Spinal Cord Injury Functional Ambulation Inventory (SCI-FAI)

Assessment Overview

Assessment Area

ICF Domain:
Activity
Subcategory:
Mobility
Areas measured:
Gait parameters
Assistive device use
Walking mobility

You Will Need

Length:
5 minutes, 10 items
Scoring:
Scores within each component are summed. Component scores range from 0 to 20 in the gait parameter component, 0 to 14 in the assistive device component, and 0 to 5 in the walking mobility component. It is not meaningful to combine component scores into an overall total score.

Summary

The Spinal Cord Injury Functional Ambulation Inventory (SCI-FAI) is a clinician-administered, self-report and performance-based SCI-specific ambulation measure focusing on gait abnormalities.

The areas measured by SCI-FAI consist of gait parameters, assistive device use, and walking mobility. This scale only applies to people with SCI who can ambulate independently.

Availability

Worksheet: Can be found here.

Languages: English

Assessment Interpretability

Minimal Clinically Important Difference

Not established in SCI

Statistical Error

Standard Error of Measurement:
Gait Parameter Subscale = 0.7

Minimal Detectable Change:
Gait Parameter Subscale = 1.9

(Calculated by Lam et al. 2008, data from Field-Forte et al. 2001; n=22; 17 males, 5 females; incomplete SCI)

Typical Values

Mean (SD) Scores:
Gait parameter component = 18.5 (3.3); range: 7-20
Assistive devices component = 11.4 (2.7); range: 7-14
Walking mobility component = 3.7 (1.2); range: 2-5

(Lemay & Nadeau 2010; n=32, 25 males, 7 females; AIS D; level of injury: 17 cervical, 10 thoracic, and 5 lumbar; mean (SD) time since injury: 77.2 (44.3) days)

Measurement Properties

Validity – Low to High

Low to Moderate correlation with Berg Balance Scale (BBS):
SCI-FAI Gait: r = 0.31
SCI-FAI Assistive Device: r = -0.10
SCI-FAI Walking Mobility: r = 0.44

(Datta et al. 2009; n=97; 71 males, 26 females; Incomplete SCI; AIS-C/D; mean time since injury: 11.9 months)

High correlation with instruments measuring the same construct as the SCI-FAI: Gait Score & Walking Speed:
VS1: r = -0.742
VS2: r = -0.700
Gait Score & Subject self report on walking mobility:
VS1: r = 0.697

(Field-Fote et al. 2001; n=22; 17 males, 5 females; incomplete SCI)

Low to High correlation with other walking scales:
SCI-FAI Parameter:
Berg Balance Scale: r = 0.747
2 Minute Walk Test (2MWT): r = 0.805
Walking Index for SCI II (WISCI II): r = 0.761
10 Meter Walk Test (10MWT): r = 0.777
Timed Up and Go (TUG): r = -0.761

SCI-FAI Assistive devices:
BBS: r = 0.714
2MWT: r = 0.740
WISCI II: r = 0.980
10MWT: r = 0.788
TUG: r = -0.802

SCI-FAI mobility:
BBS: r = 0.740
2MWT: r = 0.740
WISCI II: r = 0.980
10MWT: r = 0.788
TUG: r = -0.802

(Lemay & Nadeau 2010; n=32, 25 males, 7 females; AIS D; level of injury: 17 cervical, 10 thoracic, and 5 lumbar; mean (SD) time since injury: 77.2 (44.3) days)

Number of studies reporting validity data: 3

Reliability – Moderate to High

Moderate to High Inter-rater Reliability:
ICC = 0.703-0.840

High Intra-rater Reliability:
ICC = 0.850-0.956

(Field-Fote et al. 2001; n=22; 17 males, 5 females; incomplete SCI)

Number of studies reporting reliability data: 1

Responsiveness

Floor/Ceiling Effect:
Subscale Ceiling:
Gait Parameter: 68.8% at ceiling
Assistive Devices: 34.4% at ceiling
Walking Mobility: 34.4% at ceiling

(Lemay & Nadeau 2010; n=32, 25 males, 7 females; AIS D; level of injury: 17 cervical, 10 thoracic, and 5 lumbar; mean (SD) time since injury: 77.2 (44.3) days)

Effect Size:
Not established in SCI

Number of studies reporting responsiveness data: 3