BLOOD SUPPLY OF THE FOREARM

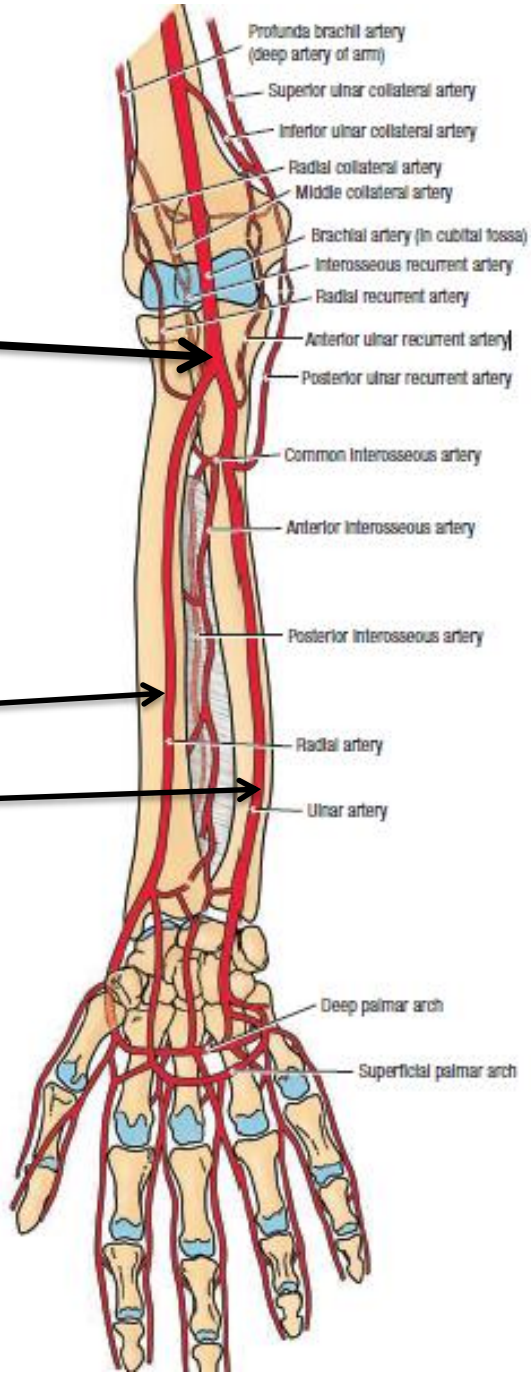
Dr. Amjad Shatarat

Brachial artery terminates :

opposite the neck of radius by dividing into:

1- Radial artery

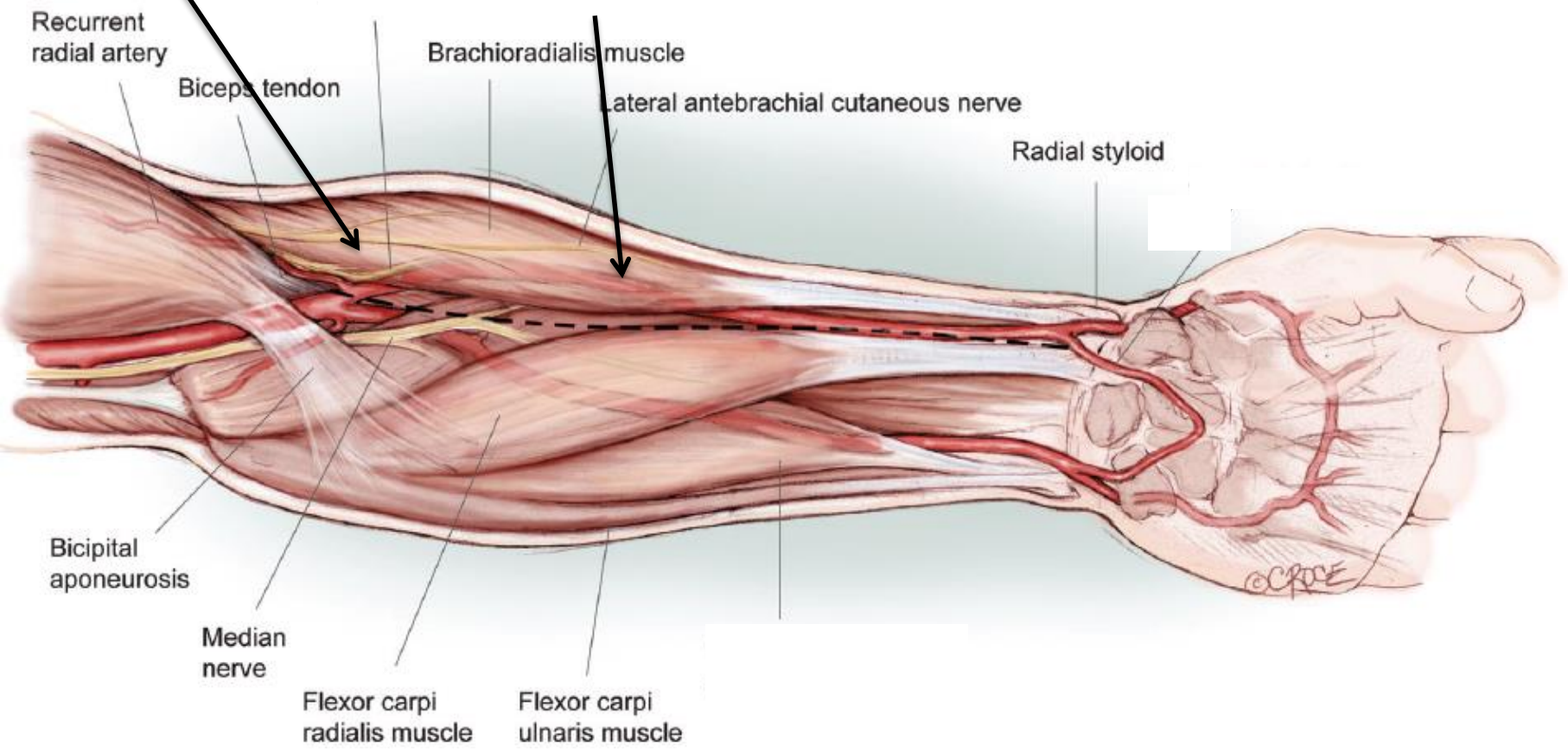
2- Ulnar artery



RADIAL ARTERY

1) Begins in cubital fossa \ neck of the radius

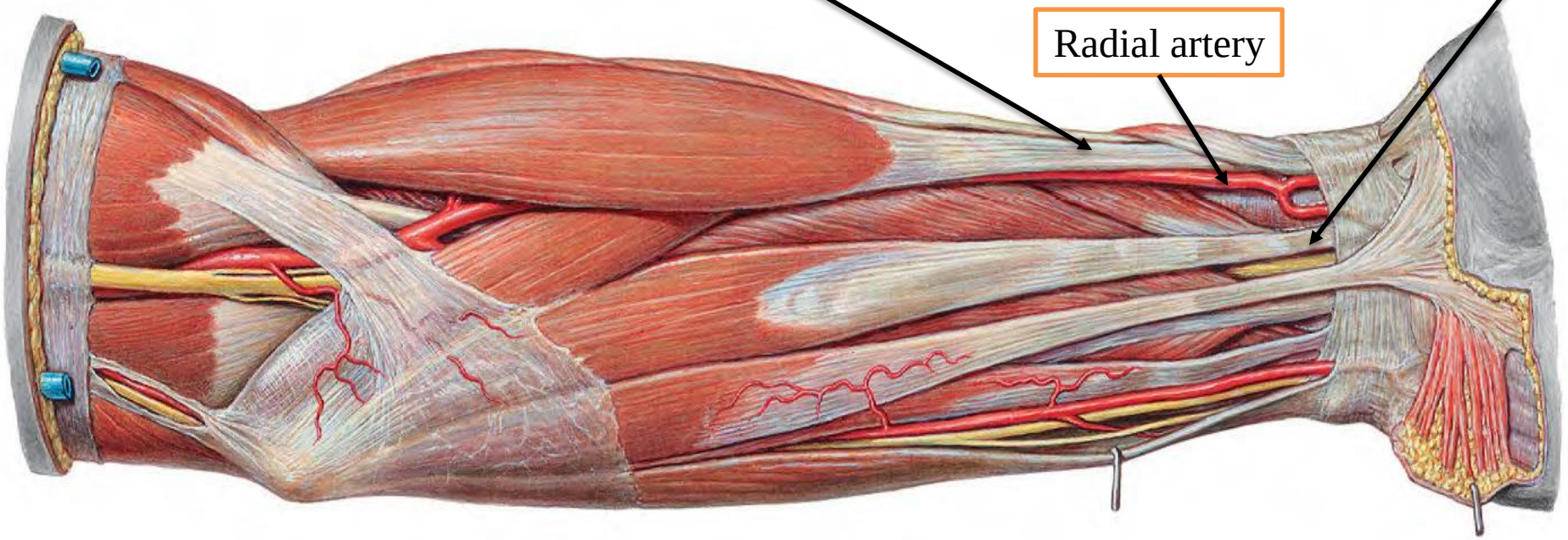
2) Passes **down & laterally**, **beneath the brachioradialis & resting on the deep muscle of the forearm**.

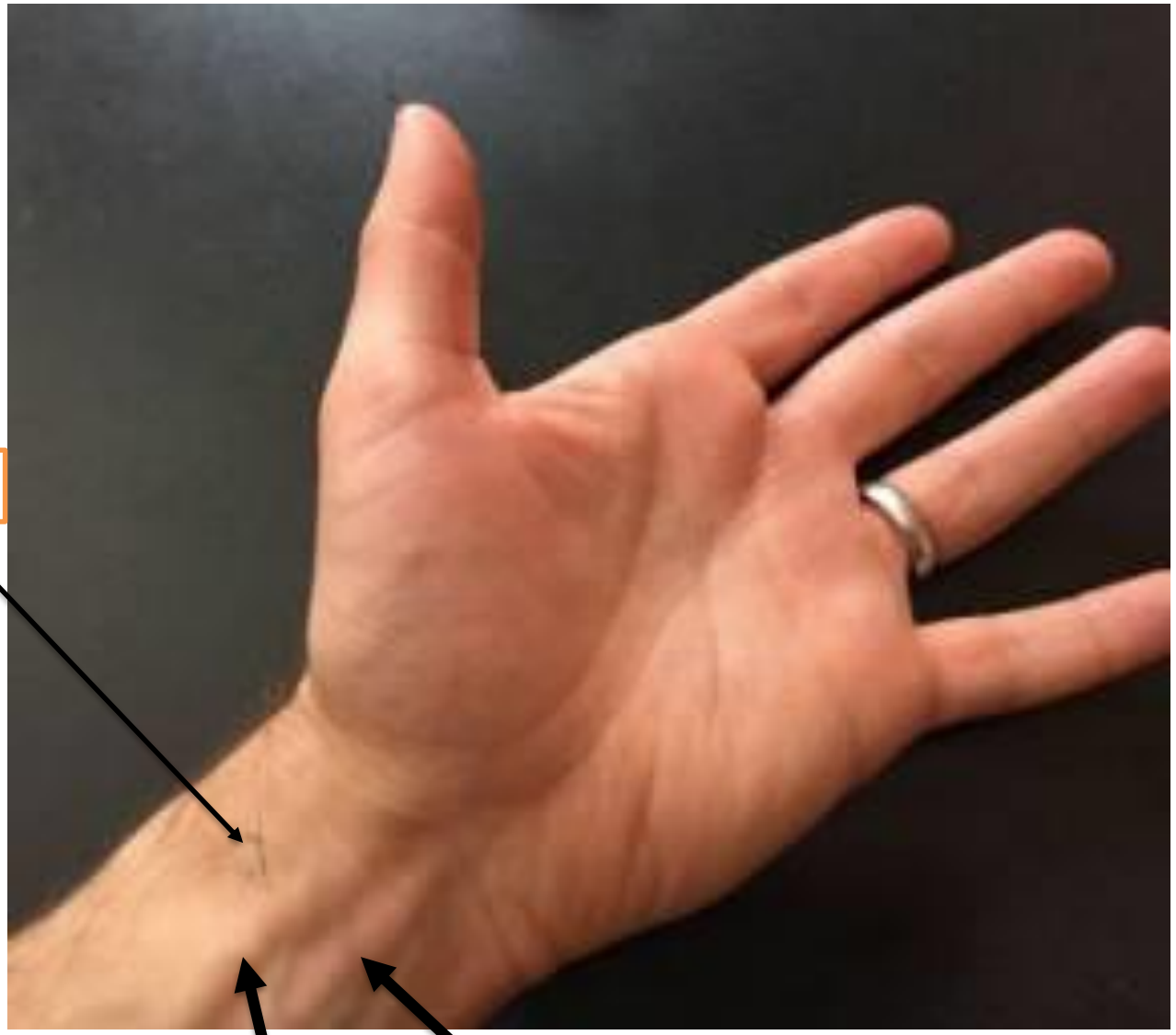


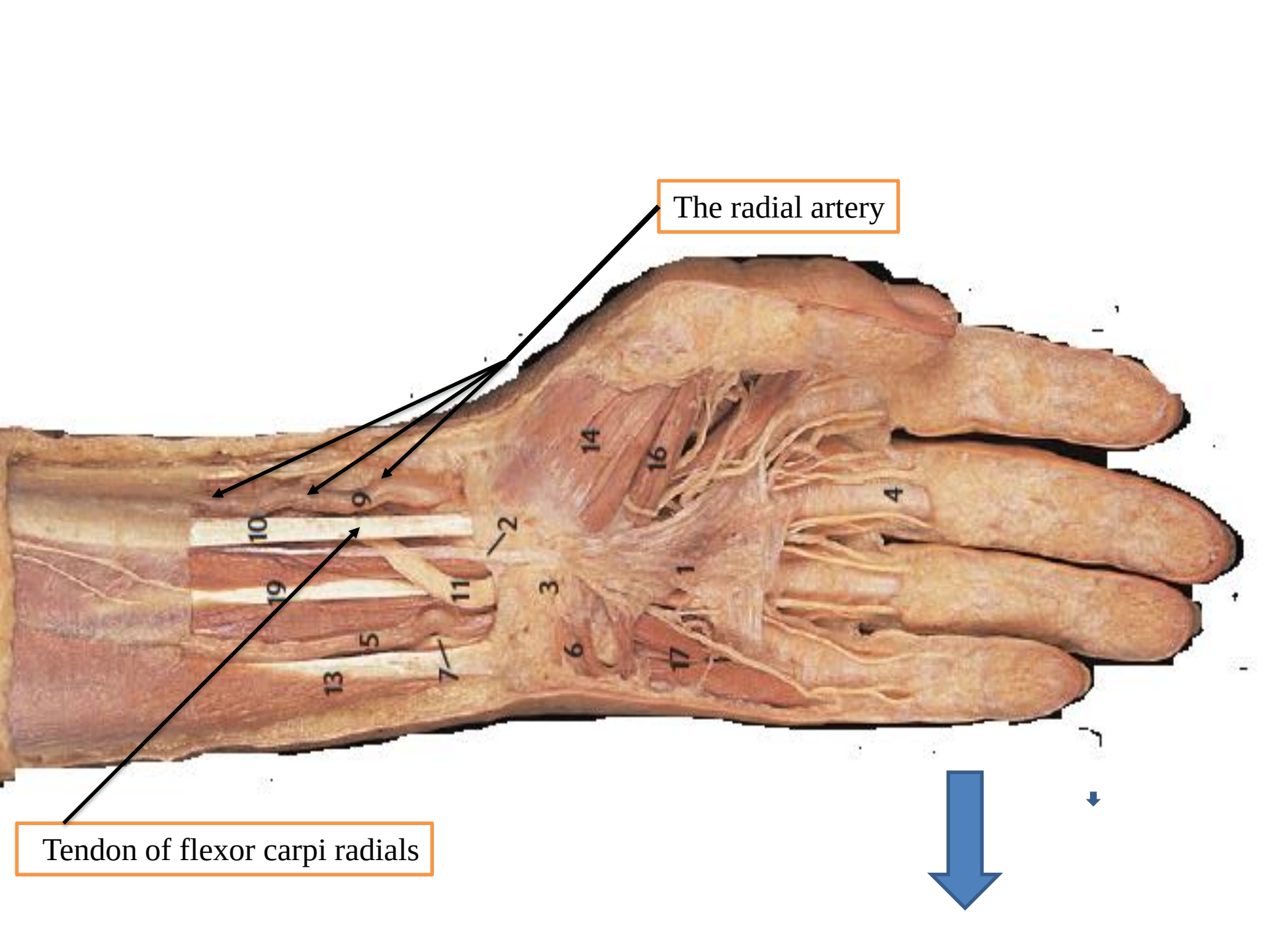
3) Proximal to the rest joint it lies on the radial bone between:

Laterally: Tendon of brachioradialis

Medially: Tendon FCR medially




Radial artery
Tendon of flexor carpi radials
Tendon of palmaris longus


The radial artery
Tendon of flexor carpi radials

Notice that lateral to the tendon of flexor carpi radials muscle passes **THE RADIAL ARTERY** **Remember that you can feel the pulse of the radial artery there**

4) At the wrist the radial artery passes in the ‘anatomical snuff-box, where again its pulsation is obvious

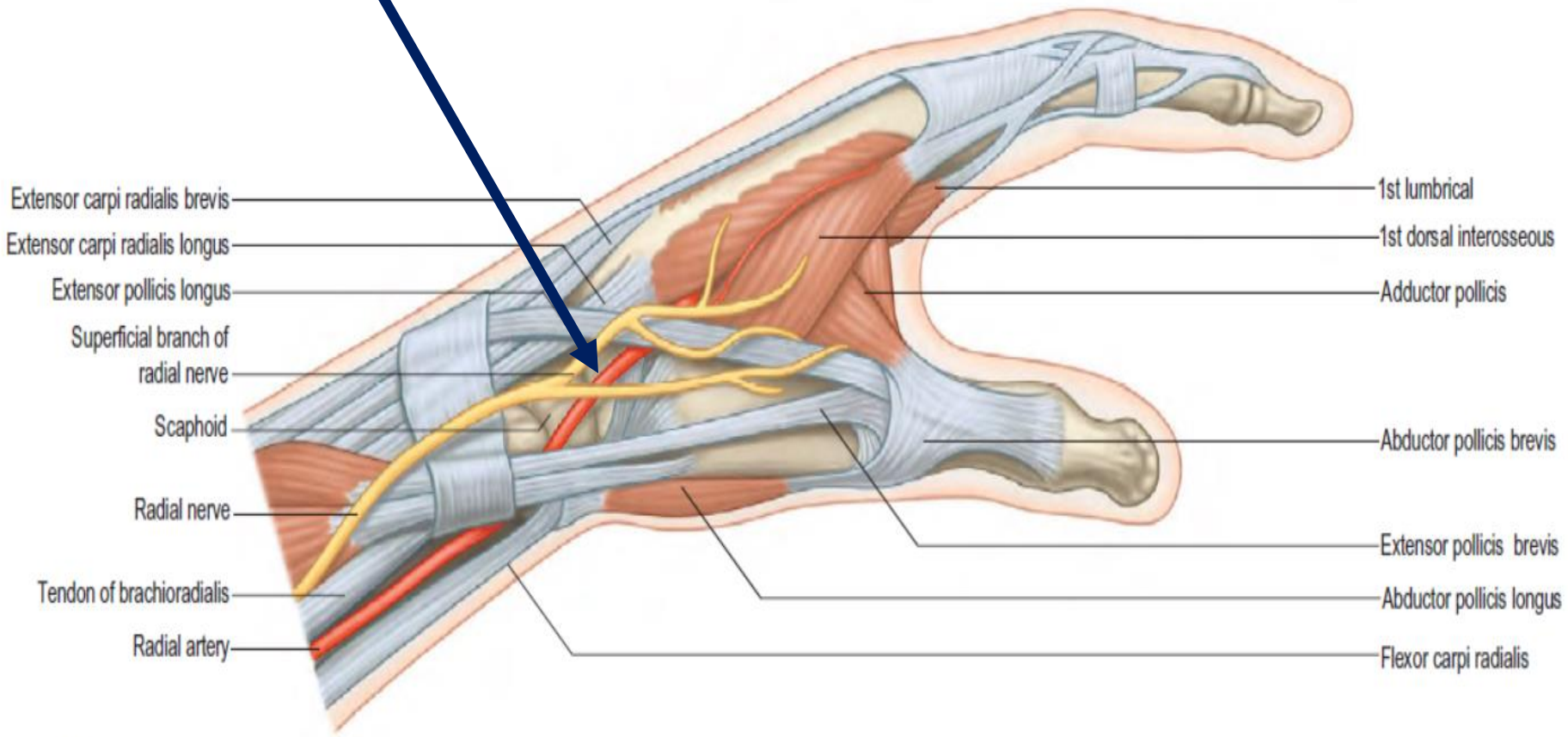


Fig. 50.38 Radial aspect of the left wrist.

5) In the hand the radial artery passes through the first interosseous space between the heads of the first dorsal interosseous and crosses the palm.

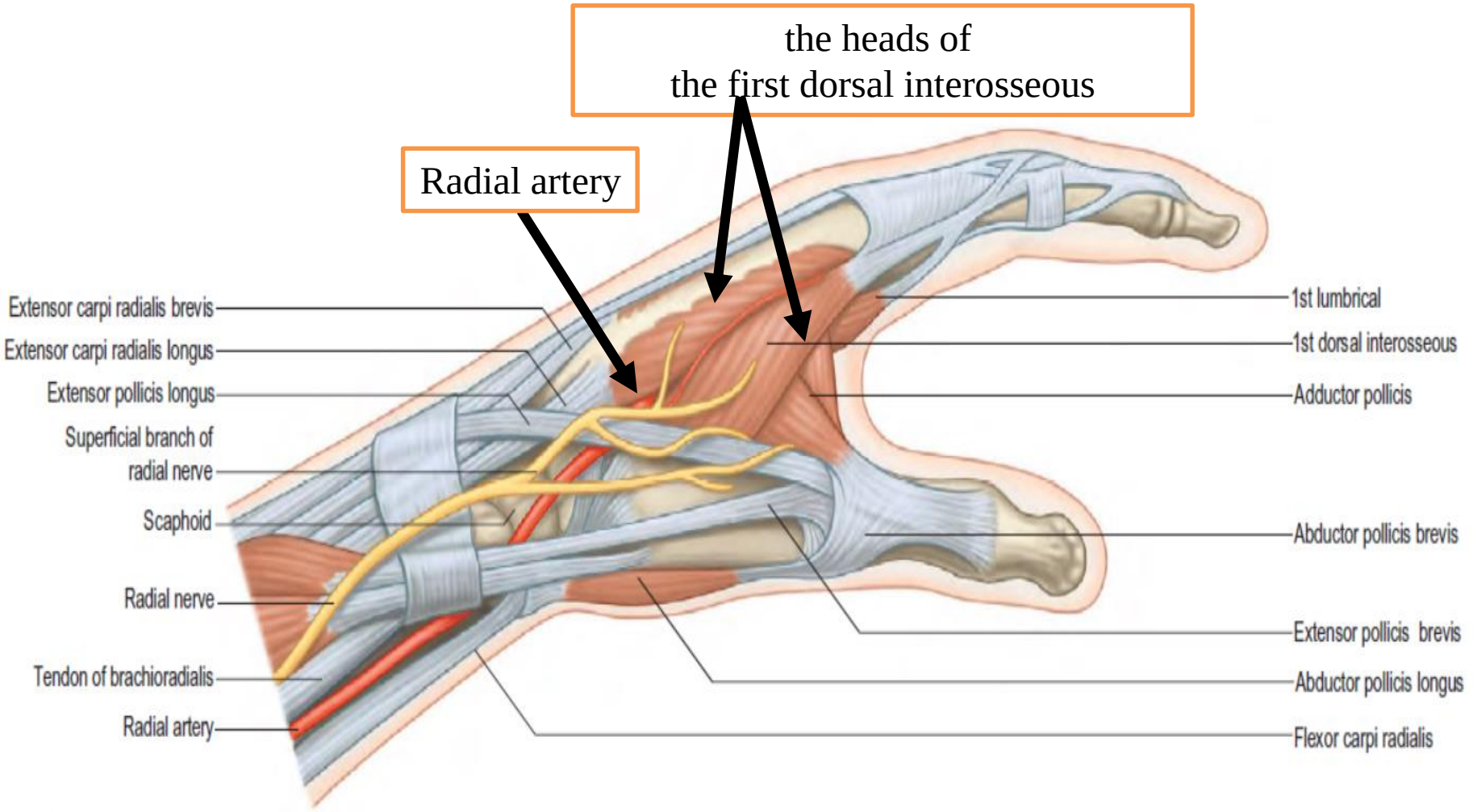
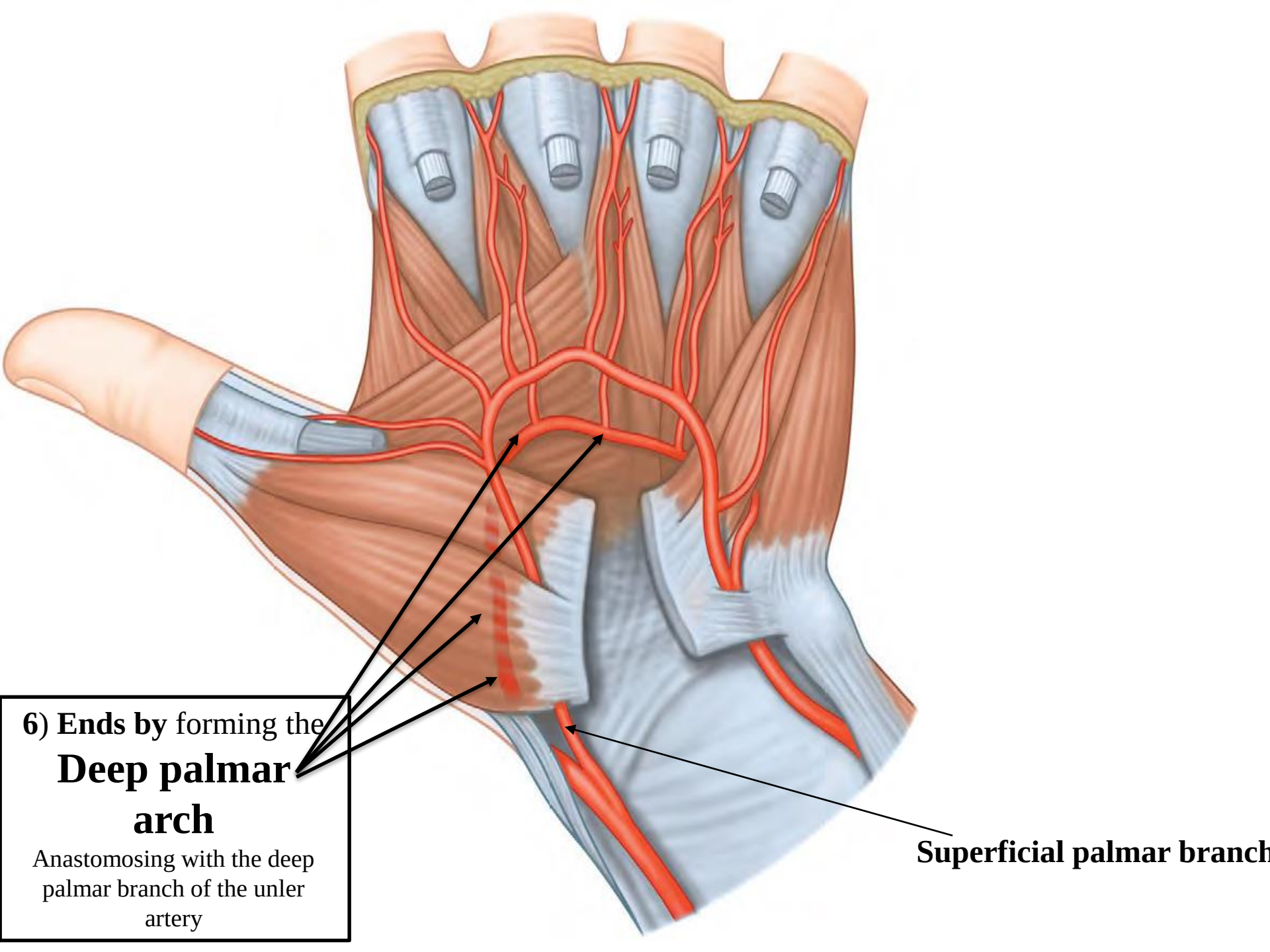


Fig. 50.38 Radial aspect of the left wrist.



6) Ends by forming the

Deep palmar arch

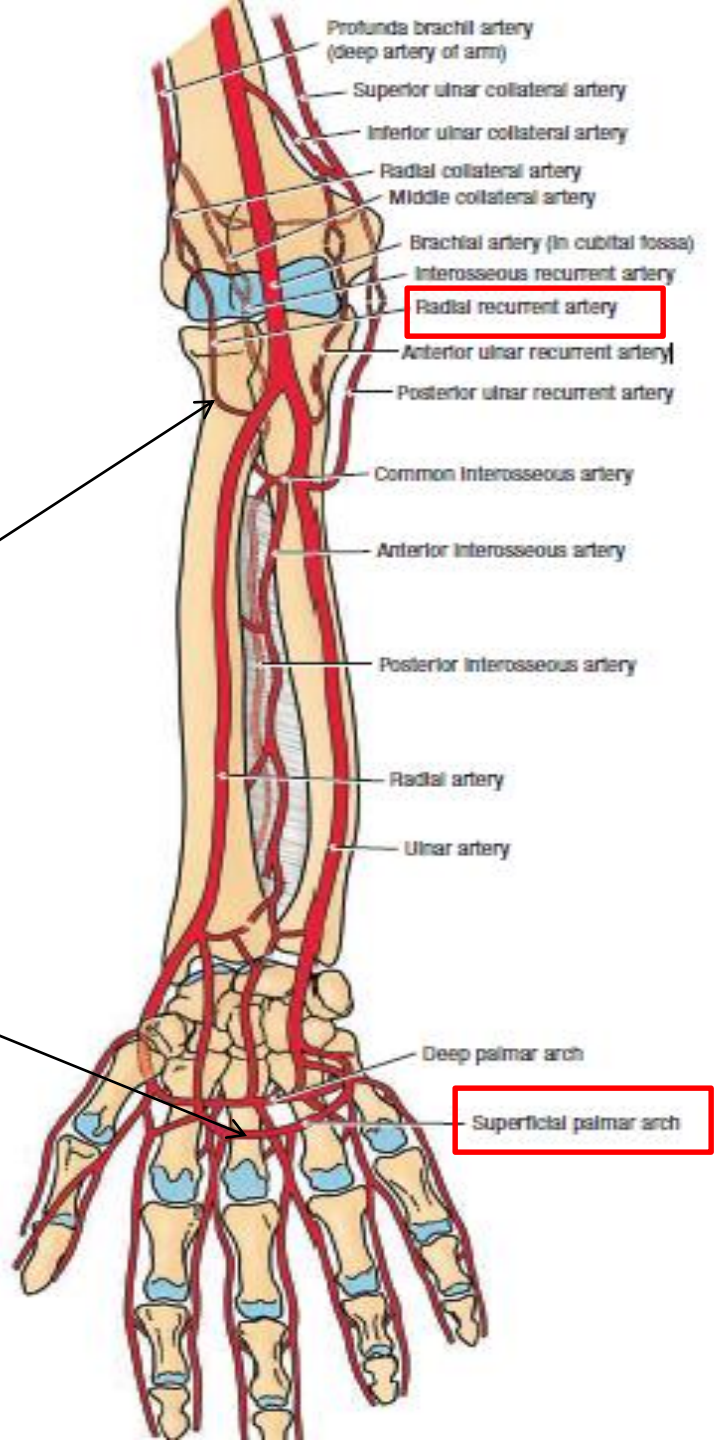
Anastomosing with the deep palmar branch of the unler artery

Superficial palmar branch

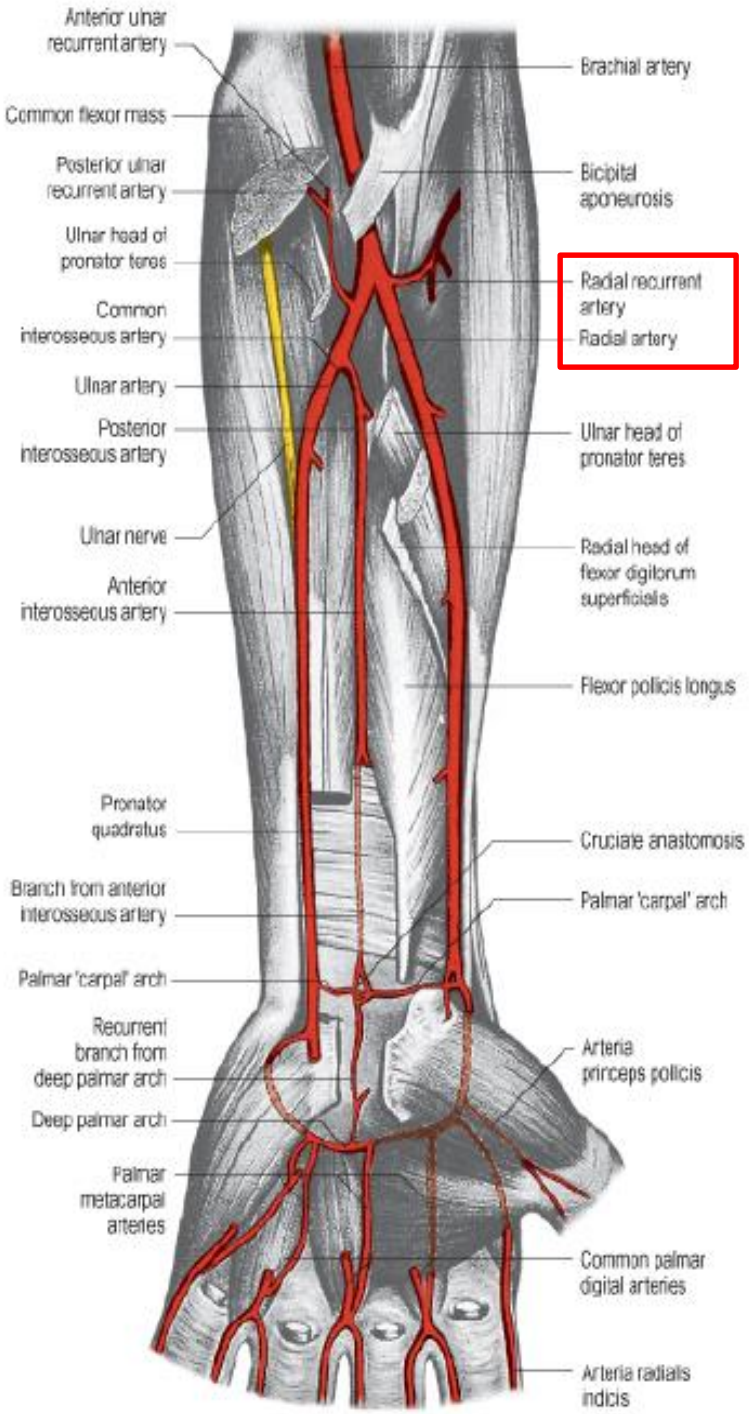
RADIAL ARTERY

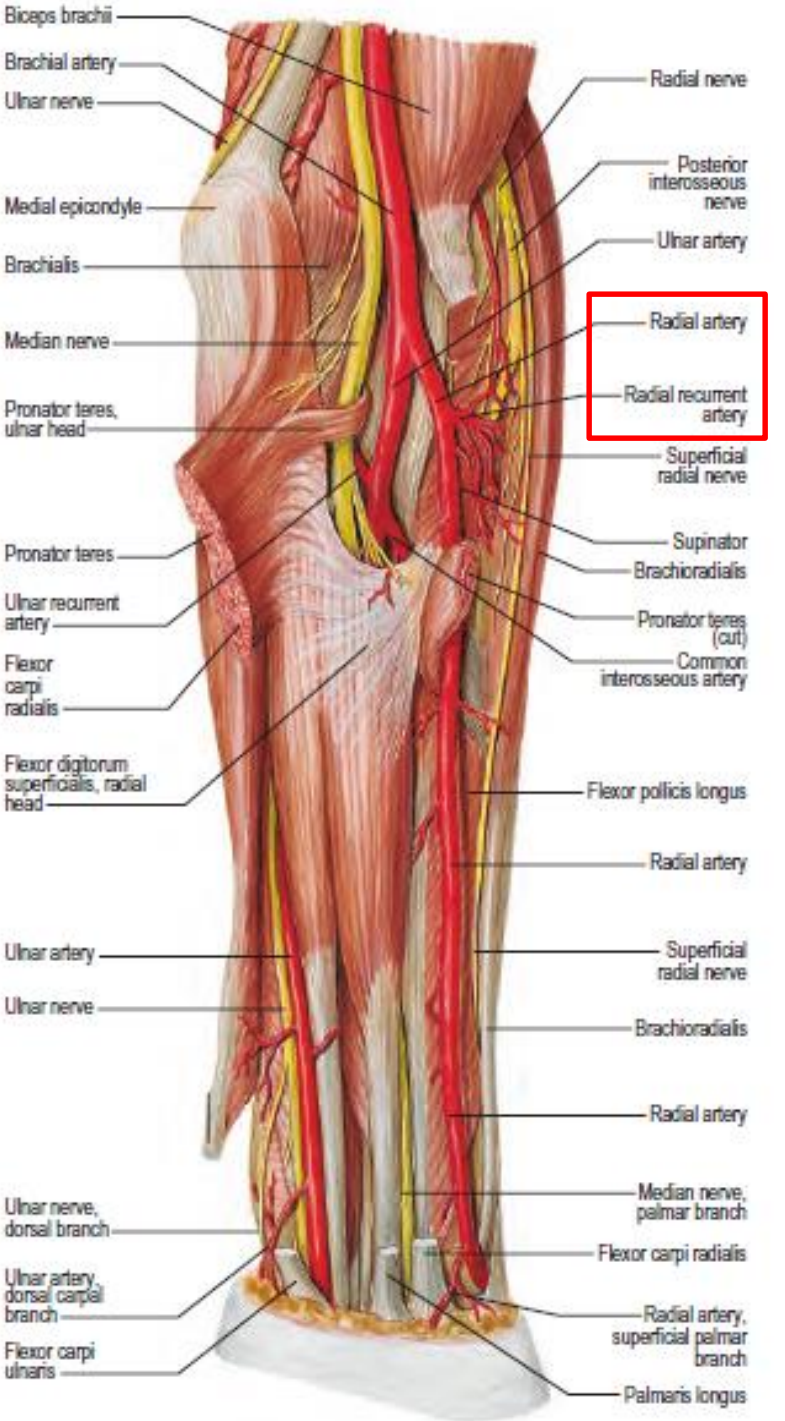
Branches in the Forearm

- **Muscular branches to neighboring muscles**
- **Recurrent branch, which takes part in the arterial anastomosis** around the elbow joint
- **Superficial palmar branch.**

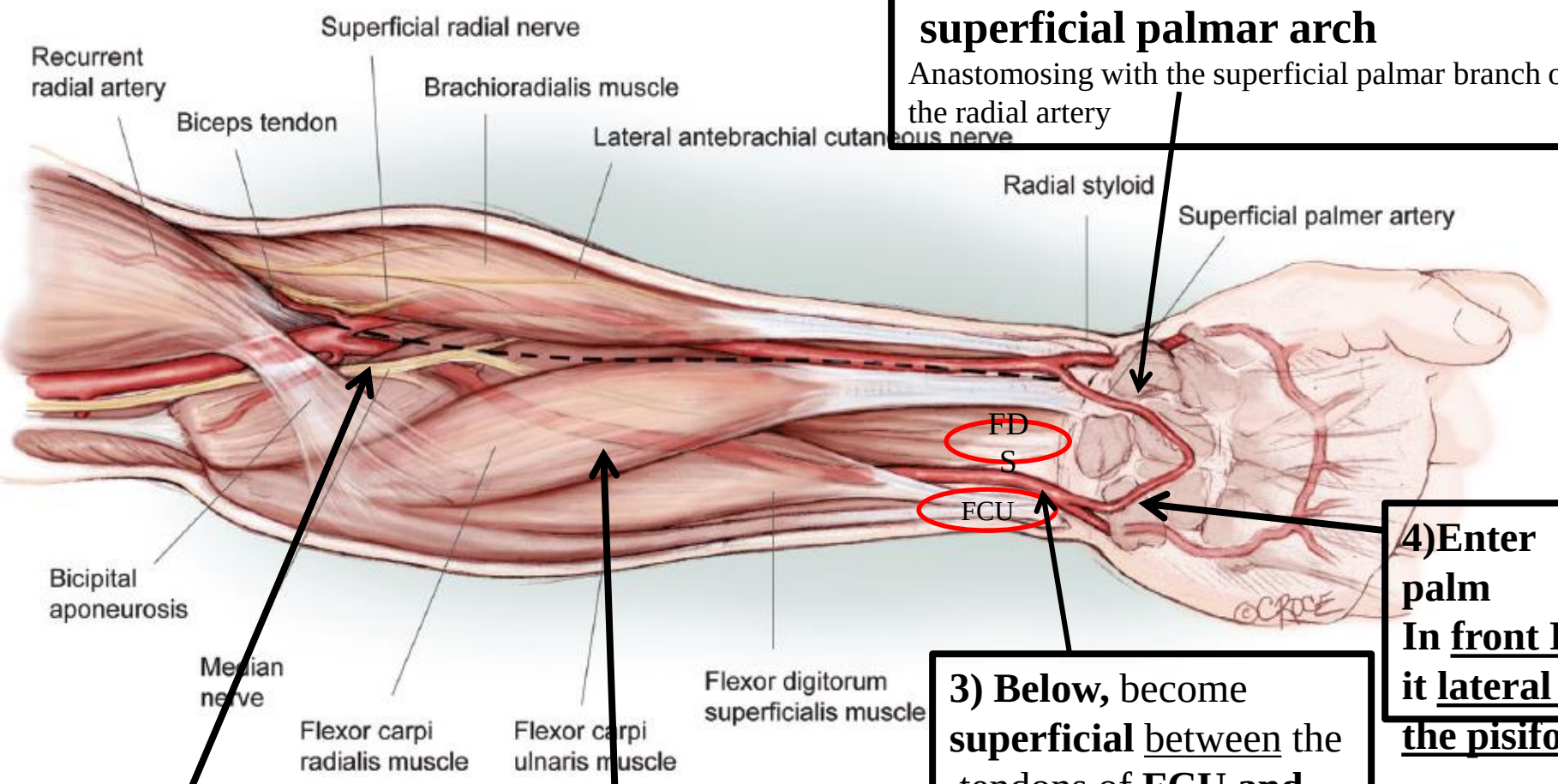


RADIAL ARTERY





ULNAR ARTERY



5) ends by forming the **superficial palmar arch**
Anastomosing with the superficial palmar branch of the radial artery

4)Enter palm
In front FR, it lateral to the pisiform

3) Below, become **superficial** between the tendons of **FCU and FDS**

1) Begins in cubital fossa \ neck of the radius

2) Upper part :
lies **deep to most** of the **flexor muscles**

ULNAR ARTERY

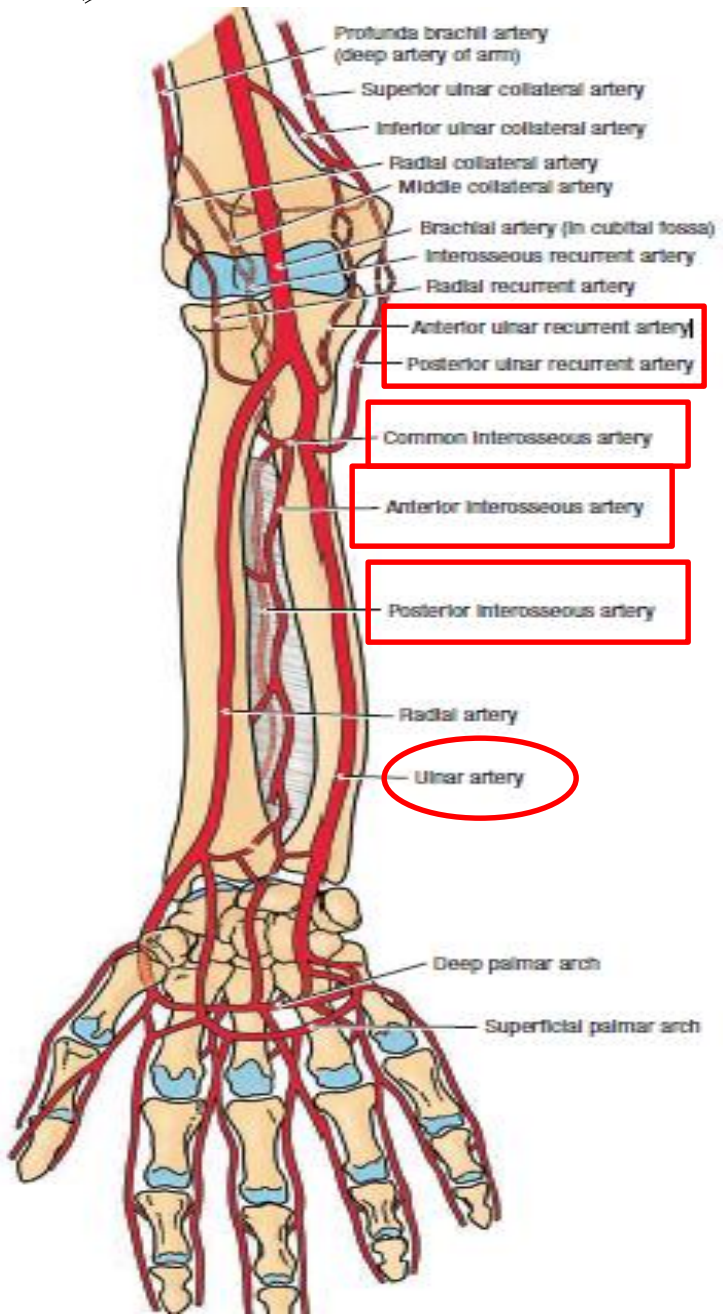
Branches

■ **Muscular branches to neighboring muscles**

■ **Recurrent branches that take part in the arterial anastomosis** around the elbow joint

■ **Branches that take part in the arterial anastomosis around the wrist joint**

■ **The common interosseous artery, which arises from** the upper part of the ulnar artery and after a brief course divides into the **anterior and posterior interosseous Arteries**



COMMON INTEROSSEOUS ARTERY

Ulnar artery

↓

Common Interosseous

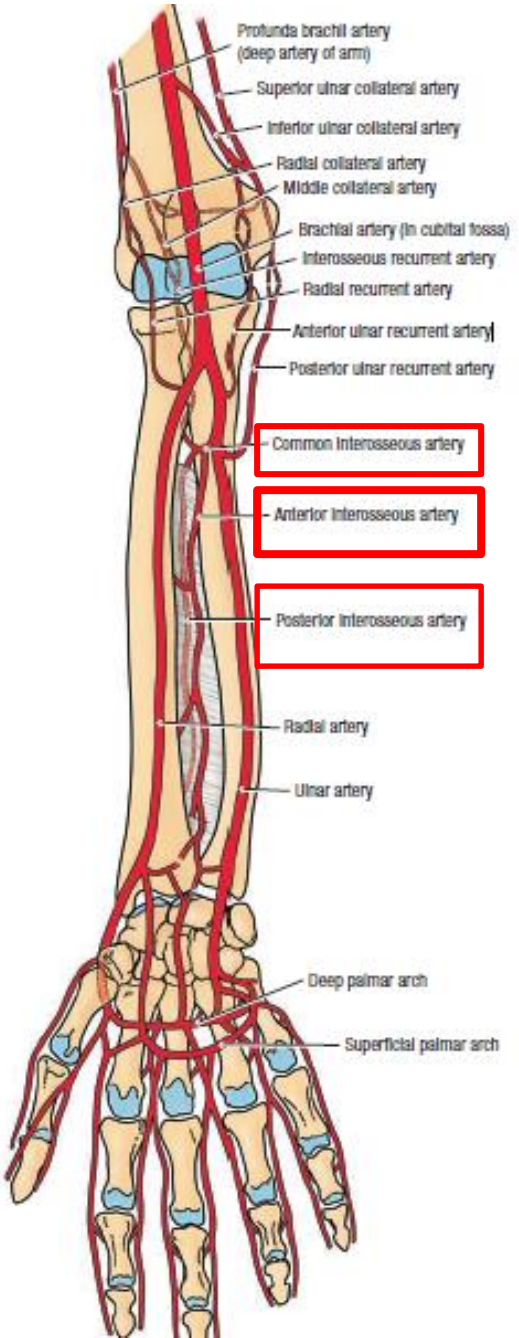
↙ ↘

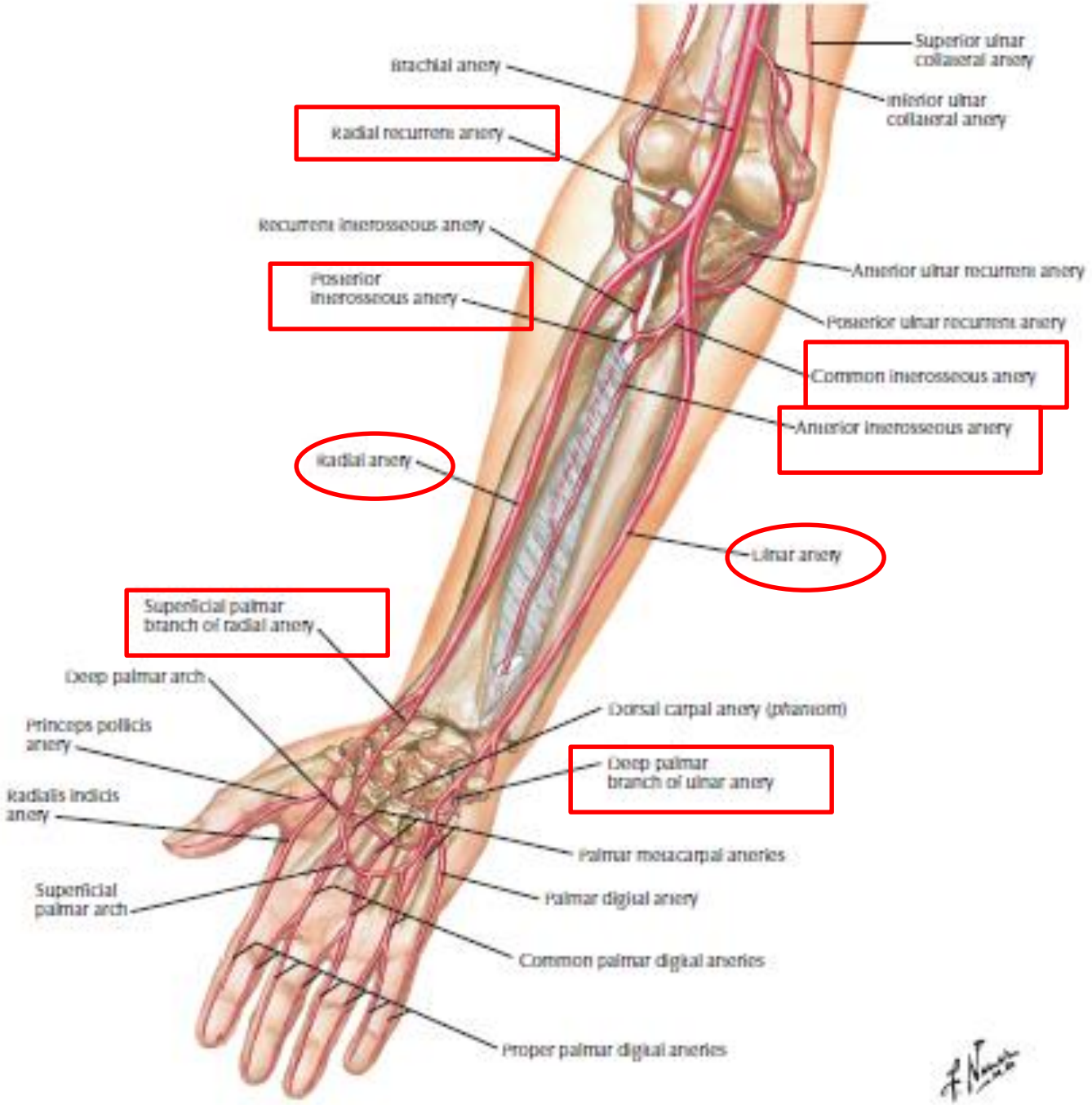
Anterior interosseous | **Posterior interosseous**

✓ They **pass downward** on the anterior and posterior **surfaces** of the interosseous membrane,

✓ **Supply the adjoining muscles and bones**

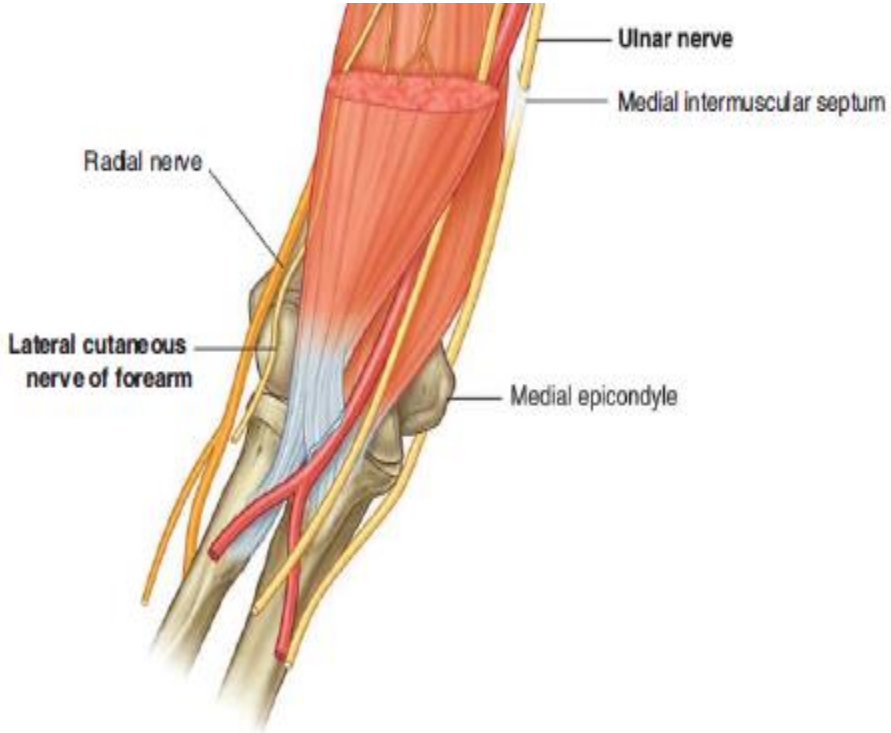
✓They **end by** taking part **in** the **anastomosis around the wrist joint.**

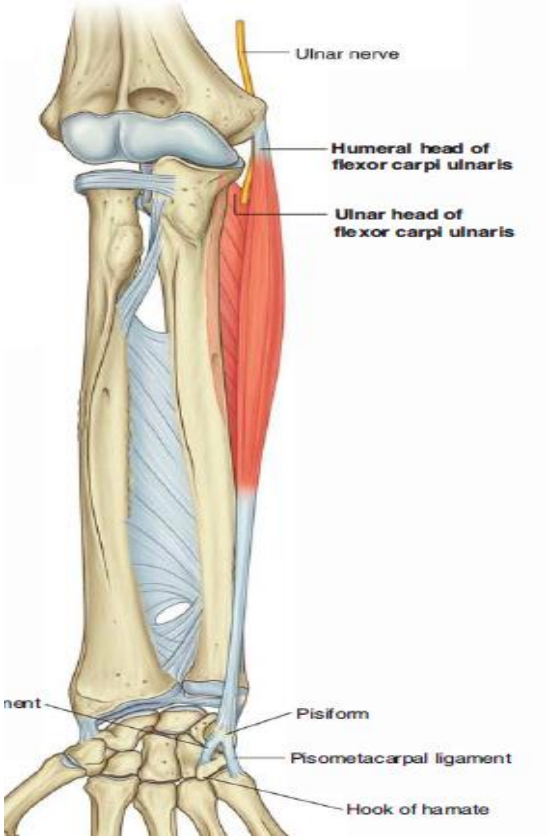



Brachial artery
Radial recurrent artery
Recurrent interosseous artery
Posterior interosseous artery
Radial artery
Superficial palmar branch of radial artery
Deep palmar arch
Princeps pollicis artery
Radialis indicis artery
Superficial palmar arch
Superior ulnar collateral artery
Inferior ulnar collateral artery
Anterior ulnar recurrent artery
Posterior ulnar recurrent artery
Common interosseous artery
Anterior interosseous artery
Ulnar artery
Dorsal carpal artery (phantom)
Deep palmar branch of ulnar artery
Palmar metacarpal arteries
Palmar digital artery
Common palmar digital arteries
Proper palmar digital arteries

NERVE SUPPLY OF THE FOREARM

ULNAR NERVE





At the elbow joint,
The ulnar nerve passes from **behind the medial epicondyle** of the **humerus.**

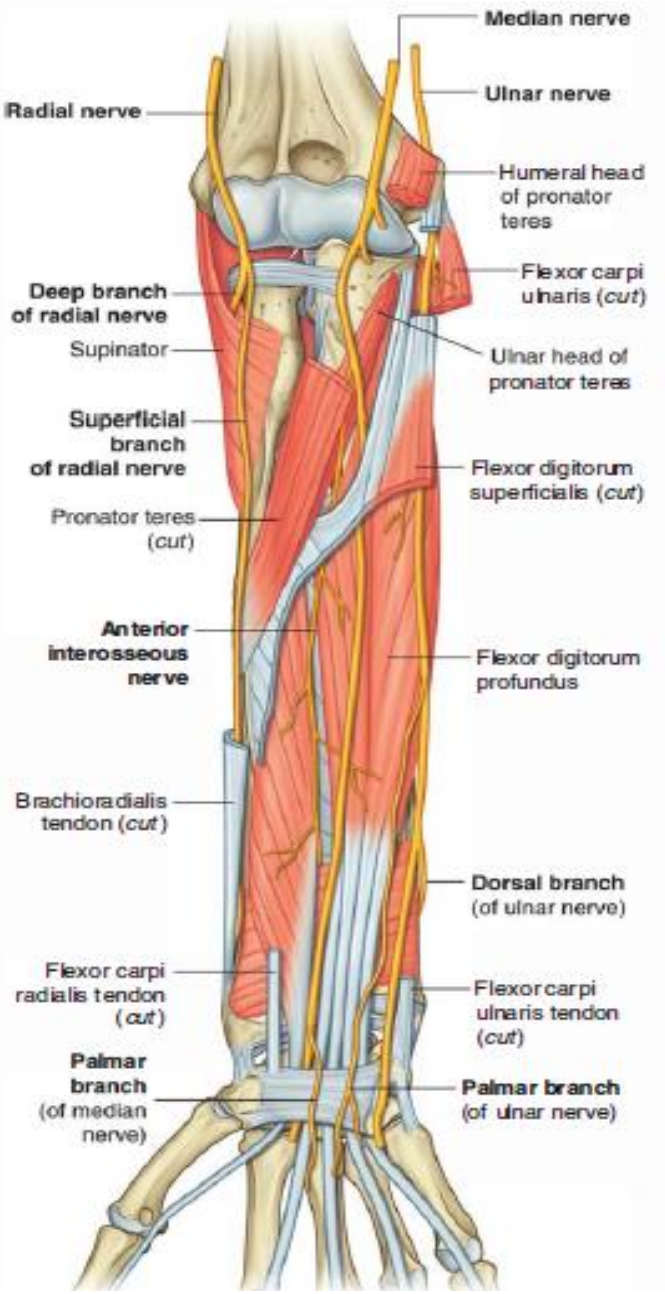
Enters the front of the forearm by **passing between the two heads of the flexor carpi ulnaris.**

ULNAR NERVE

Then **runs down** the forearm **between the <u>FCU and the FDP</u>**

<u>At the wrist</u>, the ulnar nerve **becomes superficial** and **lies <u>between FCU and FDS.</u>**

Ulnar nerve **<u>enters the palm</u>** by passing **in <u>front of FR</u> and lateral to the pisiform bone.**



ULNAR NERVE

Branches

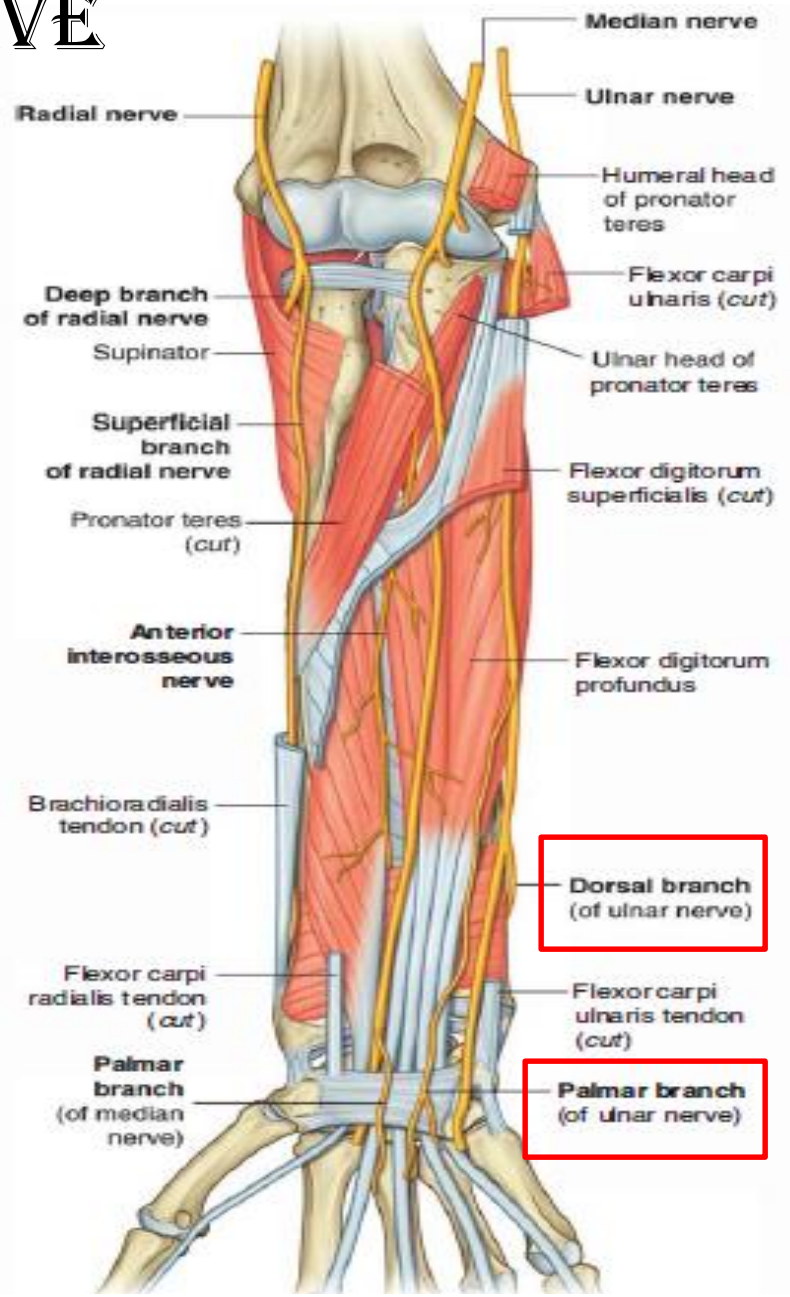
■ **Muscular branches to the FCU and to the <u>medial half</u> of the <u>FDP</u>**

■ **Articular branches to the <u>elbow joint</u>**

■ **palmar cutaneous branch**

is a small branch that <u>arises</u> in the <u>middle of the forearm</u> and supplies the <u>skin over the hypothenar eminence</u>.

■ The **dorsal posterior cutaneous branch**

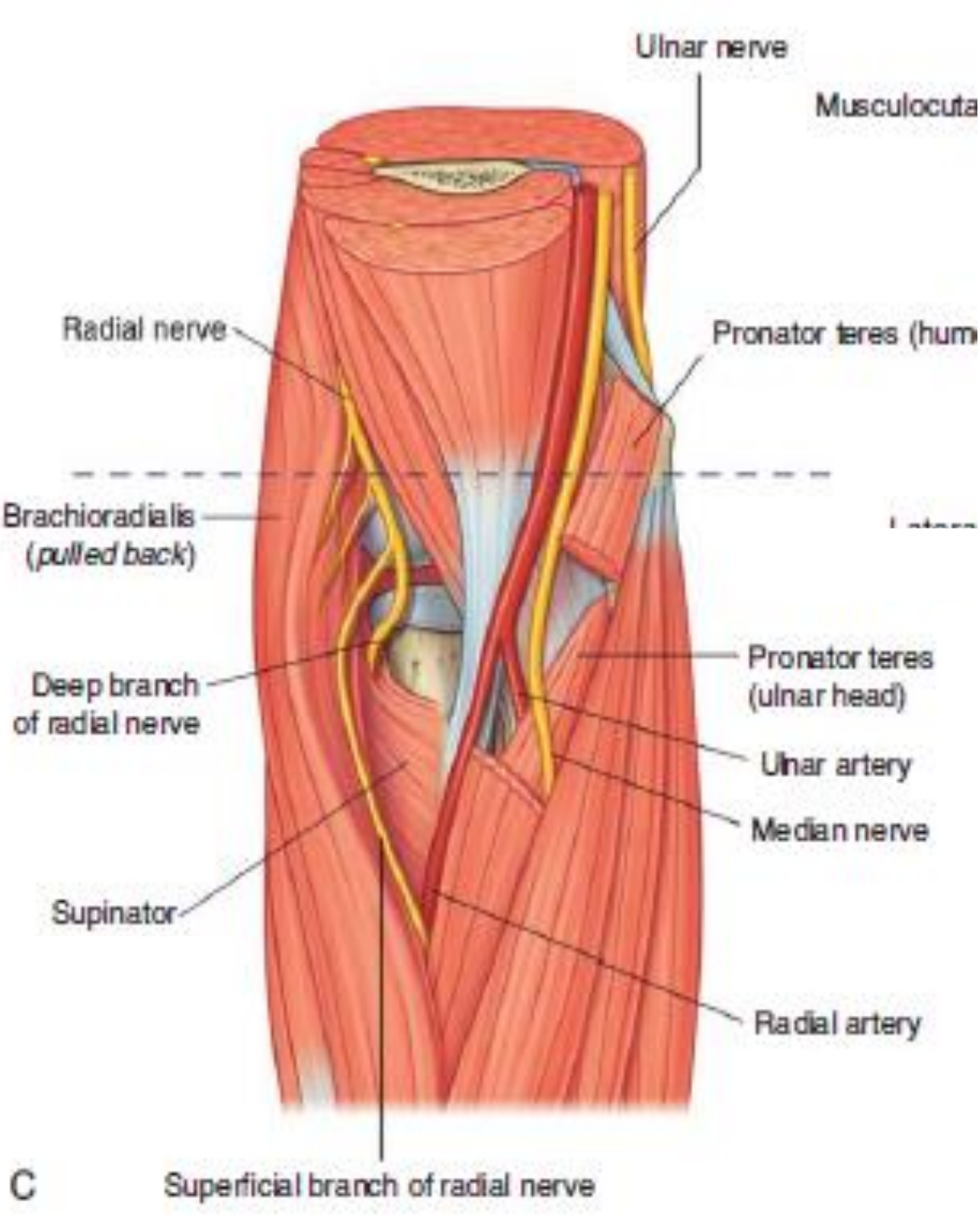


RADIAL NERVE

1) **The radial nerve pierces the lateral intermuscular septum** in the lower part of the arm and passes forward into the cubital fossa.

2) passes downward in front of the lateral epicondyle of the humerus, **between brachialis medially &(brachioradialis \ ECRL) Laterally.**

3) **At the level of the lateral epicondyle**, it **divides** ***into superficial and deep branches***



RADIAL NERVE

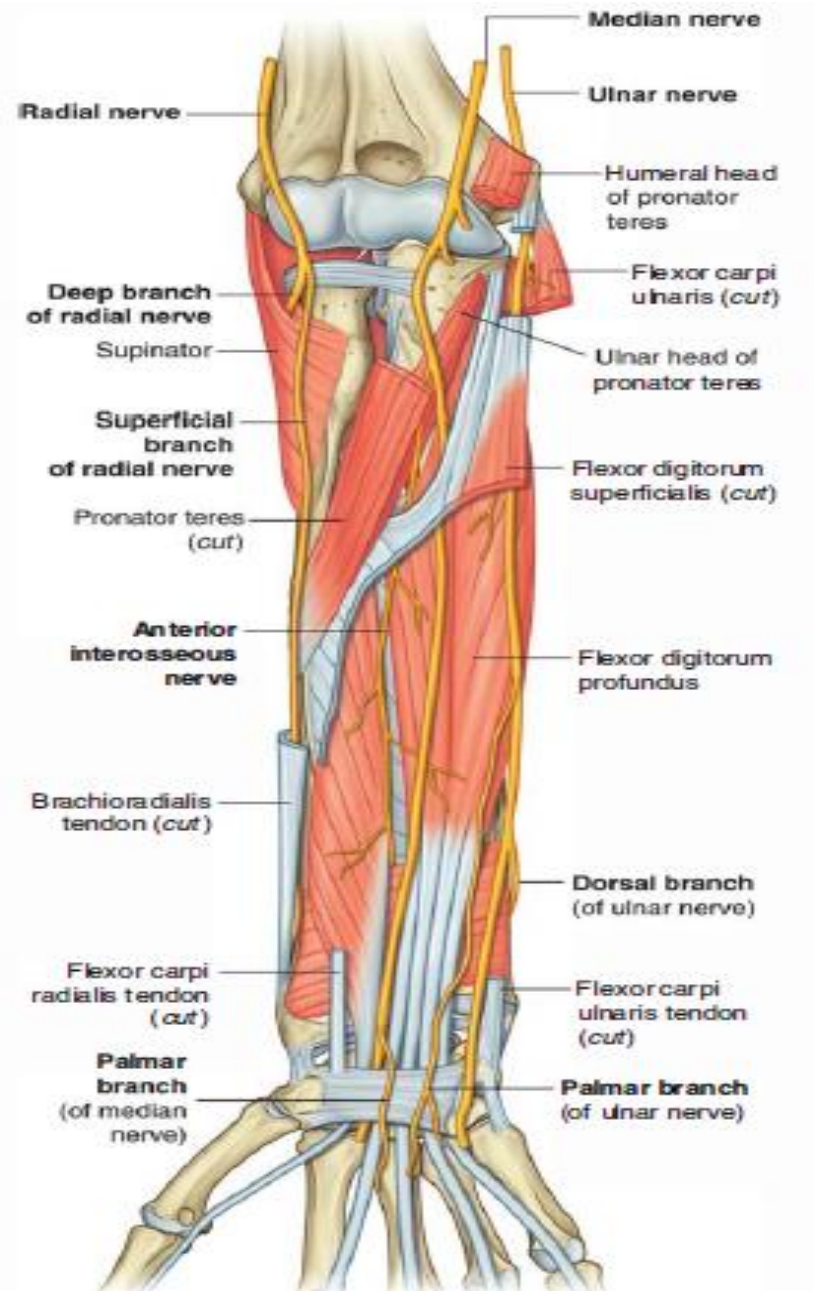
Branches in forearm

■ **Muscular branches to brachioradialis, ECRL**, and a small branch to the **lateral brachialis**

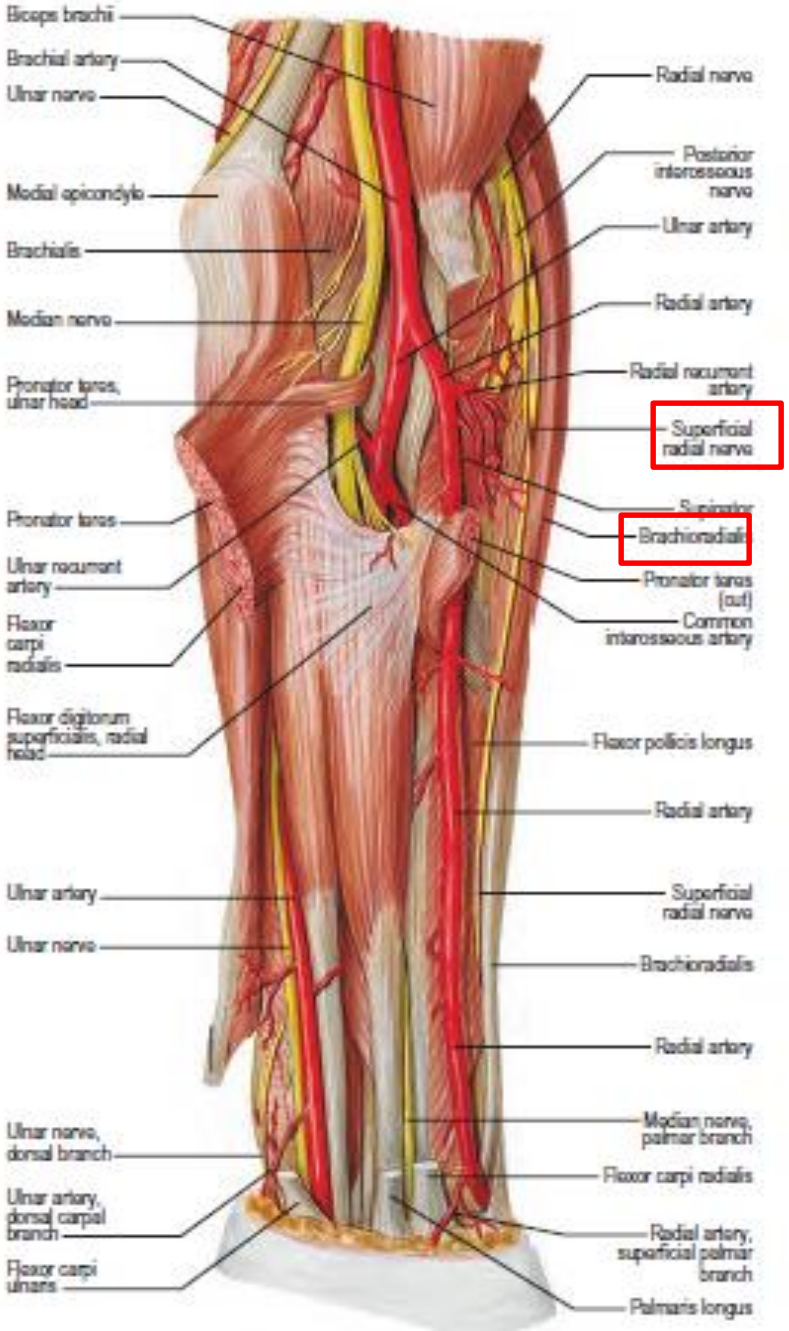
■ **Articular branches to the <u>elbow joint</u>**

■**<u>Deep branch</u> of the radial nerve.**

■ **<u>Superficial branch</u> of the radial nerve**



RADIAL NERVE/ SUPERFICIAL BRANCH

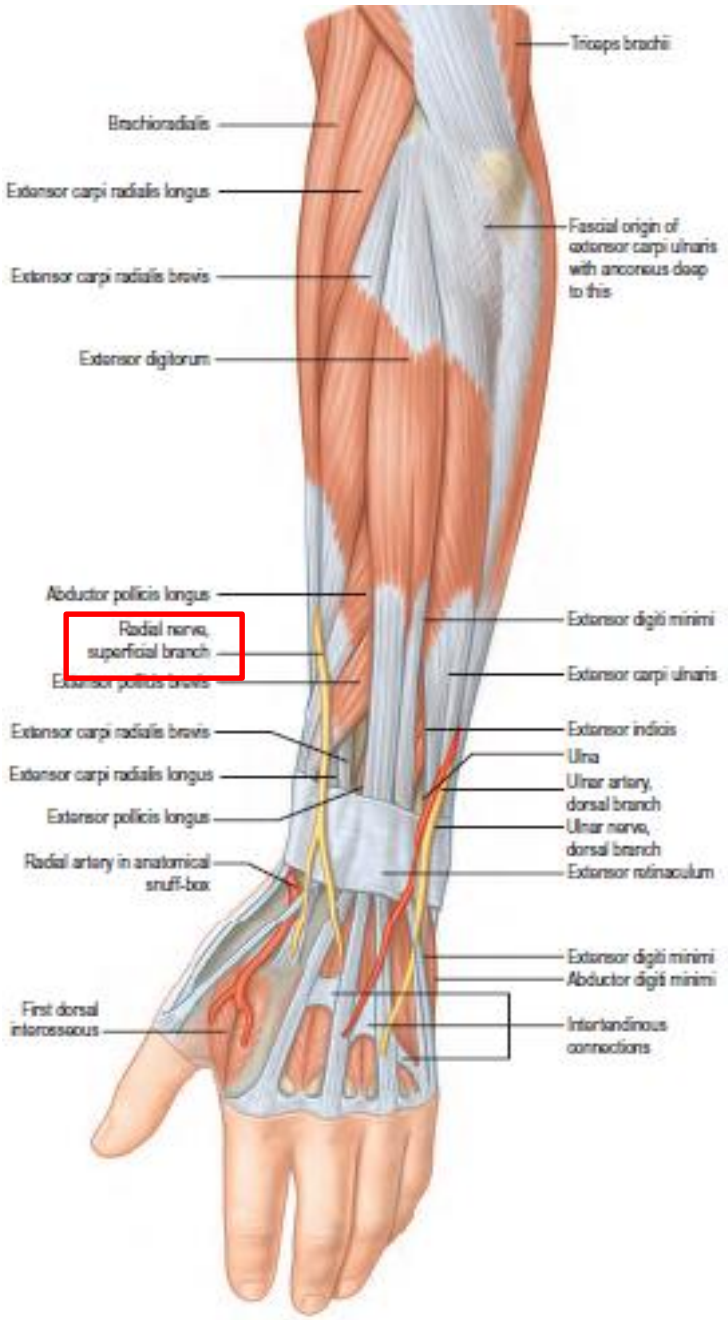


1) direct **continuation** of Radial nerve
2) It runs down **under cover** of the **brachioradialis** muscle on the **lateral** to the **radial artery**

RADIAL NERVE/ SUPERFICIAL BRANCH

3) In the **distal part** of the forearm, it **leaves the artery** and **passes backward under the tendon of the brachioradialis**

4) **) It reaches the Posterior surface of the wrist**



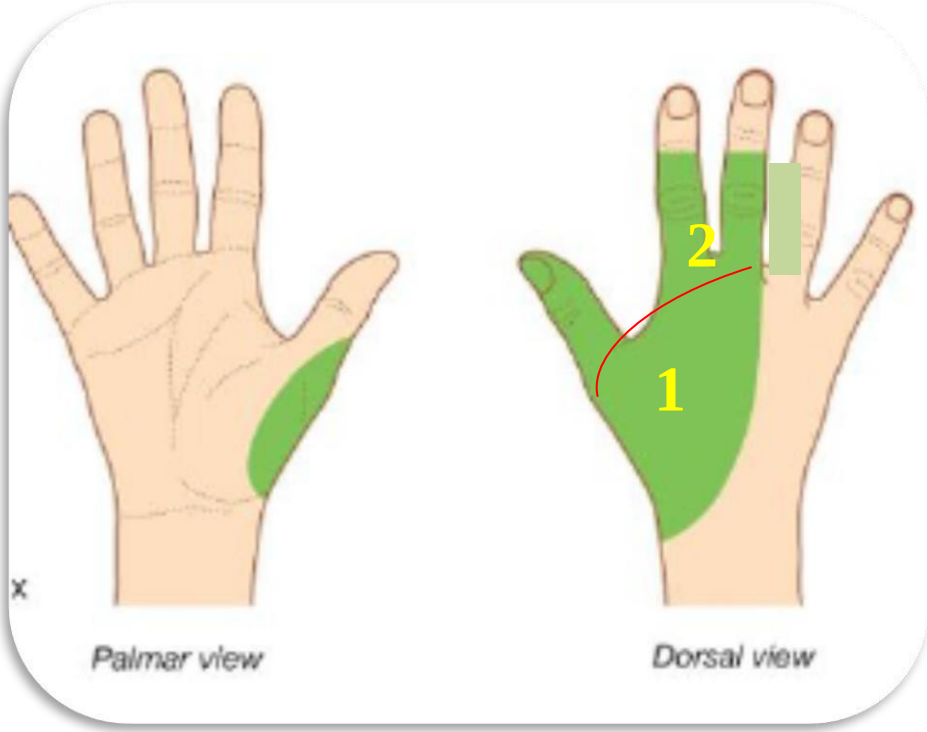
RADIAL NERVE/ SUPERFICIAL BRANCH

❖ **In the wrist it divides** into terminal branches **that supply** :

1) The **skin** on the **lateral two thirds** of the **posterior** surface of the **hand**

2) The **posterior** surface over the **proximal phalanges** of the **lateral three and a half fingers.**

* The area of skin supplied by the nerve on the dorsum of the hand is variable.

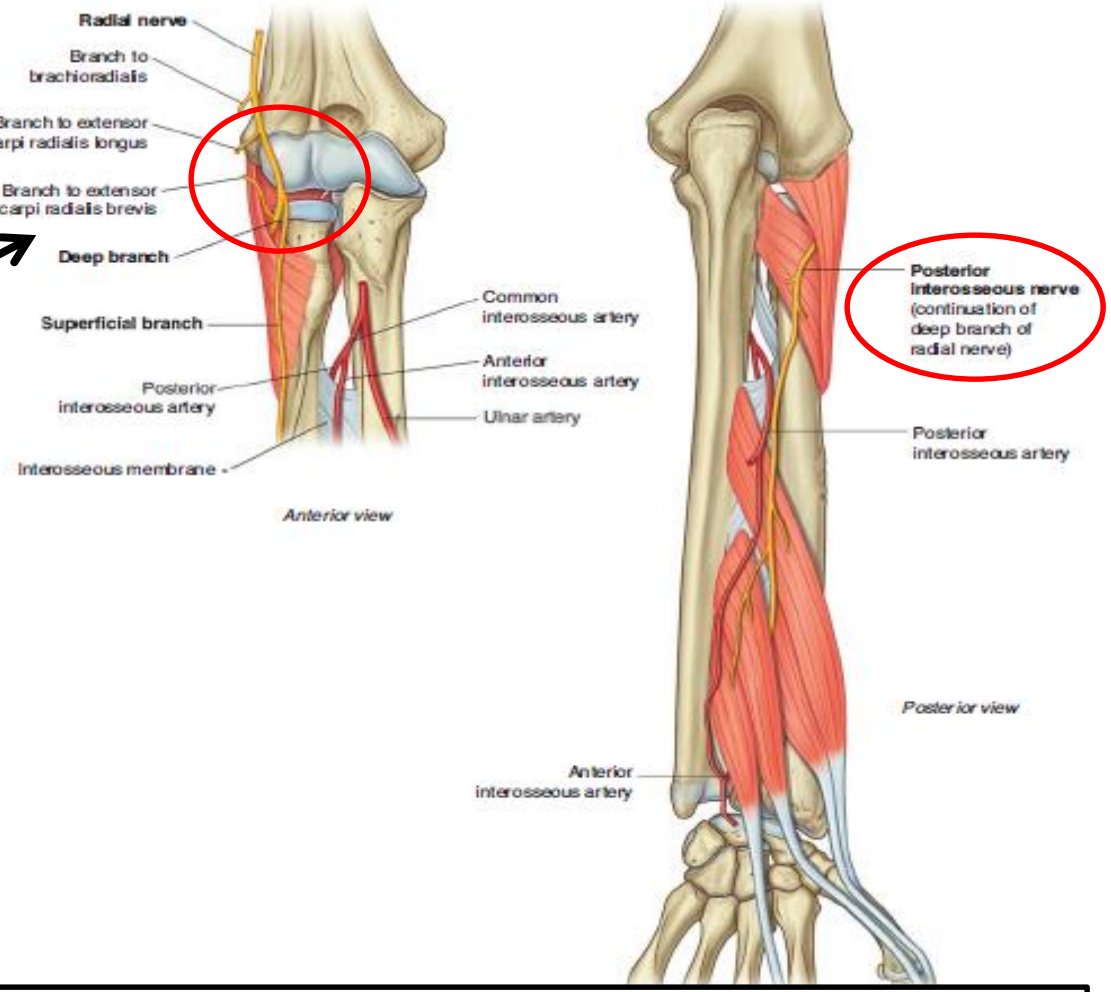


RADIAL NERVE/ DEEP BRANCH(POST. INTEROSSEOUS

It pierces the **supinator** and winds around the lateral aspect of the neck of the radius

The nerve **descends** in the interval **between the superficial and deep groups of Muscles** **(post. Forearm)**

It eventually reaches the posterior surface of the wrist joint.



Branches

- **Muscular branches to muscles in post. Compartment of forearm**
- **Articular branches to the wrist and carpal joints**