

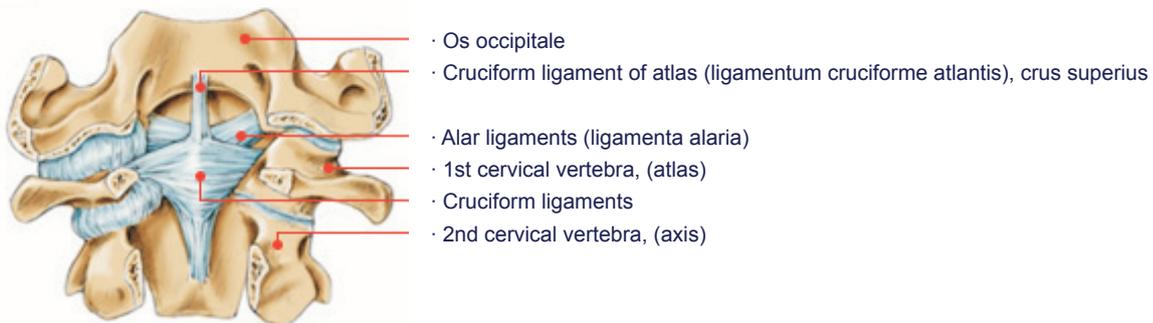
**What is an atlantoaxial dislocation (atlantoaxial instability)?**

This injury involves a dislocation between the first two cervical vertebrae, which may result from the rupturing of the stabilizing ligaments, a fracture in one of the two vertebrae, or a combination injury.

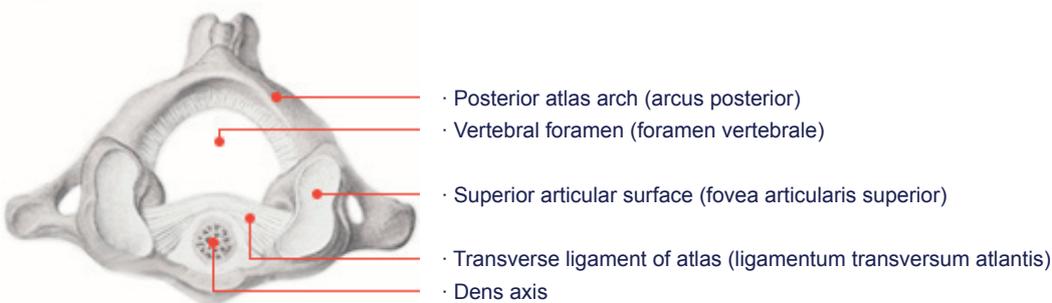
The 1st and 2nd cervical vertebrae are connected by joints and ligaments, and form the atlantoaxial joint C1/C2. The complex ligamentous apparatus, in particular the alar ligaments, the transverse ligament of the atlas, and cruciform ligaments, ensure the stable mobility of the two vertebrae along their articular surfaces.



• Ligamentous apparatus of the atlantoaxial joint



• Atlas, ligamentum transversum



**What forms of dislocation are there?**

- Ventral translatory atlantoaxial dislocation, frequently observed in cases of avulsion of the ligamentum transversum of the atlas
- Rotational atlantooccipital dislocation, in which the applied traumatizing force results in a rotation of the atlas and axis counter to one another. Rotational atlantooccipital instabilities may also occur without trauma, such as with rheumatoid arthritis, here due to the inflammatory destruction of the ligamentous apparatus.

**How is it diagnosed?**

- X-ray images of the cervical spine in 2 planes with transoral image of the dens axis to assess the atlantodental joint gap.
- Computer tomography or magnetic resonance tomography to assess bony or ligamentous injuries.
- In all cases of old injuries, a Dvorak CT or MRT scan must be done in maximum right and left flexion to allow for accurate assessment.

**How is this injury treated?**

Rotational atlantoaxial dislocations are normally treated as follows:

- Frictional C1/C2 luxations are repositioned, then treated conservatively in a halo brace for 16 weeks.
- Old luxations are first treated with conservative therapy involving repositioning under anesthesia and immobilization in a halo brace.

If repositioning is not possible, pretreatment with a halo-extension for 14 days should be done first, followed by dorsal repositioning and instrumentation C1/C2, in most cases with a definitive fusion.