Timed Motor Test (TMT)

Assessment Overview

Assessment Area

ICF Domain:
Activity
Subcategories:
Mobility/Self-Care

You Will Need

Length:
Approx. 60-90 minutes, 6 tasks.
Equipment:
An adjustable mat
An 80 foot (24.3 m) corridor
A 45 foot (13.72 m) ramp with an 8 degree angle.
Scoring:
Time (seconds) to complete each task is recorded.
The 'final' score is the average score of the fastest 3 trials for each task. More time required to complete each task indicates a lower capacity to perform ADL.

Summary

The Timed Motor Test (TMT) assesses the capacity of children with SCI who use a manual wheelchair. It is clinician-administered and performance-based to measure the children's mobility and Activities of Daily Living (ADL). The TMT includes common ADL tasks for children with SCI.

Tasks include: 1) Donning a shirt, 2) Donning sweat pants, 3) Performance of even transfers, 4) Performance of uneven transfers (4 inch height difference), 5) Wheelchair propulsion on even surfaces, and 6) Wheelchair performance up a ramp

Each task is completed 5 times, except for wheelchair skills which are only done 3 times. Participants are instructed to complete each task quickly but safely. If participants are not able to complete all 5 trials or if they require more than 20 seconds to complete a task, then no time is reported - it is considered "incomplete".

The client/clinician burden in completing the test is considerable. The objective scale (time in seconds) is useful to detect change.

Availability

Worksheet: Can be found by contacting the author (Ross Chafetz, rchafetz@shrinenet.org)

Languages: English

Assessment Interpretability

Minimal Clinically Important Difference

Not established in SCI

Statistical Error

Not established in SCI

Typical Values

Not established in adult SCI.

Mean (with/without TLSO) time:
Donning shirt: 17.88/13.51s
Donning pants: 47.70/44.90s
Even transfers: 7.46/5.54s
Uneven transfers: 8.84/6.67s
Propelling down hall: 12.19/11.58s
Propelling up ramp: 11.11/10.62s
(Chafetz et al. 2004; n=11; 6 males; 5 females; mean (SD) age: 9.6 (3.5) years, children's hospital; thoracic SCI; no info on chronicity)

Measurement Properties

Validity

TMT is able to discriminate between groups with and without Thoracolumbosacral Orthoses (TLSO) in 5 out of 6 items:

Donning shirt: F value=10.98 (P<.05)
Donning pants: F value=8.89 (P<.05)
Even transfers: F value=18.74 (P<.01)
Uneven transfers: F value=16.13 (P<.01)
Propelling down hall: F value=16.61 (P<.001)
Propelling up a ramp: F value=4.15 (P=.08)

(Chafetz et al. 2004; n=11; 6 males; 5 females; mean (SD) age: 9.6 (3.5) years, children's hospital; thoracic SCI; no info on chronicity)

Number of studies reporting validity data: 1

Reliability – **Low** to **High**

Low to **High** **Test-retest Reliability:**

ICC = 0.30-0.92

Moderate to **High** **Inter-rater Reliability:**

ICC = 0.71-0.95

Moderate to **High** **Intra-rater Reliability:**

ICC = 0.73-0.95

(Chafetz et al. 2004; n=11; 6 males; 5 females; mean (SD) age: 9.6 (3.5) years, children's hospital; thoracic SCI; no info on chronicity)

Number of studies reporting reliability data: 1

Responsiveness

Floor/Ceiling Effect:
Not established in SCI

Effect Size:
Not established in SCI

Number of studies reporting responsiveness data: 0