

# **Supplemental Material**

**Table S1. Definition and scoring approach for the American Heart Association's Life's Essential 8 score.**

| Domain           | CVH Metric        | Measurement  | Quantification and Scoring of CVH Metric  |
|------------------|-------------------|--|---|
| Health Behaviors | Diet              | Healthy Eating Index-2015 diet score percentile                          | Quantiles of DASH-style diet adherence or HEI-2015 (population)<br><b>Scoring (Population):</b><br><u>Points</u> <u>Quantile</u><br>100 $\geq$ 95 <sup>th</sup> percentile (top/ideal diet)<br>80        75 <sup>th</sup> - 94 <sup>th</sup> percentile<br>50        50 <sup>th</sup> -74 <sup>th</sup> percentile<br>25        25 <sup>th</sup> -49 <sup>th</sup> percentile<br>0         1 <sup>st</sup> -24 <sup>th</sup> percentile (bottom/least ideal quartile) |
|                  | Physical activity | Self-reported minutes of moderate or vigorous physical activity per week | <b>Metric:</b> Minutes of moderate (or greater) intensity activity per week<br><br><b>Scoring:</b><br><u>Points</u> <u>Minutes</u><br>100 $\geq$ 150<br>90        120 - 149<br>80        90 - 119<br>60        60 - 89<br>40        30 - 59<br>20        1 - 29<br>0        0   |
|                  | Nicotine exposure | Self-reported use of cigarettes or inhaled nicotine- delivery system     | <b>Metric:</b> Combustible tobacco use and/or inhaled NDS use; or secondhand smoke exposure<br><br><b>Scoring:</b><br><u>Points</u> <u>Status</u><br>100      Never smoker<br>75        Former smoker, quit $\geq$ 5 y<br>50        Former smoker, quit 1 - < 5 y<br>25        Former smoker, quit < 1 y, or currently using inhaled NDS<br>0         Current smoker<br><br>Subtract 20 points (unless score is 0) for living with active indoor smoker in home       |
|                  | Sleep health      | Self-reported average hours of sleep per night                           | <b>Metric:</b> Average hours of sleep per night<br><br><b>Scoring:</b><br><u>Points</u> <u>Level</u><br>100      7 - < 9<br>90        9 - < 10<br>70        6 - < 7<br>40        5 - < 6 or $\geq$ 10   |

| Domain                | CVH Metric      | Measurement  | Quantification and Scoring of CVH Metric   |
|-----------------------|-----------------|--|--|
|                       |                 |  | 20      4 - <5<br>0        <4  |
| <b>Health Factors</b> | Body mass index | Body weight (kg) divided by height squared (m <sup>2</sup> )             | <b>Metric:</b> Body mass index (kg/m <sup>2</sup> )<br><b>Scoring:</b><br><u>Points</u> <u>Level</u><br>100      < 25<br>70        25.0 - 29.9<br>30        30.0 - 34.9<br>15        35.0 - 39.9<br>0         ≥ 40.0   |
|                       | Blood lipids    | Plasma total and HDL-cholesterol with calculation of non-HDL-cholesterol | <b>Metric:</b> Non-HDL-cholesterol (mg/dL)<br><b>Scoring:</b><br><u>Points</u> <u>Level</u><br>100      <130<br>60        130 - 159<br>40        160 - 189<br>20        190 - 219<br>0         ≥ 220<br><br>If drug-treated level, subtract 20 points  |
|                       | Blood glucose   | Fasting blood glucose or casual hemoglobin A1c                           | <b>Metric:</b> Fasting blood glucose (mg/dL) or Hemoglobin A1c (%)<br><b>Scoring:</b><br><u>Points</u> <u>Level</u><br>100      No history of diabetes and FBG < 100 (or HbA1c < 5.7)<br>60        No diabetes and FBG 100 - 125 (or HbA1c 5.7 - 6.4)<br>(Pre-diabetes)<br>40        Diabetes with HbA1c < 7.0<br>30        Diabetes with HbA1c 7.0 - 7.9<br>20        Diabetes with HbA1c 8.0 - 8.9<br>10        Diabetes with Hb A1c 9.0 - 9.9<br>0         Diabetes with HbA1c ≥ 10.0 |
|                       | Blood pressure  | Appropriately measured systolic and diastolic blood pressure             | <b>Metric:</b> Systolic and diastolic blood pressure (mm Hg)<br><b>Scoring:</b><br><u>Points</u> <u>Level</u><br>100      < 120/< 80 (Optimal)<br>75        120 - 129/< 80 (Elevated)<br>50        130 - 139 or 80 - 89 (Stage I HTN)<br>25        140 - 159 or 90 - 99<br>0         ≥ 160 or ≥ 100<br><br>Subtract 20 points if treated level   |

CVH, cardiovascular health; FBG, Fasting blood glucose; HbA1c, Hemoglobin A1c

**Table S2. Healthy Eating Index-2015 Components & Scoring Standards\*.**

| Component                  | Maximum points | Standard for maximum score     | Standard for minimum score of zero  |
|----------------------------|----------------|--------------------------------|-------------------------------------|
| Adequacy <sup>†</sup>      |                |                                |                                     |
| Total Fruits               | 5              | ≥0.8 cup equiv. per 1,000 kcal | No Fruit                            |
| Whole Fruits               | 5              | ≥0.4 cup equiv. per 1,000 kcal | No Whole Fruit                      |
| Total Vegetables           | 5              | ≥1.1 cup equiv. per 1,000 kcal | No Vegetables                       |
| Greens and Beans           | 5              | ≥0.2 cup equiv. per 1,000 kcal | No Dark Green Vegetables or Legumes |
| Whole Grains               | 10             | ≥1.5 oz equiv. per 1,000 kcal  | No Whole Grains                     |
| Dairy                      | 10             | ≥1.3 cup equiv. per 1,000 kcal | No Dairy                            |
| Total Protein Foods        | 5              | ≥2.5 oz equiv. per 1,000 kcal  | No Protein Foods                    |
| Seafood and Plant Proteins | 5              | ≥0.8 oz equiv. per 1,000 kcal  | No Seafood or Plant Proteins        |
| Fatty Acids <sup>‡</sup>   | 10             | (PUFAs + MUFAs)/SFAs ≥2.5      | (PUFAs + MUFAs)/SFAs ≤1.2           |
| Moderation <sup>§</sup>    |                |                                |                                     |
| Refined Grains             | 10             | ≤1.8 oz equiv. per 1,000 kcal  | ≥4.3 oz equiv. per 1,000 kcal       |
| Sodium                     | 10             | ≤1.1 gram per 1,000 kcal       | ≥2.0 grams per 1,000 kcal           |
| Added Sugars               | 10             | ≤6.5% of energy                | ≥26% of energy                      |
| Saturated Fats             | 10             | ≤8% of energy                  | ≥16% of energy                      |

\*Intakes between the minimum and maximum standards are scored proportionately.

<sup>†</sup>Adequacy components represent the food groups, subgroups, and dietary elements that are encouraged. For these components, higher scores reflect higher intakes, because higher intakes are desirable.

<sup>‡</sup>Ratio of poly- and monounsaturated fatty acids (PUFAs and MUFAs) to saturated fatty acids (SFAs).

<sup>§</sup>Moderation components represent the food groups and dietary elements for which there are recommended limits to consumption. For moderation components, higher scores reflect lower intakes, because lower intakes are more desirable.

**Table S3. Baseline characteristics of excluded and included participants\*.**

| Characteristics                 | Excluded      | Included      | P-value |
|---------------------------------|---------------|---------------|---------|
| Participant number              | 1339          | 2369          | /       |
| Age (years), mean (SE)          | 59.47 (0.48)  | 57.15 (0.30)  | < 0.001 |
| Age strata, n (%)               |               |               | 0.001   |
| 40-60                           | 672 (54.86)   | 1362 (63.16)  |         |
| > 60                            | 667 (45.14)   | 1007 (36.84)  |         |
| Sex, n (%)                      |               |               | 0.260   |
| Female                          | 715 (54.57)   | 1238 (51.93)  |         |
| Male                            | 624 (45.43)   | 1131 (48.07)  |         |
| Race/ethnicity, n (%)           |               |               | 0.010   |
| Mexican American                | 202 (8.70)    | 286 (6.24)    |         |
| Non-Hispanic Black              | 298 (12.44)   | 465 (9.87)    |         |
| Non-Hispanic White              | 547 (66.97)   | 1092 (72.66)  |         |
| Other Hispanic                  | 114 (4.60)    | 214 (4.27)    |         |
| Other race/multiracial          | 178 (7.29)    | 312 (6.96)    |         |
| Education levels, n (%)         |               |               | 0.001   |
| < High school                   | 193 (8.17)    | 183 (4.19)    |         |
| High school                     | 520 (35.48)   | 828 (30.89)   |         |
| > High school                   | 623 (56.35)   | 1358 (64.92)  |         |
| Marital status, n (%)           |               |               | 0.010   |
| Coupled                         | 797 (61.85)   | 1505 (68.90)  |         |
| Single or separated             | 539 (38.15)   | 864 (31.10)   |         |
| PIR, mean (SE)                  | 2.76 (0.10)   | 3.22 (0.13)   | < 0.001 |
| PIR levels, n (%)               |               |               | < 0.001 |
| ≤ 1.30                          | 373 (25.54)   | 703 (18.75)   |         |
| 1.31-3.50                       | 392 (38.08)   | 813 (33.03)   |         |
| > 3.50                          | 278 (36.37)   | 853 (48.23)   |         |
| eGFR, ml/min/1.73m <sup>2</sup> | 80.89 (0.85)  | 84.68 (0.50)  | < 0.001 |
| Serum creatinine, umol/l        | 88.28 (3.11)  | 81.29 (0.76)  | 0.050   |
| Serum uric acid, umol/l         | 339.60 (3.57) | 318.95 (1.48) | < 0.001 |
| Serum phosphorus, mmol/l        | 1.24 (0.01)   | 1.23 (0.01)   | 0.300   |
| Serum total calcium, mmol/l     | 2.36 (0.00)   | 2.36 (0.00)   | 0.390   |

PIR, poverty income ratio; eGFR, estimated glomerular filtration rate

\*Differences in baseline characteristics were compared employing t-test for continuous variables and chi-square test for categorical variables. Data were presented as weighted mean (SE) for continuous variables and unweighted frequencies (weighted percentages) for categorical variables.

**Table S4. Associations of LE8 and its components with AAC score\*.**

|                   | Model 1              |                 | Model 2              |                 | Model 3              |                 |
|-------------------|----------------------|-----------------|----------------------|-----------------|----------------------|-----------------|
|                   | $\beta$ (95% CI)     | <i>P</i> -value | $\beta$ (95% CI)     | <i>P</i> -value | $\beta$ (95% CI)     | <i>P</i> -value |
| LE8               | -0.31 (-0.36, -0.26) | < 0.001         | -0.18 (-0.29, -0.06) | 0.011           | -0.15 (-0.25, -0.05) | 0.006           |
| HEI               | -0.01 (-0.16, 0.14)  | 0.879           | -0.06 (-0.19, 0.07)  | 0.277           | -0.05 (-0.15, 0.05)  | 0.325           |
| PA                | -0.05 (-0.09, -0.01) | 0.015           | -0.01 (-0.07, 0.04)  | 0.594           | -0.01 (-0.06, 0.04)  | 0.746           |
| Nicotine exposure | -0.05 (-0.10, 0.00)  | 0.063           | -0.08 (-0.13, -0.02) | 0.018           | -0.07 (-0.12, -0.03) | 0.003           |
| Sleep health      | 0.03 (-0.04, 0.09)   | 0.368           | -0.02 (-0.09, 0.05)  | 0.518           | -0.01 (-0.07, 0.05)  | 0.710           |
| BMI               | 0.06 (0.01, 0.11)    | 0.030           | 0.04 (-0.03, 0.11)   | 0.226           | 0.05 (-0.01, 0.11)   | 0.078           |
| Blood glucose     | -0.20 (-0.27, -0.14) | < 0.001         | -0.10 (-0.17, -0.03) | 0.014           | -0.09 (-0.15, -0.03) | 0.004           |
| Blood lipids      | -0.03 (-0.09, 0.03)  | 0.291           | -0.04 (-0.10, 0.03)  | 0.195           | -0.02 (-0.07, 0.02)  | 0.270           |
| BP                | -0.19 (-0.22, -0.15) | < 0.001         | -0.06 (-0.12, 0.00)  | 0.063           | -0.05 (-0.10, 0.00)  | 0.049           |

LE8, life's essential 8; AAC, abdominal aortic calcification;  $\beta$ , effect size; CI, confidence interval; HEI, healthy eating index; PA, physical activity; BMI, body mass index; BP, blood pressure;

\*The  $\beta$ -coefficients of AAC score were calculated per 10 points increase of LE8 and its components.

Model 1 was unadjusted for any covariates, and Model 2 included adjustments for age (continuous), sex, race/ethnicity, education levels, and marital status. Model 3 was further adjusted for PIR (continuous), eGFR, serum creatinine, serum uric acid, serum phosphorus, and serum total calcium.

**Table S5. Associations with LE8 components (including sleep) and AAC score varied across the subgroups\*.**

|                  | HEI                   | PA                    | Nicotine exposure      | Sleep health          | BMI                  | Blood glucose          | Blood lipids          | Blood pressure         |
|------------------|-----------------------|-----------------------|------------------------|-----------------------|----------------------|------------------------|-----------------------|------------------------|
| Age strata       |                       |                       |                        |                       |                      |                        |                       |                        |
| 40-60            | -0.03 (-0.13, 0.07)   | -0.02(-0.04, 0.01)    | -0.06(-0.10, -0.02)    | -0.01(-0.07, 0.05)    | 0.01(-0.02, 0.05)    | -0.08(-0.12, -0.04)    | -0.03(-0.06, 0.01)    | -0.06(-0.10, -0.02)    |
| > 60             | 0.04 (-0.15, 0.22)    | -0.01(-0.11, 0.09)    | -0.10(-0.18, -0.01)    | 0.05(-0.07, 0.17)     | 0.12(-0.02, 0.25)    | -0.19(-0.33, -0.06)    | -0.07(-0.18, 0.04)    | -0.16(-0.25, -0.08)    |
| Sex              |                       |                       |                        |                       |                      |                        |                       |                        |
| Male             | 0.01(-0.21, 0.22)     | 0.00(-0.06, 0.05)     | -0.07(-0.13, -0.02)    | 0.01(-0.10, 0.12)     | 0.06(-0.01, 0.14)    | -0.09(-0.17, -0.01)    | -0.03(-0.09, 0.03)    | -0.03(-0.10, 0.05)     |
| Female           | -0.08(-0.20, 0.05)    | -0.01(-0.07, 0.05)    | -0.08(-0.13, -0.03)    | -0.03(-0.11, 0.06)    | 0.06(-0.02, 0.13)    | -0.09(-0.16, -0.02)    | -0.02(-0.11, 0.07)    | -0.06(-0.11, -0.01)    |
| PIR              |                       |                       |                        |                       |                      |                        |                       |                        |
| ≤ 1.30           | -0.172(-0.349, 0.004) | -0.029(-0.093, 0.035) | -0.06(-0.123, 0.002)   | 0.014(-0.074, 0.102)  | 0.114(0.023, 0.205)  | -0.015(-0.090, 0.059)  | 0.011(-0.046, 0.068)  | -0.123(-0.275, 0.029)  |
| 1.31-3.50        | 0.028(-0.158, 0.214)  | -0.034(-0.120, 0.052) | -0.064(-0.128, 0.001)  | -0.011(-0.153, 0.131) | 0.048(-0.010, 0.107) | -0.108(-0.204, -0.013) | 0.021(-0.084, 0.126)  | -0.033(-0.131, 0.065)  |
| > 3.50           | -0.062(-0.260, 0.136) | 0.021(-0.026, 0.067)  | -0.092(-0.223, 0.039)  | -0.02(-0.084, 0.044)  | 0.039(-0.070, 0.148) | -0.107(-0.199, -0.014) | -0.06(-0.110, -0.011) | -0.031(-0.117, 0.054)  |
| Education levels |                       |                       |                        |                       |                      |                        |                       |                        |
| < High school    | -0.257(-0.611, 0.096) | -0.088(-0.190, 0.014) | -0.123(-0.276, 0.031)  | -0.077(-0.352, 0.198) | 0.22(0.101, 0.339)   | -0.009(-0.177, 0.159)  | -0.01(-0.158, 0.137)  | -0.039(-0.161, 0.083)  |
| High school      | -0.149(-0.408, 0.111) | 0.021(-0.086, 0.128)  | -0.1(-0.170, -0.031)   | -0.002(-0.122, 0.118) | 0.076(0.017, 0.136)  | -0.083(-0.181, 0.016)  | -0.006(-0.084, 0.072) | -0.079(-0.145, -0.012) |
| > High school    | -0.002(-0.153, 0.148) | -0.021(-0.048, 0.006) | -0.062(-0.141, 0.017)  | -0.014(-0.062, 0.034) | 0.035(-0.054, 0.124) | -0.099(-0.158, -0.040) | -0.032(-0.079, 0.016) | -0.042(-0.106, 0.021)  |
| Marital status   |                       |                       |                        |                       |                      |                        |                       |                        |
| Coupled          | 0.011(-0.146, 0.169)  | -0.002(-0.033, 0.030) | -0.092(-0.166, -0.018) | -0.022(-0.080, 0.035) | 0.067(-0.006, 0.140) | -0.071(-0.131, -0.011) | -0.017(-0.062, 0.028) | -0.009(-0.066, 0.048)  |

|                           |                                |                           |                                |                         |                             |                                |                               |                            |
|---------------------------|--------------------------------|---------------------------|--------------------------------|-------------------------|-----------------------------|--------------------------------|-------------------------------|----------------------------|
| Single<br>or<br>separated | -0.222(-<br>0.365, -<br>0.078) | -0.036(-<br>0.124, 0.052) | -0.077(-<br>0.147, -<br>0.007) | 0.013(-0.091,<br>0.118) | 0.019(-<br>0.053,<br>0.090) | -0.115(-<br>0.194, -<br>0.035) | -0.029(-<br>0.116, 0.058<br>) | -0.153(-<br>0.235, -0.072) |
|---------------------------|--------------------------------|---------------------------|--------------------------------|-------------------------|-----------------------------|--------------------------------|-------------------------------|----------------------------|

LE8, life's essential 8; AAC, abdominal aortic calcification; HEI, healthy eating index; PA, physical activity; BMI, body mass index

\*The  $\beta$ -coefficients of AAC score were calculated per 10 points increase of LE8 components and adjusted for age (continuous), sex, race/ethnicity, education levels, marital status, PIR (continuous), eGFR, serum creatinine, serum uric acid, serum phosphorus, and serum total calcium.



**Table S6. Associations between LE8 and both AAC and severe AAC (moderate LE8 as reference)\*.**

|                  | OR <sup>†</sup> (95% CI) | <i>P</i> -value | OR <sup>‡</sup> (95% CI) | <i>P</i> -value |
|------------------|--------------------------|-----------------|--------------------------|-----------------|
| LE8 score        |                          |                 |                          |                 |
| Moderate (50-79) | Reference                | /               | Reference                | /               |
| Low (0-49)       | 1.04 (0.64, 1.68)        | 0.867           | 1.11 (0.67, 1.83)        | 0.670           |
| High (80-100)    | 0.42 (0.26, 0.70)        | 0.002           | 0.42 (0.17, 1.02)        | 0.056           |

LE8, life's essential 8; AAC, abdominal aortic calcification; OR, odds ratio; CI, confidence interval

\*Adjusted for age (continuous), sex, race/ethnicity, education levels, marital status, PIR (continuous), eGFR, serum creatinine, serum uric acid, serum phosphorus, and serum total calcium

<sup>†</sup>The association between LE8 and AAC

<sup>‡</sup>The association between LE8 and severe AAC

**Table S7. Subgroup analysis for the associations between LE8 and both AAC and severe AAC\*.**

|                  | OR <sup>†</sup> (95% CI) | <i>P</i> for interaction | OR <sup>‡</sup> (95% CI) | <i>P</i> for interaction |
|------------------|--------------------------|--------------------------|--------------------------|--------------------------|
| Age strata       |                          | 0.259                    |                          | 0.073                    |
| 40-60            |                          |                          |                          |                          |
| Low (0-49)       | Reference                |                          | Reference                |                          |
| Moderate (50-79) | 1.09 (0.58, 2.08)        |                          | 0.99 (0.59, 1.67)        |                          |
| High (80-100)    | 0.31 (0.16, 0.61)        |                          | 0.11 (0.02, 0.58)        |                          |
| > 60             |                          |                          |                          |                          |
| Low (0-49)       | Reference                |                          | Reference                |                          |
| Moderate (50-79) | 0.89 (0.52, 1.52)        |                          | 1.12 (0.58, 2.17)        |                          |
| High (80-100)    | 0.55 (0.18, 1.68)        |                          | 0.73 (0.16, 3.38)        |                          |
| Sex              |                          | 0.411                    |                          | 0.600                    |
| Male             |                          |                          |                          |                          |
| Low (0-49)       | Reference                |                          | Reference                |                          |
| Moderate (50-79) | 1.18 (0.63, 2.22)        |                          | 1.24 (0.42, 3.70)        |                          |
| High (80-100)    | 0.45 (0.25, 0.81)        |                          | 0.63 (0.23, 1.76)        |                          |
| Female           |                          |                          |                          |                          |
| Low (0-49)       | Reference                |                          | Reference                |                          |
| Moderate (50-79) | 0.82 (0.44, 1.56)        |                          | 0.76 (0.38, 1.52)        |                          |
| High (80-100)    | 0.39 (0.14, 1.09)        |                          | 0.25 (0.03, 1.91)        |                          |
| PIR              |                          | 0.804                    |                          | 0.798                    |
| ≤ 1.30           |                          |                          |                          |                          |
| Low (0-49)       | Reference                |                          | Reference                |                          |
| Moderate (50-79) | 1.08 (0.45, 2.59)        |                          | 0.72 (0.28, 1.86)        |                          |
| High (80-100)    | 0.39 (0.12, 1.30)        |                          | 0.67 (0.09, 4.92)        |                          |
| 1.31-3.50        |                          |                          |                          |                          |
| Low (0-49)       | Reference                |                          | Reference                |                          |
| Moderate (50-79) | 0.80 (0.48, 1.35)        |                          | 0.91 (0.47, 1.76)        |                          |
| High (80-100)    | 0.30 (0.17, 0.54)        |                          | 0.22 (0.02, 2.17)        |                          |
| > 3.50           |                          |                          |                          |                          |
| Low (0-49)       | Reference                |                          | Reference                |                          |
| Moderate (50-79) | 1.19 (0.46, 3.05)        |                          | 1.15 (0.53, 2.50)        |                          |
| High (80-100)    | 0.55 (0.23, 1.27)        |                          | 0.45 (0.12, 1.63)        |                          |
| Education levels |                          | 0.647                    |                          | 0.161                    |
| < High school    |                          |                          |                          |                          |
| Low (0-49)       | Reference                |                          | Reference                |                          |
| Moderate (50-79) | 1.05 (0.21, 5.41)        |                          | 0.91 (0.14, 5.86)        |                          |
| High (80-100)    | 2.82 (0.36, 22.08)       |                          | 0.00 (0.00, 0.00)        |                          |
| High school      |                          |                          |                          |                          |
| Low (0-49)       | Reference                |                          | Reference                |                          |

|                     |                   |       |                   |       |
|---------------------|-------------------|-------|-------------------|-------|
| Moderate (50-79)    | 0.75 (0.32, 1.80) |       | 1.56 (0.61, 4.02) |       |
| High (80-100)       | 0.40 (0.11, 1.40) |       | 0.51 (0.08, 3.45) |       |
| > High school       |                   |       |                   |       |
| Low (0-49)          | Reference         |       | Reference         |       |
| Moderate (50-79)    | 1.19 (0.73, 1.95) |       | 0.56 (0.34, 0.95) |       |
| High (80-100)       | 0.48 (0.22, 1.04) |       | 0.26 (0.10, 0.68) |       |
| Marital status      |                   | 0.518 |                   | 0.138 |
| Coupled             |                   |       |                   |       |
| Low (0-49)          | Reference         |       | Reference         |       |
| Moderate (50-79)    | 0.93 (0.58, 1.49) |       | 1.31 (0.76, 2.25) |       |
| High (80-100)       | 0.47 (0.25, 0.90) |       | 0.77 (0.31, 1.91) |       |
| Single or separated |                   |       |                   |       |
| Low (0-49)          | Reference         |       | Reference         |       |
| Moderate (50-79)    | 1.05 (0.50, 2.22) |       | 0.65 (0.30, 1.39) |       |
| High (80-100)       | 0.29 (0.10, 0.84) |       | 0.19 (0.02, 1.67) |       |

LE8, life's essential 8; AAC, abdominal aortic calcification; OR, odds ratio; CI, confidence interval; PIR, poverty income ratio;

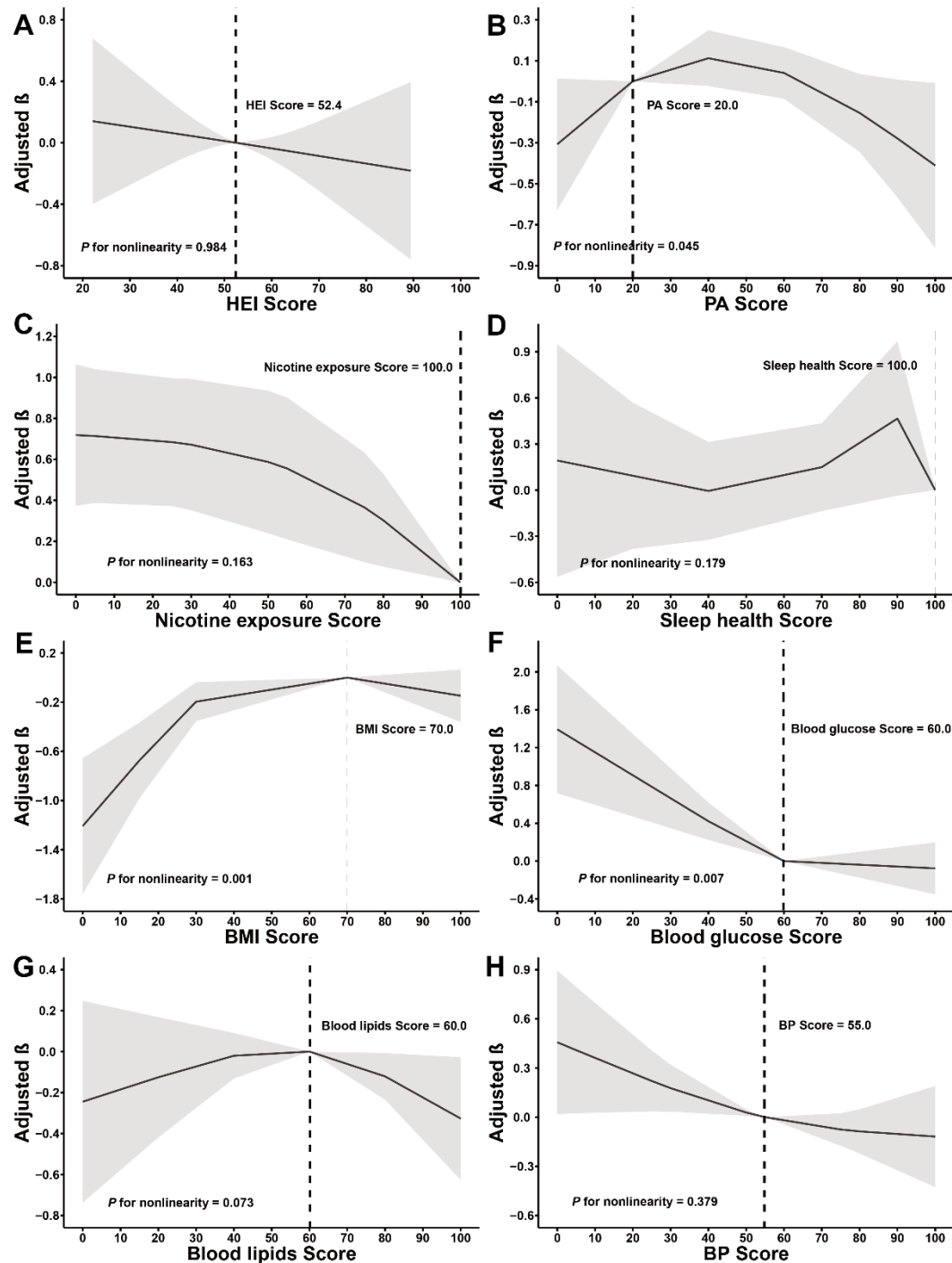
\*Adjusted for age (continuous), sex, race/ethnicity, education levels, marital status, PIR (continuous), eGFR, serum creatinine, serum uric acid, serum phosphorus, and serum total calcium.

†The association between LE8 and AAC.

‡The association between LE8 and severe AAC.

Figure S1. The non-linear associations between component of LE8 and AAC

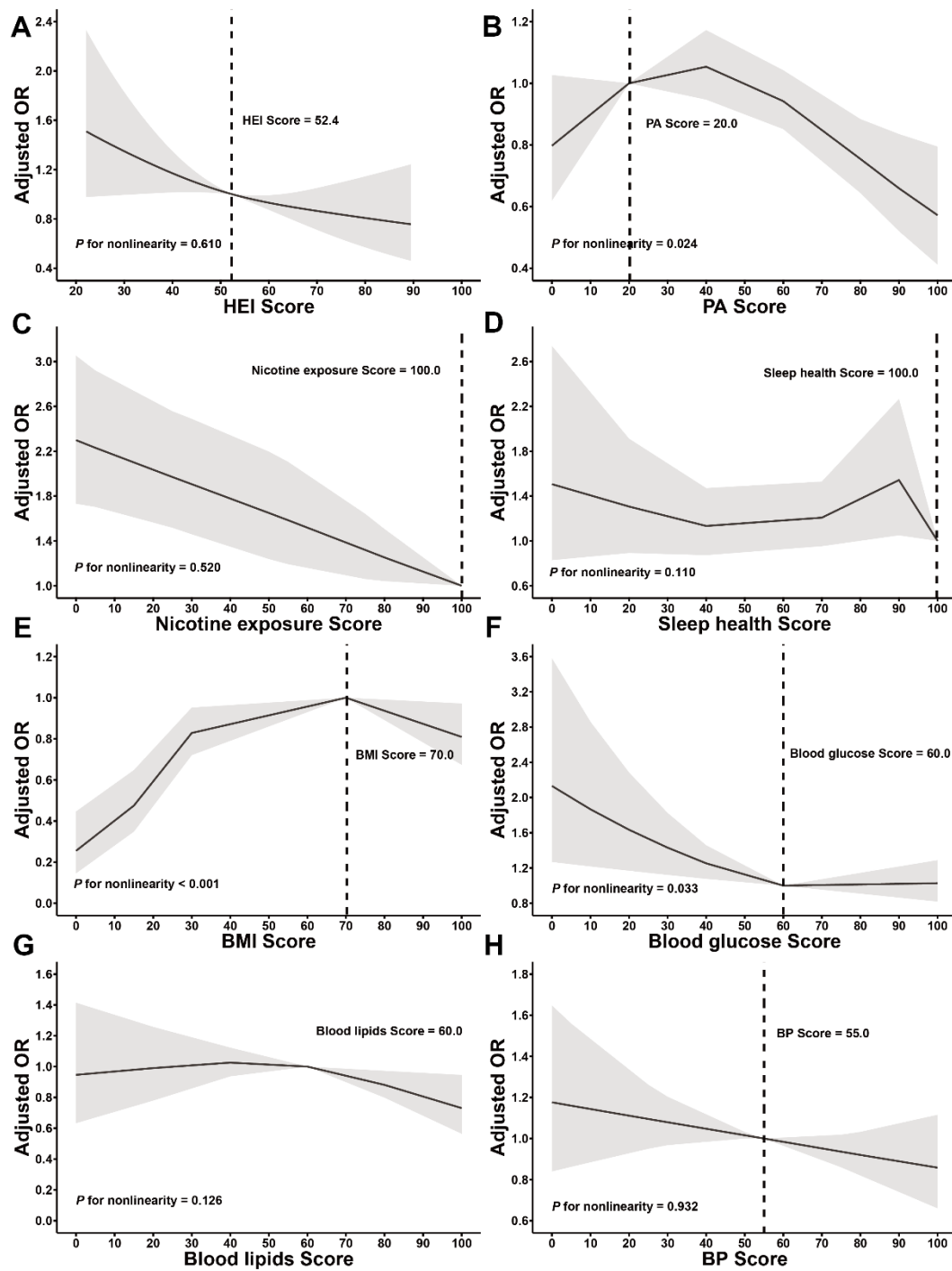
score\*



\* $\beta$  (solid lines) and 95% confidence levels (shaded areas) were adjusted for age (as a continuous variable), sex, race/ethnicity, poverty income ratio (as a continuous variable), education levels, marital status, eGFR, serum creatinine, serum uric acid, serum phosphorus, and serum total calcium. Vertical dotted lines indicate the minimal threshold for the beneficial association with estimated  $\beta = 0$ .

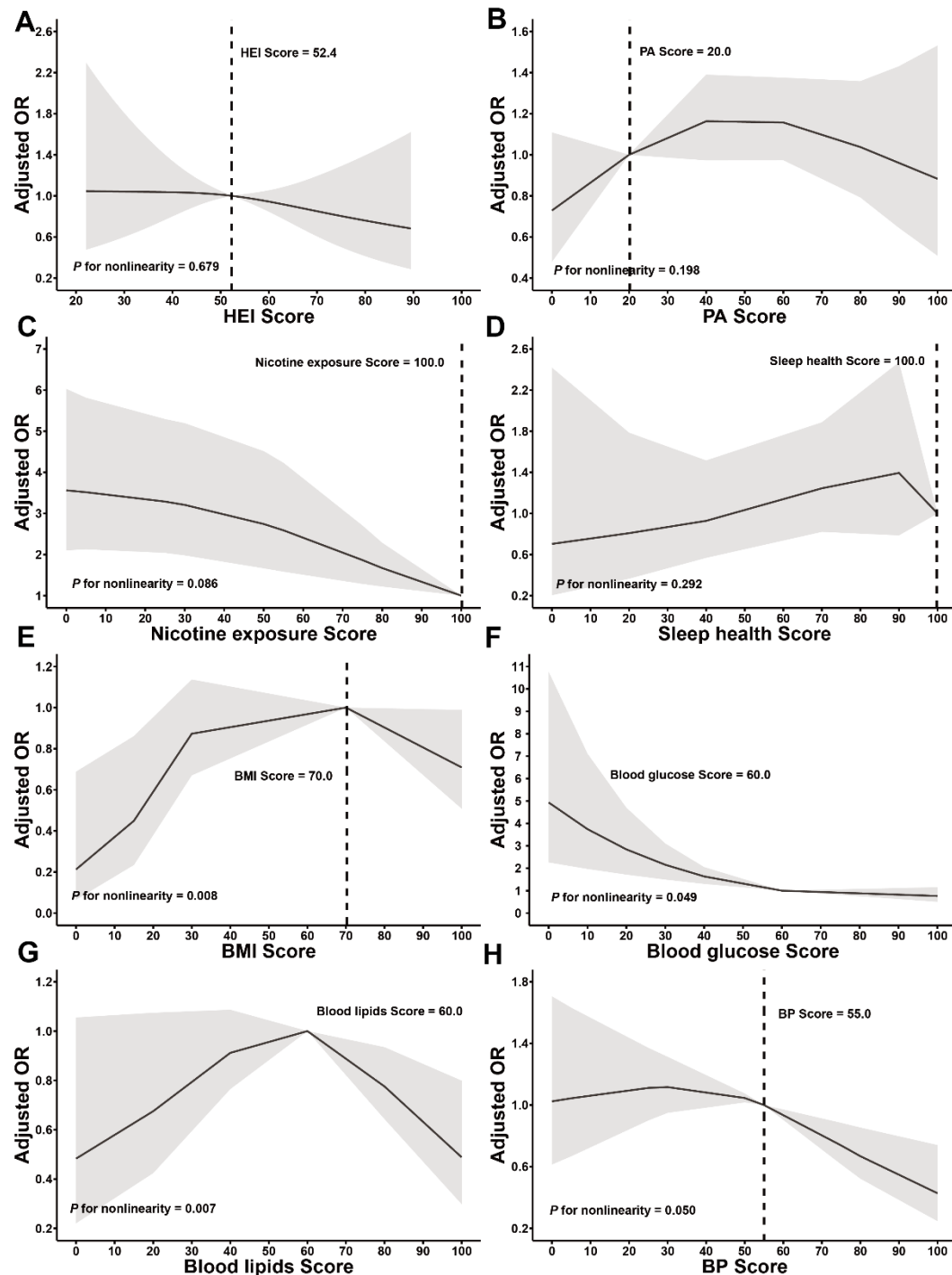
LE8, Life's Essential 8; AAC, abdominal aortic calcification;  $\beta$ , effect size; HEI, healthy eating index; PA, physical activity; BMI, body mass index; BP, blood pressure

**Figure S2. The non-linear associations between component of LE8 and AAC\*.**



\*OR (solid lines) and 95% confidence levels (shaded areas) were adjusted for age (as a continuous variable), sex, race/ethnicity, poverty income ratio (as a continuous variable), education levels, marital status, eGFR, serum creatinine, serum uric acid, serum phosphorus, and serum total calcium. Vertical dotted lines indicate the minimal threshold for the beneficial association with estimated OR = 1. LE8, Life's Essential 8; AAC, abdominal aortic calcification; OR, odds ratio; HEI, healthy eating index; PA, physical activity; BMI, body mass index; BP, blood pressure

**Figure S3. The non-linear associations between component of LE8 and severe AAC\*.**



\*OR (solid lines) and 95% confidence levels (shaded areas) were adjusted for age (as a continuous variable), sex, race/ethnicity, poverty income ratio (as a continuous variable), education levels, marital status, eGFR, serum creatinine, serum uric acid, serum phosphorus, and serum total calcium. Vertical dotted lines indicate the minimal threshold for the beneficial association with estimated OR = 1. LE8, Life's Essential 8; AAC, abdominal aortic calcification; OR, odds ratio; HEI, healthy eating index; PA, physical activity; BMI, body mass index; BP, blood pressure