

# Back of Forearm and Hand, Dorsum of the Hand, Anatomical Snuffbox

## Back of Forearm and Hand

### Surface Landmarks

- **Olecranon Process:**

- Prominent bony point of elbow; attachment of triceps tendon.
- In extension ? lies in line with medial and lateral epicondyles.

- **Posterior Border of Ulna:**

- Subcutaneous throughout; forms a palpable ridge along medial side of back of forearm.

- **Styloid Processes:**

- **Radial styloid** – more distal and lateral; palpable at base of anatomical snuffbox.
- **Ulnar styloid** – smaller and lies higher.

- **Dorsal Venous Network:**

- Clearly visible superficial veins on dorsum of hand ? drains into cephalic (lateral) and basilic (medial) veins.

- **Tendons at Wrist During Extension:**

- Seen as distinct ridges:
  - Lateral: *Extensor pollicis brevis* and *abductor pollicis longus*.
  - Middle: *Extensor digitorum* and *extensor indicis*.
  - Medial: *Extensor carpi ulnaris*.

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## Dorsum of the Hand

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### Skin and Superficial Fascia

- Skin ? thin, loose, and freely movable ? allows expansion during grip.
- Contains **dorsal venous arch**, **cutaneous nerves**, and **superficial lymphatics**.

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### Deep Fascia

- Thinner than in palm.
- Sends septa between extensor tendons forming **dorsal compartments** beneath the extensor retinaculum.

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## Extensor Tendons

- Spread out into **dorsal digital expansions (extensor hoods)** over the MCP joints.
- Each expansion receives slips from lumbricals and interossei ? coordinates finger extension.

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## Clinical Note

- **Synovial sheath infections** on dorsum are rare but may follow traumatic punctures.
- **Tenosynovitis** in these sheaths restricts wrist and finger extension.

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## ? Anatomical Snuffbox

### Definition

A **triangular depression** on the lateral side of wrist seen when thumb is fully extended.

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### Boundaries

BOUNDARY	STRUCTURE
Anterior (lateral)	Tendons of <i>abductor pollicis longus</i> and <i>extensor pollicis brevis</i>
Posterior (medial)	Tendon of <i>extensor pollicis longus</i>

BOUNDARY	STRUCTURE
Floor	Scaphoid and trapezium bones, and base of 1st metacarpal
Roof	Skin and superficial fascia
Contents	Radial artery (passes obliquely), cephalic vein, and superficial branch of radial nerve

### Clinical Anatomy of Snuffbox

- **Radial pulse** felt here (in distal part).
- **Tenderness in scaphoid fracture** (classical sign).
- **Radial artery puncture** or **cannulation** site.
- **Superficial branch of radial nerve** lies superficially ? can be injured in snuffbox trauma or surgery.

### ? Extensor Retinaculum

#### Definition

A thickened part of deep fascia that **holds extensor tendons** in place at the back of wrist — prevents “bow-stringing” during extension.

## Attachments

- **Lateral:** Lower end of radius.
- **Medial:** Pisiform and triquetral bones.

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## Compartments Beneath Extensor Retinaculum

COMPARTMENT	TENDONS CONTAINED	MNEMONIC: 1–6 (LATERAL ? MEDIAL)
1	Abductor pollicis longus & Extensor pollicis brevis	(AB-L-E-PB)
2	Extensor carpi radialis longus & brevis	(ECRL, ECRB)
3	Extensor pollicis longus	(EPL)
4	Extensor digitorum & Extensor indicis	(ED, EI)
5	Extensor digiti minimi	(EDM)
6	Extensor carpi ulnaris	(ECU)

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## Relations

- **Superficial:** Skin and superficial fascia with dorsal veins.

- **Deep:** Carpal bones.
- Each tendon is enclosed in a **synovial sheath** for frictionless movement.

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## Functions

- Maintains **alignment of extensor tendons** during wrist motion.
- Prevents **tendon displacement** during extension and abduction.

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## Clinical Anatomy

- **Tenosynovitis:** Common in first dorsal compartment ? *De Quervain's disease.*
  - Pain and tenderness near lateral wrist.
  - Involves tendons of *abductor pollicis longus* and *extensor pollicis brevis*.
- **Triggering or snapping** may occur due to stenosis of tendon sheath.
- **Ganglion cysts** may arise from dorsal tendon sheaths.

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## ? Dissection of Back of Forearm and Hand

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## Steps

1. Place limb prone (palm down). Make longitudinal incisions along the **midline of posterior forearm and dorsum of hand.**

2. Reflect skin and superficial fascia ? identify **superficial veins** (cephalic, basilic) and **cutaneous nerves** (posterior & lateral cutaneous nerves of forearm).
3. Remove deep fascia ? identify **extensor retinaculum** near wrist.
4. Under it, locate **six dorsal compartments** and their tendons:
  - Compartment 1 (lateral): *Abductor pollicis longus, Extensor pollicis brevis.*
  - Compartment 2: *ECRL, ECRB.*
  - Compartment 3: *EPL* (forms medial boundary of snuffbox).
  - Compartment 4: *Extensor digitorum, Extensor indicis.*
  - Compartment 5: *Extensor digiti minimi.*
  - Compartment 6: *Extensor carpi ulnaris.*
5. Identify **radial artery** in anatomical snuffbox and **superficial branch of radial nerve**.
6. Trace **extensor tendons** to their expansions over MCP joints and phalanges