

ISNCSCI

International Standards for Neurological Classification of Spinal Cord Injury

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The ISNCSCI is a tool used to provide standardized examination information about the sensory and motor impairments for SCI patients.

The ISNCSCI and the ASIA Grade should be used to provide guidance for establishing the prognosis, and is an important tool for clinical research trials.

Neurologic Level of Injury

Neurological level of injury (NLI) refers to the most caudal level of the spinal cord with fully intact motor (5/5) and sensory (2/2) function bilaterally¹.

Motor Level

- Bilateral testing
- 10 key muscles
- 6 point scale (0-5)
- Lowest myotome: Grade of at least 3
 - Provided all myotomes superiorly are normal (5/5)

Sensory Level

- Bilateral testing
- Dermatome distributions
- Sensitivity to
 - Light touch
 - Sharp/dull
- Scoring
 - 3 point scale (0-2)
- Sensory level
 - The most caudal level with normal light touch and pinprick sensation¹

Sacral Sparing

Sacral sparing is determined by sensory function at S4–5 dermatome, ability to feel deep anal pressure, or voluntary anal sphincter contraction.

i Note

On the ISNCSCI, writing “no” (negative test) for deep anal pressure (DAP) and voluntary anal sphincter contraction is called a “NOON sign.”

Completeness

Complete

- Anatomically rare¹
 - Incomplete anatomical transections can present as neurologically complete¹
- ISNCSCI Definition
 - No sensory or motor function at lowest segments (S4-S5)¹
 - No sacral sparing

Incomplete

- Definition
 - Having motor and/or sensory function below NLI
 - Includes sensory and/or motor function at S4 and S5
 - Presence of sacral sparing.

Zones of Partial Pressure

- Classification
 - Motor and/or sensory function below NLI
 - No sacral sparing
- Definition
 - Areas of intact motor and/or sensory function below NLI

ASIA Grading

The AIS scale was created to distinguish between types of SCI injury since categorizing patients solely based on completeness or NLI introduces too much variability.

Prognosis

Worksheet File

[ISNCSCI Calculator](#)

1. O'Sullivan SB, Schmitz TJ, Fulk GD, eds. *Physical Rehabilitation*. 7th ed. F.A. Davis Company; 2019.