

# A Classification of Fractures

EQ: Why do bones break in different  
ways?

# Fractures

- A fracture means that a bone has been cracked or broken.
- It may be a simple crack or may break into two or more pieces
- Two main types of breaks...



# Closed or Open?

- Closed

- called “simple” fractures.
- There is no break in the skin
- break is completely inside the body.

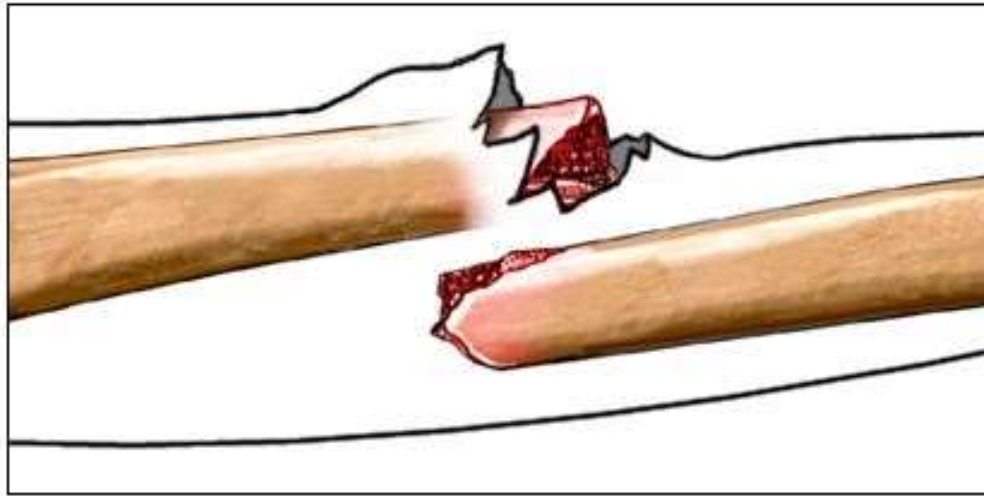
- Open

- called a “compound” fracture
- broken bones project through the skin.

# Simple Fracture



# Open Fracture

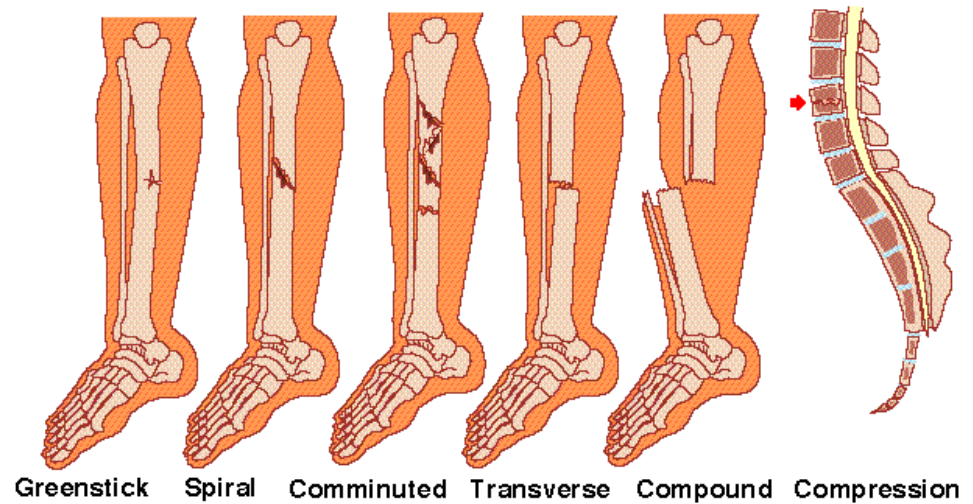


Warning: Next slide pretty gross...



# Main Bone Fractures

1. Greenstick
2. Comminuted
3. Transverse or complete
4. Spiral
5. Compression



TYPICAL BONE FRACTURES

*A. Bonvall*

# Greenstick Fracture

- Only one side of the shaft is broken and the other side is bent.
- Common to young children, whose long bones have not completely ossified yet.





# Comminuted Fracture

- Shatters the affected bone.



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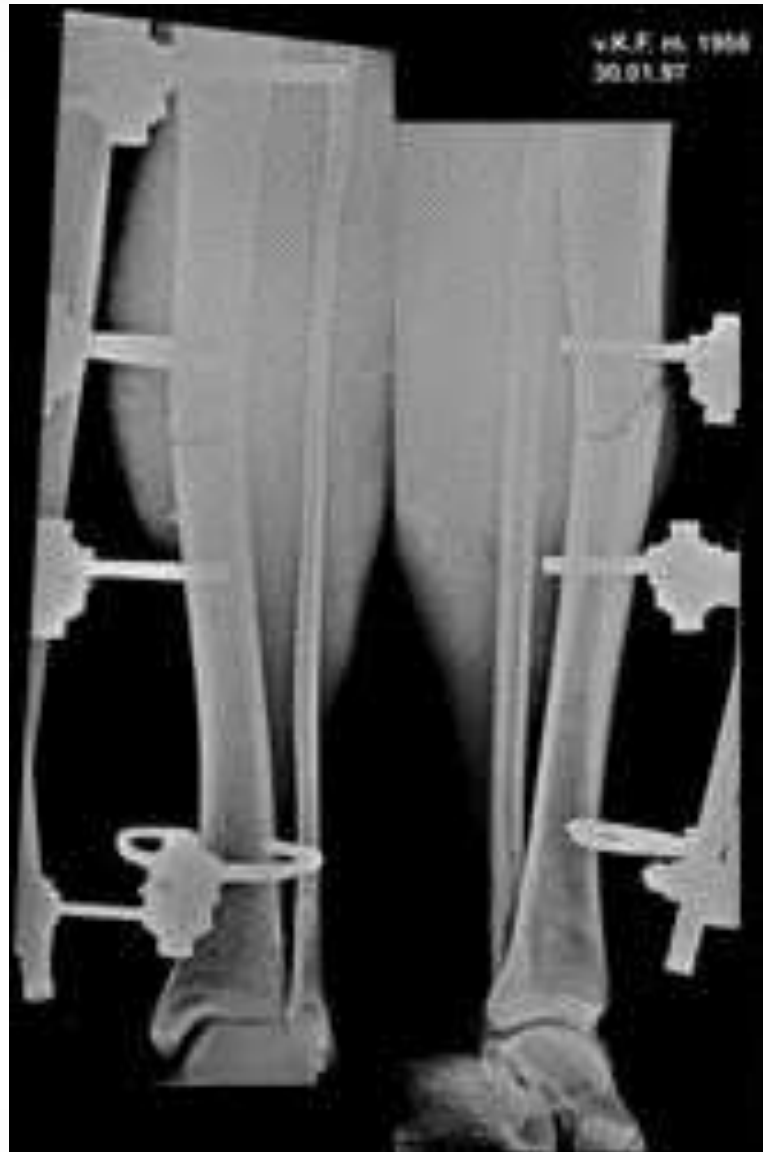
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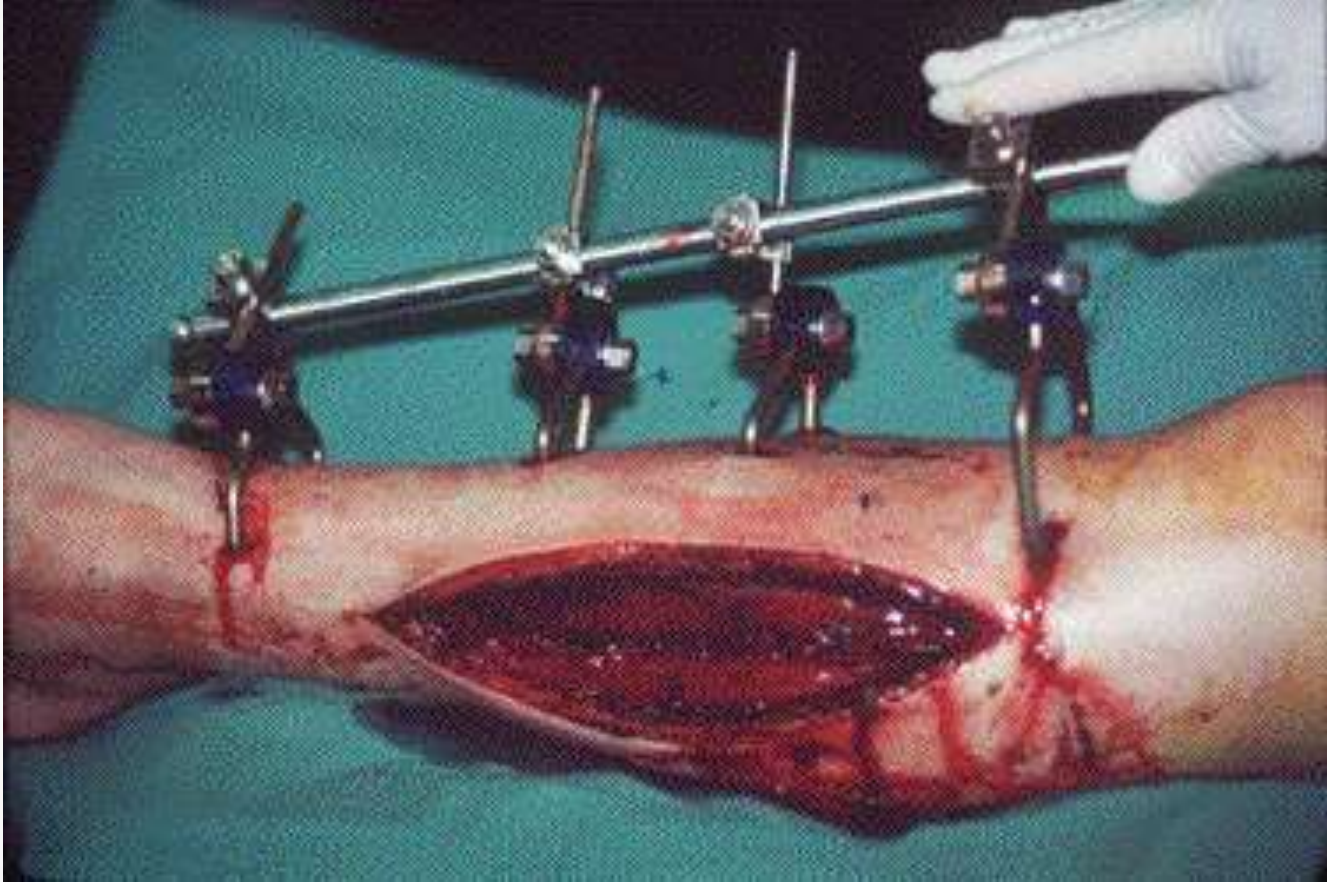
# Transverse Fracture or Complete Fracture

- A break across the long axis of the bone.
- The bone breaks into 2 pieces





Warning: Next  
slide!

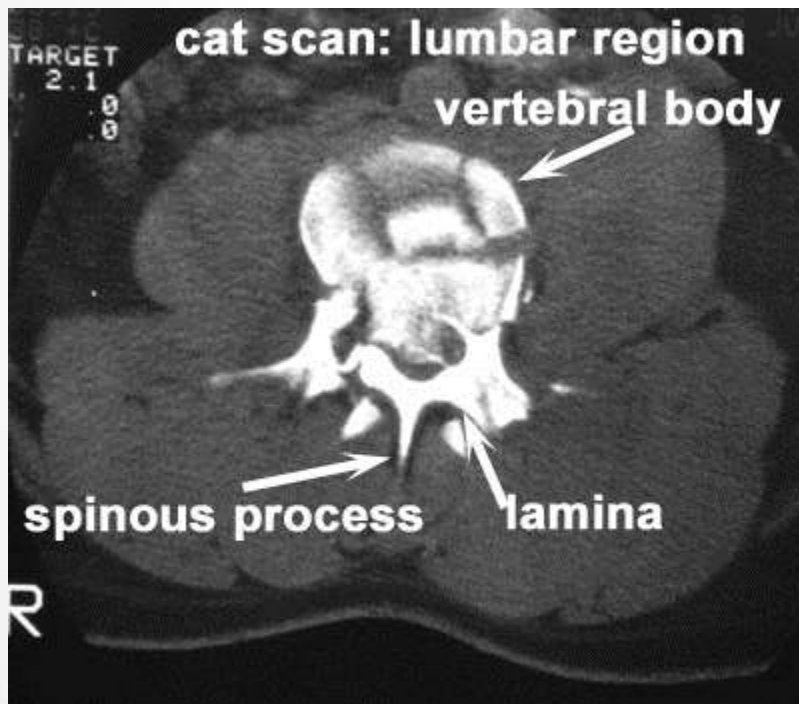


# Spiral Fracture

- Caused by twisting force spread along the length of the bone.
- In children that are not yet walking this is often a sign of child abuse.



# Compression Fracture



- Usually in the vertebrae.
- Falling to the ground on your feet or butt – puts tremendous stress on the vertebrae.

# Stress Fracture

Figures: Courtesy of David B. Thordarson, MD

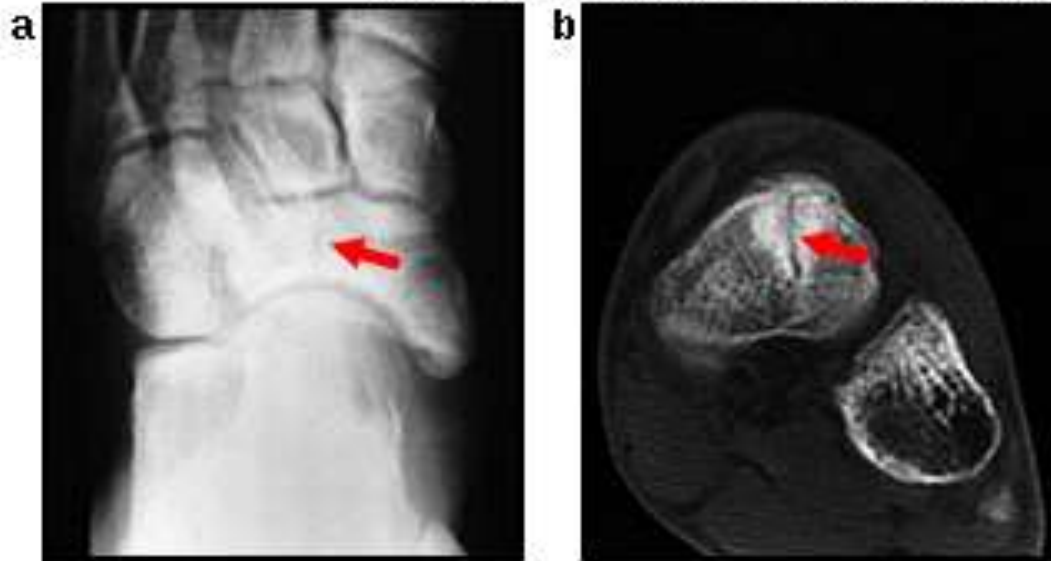
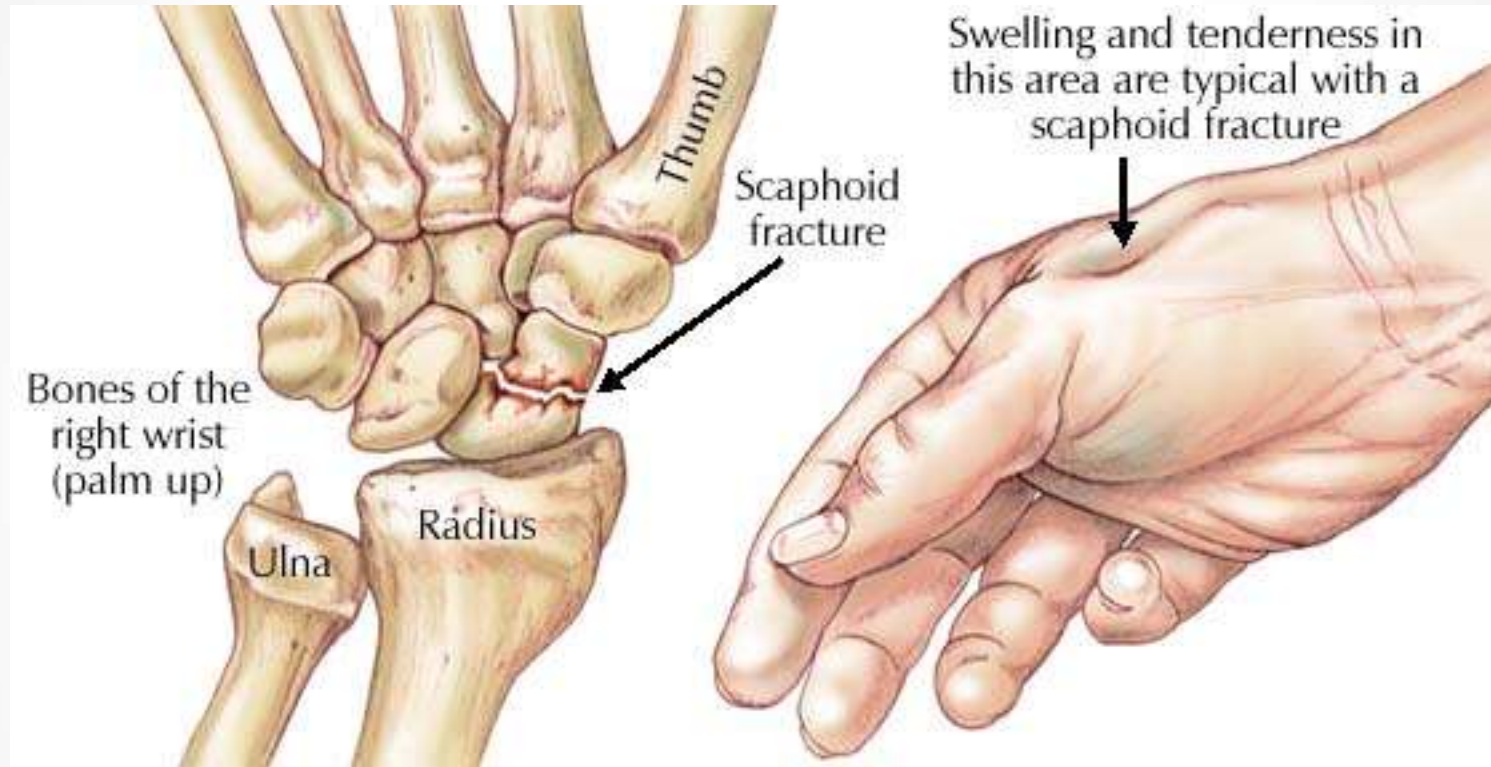
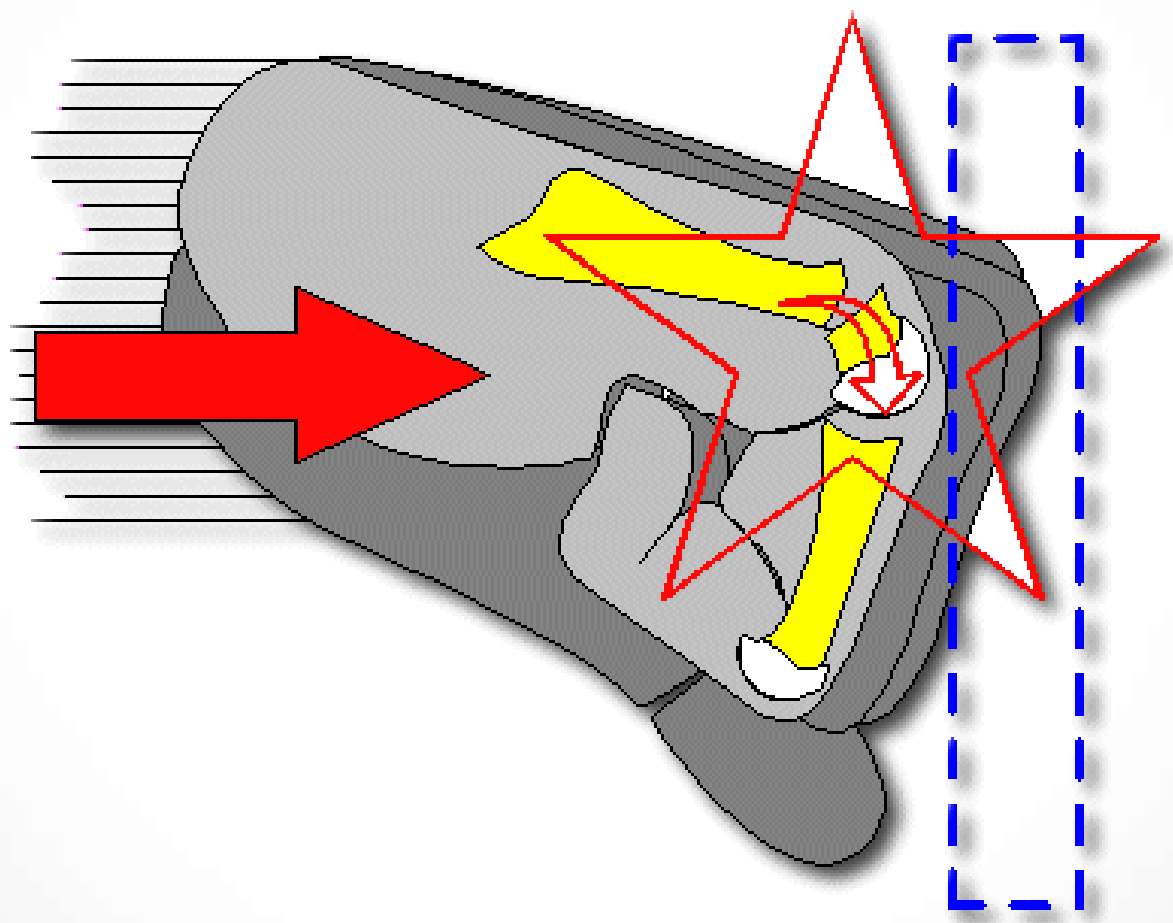


Figure 1. An 18-year-old male high school baseball player experienced gradually increasing medial midfoot pain during the season. Oblique and lateral x-rays revealed no abnormalities, but an anteroposterior radiograph of his foot (a) revealed slight radiolucency at the navicular (arrow). A coronal CT scan (b) demonstrated a nondisplaced stress fracture running through the navicular from dorsal to plantar aspects (arrow). The patient responded to 8 weeks in a non-weight-bearing cast. His immobilization was supplemented with noninvasive electromagnetic bone stimulation.

# A Colles' Fracture – Scaphoid Fracture

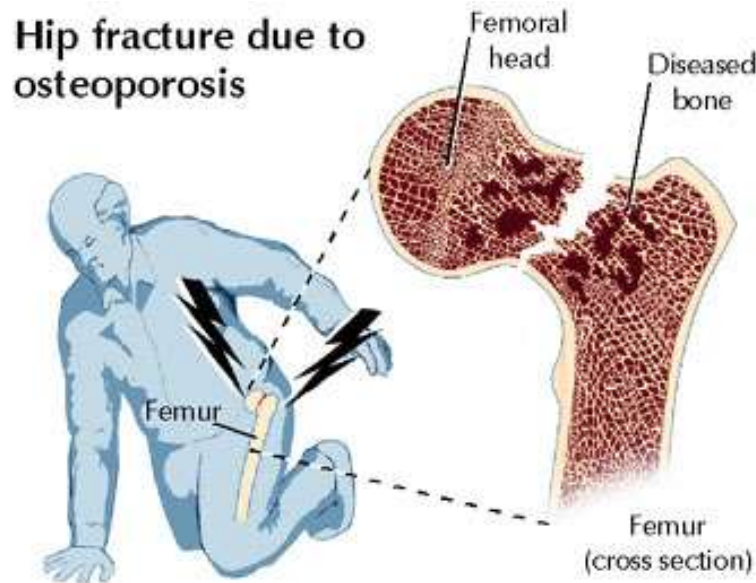






# Osteoporosis

- Osteoporosis causes bones to become brittle
- Loss of bone density is called **osteoporosis**, & can cause bone to become light, brittle, & easily broken



# Who is at Risk?

- Both men & women lose bone as we age
- But women are at greater risk for osteoporosis for 2 reasons.

## Who it affects



**1 in 2 Women**



**1 in 5 Men**

People over the age of 50, who will break a bone mainly as a result of poor bone health.

# Women & Osteoporosis



1. Women's bones are smaller & lighter than men's bones
2. Female sex hormones **decline** during menopause – sex hormones help to maintain bone density



# Prevention?

- Increase your bone density
- This can only be done during your **teens and twenties!**
- Eat right and exercise – especially resistance exercise

