

Arteries of the hand

Superficial
palmar
arch

Formed by: terminal part of the ulnar artery and completed the superficial branch of the radial artery.

Lies in the superficial part of the mid palmar space.

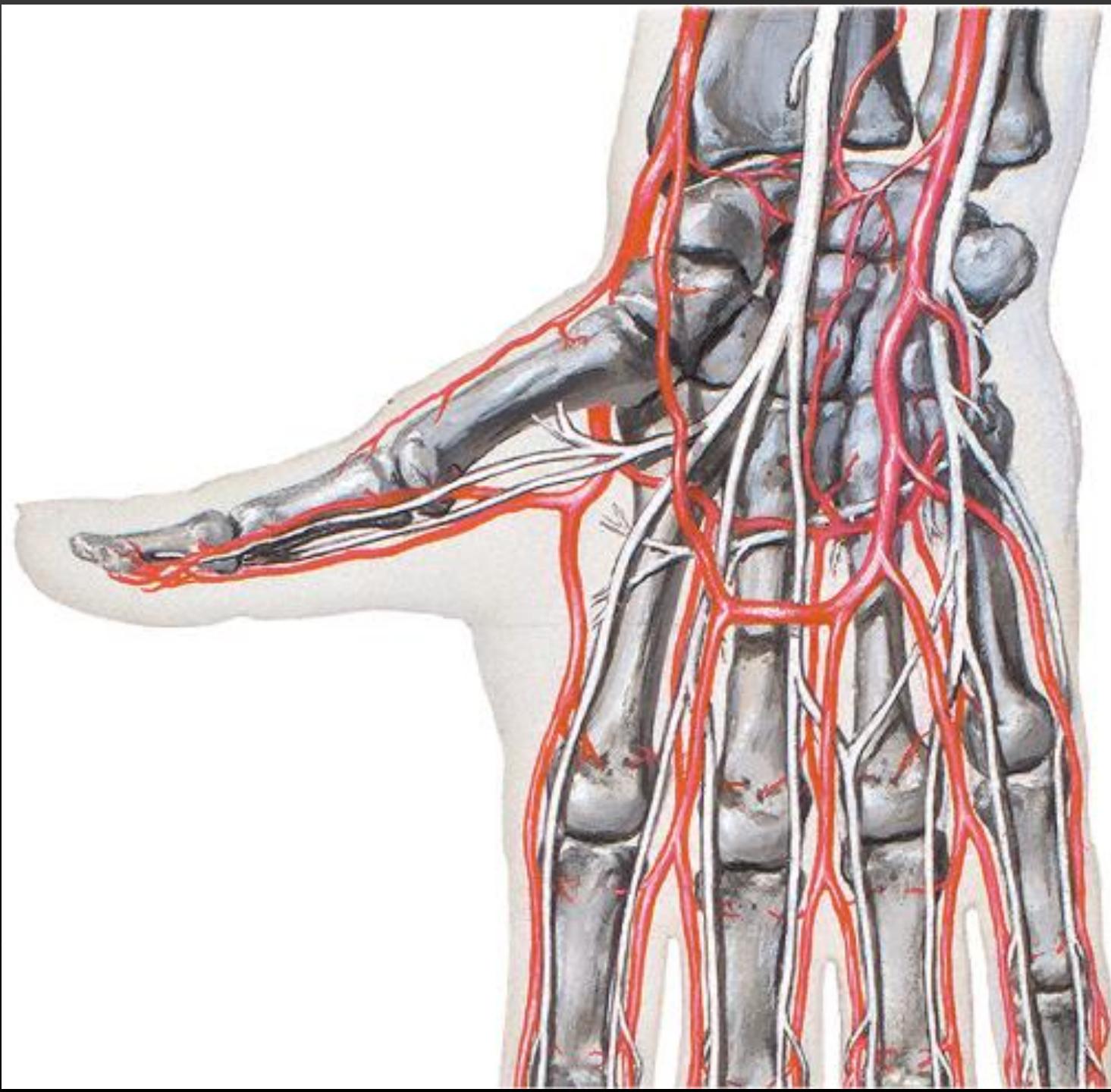
Convex distally.

Covered by the palmar aponeurosis and palmaris brevis muscle.

It overlies:

- Flexor tendons
- Lumbricals
- Flexor digiti minimi
- Branches of the median nerve

The arch is represented by a curved line drawn from the pisiform bone to the middle of the palm opposite the distal border of an extended thumb.



Branches of the superficial palmar arch

It gives 4 palmar digital arteries.

One artery supplies the medial side of the little finger.

Each of the remaining 3 palmar digital artery divides to supply adjacent sides of the palmar surfaces of the little, ring, middle and index fingers.

The branches are joined by the palmar metacarpal branches of the deep arch.



Deep
palmar
arch

Formed by: terminal part of the radial artery and completed by the deep branch of the ulnar artery.

Lies in the deep part of the middle palmar space.

Covered by the long flexor tendons and lumbricals.

It overlies the bases of metacarpal bones and the oblique head of the adductor pollicis.

The deep branch of the ulnar nerve lies in its concavity.

The deep arch is 1.5 cm proximal
to the superficial arch.

Represented by a straight line from
the hook of hamate to the base of
fully abducted thumb.

Branches of the deep palmar arch

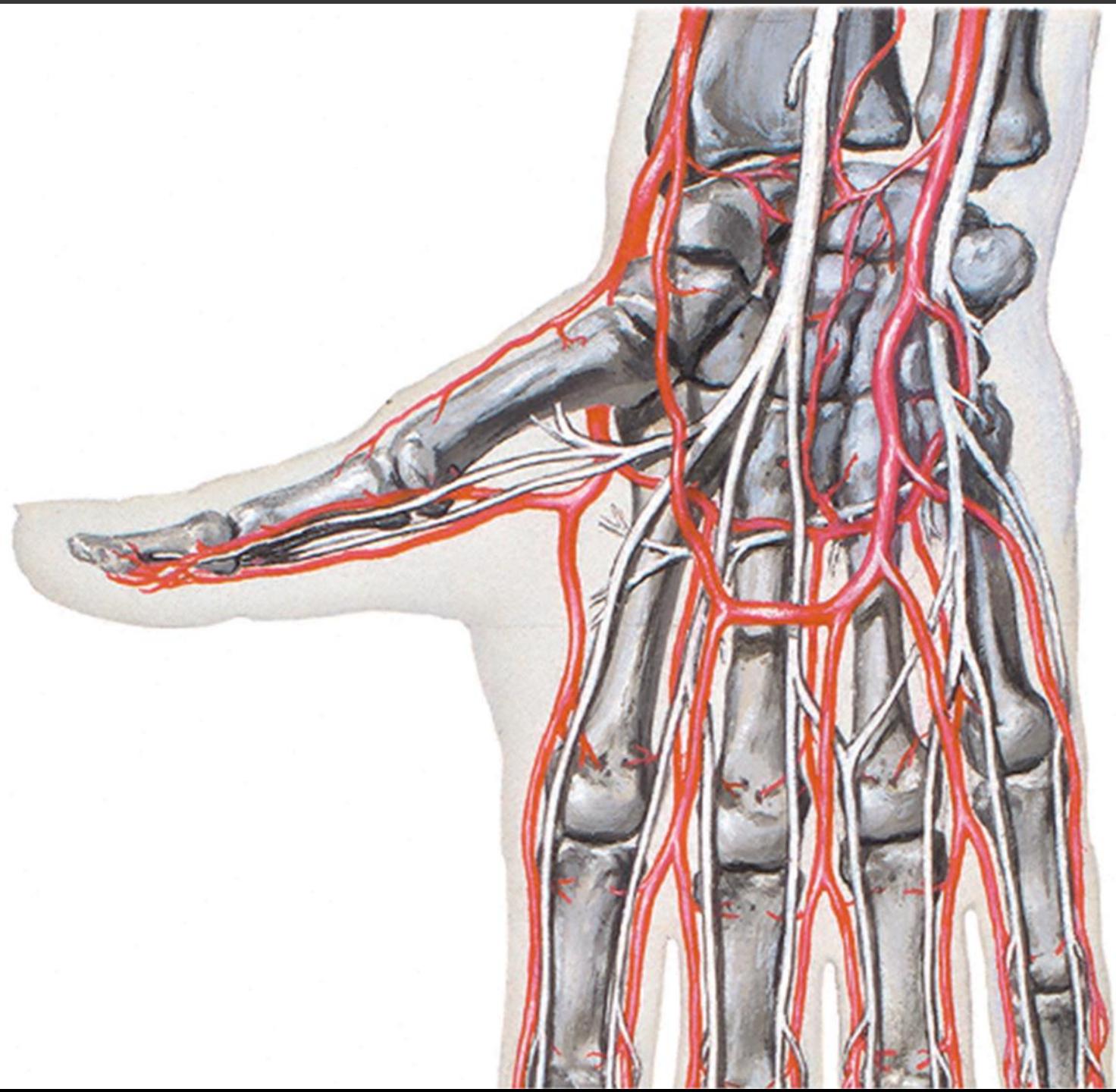
It gives 4 palmar metacarpal arteries.

- They join the common palmar digital arteries to supply adjacent parts of the index, middle, ring and little fingers.

Perforating arteries:

- Pierce dorsal interossei to join 2nd, 3rd and 4th dorsal metacarpal arteries.

Recurrent branches join the anterior carpal arch.





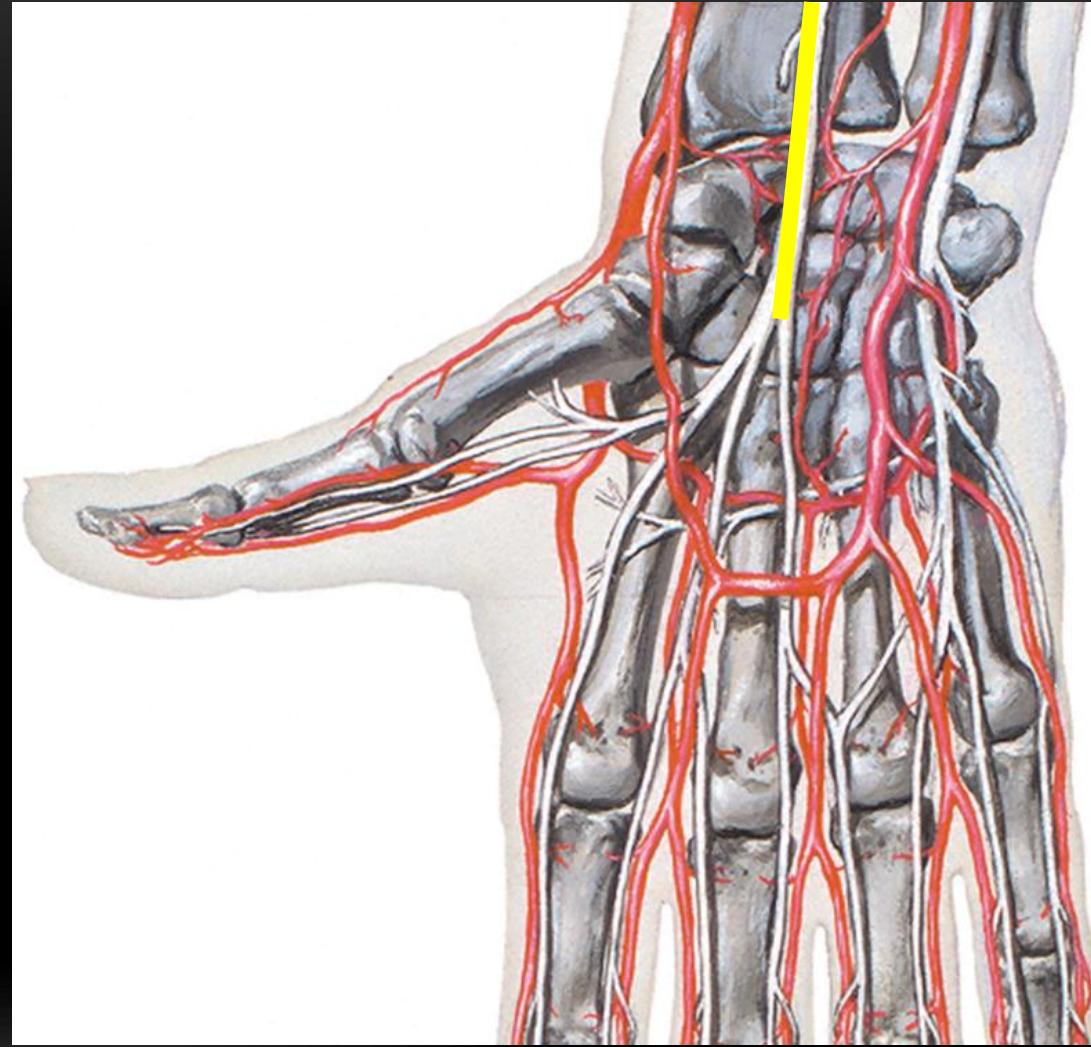
Nerves in
the hand



Median
nerve in the
hand

Enters the hand under the flexor retinaculum as the most superficial structure in the carpal tunnel (dangerous area).

Divides at the distal border of the flexor retinaculum into lateral and medial branches.



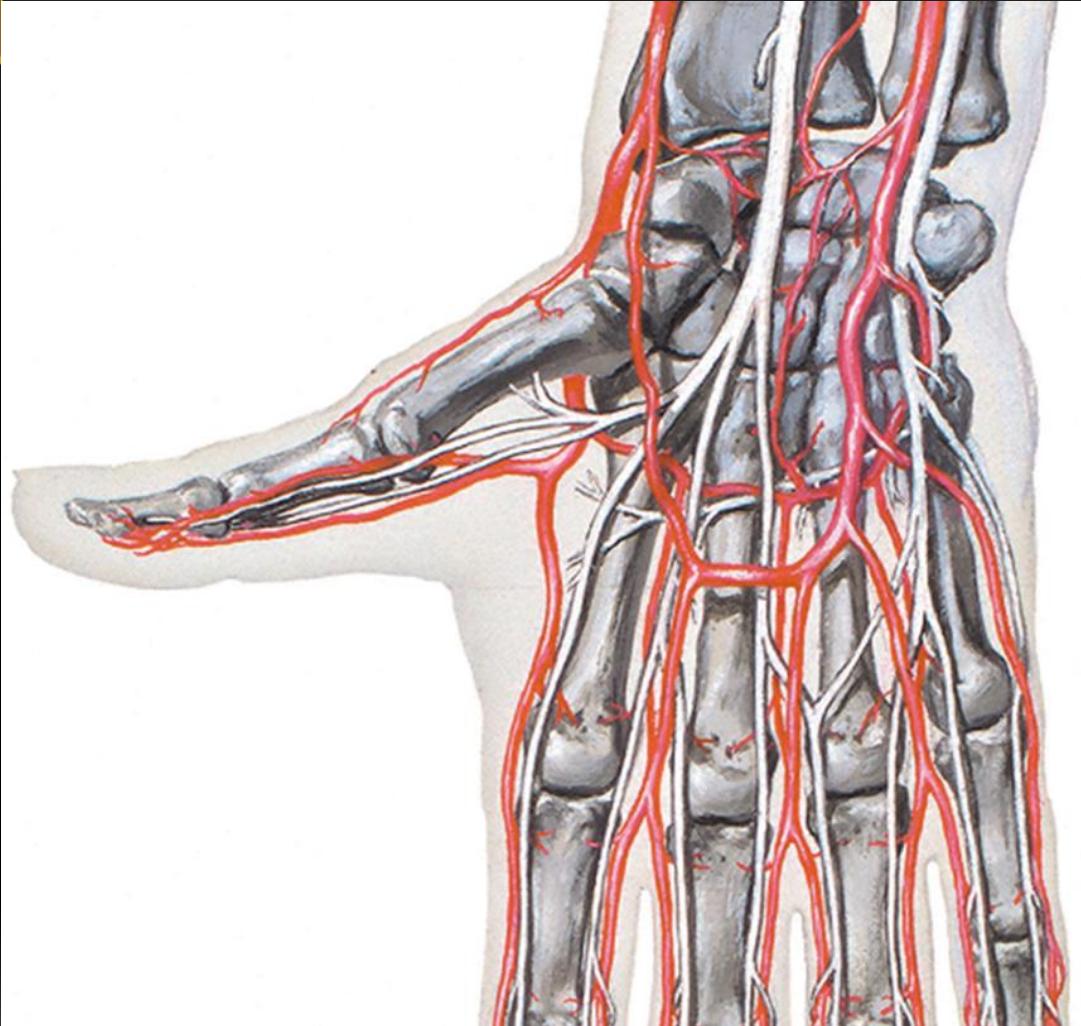
The lateral branch of the median nerve gives:

Recurrent muscular branch to thenar muscles.

Three palmar digital branches that supply:

- Both sides of the thumb
- Radial side of the index
- Dorsal aspect of phalanges of the index and thumb.

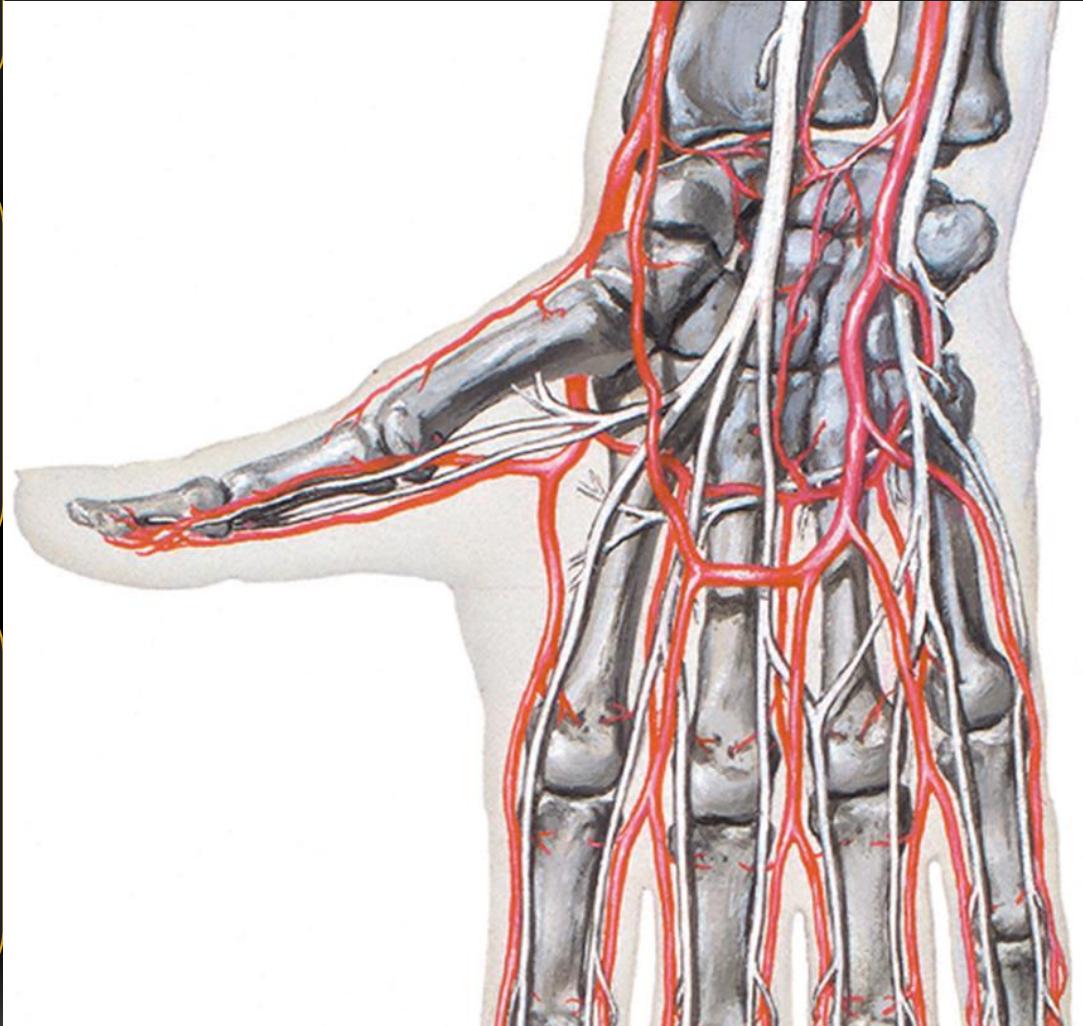
Muscular branch to the 1st lumbrical (from the digital branch of the lateral side of the index).



The medial branch of the median nerve gives:

Common palmar digital branches (2): supply adjacent sides of index-middle and middle-ring fingers.

Muscular branch to the 2nd lumbral



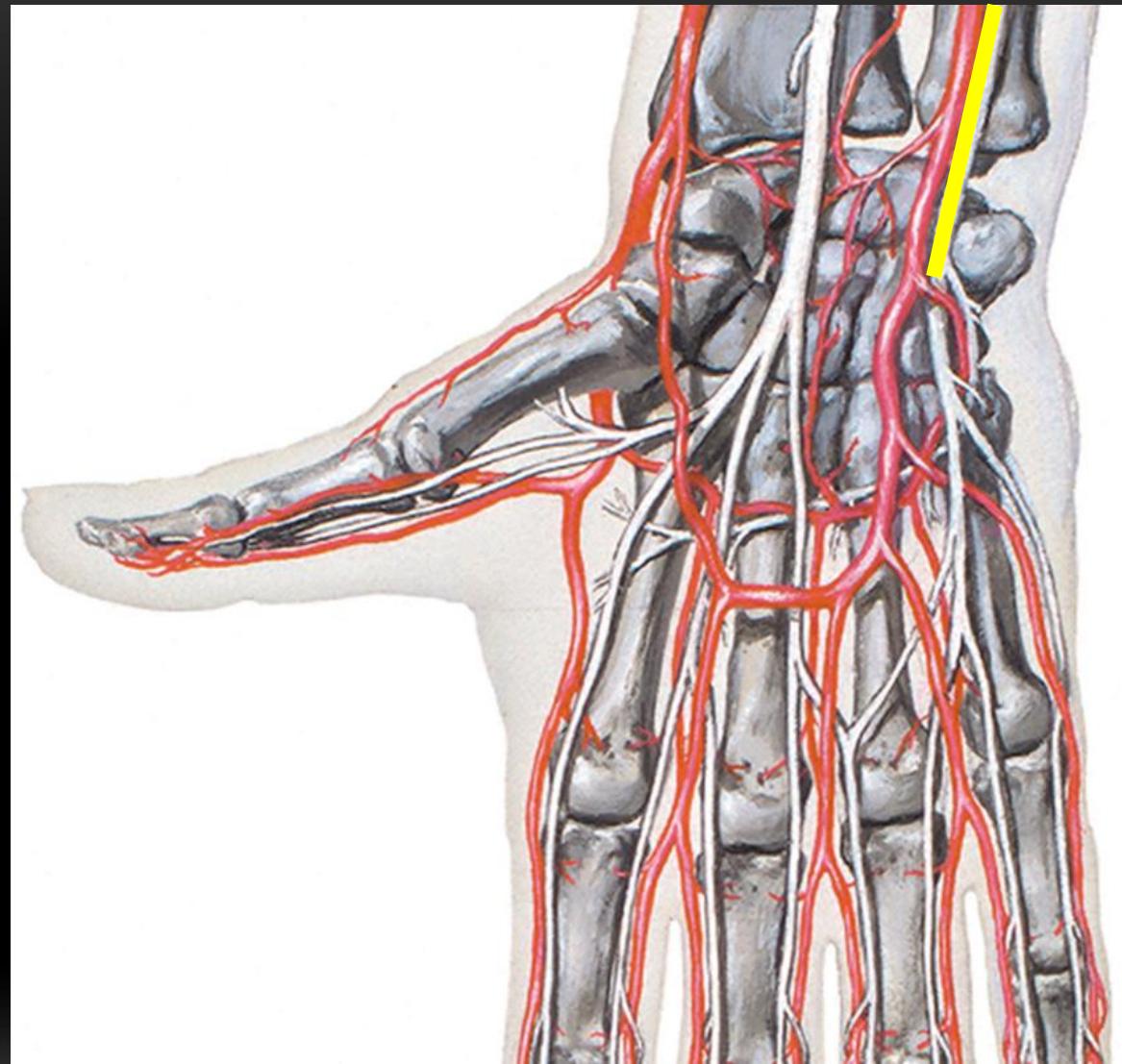




Ulnar
nerve in the
hand

Enters the hand superficial to the medial side of the flexor retinaculum.

Divides into superficial and deep branches.



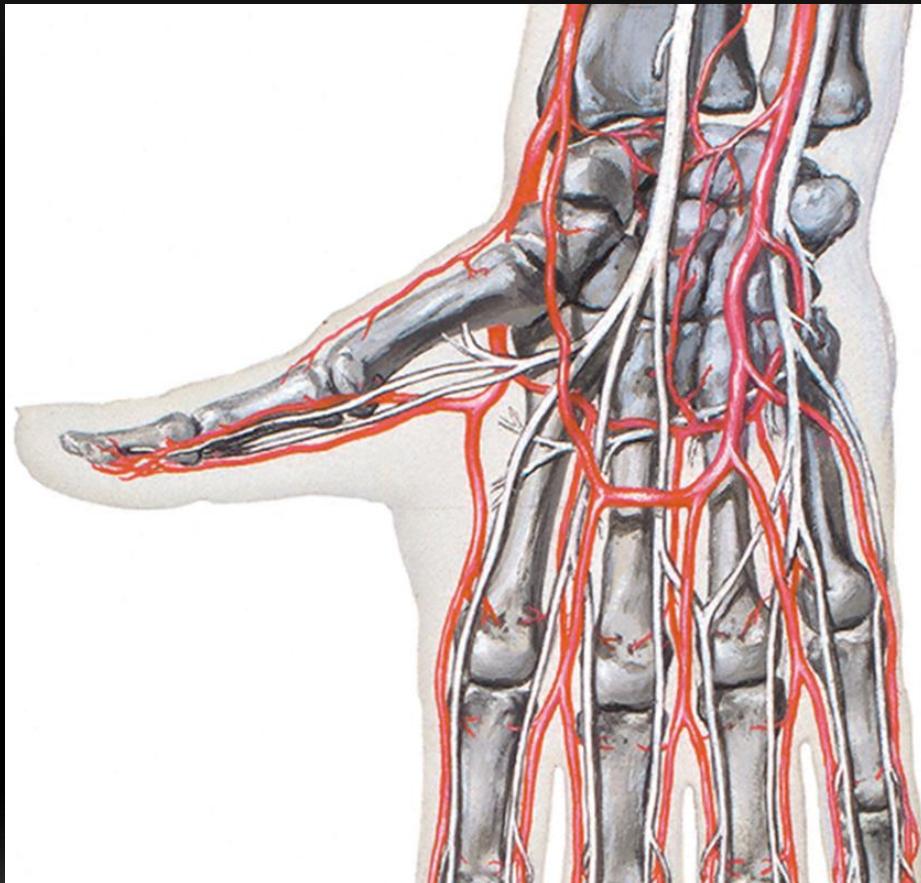
The superficial branch of the ulnar nerve:

Seen in the concavity of the deep palmar arch.

Ends in the adductor pollicis.

Gives branches to:

- All muscles of the hand EXCEPT those supplied by the median nerve.
- Articular branches to the intercarpal and inter-phalyngeal joints.

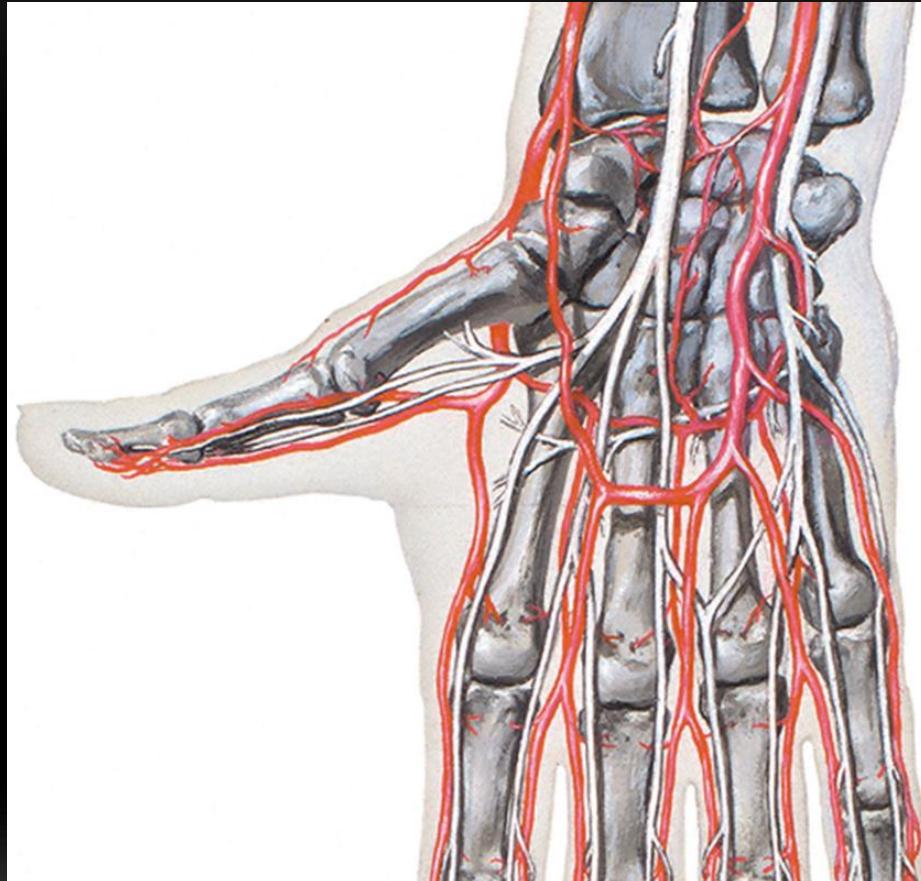


The deep branch of
the ulnar nerve:

It supplies the palmaris
brevis.

Divides into palmar
digital branches that
supply:

- Medial side of the little finger.
- Adjacent sides of the little and ring fingers.





Radial Nerve in the Hand

The superficial branch of the radial nerve ends on the dorsum of the hand by dividing into 4-5 dorsal digital branches.

The dorsal digital branches supply:

- Lateral 2/3 of the dorsum of the hand.
- Dorsal aspect of the lateral 3 $\frac{1}{2}$ fingers

The radial nerve does
NOT supply any
muscle in the hand.



