

## Online Appendix.

**eTable 1.** Selected screen shots of the personal digital assistant diary.

<p>During the BP measurements, what was your POSTURE?</p> <div style="display: flex; flex-direction: column; gap: 5px;"> <div style="display: flex; align-items: center;"> <span style="margin-left: 5px;">STANDING/ WALKING</span> </div> <div style="display: flex; align-items: center;"> <span style="margin-left: 5px;">SITTING</span> </div> <div style="display: flex; align-items: center;"> <span style="margin-left: 5px;">RECLINING/ LAYING DOWN</span> </div> <div style="display: flex; align-items: center;"> <span style="margin-left: 5px;">CHANGED POSITION</span> </div> </div>	<p>MODERATE to STRENUOUS Physical Activity During Last Hour?</p> <div style="display: flex; flex-direction: column; gap: 10px;"> <div style="display: flex; align-items: center;"> <span style="margin-left: 10px;">NO</span> </div> <div style="display: flex; align-items: center;"> <span style="margin-left: 10px;">YES</span> </div> </div>	<p>Right Now I Feel: STRESS/ANXIETY:</p> <div style="display: flex; flex-direction: column; gap: 5px;"> <div style="display: flex; align-items: center;"> <span style="margin-left: 5px;">NOT AT ALL</span> </div> <div style="display: flex; align-items: center;"> <span style="margin-left: 5px;">JUST A LITTLE</span> </div> <div style="display: flex; align-items: center;"> <span style="margin-left: 5px;">MODERATE</span> </div> <div style="display: flex; align-items: center;"> <span style="margin-left: 5px;">STRONG</span> </div> <div style="display: flex; align-items: center;"> <span style="margin-left: 5px;">INTENSE</span> </div> </div>
<p>Right Now I Feel ANGRY:</p> <div style="display: flex; flex-direction: column; gap: 5px;"> <div style="display: flex; align-items: center;"> <span style="margin-left: 5px;">NOT AT ALL</span> </div> <div style="display: flex; align-items: center;"> <span style="margin-left: 5px;">JUST A LITTLE</span> </div> <div style="display: flex; align-items: center;"> <span style="margin-left: 5px;">MODERATE</span> </div> <div style="display: flex; align-items: center;"> <span style="margin-left: 5px;">STRONG</span> </div> <div style="display: flex; align-items: center;"> <span style="margin-left: 5px;">INTENSE</span> </div> </div>	<p>QUALITY of my most important INTERACTION:</p> <div style="display: flex; flex-direction: column; gap: 5px;"> <div style="display: flex; align-items: center;"> <span style="margin-left: 5px;">SPECIAL</span> </div> <div style="display: flex; align-items: center;"> <span style="margin-left: 5px;">PLEASANT</span> </div> <div style="display: flex; align-items: center;"> <span style="margin-left: 5px;">NEUTRAL</span> </div> <div style="display: flex; align-items: center;"> <span style="margin-left: 5px;">UNCOMFORTABLE</span> </div> <div style="display: flex; align-items: center;"> <span style="margin-left: 5px;">CONFRONTATIONAL</span> </div> </div>	<p>Did you have any ALCOHOL in the last HOUR?</p> <div style="display: flex; flex-direction: column; gap: 5px;"> <div style="display: flex; align-items: center;"> <span style="margin-left: 5px;">NONE AT ALL</span> </div> <div style="display: flex; align-items: center;"> <span style="margin-left: 5px;">1 Drink</span> </div> <div style="display: flex; align-items: center;"> <span style="margin-left: 5px;">2 Drinks</span> </div> <div style="display: flex; align-items: center;"> <span style="margin-left: 5px;">3 or More</span> </div> </div>
<p>Did you have any CAFFEINATED BEVERAGES in the last hour?</p> <div style="display: flex; flex-direction: column; gap: 5px;"> <div style="display: flex; align-items: center;"> <span style="margin-left: 5px;">NOT AT ALL</span> </div> <div style="display: flex; align-items: center;"> <span style="margin-left: 5px;">1 COFFEE /BEVERAGES</span> </div> <div style="display: flex; align-items: center;"> <span style="margin-left: 5px;">2 CUPS /SERVINGS</span> </div> <div style="display: flex; align-items: center;"> <span style="margin-left: 5px;">3 or MORE CUPS /SERVINGS</span> </div> </div>	<p>Between 45 MIN and 60 MIN Ago I Was:</p> <div style="display: flex; flex-direction: column; gap: 5px;"> <div style="display: flex; align-items: center;"> <span style="margin-left: 5px;">HOME: INDOORS</span> </div> <div style="display: flex; align-items: center;"> <span style="margin-left: 5px;">HOME: YARD or NEARBY</span> </div> <div style="display: flex; align-items: center;"> <span style="margin-left: 5px;">ROAD/TRANSIT</span> </div> <div style="display: flex; align-items: center;"> <span style="margin-left: 5px;">ELSEWHERE</span> </div> </div>	<p>Between 30 MIN and 45 MIN Ago I Was:</p> <div style="display: flex; flex-direction: column; gap: 5px;"> <div style="display: flex; align-items: center;"> <span style="margin-left: 5px;">HOME: INDOORS</span> </div> <div style="display: flex; align-items: center;"> <span style="margin-left: 5px;">HOME: YARD or NEARBY</span> </div> <div style="display: flex; align-items: center;"> <span style="margin-left: 5px;">ROAD/TRANSIT</span> </div> <div style="display: flex; align-items: center;"> <span style="margin-left: 5px;">ELSEWHERE</span> </div> </div>
<p>Between 15 MIN and 30 MIN Ago I Was:</p> <div style="display: flex; flex-direction: column; gap: 5px;"> <div style="display: flex; align-items: center;"> <span style="margin-left: 5px;">HOME: INDOORS</span> </div> <div style="display: flex; align-items: center;"> <span style="margin-left: 5px;">HOME: YARD or NEARBY</span> </div> <div style="display: flex; align-items: center;"> <span style="margin-left: 5px;">ROAD/TRANSIT</span> </div> <div style="display: flex; align-items: center;"> <span style="margin-left: 5px;">ELSEWHERE</span> </div> </div>	<p>Between NOW and 15 MIN Ago I Was:</p> <div style="display: flex; flex-direction: column; gap: 5px;"> <div style="display: flex; align-items: center;"> <span style="margin-left: 5px;">HOME: INDOORS</span> </div> <div style="display: flex; align-items: center;"> <span style="margin-left: 5px;">HOME: YARD or NEARBY</span> </div> <div style="display: flex; align-items: center;"> <span style="margin-left: 5px;">ROAD/TRANSIT</span> </div> <div style="display: flex; align-items: center;"> <span style="margin-left: 5px;">ELSEWHERE</span> </div> </div>	<p>Type of Transportation Used?</p> <div style="display: flex; flex-direction: column; gap: 5px;"> <div style="display: flex; align-items: center;"> <span style="margin-left: 5px;">CAR/VAN</span> </div> <div style="display: flex; align-items: center;"> <span style="margin-left: 5px;">BUS</span> </div> <div style="display: flex; align-items: center;"> <span style="margin-left: 5px;">WALKING: NEAR ROAD</span> </div> <div style="display: flex; align-items: center;"> <span style="margin-left: 5px;">WALKING: FAR FROM ROAD</span> </div> <div style="display: flex; align-items: center;"> <span style="margin-left: 5px;">BICYCLE: NEAR ROAD</span> </div> <div style="display: flex; align-items: center;"> <span style="margin-left: 5px;">BICYCLE: FAR FROM ROAD</span> </div> </div>

The subjects received in-person training on the use of the diary during a one-day run-in trial and they were also given a diary training manual.

Subjects were instructed that the following represents moderate to strenuous physical activity (essentially level of exertion):

*“Moderate activity may be a non-exhausting activity, such as fast walking, easy bicycling, easy swimming, heavy housecleaning or yard work, where you notice that your breathing becomes faster and you may sweat.”*

*“Strenuous activity may be an activity that makes you breathe very fast, your heart beats rapidly, and your face may flush, such as jogging and vigorous swimming, or any of the above activities that for you may be strenuous.”*

**eTable 2.** Associations of diastolic and systolic blood pressure with outdoor home air pollutants: sensitivity analysis restricting observations to hours subjects were at home.

Exposure / ave. time	Systolic Blood Pressure Coefficient (95% CI) <sup>a</sup>		Diastolic Blood Pressure Coefficient (95% CI)	
	Overall hours	Hours at home	Overall hours	Hours at home
<b>Particle number</b>				
1hr	-0.01 (-0.58, 0.56)	0.01 (-0.59, 0.62)	0.04 (-0.30, 0.37)	0.02 (-0.34, 0.38)
4hr	0.31 (-0.48, 1.11)	0.52 (-0.31, 1.35)	0.07 (-0.38, 0.53)	0.10 (-0.38, 0.58)
8-hr	0.43 (-0.56, 1.42)	0.58 (-0.45, 1.62)	0.03 (-0.53, 0.59)	0.10 (-0.49, 0.69)
24-hr	0.09 (-1.41, 1.60)	-0.03 (-1.62, 1.56)	-0.26 (-1.11, 0.58)	-0.13 (-1.03, 0.76)
3-day	-1.36 (-3.90, 1.18)	-1.87 (-4.49, 0.75)	-0.76 (-2.18, 0.65)	-1.09 (-2.57, 0.39)
5-day	-1.79 (-6.05, 2.46)	-3.18 (-7.60, 1.25)	-0.72 (-3.09, 1.65)	-1.45 (-3.95, 1.05)
7-day	-4.86 (-10.68, 0.97)	-5.81 (-11.81, 0.18)	-2.10 (-5.34, 1.14)	-2.73 (-6.11, 0.66)
9-day	-2.86 (-11.04, 5.33)	-3.33 (-11.73, 5.07)	-1.20 (-5.74, 3.33)	-2.15 (-6.86, 2.57)
<b>Black carbon</b>				
1hr	0.12 (-0.30, 0.53)	0.17 (-0.26, 0.60)	0.10 (-0.14, 0.34)	0.14 (-0.11, 0.39)
4hr	0.09 (-0.45, 0.63)	0.20 (-0.36, 0.76)	0.19 (-0.11, 0.48)	0.23 (-0.09, 0.54)
8-hr	0.37 (-0.29, 1.02)	0.46 (-0.22, 1.14)	0.29 (-0.06, 0.65)	0.35 (-0.03, 0.72)
24-hr	0.22 (-0.65, 1.09)	0.29 (-0.61, 1.19)	0.36 (-0.11, 0.83)	0.42 (-0.07, 0.92)
3-day	2.06 (0.60, 3.52)	2.35 (0.84, 3.85)	1.27 (0.49, 2.06)	1.38 (0.56, 2.21)
5-day	3.14 (0.57, 5.71)	3.76 (1.11, 6.41)	2.38 (0.99, 3.76)	2.73 (1.29, 4.18)
7-day	3.55 (-0.23, 7.32)	3.60 (-0.22, 7.43)	2.63 (0.60, 4.67)	2.51 (0.43, 4.60)
9-day	5.28 (0.86, 9.69)	5.52 (0.94, 10.09)	4.18 (1.80, 6.55)	3.98 (1.48, 6.49)
<b>Organic Carbon (OC)</b>				
1hr	0.35 (-0.84, 1.55)	0.27 (-0.99, 1.53)	0.20 (-0.48, 0.89)	0.38 (-0.34, 1.10)
4hr	0.29 (-1.36, 1.94)	0.39 (-1.32, 2.10)	0.17 (-0.73, 1.07)	0.35 (-0.60, 1.29)
8-hr	0.67 (-1.32, 2.66)	0.76 (-1.30, 2.82)	0.32 (-0.75, 1.39)	0.46 (-0.66, 1.58)
24-hr	0.06 (-2.16, 2.29)	0.14 (-2.15, 2.42)	0.53 (-0.66, 1.72)	0.66 (-0.58, 1.90)
3-day	4.24 (0.86, 7.62)	5.52 (2.00, 9.05)	2.31 (0.50, 4.12)	2.99 (1.07, 4.90)
5-day	6.03 (1.00, 11.06)	8.20 (3.02, 13.38)	4.57 (1.91, 7.23)	5.83 (3.05, 8.61)
7-day	7.59 (0.13, 15.06)	9.07 (1.48, 16.66)	6.19 (2.24, 10.14)	7.55 (3.49, 11.62)
9-day	3.32 (-6.16, 12.80)	5.72 (-4.02, 15.45)	6.84 (1.81, 11.87)	7.94 (2.69, 13.18)

**eTable 2 (cont.)**

Exposure / ave. time	Systolic Blood Pressure Coefficient (95% CI)		Diastolic Blood Pressure Coefficient (95% CI)	
	Overall hours	Hours at home	Overall hours	Hours at home
<b>Primary OC</b>				
1hr	0.02 (-1.24, 1.28)	0.04 (-1.29, 1.38)	-0.16 (-0.88, 0.57)	-0.04 (-0.81, 0.72)
4hr	0.63 (-1.10, 2.36)	1.02 (-0.79, 2.83)	0.19 (-0.77, 1.14)	0.40 (-0.61, 1.40)
8-hr	1.63 (-0.51, 3.76)	2.10 (-0.12, 4.32)	0.33 (-0.82, 1.48)	0.54 (-0.68, 1.75)
24-hr	0.75 (-2.29, 3.79)	1.50 (-1.67, 4.66)	0.32 (-1.32, 1.96)	0.77 (-0.96, 2.49)
3-day	4.98 (0.47, 9.49)	6.74 (2.05, 11.43)	2.80 (0.33, 5.26)	3.63 (1.02, 6.23)
5-day	4.68 (-2.85, 12.22)	7.89 (0.14, 15.64)	3.62 (-0.50, 7.74)	5.80 (1.51, 10.10)
7-day	7.11 (-4.43, 18.65)	9.30 (-2.63, 21.24)	5.51 (-0.79, 11.81)	7.43 (0.86, 14.00)
9-day	-7.34 (-23.50, 8.81)	-2.04 (-18.62, 14.55)	1.96 (-6.92, 10.83)	5.11 (-4.12, 14.34)
<b>Secondary OC</b>				
1hr	0.39 (-0.27, 1.06)	0.40 (-0.29, 1.09)	0.24 (-0.15, 0.62)	0.33 (-0.07, 0.73)
4hr	0.45 (-0.56, 1.46)	0.49 (-0.55, 1.53)	0.32 (-0.23, 0.88)	0.40 (-0.18, 0.98)
8-hr	0.76 (-0.48, 2.01)	0.68 (-0.59, 1.96)	0.43 (-0.24, 1.10)	0.44 (-0.25, 1.14)
24-hr	1.32 (-0.16, 2.80)	1.19 (-0.32, 2.70)	0.65 (-0.14, 1.45)	0.58 (-0.24, 1.41)
3-day	1.90 (-0.24, 4.04)	2.33 (0.11, 4.56)	1.06 (-0.11, 2.22)	1.35 (0.12, 2.58)
5-day	3.19 (0.48, 5.89)	4.05 (1.25, 6.85)	2.28 (0.82, 3.75)	2.63 (1.09, 4.17)
7-day	3.03 (-0.87, 6.94)	3.54 (-0.47, 7.55)	2.54 (0.44, 4.64)	3.09 (0.91, 5.28)
9-day	1.27 (-4.84, 7.37)	2.69 (-3.60, 8.97)	2.43 (-0.86, 5.72)	2.82 (-0.63, 6.27)
<b>PM<sub>2.5</sub></b>				
1hr	0.02 (-0.60, 0.63)	0.01 (-0.63, 0.64)	0.12 (-0.23, 0.46)	0.10 (-0.26, 0.46)
4hr	-0.01 (-0.73, 0.71)	0.04 (-0.70, 0.77)	0.21 (-0.19, 0.60)	0.17 (-0.24, 0.58)
8-hr	0.26 (-0.54, 1.07)	0.25 (-0.58, 1.07)	0.40 (-0.03, 0.84)	0.32 (-0.13, 0.78)
24-hr	0.54 (-0.40, 1.49)	0.47 (-0.50, 1.43)	0.60 (0.09, 1.11)	0.48 (-0.05, 1.01)
3-day	2.11 (0.77, 3.45)	2.46 (1.09, 3.83)	1.23 (0.51, 1.95)	1.31 (0.56, 2.05)
5-day	3.37 (1.15, 5.60)	3.87 (1.59, 6.16)	2.06 (0.86, 3.26)	2.33 (1.08, 3.58)
7-day	3.54 (0.19, 6.89)	3.65 (0.23, 7.07)	2.22 (0.41, 4.03)	2.26 (0.39, 4.13)
9-day	3.32 (-0.42, 7.06)	3.79 (-0.11, 7.69)	3.36 (1.35, 5.36)	3.26 (1.14, 5.39)

**eTable 2 (cont.)**

Exposure / ave. time	Systolic Blood Pressure Coefficient (95% CI)		Diastolic Blood Pressure Coefficient (95% CI)	
	Overall hours	Hours at home	Overall hours	Hours at home
<b>NO<sub>x</sub></b>				
1hr	0.36 (-0.23, 0.95)	0.46 (-0.16, 1.07)	0.18 (-0.16, 0.52)	0.29 (-0.07, 0.64)
4hr	0.11 (-0.63, 0.85)	0.28 (-0.49, 1.05)	0.16 (-0.25, 0.57)	0.29 (-0.14, 0.73)
8-hr	0.41 (-0.46, 1.28)	0.53 (-0.37, 1.44)	0.23 (-0.25, 0.70)	0.37 (-0.13, 0.88)
24-hr	0.12 (-1.04, 1.29)	0.30 (-0.90, 1.50)	0.20 (-0.43, 0.83)	0.37 (-0.29, 1.03)
3-day	1.21 (-0.75, 3.17)	1.36 (-0.67, 3.39)	0.79 (-0.27, 1.84)	0.83 (-0.28, 1.93)
5-day	0.90 (-2.81, 4.61)	1.56 (-2.27, 5.40)	1.79 (-0.21, 3.79)	2.03 (-0.06, 4.12)
7-day	-0.01 (-5.18, 5.16)	0.44 (-4.85, 5.73)	0.84 (-1.95, 3.63)	0.65 (-2.24, 3.54)
9-day	3.98 (-2.57, 10.52)	4.33 (-2.39, 11.05)	2.75 (-0.79, 6.29)	2.38 (-1.30, 6.07)
<b>CO</b>				
1hr	-0.04 (-0.68, 0.59)	0.02 (-0.64, 0.68)	0.08 (-0.29, 0.44)	0.21 (-0.17, 0.60)
4hr	-0.34 (-1.16, 0.49)	-0.17 (-1.02, 0.69)	0.04 (-0.42, 0.50)	0.21 (-0.28, 0.69)
8-hr	0.18 (-0.83, 1.19)	0.37 (-0.68, 1.42)	0.29 (-0.27, 0.85)	0.53 (-0.06, 1.12)
24-hr	-0.40 (-1.73, 0.93)	-0.29 (-1.67, 1.09)	0.26 (-0.47, 0.99)	0.51 (-0.25, 1.28)
3-day	0.69 (-1.44, 2.81)	0.90 (-1.29, 3.09)	0.87 (-0.29, 2.03)	1.08 (-0.13, 2.29)
5-day	-0.48 (-3.94, 2.98)	0.01 (-3.56, 3.57)	1.47 (-0.41, 3.35)	2.08 (0.12, 4.04)
7-day	-2.55 (-7.58, 2.48)	-2.06 (-7.20, 3.08)	0.63 (-2.11, 3.38)	1.22 (-1.63, 4.07)
9-day	1.22 (-5.96, 8.40)	1.53 (-5.87, 8.94)	4.22 (0.31, 8.13)	4.23 (0.13, 8.32)
<b>O<sub>3</sub></b>				
1hr	0.34 (-0.31, 0.99)	0.27 (-0.40, 0.94)	-0.01 (-0.38, 0.36)	-0.07 (-0.45, 0.31)
4hr	0.30 (-0.46, 1.06)	0.25 (-0.53, 1.03)	-0.07 (-0.49, 0.35)	-0.14 (-0.57, 0.30)
8-hr	0.11 (-0.78, 0.99)	0.03 (-0.87, 0.93)	-0.27 (-0.76, 0.23)	-0.34 (-0.85, 0.17)
24-hr	0.58 (-1.01, 2.18)	0.37 (-1.27, 2.02)	-0.22 (-1.09, 0.65)	-0.42 (-1.32, 0.49)
3-day	0.04 (-2.25, 2.34)	-0.02 (-2.36, 2.33)	-0.76 (-2.00, 0.48)	-0.75 (-2.03, 0.53)
5-day	1.07 (-3.81, 5.95)	0.73 (-4.32, 5.78)	-1.63 (-4.27, 1.00)	-1.41 (-4.17, 1.36)
7-day	0.90 (-7.57, 9.37)	-0.75 (-9.64, 8.14)	0.36 (-4.25, 4.96)	0.89 (-4.02, 5.79)
9-day	-3.09 (-10.04, 3.87)	-3.70 (-10.83, 3.43)	-1.99 (-5.74, 1.76)	-1.89 (-5.79, 2.01)

<sup>a</sup> Regression coefficients and 95% confidence intervals are for the expected change in blood pressure associated with an interquartile range change in the air pollutant (see Table 2). All models are adjusted for temperature of the same averaging time, hour of day, posture during the BP measurement, and last 25-min average of z-scored actigraph activity.

**eTable 3. Associations of diastolic and systolic blood pressure with outdoor home air pollutants: Effect modification by diary reports of moderate to strenuous activity.**

Exposure / ave. times	Systolic Blood Pressure Coefficient (95% CI) <sup>a</sup>			Diastolic Blood Pressure Coefficient (95% CI)		
	With Moderate-Strenuous Activity <sup>b</sup>	Without Moderate-Strenuous Activity	P-value for Effect Modification	With Moderate-Strenuous Activity	Without Moderate-Strenuous Activity	P-value for Effect Modification
<b>Particle number</b>						
1hr	1.21 (-0.77, 3.19)	-0.01 (-0.62, 0.61)	0.236	1.33 (0.12, 2.55)	-0.04 (-0.41, 0.32)	0.030
4hr	3.88 (1.08, 6.68)	0.33 (-0.51, 1.17)	0.013	2.72 (1.01, 4.43)	-0.05 (-0.53, 0.44)	0.002
8-hr	3.31 (-0.27, 6.90)	0.41 (-0.64, 1.45)	0.114	2.16 (-0.02, 4.33)	-0.02 (-0.62, 0.57)	0.053
24-hr	-1.08 (-7.63, 5.46)	-0.31 (-1.91, 1.29)	0.818	1.17 (-2.82, 5.16)	-0.33 (-1.23, 0.57)	0.465
3-day	-1.89 (-11.00, 7.22)	-1.93 (-4.55, 0.70)	0.993	-2.86 (-8.42, 2.70)	-1.07 (-2.55, 0.40)	0.534
5-day	-4.15 (-18.40, 10.10)	-2.78 (-7.22, 1.65)	0.852	-0.49 (-9.17, 8.20)	-1.39 (-3.89, 1.11)	0.842
7-day	-4.21 (-23.79, 15.36)	-5.10 (-11.13, 0.92)	0.930	-0.48 (-12.51, 11.54)	-2.35 (-5.77, 1.06)	0.764
9-day	7.77 (-25.92, 41.45)	-3.66 (-12.10, 4.78)	0.508	9.41 (-11.09, 29.90)	-2.48 (-7.25, 2.28)	0.260
<b>Black carbon</b>						
1hr	0.90 (-0.29, 2.09)	0.13 (-0.32, 0.57)	0.212	1.01 (0.29, 1.72)	0.05 (-0.20, 0.31)	0.011
4hr	0.77 (-0.78, 2.32)	0.17 (-0.40, 0.74)	0.456	1.15 (0.22, 2.08)	0.16 (-0.16, 0.48)	0.039
8-hr	0.17 (-1.72, 2.07)	0.50 (-0.19, 1.18)	0.739	1.35 (0.22, 2.47)	0.28 (-0.10, 0.66)	0.069
24-hr	-1.36 (-4.01, 1.29)	0.34 (-0.57, 1.24)	0.213	0.75 (-0.85, 2.34)	0.34 (-0.15, 0.84)	0.628
3-day	-4.04 (-9.19, 1.12)	2.47 (0.97, 3.96)	0.014	-0.68 (-3.79, 2.44)	1.37 (0.56, 2.19)	0.201
5-day	-6.48 (-15.61, 2.65)	3.49 (0.87, 6.10)	0.033	2.74 (-2.76, 8.24)	2.29 (0.87, 3.72)	0.874
7-day	-0.60 (-12.65, 11.44)	3.19 (-0.56, 6.94)	0.537	7.14 (-0.12, 14.40)	1.94 (-0.10, 3.98)	0.164
9-day	-1.15 (-15.52, 13.22)	4.81 (0.33, 9.29)	0.420	1.13 (-7.44, 9.70)	3.51 (1.06, 5.97)	0.592

eTable 3 (cont.)

Exposure / ave. times	Systolic Blood Pressure Coefficient (95% CI) <sup>a</sup>			Diastolic Blood Pressure Coefficient (95% CI)		
	With Moderate-Strenuous Activity <sup>b</sup>	Without Moderate-Strenuous Activity	P-value for Effect Modification	With Moderate-Strenuous Activity	Without Moderate-Strenuous Activity	P-value for Effect Modification
<b>Organic Carbon (OC)</b>						
1hr	4.13 (-0.49, 8.75)	0.13 (-1.15, 1.41)	0.096	3.19 (0.42, 5.97)	0.24 (-0.50, 0.97)	0.041
4hr	3.10 (-2.64, 8.84)	0.44 (-1.29, 2.16)	0.367	3.01 (-0.42, 6.44)	0.28 (-0.67, 1.24)	0.125
8-hr	1.93 (-4.34, 8.21)	1.05 (-1.01, 3.11)	0.784	4.04 (0.31, 7.76)	0.42 (-0.71, 1.55)	0.062
24-hr	0.14 (-6.43, 6.72)	0.31 (-1.98, 2.60)	0.961	2.66 (-1.25, 6.57)	0.63 (-0.62, 1.88)	0.320
3-day	-2.47 (-13.11, 8.16)	6.03 (2.52, 9.54)	0.120	-1.96 (-8.35, 4.43)	3.33 (1.40, 5.26)	0.111
5-day	4.80 (-10.47, 20.06)	7.91 (2.73, 13.08)	0.691	4.37 (-4.75, 13.49)	5.75 (2.95, 8.55)	0.770
7-day	6.30 (-16.39, 28.99)	9.63 (1.98, 17.27)	0.773	11.45 (-2.12, 25.01)	7.63 (3.51, 11.75)	0.585
9-day	19.14 (-10.21, 48.50)	6.48 (-3.30, 16.26)	0.400	15.10 (-2.40, 32.60)	8.56 (3.24, 13.87)	0.470
<b>Primary OC</b>						
1hr	4.30 (0.24, 8.37)	-0.32 (-1.69, 1.04)	0.028	2.72 (0.26, 5.17)	-0.32 (-1.11, 0.47)	0.018
4hr	5.49 (0.04, 10.93)	0.69 (-1.14, 2.53)	0.085	3.60 (0.36, 6.85)	0.14 (-0.88, 1.16)	0.039
8-hr	2.92 (-4.05, 9.88)	2.13 (-0.10, 4.36)	0.824	2.18 (-1.97, 6.32)	0.47 (-0.76, 1.70)	0.424
24-hr	-2.55 (-12.93, 7.82)	1.62 (-1.54, 4.78)	0.433	-0.22 (-6.44, 5.99)	0.83 (-0.91, 2.57)	0.744
3-day	-2.27 (-19.50, 14.95)	7.32 (2.59, 12.05)	0.278	-3.22 (-13.62, 7.18)	4.10 (1.46, 6.75)	0.172
5-day	11.88 (-15.13, 38.88)	7.01 (-0.64, 14.65)	0.724	11.72 (-4.57, 28.02)	4.77 (0.52, 9.02)	0.407
7-day	8.61 (-35.90, 53.12)	8.38 (-3.44, 20.21)	0.992	16.53 (-10.38, 43.44)	6.75 (0.20, 13.29)	0.478
9-day	52.26 (-19.65, 124.16)	-5.10 (-21.66, 11.45)	0.117	6.84 (-36.71, 50.40)	4.42 (-4.84, 13.67)	0.913

eTable 3 (cont.)

Exposure / ave. times	Systolic Blood Pressure Coefficient (95% CI) <sup>a</sup>			Diastolic Blood Pressure Coefficient (95% CI)		
	With Moderate-Strenuous Activity <sup>b</sup>	Without Moderate-Strenuous Activity	P-value for Effect Modification	With Moderate-Strenuous Activity	Without Moderate-Strenuous Activity	P-value for Effect Modification
<b>Secondary OC</b>						
1hr	0.18 (-2.02, 2.37)	0.53 (-0.18, 1.23)	0.757	-0.06 (-1.38, 1.26)	0.40 (-0.01, 0.81)	0.500
4hr	0.24 (-2.64, 3.12)	0.80 (-0.24, 1.85)	0.701	-0.35 (-2.06, 1.35)	0.58 (-0.01, 1.16)	0.287
8-hr	2.24 (-1.35, 5.83)	0.96 (-0.32, 2.25)	0.486	0.55 (-1.58, 2.67)	0.63 (-0.08, 1.33)	0.941
24-hr	2.74 (-1.89, 7.38)	1.34 (-0.17, 2.84)	0.554	0.92 (-1.84, 3.68)	0.72 (-0.11, 1.55)	0.889
3-day	0.37 (-6.53, 7.28)	2.63 (0.39, 4.86)	0.526	-1.44 (-5.57, 2.70)	1.62 (0.37, 2.87)	0.154
5-day	0.94 (-7.00, 8.88)	4.29 (1.46, 7.12)	0.409	0.31 (-4.47, 5.10)	3.01 (1.45, 4.58)	0.277
7-day	2.46 (-8.85, 13.77)	4.14 (0.09, 8.19)	0.772	2.91 (-3.89, 9.71)	3.44 (1.21, 5.68)	0.879
9-day	6.19 (-11.06, 23.45)	4.19 (-2.15, 10.52)	0.820	5.31 (-5.02, 15.65)	3.55 (0.05, 7.06)	0.742
<b>PM<sub>2.5</sub></b>						
1hr	0.41 (-1.55, 2.37)	0.09 (-0.54, 0.72)	0.748	0.33 (-0.85, 1.51)	0.15 (-0.20, 0.51)	0.776
4hr	-0.21 (-2.40, 1.98)	0.17 (-0.56, 0.89)	0.738	0.19 (-1.12, 1.50)	0.26 (-0.14, 0.67)	0.909
8-hr	-0.62 (-2.94, 1.71)	0.40 (-0.41, 1.21)	0.396	0.40 (-0.99, 1.78)	0.40 (-0.05, 0.84)	0.999
24-hr	-1.44 (-4.05, 1.17)	0.73 (-0.20, 1.65)	0.106	0.33 (-1.23, 1.88)	0.53 (0.02, 1.04)	0.799
3-day	-1.82 (-6.16, 2.52)	2.33 (1.01, 3.65)	0.062	0.78 (-1.83, 3.39)	1.20 (0.48, 1.92)	0.754
5-day	-1.07 (-8.52, 6.39)	3.36 (1.10, 5.62)	0.247	4.06 (-0.42, 8.54)	1.88 (0.65, 3.12)	0.347
7-day	1.31 (-7.12, 9.73)	3.83 (0.41, 7.25)	0.562	4.08 (-0.93, 9.09)	1.92 (0.03, 3.80)	0.411
9-day	2.39 (-8.73, 13.51)	3.95 (0.02, 7.89)	0.786	3.63 (-2.95, 10.22)	3.24 (1.08, 5.39)	0.908



eTable 3 (cont.)

Exposure / ave. times	Systolic Blood Pressure Coefficient (95% CI) <sup>a</sup>			Diastolic Blood Pressure Coefficient (95% CI)		
	With Moderate-Strenuous Activity <sup>b</sup>	Without Moderate-Strenuous Activity	P-value for Effect Modification	With Moderate-Strenuous Activity	Without Moderate-Strenuous Activity	P-value for Effect Modification
<b>NO<sub>x</sub></b>						
1hr	1.95 (0.33, 3.58)	0.31 (-0.32, 0.94)	0.049	1.50 (0.52, 2.48)	0.13 (-0.23, 0.49)	0.007
4hr	1.90 (-0.13, 3.93)	0.09 (-0.70, 0.87)	0.078	1.71 (0.49, 2.93)	0.11 (-0.33, 0.55)	0.010
8-hr	1.22 (-1.38, 3.81)	0.46 (-0.45, 1.38)	0.570	2.02 (0.47, 3.58)	0.23 (-0.28, 0.74)	0.025
24-hr	-1.91 (-6.10, 2.28)	0.26 (-0.95, 1.47)	0.311	1.07 (-1.47, 3.61)	0.23 (-0.43, 0.90)	0.522
3-day	-4.56 (-11.69, 2.57)	1.55 (-0.47, 3.57)	0.093	-1.12 (-5.43, 3.19)	0.83 (-0.27, 1.93)	0.379
5-day	-13.08 (-26.44, 0.28)	1.93 (-1.92, 5.78)	0.028	1.71 (-6.32, 9.74)	1.77 (-0.33, 3.87)	0.988
7-day	-1.20 (-18.87, 16.47)	0.20 (-5.13, 5.52)	0.876	7.11 (-3.51, 17.74)	0.15 (-2.77, 3.06)	0.202
9-day	-1.82 (-25.45, 21.81)	3.85 (-2.88, 10.59)	0.639	-2.14 (-16.34, 12.06)	2.09 (-1.61, 5.79)	0.563
<b>CO</b>						
1hr	1.43 (-0.57, 3.43)	-0.10 (-0.77, 0.56)	0.136	1.48 (0.26, 2.69)	0.11 (-0.28, 0.50)	0.028
4hr	1.12 (-1.33, 3.58)	-0.28 (-1.14, 0.58)	0.260	1.51 (0.02, 2.99)	0.12 (-0.37, 0.60)	0.068
8-hr	0.29 (-2.76, 3.34)	0.40 (-0.67, 1.46)	0.946	1.91 (0.07, 3.74)	0.46 (-0.14, 1.05)	0.126
24-hr	-2.54 (-7.10, 2.02)	-0.15 (-1.54, 1.25)	0.308	0.87 (-1.87, 3.62)	0.50 (-0.28, 1.27)	0.792
3-day	-5.29 (-13.64, 3.06)	1.11 (-1.07, 3.28)	0.134	-3.70 (-8.79, 1.40)	1.27 (0.07, 2.47)	0.058
5-day	-11.61 (-24.59, 1.37)	0.10 (-3.43, 3.64)	0.078	-0.52 (-8.40, 7.35)	1.95 (0.01, 3.89)	0.543
7-day	-3.96 (-23.29, 15.37)	-1.98 (-7.08, 3.11)	0.842	4.99 (-6.77, 16.75)	0.92 (-1.89, 3.74)	0.501
9-day	8.62 (-20.91, 38.15)	1.19 (-6.24, 8.62)	0.622	1.83 (-16.10, 19.75)	4.17 (0.06, 8.27)	0.800

<sup>a</sup> Regression coefficients and 95% confidence intervals are for the expected change in blood pressure associated with an interquartile range change in the air pollutant (see Table 2). All models are adjusted for temperature of the same averaging time, hour of day, and posture during the BP measurement. Models are for blood pressure measured during hours subjects were at home.

<sup>b</sup> Stratified results for activity are derived from product term models of the pollutant by activity report.

**eTable 4. Associations of diastolic and systolic blood pressure with outdoor home air pollutants: Effect modification by body mass index (BMI).**

Exposure / ave. times	Systolic Blood Pressure Coefficient (95% CI) <sup>a,b</sup>			Diastolic Blood Pressure Coefficient (95% CI)		
	BMI < 30 kg/m <sup>2</sup>	BMI ≥ 30 kg/m <sup>2</sup>	P-value for Effect Modification	BMI < 30 kg/m <sup>2</sup>	BMI ≥ 30 kg/m <sup>2</sup>	P-value for Effect Modification
<b>Particle number</b>						
1hr	-0.064 (-0.71, 0.58)	0.51 (-1.11, 2.14)	0.513	-0.10 (-0.48, 0.28)	0.86 (-0.094, 1.82)	0.063
4hr	0.45 (-0.43, 1.33)	0.98 (-1.30, 3.26)	0.669	-0.014 (-0.52, 0.49)	0.94 (-0.37, 2.24)	0.178
8-hr	0.46 (-0.63, 1.54)	1.68 (-1.43, 4.79)	0.463	-0.037 (-0.66, 0.58)	1.32 (-0.45, 3.10)	0.154
24-hr	0.24 (-1.45, 1.93)	-2.02 (-6.65, 2.62)	0.371	-0.063 (-1.02, 0.89)	-0.68 (-3.31, 1.95)	0.665
3-day	-1.71 (-4.58, 1.16)	-2.50 (-8.95, 3.95)	0.826	-1.68 (-3.29, -0.060)	1.98 (-1.67, 5.63)	0.073
5-day	-2.42 (-7.26, 2.42)	-6.53 (-17.39, 4.33)	0.498	-1.73 (-4.46, 1.01)	0.13 (-6.03, 6.30)	0.589
7-day	-5.28 (-11.63, 1.07)	-9.17 (-27.03, 8.69)	0.687	-2.53 (-6.11, 1.06)	-3.98 (-14.23, 6.28)	0.793
9-day	-3.04 (-11.78, 5.70)	-5.04 (-35.66, 25.58)	0.902	-1.82 (-6.72, 3.08)	-5.63 (-23.00, 11.73)	0.678
<b>Black carbon</b>						
1hr	0.060 (-0.40, 0.52)	0.83 (-0.25, 1.91)	0.189	0.13 (-0.14, 0.39)	0.22 (-0.41, 0.84)	0.792
4hr	-0.0033 (-0.60, 0.59)	1.52 (0.09, 2.94)	0.049	0.17 (-0.16, 0.51)	0.59 (-0.22, 1.39)	0.339
8-hr	0.29 (-0.42, 1.01)	1.60 (-0.25, 3.44)	0.192	0.37 (-0.033, 0.76)	0.21 (-0.82, 1.24)	0.780
24-hr	0.26 (-0.69, 1.22)	0.53 (-2.23, 3.28)	0.859	0.46 (-0.062, 0.99)	0.087 (-1.43, 1.61)	0.647
3-day	1.96 (0.38, 3.54)	6.35 (1.54, 11.17)	0.089	1.16 (0.29, 2.02)	3.65 (1.00, 6.30)	0.080
5-day	2.19 (-0.66, 5.04)	13.60 (6.77, 20.43)	0.002	2.16 (0.60, 3.72)	6.33 (2.59, 10.08)	0.043
7-day	2.09 (-2.10, 6.28)	11.43 (2.47, 20.38)	0.062	2.18 (-0.11, 4.48)	4.32 (-0.56, 9.21)	0.435
9-day	4.27 (-0.60, 9.14)	15.20 (2.14, 28.26)	0.124	3.52 (0.85, 6.19)	7.65 (0.49, 14.80)	0.289

eTable 4 (cont.)

Exposure / ave. times	Systolic Blood Pressure Coefficient (95% CI)			Diastolic Blood Pressure Coefficient (95% CI)		
	BMI < 30 kg/m <sup>2</sup>	BMI ≥ 30 kg/m <sup>2</sup>	P-value for Effect Modification	BMI < 30 kg/m <sup>2</sup>	BMI ≥ 30 kg/m <sup>2</sup>	P-value for Effect Modification
<b>Organic Carbon (OC)</b>						
1hr	0.16 (-1.18, 1.50)	1.13 (-2.54, 4.79)	0.626	0.41 (-0.36, 1.17)	0.16 (-1.96, 2.27)	0.826
4hr	0.14 (-1.67, 1.96)	2.38 (-2.60, 7.36)	0.406	0.38 (-0.62, 1.38)	0.11 (-2.65, 2.87)	0.856
8-hr	0.83 (-1.34, 3.01)	0.27 (-5.82, 6.35)	0.863	0.63 (-0.56, 1.81)	-0.91 (-4.25, 2.42)	0.391
24-hr	0.015 (-2.38, 2.41)	1.38 (-6.25, 9.01)	0.738	0.57 (-0.73, 1.87)	1.57 (-2.58, 5.73)	0.652
3-day	4.59 (0.84, 8.34)	12.64 (2.48, 22.80)	0.145	2.35 (0.31, 4.39)	7.77 (2.22, 13.32)	0.072
5-day	6.33 (0.61, 12.06)	16.85 (5.12, 28.58)	0.112	4.75 (1.67, 7.82)	10.69 (4.34, 17.05)	0.097
7-day	7.29 (-0.90, 15.48)	20.09 (1.50, 38.68)	0.211	6.20 (1.81, 10.59)	15.42 (5.37, 25.47)	0.096
9-day	4.47 (-5.77, 14.71)	18.93 (-9.78, 47.63)	0.348	7.07 (1.54, 12.60)	16.12 (0.57, 31.67)	0.279
<b>Primary OC</b>						
1hr	-0.47 (-1.92, 0.97)	2.64 (-0.51, 5.78)	0.073	-0.27 (-1.11, 0.56)	1.10 (-0.70, 2.91)	0.168
4hr	0.23 (-1.73, 2.19)	4.95 (0.76, 9.14)	0.041	0.072 (-1.02, 1.16)	2.01 (-0.31, 4.34)	0.131
8-hr	1.63 (-0.76, 4.01)	4.69 (-0.81, 10.18)	0.310	0.43 (-0.88, 1.73)	1.12 (-1.90, 4.14)	0.676
24-hr	1.38 (-2.02, 4.78)	1.92 (-6.79, 10.63)	0.910	0.54 (-1.32, 2.39)	2.19 (-2.59, 6.96)	0.528
3-day	5.85 (0.82, 10.88)	13.07 (-0.19, 26.34)	0.320	2.40 (-0.38, 5.19)	12.33 (4.90, 19.76)	0.014
5-day	5.46 (-3.13, 14.06)	18.32 (0.64, 36.00)	0.199	3.88 (-0.87, 8.63)	14.27 (4.37, 24.18)	0.063
7-day	6.82 (-6.40, 20.05)	19.53 (-6.05, 45.11)	0.380	5.41 (-1.90, 12.71)	15.51 (1.36, 29.65)	0.208
9-day	-6.51 (-24.37, 11.36)	24.53 (-18.14, 67.21)	0.186	0.63 (-9.27, 10.53)	32.36 (8.24, 56.48)	0.017

eTable 4 (cont.)

Exposure / ave. times	Systolic Blood Pressure Coefficient (95% CI)			Diastolic Blood Pressure Coefficient (95% CI)		
	BMI < 30 kg/m <sup>2</sup>	BMI ≥ 30 kg/m <sup>2</sup>	P-value for Effect Modification	BMI < 30 kg/m <sup>2</sup>	BMI ≥ 30 kg/m <sup>2</sup>	P-value for Effect Modification
<b>Secondary OC</b>						
1hr	0.72 (-0.020, 1.46)	-1.39 (-3.06, 0.27)	0.020	0.47 (0.036, 0.90)	-0.46 (-1.43, 0.51)	0.078
4hr	0.97 (-0.14, 2.08)	-1.87 (-4.14, 0.40)	0.022	0.66 (0.039, 1.27)	-0.87 (-2.14, 0.39)	0.027
8-hr	1.26 (-0.11, 2.63)	-2.23 (-5.11, 0.64)	0.026	0.70 (-0.053, 1.45)	-0.82 (-2.40, 0.75)	0.078
24-hr	1.64 (-0.0035, 3.28)	-1.30 (-5.16, 2.56)	0.169	0.77 (-0.12, 1.67)	-0.49 (-2.60, 1.62)	0.280
3-day	3.16 (0.68, 5.64)	-1.19 (-6.21, 3.82)	0.127	1.84 (0.47, 3.21)	-0.70 (-3.48, 2.08)	0.108
5-day	3.95 (0.83, 7.06)	4.64 (-1.60, 10.88)	0.845	2.61 (0.89, 4.32)	2.74 (-0.71, 6.18)	0.947
7-day	3.34 (-0.88, 7.56)	6.20 (-5.82, 18.22)	0.657	2.86 (0.55, 5.17)	5.41 (-1.20, 12.03)	0.473
9-day	1.82 (-4.83, 8.47)	10.64 (-6.19, 27.48)	0.332	2.55 (-1.13, 6.22)	5.44 (-3.84, 14.73)	0.566
<b>PM<sub>2.5</sub></b>						
1hr	-0.29 (-0.97, 0.38)	2.20 (0.42, 3.97)	0.009	-0.024 (-0.40, 0.36)	1.01 (-0.0047, 2.02)	0.059
4hr	-0.23 (-1.00, 0.55)	2.12 (-0.013, 4.26)	0.041	0.11 (-0.32, 0.54)	0.63 (-0.56, 1.82)	0.415
8-hr	0.091 (-0.78, 0.96)	1.50 (-0.93, 3.93)	0.279	0.34 (-0.14, 0.82)	0.14 (-1.20, 1.49)	0.786
24-hr	0.48 (-0.52, 1.49)	0.08 (-3.06, 3.22)	0.807	0.54 (-0.014, 1.08)	-0.18 (-1.90, 1.54)	0.431
3-day	1.95 (0.48, 3.41)	5.91 (2.04, 9.77)	0.060	1.21 (0.41, 2.01)	1.93 (-0.18, 4.05)	0.529
5-day	2.89 (0.33, 5.44)	7.73 (2.63, 12.83)	0.097	2.05 (0.65, 3.44)	3.44 (0.65, 6.24)	0.381
7-day	5.04 (1.31, 8.77)	-4.20 (-12.86, 4.46)	0.055	3.24 (1.20, 5.28)	-3.14 (-7.89, 1.61)	0.016
9-day	3.51 (-0.61, 7.63)	5.46 (-6.68, 17.60)	0.766	3.16 (0.91, 5.41)	3.98 (-2.67, 10.64)	0.818

eTable 4 (cont.)

Exposure / ave. times	Systolic Blood Pressure Coefficient (95% CI)			Diastolic Blood Pressure Coefficient (95% CI)		
	BMI < 30 kg/m <sup>2</sup>	BMI ≥ 30 kg/m <sup>2</sup>	P-value for Effect Modification	BMI < 30 kg/m <sup>2</sup>	BMI ≥ 30 kg/m <sup>2</sup>	P-value for Effect Modification
<b>NO<sub>x</sub></b>						
1hr	0.34 (-0.31, 0.99)	1.25 (-0.24, 2.75)	0.251	0.26 (-0.11, 0.63)	0.50 (-0.37, 1.36)	0.603
4hr	0.048 (-0.76, 0.85)	2.02 (0.15, 3.89)	0.046	0.18 (-0.27, 0.64)	1.10 (0.042, 2.15)	0.101
8-hr	0.33 (-0.61, 1.27)	2.36 (-0.05, 4.77)	0.109	0.26 (-0.26, 0.78)	1.39 (0.041, 2.75)	0.111
24-hr	0.37 (-0.90, 1.64)	-0.24 (-3.99, 3.50)	0.762	0.40 (-0.29, 1.10)	0.073 (-2.01, 2.15)	0.767
3-day	1.25 (-0.87, 3.37)	3.26 (-3.34, 9.86)	0.569	0.59 (-0.57, 1.74)	3.64 (-0.0059, 7.28)	0.117
5-day	-0.27 (-4.26, 3.72)	21.88 (9.64, 34.11)	0.001	1.31 (-0.87, 3.50)	9.94 (3.19, 16.69)	0.017
7-day	-2.24 (-7.84, 3.36)	20.41 (6.32, 34.50)	0.003	-0.46 (-3.54, 2.61)	8.99 (1.16, 16.83)	0.027
9-day	3.83 (-3.25, 10.92)	10.41 (-10.02, 30.84)	0.550	2.23 (-1.65, 6.11)	4.45 (-6.91, 15.80)	0.717
<b>CO</b>						
1hr	-0.16 (-0.85, 0.54)	1.25 (-0.45, 2.94)	0.122	0.17 (-0.24, 0.57)	0.53 (-0.44, 1.51)	0.487
4hr	-0.50 (-1.40, 0.40)	1.99 (-0.09, 4.07)	0.026	0.12 (-0.39, 0.63)	0.76 (-0.41, 1.93)	0.309
8-hr	0.15 (-0.96, 1.26)	1.83 (-0.82, 4.48)	0.240	0.47 (-0.15, 1.10)	0.90 (-0.59, 2.39)	0.595
24-hr	0.0094 (-1.47, 1.48)	-2.27 (-6.12, 1.58)	0.278	0.67 (-0.15, 1.49)	-0.55 (-2.70, 1.60)	0.298
3-day	0.84 (-1.44, 3.12)	2.55 (-4.99, 10.10)	0.668	1.14 (-0.12, 2.40)	0.74 (-3.47, 4.96)	0.860
5-day	-1.53 (-5.24, 2.17)	17.51 (6.19, 28.83)	0.002	1.72 (-0.33, 3.77)	6.24 (-0.065, 12.54)	0.179
7-day	-4.20 (-9.62, 1.23)	16.26 (2.01, 30.52)	0.008	0.86 (-2.16, 3.88)	4.64 (-3.35, 12.64)	0.382
9-day	0.37 (-7.36, 8.11)	17.18 (-6.64, 41.00)	0.186	3.81 (-0.48, 8.09)	9.77(-3.55, 23.10)	0.402

<sup>a</sup> Regression coefficients and 95% confidence intervals are for the expected change in blood pressure associated with an interquartile range change in the air pollutant (see Table 2). All models are adjusted for temperature of the same averaging time, hour of day, and posture during the BP measurement. Models are for blood pressure measured during hours subjects were at home.

<sup>b</sup> Stratified results for activity are derived from product term models of the pollutant by BMI category. There were N subjects < 30 kg/m<sup>2</sup> and N subjects ≥ 30 kg/m<sup>2</sup>.

**eTable 5. Associations between systolic blood pressure and five-day average air pollutants: Effect modification by anti-hypertensive medications.**

Exposure	ACE/ARBs Coefficient (95% CI)		<i>P</i> -value for Effect Modification	β-blockers Coefficient (95% CI)		<i>P</i> -value for Effect Modification	Anti-adrenergics Coefficient (95% CI)		<i>P</i> -value for Effect Modification	CA channel blockers Coefficient (95% CI)		<i>P</i> -value for Effect Modification
	No	Yes		No	Yes		No	Yes		No	Yes	
Particle number	1.24 (-4.66, 7.14)	-8.68 (-15.3, -2.10)	0.027	-6.95 (-13.4, -0.51)	0.12 (-5.90, 6.13)	0.11	-4.14 (-8.75, 0.47)	7.20 (-7.83, 22.2)	0.16	-2.35 (-7.71, 3.01)	-4.98 (-12.7, 2.71)	0.58
Black carbon	3.52 (0.23, 6.82)	3.88 (-0.59, 8.34)	0.90	7.29 (3.06, 11.5)	1.43 (-1.96, 4.82)	0.034	3.14 (0.36, 5.92)	9.98 (1.14, 18.8)	0.15	3.80 (0.53, 7.08)	3.60 (-0.87, 8.06)	0.94
Organic Carbon (OC)	6.87 (1.04, 12.7)	12.1 (0.80, 23.3)	0.42	14.3 (6.16, 22.4)	3.93 (-2.75, 10.6)	0.052	6.79 (1.37, 12.2)	22.9 (5.19, 40.6)	0.089	9.78 (3.31, 16.3)	5.07 (-3.45, 13.6)	0.39
Primary OC	3.80 (-5.23, 12.8)	16.9 (1.55, 32.2)	0.15	11.1 (-2.72, 24.9)	6.09 (-3.31, 15.5)	0.56	7.37 (-0.56, 15.3)	20.8 (-15.7, 57.3)	0.48	9.44 (0.64, 18.2)	1.96 (-14.2, 18.1)	0.42
Secondary OC	4.10 (0.85, 7.35)	3.61 (-1.88, 9.11)	0.88	5.03 (0.95, 9.12)	3.00 (-0.84, 6.84)	0.48	3.79 (0.91, 6.67)	8.26 (-3.31, 19.8)	0.46	4.50 (1.19, 7.81)	2.76 (-2.44, 7.96)	0.58
PM <sub>2.5</sub>	2.20 (-0.59, 4.99)	7.02 (3.04, 11.0)	0.052	6.18 (2.67, 9.69)	2.15 (-0.86, 5.16)	0.088	3.71 (1.29, 6.13)	5.23 (-1.68, 12.2)	0.68	5.14 (1.95, 8.32)	2.51 (-0.77, 5.78)	0.26
NO <sub>x</sub>	3.80 (-0.82, 8.41)	-3.57 (-10.3, 3.12)	0.073	5.38 (-0.67, 11.4)	-0.99 (-5.86, 3.88)	0.10	0.87 (-3.06, 4.80)	13.6 (-2.57, 29.7)	0.13	1.08 (-3.53, 5.68)	2.53 (-4.14, 9.20)	0.72
CO	2.22 (-2.32, 6.76)	-3.77 (-9.42, 1.87)	0.10	3.25 (-2.22, 8.72)	-2.39 (-7.01, 2.22)	0.12	-0.71 (-4.43, 3.01)	7.15 (-4.50, 18.8)	0.21	0.057 (-4.24, 4.35)	-0.088 (-6.25, 6.07)	0.97

ACE/ARBs: Angiotensin-converting enzyme inhibitors and angiotensin II receptor antagonists.

<sup>a</sup> Regression coefficients and 95% confidence intervals are for the expected change in systolic blood pressure associated with an interquartile range change in the air pollutant (see Table 2). All models are adjusted for temperature of the same averaging time, hour of day, posture during the BP measurement, and last 25-min average of z-scored actigraph activity.

**eTable 6. Associations between diastolic blood pressure and five-day average air pollutants: Effect modification by anti-hypertensive medications.**

Exposure	ACE/ARBs Coefficient (95% CI)		<i>P</i> -value for Effect Modification	$\beta$ -blockers Coefficient (95% CI)		<i>P</i> -value for Effect Modification	Anti-adrenergics Coefficient (95% CI)		<i>P</i> -value for Effect Modification	CA channel blockers Coefficient (95% CI)		<i>P</i> -value for Effect Modification
	No	Yes		No	Yes		No	Yes		No	Yes	
Particle number	0.66 (-2.68, 4.00)	-4.08 (-7.80, -0.36)	0.062	-2.98 (-6.63, 0.66)	-0.11 (-3.52, 3.29)	0.26	-1.37 (-3.97, 1.24)	-2.25 (-10.8, 6.33)	0.85	-0.19 (-3.23, 2.84)	-4.07 (-8.42, 0.27)	0.15
Black carbon	2.63 (0.84, 4.43)	2.75 (0.31, 5.19)	0.94	4.34 (2.04, 6.65)	1.66 (-0.20, 3.51)	0.075	2.44 (0.93, 3.95)	5.74 (0.91, 10.6)	0.20	2.67 (0.88, 4.45)	2.85 (0.42, 5.29)	0.90
Organic Carbon (OC)	5.05 (1.92, 8.18)	8.12 (2.05, 14.2)	0.38	9.47 (5.10, 13.8)	3.27 (-0.33, 6.87)	0.031	4.87 (1.96, 7.78)	15.7 (6.24, 25.1)	0.032	6.82 (3.33, 10.3)	4.11 (-0.47, 8.69)	0.35
Primary OC	5.34 (0.33, 10.4)	5.96 (-2.47, 14.4)	0.90	8.82 (1.22, 16.4)	4.19 (-1.02, 9.41)	0.33	5.99 (1.60, 10.4)	3.22 (-16.9, 23.3)	0.79	7.49 (2.60, 12.4)	0.25 (-8.66, 9.16)	0.16
Secondary OC	1.81 (0.029, 3.59)	4.84 (1.81, 7.86)	0.091	2.85 (0.60, 5.10)	2.30 (0.18, 4.41)	0.72	2.31 (0.73, 3.90)	7.67 (1.34, 14.0)	0.11	2.88 (1.05, 4.71)	2.02 (-0.84, 4.88)	0.62
PM <sub>2.5</sub>	1.76 (0.23, 3.29)	3.33 (1.15, 5.51)	0.25	3.37 (1.45, 5.29)	1.55 (-0.10, 3.19)	0.16	1.98 (0.66, 3.30)	5.19 (1.40, 8.97)	0.12	2.42 (0.67, 4.16)	2.23 (0.44, 4.02)	0.88
NO <sub>x</sub>	2.46 (-0.057, 4.97)	0.88 (-2.79, 4.54)	0.48	3.69 (0.40, 6.98)	0.89 (-1.77, 3.55)	0.19	1.95 (-0.19, 4.09)	3.37 (-5.54, 12.3)	0.76	2.50 (-0.017, 5.01)	1.01 (-2.62, 4.65)	0.51
CO	2.40 (-0.10, 4.90)	1.40 (-1.73, 4.52)	0.62	3.29 (0.27, 6.30)	1.17 (-1.38, 3.73)	0.29	1.90 (-0.15, 3.95)	3.83 (-2.60, 10.3)	0.57	2.40 (0.024, 4.77)	1.42 (-1.97, 4.82)	0.64

ACE/ARBs: Angiotensin-converting enzyme inhibitors and angiotensin II receptor antagonists.

<sup>a</sup> Regression coefficients and 95% confidence intervals are for the expected change in diastolic blood pressure associated with an interquartile range change in the air pollutant (see Table 2). All models are adjusted for temperature of the same averaging time, hour of day, posture during the BP measurement, and last 25-min average of z-scored actigraph activity.

**eTable 7. Associations between systolic blood pressure and five-day average air pollutants: Effect modification by NSAIDs and statins.**

Exposure	NSAIDs Coefficient (95% CI) <sup>a</sup>		<i>P</i> -value for Effect Modification	Statins Coefficient (95% CI)		<i>P</i> -value for Effect Modification
	No	Yes		No	Yes	
Particle number	-2.81 (-7.51, 1.89)	-6.46 (-19.2, 6.26)	0.60	-9.38 (-15.5, -3.27)	3.41 (-2.89, 9.71)	0.0040
Black carbon	2.68 (-0.16, 5.52)	11.2 (3.92, 18.5)	0.032	4.53 (0.62, 8.44)	3.28 (-0.32, 6.88)	0.64
Organic Carbon (OC)	6.00 (0.59, 11.4)	31.1 (13.7, 48.5)	0.0069	9.80 (2.13, 17.5)	7.26 (0.32, 14.2)	0.63
Primary OC	2.73 (-5.50, 11.0)	46.8 (24.6, 69.0)	0.00025	8.59 (-4.02, 21.2)	8.09 (-1.74, 17.9)	0.95
Secondary OC	3.41 (0.42, 6.41)	8.19 (0.30, 16.1)	0.27	3.44 (-0.55, 7.42)	4.86 (0.95, 8.78)	0.61
PM <sub>2.5</sub>	2.91 (0.51, 5.31)	12.7 (5.51, 20.0)	0.011	5.74 (2.67, 8.82)	1.67 (-1.74, 5.09)	0.083
NO <sub>x</sub>	0.42 (-3.62, 4.46)	11.9 (0.24, 23.5)	0.067	-0.53 (-5.61, 4.55)	4.49 (-1.19, 10.2)	0.19
CO	-0.81 (-4.50, 2.88)	10.8 (-1.97, 23.5)	0.085	-1.30 (-6.62, 4.02)	1.07 (-3.63, 5.78)	0.51

NSAIDs: Nonsteroidal anti-inflammatory drugs; Statins: HMG-CoA reductase inhibitors.

<sup>a</sup> Regression coefficients and 95% confidence intervals are for the expected change in systolic blood pressure associated with an interquartile range change in the air pollutant (see Table 2). All models are adjusted for temperature of the same averaging time, hour of day, posture during the BP measurement, and last 25-min average of z-scored actigraph activity.



**eTable 8. Associations between diastolic blood pressure and five-day average air pollutants: Effect modification by NSAIDs and statins.**

Exposure	NSAIDs Coefficient (95% CI) <sup>a</sup>		<i>P</i> -value for Effect Modification	Statins Coefficient (95% CI)		<i>P</i> -value for Effect Modification
	No	Yes		No	Yes	
Particle number	-1.59 (-4.24, 1.07)	-0.35 (-7.52, 6.81)	0.75	-5.66 (-9.10, -2.22)	3.06 (-0.50, 6.63)	0.00052
Black carbon	2.46 (0.91, 4.01)	4.57 (0.59, 8.54)	0.33	4.43 (2.30, 6.55)	1.31 (-0.66, 3.27)	0.034
Organic Carbon (OC)	5.26 (2.35, 8.17)	11.8 (2.45, 21.2)	0.19	7.48 (3.37, 11.6)	4.48 (0.73, 8.23)	0.29
Primary OC	3.63 (-0.94, 8.20)	21.6 (9.41, 33.8)	0.0068	7.00 (0.068, 13.9)	5.19 (-0.28, 10.7)	0.69
Secondary OC	2.80 (1.15, 4.45)	1.45 (-2.89, 5.79)	0.57	2.53 (0.34, 4.72)	2.76 (0.60, 4.92)	0.89
PM <sub>2.5</sub>	2.01 (0.70, 3.32)	5.22 (1.27, 9.17)	0.13	4.19 (2.52, 5.87)	-0.00093 (-1.87, 1.87)	0.0011
NO <sub>x</sub>	1.66 (-0.54, 3.86)	5.27 (-1.11, 11.7)	0.29	1.60 (-1.17, 4.37)	2.57 (-0.54, 5.68)	0.65
CO	1.92 (-0.11, 3.95)	4.06 (-3.00, 11.1)	0.57	3.18 (0.25, 6.11)	1.21 (-1.40, 3.81)	0.32

NSAIDs: Nonsteroidal anti-inflammatory drugs; Statins: HMG-CoA reductase inhibitors.

<sup>a</sup> Regression coefficients and 95% confidence intervals are for the expected change in diastolic blood pressure associated with an interquartile range change in the air pollutant (see Table 2). All models are adjusted for temperature of the same averaging time, hour of day, posture during the BP measurement, and last 25-min average of z-scored actigraph activity.

**eTable 9. Associations between blood pressure and five-day average air pollutants: Effect modification by gender.**

Exposure	Systolic		<i>P</i> -value for Effect Modification	Diastolic		<i>P</i> -value for Effect Modification
	Coefficient (95% CI) <sup>a</sup>			Coefficient (95% CI)		
	Male	Female		Male	Female	
Particle number	3.12 (-2.73, 8.97)	-11.35 (-18.01, -4.69)	0.0013	1.55 (-1.75, 4.86)	-5.40 (-9.17, -1.62)	0.0065
Black carbon	6.14 (2.53, 9.76)	1.07 (-2.78, 4.91)	0.058	2.49 (0.52, 4.47)	2.99 (0.88, 5.09)	0.74
Organic Carbon (OC)	8.16 (1.34, 14.97)	8.23 (0.39, 16.08)	0.99	5.78 (2.10, 9.46)	5.88 (1.68, 10.09)	0.97
Primary OC	15.63 (5.67, 25.58)	-3.51 (-15.63, 8.60)	0.016	7.50 (1.95, 13.06)	3.27 (-3.44, 9.98)	0.34
Secondary OC	2.31 (-1.46, 6.08)	6.16 (2.01, 10.31)	0.18	2.24 (0.16, 4.31)	3.10 (0.81, 5.39)	0.58
PM <sub>2.5</sub>	2.99 (-0.13, 6.12)	4.88 (1.54, 8.22)	0.42	1.23 (-0.48, 2.94)	3.56 (1.74, 5.38)	0.068
NO <sub>x</sub>	8.38 (2.68, 14.09)	-3.68 (-8.71, 1.34)	0.0016	3.27 (0.15, 6.40)	1.04 (-1.71, 3.79)	0.29
CO	3.93 (-0.99, 8.85)	-4.07 (-9.09, 0.94)	0.024	1.89 (-0.83, 4.62)	2.26 (-0.51, 5.04)	0.85

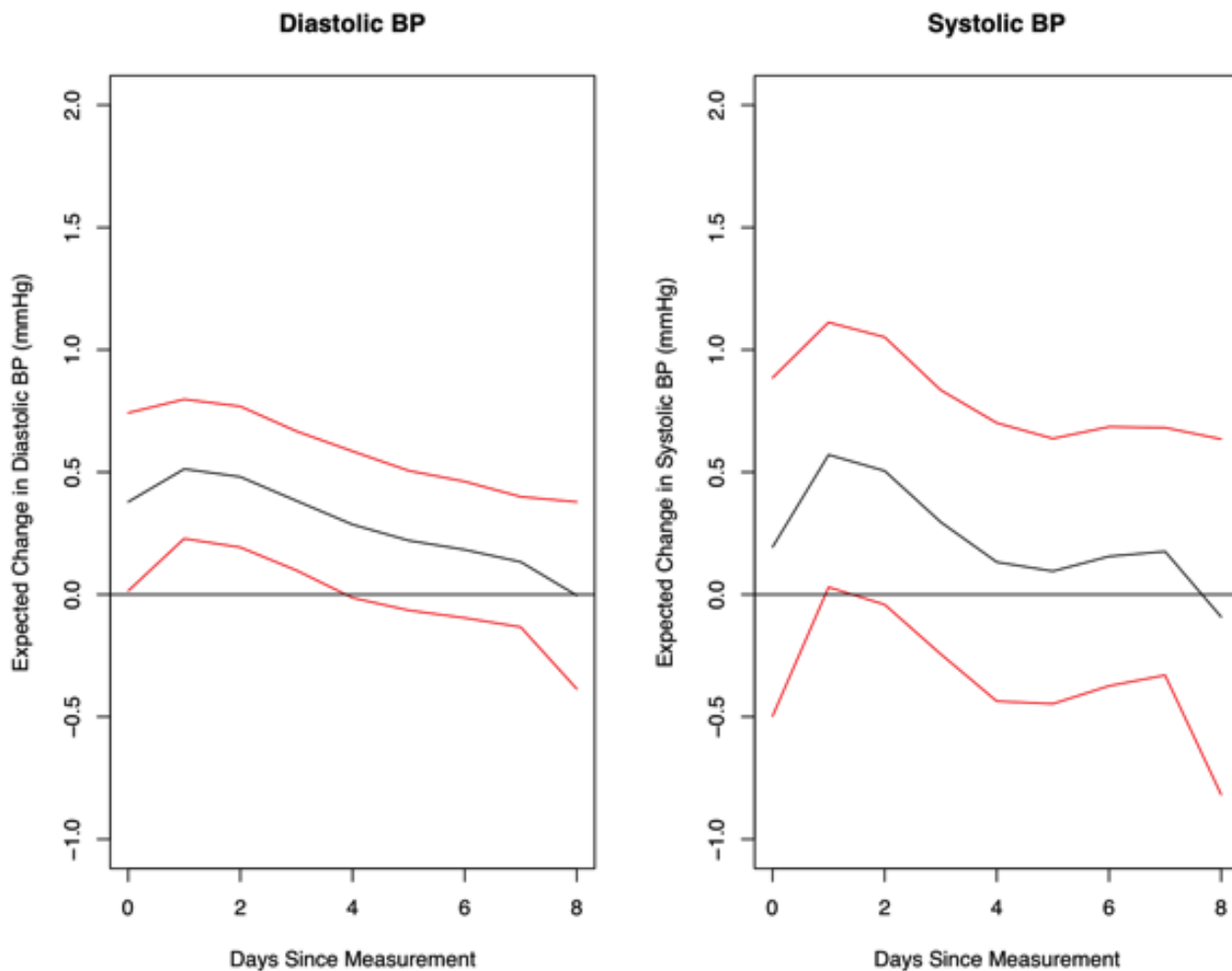
<sup>a</sup> Regression coefficients and 95% confidence intervals are for the expected change in systolic blood pressure associated with an interquartile range change in the air pollutant (see Table 2). All models are adjusted for temperature of the same averaging time, hour of day, posture during the BP measurement, and last 25-min average of z-scored actigraph activity.

We utilized distributed lag mixed effects model (Schwartz 2000) to investigate the relationship of BP to daily average black carbon (BC) exposures out to lag 8 days (lag 0 through 8 days). We fit a fifth-order polynomial distributed lag models via a linear mixed effects model assuming an autoregressive-1 correlation structure. We found negligible differences in the response curves when models that are more flexible were considered. Figure 2 shows the results of a distributed lag model for BC with adjustment for outdoor temperature. The maximum association is at lag 1 day (24-48 hours) closely followed by lag 2 days (48-72 hours). The stronger and significant associations between DBP and 5-day average BC (Figure 2 in text, eTable 2) is reflected by significant lag associations with BC to lag 4. However, the lower confidence limit is closer to 0.0 for DBP than for SBP, which only partially reflects results when using multi-day moving averages presented in the text because 5-day average BC was most strongly associated with SBP as well (Figure 2 in text, eTable 2).

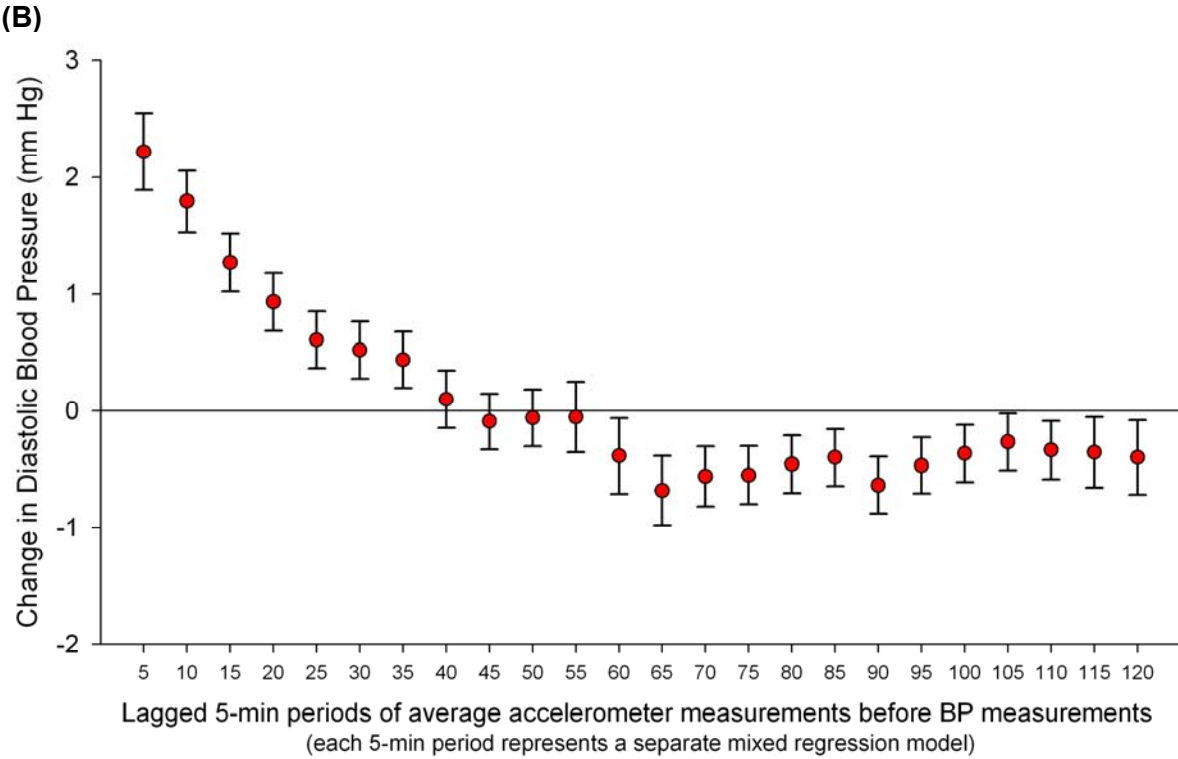
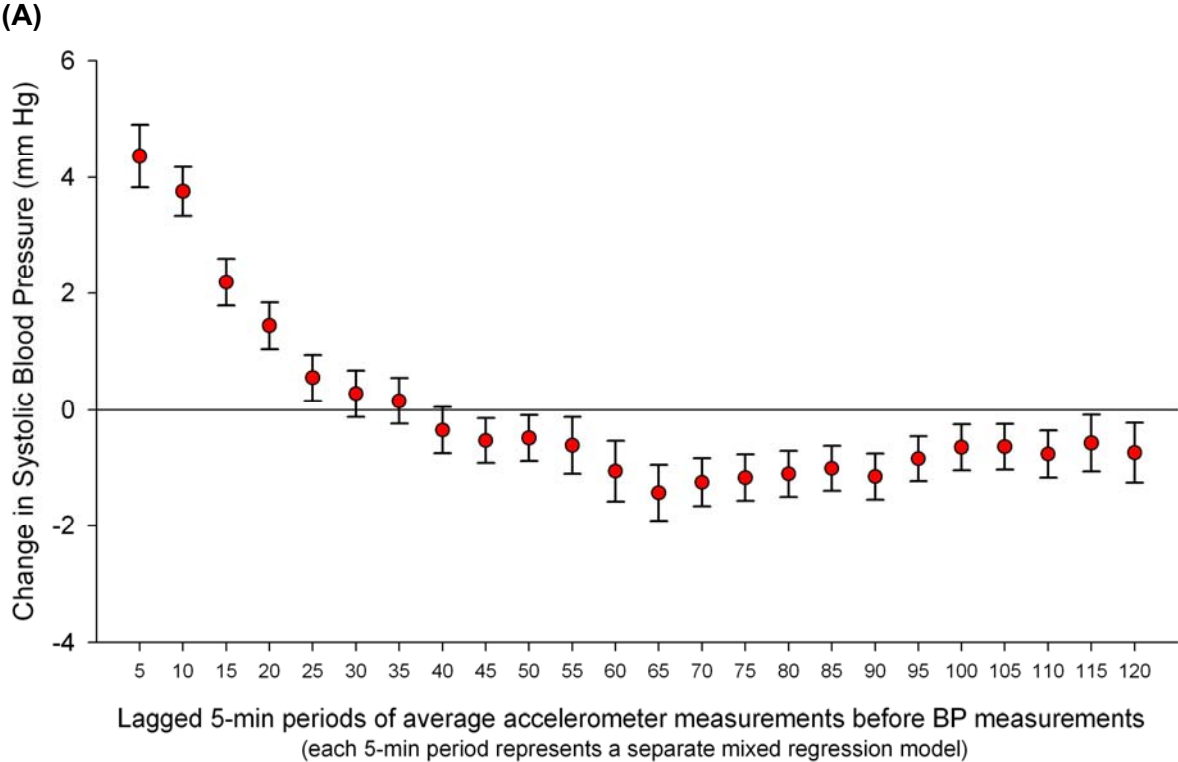
**Reference:**

Schwartz J. The distributed lag between air pollution and daily death. *Epidemiology* 2000;11:320-326.

**eFigure 1.** Estimated lag effect of daily average black carbon exposures on blood pressure (BP), adjusted for temperature.



**eFigure 2.** Relation of ambulatory blood pressure (BP) to actigraph-recorded physical activity during the last two hours by lagged 5-minute periods. Estimates and 95% CI are for a Z-score interquartile increase in activity of 0.70, adjusted for hour of the day and posture. (A) Systolic blood pressure; (B) Diastolic blood pressure.



**eFigure 3.** One and two-pollutant models for change in blood pressure (BP) in relation to outdoor 5-day average organic carbon (OC) and PM<sub>2.5</sub>, and black carbon (BC) and PM<sub>2.5</sub>. Estimates and 95% CI are for interquartile increases in the air pollutant, adjusted for temperature of the same averaging time, hour of day, posture during the BP measurement, and last 25-min average of z-scored actigraph activity, and restricted to hours subjects were at home. Single pollutant models are for the subset of nonmissing observations for the other co-pollutant.

