SUPPLEMENTARY DATA

Appendix 1 – Methods (Gait and balance testing)

The order of footwear condition during gait testing was counterbalanced to minimise potential sequential effects of practice or fatigue during testing, i.e. footwear conditions differed in sequence for successive participants. Short rests were allowed as required between walks and change in footwear condition. All walking trials commenced two metres before and stopped two metres after the mat to allow for acceleration and deceleration. Each participant performed one practice walk and three test walks in each footwear condition. The following gait variables were recorded for each walk: speed (cm/s), step length (distance from one footstep to the next footstep, cm), cadence (steps per minute), base of support (perpendicular distance from the heel centre of one footprint to the line of progression formed by 2 consecutive footprints of the opposite foot, cm) [1], double support time (time both feet are in contact with the ground during a gait cycle, s) [1, 2], stance percentage (proportion of the gait cycle spent in stance or weight-bearing phase, %) [2], and step length differential (asymmetry in step length between limbs, cm). The Functional Reach Test was recorded while participants stood with their feet 10 cm apart as suggested by Hill et al [3]. The non-affected arm was used, and when neither arm was affected, the dominant arm was used. Each participant had one practice trial prior to the measure being recorded in each footwear condition.

Appendix 2 – Sample power estimation

With few published data on footwear in individuals recovering from stroke, we derived our study power estimates on a study by Arnadottir and Mercer [4] examining footwear effects on gait speed (10 metre walk test) and balance (FRT) in 35 healthy older women. Using
ANOVA (Analysis of Variance), they demonstrated highly significant within-person effects of footwear for gait speed ($F = 47.29, p < 0.0001$) and balance ($F = 29.57, p < 0.0001$) [4].

Using tables from Cohen [5], for study power of 80%, with alpha set at 0.05, effects suggested sample sizes of 15 (for gait) or 36 (for balance). Given the apparent clinical effect of stroke, we anticipated larger effect sizes and estimated our sample size of 30 participants would be sufficient to examine our hypotheses with 80% power and alpha 0.05.

### Supplementary Table 1. Group characteristics for gait and balance measures by footwear condition

<table>
<thead>
<tr>
<th>Variable</th>
<th>Shoe mean (SD)</th>
<th>Slipper mean (SD)</th>
<th>Barefoot mean (SD)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Speed (cm/s)</td>
<td>109 (24.1)</td>
<td>105 (24.6)</td>
<td>103 (22.7)</td>
</tr>
<tr>
<td>Step length (cm)</td>
<td>58.7 (10.7)</td>
<td>56.4 (10.4)</td>
<td>53.8 (9.4)</td>
</tr>
<tr>
<td>Cadence (steps/min)</td>
<td>111 (9.9)</td>
<td>111 (10.5)</td>
<td>114 (10.6)</td>
</tr>
<tr>
<td>Base of support (cm)</td>
<td>11.2 (3.8)</td>
<td>11.2 (3.7)</td>
<td>11.4 (3.3)</td>
</tr>
<tr>
<td>Double support time (s)</td>
<td>0.26 (0.06)</td>
<td>0.25 (0.06)</td>
<td>0.23 (0.06)</td>
</tr>
<tr>
<td>Step length differential (cm)</td>
<td>3.52 (3.18)</td>
<td>3.17 (2.81)</td>
<td>3.25 (3.05)</td>
</tr>
<tr>
<td>Stance percentage</td>
<td>62.0 (1.9)</td>
<td>61.1 (2.7)</td>
<td>61.0 (1.9)</td>
</tr>
<tr>
<td>Functional Reach Test (cm)</td>
<td>26.2 (6.9)</td>
<td>25.2 (7.7)</td>
<td>26.2 (7.2)</td>
</tr>
</tbody>
</table>

### REFERENCES


