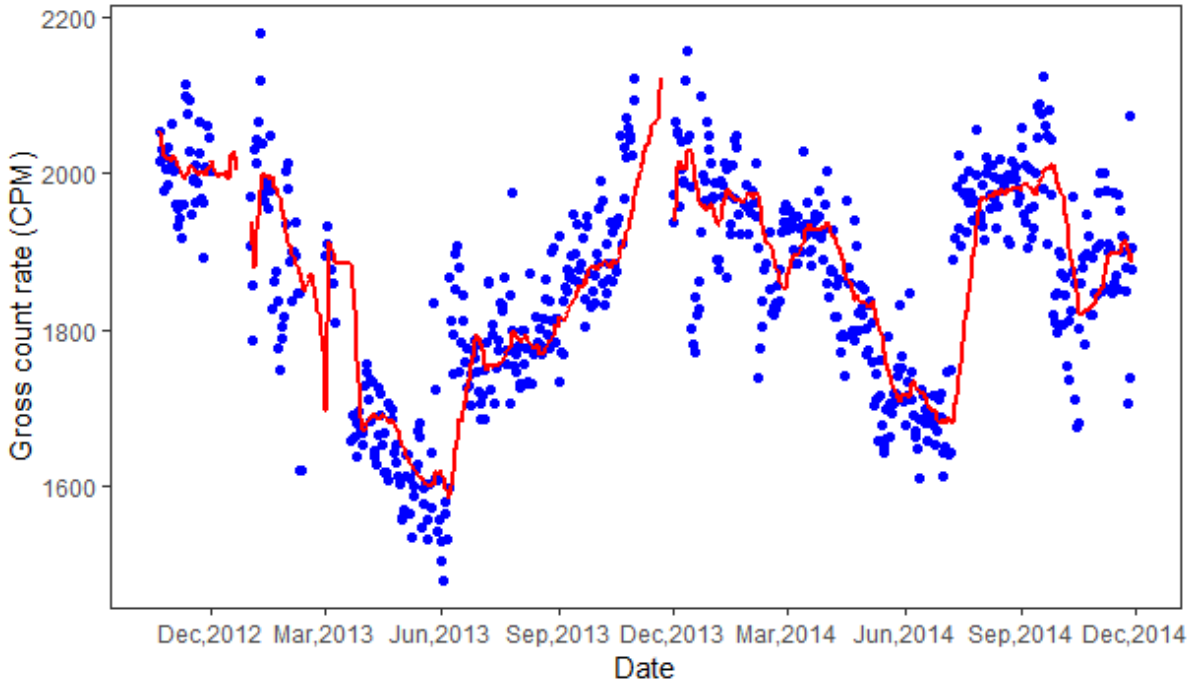
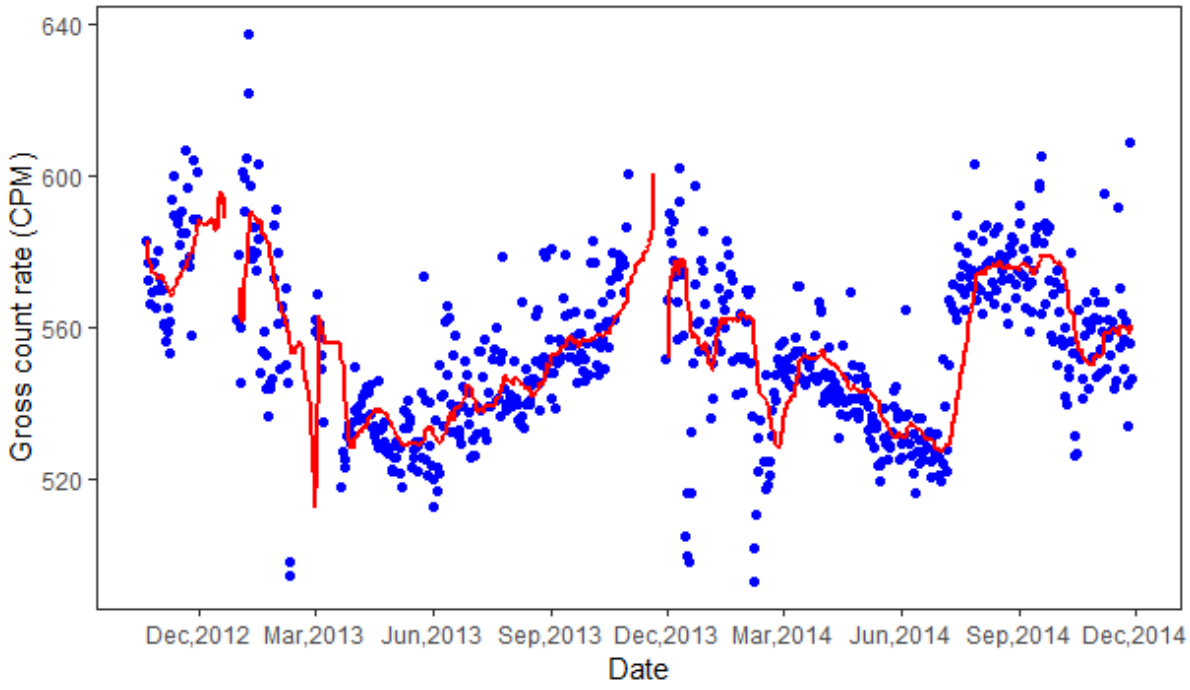
Supplementary Information

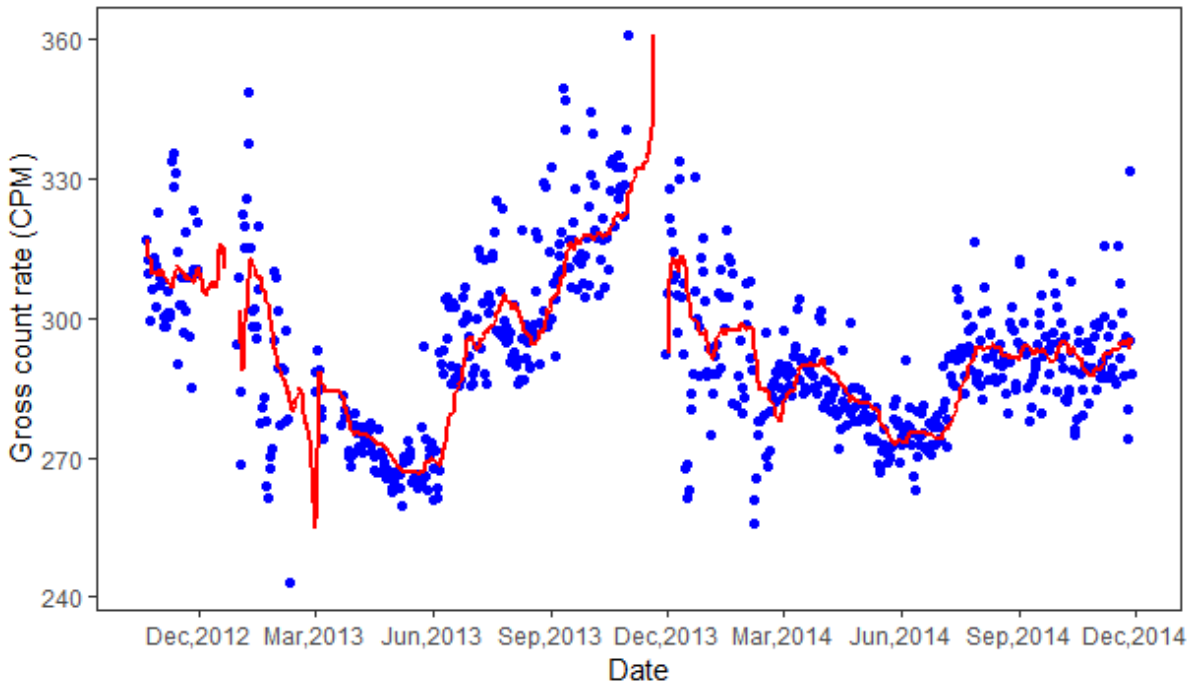
Figure S1. Daily measured gamma data (blue dots) from RadNet and background radiation (red line) during study period using REBS method with 90-day bandwidth.



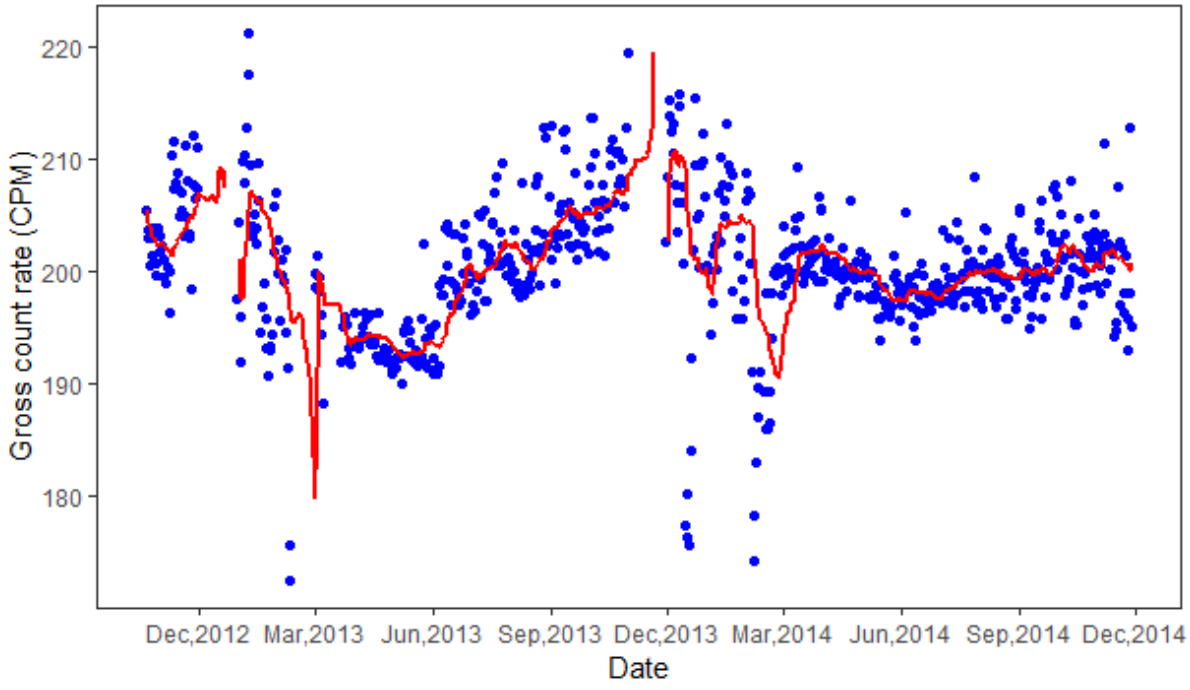
(a) Gamma-3



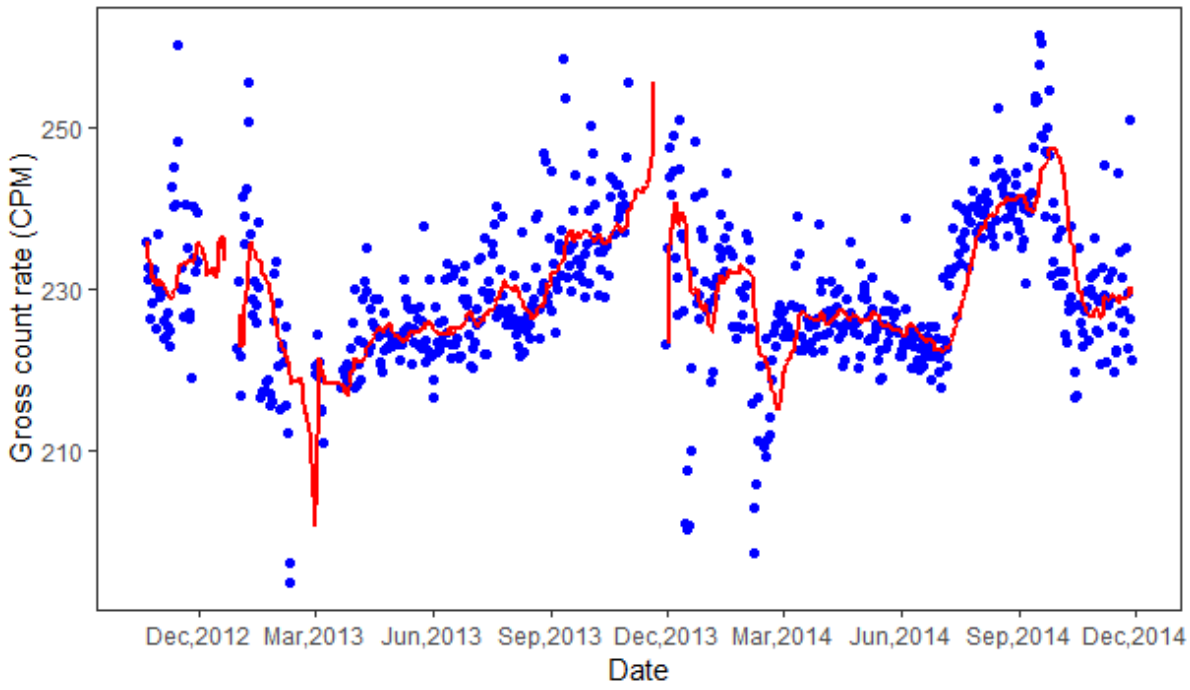
(b) Gamma-4



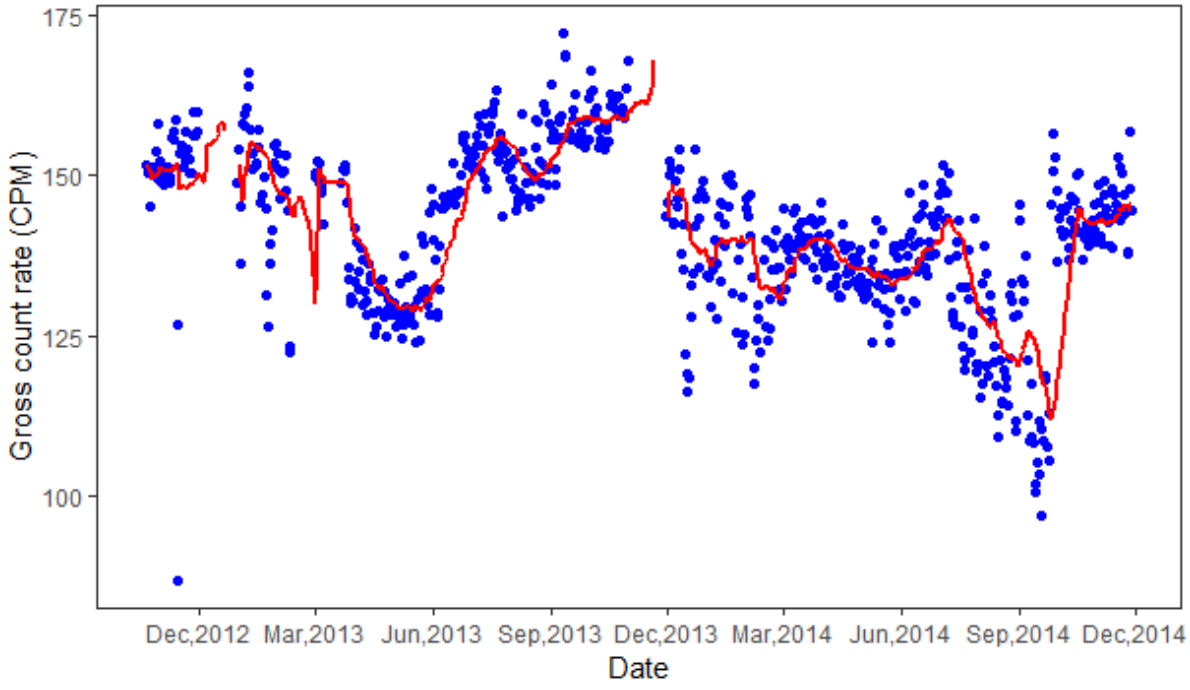
(c) Gamma-5



(d) Gamma-6



(e) Gamma-7



(f) Gamma-8

Figure S2. Flow chart of participants in the cohort

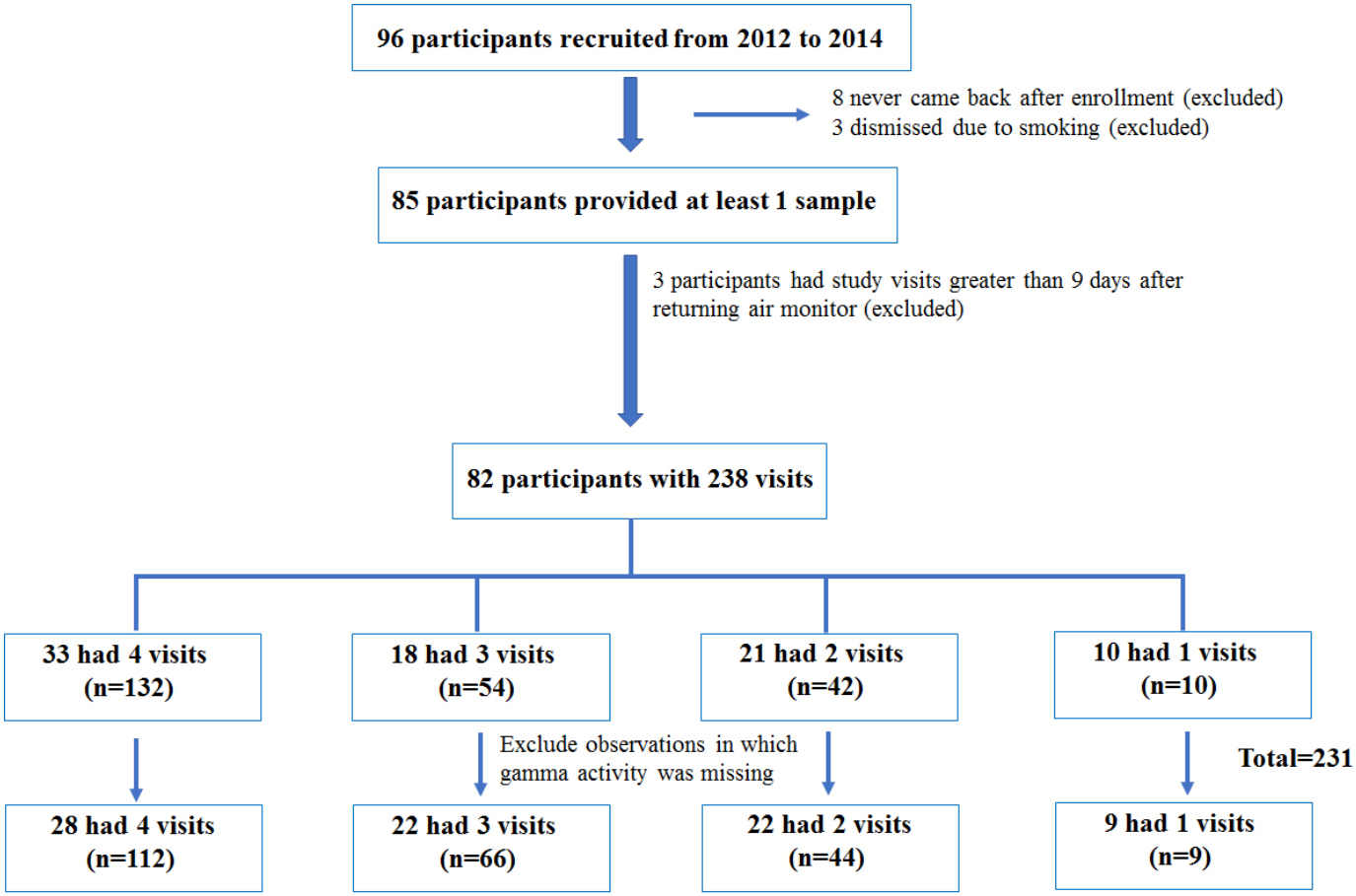
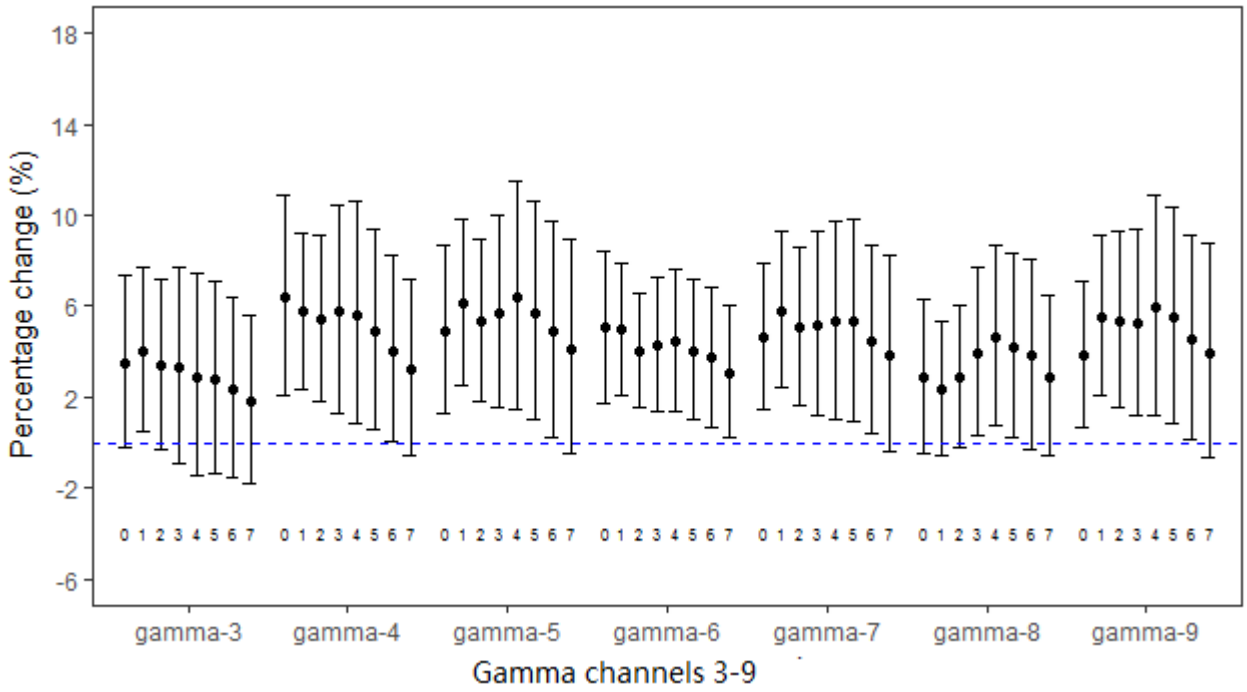
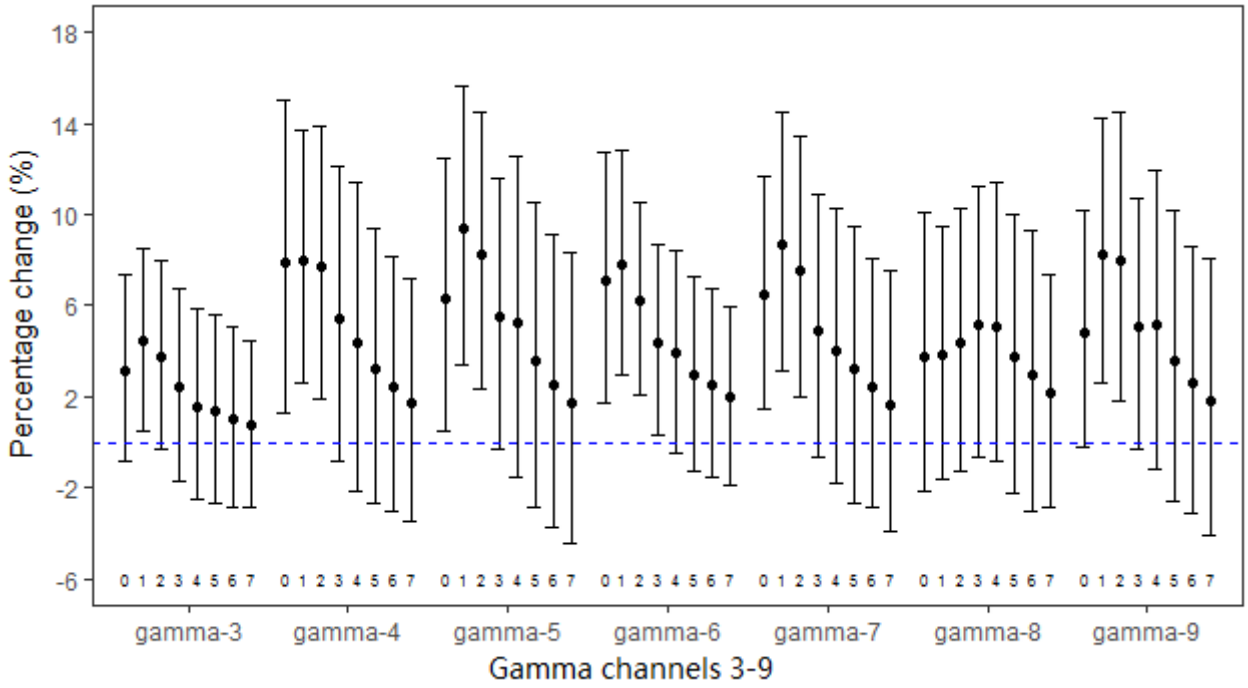


Figure S3. Percentage changes in 8-OHdG with per IQR increase in exposures to PM gamma activities (gamma-3 through gamma-9) for daily moving averages starting with the day of urine collection (day 0) through 7 days before urine collection (day 7), adjusted for weekly $PM_{2.5}$.

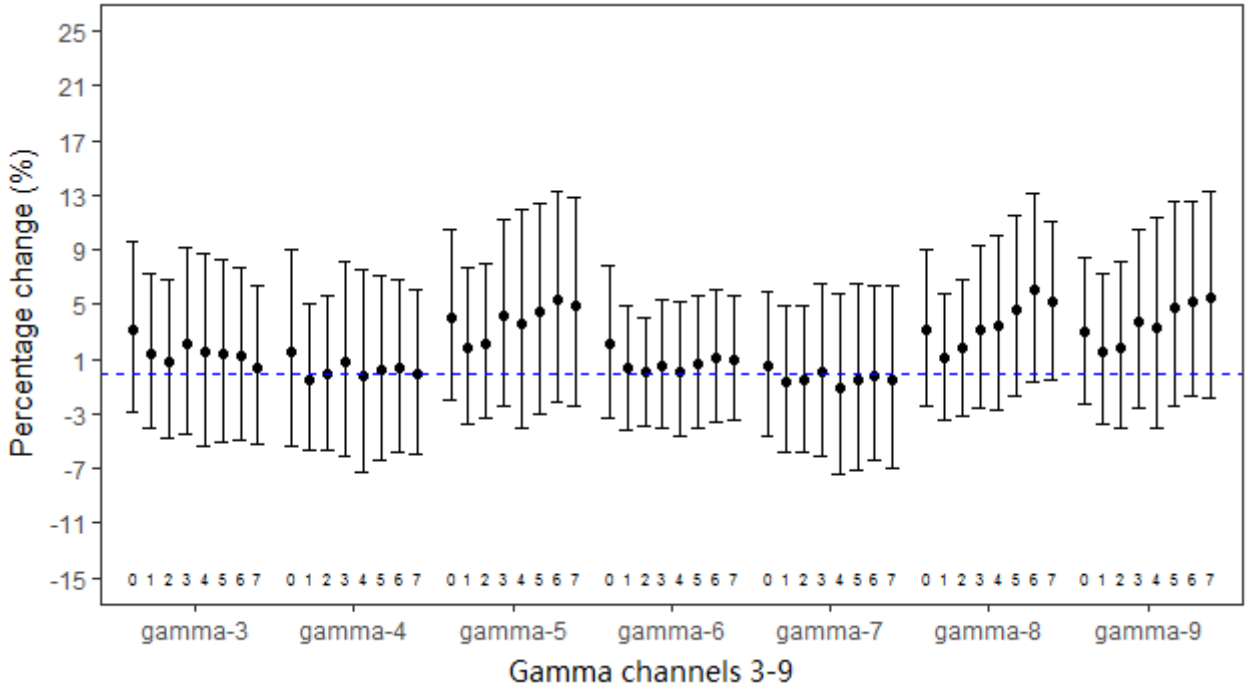


(a) Effect of ambient PM gamma activities adjusted for ambient $PM_{2.5}$

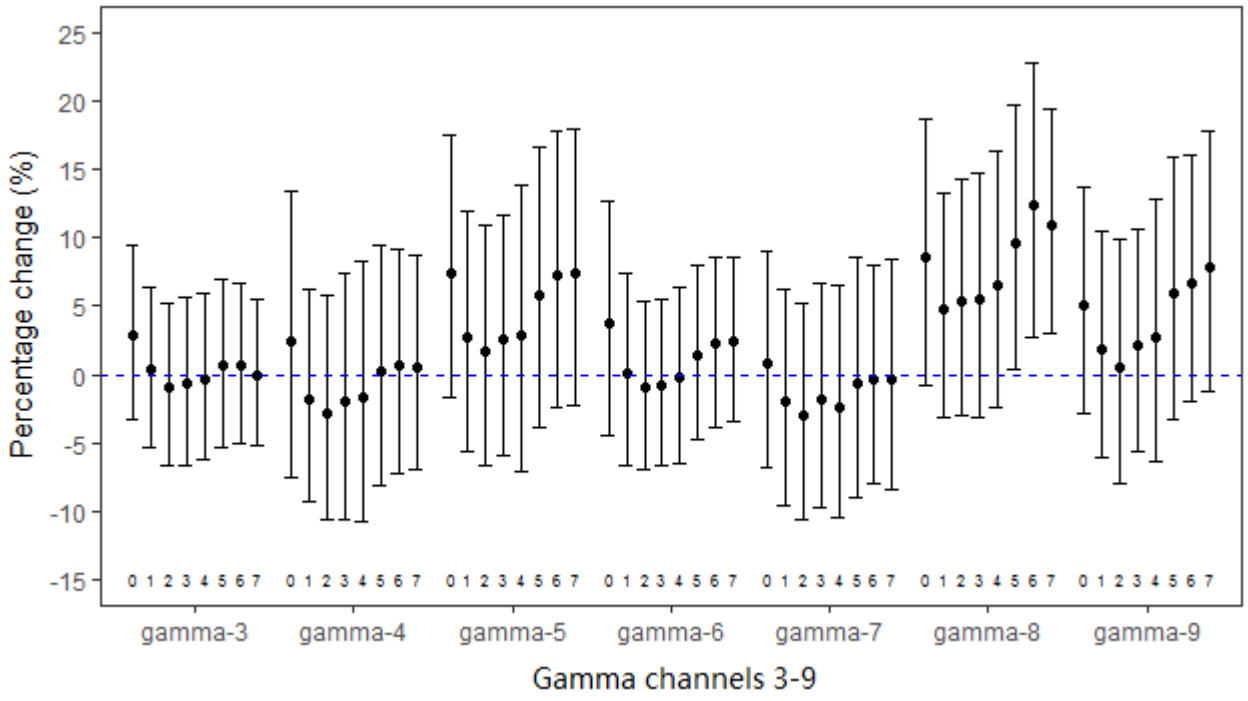


(b) Effect of indoor PM gamma activities adjusted for indoor $PM_{2.5}$

Figure S4. Percentage changes in MDA with per IQR increase in exposures to PM gamma activities, gamma-3 through gamma-9) for daily moving averages starting with the day of urine collection (day 0) through 7 days before urine collection (day 7), adjusted for weekly $PM_{2.5}$.

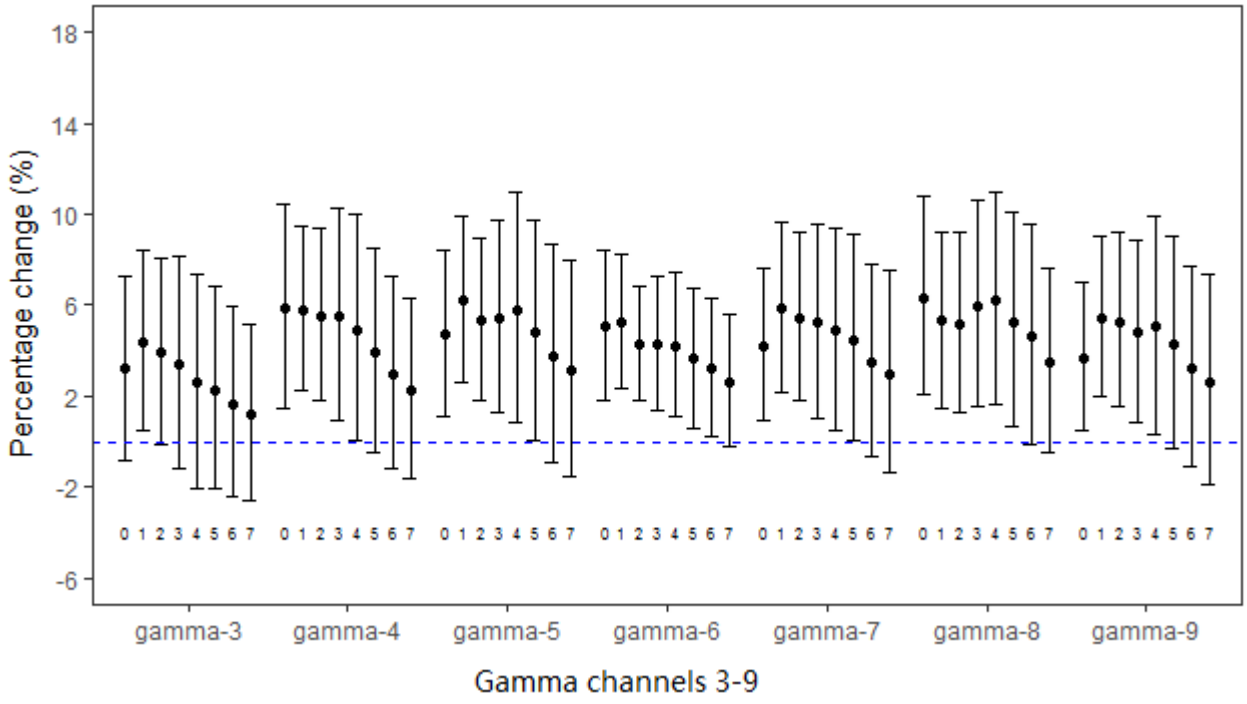


(a) Effect of ambient PM gamma activities adjusted for ambient $PM_{2.5}$

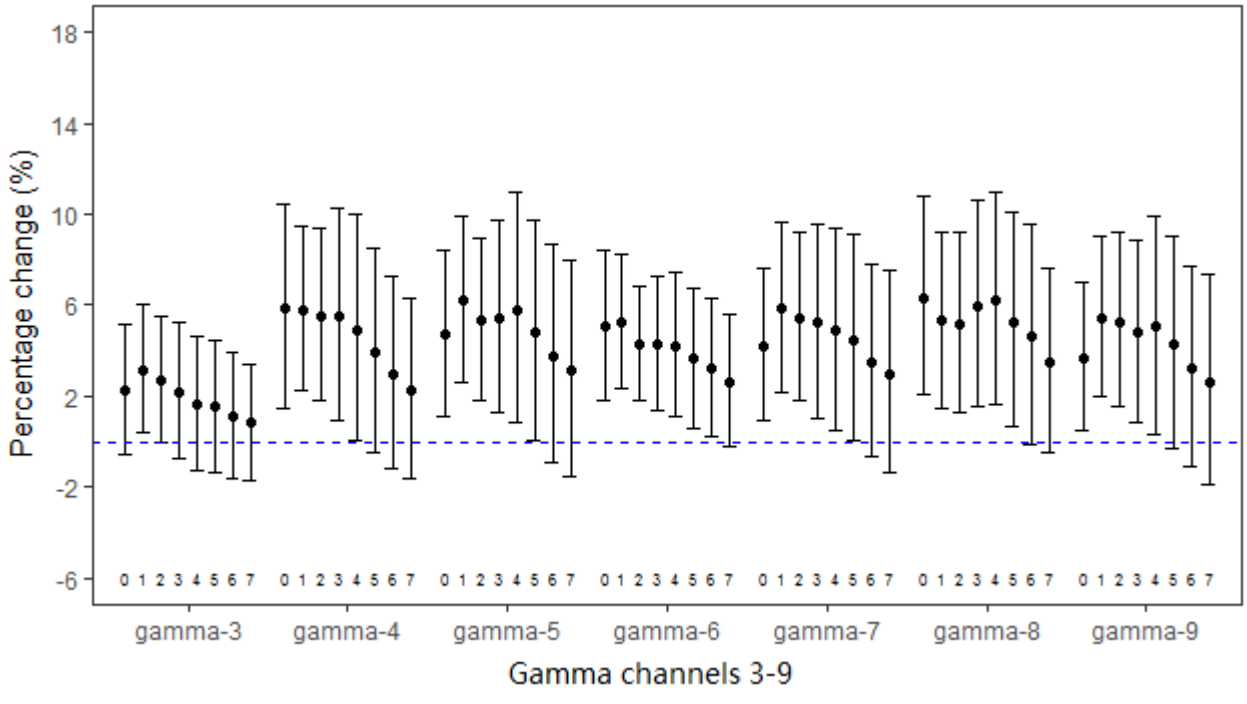


(b) Effect of indoor PM gamma activities adjusted for indoor $PM_{2.5}$

Figure S5. Percentage changes in 8-OHdG with per IQR increase in exposures to PM gamma activities, gamma-3 through gamma-9) for daily moving averages starting with the day of urine collection (day 0) through 7 days before urine collection (day 7), adjusted for weekly NO_2.

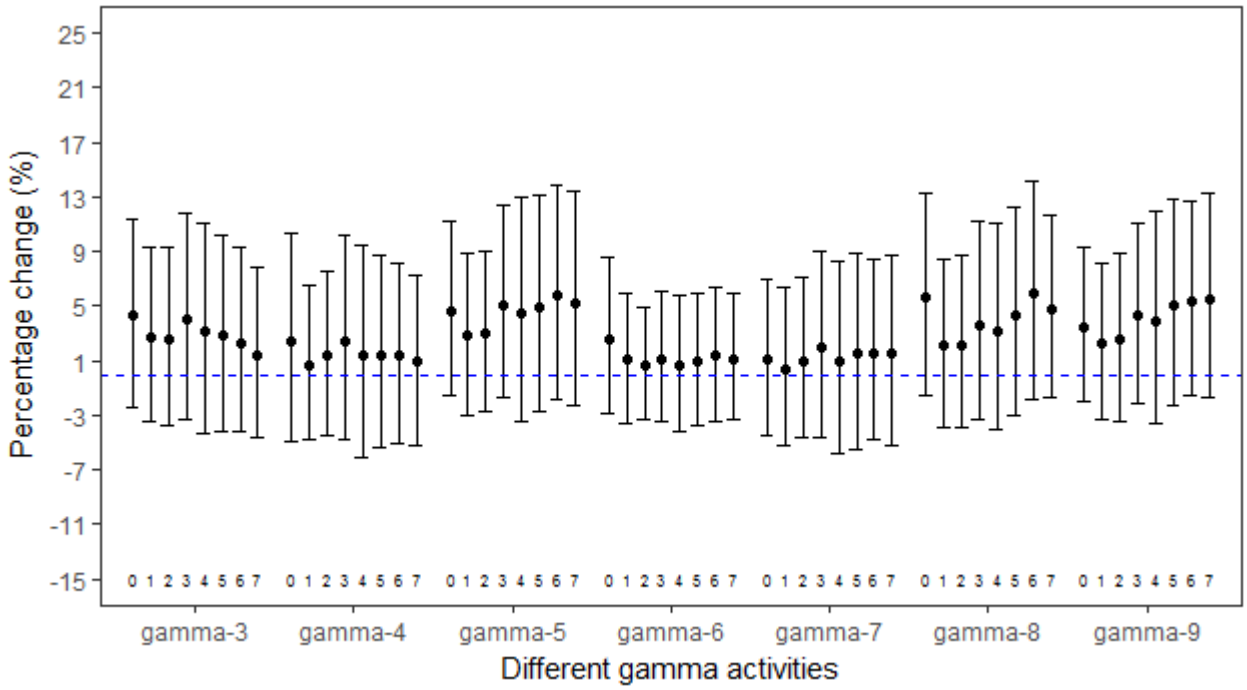


(a) Effect of ambient PM gamma activities adjusted for ambient NO_2

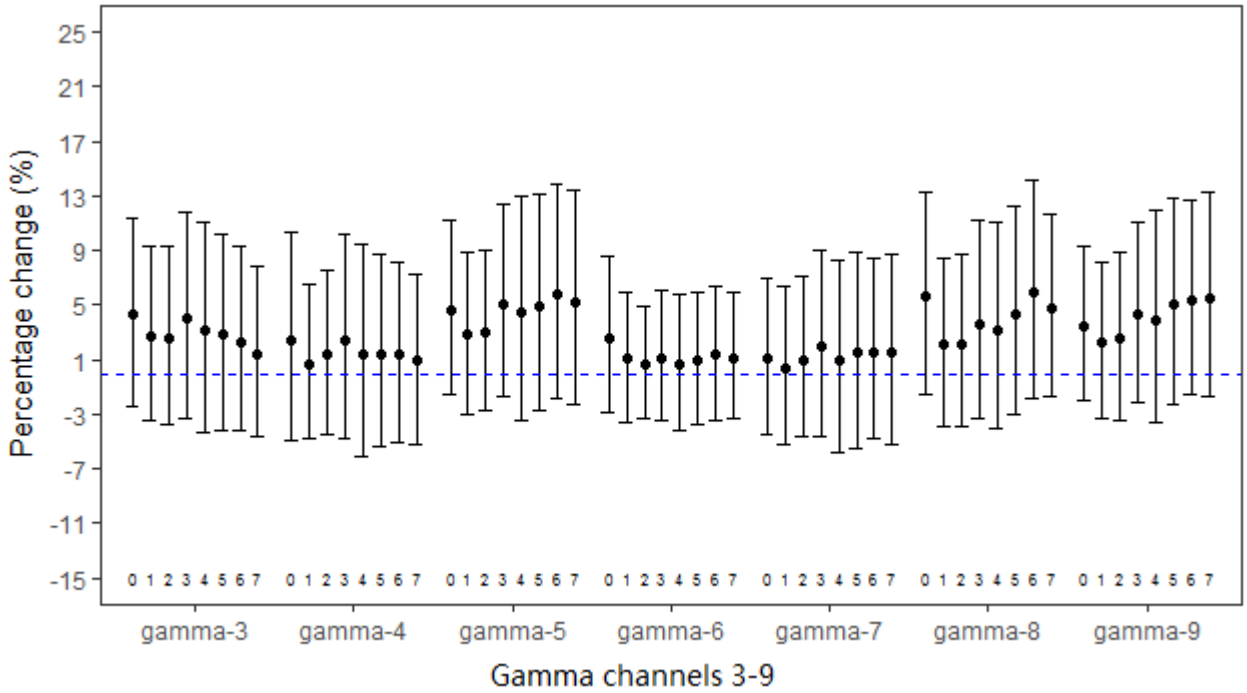


(b) Effect of indoor PM gamma activities adjusted for indoor NO_2

Figure S6. Percentage changes in MDA with per IQR increase in exposures to PM gamma activities, gamma-3 through gamma-9) for daily moving averages starting with the day of urine collection (day 0) through 7 days before urine collection (day 7), adjusted for weekly NO_2.

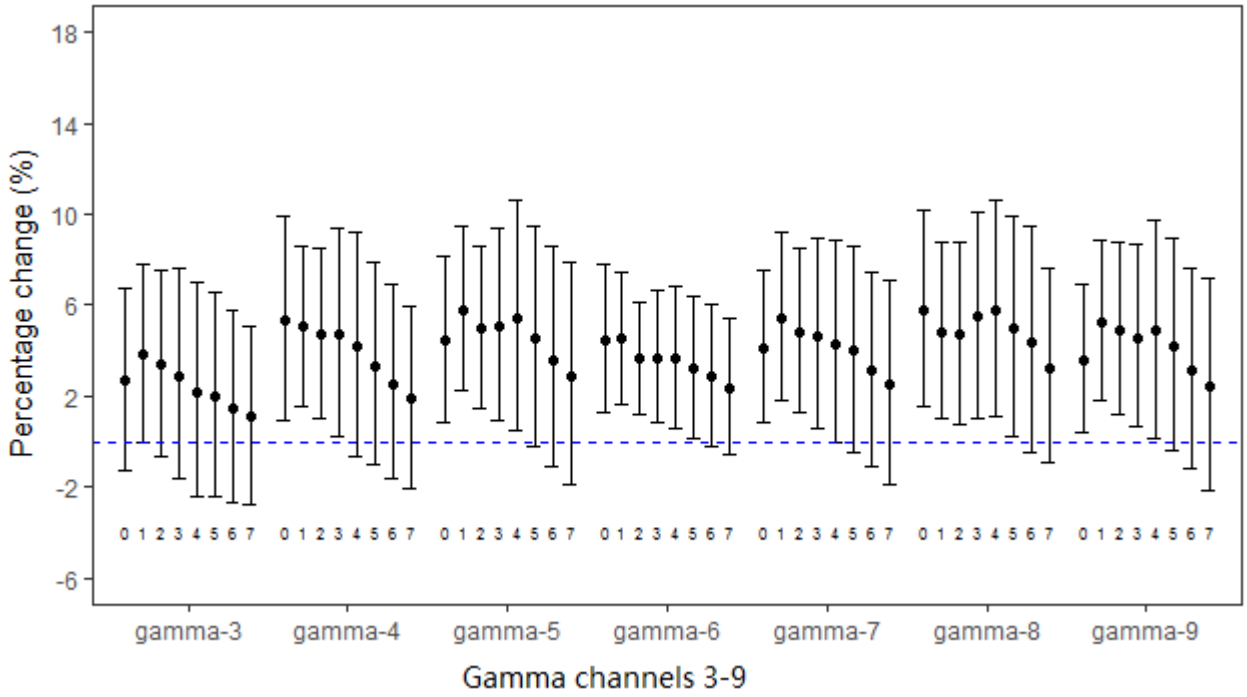


(a) Effect of ambient PM gamma activities adjusted ambient NO_2



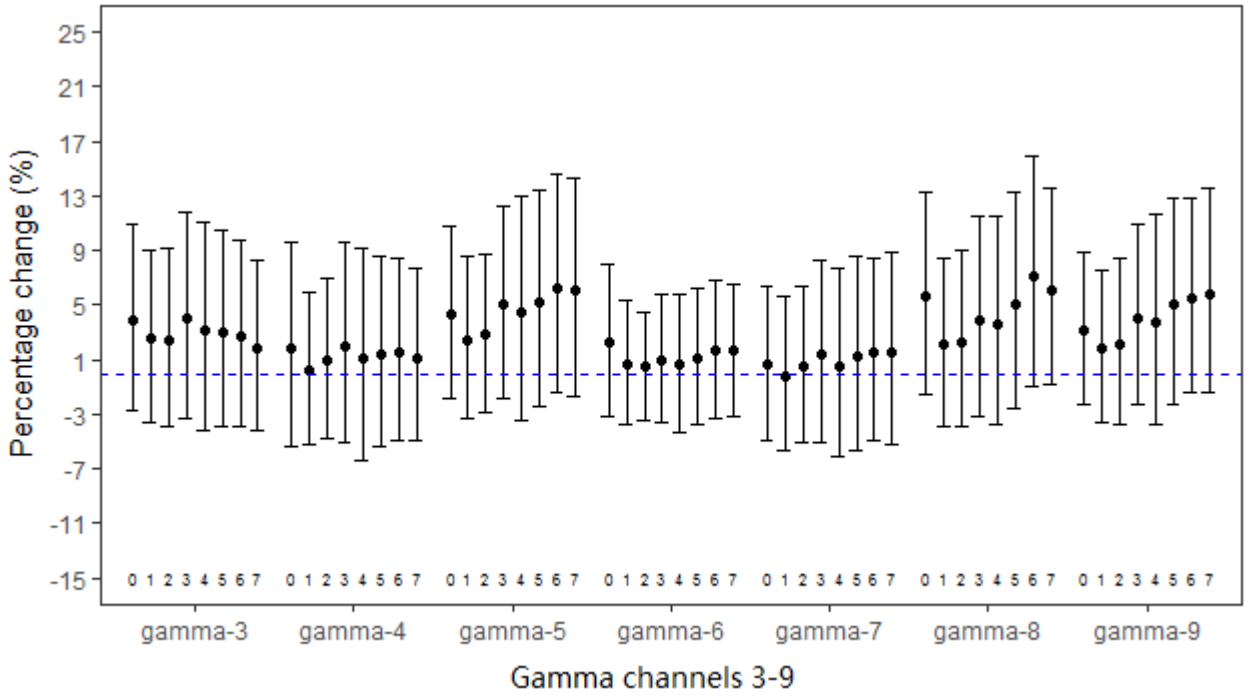
(b) Effect of indoor PM gamma activities adjusted for indoor NO_2

Figure S7. Percentage changes in 8-OHdG with per IQR increase in exposures to PM gamma activities, (gamma-3 through gamma-9) for daily moving averages starting with the day of urine collection (day 0) through 7 days before urine collection (day 7), adjusted for weekly O_3.



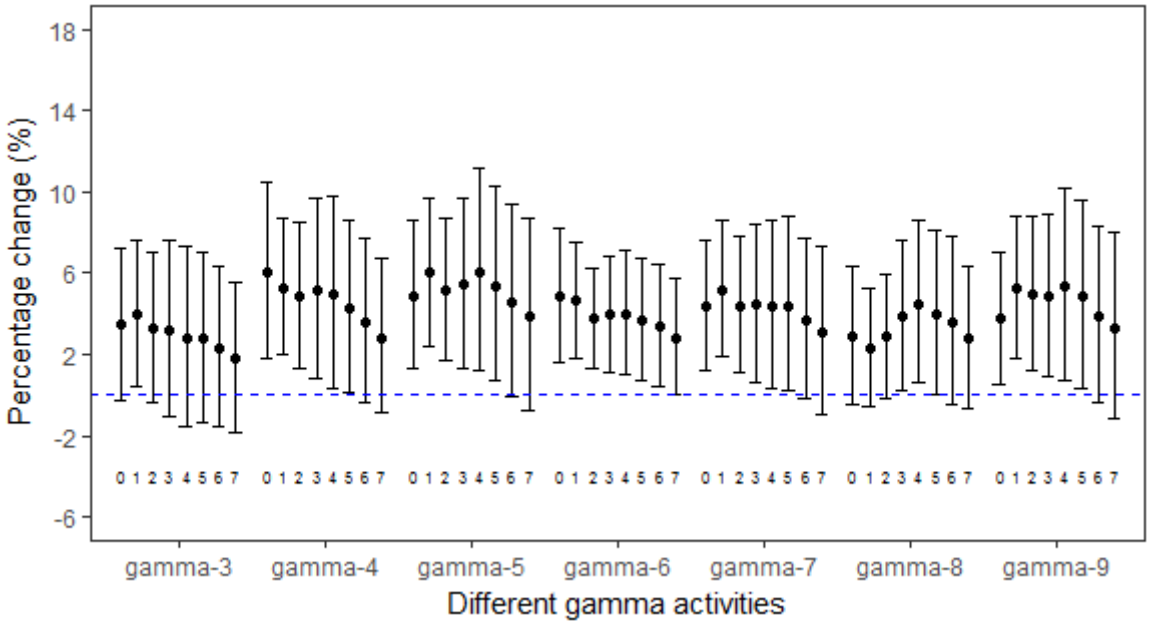
Effect of ambient PM gamma activities adjusted for ambient O_3

Figure S8. Percentage changes in MDA with per IQR increase in exposures to PM gamma activities, (gamma-3 through gamma-9) for daily moving averages starting with the day of urine collection (day 0) through 7 days before urine collection (day 7),. adjusted for weekly O_3.

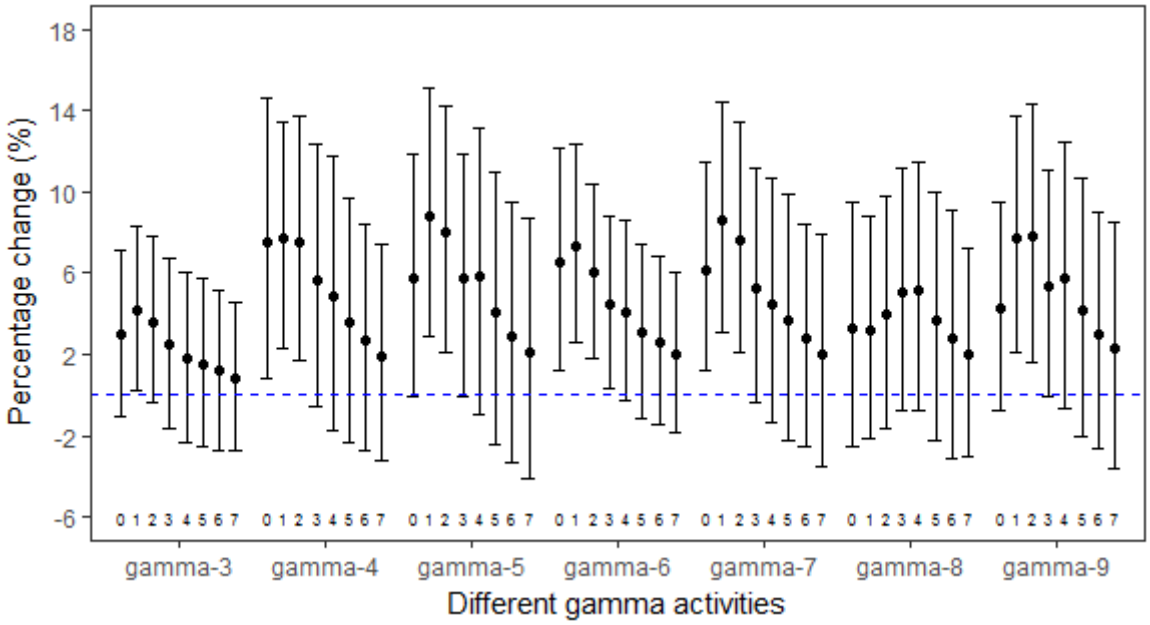


Effect of ambient PM gamma activities adjusted for ambient O_3

Figure S9. Percentage changes in 8-OHdG with per IQR increase in exposures to PM gamma activities, (gamma-3 through gamma-9) for daily moving averages starting with the day of urine collection (day 0) through 7 days before urine collection (day 7), unadjusted for other pollutants.

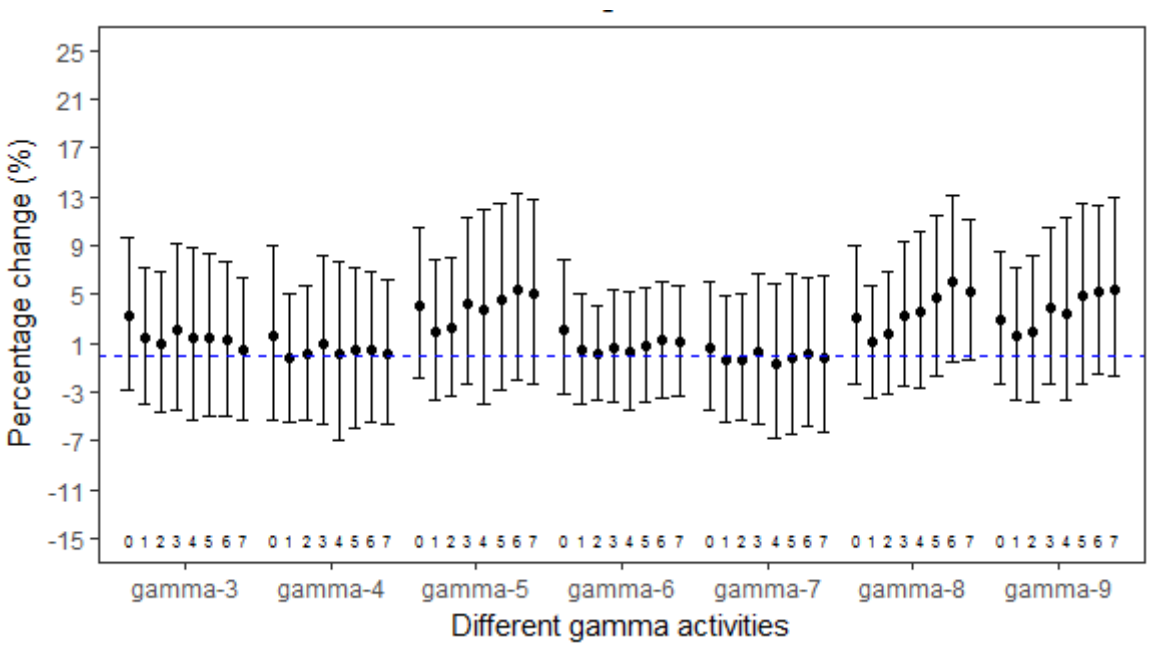


(a) Effect of ambient PM gamma activities for unadjusted models

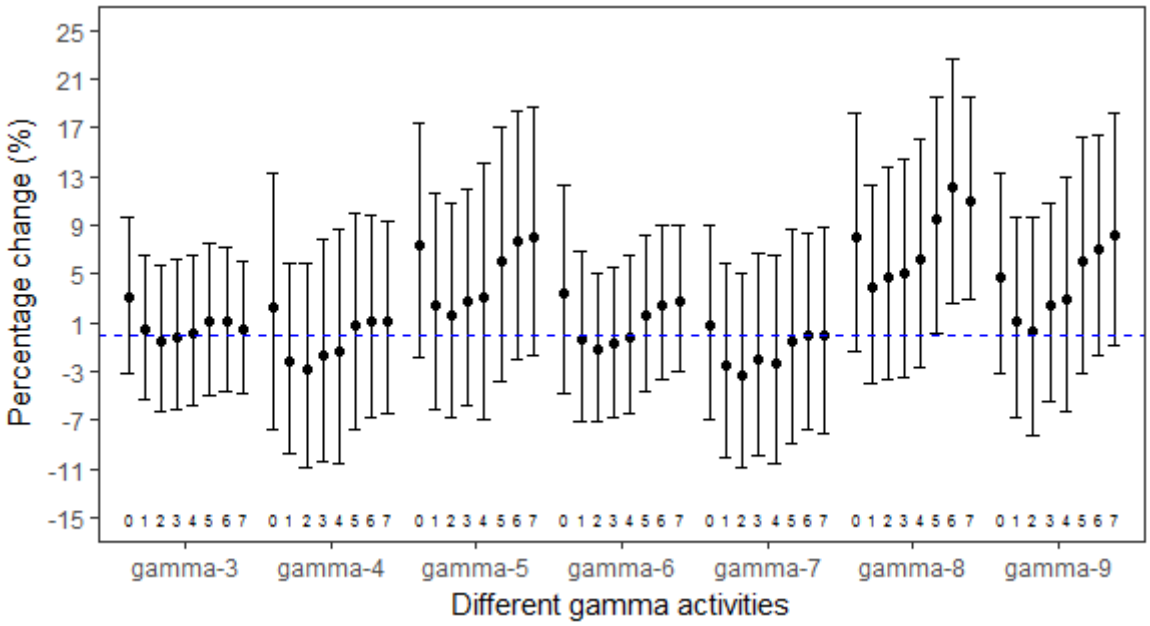


(b) Effect of indoor PM gamma activities for unadjusted models

Figure S10. Percentage changes in MDA with per IQR increase in exposures to PM gamma activities, (gamma-3 through gamma-9) for daily moving averages starting with the day of urine collection (day 0) through 7 days before urine collection (day 7), unadjusted for other pollutants.

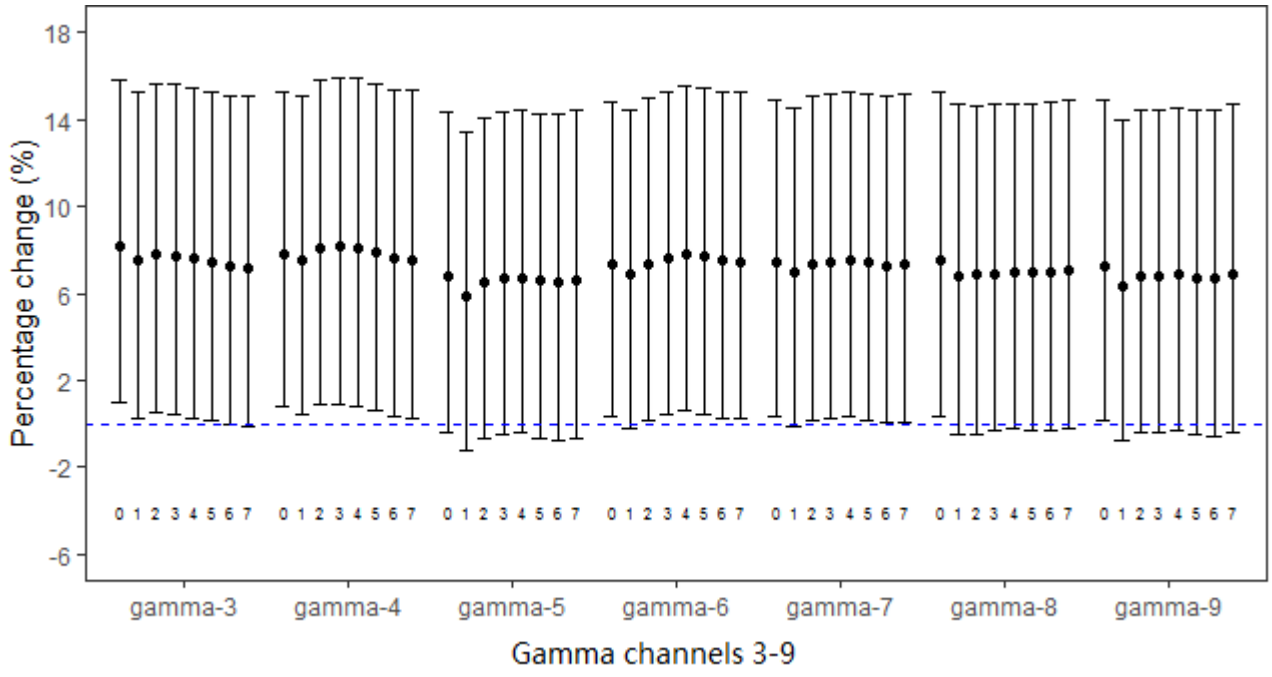


(a) Effect of ambient PM gamma activities for unadjusted models

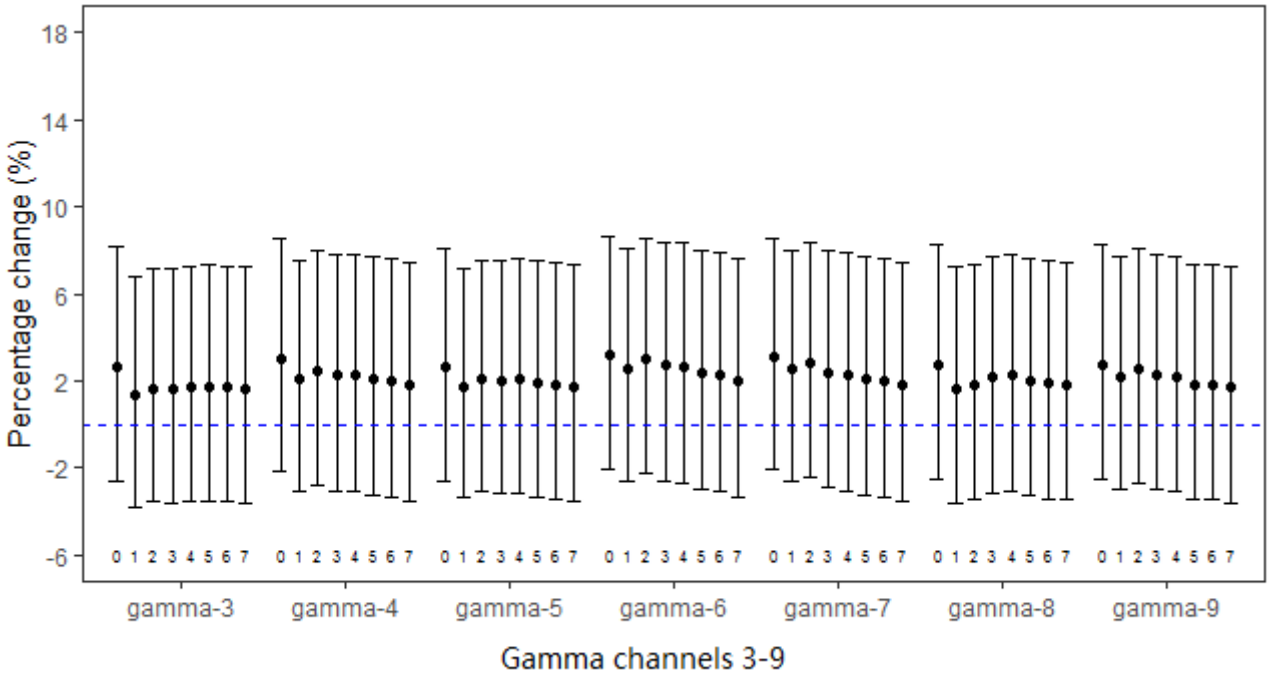


(b) ffect of indoor PM gamma activities for unadjusted models

Figure S11. Percentage changes in 8-OHdG with per IQR increase of BC exposures, adjusted for ambient and indoor PM gamma activities for daily moving averages starting with the day of urine collection (day 0) through 7 days before urine collection (day 7).

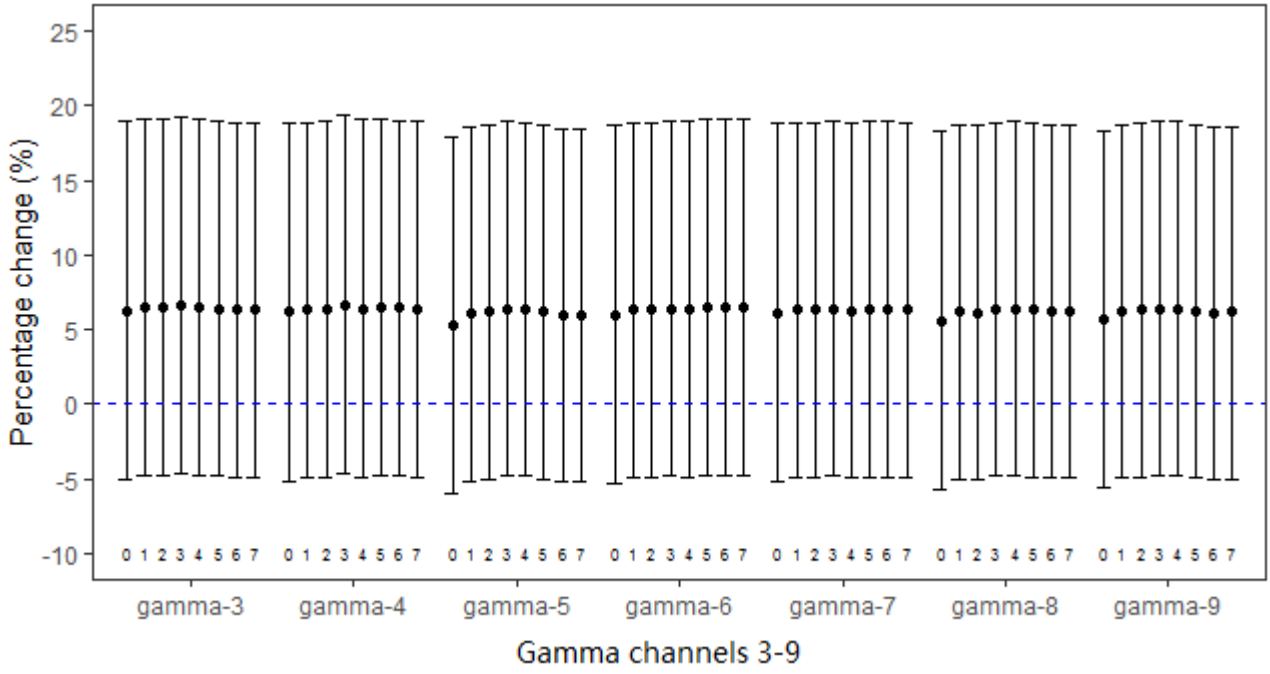


(a) Weekly ambient BC

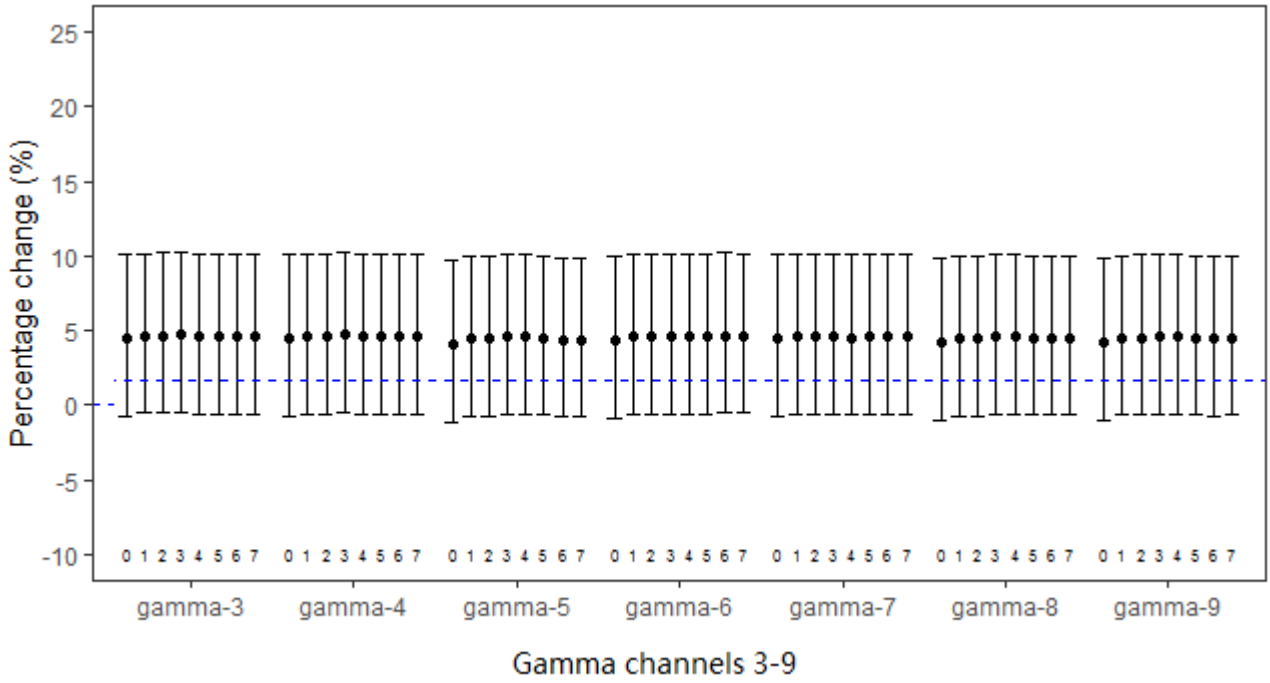


(b) Weekly indoor BC

Figure S12. Percentage changes in MDA with per IQR increase of BC exposures, adjusted for ambient and indoor PM gamma activities for daily moving averages starting with the day of urine collection (day 0) through 7 days before urine collection (day 7).

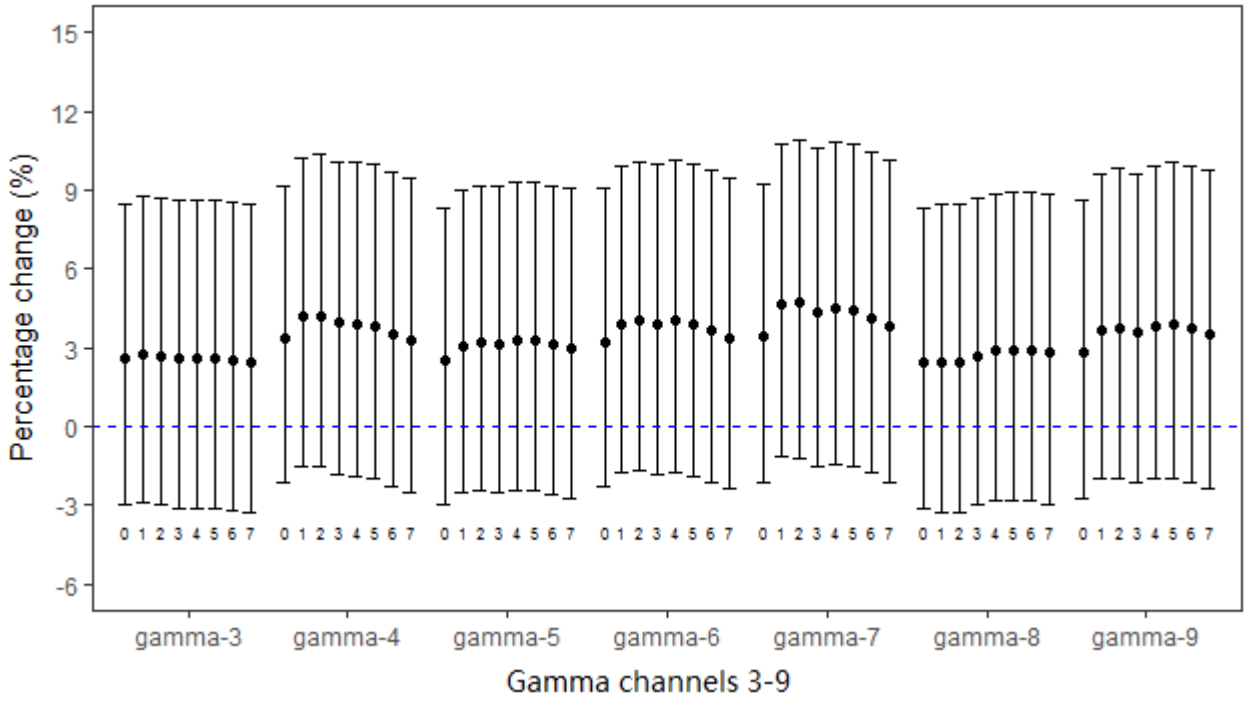


(a) Weekly ambient BC

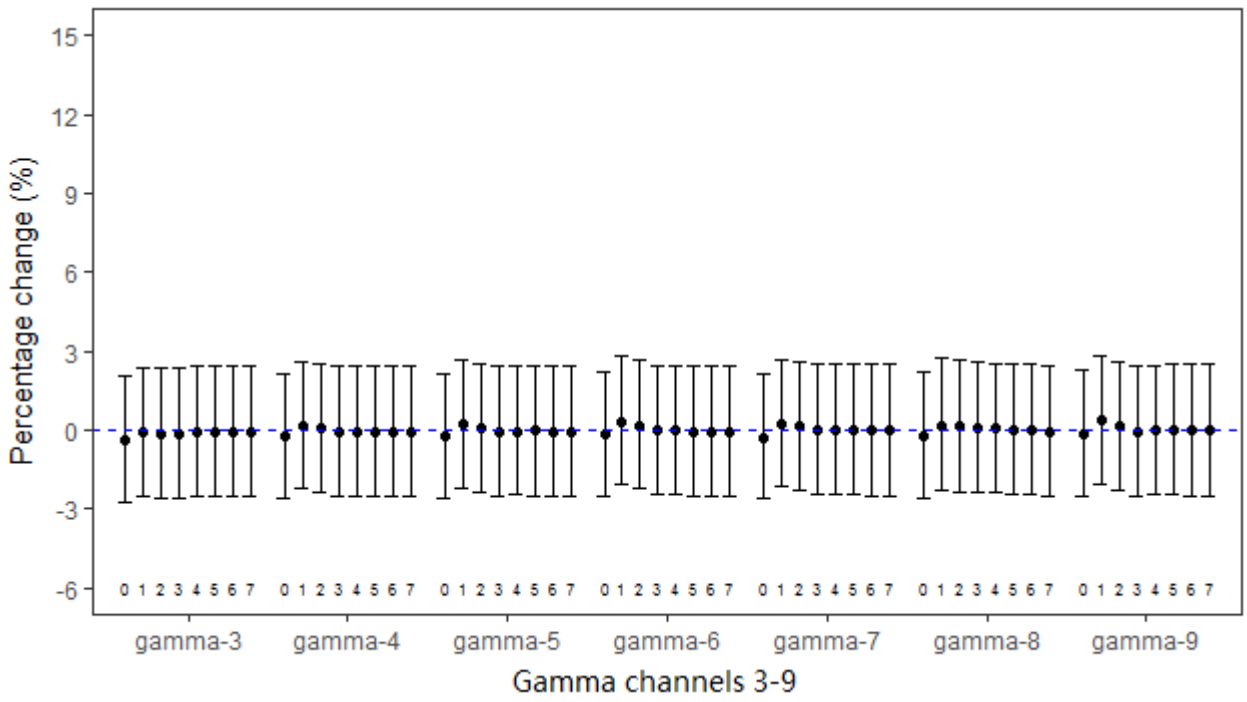


(b) Weekly indoor BC

Figure S13. Percentage changes in 8-OHdG with per IQR increase of $PM_{2.5}$ exposures, adjusted for ambient and indoor PM gamma activities for daily moving averages starting with the day of urine collection (day 0) through 7 days before urine collection (day 7).

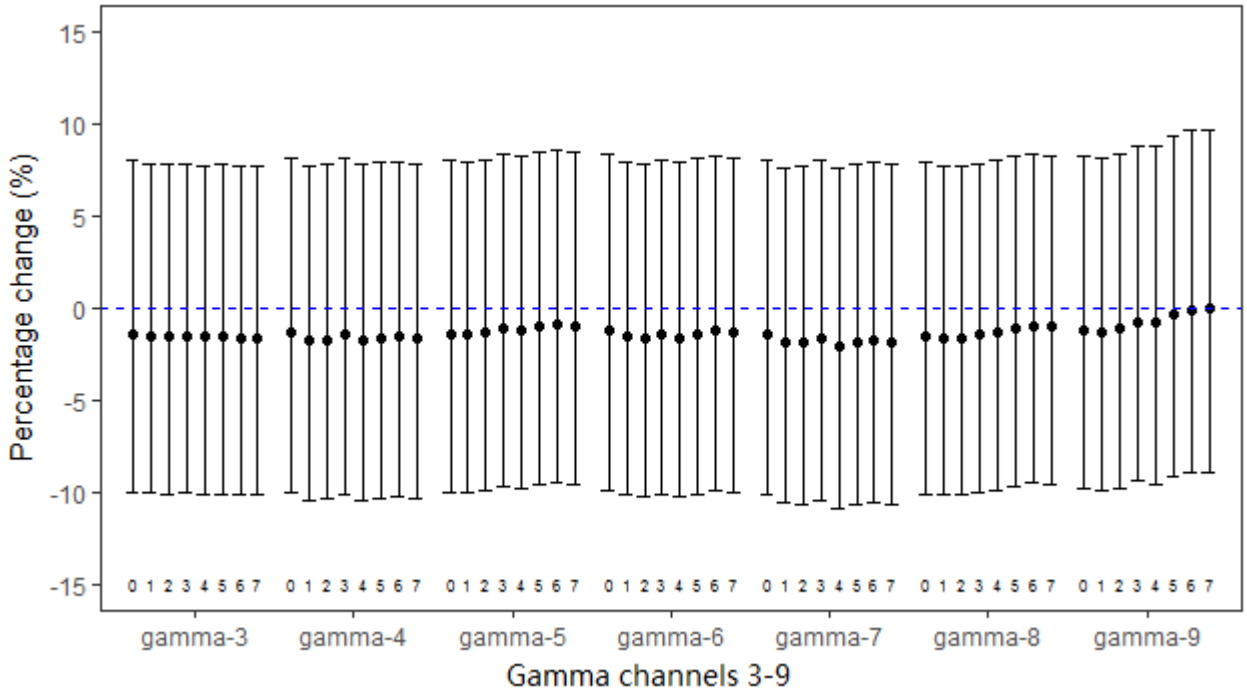


(a) Weekly ambient $PM_{2.5}$

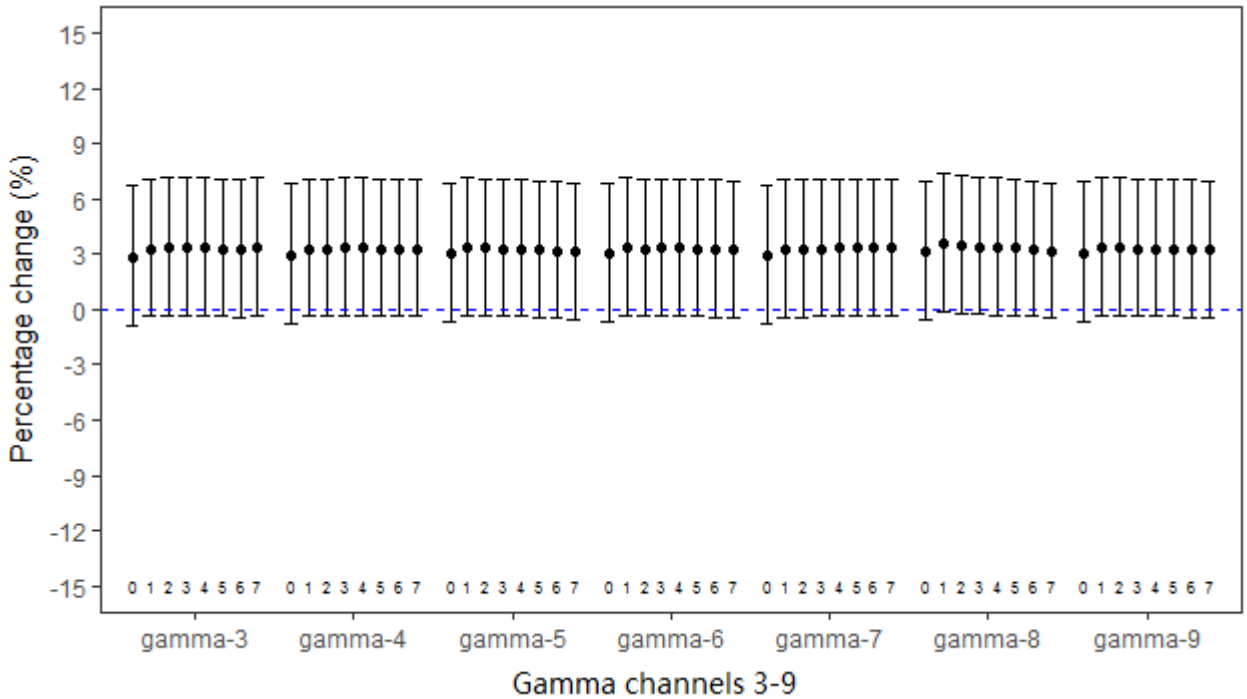


(b) Weekly indoor $PM_{2.5}$

Figure S14. Percentage changes in MDA with per IQR increase of $PM_{2.5}$ exposures, adjusted for ambient and indoor PM gamma activities for daily moving averages starting with the day of urine collection (day 0) through 7 days before urine collection (day 7).

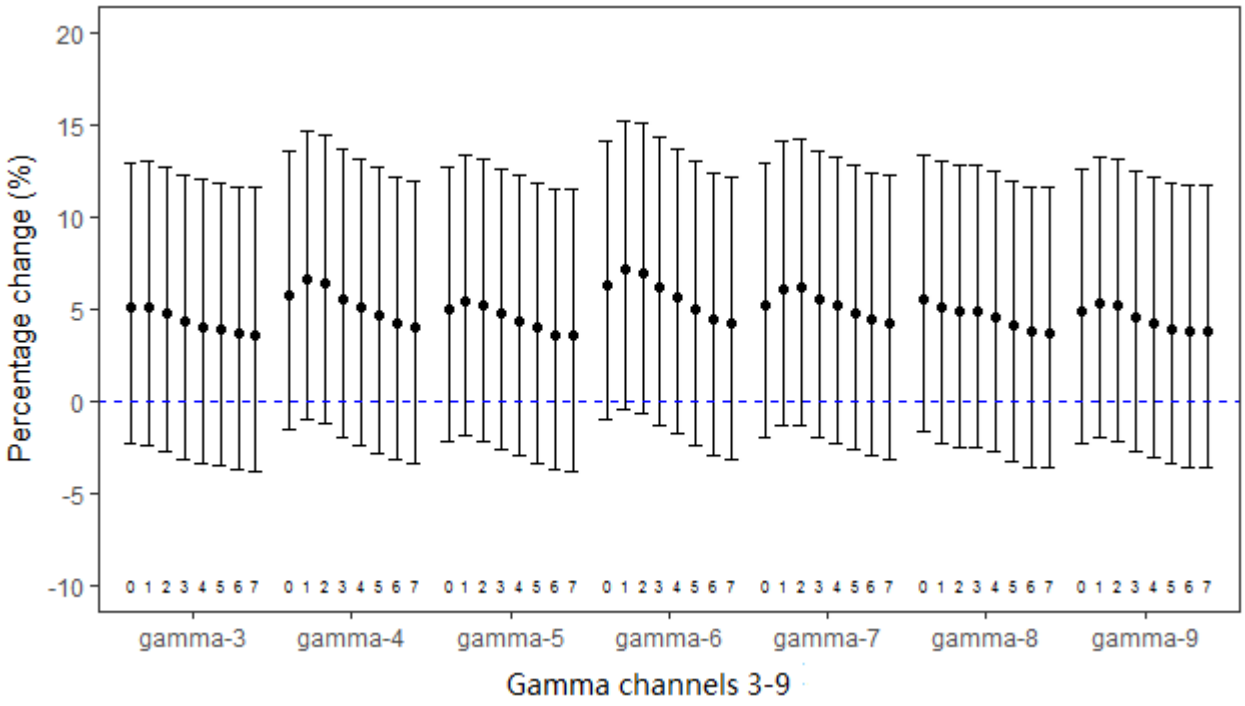


(a) Weekly ambient $PM_{2.5}$

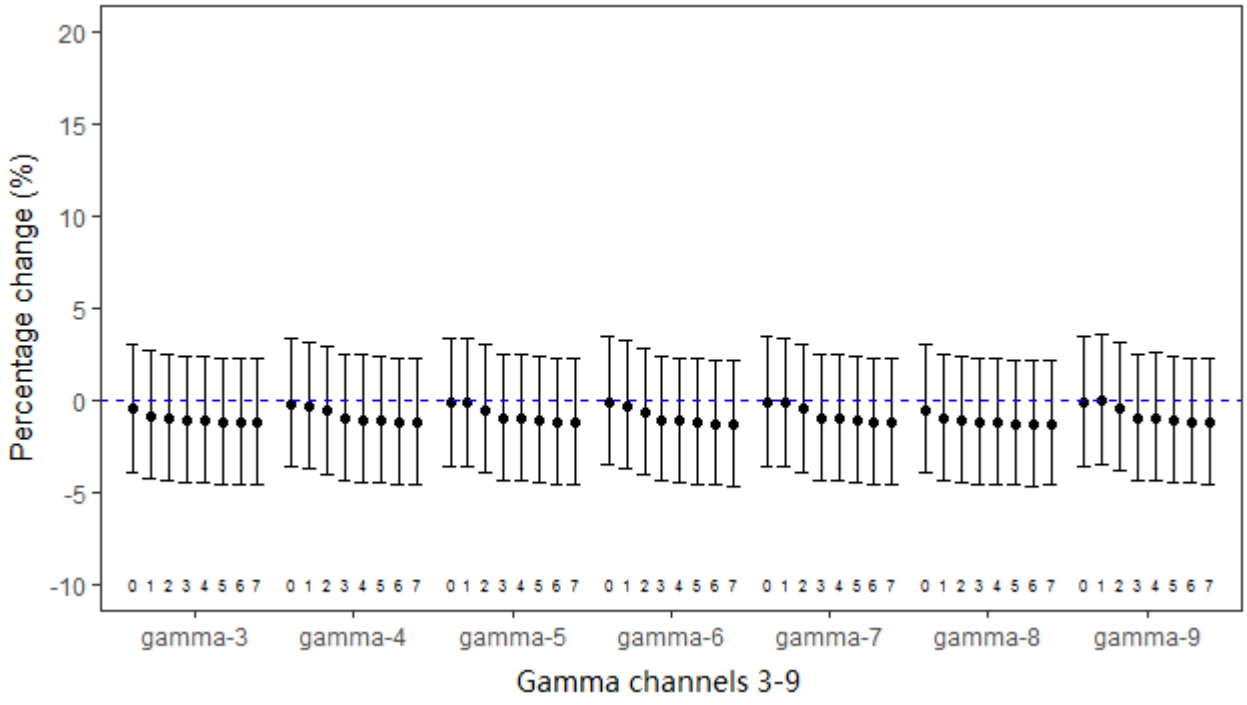


(b) Weekly indoor $PM_{2.5}$

Figure S15. Percentage changes in 8-OHdG with per IQR increase of NO_2 exposures, adjusted for ambient and indoor PM gamma activities for daily moving averages starting with the day of urine collection (day 0) through 7 days before urine collection (day 7).

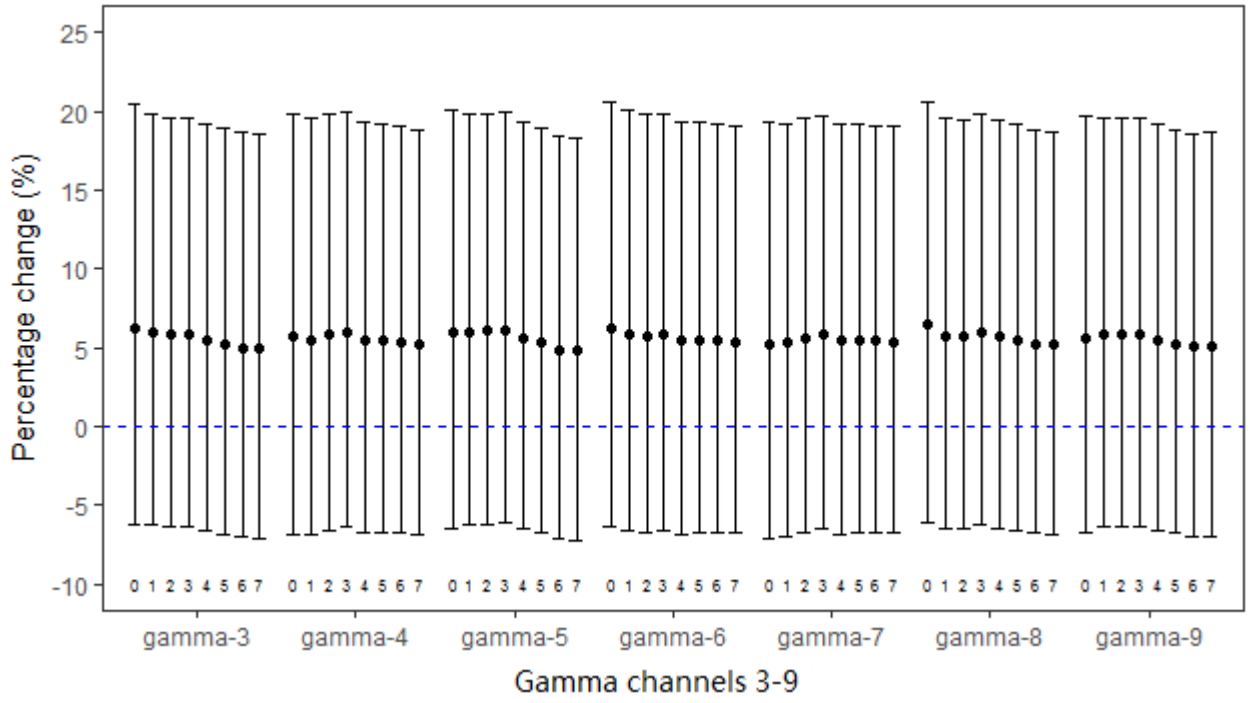


(a) Weekly ambient NO_2

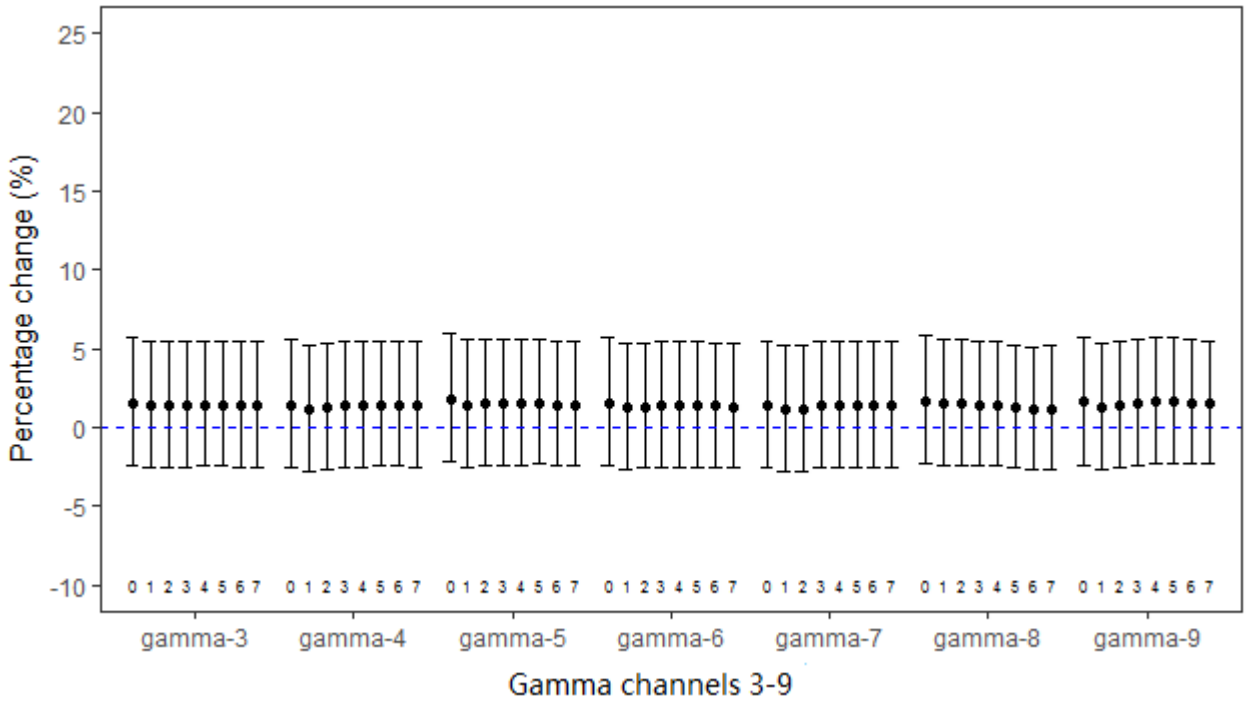


(b) Weekly indoor NO_2

Figure S16. Percentage changes in MDA with per IQR increase of NO_2 exposures, adjusted for ambient and indoor PM gamma activities for daily moving averages starting with the day of urine collection (day 0) through 7 days before urine collection (day 7).

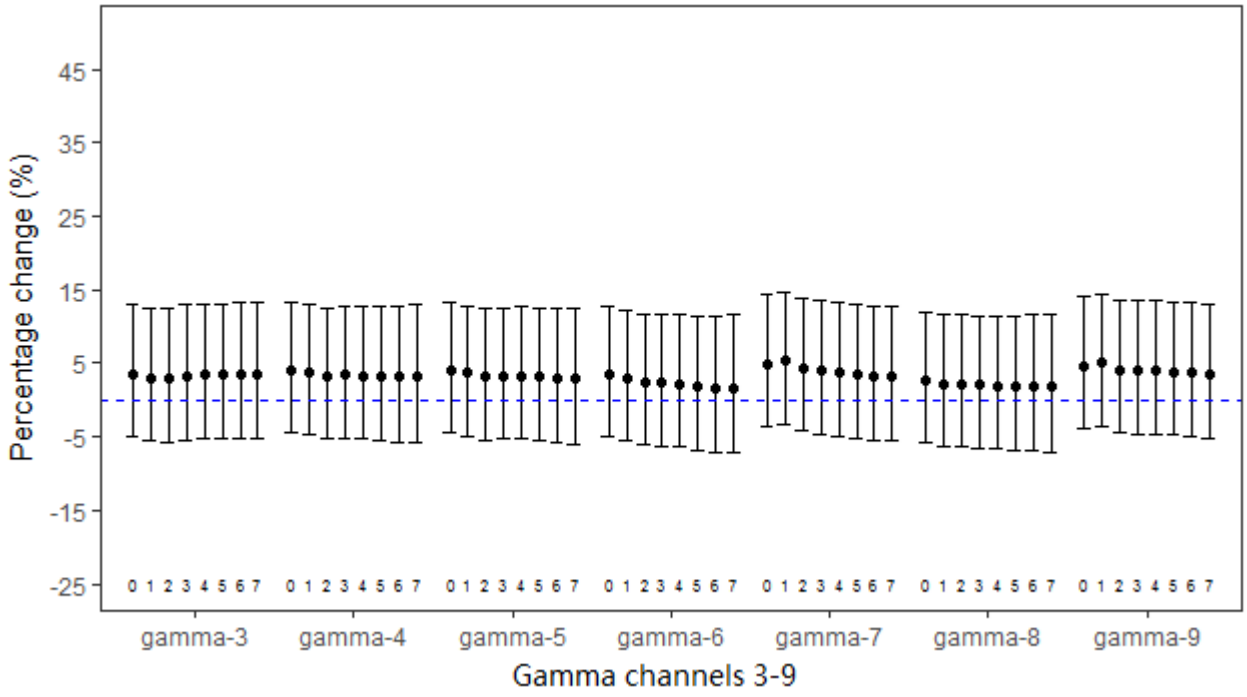


(a) Weekly ambient NO_2



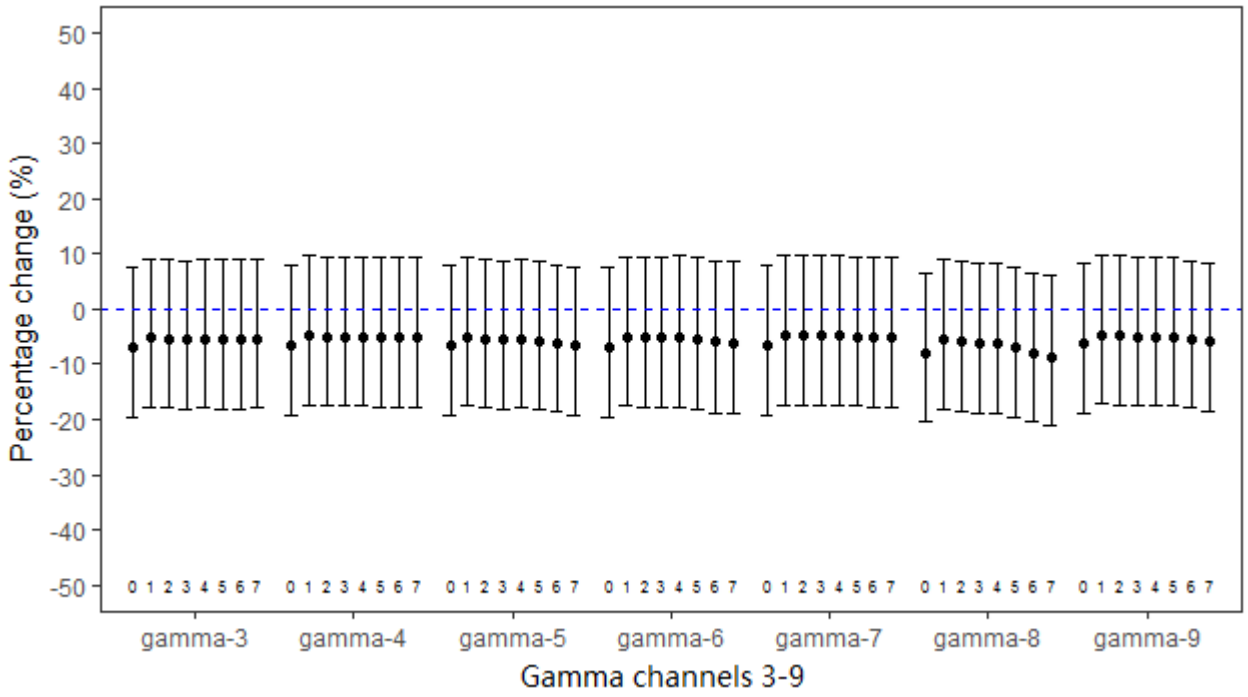
(b) Weekly indoor NO_2

Figure S17. Percentage changes in 8-OHdG with per IQR increase of O_3 exposures, adjusted for ambient PM gamma activities for daily moving averages starting with the day of urine collection (day 0) through 7 days before urine collection (day 7).



Weekly ambient O_3

Figure S18. Percentage changes in MDA with per IQR increase of O_3 exposures, adjusted for ambient for daily moving averages starting with the day of urine collection (day 0) through 7 days before urine collection (day 7).



Weekly ambient O_3

Table S1. RadNet gamma energies classification.

Gamma activity	**Energy range (keV)**
Gamma-1	Reserved by software for instrument stabilization
Gamma-2	100-200
Gamma-3	201-400
Gamma-4	401-600
Gamma-5	601-800
Gamma-6	801-1000
Gamma-7	1001-1400
Gamma-8	1401-1800
Gamma-9	1801-2200

Table S2. IQR values of ambient PM gamma activities for different exposure windows

Ambient PM gamma activity	Exposure window	N	Median (25-75th percentile) (CPM)	Range (CPM)	IQR (CPM)
Gamma-3	0	226	4.34 (-25.62, 51.11)	-195.61 ~265.47	76.72
	1	231	5.49 (-26.96, 41.44)	-209.33 ~244.85	68.40
	2	231	4.61 (-21.96, 43.12)	-205.63 ~233.49	65.09
	3	231	5.67 (-30.81, 41.92)	-187.21 ~213.92	72.73
	4	231	7.19 (-29.01, 42.23)	-170.29 ~188.53	71.24
	5	231	3.26 (-25.33, 39.79)	-182.71 ~196.75	65.12
	6	231	1.71 (-23.08, 37.87)	-189.89 ~197.85	60.94
	7	231	4.95 (-20.09, 35.55)	-177.57 ~197.94	55.63
Gamma-4	0	226	-0.01 (-6.10, 9.98)	-53.89 ~ 43.36	16.08
	1	231	0.09 (-4.13, 7.28)	-61.36 ~ 34.05	11.41
	2	231	0.00 (-3.61, 7.72)	-64.56 ~ 34.35	11.32
	3	231	-0.11 (-4.96, 8.59)	-54.27 ~ 34.69	13.56
	4	231	0.29 (-5.24, 8.45)	-47.14 ~ 31.34	13.69
	5	231	0.50 (-4.02, 8.05)	-52.07 ~ 26.85	12.07
	6	231	0.45 (-3.61, 7.67)	-55.22 ~ 30.88	11.27
	7	231	0.45 (-3.31, 7.17)	-50.14 ~ 30.34	10.48
Gamma-5	0	226	1.08 (-4.49, 6.56)	-37.20 ~ 31.43	11.05
	1	231	0.24 (-3.25, 5.99)	-42.19 ~ 36.49	9.24
	2	231	0.05 (-2.71, 5.42)	-42.60 ~ 27.25	8.14
	3	231	-0.11 (-3.82, 5.53)	-36.88 ~ 20.51	9.35
	4	231	0.42 (-3.91, 6.56)	-29.01 ~ 19.55	10.48
	5	231	0.63 (-3.51, 6.21)	-32.65 ~ 21.83	9.72
	6	231	0.24 (-3.26, 6.07)	-34.44 ~ 21.74	9.32
	7	231	0.40 (-3.00, 6.02)	-32.39 ~ 21.05	9.03
Gamma-6	0	226	0.23 (-1.58, 2.68)	-25.26 ~ 14.34	4.26
	1	231	0.14 (-1.24, 2.20)	-28.09 ~ 11.75	3.44
	2	231	-0.01 (-0.95, 1.96)	-29.36 ~ 10.71	2.91
	3	231	0.05 (-1.04, 2.19)	-24.02 ~ 10.71	3.23
	4	231	0.19 (-1.15, 2.12)	-20.38 ~ 9.65	3.27
	5	231	0.04 (-1.09, 2.06)	-22.46 ~ 8.71	3.14
	6	231	0.13 (-1.20, 1.93)	-24.04 ~ 7.20	3.13
	7	231	0.19 (-0.96, 1.96)	-21.92 ~ 7.81	2.92
Gamma-7	0	226	-0.04 (-2.41, 3.65)	-26.31 ~ 18.62	6.05
	1	231	0.31 (-2.27, 3.42)	-30.94 ~ 17.13	5.69
	2	231	0.52 (-2.26, 3.09)	-33.03 ~ 12.89	5.35
	3	231	0.65 (-2.47, 3.42)	-28.17 ~ 11.45	5.89
	4	231	0.76 (-2.35, 3.41)	-23.52 ~ 9.44	5.76
	5	231	0.55 (-2.28, 3.43)	-24.71 ~ 10.68	5.72

	6	231	0.54 (-1.93, 3.26)	-26.80 ~ 9.95	5.19
	7	231	0.49 (-1.80, 3.49)	-24.64 ~ 9.95	5.29
Gamma-8	0	226	0.60 (-2.89, 4.34)	-26.71 ~ 43.40	7.23
	1	231	0.57 (-2.11, 3.61)	-26.08 ~ 40.79	5.72
	2	231	0.64 (-2.18, 3.49)	-25.30 ~ 38.38	5.67
	3	231	0.10 (-2.68, 3.32)	-20.55 ~ 23.93	6.00
	4	231	0.22 (-2.72, 3.13)	-17.23 ~ 20.37	5.85
	5	231	0.45 (-2.50, 3.17)	-18.81 ~ 22.20	5.67
	6	231	0.60 (-2.36, 3.35)	-19.63 ~ 21.81	5.71
	7	231	0.85 (-1.72, 3.08)	-18.46 ~ 24.11	4.81
Gamma-9	0	226	0.08 (-0.43, 0.44)	-3.22 ~ 3.23	0.87
	1	231	0.03 (-0.31, 0.48)	-3.47 ~ 3.73	0.79
	2	231	-0.01 (-0.31, 0.46)	-3.59 ~ 2.71	0.78
	3	231	0.01 (-0.37, 0.41)	-3.04 ~ 2.10	0.79
	4	231	0.04 (-0.37, 0.50)	-2.60 ~ 1.80	0.87
	5	231	0.04 (-0.33, 0.48)	-2.83 ~ 1.93	0.81
	6	231	0.05 (-0.29, 0.45)	-3.00 ~ 1.80	0.74
	7	231	0.10 (-0.30, 0.44)	-2.79 ~ 1.57	0.73

Footnotes: 0-7 represent different exposure windows: 0 represents the average indoor PM gamma activity at the phlebotomy day; 1-7 represents the moving averages from 1 to 7 days before phlebotomy respectively.

Table S3. IQR values of indoor PM gamma activities for different exposure windows

Ambient PM gamma activity	Exposure window	N	Median (25-75th percentile) (CPM)	Range (CPM)	IQR (CPM)
Gamma-3	0	217	-0.03 (-22.22, 32.45)	-151.06 ~205.23	54.67
	1	222	0.37 (-22.31, 27.40)	-170.32 ~237.26	49.71
	2	222	-0.06 (-19.27, 25.97)	-170.32 ~165.89	45.24
	3	222	-0.14 (-24.44, 23.43)	-170.32 ~198.49	47.87
	4	222	-0.17 (-23.44, 21.76)	-170.32 ~212.42	45.20
	5	222	-0.13 (-21.55, 21.45)	-192.54 ~203.84	43.00
	6	222	-2.10 (-20.36, 20.40)	-197.32 ~222.93	40.75
	7	222	-2.23 (-18.96, 17.70)	-170.32 ~223.02	36.66
Gamma-4	0	217	-0.26 (-4.30, 5.51)	-38.41 ~ 38.83	16.08
	1	222	-0.16 (-3.94, 4.58)	-37.72 ~ 38.83	11.41
	2	222	-0.17 (-3.84, 4.85)	-36.22 ~ 38.83	11.32
	3	222	-0.51 (-4.18, 5.38)	-38.50 ~ 28.37	13.56
	4	222	-0.39 (-4.52, 4.93)	-39.56 ~ 32.05	13.69
	5	222	-0.40 (-3.80, 4.74)	-46.06 ~ 30.25	12.07
	6	222	-0.63 (-3.65, 4.39)	-48.73 ~ 34.79	11.27
	7	222	-0.28 (-3.42, 3.96)	-42.08 ~ 34.18	10.48
Gamma-5	0	217	0.00 (-3.25, 3.87)	-24.36 ~ 29.12	11.05
	1	222	-0.34 (-2.75, 3.39)	-23.68 ~ 24.68	9.24
	2	222	-0.11 (-2.72, 3.47)	-23.90 ~ 24.68	8.14
	3	222	-0.22 (-3.47, 3.45)	-22.05 ~ 25.37	9.35
	4	222	-0.01 (-3.22, 3.36)	-24.34 ~ 18.43	10.48
	5	222	-0.01 (-2.94, 3.56)	-30.98 ~ 17.79	9.72
	6	222	-0.10 (-2.72, 3.59)	-31.79 ~ 16.84	9.32
	7	222	-0.02 (-2.55, 3.31)	-27.18 ~ 16.53	9.03
Gamma-6	0	217	0.01 (-1.10, 1.62)	-15.10 ~ 15.71	4.26
	1	222	-0.04 (-1.00, 1.16)	-16.11 ~ 15.71	3.44
	2	222	-0.05 (-0.85, 1.17)	-16.48 ~ 15.71	2.91
	3	222	-0.07 (-0.89, 1.39)	-15.70 ~ 8.21	3.23
	4	222	-0.06 (-0.88, 1.46)	-17.08 ~ 5.91	3.27
	5	222	-0.01 (-0.88, 1.34)	-18.85 ~ 5.26	3.14
	6	222	-0.01 (-0.87, 1.26)	-20.17 ~ 4.87	3.13
	7	222	0.00 (-0.85, 1.19)	-18.39 ~ 4.96	2.92
Gamma-7	0	217	-0.19 (-2.13, 2.16)	-16.08 ~ 17.26	6.05
	1	222	-0.01 (-1.81, 2.08)	-18.11 ~ 15.80	5.69
	2	222	0.12 (-1.74, 2.03)	-18.54 ~ 15.80	5.35
	3	222	0.22 (-2.01, 2.25)	-17.25 ~ 13.72	5.89
	4	222	0.22 (-1.94, 2.22)	-18.46 ~ 12.06	5.76
	5	222	0.23 (-1.64, 2.22)	-20.73 ~ 11.75	5.72

	6	222	0.16 (-1.54, 2.01)	-22.49 ~ 11.63	5.19
	7	222	0.14 (-1.48, 1.90)	-20.68 ~ 11.71	5.29
Gamma-8	0	217	0.37 (-1.85, 3.39)	-21.99 ~ 29.76	7.23
	1	222	0.10 (-1.61, 3.03)	-23.18 ~ 31.91	5.72
	2	222	0.11 (-1.63, 2.36)	-24.05 ~ 31.27	5.67
	3	222	0.00 (-2.10, 2.17)	-23.65 ~ 30.13	6.00
	4	222	0.03 (-2.03, 1.97)	-19.83 ~ 22.61	5.85
	5	222	0.04 (-1.86, 1.96)	-19.53 ~ 21.70	5.67
	6	222	0.05 (-1.58, 2.03)	-19.50 ~ 22.57	5.71
	7	222	0.04 (-1.57, 1.96)	-18.83 ~ 22.73	4.81
Gamma-9	0	217	0.00 (-0.31, 0.30)	-2.01 ~ 2.99	0.87
	1	222	0.00 (-0.23, 0.27)	-1.95 ~ 2.29	0.79
	2	222	0.00 (-0.20, 0.28)	-2.02 ~ 1.79	0.78
	3	222	0.00 (-0.27, 0.29)	-2.01 ~ 2.23	0.79
	4	222	0.00 (-0.24, 0.30)	-2.18 ~ 1.86	0.87
	5	222	0.00 (-0.22, 0.30)	-2.37 ~ 1.53	0.81
	6	222	0.00 (-0.22, 0.30)	-2.53 ~ 1.30	0.74
	7	222	0.02 (-0.20, 0.28)	-2.34 ~ 1.16	0.73

Footnotes: 0-7 represent different exposure windows: 0 represents the average indoor PM gamma activity at the phlebotomy day; 1-7 represents the moving averages from 1 to 7 days before phlebotomy respectively.

Table S4. Percent increases of 8-OHdG with per IQR increases of ambient and indoor PM gamma activities with different exposure windows

Ambient PM gamma activity	Exposure window	(a) Effect of ambient PM gamma		
		N	Percentage change per IQR (95%CI) (%)	*p*
Gamma-3	0	226	3.41 (-0.25, 7.21)	0.070
	1	**231**	**4.07 (0.57, 7.69)**	**0.023**
	2	231	3.57 (-0.06, 7.32)	0.056
	3	231	3.55 (-0.67, 7.96)	0.102
	4	231	3.06 (-1.27, 7.58)	0.171
	5	231	2.86 (-1.25, 7.15)	0.178
	6	231	2.28 (-1.61, 6.33)	0.255
	7	231	1.70 (-1.90, 5.44)	0.36
Gamma-4	0	**226**	**5.92 (1.69, 10.32)**	**0.006**
	1	**231**	**5.38 (2.07, 8.80)**	**0.002**
	2	**231**	**5.16 (1.65, 8.78)**	**0.004**
	3	**231**	**5.64 (1.27, 10.19)**	**0.012**
	4	**231**	**5.43 (0.81, 10.27)**	**0.022**
	5	**231**	**4.64 (0.48, 8.98)**	**0.030**
	6	231	3.78 (-0.14, 7.86)	0.061
	7	231	3.00 (-0.72, 6.86)	0.117
Gamma-5	0	**226**	**4.31 (0.67, 8.08)**	**0.021**
	1	**231**	**5.65 (2.08, 9.34)**	**0.002**
	2	**231**	**4.91 (1.44, 8.50)**	**0.006**
	3	**231**	**5.23 (1.13, 9.49)**	**0.013**
	4	**231**	**5.81 (0.98, 10.88)**	**0.019**
	5	**231**	**5.00 (0.35, 9.87)**	**0.037**
	6	231	4.08 (-0.53, 8.90)	0.086
	7	231	3.35 (-1.24, 8.15)	0.157
Gamma-6	0	**226**	**4.56 (1.30, 7.92)**	**0.007**
	1	**231**	**4.57 (1.74, 7.47)**	**0.002**
	2	**231**	**3.75 (1.32, 6.25)**	**0.003**
	3	**231**	**4.04 (1.20, 6.96)**	**0.006**
	4	**231**	**4.20 (1.16, 7.32)**	**0.007**
	5	**231**	**3.81 (0.84, 6.86)**	**0.013**
	6	**231**	**3.47 (0.51, 6.52)**	**0.023**
	7	**231**	**2.91 (0.10, 5.80)**	**0.044**
Gamma-7	0	**226**	**4.09 (0.96, 7.31)**	**0.011**
	1	**231**	**5.12 (1.82, 8.51)**	**0.003**
	2	**231**	**4.44 (1.16, 7.83)**	**0.008**
	3	**231**	**4.53 (0.69, 8.51)**	**0.022**

	4	**231**	**4.55 (0.50, 8.76)**	**0.029**
	5	**231**	**4.50 (0.33, 8.84)**	**0.036**
	6	231	3.72 (-0.13, 7.73)	0.060
	7	231	3.16 (-0.90, 7.39)	0.131
Gamma-8	0	226	2.43 (-0.89, 5.85)	0.155
	1	231	2.09 (-0.79, 5.05)	0.159
	2	231	2.64 (-0.41, 5.78)	0.092
	3	**231**	**3.71 (0.09, 7.45)**	**0.046**
	4	**231**	**4.38 (0.49, 8.41)**	**0.028**
	5	231	3.84 (-0.11, 7.94)	0.059
	6	231	3.42 (-0.63, 7.64)	0.101
	7	231	2.63 (-0.78, 6.16)	0.134
Gamma-9	0	**226**	**3.34 (0.16, 6.62)**	**0.041**
	1	**231**	**4.99 (1.56, 8.53)**	**0.005**
	2	**231**	**4.78 (1.06, 8.63)**	**0.012**
	3	**231**	**4.61 (0.70, 8.68)**	**0.022**
	4	**231**	**5.15 (0.54, 9.98)**	**0.030**
	5	**231**	**4.59 (0.08, 9.31)**	**0.048**
	6	231	3.52 (-0.73, 7.96)	0.108
	7	231	2.95 (-1.52, 7.62)	0.201

Indoor PM gamma activity	**Exposure window**	**(b) Effect of indoor PM gamma**		
		N	**Percentage change per IQR (95%CI) (%)**	***p***
Gamma-3	0	216	3.24 (-0.67, 7.31)	0.108
	1	221	3.69 (-0.14, 7.67)	0.061
	2	221	2.80 (-1.07, 6.82)	0.161
	3	221	1.52 (-2.41, 5.61)	0.454
	4	221	0.97 (-2.87, 4.96)	0.627
	5	221	0.80 (-2.98, 4.72)	0.684
	6	221	0.46 (-3.10, 4.14)	0.805
	7	221	0.19 (-3.04, 3.51)	0.911
Gamma-4	0	**216**	**8.58 (1.96, 15.64)**	**0.011**
	1	**221**	**7.24 (1.89, 12.87)**	**0.008**
	2	**221**	**6.56 (0.81, 12.63)**	**0.026**
	3	221	4.27 (-1.82, 10.74)	0.175
	4	221	3.65 (-2.72, 10.43)	0.270
	5	221	2.71 (-2.96, 8.71)	0.357
	6	221	1.92 (-3.28, 7.41)	0.478
	7	221	1.27 (-3.64, 6.42)	0.620
Gamma-5	0	**216**	**7.07 (1.32, 13.14)**	**0.017**
	1	**221**	**8.87 (2.98, 15.11)**	**0.003**

	2	**221**	**7.28 (1.52, 13.37)**	**0.014**
	3	221	4.55 (-1.06, 10.48)	0.116
	4	221	4.86 (-1.78, 11.95)	0.157
	5	221	3.49 (-2.83, 10.22)	0.288
	6	221	2.41 (-3.62, 8.82)	0.443
	7	221	1.75 (-4.24, 8.11)	0.576
Gamma-6	0	**216**	**7.75 (2.46, 13.32)**	**0.004**
	1	**221**	**7.56 (2.77, 12.58)**	**0.002**
	2	**221**	**5.99 (1.79, 10.36)**	**0.005**
	3	**221**	**4.22 (0.07, 8.53)**	**0.048**
	4	221	4.07 (-0.34, 8.68)	0.073
	5	221	3.19 (-1.01, 7.57)	0.14
	6	221	2.79 (-1.29, 7.05)	0.185
	7	221	2.26 (-1.61, 6.29)	0.257
Gamma-7	0	**216**	**6.17 (1.34, 11.23)**	**0.013**
	1	**221**	**6.82 (1.59, 12.32)**	**0.011**
	2	**221**	**5.36 (0.21, 10.76)**	**0.043**
	3	221	3.18 (-2.08, 8.71)	0.243
	4	221	3.13 (-2.52, 9.11)	0.285
	5	221	2.77 (-3.01, 8.90)	0.356
	6	221	2.19 (-3.08, 7.74)	0.424
	7	221	1.36 (-4.13, 7.16)	0.636
Gamma-8	0	216	4.06 (-0.87, 9.24)	0.110
	1	221	3.41 (-0.88, 7.88)	0.123
	2	221	3.71 (-0.70, 8.32)	0.103
	3	221	4.33 (-0.40, 9.28)	0.076
	4	221	4.88 (-0.29, 10.31)	0.067
	5	221	3.91 (-1.28, 9.37)	0.144
	6	221	3.28 (-1.95, 8.78)	0.225
	7	221	2.56 (-1.83, 7.14)	0.260
Gamma-9	0	216	**5.40 (0.39, 10.65)**	**0.036**
	1	**221**	**7.60 (1.99, 13.53)**	**0.008**
	2	**221**	**6.80 (0.82, 13.14)**	**0.027**
	3	221	4.05 (-1.14, 9.52)	0.131
	4	221	4.58 (-1.61, 11.15)	0.152
	5	221	3.41 (-2.61, 9.81)	0.274
	6	221	2.50 (-3.05, 8.38)	0.386
	7	221	1.80 (-3.99, 7.95)	0.551

Footnotes: 0-7 represent different exposure windows: 0 represents the average indoor PM gamma activity at the urine collection day; 1-7 represents the moving averages from 1 to 7 days before urine collection. *P* is the *p*-value, which represents the significant level of indoor PM

gamma effect: $P<0.05$ represents significant, and $0.05 \leq P<0.1$ represents marginally significant.

Table S5. Percent increases of MDA with per IQR increases of ambient and indoor PM gamma activities with different exposure windows

Ambient PM gamma activity	Exposure window	(a) Effect of ambient PM gamma		
		N	Percentage change per IQR (95%CI) (%)	*p*
Gamma-3	0	226	3.24 (-2.82, 9.67)	0.303
	1	231	1.60 (-3.88, 7.40)	0.575
	2	231	1.22 (-4.46, 7.23)	0.682
	3	231	1.51 (-4.65, 8.07)	0.639
	4	231	0.94 (-5.42, 7.74)	0.777
	5	231	0.98 (-5.15, 7.49)	0.761
	6	231	0.69 (-5.09, 6.83)	0.820
	7	231	-0.12 (-5.44, 5.51)	0.967
Gamma-4	0	226	1.65 (-5.25, 9.05)	0.648
	1	231	-0.11 (-5.24, 5.30)	0.967
	2	231	0.40 (-5.04, 6.16)	0.888
	3	231	1.13 (-4.93, 7.57)	0.722
	4	231	0.31 (-6.12, 7.17)	0.928
	5	231	0.63 (-5.25, 6.87)	0.839
	6	231	0.61 (-4.96, 6.51)	0.833
	7	231	0.20 (-5.08, 5.78)	0.941
Gamma-5	0	226	3.75 (-2.30, 10.19)	0.231
	1	231	1.68 (-3.88, 7.57)	0.562
	2	231	2.13 (-3.37, 7.94)	0.457
	3	231	2.90 (-2.84, 8.98)	0.330
	4	231	2.26 (-4.46, 9.47)	0.52
	5	231	3.28 (-3.36, 10.38)	0.342
	6	231	4.05 (-2.58, 11.12)	0.239
	7	231	3.65 (-2.95, 10.69)	0.287
Gamma-6	0	226	2.05 (-3.31, 7.70)	0.463
	1	231	0.43 (-3.96, 5.03)	0.850
	2	231	0.25 (-3.58, 4.24)	0.899
	3	231	0.37 (-3.59, 4.49)	0.859
	4	231	0.12 (-4.12, 4.54)	0.957
	5	231	0.69 (-3.49, 5.05)	0.752
	6	231	1.07 (-3.11, 5.44)	0.622
	7	231	0.96 (-3.03, 5.12)	0.642
Gamma-7	0	226	0.50 (-4.65, 5.92)	0.854
	1	231	-0.37 (-5.47, 5.00)	0.890
	2	231	-0.16 (-5.26, 5.21)	0.952
	3	231	0.53 (-4.88, 6.24)	0.852

	4	231	-0.45 (-6.11, 5.55)	0.880
	5	231	0.10 (-5.73, 6.28)	0.975
	6	231	0.27 (-5.14, 5.99)	0.924
	7	231	0.05 (-5.64, 6.08)	0.987
Gamma-8	0	226	2.86 (-2.66, 8.70)	0.317
	1	231	0.88 (-3.66, 5.63)	0.711
	2	231	1.64 (-3.22, 6.73)	0.517
	3	231	2.39 (-2.92, 8.00)	0.386
	4	231	2.78 (-2.99, 8.88)	0.354
	5	231	4.20 (-1.82, 10.59)	0.177
	6	231	5.51 (-0.76, 12.18)	0.088
	7	231	4.66 (-0.61, 10.22)	0.086
Gamma-9	0	226	2.77 (-2.51, 8.33)	0.311
	1	231	1.58 (-3.74, 7.18)	0.569
	2	231	1.95 (-3.85, 8.10)	0.519
	3	231	2.86 (-2.55, 8.57)	0.307
	4	231	2.40 (-3.92, 9.14)	0.466
	5	231	3.76 (-2.51, 10.43)	0.247
	6	231	3.98 (-1.97, 10.29)	0.196
	7	231	4.21 (-2.06, 10.88)	0.195

Indoor PM gamma activity	**Exposure window**	**(b) Effect of indoor PM gamma**		
		N	**Percentage change per IQR (95%CI) (%)**	***p***
Gamma-3	0	216	1.81 (-5.50, 9.68)	0.638
	1	221	0.87 (-5.95, 8.19)	0.808
	2	221	0.47 (-6.37, 7.82)	0.896
	3	221	1.93 (-5.13, 9.52)	0.602
	4	221	1.70 (-5.24, 9.15)	0.641
	5	221	2.16 (-4.75, 9.58)	0.550
	6	221	1.71 (-4.79, 8.65)	0.615
	7	221	1.22 (-4.68, 7.49)	0.692
Gamma-4	0	216	1.87 (-10.13, 15.47)	0.773
	1	221	0.23 (-8.97, 10.35)	0.963
	2	221	0.60 (-9.23, 11.50)	0.909
	3	221	3.57 (-7.25, 15.66)	0.534
	4	221	2.14 (-9.07, 14.72)	0.722
	5	221	2.64 (-7.53, 13.93)	0.626
	6	221	2.28 (-7.11, 12.63)	0.646
	7	221	2.03 (-6.88, 11.80)	0.666
Gamma-5	0	216	7.08 (-3.98, 19.40)	0.221
	1	221	5.89 (-4.64, 17.59)	0.285

	2	221	6.09 (-4.33, 17.65)	0.264
	3	221	7.67 (-2.81, 19.27)	0.159
	4	221	6.80 (-5.40, 20.58)	0.289
	5	221	8.45 (-3.45, 21.81)	0.173
	6	221	8.84 (-2.68, 21.73)	0.140
	7	221	9.10 (-2.45, 22.02)	0.129
Gamma-6	0	216	5.00 (-5.05, 16.11)	0.343
	1	221	3.51 (-5.03, 12.82)	0.433
	2	221	2.61 (-4.89, 10.71)	0.507
	3	221	3.31 (-4.22, 11.44)	0.400
	4	221	2.66 (-5.29, 11.27)	0.525
	5	221	3.29 (-4.39, 11.57)	0.413
	6	221	3.61 (-3.92, 11.73)	0.358
	7	221	3.62 (-3.56, 11.33)	0.334
Gamma-7	0	216	0.89 (-8.13, 10.79)	0.853
	1	221	1.31 (-7.89, 11.43)	0.789
	2	221	0.96 (-8.08, 10.88)	0.842
	3	221	3.30 (-6.23, 13.80)	0.511
	4	221	1.45 (-8.55, 12.53)	0.787
	5	221	2.36 (-7.97, 13.85)	0.668
	6	221	2.45 (-7.03, 12.90)	0.626
	7	221	2.31 (-7.61, 13.30)	0.661
Gamma-8	0	216	7.25 (-2.42, 17.89)	0.148
	1	221	4.55 (-3.35, 13.10)	0.269
	2	221	5.59 (-2.67, 14.55)	0.193
	3	221	6.25 (-2.61, 15.91)	0.174
	4	221	6.62 (-3.01, 17.20)	0.186
	5	221	7.94 (-1.89, 18.75)	0.119
	6	221	8.95 (-1.13, 20.07)	0.085
	7	221	7.74 (-0.72, 16.91)	0.076
Gamma-9	0	216	2.47 (-6.86, 12.74)	0.617
	1	221	2.87 (-6.88, 13.64)	0.578
	2	221	3.71 (-6.75, 15.35)	0.502
	3	221	6.07 (-3.43, 16.51)	0.220
	4	221	5.52 (-5.62, 17.98)	0.346
	5	221	7.73 (-3.38, 20.12)	0.182
	6	221	7.59 (-2.80, 19.09)	0.160
	7	221	8.81 (-2.21, 21.06)	0.123

Footnotes: 0-7 represent different exposure windows: 0 represents the average indoor PM gamma activity at the urine collection day; 1-7 represents the moving averages from 1 to 7 days before urine collection respectively. *P* is the *p*-value, which represents the significant level of

indoor PM gamma effect: $P<0.05$ represents significant, and $0.05 \leq P<0.1$ represents marginally significant.