

Nerves of the Arm 1

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The arm contains four major nerves: **musculocutaneous, median, ulnar, and radial**.

Here we cover the **musculocutaneous** and **median** nerves.

1. Musculocutaneous Nerve

Root Value

- **C5, C6, C7** (branch of *lateral cord* of brachial plexus).

Course

1. Arises in the **axilla** from lateral cord.
2. **Pierces coracobrachialis** (landmark).
3. Descends between **biceps brachii** and **brachialis**.
4. Emerges at lateral border of biceps tendon, just above elbow.
5. Continues as **lateral cutaneous nerve of forearm** (purely sensory).

Branches

- **Muscular:** to coracobrachialis, biceps brachii, brachialis.
- **Articular:** to elbow joint.

- **Cutaneous (terminal):** lateral cut. nerve of forearm ? skin of lateral forearm (front + back).

Functions

- Motor ? all flexors of arm.
- Sensory ? lateral aspect of forearm.

Clinical Anatomy

- **Lesion (rare):** weakness of elbow flexion & supination, loss of sensation over lateral forearm.
- **Compression in coracobrachialis:** causes pain/tingling along lateral forearm.
- **Biceps reflex (C5–C6):** tests integrity of musculocutaneous nerve and segments.

2. Median Nerve

Root Value

- **C5–T1** (union of lateral and medial roots from lateral & medial cords of brachial plexus).

Formation

- In axilla, the two roots embrace the third part of axillary artery and unite anterior to it.

Course in Arm

1. Begins lateral to brachial artery.

2. Crosses in front of the artery (mid-arm) from lateral to medial side.
3. Runs down medial to brachial artery to cubital fossa.
4. At elbow ? lies medial to brachial artery and anterior to brachialis, deep to bicipital aponeurosis.
5. Enters forearm between two heads of pronator teres.

Relations in Arm

- **Lateral:** biceps brachii early in arm.
- **Medial:** brachial artery (distally).
- **Posterior:** brachialis muscle.
- **Anterior:** skin & deep fascia.

Branches in Arm

- **No muscular branches** in the arm.
- **Articular branch** to elbow joint occasionally.
- **Vascular branches** to brachial artery.

Functions (below elbow overview)

- Chief motor nerve of forearm flexors (except FCU & $\frac{1}{2}$ FDP).
- Supplies thenar muscles & lateral two lumbricals.

- Sensory to lateral 3½ digits and corresponding palm.

Clinical Anatomy

- **Injury in Arm:**

- Rare; may occur in supracondylar fracture or deep laceration.
- Produces loss of forearm flexion (esp. pronators, long flexors of thumb & index).
- Sensory loss over lateral palm and 3½ digits.

- **Pronator Syndrome:** median nerve compressed between heads of pronator teres ? forearm pain & paresthesia in thumb/index/middle fingers.

- **Carpal Tunnel Syndrome (distal lesion):** thenar atrophy, ape-hand deformity, tingling in lateral fingers.

- **Testing:** ask patient to make fist (thumb flexion & opposition weak).