

PERIPHERL NERVES

Cervical Plexus

Formed by Anterior Branches of first four Cervical Nerves (C₁-C₄).

Nerve	Origin	Branches	Distribution
<u>SUPERFICIAL BRANCHES OF CERVICAL PLEXUS</u>			
Lesser Occipital Nerve	C ₁		Skin behind auricle
Great auricular nerve	C ₂₋₃		External ear and skin around auricle
Transverse nerve of neck	C ₂₋₃		Skin of anterior part of neck
Supraclavicular nerve	C ₂₋₄		Skin at upper portion of chest, Base of neck, shoulder
<u>DEEP BRANCHES OF CERVICAL PLEXUS</u>			
The Phrenic Nerve (Right and Left)	C ₃₋₅	Motor Fibers	Diaphragm
		Sensory Fibers	Diaphragmatic Peritoneum, Diaphragmatic and Mediastinal Pleura and the pericardium <i>Right</i> phrenic also distribute to liver, gallbladder and bile duct system

The Brachial Plexus

Formed by the union of anterior branches of four lower cervical nerves (C₅₋₈) and first thoracic nerve. (T₁)

Trunks:

- Superior: C₅₋₆
- Middle: C₇
- Inferior: C₈– T₁

Divisions: Each Trunk divided into

- Anterior
- Posterior

Cords: Three Cords

- Lateral Cord: Anterior division of Superior and Middle Trunks
- Medial Cord: Anterior division of Medial Trunk
- Posterior Cord: Posterior division of all three trunks

Nerve	Origin	Branches	Innervation	Abnormality
<u>BRANCHES ABOVE THE CLAVICLE</u>				
Long Thoracic Nerve	(C ₅₋₇) Roots		Serratus Anterior	Winging of Scapula
Dorsal Scapular Nerve	(C ₅) Roots		Levator Scapula Rhomboides	
Suprascapular Nerve	Superior Trunk		Supraspinatus, Infraspinatus	

BRANCHES BELOW CLAVICLE					
Thoracodorsal Nerve	C ₆ - 8		Lattissimus Dorsi		
Lateral Pectoral Nerve	Lateral Cord		Pectoralis Major		
Median Pectoral Nerve	Medial Cord		Pectoralis Minor and Major		
Musculocutaneous Nerve	C ₅₋₇ Lateral Cord		Coracobrachialis, Biceps brachii, and Brachialis		
		Lateral Antebrachial Cutaneous Nerve	Skin of lateral side of forearm		
The Median Nerve	C ₆₋₈ , T ₁ Arise by two roots, one from lateral and other from the medial cord of brachial plexus	<i>In Forearm:</i> Large Muscular Branches	All flexors of forearm except Flexor Carpi Ulnaris, Flexor Digitorum Profundus	<i>In Forearm (At Elbow):</i> Loss of flexion of digits, thenar muscles and lumbricals 1, 2. Ulnar Deviation Sensory loss on lateral palmand digits 1,2, 3and half 4 “Ape or Simian hand” <i>In Hand:</i> Sensory loss on lateral palmand digits 1,2, 3and half 4 “Ape or Simian hand” Flattening of thenar eminence	
		Palmar Cutaneous Branch	Skin of thenar and central part of Palm		
		<i>In Palm:</i> Recurrant Branch	Thenar Muscles except adductor pollicis		
		Common Palmar Digital Nerves	Skin of palmar aspect of thumb, second, third and lateral half of four fingers. Skin on dorsum of terminal phalanges		
		Proper Palmar Digital Nerves			
		<i>In Hand:</i> Muscular Branches	1 st and 2 nd lumbricals		
The Ulnar Nerve	(C ₇ , T ₁) Medial Cord of Brachial Plexus	Muscular Branches	Flexor Carpi Ulnaris, Flexor Digitorum Profundus	Weakened wrist flexion, radial deviation, Loss f abduction and adduction of digits, Loss of hypothenar muscles and lumbricals 3 and 4. Weakened flexion of digits 4 and 5, Sensry loss on digit 5 “Claw hand”	
		Dorsal Branch (Cutaneous) Branch	Skin on ulnar half of dorsum and posterior surface of ulnar one and half fingers		
		<i>At Wrist:</i> Superficial Palmar Branch	Proper palmar digital nerve		Ulnar side of little finger
			Common Palmar digital nerves		Skin of hypothenar and opposite side of 4 th and 5 th fingers
		Deep Branch			3 rd and 4 th lumbricals, adductor pollicis, introssei and muscles of hypothenar
The Radial Nerve	(C ₅ -T ₁) Continuation f Posterior Cord. Largest Branch of Brachial Plexus	Superficial Branches	Skin on radial side of dorsum of hand and on proximal digits of rdial two and half fingers	Loss of extensors at elbow, wrist and digits. Weakened extension at shoulder,weakened supination. Sensory loss on posterior arm, forearm and hand. “Wrist drop”, “Saturday Night Palsy”	
		Deep Branch	Posterior Extensor Muscles of forearm and brachiradialis		
			Also supplies triceps brachii and skin on dorsum of arm		

The Axillary Nerve (C ₅₋₆)	C ₅₋₆ Posterior Cord	Muscular Branches	Deltoid, Teres major	Loss of abduction of arm. The nerve can be damaged by fracture of surgical neck of humerus
		Cutaneous Branches	Skin over deltoid	

Thoracic Nerves

- Total Thoracic Nerves: 12
- Upper eleven: Lie in intercostals spaces called *Intercostal Nerves*
- Twelfth Nerve: Lies below the last rib called *Subcostal Nerve*

Supply:

- Upper 6 intercostal nerves supply *Skin on anterior thoracic wall*
- Lower 5 intercostal and subcostal nerves: *Skin of thoracic and abdominal wall*

Level of Thoracic Nerves

- T₂ – Sternal Angle
- T₄ – The Nipple
- T₆ – Xiphoid Process
- T₈ – Costal Arch
- T₁₀ – The Umbilicus
- T₁₂ – Anterior Superior Iliac spine

The Lumbar Plexus

- Behind Psoas Major
- Composed of Anterior branches of first three lumbar nerves (L₁₋₃), Branch of last thoracic (T₁₂), and fourth lumbar nerve (L₄).

Nerve	Origin	Branches	Innervation	Abnormality
Iliohypogastric nerve	(T ₁₂ , L ₁), Psoas Lateral border	Cutaneous Branches	Skin of Hypogastric region and medial part of inguinal region	These Three Nerves must be protected in the surgery of Inguinal Hernia
		Muscular Branch	Muscles of lower part of abdominal wall	
Ilioinguinal Nerve	(L ₁) Psoas Lateral border	Cutaneous	Skin of upper medial thigh, root of penis, scrotum in male. Mons Pubis and Labia majora in female	
		Muscular	Muscles of Abdominal Wall	
Genitofemoral Nerve	(L ₁ -L ₂) Between Psoas and Iliacus	Cutaneous	Skin over scrotum or Greater lip of Pudendum	
		Muscular	Cremaster and genital organs	
Lateral Femoral Cutaneous Nerve	(L ₂ -L ₃) Psoas Lateral border		Skin of Anterior and lateral aspect of thigh	

Femoral Nerve	(L ₂₋₄) Posterior Division Between Psoas and Iliacus	Cutaneous	Anterior Femoral Cutaneous N.	Anterior Thigh	Impaired flexion of hip joint. No extension of Knee. Knee jerk disappears. Loss of sensation on anterior aspect of thigh and medial side of leg and foot
			Medial Femoral Cutaneous N.	Medial Thigh	
			Saphenous Nerve	Medial Side of leg and medial side of foot	
		Muscular Branch	Supply Anterior group Muscles of thigh, Quadriceps femoris, Sartorius, Pectineus		
Obturator Nerve	(L ₂₋₄) Anterior Division. Medial Psoas Border	Muscular Branches	Medial Group of Muscles of thigh. Gracilis, Adductor longus, brevis, magnus		Impaired adduction of thigh and loss of sensation in skin of medial aspect of thigh
		Cutaneous Branches	Skin of medial side of thigh		

The Sacral Plexus

- Lumbosacral trunk
- Anterior branches of sacral and coccygeal nerves

Nerve	Origin	Branches	Innervation	Abnormality
Superior Gluteal Nerve	(L ₄ – S ₁)Leaves pelvis via Greater Sciatic Foramen		Gluteus medius, Gluteus minimus, Tenser Fascia Latae	
Inferior Gluteal Nerve	(L ₅ – S ₂)Leaves pelvis via lesser sciatic foramen		Gluteus maximus. Skin over lower part of gluteal region	
The Pudendal Nerve	(S ₂ - S ₄) Via Greater Scitic Foramen	The Anal Nerve (Inferior rectal N.)	Sphincter ani Externus, Skin of anus	
		The Perineal Nerve	Muscles of perineum, skin of scrotum or greater lip of pudendum	
		Dorsal Nerve of Penis or clitoris	Supplies skin of penis, preuce and glans penis	
Posterior Femoral Cutaneous Nerve	(S ₁ – S ₃)		Skin of posterior part of thigh	
Sciatic Nerve	On next page			