

SUMMRRY FOR MAIN NERVES OF THE UPPER LIMB :

<u>nerve</u>	<u>Course</u>	<u>branches</u>	<u>Injuries</u>
The Axillary Nerve	<p>* arises from the posterior cord of the brachial plexus (C5 and 6),</p> <p>* This nerve passes to the posterior aspect of the arm through the quadrangular space in the company of the posterior circumflex vessels.</p> <p>* On emerging from the quadrangular space, the axillary nerve winds around the surgical neck of the humerus to supply the teres minor and deltoid muscles.</p> <p>* The axillary nerve ends as the upper lateral brachial cutaneous nerve. مش ضروري تعرف هالمعلومة</p> <p>* It supplies skin over the inferior half of the deltoid and adjacent areas of the arm.</p>	<p>- anterior branch (upper branch) winds around the surgical neck of the humerus, and supply the deltoid</p> <p>- posterior branch (lower branch) supplies the teres minor</p> <p>- motor branch of the long head of the triceps brachii</p>	<p>The axillary nerve may be injured by:</p> <ul style="list-style-type: none"> - inferior dislocations of the shoulder joint - or compression of the axilla with a crutch - or fracture of the surgical neck of the humerus. <p>Injury to the nerve results in:</p> <ol style="list-style-type: none"> 1. Paralysis of the teres minor muscle and deltoid muscle , resulting in loss of abduction of arm (from 15-90 degrees), weak flexion, extension, and rotation of shoulder. Paralysis of deltoid & teres minor results in Flat shoulder deformity. 2. Loss of sensation in the skin over a small part of the lateral upper arm.
The Median Nerve (claw hand)	<ul style="list-style-type: none"> - a combination from the medial root of median cord with the lateral root of the lateral cord of the brachil plexus (C8 mainly) - This nerve enters the forearm with the brachial artery anterior to the cubital fossa - It lies on the brachialis muscle and passes between the two heads of the pronator teres muscle, giving branches to both. - Afterwards, it descends deep to the flexor digitorum superficialis muscle, closely attached by the muscle's facial sheath. - Then is continues between the two flexor digitorum muscles. - Near the wrist, it becomes superficial, passing between the tendons of the flexor digitorum superficialis and the flexor carpi ulnaris muscles, deep to the tendon of palmaris longus muscle. - The median nerve enters the hand through the carpal tunnel, between the tendons of flexor digitorum superficialis and flexor carpi radialis. - It then supplies the 3 thenar muscles and the 1st and 2nd lumbrical muscles. 	<ul style="list-style-type: none"> - There are no branches in the arm. - Articular branches pass to the elbow joint as the median nerve passes it. - Muscular branches supply the pronator teres, pronator quadratus, all flexors except flexor carpi ulnaris and medial half of flexor digitorum profundus (which is supplied by the ulnar nerve). <p>* The Anterior Interosseous Nerve</p> <ul style="list-style-type: none"> - This nerve arises from the median nerve in the distal part of the cubital fossa. - It runs between the flexor digitorum profundus and the flexor pollicis longus muscles to reach the pronator quadratus muscle. - It supplies all of these but only the lateral half of flexor digitorum profundus. - It then passes deep to the pronator quadratus muscle and ends by sending articular branches to the wrist joint. <p>* The Palmar Cutaneous Branch</p> <ul style="list-style-type: none"> - This arises from the median nerve just proximal to the flexor retinaculum. - It becomes cutaneous between the tendons of the palmaris longus and flexor carpi radialis muscles. - It passes superficial to the flexor retinaculum to supply skin of the lateral part of the palm. <p>* . Recurrent branch to muscles of the thenar compartment</p>	<ul style="list-style-type: none"> - Above the elbow : loss of pronation and a reduction in flexion of the hand at the wrist. - At elbow : - The pronator muscles , long flexor muscles, with the exception of the flexor carpi ulnaris and the medial half of the flexor digitorum profundus, will be paralyzed - -the forearm is kept in the supine position; wrist flexion is weak and is accompanied by adduction. - The thumb is laterally rotated and adducted. The hand looks flattened and apelike At the forearm : injury to Anterior interosseous nerve causes pain in the forearm and a characteristic weakness of the movement of the thumb and index finger. <p>At the Wrist :</p> <ul style="list-style-type: none"> - Injury by compression at the carpal tunnel causes carpal tunnel syndrome. -The muscles of the thenar eminence are paralyzed and wasted so that the eminence becomes flattened. The thumb is laterally rotated and adducted -Opposition movement of the thumb is impossible - The first two lumbricals are paralyzed <p>Skin sensation , lost on the lateral half or less of the palm of the hand and the palmar aspect of the lateral three and a half fingers.</p>

The Ulnar Nerve
(claw hand)
بس بتكون اخف اشوي من ال Median

- arises from the medial cord of the brachial plexus (C8 and T1),
- This nerve passes posterior to the **medial epicondyle** of the humerus.
- It enters the forearm by **passing between the two heads** of the flexor carpi ulnaris muscle.
- It then **descends deep to this muscle** on the flexor digitorum profundus, where it accompanies the ulnar artery near the middle of the forearm.
- Then it passes on the **medial side** of this artery and the **lateral side** of the tendon of flexor carpi ulnaris.
- In the distal part of the forearm, the ulnar nerve become relatively superficial covered only by fascia and skin.
- It **pieces the deep fascia** and passes **superficial to the flexor retinaculum** with the ulnar artery, **lateral to the pisiform**, between this bone and the **hook of the hamate**.
- This passage for the nerve and artery, covered with a slip of flexor retinaculum, is referred to clinically as the **canal of Guyon**.

- There are **no branches** in the arm.
 - **Articular branches** pass to the elbow joint,
 - **Muscular branches** to flexor carpi ulnaris and the medial half of the flexor digitorum profundus muscles.
- The Palmar Cutaneous Branch**
- This arises **near the middle of the forearm**.
 - It **pierces the deep fascia** in its distal 1/3 to supply the **skin on the medial part of the palm**.
- The Dorsal Cutaneous Branch**
- It arises **from the distal half of the forearm**.
 - It passes posteroinferiorly between the ulna and flexor carpi ulnaris muscle.
 - It supplies the **posterior surface of the medial part of the hand**.
- The Superficial Branch of the Ulnar Nerve**
- This branch supplies the **cutaneous fibres** to the **anterior surfaces of the medial one and a half digits**.
- The Deep Branch of the Ulnar Nerve**
- supplies the hypothenar muscles, the medial two lumbrical muscles, the adductor pollicis muscle, and the interosseous muscles.
 - supplies several joints (wrist, intercarpal, carpometacarpal and intermetacarpal joints).

- commonly occurs where the **nerve passes posterior** to the **medial epicondyle** of the humerus.
- Often the damage occurs when the elbow hits a hard surface and the medial epicondyle is fractured.
- There tends to be **extensive motor and sensory loss** to the **hand**.
- **Adduction is impaired**, and when an attempt is made to flex the wrist joint, the hand is drawn to the radial side by the flexor carpi radialis muscle.
- There is **difficulty making a fist** as the distal interphalangeal joints **cannot be flexed**.
- When an effort is made to straighten the fingers, the hand goes into the position known as "**claw hand**".

Radial Nerve

- arises from the posterior cord of the brachial plexus (C7)
- The radial nerve **descends in the arm** between the brachialis and brachioradialis muscles.
- It crosses the **anterior aspect of the lateral epicondyle**.
- Soon after it enters the forearm, it divides into superficial and deep branches.

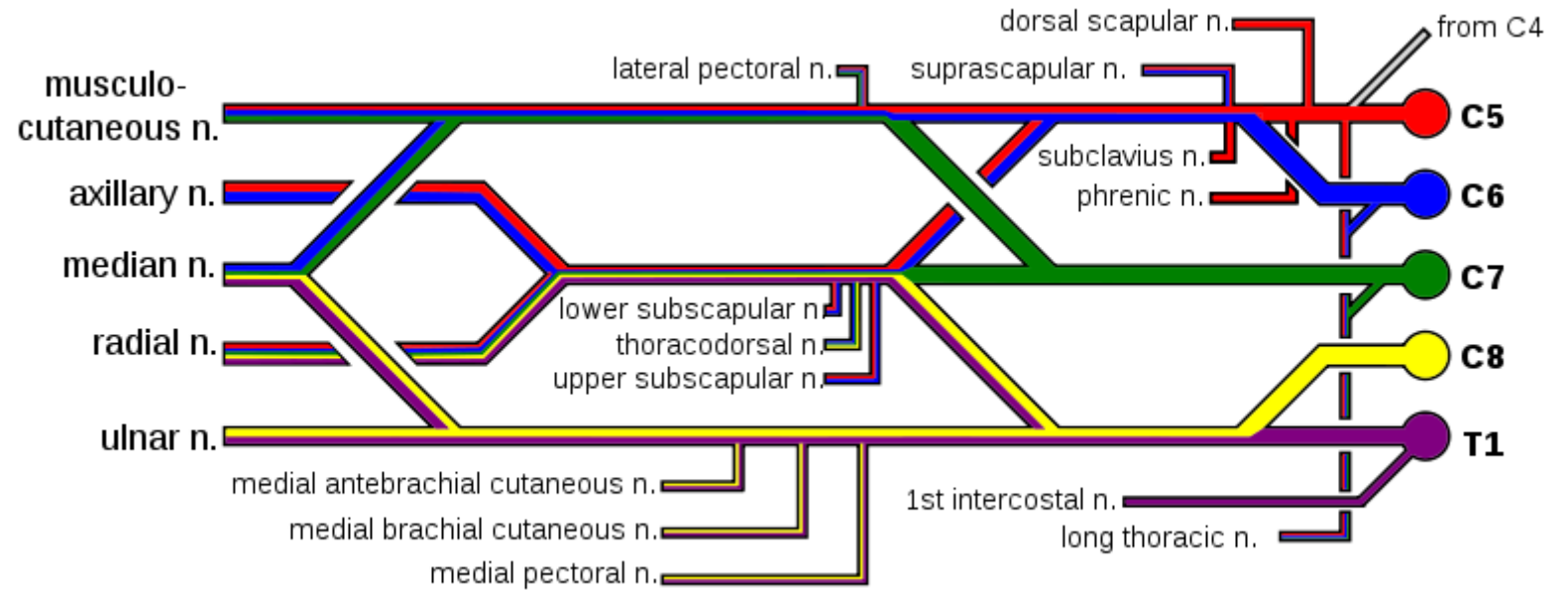
- The Superficial Branch**
- This is the smaller of the two branches and is the direct continuation of the radial nerve.
 - It passes distally, **anterior to** the pronator teres muscle and under the cover of the brachioradialis muscle.
 - In the distal 1/3 of the forearm, the **superficial branch passes posteriorly**, deep to the tendon of the brachioradialis muscle, and enters the **posterior fascial compartment of the forearm**.
 - It pierces the deep fascia **3 to 4 cm proximal to the wrist** and supplies skin on the **dorsum of the wrist, hand, thumb, and the lateral 1 (or 2) and a half digits**.
- The Deep Branch**
- This is the larger of the two terminal branches and is **entirely muscular and articular** in its distribution. , As it passes posteroinferiorly, it gives branches to the extensor carpi radialis brevis and supinator muscles. It then pierces the supinator muscle, giving additional branches to it, and curving around the lateral side of the neck of radius to enter the posterior fascial compartment of the forearm. , On reaching the posterior aspect of the forearm, the deep branch of the radial nerve gives many branches to the extensor muscles.

- **In the axilla :**
- The triceps, the anconeus, and the long extensors of the wrist are paralyzed causing **Wristdrop**
- **In spiral groove :**
- and wristdrop occurs
- **injury to the deep branch :**
- **No sensory loss**
- No wristdrop occurs here because the wrist stills can be extended by the extensor carpi radialis longus
- There is **Fingers drop** because extensor digitorum ,extensor digiti minimi,extensor indicis lose their function
- **Injury to the superficial branch :**
- results in a variable small area of anesthesia over the dorsum of the hand and the dorsal surface of the roots of the lateral three and a half fingers

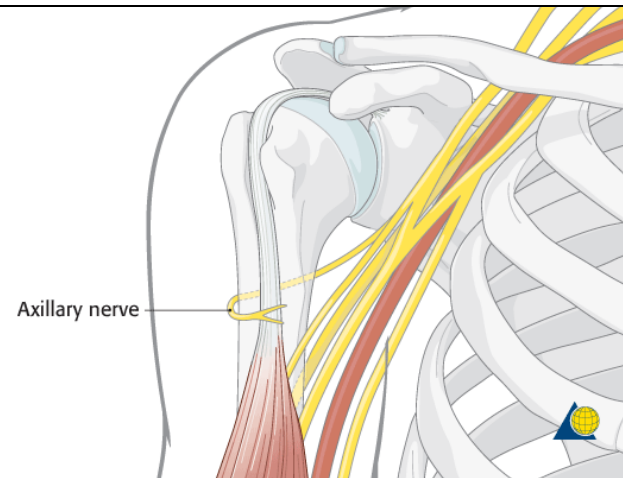
<p><u>Musculocutaneous Nerve</u></p>	<p>- It penetrates the Coracobrachialis muscle and passes obliquely between the Biceps brachii and the Brachialis, to the lateral side of the arm; a little above the elbow it pierces the deep fascia lateral to the tendon of the Biceps brachii and is continued into the forearm as the lateral cutaneous nerve of the forearm. In its course through the arm it innervates the Coracobrachialis, Biceps brachii, and the greater part of the Brachialis.</p>	<p>- branches to the anterior muscles of the arm - end as the lateral cutaneous nerve of the forearm</p>	<p>- rarely injured because of its protected position beneath the biceps brachii muscle</p> <p>-if it is injured high up in the arm, the biceps and coracobrachialis are paralyzed and the brachialis muscle is weakened (because it's also supplied by the radil nerve)</p> <p>- sensory loss along the lateral side of the forearm.</p>
<p><u>Long Thoracic Nerve</u></p>	<p>- arises from C5, 6, and 7 and supplies the serratus anterior muscle,</p>		<ul style="list-style-type: none"> • Paralysis of the serratus anterior results in the inability to rotate the scapula during the movement of abduction of the arm above a right angle • The patient therefore experiences difficulty in raising the arm above the head • The vertebral border and inferior angle of the scapula will no longer be kept closely applied to the chest wall and will protrude posteriorly, a condition known as winged scapula

* قد لا اكون ذكرت كلللل شيء عن الاعصاب في هذه الصفحات , لذلك يجب الرجوع الى الشبكات واطافة اي شيء تجدونه ناقصا ..
* في الصفحة التالية صور مفيدة للاعصاب ... اترككم معها :

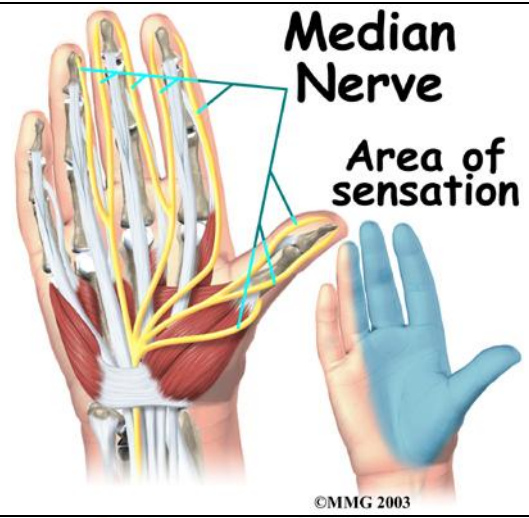
Brachil plexus



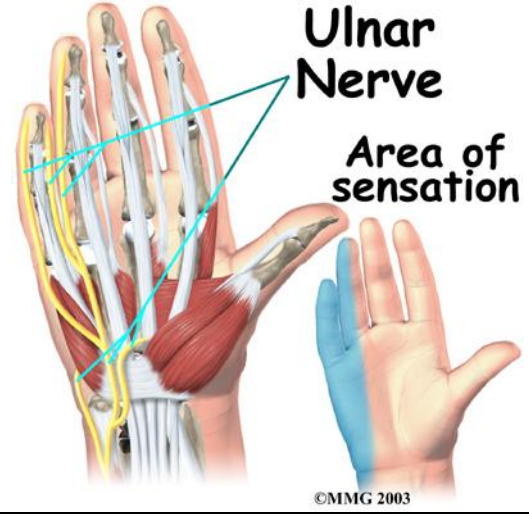
Axillary Nerve



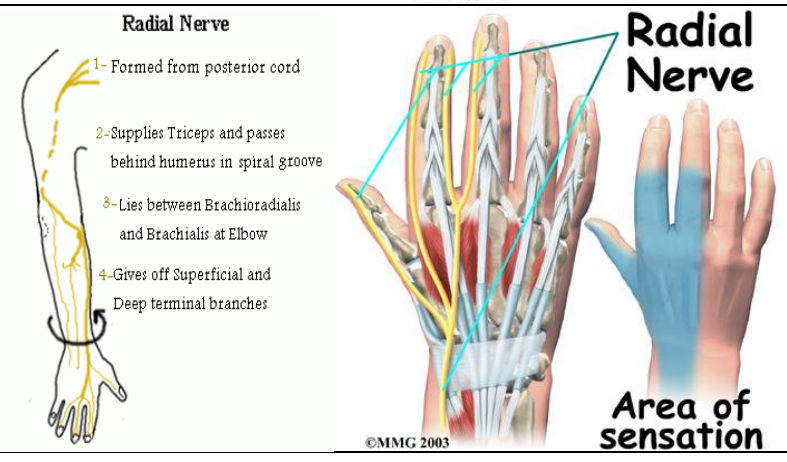
Median

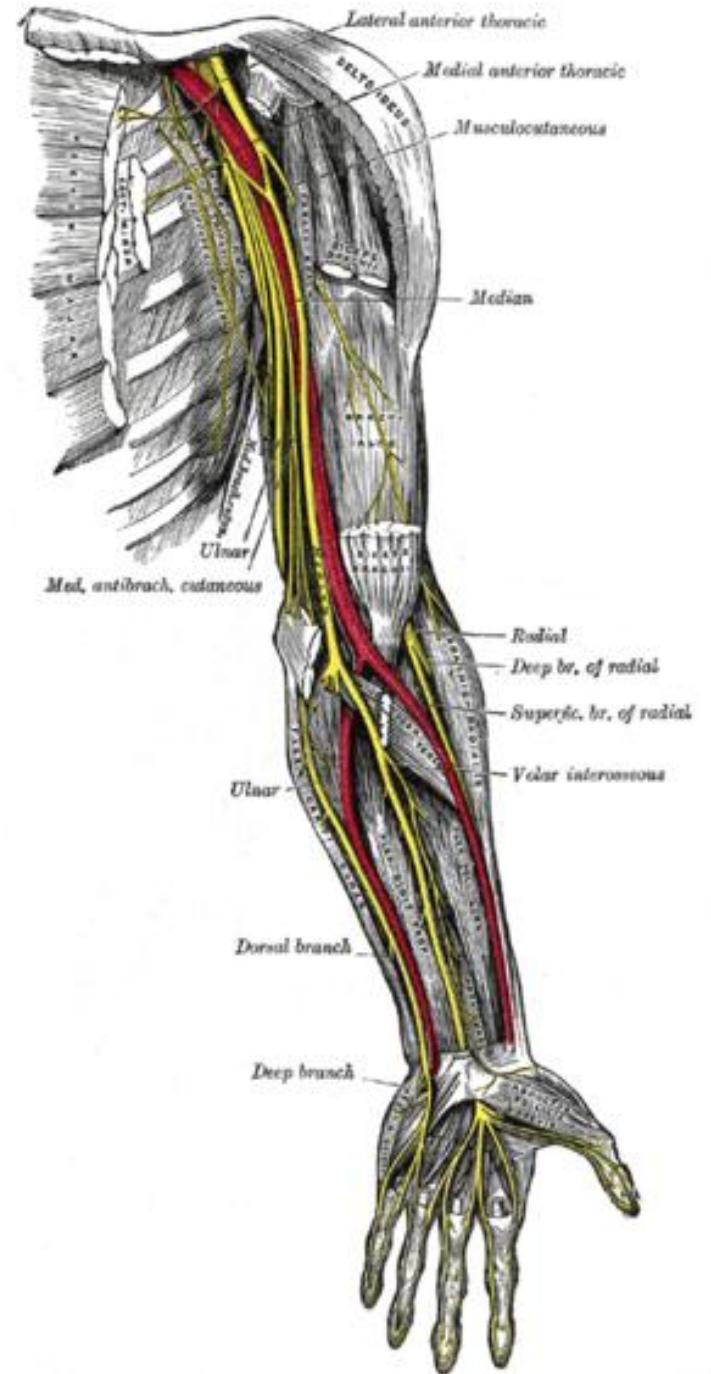
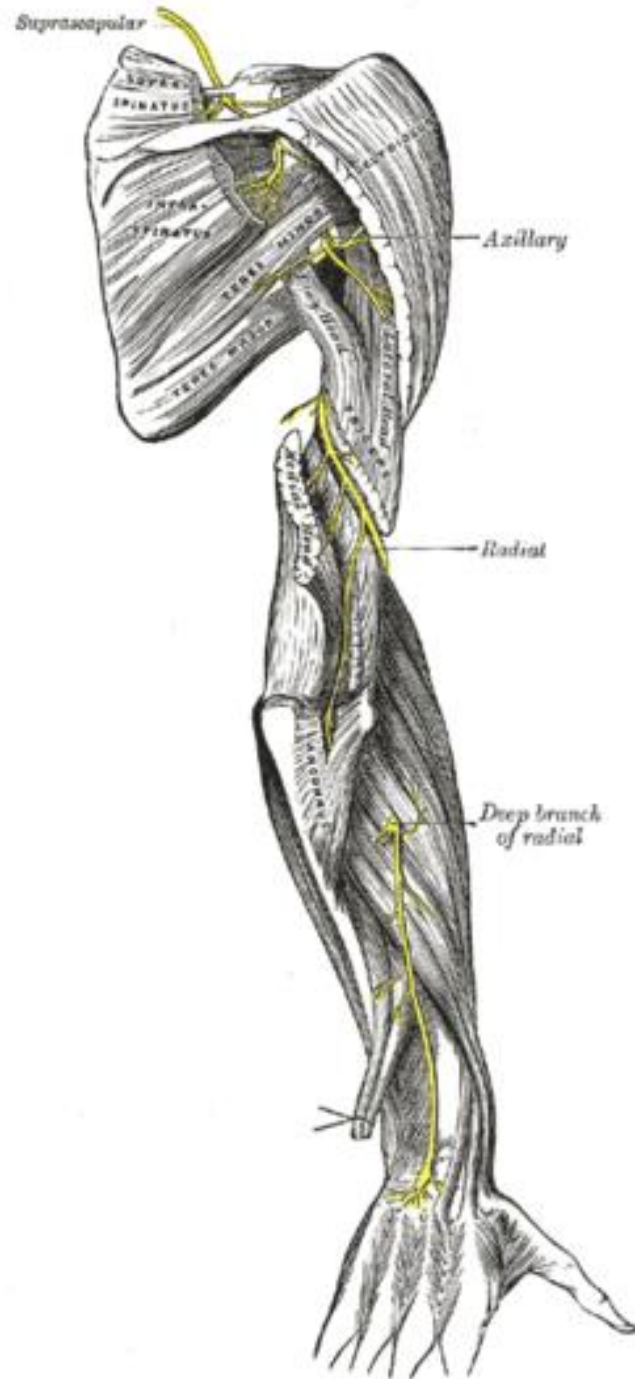


Ulnar



Radial





Nerves of the Hand

