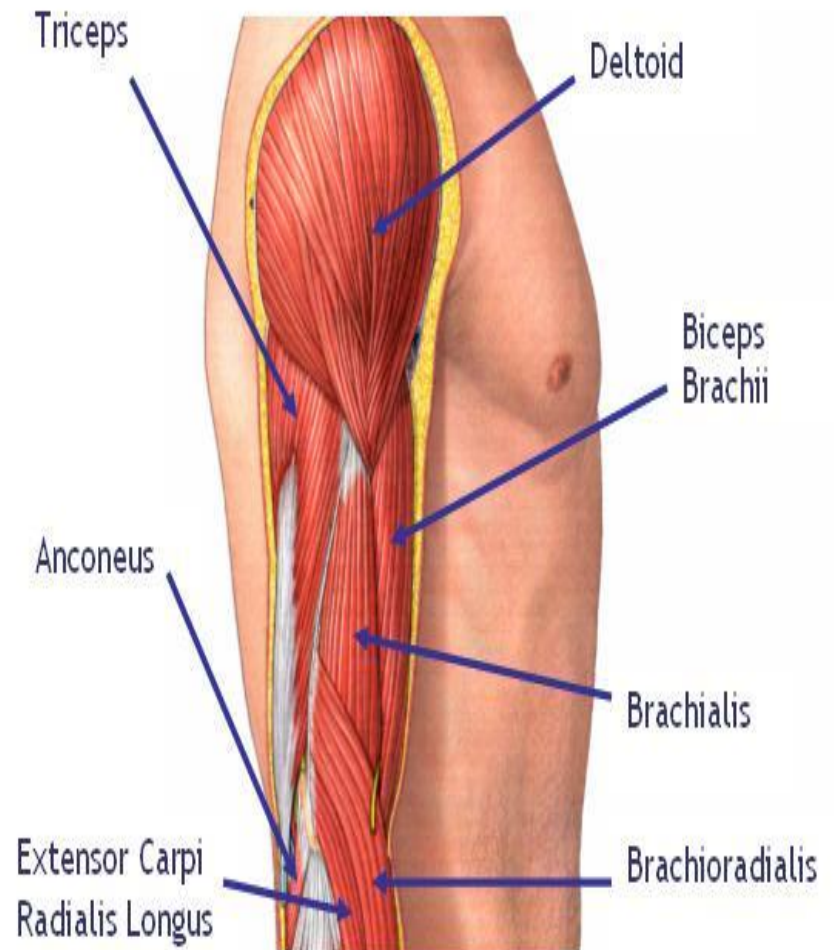


The Arm

- The upper arm is enclosed in a sheath of deep fascia
- Two fascial septa, one on the medial side and one on the lateral side, extend from this sheath and are attached to the medial and lateral supracondylar ridges of the humerus
- By this means, the upper arm is divided into an anterior and a posterior fascial compartment, each having its muscles, nerves, and arteries.

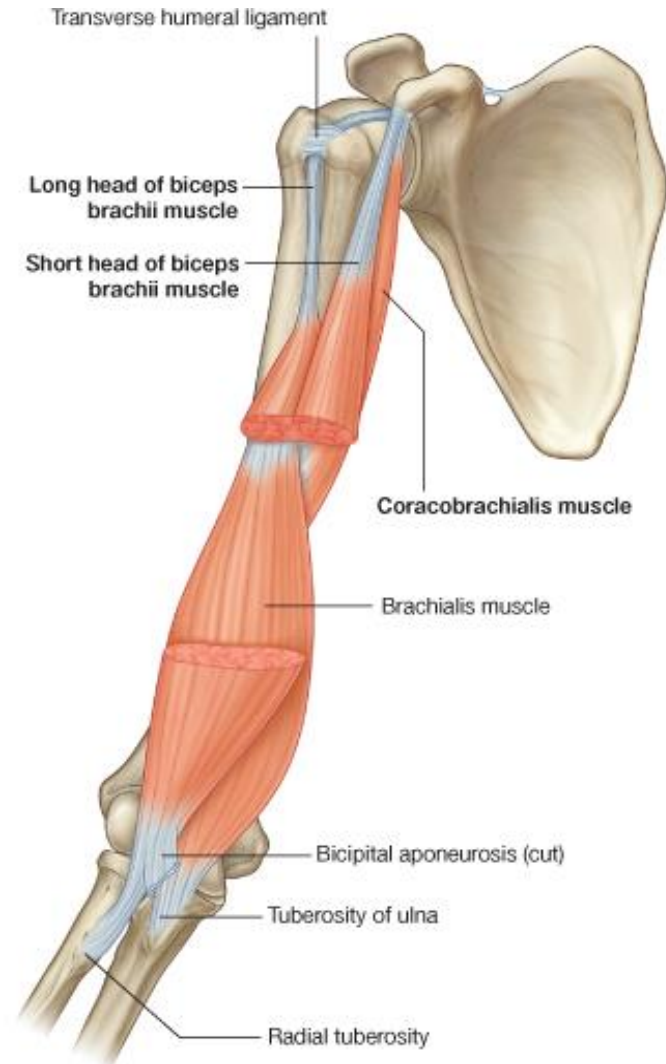


Contents of the Anterior Fascial Compartment of the Upper Arm

- Muscles: Biceps brachii, coracobrachialis, and brachialis
- Blood supply: Brachial artery
- Nerve supply to the muscles: Musculocutaneous nerve
- Structures passing through the compartment: Musculocutaneous, median, and ulnar nerves; brachial artery and basilic vein. The radial nerve is present in the lower part of the compartment

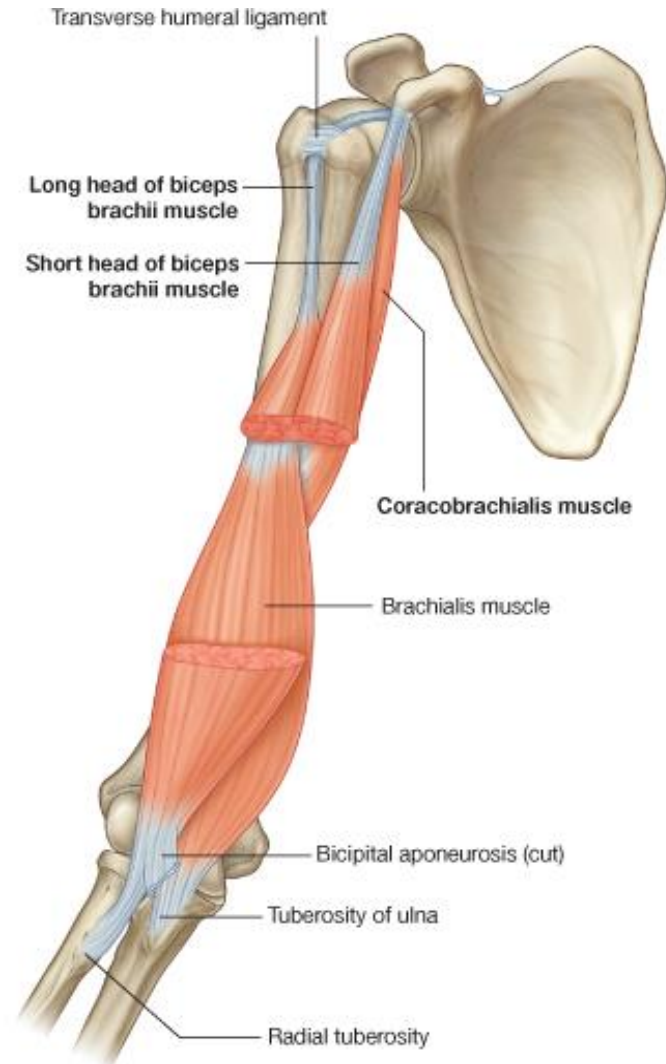
Muscles of the Anterior Fascial Compartment

- **Biceps brachii**
- Long head Supraglenoid tubercle of scapula
- Short head
- Coracoid process of scapula
- Insertion : Tuberosity of radius and bicipital aponeurosis into deep fascia of forearm
- Musculocutaneous nerve C5, 6
- Supinator of forearm and flexor of elbow joint; weak flexor of shoulder joint



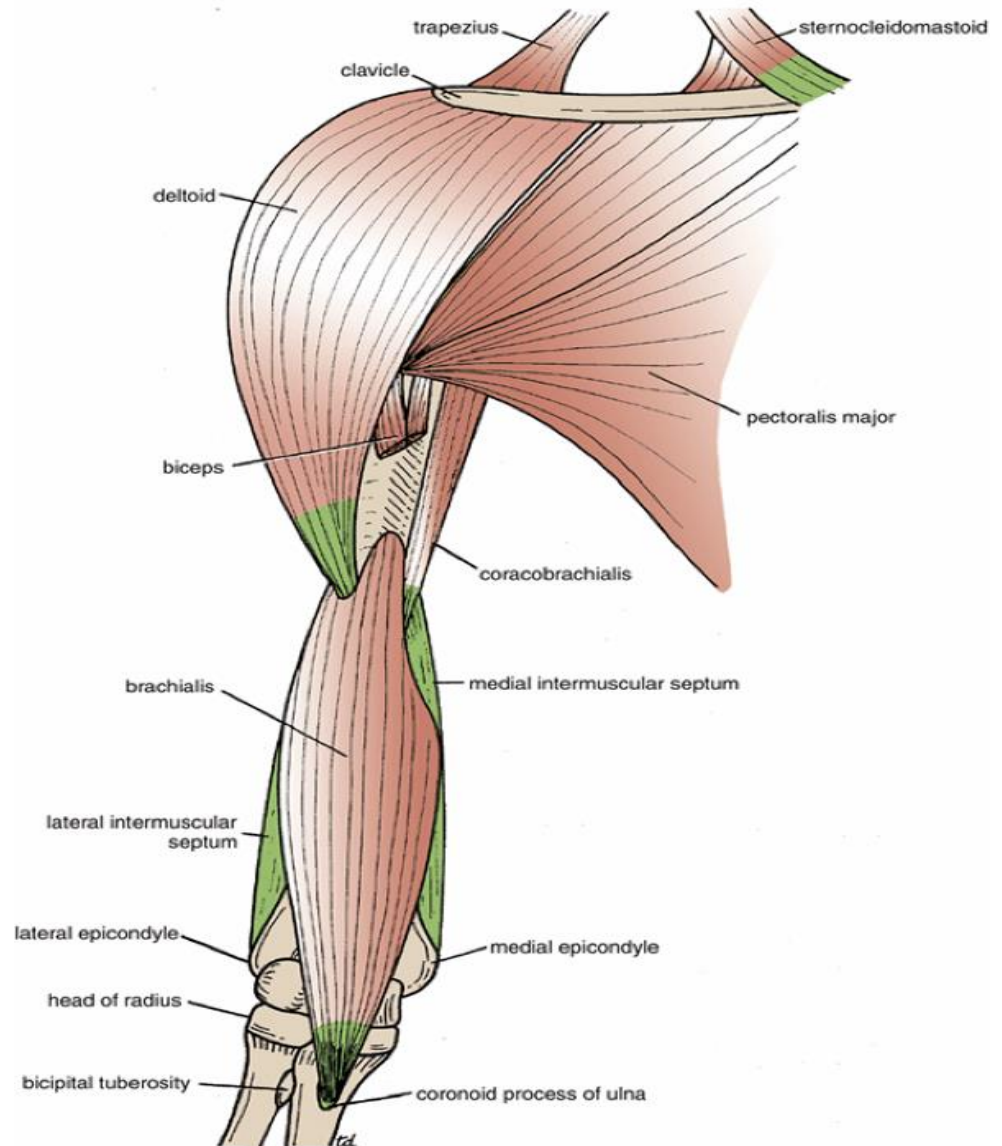
Coracobrachialis

- Origin:
- Coracoid process of scapula
- Insertion:
- Medial aspect of shaft of humerus
- Innervation:
- Musculocutaneous nerve C5, 6, 7
- Action:
- Flexes arm and also process of weak adductor



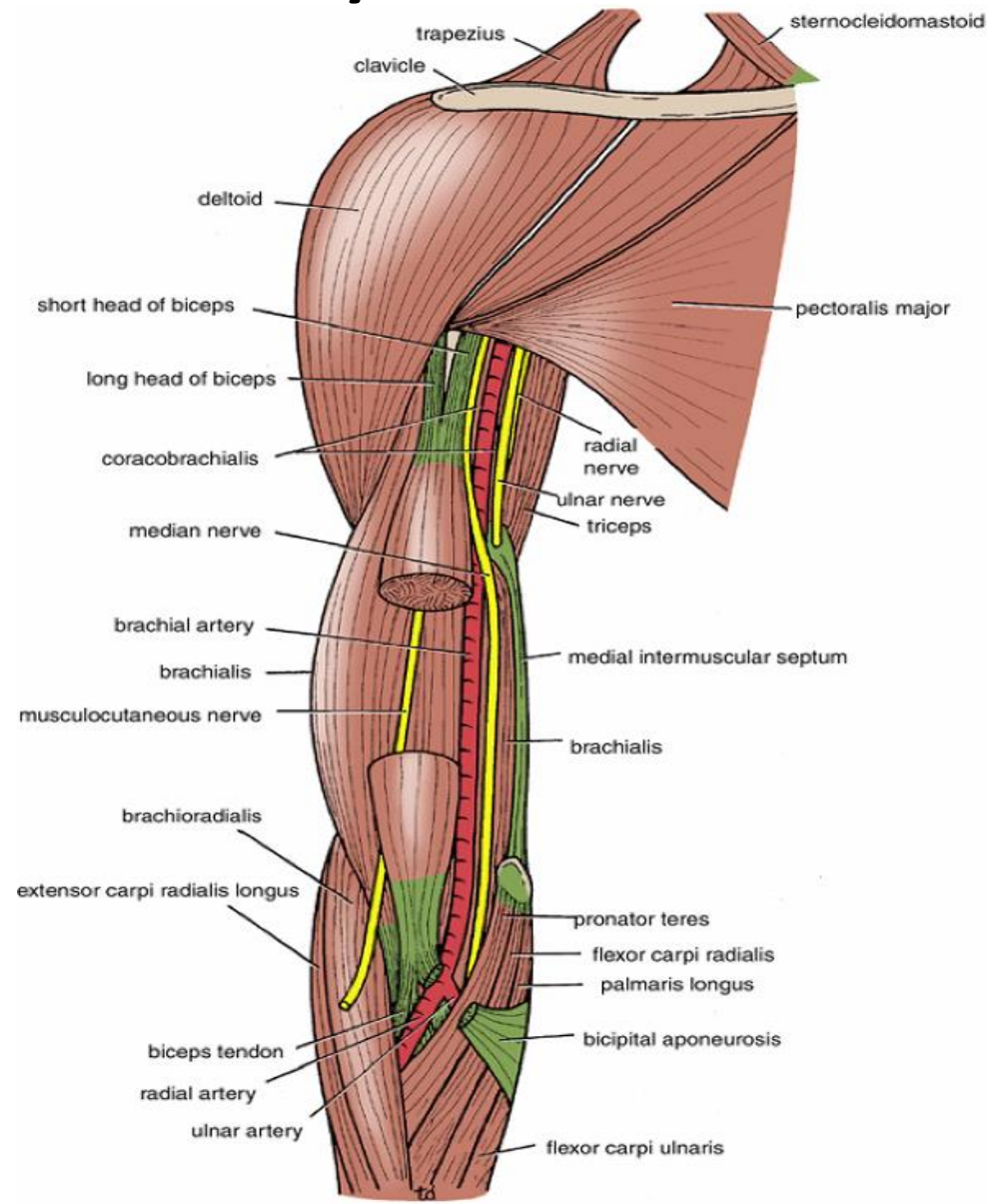
Brachialis

- Origin:
- Front of lower half of humerus
- Insertion:
- Coronoid process of ulna
- Innervation:
- Musculocutaneous nerve C5, 6, 7, Radial Nerve.
- Action:
- Flexor of elbow joint

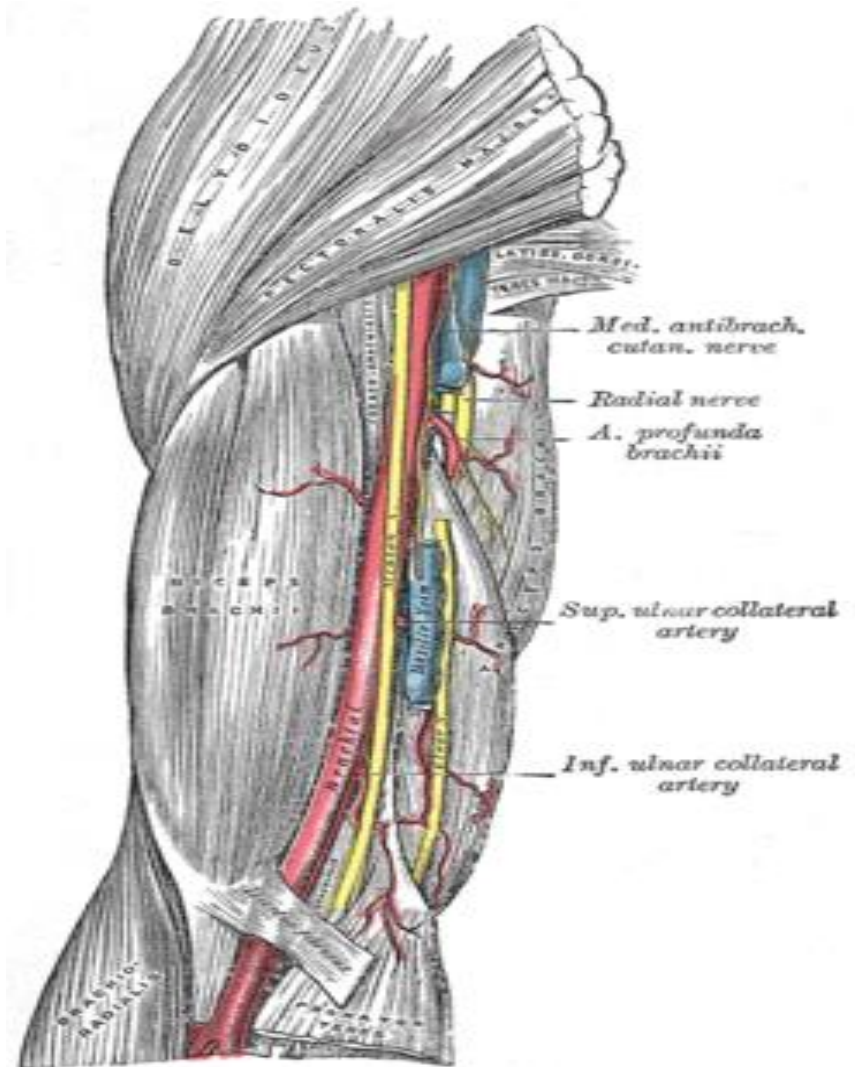


Brachial Artery

- begins at the lower border of the teres major muscle as a continuation of the axillary artery
- It provides the main arterial supply to the arm
- It terminates opposite the neck of the radius by dividing into the radial and ulnar arteries.
- Relations
 - Anteriorly: The vessel is superficial and is overlapped from the lateral side by the coracobrachialis and biceps
 - The medial cutaneous nerve of the forearm lies in front of the upper part
 - the median nerve crosses its middle part
 - and the bicipital aponeurosis crosses its lower part
- Posteriorly: The artery lies on the triceps, the coracobrachialis insertion, and the brachialis

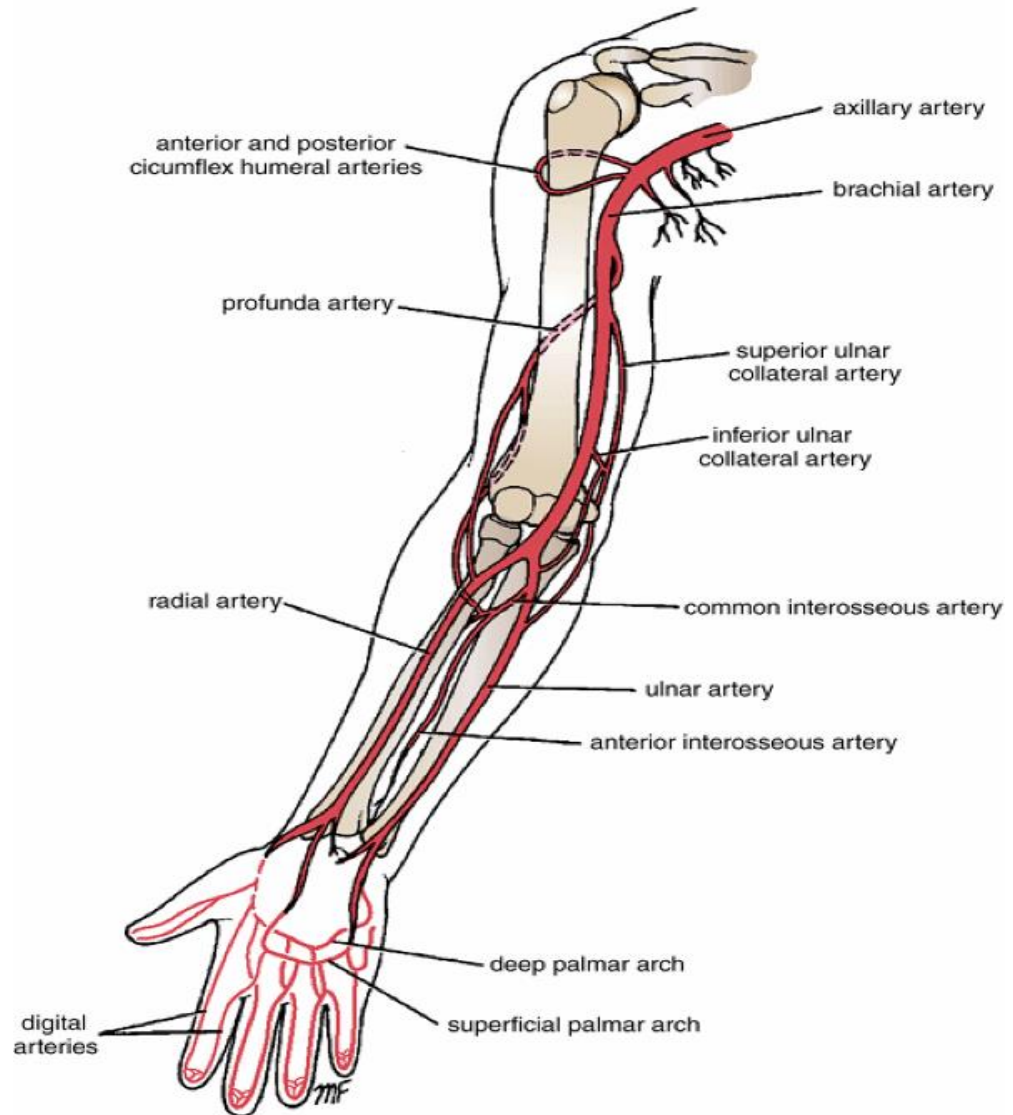


- Medially: The ulnar nerve and the basilic vein in the upper part of the arm;
- in the lower part of the arm, the median nerve lies on its medial side
- Laterally: The median nerve and the coracobrachialis and biceps muscles above;
- the tendon of the biceps lies lateral to the artery in the lower part of its course
- Triple relation between the median nerve and the artery :
- It runs downward on the lateral side of the brachial artery ,
Halfway down the upper arm, it crosses the brachial artery and continues downward on its medial side.



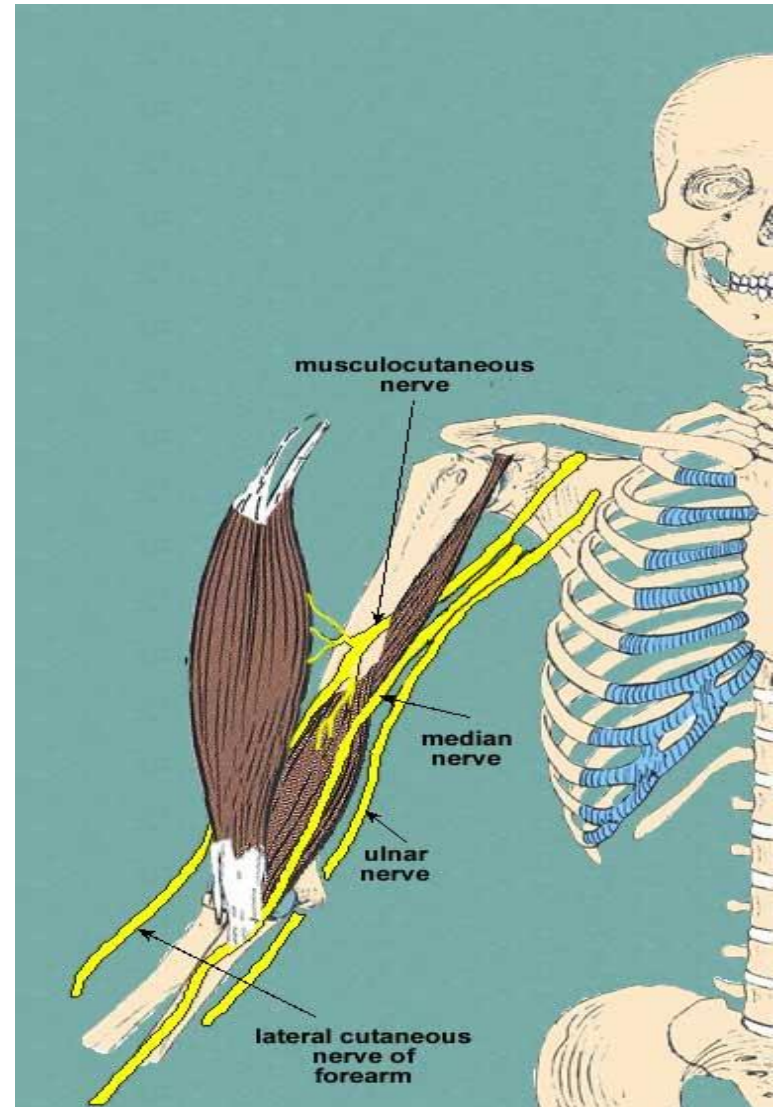
Branches

- Muscular branches to the anterior compartment of the upper arm
- The nutrient artery to the humerus
- The profunda artery arises near the beginning of the brachial artery and follows the radial nerve into the spiral groove of the humerus
- The superior ulnar collateral artery arises near the middle of the upper arm and follows the ulnar nerve
- The inferior ulnar collateral artery arises near the termination of the artery and takes part in the anastomosis around the elbow joint

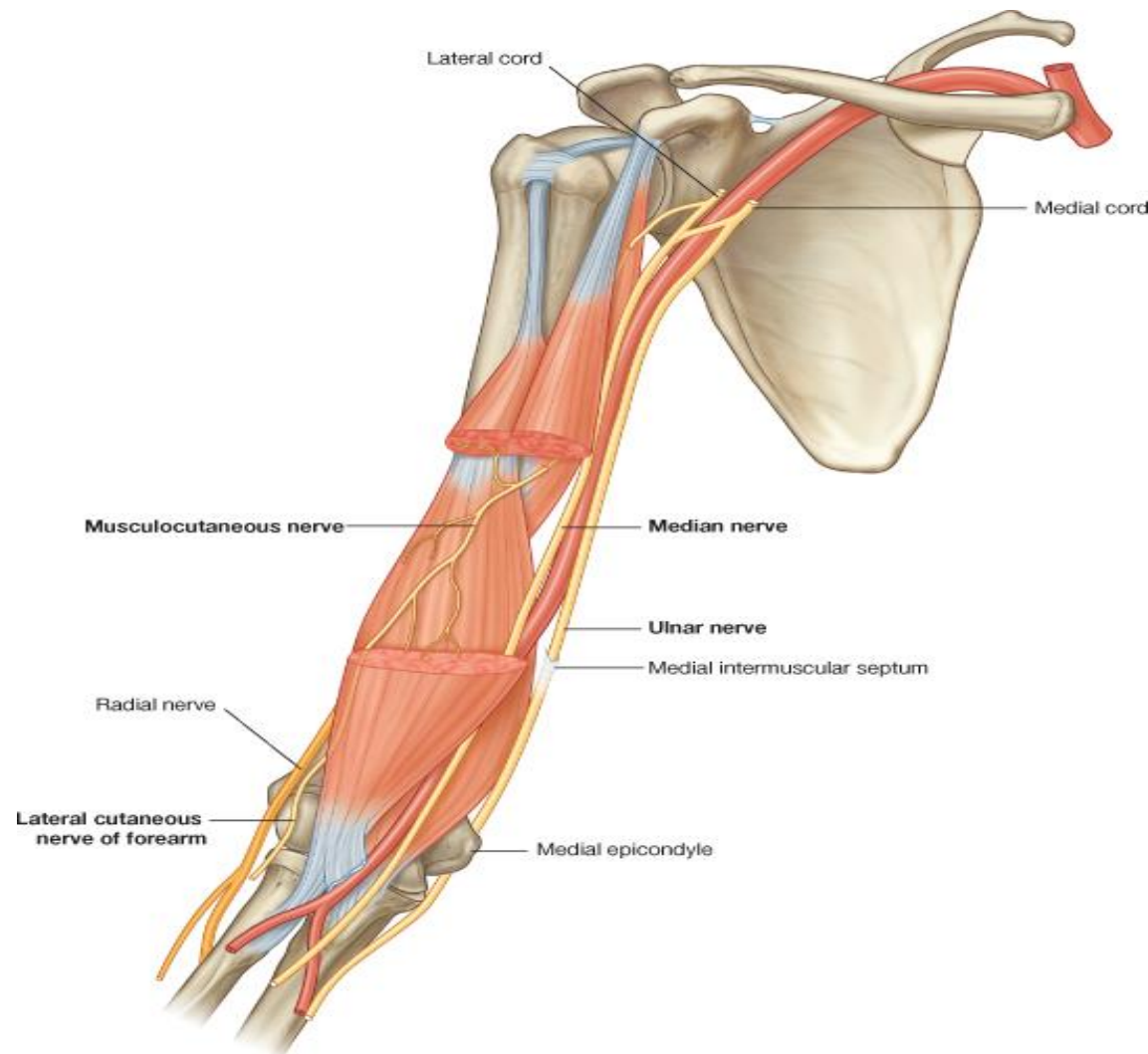


Musculocutaneous Nerve

- The origin of the musculocutaneous nerve from the lateral cord of the brachial plexus (C5, 6, and 7) in the axilla
- It runs downward and laterally, pierces the coracobrachialis muscle
- and then passes downward between the biceps and brachialis muscles
- It appears at the lateral margin of the biceps tendon and pierces the deep fascia just above the elbow
- It runs down the lateral aspect of the forearm as the lateral cutaneous nerve of the forearm



- Branches
- Muscular branches to the biceps, coracobrachialis, and brachialis
- Cutaneous branches; the lateral cutaneous nerve of the forearm supplies the skin of the front and lateral aspects of the forearm down as far as the root of the thumb.
- Articular branches to the elbow joint

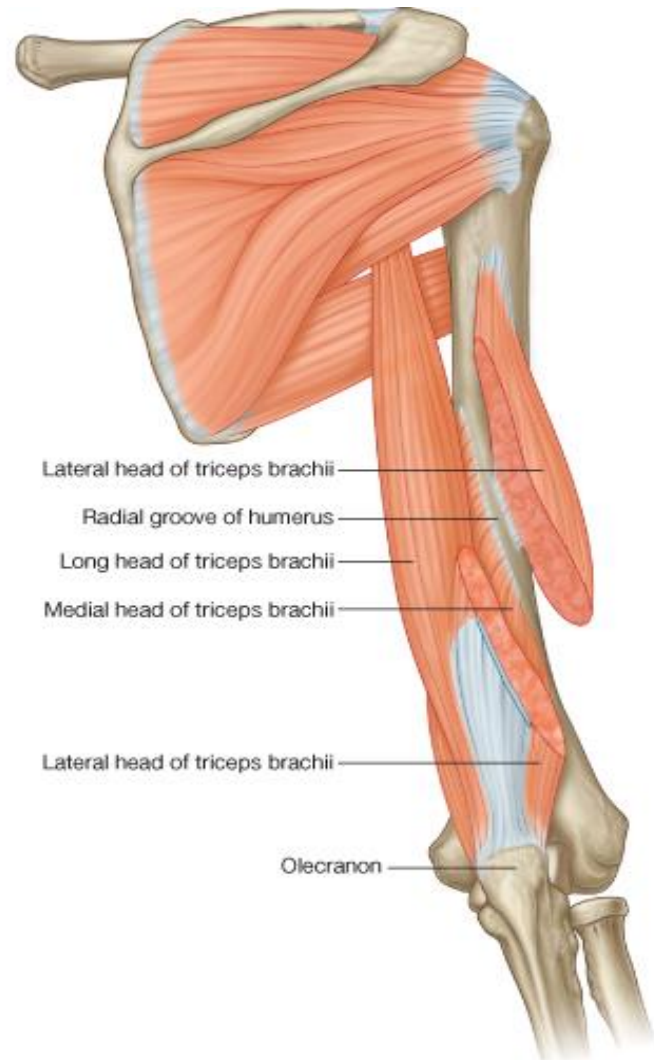


Contents of the Posterior Fascial Compartment of the Upper Arm

- Muscle: The three heads of the triceps muscle
- Nerve supply to the muscle: Radial nerve
- Blood supply: Profunda brachii and ulnar collateral arteries
- Structures passing through the compartment: Radial nerve and ulnar nerve

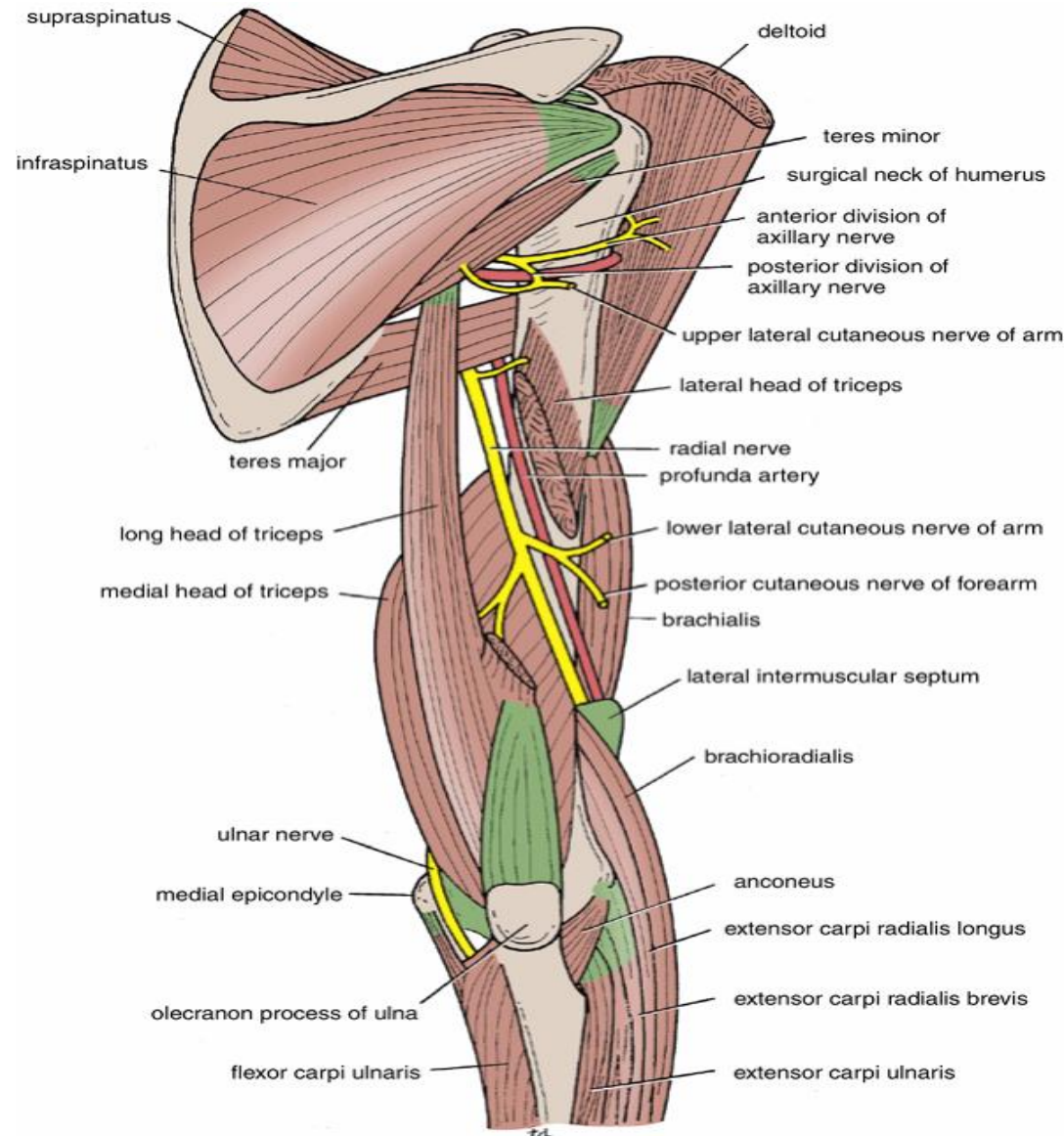
Triceps

- Origin :
- Long head Infraglenoid tubercle of scapula
- Lateral head Upper half of posterior surface of shaft of humerus
- Medial head Lower half of posterior surface of shaft of humerus
- Insertion:
- Olecranon process of ulna
- Innervation:
- Radial nerve C6, 7, 8
- Action :
- Extensor of elbow joint



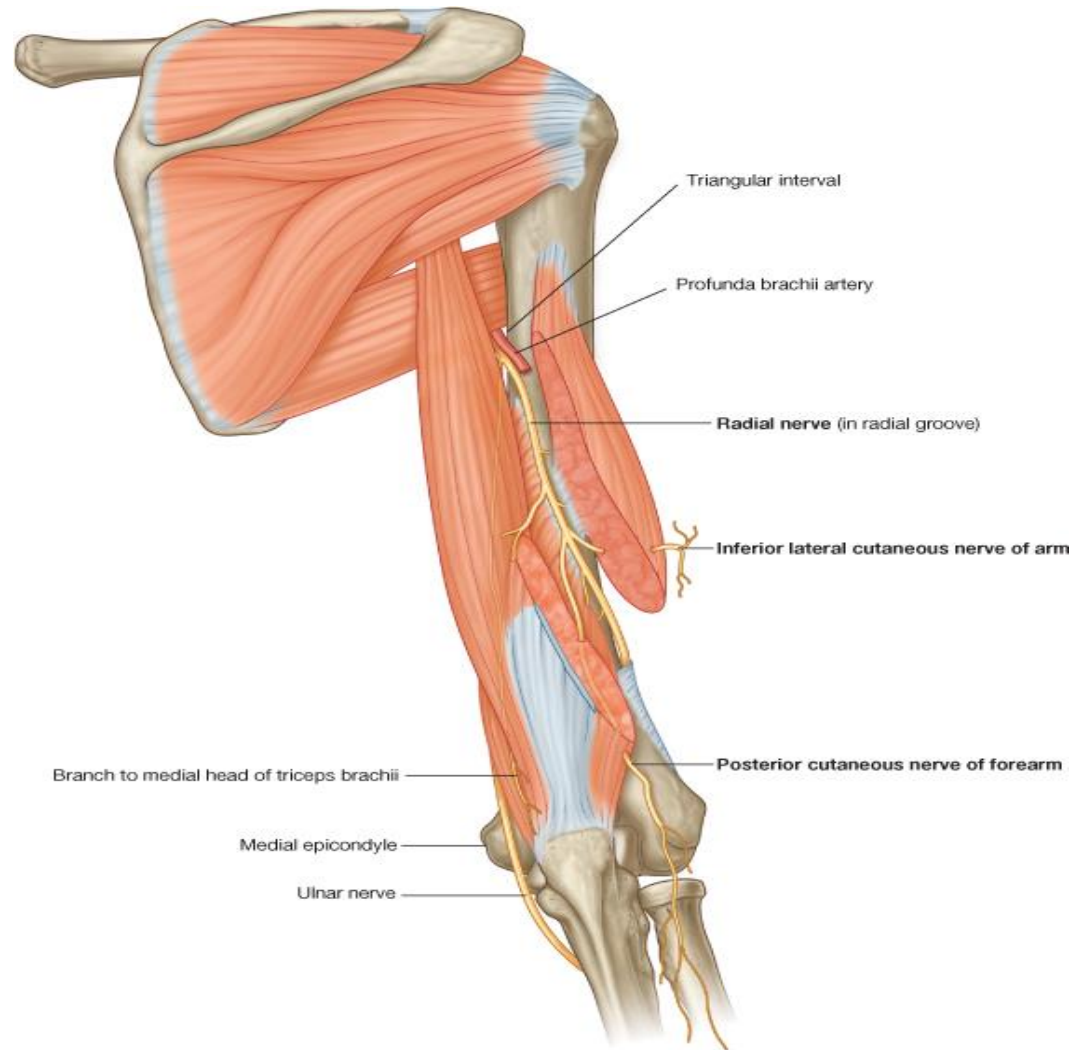
Radial Nerve

- The origin of the radial nerve from the posterior cord of the brachial plexus in the axilla
- The nerve winds around the back of the arm in the spiral groove on the back of the humerus between the heads of the triceps
- It pierces the lateral fascial septum above the elbow and continues downward into the cubital fossa in front of the elbow, between the brachialis and the brachioradialis muscles
- In the spiral groove, the nerve is accompanied by the profunda vessels, and it lies directly in contact with the shaft of the humerus



Branches

- In the axilla, branches are given to the long and medial heads of the triceps, and the posterior cutaneous nerve of the arm is given off.
- In the spiral groove branches are given to the lateral and medial heads of the triceps and to the anconeus
- The lower lateral cutaneous nerve of the arm supplies the skin over the lateral and anterior aspects of the lower part of the arm
- The posterior cutaneous nerve of the forearm runs down the middle of the back of the forearm as far as the wrist.
- In the anterior compartment of the arm, after the nerve has pierced the lateral fascial septum, it gives branches to the brachialis
- It also gives articular branches to the elbow joint.

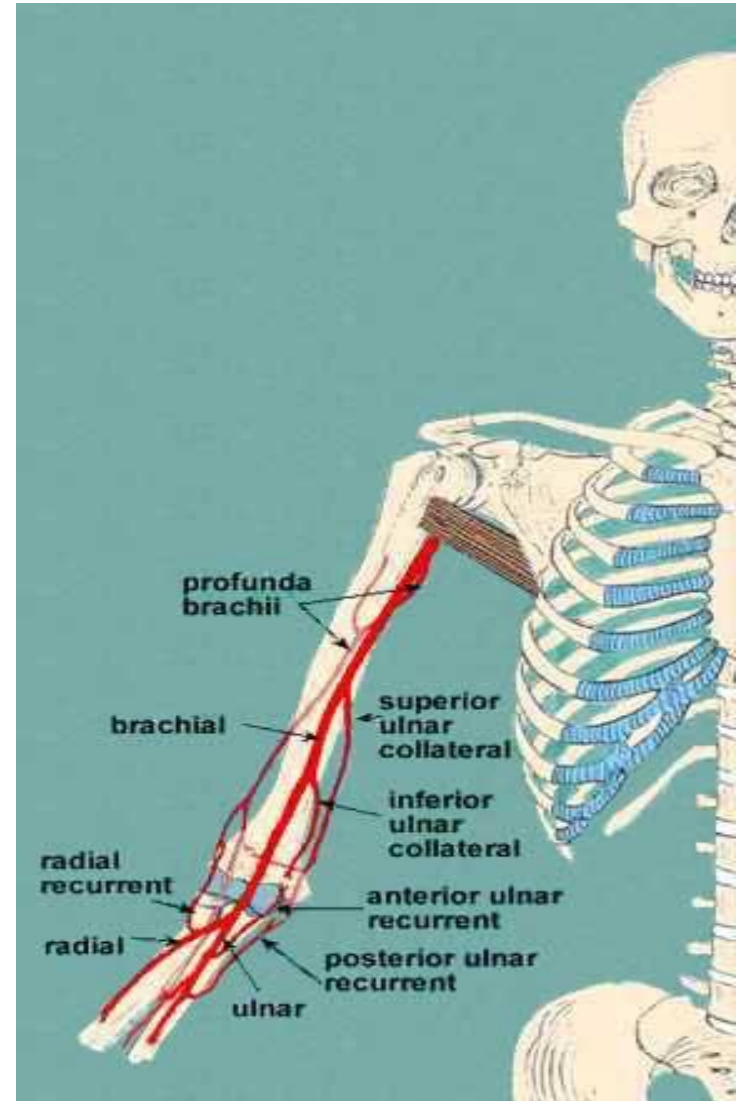


Ulnar Nerve

- Having pierced the medial fascial septum halfway down the upper arm, the ulnar nerve descends behind the septum, covered posteriorly by the medial head of the triceps
- The nerve is accompanied by the superior ulnar collateral vessels. At the elbow, it lies behind the medial epicondyle of the humerus

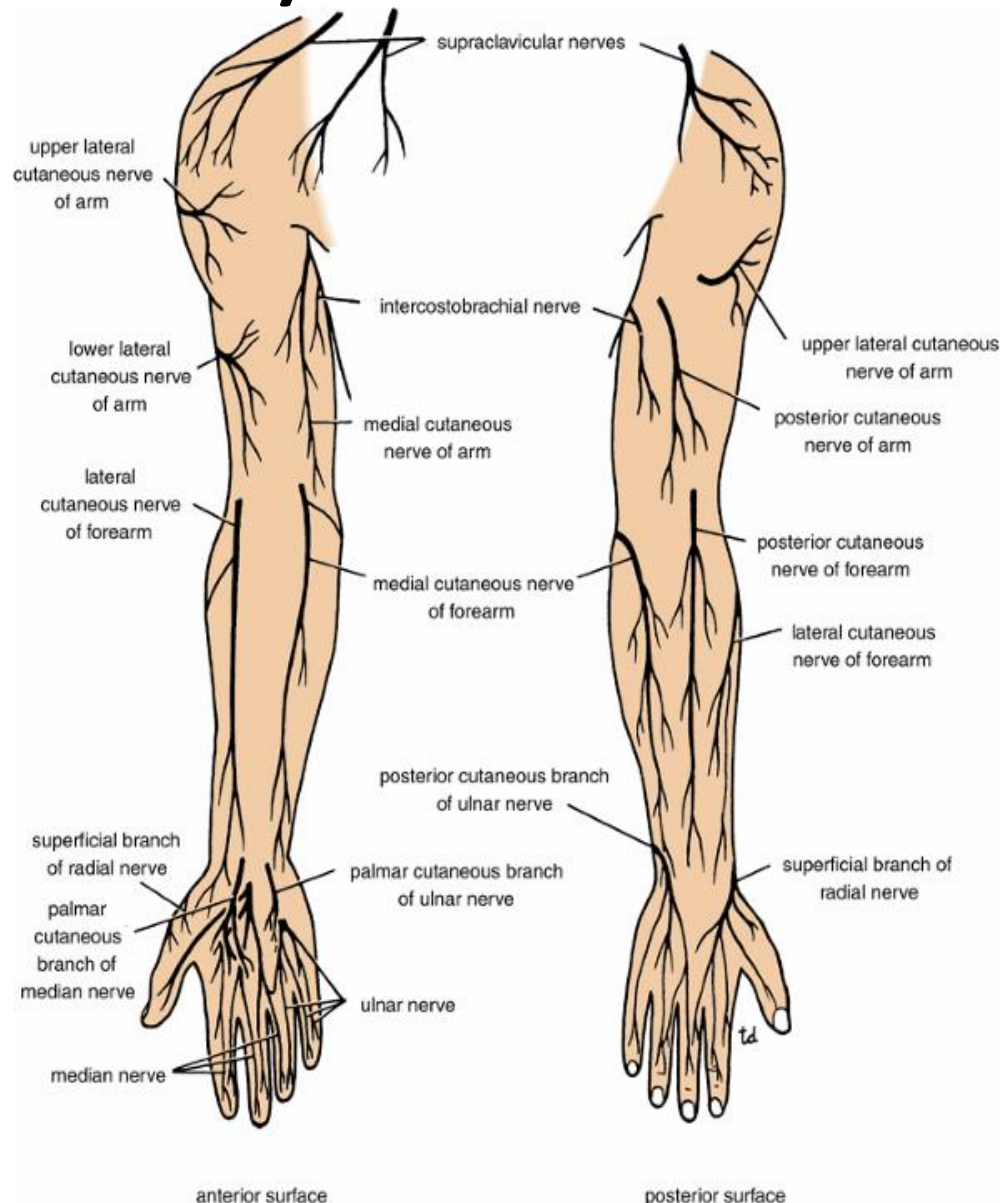
Profunda Brachii Artery

- The profunda brachii artery arises from the brachial artery near its origin
- It accompanies the radial nerve through the spiral groove
- supplies the triceps muscle, and takes part in the anastomosis around the elbow joint
- Superior and Inferior Ulnar Collateral Arteries
- The superior and inferior ulnar collateral arteries arise from the brachial artery and take part in the anastomosis around the elbow joint.



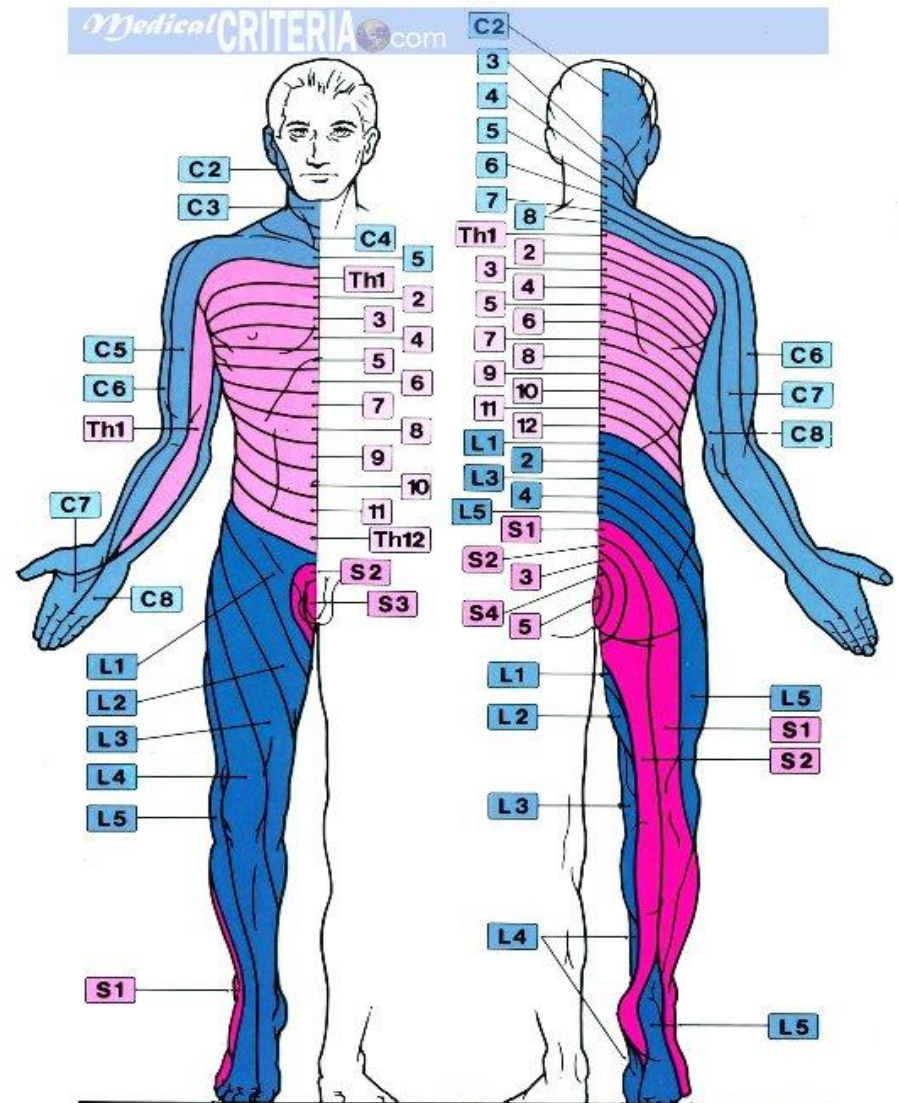
Superficial Sensory Nerves

- The sensory nerve supply to the skin over the point of the shoulder to halfway down the deltoid muscle is from the supraclavicular nerves (C3 and 4).
- the lower half of the deltoid is supplied by the upper lateral cutaneous nerve of the arm, a branch of the axillary nerve (C5 and 6).
- The skin over the lateral surface of the arm below the deltoid is supplied by the lower lateral cutaneous nerve of the arm, a branch of the radial nerve (C5 and 6).
- The skin of the armpit and the medial side of the arm is supplied by the medial cutaneous nerve of the arm (T1) and the intercostobrachial nerves (T2).
- The skin of the armpit and the medial side of the arm is supplied by the medial cutaneous nerve of the arm (T1) and the intercostobrachial nerves (T2).
- The skin of the back of the arm is supplied by the posterior cutaneous nerve of the arm, a branch of the radial nerve (C8).



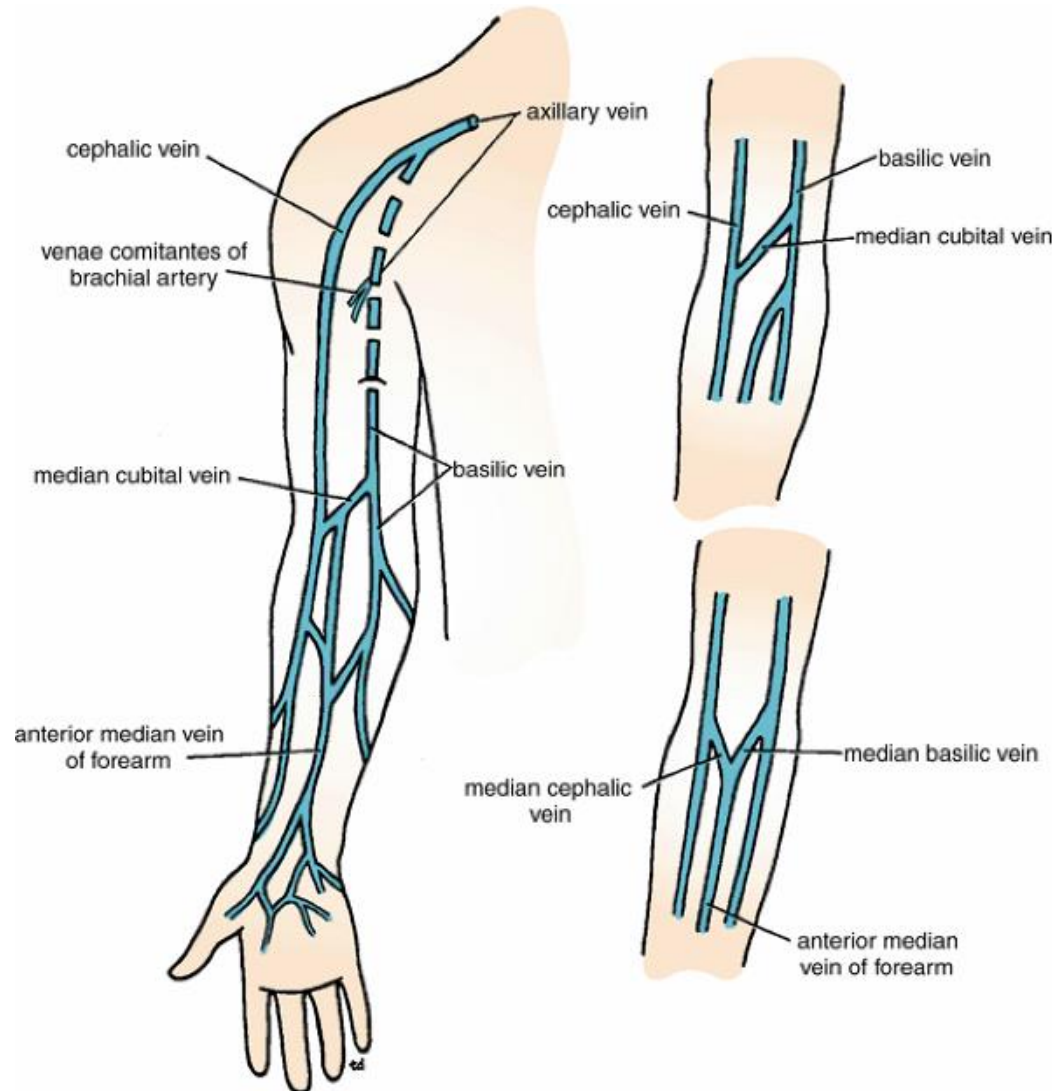
Dermatomes and Cutaneous Nerves

- necessary for a physician to test the integrity of the spinal cord segments of C3 through T1
- It is seen that the dermatomes for the upper cervical segments C3 to 6 are located along the lateral margin of the upper limb
- the C7 dermatome is situated on the middle finger; and the dermatomes for C8, T1, and T2 are along the medial margin of the limb
- The nerve fibers from a particular segment of the spinal cord, although they exit from the cord in a spinal nerve of the same segment, pass to the skin in two or more different cutaneous nerves.

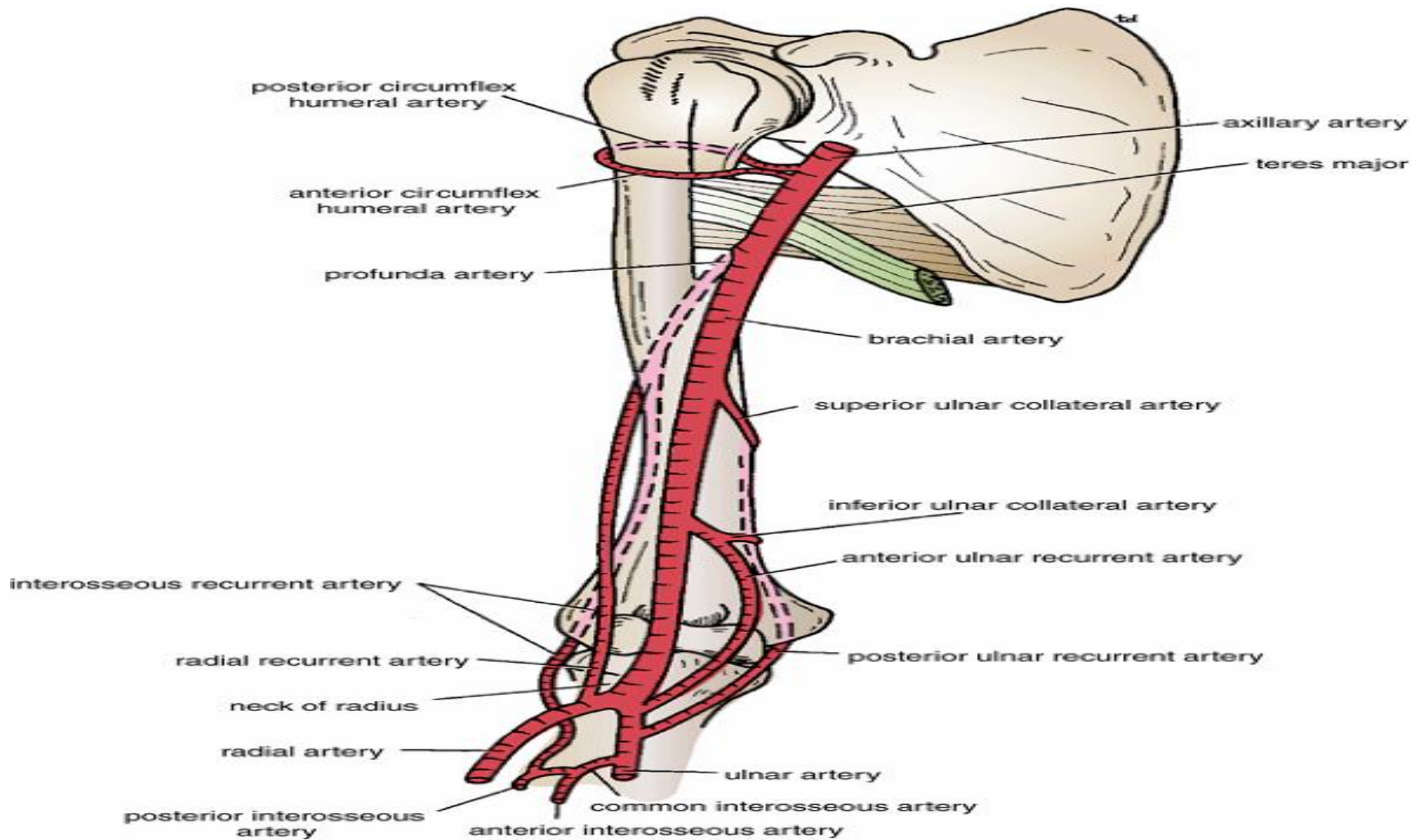


Superficial Veins

- The veins of the upper limb can be divided into two groups: superficial and deep
- The deep veins comprise the venae comitantes, which accompany all the large arteries, usually in pairs, and the axillary vein.
- The superficial veins of the arm lie in the superficial fascia
- The cephalic vein ascends in the superficial fascia on the lateral side of the biceps and, on reaching the infraclavicular fossa, drains into the axillary vein.
- The basilic vein ascends in the superficial fascia on the medial side of the biceps
- Halfway up the arm, it pierces the deep fascia and at the lower border of the teres major joins the venae comitantes of the brachial artery to form the axillary vein

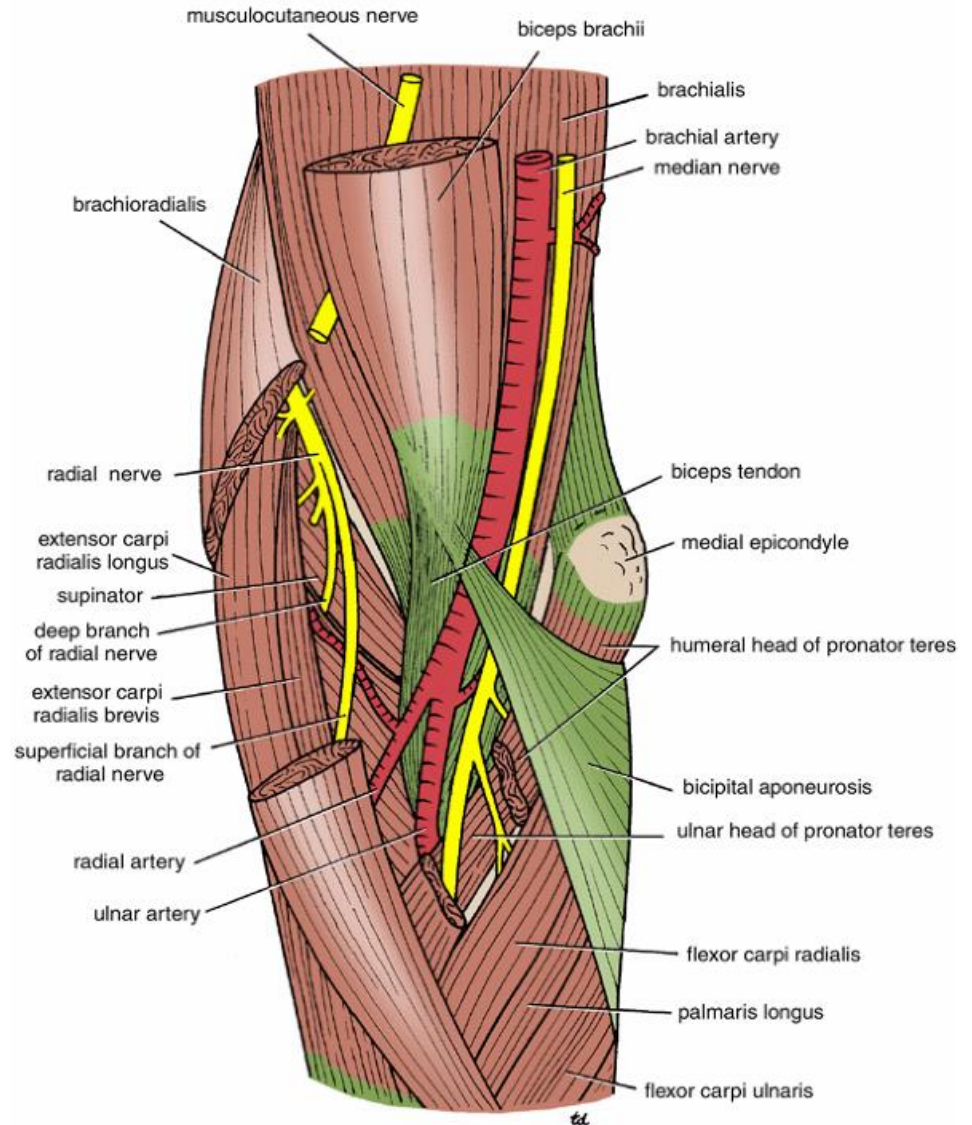


the arterial anastomosis around the elbow joint



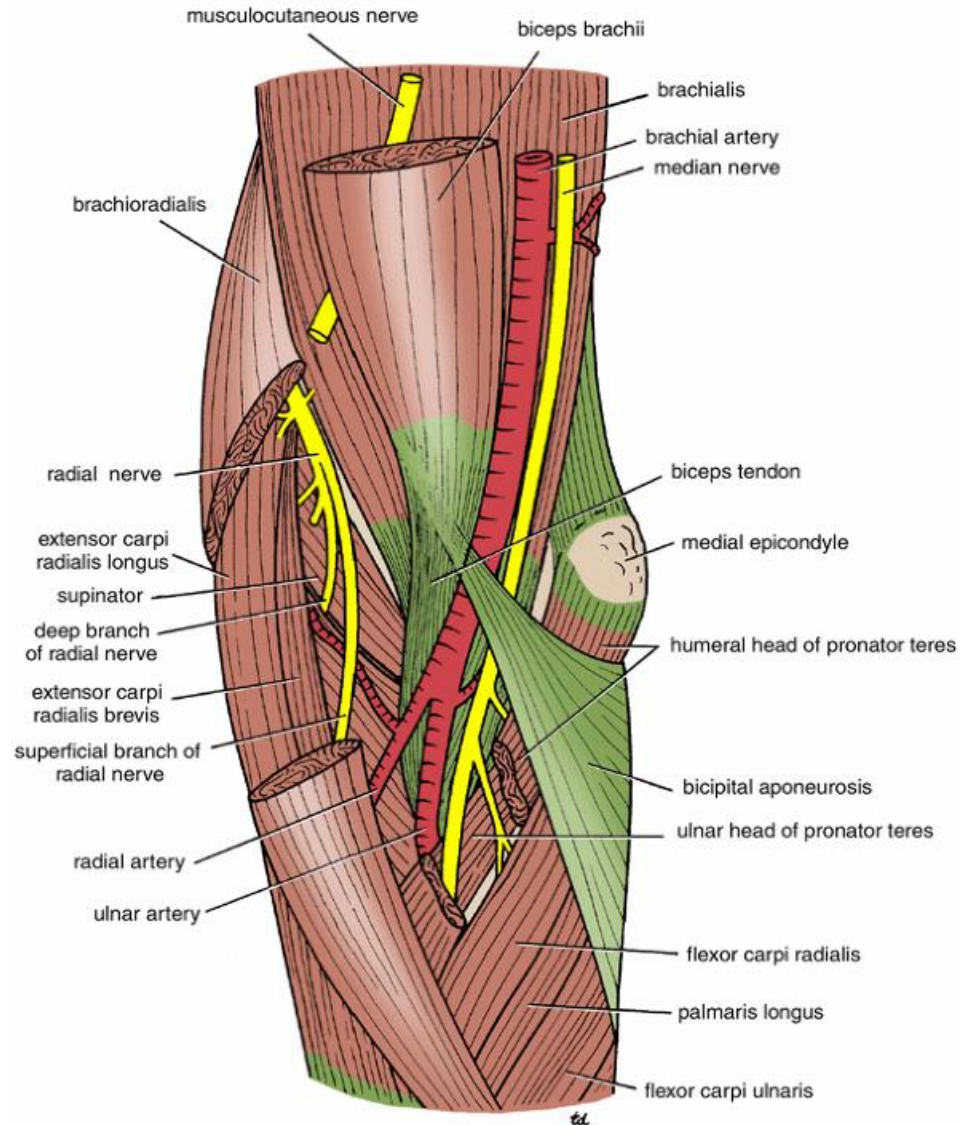
The Cubital Fossa

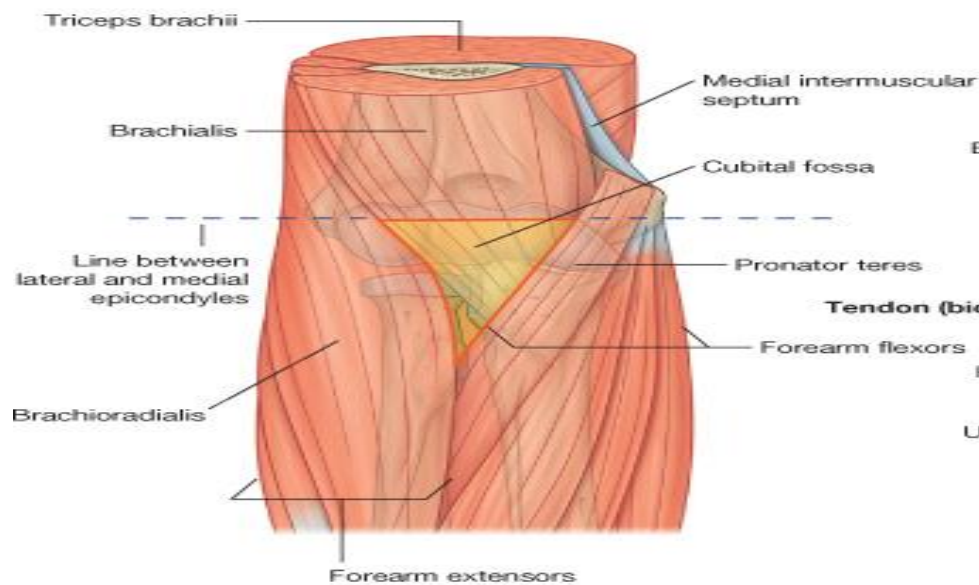
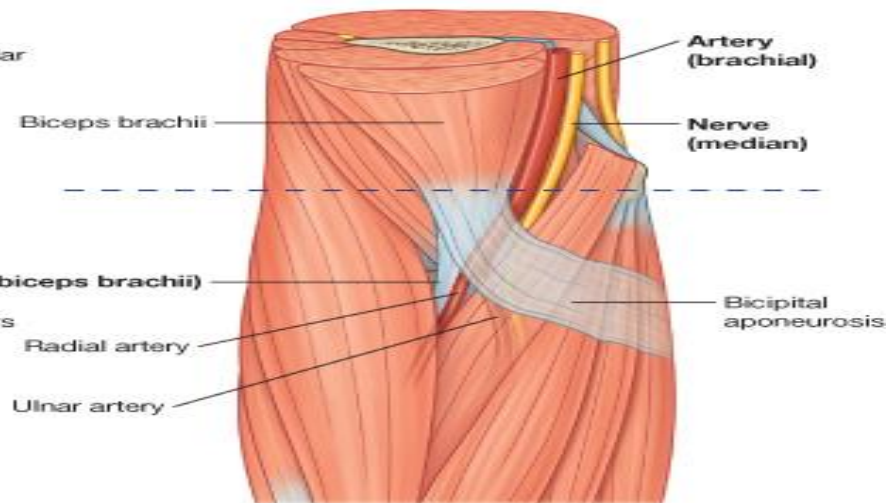
- The cubital fossa is a triangular depression that lies in front of the elbow
- Boundaries
 - Laterally: The brachioradialis muscle
 - Medially: The pronator teres muscle
- The base of the triangle is formed by an imaginary line drawn between the two epicondyles of the humerus
- The floor of the fossa is formed by the supinator muscle laterally and the brachialis muscle medially
- The roof is formed by skin and fascia and is reinforced by the bicipital aponeurosis.



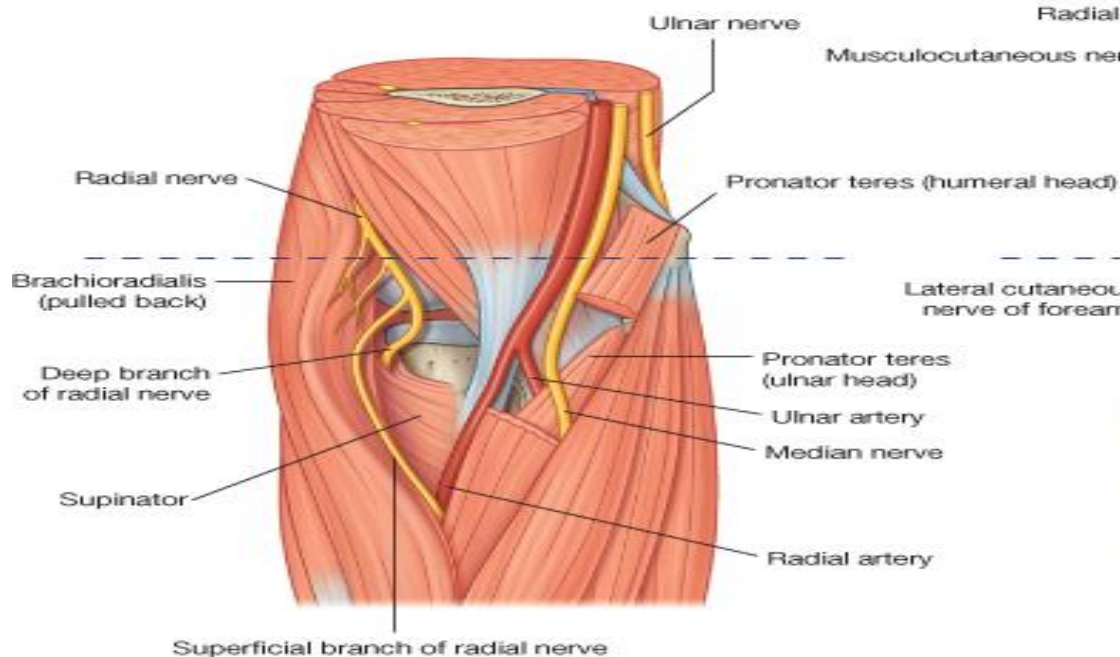
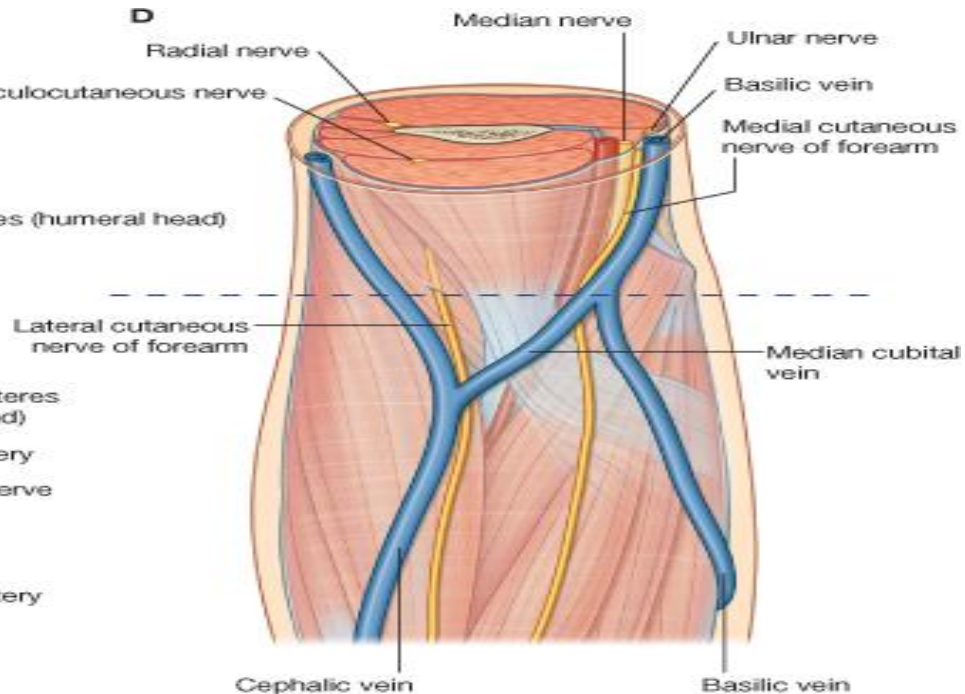
Contents

- The cubital fossa contains the following structures, from the medial to the lateral side
- the **median nerve**, the bifurcation of the **brachial artery** into the ulnar and radial arteries, the tendon of the **biceps muscle**, and the **radial nerve** and its deep branch.
- The supratrochlear lymph node lies in the superficial fascia over the upper part of the fossa
- receives afferent lymph vessels from the third, fourth, and fifth fingers; the medial part of the hand; and the medial side of the forearm
- The efferent lymph vessels pass up to the axilla and enter the lateral axillary group of nodes



A**B**

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C**D**

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