Joints

Anatomy Department

Beni-Suef University

Intended learning objectives (ILOs)

By the end of this lecture the student will be able to:

1. Describe the structure and functions of fibrous joints.
2. Describe the structure and functions of cartilaginous joints.
3. Describe the structure and functions of synovial joints.
4. Describe the structure and functions of bursae.

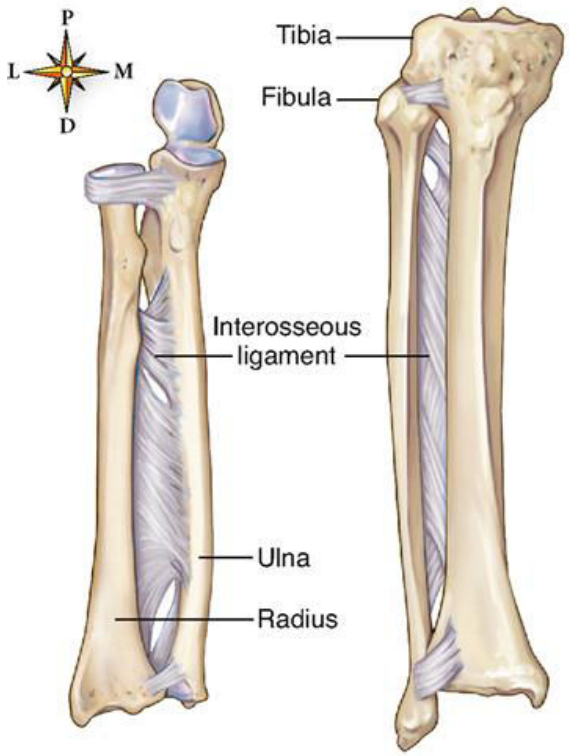
Classification of joints:

1. Fibrous joints.
2. Cartilaginous joints.
3. Synovial joints.

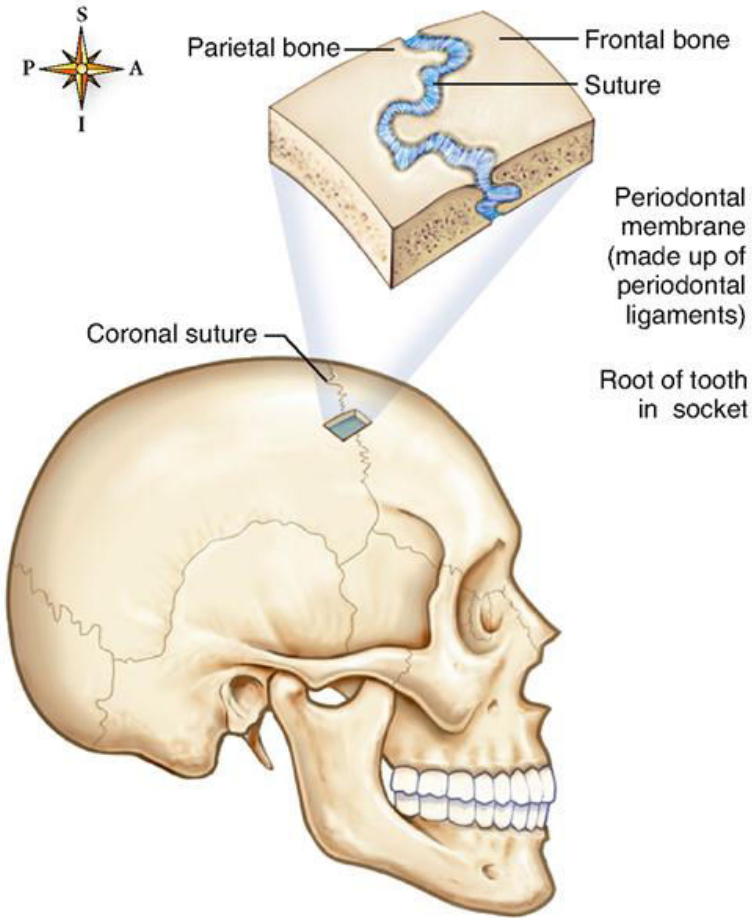
1. Fibrous joints:

- No movement allowed
- Types:
    - a- Sutures
    - b- Gomphosis
    - C- Interosseous ligament

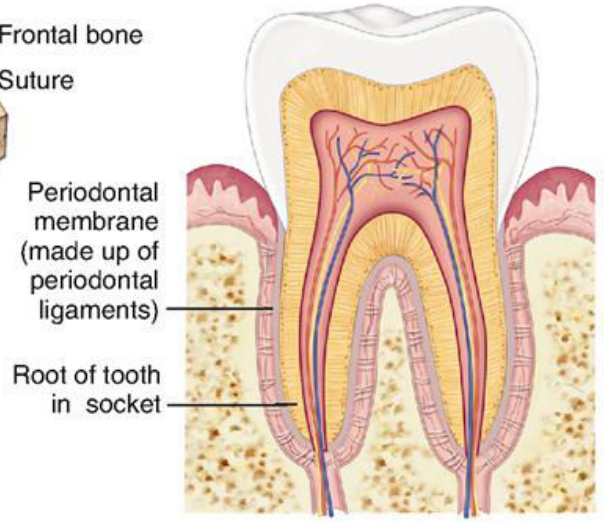
SYNDESMOSES



SUTURES

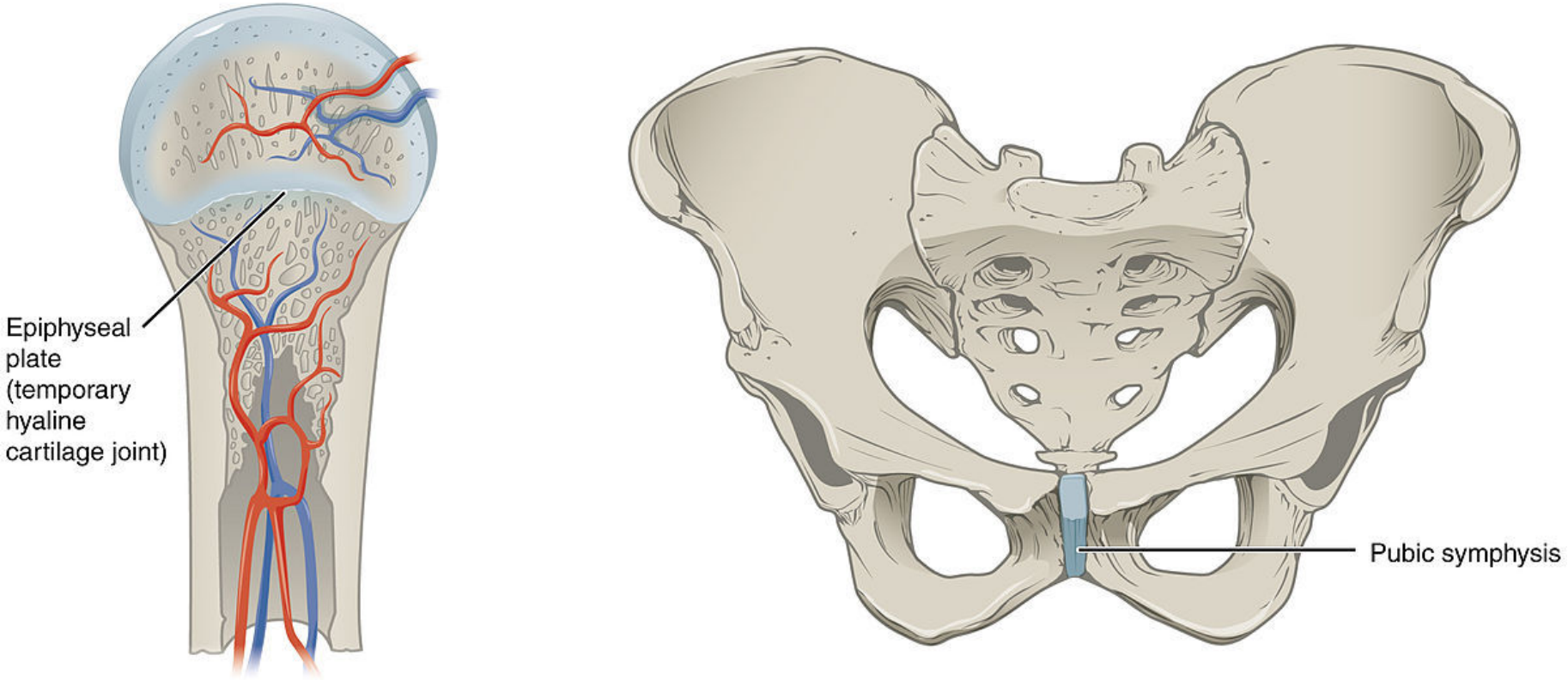


GOMPHOSIS



2. Cartilaginous joints:

a. Primary
b. secondary

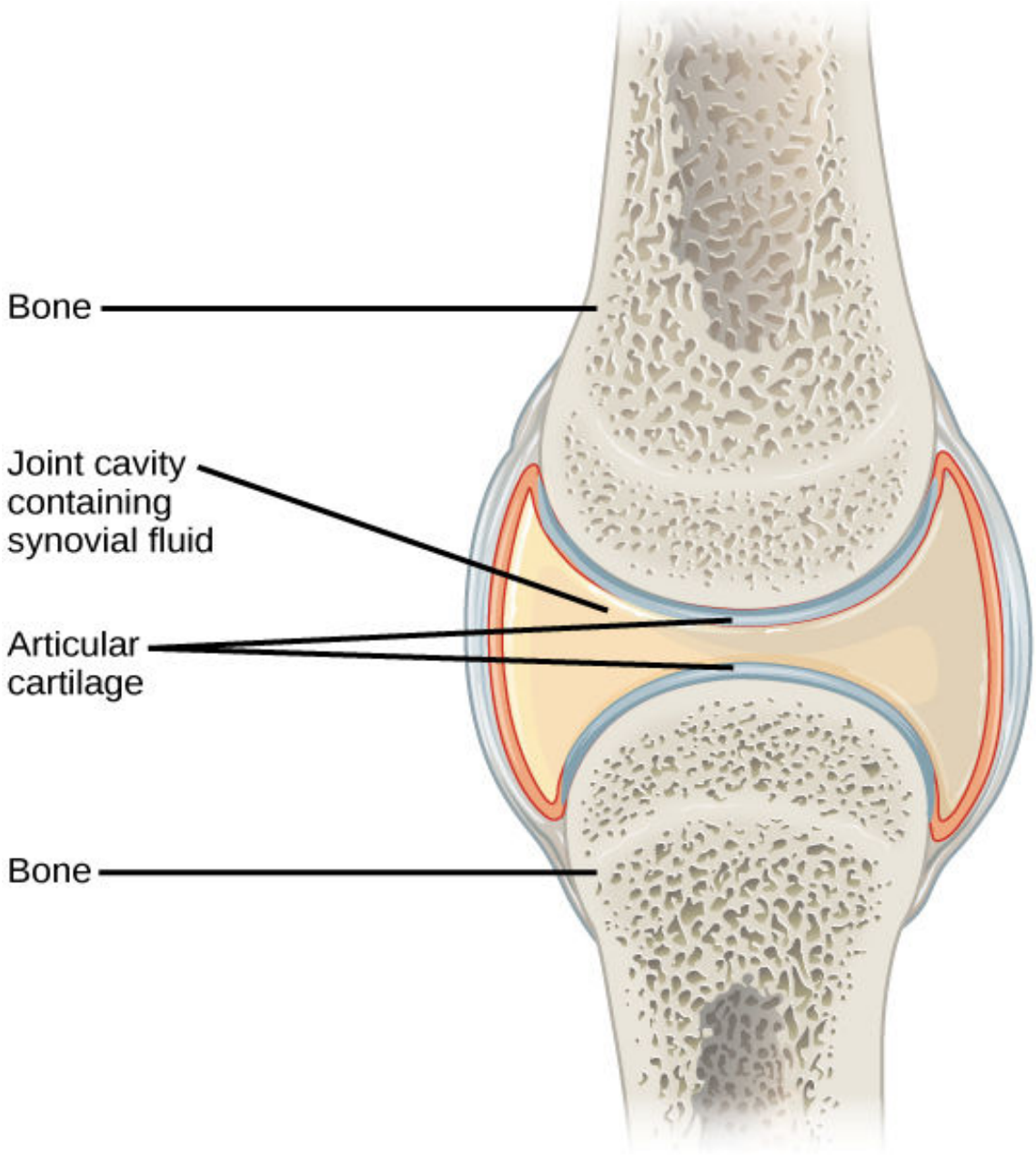

Epiphyseal plate (temporary hyaline cartilage joint)
Pubic symphysis

(a) (b)

3. Synovial joints:

- Features of synovial joints:

1. Articular surface covered by hyaline cartilage
2. Fibrous capsule
3. Ligaments
4. Synovial membrane
5. Synovial fluid
6. Intra-articular structures

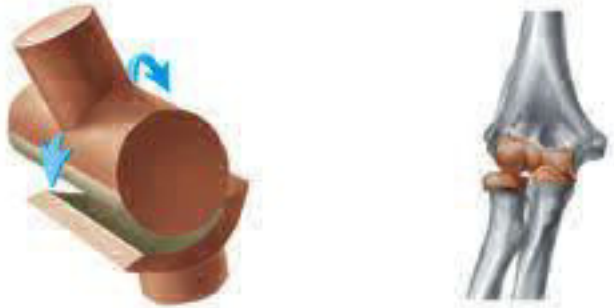

Bone
Joint cavity containing synovial fluid
Articular cartilage
Bone

Types of synovial joints:

1. According to axes of movement:
   - Uniaxial
   - Biaxial
   - Multiaxial
2. According to shape of articular surfaces:
   - Hinge
   - Ellipsoid
   - Ball and socket
   - Pivot
   - Saddle
   - Plane

Plane Joint

Saddle Joint



Hinge Joint

Pivot Joint

Ball-and-Socket Joint

Ellipsoid Joint

Clinical correlations:

- Tear of menisci in the knee
- A sprain

Bursa

- Closed sac containing synovial fluid
- Around joints
- Types:
  1. Subcutaneous.
  2. Subtendinous.
  3. Interligamentous.
  4. Submuscular.
  5. Adventitious.

Quiz

1. One of the following joints is uniaxial

a. Shoulder
b. Wrist
c. Elbow
d. Knee
e. hip

2. Joints that allow human bones to move in all directions are called

a. fixed joints
b. slightly moveable joints
c. hinge joints
d. ball-and-socket joints

3. In what joint is the root of a tooth attached to a periodontal ligament and held into a tooth socket?

a. Gomphosis
b. Suture
c. Syndesmosis
d. Suture

4. Regarding the type of wrist joint, one is correct:

a. Ball and socket
b. Condylar
c. Saddle
d. Ellipsoid

5. One of the following is biaxial joint:

a. Shoulder
b. Hip
c. Elbow
d. Wrist
e. Superior radioulnar

Thank you