Frequently Asked Questions – Forearm and Hand

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1. What are the compartments of the forearm and their main functions?

- **Anterior (flexor-pronator) compartment** ? flexes wrist & fingers, pronates forearm.
- **Posterior (extensor-supinator) compartment** ? extends wrist & fingers, supinates forearm.

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2. Name the main nerves supplying the forearm.

- **Median nerve** ? main nerve of anterior compartment.
- **Ulnar nerve** ? supplies FCU + medial ½ of FDP.
- **Radial nerve** (and posterior interosseous) ? supplies all extensors.

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3. Which muscles are called “work-horse flexors” and “work-horse extensors” of wrist?

- **Flexor carpi radialis** ? work-horse flexor.
- **Extensor carpi radialis longus** ? work-horse extensor.

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4. Why is pronator teres called a landmark of cubital fossa?

Because the **median nerve passes between its two heads**, dividing the fossa and serving as an important surface landmark during dissections.

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5. Which muscles are responsible for pronation and supination of forearm?

- **Pronation:** Pronator teres & pronator quadratus.
- **Supination:** Biceps brachii & supinator.

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6. Name the contents of the carpal tunnel.

- **Nine tendons:** FDS (4) + FDP (4) + FPL (1).
- **One nerve:** Median nerve.

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7. What are the boundaries and contents of the anatomical snuffbox?

- **Anterior:** Abductor pollicis longus & Extensor pollicis brevis.
- **Posterior:** Extensor pollicis longus.
- **Floor:** Scaphoid & trapezium.
- **Contents:** Radial artery, cephalic vein, superficial branch of radial nerve.

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8. Why is the scaphoid bone clinically important?

- Commonly fractured on fall on outstretched hand.
- **Radial artery crosses its waist** ? risk of **avascular necrosis** of proximal fragment.

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9. What structures pass superficial and deep to the flexor retinaculum?

- **Superficial:** Palmaris longus, ulnar nerve & artery, palmar cutaneous branches.
- **Deep:** Median nerve + tendons of FDS, FDP, and FPL.

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10. What is the difference between ulnar and radial bursae?

- **Ulnar bursa:** Common synovial sheath for FDS & FDP tendons ? continues into little finger.
- **Radial bursa:** Sheath for FPL tendon ? continues into thumb.
- Both may communicate with **Parona's space** in forearm.

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11. How do you test the integrity of flexor digitorum superficialis (FDS)?

Hold all other fingers extended; ask patient to flex one finger at PIP joint ? if normal, that finger flexes alone.

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12. How do you test the flexor digitorum profundus (FDP)?

Immobilize middle phalanx; ask patient to flex DIP joint ? movement confirms FDP function.

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13. What are the clinical signs of ulnar nerve lesion at wrist?

- **Clawing** of ring & little fingers.
- **Froment's sign** positive.
- Flattened **hypothenar eminence.**

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14. What are the effects of median nerve injury at wrist?

- Loss of thumb opposition.
- Wasting of thenar eminence ? *Ape-hand deformity.*
- Sensory loss in lateral 3½ fingers.

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15. What causes wrist drop?

- **Radial nerve palsy** above elbow or in spiral groove ? paralysis of wrist & finger extensors.

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16. What is De Quervain's tenosynovitis?

Inflammation of 1st dorsal compartment tendons (**APL & EPB**) ? pain on lateral wrist; Finkelstein's test positive.

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17. What are the major arteries forming the palmar arches?

- **Superficial arch:** Ulnar artery + superficial branch of radial.
- **Deep arch:** Radial artery + deep branch of ulnar.

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18. What is Allen's test and why is it done?

A clinical test to check **collateral circulation** between radial and ulnar arteries before **radial artery cannulation or harvest.**

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19. What is the main action of lumbricals?

Flex MCP joints and extend IP joints ? "writing position."

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20. Differentiate between thenar and hypothenar muscles.

THENAR MUSCLES	HYPOTHENAR MUSCLES
Act on **thumb**	Act on **little finger**
Supplied by **median nerve** (except deep FPB head)	Supplied by **ulnar nerve**
Responsible for **opposition & precision**	Aid in **grip & cupping of palm**

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21. What is “claw hand” and what is its anatomical basis?

Hyperextension of MCP & flexion of IP joints of ring and little fingers due to **ulnar nerve palsy** ? loss of lumbricals & interossei.

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22. What is “hand of benediction”?

Seen in **median nerve injury at elbow** — patient cannot flex index & middle fingers when making a fist.

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23. What is “Ape-hand deformity”?

Flattened thenar eminence with thumb in same plane as fingers due to **median nerve lesion at wrist.**

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24. Why is the mid-palmar space clinically important?

Infections of flexor tendons of middle, ring, and little fingers can spread here and further to **Parona’s space** in forearm.

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25. What is the difference between palmar and dorsal skin of hand?

- **Palmar skin:** Thick, hairless, firmly bound by fibrous septa.
- **Dorsal skin:** Thin, loose, and mobile ? easily distended by edema.