

# The Neck/ Part II

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## Superficial and Deep Cervical Fascia

- The superficial fascia of the neck forms a thin layer that encloses the cutaneous nerves, the platysma muscle, the superficial veins, and the superficial lymph nodes.
- It is composed of superficial thin fatty layer and deep membranous layer as the superficial fascia in the rest of the body except for the amount of fat.
- The deep fascia is a fibrous sheet that enclose the muscles, the vessels, and the viscera of the neck, it includes multiple layers; **the investing layer of deep cervical fascia, pretracheal layer, prevertebral layer and carotid sheath.**

- **Investing Layer (Investing Deep Fascia)**

The investing layer is a superficial layer of the deep fascia that encircles the neck; it covers the anterior and posterior triangles. It splits to enclose the trapezius and the sternocleidomastoid muscles. It splits to form the capsule around the submandibular salivary gland.

- **Pretracheal Layer (Pretracheal Fascia; Thyroid Capsule)**

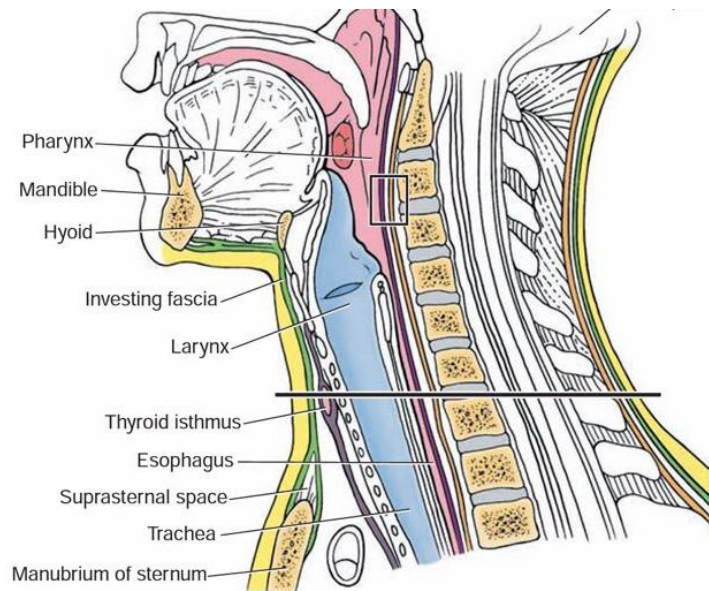
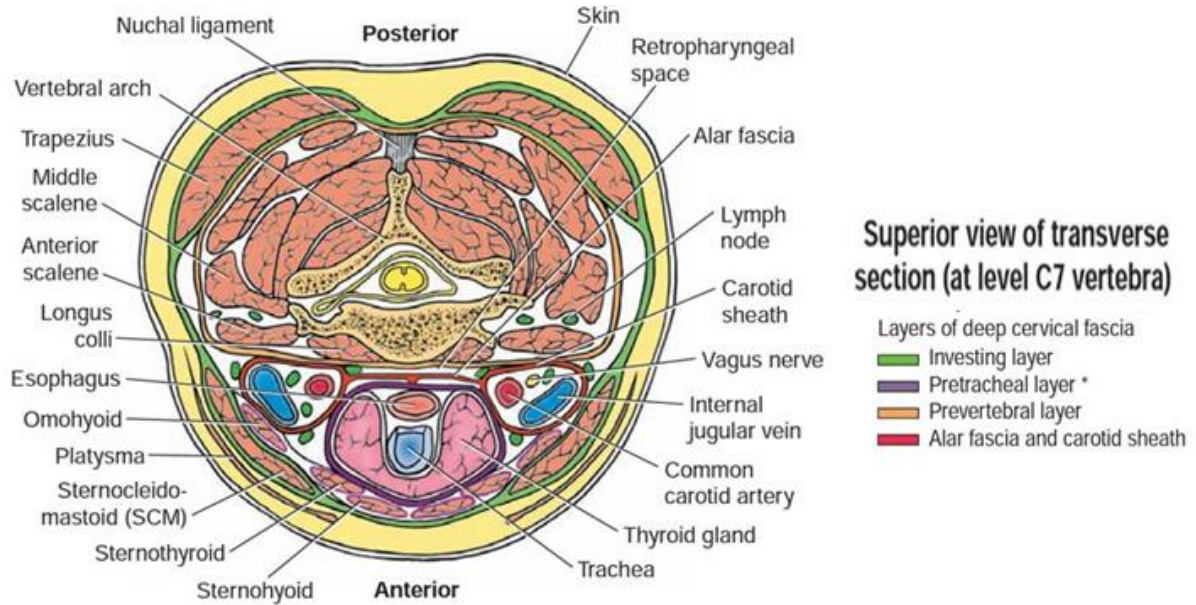
The pretracheal layer is a thin cylindrical layer that is attached to the thyroid cartilage from above. It surrounds the thyroid, larynx, and trachea. It encloses the infrahyoid muscles.

- **Prevertebral Layer (Prevertebral Fascia)**

The prevertebral layer is encircling the prevertebral muscles and the vertebral column. This fascia forms the floor of the posterior triangle.

**Carotid Sheath**

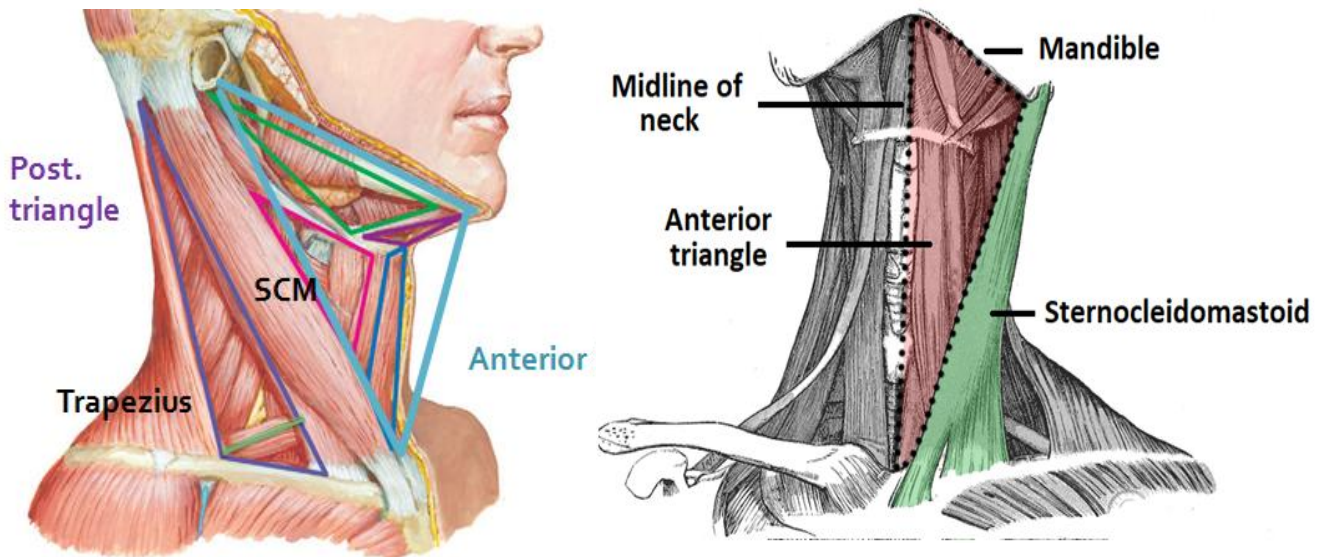
The carotid sheath is a contribution from the three layers of the prevertebral, the pretracheal, and the investing layers of the deep fascia that surround the common carotid arteries, the internal jugular vein, the vagus nerve, and the deep cervical lymph nodes.



**Cervical fascia in midsagittal view**

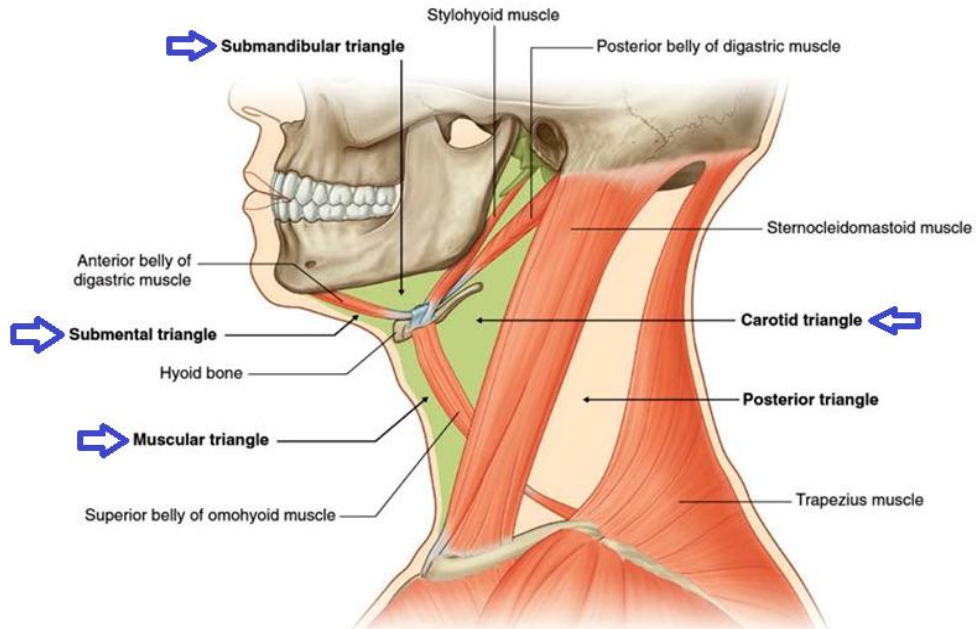
## Triangles of the Neck

The sternocleidomastoid muscle divides the neck into large anterior and posterior triangles; each of these contains smaller triangular spaces:



### Anterior Triangle

- The boundaries are the sternocleidomastoid muscle, the midline of the neck, and the lower margin of the body of the mandible.
- Roof (lateral relation): Skin, superficial fascia, Platysma muscle and Investing layer of deep cervical fascia.
- **Subdivisions are:**  
**Submental triangle, Submandibular (digastric) triangle, Muscular triangle and Carotid triangle**



### 1. Submental Triangle

✓ **Boundaries:**

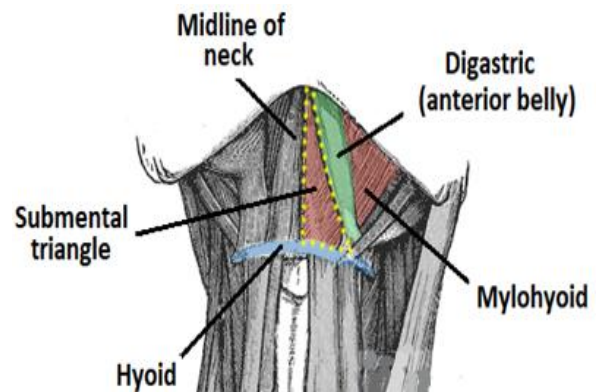
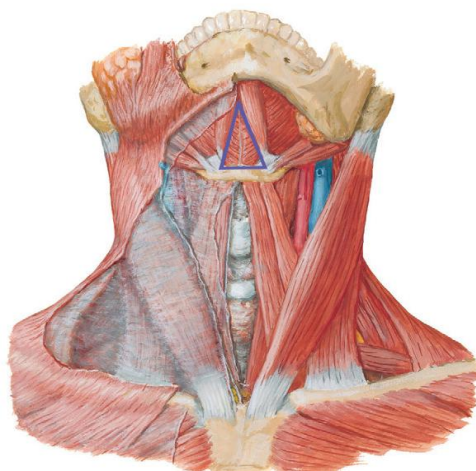
Anterior midline, hyoid bone, anterior belly of digastric.

✓ **Floor:**

Mylohyoid muscle.

✓ **Contents:**

Submental lymph nodes, anterior jugular vein.



- **Clinical Note**

Submental space abscess: is one of the orofacial space infections, caused by infection either directly from the lower incisor or from the submental lymph nodes which drain the tip of the tongue, anterior floor of the mouth and lower incisors.

**2- Submandibular (digastric) triangle:**

✓ **Boundaries:**

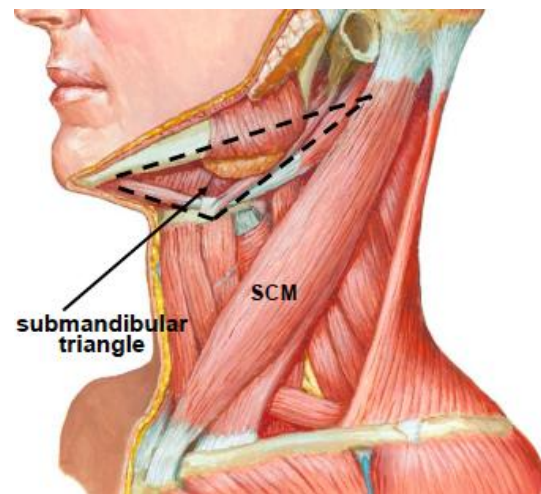
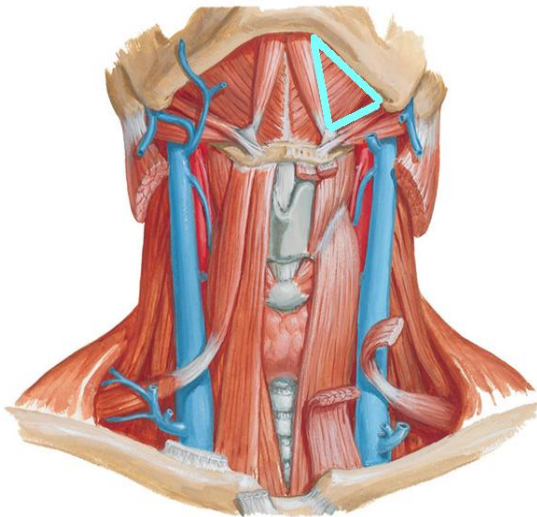
Lower margin of body of the mandible, anterior belly of digastric and posterior belly of digastric.

✓ **Floor:**

Mylohyoid and Hyoglossus muscles

✓ **Contents:**

submandibular gland, submandibular lymph nodes, Facial artery, facial vein, Hypoglossal nerve.



- **Clinical Note**

Submandibular space abscess: is very common space infection, caused by infection of the Submandibular lymph nodes, or direct spread of the abscess from the lower posterior teeth or could be spread from other spaces as sublingual space.

### **3- Muscular triangle**

✓ **Boundaries:**

- Midline
- Anterior border of sternocleidomastoid
- Superior belly of the omohyoid.

✓ **Contents:**

- Infrahyoid muscles (sternohyoid, sternothyroid and thyrohyoid)
- Thyroid and parathyroid glands.

### **4- Carotid triangle:**

✓ **Boundaries:**

- Posterior belly of digastric
- Anterior border of sternocleidomastoid
- Superior belly of the omohyoid

✓ **Contents:**

- Carotid sheath (common carotid artery, Internal Jugular vein and Vagus nerve)
- Hypoglossal nerve
- Deep cervical lymph nodes

## **Posterior Triangle**

- This is an area enclosed between sternomastoid anteriorly and trapezius muscle posteriorly; its apex lies high up at the back of the skull on the superior nuchal line where both muscles meet

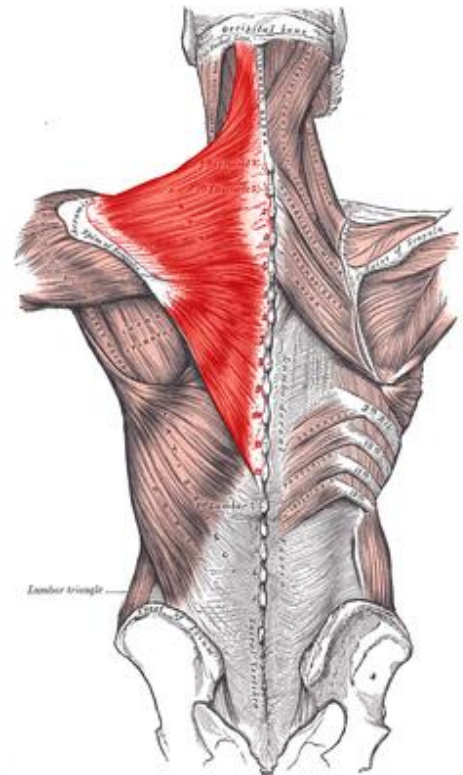
## • Trapezius Muscle

It is one of the superficial muscles of the back:

- **Origin:** from (occipital bone, ligamentum nuchae and spines of all thoracic vertebrae.

**Ligamentum nuchae:** is a fibrous band (ligament) that extends from the external occipital protuberance over the spines of cervical vertebrae to C7, nuchae means neck.

- **Insertion:** Lateral third of the clavicle and spine of the scapula
- **Nerve supply:** Accessory nerve (CN XI)
- **Action:** elevation of the scapula (shoulder), pulling of the scapula medially



## • The boundaries of posterior triangle are:

- Anteriorly : the posterior border of sternocleidomastoid muscle
- Posteriorly : the anterior border of trapezius muscle
- Inferiorly: the middle third of the clavicle

## • Roof is formed by:

Skin, Superficial fascia, Platysma (inferior part of the triangle) and Investing layer of deep cervical fascia

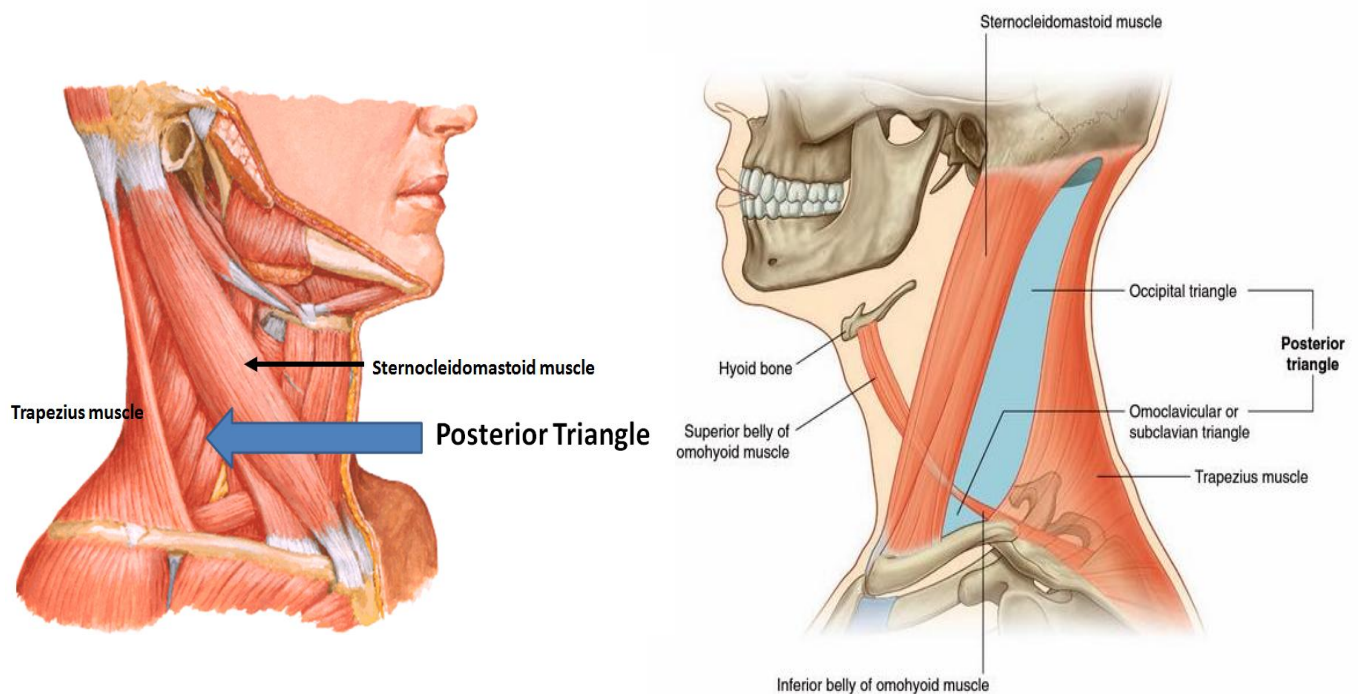
## • Floor is formed by:

The prevertebral fascia and prevertebral muscles (Scalenus anterior, Scalenus medius, Levator Scapulae, Splenius capitis and Semispinalis Capitis)

## • Subdivisions:

formed by the inferior belly of Omohyoid muscle.

- **Occipital triangle:**
  - ✓ Boundaries: Sternocleidomastoid, trapezius, inferior belly of omohyoid
- **Omoclavicular (subclavian) triangle:**
  - ✓ Boundaries: Sternocleidomastoid, inferior belly of omohyoid, clavicle.
- **Contents:**
  - Arteries: occipital artery (branch of external carotid artery), third part of subclavian artery
  - Nerves: accessory nerve (CN XI), Cervical plexus and brachial plexus
  - Lymph nodes: occipital lymph nodes and supraclavicular lymph nodes



**This is the End of the Lecture – Good Luck**