

# Fractures





◆ The breaking of a bone or cartilage

◆ Usually accompanies injury to surrounding tissue. Can be more serious than the fracture – severed artery, punctured lung etc.

# Terms

✦ Compound fracture – broken bone protrudes through the skin.

✦ Closed or simple fracture – doesn't break the skin.



# Types of fractures

- ✦ Complete – fracture line extends through the bone
- ✦ Incomplete – fracture line does not extend through bone



# Classified according to location or direction of fracture line in bone

- ◆ Transverse – across

- ◆ Oblique – angle

- ◆ Longitudinal – lengthwise

- ◆ Spiral - twist



# Specific Types

- ◆ Comminuted Fracture – more than 2 bone fragments.
- ◆ Pathologic Fracture – occurs where bone disease was.
- ◆ Compression Fracture – common in vertebrae, bones driven together
- ◆ Greenstick Fracture – incomplete fracture of long bones, mostly in children
- ◆ Fatigue (stress) fracture – metatarsals, no trauma

**TABLE 6.2** Common Types of Fractures

Fracture type	Description and comments	Fracture type	Description and comments
Comminuted	Bone fragments into 3 or more pieces  Particularly common in the aged, whose bones are more brittle	Epiphyseal	Epiphysis separates from the diaphysis along the epiphyseal plate  Tends to occur where cartilage cells are dying and calcification of the matrix is occurring



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**TABLE 6.2** Common Types of Fractures

Fracture type	Description and comments	Fracture type	Description and comments
Compression	Bone is crushed  Common in porous bones (i.e., osteoporotic bones) subjected to extreme trauma, i.e., as in a fall	Greenstick	Bone breaks incompletely, much in the way a green twig breaks. Only one side of the shaft breaks; the other side bends  Common in children, whose bones have relatively more organic matrix and are more flexible than those of adults



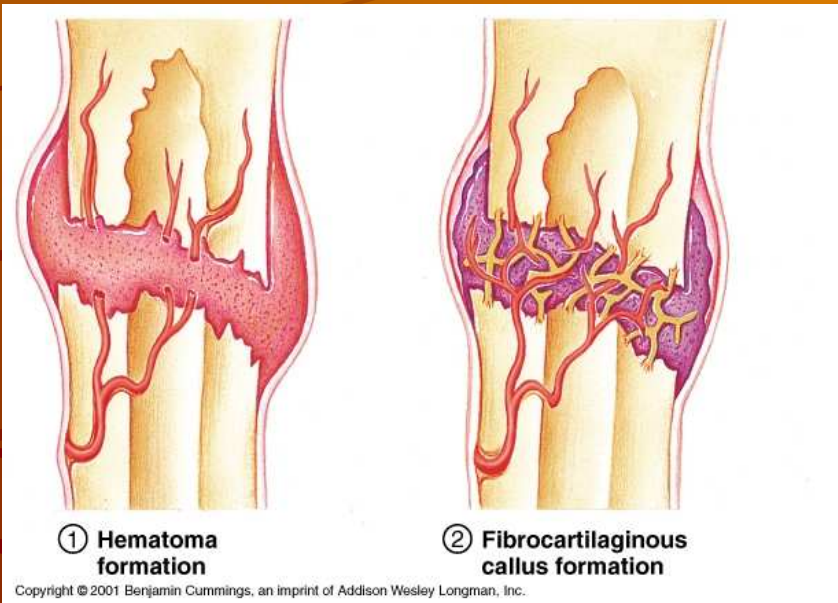
Depressed	Broken bone portion is pressed inward  Typical of skull fracture	Spiral	Ragged break occurs when excessive twisting forces are applied to a bone  Common sports fracture
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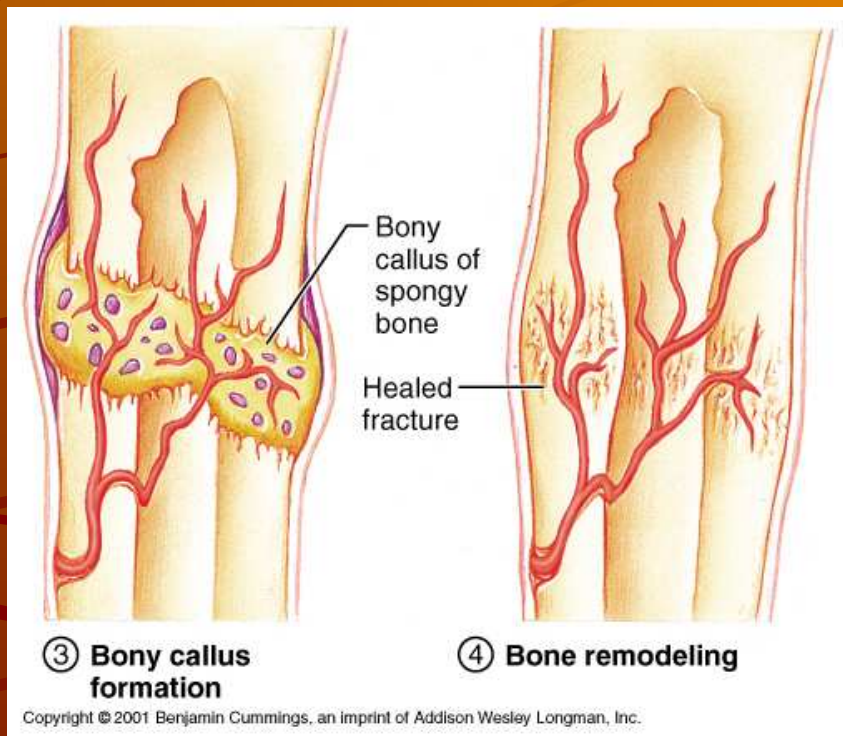
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# Healing of a fracture

- ✦ 1. blood clot forms
- ✦ 2. fibroblasts & capillaries grow into clot
- ✦ 3. dense fibrous tissue forms (fibers & cartilage)







- ✦ 4. Cancellous (spongy) bone forms (bony callus)
- ✦ 5. compact bone forms.
- ✦ Best healing occurs when ends of bone are fit closely together.