

ANATOMY

ANATOMY

THE BASICS

HEAD

NEUROANATOMY

NECK

THORAX

BACK

UPPER LIMB

LOWER LIMB

ABDOMEN

PELVIS

3D BODY

QUICK QUIZ



ANATOMY

NECK

NECK

AREAS	BONES	ORGANS	MUSCLES	NERVES	VESSELS	OTHER
<ul style="list-style-type: none">• Anterior Triangle• Posterior Triangle	<ul style="list-style-type: none">• Cervical Spine• Hyoid Bone	<ul style="list-style-type: none">• Pharynx• Larynx• Oesophagus• Thyroid Gland• Parathyroid Glands	<ul style="list-style-type: none">• Suboccipital• Suprahyoids• Infrahyoids• Scalenes	<ul style="list-style-type: none">• Phrenic Nerve• Cervical Plexus	<ul style="list-style-type: none">• Arterial Supply• Venous Drainage• Lymphatics	<ul style="list-style-type: none">• Fascial Layers



NECK

Areas of the Neck

1. Anterior Triangle
2. Posterior Triangle

Anterior Triangle

Contents

1 Borders

2 Contents

3 Subdivisions

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3.1.1 Clinical Relevance: Medical Uses of the
Carotid Triangle

3.2 Submental Triangle

3.3 Submandibular Triangle

3.4 Muscular Triangle

Anterior Triangle

- The **anterior triangle** is a region located at the front of the neck.
- In this article, we shall look at the anatomy of the anterior triangle of the neck – its borders, contents and subdivisions.
- *Note: it is important to note that all triangles mentioned here are paired; they are located on both the left and the right sides of the neck.*

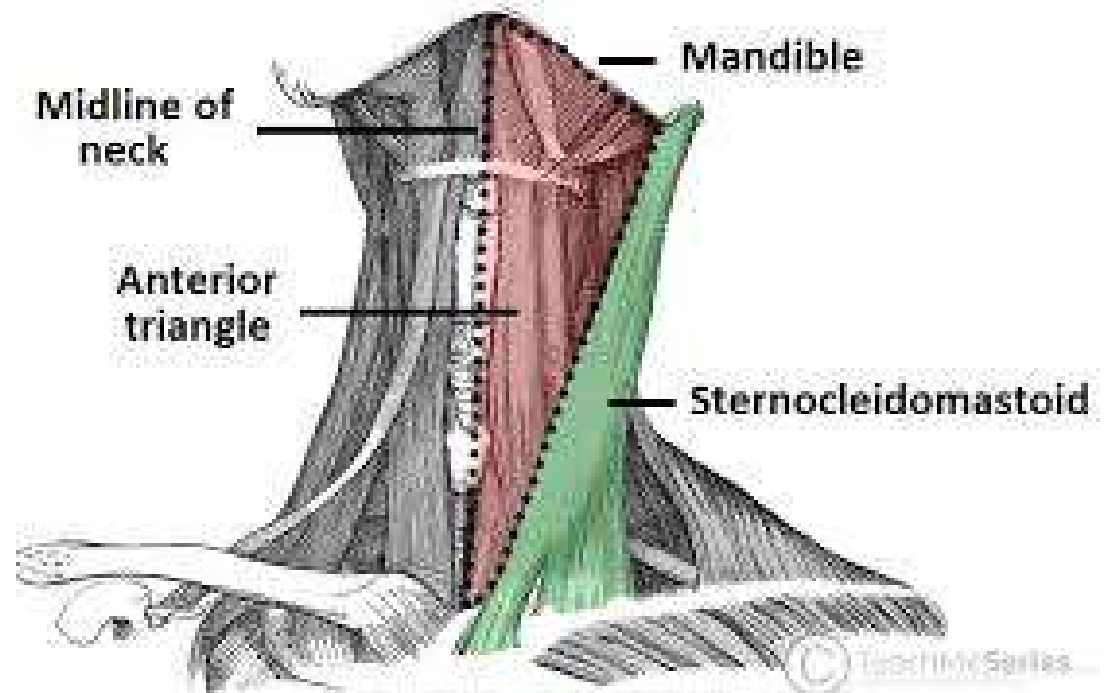
Anterior Triangle

Borders

- The anterior triangle is situated at the front of the neck. It is bounded:
- **Superiorly** – inferior border of the mandible (jawbone).
- **Laterally** – anterior border of the sternocleidomastoid.
- **Medially** – sagittal line down the midline of the neck.
- **Investing fascia** covers the roof of the triangle, while visceral fascia covers the floor. It can be subdivided further into four triangles – which are detailed later on in this chapter.

Anterior Triangle

Borders



Anterior Triangle

Contents

The contents of the **anterior triangle** include muscles, nerves, arteries, veins and lymph nodes.

- The muscles in this part of the neck are divided as to where they lie in relation to the [hyoid bone](#). The **suprahyoid muscles** are located superiorly to the hyoid bone, and Infrahyoid inferiorly.

Anterior Triangle

Suprahyoid Muscles	Infrahyoid Muscles
Stylohyoid Digastric Mylohyoid Geniohyoid	Omohyoid Sternohyoid Thyrohyoid Sternothyroid

Anterior Triangle

There are several important vascular structures within the anterior triangle. The **common carotid artery** bifurcates within the triangle into the external and internal carotid branches. The internal jugular vein can also be found within this area – it is responsible for venous drainage of the head and neck.

- Numerous **cranial nerves** are located in the anterior triangle. Some pass straight through, and others give rise to branches which innervate some of the other structures within the triangle. The cranial nerves in the anterior triangle are the facial [VII], glossopharyngeal [IX], vagus [X], accessory [XI], and hypoglossal [XII] nerves.

Anterior Triangle

Subdivision

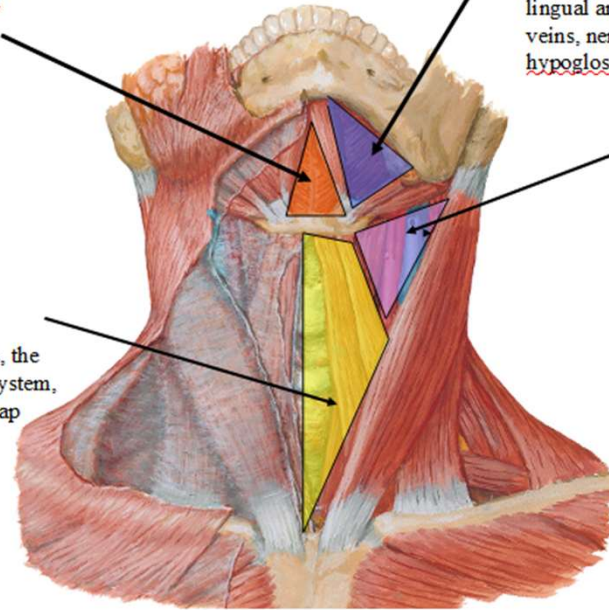
Subdivision of Anterior Triangle

Submental
lymph, nodes

Submandibular
submandibular gland,
submandibular lymph nodes,
lingual and facial arteries and
veins, nerve to the mylohyoid,
hypoglossal nerve

Muscular
fat, lymph, nodes, the
anterior jugular system,
the infrahyoid strap
muscles

Carotid
lymph nodes,
carotid system,
internal jugular
vein and its
tributaries, CN's
X, XI, XII





Anterior Triangle

Subdivisions

The anterior triangle is subdivided by the hyoid bone, suprahyoid and infrahyoid muscles into four triangles.

Carotid Triangle

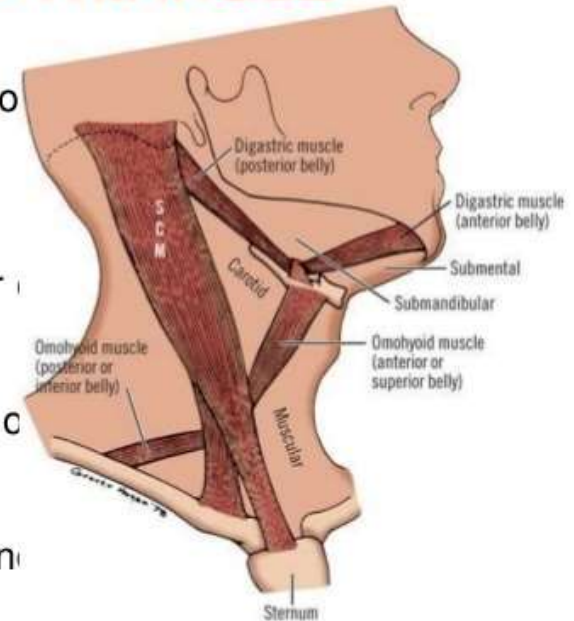
- The carotid triangle of the neck has the following boundaries:
- **Superior** – posterior belly of the digastric muscle.
- **Lateral** – medial border of the sternocleidomastoid muscle.
- **Inferior** – superior belly of the omohyoid muscle.
- The main contents of the carotid triangle are the **common carotid artery** (which bifurcates within the carotid triangle into the external and internal carotid arteries), the **internal jugular vein**, and the **hypoglossal** and **Vagus nerves**.

Anterior Triangle

Carotid triangle

CAROTID TRIANGLE

- Boundaries:
- Anterosup: Post belly of digastric
- Anteroinf: Sup belly of omohyoid
- Posteriorly: Ant border of SCM
- Roof: skin, superficial fascia, investing layer of deep fascia
- Floor: Thyrohyoid M, hyoglossus, Middle and Inf. constrictors of pharynx



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Anterior Triangle

Submental Triangle

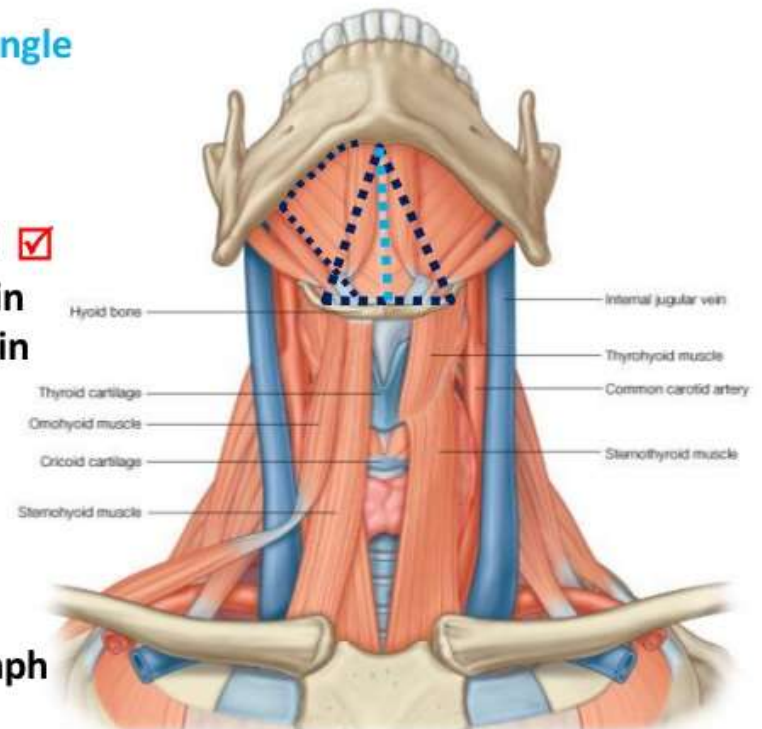
- The **submental triangle** in the neck is situated underneath the chin. It contains the submental **lymph nodes**, which filter lymph draining from the floor of the mouth and parts of the tongue.
- It is bounded:
- **Inferiorly** – hyoid bone.
- **Medially** – midline of the neck.
- **Laterally** – anterior belly of the digastric
- The base of the submental triangle is formed by the **mylohyoid muscle**, which runs from the mandible to the hyoid bone.

Carotid Triangle

Submental Triangle

Submental triangle

- Boundaries
- Floor
- Contents
- Submental LN
- Submental vein
- Ant jugular vein



Triangle mostly occupied by lymph node.

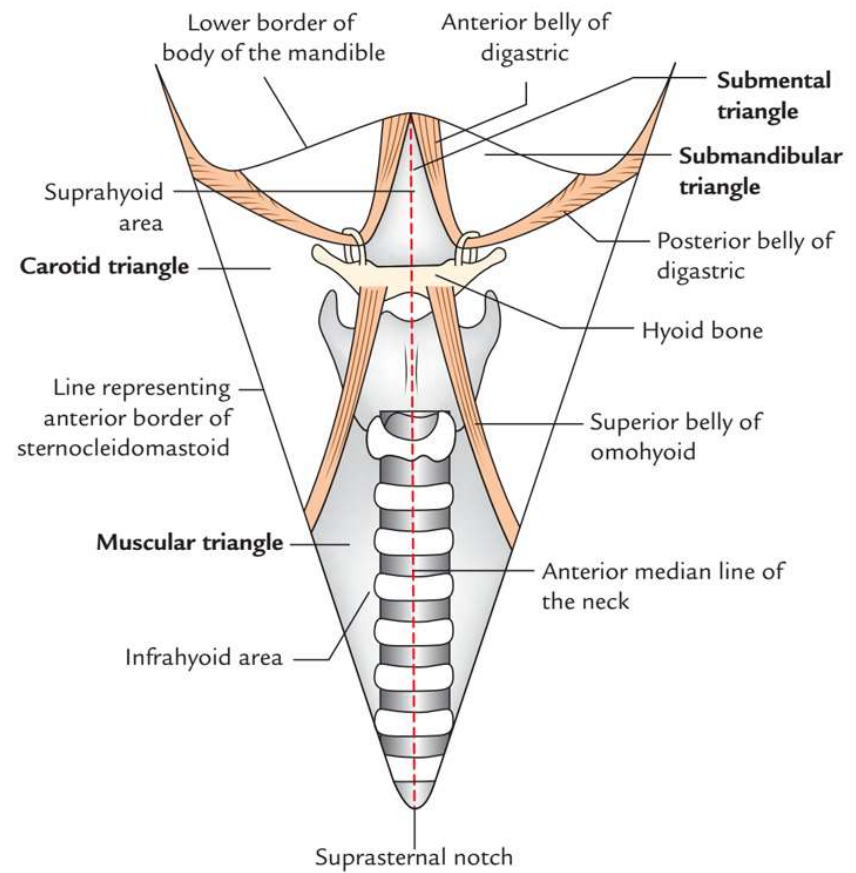
Anterior Triangle

Submandibular Triangle

- The submandibular triangle is located underneath the body of the [mandible](#). It contains the submandibular gland (salivary), and lymph nodes. The **facial artery** and vein also pass through this area.
- The boundaries of the submandibular triangle are:
- **Superiorly** – body of the mandible.
- **Anteriorly** – anterior belly of the digastric muscle.
- **Posteriorly** – posterior belly of the digastric muscle.

Anterior Triangle

Submandibular Triangle



Anterior Triangle

Muscular Triangle

- The muscular triangle is situated more **inferiorly** than the subdivisions. It is a slightly 'dubious' triangle, in reality having **four** boundaries. The muscular triangle contains some muscles and organs – the **infrahyoid** muscles, the **pharynx**, and the **thyroid, parathyroid** glands.
- The boundaries of the muscular triangle are:
- **Superiorly** – hyoid bone.
- **Medially** – imaginary midline of the neck.
- **Supero-laterally** – superior belly of the omohyoid muscle.
- **Infero-laterally** – inferior portion of the sternocleidomastoid muscle.

Anterior Triangle

Muscular Triangle

Q. Name the structures forming boundaries and contents of muscular triangle.

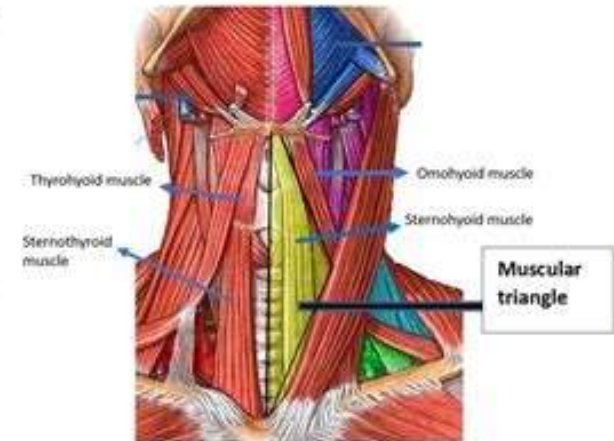
A. Muscular triangle

• Boundaries:

- Anterior: midline of neck
- Posterosuperior: superior belly of omohyoid
- Posteroinferior: anterior border of sternocleidomastoid

• Contents:

- Sternothyroid muscle
- Sternohyoid muscle
- Thyrohyoid muscle



ANATOMY

NECK



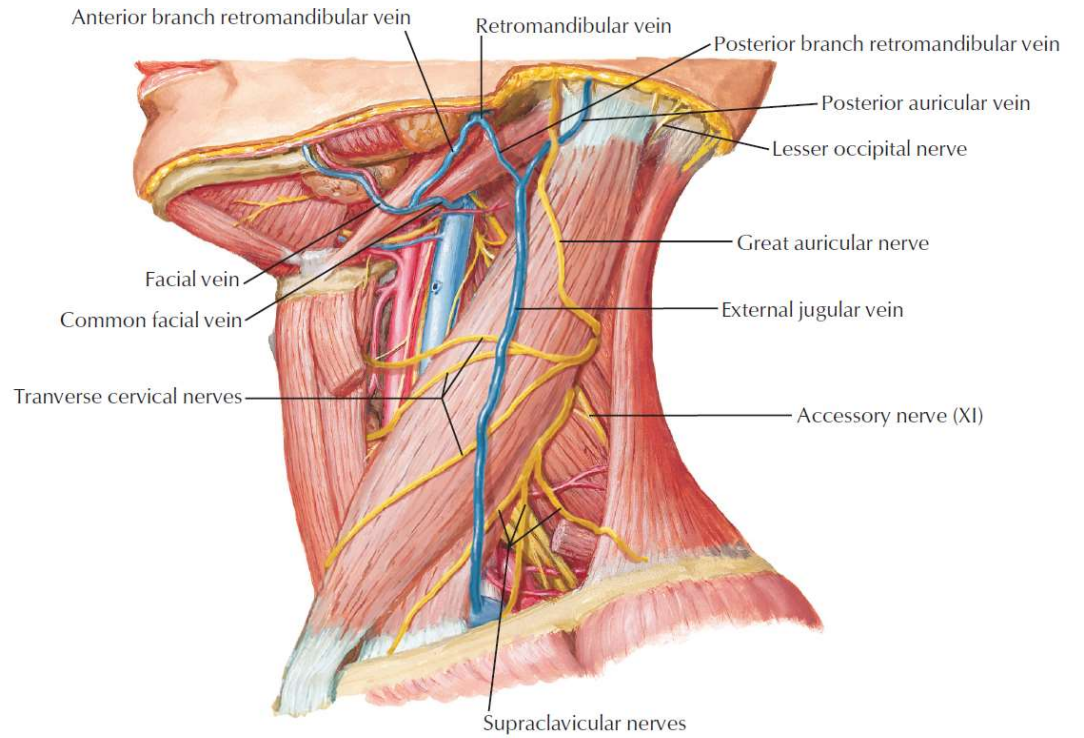
NECK

Areas of Neck

1. Anterior Triangle
2. Posterior triangle

Triangles of Neck

Posterior Triangle





Posterior Triangle

Contents

1 Borders

2 Contents

2.1 Muscles

2.2 Vasculature

2.2.1 Clinical Relevance: Severance of the External Jugular Vein

2.3 Nerves

2.3.1 Clinical Relevance: Cervical Plexus Nerve Block

3 Subdivisions

Posterior Triangle

- The **posterior triangle** of the neck is an anatomical area located in the lateral aspect of the neck.
- In this article, we shall look at the anatomy of the posterior triangle of the neck – its borders, contents, subdivisions, and any clinical relevance.

Posterior Triangle

Borders

Its boundaries are as follows:

- **Anterior** – posterior border of the sternocleidomastoid.
- **Posterior** – anterior border of the trapezius muscle.
- **Inferior** – middle 1/3 of the clavicle.
- The posterior triangle of the neck is covered by the **investing** layer of fascia, and the floor is formed by the **prevertebral** fascia (see [fascial layers of the neck](#)).

Posterior Triangle

Borders

BOUNDRIES

Anteriorly:

- Posterior border of sternomastoid.

Posteriorly:

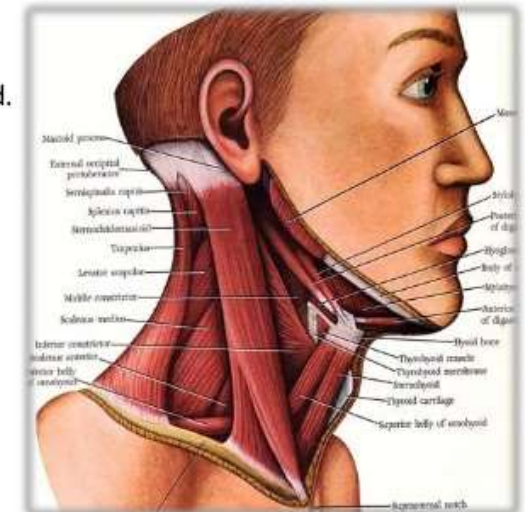
- Anterior border of Trapezius.

Base:

- Middle 1/3 of the clavicle.

Apex:

- Meeting of Trapezius & Sternomastoid.



Posterior Triangle

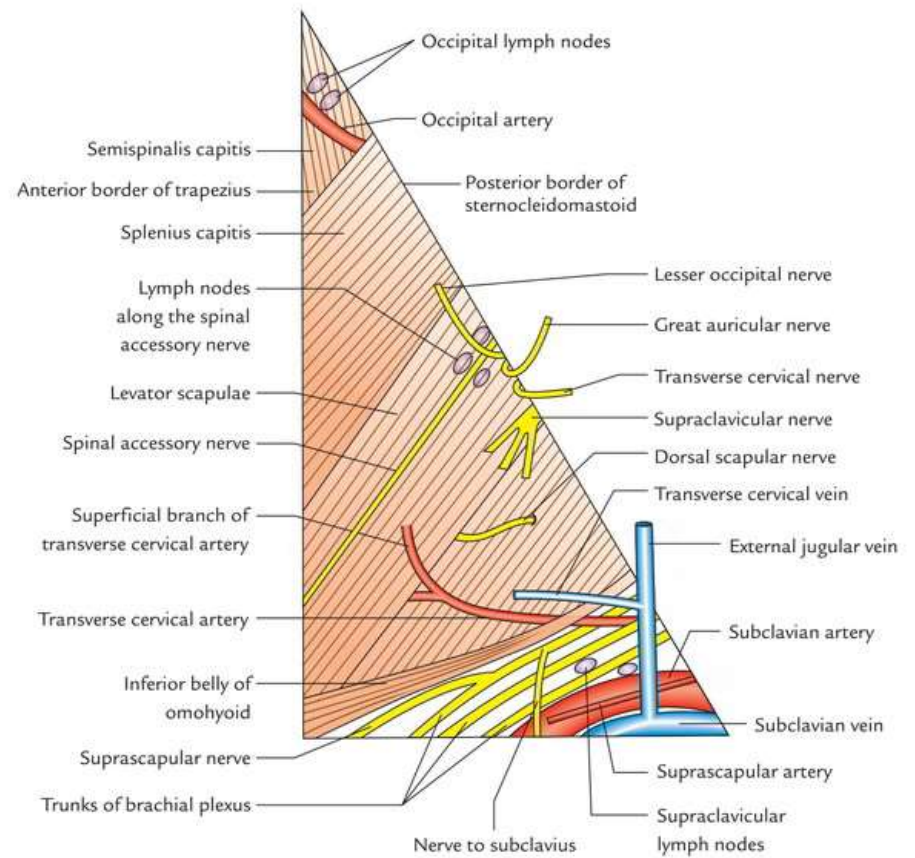
Contents

Muscles

- The posterior triangle of the neck contains many muscles, which make up the borders and the floor of the area.
- A significant muscle in the posterior triangle region is the **omohyoid** muscle. It is split into two bellies by a tendon. The **inferior belly** crosses the posterior triangle, travelling in an supero-medial direction, and splitting the triangle into two. The muscle then crosses underneath the SCM to enter the anterior triangle of the neck.
- A number of vertebral muscles (covered by prevertebral fascia) form the **floor** of the posterior triangle:
- Splenius capitis
- Levator scapulae
- Anterior, middle and posterior scalene

Posterior Triangle

Contents



Posterior Triangle

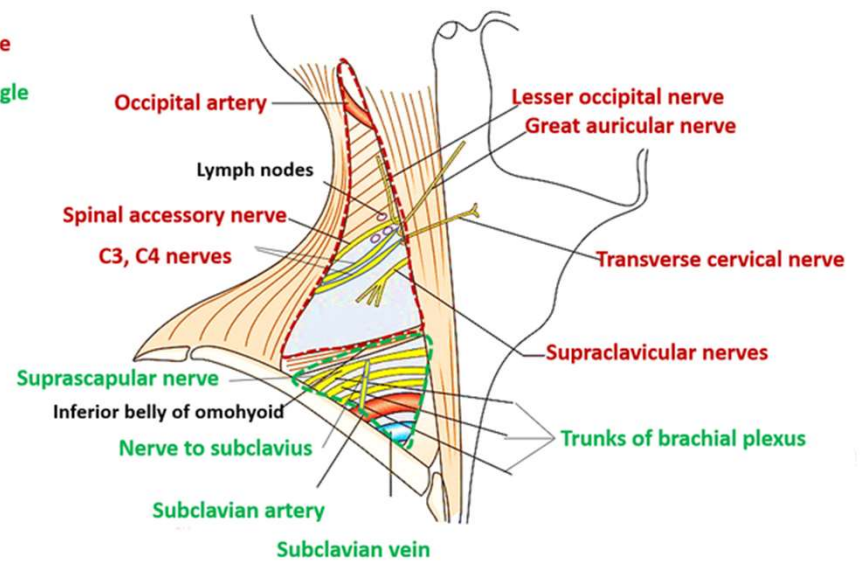
Vasculature

- The **external jugular vein** is one of the major veins of the neck region. Formed by the retromandibular and posterior auricular veins, it lies **superficially**, entering the posterior triangle after crossing the **sternocleidomastoid** muscle. Within the posterior triangle, the external jugular vein pierces the investing layer of fascia and empties into the **subclavian vein**.
- The **subclavian vein** is often used as a point of access to the venous system, via a **central catheter**.
- The **transverse cervical** and **suprascapular** veins also lie in the posterior triangle
- The subclavian, transverse cervical and suprascapular veins are accompanied by their respective arteries in the posterior triangle.
- The distal part of the **subclavian artery** can be located as it emerges between the anterior and middle **scalene** muscles. As it crosses the first rib, it becomes the **axillary** artery, which goes onto supply the upper limb.

Posterior Triangle

Contents

- △ Occipital triangle
- △ Subclavian triangle



Posterior Triangle

Nerves

- The **accessory nerve (CN XI)** exits the cranial cavity, descends down the neck, innervates sternocleidomastoid and enters the posterior triangle. It crosses the posterior triangle in an oblique, inferoposterior direction, within the **investing** layer of fascia. It lies relatively **superficially** in the posterior triangle, leaving it vulnerable to injury.
- The **cervical plexus** forms within the muscles of the **floor** of the posterior triangle. A major branch of this plexus is the **phrenic nerve**, which arises from the anterior divisions of spinal nerves C3-C5. It descends down the neck, within the **prevertebral** fascia, to innervate the diaphragm.
- Other branches of the cervical plexus innervate the vertebral muscles, and provide cutaneous innervation to parts of the neck and scalp.
- The trunks of the **brachial plexus** also cross the floor of the posterior triangle.

Posterior Triangle

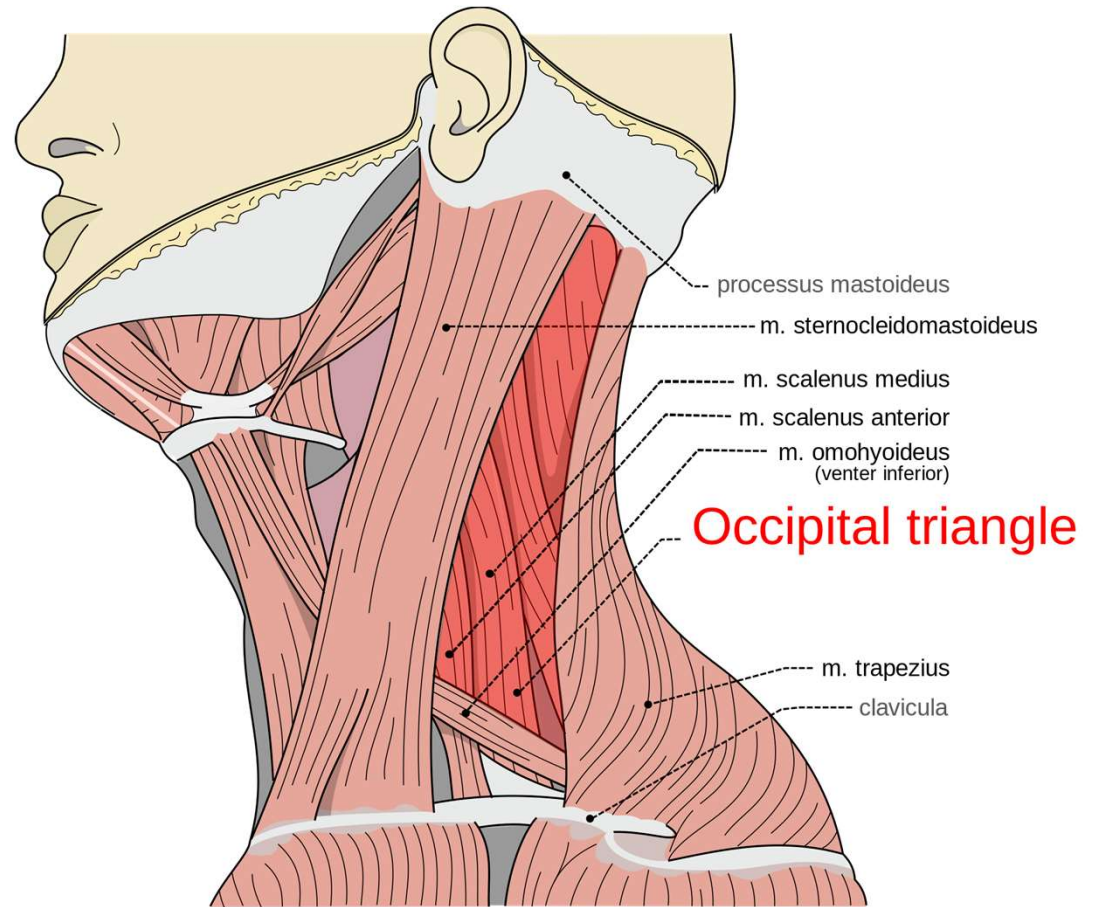
Subdivisions

The **omohyoid** muscle splits the posterior triangle of the neck into two:

- The larger, superior part is termed the **Occipital triangle**.
- The inferior triangle is known as the **Subclavian triangle** and contains the distal portion of the **subclavian artery**.

Posterior Triangle

Subdivisions



Posterior Triangle

Clinical Relevance: Cervical Plexus Nerve Block

- For anaesthesia of the neck area, a **cervical plexus block** can be used.
- Local anaesthetic is injected along the **posterior border** of sternocleidomastoid at the junction of its superior and middle thirds. This junction is where the cutaneous branches of the cervical plexus emerge, known as the **nerve point** of the neck.