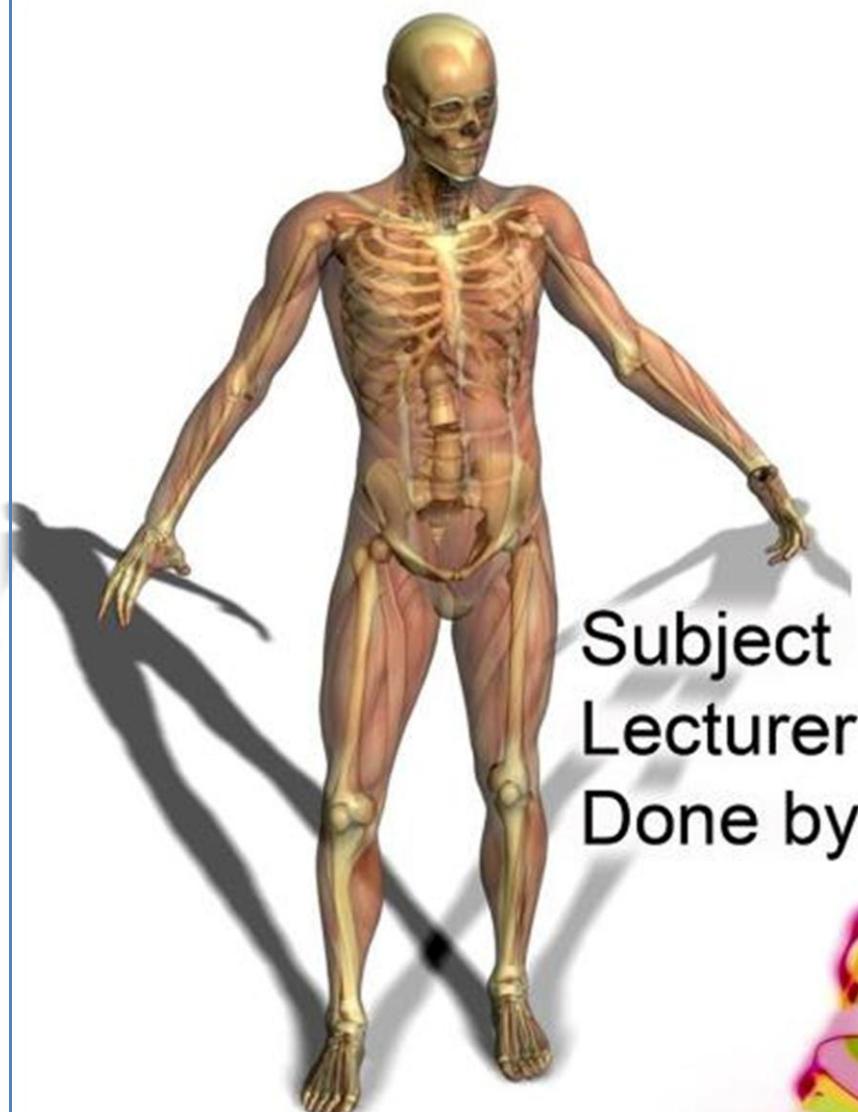




ANATOMY



Subject : *Introduction to Anatomy*
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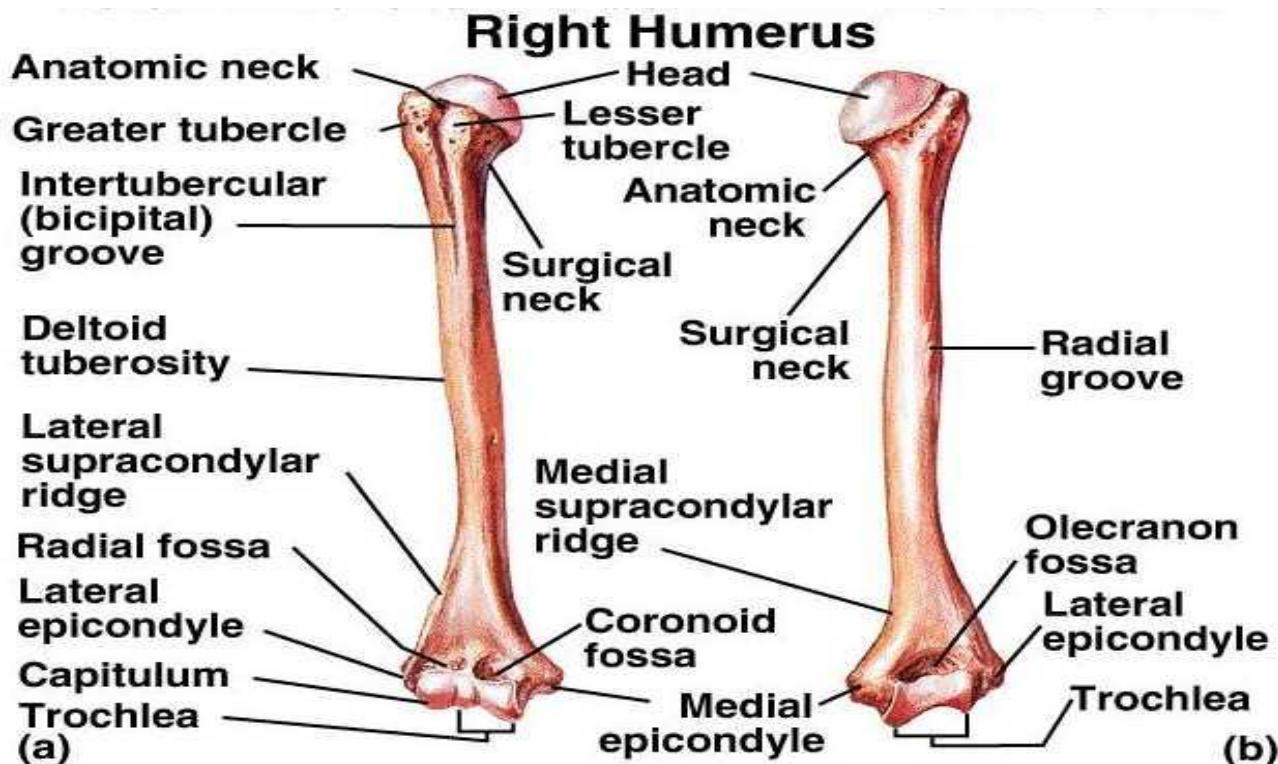
lecture # : 7

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Upper Limb – Upper Arm

Upper arm is the part of the body that extends from the shoulder joint until the elbow joint. Its skeleton is formed by the humerus.

Humerus



Divided into 3 parts:

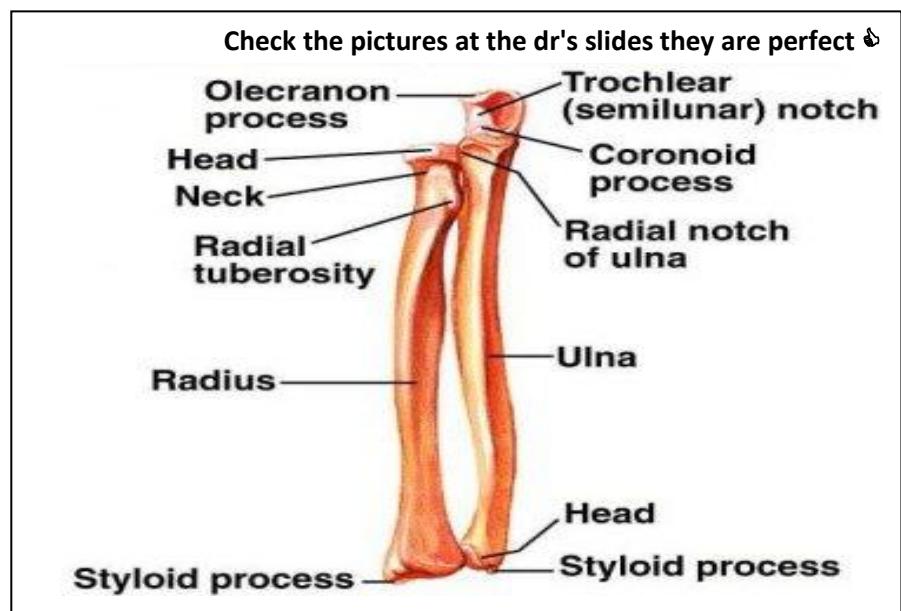
- 1- The proximal end; contains: Head, greater tubercle, lesser tubercle, surgical neck, anatomical neck.
- 2- Shaft contains: posterior surface the Radial groove which is a groove (pathway) that contains the radial nerve. Deltoid tuberosity where the deltoid muscle is inserted.
- 3- Distal end:
 1. Medial supracondylar ridge 2. Lateral supracondylar ridge * posteriorly
 3. Olecranon fossa to articulate with Ulna at the olecranon process, triangular in shape.
 4. Trochlea process for articulation with Ulna *anteriorly "anterior aspect" > two spaces (5 and 6)
 5. Coronoid fossa (above the trochlea) to articulate with Ulna at the coronoid process.

6. Radial fossa, lateral (above the capitulum) to articulate with Radius when we do full flexion.

7. Capitulum (lateral) for articulation with Radius.

*Trochlea is at the two surfaces (ant. And post.), it is medial at the anterior surface.

-**Muscles of the upper arm inserted in the bones of the forearm; we study those two bones.**



Bones of the forearm are:

a. Radius (lateral): long bone

increases in size from proximal to distal. Consist of 3 parts:

1- Proximal end :

Head: disk-shaped, articulates with capitulum.

Neck: narrow part.

Radial tuberosity: also called "bicipital tuberosity" where biceps is inserted.

Remember: tuberosity is for muscle attachment.

2- Shaft: convex laterally

medially it has a sharp border called the interosseous border.

- interosseous border: osseous means bone so it's named because it's located between two bones Ulna and Radius, gives attachment to the interosseous membrane that binds ulna and radius together.

3- Distal end: triangular and flattened

Styloid process (laterally): a finger-like process, large, restrict the movement of the palm

Inferior articular surface of Radius which articulates with wrist bones.

Ulnar notch

the common side to feel the pulse

b. Ulna (medial): long bone

increases in size from distal to proximal. Consists of 3 parts:

1- Proximal end: wrench-like end

olecranon process: large process, posterior to the humerus

coronoid process: smaller than olecranon

both processes are for muscle attachment and have in between the trochlear fossa

trochlear fossa: which articulates with the trochlea of the humerus.

Radial notch: for articulation with the head of the radius.

Tuberosity of ulna

2- Shaft:

interosseous border; was mentioned before.

3- Distal end:

styloid process: small process

The styloid process of the Radius is larger than the styloid process of the Ulna, that's why it restricts the radial deviation "to move the wrist laterally (abduct the palm) "

At the lateral border of scapula

- Glenoid cavity articulates with head of the humerus.

- Supraglenoid tubercle for biceps muscle.

- Infraglenoid tubercle for triceps.

Cross section in the arm:

Has 3 layers:

1- Skin

2- Superficial fascia contains

a. 2 veins:

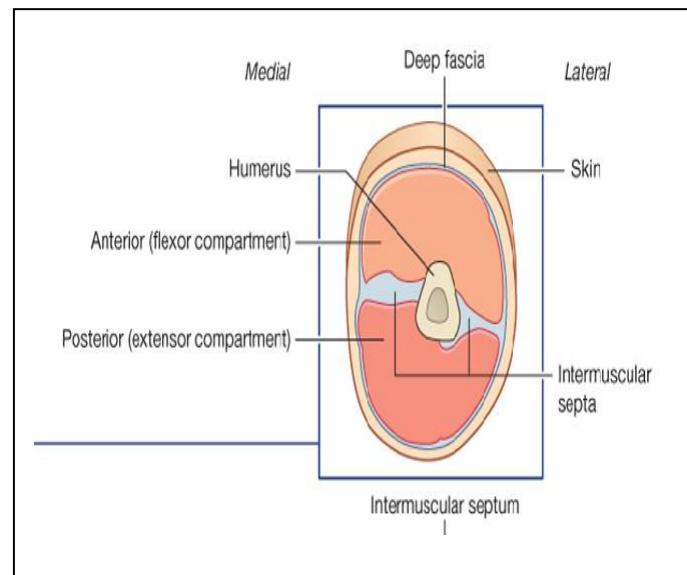
the cephalic vein and the basilica vein.

b. Fat.

3- Deep fascia: - holds the muscles together

- sends two septa (lateral and medial) to the humerus divide the upper arm into 2 compartments: anterior and posterior

each one has: its own muscles, its nerve supply, its arterial supply and its main action.



Anterior compartments of Arm

Has 3 muscles:

1-Biceps.

2- Coracobrachialis.

3- Brachialis.

- All are supplied by the musculocutaneous nerve.

- All supplied by the brachial artery.

1- Biceps brachii

Has 2 heads (named according to the number of heads.)

Long head originates from supraglenoid tubercle of the scapula.

Short head originates from coracoid process of scapula.

Insertion: Radial tuberosity (bicipital tuberosity).

Nerve supply: musculocutaneous nerve

Action: 1- Prime supinator of the elbow joint.

2- Flexion of the elbow joint



*The elbow joint is articulation of the Ulna and Humerus; Radius is accessory!

2- Coracobrachialis: named according to its origin and insertion.

Origin: coracoid process.

Insertion: brachialis (medial surface of humerus)

Nerve supply: musculocutaneous nerve



Action: assist flexion of the shoulder joint; the main flexor is Deltoid muscle.

3- Brachialis: named according to the bone which is attached to it.

Origin: lower half of the anterior surface of humerus.

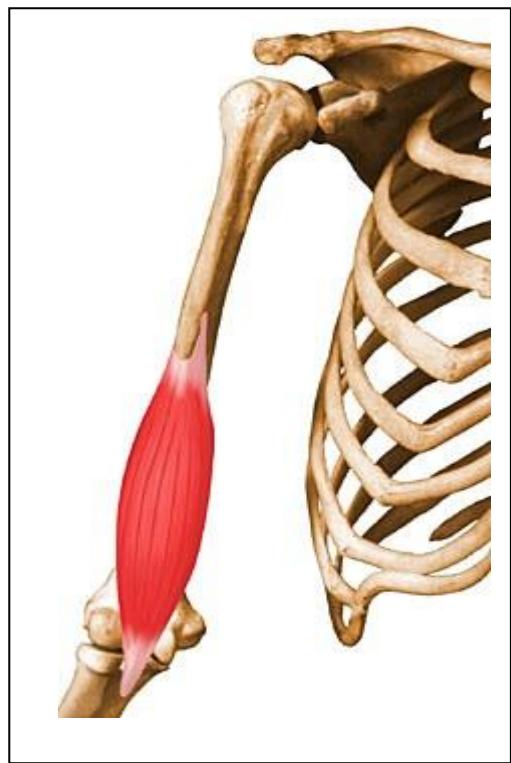
Insertion: the tuberosity of the ulna and coronoid process of the ulna.

Nerve supply: musculocutaneous nerve

Action: prime flexion of elbow joint.

Remember:

Coracoid process is attached to 3 muscles: pectoralis minor (insertion), short head of biceps and the coracobrachialis (as an origin).



Brachial artery:

Begins at the lower border of teres major muscle as a direct continuation of the axillary artery.

Ends at the opposite neck of radius

- Has 3 Branches:

1. Profunda brachii: (profunda means deep), passing posteriorly to supply the posterior compartments of the upper arm. Supply the posterior compartments of the upper arm.

2. Superior ulnar collateral artery: (collateral means inherent "لازم له")

3. Inferior ulnar collateral artery.

Both 2 and 3 accompany the ulnar nerve throughout its course.

-The axillary vein is medial to the axillary artery
-Ulnar vein is medial.

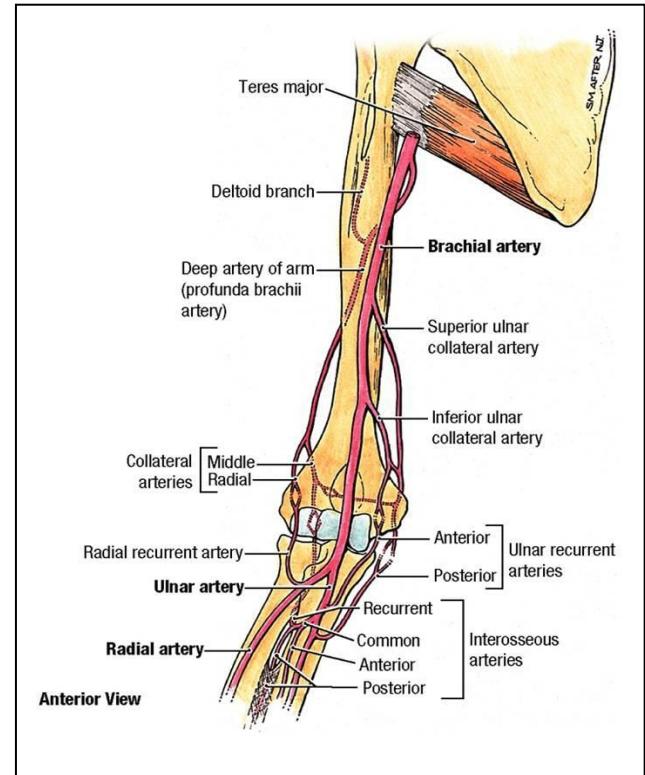
-Lateral cord and medial cord are connected together to form median nerve.

- The relation (position) of the median nerve to the brachial artery:

Crossing it – laterally, upper part (L)

- anteriorly, middle part (A)
- medially, lower part (M)

* Abbreviated by LAM.



Posterior compartments of Arm

Has a muscle with 3 heads Triceps

Origin: long head: from the infraglenoid tubercle of scapula.

Lateral head: from the upper half of the posterior surface of the humerus above the radial groove.

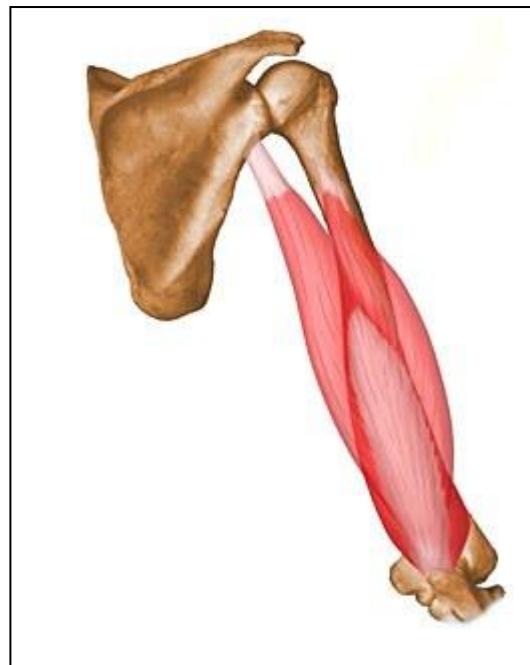
Medial head: from the lower half of the posterior surface of the humerus below the radial groove.

Insertion: olecranon process of Ulna.

Nerve supply: Radial nerve.

Action: prime extensor.

- Supplied by profunda brachii artery.



The Radial groove divides posterior surface of the triceps into 2 halves (parts): upper part and lower part.

Note: musclocotaneous nerve has two divisions: coetaneous and muscular. Coetaneous division supplies the skin. Muscular supplies the muscles. At the lateral border of the biceps it continues as a branch called lateral cotaneous nerve of the forearm. This nerve crosses a joint (elbow joint). It supplies it because it crosses it. The msuclocotaneous nerve supplies it.