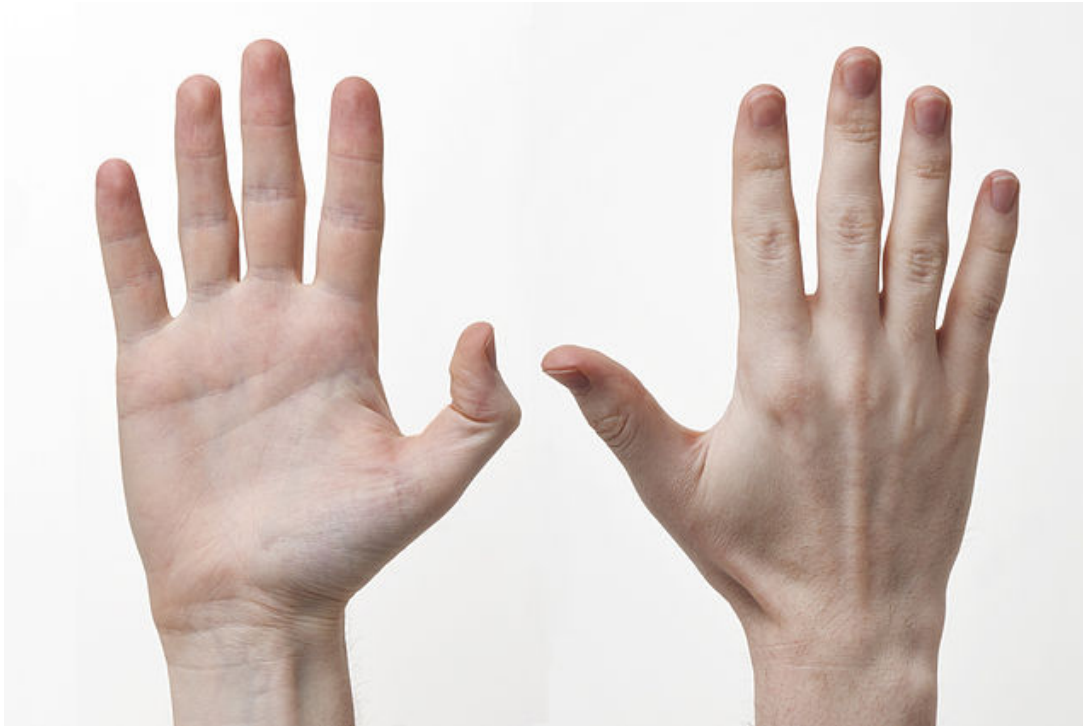


Anatomy of the Upper Limb: Muscles of the Hand and Fingers

[See online here](#)

Hardly any other muscle group carries as many minute and intricate complexes as those of the thumb and fingers, posing a challenge to medical students. Nonetheless the muscles and their functions can be very easily remembered on the basis of their denominations. The majority of these muscles are innervated by the deep branch. Mnemonic strategies can facilitate their study to prepare for the next examination.



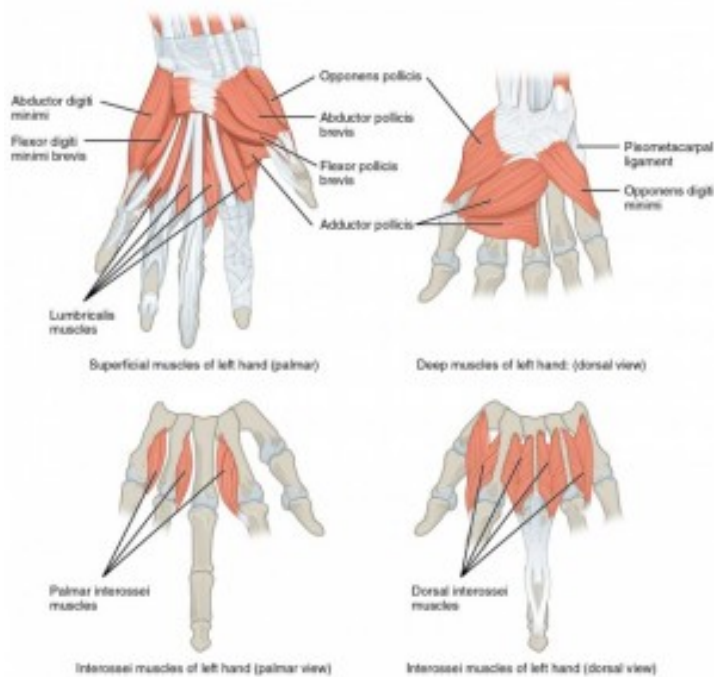


Image: Intrinsic muscles of the hand. By philschatz, License: [CC BY 4.0](https://creativecommons.org/licenses/by/4.0/)

Many of the muscles that move the hand and fingers are reviewed in the [Anatomy of the Upper Limb – Muscles of the Arm](#) article.

The other muscles of the hand are divided into 4 groups: **the lumbricals, interossei, thenars, and hypothenars.**

Lumbricals

| Muscles | Origin | Insertion | Nerve supply | Function |
|----------------------------|--|---|-------------------------------------|--|
| Lumbricals (I-II) | Lateral 2 tendons of flexor digitorum profundus (FDP) (unipennate) | Lateral surfaces of extensor expansions of digits 2-5 | Median nerve (T1) | Flex metacarpophalangeal and extend interphalangeal joints of digits 2-5 |
| Lumbricals (III-IV) | Medial 2 tendons of FDP (bipennate) | | Deep branch of the ulnar nerve (T1) | |

The lumbricals are 4 narrow muscle bellies that have no direct bony anchors. They also stabilize the metacarpophalangeal joints and prevent ulnar deviation.

Interossei Muscles

| Muscle | Origin | Insertion | Nerve supply | Function |
|--------------------------|---|--|-------------------------------------|--|
| Dorsal interossei | Dorsal sides of all metacarpals (bipennate) | Base of proximal phalanges and extensor expansions (digits 2-4, dorsal; digits 2, 4 and 5, palmar) | Deep branch of the ulnar nerve (T1) | Abduct digits 2-4 away from the axial line |
| Palmar interossei | Palmar sides of metacarpals 2, 4 and 5 | | | Adduct digits 2, 4 and 5 toward the axial line |

The radial artery traverses between the 2 heads of the dorsal interosseous muscle I. The

3 palmar interossei muscles are one-headed and lie between the metacarpal bones.

Thenar Muscles

| Muscles | Origin | Insertion | Nerve supply | Function |
|---------------------------------|---|---|---|--|
| Opponens pollicis | Flexor retinaculum and tubercles of scaphoid and trapezium | Lateral side of the 1st metacarpal | Recurrent branch of the median nerve (C8) | Oppose thumb |
| Abductor pollicis brevis | | Lateral side of proximal phalanx of digit 1 | | Abducts thumb; supports the opposition |
| Flexor pollicis brevis | | | | Flexes thumb |
| Adductor pollicis | Oblique head: Base of 2nd and 3rd metacarpals and capitate Transverse head: anterior surface of the 3rd metacarpal | Medial side of proximal phalanx of thumb | Deep branch of the ulnar nerve (C8) | Adducts thumb |

Hypothenar Muscles

| Muscles | Origin | Insertion | Nerve supply | Function |
|------------------------------------|---|--|-------------------------------------|--|
| Palmaris brevis | Transverse carpal ligament and palmar aponeurosis | Ulnar palm | Ulnar nerve | Wrinkles the skin of the medial palm |
| Abductor digiti minimi | Pisiform | Medial side of proximal phalanx of the 5th digit | Deep branch of the ulnar nerve (T1) | Abducts the 5th digit |
| Flexor digiti minimi brevis | Hook of hamate and flexor retinaculum | | | Flexes proximal phalanx of the 5th digit |
| Opponens digiti minimi | | | | Medial border of the 5th metacarpal |

References

Bayes, M. C. (2013). Hand and Fingers. *Basics of Musculoskeletal Ultrasound*, 29-34. doi:10.1007/978-1-4614-3215-9_6.

Bell, C. (n.d.). Of the muscles of the arm and hand—Their vital action—Their mechanical adaptation to the motions of the hand and fingers—Form of the human hand. *The Hand: Its Mechanism and Vital Endowments, as Evincing Design (7th Ed. Rev.)*, 81-93. doi:10.1037/12269-004.

Boscheinen-Morrin, J., & Conolly, W. B. (2001). *The hand: Fundamentals of therapy*. Oxford: Butterworth-Heinemann.

Legal Note: Unless otherwise stated, all rights reserved by Lecturio GmbH. For further legal regulations see our [legal information page](#).

Notes