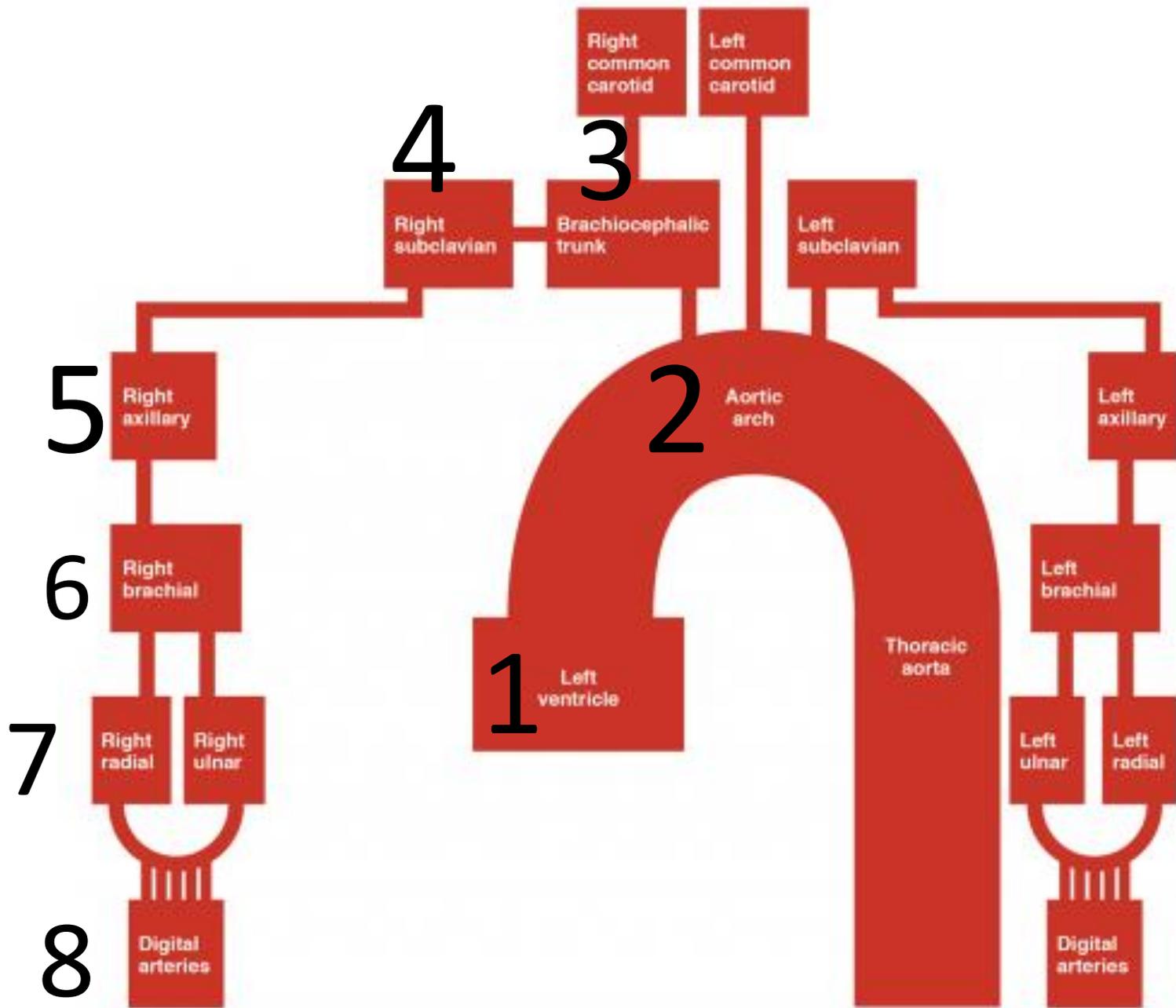


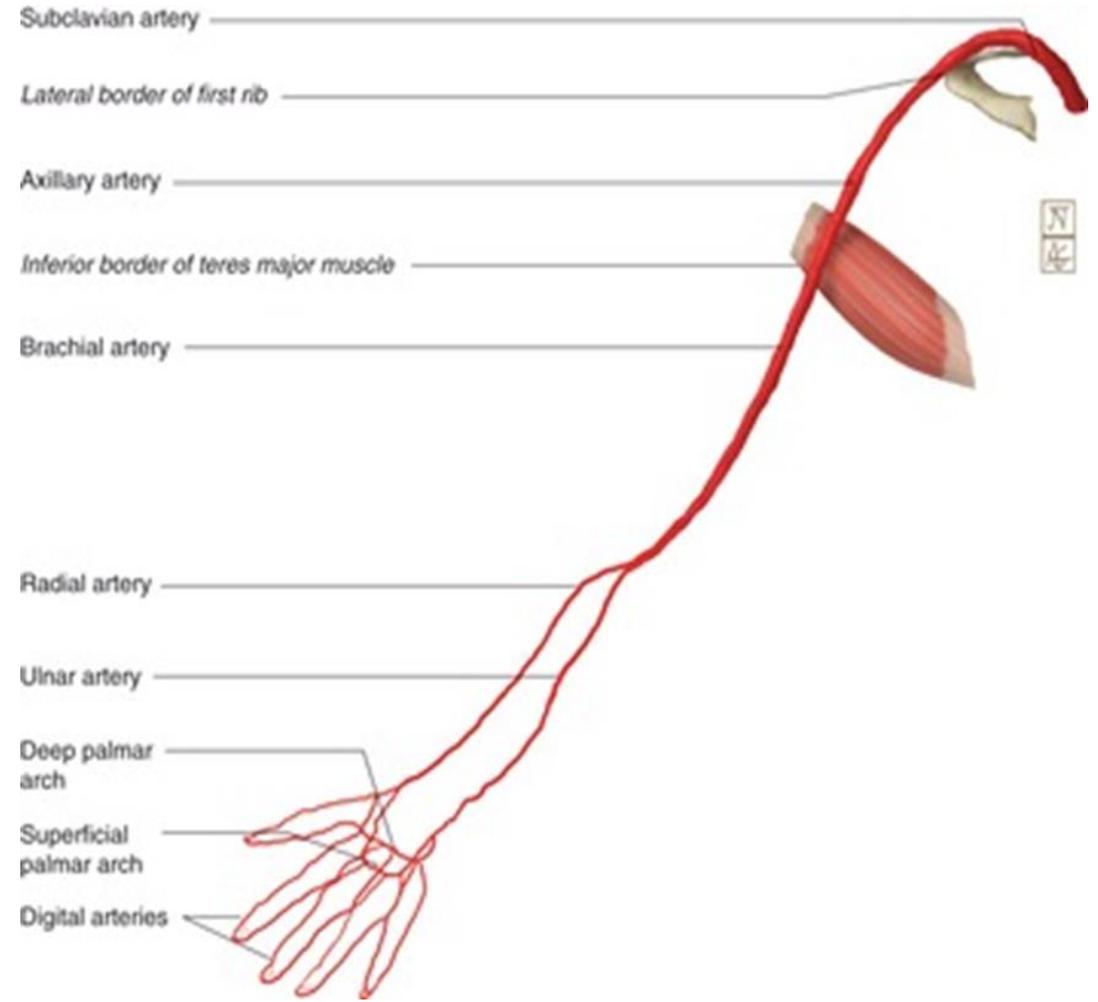
Great blood vessels of the upper limb

Dr Amal Albtoosh



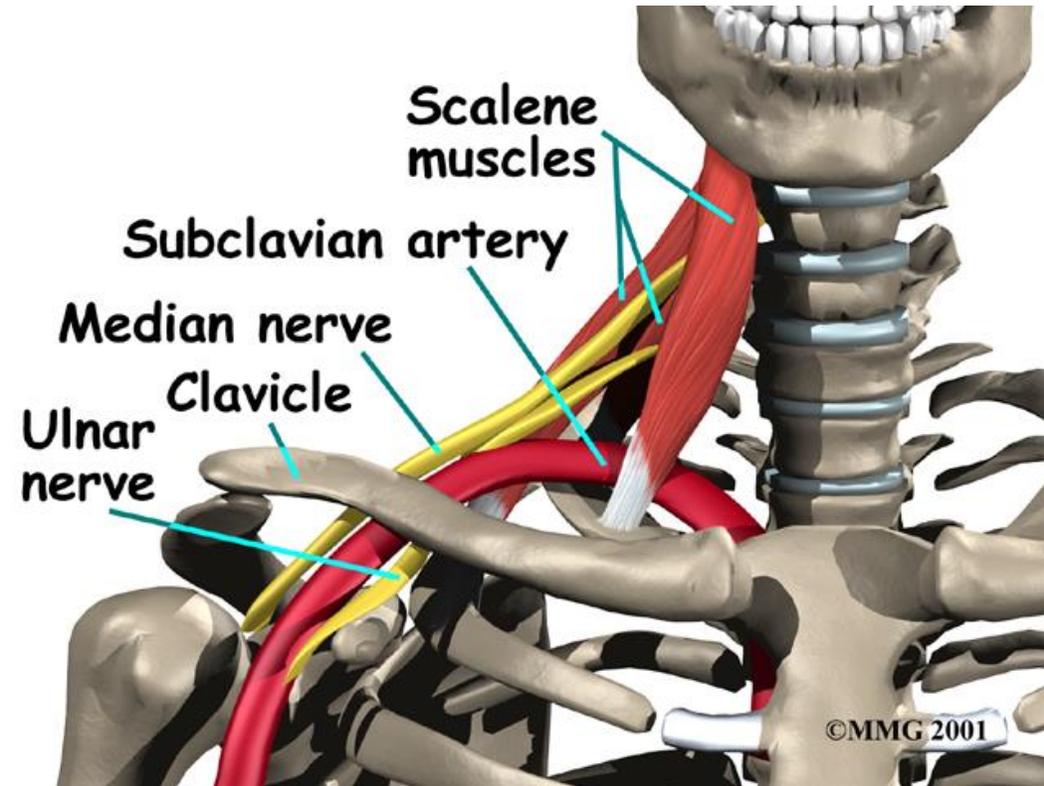
ARTERIES

- ❖ The **arterial supply to the upper limb** is delivered via five main vessels (proximal to distal):
 - Subclavian artery
 - Axillary artery
 - Brachial artery
 - Radial artery
 - Ulnar artery
- ❖ The subclavian artery becomes the axillary artery after crossing the 1st rib
- ❖ The axillary artery becomes the brachial artery after crossing the posterior axillary fold
- ❖ The brachial artery divides just distal to the elbow into the radial and ulnar arteries.
- ❖ The hand is supplied on the palmar aspect by variable anastomoses between branches of the radial and ulnar arteries.



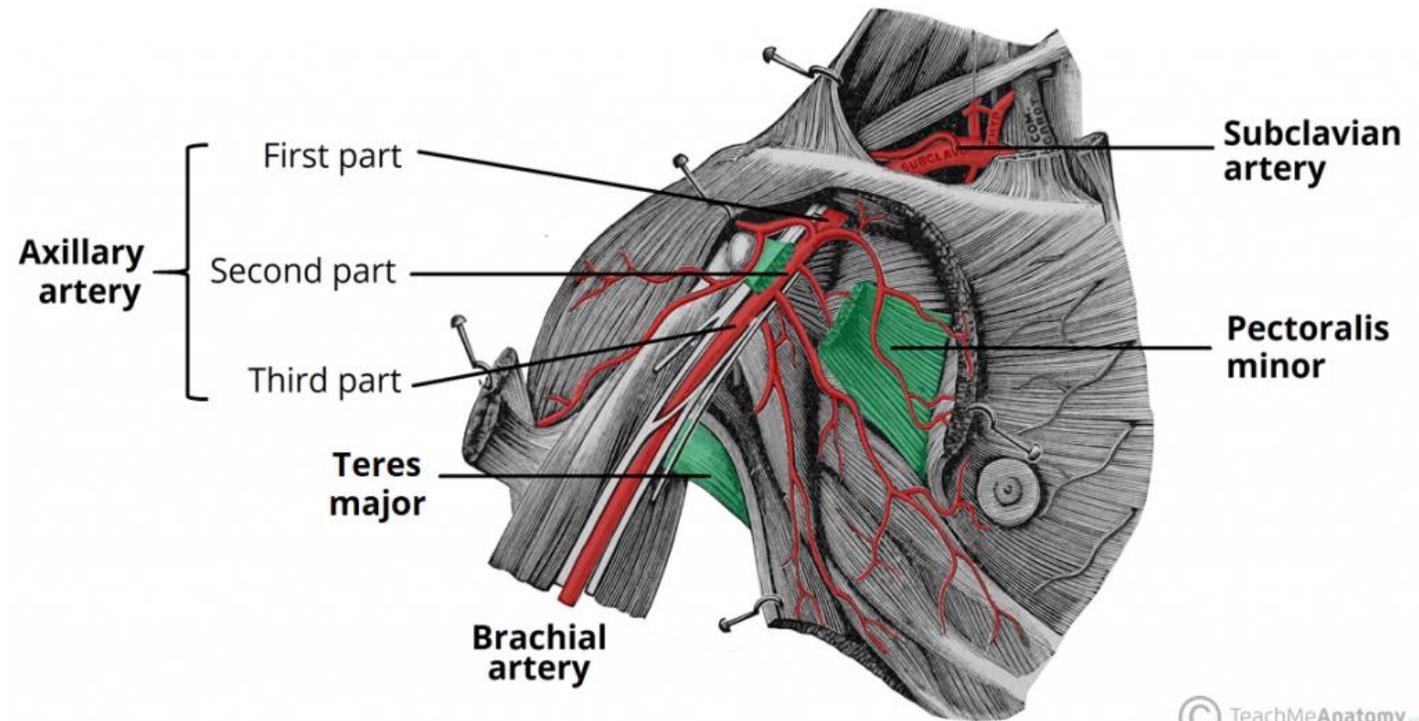
Subclavian Artery

- ❖ The arterial supply to the upper limb begins as the **subclavian artery**. **RIGHT** : from the brachiocephalic trunk.
LEFT: directly from the arch of aorta.
- ❖ The subclavian artery travels laterally towards the axilla.
- ❖ It can be divided into **three parts** based on its position relative to the **ANTERIOR SCALENE** muscle:
 - **First part** – origin of the subclavian artery to the medial border of the anterior scalene.
 - **Second part** – posterior to the anterior scalene.
 - **Third part** – lateral border of anterior scalene to the lateral border of the first rib.
- ❖ At the lateral border of the first rib, the subclavian artery enters the axilla – and is renamed the **axillary artery**.



AXILLARY ARTERY

- ❖ **BEGINS:** at the lateral border of the 1st rib as a continuation of the subclavian
- ❖ Is enclosed in the axillary sheath
- ❖ The artery can be divided into three parts based on its position relative to the **PECTORALIS MINOR** muscle:
 - **First part** – proximal to pectoralis minor
 - **Second part** – posterior to pectoralis minor
 - **Third part** – distal to pectoralis minor
- ❖ **ENDS:** at the lower border of the **TERES MAJOR** muscle,



Branches of the Axillary Artery

From the first part (1 branch):

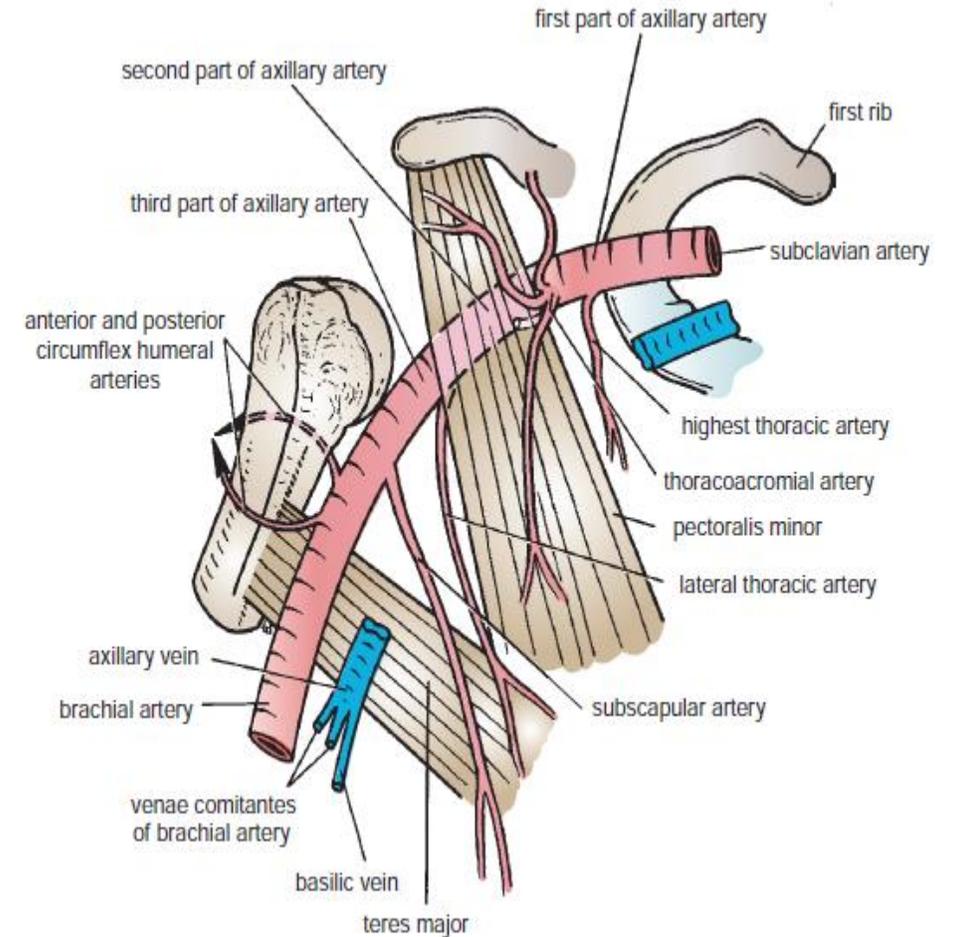
- The **highest thoracic artery**

From the second part (2 branches):

- The **thoracoacromial artery**
- The **lateral thoracic artery**

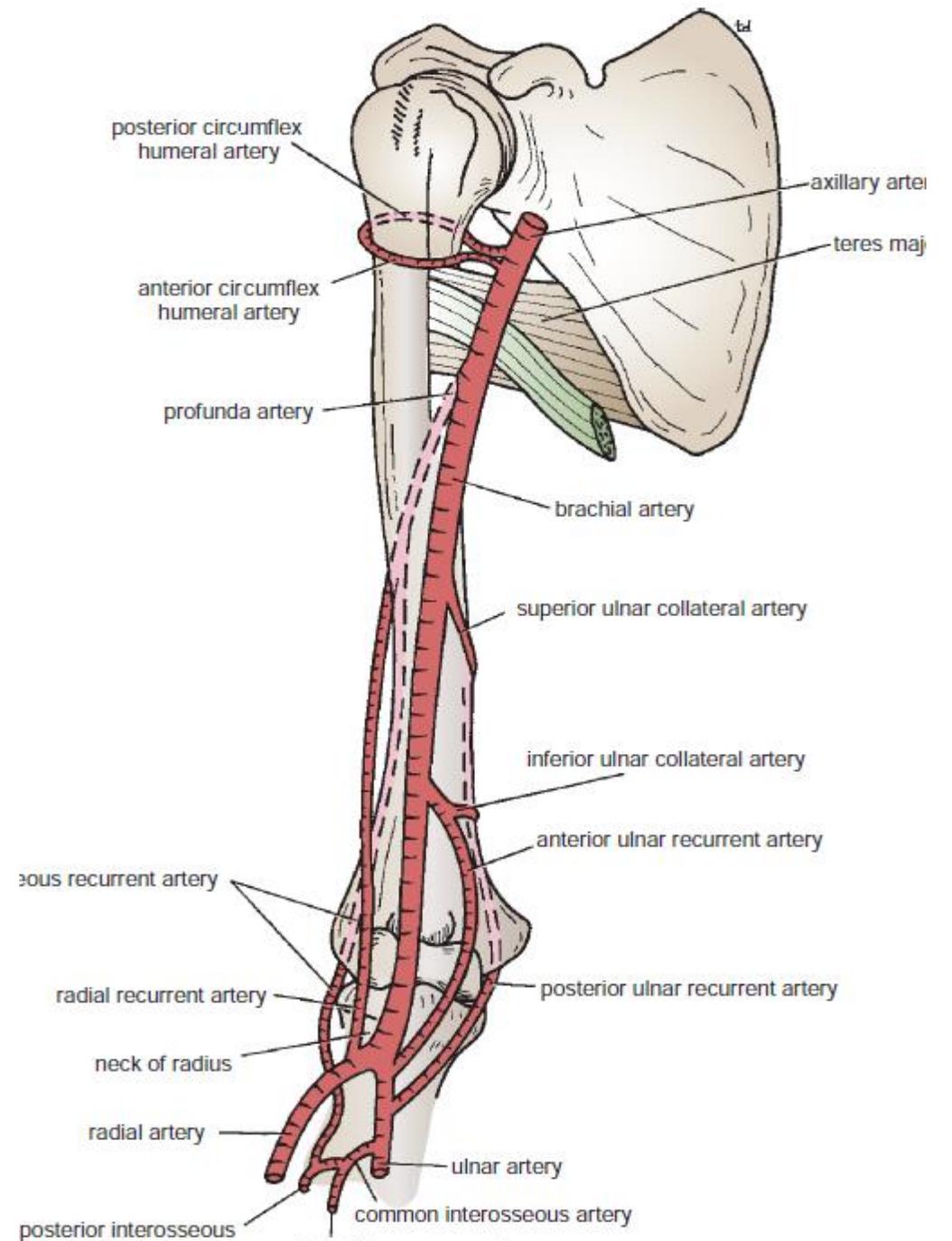
From the third part (3 branches):

- The **subscapular artery**
 - The **anterior and posterior circumflex humeral arteries**
- humeral arteries**



Brachial artery

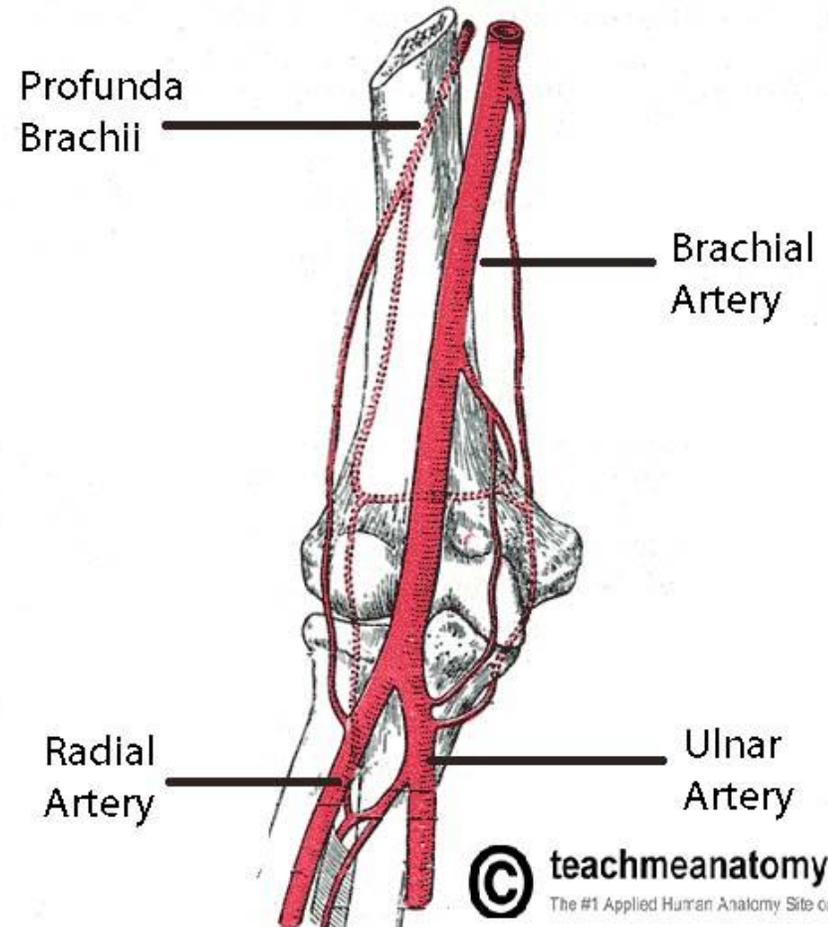
- ❖ Begins: at the distal border of the tendon of teres major
- ❖ Ends about 1 cm distal to the elbow joint
- ❖ terminates by dividing into radial and ulnar arteries.
- ❖ **Brachial artery is the site of auscultation of blood pressure**



Brachial artery

Branches :

- Profunda brachii artery
- Nutrient artery of humerus
- Superior ulnar collateral artery
- Middle ulnar collateral artery (if present)
- Inferior ulnar collateral artery
- Muscular branches



Relations of the brachial artery in the arm

☐ Laterally:

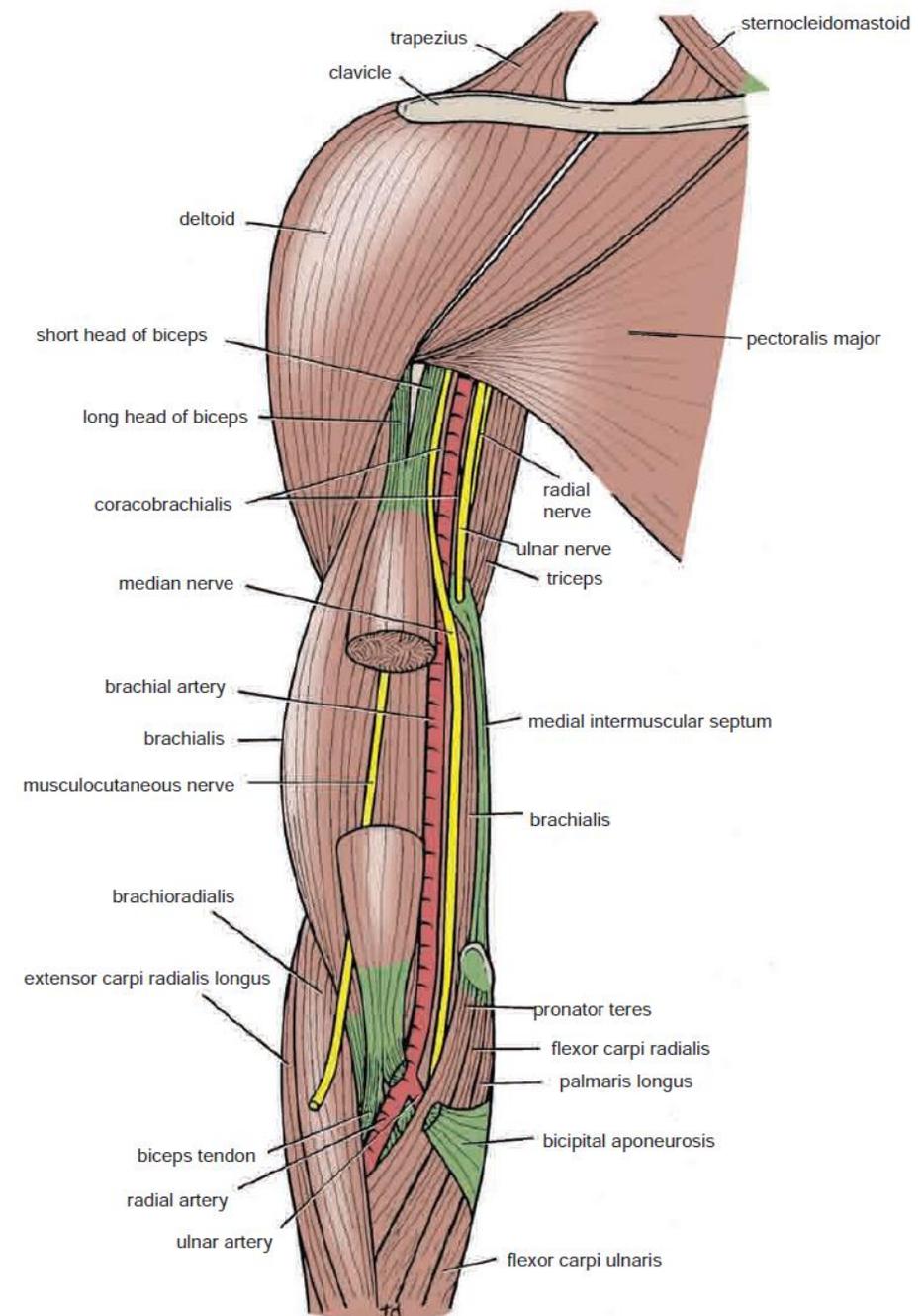
- In the upper half, median nerve and musculocutaneous nerve.
- in the lower half, the biceps brachii.

☐ Medially:

- In the upper half, ulnar nerve and medial cutaneous nerves of the arm and forearm.
- In the lower half, median nerve and basilic vein.

☐ Anteriorly:

- Median nerve crosses in front of the artery from lateral to medial.
- **Bicipital aponeurosis** which separates the brachial artery from the median cubital vein.



Radial artery

- ❖ **BEGINS:** from the brachial artery near the neck of the radius
- ❖ **Course:**
 - passes deep to brachioradialis
 - At the wrist it passes in the anatomical snuff box
- ❖ **ENDS:** in the hand by anastomosis with the deep branch of the ulnar artery, completing the deep palmar arch

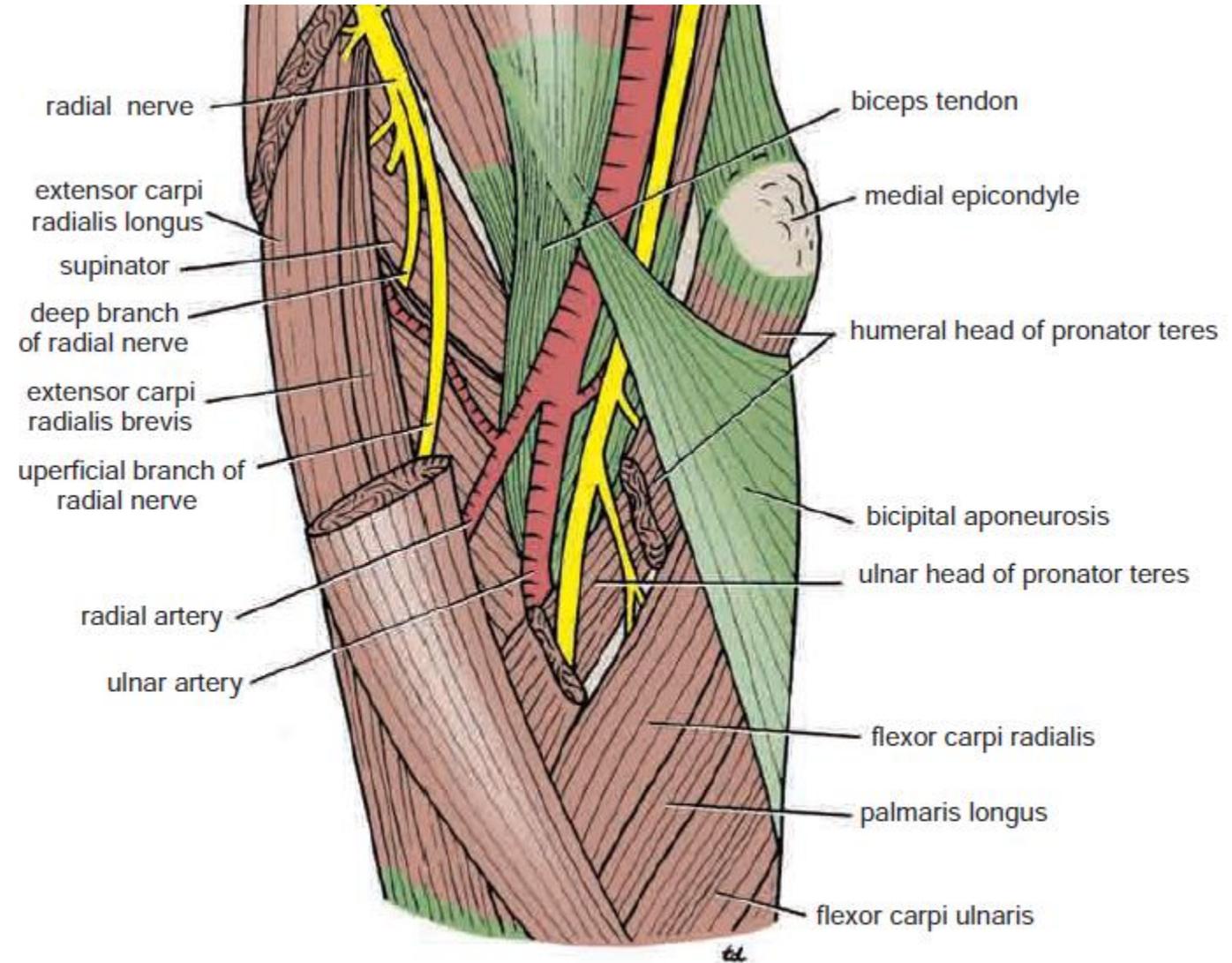
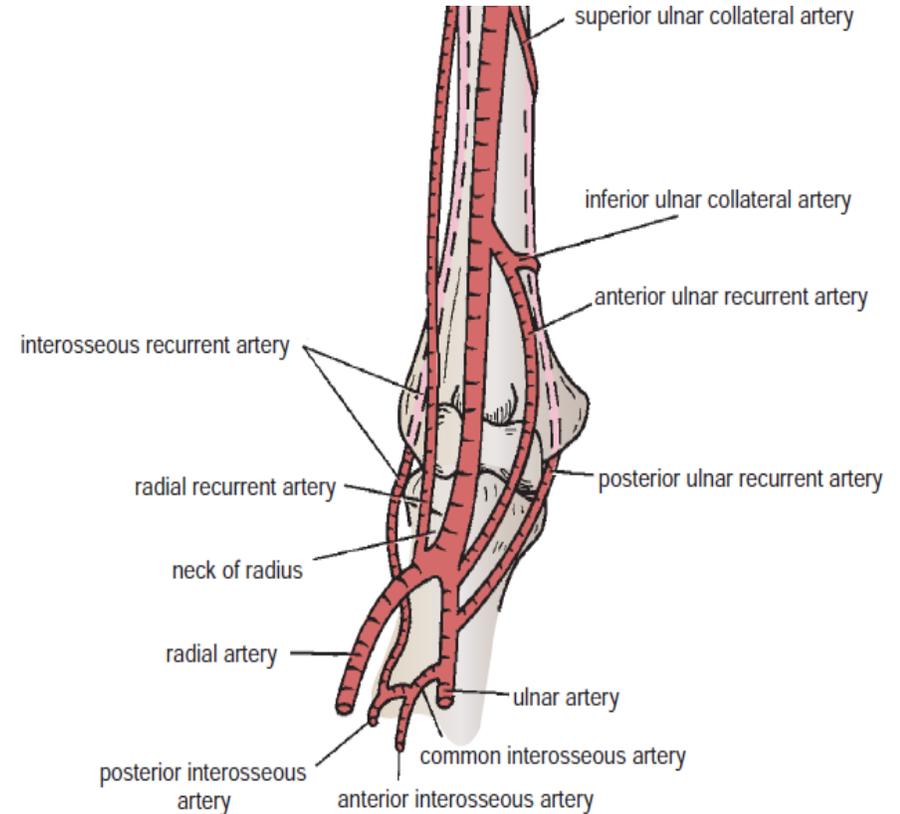


FIGURE 9.47 Right cubital fossa.

Branches of the Radial artery

- Radial recurrent artery
- Radial collateral (anastomoses with the radial collateral branch of the profunda brachii)
- Muscular branches
- Cutaneous branches

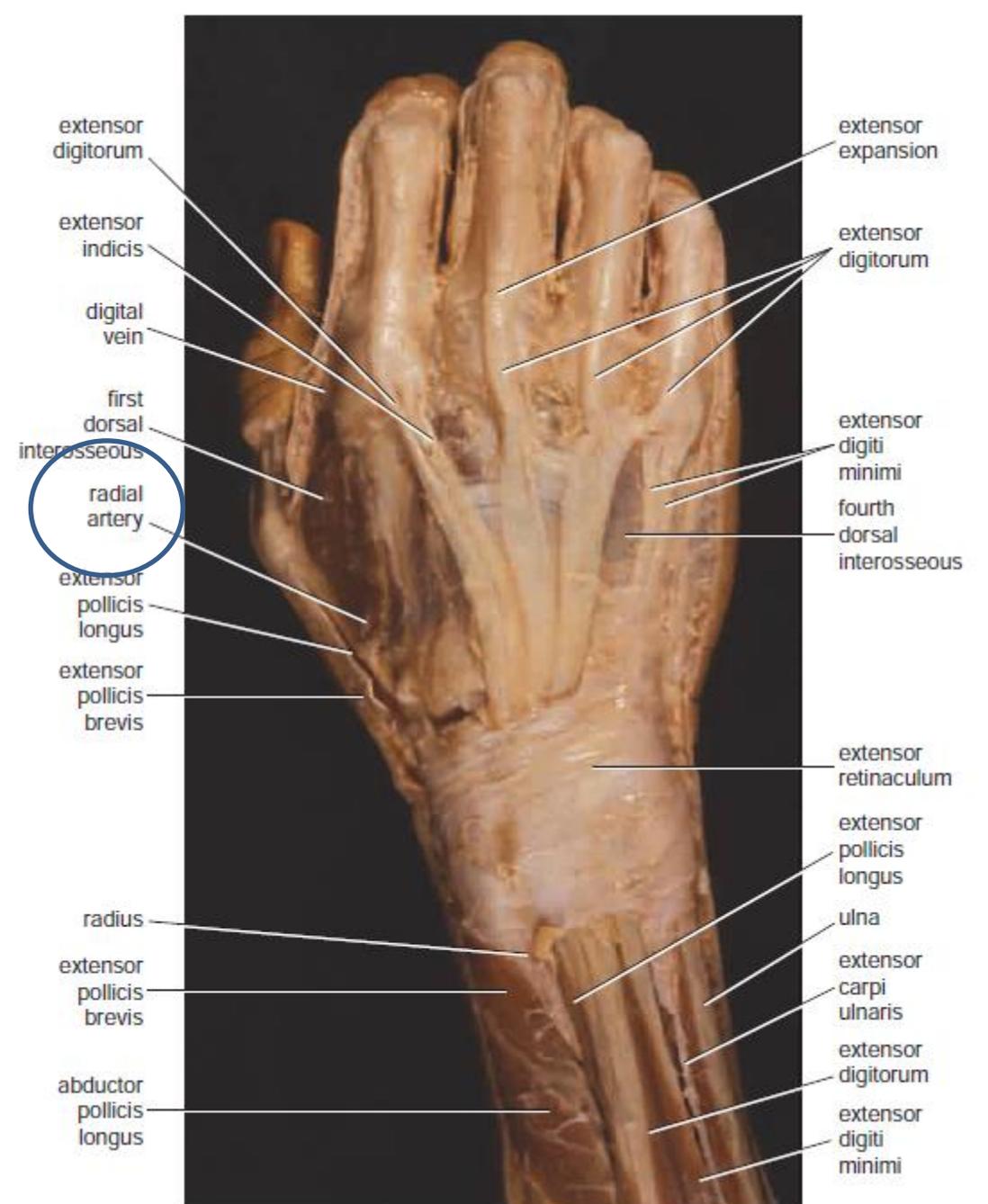


Radial artery passes through anatomical snuff box

➤ **Deep** to the extensors of the thumb

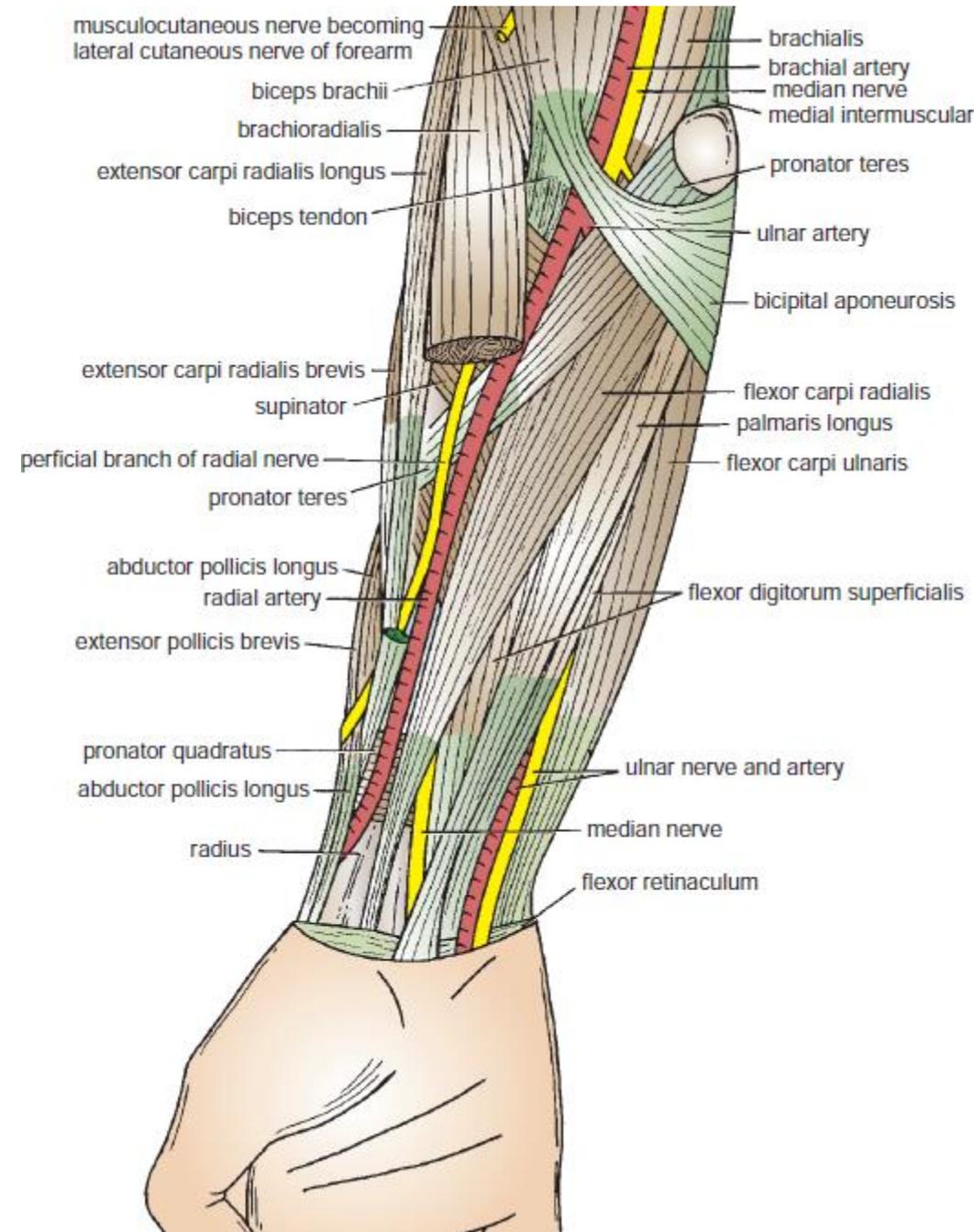
➤ **Superficial** to carpal bones

➤ It reaches the palm of the hand through the first interosseous space.



Ulnar artery

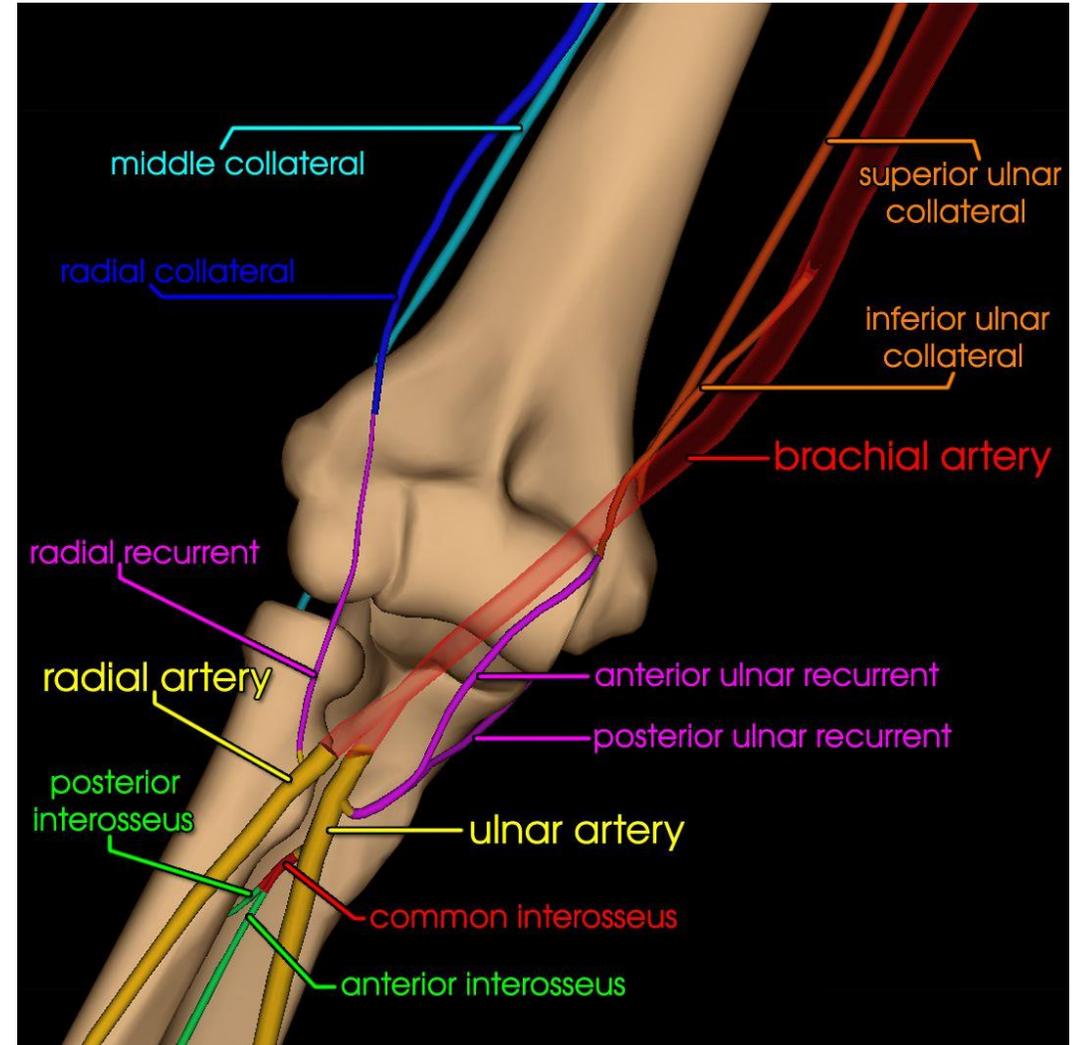
- ❖ **BEGINS** from the brachial artery near the neck of the radius
- ❖ **Course:**
 - passes **DEEP** to pronator teres, flexor carpi radialis, palmaris longus and flexor digitorum superficialis
 - The ulnar head of pronator teres separates it from the median nerve
 - At the wrist it passes in the anatomical snuff box
- ❖ **ENDS** in the hand by anastomosis with the superficial palmar branch of the radial artery, completing the superficial palmar arch.



Ulnar artery

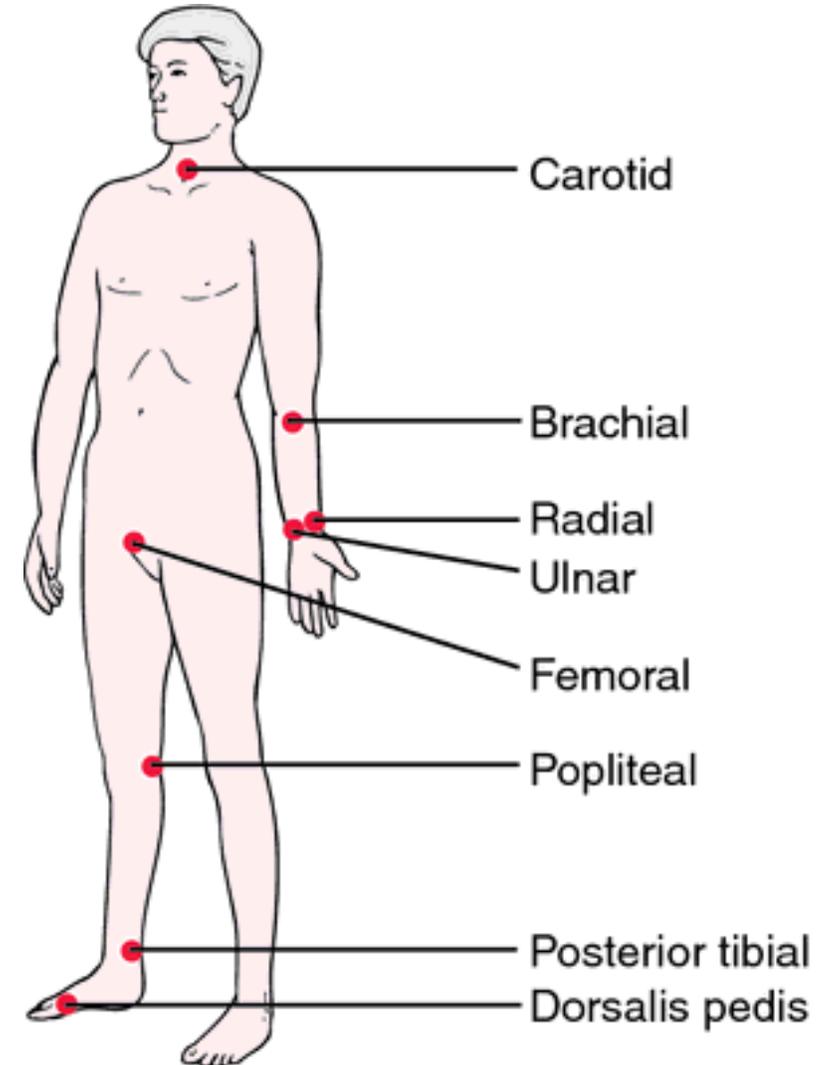
Branches

- Anterior ulnar recurrent
- Posterior ulnar recurrent
- Common interosseous artery, which divides into anterior interosseous and posterior interosseous artery (which gives rise to the posterior interosseous recurrent artery)
- Muscular branches
- Cutaneous branches along the septum between flexor carpi ulnaris and flexor digitorum superficialis.



pulsation

- Pulsations of the brachial artery, radial artery, and ulnar artery are palpable because some parts of these arteries are not covered by the muscles and are close to the skin.

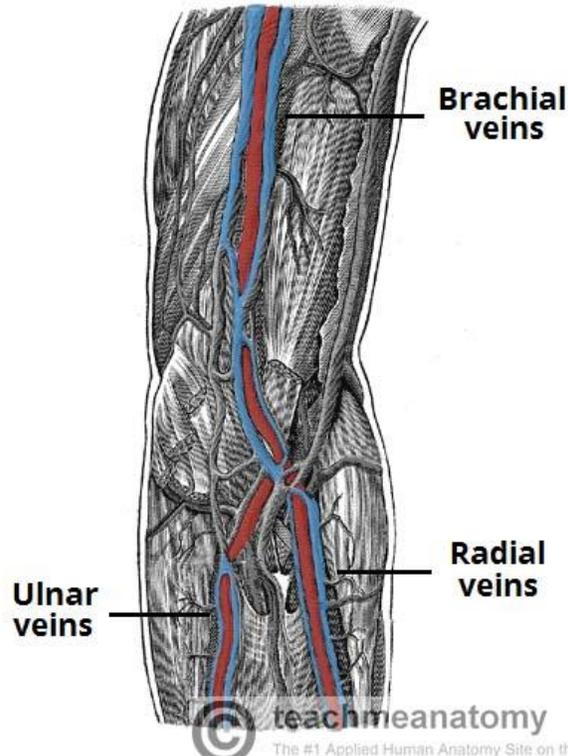


Veins

The veins of the upper limb can be divided into two groups:

DEEP

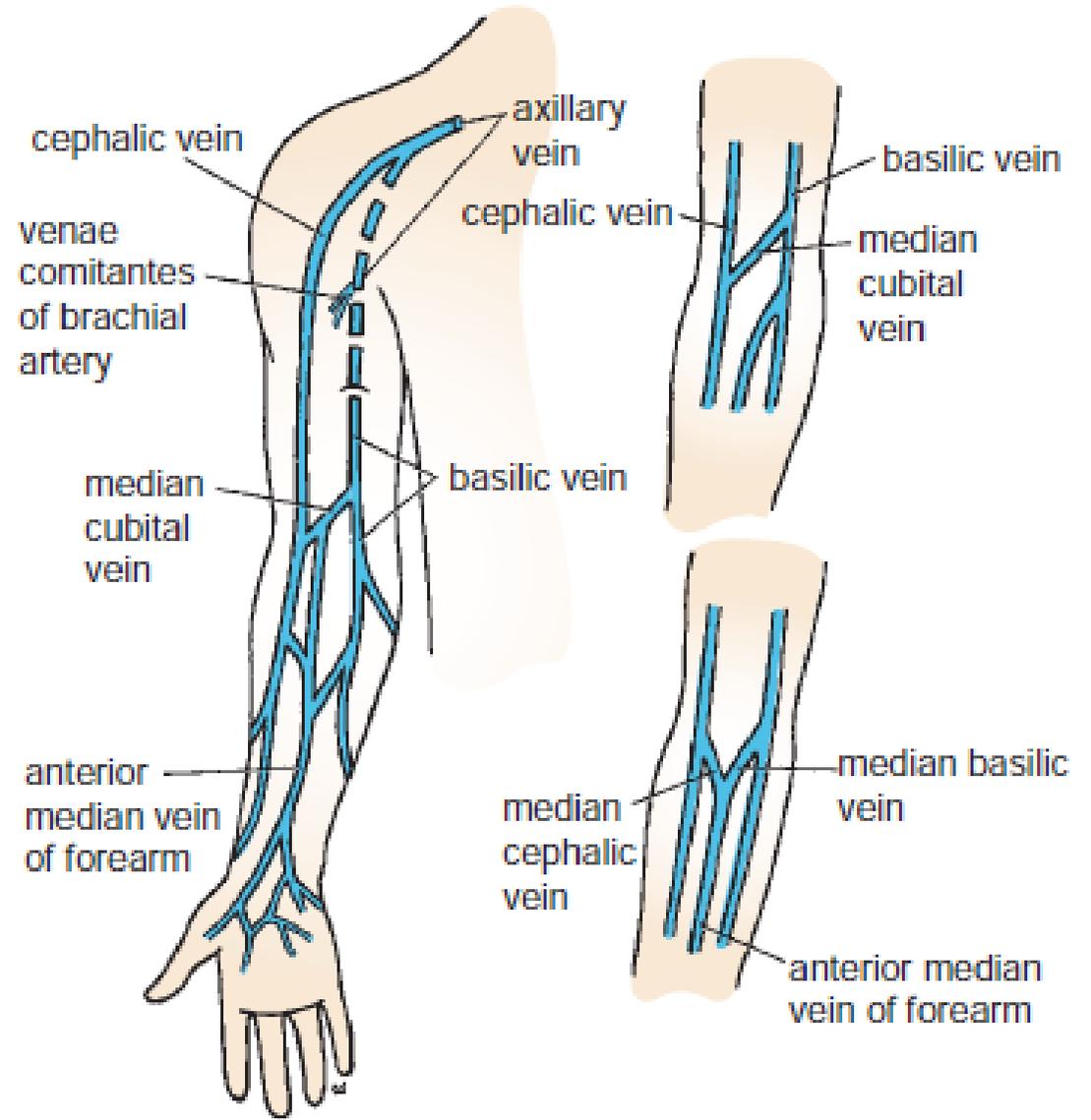
The deep veins comprise the **VENAE COMITANTES**, which accompany all the large arteries, usually in pairs, and the axillary vein.



SUPERFICIAL

- 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**.

Common variation of superficial vein seen in elbow area



VEINS/ recap

The venous drainage of the upper limb is composed of

- superficial and deep vessels.
- The deep veins accompany the arteries.
- The superficial veins starts on the back of the hand as a dorsal arch.
- The cephalic vein begins at the radial extremity of the arch.
- axillary vein just distal to the clavicle.
- The basilic vein passes along the medial aspect of the forearm,
- The median cubital vein links the cephalic and basilic veins in front of the elbow.

Good luck

