The Six-Spot Step Test is a reliable measure of balance during walking in persons with Parkinson disease

John Brincks, VIA University College, Department of Physiotherapy and Research Centre of Rehabilitation and Health Promotion, Aarhus, Denmark, jobr@via.dk

![Diagram of Six-Spot Step Test]

### Characteristics for participants and baseline scores, n=44

<table>
<thead>
<tr>
<th>Characteristic</th>
<th>Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Sex, males (n(%))</td>
<td>28 (64%)</td>
</tr>
<tr>
<td>Age, years (mean /SD))</td>
<td>67.8 (6.8)</td>
</tr>
<tr>
<td>Deep Brain Stimulator, n(%)</td>
<td>4 (9.1 %)</td>
</tr>
<tr>
<td>Time since diagnose (years (median (min-max)))</td>
<td>5 (1-18)</td>
</tr>
<tr>
<td>Hoehn &amp; Yahr score 1</td>
<td>2 (4.5%)</td>
</tr>
<tr>
<td>Hoehn &amp; Yahr score 2</td>
<td>17 (38.5%)</td>
</tr>
<tr>
<td>Hoehn &amp; Yahr score 2.5</td>
<td>14 (32.0%)</td>
</tr>
<tr>
<td>Hoehn &amp; Yahr score 3</td>
<td>10 (23.0%)</td>
</tr>
<tr>
<td>Hoehn &amp; Yahr score 4</td>
<td>1 (2.0%)</td>
</tr>
<tr>
<td>SSST one on day 1, s mean (SD)</td>
<td>8.1 (1.8)</td>
</tr>
<tr>
<td>SSST two on day 1, s mean (SD)</td>
<td>7.6 (1.7)</td>
</tr>
<tr>
<td>SSST three on day 2, s mean (SD)</td>
<td>7.6 (1.6)</td>
</tr>
</tbody>
</table>
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Average (seconds)

Within-day agreement

Mean difference (seconds)

Upper 95 % CI

Mean difference

Upper LOA

Mean difference (seconds)

Lower 95 % CI

Lower LOA

Average (seconds)
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Conclusion

• An agreement for within-day and day-to-day of $\pm 1.8$ ($\pm 23.7\%$) and $\pm 2.2$ ($\pm 26.7\%$) seconds was found. The reliability was ICC=$0.81$ and ICC=$0.76$ for within-day and day-to-day, respectively. A small learning effect was observed ($P<0.05$), but this was called out after the first Six-Spot Step Test on day one.

• An interventional change of 2.2 seconds or 25% can be regarded as a true change.

• To minimize learning effects test trials of the Six-Spot Step Test is recommended before use.