2/2/15

ARTICULATIONS

I. CLASSIFICATION OF JOINTS

A. Articulations = joints: a place of union between two or more bones

B. Two ways to classify joints:

1. Structure

a. Fibrous Joints:

i. dense regular CT connects bones

ii. no fluid filled joint cavity

b. Cartilaginous Joints:

i. cartilage connects the bones

ii. no joint cavity

c. Synovial Joints:

i. ligaments (dense regular C.T.) connect bones

ii. contains a fluid-filled joint cavity

2. Movement

a. Synarthroses: immovable joints

b. Amphiarthroses:slightly moveable joints

c. Diarthroses: freely moveable

In joints, there's an inverse relationship
between mobility and stability (the more mobile a joint, the less stable it is)
-more movement a joint has—the less stable it is

II. FIBROUS JOINTS (all held together by dense regular CT)

A. Suture: dense regular CT binds bones. –joints going in between skull bones

Synarthrotic joint (immoveable)
Example: found connecting the flat bones of skull

B. Syndesmosis: bones held together by interosseous ligament (sheet of dense regular CT)
Amphiarthrotic joint (slightly moveable)
Example: joint between radius and ulna
→another example: joint b/w tibia and fibula (sheet of tissue right between them)

C. Gomphosis: root of tooth attached to jaw by dense regular C.T. (periodontal ligament).
Synarthrotic joint (immoveable)

III. CARTILAGINOUS JOINTS

A. **Symphysis**: bones attached by pad of **fibrocartilage.**
Amphiarthrotic joint (Slightly moveable)
Example: pubic symphysis and intervertebral discs

B. Synchondrosis: bones or bone segments connected by hyaline cartilage (hyaline cartilage=more rigid/firm)
Synarthrosis (immoveable joint)
Example: epiphyseal plate and costochondral joints
→no fluid between the bones

IV. SYNOVIAL JOINTS: All are diarthrotic (freely moveable)

A. Generalized structure
1. ligaments (held together by ligaments)
2. articular (joint) capsule
   a. fibrous capsule
   b. synovial membrane
      i. makes synovial fluid
      ii. LUBRICATION-REDUCES FRICTION
      iii. ACTS AS SHOCK ABSORBER
3. fluid-filled joint cavity

4. Ends of bones lined w/ articular cartilage

*hyaline cartilage reduces friction

B. Movements at Synovial joints.
1. Flexion: decreases joint angle

a. special kinds of flexion at ankle joint:
i. **dorsiflexsion:** dorsum (top) of foot is pointed toward head (standing on heels)
ii. **plantar flexion**: pointing foot away from head ("standing on the balls of your foot")

2. Extension: increases joint angle b/w two bones

3. Abduction: body part moved **away** from midline of the body or extremetie/midline of body(fingers/toes moving away from eachother)
4. Adduction: body part moved **toward** the midline of the body
5. Rotation: movement of a body part around its own axis
a. special kinds of rotation of forearm:
i. supination: palm facing anteriorly (upward)—hint=see word up=supination

ii. pronation: palm facing posteriorly (downward)

6. Circumduction: circular, conelike movement of a body segment

7. Inversion: movement of the sole of the foot inward or medially

8. Eversion: movement of the sole of the foot outward or laterally

C. Kinds of Synovial Joints
1. Hinge: