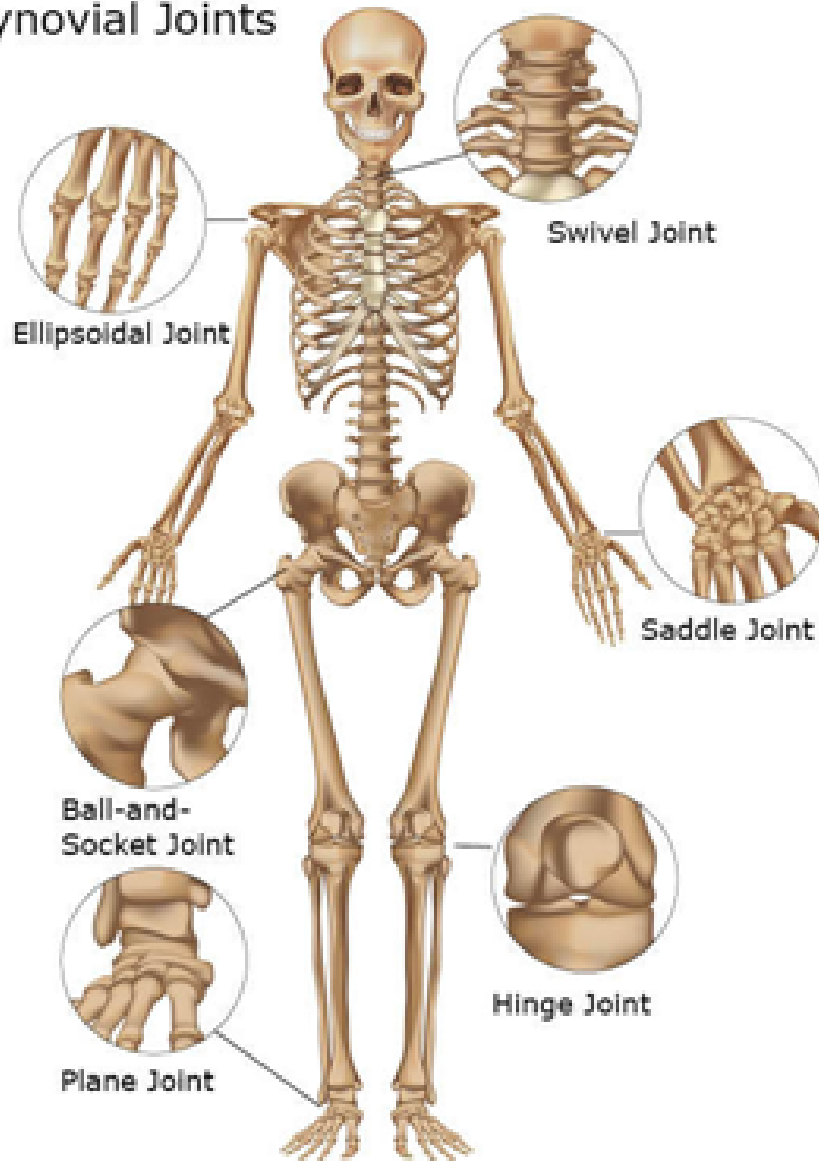


# Joints

## Synovial Joints



# Fibrous Joints

- Occur where fibrous connective tissue joints bone to bone

- Typically immovable

- Examples: Cranium / Sutures

Coronal Suture

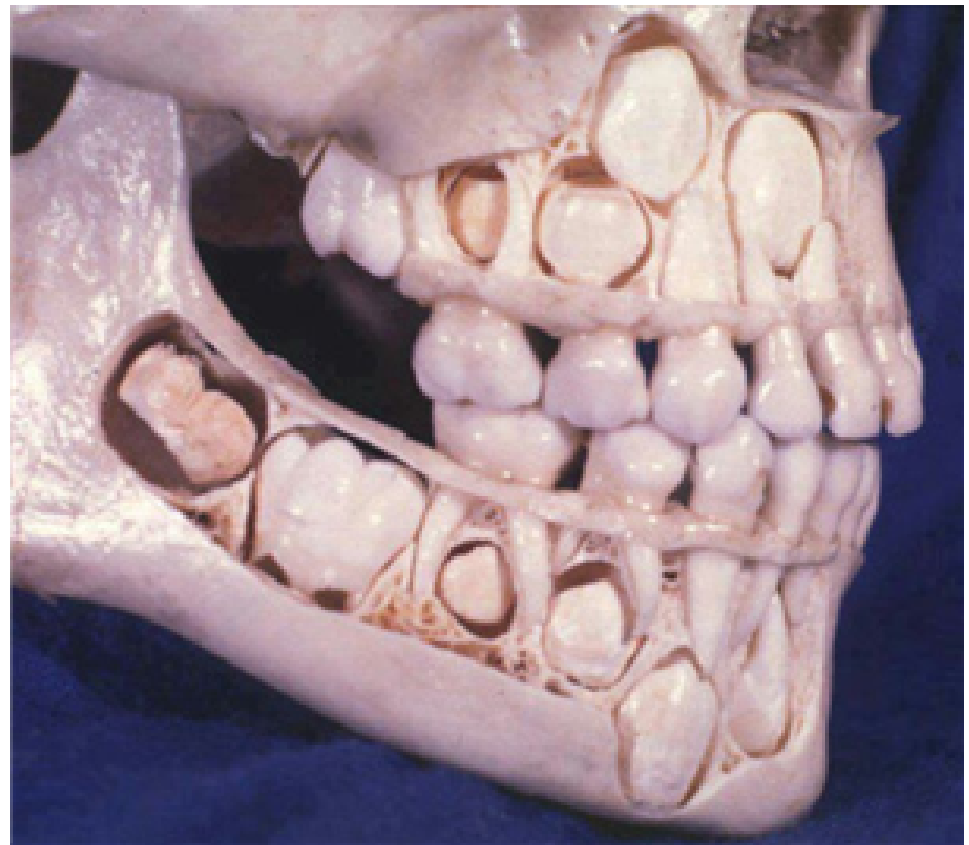
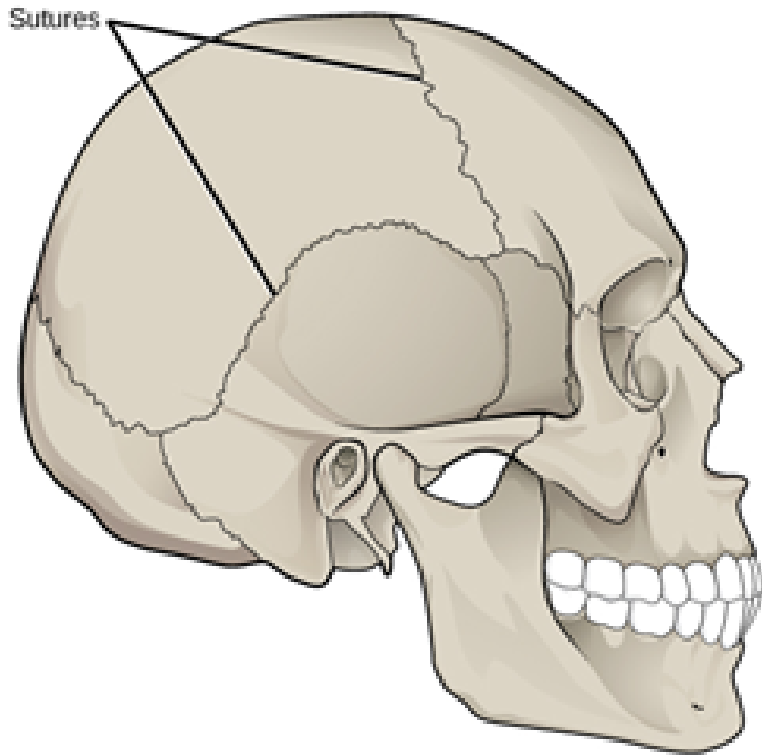
Lambdoidal Suture

Squamosal Suture

Sagittal Suture

- Also found in the joints formed by each tooth in its tooth socket

# Fibrous Joints



# Cartilaginous Joints

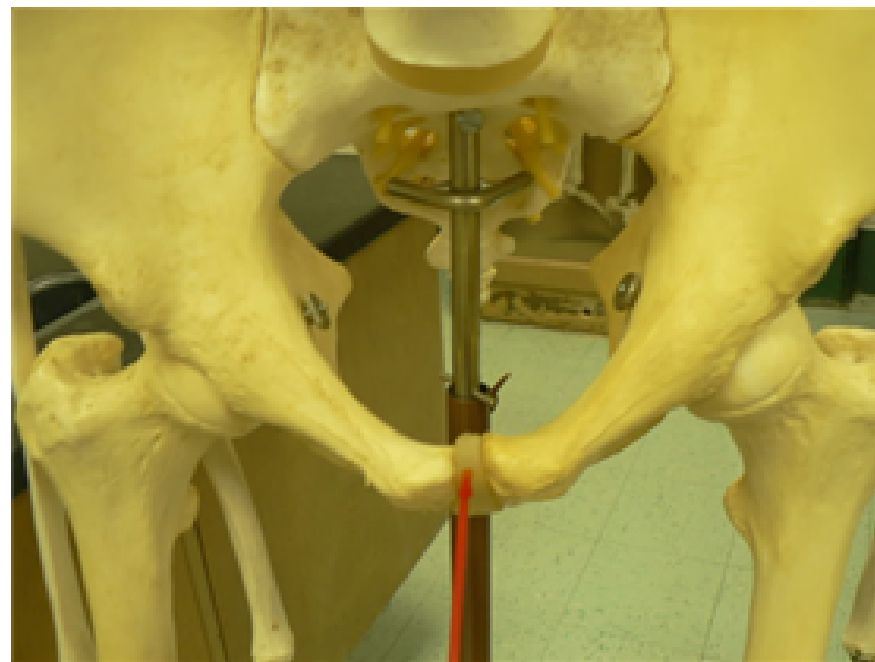
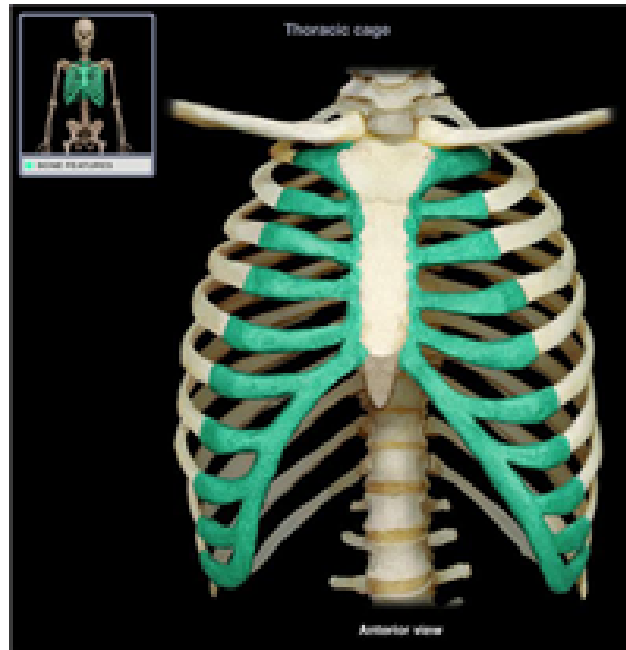
- Located where bones are joined by hyaline or fibrocartilage
  - Slightly movable
    - Examples:

Ribs joining to sternum by costal cartilage

Intervertebral disks

Pubic symphysis

# Cartilaginous Joints



# Synovial Joints

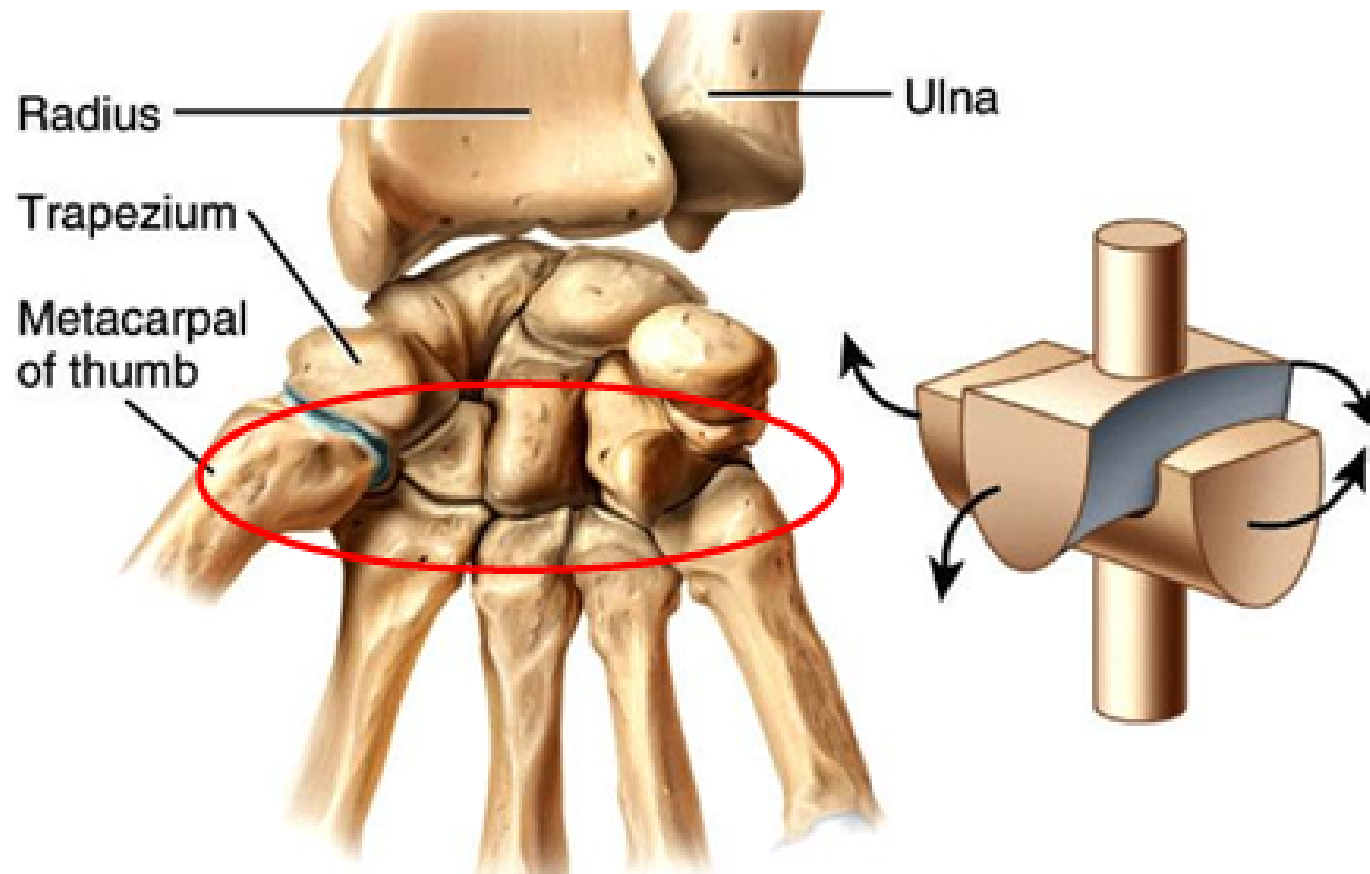
- Freely movable
  - Separated by a joint cavity
  - Lined by a synovial membrane
- Produces synovial fluid to lubricate the joint
- Stabilized by a joint capsule (a sleeve-like extension of the periosteum of each articulating bone)
  - Ligaments bind the two bones to one another
    - Tendons connect muscle to bone

# Synovial Joints

- Bone ends are covered by articular cartilage
- Extra protection from menisci (meniscus) - a crescent-shaped piece of cartilage
  - Even more protection from a fluid filled sac called bursae to ease friction between the joint (tennis elbow / bursae is worn away from constant use)

# Synovial Joints

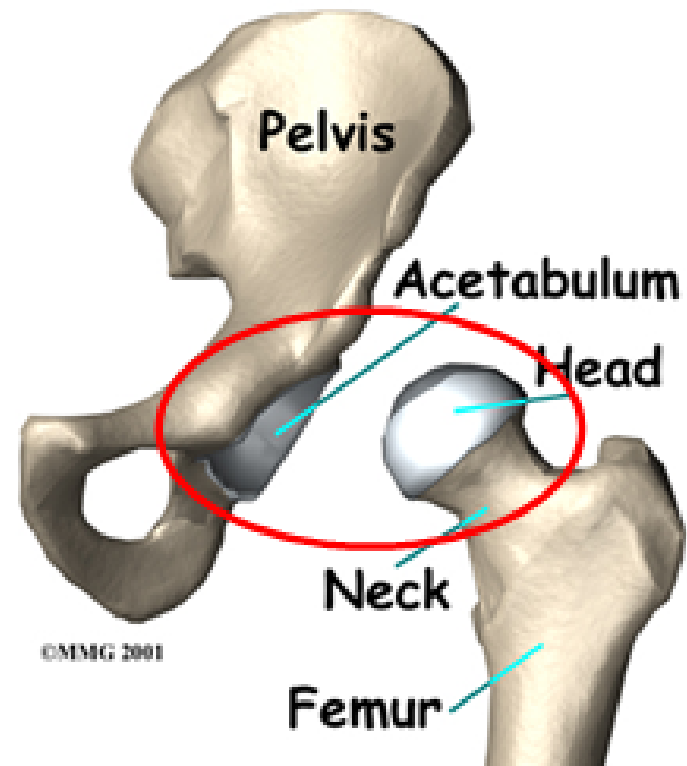
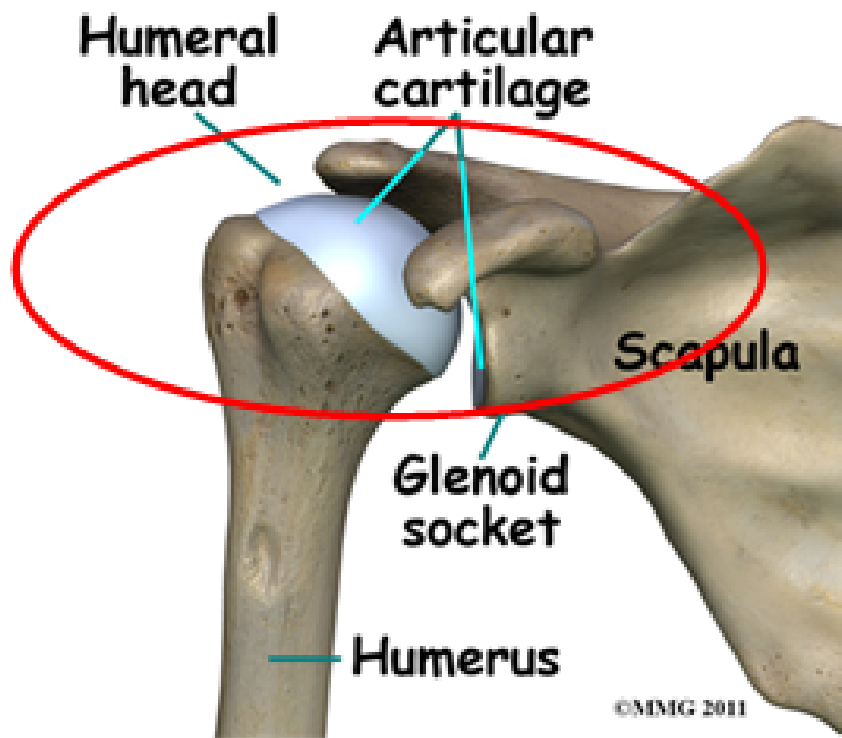
- Saddle Joint - each bone is saddle-shaped and fits into their complementary regions of the other to produce a variety of movements





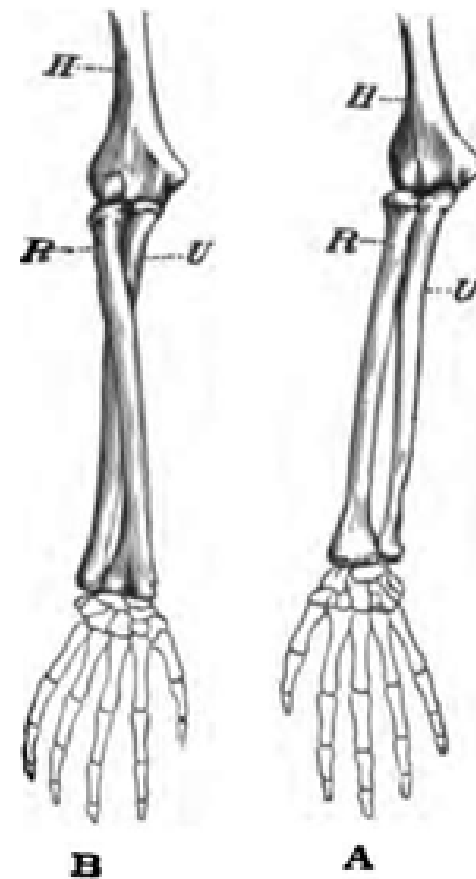
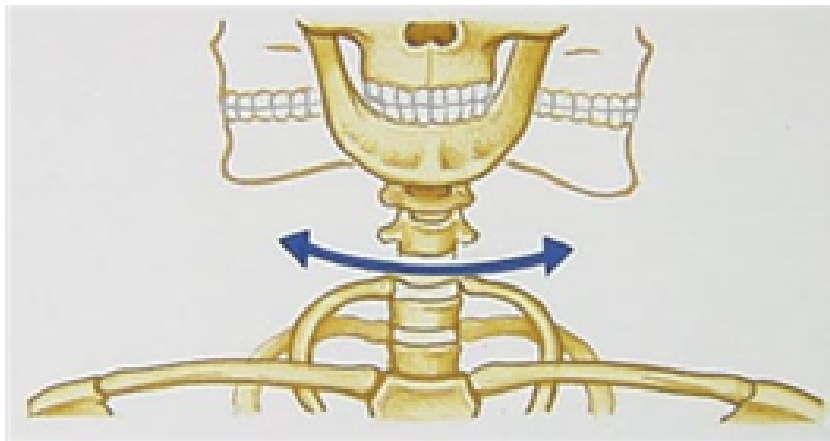
# Synovial Joints

- Ball and Socket Joint - The ball-shaped head of one bone fits into the cup shaped socket of another. Movement in all planes, as well as rotation, are possible.



# Synovial Joints

- Pivot joint - A small, cylindrical projection of one bone pivots within the ring formed of bone and ligament of another bone. Only rotation is possible.



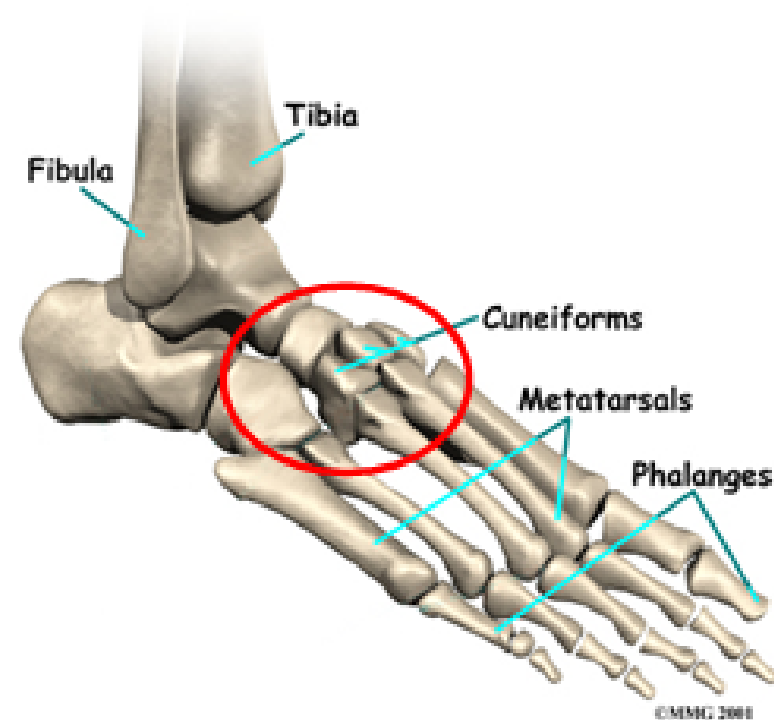
# Synovial Joints

- Hinge Joint - The convex surface of one bone articulates with the concave of another. Up and down motion in one plane is possible.



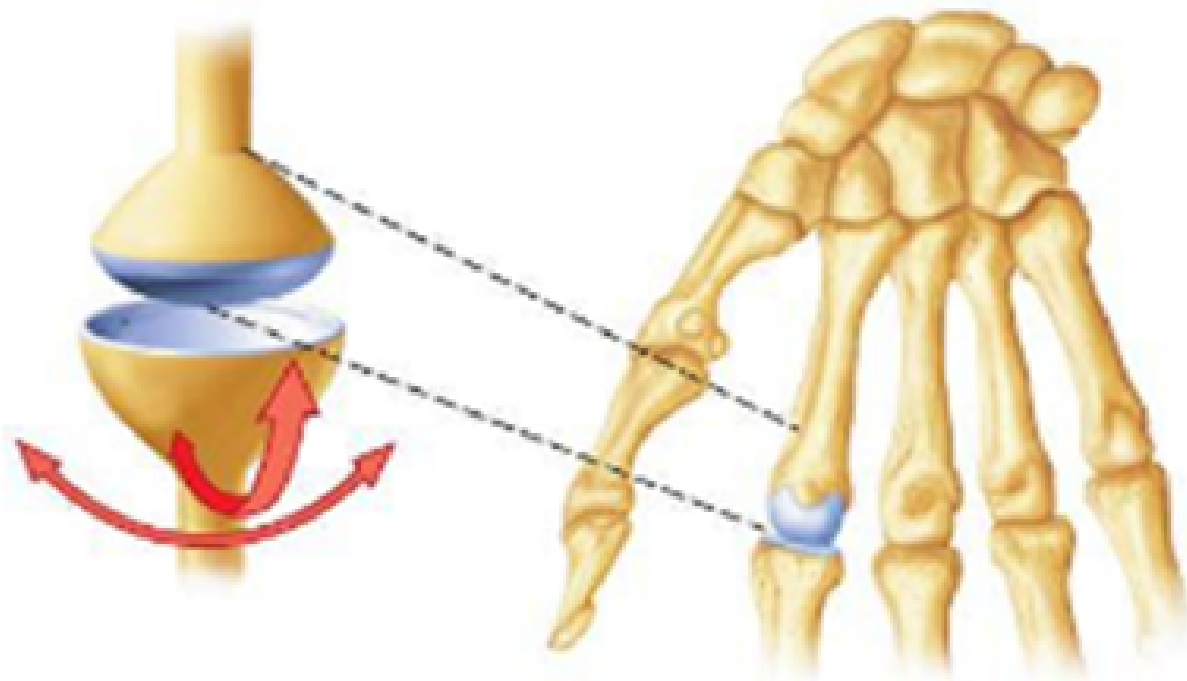
# Synovial Joints

- Gliding Joint - Flat or slightly curved surfaces of bones articulate. Sliding or twisting in various planes is possible.

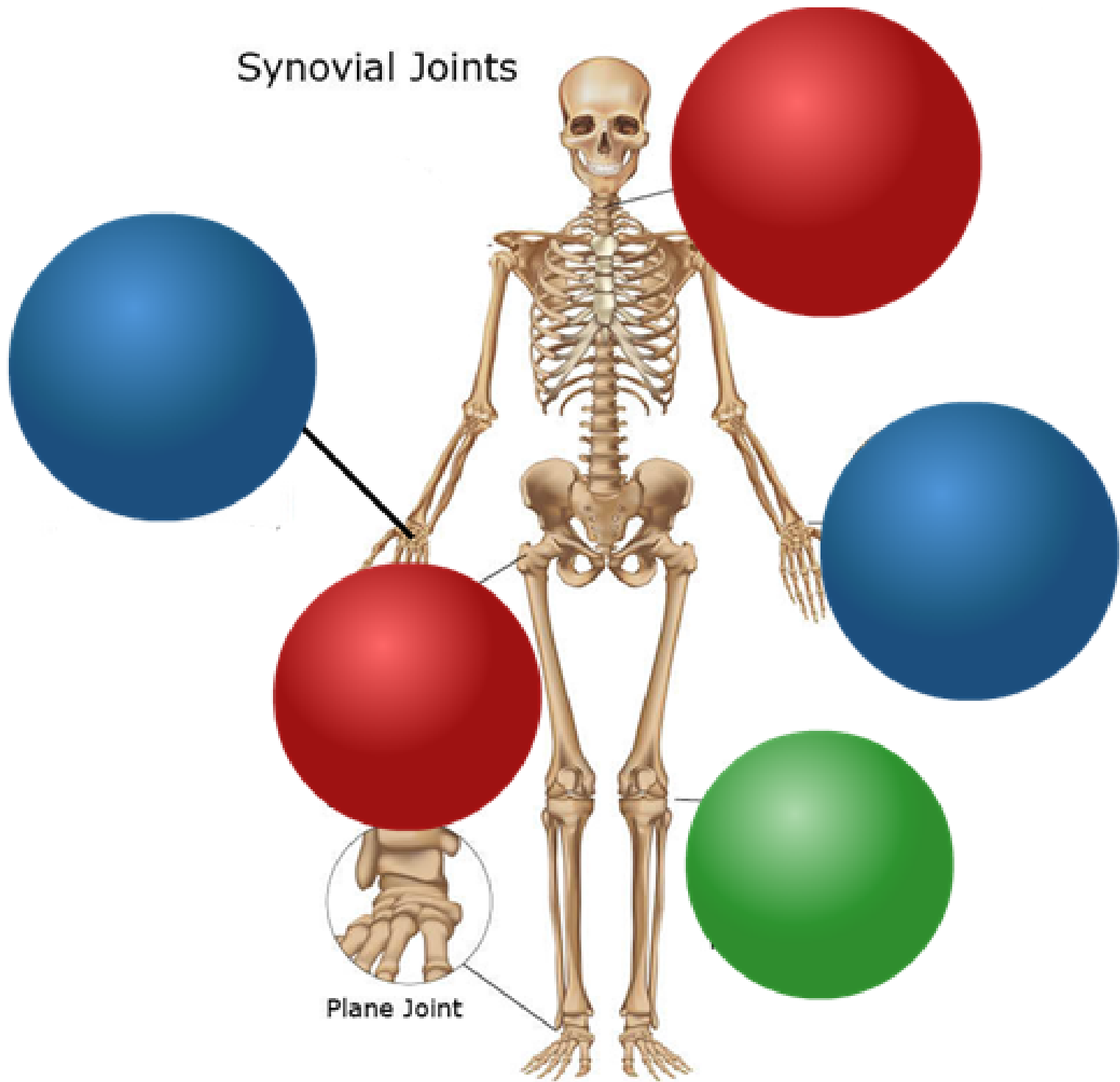


# Synovial Joints

- **Condyloid Joint** - The oval-shaped condyle of one bone fits into the elliptical cavity of another. Movement in different planes is possible but rotation is not.



# Synovial Joints



# Movement Terms from Synovial Joints



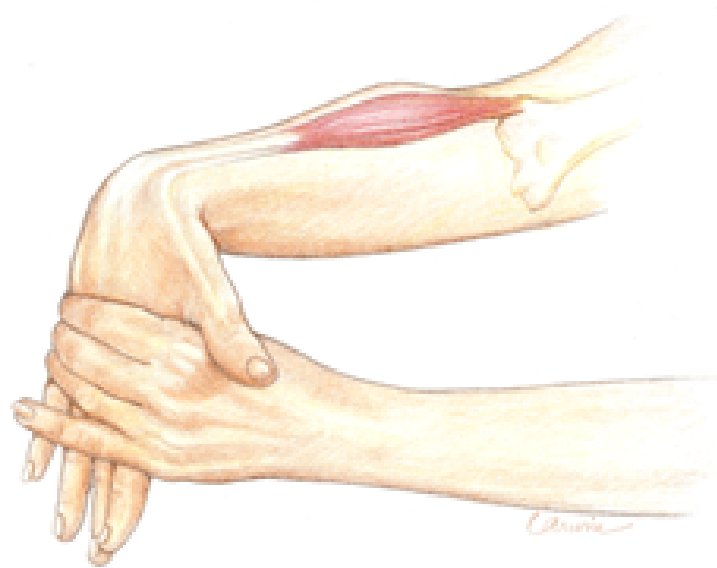
I Like to Move it...Move it..

He Likes to Move it...Move it..

You Like To.....?

**MOVE IT !**

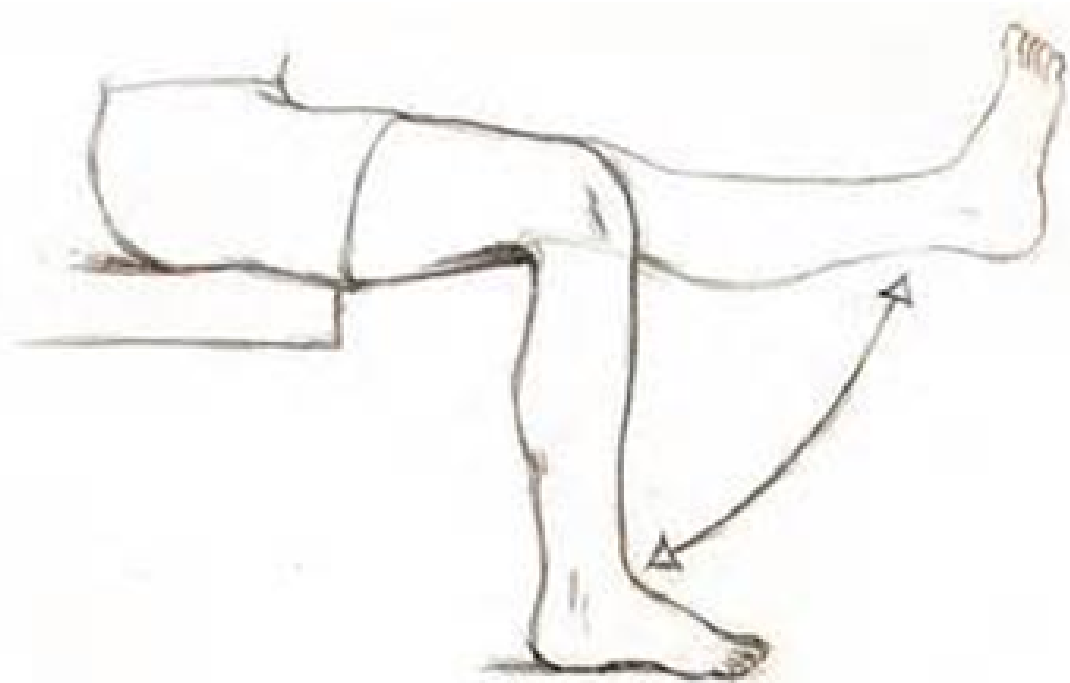
# Flexion - decreases the joint angle



- Dorsiflexion is foot upward (stand on heels)
- Plantar flexion is foot downward (stand on toes)

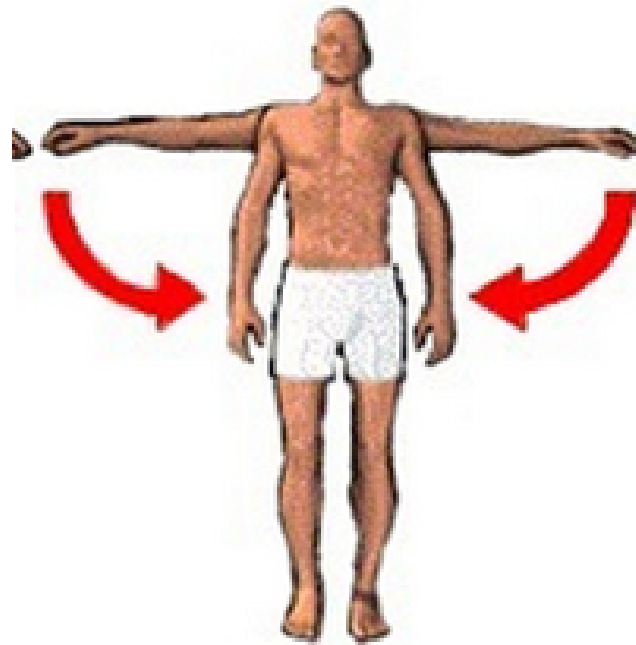


# Extension - increases joint angle



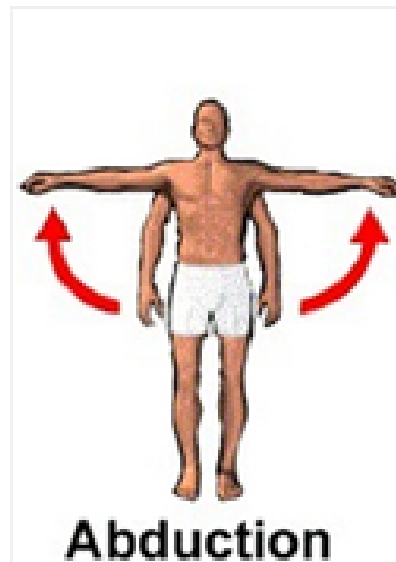
- Hyperextension - extended beyond 180 degrees

# Adduction - movement of a body part toward the midline



**Adduction**

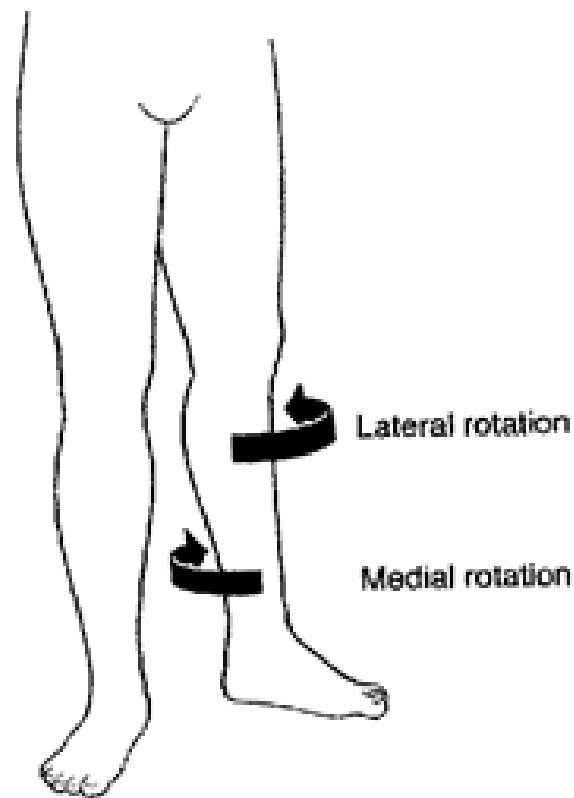
Abduction - movement  
of a body part  
laterally, away from  
midline



Circumduction -  
movement of a body  
part in a wide circle



Rotation - the movement of a body part around its own axis



Supination - The rotation of the forearm so that the palm is upward



Supination

Pronation

Pronation is opposite.

Inversion and Eversion - Apply only to feet. Inversion is turning the foot so that the sole faces inward and eversion is turning the foot so that the sole faces outward.



(b) Inversion and eversion

Elevation and Depression -  
refer to lifting up and down  
respectively

