

# Odontoid fracture

- Very common.
- Seen in elderly
- Also frequently in children due to the relatively large head-to-spine ratio.
- Chronic nonunion or fibrous union in elderly
- Nonunion common in elderly without primary fusion
  - May stabilize by fibrous union with prolonged immobilization
- Fusion produces stability
- Type 2 - Most likely to progress to nonunion
  - Surgical fusion may be necessary to achieve stability

# Classification

## ■ Type I:

- Avulsion of the tip of the dens, it is attached to C1.
- Rare fracture.
- **Stable**, since the fracture line is above the transverse ligament.

## ■ Type II:

- Through the base of the dens.  
Most common fracture.
- **Always unstable** and poor healing.

## ■ Type III:

- Fracture through the body of the axis and sometimes facets.
- **Can be unstable**, but has a better prognosis than type II due to better healing of the fracture which runs through the metaphyseal bone of the body of C2.

# Dens Fracture

- Type 2 - is the most common and considered unstable
- Type 3 - heals the best, more cancellous bone
- Type I and III considered stable



Type I



Type II



Type III

