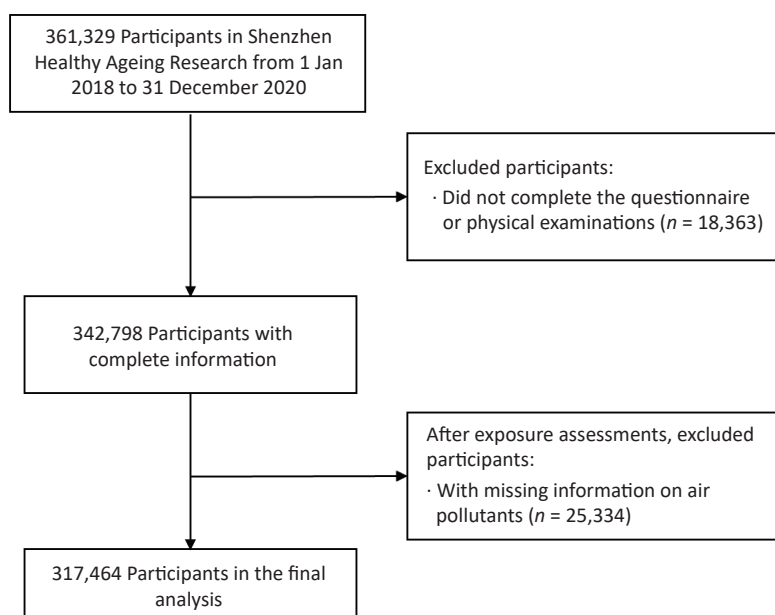
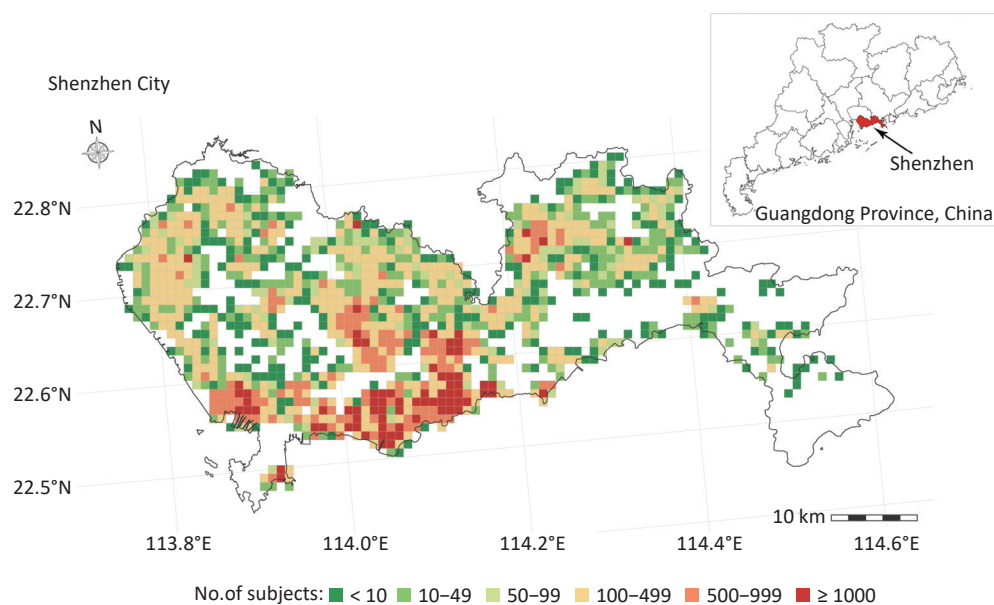




Supplementary Figure S1. Flow diagram of study participants' selection.



Supplementary Figure S2. Spatial distribution of the study population in Shenzhen, China, 2018–2020. The grids with different colors indicate the number of subjects at a 1 km × 1 km (approximately 0.01° × 0.01°) spatial resolution.

Supplementary Table S1. Spearman's correlation coefficients between ambient air pollutants

Air pollutant	PM ₁	PM _{2.5}	PM ₁₀	SO ₂	NO ₂	CO	O ₃
PM ₁	1	0.93	0.96	0.42	0.71	0.74	0.33
PM _{2.5}		1	0.95	0.43	0.77	0.71	0.30
PM ₁₀			1	0.46	0.80	0.73	0.23
SO ₂				1	0.65	0.31	-0.01
NO ₂					1	0.40	-0.14
CO						1	0.61
O ₃							1

Note. All $P < 0.05$. PM₁, particulate matter with an aerodynamic diameter $\leq 1 \mu\text{m}$; PM_{2.5}, particulate matter with an aerodynamic diameter $\leq 2.5 \mu\text{m}$; PM₁₀, particulate matter with an aerodynamic diameter $\leq 10 \mu\text{m}$; SO₂, sulfur dioxide; NO₂, nitrogen dioxide; CO, carbon monoxide; O₃, ozone.

Supplementary Table S2. Adjusted *ORs* and 95% *CI*s of all-cause and cause-specific mortality associated with 3-year exposure to ambient air pollution in categorical analyses

Air pollutant		OR (95% CI)				P for linear trend
		Quartile of exposure				
		Quartile 1 (Ref.)	Quartile 2	Quartile 3	Quartile 4	
PM ₁	All-cause mortality	1	3.49 (2.97, 4.10)	6.73 (5.77, 7.86)	6.97 (5.98, 8.13)	< 0.001
	Non-accidental mortality	1	3.52 (2.99, 4.14)	6.64 (5.68, 7.77)	6.89 (5.90, 8.06)	< 0.001
	Cancer mortality	1	3.55 (2.72, 4.62)	5.70 (4.41, 7.36)	6.23 (4.82, 8.05)	< 0.001
	Cardiovascular mortality	1	3.14 (2.43, 4.04)	6.74 (5.30, 8.58)	6.37 (5.00, 8.10)	< 0.001
PM _{2.5}	All-cause mortality	1	2.02 (1.71, 2.38)	7.12 (6.15, 8.24)	4.96 (4.27, 5.77)	< 0.001
	Non-accidental mortality	1	2.04 (1.73, 2.41)	7.19 (6.19, 8.34)	4.94 (4.23, 5.76)	< 0.001
	Cancer mortality	1	2.59 (1.95, 3.45)	7.88 (6.08, 10.22)	5.60 (4.28, 7.32)	< 0.001
	Cardiovascular mortality	1	1.82 (1.40, 2.37)	7.30 (5.79, 9.20)	5.06 (3.99, 6.42)	< 0.001
PM ₁₀	All-cause mortality	1	2.92 (2.56, 3.35)	6.03 (5.31, 6.85)	2.24 (1.94, 2.59)	< 0.001
	Non-accidental mortality	1	2.92 (2.55, 3.35)	5.95 (5.23, 6.78)	2.23 (1.93, 2.58)	< 0.001
	Cancer mortality	1	3.44 (2.73, 4.35)	6.07 (4.86, 7.60)	2.18 (1.69, 2.81)	< 0.001
	Cardiovascular mortality	1	2.89 (2.33, 3.59)	6.41 (5.23, 7.86)	1.96 (1.56, 2.48)	< 0.001
SO ₂	All-cause mortality	1	1.52 (1.28, 1.81)	5.18 (4.45, 6.02)	7.83 (6.76, 9.06)	< 0.001
	Non-accidental mortality	1	1.51 (1.26, 1.80)	5.24 (4.49, 6.12)	7.89 (6.79, 9.17)	< 0.001
	Cancer mortality	1	1.61 (1.18, 2.21)	6.04 (4.62, 7.90)	9.31 (7.16, 12.10)	< 0.001
	Cardiovascular mortality	1	1.36 (1.03, 1.78)	4.82 (3.82, 6.08)	6.67 (5.32, 8.36)	< 0.001
NO ₂	All-cause mortality	1	1.08 (0.98, 1.19)	1.24 (1.13, 1.37)	1.07 (0.97, 1.18)	0.030
	Non-accidental mortality	1	1.07 (0.97, 1.19)	1.25 (1.13, 1.37)	1.07 (0.97, 1.19)	0.020
	Cancer mortality	1	1.16 (0.98, 1.37)	1.32 (1.12, 1.55)	1.17 (0.99, 1.38)	0.030
	Cardiovascular mortality	1	0.96 (0.82, 1.13)	1.30 (1.12, 1.51)	1.05 (0.90, 1.23)	0.060
CO	All-cause mortality	1	1.15 (0.99, 1.35)	2.15 (1.86, 2.47)	7.56 (6.68, 8.54)	< 0.001
	Non-accidental mortality	1	1.17 (1.00, 1.37)	2.18 (1.89, 2.52)	7.63 (6.73, 8.65)	< 0.001
	Cancer mortality	1	1.16 (0.90, 1.50)	2.09 (1.65, 2.65)	7.81 (6.35, 9.59)	< 0.001
	Cardiovascular mortality	1	1.24 (0.97, 1.58)	2.24 (1.78, 2.82)	7.56 (6.19, 9.24)	< 0.001
O ₃	All-cause mortality	1	1.09 (0.99, 1.20)	0.92 (0.83, 1.02)	1.25 (1.13, 1.38)	< 0.001
	Non-accidental mortality	1	1.09 (0.99, 1.21)	0.93 (0.84, 1.03)	1.25 (1.13, 1.38)	< 0.001
	Cancer mortality	1	0.96 (0.82, 1.13)	0.84 (0.71, 0.99)	1.07 (0.91, 1.25)	0.800
	Cardiovascular mortality	1	1.12 (0.96, 1.31)	0.96 (0.81, 1.13)	1.29 (1.11, 1.51)	< 0.010

Note. Adjusted for age, sex, race, education, marital status, BMI, physical activity, smoking, drinking, hypertension, and diabetes. PM₁, particulate matter with an aerodynamic diameter ≤ 1 µm; PM_{2.5}, particulate matter with an aerodynamic diameter ≤ 2.5 µm; PM₁₀, particulate matter with an aerodynamic diameter ≤ 10 µm; SO₂, sulfur dioxide; NO₂, nitrogen dioxide; CO, carbon monoxide; O₃, ozone; *OR*, odds ratio; *CI*, confidence interval.

Supplementary Table S3. Adjusted *ORs* and 95% *CI*s for per 1 $\mu\text{g}/\text{m}^3$ increase in 3-year exposure to ambient air pollution with risk of non-accidental mortality in stratified analyses

Subgroup	<i>OR</i> (95% <i>CI</i>)						
	PM ₁	PM _{2.5}	PM ₁₀	SO ₂	NO ₂	CO	O ₃
Sex							
Male	1.49 (1.44, 1.53)	1.31 (1.28, 1.35)	1.05 (1.04, 1.07)	5.97 (5.36, 6.64)	1.01 (1.00, 1.02)	1.04 (1.04, 1.05)	1.02 (1.00, 1.04)
Female	1.49 (1.44, 1.55)	1.27 (1.23, 1.31)	1.05 (1.03, 1.06)	5.81 (5.13, 6.59)	1.00 (0.99, 1.01)	1.04 (1.04, 1.05)	1.01 (0.99, 1.03)
<i>P</i> for difference ^a	0.880	0.140	0.590	0.910	0.050	0.360	0.940
Age							
< 75 years	1.51 (1.46, 1.57)	1.28 (1.24, 1.32)	1.05 (1.03, 1.07)	6.41 (5.68, 7.24)	1.01 (1.00, 1.02)	1.04 (1.04, 1.05)	1.02 (1.00, 1.04)
≥ 75 years	1.45 (1.41, 1.50)	1.29 (1.25, 1.32)	1.05 (1.03, 1.06)	5.38 (4.82, 6.00)	1.00 (0.99, 1.01)	1.04 (1.04, 1.05)	1.00 (0.99, 1.02)
<i>P</i> for difference ^a	0.030	0.300	0.570	0.002	0.110	0.570	0.560
BMI							
< 25.0 kg/m ²	1.48 (1.44, 1.52)	1.29 (1.26, 1.32)	1.05 (1.04, 1.06)	5.88 (5.35, 6.47)	1.01 (1.00, 1.02)	1.04 (1.04, 1.05)	1.02 (1.00, 1.04)
≥ 25.0 kg/m ²	1.51 (1.44, 1.58)	1.31 (1.26, 1.37)	1.06 (1.04, 1.08)	5.93 (5.06, 6.96)	1.01 (0.99, 1.03)	1.05 (1.04, 1.05)	1.01 (0.98, 1.04)
<i>P</i> for difference ^a	0.140	0.280	0.820	0.040	0.950	0.520	0.600
Physical activity							
Not daily	1.48 (1.43, 1.53)	1.25 (1.21, 1.29)	1.04 (1.03, 1.06)	5.14 (4.57, 5.79)	1.01 (1.00, 1.02)	1.04 (1.04, 1.04)	0.99 (0.97, 1.02)
Daily	1.51 (1.45, 1.56)	1.34 (1.31, 1.39)	1.06 (1.05, 1.08)	6.70 (6.00, 7.49)	1.01 (1.00, 1.02)	1.05 (1.04, 1.05)	1.03 (1.01, 1.05)
<i>P</i> for difference ^a	0.003	< 0.001	< 0.001	0.004	0.040	< 0.001	0.010
Smoking							
Never	1.48 (1.44, 1.52)	1.30 (1.27, 1.33)	1.05 (1.04, 1.06)	6.02 (5.50, 6.59)	1.01 (1.00, 1.02)	1.05 (1.04, 1.05)	1.01 (1.00, 1.03)
Quit or current	1.54 (1.45, 1.63)	1.29 (1.23, 1.36)	1.06 (1.03, 1.08)	5.30 (4.38, 6.42)	1.01 (0.99, 1.03)	1.04 (1.04, 1.04)	1.03 (1.00, 1.06)
<i>P</i> for difference ^a	0.455	0.544	0.910	0.147	0.700	0.009	0.911
History of hypertension							
No	1.49 (1.43, 1.55)	1.30 (1.26, 1.35)	1.06 (1.04, 1.07)	5.94 (5.19, 6.79)	1.00 (0.99, 1.02)	1.05 (1.04, 1.05)	1.00 (0.98, 1.03)
Yes	1.49 (1.44, 1.53)	1.29 (1.25, 1.32)	1.05 (1.04, 1.06)	5.83 (5.26, 6.46)	1.01 (1.00, 1.02)	1.04 (1.04, 1.05)	1.02 (1.00, 1.04)
<i>P</i> for difference ^a	0.880	0.790	0.720	0.860	0.330	0.120	0.120
History of diabetes							
No	1.48 (1.43, 1.52)	1.28 (1.25, 1.32)	1.05 (1.03, 1.06)	5.53 (5.01, 6.10)	1.00 (0.99, 1.01)	1.05 (1.04, 1.05)	1.02 (1.00, 1.03)
Yes	1.51 (1.44, 1.57)	1.32 (1.27, 1.37)	1.06 (1.04, 1.08)	6.72 (5.81, 7.77)	1.02 (1.00, 1.03)	1.04 (1.04, 1.05)	1.01 (0.99, 1.04)
<i>P</i> for difference ^a	0.440	0.260	0.180	0.040	0.060	0.230	0.970

Note. Adjusted for age, sex, race, education, marital status, BMI, physical activity, smoking, drinking, hypertension, and diabetes. ^a*P* for difference was compared with another stratified group. BMI, body mass index; PM₁, particulate matter with an aerodynamic diameter ≤ 1 μm ; PM_{2.5}, particulate matter with an aerodynamic diameter ≤ 2.5 μm ; PM₁₀, particulate matter with an aerodynamic diameter ≤ 10 μm ; SO₂, sulfur dioxide; NO₂, nitrogen dioxide; CO, carbon monoxide; O₃, ozone; *OR*, odds ratio; *CI*, confidence interval.

Supplementary Table S4. Adjusted *ORs* and 95% *CI*s for per 1 µg/m³ increase in 3-year exposure to ambient air pollution with risk of cancer mortality in stratified analyses

Subgroup	OR (95% CI)						
	PM ₁	PM _{2.5}	PM ₁₀	SO ₂	NO ₂	CO	O ₃
Sex							
Male	1.45 (1.38, 1.53)	1.31 (1.25, 1.37)	1.04 (1.02, 1.07)	6.36 (5.37, 7.54)	1.01 (1.00, 1.03)	1.05 (1.04, 1.05)	1.01 (0.98, 1.04)
Female	1.47 (1.37, 1.56)	1.30 (1.23, 1.38)	1.04 (1.01, 1.07)	6.35 (5.11, 7.89)	1.01 (0.99, 1.03)	1.04 (1.04, 1.05)	0.99 (0.95, 1.02)
<i>P</i> for difference ^a	0.960	0.640	0.550	0.990	0.750	0.410	0.250
Age							
< 75 years	1.45 (1.37, 1.53)	1.28 (1.22, 1.34)	1.04 (1.01, 1.06)	6.45 (5.40, 7.69)	1.01 (0.99, 1.03)	1.04 (1.04, 1.05)	1.00 (0.97, 1.03)
≥ 75 years	1.45 (1.37, 1.54)	1.33 (1.26, 1.40)	1.04 (1.01, 1.07)	6.18 (5.03, 7.59)	1.01 (0.99, 1.03)	1.04 (1.04, 1.05)	0.99 (0.96, 1.03)
<i>P</i> for difference ^a	0.260	0.950	0.550	0.290	0.810	0.910	0.340
BMI							
< 25.0 kg/m ²	1.45 (1.38, 1.52)	1.30 (1.25, 1.35)	1.03 (1.01, 1.05)	6.46 (5.53, 7.55)	1.01 (1.00, 1.03)	1.05 (1.04, 1.05)	0.99 (0.97, 1.02)
≥ 25.0 kg/m ²	1.48 (1.37, 1.59)	1.32 (1.24, 1.42)	1.06 (1.03, 1.10)	6.11 (4.72, 7.91)	1.01 (0.99, 1.04)	1.04 (1.04, 1.05)	1.02 (0.97, 1.07)
<i>P</i> for difference ^a	0.350	0.680	0.580	0.770	0.990	0.260	0.480
Physical activity							
Not daily	1.42 (1.34, 1.52)	1.25 (1.19, 1.32)	1.02 (1.00, 1.05)	5.73 (4.61, 7.11)	1.02 (1.00, 1.04)	1.04 (1.04, 1.05)	0.97 (0.93, 1.01)
Daily	1.47 (1.40, 1.55)	1.34 (1.28, 1.40)	1.05 (1.03, 1.07)	6.72 (5.67, 7.97)	1.01 (0.99, 1.03)	1.05 (1.04, 1.05)	1.02 (0.99, 1.05)
<i>P</i> for difference ^a	0.150	0.004	0.110	0.290	0.020	0.001	0.080
Smoking							
Never	1.43 (1.37, 1.50)	1.30 (1.25, 1.36)	1.04 (1.02, 1.06)	6.59 (5.67, 7.67)	1.01 (0.99, 1.02)	1.05 (1.04, 1.05)	0.99 (0.96, 1.02)
Quit or current	1.56 (1.42, 1.70)	1.31 (1.21, 1.41)	1.04 (1.00, 1.08)	5.57 (4.19, 7.40)	1.02 (0.99, 1.05)	1.04 (1.04, 1.05)	1.04 (0.99, 1.08)
<i>P</i> for difference ^a	0.183	0.785	0.578	0.228	0.569	0.177	0.089
History of hypertension							
No	1.45 (1.36, 1.54)	1.30 (1.23, 1.37)	1.05 (1.02, 1.08)	5.85 (4.79, 7.15)	1.00 (0.98, 1.02)	1.04 (1.04, 1.05)	1.00 (0.96, 1.03)
Yes	1.46 (1.38, 1.54)	1.30 (1.25, 1.37)	1.03 (1.01, 1.06)	6.76 (5.65, 8.09)	1.02 (1.01, 1.04)	1.05 (1.04, 1.05)	1.00 (0.97, 1.04)
<i>P</i> for difference ^a	0.920	0.940	0.330	0.410	0.070	0.900	0.620
History of diabetes							
No	1.45 (1.38, 1.52)	1.29 (1.24, 1.34)	1.04 (1.02, 1.06)	5.99 (5.13, 6.99)	1.01 (0.99, 1.02)	1.04 (1.04, 1.05)	1.00 (0.98, 1.03)
Yes	1.47 (1.36, 1.59)	1.35 (1.26, 1.44)	1.04 (1.01, 1.08)	7.57 (5.81, 9.87)	1.03 (1.00, 1.06)	1.05 (1.04, 1.05)	1.00 (0.95, 1.04)
<i>P</i> for difference ^a	0.940	0.360	0.850	0.200	0.100	0.840	0.560

Note. Adjusted for age, sex, race, education, marital status, BMI, physical activity, smoking, drinking, hypertension, and diabetes. ^a*P* for difference was compared with another stratified group. BMI, body mass index; PM₁, particulate matter with an aerodynamic diameter ≤ 1 µm; PM_{2.5}, particulate matter with an aerodynamic diameter ≤ 2.5 µm; PM₁₀, particulate matter with an aerodynamic diameter ≤ 10 µm; SO₂, sulfur dioxide; NO₂, nitrogen dioxide; CO, carbon monoxide; O₃, ozone; *OR*, odds ratio; *CI*, confidence interval.

Supplementary Table S5. Adjusted *ORs* and 95% *CI*s for per 1 µg/m³ increase in 3-year exposure to ambient air pollution with risk of cardiovascular mortality in stratified analyses

Subgroup	OR (95% CI)						
	PM ₁	PM _{2.5}	PM ₁₀	SO ₂	NO ₂	CO	O ₃
Sex							
Male	1.49 (1.42, 1.57)	1.34 (1.28, 1.40)	1.05 (1.03, 1.07)	5.34 (4.48, 6.36)	1.02 (1.01, 1.04)	1.04 (1.04, 1.05)	1.02 (0.99, 1.05)
Female	1.45 (1.37, 1.53)	1.26 (1.20, 1.33)	1.04 (1.02, 1.06)	5.43 (4.49, 6.57)	1.00 (0.98, 1.02)	1.04 (1.04, 1.05)	1.01 (0.97, 1.04)
<i>P</i> for difference ^a	0.560	0.090	0.610	0.810	0.070	0.230	0.580
Age							
< 75 years	1.54 (1.44, 1.64)	1.30 (1.23, 1.37)	1.04 (1.02, 1.07)	5.89 (4.78, 7.25)	1.01 (1.00, 1.03)	1.04 (1.04, 1.05)	1.04 (1.00, 1.07)
≥ 75 years	1.42 (1.36, 1.49)	1.28 (1.23, 1.34)	1.04 (1.02, 1.06)	4.93 (4.19, 5.80)	1.00 (0.99, 1.02)	1.04 (1.04, 1.04)	1.00 (0.97, 1.03)
<i>P</i> for difference ^a	0.030	0.260	0.450	0.010	0.180	0.220	0.210
BMI							
< 25.0 kg/m ²	1.44 (1.38, 1.51)	1.29 (1.24, 1.34)	1.04 (1.02, 1.06)	4.92 (4.23, 5.72)	1.01 (1.00, 1.02)	1.04 (1.04, 1.05)	1.02 (1.00, 1.05)
≥ 25.0 kg/m ²	1.55 (1.44, 1.67)	1.33 (1.25, 1.42)	1.06 (1.03, 1.09)	6.66 (5.21, 8.51)	1.02 (0.99, 1.04)	1.05 (1.04, 1.05)	1.00 (0.96, 1.04)
<i>P</i> for difference ^a	0.610	0.900	0.930	0.050	0.990	0.250	0.290
Physical activity							
Not daily	1.44 (1.37, 1.52)	1.25 (1.20, 1.31)	1.04 (1.02, 1.06)	4.35 (3.64, 5.19)	1.01 (0.99, 1.03)	1.04 (1.04, 1.04)	0.99 (0.96, 1.02)
Daily	1.52 (1.44, 1.61)	1.38 (1.31, 1.45)	1.06 (1.03, 1.08)	6.82 (5.66, 8.21)	1.02 (1.00, 1.04)	1.05 (1.04, 1.05)	1.04 (1.01, 1.07)
<i>P</i> for difference ^a	0.110	0.001	0.030	0.003	0.650	0.030	0.080
Smoking							
Never	1.47 (1.41, 1.53)	1.30 (1.25, 1.35)	1.04 (1.02, 1.06)	5.49 (4.77, 6.31)	1.01 (1.00, 1.02)	1.04 (1.04, 1.05)	1.02 (0.99, 1.04)
Quit or current	1.49 (1.35, 1.65)	1.32 (1.21, 1.43)	1.06 (1.02, 1.10)	4.68 (3.38, 6.47)	1.02 (0.99, 1.05)	1.04 (1.03, 1.05)	1.01 (0.96, 1.06)
<i>P</i> for difference ^a	0.926	0.919	0.669	0.248	0.742	0.160	0.440
History of hypertension							
No	1.46 (1.36, 1.57)	1.31 (1.23, 1.40)	1.05 (1.02, 1.09)	5.81 (4.58, 7.37)	1.02 (1.00, 1.05)	1.05 (1.04, 1.05)	0.99 (0.95, 1.04)
Yes	1.48 (1.41, 1.54)	1.30 (1.25, 1.35)	1.04 (1.02, 1.06)	5.17 (4.44, 6.02)	1.01 (0.99, 1.02)	1.04 (1.04, 1.04)	1.03 (1.00, 1.05)
<i>P</i> for difference ^a	0.980	0.730	0.500	0.380	0.410	0.020	0.310
History of diabetes							
No	1.47 (1.41, 1.55)	1.30 (1.25, 1.36)	1.04 (1.02, 1.06)	4.89 (4.17, 5.73)	1.01 (0.99, 1.02)	1.05 (1.04, 1.05)	1.03 (1.00, 1.06)
Yes	1.47 (1.38, 1.56)	1.30 (1.22, 1.37)	1.05 (1.03, 1.08)	6.29 (5.05, 7.83)	1.02 (1.00, 1.04)	1.04 (1.03, 1.04)	0.99 (0.95, 1.03)
<i>P</i> for difference ^a	0.690	0.650	0.640	0.110	0.340	0.030	0.120

Note. Adjusted for age, sex, race, education, marital status, BMI, physical activity, smoking, drinking, hypertension, and diabetes. ^a*P* for difference was compared with another stratified group. BMI, body mass index; PM₁, particulate matter with an aerodynamic diameter ≤ 1 µm; PM_{2.5}, particulate matter with an aerodynamic diameter ≤ 2.5 µm; PM₁₀, particulate matter with an aerodynamic diameter ≤ 10 µm; SO₂, sulfur dioxide; NO₂, nitrogen dioxide; CO, carbon monoxide; O₃, ozone; *OR*, odds ratio; *CI*, confidence interval.

Supplementary Table S6. Adjusted *ORs* and 95% *CI*s for per 1 µg/m³ increase in 1-year exposure to ambient air pollution with risk of all-cause and cause-specific mortality

Air pollutant	OR (95% CI)			
	All-cause mortality	Non-accidental mortality	Cancer mortality	Cardiovascular mortality
PM ₁	1.27 (1.24, 1.29)	1.27 (1.24, 1.29)	1.28 (1.24, 1.32)	1.26 (1.22, 1.30)
PM _{2.5}	2.16 (2.03, 2.31)	2.16 (2.02, 2.31)	2.37 (2.11, 2.66)	2.10 (1.89, 2.33)
PM ₁₀	1.20 (1.18, 1.22)	1.20 (1.19, 1.22)	1.21 (1.18, 1.24)	1.20 (1.17, 1.23)
SO ₂	1.91 (1.71, 2.15)	1.91 (1.70, 2.15)	1.91 (1.58, 2.30)	1.92 (1.59, 2.31)
NO ₂	1.05 (1.04, 1.06)	1.05 (1.04, 1.06)	1.05 (1.03, 1.07)	1.06 (1.04, 1.08)
CO	1.00 (1.00, 1.01)	1.00 (1.00, 1.01)	1.00 (0.99, 1.01)	1.00 (1.00, 1.01)
O ₃	1.39 (1.37, 1.41)	1.39 (1.37, 1.41)	1.37 (1.34, 1.40)	1.41 (1.38, 1.44)

Note. Adjusted for age, sex, race, education, marital status, BMI, physical activity, smoking, drinking, hypertension, and diabetes. PM₁, particulate matter with an aerodynamic diameter ≤ 1 µm; PM_{2.5}, particulate matter with an aerodynamic diameter ≤ 2.5 µm; PM₁₀, particulate matter with an aerodynamic diameter ≤ 10 µm; SO₂, sulfur dioxide; NO₂, nitrogen dioxide; CO, carbon monoxide; O₃, ozone; *OR*, odds ratio; *CI*, confidence interval.

Supplementary Table S7. Adjusted *ORs* and 95% *CI*s of all-cause mortality associated with per 1 µg/m³ increase of 3-year exposure to ambient air pollution estimated by single- and 2-pollutant models

Air pollutant	Model	OR (95% CI)	P for difference
PM ₁	Single	1.49 (1.46, 1.53)	
	And SO ₂	1.19 (1.15, 1.22)	< 0.001
	And NO ₂	2.33 (2.25, 2.41)	< 0.001
	And CO	1.18 (1.14, 1.22)	< 0.001
	And O ₃	1.61 (1.57, 1.65)	< 0.001
PM _{2.5}	Single	1.30 (1.27, 1.32)	
	And SO ₂	1.09 (1.07, 1.11)	< 0.001
	And NO ₂	2.43 (2.34, 2.51)	< 0.001
	And CO	0.93 (0.90, 0.95)	< 0.001
	And O ₃	1.41 (1.38, 1.44)	< 0.001
PM ₁₀	Single	1.05 (1.04, 1.06)	
	And SO ₂	0.96 (0.95, 0.97)	< 0.001
	And NO ₂	1.27 (1.24, 1.29)	< 0.001
	And CO	0.76 (0.74, 0.77)	< 0.001
	And O ₃	1.07 (1.06, 1.08)	< 0.001
SO ₂	Single	5.84 (5.39, 6.32)	
	And PM ₁	3.05 (2.75, 3.38)	< 0.001
	And PM _{2.5}	3.46 (3.13, 3.83)	< 0.001
	And PM ₁₀	5.97 (5.49, 6.49)	0.090
	And NO ₂	8.61 (7.92, 9.36)	< 0.001
	And CO	2.41 (2.16, 2.69)	< 0.001
	And O ₃	6.94 (6.39, 7.54)	< 0.001

Continued

Air pollutant	Model	OR (95% CI)	P for difference
NO ₂	Single	1.01 (1.00, 1.01)	
	And PM ₁	0.77 (0.77, 0.78)	< 0.001
	And PM _{2.5}	0.64 (0.63, 0.65)	< 0.001
	And PM ₁₀	0.81 (0.80, 0.82)	< 0.001
	And SO ₂	0.88 (0.87, 0.89)	< 0.001
	And CO	0.83 (0.82, 0.84)	< 0.001
	And O ₃	1.01 (1.00, 1.01)	< 0.001
CO	Single	1.04 (1.04, 1.05)	
	And PM ₁	1.03 (1.02, 1.03)	< 0.001
	And PM _{2.5}	1.03 (1.03, 1.03)	< 0.001
	And PM ₁₀	1.07 (1.07, 1.08)	< 0.001
	And SO ₂	1.02 (1.02, 1.03)	< 0.001
	And NO ₂	1.06 (1.06, 1.06)	< 0.001
	And O ₃	1.10 (1.10, 1.10)	< 0.001
O ₃	Single	1.02 (1.00, 1.03)	
	And PM ₁	0.88 (0.87, 0.89)	< 0.001
	And PM _{2.5}	0.85 (0.84, 0.86)	< 0.001
	And PM ₁₀	0.95 (0.94, 0.96)	< 0.001
	And SO ₂	0.94 (0.93, 0.95)	< 0.001
	And NO ₂	1.02 (1.01, 1.03)	< 0.001
	And CO	0.60 (0.58, 0.61)	< 0.001

Note. Adjusted for age, sex, race, education, marital status, BMI, physical activity, smoking, drinking, hypertension, and diabetes. PM₁, particulate matter with an aerodynamic diameter ≤ 1 µm; PM_{2.5}, particulate matter with an aerodynamic diameter ≤ 2.5 µm; PM₁₀, particulate matter with an aerodynamic diameter ≤ 10 µm; SO₂, sulfur dioxide; NO₂, nitrogen dioxide; CO, carbon monoxide; O₃, ozone; OR, odds ratio; CI, confidence interval.

Supplementary Table S8. Adjusted ORs and 95% CIs of non-accidental mortality associated with per 1 µg/m³ increase of 3-year exposure to ambient air pollution estimated by single- and 2-pollutant models

Air pollutant	Model	OR (95% CI)	P for difference
PM ₁	Single	1.49 (1.45, 1.52)	
	And SO ₂	1.18 (1.15, 1.21)	< 0.001
	And NO ₂	2.31 (2.24, 2.39)	< 0.001
	And CO	1.18 (1.14, 1.22)	< 0.001
	And O ₃	1.60 (1.56, 1.64)	< 0.001
PM _{2.5}	Single	1.29 (1.27, 1.32)	
	And SO ₂	1.09 (1.06, 1.11)	< 0.001
	And NO ₂	2.41 (2.33, 2.50)	< 0.001
	And CO	0.92 (0.89, 0.95)	< 0.001
	And O ₃	1.40 (1.37, 1.44)	< 0.001

Continued

Air pollutant	Model	OR (95% CI)	P for difference
PM ₁₀	Single	1.05 (1.04, 1.06)	
	And SO ₂	0.96 (0.95, 0.97)	< 0.001
	And NO ₂	1.26 (1.24, 1.29)	< 0.001
	And CO	0.75 (0.74, 0.77)	< 0.001
	And O ₃	1.07 (1.06, 1.08)	< 0.001
SO ₂	Single	5.87 (5.42, 6.37)	
	And PM ₁	3.11 (2.80, 3.45)	< 0.001
	And PM _{2.5}	3.51 (3.17, 3.89)	< 0.001
	And PM ₁₀	6.02 (5.53, 6.56)	0.081
	And NO ₂	8.65 (7.95, 9.42)	< 0.001
	And CO	2.44 (2.18, 2.73)	< 0.001
	And O ₃	6.98 (6.41, 7.60)	< 0.001
NO ₂	Single	1.01 (1.00, 1.01)	
	And PM ₁	0.77 (0.77, 0.78)	< 0.001
	And PM _{2.5}	0.64 (0.63, 0.65)	< 0.001
	And PM ₁₀	0.81 (0.80, 0.82)	< 0.001
	And SO ₂	0.88 (0.87, 0.89)	< 0.001
	And CO	0.83 (0.82, 0.84)	< 0.001
	And O ₃	1.01 (1.00, 1.01)	< 0.001
CO	Single	1.04 (1.04, 1.05)	
	And PM ₁	1.03 (1.03, 1.03)	< 0.001
	And PM _{2.5}	1.03 (1.03, 1.03)	< 0.001
	And PM ₁₀	1.07 (1.07, 1.08)	< 0.001
	And SO ₂	1.02 (1.02, 1.03)	< 0.001
	And NO ₂	1.06 (1.06, 1.06)	< 0.001
	And O ₃	1.10 (1.10, 1.10)	< 0.001
O ₃	Single	1.02 (1.00, 1.03)	
	And PM ₁	0.88 (0.87, 0.89)	< 0.001
	And PM _{2.5}	0.85 (0.84, 0.86)	< 0.001
	And PM ₁₀	0.95 (0.94, 0.97)	< 0.001
	And SO ₂	0.94 (0.93, 0.95)	< 0.001
	And NO ₂	1.02 (1.01, 1.03)	< 0.001
	And CO	0.60 (0.58, 0.61)	< 0.001

Note. Adjusted for age, sex, race, education, marital status, BMI, physical activity, smoking, drinking, hypertension, and diabetes. PM₁, particulate matter with an aerodynamic diameter ≤ 1 µm; PM_{2.5}, particulate matter with an aerodynamic diameter ≤ 2.5 µm; PM₁₀, particulate matter with an aerodynamic diameter ≤ 10 µm; SO₂, sulfur dioxide; NO₂, nitrogen dioxide; CO, carbon monoxide; O₃, ozone; OR, odds ratio; CI, confidence interval.

Supplementary Table S9. Adjusted *ORs* and 95% *CI*s of cancer mortality associated with per 1 $\mu\text{g}/\text{m}^3$ increase of 3-year exposure to ambient air pollution estimated by single- and 2-pollutant models

Air pollutant	Model	OR (95% CI)	P for difference
PM ₁	Single	1.46 (1.40, 1.52)	
	And SO ₂	1.12 (1.08, 1.17)	< 0.001
	And NO ₂	2.25 (2.12, 2.38)	< 0.001
	And CO	1.10 (1.03, 1.16)	< 0.001
	And O ₃	1.57 (1.50, 1.64)	< 0.001
PM _{2.5}	Single	1.30 (1.26, 1.35)	
	And SO ₂	1.08 (1.05, 1.12)	< 0.001
	And NO ₂	2.45 (2.30, 2.60)	< 0.001
	And CO	0.90 (0.86, 0.95)	< 0.001
	And O ₃	1.42 (1.37, 1.48)	< 0.001
PM ₁₀	Single	1.04 (1.02, 1.06)	
	And SO ₂	0.95 (0.94, 0.97)	< 0.001
	And NO ₂	1.23 (1.20, 1.27)	< 0.001
	And CO	0.70 (0.68, 0.73)	< 0.001
	And O ₃	1.06 (1.04, 1.08)	< 0.001
SO ₂	Single	6.34 (5.55, 7.25)	
	And PM ₁	3.54 (2.99, 4.19)	< 0.001
	And PM _{2.5}	3.91 (3.31, 4.61)	< 0.001
	And PM ₁₀	6.54 (5.70, 7.51)	0.124
	And NO ₂	9.03 (7.88, 10.36)	< 0.001
	And CO	2.67 (2.21, 3.21)	< 0.001
	And O ₃	7.77 (6.75, 8.94)	< 0.001
	Single	1.01 (1.00, 1.02)	
NO ₂	And PM ₁	0.76 (0.75, 0.78)	< 0.001
	And PM _{2.5}	0.62 (0.60, 0.64)	< 0.001
	And PM ₁₀	0.82 (0.80, 0.84)	< 0.001
	And SO ₂	0.88 (0.87, 0.89)	< 0.001
	And CO	0.82 (0.80, 0.83)	< 0.001
	And O ₃	1.01 (1.00, 1.02)	< 0.001
	Single	1.04 (1.04, 1.05)	
	And PM ₁	1.03 (1.03, 1.03)	< 0.001
CO	And PM _{2.5}	1.03 (1.03, 1.04)	< 0.001
	And PM ₁₀	1.08 (1.08, 1.09)	< 0.001
	And SO ₂	1.02 (1.02, 1.03)	< 0.001
	And NO ₂	1.06 (1.06, 1.07)	< 0.001
	And O ₃	1.12 (1.11, 1.12)	< 0.001

Continued

Air pollutant	Model	OR (95% CI)	P for difference
O ₃	Single	1.00 (0.98, 1.02)	
	And PM ₁	0.85 (0.83, 0.87)	< 0.001
	And PM _{2.5}	0.82 (0.81, 0.84)	< 0.001
	And PM ₁₀	0.94 (0.92, 0.96)	< 0.001
	And SO ₂	0.93 (0.91, 0.94)	< 0.001
	And NO ₂	1.01 (0.99, 1.03)	< 0.001
	And CO	0.52 (0.50, 0.54)	< 0.001

Note. Adjusted for age, sex, race, education, marital status, BMI, physical activity, smoking, drinking, hypertension, and diabetes. PM₁, particulate matter with an aerodynamic diameter ≤ 1 µm; PM_{2.5}, particulate matter with an aerodynamic diameter ≤ 2.5 µm; PM₁₀, particulate matter with an aerodynamic diameter ≤ 10 µm; SO₂, sulfur dioxide; NO₂, nitrogen dioxide; CO, carbon monoxide; O₃, ozone; OR, odds ratio; CI, confidence interval.

Supplementary Table S10. Adjusted ORs and 95% CIs of cardiovascular mortality associated with per 1 µg/m³ increase of 3-year exposure to ambient air pollution estimated by single- and 2-pollutant models

Air pollutant	Model	OR (95% CI)	P for difference
PM ₁	Single	1.47 (1.42, 1.53)	
	And SO ₂	1.19 (1.14, 1.25)	< 0.001
	And NO ₂	2.37 (2.24, 2.50)	< 0.001
	And CO	1.20 (1.13, 1.26)	< 0.001
	And O ₃	1.58 (1.52, 1.65)	< 0.001
PM _{2.5}	Single	1.30 (1.26, 1.34)	
	And SO ₂	1.10 (1.06, 1.13)	< 0.001
	And NO ₂	2.43 (2.29, 2.57)	< 0.001
	And CO	0.93 (0.88, 0.97)	< 0.001
	And O ₃	1.41 (1.36, 1.47)	< 0.001
PM ₁₀	Single	1.04 (1.03, 1.06)	
	And SO ₂	0.95 (0.94, 0.97)	< 0.001
	And NO ₂	1.27 (1.23, 1.31)	< 0.001
	And CO	0.74 (0.72, 0.76)	< 0.001
	And O ₃	1.06 (1.05, 1.08)	< 0.001
SO ₂	Single	5.33 (4.69, 6.07)	
	And PM ₁	2.71 (2.29, 3.20)	< 0.001
	And PM _{2.5}	3.06 (2.59, 3.61)	< 0.001
	And PM ₁₀	5.46 (4.77, 6.26)	0.332
	And NO ₂	8.07 (7.04, 9.24)	< 0.001
	And CO	2.15 (1.79, 2.57)	< 0.001
	And O ₃	6.43 (5.62, 7.36)	< 0.001

Continued

Air pollutant	Model	OR (95% CI)	P for difference
NO ₂	Single	1.01 (1.00, 1.02)	
	And PM ₁	0.77 (0.75, 0.78)	< 0.001
	And PM _{2.5}	0.63 (0.61, 0.65)	< 0.001
	And PM ₁₀	0.82 (0.80, 0.83)	< 0.001
	And SO ₂	0.88 (0.87, 0.89)	< 0.001
	And CO	0.83 (0.81, 0.84)	< 0.001
	And O ₃	1.01 (1.00, 1.02)	< 0.001
CO	Single	1.04 (1.04, 1.05)	
	And PM ₁	1.03 (1.02, 1.03)	< 0.001
	And PM _{2.5}	1.03 (1.03, 1.03)	< 0.001
	And PM ₁₀	1.07 (1.07, 1.08)	< 0.001
	And SO ₂	1.02 (1.02, 1.03)	< 0.001
	And NO ₂	1.06 (1.06, 1.06)	< 0.001
	And O ₃	1.10 (1.10, 1.11)	< 0.001
O ₃	Single	1.02 (0.99, 1.04)	
	And PM ₁	0.87 (0.85, 0.88)	< 0.001
	And PM _{2.5}	0.84 (0.83, 0.86)	< 0.001
	And PM ₁₀	0.95 (0.93, 0.97)	< 0.001
	And SO ₂	0.94 (0.92, 0.95)	< 0.001
	And NO ₂	1.02 (1.00, 1.04)	< 0.001
	And CO	0.57 (0.55, 0.59)	< 0.001

Note. Adjusted for age, sex, race, education, marital status, BMI, physical activity, smoking, drinking, hypertension, and diabetes. PM₁, particulate matter with an aerodynamic diameter ≤ 1 μm; PM_{2.5}, particulate matter with an aerodynamic diameter ≤ 2.5 μm; PM₁₀, particulate matter with an aerodynamic diameter ≤ 10 μm; SO₂, sulfur dioxide; NO₂, nitrogen dioxide; CO, carbon monoxide; O₃, ozone; OR, odds ratio; CI, confidence interval.