

# Viva Voce – Forearm and Hand

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### General and Surface Anatomy

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#### 1. What are the boundaries of the forearm?

Between **elbow joint** (above) and **wrist joint** (below).

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#### 2. Name the bones forming the forearm.

- **Radius** (lateral)
- **Ulna** (medial)

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#### 3. What is the interosseous membrane?

A fibrous sheet connecting **radius** and **ulna**, providing:

- Site for **muscle attachment**
- **Transmission of forces** from hand to humerus

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#### 4. What are the palpable bony landmarks at the wrist?

- **Radial styloid process** (lateral)

- **Ulnar styloid process** (medial)
- **Pisiform** (medial anterior)
- **Scaphoid tubercle** (lateral anterior)

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## 5. What forms the roof and floor of the anatomical snuffbox?

- **Roof:** Skin and superficial fascia
- **Floor:** Scaphoid and trapezium bones

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## 6. Which artery passes through the anatomical snuffbox?

Radial artery

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## 7. What is the clinical importance of the anatomical snuffbox?

- Site for **radial pulse**
- **Tenderness** in scaphoid fracture

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### Muscles of Forearm

## 8. Name the superficial flexors of the forearm.

“Pass–Fail–Pass–Fail”

Pronator teres, Flexor carpi radialis, Palmaris longus, Flexor carpi ulnaris

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## 9. Which muscle forms the intermediate layer of anterior compartment?

## **Flexor digitorum superficialis (FDS)**

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### **10. Name the deep flexors of forearm.**

Flexor digitorum profundus, Flexor pollicis longus, Pronator quadratus

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### **11. What is the nerve supply of FDS and FDP?**

- **FDS:** Median nerve
- **FDP:** Lateral half – Median (AIN), Medial half – Ulnar nerve

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### **12. Which muscle is known as the “work-horse of pronation”?**

Pronator quadratus

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### **13. Which muscle is known as the “work-horse of extension”?**

Extensor carpi radialis longus

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### **14. What is the nerve of the posterior compartment of forearm?**

Radial nerve (via posterior interosseous branch)

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### **15. Which muscle is an exception—anterior in position but supplied by radial nerve?**

Brachioradialis

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### **16. What is the common site of origin of superficial extensors?**

Lateral epicondyle of humerus

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### **17. Name the deep extensors of forearm.**

Supinator, Abductor pollicis longus, Extensor pollicis brevis, Extensor pollicis longus, Extensor indicis

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## Flexor and Extensor Retinacula

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### 18. What is the function of the flexor retinaculum?

- Converts carpal groove into **carpal tunnel**
- Prevents “bow-stringing” of flexor tendons

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### 19. What are the contents of carpal tunnel?

- Median nerve
- **9 tendons:** 4 FDS, 4 FDP, 1 FPL

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### 20. What is the function of the extensor retinaculum?

Prevents “bow-stringing” of extensor tendons during wrist extension.

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### 21. Name the structures in first dorsal compartment.

Abductor pollicis longus & Extensor pollicis brevis

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### 22. What is De Quervain's disease?

Tenosynovitis of tendons in the **first dorsal compartment** (APL & EPB).

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## Intrinsic Muscles of Hand

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### 23. Name the thenar muscles.

Abductor pollicis brevis, Flexor pollicis brevis, Opponens pollicis, Adductor pollicis

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### 24. Name the hypotenar muscles.

Abductor digiti minimi, Flexor digiti minimi brevis, Opponens digiti minimi

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### 25. What are lumbricals and what is their action?

- Arise from FDP tendons, insert into extensor expansions.
- **Flex MCP and extend IP joints.**

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### 26. What are the interossei and what is their function?

- **Palmar (3)** ? ADduct fingers (**PAD**)
- **Dorsal (4)** ? ABduct fingers (**DAB**)

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### 27. Which nerve supplies the lumbricals?

1st & 2nd – Median nerve

3rd & 4th – Ulnar nerve

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### 28. Which muscles are supplied by both median and ulnar nerves?

Flexor digitorum profundus and Flexor pollicis brevis (deep head).

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### Arteries and Nerves of Hand

### 29. What are the main arterial arches of the hand?

- **Superficial palmar arch:** mainly ulnar artery

- **Deep palmar arch:** mainly radial artery

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**30. What test is used to check patency of these arches?**

**Allen's Test**

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**31. What are the contents of Guyon's canal?**

**Ulnar nerve and ulnar artery**

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**32. What is the nerve supply of adductor pollicis?**

**Deep branch of ulnar nerve**

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**33. What is the chief sensory nerve of hand?**

**Median nerve** – supplies lateral 3½ digits on palmar side.

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**34. Which nerve lesion causes “claw hand”?**

**Ulnar nerve lesion** at wrist.

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**35. Which nerve lesion causes “ape-hand deformity”?**

**Median nerve lesion** at wrist.

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**36. Which nerve lesion causes “wrist drop”?**

**Radial nerve lesion** (spiral groove or posterior interosseous nerve).

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**37. What is the clinical significance of Parona's space?**

Acts as a **communication pathway** between **mid-palmar/thenar spaces** and the **forearm** ?  
pus may spread to forearm.

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### 38. How would you test ulnar nerve integrity in hand?

- Ask patient to hold a paper between fingers ? **interossei test**.
- **Froment's sign** positive if thumb flexes at IP joint.

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### 39. How do you test median nerve in the hand?

- Ask to **oppose thumb** to little finger.
- **Ape-hand** deformity indicates loss of opposition.

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### 40. What is the sensory area supplied by the radial nerve in hand?

Dorsum of hand – **lateral side and base of thumb**.

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#### Clinical Viva and Maneuvers

### 41. What is Finkelstein's test?

Pain on ulnar deviation of wrist with thumb flexed inside fist ? **De Quervain's tenosynovitis**.

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### 42. What is Froment's sign?

Flexion of thumb IP joint when gripping paper ? paralysis of **adductor pollicis** (ulnar nerve palsy).

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### 43. What is the “OK” or “Pinch” sign?

Inability to flex thumb IP and index DIP joints ? **Anterior interosseous nerve lesion.**

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**44. What is the “writing position” of fingers?**

**Lumbrical action:** MCP flexion + IP extension.

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**45. What is the cause of “trigger finger”?**

Thickening of fibrous sheath of **flexor tendons** causing locking during flexion.

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**46. What is the difference between tennis and golfer’s elbow?**

TENNIS ELBOW	GOLFER’S ELBOW
Lateral epicondyle	Medial epicondyle
Extensor origin	Flexor origin
Pain on extension	Pain on flexion

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**47. Why is scaphoid fracture dangerous?**

Because the **radial artery** supplies its proximal fragment ? risk of **avascular necrosis**.

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**48. What is a “claw hand” deformity?**

Hyperextension of MCP + flexion of IP joints in ring & little fingers ? due to **ulnar nerve palsy**.

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**49. What is a “hand of benediction”?**

When trying to make a fist, **index and middle fingers remain extended** ? **median nerve injury at elbow.**

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**50. What is the functional position of hand?**

Slight wrist extension, MCP flexion, and IP joint extension – **optimal for power and precision grip.**