## Sacral Fractures—Overview

Hierarchical system progressing from least to most unstable:

- **Type A**  Lower Sacrococcygeal Injuries
  - No impact on posterior pelvic or spine-pelvic instability
  - **A1** Coccygeal or compression vs ligamentous avulsion fractures
  - **A2** Non-displaced transverse fractures below the S-I joint
    - No implications on stability
    - Low likelihood of cauda equina injury
  - **A3** Displaced transverse fractures below the S-I joint
    - Higher likelihood of neuro injury than A1 or A2 (displacement)
    - May possibly benefit from reduction and stabilization

- **Type B**  Posterior Pelvic Injuries
  - Primary impact is on posterior pelvic stability
  - **B1** Central Fracture—Involves spinal canal
    - Longitudinal injuries only—rare type of Denis Zone III injuries
    - Low likelihood of neurological injury
  - **B2** Transalar Fracture—Does not involve foramina or spinal canal
    - Unilateral Denis Zone I injury
  - **B3** Transforaminal Fracture—Involves foramina but not spinal canal
    - Denis Zone II injury

- **Type C**  Spino-Pelvic Injuries
  - Spino-pelvic instability
  - **C0** Nondisplaced sacral U-type variant
    - Commonly seen low-energy insufficiency fracture
  - **C1** Sacral U-type variant without posterior pelvic instability
    - Any unilateral B-subtype where ipsilateral superior S1 facet is discontinuous with medial part of sacrum
    - May impact spino-pelvic stability (Isler)
  - **C2** Bilateral complete Type B injuries without transverse fracture
    - More unstable and higher likelihood of neuro injury than C1
  - **C3** Displaced U-type sacral fracture
    - Worst combination of instability and likelihood of neuro injury
    - Displaced transverse sacral fracture = canal compromise

## Neurology

### Type

- **N0** Neurological intact
- **N1** Transient neurological deficit
- **N2** Radicular symptoms
- **N3** Incomplete spinal cord injury of any degree of injury to the spinal cord
- **N4** Complete spinal cord injury
- **NX** Cannot be assessed

### Primary Injury

- **B3** Central fracture
  - High energy injury associated with soft tissue injury (MI) and anterior pelvic ring (M3)

## Classifications

For the neuro NMX is the neurostatus and NNX is neurostatus and neuroinjury.

### Classification Nomenclature

- **B3; N1, M3**

Further information: [www.aospine.org/classification](http://www.aospine.org/classification)