Timed Up and Go (TUG) Walking Test

Assessment Overview

Assessment Area

ICF Domain: Activity
Subcategory: Mobility

Summary

The Timed Up and Go (TUG) Walking Test measures gait performance and balance. The task of this test incorporates mobility, balance and lower extremity leg strength. The TUG test is originally developed to measure walking balance in older adults, and has yet to be widely used in the SCI population.

You Will Need

Length: 5-10 minutes

Equipment:
- A chair
- A 3m walkway
- A cone or line to demarcate 3 meter boundary
- A stopwatch

Scoring:
The time for the up and go test is measured in seconds.

Availability

http://www.scireproject.com/sites/default/files/worksheet_tug.docx
Video: https://www.scireproject.com/outcome-measures/video
Languages: English

Assessment Interpretability

Minimal Clinically Important Difference

14.5 seconds
(Duffell et al. 2015; n=83, 57 males, outpatient, incomplete SCI, >12 months post-injury, AIS C or D)

Statistical Error

Standard Error of Measurement: 3.9 seconds

Minimal Detectable Change: 10.8 seconds
(Lam et al. 2008, calculated from measurements made in van Hedel et al. 2005; n=22, 14 males, mixed injury types, no information on chronicity)

Typical Values

Mean (SD) Scores:
36 (27) seconds; range = 8-156 seconds
(van Hedel et al. 2005; n=75, 45 males, mixed injury types, no information on chronicity)

Threshold Values:
Not established in SCI; but for community-dwelling older adults, a time of > 13.5s indicates a risk of falling.
(Shumway-Cook et al 2000; N=30, mean age 78±6; sensitivity=80%, specificity=100%)
## Measurement Properties

<table>
<thead>
<tr>
<th>Validity – <strong>High</strong></th>
<th>Reliability – <strong>High</strong></th>
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</thead>
<tbody>
<tr>
<td><em>High</em> correlation with Berg Balance Scale (BBS):</td>
<td><em>High</em> Inter-rater Reliability:</td>
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<tr>
<td>Correlation = -0.815</td>
<td>ICC = 0.999</td>
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<td><em>High</em> correlation with SCI-Functional Ambulation Inventory (SCI-FAI):</td>
<td>(Srism et al. 2015; n=83, chronic SCI, mixed injury types, mean time since injury (multiple and non-multiple fallers) = 46.72-58.70 months)</td>
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<td>Correlation = -0.724 to -0.802</td>
<td><em>High</em> Intra-rater Reliability:</td>
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<td><em>High</em> correlation with Walking Index for SCI (WSCI-II):</td>
<td>Correlation = 0.979</td>
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<td>(Lemay &amp; Nadeau 2010; N=32, 25 male, AIS D mixed injury types, mean time since injury (SD) = 77.2 (44.3) days)</td>
<td>(van Hedel et al. 2005; n=22, 14 males, mixed injury types, no information on chronicity)</td>
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<td><em>High</em> correlation with 10 Meter Walk Test (10MWT):</td>
<td>Number of studies reporting reliability data: 4</td>
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<td>Correlation = 0.81-0.96</td>
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<td>(van Hedel, 2008; N=6-127 (depending on time-point), calculated at 2 weeks, 1 month, 3 months, 6 months, and 12 months post-injury, no info on injury types)</td>
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**Number of studies reporting validity data:** 6

### Responsiveness

<table>
<thead>
<tr>
<th>Floor/Ceiling Effect:</th>
<th>Effect Size:</th>
<th>Number of studies reporting responsiveness data:</th>
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<tbody>
<tr>
<td>Not established in SCI</td>
<td>Not established in SCI</td>
<td>0</td>
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