### Right Motor Key Muscles

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

### Right Sensory Key Sensory Points

- **Light Touch (LTR)**: C2, C3, C4
- **Pin Prick (PPR)**: C5, T2, T3, T4, T5, T6, T7, T8, T9, T10, T11, T12, L1, L2, L3, L4, L5, S1, S2, S3, S4–5

### Right Sensory Subscores

- **UER** (Upper Extremity Right) = UEMS Total
- **LER** (Lower Extremity Right) = LEMS Total

### Right Neurological Levels

1. **Sensory**
2. **Motor**
3. **Neurological Level of Injury (NLI)**

### Left Motor Key Muscles

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

### Left Sensory Key Sensory Points

- **Light Touch (LTR)**: C2, C3, C4
- **Pin Prick (PPR)**: C5, T2, T3, T4, T5, T6, T7, T8, T9, T10, T11, T12, L1, L2, L3, L4, L5, S1, S2, S3, S4–5

### Left Sensory Subscores

- **UER** (Upper Extremity Left) = UEMS Total
- **UEL** (Upper Extremity Left) = UEMS Total

### Left Neurological Levels

1. **Sensory**
2. **Motor**
3. **Neurological Level of Injury (NLI)**

### Miscellaneous

- **Ankle plantar flexors**
- **Hip flexors**
- **Knee extensors**
- **Ankle dorsiflexors**
- **Long toe extensors**
- **Ankle plantar flexors**

---

This form may be copied freely but should not be altered without permission from the American Spinal Injury Association.
**Muscle Function Grading**

- **0** = total paralysis
- **1** = palpable or visible contraction
- **2** = active, movement, full range of motion (ROM) with gravity eliminated
- **3** = active, movement, full ROM against gravity
- **4** = active, movement, full ROM against gravity and moderate resistance in a muscle specific position
- **5** = (normal) active movement, full ROM against gravity and full resistance in a functional muscle position expected from an otherwise unimpaired person
- **5* = (normal) active movement, full ROM against gravity and sufficient resistance to be considered normal if identified inhibiting factors (i.e. pain, disuse) were not present
- **NT** = not testable (i.e. due to immobilization, severe pain such that the patient cannot be graded, amputation of limb, or contracture of > 50% of the normal ROM)

**Sensory Grading**

- **0** = Absent
- **1** = Altered, either decreased/impaired sensation or hypersensitivity
- **2** = Normal
- **NT =** Not testable

**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**

- **Shoulder:** Flexion, extension, abduction, adduction, internal and external rotation
- **Elbow:** Pronation
- **Finger:** Flexion at proximal joint, extension.
- **Thumb:** Opposition, adduction and abduction perpendicular to palm
- **Finger:** Abduction of the index finger
- **Hip:** Adduction
- **Hip:** Extension, abduction, internal rotation
- **Knee:** Flexion
- **Ankle:** Inversion and eversion
- **Toe:** MP and IP extension
- **Hallux and Toe:** DIP and PIP flexion and abduction
- **Hallux:** Adduction

**Root level**

- **C5**
- **C6**
- **C7**
- **C8**
- **T1**
- **L2**
- **L3**
- **L4**

**ASIA Impairment Scale (AIS)**

- **A** = Complete. No sensory or motor function is preserved in the sacral segments S4-5.
- **B** = Sensory Incomplete. Sensory but not motor function is preserved below the neurological level and includes the sacral segments S4-5 (light touch or pin prick at S4-5 or deep anal pressure) AND no motor function is preserved more than three levels below the motor level on either side of the body.
- **C** = Motor Incomplete. Motor function is preserved at the most caudal sacral segments for voluntary anal contraction (VAC) OR the patient meets the criteria for sensory incomplete status (sensory function preserved at the most caudal sacral segments (S4-5) by LT, PP or DAP), and has some sparing of motor function more than three levels below the ipsilateral motor level on either side of the body.
- **D** = Motor Incomplete. Motor incomplete status as defined above, with at least half (half or more) of key muscle functions below the single NLI have a muscle grade ≥ 3.
- **E** = Normal. If sensation and motor function as tested with the ISNCSCI are graded as normal in all segments, and the patient had prior deficits, then the AIS grade is E. Someone without an initial SCI does not receive an AIS grade.

**Steps in Classification**

1. Determine sensory levels for right and left sides.
   - 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).
   - Note: in regions where there is no myotome to test, the motor level is presumed to be the same as the sensory level, if testable motor function above that level is also normal.

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?**
     - **NO**
     - **Is injury Motor Complete?**
       - **NO**
         - **Are at least half (half or more) of the key muscles below the neurological level of injury graded 3 or better?**
           - **NO**
             - **AIS=C**
           - **YES**
             - **AIS=D**
   - **YES**
     - **If Yes, AIS=A and can record ZPP (lowest dermatome or myotome on each side with some preservation)**

**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; the ASIA Impairment Scale does not apply.