**ASSIGNMENT ANATOMY**

 **ID NO: 17507**

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**QUESTION:** Joints of upper limbs?

**ANS:**

BONE OF HOULDER GIRDLE AND ARM

The shoulder girdle consists of

1. CLAVICLE:

2. SCAPULA:

1. SCAPULA:

The scapula is flat triangular bone that lies on posterior chest wall between 2nd ribs to 7th rib.

SURFACES AND BORDER;

**IT HAS 3 SURFACES**

1. Anterior surface
2. Posterior surface
3. Superior o lateral surface

**It has 3 borders**

1. Medial border
2. Lateral border
3. Superior border

**It has 3 angles**

1. Superior angle
2. Inferior angle
3. Lateral angle

**POSTERIOR SURFACE**

1. **The spine of the scapula**: projects backward.
2. **Spine of scapula:** (inferior surface) give attachment to Deltoid muscle.
3. **Spine of scapula:** (superior surface) give attachment to Trapezius muscle.

The convex posterior surface is divided by the spine into small supraspinous fossa above and much larger infraspinous fossa below.

1. **Supraspinous fossa**: give attachment to

supraspinatus muscle.

1. **Infraspinous fossa**: give attachment to Infraspinatus muscle.
2. **Acromion**: The lateral end of the spine and is free, which articulates with the clavicle to

**Form Acromioclavicular joint.**

**Anterior surface**

Also called Costal surface

It is concave and forms the shallow subscapular fossa.

Subscapular fossa: Giveattachment to Subscapularis muscle.

**Superiorolateral surface**

1. **Gleniod cavity or fossa**

Superolateral surface of the scapula forms the pear-shaped

glenoid cavity, or fossa, whicharticulates with the head of the

humerus at the shoulder joint.

**Supraglenoid tubercle:** Provides attachment for Long head of Bicep

**Infraglenoid tubercle:** provides attachment for Long head of Triceps.

**coracoid process**

project upward and forward for gleniod cavity and provide attachment for

1. Short head of bricep
2. Coracobrchislis muscles
3. Pectoralis minor muscles

**Suprascapular notch**

Medial to the base of corocoid process is the suprascapulr notch

**MEDIAL BORDER**

Give attachment to Outer surface:

Inner surface

**OUTER SURFACE**

Levator scapula

Rombhoid minor

Rombhiod major

**INNERSURFACE**

SERATUS ANTERIOR MUSCLES

**LATERAL BORDER**

long head of tricep

teresminor muscle

teres mjor muscles

**SUPERIOR BORDER**

Thinnest and shortest bone

**SUPRASCAPULAR NOTCH:**

Where superior border join base of corocoid

Provide attachment for omohyoid muscles

**INFERIOR ANGLE:**

Provide attachment for

Serattus anterior muscles

Latissimus dorsi muscles

The inferior angle of scapula can be palpated in living subjected and marks the level of 7th rib and the spine of the 7th thoracic vertebrae.

**FEATURES OF SCAPULA :**

1. Features of scapula are usually the result of severe trauma such as occur in automobile crashes .
2. Injuries are usually associated with fractured rib.
3. Most fracture of scapula required little treatment bcz the muscle on anterior and posterior surfaces adequetly splint the fragment.

**LECTURE NO 2:**

**CLAVICLE:**

The clavicle is long salenderd bone that lies horizontally across the root of neck just beneat the skin

It is also called collar bone

It connect upper limbs to trunck

**END AND SURFACES :**

It consists of :

**Sterna end**

**Acromial end**

**Body shaft**

It consists of four surfaces:

**Interior surface**

**Superior surface**

**Anterior surface**

**Posterior surface**

**ARTICULATIONS:**

It articulates

Medially with the maniburium of sternum and 1st costal of cartilage at sterno clavicular joint

Laterally at the acromion process of scapula at acromioclavicular joint.

It is divided into :

Medial two third

Lateral one third

**MEDIAL TWO THIRD :**

Medial two thirdof clavicle is convex forward

**LATERAL ONE THIRD:**

Lateral one third is concave forward .

**INFERIOR SURFACE:**

**1.conoid tubercles** :near the acromial end of clavicle give attachment to conoid ligament .

**2.trapezoid line**: near the acromial end ofclaviclr give attachment to trapezoid ligament .

**3.subclavin groove:** in the medial shaft third of shaft of clavicle give attachment to subclaviculus muscles .

**4.impression costoclavicular ligament:** rough depressed oval area of at sterna end that give attachment to costoclavicular ligament.

**SUPERIOR SURFACE :**

Attachment for sternoclediomestoid muscles at medial two third of clavicle .

Attachment for trapzuis muscles at lateral one third o clavicle.

**ANTERIOR SURFACE :**

Attachment for pectoralis muscles at medial two third of clavicle.

Attachment for deltoid muscles at lateral one third of clavicle .

**FUNCTION:**

1. The clavicle hold the arm away from trunks .
2. It also transmit forces for upper limb to the axial skeleton
3. It provide attachment for muscles 4it provide attachment for ligament.

**HUMERUS:**

The humerus is lrgest bone in upper limb . articulates at the scapula at the shoulder joint and with the radius and ulna at the elbow joint.

It consists of:

Proximal end

Shaft

Distal end

 **PROXIMAL END**

**HEAD :**

THE UPPER END of humerus as a head which form about one third of sphere and articulate with the glenoid cavity of the scapula.

**ANATOMIC NECK:**

Immediately below the head is the anatomical neck formed by groove separating head from greater and lesser tuberusity.

**SURGICAL NECK:**

Narrow part where the upper end of humerus joint the neck it is common site of fracture.

 **GREATER TUBEREROSITY:**

At lateral marjin of humerus.

Give attachment to

Suprasinatus muscles

Infraspinatus muscles

Teres minor muscles

**LESSER TUBEROSITY:**

Project anteriorly formed bone give attachment to suprascapularis muscles .

**SHAFT:**

Lateral head of tricep muscles

Medial head oftricep muscles

**DISTAL END:**

**Medial supracondyral bridge:**

End in medial epi condyl

Common flexor tendon

Pronator teres

**LATERAL SUPRACONDYRAL BRIDGE:**

End in lateral epicondyl

 brocioradiali muscles extensor

common extensor tendon

**CAPITELLUM:**

 For articulation with the head of radius

**TROCHLEA:**

It is pulley shaped for articulation with the trochlear notch of ulna .

**RADIAL FOSSA:**

Above he capitellum is the radial fossa which receive the head of radius when elbow is flexed.

 **CORONOID FOSSA :**

**above** the trochlea anteriorly is coronoid fossa which received the head of radius when elbow is free.

**OLECRANON FOSSA:**

Above the trochlea posteriorly is the olecranon fossa which receive the olecranon process of ulna when elbow joint is extended.

**RADIUS AND ULNA:**

The radius is the lateral bone ofthe forearm.

Its proximal end articulates withthe humerus at the elbow joint andwith the ulna at the proximal

radioulnar joint.

Its distal end articulates with thescaphoid and lunate bones of the

hand at the wrist joint and with theulna at the distal radioulnar joint

**PROXIMAL END:**

At the proximal end of the radius is the smallcircular head, with 2 articular surfaces

The upper surface of the head is concave and

articulates with the convex capitellum of the

humerus.

The medial surface of the head articulates with

the radial notch of the ulna.

Below the head, the bone is constricted to form

the neck.

Below the neck medially is the bicipital

tuberosity for the insertion of the biceps muscle.

SHAFT

The shaft of the radius is wider below than

above.

It consist of:

**3 borders:**

**Interosseous border (medially)**

**Anterior border**

**Posterior border**

**3 surfaces:**

Anterior surface (B/w interosseous & Anterior

border)

Lateral surface (B/w Anterior and Posterior

borders.)Posterior surface (B/w Interosseous & Posterior

border)

interosseous border

It has a sharp interosseousborder medially for the

attachment of theinterosseous membrane thatbinds the radius and ulnatogether.

**ANTERIOR SURFACE**

(B/w interosseous & Anterior border)

It gives attachments to:

**Supinator muscle**: lateral, anterior & posterior

surface of radius proximally.

**Flexor Digitorum superficialis**: Upper half of

anterior border

**Flexor pollices longus**: Middle 3rd of anterior

surface of radius.

**Pronator quadratus**: distal end of anterior

**surface**

The ulna is the medial bone of the forearm.

It consist of :

**Proximal end**

**Shaft**

Proximal end:Proximal end: Articulates with the humerus at

the elbow joint and with the head of theradius at the proximal radioulnar joint.

**PROXIMAL END**

The proximal end of the ulna is largeand is known as the olecranon process. This forms the prominence of the elbow. It has a notch on its anterior surface, the trochlear notch, which articulateswith the trochlea of the humerus .Below the trochlear notch is thetriangular coronoid process. On lateral surface of coronoid process, there is radial notch for

articulation with the head of the radius.

Inferior to the coronoid process is the tuberosity of ulna for

attachment of brachialis muscle.

Medially give attachments to Flexor Digitorum superficialis and

pronator teres

Below the radial notch is the supinator crest that gives origin to thesupinator muscle.

**Shaft of the ulna**

The shaft of the ulna tapers from above down.

It onsist of:

3 borders:

**Posterior border Interosseous border (laterally)**

**Anerior border**

**3 surfaces:**

**Anterior surface (b/w Interosseous and Anterior**

**border)**

**Medial surface (b/w Anterior and Posterior border)**

**Posterior surface (b/w interosseous and posterior**

**border)**

**Borders**

Interosseous border : It is sharp andis lateral, Provide attachment of the

interosseous membrane.Anterior border runs down to the

styloid process

The posterior border is rounded andsubcutaneous and can be easily

palpated throughout its length.

**SURFSACES**

**Anterior surface**: (b/w Interosseous and

Anterior border)

**Medial surface**: (b/w Anterior and Posterior

border)

**profundus Flexor Digitorum:** Proximal end ofthe medial and anterior surfaces of ulnaPronator quadratus: Distal end of anteriorsurface of **Flexor carpi ulnaris** ulna.Posterior surface:(b/w interosseous and posterior border)

Gives attachment to:

**Triceps brachii:** posterior surface of olecranon process of ulna.

**Anconeus:** proximal end of posterior surface of ulna.

: proximal end of posterior border

Abductor pollices longus: Posterior surface of upper 3rd of ulna

Extensor pollices longus: Posterior surface of middle 3rd of ulna

Extensor indices: Posterior surface of lower 3rd of ulna.

Distal end:Distal end: Articulates with the

radius at the distal radioulnarjoint. The ulna does not reach

and therefore does notparticipate in wrist joint.

At the distal end of the ulna isthe small rounded head, whichhas projecting from its medialaspect the styloid process.

**BONES OF HAND**

There are eight carpal bones, made up of two rows

of four.

Proximal row: it consists of (from lateral to

**medial):**

**Scaphoid**

**Lunate,**

**Triquetral**

**Pisiform bones.**

**Distal row:** it consists of (from lateral to medial):

**Trapezium**

**Trapezoid**

**Capitate**

**Hamate bones.**

**Flexor retinaculum**: Together, thebones of the carpus present ontheir anterior surface a concavity,the lateral and medial edges ofwhich is attached a strongmembranous band called theflexor retinaculum.carpal tunnel: An osteofascialtunnel, formed for the passage ofthe median nerve and the flexortendons of the fingers.

**The Metacarpals**

There are five metacarpal bones,each of which has:

**Base**

**Shaft**

**Head**

The first metacarpal bone of the thumb is the shortest and most mobile.The bases of the metacarpal bones articulate with the distal row of thecarpal bones.The heads, which form the knuckles, articulate with the proximal

**phalanges**

The shaft of each metacarpal bone is slightly concave forward.

Its surfaces are posterior, lateral, and medial.

Phalanges

There are three phalanges for eachof the fingers but only two for the

thumb.

1.Proximal Phalanges

2. Middle Phalanges

3. Distal Phalanges

4.Distal end