

## **Midterm Lab Assignment**

**Fall 2020**

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**Topic:-**

### ***Joints of Upper Limb:-***

There are Three Joints in upper limb which are as follows;

#### **1. Shoulder Joint:-**

The Shoulder joint (glenohumeral joint) is a ball and socket joint between the scapula and the humerus.

It is the major joint connecting the upper limb to the trunk.

It is one of the most mobile joint in the human body.

#### ***Structure of Shoulder Joint:-***

##### **Articulating Surfaces:**

The shoulder joint is formed by the articulation of the head of the humerus with the glenoid cavity.

The articulating surfaces are covered by hyaline cartilage.

The head of humerus is larger than the glenoid fossa giving the joint a wide range of movement.

This glenoid fossa is deepened by a fibrocartilage rim, called the glenoid labrum.

##### **Joint Capsule and Bursae:-**

It is a fibrous sheath which encloses the structures of the joint.

It extends from the anatomical neck of the humerus to the border or 'rim' of the glenoid fossa.

The synovial membrane lines the inner surface of joint capsule, produces synovial fluid to reduce friction.

In shoulder joint, for the reduction of friction several synovial bursae are present which are as follows;

**Subacromial:** located deep to the deltoid and acromion, superficial to the supraspinatus tendon and joint capsule. It reduces friction beneath the deltoid.

**Subscapular;** it is present between the subscapularis tendon and scapula. It reduces wear and tear on tendon during movement.

### **Ligaments:-**

It plays a key role in stabilizing the bony structures.

Glenohumeral ligaments: joint capsule is formed by this group of ligaments connecting the humerus to the glenoid fossa.

Main source of stability for the shoulder.

**Coracohumeral ligament:** attaches the base of the coracoids process to the greater tubercle of the humerus.

**Transverse humeral ligament:** spans the distance between the two tubercles of the humerus.

Coraco-clavicular ligament: composed of the trapezoid and conoid ligaments and runs from the clavicle to the coracoids process of the scapula.

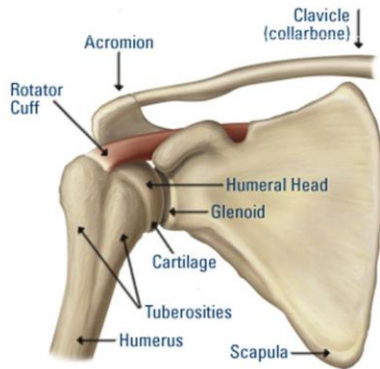
### **Neurovasculature:-**

Shoulder joint is supplied by the anterior and posterior circumflex humeral arteries, which are both branches of the axillary artery.

Suprascapular artery and branch of thyrocervical trunk also contribute.

Axillary, suprascapular and lateral pectoral nerves provide innervations.

## Shoulder Joint



### ***Elbow Joint:-***

A synovial joint found in the upper limb between the arm and the forearm.

It is the point of articulation of three bones: the humerus, the ulna and the radius.

### **Structure of Elbow Joint:-**

It is classified as compound joint.

There are two articulations in the joint.

The articular surfaces of the bones at these joints are separated from each other by layer of hyaline cartilage.

A fibrous capsule encloses the joint, and is lined internally by synovial membrane.

An elbow joint is functionally hinge joint that allows movement in only one plane.

There are three bones that comprise the elbow point which are as:

- The Humerus
- The Radius
- The Ulna

### **Elbow Joint:-**

**Humeroulnar Joint:** Joint between the trochlea on the medial aspect of the distal end of the humerus and the trochlear notch on proximal ulna.

**Humeroradial Joint:** Joint between the capitulum on the lateral aspect of the distal end of the humerus with the head of radius.

### **Ligaments of Elbow Joint:-**

**Ulnar Collateral Ligament:** Extends from the medial epicondyl of the humerus to the coronoid process of ulna.

Triangular in shape and composed of three parts: an anterior, posterior, and inferior band.

### **Radial Collateral Ligaments:-**

Low attachment to the lateral epicondyl of the humerus.

Distal fibers blend with the annular ligament that encloses the head of radius.

### **Blood Supply and Innervations:-**

Profunda brachii, radial and ulnar arteries.

Proximal to the elbow point, the brachial artery, the largest in the arm, gives off two branches, a superior and inferior ulnar collateral artery. The profunda brachii gives off radial collateral and the middle collateral artery.



### **Wrist Joint:-**

#### **Type:-**

Synovial ellipsoid joint.

### **Articular Surfaces:-**

Proximal component—distal end of the radius, articular disc.

Distal Component—scaphoid, lunate and triquetrum of the proximal row of carpal bones.

### **Ligaments:-**

Palmer radiocarpal joint, dorsal radiocarpal ligament, ulnar collateral ligament, radial collateral ligament.

### **Innervation:-**

Anterior interosseous nerve arising from median nerve (C5-T1)

Posterior interosseous nerve arising from radial nerve (C7-C8)

Deep and dorsal branches of the ulnar nerve (C8-T1)

### **Blood Supply:-**

Branches of the dorsal and palmar carpal arches.

