C-Leg and NMPKs

Major Findings

With C-Leg compared to NMPKs:

- **Improved balance and decreased risk of falling**
  - Time required completing the timed up and go (TUG) test decreased by up to 38%
  - The BERG balance scale score improved by up to 6 points
  - The activities-specific balance confidence (ABC) scale score improved by 10%
  - Falls during a 2 months period were reduced from 2 to 0

- **Stair descent strategy improved from step-to-step to step-over-step**

Decreased risk of falling with C-Leg

The timed up and go (TUG) test is an indicator for risk of falling.

Population

- Subjects: 1 unilateral, transfemoral amputee
- Previous prosthesis: NMPK
- Amputation causes: vascular
- Mean age: 53 yrs
- Mean time since amputation: 1.7 yrs
- MFCL: K3
Case Report:

<table>
<thead>
<tr>
<th>Category</th>
<th>Outcomes</th>
<th>Results for C-Leg compared to NMPKs</th>
<th>Sig.*</th>
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</thead>
<tbody>
<tr>
<td>Stairs</td>
<td>Questionnaire</td>
<td>Stairs descent strategy changed from step-to-step strategy to step-over-step strategy.</td>
<td>n.a.</td>
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<td>Safety</td>
<td>Timed up and go (TUG)</td>
<td>The TUG time decreased immediately following the 1-hour training session by 8% (15.7s to 14.5s) and decreased after 1 year by 38% (15.7s to 9.7s).</td>
<td>n.a.</td>
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<td>BERG balance scale</td>
<td>The BERG score increased immediately following the 1-hour training session by 3 points (from 46 to 49) increased after 1 year by 6 points (46 to 52 with a maximum of 56 points)), representing clinically meaningful improvement.</td>
<td>n.a.</td>
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<td>The increased BERG balance scale score represents a reduced risk of falling.</td>
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<td>Activities-Specific Bal-</td>
<td>The ABC score increased immediately following the 1-hour training by approximately 10% (from 84 to 92%) and was maintained at 1-year follow-up.</td>
<td>n.a.</td>
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<td>ance Confidence (ABC)</td>
<td>Scale</td>
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<td>Questionnaire</td>
<td>Reported falls regarding a two months period were reduced from 2 to none.</td>
<td>n.a.</td>
</tr>
</tbody>
</table>

* no difference (0), positive trend (+), negative trend (−), significant (++/−−), not applicable (n.a.)

Author’s Conclusion

“For this man with transfemoral amputation because of vascular disease, balance, balance confidence, falls, and participation in leisure activities all improved during a year of MPK. Future research to identify and reduce risk of falls for people with vascular transfemoral amputation is needed before clinical conclusions can be drawn.” (Wong et al. 2012)