Joints

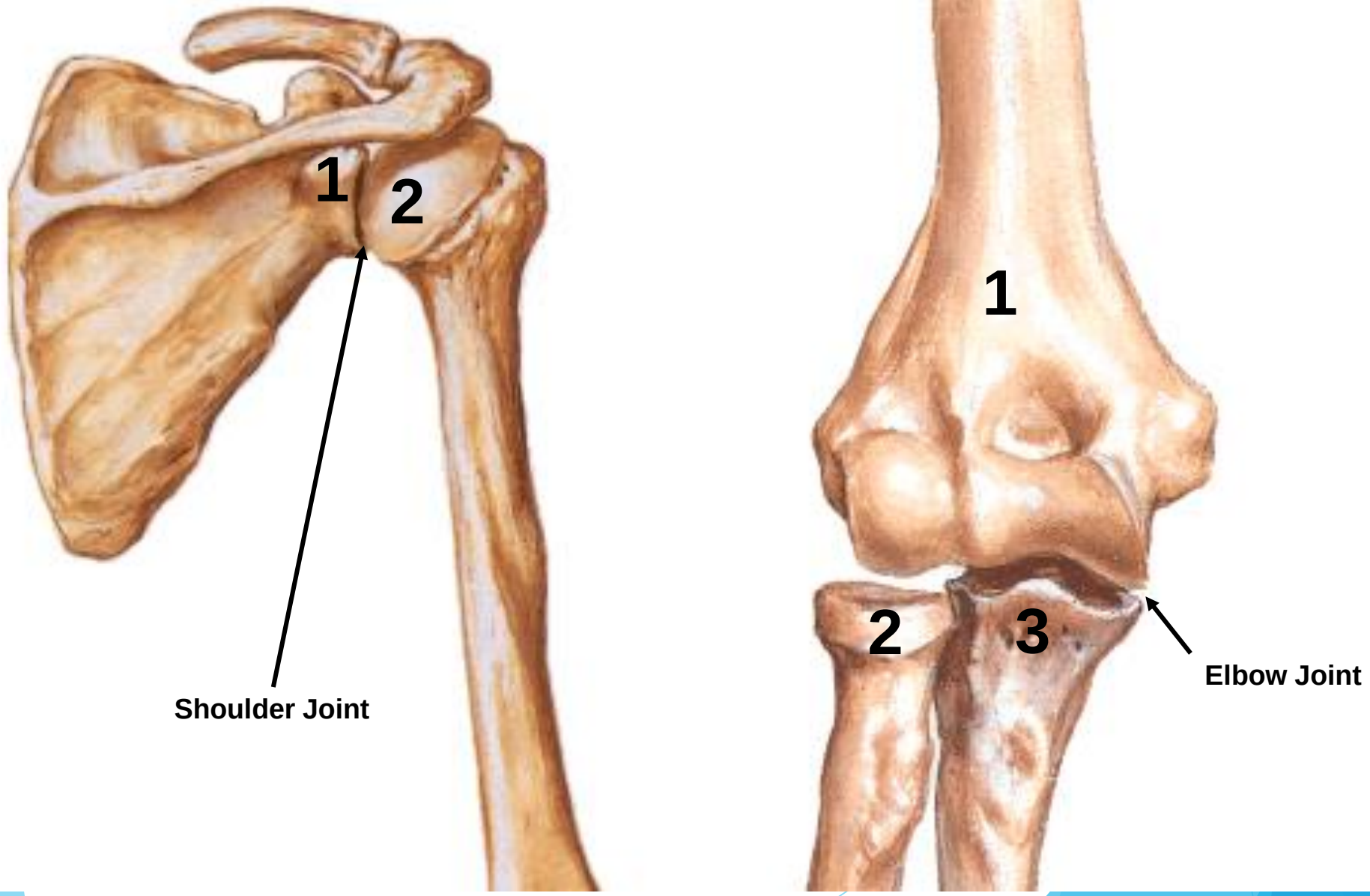
Dr Alsayed

Objectives

- Definition of a Joint
- Classification of Joints
- Stability of Joints
- Nerve Supply of Joints

Definition of a Joint

Articulation between two or more bones.



Classification of Joints

JOINTS

(1)-Fibrous joints

مفصل ثابت أو غير متحرك

1-Suture

2-Syndesmosis.

3-Gomphosis.

(2)-Cartilagenous joints

مفصل (قليل الحركة)

1-Primary.

2-Secondry (symphysis).

(3)-Synovial joints

مفصل متحرك

Several classifications

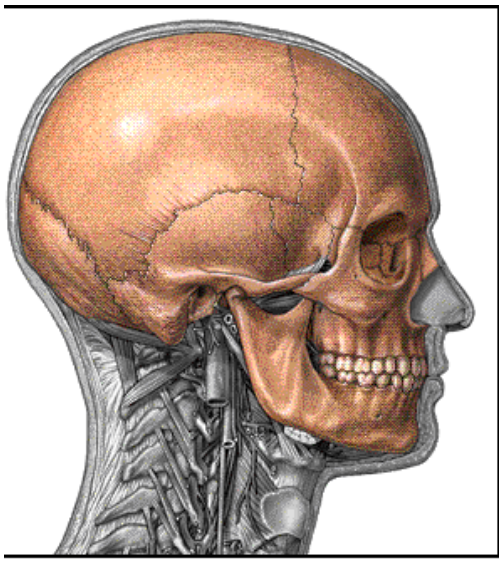
***For each joint:-**

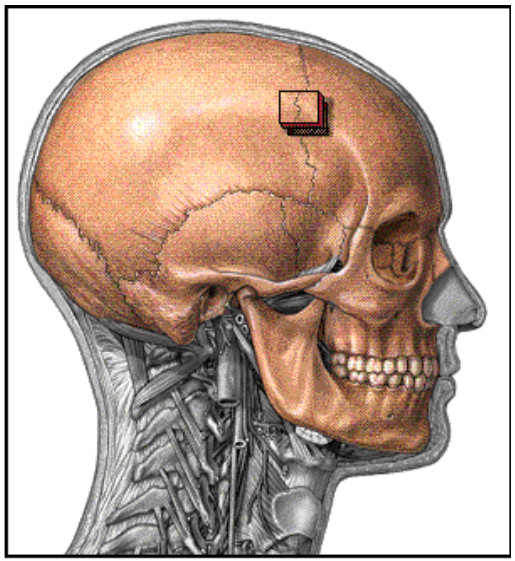
1. Characters.
2. Types.

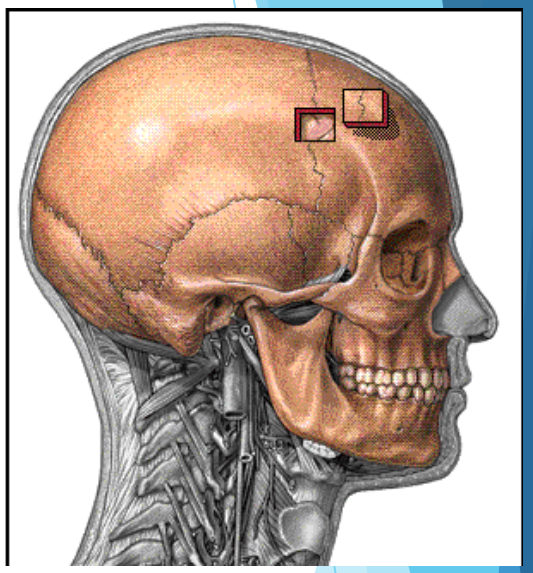
I- Fibrous Joints

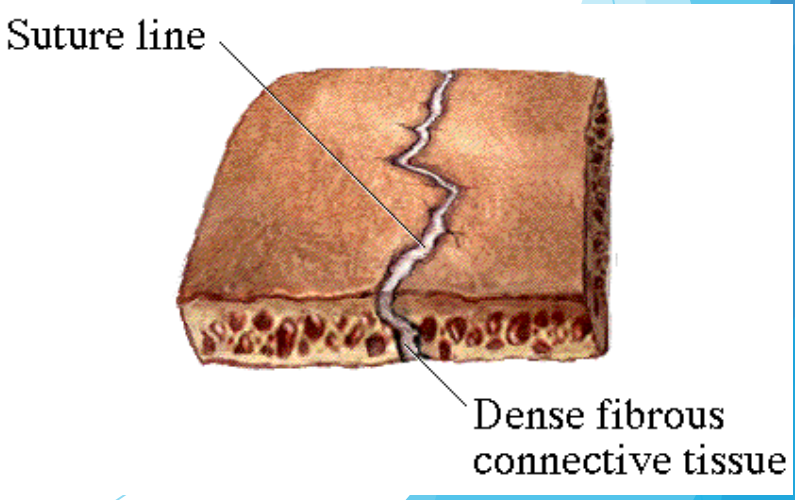
1- Sutures

1- Attached by fibrous tissue 2- Ossify at certain age 3- No or very limited movement



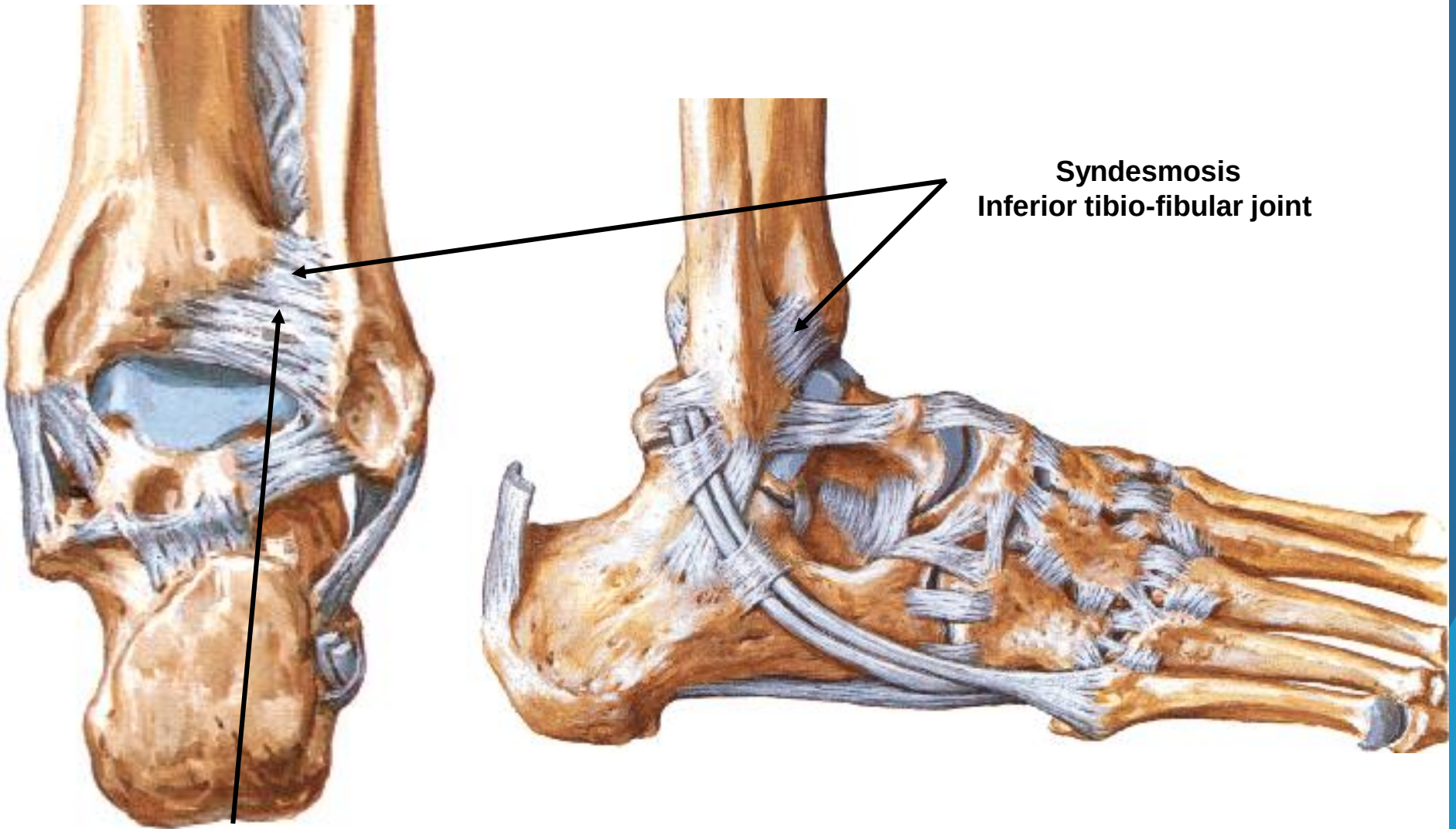




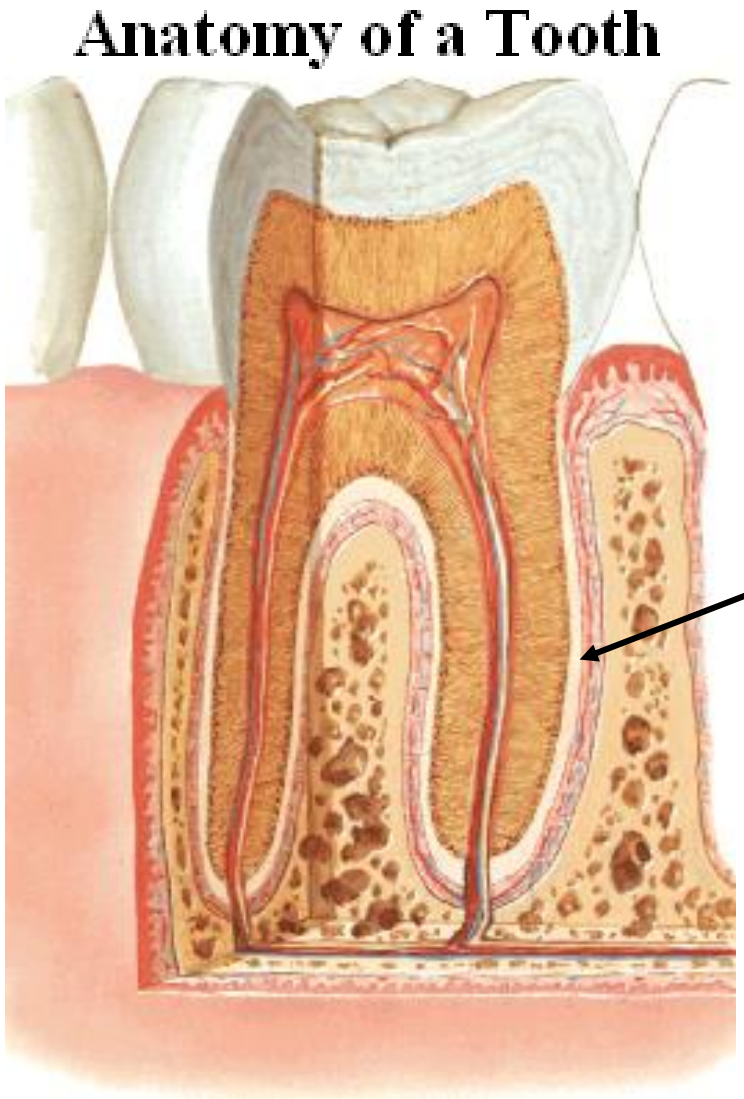


2- Syndesmosis

1- Attached by Strong Ligaments 2- Never ossify



3- Gomphosis

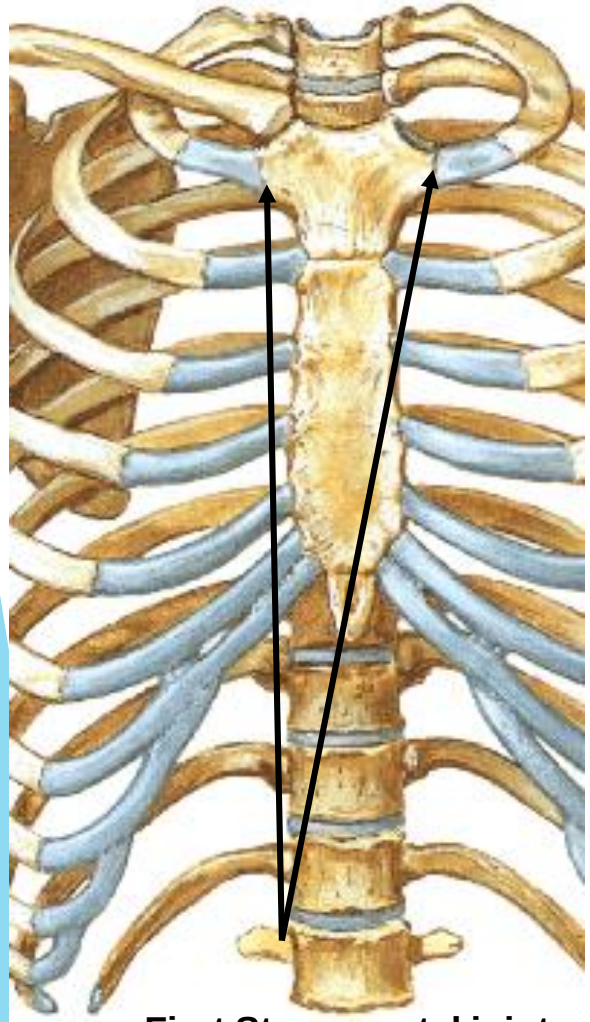


II- Cartilagenous Joints

II- Cartilagenous Joints

Bones are united by cartilage

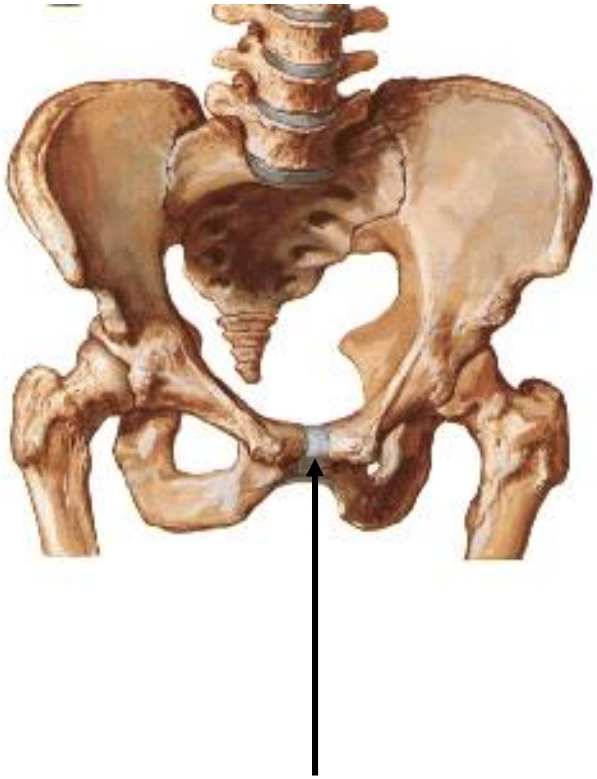
1- Primary (not mobile) (synchondrosis)



First Sternocostal joint

2- Secondary (some mobility) (Symphysis)

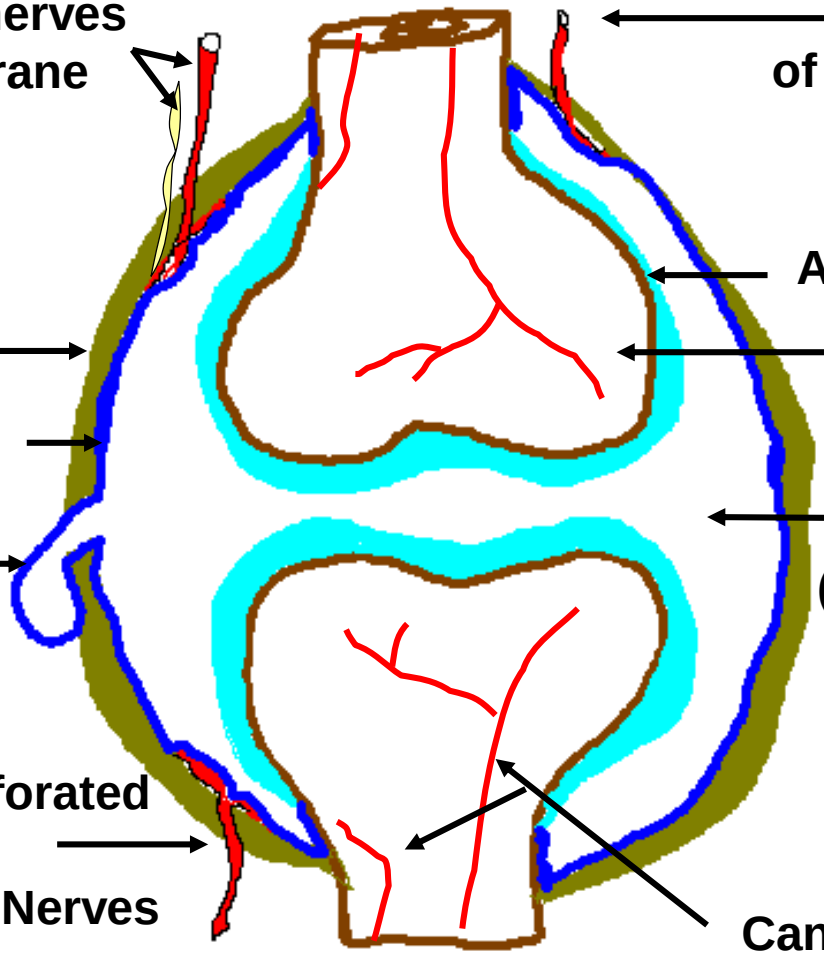
1- They lie in the median plane
2- Connected by fibrocartilage
3- No capsule
4- Strengthened by strong ligament
5- Have some range of movement

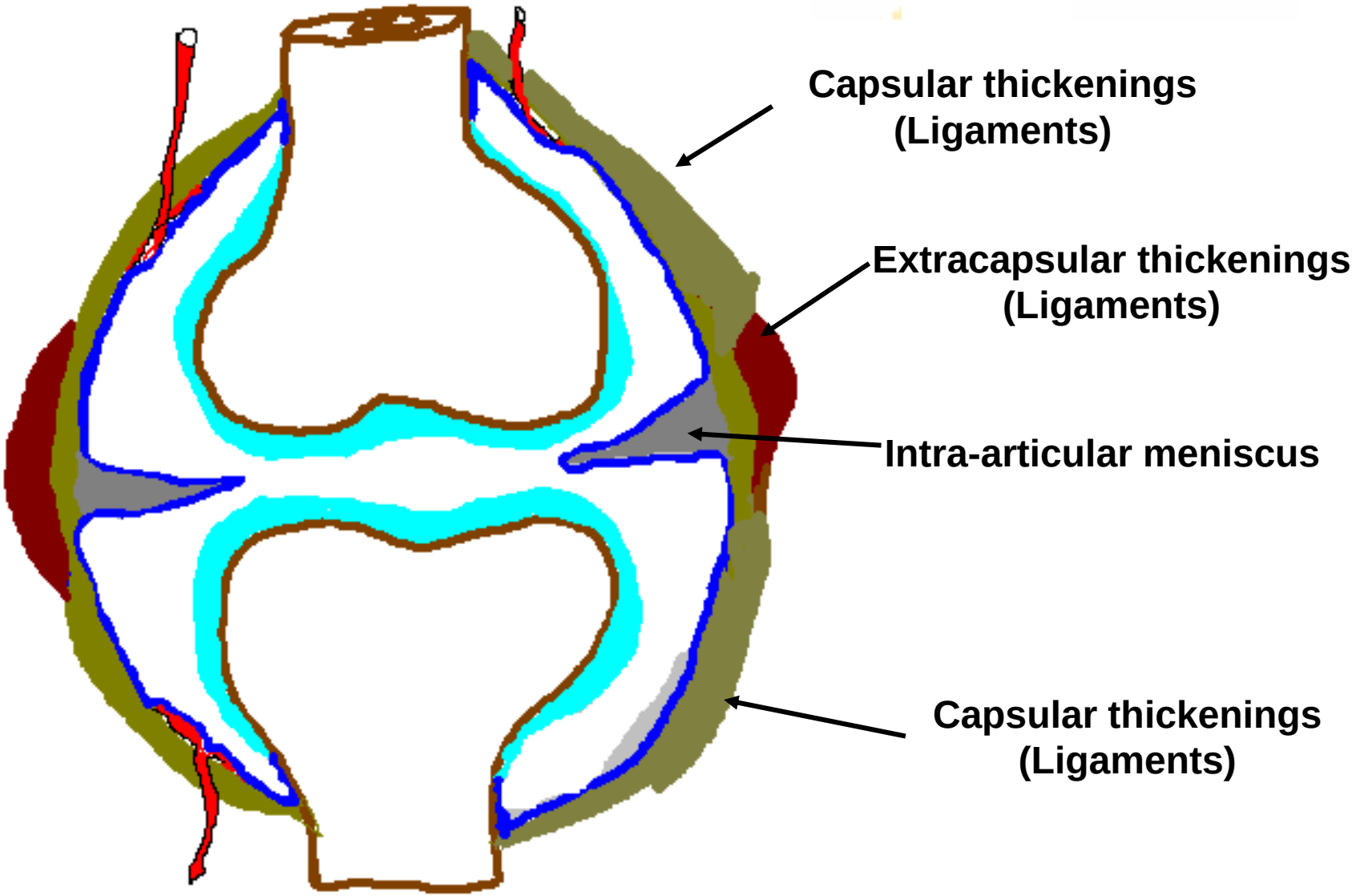


Symphysis Pubis

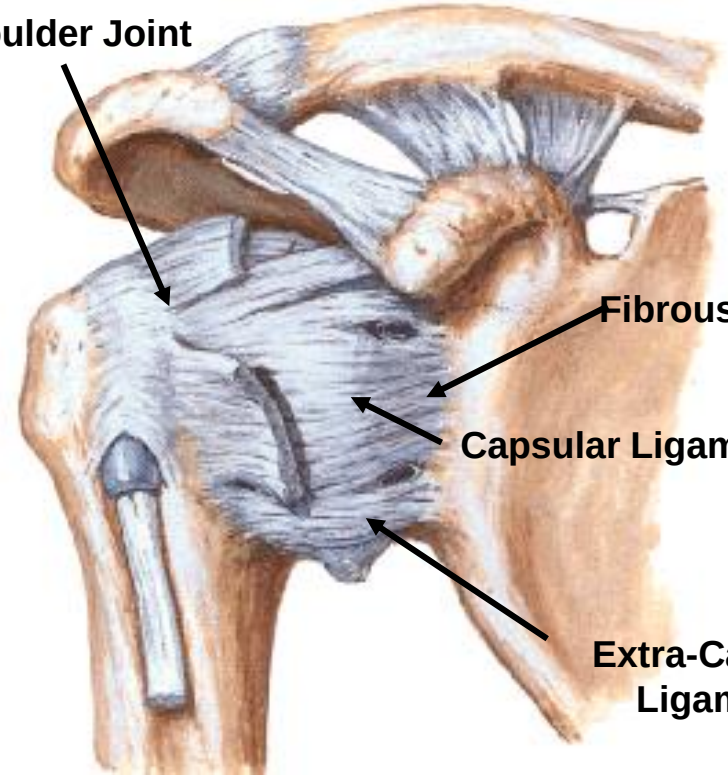
III- Synovial Joints

Characters of Synovial Joints


Blood vessels and nerves of Synovial membrane
Blood vessels of Synovial membrane
Articular hyaline cartilage
Fibrous capsule
Cancellous bone
Synovial membrane
Joint cavity (filled with synovial fluid)
Bursa
The Capsule is perforated by Blood vessels and Nerves of Synovial membrane
Cancellous bone arteries


Capsular thickenings
(Ligaments)
Extracapsular thickenings
(Ligaments)
Intra-articular meniscus
Capsular thickenings
(Ligaments)

Anterior View - Tendons and Ligaments



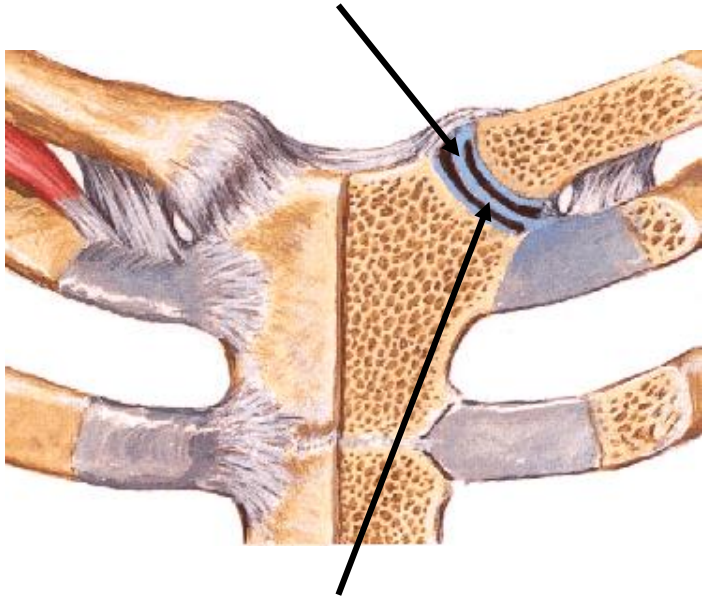
Ligaments of Elbow

Right Elbow - Anterior View

Structures which may present inside Synovial Joints

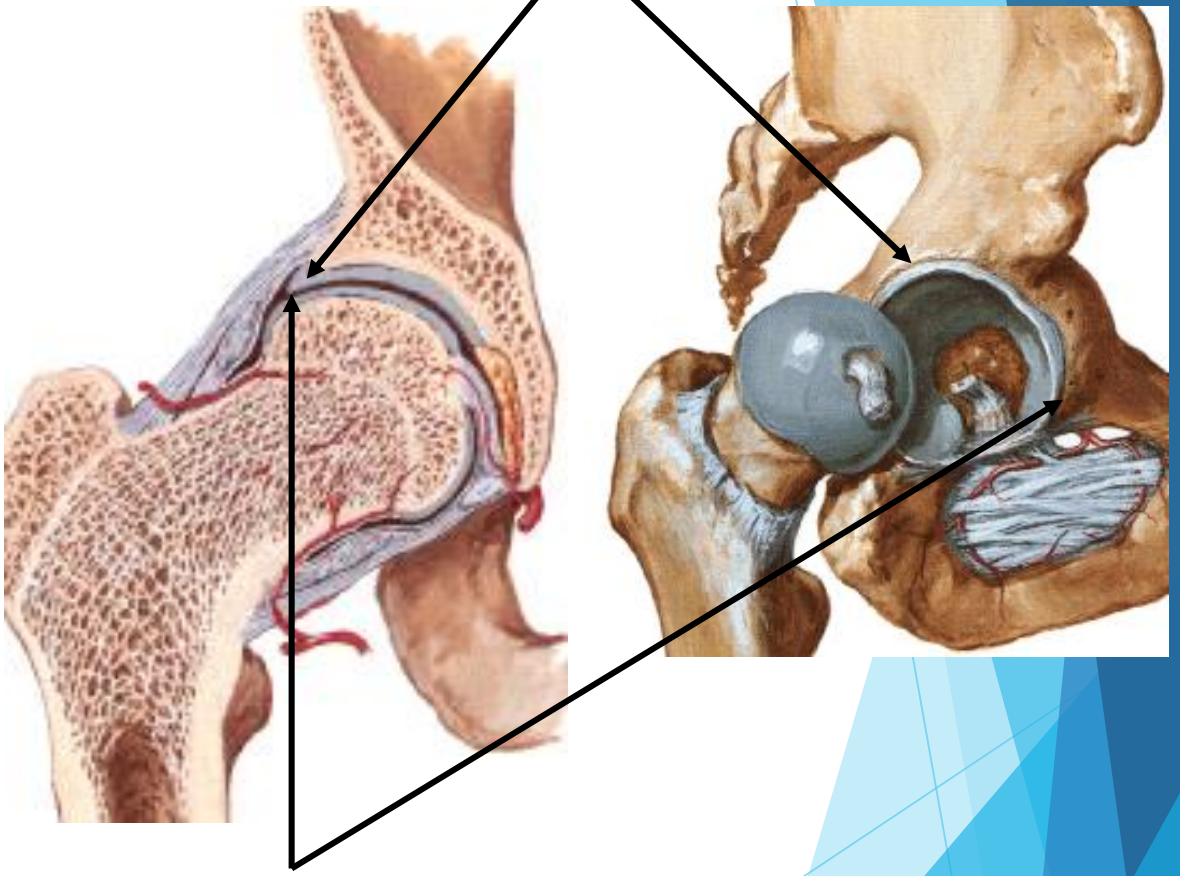
A- Cartilagenous structures may be inside Joint cavity

1- Disc



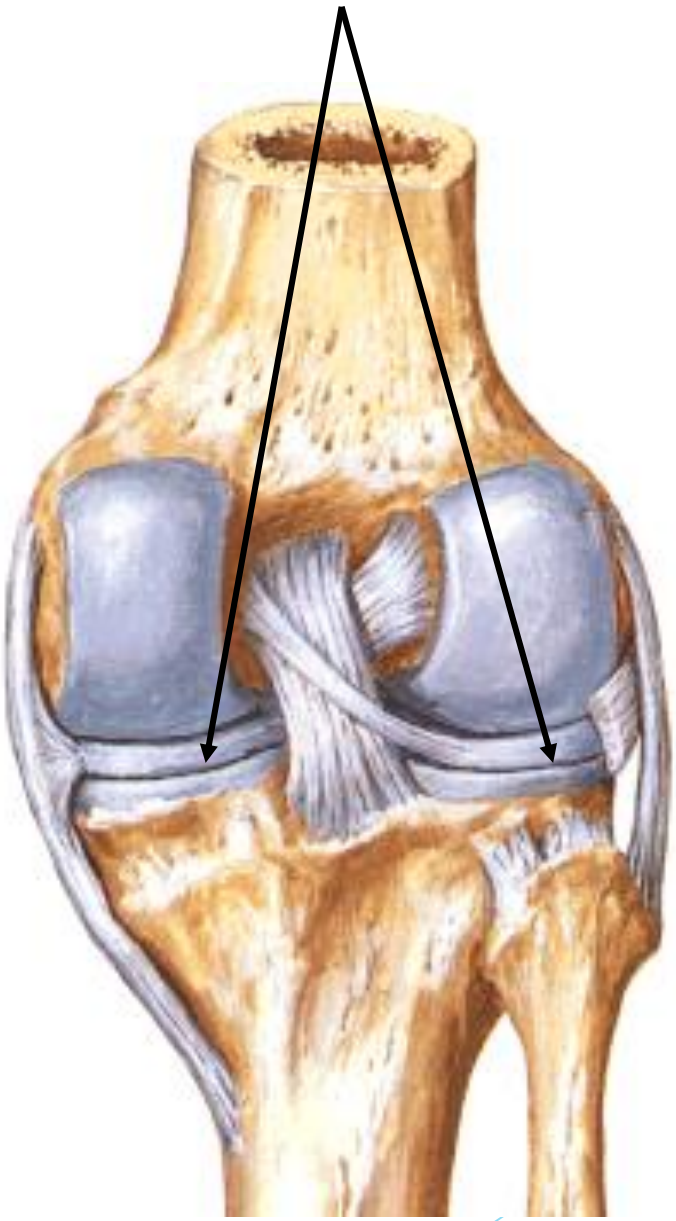
Disc inside sternoclavicular joint

2- Labrum

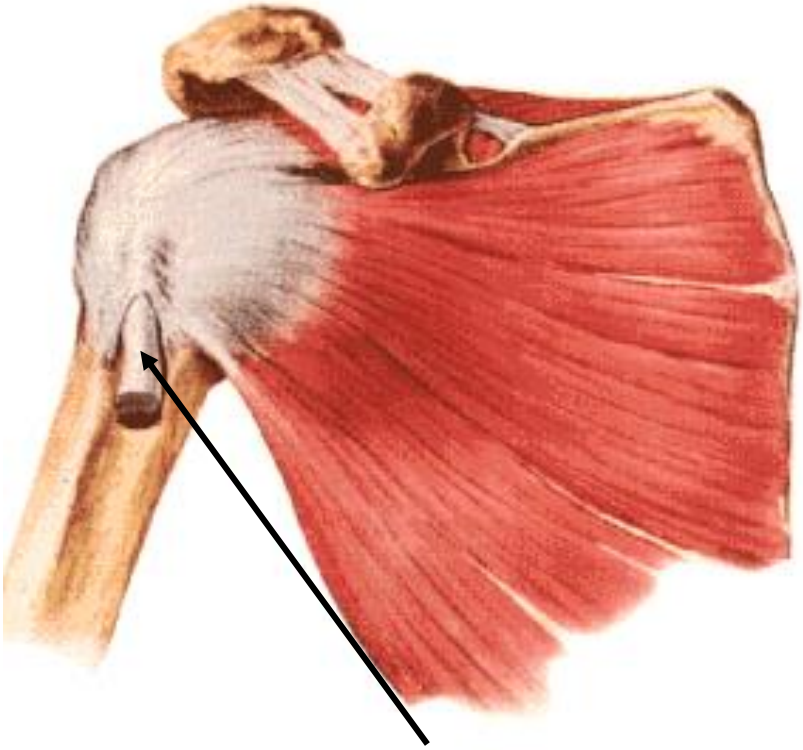


Labrum inside Hip joint

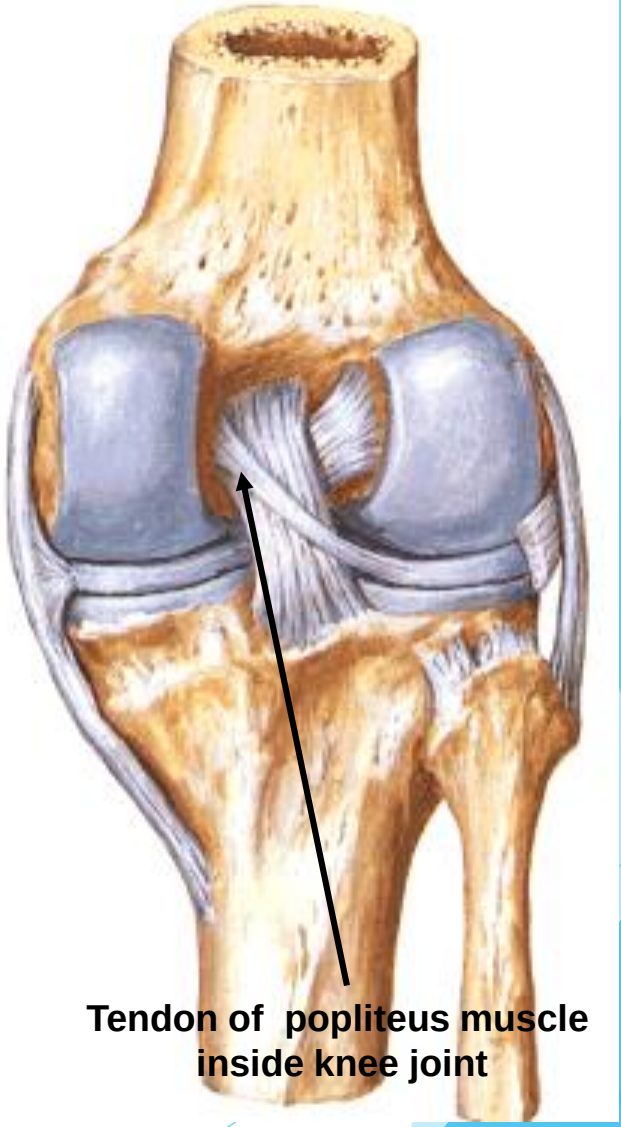
3- Meniscus



B- Tendon of a muscle may be inside Joint cavity

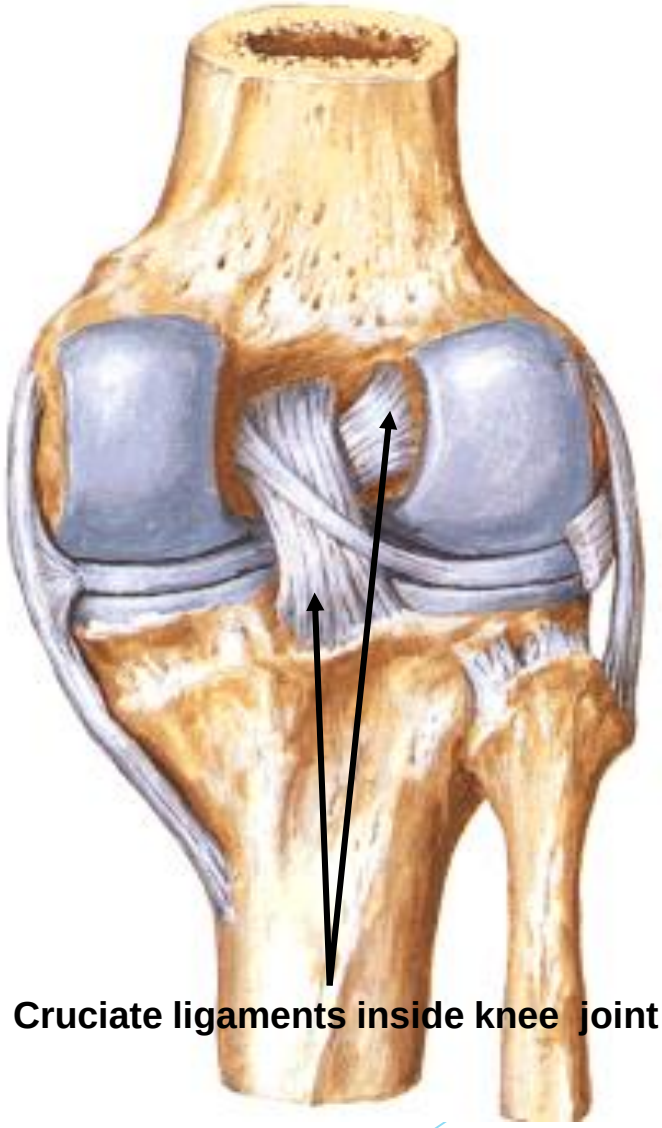


Tendon of long head of biceps muscle inside shoulder joint



Tendon of popliteus muscle inside knee joint

C- Ligaments may be inside Joint cavity

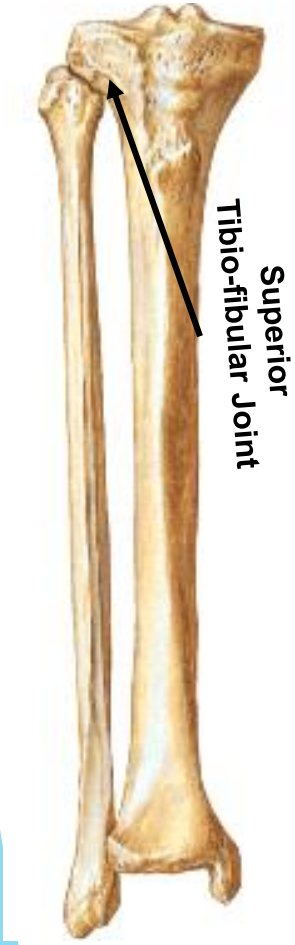


Cruciate ligaments inside knee joint

Types of Synovial Joints

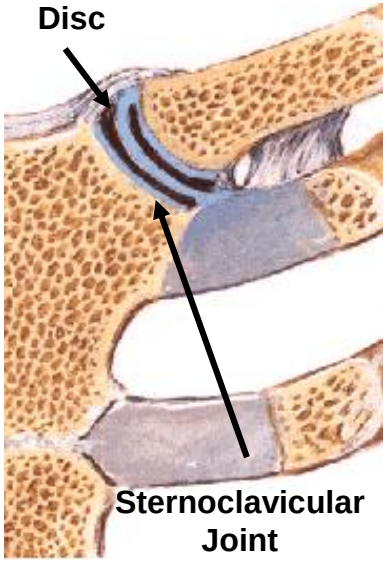
A- According to number of articulating bones

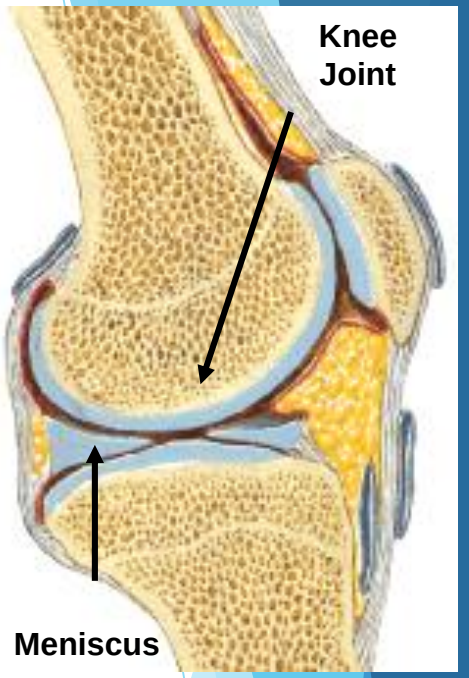
1- Simple



2- Compound

3- Complex

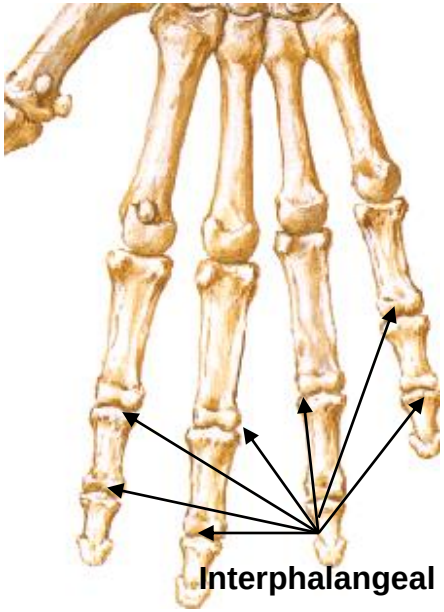




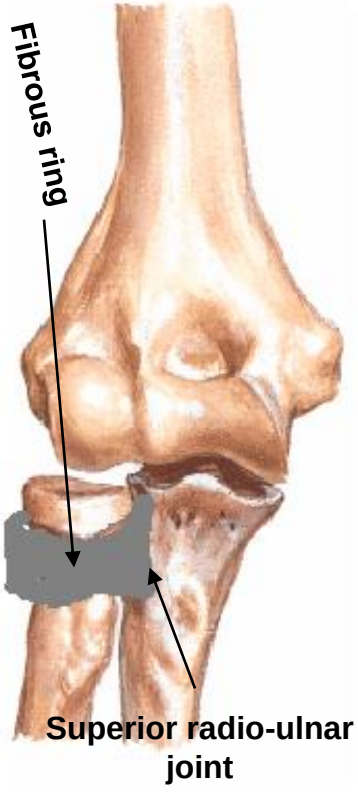
B- According to number of axes of movement

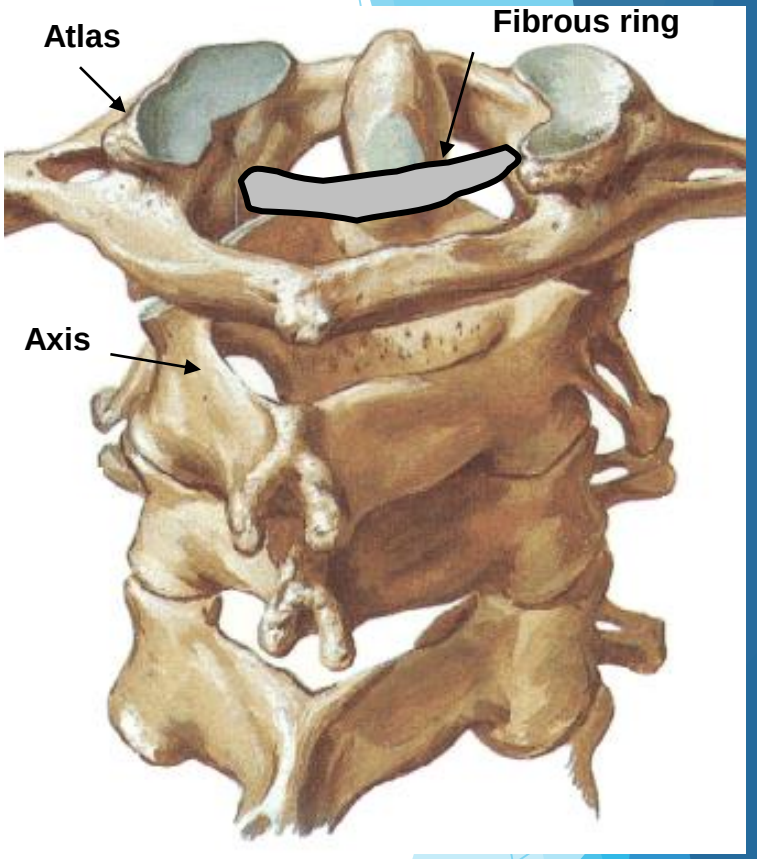
1- Uniaxial

a- Hinge Joints



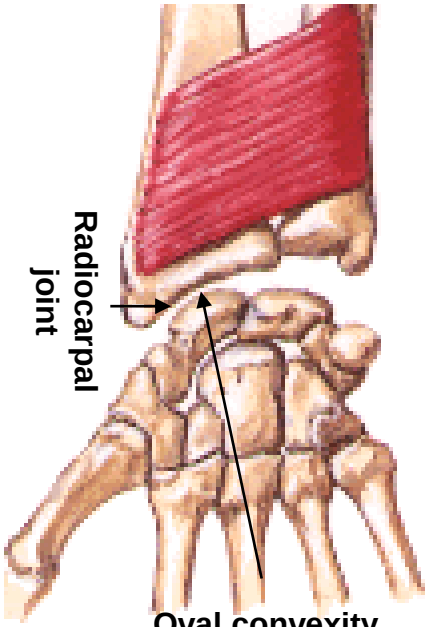
b- Pivot Joints



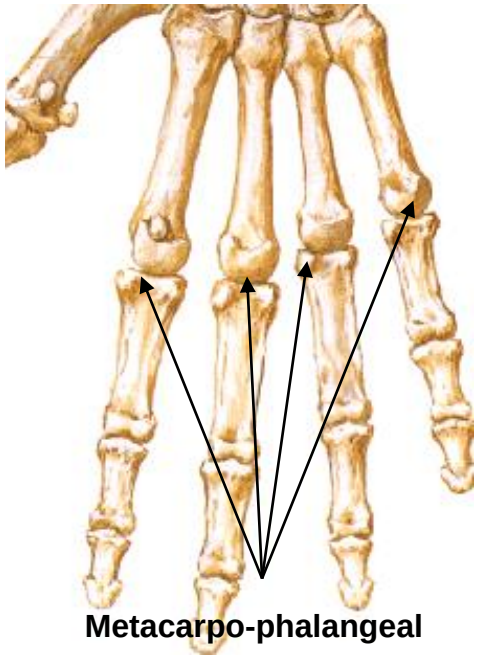


2- Biaxial

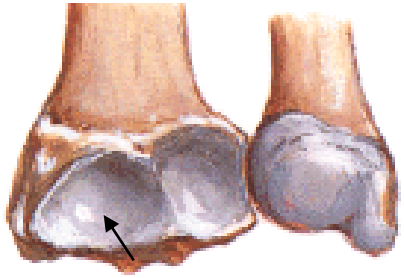
a- Ellipsoid Joints



Oval convexity

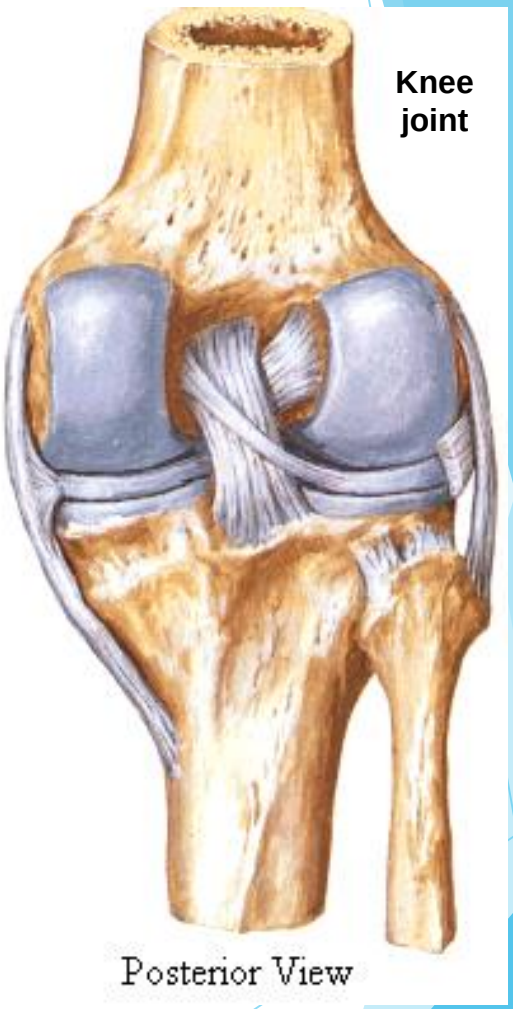


Metacarpo-phalangeal



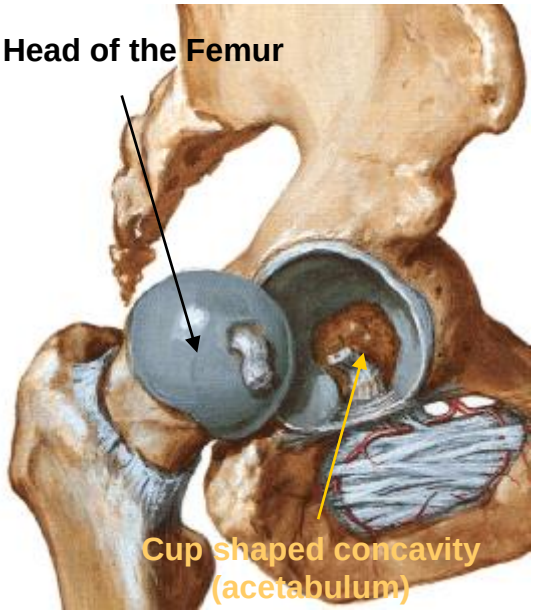
Oval concavity

b- Bicondylar Joints

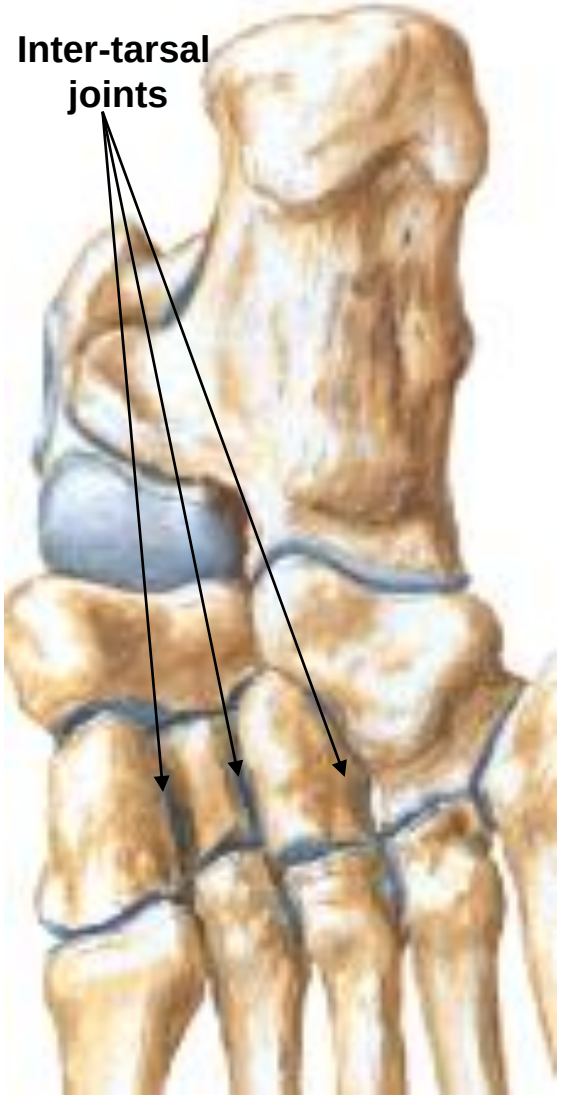


3- Polyaxial

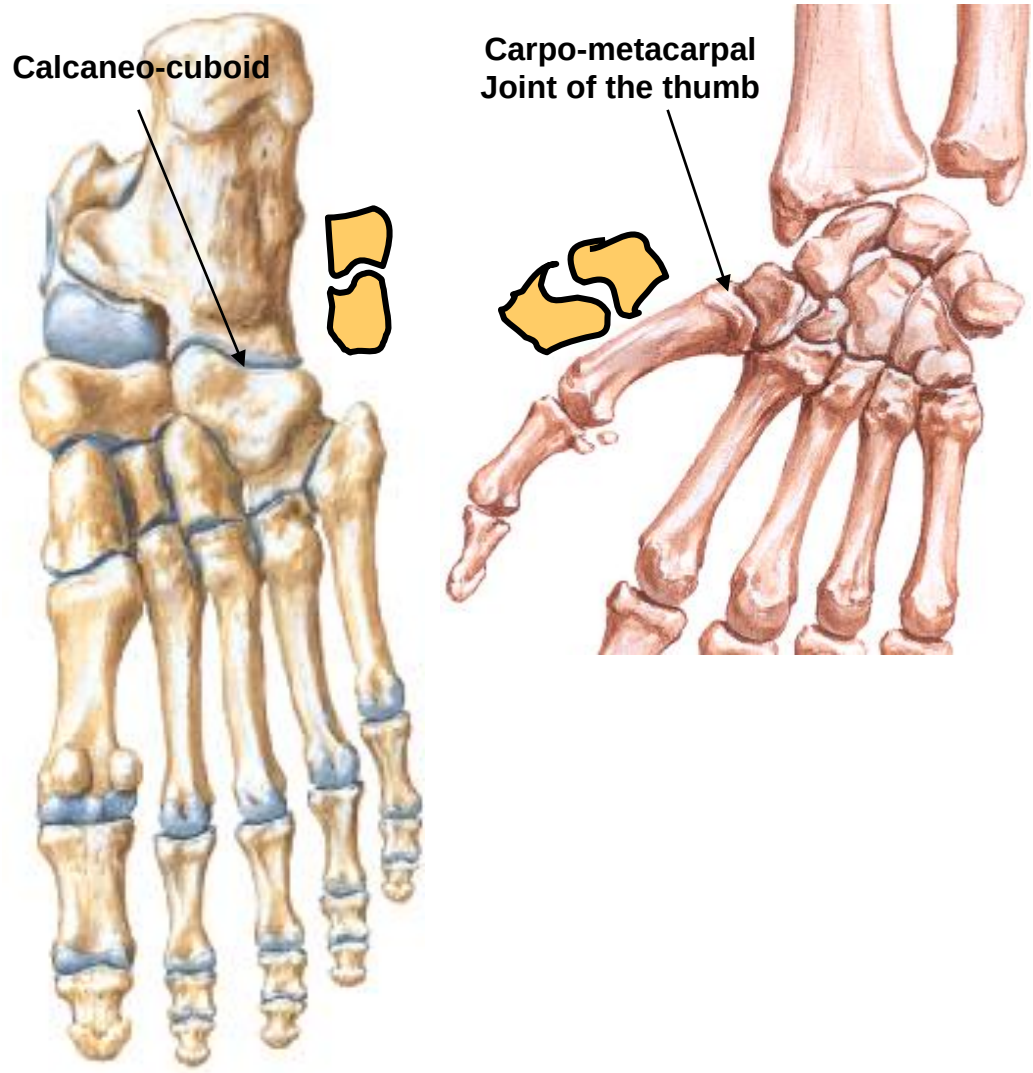
a- Ball-and-Socket Joints



b- Plane

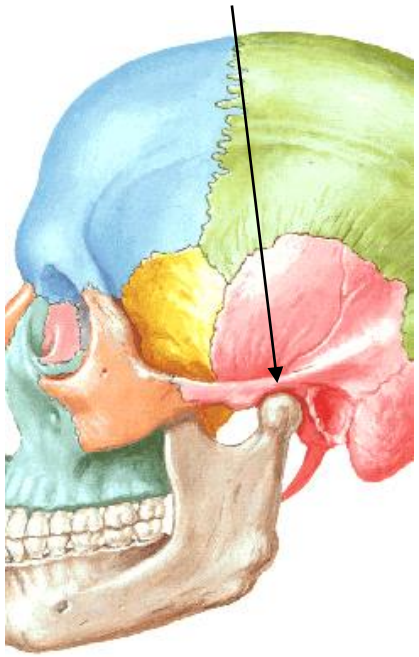


c- Saddle Joints

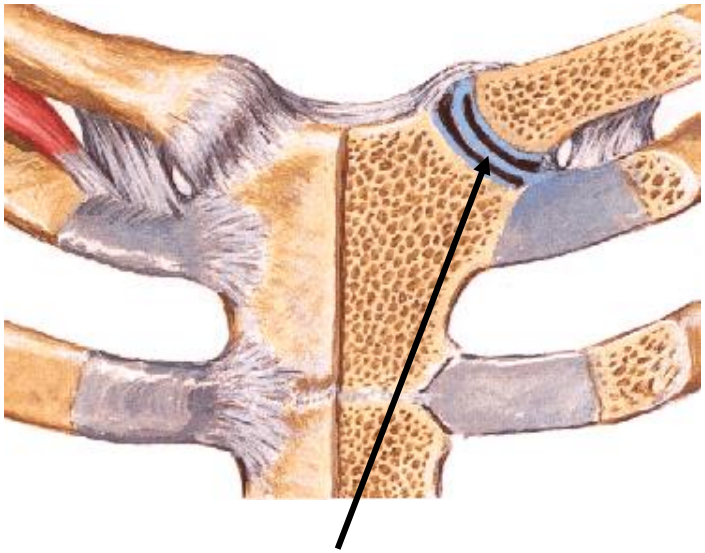


The Articular Disc

1- Temporo-mandibular joint

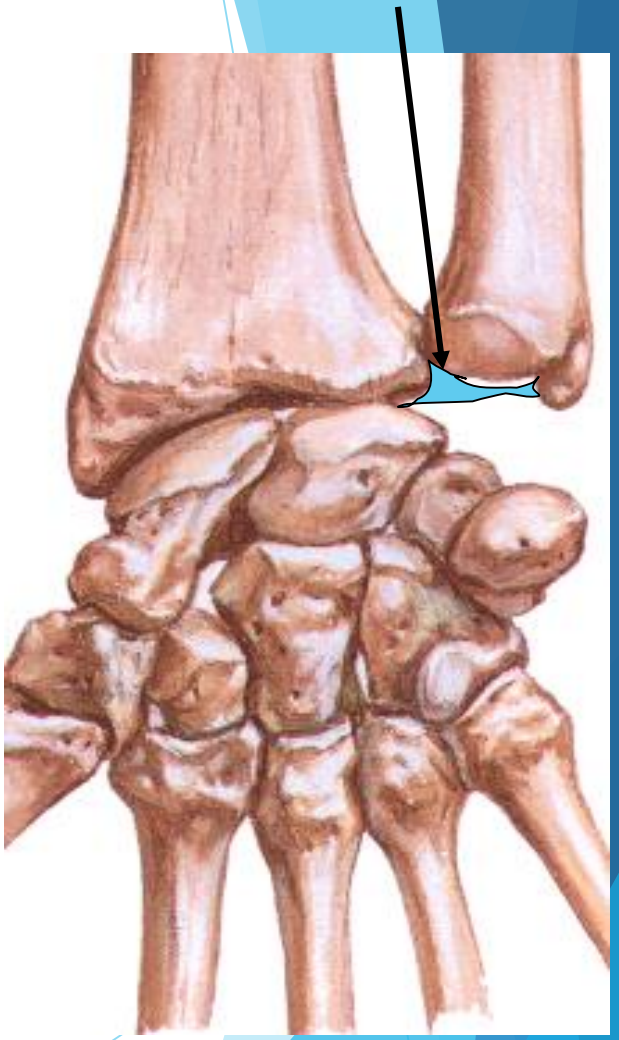


2- Sternoclavicular joint joint



Disc inside sternoclavicular joint

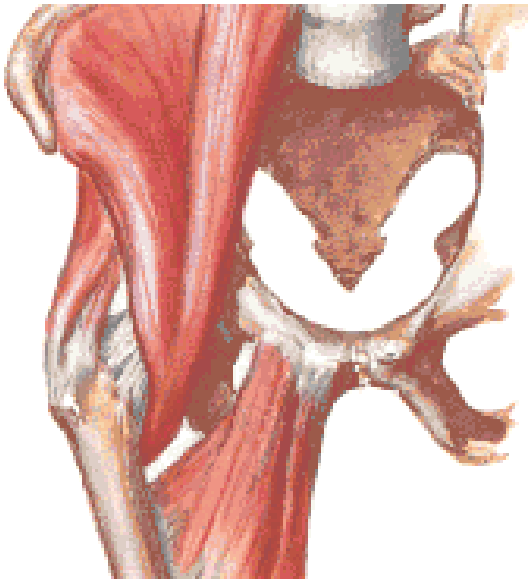
3- The Ulnocarpal Joint:



Stability of Joints

1- Shape of bones

2- Muscles

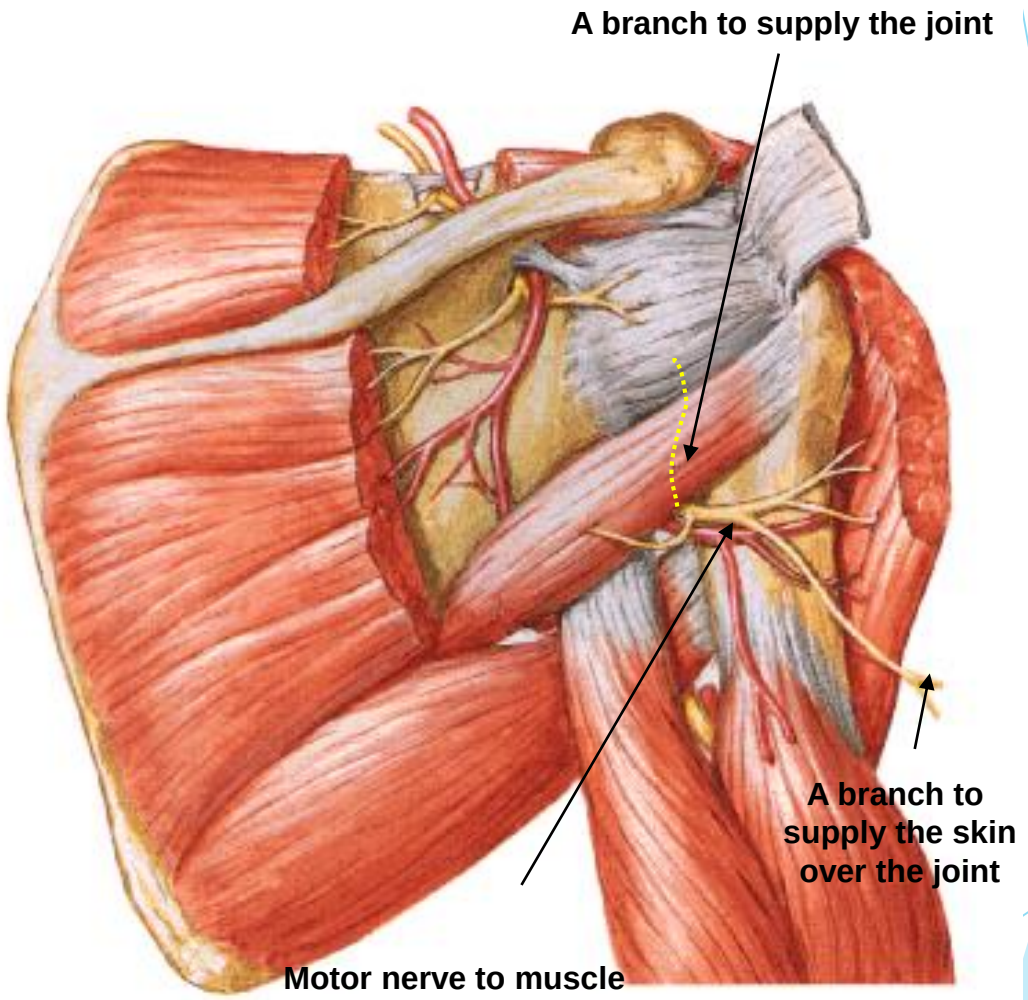


3- Ligaments

Nerve Supply of Joints (Hilton's Law)

Scapulohumeral Dissection

Posterior View



Thank You