Supplementary Online Content

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This supplementary material has been provided by the authors to give readers additional information about their work.
eMethods 1. Explanation for Ground-Monitored Data on PM$_{1,0}$ and PM$_{2,5}$

Ground-monitored PM$_{1}$ and PM$_{2,5}$ were obtained from the China Atmosphere Watch Network (CAWNET) of the China Meteorological Administration (CMA). The network consisted of 96 air monitoring stations located across mainland China. Concentrations of PM$_{1}$ and PM$_{2,5}$ at all stations were measured with GRIMM 180 Environmental dust monitors (Model 1.108, Grimm Aerosol Technik GmbH, Ainring, Germany). Two quality-control procedures were applied to all PM measurements: a "limit check" and a "climatological check". For the limit check, we evaluated each valid PM measurement to determine whether it fell within its possible limits, otherwise, they were removed. In the climatological check, the median and standard deviation (SD) of hourly PM measurements were calculated at each PM observational site. Any PM values lying outside of more than three SDs from the median PM were removed.
eMethods 2. Explanation for the Air Pollution Data (PM$_{10.0}$, SO$_2$, NO$_2$, and O$_3$)

The operation of the monitoring stations strictly followed quality assurance/quality control (QA/QC) procedures set by the State Environmental Protection Administration of China (SEPAC, 1992). The environmental monitoring centers in each of the three study cities conducted regular performance audits and precision checks on the air-monitoring equipment. Quarterly performance audits are conducted to assess data accuracy on PM$_{10.0}$, SO$_2$, NO$_2$, and O$_3$ monitoring systems.

1) The calculation method
   The calculation method is performed according to Chinese National standards (GB8170-87). The unit of monitored pollutants is mg/m$^3$ accurate to the third decimal. The units can also be expressed as μg/m$^3$, depending on the pollutant's concentration. For concentrations that were too low to be measured, half of the lowest checking limit of the equipment will be used as the measured value.

2) Outliers
   When the measured concentration is too low (e.g., background value), a negative value can be obtained because of the zero drift of the monitor. There is no physical meaning to this value. This negative value can be regarded as a value of "unable to measure."

   For the monitoring station with an automatic calibration system, if equipment zero drift/span drift exceeds the control range during the period of zero/span calibration, the data from the time it becomes out of control until the equipment is recovered should be regarded as invalid data. The data cannot be used statistically.

   The data during the period of zero calibration/span calibration should be regarded as invalid data. It cannot be used statistically, but a flag should be made on these data and the records stored as evidence.

   When values are missing because of a loss of power, any data received by the central control station during the period of the loss of power should be regarded as invalid data. The period of loss of power should be counted at the start of power outage until complete warm-up of equipment. The data cannot be used statistically.

   Because pollutant concentrations change over time and change slowly, there should be no swift change in pollutant concentration in the results of normal monitoring. Either a swift change or no change indicates that there is an equipment problem. The problem should be identified, and the data between the start of problem to recovery should be regarded as outliers. These data cannot be used statistically.

3) Statistics of monitoring data
   One time value
   The central control station uses an average of 15 minutes of pollutant concentrations measured at the branch station as a one-time value. The central control modifies this value and judge whether this value is an outlier using the report software.

   One hour mean value
   At least 75% of the one-time values should be used to calculate the one-hour average mean values. The one-hour average mean value is calculated by averaging all the valid one-time values within one hour.

   Daily average mean
   For PM$_{10}$ at least 12 valid hourly mean values are needed to calculate the daily mean value (using the calendar as the valid time frame), using all available valid hourly mean values. For SO$_2$ and NO$_2$ at least 18 hourly mean values everyday are needed to calculate valid daily mean value (using the calendar as the valid time frame). For O$_3$, at least six hourly concentrations of O$_3$ per day are needed for calculating the 8-hour average concentration of O$_3$. All valid hourly mean values are used to calculate the daily mean. (National Environmental Air Quality Standard GB3095-2012)

   Monthly mean values are the arithmetic means of all valid daily mean values within the month. Seasonal mean values are the arithmetic means of all valid daily mean values within the season. Yearly mean values are the arithmetic means of all valid daily mean values within the year. District daily mean values are calculated using the monthly mean value, the seasonal mean value, and the yearly mean value from the available air monitoring stations in the district.
eMethods 3. Detailed Information on the 2-Level Binary Logistic Regression Model

At the participant level, we predicted the logit of the prevalence of a cardiovascular disease (CVD) or its risk factors as a function of k covariates \(X_1 \ldots X_k\) as follows:

\[
\logit \left[ \text{Probability} \left( Y_{ij} \right) \right] = \alpha_j + \beta_1 X_{1ij} + \ldots + \beta_k X_{kij} + e_{ij} \quad (1)
\]

The variable \(Y\) in equation 1 is prevalence of CVD or its cardiometabolic risk factor, the subscript \(j\) is for study districts \((j=1,\ldots, 11)\) or communities \((j=1,\ldots,33)\), the subscript \(i\) is for participants \((i=1,..n_j)\), \(\alpha_j\) are intercepts at the district or community level, \(\beta_1 \ldots \beta_k\) are regression coefficients for covariates, and \(e_{ij}\) are the random errors, assumed to have means of zero and constant variance. The \(\alpha_j\) are random coefficients because they are assumed to vary across districts or communities.

At the district or community level, we regressed the district- specific or community-specific intercepts \(\alpha_j\) on the district- specific or community-specific pollutant level \(Z_j\) to explain variations of \(\alpha_j\), as follows:

\[
\alpha_j = \alpha + \gamma_1 Z_j + u_j \quad (2)
\]

Equation 2 predicts CVD or its risk factor prevalence in a district or community by air pollutant concentration \(Z_j\). If \(\gamma_1\) is positive then districts or communities with higher pollutant levels have a higher prevalence of CVD or its risk factor (adjusting for covariates). Conversely, if \(\gamma_1\) is negative, then the prevalence is lower in districts or communities with a higher pollutant level (adjusting for covariates). The \(u\)-terms \(u_j\) are random errors at the district or community level, assumed to be independent and have mean of zero and constant variance. These random errors characterize the variation between districts or communities and are assumed to be independent from \(e_{ij}\) at the participant level. Note that \(\alpha, \beta_1, \ldots, \beta_k, \text{ and } \gamma_1\) are not assumed to vary across districts or communities. Therefore, they have no subscript \(j\) to indicate to which district or community they belong; they are referred to as fixed effects given that they apply to all districts or communities.

Substituting equation 2 into equation 1 yields a single regression equation:

\[
\logit \left[ \text{Probability} \left( Y_{ij} \right) \right] = (\alpha + \gamma_1 Z_j + \beta_1 X_{1ij} + \ldots + \beta_k X_{kij}) + (u_i + e_{ij}) \quad (3)
\]

The terms in the first and second parentheses in equation 3 are often respectively called the fixed (or deterministic) and random (or stochastic) parts of the model.
**eTable 1. Characteristics of the Study Participants and the Total 33CCHS Participants**

| Characteristics                          | Participants (n = 15 477) | Total (n = 24 845) |
|------------------------------------------|---------------------------|--------------------|
| Age (years, mean ± SD)                   | 45.0 ± 13.5               | 45.6 ± 13.5        |
| Sex                                      |                           |                    |
| Men                                      | 8156 (52.7)               | 12661 (51.0)       |
| Women                                    | 7321 (47.3)               | 12184 (49.0)       |
| Nationality                              |                           |                    |
| Han                                      | 14 554 (94.0)             | 23 470 (94.5)      |
| Others                                   | 923 (6.0)                 | 1375 (5.5)         |
| Education                                |                           |                    |
| Junior college or higher                 | 3579 (23.1)               | 5475 (22.0)        |
| Middle school                            | 9554 (61.7)               | 14933 (60.1)       |
| Primary school                           | 1863 (12.0)               | 3446 (13.8)        |
| No school                                | 481 (3.1)                 | 991 (4.0)          |
| Career                                   |                           |                    |
| Officials                                | 2900 (18.7)               | 4443 (17.9)        |
| Workers                                  | 4996 (32.3)               | 7227 (29.1)        |
| Farmers                                  | 2210 (14.3)               | 4880 (19.6)        |
| Others                                   | 5371 (34.7)               | 8295 (33.4)        |
| Family income per year                   |                           |                    |
| ≤5000 Yuan                               | 1167 (7.5)                | 2224 (9.0)         |
| 5001-10 000 Yuan                         | 1977 (12.8)               | 3537 (14.2)        |
| 10001-30 000 Yuan                        | 7869 (50.8)               | 12 348 (49.7)      |
| ≥30 001 Yuan                             | 4464 (28.8)               | 6736 (27.1)        |
| Smoking status                           |                           |                    |
| Nonsmoker                                | 10 837 (70.0)             | 17 543 (70.6)      |
| Smoker                                   | 4640 (30.0)               | 7302 (29.4)        |
| Alcohol consumption                      |                           |                    |
| Nondrinker                               | 11 668 (75.4)             | 19 082 (76.8)      |
| Drinking                                 | 3809 (24.6)               | 5763 (23.2)        |
| Exercise                                 |                           |                    |
| No                                       | 10 545 (68.1)             | 17 198 (69.2)      |
| Yes                                      | 4932 (31.9)               | 7647 (30.8)        |
| Control diet with low calories and low fat|                        |                    |
| No                                       | 11 616 (75.1)             | 18 657 (75.1)      |
| Yes                                      | 3861 (24.9)               | 6188 (24.9)        |
| Sugar-sweetened soft drink               |                           |                    |
| ≤1 day per week                          | 13 621 (88.0)             | 21 939 (88.3)      |
| 2-4 days per week                        | 1286 (8.3)                | 1974 (8.0)         |
| ≥5 days per week                         | 570 (3.7)                 | 932 (3.8)          |

SD indicates standard deviation.
Table 2. Annual Mean Concentrations and Pairwise Correlations of Air Pollutants

| Exposure      | Annual mean concentrations | Spearman correlation coefficient (P-value) |
|---------------|----------------------------|------------------------------------------|
|               | Mean (SD) | Median | Minimum | Maximum | IQR | >WHO (%) | PM1 | PM2.5 | PM10 | SO2  | NO2  | O3  |
| PM1 (µg/m³)²  | 66.0 (10.7) | 62     | 50      | 82      | 15   | None²     | 1.00 | 0.99 (0.001) | 0.73 (0.01) | 0.52 (0.10) | 0.67 (0.02) | 0.47 (0.14) |
| PM2.5 (µg/m³)² | 82.0 (14.8) | 73     | 64      | 104     | 26   | 100       | 1.00 | 0.72 (0.01) | 0.51 (0.11) | 0.63 (0.04) | 0.45 (0.04) |
| PM10 (µg/m³)³  | 123.1 (14.6) | 123    | 93      | 145     | 19   | 100       | 1.00 | 0.81 (0.003) | 0.65 (0.03) | 0.81 (0.002) |              |              |
| SO2 (µg/m³)³  | 54.4 (14.3) | 48     | 36      | 78      | 20   | 100       | 1.00 | 0.25 (0.46) | 0.84 (0.001) |              |              |
| NO2 (µg/m³)³  | 35.3 (5.5)  | 33     | 27      | 45      | 9    | 18.2      | 1.00 | 0.45 (0.16) |              |              |              |
| O3 (µg/m³)³   | 49.4 (14.1) | 50     | 27      | 71      | 22   | 0.0       | 1.00 |              |              |              |              |

Abbreviations: IQR, interquartile range; NO2, nitrogen dioxide; O3, ozone; PM1, particles with aerodynamic diameter ≤1.0 µm; PM2.5, particles with aerodynamic diameter ≤2.5 µm; PM10, particles with aerodynamic diameter ≤10 µm; SO2, sulfur dioxide; WHO, World Health Organization air quality guidelines (2005).

²Based on values from 33 communities.

³Based on values from 11 districts.

²A guideline for PM1 has not been proposed by WHO.
eTable 3. Associations Between Cardiometabolic Risk Factors and CVD Prevalence

| CVD metabolic risk factors       | Crude model | P-value   | Adjusted model<sup>a</sup> | P-value |
|---------------------------------|-------------|-----------|-----------------------------|---------|
| Hypertension                    | 4.63 (3.94, 5.43) | <0.001    | 2.79 (2.35, 3.31)           | <0.001  |
| Type 2 diabetes                 | 2.43 (2.02, 2.92) | <0.001    | 1.44 (1.18, 1.75)           | <0.001  |
| Overweight/obesity              | 1.25 (1.08, 1.46) | 0.003     | 1.23 (1.06, 1.43)           | 0.007   |
| Hypertriglyceridemia            | 1.80 (1.54, 2.11) | <0.001    | 1.77 (1.50, 2.09)           | <0.001  |
| HyperbetaIIipoproteinemia       | 3.83 (3.21, 4.58) | <0.001    | 2.76 (2.28, 3.32)           | <0.001  |

Abbreviations: CI, confidence interval; CVD, cardiovascular disease; OR, odds ratio.
<sup>a</sup>Adjusted by age, gender, career, education, household income, smoking status, alcohol consumption, exercise, controlled food of low calories and low fat, sugar-sweetened soft drink intake, family history of CVD, and gross domestic product, and greenness levels.
**eTable 4. Proportion Mediated by Cardiometabolic Risk Factors in the Associations of Air Pollutants With CVD Prevalence**

| Exposure | Mediator                           | % mediated | P Value |
|----------|------------------------------------|------------|---------|
| PM\(_1\) | Systolic blood pressure            | 5.6        | .03     |
|          | Diastolic blood pressure           | 6.5        | .01     |
|          | Fasting blood glucose              | 2.1        | .06     |
|          | 2-hour blood glucose               | 3.1        | .03     |
|          | Body mass index                    | 2.0        | .15     |
|          | Triglycerides                      | 0.0        | .78     |
|          | Low-density lipoprotein cholesterol| 1.1        | .71     |
| PM\(_2.5\) | Systolic blood pressure             | 5.3        | .06     |
|          | Diastolic blood pressure           | 5.3        | .03     |
|          | Fasting blood glucose              | 1.5        | .08     |
|          | 2-hour blood glucose               | 2.9        | .10     |
|          | Body mass index                    | 1.5        | .15     |
|          | Triglycerides                      | 0.0        | .48     |
|          | Low-density lipoprotein cholesterol| 0.0        | .78     |
| PM\(_10\) | Systolic blood pressure            | 13.9       | .04     |
|          | Diastolic blood pressure           | 19.4       | <.001   |
|          | Fasting blood glucose              | 6.3        | .06     |
|          | 2-hour blood glucose               | 12.5       | .002    |
|          | Body mass index                    | 0.0        | .42     |
|          | Triglycerides                      | 18.2       | <.001   |
|          | Low-density lipoprotein cholesterol| 0.0        | .78     |
| SO\(_2\)  | Systolic blood pressure            | 3.9        | .09     |
|          | Diastolic blood pressure           | 5.1        | .02     |
|          | Fasting blood glucose              | 1.3        | .11     |
|          | 2-hour blood glucose               | 4.0        | .004    |
|          | Body mass index                    | 0.0        | .73     |
|          | Triglycerides                      | 7.6        | <.001   |
|          | Low-density lipoprotein cholesterol| 0.0        | .74     |
| NO\(_2\)  | Systolic blood pressure            | 5.2        | .08     |
|          | Diastolic blood pressure           | 8.7        | .002    |
|          | Fasting blood glucose              | 2.5        | .06     |
|          | 2-hour blood glucose               | 4.3        | .01     |
|          | Body mass index                    | 0.6        | .33     |
|          | Triglycerides                      | 5.0        | .008    |
|          | Low-density lipoprotein cholesterol| 0.0        | .89     |
| O\(_3\)   | Systolic blood pressure            | 4.2        | <.001   |
|          | Diastolic blood pressure           | 6.9        | .02     |
|          | Fasting blood glucose              | 1.4        | .23     |
|          | 2-hour blood glucose               | 4.2        | .01     |
|          | Body mass index                    | 0.0        | .30     |
|          | Triglycerides                      | 9.6        | <.001   |
|          | Low-density lipoprotein cholesterol| 0.0        | .84     |

Abbreviations: CVD, cardiovascular disease; NO\(_2\), nitrogen dioxide; O\(_3\), ozone; PM\(_1\), particles with aerodynamic diameter ≤1.0 µm; PM\(_2.5\), particles with aerodynamic diameter ≤2.5 µm; PM\(_10\), particles with aerodynamic diameter ≤10 µm; SO\(_2\), sulfur dioxide.
**eTable 5. Associations of Dichotomous Air Pollutants and Cardiometabolic Risk Factors With CVD Prevalence**

| Cardiometabolic risk factors | Air pollutants | OR (95% CI) | RERI (95% CI) |
|-----------------------------|---------------|-------------|---------------|
| **PM$_{2.5}$:**            |               |             |               |
| Hypertension                |               |             |               |
| No                          | PM$_{2.5} < 82$ $\mu g/m^3$ | Ref.        |               |
| No                          | PM$_{2.5} \geq 82$ $\mu g/m^3$ | 1.06 (0.78, 1.45) |               |
| Yes                         | PM$_{2.5} < 82$ $\mu g/m^3$ | 2.74 (2.15, 3.48) |               |
| Yes                         | PM$_{2.5} \geq 82$ $\mu g/m^3$ | 3.01 (2.27, 3.99) |               |
| Type 2 diabetes             |               | -0.11 (-0.68, 0.45) |               |
| No                          | PM$_{2.5} < 82$ $\mu g/m^3$ | Ref.        |               |
| No                          | PM$_{2.5} \geq 82$ $\mu g/m^3$ | 1.11 (0.88, 1.39) |               |
| Yes                         | PM$_{2.5} < 82$ $\mu g/m^3$ | 1.52 (1.15, 1.99) |               |
| Yes                         | PM$_{2.5} \geq 82$ $\mu g/m^3$ | 1.48 (1.09, 2.02) |               |
| Overweight/obesity          |               | 0.10 (-0.25, 0.45) |               |
| No                          | PM$_{2.5} < 82$ $\mu g/m^3$ | Ref.        |               |
| No                          | PM$_{2.5} \geq 82$ $\mu g/m^3$ | 1.03 (0.80, 1.32) |               |
| Yes                         | PM$_{2.5} < 82$ $\mu g/m^3$ | 1.18 (0.95, 1.46) |               |
| Yes                         | PM$_{2.5} \geq 82$ $\mu g/m^3$ | 1.29 (1.00, 1.66) |               |
| Hypertriglyceridemia        |               | 0.41 (-0.09, 0.92) |               |
| No                          | PM$_{2.5} < 82$ $\mu g/m^3$ | Ref.        |               |
| No                          | PM$_{2.5} \geq 82$ $\mu g/m^3$ | 1.02 (0.80, 1.30) |               |
| Yes                         | PM$_{2.5} < 82$ $\mu g/m^3$ | 1.60 (1.26, 2.03) |               |
| Yes                         | PM$_{2.5} \geq 82$ $\mu g/m^3$ | 1.96 (1.49, 2.58) |               |
| Hyperbetalipoproteinemia    |               | 0.05 (-1.02, 1.12) |               |
| No                          | PM$_{2.5} < 82$ $\mu g/m^3$ | Ref.        |               |
| No                          | PM$_{2.5} \geq 82$ $\mu g/m^3$ | 1.11 (0.88, 1.41) |               |
| Yes                         | PM$_{2.5} < 82$ $\mu g/m^3$ | 2.63 (1.95, 3.54) |               |
| Yes                         | PM$_{2.5} \geq 82$ $\mu g/m^3$ | 3.19 (2.43, 4.18) |               |
| **PM$_{10}$:**              |               |             |               |
| Hypertension                |               |             |               |
| No                          | PM$_{10} < 123$ $\mu g/m^3$ | Ref.        |               |
| No                          | PM$_{10} \geq 123$ $\mu g/m^3$ | 0.87 (0.66, 1.16) |               |
| Yes                         | PM$_{10} < 123$ $\mu g/m^3$ | 2.49 (1.91, 3.23) |               |
| Yes                         | PM$_{10} \geq 123$ $\mu g/m^3$ | 2.62 (2.02, 3.39) |               |
| Type 2 diabetes             |               | 0.18 (-0.34, 0.69) |               |
| No                          | PM$_{10} < 123$ $\mu g/m^3$ | Ref.        |               |
| No                          | PM$_{10} \geq 123$ $\mu g/m^3$ | 0.98 (0.81, 1.20) |               |
| Yes                         | PM$_{10} < 123$ $\mu g/m^3$ | 1.32 (0.96, 1.81) |               |
| Yes                         | PM$_{10} \geq 123$ $\mu g/m^3$ | 1.46 (1.12, 1.92) |               |
| Overweight/obesity          |               | -0.06 (-0.40, 0.28) |               |
| No                          | PM$_{10} < 123$ $\mu g/m^3$ | Ref.        |               |
| No                          | PM$_{10} \geq 123$ $\mu g/m^3$ | 0.99 (0.80, 1.24) |               |
| Yes                         | PM$_{10} < 123$ $\mu g/m^3$ | 1.30 (1.02, 1.66) |               |
| Yes                         | PM$_{10} \geq 123$ $\mu g/m^3$ | 1.16 (0.92, 1.46) |               |
| Hypertriglyceridemia        |               | -0.18 (-0.74, 0.37) |               |
| No                          | PM$_{10} < 123$ $\mu g/m^3$ | Ref.        |               |
| No                          | PM$_{10} \geq 123$ $\mu g/m^3$ | 1.04 (0.84, 1.29) |               |
| Yes                         | PM$_{10} < 123$ $\mu g/m^3$ | 1.90 (1.45, 2.47) |               |
| Yes                         | PM$_{10} \geq 123$ $\mu g/m^3$ | 1.74 (1.36, 2.23) |               |
| Hyperbetalipoproteinemia    |               | -0.65 (-1.69, 0.38) |               |
| No                          | PM$_{10} < 123$ $\mu g/m^3$ | Ref.        |               |
| No                          | PM$_{10} \geq 123$ $\mu g/m^3$ | 1.10 (0.90, 1.35) |               |
| Yes                         | PM$_{10} < 123$ $\mu g/m^3$ | 3.26 (2.43, 4.38) |               |
| Yes                         | PM$_{10} \geq 123$ $\mu g/m^3$ | 2.66 (2.02, 3.51) |               |
| **SO$_2$:**                 |               |             |               |
| Hypertension                |               | 0.46 (-0.16, 1.07) |               |
|                | SO$_2$ < 54 µg/m$^3$ | Ref.       | SO$_2$ ≥ 54 µg/m$^3$ |
|----------------|----------------------|------------|----------------------|
| No             |                      |            | 1.13 (0.85, 1.49)    |
| Yes            |                      |            | 2.64 (2.12, 3.30)    |
| Yes            |                      |            | 3.33 (2.63, 4.21)    |
| Type 2 diabetes|                      | 0.60 (0.03, 1.16) |            |
| No             |                      |            | 1.15 (0.96, 1.38)    |
| Yes            |                      |            | 1.21 (0.92, 1.58)    |
| Yes            |                      |            | 1.98 (1.50, 2.62)    |
| Overweight/obesity |                      | -0.09 (-0.45, 0.27) |            |
| No             |                      |            | 1.21 (0.98, 1.49)    |
| Yes            |                      |            | 1.29 (1.06, 1.58)    |
| Yes            |                      |            | 1.37 (1.09, 1.71)    |
| Hypertriglyceridemia |                      | -0.20 (-0.76, 0.37) |            |
| No             |                      |            | 1.29 (1.06, 1.58)    |
| Yes            |                      |            | 1.91 (1.53, 2.38)    |
| Yes            |                      |            | 2.01 (1.58, 2.57)    |
| Hyperbetalipoproteinemia |                      | -0.19 (-1.27, 0.89) |            |
| No             |                      |            | 1.38 (1.14, 1.66)    |
| Yes            |                      |            | 3.05 (2.40, 3.88)    |
| Yes            |                      |            | 3.29 (2.42, 4.48)    |
| No             |                      |            | 0.97 (0.72, 1.30)    |
| Yes            |                      |            | 2.51 (1.93, 3.28)    |
| Yes            |                      |            | 2.87 (2.20, 3.75)    |
| Hypertriglyceridemia |                      | 0.42 (-1.10, 1.93) |            |
| No             |                      |            | 1.03 (0.84, 1.27)    |
| Yes            |                      |            | 1.16 (0.84, 1.61)    |
| Yes            |                      |            | 1.65 (1.25, 2.17)    |
| O$_3$:         |                      | -0.16 (-0.53, 0.21) |            |
| Hypertension   |                      |            | 1.09 (0.87, 1.37)    |
| No             |                      |            | 1.35 (1.06, 1.72)    |
| Yes            |                      |            | 1.25 (0.98, 1.59)    |
| Type 2 diabetes|                      | 0.48 (-0.04, 0.99) |            |
| No             |                      |            | 1.07 (0.86, 1.34)    |
| Yes            |                      |            | 1.76 (1.34, 2.31)    |
| Yes            |                      |            | 1.88 (1.47, 2.40)    |
| Hyperbetalipoproteinemia |                      | 0.07 (-0.48, 0.61) |            |
| No             |                      |            | 1.07 (0.86, 1.34)    |
| Yes            |                      |            | 1.76 (1.34, 2.31)    |
| Yes            |                      |            | 1.88 (1.47, 2.40)    |

|                | SO$_2$ < 54 µg/m$^3$ | Ref.       | SO$_2$ ≥ 54 µg/m$^3$ |
|----------------|----------------------|------------|----------------------|
| No             |                      |            | 1.21 (0.98, 1.50)    |
| Yes            |                      |            | 2.96 (2.22, 3.96)    |
| Yes            |                      |            | 3.17 (2.38, 4.23)    |

Abbreviations: CI, confidence interval; CVD, cardiovascular disease; O$_3$, ozone; OR, odds ratio; PM$_{2.5}$, particles with aerodynamic diameter ≤2.5 µm; PM$_{10}$, particles with aerodynamic diameter ≤10 µm; RERI, relative excess risk due to interaction; Ref, reference; SO$_2$, sulfur dioxide. The effect estimates were adjusted for gender, smoking status, alcohol consumption, household income, controlled diet of low calories and low fat, sugar-sweetened soft drink intake, exercise, career, education, gross domestic product, greenness level, family history of cardiovascular disease, and residuals from regression model of highly correlated air pollutants.

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eFigure 1. Associations Between Air Pollution and Cardiometabolic Risk Factors Stratified by Sex

A, for particles with aerodynamic diameter ≤1.0 μm (PM₁); B, for particles with aerodynamic diameter ≤2.5 μm (PM₂.₅); C, for particles with aerodynamic diameter ≤10 μm (PM₁₀); D, for sulfur dioxide (SO₂); E, for nitrogen dioxide (NO₂); F, for ozone (O₃). The effect estimates (odds ratios and 95% confidence intervals) were scaled to 10 μg/m³ in air pollutants and were adjusted by age, smoking status, alcohol consumption, household income, controlled diet of low calories and low fat, sugar-sweetened soft drink intake, exercise, career, education, gross domestic product, greenness level, family history of cardiovascular disease, and residuals from regression model of highly
correlated air pollutants. (*) indicates $P<0.05$ for the interaction.

eFigure 2. Associations Between Air Pollution and Cardiometabolic Risk Factors Stratified by Age

A, for particles with aerodynamic diameter $\leq 1.0$ $\mu$m (PM$_1$); B, for particles with aerodynamic diameter $\leq 2.5$ $\mu$m (PM$_{2.5}$); C, for particles with aerodynamic diameter $\leq 10$ $\mu$m (PM$_{10}$); D, for sulfur dioxide (SO$_2$); E, for nitrogen dioxide (NO$_2$); F, for ozone (O$_3$). The effect estimates (odds ratios and 95% confidence intervals) were scaled to 10 $\mu$g/m$^3$ in air pollutants and were adjusted by gender, smoking status, alcohol

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consumption, household income, controlled diet of low calories and low fat, sugar-sweetened soft drink intake, exercise, career, education, gross domestic product, greenness level, family history of cardiovascular disease, and residuals from regression model of highly correlated air pollutants. (*) indicates $P<0.05$ for the interaction.
eFigure 3. Associations Between Air Pollution and Cardiometabolic Risk Factors Stratified by Family History of Cardiovascular Disease (CVD)

A, for particles with aerodynamic diameter ≤1.0 µm (PM1); B, for particles with aerodynamic diameter ≤2.5 µm (PM2.5); C, for particles with aerodynamic diameter ≤10 µm (PM10); D, for sulfur dioxide (SO2); E, for nitrogen dioxide (NO2); F, for ozone (O3). The effect estimates (odds ratios and 95% confidence intervals) were scaled to 10 µg/m³ in air pollutants and were adjusted by age, gender, smoking status, alcohol consumption, household income, controlled diet of low calories and low fat, sugar-sweetened soft drink intake, exercise, career, education, gross domestic product,
greenness level, and residuals from regression model of highly correlated air pollutants. (*) indicates $P<0.05$ for the interaction.