International Standards to Document Remaining Autonomic Function after Spinal Cord Injury (ISAFSCI)

Assessment Overview

Assessment Area

ICF Domain:

Body Functions

Subcategory:

Self-Care

You Will Need

Length:

11 items

Scoring:

The functional performance categories are scored on a 2-point scale from 0 (complete loss of control) to 2 (normal function)

Summary

The International Standards to document Autonomic Function following SCI (IASFSCI) is an assessment designed to determine which autonomic functions are intact, impaired or lost following SCI.

A revised version (ISAFSCI second edition) was developed in 2021 (Wecht et al. 2021). The assessment form consists of 2 main sections: General autonomic function and sacral autonomic function.

Availability

Worksheet: Can be found here.

Assessment Interpretability

Minimal Clinically Important Difference

Not established in SCI

Statistical Error

Not established in SCI

Typical Values

Ranges for General Autonomic Function items:

- Cardiovascular:
  - Heart rate:
    Normal: 61-99 bpm
    Bradycardia: < 60 bpm
    Tachycardia: > 100 bpm
  - Systolic blood pressure:
    Normal: 91-139 mmHg
    Supine Hypotension: SBP < 90 mmHg
    Orthostatic Hypotension: Fall > 20 mmHg within 10 min
    Neurogenic shock: within 30 days of injury; heart rate < 60 bpm; SBP < 90 mmHg
    Autonomic dysreflexia:

increase in SBP > 20 mmHg above baseline
Supine Hypertension: > 140 mmHg
- Diastolic blood pressure:
Normal: 61-89 mmHg
Supine Hypotension: < 60 mmHg
Orthostatic Hypotension: Fall > 10 mmHg within 10 min
Supine Hypertension: > 90 mmHg

- Thermoregulation:
  - Normal: 36.4-37.6 °C (97.5-99.7 °F)
  - Subnormal: 35.1-36.3 °C (95.1-97.4 °F)
  - Elevated: 37.7-37.9°C (99.8-100.3 °F)
  - Hypothermia: ≤35°C (≤95°F)
  - Hyperthermia: ≥38.0°C (≥100.4°F)
- Sudomotor:
  - Normal sweating: Sweating on all skin surfaces
  - Hypohidrosis: Diminished sweating above NLI / Diminished sweating below NLI
  - Hyperhidrosis: Excessive sweating above NLI / Excessive sweating below NLI
  - Anhidrosis: No sweating above or below NLI

(Wecht et al. 2021; ISAFSCI v.2)

Measurement Properties

Validity – Moderate to High

Moderate correlation between composite bladder score and Qualiveen Compositive:
p < 0.0001

Moderate to High correlation between composite bladder score and ISNCSCI composite pinprick score:
rho = 0.68, p = 0.003

High when correlated with ASP test for orthostatic hypotension:
p = 0.01
(Kurban et al. 2023; n=49, mean age: 45 years; injury level: cervical – thoracolumbar; mean time since injury 6 years; version 1)

Number of studies reporting validity data: 1

Reliability – Moderate to High

Moderate inter-rater reliability:
κ=0.41-0.6 with general autonomic component

High inter-rater reliability:
κ=0.62-0.88 within the lower urinary tract, bowel, and sexual function component
(Davidson et al. 2017, n=65; 85.4% males; mean (SD) age: 45 (12) years; details of injury not reported, version 1)

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