

Structure based on material & cavity

Structure of the joint:

Fibrous

Immovable to slightly
movable

Cartilaginous

Both rigid &
slightly moveable

Synovial

Freely movable

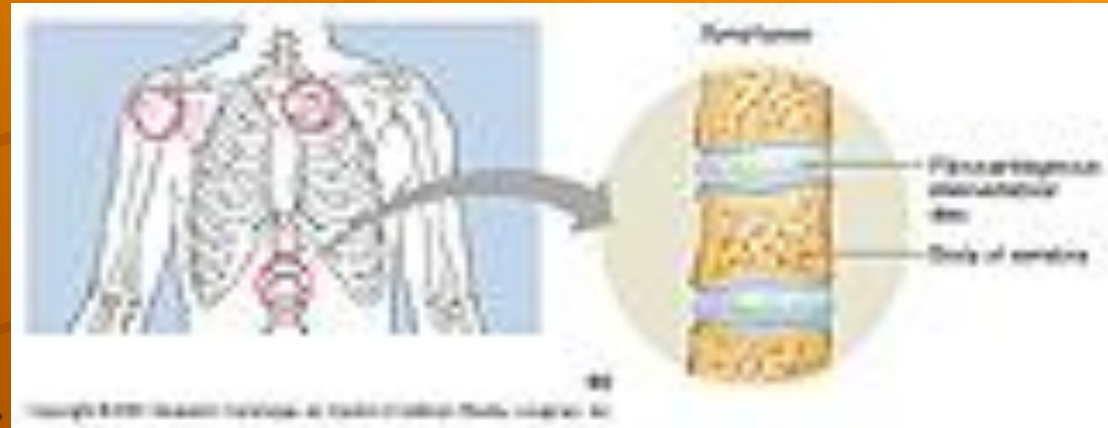
Fibrous

- ✦ Made of fibrous tissue
- ✦ No cavity
- ✦ Sutures (skull)
- ✦ Syndesmoses-ligaments
tibia/fibula
Radius/ulna
- ✦ Gomphoses peg in socket

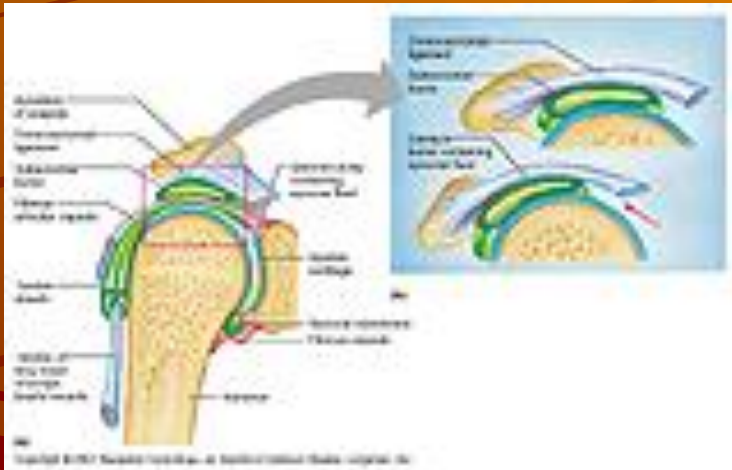


Cartilaginous

- ◆ Cartilage between bones
- ◆ No cavity
- ◆ 2 types
- ◆ Synchondroses- epiphyseal plate
- ◆ Symphyses- joint between vert., pubis & manubrium



Synovial



- ◆ Joint cavity-bones separated by fluid filled cavity
- ◆ Bursae-fibrous sac with fluid
- ◆ Tendon sheaths-elongated bursae wraps tendon

Q:Fibrous joints are classified as:

- A. Pivot, hinge, ball & socket
- B. Symphysis sacroiliac, & articular
- C. Sutures, syndesmoses, & gomphoses
- D. Hinge & saddle



Movements allowed by synovial joints



◆ Gliding - bones slide over each other.



◆ Flexion – decrease angle

◆ Extension – increases angle

◆ Abduction – movement away from mid-line.

◆ Adduction – movement toward the mid-line

◆ Circumduction – end of limb makes a cone.





- ◆ Supination – parallel
- ◆ Pronation – radius over ulna
- ◆ Rotation – turning around its axis.

End day 1

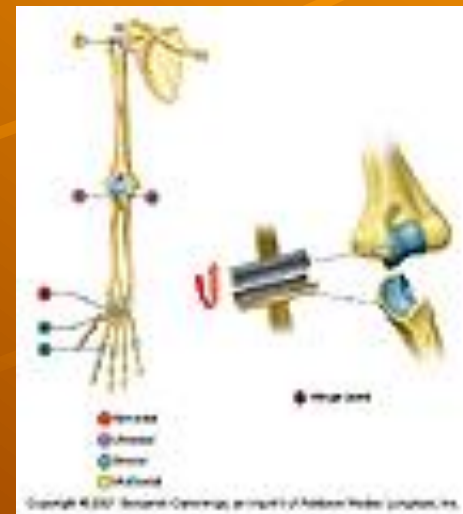


Types of synovial joints

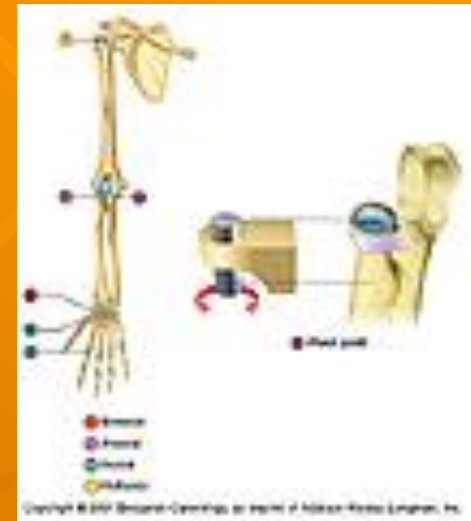
✦ Plane joints – allow only gliding



✦ Hinge joint – projection of one bone fits into the depression of another



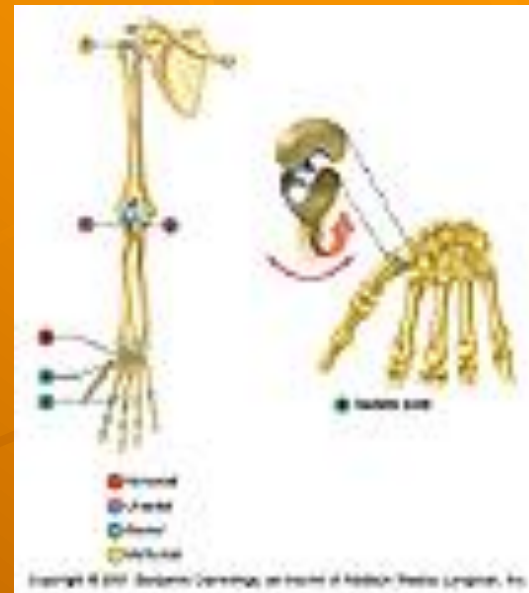
◆ Pivot joint – rounded surface of one bone fits into bony ring of another.



◆ Condylloid joint – oval surface of one bone fits into elliptical cavity of another. Metacarpophalangeal joints



- ◆ Saddle joint – structure is like condyloid but greater movement: has saddle shape. Carpometacarpal of thumb.



Ball & Socket – most freely moving. Head of one bone fits into socket of another.

Common Joint Injuries

- ◆ **Sprains** – ligaments are stretched or torn. Lumbar of spine, ankle, knee are common sites.
- ◆ Heal slowly – poor blood supply, painful, and immobilizing.
- ◆ If severe: transplant tendon from another area, protein from cattle hide woven into bands and stapled. Carbon fibers implanted in torn ligament to form supporting mesh for new fibers



Cartilage injuries

- ◆ Most involve the menisci of the knee
- ◆ Avascular, rarely repairs itself
- ◆ Remove pieces of cartilage – arthroscopic surgery



Q: The meniscus refers to

- A. A small sac containing synovial fluid
- B. Semilunar cartilage pads
- C. A tendon sheath
- D. A cavity lined with cartilage



Dislocations

- ◆ Occurs when bones are forced out of normal position
- ◆ Usually accompanied by sprains
- ◆ Let Dr. relocate

