**RIGHT**

**MOTOR KEY MUSCLES**

- UER (Upper Extremity Right)
  - Elbow flexors
  - Wrist extensors
  - Finger flexors
  - Finger abductors (little finger)

- LER (Lower Extremity Right)
  - Hip flexors
  - Knee extensors
  - Ankle dorsiflexors
  - Long toe extensors
  - Ankle plantar flexors

**SENSORY KEY SENSORY POINTS**

- Light Touch (LTR)
- Pin Prick (PPR)

**SENSORY SCORES**

- SENSORY TOTALS
  - MAX (50)
  - (56)
  - (56)

**SENSORY KEY SENSORY POINTS**

- Light Touch (LTL)
- Pin Prick (PPL)

**SENSORY SCORES**

- SENSORY TOTALS
  - MAX (56)
  - (56)
  - (56)

**MOTOR KEY MUSCLES**

- C5 Elbow flexors
- C6 Wrist extensors
- C7 Elbow extensors
- C8 Finger flexors
- T1 Finger abductors (little finger)

**LEFT**

**MOTOR KEY MUSCLES**

- UEL (Upper Extremity Left)

**SENSORY SCORES**

- SENSORY TOTALS
  - MAX (56)
  - (56)
  - (56)

**SENSORY KEY SENSORY POINTS**

- Light Touch (LTL)
- Pin Prick (PPL)

**SENSORY SCORES**

- SENSORY TOTALS
  - MAX (56)
  - (56)
  - (56)

**MOTOR phi3**

- C2 Hip flexors
- C3 Knee extensors
- C4 Ankle dorsiflexors
- C5 Long toe extensors
- C6 Ankle plantar flexors

**NEUROLOGICAL LEVEL OF INJURY (NLI)**

**CLASSIFICATION OF SPINAL CORD INJURY (ISCSCI)**

**NEUROLOGICAL LEVELS**

**COMMENTS**

- Non-key Muscle? Reason for NT? Pain?
- Non-SCI condition present?

**ASIA IMPAIRMENT SCALE (AIS)**

- Most caudal levels with any innervation

**56 (112)**

**4. COMPLETE OR INCOMPLETE?**

- Injuries with absent motor OR sensory function in S4-5 only

- Complete = Any sensory or motor function in S4-5
- Incomplete = Any sensory or motor function in S4-5

**6. ZONE OF PARTIAL PRESERVATION**

- Most caudal levels with any innervation

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**When to Test Non-Key Muscles:**

In a patient with an apparent AIS B classification, non-key muscle functions more than 3 levels below the motor level on each side should be tested to most accurately classify the injury (differentiate between AIS B and C).

### Movement

<table>
<thead>
<tr>
<th>Movement</th>
<th>Root level</th>
</tr>
</thead>
<tbody>
<tr>
<td>Shoulder</td>
<td>C5</td>
</tr>
<tr>
<td>Elbow</td>
<td></td>
</tr>
<tr>
<td>Wrist</td>
<td>C6</td>
</tr>
<tr>
<td>Finger at proximal joint, extension</td>
<td>C7</td>
</tr>
<tr>
<td>Thumb</td>
<td></td>
</tr>
<tr>
<td>Finger at MCP joint</td>
<td>C8</td>
</tr>
<tr>
<td>Thumb</td>
<td></td>
</tr>
<tr>
<td>Hip</td>
<td>L2</td>
</tr>
<tr>
<td>Hip</td>
<td>L3</td>
</tr>
<tr>
<td>Hallux and Toe: DIP and PIP flexion and abduction</td>
<td>L5</td>
</tr>
<tr>
<td>Hallux</td>
<td>S1</td>
</tr>
</tbody>
</table>

### Steps in Classification

1. Determine sensory levels for right and left sides. The sensory level is the most caudal, intact dermatome for both pin prick and light touch sensation.

2. Determine motor levels for right and left sides. Defined by the lowest key muscle function that has a grade of at least 3 (on supine testing), providing the key muscle functions represented by segments above that level are judged to be intact (graded as a 5).

3. Determine the neurological level of injury (NLI). This refers to the most caudal segment of the cord with intact sensation and antigravity (3 or more) muscle function strength, provided that there is normal (intact) sensory and motor function rostrally respectively. The NLI is the most cephalad of the sensory and motor levels determined in steps 1 and 2.

4. Determine whether the injury is Complete or Incomplete. (i.e. absence or presence of sacral sparing)

   - If voluntary anal contraction = No AND all S4-5 sensory scores = 0 AND deep anal pressure = No, then injury is Complete. Otherwise, injury is Incomplete.

5. Determine ASIA Impairment Scale (AIS) Grade.

   - Is injury Complete? If YES, AIS=A
     - NO
     - Is injury Motor Complete? If YES, AIS=B
       - NO (No=voluntary anal contraction OR motor function more than three levels below the motor level on a given side, if the patient has sensory incomplete classification)
   - Are at least half (half or more) of the key muscles below the neurological level of injury graded 3 or better?
     - NO
     - YES
       - AIS=C
       - AIS=D

   - If sensation and motor function is normal in all segments, AIS=E

   Note: AIS E is used in follow-up testing when an individual with a documented SCI has recovered normal function. If at initial testing no deficits are found, the individual is neurologically intact and the ASIA Impairment Scale does not apply.

6. Determine the zone of partial preservation (ZPP).

   The ZPP is used only in injuries with absent motor (no VAC) OR sensory function (no DAP, no LT and no PP sensation) in the lowest sacral segments S4-5, and refers to those dermatomes and myotomes caudal to the sensory and motor levels that remain partially innervated. With sacral sparing of sensory function, the sensory ZPP is not applicable and therefore (NA) is recorded in the block of the worksheet. Accordingly, if VAC is present, the motor ZPP is not applicable and is noted as (NA).