

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*.

Dorsum of the Hand

Skin and Superficial Fascia

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

Deep Fascia

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

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.

Clinical Note

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

? Anatomical Snuffbox

Definition

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

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.

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)

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

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