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This supplementary material has been provided by the authors to give readers additional information about their work.
eAppendix. Contributors to the Systolic Blood Pressure Intervention Trial (SPRINT)

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eFigure. Diagram of Multistate Model for Mobility Limitation

No mobility limitation → Mobility limitation

→ Death

Boxes denote states for multi-state model, arrows depict possible transitions.
eMethods. Multiple Imputation for Missing Data

Multiple imputation (100 imputed datasets) was implemented using proc mi and proc mianalyze in SAS v9.4 (SAS, Cary, NC). Because our data involved both monotone and non-monotone missing data patterns, we used a two-step procedure for imputation. We first partially imputed missing gait speeds by treatment group using Markov Chain Monte Carlo, assuming multivariate normality for the gait speed measurements, and using Jeffrey’s priors for the prior distribution of the mean and variance-covariance matrix. For this step, we used the impute=monotone option in proc mi so as to only impute enough data to produce monotone missing data patterns. We then used a series of univariate linear regression models to impute the remaining missing gait speed values, including treatment group, age, age by treatment group, sex, sex by treatment group, race/ethnicity (White, Black, Hispanic, or Other), number of antihypertensive medications at randomization (0, 1, 2, 3, or 4+), Montreal Cognitive Assessment (MoCA) Score at randomization,1 smoking status (Current, Former, or Never smoker), Body Mass Index (<25 kg/m², 25 to <30 kg/m², 30 kg/m² or greater), eGFR (<60 ml/min/1.73m² versus 60 ml/min/1.73m² or greater), systolic blood pressure at randomization, diastolic blood pressure at randomization, whether the gait assessment followed a non-fatal primary cardiovascular event (Yes versus No), and gait speed at the previous study visit (for post-baseline measurements) as predictors. Non-fatal cardiovascular events included myocardial infarction, acute coronary syndrome not resulting in myocardial infarction, stroke, or acute decompensated heart failure. Similar to previous work with the SPRINT cohort,2 we categorized MoCA scores as <10th percentile, 10th percentile to <25th percentile, or ≥ 25th percentile using normative data by age, sex, and education from the Irish Longitudinal Study on Ageing.3 We also evaluated sensitivity to the missing at random assumption by performing the same multiple imputation procedure using only data from the standard-treatment group (thus the univariate imputation models did not
include treatment group as a predictor, along with the interaction terms for age and sex).

This analysis assumes that participants in the intensive-treatment group that withdrew consent, were lost to follow-up, or were otherwise missing gait speed measurements were likely intolerant to intensive blood pressure control, and thus might be expected to have higher blood pressure and be more similar to participants in the standard-treatment group. Results were not changed when we used this approach.

References


**eTable 1. Rate of Missing Data for Gait Speed by Treatment Group and Study Visit**

<table>
<thead>
<tr>
<th>Group</th>
<th>Baseline</th>
<th>12M</th>
<th>24M</th>
<th>36M</th>
<th>48M</th>
</tr>
</thead>
<tbody>
<tr>
<td>Intensive-treatment</td>
<td>48 / 1,317</td>
<td>137 / 1,297</td>
<td>172 / 1,273</td>
<td>161 / 983</td>
<td>72 / 324</td>
</tr>
<tr>
<td></td>
<td>3.64%</td>
<td>10.56%</td>
<td>13.51%</td>
<td>16.38%</td>
<td>22.22%</td>
</tr>
<tr>
<td>Standard-treatment</td>
<td>47 / 1,319</td>
<td>145 / 1,295</td>
<td>180 / 1,266</td>
<td>176 / 966</td>
<td>58 / 323</td>
</tr>
<tr>
<td></td>
<td>3.56%</td>
<td>11.20%</td>
<td>14.22%</td>
<td>18.22%</td>
<td>17.96%</td>
</tr>
</tbody>
</table>

Denominator includes all study visits where the upper limit for the visit window (±45 days of target visit date) was on or before 12/01/2015, removing any visits following a participant’s death.
**eTable 2. Rate of Missing Data for Gait Speed by Mobility Limitation at Baseline and Study Visit**

<table>
<thead>
<tr>
<th>Group</th>
<th>Baseline</th>
<th>12 Mo</th>
<th>24 Mo</th>
<th>36 Mo</th>
<th>48 Mo</th>
</tr>
</thead>
<tbody>
<tr>
<td>No Mobility Limitation</td>
<td>70 / 2,165</td>
<td>212 / 2,140</td>
<td>265 / 2,099</td>
<td>238 / 1,607</td>
<td>98 / 523</td>
</tr>
<tr>
<td></td>
<td>3.23%</td>
<td>9.91%</td>
<td>12.63%</td>
<td>14.81%</td>
<td>18.74%</td>
</tr>
<tr>
<td>Mobility Limitation</td>
<td>18 / 464</td>
<td>64 / 445</td>
<td>80 / 433</td>
<td>93 / 336</td>
<td>29 / 121</td>
</tr>
<tr>
<td></td>
<td>3.88%</td>
<td>14.38%</td>
<td>18.48%</td>
<td>27.68%</td>
<td>23.97%</td>
</tr>
</tbody>
</table>

Counts exclude study participants where mobility status at randomization could not be defined (N=7). Denominator includes all study visits where the upper limit for the visit window (±45 days of target visit date) was on or before 12/01/2015, removing any visits following a participant's death.