

The neck is the transitional region between the base of the cranium and the clavicles. It serves as a major conduit for structures passing between the head, thorax, and upper limbs.

1. Overview & Bones of the Neck

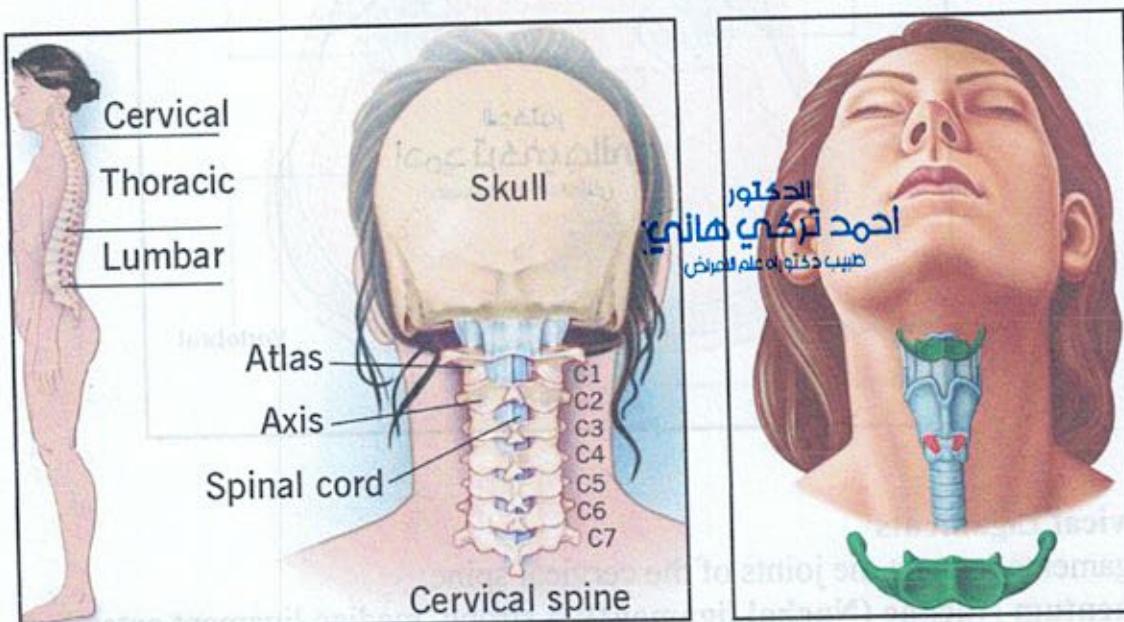
The neck is supported by the Cervical Spine and the Hyoid Bone.

Cervical Vertebrae (C1-C7):

C1 (Atlas): Lacks a body; supports the skull.

C2 (Axis): Features the dens (odontoid process) for rotation.

C7 (Vertebra Prominens): Notable for its long, non-bifid spinous process.



Hyoid Bone: A U-shaped bone at the level of C3. It is unique because it does not articulate with any other bone, suspended instead by muscles and ligaments.

2. Skin and Fasciae of the Neck

The fasciae of the neck organize structures into compartments and provide planes that determine how infections might spread.

Superficial Cervical Fascia

A thin layer of subcutaneous connective tissue.

Contains the Platysma muscle, cutaneous nerves, and superficial veins.

Deep Cervical Fascia

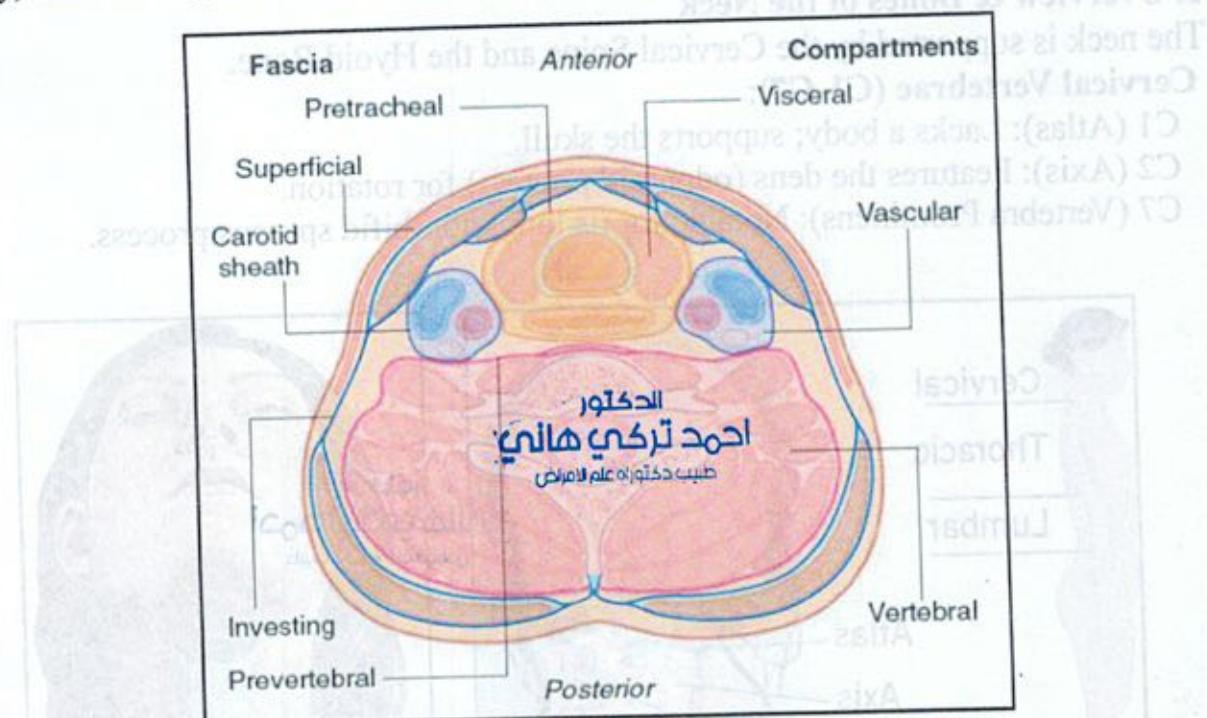
Consists of three layers:

Investing Layer: Surrounds the entire neck; encloses the Trapezius and Sternocleidomastoid (SCM) muscles.

Pretracheal (Visceral) Layer: Limited to the anterior neck. Encloses the thyroid gland, trachea, and esophagus.

Prevertebral Layer: Forms a tubular sheath for the vertebral column and associated muscles (e.g., scalenes).

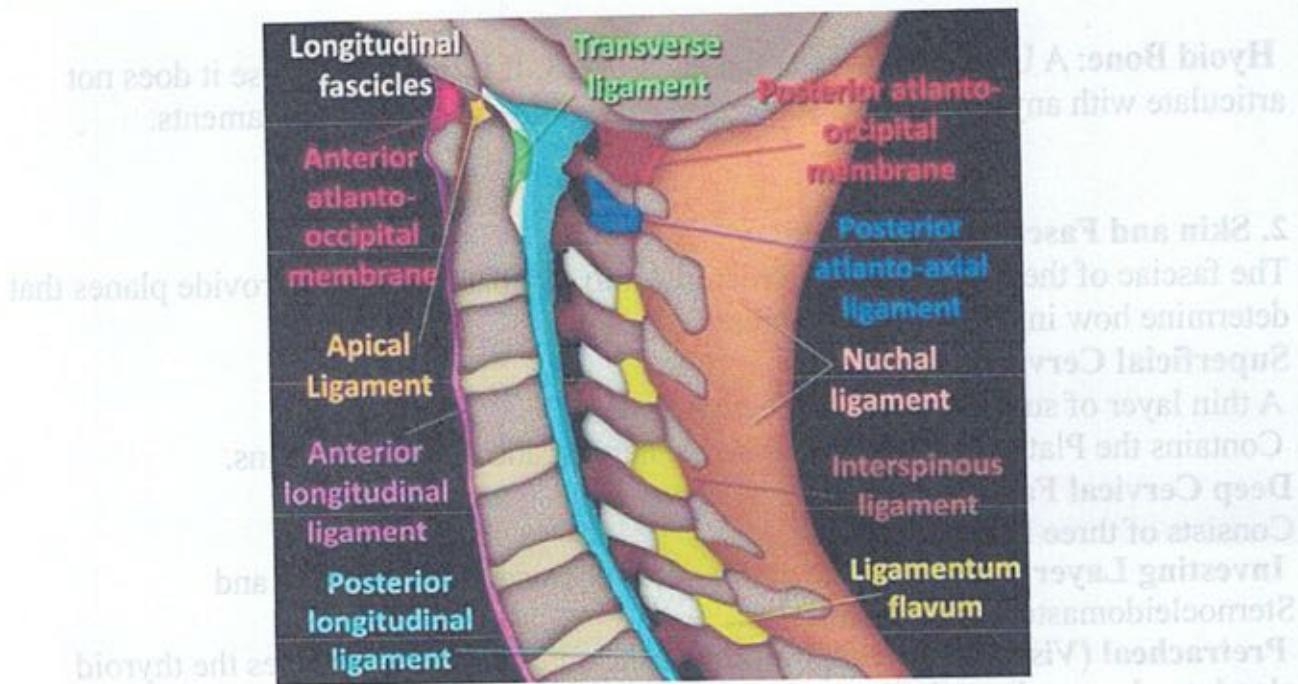
Carotid Sheath: A condensation of the three layers containing the Common Carotid Artery, Internal Jugular Vein, and Vagus Nerve (CN X).



3. Cervical Ligaments

Key ligaments support the joints of the cervical spine:

Ligamentum Nuchae (Nuchal ligament): A strong, median ligament extending from the external occipital protuberance to the C7 spinous process; provides muscle



attachment.

Transverse Ligament of Atlas: Holds the dens of the axis against the atlas, crucial for spinal cord protection.

4. Muscles of the Neck

Neck muscles are categorized by their location and depth.

Key Neck Muscles

Sternocleidomastoid (SCM): Action: Bilaterally flexes the neck; unilaterally rotates the head to the opposite side.

Innervation: Accessory Nerve (CN XI).

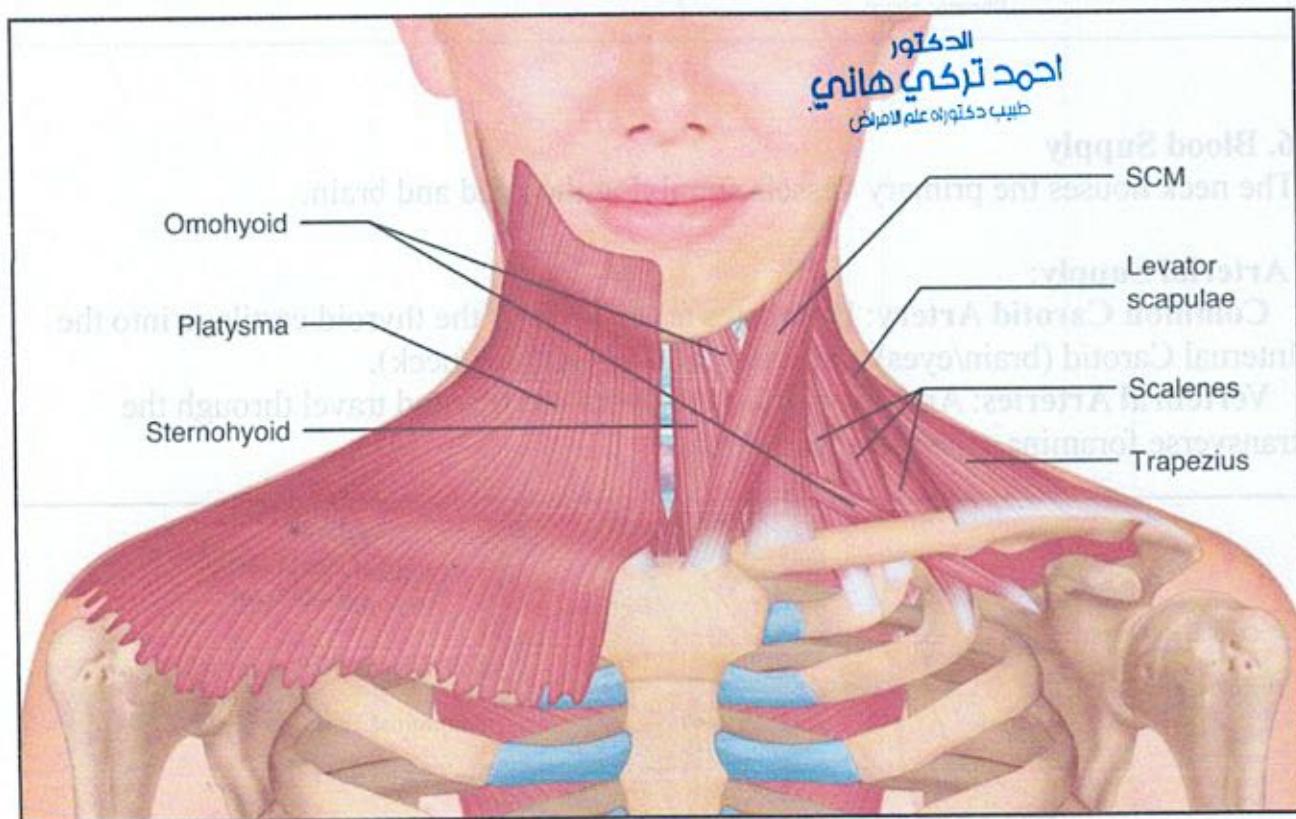
Trapezius:

Action: Elevates, rotates, and retracts the scapula.

Innervation: Accessory Nerve (CN XI).

Suprathyroid Muscles: (e.g., Digastric, Mylohyoid) Elevate the hyoid during swallowing.

Infrathyroid (Strap) Muscles: (e.g., Sternohyoid, Omohyoid) Depress the hyoid.



5. Cervical Plexus

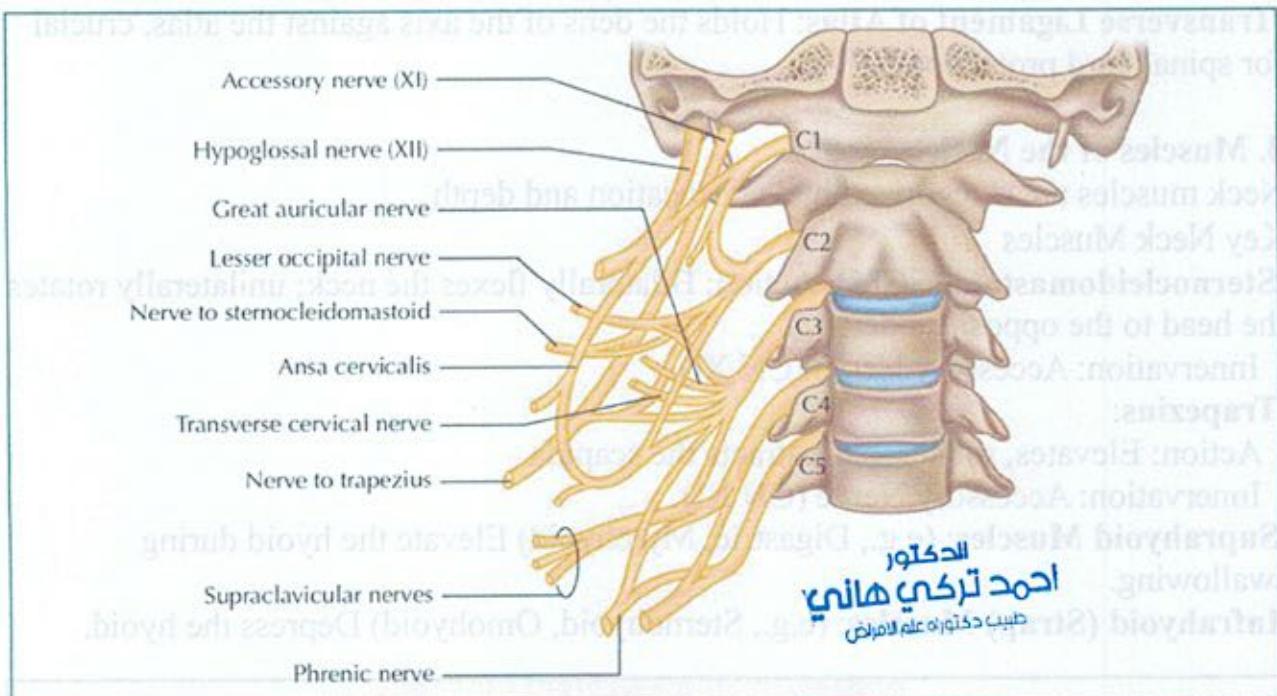
The cervical plexus is formed by the anterior rami of C1-C4 spinal nerves.

Cutaneous Branches: Emerge from the "nerve point of the neck" (posterior border of SCM) to provide sensation to the scalp, ear, and neck.

Motor Branches:

Phrenic Nerve (C3, C4, C5): "C3, 4, 5 keep the diaphragm alive."

Ansa Cervicalis: A loop of nerves supplying the infrathyroid muscles.



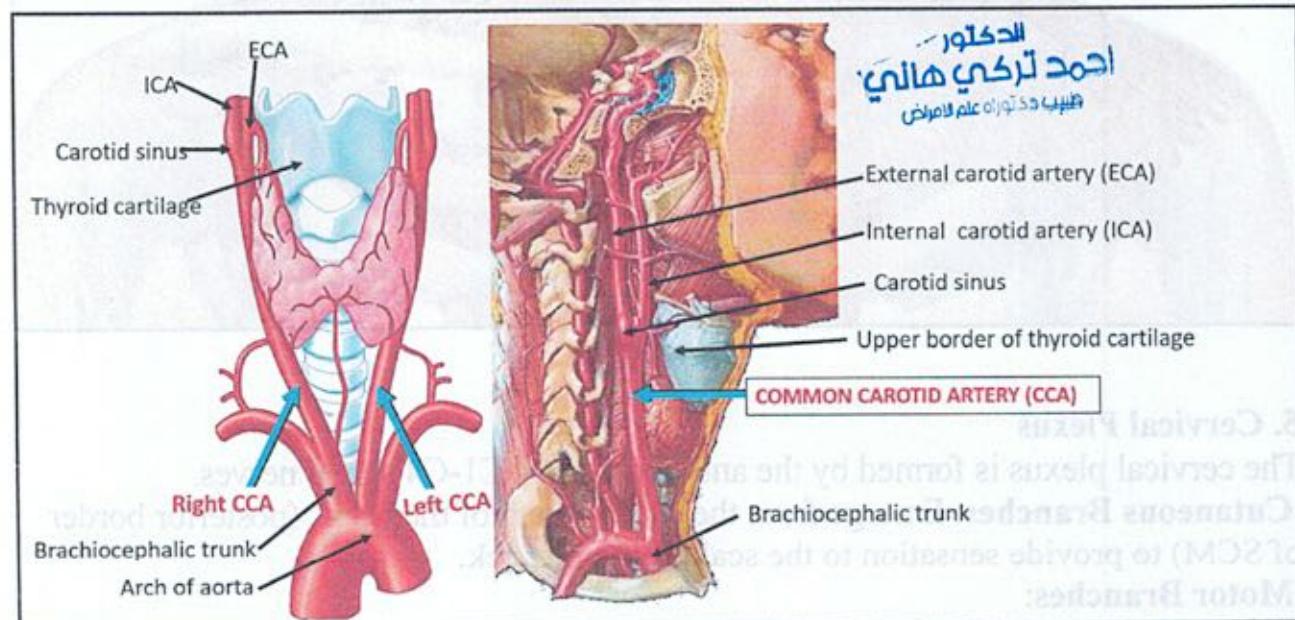
6. Blood Supply

The neck houses the primary vessels supplying the head and brain.

Arterial Supply:

Common Carotid Artery: Bifurcates at the level of the thyroid cartilage into the Internal Carotid (brain/eyes) and External Carotid (face/neck).

Vertebral Arteries: Arise from the subclavian arteries and travel through the transverse foramina of cervical vertebrae.



Venous Drainage:

Internal Jugular Vein (IJV): Drains the brain and deep neck.

External Jugular Vein (EJV): Drains the scalp and face; runs superficial to the SCM.

