Modified Functional Reach Test (mFRT)

Assessment Overview

Assessment Area

ICF Domain:
Activity
Subcategory:
Mobility

You Will Need

Length:
1 item – 5 minutes
Scoring:
FRT - Scores are determined by assessing the difference between the start and end position is the reach distance, usually measured in inches. Three trials are done and the average of the last two is noted usually in cm.
mFRT – The individual is seated on a bench and the maximum distance forward they can reach is measured.
The average of the three trials is reported in cm.

Summary

Balance is defined as 'the ability to maintain control over upright posture during forward reach without stabilization.'

The Functional Reach Test (FRT) was designed as a simple reach test to assess standing balance. The modified Functional Reach Test (mFRT) is designed to assess sitting balance in individuals with SCI.

Availability

Worksheet: Can be found here.

Assessment Interpretability

Minimal Clinically Important Difference

Not established in SCI

Statistical Error

Minimal Detectable Change:
Group 1 (C5-C6) MDC: 5.16
Group 2 (T1-T4) MDC: 4.62
Group 3 (T10-12) MDC: 4.11

Standard Error of Measurement:
Group 1 (C5-C6) SEM: 1.86
Group 2 (T1-T4) SEM: 1.67
Group 3 (T10-12) SEM: 1.48

(Lynch et al. 1998; n=30; 30 males, mean (SD) age: 30.8 (7.2) years; complete motor injury)

Typical Values

Mean Transfer Assessment Scores (±SD):
Group 1 (C5-C6) SD: 7.6
Group 2 (T1-4) SD: 4.3
Group 3 (T10-12) SD: 5.6

Measurement Properties

Validity – Low to High

Low to High correlations between forward reach, right reach, and left reach areas of center-of-pressure sway (in cm^2); and forward reach, right reach, and left reach:

r = 0.25 (p = 0.428) to 0.82 (p = 0.001)

(Gatica-Rojas et al. 2024; n=10, 9 males, 1 female; mean age: 29 years; 10 ASIA A; injury level: thoracic; mean time post injury: 56.6 months)

High correlations between forward mFRT and Balance Master (first and second evaluation):

r = 0.50 to 0.55

Moderate to High correlations between forward mFRT and FIM (first and second evaluation):

r = 0.45 to 0.51

Low to Moderate correlations between forward mFRT and Stroke Assessment Scale (SAS) (first and second evaluation):

r = 0.21 to 0.35

(Katz-Leurer et al. 2009; n=45, 5 males, 40 females; mean age: 63 years; stroke population)

Number of studies reporting validity data: 2

Reliability – High

High Intra-rater reliability:

ICC session 1: 0.85-0.94

(Lynch et al. 1998; n=30; 30 males, mean (SD) age: 30.8 (7.2) years; complete motor injury)

Number of studies reporting reliability data: 2

Responsiveness

Floor/Ceiling Effect:

Not established in SCI

Effect Size:

Not established in SCI

Number of studies reporting responsiveness data: 0