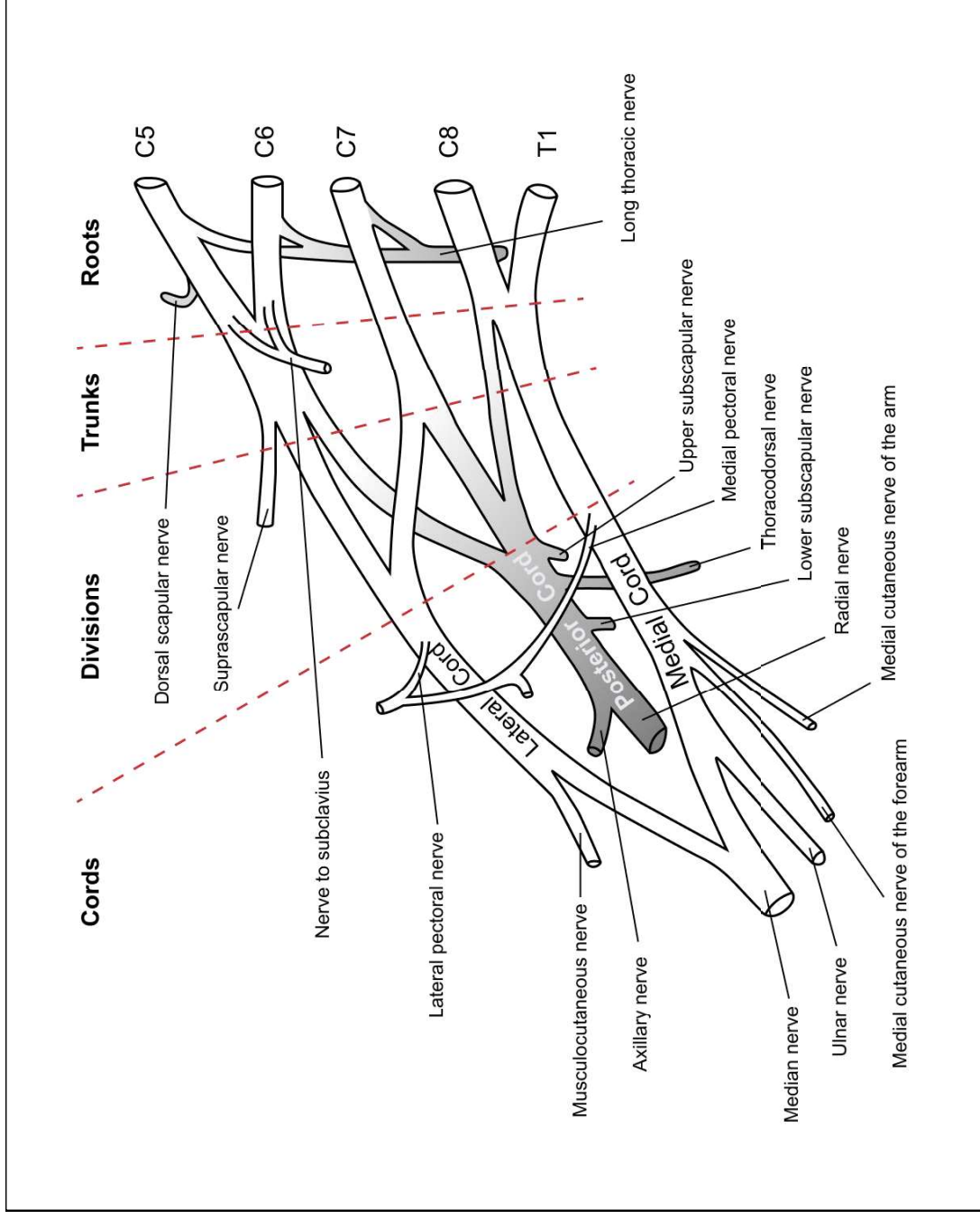


Brachial Plexus Diagram

The brachial plexus is a network of nerves that originates from the spinal cord in the neck and travels down the arm. It is responsible for the motor and sensory innervation of the upper limb, including the shoulder, arm, forearm, and hand.



Components of the brachial plexus

Roots

The five roots are formed by the anterior rami of the C5, C6, C7, C8, and T1 spinal nerves.

Trunks

- **Upper trunk (superior trunk):** Formed by the union of the C5 and C6 roots.
- **Middle trunk:** Continuation of the C7 root.
- **Lower trunk:** Formed by the union of the C8 and T1 roots.

Divisions

Each trunk splits into an anterior and a posterior division, depending on their movement. There are three anterior nerve fiber divisions and three posterior nerve fiber divisions, which then reconnect inside the axilla to become cords.

Branches

A. Major branches

1. Musculocutaneous nerve

- **Roots:** C5, C6, C7
- **Motor functions:** Innervates the brachialis, biceps brachii, and coracobrachialis muscles.
- **Sensory functions:** Provides sensation to the lateral half of the anterior forearm and a small lateral portion of the posterior forearm.

2. Axillary nerve
 - **Roots:** C5, C6
 - **Motor functions:** Innervates the teres minor and deltoid muscles.
 - **Sensory functions:** Provides sensation to the inferior region of the deltoid, known as the “regimental badge area.”
 3. Radial nerve
 - **Roots:** C6 – T1 (also contains fibers from C5 in some individuals)
 - **Motor functions:** Innervates most of the flexor muscles in the forearm, the thenar muscles, and the two lateral lumbricals associated with the index and middle fingers.
 - **Sensory functions:** Provides sensation to the lateral part of the palm and the lateral three-and-a-half fingers on the anterior (palmar) surface of the hand.
 4. Median nerve
 - **Roots:** C5 – T1
 - **Motor functions:** Innervates the triceps brachii and the muscles in the posterior compartment of the forearm, which are primarily extensors of the wrist and fingers.
 - **Sensory functions:** Provides sensation to the posterior aspect of the arm and forearm, and the posterolateral aspect of the hand.
 5. Ulnar nerve
 - **Roots:** C8 and T1
 - **Motor functions:** Innervates the muscles of the hand (apart from the thenar muscles and two lateral lumbricals), flexor carpi ulnaris, and the medial half of flexor digitorum profundus.
 - **Sensory functions:** Provides sensation to the anterior and posterior surfaces of the medial one and a half fingers, and the associated palm area.
- B. Minor branches
- **Roots:**
 - Dorsal scapular nerve
 - Long thoracic nerve

- **Trunks:**
 - Suprascapular nerve
 - Subclavian nerve (nerve to subclavius)
- **Lateral cord:**
 - Lateral pectoral nerve
- **Medial cord:**
 - Medial pectoral nerve
 - Medial antebrachial cutaneous nerve (medial cutaneous nerve of the forearm)
 - Medial brachial cutaneous nerve (also known as the medial cutaneous nerve of the arm or the lesser internal cutaneous nerve)
- **Posterior Cord:**
 - Superior subscapular nerve
 - Thoracodorsal nerve
 - Inferior subscapular nerve

Additional notes

C5-T1 roots are critical for full arm function.
 Upper trunk damage (C5-C6) impacts shoulder and elbow movement - Erb's palsy
 Lower trunk injury (C8-T1) affects hand function - watch for Klumpke's
 Axillary nerve: key for deltoid and teres minor - shoulder abduction
 Radial nerve: controls extensors - wrist drop if injured
 Median nerve: for thumb opposition and wrist flexion - carpal tunnel syndrome
 Ulnar nerve: fine motor skills in the hand - claw hand if damaged
 Suprascapular nerve: important for shoulder stability - infraspinatus and supraspinatus.
 Long thoracic nerve: winged scapula if serratus anterior is weak
 Thoracodorsal nerve: latissimus dorsi - for arm adduction

MARMU - Musculocutaneous, Axillary, Radial, Median, Ulnar.
 Always check motor and sensory deficit for full assessment

Gray, H., & Clemente, C. D. (1985). *Anatomy of the human body*. Lippincott Williams & Wilkins.