SUPPLEMENTAL MATERIAL
Table S1. Distribution of Life’s Simple 7 Metrics

<table>
<thead>
<tr>
<th>LS7 Metrics</th>
<th>Score</th>
<th>Definition</th>
<th>% MESA Participants, N=6506</th>
</tr>
</thead>
<tbody>
<tr>
<td>Smoking</td>
<td>0</td>
<td>Current smoker</td>
<td>12.9%</td>
</tr>
<tr>
<td></td>
<td>1</td>
<td>Former smoker, quit ≤12 mo ago</td>
<td>1.2%</td>
</tr>
<tr>
<td></td>
<td>2</td>
<td>Never smoker or quit &gt;12 mo ago</td>
<td>85.9%</td>
</tr>
<tr>
<td>Body Mass Index</td>
<td>0</td>
<td>≥30 kg/m²</td>
<td>31.9%</td>
</tr>
<tr>
<td></td>
<td>1</td>
<td>25.0–29.99 kg/m²</td>
<td>39.3%</td>
</tr>
<tr>
<td></td>
<td>2</td>
<td>&lt;25.0 kg/m²</td>
<td>28.8%</td>
</tr>
<tr>
<td>Physical Activity*</td>
<td>0</td>
<td>No exercise</td>
<td>22.8%</td>
</tr>
<tr>
<td></td>
<td>1</td>
<td>1–149 min of moderate exercise or 1–74 min of vigorous exercise/week</td>
<td>17.3%</td>
</tr>
<tr>
<td></td>
<td>2</td>
<td>150+ min of moderate exercise or 75+ min of vigorous exercise/week</td>
<td>59.8%</td>
</tr>
<tr>
<td>Diet</td>
<td>0</td>
<td>0–1 components of healthy diet</td>
<td>45.2%</td>
</tr>
<tr>
<td></td>
<td>1</td>
<td>2–3 components of healthy diet</td>
<td>53.7%</td>
</tr>
<tr>
<td></td>
<td>2</td>
<td>4–5 components of healthy diet</td>
<td>1.1%</td>
</tr>
<tr>
<td>Total Cholesterol</td>
<td>0</td>
<td>≥240 mg/dL</td>
<td>13.4%</td>
</tr>
<tr>
<td></td>
<td>1</td>
<td>200–239 mg/dL or treated to &lt;200 mg/dL</td>
<td>39.1%</td>
</tr>
<tr>
<td></td>
<td>2</td>
<td>&lt;200 mg/dL, unmedicated</td>
<td>47.5%</td>
</tr>
<tr>
<td>Blood Pressure</td>
<td>0</td>
<td>SBP ≥140 mmHg or DBP ≥90 mmHg</td>
<td>37.5%</td>
</tr>
<tr>
<td></td>
<td>1</td>
<td>SBP 120–139 mmHg or DBP 80–89 mmHg or treated to &lt;120/80 mmHg</td>
<td>28.0%</td>
</tr>
<tr>
<td></td>
<td>2</td>
<td>&lt;120/80 mm Hg, unmedicated</td>
<td>34.6%</td>
</tr>
<tr>
<td>Blood Glucose</td>
<td>0</td>
<td>≥126 mg/dL fasting</td>
<td>10.8%</td>
</tr>
<tr>
<td></td>
<td>1</td>
<td>100–125 mg/dL fasting or treated to &lt;100 mg/dL</td>
<td>15.2%</td>
</tr>
<tr>
<td></td>
<td>2</td>
<td>&lt;100 mg/dL fasting, unmedicated</td>
<td>74.1%</td>
</tr>
</tbody>
</table>

Adapted from Lloyd Jones et al [1] and Unger et al [2]. DBP indicates diastolic blood pressure and SBP, systolic blood pressure. Poor=0 point, Intermediate=1 point, ideal =2 points. *When combining vigorous and moderate exercise, vigorous exercise was weighted double.
<table>
<thead>
<tr>
<th>Characteristics</th>
<th>Yes</th>
<th>No</th>
<th>P Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Age</td>
<td>69 (8.9)</td>
<td>62.0 (10.2)</td>
<td>&lt;.0001</td>
</tr>
<tr>
<td>Female</td>
<td>41%</td>
<td>53%</td>
<td>&lt;.0001</td>
</tr>
<tr>
<td>White</td>
<td>110 (42%)</td>
<td>2,429 (39%)</td>
<td>&lt;.0001</td>
</tr>
<tr>
<td>Chinese American</td>
<td>19 (7%)</td>
<td>776 (12%)</td>
<td>0.870</td>
</tr>
<tr>
<td>African American</td>
<td>75 (29%)</td>
<td>1,641 (26%)</td>
<td></td>
</tr>
<tr>
<td>Hispanic</td>
<td>58 (22%)</td>
<td>1,398 (22%)</td>
<td></td>
</tr>
<tr>
<td>Education &gt; Bachelor’s Degree</td>
<td>31.3%</td>
<td>36.0%</td>
<td>0.975</td>
</tr>
<tr>
<td>Income &gt;$40,000</td>
<td>40.1%</td>
<td>50.0%</td>
<td>0.002</td>
</tr>
<tr>
<td>No health insurance</td>
<td>6.5%</td>
<td>9%</td>
<td>0.157</td>
</tr>
<tr>
<td>Current Smoking</td>
<td>14%</td>
<td>13%</td>
<td>0.765</td>
</tr>
<tr>
<td>Body-mass Index (kilograms/meter²)</td>
<td>29.7 (6)</td>
<td>28.2 (5)</td>
<td>&lt;.0001</td>
</tr>
<tr>
<td>Physical Activity (min/week)</td>
<td>349 (539)</td>
<td>404 (608)</td>
<td>0.148</td>
</tr>
<tr>
<td>Healthy diet score (0-5)</td>
<td>1.6 (0.9)</td>
<td>1.6 (0.9)</td>
<td>0.635</td>
</tr>
<tr>
<td>Total Cholesterol (mg/dL)</td>
<td>189 (35)</td>
<td>194 (36)</td>
<td>0.009</td>
</tr>
<tr>
<td>Systolic blood pressure (mmHg)</td>
<td>138 (23)</td>
<td>126 (21)</td>
<td>&lt;.0001</td>
</tr>
<tr>
<td>Diastolic blood pressure (mmHg)</td>
<td>74 (12)</td>
<td>72 (10)</td>
<td>&lt;.0001</td>
</tr>
<tr>
<td>Fasting Glucose (mg/dL)</td>
<td>109 (46)</td>
<td>97 (30)</td>
<td>&lt;.0001</td>
</tr>
</tbody>
</table>

Baseline categories of Ideal Life’s Simple 7 Metrics

<table>
<thead>
<tr>
<th></th>
<th>Yes</th>
<th>No</th>
<th>P Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>0-2</td>
<td>38.6%</td>
<td>25.8%</td>
<td></td>
</tr>
<tr>
<td>3-5</td>
<td>60.7%</td>
<td>69.9%</td>
<td>&lt;.0001</td>
</tr>
<tr>
<td>6-7</td>
<td>0.8%</td>
<td>4.3%</td>
<td></td>
</tr>
</tbody>
</table>

Baseline Total Life’s Simple 7 Score

<table>
<thead>
<tr>
<th></th>
<th>Yes</th>
<th>No</th>
<th>P Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Inadequate (0-8)</td>
<td>65.7%</td>
<td>46.6%</td>
<td></td>
</tr>
<tr>
<td>Average (9-10)</td>
<td>26.3%</td>
<td>32.9%</td>
<td>&lt;.0001</td>
</tr>
<tr>
<td>Optimal (11-14)</td>
<td>8.0%</td>
<td>20.6%</td>
<td></td>
</tr>
</tbody>
</table>
### Table S3. Hazard Ratios for Heart Failure after exclusion of participants with non-fatal CHD*  

#### Hazard Ratios for Heart Failure by Number of Ideal Life's Simple 7 Metrics

<table>
<thead>
<tr>
<th></th>
<th>Total</th>
<th>White</th>
<th>Chinese American</th>
<th>African American</th>
<th>Hispanic</th>
</tr>
</thead>
<tbody>
<tr>
<td>0-1</td>
<td>1 (Ref)</td>
<td>1 (Ref)</td>
<td>1 (Ref)</td>
<td>1 (Ref)</td>
<td>1 (Ref)</td>
</tr>
<tr>
<td>2</td>
<td>0.83 (0.49-1.38)</td>
<td>8.34 (1.12-62.11)</td>
<td>0.51 (0.04-6.08)</td>
<td>0.58 (0.28-1.22)</td>
<td>0.31 (0.11-0.93)</td>
</tr>
<tr>
<td>3</td>
<td>0.72 (0.44-1.18)</td>
<td>4.35 (0.59-32.29)</td>
<td>0.48 (0.05-4.97)</td>
<td>0.54 (0.27-1.09)</td>
<td>0.64 (0.26-1.56)</td>
</tr>
<tr>
<td>4</td>
<td>0.49 (0.28-0.84)</td>
<td>3.28 (0.44-24.66)</td>
<td>0.66 (0.07-6.06)</td>
<td>0.27 (0.10-0.68)</td>
<td>0.29 (0.09-0.92)</td>
</tr>
<tr>
<td>5</td>
<td>0.33 (0.16-0.68)</td>
<td>1.98 (0.24-16.72)</td>
<td>0.18 (0.01-2.97)</td>
<td>0.34 (0.11-1.06)</td>
<td>0.13 (0.02-1.12)</td>
</tr>
<tr>
<td>6-7</td>
<td>0.21 (0.05-0.90)</td>
<td>2.06 (0.18-22.93)</td>
<td>-</td>
<td>-</td>
<td>-</td>
</tr>
<tr>
<td><strong>P for trend</strong></td>
<td>0.0001</td>
<td>0.0014</td>
<td>0.5499</td>
<td>0.0177</td>
<td>0.0510</td>
</tr>
</tbody>
</table>

#### Hazard Ratios for Heart Failure by Life's Simple 7 Score

<table>
<thead>
<tr>
<th></th>
<th>Inadequate (0-8)</th>
<th>Average (9-10)</th>
<th>Optimal (11-14)</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>1 (Ref)</td>
<td>1 (Ref)</td>
<td>1 (Ref)</td>
</tr>
<tr>
<td></td>
<td>0.52 (0.36-0.73)</td>
<td>0.48 (0.29-0.80)</td>
<td>0.82 (0.25-2.73)</td>
</tr>
<tr>
<td></td>
<td>(0.37-0.64)</td>
<td>(0.18-0.76)</td>
<td>(0.18-0.6)</td>
</tr>
<tr>
<td></td>
<td>(0.29-1.43)</td>
<td>(0.29-1.43)</td>
<td>(0.29-1.43)</td>
</tr>
<tr>
<td></td>
<td>(0.19-0.55)</td>
<td>(0.15-0.61)</td>
<td>(0.16-1.23)</td>
</tr>
<tr>
<td></td>
<td>(0.16-1.23)</td>
<td>(0.02-1.34)</td>
<td>(0.02-1.34)</td>
</tr>
<tr>
<td><strong>P for trend</strong></td>
<td>&lt;0.0001</td>
<td>0.0005</td>
<td>0.1512</td>
</tr>
</tbody>
</table>

* Seventy-two participants with non-fatal CHD were excluded. - signifies extremely small Hazard ratios. Hazard ratios were adjusted for age, sex, race/ethnicity, education, income and health insurance. Hazard ratios stratified by race/ethnicity were not adjusted for race/ethnicity. P for trend was calculated using Log rank test.
### Table S4. Incidence Rates of Heart Failure per 1000 Person-years by sex and age

#### Incidence Rates of Heart Failure by Number of Ideal Life’s Simple 7 Metrics

<table>
<thead>
<tr>
<th>Total</th>
<th>&lt;65</th>
<th>≥65</th>
<th>Women</th>
<th>Men</th>
</tr>
</thead>
<tbody>
<tr>
<td>0-1</td>
<td>5.9 (4.0-8.5)</td>
<td>4.8 (2.8-8.2)</td>
<td>7.4 (4.4-12.2)</td>
<td>4.6 (2.6-8.1)</td>
</tr>
<tr>
<td>2</td>
<td>5.6 (4.4-7.0)</td>
<td>3.2 (2.0-4.8)</td>
<td>8.6 (6.5-11.3)</td>
<td>4.8 (3.4-6.7)</td>
</tr>
<tr>
<td>3</td>
<td>4.1 (3.3-5.0)</td>
<td>1.7 (1.1-2.6)</td>
<td>7.3 (5.8-9.3)</td>
<td>3.3 (2.4-4.5)</td>
</tr>
<tr>
<td>4</td>
<td>2.9 (2.2-3.8)</td>
<td>1.0 (0.5-1.8)</td>
<td>5.9 (4.3-7.9)</td>
<td>1.8 (1.1-2.9)</td>
</tr>
<tr>
<td>5</td>
<td>1.6 (1.0-2.6)</td>
<td>1.0 (0.5-2.1)</td>
<td>2.9 (1.6-5.5)</td>
<td>0.9 (0.4-2.2)</td>
</tr>
<tr>
<td>6-7</td>
<td>0.6 (0.2-2.5)</td>
<td>0</td>
<td>2.4</td>
<td>0.5</td>
</tr>
</tbody>
</table>

#### Incidence Rates of Heart Failure by Life’s Simple 7 Score

| Inadequate (0-8) | 5.3 (4.5-6.1) | 2.8 (2.1-3.7) | 8.6 (7.2-10.3) | 4.2 (3.3-5.3) | 6.4 (5.3-7.8) |
| Average (9-10)   | 2.9 (2.3-3.7) | 0.9 (0.5-1.6) | 5.9 (4.5-7.6) | 2.0 (1.4-3.0) | 3.9 (2.3-5.2) |
| Optimal (11-14)  | 1.4 (0.9-2.1) | 0.8 (0.4-1.6) | 2.4 (1.4-4.2) | 1.0 (0.5-2.0) | 1.9 (1.1-3.3) |
### Table S5. Hazard Ratios for Heart Failure by age (<65 & ≥65) and sex

#### Hazard Ratios for Heart Failure by Number of Ideal Life’s Simple 7 Metrics

<table>
<thead>
<tr>
<th></th>
<th>Total</th>
<th>&lt;65</th>
<th>≥65</th>
<th>Women</th>
<th>Men</th>
</tr>
</thead>
<tbody>
<tr>
<td>0-1</td>
<td>1 (Ref)</td>
<td>1 (Ref)</td>
<td>1 (Ref)</td>
<td>1 (Ref)</td>
<td>1 (Ref)</td>
</tr>
<tr>
<td>2</td>
<td>0.93</td>
<td>0.69</td>
<td>1.18</td>
<td>1.03</td>
<td>0.84</td>
</tr>
<tr>
<td></td>
<td>(0.60-1.44)</td>
<td>(0.35-1.37)</td>
<td>(0.66-2.10)</td>
<td>(0.53-2.00)</td>
<td>(0.47-1.50)</td>
</tr>
<tr>
<td>3</td>
<td>0.68</td>
<td>0.38</td>
<td>1.00</td>
<td>0.73</td>
<td>0.64</td>
</tr>
<tr>
<td></td>
<td>(0.45-1.05)</td>
<td>(0.19-0.77)</td>
<td>(0.57-1.75)</td>
<td>(0.38-1.40)</td>
<td>(0.36-1.12)</td>
</tr>
<tr>
<td>4</td>
<td>0.52</td>
<td>0.24</td>
<td>0.81</td>
<td>0.42</td>
<td>0.58</td>
</tr>
<tr>
<td></td>
<td>(0.33-0.83)</td>
<td>(0.10-0.53)</td>
<td>(0.45-1.47)</td>
<td>(0.20-0.88)</td>
<td>(0.32-1.04)</td>
</tr>
<tr>
<td>5</td>
<td>0.34</td>
<td>0.25</td>
<td>0.41</td>
<td>0.26</td>
<td>0.37</td>
</tr>
<tr>
<td></td>
<td>(0.18-0.63)</td>
<td>(0.10-0.65)</td>
<td>(0.18-0.92)</td>
<td>(0.09-0.76)</td>
<td>(0.17-0.79)</td>
</tr>
<tr>
<td>6-7</td>
<td>0.15</td>
<td>0.33</td>
<td>0.33</td>
<td>0.18</td>
<td>0.13</td>
</tr>
<tr>
<td></td>
<td>(0.04-0.65)</td>
<td>(0.08-1.48)</td>
<td>(0.02-1.39)</td>
<td>(0.13-0.57)</td>
<td>(0.02-0.99)</td>
</tr>
<tr>
<td>P for trend</td>
<td>&lt;0.0001</td>
<td>&lt;0.0001</td>
<td>0.0136</td>
<td>&lt;0.0001</td>
<td>0.0033</td>
</tr>
</tbody>
</table>

#### Hazard Ratios for Heart Failure by Life’s Simple 7 Score

<table>
<thead>
<tr>
<th></th>
<th>Total</th>
<th>&lt;65</th>
<th>≥65</th>
<th>Women</th>
<th>Men</th>
</tr>
</thead>
<tbody>
<tr>
<td>Inadequate (0-8)</td>
<td>1 (Ref)</td>
<td>1 (Ref)</td>
<td>1 (Ref)</td>
<td>1 (Ref)</td>
<td>1 (Ref)</td>
</tr>
<tr>
<td>Average (9-10)</td>
<td>0.57</td>
<td>0.36</td>
<td>0.68</td>
<td>0.47</td>
<td>0.64</td>
</tr>
<tr>
<td></td>
<td>(0.43-0.76)</td>
<td>(0.19-0.67)</td>
<td>(0.49-0.95)</td>
<td>(0.30-0.75)</td>
<td>(0.45-0.93)</td>
</tr>
<tr>
<td>Optimal (11-14)</td>
<td>0.31</td>
<td>0.34</td>
<td>0.28</td>
<td>0.27</td>
<td>0.33</td>
</tr>
<tr>
<td></td>
<td>(0.19-0.49)</td>
<td>(0.16-0.73)</td>
<td>(0.15-0.50)</td>
<td>(0.13-0.57)</td>
<td>(0.18-0.59)</td>
</tr>
<tr>
<td>P for trend</td>
<td>&lt;0.0001</td>
<td>0.0001</td>
<td>&lt;0.0001</td>
<td>&lt;0.0001</td>
<td>&lt;0.0001</td>
</tr>
</tbody>
</table>

*signifies extremely small Hazard ratios. Hazard ratios were adjusted for age, sex, race/ethnicity, education, income and health insurance. Hazard ratios stratified by race/ethnicity was not adjusted for race/ethnicity. P for trend was calculated using Log rank test.
<table>
<thead>
<tr>
<th>LS7 score</th>
<th>Preserved ejection fraction HF</th>
<th>Reduced ejection fraction HF</th>
</tr>
</thead>
<tbody>
<tr>
<td>Inadequate (0-8)</td>
<td>1 (Ref)</td>
<td>1 (Ref)</td>
</tr>
<tr>
<td>Average (9-10)</td>
<td>0.37 (0.12-1.13)</td>
<td>0.47 (0.14-1.60)</td>
</tr>
<tr>
<td>Optimal (11-14)</td>
<td>0.56 (0.28-1.12)</td>
<td>0.82 (0.44-1.52)</td>
</tr>
</tbody>
</table>

Table S6. Hazard Ratios by Heart Failure Subtype
The Life’s Simple 7 score ranged from 0-14 and was classified into inadequate (0-8), average (9-10) and optimal (11-14) based on points assigned to each category of the LS7 metrics.
Supplemental References:
