AO Spine Upper Cervical Injury Classification System

### I. Occipital Condyle and Craniocervical junction

- **Type A** Isolated bony injury (condyle)

- **Type B** Non-displaced ligamentous injury (craniocervical)

- **Type C** Any injury with displacement on spinal imaging

### II. C1 Ring and C1-2 Joint

- **Type A** Isolated bony only (arch)

- **Type B** Ligamentous injury (transverse atlantal ligament)

- **Type C** Atlantoaxial instability / Translation in any plane

### III. C2 and C2-3 Joint

- **Type A** Bony injury only without ligamentous, tension band, discal injury

- **Type B** Tension band / Ligamentous injury with or without bony injury

- **Type C** Any injury that leads to vertebral body translation in any directional plane

Contact: research@aospine.org  
Further information: www.aospine.org/classification
AO Spine Upper Cervical Injury Classification System

Upper Cervical Spine Fractures Overview

I. Occipital condyle and occipital cervical joint complex injuries
II. C1 ring and C1-2 joint complex injuries
III. C2 and C2-3 joint complex injuries

Type A
Bony injury only
- Without significant ligamentous, tension band, discal injury
- Stable injuries

Type B
Tension band/ligamentous injury
- With or without bony injury
- No complete separation of anatomic integrity
- Stable or unstable depending on injury specifics

Type C
Translation injury
- Any injury with significant translation in any directional plane and separation of anatomic integrity
- Unstable injuries

Neurology

<table>
<thead>
<tr>
<th>Type</th>
<th>Neurological</th>
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<tbody>
<tr>
<td>N0</td>
<td>Neurology intact</td>
</tr>
<tr>
<td>N1</td>
<td>Transient neurologic deficit</td>
</tr>
<tr>
<td>N2</td>
<td>Radicular symptoms</td>
</tr>
<tr>
<td>N3</td>
<td>Incomplete spinal cord injury or any degree of cauda equina injury</td>
</tr>
<tr>
<td>N4</td>
<td>Complete spinal cord injury</td>
</tr>
<tr>
<td>NX</td>
<td>Cannot be examined</td>
</tr>
<tr>
<td>+</td>
<td>Continued spinal cord compression</td>
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</tbody>
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Modifiers

<table>
<thead>
<tr>
<th>Type</th>
<th>Description</th>
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</thead>
<tbody>
<tr>
<td>M1</td>
<td>Injuries at High Risk of Non-Union with Nonoperative Tx</td>
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<tr>
<td>M2</td>
<td>Injury with significant potential for instability</td>
</tr>
<tr>
<td>M3</td>
<td>Patient Specific Factors Affecting Tx</td>
</tr>
<tr>
<td>M4</td>
<td>Vascular Injury or Abnormality Affecting Tx</td>
</tr>
</tbody>
</table>

Classification Nomenclature

Atlanto-occipital dissociation with a complete spinal cord injury.

Primary injury ➔ **OC Type C, N4** ➔ Neurologic status and modifiers