

Neurogenic Bowel Dysfunction Score (NBD)

Assessment Overview

Assessment Area

ICF Domain:

Body Functions

Subcategory:

Digestive, Metabolic and
Endocrine

You Will Need

Length:

10 items

Scoring:

Total score: out of 47 (each item
has a weighted response base)

Severity of bowel dysfunction:

Score 0-6: Very minor

Score 7-9: Minor

Score 10-13: Moderate

Score 14+: Severe

Summary

The Neurogenic Bowel Dysfunction Score (NBD) is a self-report questionnaire designed to help healthcare professionals evaluate the effectiveness of their patient's current bowel management routine by assessing the impact it has on the patient's quality of life.

Questions ask about background parameters (n=8), faecal incontinence (n=10), constipation (n=10), obstructed defecation (n=8), and impact on quality of life (QOL).

Availability

Worksheet: Can be found [here](#).

Languages: English, Dutch, Turkish, and Spanish.

Assessment Interpretability

Minimal Clinically Important Difference

Not established in SCI

Statistical Error

Not established in SCI

Typical Values

Not established in SCI

Measurement Properties

Validity – Low to High

Low to High Correlations between total NBD score & SF-36 subscales:

Bodily pain subscale: $r = -0.382$ (low)

General health subscale: $r = -0.560$ (moderate)

Vitality subscale: $r = -0.626$ (moderate)

Social role functioning subscale: $r = -0.741$ (high)

Emotional role functioning subscale: $r = -0.604$ (high)

Mental health subscale: $r = -0.687$ (high)

High Correlation between change in total NBD score and change in Global Rating of Change scale at end of 2 months:

$r = 0.821$ ($P=0.007$)

(Erdem et al. 2017; $n=42$, mean age (SD): 39 (16) years; level: 12 cervical, 24 thoracic, 6 lumbar; acute and chronic, Turkish version)

High Correlation between total NBD score & FIQL

$r = -0.648$

Moderate Correlation between total NBD score & FISI

$r = -0.367$

High Correlation between total NBD score & EQ-5D-3L index score:

$r = -0.589$

Moderate Correlation between total NBD score and EQ-5D-3L VAS Score

$r = -0.428$

(Van Doorn et al. 2022, $n=55$; 6 males, 19 females; mean (SD) age: 54 (15.8) years; 14 cervical, 20 thoracic, 9 lumbar, and 3 unknown; 15 ASIA A, 7 ASIA B, 10 ASIA C, and 9 ASIA D; mean (SD) time since injury: 13.6 (8.4) years; Dutch version)

Number of studies reporting validity data: 3

Reliability – Low and High

Low Internal Consistency:

$\alpha = 0.547$

High Test-retest answers of each question:

$r = 1.000$, $P<0.001$

High Consistency of frequency distribution:

$r = 1.000$, $P<0.001$

(Erdem et al. 2017; $n=42$, mean age (SD): 39 (16) years; level: 12 cervical, 24 thoracic, 6 lumbar; acute and chronic, Turkish version)

Low Internal consistency:

Test: $\alpha = 0.56$

Retest: $\alpha = 0.30$

(Van Doorn et al. 2022, $n=55$; 6 males, 19 females; mean (SD) age: 54 (15.8) years; 14 cervical, 20 thoracic, 9 lumbar, and 3 unknown; 15 ASIA A, 7 ASIA B, 10 ASIA C, and 9 ASIA D; mean (SD) time since injury: 13.6 (8.4) years; Dutch version)

High Construct Reliability

$\alpha = 0.897$

High Test-retest Reliability

ICC = 0.886 (0.764 – 0.946)

(González-Viejo et al. 2021; $n=59$; 30 with SCI, 29 with cerebral vascular accident; 24 males, 6 females; mean (SD) age: 43.6 (11.7), chronic; Spanish version)

Number of studies reporting reliability data: 4

Responsiveness

Floor/Ceiling Effect:

Not established in SCI

Effect Size:

Not established in SCI

Number of studies reporting responsiveness data: 0