

WHAT MAJOR NERVES ARISE FROM THE FOLLOWING PLEXUSES: CERVICAL, BRACHIAL, LUMBAR, AND SACRAL

WHAT MAJOR NERVES ARISE FROM THE FOLLOWING PLEXUSES: CERVICAL, BRACHIAL, LUMBAR, AND SACRAL

UNDERSTANDING THE INTRICATE NETWORK OF NERVES IN THE HUMAN BODY IS ESSENTIAL FOR COMPREHENDING HOW THE NERVOUS SYSTEM CONTROLS MOVEMENT, SENSATION, AND AUTONOMIC FUNCTIONS. THE PERIPHERAL NERVOUS SYSTEM IS ORGANIZED INTO SEVERAL PLEXUSES—COMPLEX NETWORKS OF INTERSECTING NERVE FIBERS—THAT SERVE SPECIFIC REGIONS OF THE BODY. AMONG THESE, THE CERVICAL, BRACHIAL, LUMBAR, AND SACRAL PLEXUSES ARE THE MOST PROMINENT AND CLINICALLY SIGNIFICANT. EACH PLEXUS GIVES RISE TO MAJOR NERVES THAT INNERVATE MUSCLES, SKIN, AND INTERNAL ORGANS, PLAYING VITAL ROLES IN DAILY FUNCTION AND HEALTH.

THIS ARTICLE EXPLORES THE MAJOR NERVES ARISING FROM THESE KEY PLEXUSES, DETAILING THEIR ANATOMICAL COURSES, FUNCTIONS, AND CLINICAL RELEVANCE. BY UNDERSTANDING THE ORIGIN AND DISTRIBUTION OF THESE NERVES, HEALTHCARE PROFESSIONALS AND STUDENTS CAN BETTER DIAGNOSE NERVE INJURIES, UNDERSTAND NEUROLOGICAL DEFICITS, AND APPRECIATE THE COMPLEXITY OF THE NERVOUS SYSTEM.

CERVICAL PLEXUS

OVERVIEW OF THE CERVICAL PLEXUS

THE CERVICAL PLEXUS IS FORMED BY THE ANTERIOR RAMI OF THE FIRST FOUR CERVICAL SPINAL NERVES (C1-C4). IT IS SITUATED DEEP IN THE NECK, AROUND THE TRANSVERSE PROCESSES OF THE CERVICAL VERTEBRAE. ALTHOUGH IT PRIMARILY SUPPLIES SENSATION TO PARTS OF THE NECK, SCALP, AND SHOULDERS, IT ALSO PROVIDES MOTOR FIBERS TO SOME NECK MUSCLES.

MAJOR NERVES ARISING FROM THE CERVICAL PLEXUS

THE CERVICAL PLEXUS GIVES RISE TO SEVERAL IMPORTANT NERVES, WHICH CAN BE CATEGORIZED INTO CUTANEOUS (SENSORY) AND MOTOR NERVES:

- **PHRENIC NERVE (C3-C5):** THE MOST SIGNIFICANT MOTOR NERVE FROM THE CERVICAL PLEXUS, THE PHRENIC NERVE IS ESSENTIAL FOR RESPIRATION AS IT PROVIDES MOTOR INNERVATION TO THE DIAPHRAGM. IT ALSO CARRIES SENSORY FIBERS FROM THE CENTRAL PART OF THE DIAPHRAGM, MEDIASTINAL PLEURA, AND PERICARDIUM.
- **CUTANEOUS BRANCHES:** THESE NERVES SUPPLY SENSATION TO PARTS OF THE NECK AND HEAD, INCLUDING:
 - **GREAT AURICULAR NERVE (C2-C3):** SUPPLIES SKIN OVER THE PAROTID GLAND, MASTOID PROCESS, AND OUTER EAR.
 - **LESSER OCCIPITAL NERVE (C2):** INNERVATES THE SCALP POSTERIOR AND SUPERIOR TO THE EAR.
 - **TRANSVERSE CERVICAL NERVE (C2-C3):** PROVIDES SENSATION TO THE ANTERIOR NECK.
 - **SUPRACLAVICULAR NERVES (C3-C4):** SUPPLY SKIN OVER THE CLAVICLE AND SHOULDER REGION.

- **MOTOR BRANCHES:** THESE INNERVATE SOME OF THE INFRAHYOID MUSCLES AND OTHER MUSCLES OF THE NECK:
 - BRANCHES TO THE PREVERTEBRAL MUSCLES.

BRACHIAL PLEXUS

OVERVIEW OF THE BRACHIAL PLEXUS

THE BRACHIAL PLEXUS IS A NETWORK OF NERVE FIBERS ORIGINATING FROM THE ANTERIOR RAMI OF SPINAL NERVES C5 THROUGH T1. IT IS LOCATED IN THE NECK AND AXILLA (ARMPIT), SUPPLYING MOTOR AND SENSORY INNERVATION TO THE ENTIRE UPPER LIMB, SHOULDER, AND PARTS OF THE CHEST WALL.

MAJOR NERVES ARISING FROM THE BRACHIAL PLEXUS

THE BRACHIAL PLEXUS GIVES RISE TO NUMEROUS NERVES, MANY OF WHICH ARE WELL-KNOWN FOR THEIR CLINICAL SIGNIFICANCE:

1. **MUSCULOCUTANEOUS NERVE (C5-C7):** INNERVATES THE ANTERIOR COMPARTMENT OF THE ARM, INCLUDING BICEPS BRACHII, BRACHIALIS, AND CORACOBRAHIALIS MUSCLES. IT ALSO PROVIDES SENSORY INNERVATION TO THE LATERAL FOREARM.
2. **AXILLARY NERVE (C5-C6):** SUPPLIES THE DELTOID AND TERES MINOR MUSCLES, FACILITATING SHOULDER ABDUCTION AND ROTATION. IT ALSO PROVIDES SENSATION TO THE SKIN OVER THE DELTOID (REGIMENTAL BADGE AREA).
3. **RADIAL NERVE (C5-T1):** ORIGINATES FROM THE POSTERIOR CORD AND SUPPLIES ALL THE MUSCLES OF THE POSTERIOR COMPARTMENT OF THE ARM AND FOREARM, RESPONSIBLE FOR EXTENSION OF THE ELBOW, WRIST, AND FINGERS. IT PROVIDES SENSORY INNERVATION TO THE POSTERIOR ARM, FOREARM, AND DORSUM OF THE HAND.
4. **MEDIAN NERVE (C6-T1):** FORMED FROM CONTRIBUTIONS OF THE LATERAL AND MEDIAL CORDS, IT SUPPLIES MOST OF THE FLEXOR MUSCLES OF THE FOREARM AND SOME INTRINSIC MUSCLES OF THE HAND. IT ALSO PROVIDES SENSATION TO THE LATERAL PALM AND FINGERS.
5. **ULNAR NERVE (C8-T1):** SUPPLIES THE INTRINSIC MUSCLES OF THE HAND, FLEXOR CARPI ULNARIS, AND THE MEDIAL HALF OF THE FLEXOR DIGITORUM PROFUNDUS. IT PROVIDES SENSATION OVER THE MEDIAL HAND, INCLUDING THE LITTLE FINGER AND HALF OF THE RING FINGER.

CLINICAL RELEVANCE OF THE BRACHIAL PLEXUS NERVES

- **INJURIES:** TRAUMA TO THE BRACHIAL PLEXUS CAN CAUSE WEAKNESS, PARALYSIS, OR SENSORY DEFICITS IN THE UPPER LIMB, OFTEN SEEN IN ACCIDENTS OR DURING CHILDBIRTH (ERB-DUCHENNE OR KLUMPKE'S PALSY).
- **NERVE BLOCKS:** ANESTHETIC PROCEDURES TARGETING THESE NERVES ARE COMMON DURING SURGERIES INVOLVING THE SHOULDER, ARM, OR HAND.

LUMBAR PLEXUS

OVERVIEW OF THE LUMBAR PLEXUS

FORMED BY THE ANTERIOR RAMI OF SPINAL NERVES L1-L4, THE LUMBAR PLEXUS IS SITUATED WITHIN THE PSOAS MAJOR MUSCLE. IT PRIMARILY SUPPLIES THE ANTERIOR AND MEDIAL THIGH.

MAJOR NERVES ARISING FROM THE LUMBAR PLEXUS

KEY NERVES FROM THE LUMBAR PLEXUS INCLUDE:

- **FEMORAL NERVE (L2-L4):** THE LARGEST BRANCH OF THE LUMBAR PLEXUS, IT SUPPLIES THE ANTERIOR THIGH MUSCLES (QUADRICEPS FEMORIS, ILIACUS, SARTORIUS, PECTINEUS) AND PROVIDES SENSORY INNERVATION TO THE ANTERIOR AND MEDIAL THIGH, MEDIAL LEG, AND FOOT VIA ITS BRANCHES.
- **OBTURATOR NERVE (L2-L4):** INNERVATES THE MEDIAL THIGH MUSCLES (ADDUCTORS: ADDUCTOR LONGUS, BREVIS, MAGNUS, GRACILIS, AND OBTURATOR EXTERNUS). IT PROVIDES SENSATION TO THE MEDIAL THIGH.
- **LATERAL FEMORAL CUTANEOUS NERVE (L2-L3):** SUPPLIES SENSATION TO THE LATERAL THIGH (THE "MERALGIA PARESTHETICA" NERVE WHEN COMPRESSED).

CLINICAL SIGNIFICANCE OF LUMBAR PLEXUS NERVES

- INJURIES: COMPRESSION OR TRAUMA CAN LEAD TO DEFICITS IN THIGH FLEXION, EXTENSION, OR MEDIAL ROTATION.
- SURGICAL CONSIDERATIONS: NERVE BLOCKS IN THE LUMBAR PLEXUS ARE EMPLOYED FOR ANESTHESIA IN HIP SURGERIES.

SACRAL PLEXUS

OVERVIEW OF THE SACRAL PLEXUS

FORMED BY THE ANTERIOR RAMI OF SPINAL NERVES L4-S4, THE SACRAL PLEXUS LIES ANTERIOR TO THE PIRIFORMIS MUSCLE IN THE PELVIS. IT SUPPLIES THE BUTTOCKS, PERINEUM, AND LOWER LIMBS.

MAJOR NERVES ARISING FROM THE SACRAL PLEXUS

SIGNIFICANT NERVES INCLUDE:

1. **SCIATIC NERVE (L4-S3):** THE LARGEST NERVE IN THE BODY, IT SUPPLIES ALL MUSCLES BELOW THE KNEE (EXCEPT FOR SOME MEDIAL THIGH MUSCLES VIA THE OBTURATOR NERVE). IT DIVIDES INTO THE TIBIAL AND COMMON FIBULAR NERVES.
2. **PUDENDAL NERVE (S2-S4):** PROVIDES MOTOR INNERVATION TO THE MUSCLES OF THE PERINEUM AND EXTERNAL GENITALIA, AS WELL AS SENSORY INNERVATION TO THE PERINEUM, CLITORIS, AND PENIS.

- 3. **SUPERIOR GLUTEAL NERVE (L4-S1):** INNERVATES GLUTEUS MEDIUS, GLUTEUS MINIMUS, AND TENSOR FASCIAE LATAE, CRITICAL FOR HIP ABDUCTION.
- 4. **INFERIOR GLUTEAL NERVE (L5-S2):** SUPPLIES THE GLUTEUS MAXIMUS, ESSENTIAL FOR HIP EXTENSION AND OUTWARD ROTATION.
- 5. **POSTERIOR FEMORAL CUTANEOUS NERVE (S1-S3):** PROVIDES SENSATION TO THE POSTERIOR THIGH AND POPLITEAL REGION.

CLINICAL RELEVANCE OF SACRAL PLEXUS NERVES

- NERVE INJURIES: SCIATIC NERVE DAMAGE CAN CAUSE SCIATICA, CHARACTERIZED BY PAIN RADIATING DOWN THE LEG, WEAKNESS, OR SENSORY CHANGES.
- PERINEAL PROCEDURES: KNOWLEDGE OF THE PUDENDAL NERVE IS VITAL FOR ANESTHESIA IN PERINEAL SURGERIES OR CHILDBIRTH.

SUMMARY TABLE OF MAJOR NERVES FROM EACH PLEXUS

PLEXUS	MAJOR NERVES	INNERVATION AREA	KEY FUNCTIONS
CERVICAL	PHREN		

FREQUENTLY ASKED QUESTIONS

WHICH MAJOR NERVES ARISE FROM THE CERVICAL PLEXUS?

THE MAJOR NERVES ARISING FROM THE CERVICAL PLEXUS INCLUDE THE LESSER OCCIPITAL NERVE, GREATER AURICULAR NERVE, TRANSVERSE CERVICAL NERVE, SUPRACLAVICULAR NERVES, AND THE PHRENIC NERVE.

WHAT ARE THE MAIN NERVES ORIGINATING FROM THE BRACHIAL PLEXUS?

THE BRACHIAL PLEXUS GIVES RISE TO MAJOR NERVES SUCH AS THE MUSCULOCUTANEOUS NERVE, AXILLARY NERVE, MEDIAN NERVE, ULNAR NERVE, AND RADIAL NERVE.

WHICH NERVES ARE DERIVED FROM THE LUMBAR PLEXUS?

NERVES FROM THE LUMBAR PLEXUS INCLUDE THE FEMORAL NERVE, OBTURATOR NERVE, LATERAL FEMORAL CUTANEOUS NERVE, AND THE ILIOHYPOGASTRIC AND ILIOINGUINAL NERVES.

WHAT ARE THE KEY NERVES ORIGINATING FROM THE SACRAL PLEXUS?

THE SACRAL PLEXUS GIVES RISE TO IMPORTANT NERVES LIKE THE SCIATIC NERVE, PUDENDAL NERVE, SUPERIOR GLUTEAL NERVE, AND INFERIOR GLUTEAL NERVE.

HOW DO THE NERVES FROM THE CERVICAL PLEXUS CONTRIBUTE TO NECK AND SHOULDER

INNERVATION?

NERVES LIKE THE TRANSVERSE CERVICAL AND SUPRACLAVICULAR NERVES SUPPLY SENSATION TO PARTS OF THE NECK AND SHOULDER, WHILE THE PHRENIC NERVE CONTROLS DIAPHRAGMATIC MOVEMENT.

WHAT IS THE SIGNIFICANCE OF THE BRACHIAL PLEXUS IN LIMB INNERVATION?

THE BRACHIAL PLEXUS PROVIDES MOTOR AND SENSORY INNERVATION TO THE SHOULDER, ARM, FOREARM, AND HAND, MAKING IT ESSENTIAL FOR LIMB MOVEMENT AND SENSATION.

WHICH NERVE FROM THE LUMBAR PLEXUS IS PRIMARILY RESPONSIBLE FOR THIGH FLEXION?

THE FEMORAL NERVE, ORIGINATING FROM THE LUMBAR PLEXUS, PRIMARILY INNERVATES THE ANTERIOR THIGH MUSCLES RESPONSIBLE FOR HIP FLEXION AND KNEE EXTENSION.

HOW DOES THE SACRAL PLEXUS CONTRIBUTE TO LOWER LIMB FUNCTION?

THE SACRAL PLEXUS SUPPLIES NERVES LIKE THE SCIATIC NERVE, WHICH INNERVATES MOST OF THE MUSCLES OF THE POSTERIOR THIGH, LEG, AND FOOT, ENABLING MOVEMENT AND SENSATION IN THE LOWER LIMB.

ADDITIONAL RESOURCES

NERVES: AN IN-DEPTH EXPLORATION OF THE MAJOR NERVES ARISING FROM THE CERVICAL, BRACHIAL, LUMBAR, AND SACRAL PLEXUSES

UNDERSTANDING THE INTRICATE NETWORK OF NERVES THAT EMANATE FROM THE HUMAN BODY'S PLEXUSES IS FUNDAMENTAL FOR CLINICIANS, STUDENTS, AND ANYONE INTERESTED IN NEUROANATOMY. THESE NERVE PLEXUSES SERVE AS CRITICAL HUBS, ORCHESTRATING MOTOR AND SENSORY FUNCTIONS ACROSS THE LIMBS AND TRUNK. IN THIS COMPREHENSIVE REVIEW, WE DELVE INTO THE MAJOR NERVES ORIGINATING FROM THE CERVICAL, BRACHIAL, LUMBAR, AND SACRAL PLEXUSES, PROVIDING AN INSIGHTFUL GUIDE TO THEIR ANATOMY, FUNCTION, AND CLINICAL RELEVANCE.

THE CERVICAL PLEXUS: THE NERVE NETWORK OF THE NECK

THE CERVICAL PLEXUS IS FORMED BY THE ANTERIOR RAMI OF THE FIRST FOUR CERVICAL SPINAL NERVES (C1-C4). IT IS LOCATED DEEP TO THE STERNOCLEIDOMASTOID MUSCLE, SUPPLYING NERVES TO THE NECK, PORTIONS OF THE SCALP, AND PARTS OF THE SHOULDER.

MAJOR NERVES FROM THE CERVICAL PLEXUS

THE CERVICAL PLEXUS PREDOMINANTLY GIVES RISE TO CUTANEOUS NERVES, WITH SOME MOTOR CONTRIBUTIONS. ITS MOST PROMINENT NERVES INCLUDE:

- PHRENIC NERVE (C3-C5): THE STANDOUT NERVE OF THE CERVICAL PLEXUS, THE PHRENIC NERVE IS THE SOLE MOTOR SUPPLY TO THE DIAPHRAGM, MAKING IT VITAL FOR RESPIRATION. IT ALSO PROVIDES SENSORY INNERVATION TO THE CENTRAL PART OF THE DIAPHRAGM, MEDIASTINAL PLEURA, AND PERICARDIUM.
- LESSER OCCIPITAL NERVE (C2): SUPPLIES THE SCALP POSTERIOR AND SUPERIOR TO THE EAR.
- GREAT AURICULAR NERVE (C2-C3): INNERVATES SKIN OVER THE PAROTID GLAND, MASTOID PROCESS, AND PARTS OF THE

AURICLE.

- TRANSVERSE CERVICAL NERVE (C2-C3): PROVIDES SENSATION TO THE ANTERIOR NECK.
- SUPRACLAVICULAR NERVES (C3-C4): SUPPLY THE SKIN OVER THE SHOULDER, CLAVICLE, AND UPPER CHEST.

CLINICAL RELEVANCE: THE PHRENIC NERVE'S ROLE IN BREATHING UNDERSCORES ITS IMPORTANCE; INJURY CAN LEAD TO DIAPHRAGMATIC PARALYSIS. THE OTHER CUTANEOUS NERVES ARE FREQUENTLY INVOLVED IN NECK SURGERIES OR TRAUMA, LEADING TO SENSORY DEFICITS.

THE BRACHIAL PLEXUS: THE NERVE NETWORK OF THE UPPER LIMB

THE BRACHIAL PLEXUS IS A COMPLEX NETWORK FORMED BY THE ANTERIOR RAMI OF SPINAL NERVES C5 THROUGH T1. IT IS SITUATED BETWEEN THE ANTERIOR AND MIDDLE SCALENE MUSCLES IN THE NECK AND GIVES RISE TO ALMOST ALL NERVES THAT INNERVATE THE UPPER LIMB.

MAJOR NERVES FROM THE BRACHIAL PLEXUS

THE BRACHIAL PLEXUS DIVIDES INTO ROOTS, TRUNKS, DIVISIONS, CORDS, AND TERMINAL BRANCHES, BUT FOR CLARITY, WE FOCUS ON THE MAJOR TERMINAL NERVES:

- MUSCULOCUTANEOUS NERVE: ARISES FROM THE LATERAL CORD (C5-C7). IT SUPPLIES THE ANTERIOR COMPARTMENT OF THE ARM, INCLUDING MUSCLES LIKE THE BICEPS BRACHII, BRACHIALIS, AND CORACOBRAHIALIS, FACILITATING FLEXION AT THE ELBOW AND SUPINATION OF THE FOREARM.
- AXILLARY NERVE: ORIGINATES FROM THE POSTERIOR CORD (C5-C6). IT INNERVATES THE DELTOID AND TERES MINOR MUSCLES, CRUCIAL FOR SHOULDER ABDUCTION AND LATERAL ROTATION.
- RADIAL NERVE: ALSO FROM THE POSTERIOR CORD (C5-T1). IT SUPPLIES THE POSTERIOR ARM AND FOREARM MUSCLES, INCLUDING THE TRICEPS BRACHII, ENABLING EXTENSION OF THE ELBOW, WRIST, AND FINGERS, AS WELL AS SENSORY INNERVATION TO THE POSTERIOR ARM, FOREARM, AND LATERAL HAND.
- MEDIAN NERVE: FORMED FROM CONTRIBUTIONS OF BOTH LATERAL AND MEDIAL CORDS (C5-T1). IT SUPPLIES MOST OF THE ANTERIOR FOREARM MUSCLES AND SOME INTRINSIC HAND MUSCLES, FACILITATING FLEXION OF THE WRIST AND FINGERS, AS WELL AS THUMB MOVEMENTS.
- ULNAR NERVE: ARISES FROM THE MEDIAL CORD (C8-T1). IT SUPPLIES INTRINSIC HAND MUSCLES AND SOME FOREARM MUSCLES, ENABLING FINE MOTOR MOVEMENTS AND SENSATION ON THE MEDIAL SIDE OF THE HAND.

CLINICAL RELEVANCE: INJURIES TO THESE NERVES CAN CAUSE CHARACTERISTIC DEFICITS, SUCH AS WRIST DROP WITH RADIAL NERVE INJURY OR HAND CLAWING WITH ULNAR NERVE DAMAGE. THE BRACHIAL PLEXUS IS ALSO A COMMON SITE FOR TRAUMATIC INJURIES, ESPECIALLY DURING CHILDBIRTH OR ACCIDENTS.

THE LUMBAR PLEXUS: THE NERVE NETWORK OF THE LOWER BACK AND THIGH

FORMED BY THE ANTERIOR RAMI OF SPINAL NERVES L1-L4, WITH CONTRIBUTIONS FROM T12 VIA THE SUBCOSTAL NERVE, THE LUMBAR PLEXUS IS SITUATED WITHIN THE PSOAS MAJOR MUSCLE. IT PRIMARILY SUPPLIES THE ANTERIOR AND MEDIAL REGIONS OF THE THIGH.

MAJOR NERVES FROM THE LUMBAR PLEXUS

KEY NERVES INCLUDE:

- GENITOFEMORAL NERVE (L1-L2): PROVIDES SENSORY INNERVATION TO THE SCROTUM IN MALES AND MONS PUBIS IN FEMALES, AS WELL AS THE ANTERIOR THIGH.
- LATERAL FEMORAL CUTANEOUS NERVE (L2-L3): SUPPLIES SENSATION TO THE LATERAL THIGH; ENTRAPMENT CAN CAUSE MERALGIA PARESTHETICA.
- FEMORAL NERVE (L2-L4): THE LARGEST BRANCH OF THE LUMBAR PLEXUS, IT SUPPLIES THE ANTERIOR THIGH MUSCLES (QUADRICEPS, ILIACUS, SARTORIUS) CRUCIAL FOR HIP FLEXION AND KNEE EXTENSION, AND PROVIDES SENSORY INNERVATION TO THE ANTERIOR THIGH AND MEDIAL LEG VIA THE SAPHENOUS NERVE.
- OBTURATOR NERVE (L2-L4): INNERVATES THE MEDIAL THIGH MUSCLES (ADDUCTORS), ENABLING THIGH ADDUCTION, AND SUPPLIES SENSORY INNERVATION TO THE MEDIAL THIGH.

CLINICAL RELEVANCE: DAMAGE TO THE FEMORAL NERVE RESULTS IN WEAKNESS OF THIGH FLEXION AND KNEE EXTENSION, WITH SENSORY LOSS OVER THE ANTERIOR THIGH AND MEDIAL LEG. OBTURATOR NERVE INJURY CAN CAUSE DIFFICULTY IN THIGH ADDUCTION.

THE SACRAL PLEXUS: THE NERVE NETWORK OF THE PELVIS AND POSTERIOR THIGH

THE SACRAL PLEXUS IS FORMED BY THE ANTERIOR RAMI OF SPINAL NERVES L4-S4. IT IS LOCATED ON THE POSTERIOR PELVIC WALL AND GIVES RISE TO NERVES THAT INNERVATE THE PELVIS, PERINEUM, POSTERIOR THIGH, AND LOWER LIMB.

MAJOR NERVES FROM THE SACRAL PLEXUS

PROMINENT NERVES INCLUDE:

- SCIATIC NERVE: THE LARGEST NERVE IN THE BODY, IT ORIGINATES FROM L4-S3. IT SUPPLIES THE POSTERIOR THIGH MUSCLES (HAMSTRINGS), ALL MUSCLES BELOW THE KNEE VIA ITS TIBIAL AND COMMON FIBULAR BRANCHES, AND PROVIDES SENSORY INNERVATION TO PARTS OF THE LEG AND FOOT.
- PUDENDAL NERVE (S2-S4): PROVIDES MOTOR INNERVATION TO THE MUSCLES OF THE PERINEUM AND EXTERNAL GENITALIA, AS WELL AS SENSORY INNERVATION TO THE PERINEUM, EXTERNAL GENITALIA, AND ANAL CANAL.
- SUPERIOR GLUTEAL NERVE (L4-S1): INNERVATES THE GLUTEUS MEDIUS, GLUTEUS MINIMUS, AND TENSOR FASCIAE LATAE, IMPORTANT FOR HIP ABDUCTION AND STABILIZATION DURING GAIT.
- INFERIOR GLUTEAL NERVE (L5-S2): SUPPLIES THE GLUTEUS MAXIMUS, ESSENTIAL FOR HIP EXTENSION AND OUTWARD ROTATION.
- POSTERIOR FEMORAL CUTANEOUS NERVE (S1-S3): PROVIDES SENSATION TO THE POSTERIOR THIGH AND POPLITEAL REGION.

CLINICAL RELEVANCE: SCIATIC NERVE INJURY CAN CAUSE FOOT DROP, LOSS OF SENSATION IN THE LOWER LEG, AND PARALYSIS OF MUSCLES BELOW THE KNEE. DAMAGE TO THE PUDENDAL NERVE CAN LEAD TO INCONTINENCE OR SEXUAL DYSFUNCTION.

CONCLUSION: THE INTERCONNECTED SIGNIFICANCE OF THE NERVE PLEXUSES

THE CERVICAL, BRACHIAL, LUMBAR, AND SACRAL PLEXUSES FORM A SOPHISTICATED AND VITAL NETWORK THAT ORCHESTRATES MOTOR CONTROL AND SENSORY INPUT ACROSS THE HUMAN BODY’S UPPER AND LOWER LIMBS AND TRUNK. RECOGNIZING THE MAJOR NERVES THAT ARISE FROM EACH PLEXUS NOT ONLY ENHANCES ANATOMICAL UNDERSTANDING BUT ALSO INFORMS CLINICAL DIAGNOSIS AND MANAGEMENT OF NERVE INJURIES, ENTRAPMENTS, AND NEUROPATHIES.

SUMMARIZED LIST OF MAJOR NERVES:

PLEXUS	MAJOR NERVES	KEY FUNCTIONS
CERVICAL	PHRENIC, LESSER OCCIPITAL, GREAT AURICULAR, TRANSVERSE CERVICAL, SUPRACLAVICULAR	DIAPHRAGM FUNCTION, NECK AND SHOULDER SENSATION
BRACHIAL	MUSCULOCUTANEOUS, AXILLARY, RADIAL, MEDIAN, ULNAR	UPPER LIMB MOVEMENT AND SENSATION
LUMBAR	FEMORAL, OBTURATOR, LATERAL FEMORAL CUTANEOUS	THIGH FLEXION, EXTENSION, ADDUCTION, SENSATION
SACRAL	SCIATIC, PUDENDAL, SUPERIOR GLUTEAL, INFERIOR GLUTEAL, POSTERIOR FEMORAL CUTANEOUS	LEG MOVEMENT, PELVIC FLOOR, GLUTEAL FUNCTION

UNDERSTANDING THESE NERVES’ ORIGINS AND PATHWAYS IS ESSENTIAL FOR DIAGNOSING NERVE INJURIES, PLANNING SURGICAL INTERVENTIONS, AND APPRECIATING THE NEUROANATOMICAL COMPLEXITY THAT UNDERPINS HUMAN MOVEMENT AND SENSATION.

IN SUMMARY, THE HUMAN BODY’S NERVE PLEXUSES ARE REMARKABLE IN THEIR ORGANIZATION AND FUNCTION. THEIR NERVES ARE NOT MERELY CONDUITS FOR ELECTRICAL SIGNALS BUT ARE INTEGRAL TO OUR ABILITY TO MOVE, FEEL, AND PERFORM DAILY ACTIVITIES. RECOGNIZING THEIR MAJOR BRANCHES AND FUNCTIONS IS A CORNERSTONE OF NEUROAN

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