

ANATOMY OF THE UPPER LIMB

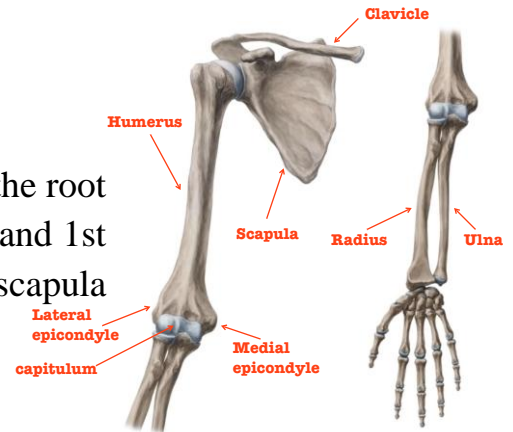
The upper limb is divided into the shoulder (junction of the trunk with the arm), arm, elbow, forearm, wrist, and hand.

BONES OF THE SHOULDER GIRDLE AND ARM

The shoulder girdle consists of the clavicle and the scapula, which articulate with one another at the acromioclavicular joint.

Clavicle

The clavicle is a long, slender bone that lies horizontally across the root of the neck just beneath the skin. It articulates with the sternum and 1st costal cartilage medially and with the acromion process of the scapula laterally.



Scapula

The scapula is a flat triangular bone that lies on the posterior chest wall between the 2nd and 7th ribs. On its posterior surface, the spine of the scapula projects backward. The lateral end of the spine is free and forms the acromion, which articulates with the clavicle.

The anterior surface of the scapula is concave and forms the shallow subscapular fossa. The posterior surface of the scapula is divided by the spine into the supraspinous fossa above and an infraspinous fossa below.

Humerus

The humerus articulates with the scapula at the shoulder joint and with the radius and ulna at the elbow joint. The upper end of the humerus has a head. Immediately below the head is the anatomic neck.

The lower end of the humerus possesses the medial and lateral epicondyles for the attachment of muscles and ligaments, the rounded capitulum for articulation with the head of the radius, and the pulley-shaped trochlea for articulation with the trochlear notch of the ulna.

BONES OF THE FOREARM

The forearm contains two bones: the radius and the ulna.

Radius

The radius is the lateral bone of the forearm. Its proximal end articulates with the humerus at the elbow joint and with the ulna at the proximal radioulnar joint. Its distal end articulates with the scaphoid and lunate bones of the hand at the wrist joint and with the ulna at the distal radioulnar joint.

Ulna

The ulna is the medial bone of the forearm. Its proximal end articulates with the humerus at the elbow joint and with the head of the radius at the proximal radioulnar joint. Its distal end

articulates with the radius at the distal radioulnar joint, but it is excluded from the wrist joint by the articular disc.

BONES OF THE HAND

There are eight carpal bones, made up of two rows of four. The proximal row consists of (from lateral to medial) the scaphoid, lunate, triquetral, and pisiform bones. The distal row consists of (from lateral to medial) the trapezium, trapezoid, capitate, and hamate bones.

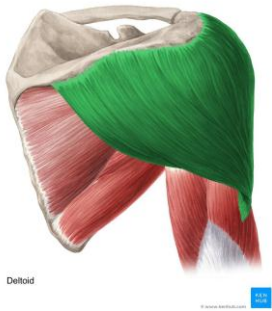
There are five metacarpal bones, each of which has a base, a shaft, and a head.

MUSCLES OF SHOULDER REGION

CONNECTING THE SCAPULA TO THE HUMERUS

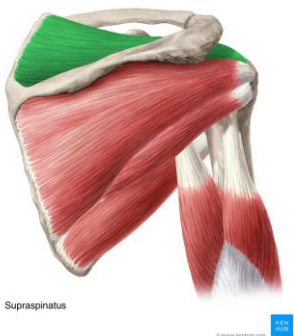
1-Deltoid

-Abducts arm (shoulder joint); anterior fibers flex and medially rotate arm; posterior fibers extend and laterally rotate arm.



2- Supraspinatus

-Abducts arm and stabilizes shoulder joint.



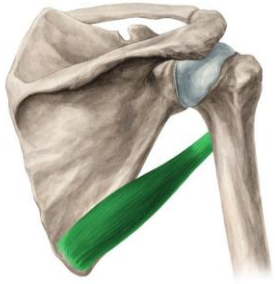
3- Infraspinatus

-Laterally rotates arm and stabilizes shoulder joint.



4-Teres major

-Medially rotates and adducts arm and stabilizes shoulder joint.

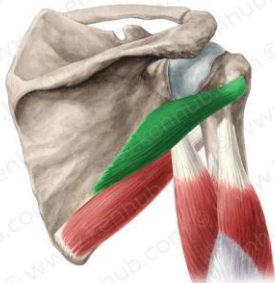


Teres major



5-Teres minor

-Laterally rotates arm and stabilizes shoulder joint.



Teres minor



6- Subscapularis

-Medially rotates arm and stabilizes shoulder joint.



Subscapularis



MUSCLES OF THE ARM

Anterior Compartment

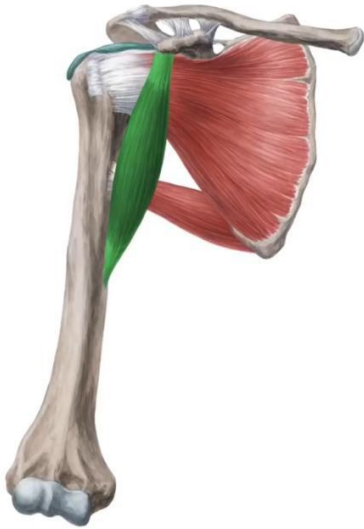
1-Biceps brachii (Long head, Short head)

-Supinator of forearm and flexor of elbow joint; weak flexor of shoulder joint.



2-Coracobrachialis

-Flexes arm and also weak adductor



3-Brachialis

-Flexor of elbow joint.



Posterior Compartment

*Triceps (Long head, Lateral head, Medial head)

-Extensor of elbow joint



MUSCLES OF THE FOREARM

Muscles of the Anterior Fascial Compartment.

1-Pronator Teres (humeral head - ulnar head):

-Function: pronation and flexion of forearm.



2-Flexor carpi radialis:

-flexes and abducts hand at wrist joint



3-Palmaris longus:
-flexes hand



4-Flexor Carpi Ulnaris (humeral head - ulnar head):
-flexes and adducts hand at wrist joint.



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5-Flexor Digitorum Superficialis (humeroulnar head - radial head):
-flexes middle phalanx of fingers and assists in flexing proximal phalanx and hand



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6-Flexor pollicis longus:

-flexes distal phalanx of thumb.



7-Flexor digitorum profundus:

-flexes distal phalanx of fingers; then assists in flexion of middle and proximal phalanges and wrist



8-Pronator quadratus:

-pronates forearm.



Muscles of the lateral fascial compartment.

1-Brachioradialis

-Flexes forearm at elbow joint



2-Extensor carpi radialis longus

-Extends and abducts hand at wrist joint



Muscles of the Posterior Fascial Compartment.

1-Extensor carpi radialis brevis

-Extends and abducts hand at wrist joint

extensor carpi radialis brevis



2-Extensor digitorum

-Extends fingers and hand

extensor digitorum



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3-Extensor digiti minimi

-Extends metacarpal phalangeal joint of little finger

extensor digiti minimi



4-Extensor carpi ulnaris

-Extends and adducts hand at wrist joint

extensor carpi ulnaris



5-Anconeus

-Extends elbow joint



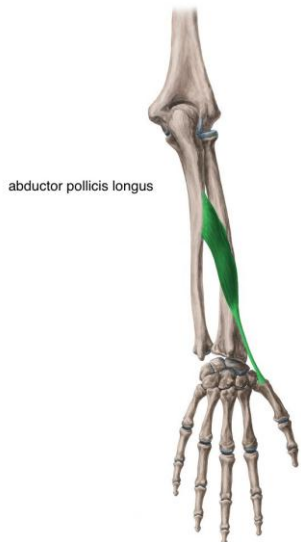
6-Supinator

-Supination of forearm



7-Abductor pollicis longus

-Abducts and extends thumb



8-Extensor pollicis brevis

-Extends metacarpophalangeal joints of thumb

extensor pollicis brevis



9-Extensor pollicis longus

-Extends distal phalanx of thumb

extensor pollicis longus



10-Extensor indicis

-Extends metacarpophalangeal joint of index finger

extensor indicis

