

# Carrier Injury (C1)

An injury to the first cervical vertebra (C1) is caused by force acting in an axial direction on the top of the head. The atlas can be injured in the range of the vertebral arch both anteriorly and posteriorly. A specific type of fracture is the so-called **Jefferson fracture**, where the arch is broken twice in the anterior and posterior parts. In this case, the fragments are displaced to the sides and the spinal canal widens.

Neurological lesions in this area, given the width of the spinal canal, are not common.

## Treatment

Determining the stability of the fracture is essential for treatment. Stable C1 fractures are not indicated for surgery, we treat them with immobilization in a halo-vest. In case of instability, we indicate operative osteosynthesis.

## Diagnostics

X-ray examination of the craniocervical junction is basic, in anteroposterior, lateral and transoral projections. A CT scan is required to classify the type of fracture.

## Links

### Related Articles

- Cone (C2) injury
- Atlanto-occipital dislocation
- Vertebrae

### External links

- Halo-vest (<https://kidshealth.org/en/parents/halo-brace.html>)

### References

- SAMES, M, et al. *Neurosurgery*. 1st edition. Prague: Jessenius Maxdorf, 2005. 127 pp. ISBN 80-7345-072-0. ([https://www-wikiskripta-eu.translate.googleusercontent.com/Speci%3%A1ln%C3%AD:Zdroje\\_knih/80-7345-072-0?\\_x\\_tr\\_sl=cs&\\_x\\_tr\\_tl=en&\\_x\\_tr\\_hl=en&\\_x\\_tr\\_pto=sc](https://www-wikiskripta-eu.translate.googleusercontent.com/Speci%3%A1ln%C3%AD:Zdroje_knih/80-7345-072-0?_x_tr_sl=cs&_x_tr_tl=en&_x_tr_hl=en&_x_tr_pto=sc))
- KOUDELA, Karel, et al. *Orthopedic traumatology*. 1st edition. Karolinum, 2002. 147 pp. ISBN 80-246-0392-6 ([https://www-wikiskripta-eu.translate.googleusercontent.com/Speci%3%A1ln%C3%AD:Zdroje\\_knih/80-246-0392-6?\\_x\\_tr\\_sl=cs&\\_x\\_tr\\_tl=en&\\_x\\_tr\\_hl=en&\\_x\\_tr\\_pto=sc](https://www-wikiskripta-eu.translate.googleusercontent.com/Speci%3%A1ln%C3%AD:Zdroje_knih/80-246-0392-6?_x_tr_sl=cs&_x_tr_tl=en&_x_tr_hl=en&_x_tr_pto=sc)).