

Human Anatomy

Lec.13,14

Triangles of the neck and Facia

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✚ Anterior Triangle

Borders of the anterior triangle

- Posteriorly: Anterior border of the sternocleidomastoid
- Superiorly: Inferior border of the mandible
- Anteriorly: Midline of the neck

Using the hyoid as a keystone, the omohyoid and digastric muscles subdivide **the anterior triangle into 4 triangles:**

- Submental triangle.
- Submandibular triangle.
- Carotid triangle.
- Muscular triangle.

All of the triangles within the anterior triangle are paired except for the submental triangle, which spans the right and the left sides of the neck (**Figure 1**).

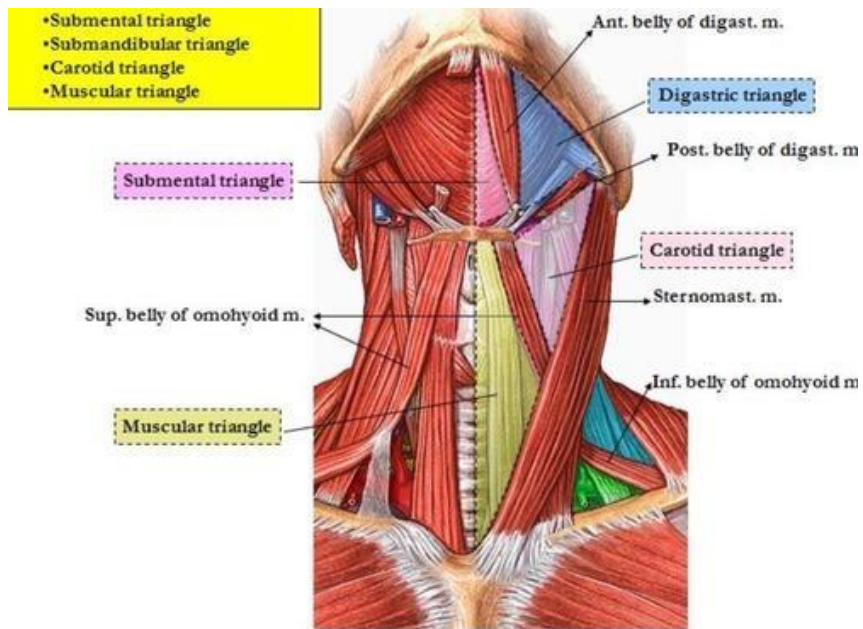
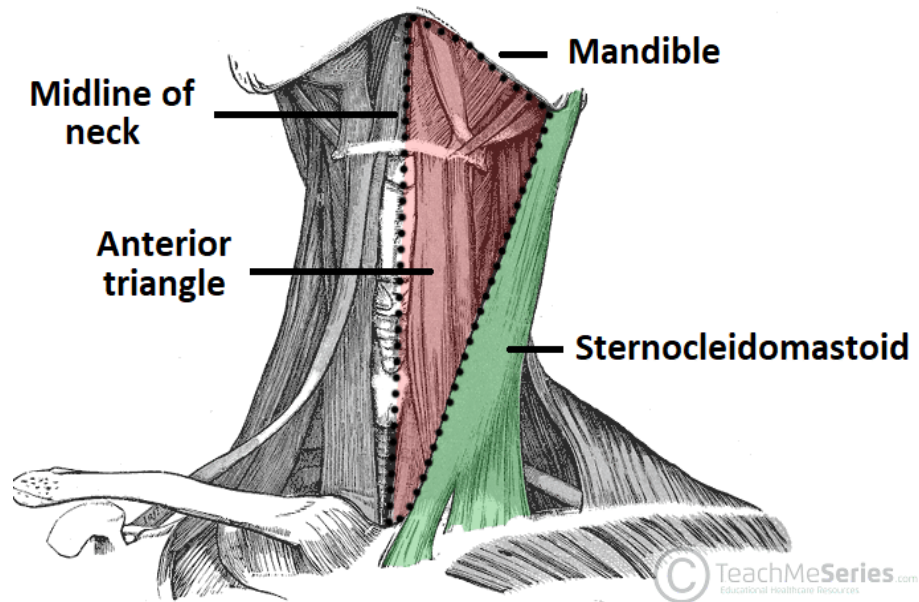


Figure 1: Anterior triangle subdivisions



✚ Submental Triangle

Borders of the submental triangle (**Figure 2**):

- **Inferiorly:** Body of the hyoid bone.
- **laterally:** Anterior belly of the digastric muscle on right and left side
- **Apex:** symphysis mentis of the mandibular bone.

The floor of the triangle is composed of the **two mylohyoid muscles** which met up at the median raphe.

The roof is made of the:

- Skin.
- Superficial fascia with platysma.
- Deep cervical fascia.

The contents of Submental Triangle include **anterior jugular veins and submental lymph nodes.**

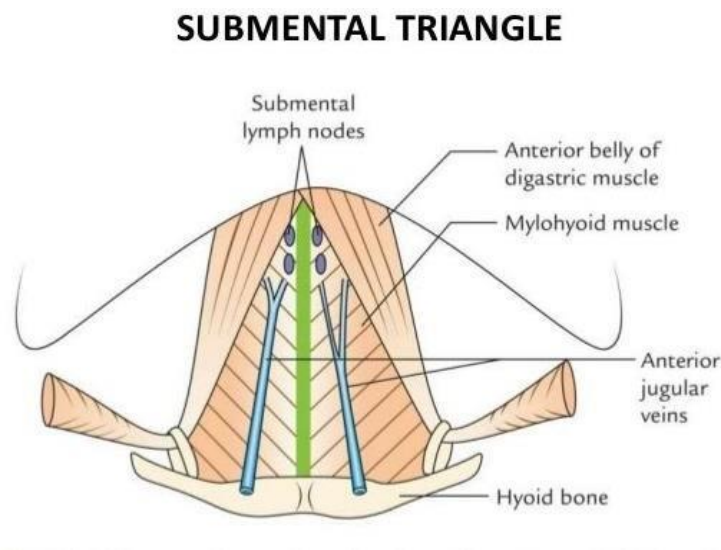


Figure 2: Boundaries and contents the Submental triangle

✚ Submandibular triangle (the digastric triangle)

Borders of the submandibular triangle (**Figure 3**):

- **Superiorly:** Inferior border of the mandible
- **Posteriorly:** Posterior belly of digastric and stylohyoid muscles
- **Anteriorly:** Anterior belly of digastric

The Floor of the triangle is composed of

- Hyoglossus muscle.
- Mylohyoid muscle.
- Middle constrictor. muscle.

The Roof is made of the:

- Skin.
- Superficial fascia with platysma.
- Deep cervical fascia (**Table 1**).

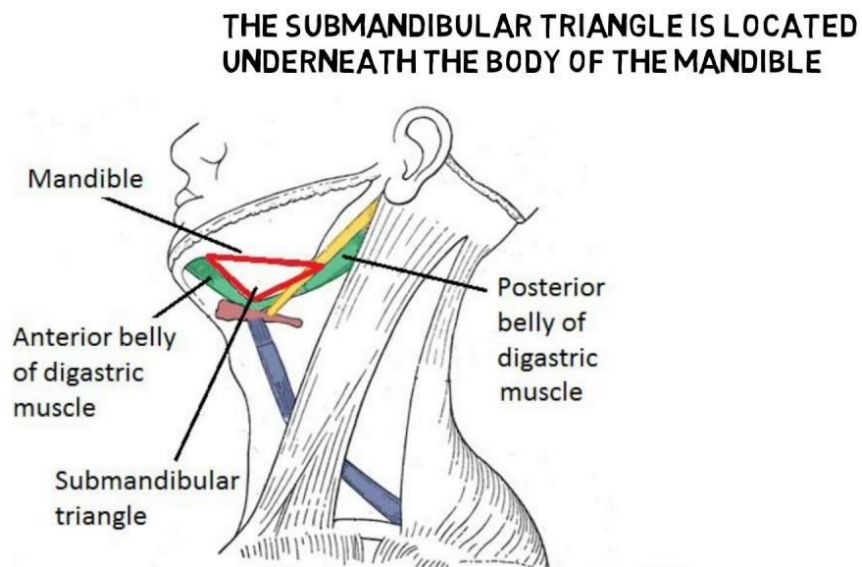


Figure 3: Boundaries and contents of the submandibular triangle

Table (1): Contents of the Submandibular triangle

Arteries	Veins	Nerves	Structures
Facial (deep to the gland) submental Lingual (Small portion)	Facial (superficial to the gland) submental Lingual (Small portion)	Hypoglossal (CN XII) Mylohyoid	Submandibular gland Submandibular lymph node Inferior portion of the parotid gland

✚ Carotid triangle

It is named because parts of all the three carotid arteries are located within it.

Borders of the carotid triangle (**Figure 4**):

- **Posteriorly:** Anterior border of the sternocleidomastoid muscle.
- **Superiorly:** Posterior belly of digastric muscle.
- **Anteroinferiorly:** Superior belly of omohyoid muscle.

The Floor of the triangle is composed of the:

- Hyoglossus muscle.
- Thyrohyoid muscle.
- Middle constrictor muscle of pharynx.
- Inferior constrictor muscle of pharynx.

The Roof is made of the:

- Skin.
- Superficial fascia which contains platysma and transverse cervical nerve.
- Investing layer of deep cervical fascia (**Table 2**).

Table (2): The contents of the carotid triangle.

Arteries	Veins	Nerves	Structures
Common carotid(with carotid body) Internal carotid External carotid Superior thyroid (with superior laryngeal branch) Facial Lingual Ascending pharyngeal Occipital	Internal jugular Common facial Lingual Superior thyroid Middle thyroid	Vagus External laryngeal Internal laryngeal Spinal accessory (CNXI) (small portion) Hypoglossal (CNXII) Ansacervicalis(superior limb) Sympathetic trunk	Larynx (small) Thyroid (small portion) Carotid sheath

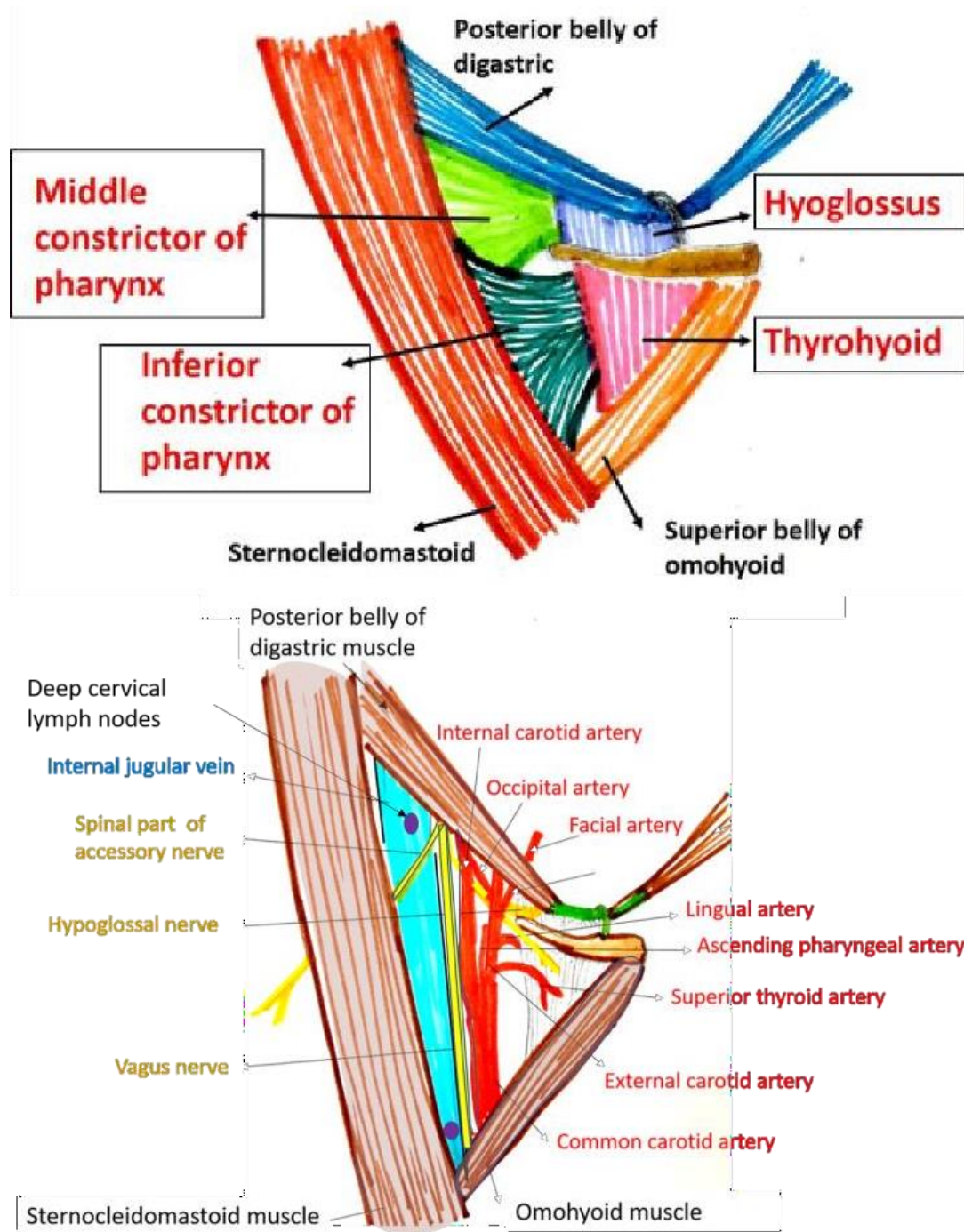


Figure 4: Boundaries and contents of the carotid triangles

✚ Muscular triangle

Borders of the muscular triangle (Figure 5):

- **Inferiorly:** Anterior border of the sternocleidomastoid.
- **Superiorly:** Superior belly of omohyoid.
- **Anteriorly:** Midline.
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✚ Floor of the triangle is composed of the:

- Sternohyoid muscle.
- Sternothyroid muscle.
- Thyrohyoid muscle.

✚ Roof of the triangle is made of the:

- Skin.
- Superficial fascia with platysma.
- Deep cervical fascia **Table (3)**.

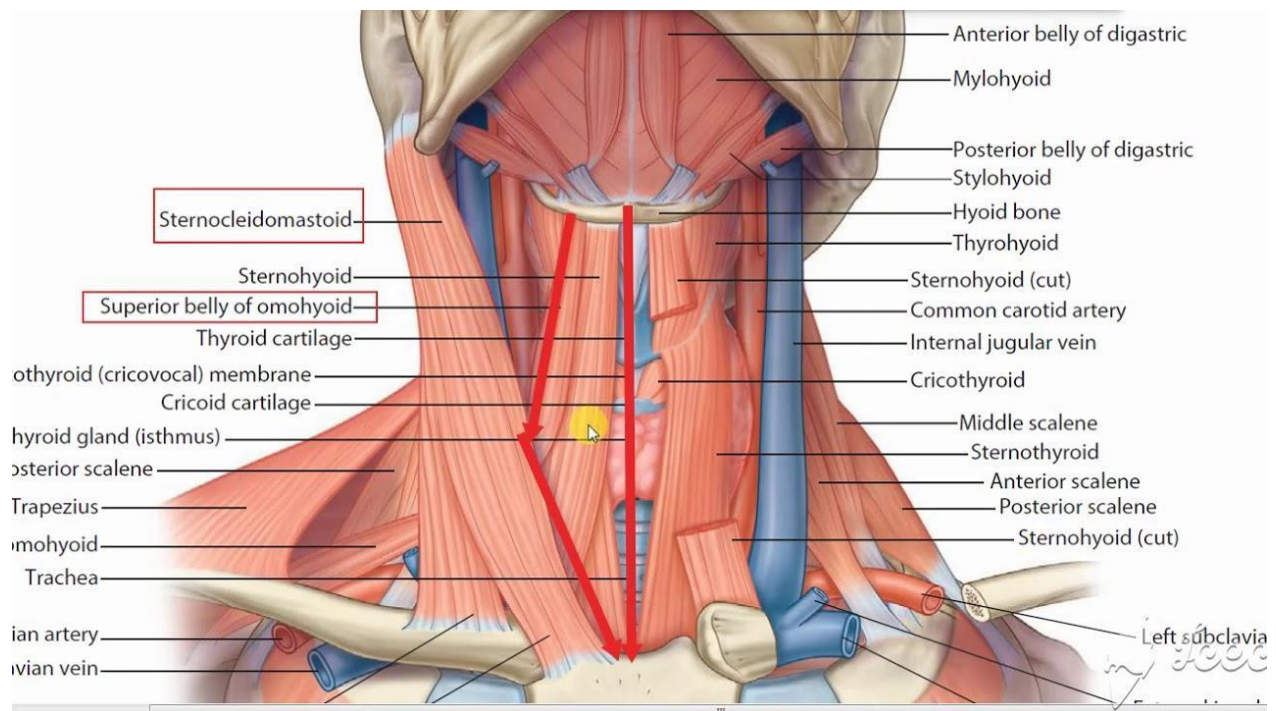


Figure 5: Boundaries and contents of the muscular triangle

Table (3): The contents of the muscular triangle

Arteries	Veins	Nerves	Structures
Superior thyroid	Anterior jugular Inferior thyroid	Ansa cervicalis	Larynx (small portion) Thyroid (Small portion)

Posterior Triangle

Borders of the posterior triangle (**Figure 6&7**):

- **Anteriorly:** Posterior border of the sternocleidomastoid
- **Inferiorly:** Middle third of the clavicle
- **Posteriorly:** Anterior border of the trapezius

The triangle is subdivided into 2 triangles by the omohyoid muscle:

- **Omoclavicular (also called the supraclavicular (subclavian) triangle).**
- **Occipital.**

Roof of the posterior triangle includes:

- Skin.
- Superficial fascia with platysma.
- Superficial (investing) layer of deep cervical fascia.

Floor of the posterior triangle includes the following muscles:

- Semispinalis capitis.
- Splenius capitis.
- Levator scapulae.
- Posterior scalene.
- Middle scalene.
- Anterior scalene.

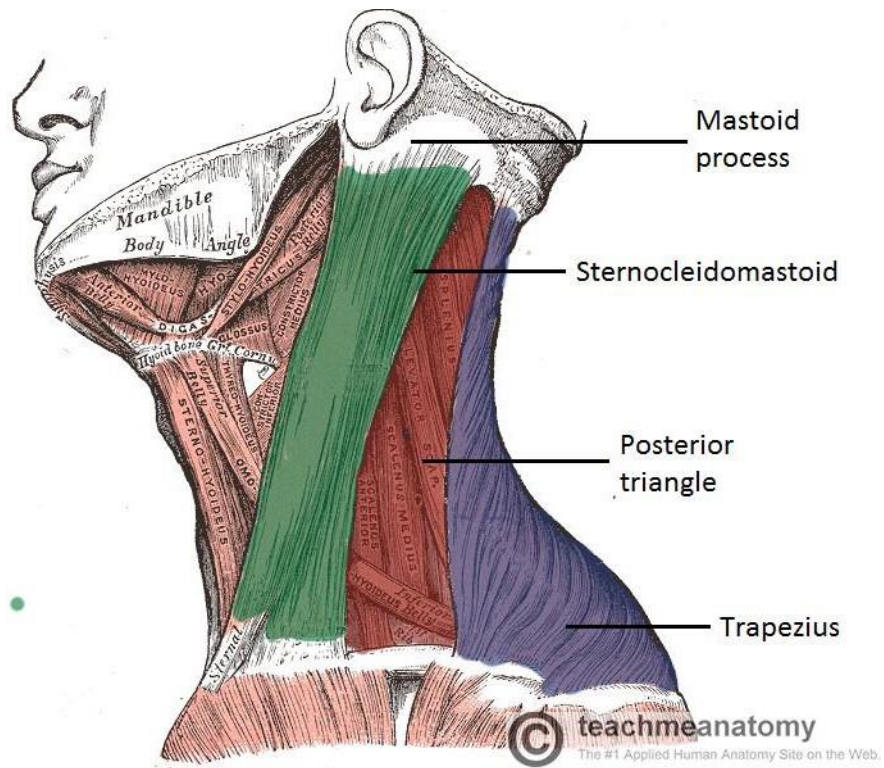
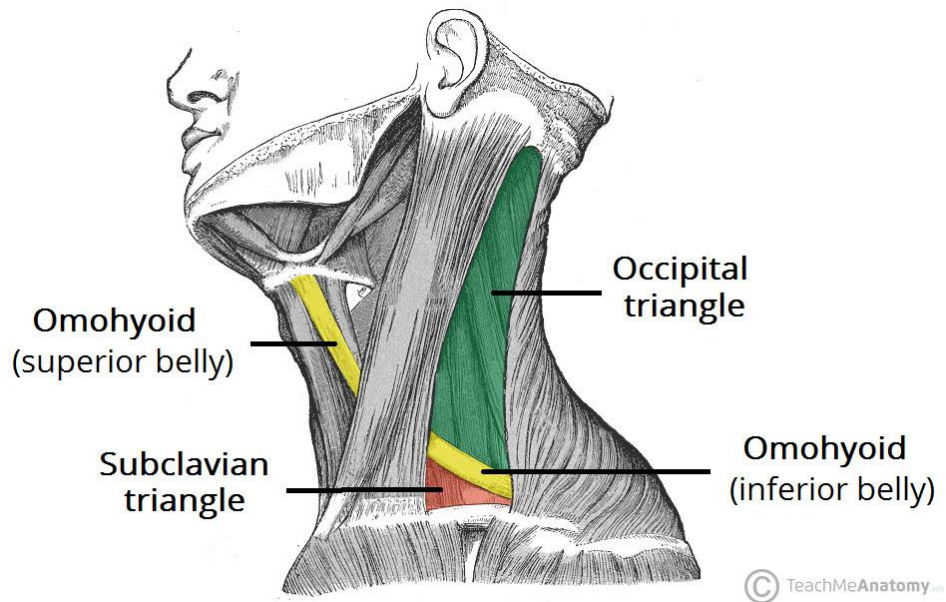


Figure 6: Boundaries and contents of the posterior triangle.



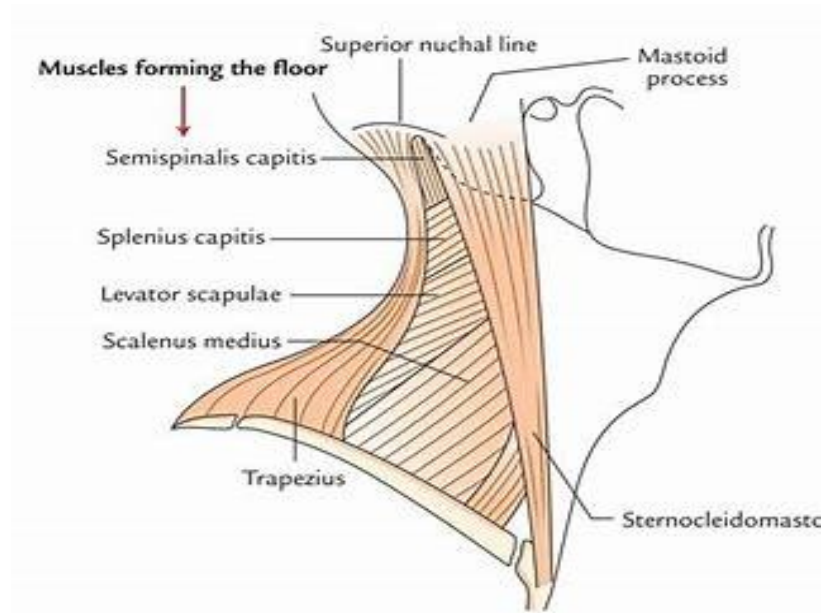


Figure 7: Muscles that form the posterior triangle

✚ Neck Muscles

The muscles of the neck are illustrated in (Figures 6, 7, and 8). The sternocleidomastoid muscle and the muscles anterior to it, plus the inferior belly of the omohyoid, are elongated bands and are collectively referred to as the strap muscles of the neck. Those superior to the hyoid bone are the suprahyoid muscles (**anterior and posterior bellies of the digastric, mylohyoid, geniohyoid, genioglossus, stylohyoid**); those inferior are the infrahyoid muscles (omohyoid, sternohyoid, sternothyroid, thyrohyoid). Others are the deep neck muscles (scalenus anterior, scalenus medius, scalenus posterior, longus colli, longus capitis).

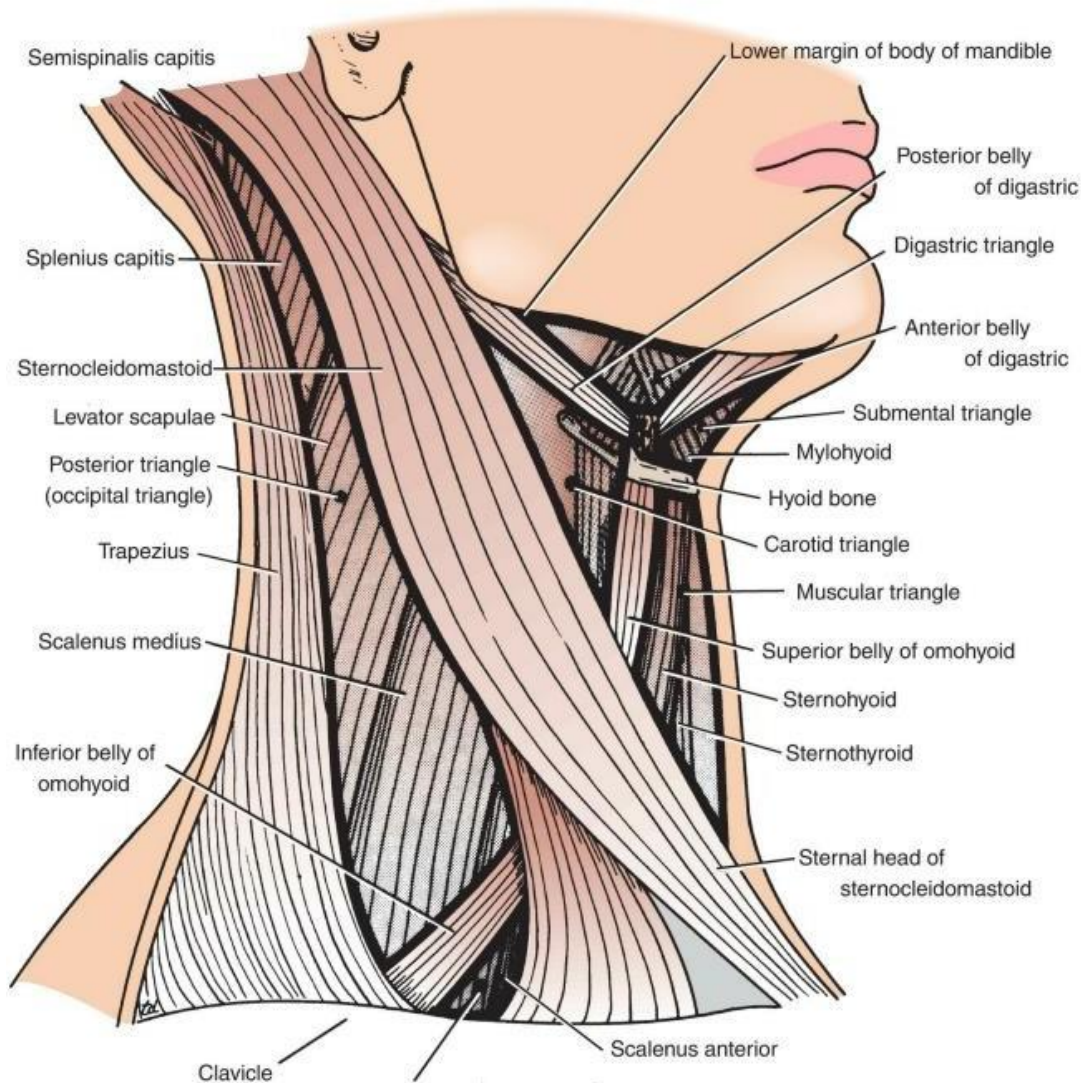


Figure 8: Anterior and posterior triangles of the neck and the muscles of the neck

✚ **Facia of the Neck**

In the neck, these layers of fascia not only act to support internal structures, but also help to **compartmentalize** structures of the neck. There are two fascia in the neck – the **superficial** cervical fascia and the **deep** cervical fascia (**Figure 9**).

the various fascial planes determine how infection can extend from the region of the floor of the mouth to the larynx or from the base of the skull into the thoracic cavity.

✚ Deep Cervical Fascia

The **deep cervical fascia** lies, as its name suggests, ‘deep’ to the superficial fascia and platysma muscle. This fascia is organised into several layers. These layers act like a **shirt collar**, supporting the structures and vessels of the neck.

The layers of the deep cervical fascia in more detail (superficial to deep):

❖ Investing Layer

The **investing layer** is the most superficial of the deep cervical fascia.

It surrounds all the structures in the neck. Where it meets the **trapezius** and **sternocleidomastoid** muscles, it splits into two, completely surrounding them.

The investing fascia can be thought of as a tube; with superior, inferior, anterior and posterior attachments:

- **Superiorly** – attaches to the external occipital protuberance and the superior nuchal line of the skull.
- **Inferiorly** – attaches to the spine and acromion of the scapula, the clavicle, and the manubrium of the sternum.
- **Anteriorly** – attaches to the hyoid bone.
- **Posteriorly** – attaches along the nuchal ligament of the vertebral column.

Pretracheal Layer (Pretracheal Fascia; Thyroid Capsule)

The pretracheal layer is a thin layer that is attached above to the laryngeal cartilages. It surrounds the **thyroid and the parathyroid glands**, forming a sheath for them, and encloses the infrahyoid muscles.

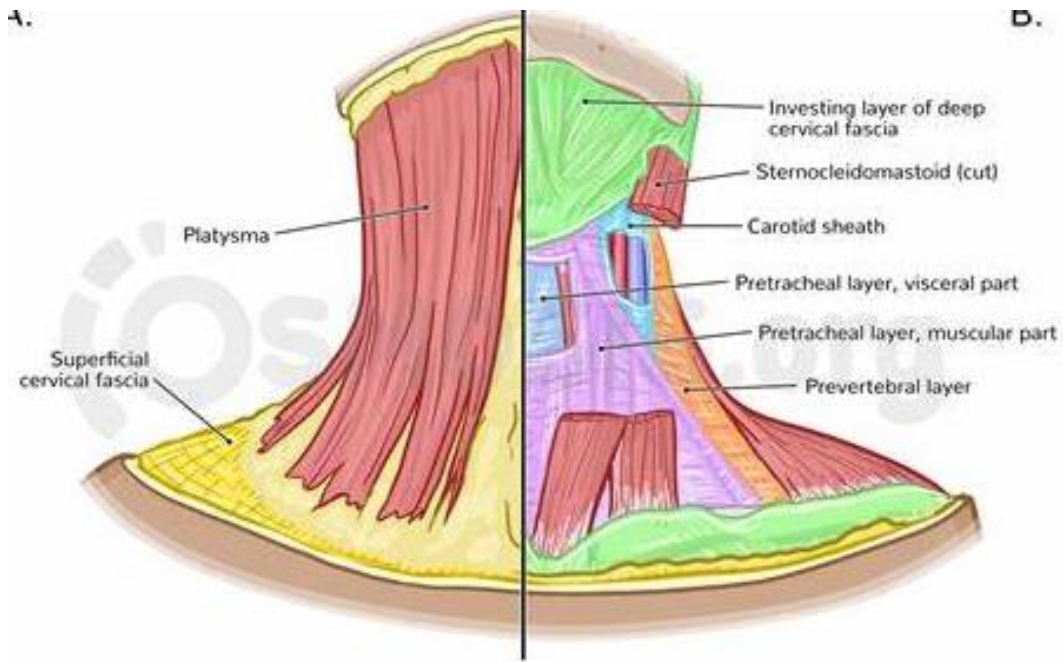


Figure 9: Fascia of the neck

References

- ✚ Snell RS. Clinical Anatomy by Regions. 9th edition. Philadelphia, PA: Lippincott Williams & Wilkins, 2012.
- ✚ <https://teachmeanatomy.info>.