C3

BRANCHES

CORDS

RAMI

DIVISIONS

TRUNKS

C4

Dorsal Scapular Nerve: Innervates rhomboids

C5

Lat. Pectoral N: Innervates Pec. Major/Minor

Suprascapular N: Innervates Supra/Infraspinatus

Musculocutaneous N: Innervates Coracobrachialis, Biceps Brachii, Brachialis & skin of lat. Forearm.

Phrenic Nerve: Innervates Diaphragm

Lat. Cord

Upper Trunk

Ant

Nerve to Subclavius: Innervates subclavius

C6

Lat Head of Median N.

Long Thoracic Nerve: Innervates Serratus Ant.

Upper Subscapular N: Innervates subscapularis

Median N.: Innervates Pronator Teres, FCR, PL, FDS, APB, Sup head of FPB, OP, Lumbricals 1&2, skin of palm and thumb radial side. Sends off one branch (ant. Interosseous): innervates Radial ½ of FDP, FPL, PQ

Post

Lower Subscapular N.: Innervates subscapularis & Teres Major

Axillary N: Innervates Deltoid, Teres Minor, and patch of skin over deltoid

Ant

C7

Radial N: Innervates Triceps Brachii, Anconeous, Skin of post arm/forearm, Brachioradialis, & ECRL. Splits into Superficial Radial N: Innervates skin dorsal hand & thumb & Deep Radial N: Innervates supinator, ECRB, ED, EDM, ECU, APL, EPB, EPL, EI

Post. Cord

Middle Trunk

Post

Thoracodorsal N: Innervates Latissimus Dorsi

Post

Med. Antebrachial Cutaneous N: Innervates skin of med. forearm

Med. Pectoral N: Innervates Pec. Major/Minor

Ulnar N.: Innervates FCU, Ulnar ½ of FDP. Sends off two branches: Dorsal Cutaneous: Innervates skin of dorsal hand-ulnar side & Palmar Cutaneous: Innervates skin of palmar hand ulnar side. Ulnar N. splits into Superficial Ulnar N: Innervates skin of 5th and ½ 4th finger. & Deep Ulnar N: Innervates OP, ADM, FDMB, ODM, Lumbricals 3&4, 3 PADS, 4 DABS, Deep ½ of FPB

Med. Head of Median N.

C8

Med. Cord

Ant

Lower Trunk

T1

Med. Brachial Cutaneous N: Innervates skin of med. Arm

**Lateral Cord**

* **B ranches from ant. Division of upper trunk and ant. Division of middle trunk**
* **Lat. Pectoral Nerve- Innervates:**
	+ **1). Pectoralis major:**
		- **O: Clavicular head: Medial ½ of clavicle. Sternocostal head: Lat manubrium, body of sternum, costal cart. 2-6.**
		- **I: Crest of greater tubercle**
		- **A: SCJ-protraction & depression; STJ- depression, abd; GHJ: flex (clavicular head), IR, Add, horizontal add, ext (sterno head)**
	+ **2). Pectoralis Minor:**
		- **O: Ribs 3-5**
		- **I: Medial & Upper border of coracoids**
		- **A: SCJ- protract, depression, post. rot.; ACJ- ext, IR, Abd; STJ- abd, depress, ant. Tipping, IR, upward rot**
* **Musculocutaneous N- Innervates:**
	+ **1). Coracobrachialis**
		- **O: Apex of coracoids process**
		- **I: Mid-Medial humerus**
		- **A: GHJ- flex to 90°, ext from 90°, add, horizontal add**
	+ **\*Passes laterally between biceps &brachialis & innervates both**
	+ **2). Biceps Brachii**
		- **O: Short head-apex of coracoids process. Long head: supraglenoid tubercle**
		- **I: Radial tuberosity & bicipital aponeurosis**
		- **A: GHJ- flex, abd(when ER) , inf glide; Elbow-flex; RUJ-supination**
	+ **3). Brachialis**
		- **O: distal ½ of ant. Radius**
		- **I: tuberosity & coranoid process of ulna**
		- **A: Elbow-flex**
	+ **\*Passes laterally and distally to innervate skin of lateral forearm**
* **Lateral head of median n and med head of median n form Median N**
	+ **\* Median N. passes through arm innervating nothing. Passes through cubital fossa & under bicipital aponeurosis. Passes between 2 heads and innervates:**
	+ **1). Pronator Teres**
		- **O: Superficial head- Medial Epicondyle. Deep head-coranoid process**
		- **I: Mid-lateral radius below ant. Oblique line**
		- **A: RUJ-pronation; Elbow-stabilization**
	+ **\*Passes between layers 2&3 of Ant compartment of forearm and innervates:**
	+ **2). Flexor Carpi Radialis**
		- **O: Medial epicondyle**
		- **I: Base of 2nd & 3rd metacarpal**
		- **A: Wrist- flex, radial deviation; Elbow-stabilization**
	+ **3). Palmaris Longus**
		- **O: Medial epicondyle**
		- **I: Palmar Aponeurosis**
		- **A: Wrist-flex; Elbow-stabilization**
	+ **4). Flexor Digitorum Superficialis**
		- **O: Medial Epicondyle, coranoid process, ant- oblique line of radius**
		- **I: Sides of middle phalanx of digits 2-5**
		- **A: PIPJ,MPJ,Wrist-flex; Elbow- stabilization**
	+ **\*Sends off 1 Branch (Ant. Interosseous) which innervates:**
	+ **1). Radial ½ of Flexor Digitorum Profundus**
		- **O: Proximal ¾ of medial & ant. Ulna & adj interosseous membrane**
		- **I: Bases of distal phalanges of digits 2-5**
		- **A: DIPJ,PIPJ, MPJ, Wrist- flex**
	+ **2). Flexor Pollicis Longus**
		- **O: Middle ½ of ant. Radius & adj interosseous membrane**
		- **I: Base of distal phalanx of thumb**
		- **A: IPJ,MPJ,Wrist- flex; Elbow-stabilization**
	+ **3). Pronator Quadratus**
		- **O: Distal ¼ of ulna**
		- **I: Distal ¼ of radius**
		- **A: RUJ- pronation**
	+ **\*Median N continues-enters carpal tunnel-enters central compartment and innervates**
	+ **5). Abductor Pollicis Brevis**
		- **O: Scaphoid, Trapezium, Flexor Retinaculum**
		- **I: Lateral side of proximal phalange of thumb**
		- **A: MPJ &CMCJ-abd**
	+ **6). Sup. Head of flexor pollicis brevis**
		- **O: Trapezium, flexor retinaculum**
		- **I: base of proximal phalange of thumb**
		- **A: MPJ & CMCJ-flex**
	+ **7). Opponens Pollicis**
		- **O: Trapezium, Flexor retinaculum**
		- **I: entire lateral side of 1st metacarpal**
		- **A: CMCJ- opposition**
	+ **8). Lumbricals 1 &2**
		- **O: lateral sides of FDP tendons**
		- **I: extensor expansions of ED on dorsal aspect of proximal phalanges**
		- **A: DIPJ &PIPJ-ext; MPJ- flex**
	+ **9) Skin of palm and thumb radial side, digits 2,3, & ½ of 4**

**Medial Cord**

* **Branch from lower trunk**
* **Branches include**
	+ **Medial Pectoral N- innervates Pec. Major/Minor (see Lat Pectoral N)**
	+ **Medial Brachial Cutaneous N: innervates skin of medial arm**
	+ **Medial Antebrachial Cutaneous N: innervates skin of medial forearm**
* **Medial Head of Median N- with Lat. Head form Median N. (see above)**
* **Ulnar N**
	+ **\*Passes through arm innervating nothing. Passes through medial intermuscular septum & into post. compartment. Passes between medial epicondyle &olecranon( cubital tunnel). Passes between two head and innervates**
	+ **1). Flexor Carpi Ulnaris**
		- **O: Humeral head- medial epicondyle. Ulnar head- olecranon & proximal 2/3 of post shaft of ulna**
		- **I: Pisiform, hook of hamate, base of 5th metacarpal**
		- **A: Wrist- flex, ulnar deviation. Elbow-stabilization**
	+ **\*Passes deep to FCU. Passes between layers 2&3 of forearm and innervates:**
	+ **2). Ulnar ½ of FDP- see radial ½ of FDP (Median N)**
	+ **\*Sends off 2 branches proximal to wrist**
	+ **1). Dorsal Cutaneous N: Innervates skin of dorsal hand ulnar side**
	+ **2). Palmar Cutaneous N: Innervates sking of palmar hand ulnar side**
	+ **\* Ulnar N. crosses wrist through guyons canal between pisiform & hook of hamate. Ends by dividing into superficial & deep ulnar N.**
	+ **Superficial Ulnar N: Innervates skin of 5th and ½ of 4th finger**
	+ **Deep Ulnar N: passes between ADM & FDMB and through ODM- follows deep arch on surface of interossi muscles and innervates:**
	+ **1). Opponens Pollicis- See OP under Median N**
	+ **2). Abductor Digiti Minimi**
		- **O: Pisiform, hamate, flexor retinaculum**
		- **I: Medial base of proximal phalange of digit 5**
		- **A: MPJ- abd**
	+ **3). Flexor Digiti Minimi Brevis**
		- **O: Hook of Hamate, flexor retinaculum**
		- **I: Medial base of proximal phalange of digit 5**
		- **A: MPJ-flex**
	+ **4). Opponens Digiti Minimi**
		- **O: Hook of Hamate, flexor retinaculum**
		- **I: Entire medial side of 5th metacarpal**
		- **A: CMCJ- opposition**
	+ **5). Lumbricals 3 &4**
		- **O: Adj sides of FDP**
		- **I: Extensor expansion of ED on dorsal aspect of proximal phalanges**
		- **A: MPJ-flex; DIPJ &PIPJ- ext**
	+ **6) 3 PADS**
		- **O: Med. Of 2nd digit, lat of 4th & 5th digit**
		- **I: Extensor expansion & base of proximal phalange**
		- **A: MPJ- flex, add. DIPJ &PIPJ- ext**
	+ **7). 4 DABS**
		- **O: Adj sides of adj metacarpals**
		- **I: Extensor expansions & base of proximal phalange**
		- **A: MPJ- flex, abd; DIPJ & PIPJ- ext**
	+ **8). Adductor Pollicis**
		- **O: Oblique Head- Capitate and base of 2nd & 3rd metacarpal. Transverse Head- shaft of 3rd metacarpal**
		- **I: Medial sie, base of proximal phalanx**
		- **A: MPJ & CMCJ of thumb- Adduction**
	+ **9). Deep ½ of FPB- see FPB under Median N**

**Posterior Cord**

* **Branches from post. cord of middle trunk, post cord of upper trunk, and post. cord of lower trunk**
* **Branches include**
	+ **Upper Subscapular N- innervates**
		- **1). Subscapularis**
			* **O: Subscapular fossa**
			* **I: Lesser Tubercle**
			* **A: GHJ- IR, inf glide, anterior stabilization**
	+ **Thoracodorsal N- Innervates**
		- **1). Latissimus Dorsi**
			* **O: Lower ribs, post. iliac crest, Mid-Low Thoracic s.p, Inf angle of scapula, supraspinous lig, TLF**
			* **I: Bicipital groove**
			* **A: SCJ-depression, retraction; ACJ- add,flex, ER. STJ- depress, add, downward rot, post tipping, ER; GHJ- ext, add, IR**
	+ **Lower Subscapular N- Innervates**
		- **1). Subscapularis- see above**
		- **2). Teres Major**
			* **O: Low lateral border of scapula**
			* **I: Crest of lesser tubercle**
			* **A: GHJ- ext, IR, add**
* **Axillary N**
	+ **\* Passes through quadrangular space and Innervates**
	+ **1) Deltoid**
		- **O: Lateral Clavicle, acromion, spine of scapula**
		- **I: Deltoid tuberosity**
		- **A: General: GHJ- Abd, sup. Gliding. Ant Deltoid:GHJ- flex, horizontal add. Middle Deltoid: GHJ-abd. Post Deltoid:GHJ- ext, horizontal abd**
	+ **2). Teres Minor**
		- **O: Upper lateral border of scapula**
		- **I: Middle facet of greater tubercle**
		- **A: GHJ- post stabilization, inferior glide, ER, horizontal abd**
	+ **3). Innervates patch of skin over deltoid**
* **Radial N**
	+ **\*Passes toward radial groove- sends off 6 Branches**
	+ **1). Triceps Brachii (3 branches)**
		- **O: Long Head- infraglenoid tubercle & capsule. Lat head- post humerus lat. to radial groove. Med head- post humerus med to radial groove**
		- **I: Olecranon process**
		- **A: GHJ- ext, add; Elbow-ext**
	+ **2). Anconeous**
		- **O: Lateral epicondyle**
		- **I: Lateral olecranon and proximal shaft of ulna**
		- **A: Elbow-stabilization**
	+ **3) Skin of post arm & forearm**
	+ **\*Passes through radial groove & intermuscular septum between lat head of triceps and brachialis and innervates:**
	+ **4) Brachioradialis**
		- **O: Lateral supracondylar ridge**
		- **I: Styloid process of radius**
		- **A: Elbow-flexion**
	+ **5) Extensor Carpi Radialis Longus**
		- **O: Lateral supracondylar ridge**
		- **I: Base of 2nd metacarpal**
		- **A: Wrist-ext, radial deviation; Elbow-stabilization**
	+ **\*Pass through cubital fossa. Ends by dividing into superficial and deep radial nerves**
	+ **Superficial Radial N- innervates skin of dorsal hand & thumb**
	+ **Deep Radial N- Innervates**
	+ **1). Supinator**
		- **O: Post ulna below radial notch**
		- **I: Post, Ant, Lat proximal 1/3 of radius**
		- **A: RUJ- supination**
	+ **2). Extensor Carp Radialis Brevis**
		- **O: Lateral epicondyle**
		- **I: Base of 3rd metacarpal**
		- **A: Wrist-extension, radial deviation; Elbow-stabilization**
	+ **3). Extensor Digitorum**
		- **O: Lateral Epicondyle**
		- **I: Middle & Distal phalange of digits 2-5**
		- **A: DIPJ,PIPJ,MPJ,Wrist- extension; Elbow-stabilization**
	+ **4). Extensor Digiti Minimi**
		- **O: Lateral Epicondyle**
		- **I: Extensor Expansion at MPJ of digit 5**
		- **A: DIPJ,PIPJ,MPJ,Wrist- extension; Elbow-stabilization**
	+ **5). Extensor Carpi Ulnaris**
		- **O: Lateral Epicondyle & Post shaft of ulna**
		- **I: Base of 5th metacarpal**
		- **A: Wrist- extension, ulnar deviation; Elbow-stabilization**
	+ **6). Abductor Pollicis Longus**
		- **O: Middle ulna, radius and interosseous membrane**
		- **I: lateral base of 1st metacarpal**
		- **A: CMCJ-abd, reposition; Wrist-radial deviation**
	+ **7). Extensor Pollicis Brevis**
		- **O: Distal radius and interosseous membrane**
		- **I: Base of proximal phalange of thumb**
		- **A: MPJ-ext; CMCJ-ext, reposition; Wrist-radial deviation**
	+ **8) Extensor Pollicis Longus**
		- **O: Middle ulna below APL & interosseous membrane**
		- **I: Base of distal phalange**
		- **A: IPJ & MPJ-ext, CMCJ-ext, reposition; Wrist-radial deviation**
	+ **9). Extensor Indicis**
		- **O: Distal ulna & interosseous memebrane**
		- **I: Extensor expansion on digit 2**
		- **A: DIPJ,PIPJ,MPJ,Wrist- extension**

**Other Nerves:**

* **Long Thoracic N: C5,C6,C7- innervates**
	+ **1). Serratus Anterior**
		- **O: Upper 8 ribs at the mid axillary line**
		- **I: Deep medial border of scapular**
		- **A: SCJ-protraction, post rot; ACJ- flex, ER, abd; STJ-abd, post tipping, ER, upward rot**
* **Dorsal Scapular N: C5- innervates**
	+ **1). Rhomboids**
		- **O: Lower part of ligamentum nuchae, Low C/s.p🡪 mid T/s.p, supraspinous ligament**
		- **I: Medial Border of scapula below spine of scapula**
		- **A: SCJ- elevation, retraction; ACJ-flex, ER; STJ- elevation, add, post tipping, ER**
* **Subscapular N- Upper trunk-C5,C6- innervates**
	+ **1). Supraspinatus**
		- **O: Supraspinous fossa**
		- **I: High facet of greater tubercle, capsule of GHJ**
		- **A: GHJ- abd, stabilization from downward dislocation**
	+ **2). Infraspinatus**
		- **O: Infraspinous fossa**
		- **I: Middle facet of greater tubercle, capsule of GHJ**
		- **A: GHJ- post stabilization, inf. Glide, ER, horizontal abd**
* **Nerve to subclavius: Upper trunk-C5,C6- innervates**
	+ **1). Subclavius**
		- **O: Junctioin of 1st rib/costocartilage**
		- **I: Inferior clavicle-groove for subclavius**
		- **A: SCJ-depression, stability; STJ-depression**
* **Phrenic N: C3, C4, C5**
	+ **1). Diaphragm**
		- **O: Xiphoid, costal arch, ribs 11-12, lateral,medial,& median arcuate ligament, aortic hiatus**
		- **I: central tendon**
		- **A: inspiration**