6.09
6-Month Avg		298	13.60	13.32	3.62
1-year Avg		293	14.04	14.07	2.44

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Supplemental Table 3:

a) Outcome Correlations

	Leptin	Adiponectin	CA 8-isoprostane	SBP	DBP	BMIPCT95	WHR	Percent Body Fat
<b>HbA1c</b>	0.09	0.00	0.05	-0.01	-0.00	0.09	0.06	0.02
<b>Leptin</b>		-0.11	0.12	0.33	0.41	0.69	0.66	0.43
<b>Adiponectin</b>			0.01	-0.14	-0.01	-0.18	-0.07	-0.05
<b>Creatinine-adjusted (CA) 8-isoprostane</b>				0.02	0.06	0.15	0.17	0.0
<b>Systolic Blood Pressure (SBP)</b>					0.55	0.46	0.41	0.18
<b>Diastolic Blood Pressure (DBP)</b>						0.44	0.44	0.18
<b>BMI relative to the 95th percentile (BMIPCT95)</b>							0.76	0.53
<b>Waist-Height Ratio (WHR)</b>								0.44

b) Pollutant Correlations

1-Day Lag

	NO <sub>2</sub>	PAH456	PM <sub>2.5</sub>
<b>EC</b>	0.76	0.63	0.78
<b>NO<sub>2</sub></b>		0.84	0.77
<b>PAH456</b>			0.71

1-Week Average

	NO <sub>2</sub>	PAH456	PM <sub>2.5</sub>
<b>EC</b>	0.80	0.68	0.82
<b>NO<sub>2</sub></b>		0.91	0.84
<b>PAH456</b>			0.83

1-Month Average

	NO <sub>2</sub>	PAH456	PM <sub>2.5</sub>
<b>EC</b>	0.76	0.67	0.78
<b>NO<sub>2</sub></b>		0.92	0.83
<b>PAH456</b>			0.86

3-Month Average

	NO <sub>2</sub>	PAH456	PM <sub>2.5</sub>
<b>EC</b>	0.78	0.72	0.80
<b>NO<sub>2</sub></b>		0.94	0.86
<b>PAH456</b>			0.91

6-Month Average

	NO <sub>2</sub>	PAH456	PM <sub>2.5</sub>
<b>EC</b>	0.67	0.65	0.65
<b>NO<sub>2</sub></b>		0.90	0.74
<b>PAH456</b>			0.84

1-year Average

	NO <sub>2</sub>	PAH456	PM <sub>2.5</sub>
<b>EC</b>	0.56	0.66	0.40
<b>NO<sub>2</sub></b>		0.50	0.29
<b>PAH456</b>			0.34

Supplemental Table 4: Associations between the traffic-related air pollutants and longer-term anthropometric measures and biomarkers

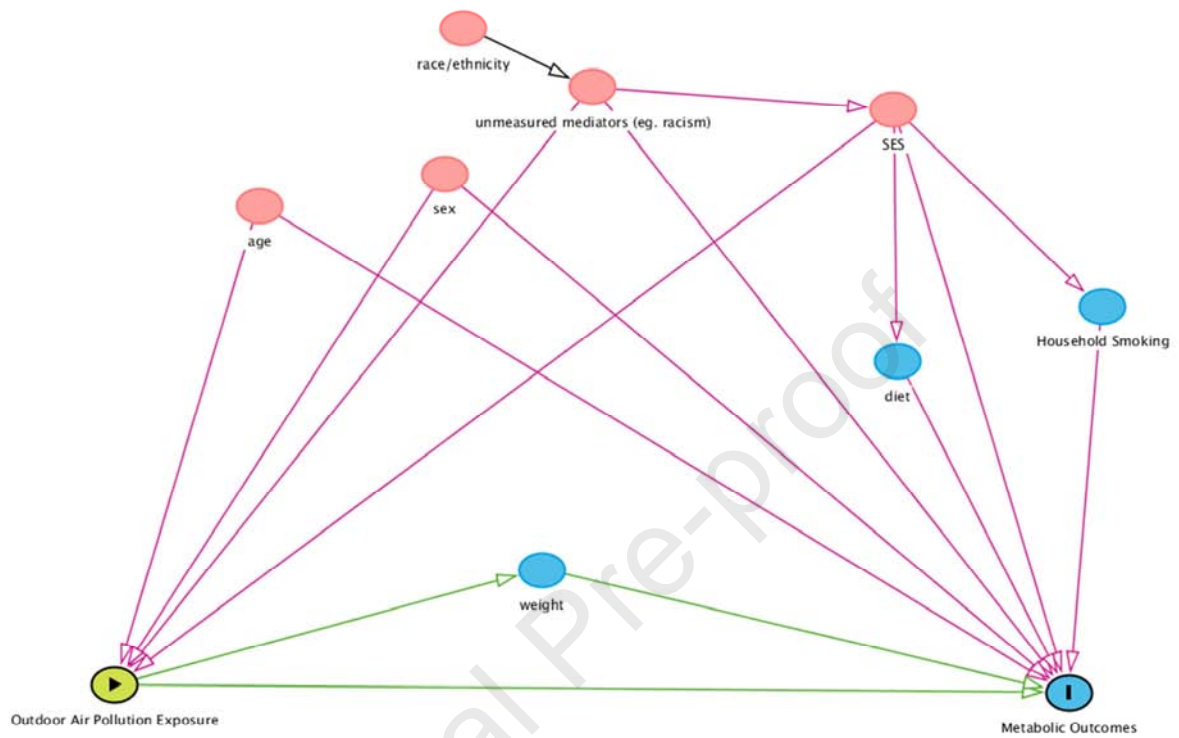
			Estimated changes in absolute value of outcome						Estimated changes in % value of outcome					
			Estimated change in HbA1c (%)		Estimated change in Waist-Height Ratio		Estimated change in Percent Body Fat		Estimated % change in BMI relative to the 95th percentile		Estimated % change in Leptin (ng/mL)		Estimated % change in Adiponectin (ug/mL)	
Pollutant	Exposure Window	IQR for pollutant/exposure window	Effect estimate and 95% CI	p	Point estimate and 95% CI	p	Point estimate and 95% CI	p	Point estimate and 95% CI	p	Point estimate and 95% CI	p	Point estimate and 95% CI	p
EC (µg/m <sup>3</sup> )	3-month	0.31	0.027 (-0.013, 0.067)	0.189	0.001 (-0.013, 0.016)	0.867	-0.058 (-1.714, 1.598)	0.945	1.620 (-2.311, 5.709)	0.425	-1.848 (-12.658, 10.301)	0.754	7.358 (-7.725, 24.906)	0.359
	6-month	0.23	0.042 (0.003, 0.081)	<b>0.036</b>	0.001 (-0.014, 0.016)	0.880	0.212 (-1.491, 1.915)	0.807	2.506 (-1.294, 6.452)	0.200	-2.564 (-14.071, 10.484)	0.686	9.313 (-6.749, 28.140)	0.273
	1-year	0.12	-0.012 (-0.054, 0.029)	0.560	0.004 (-0.010, 0.017)	0.564	-0.636 (-2.351, 1.078)	0.468	0.836 (-2.551, 4.341)	0.633	-2.246 (-13.353, 10.284)	0.712	8.001 (-7.323, 25.859)	0.325
NO <sub>2</sub> (ppb)	3-month	6.20	0.053 (-0.001, 0.108)	0.055	0.005 (-0.014, 0.024)	0.629	0.551 (-1.770, 2.871)	0.642	3.485 (-1.795, 9.050)	0.201	-2.335 (-16.815, 14.664)	0.773	8.827 (-12.806, 34.289)	0.431
	6-month	3.42	0.044 (-0.004, 0.093)	0.074	0.005 (-0.011, 0.021)	0.547	0.590 (-1.457, 2.637)	0.572	3.997 (-0.188, 8.357)	0.063	1.147 (-12.242, 16.578)	0.875	5.343 (-12.582, 26.943)	0.585
	1-year	1.74	-0.003 (-0.050, 0.044)	0.907	0.018 (0.000, 0.035)	<b>0.048</b>	0.401 (-1.619, 2.420)	0.698	1.584 (-2.227, 5.543)	0.421	2.994 (-10.303, 18.262)	0.676	0.614 (-16.238, 20.857)	0.948
PAH456 (ng/m <sup>3</sup> )	3-month	7.90	0.081 (0.018, 0.145)	<b>0.013</b>	-0.007 (-0.028, 0.015)	0.554	0.065 (-2.772, 2.901)	0.964	2.879 (-3.642, 9.840)	0.396	0.752 (-63.172, 175.632)	0.988	16.982 (-9.797, 51.710)	0.238
	6-month	4.42	0.073 (0.011, 0.136)	<b>0.022</b>	-0.003 (-0.023, 0.017)	0.761	0.401 (-2.254, 3.056)	0.767	4.615 (-0.671, 10.180)	0.089	-2.104 (-18.284, 17.278)	0.818	12.273 (-12.119, 43.435)	0.355
	1-year	0.71	0.040 (-0.003, 0.083)	0.070	0.004 (-0.012, 0.020)	0.613	0.682 (-1.177, 2.540)	0.473	0.992 (-2.994, 5.142)	0.631	-2.258 (-15.156, 12.601)	0.752	1.847 (-13.973, 20.577)	0.832
PM <sub>2.5</sub> (µg/m <sup>3</sup> )	3-month	6.09	0.048 (0.002, 0.095)	<b>0.042</b>	-0.008 (-0.036, 0.020)	0.575	1.262 (-1.100, 3.624)	0.296	1.631 (-2.526, 5.965)	0.448	-2.074 (-14.577, 12.259)	0.764	8.733 (-9.030, 29.965)	0.358
	6-month	3.62	0.055 (0.007, 0.102)	<b>0.024</b>	-0.002 (-0.011, 0.008)	0.748	0.863 (-1.164, 2.891)	0.405	2.963 (-1.087, 7.178)	0.155	-2.680 (-15.563, 12.169)	0.708	10.139 (-8.459, 32.516)	0.307
	1-year	2.44	0.010 (-0.080, 0.100)	0.827	-0.030 (-0.060, 0.001)	0.057	0.589 (-3.356, 4.534)	0.770	-4.124 (-11.069, 3.365)	0.273	-17.970 (-37.158, 7.076)	0.146	14.104 (-10.936, 62.618)	0.466

1 Supplemental Table 5: Associations between the traffic-related air pollutants and short- and  
 2 longer-term anthropometric measures and biomarkers

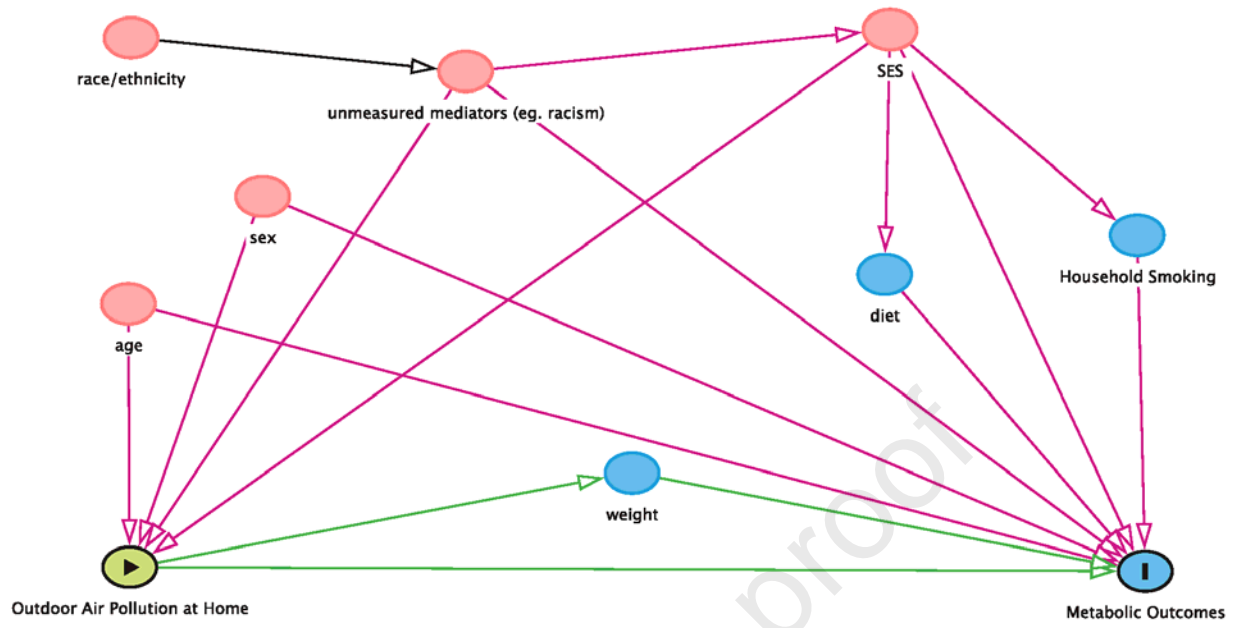
Pollutant	Exposure Window	IQR for pollutant/ exposure window	Estimated changes in absolute value of outcome				Estimated changes in % value of outcome	
			Estimated change in SBP (mmHg)		Estimated change in DBP (mmHg)		Estimated % change in 8-isoprostane (ng/mg)*	
			Point estimate and 95% CI	p	Point estimate and 95% CI	p	Point estimate and 95% CI	p
EC (µg/m <sup>3</sup> )	1-day	0.47	0.338 (-1.167, 1.844)	0.660	0.354 (-0.662, 1.37)	0.495	13.129 (4.243, 22.773)	<b>0.003</b>
	1-week	0.37	1.279 (-0.585, 3.143)	0.180	0.983 (-0.121, 2.087)	0.082	9.752 (0.732, 19.581)	<b>0.034</b>
	1-month	0.34	2.7 (-0.447, 5.847)	0.094	1.9 (0.379, 3.422)	<b>0.015</b>	19.141 (7.198, 32.415)	<b>0.001</b>
	3-month	0.31	2.594 (-1.475, 6.663)	0.212	1.695 (-0.114, 3.504)	0.067	18.449 (6.495, 31.745)	<b>0.002</b>
	6-month	0.23	1.163 (-2.056, 4.381)	0.479	0.493 (-1.315, 2.3)	0.594	3.665 (-11.703, 21.707)	0.661
	1-year	0.12	0.541 (-1.321, 2.403)	0.570	0.034 (-1.382, 1.45)	0.963	0.321 (-10.893, 12.948)	0.958
NO <sub>2</sub> (ppb)	1-day	6.42	0.926 (-1.7, 3.552)	0.490	0.389 (-1.232, 2.01)	0.638	20.211 (7.846, 33.994)	<b>0.001</b>
	1-week	6.04	2.962 (-0.617, 6.54)	0.106	1.003 (-0.643, 2.649)	0.234	17.200 (4.676, 31.222)	<b>0.006</b>
	1-month	6.46	5.61 (0.022, 11.198)	<b>0.050</b>	1.646 (-0.434, 3.726)	0.122	25.526 (9.376, 44.060)	<b>0.001</b>
	3-month	6.20	9.387 (2.842, 15.932)	<b>0.005</b>	1.866 (-1.087, 4.819)	0.217	12.401 (-9.732, 39.961)	0.297
	6-month	3.42	4.689 (0.853, 8.524)	<b>0.017</b>	0.148 (-2.008, 2.304)	0.893	-7.724 (-22.483, 9.844)	0.367
	1-year	1.74	2.613 (0.652, 4.573)	<b>0.010</b>	0.349 (-1.178, 1.876)	0.655	0.127 (-11.987, 13.908)	0.985
PAH456 (ng/m <sup>3</sup> )	1-day	6.14	2.205 (-1.17, 5.579)	0.202	1.249 (-0.242, 2.74)	0.102	25.207 (12.557, 39.279)	<b>&lt;0.00001</b>
	1-week	6.99	2.688 (-2.167, 7.543)	0.279	1.604 (-0.194, 3.402)	0.082	24.280 (9.817, 40.647)	<b>0.001</b>
	1-month	8.15	4.16 (-2.591, 10.911)	0.228	1.712 (-0.499, 3.924)	0.130	29.586 (10.834, 51.510)	<b>0.001</b>
	3-month	7.90	2.194 (-8.417, 12.805)	0.686	0.828 (-3.724, 5.38)	0.722	2.968 (-27.876, 47.003)	0.872
	6-month	4.42	0.406 (-8.429, 9.241)	0.928	-1.624 (-3.712, 0.463)	0.128	-13.542 (-40.721, 26.100)	0.451
	1-year	0.71	0.86 (-1.362, 3.081)	0.449	-0.081 (-1.759, 1.596)	0.924	-6.255 (18.626, 7.997)	0.372
PM <sub>2.5</sub> (µg/m <sup>3</sup> )	1-day	8.47	1.159 (-0.37, 2.688)	0.138	0.511 (-0.507, 1.529)	0.326	11.312 (2.381, 21.002)	<b>0.013</b>
	1-week	7.63	1.778 (-0.433, 3.988)	0.116	1.069 (-0.166, 2.304)	0.091	13.999 (3.452, 25.621)	<b>0.009</b>
	1-month	7.01	2.597 (-1.056, 6.25)	0.165	1.448 (-0.155, 3.051)	0.078	22.273 (8.340, 37.998)	<b>0.001</b>
	3-month	6.09	3.864 (-1.495, 9.224)	0.159	0.904 (-1.154, 2.961)	0.390	9.140 (-10.032, 32.398)	0.376
	6-month	3.62	-1.665 (-6.33, 3.001)	0.485	-0.359 (-2.491, 1.772)	0.741	-7.235 (-22.413, 10.912)	0.411
	1-year	2.44	-0.831 (-5.03, 3.367)	0.698	-1.284 (-4.336, 1.769)	0.411	2.076 (-21.85, 32.371)	0.877

3 \*8-isoprostane is adjusted for creatinine level

4 Supplemental Figure 1. DAG used for determining the covariates to be adjusted in the  
5 model



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