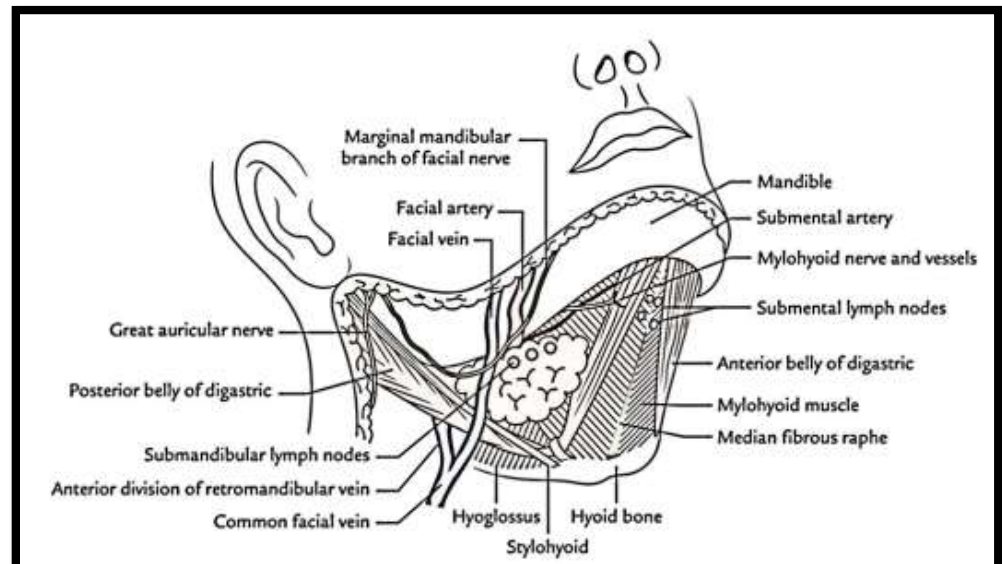
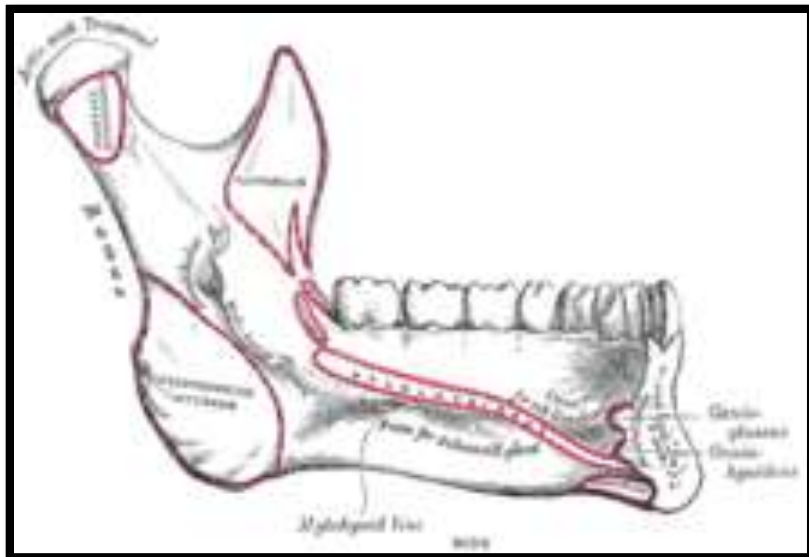


SUBMANDIBULAR REGION

Introduction

- The region under cover of body of mandible.
- Extends between **mylohyoid lines** above and **hyoid bone** below.

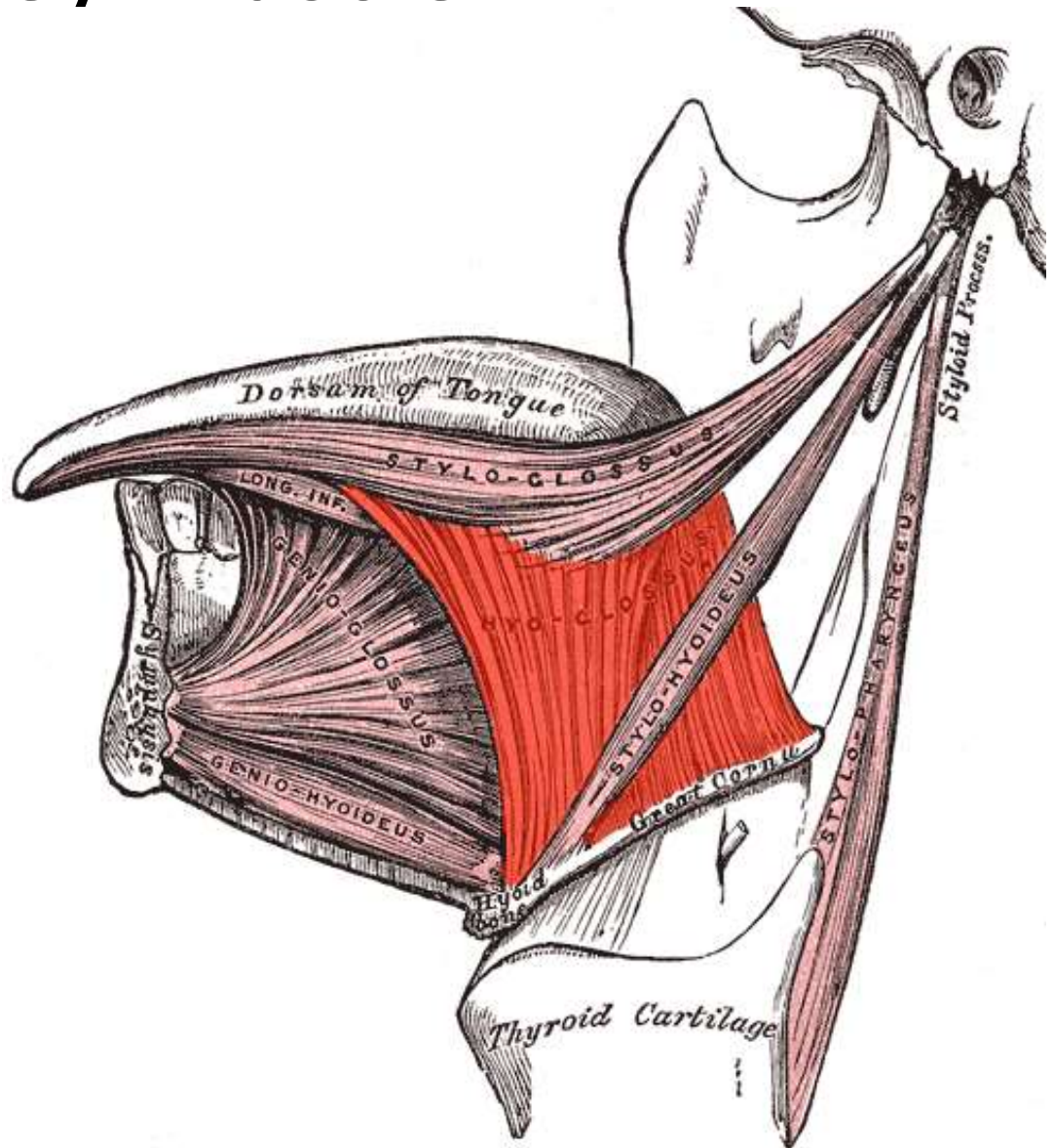


Deep Structures

- ❖ Suprahyoid muscles.
- ❖ Extrinsic muscles of the tongue.
- ❖ Salivary glands-
 - Submandibular and Sublingual.
- ❖ Arteries-
 - Facial and Lingual.
- ❖ Nerves-
 - Lingual.
 - Hypoglossal.
 - Glossopharyngeal.
- ❖ Ganglion-
 - Submandibular.

Key Muscle

- Hyoglossus



Muscular Planes

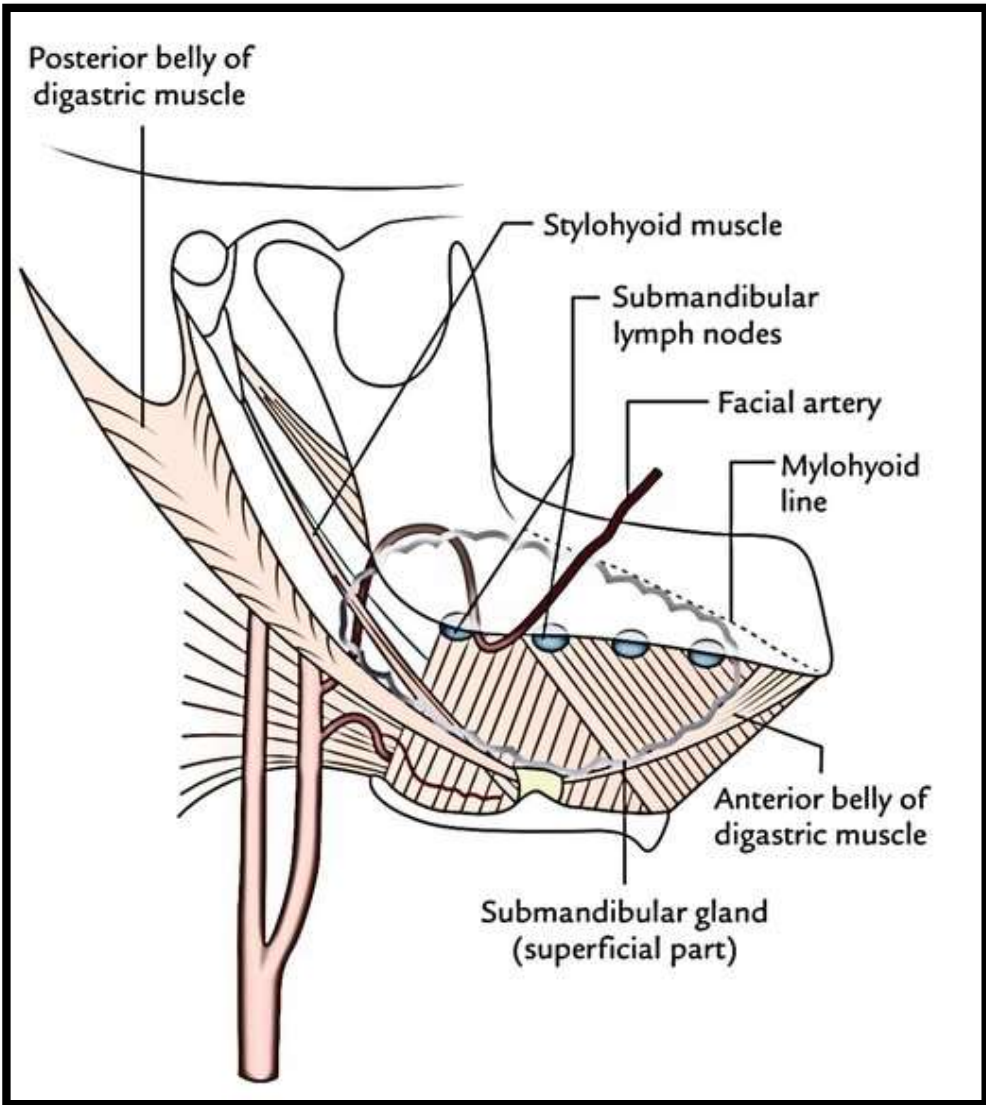
- 4

I- Digastric and Stylohyoid.

II-Mylohyoid.

III-Geniohyoid, Hyoglossus and Styloglossus.

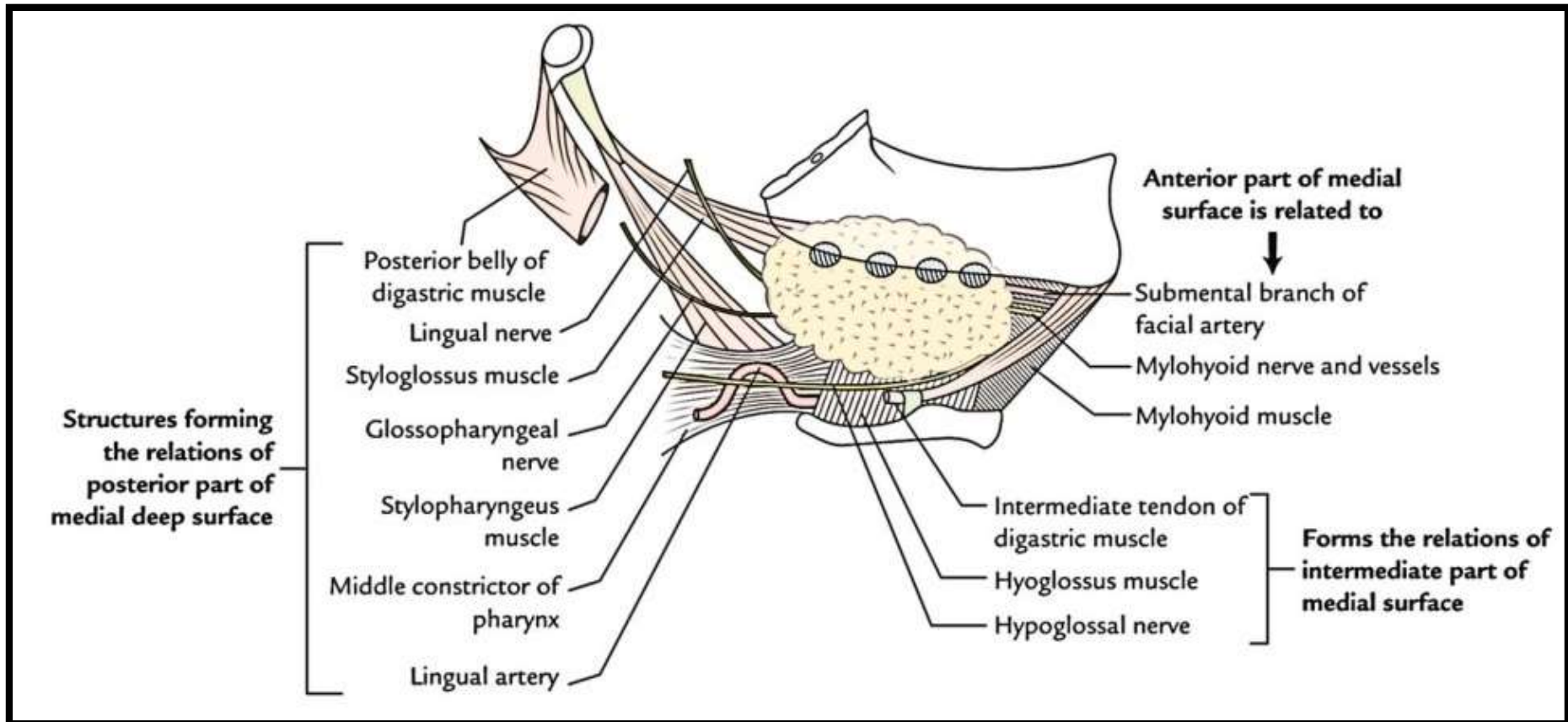
IV-Genioglossus and a part of superior constrictor of pharynx.



Submandibular Gland

Introduction

- **Size-** about the size of a **walnut**.

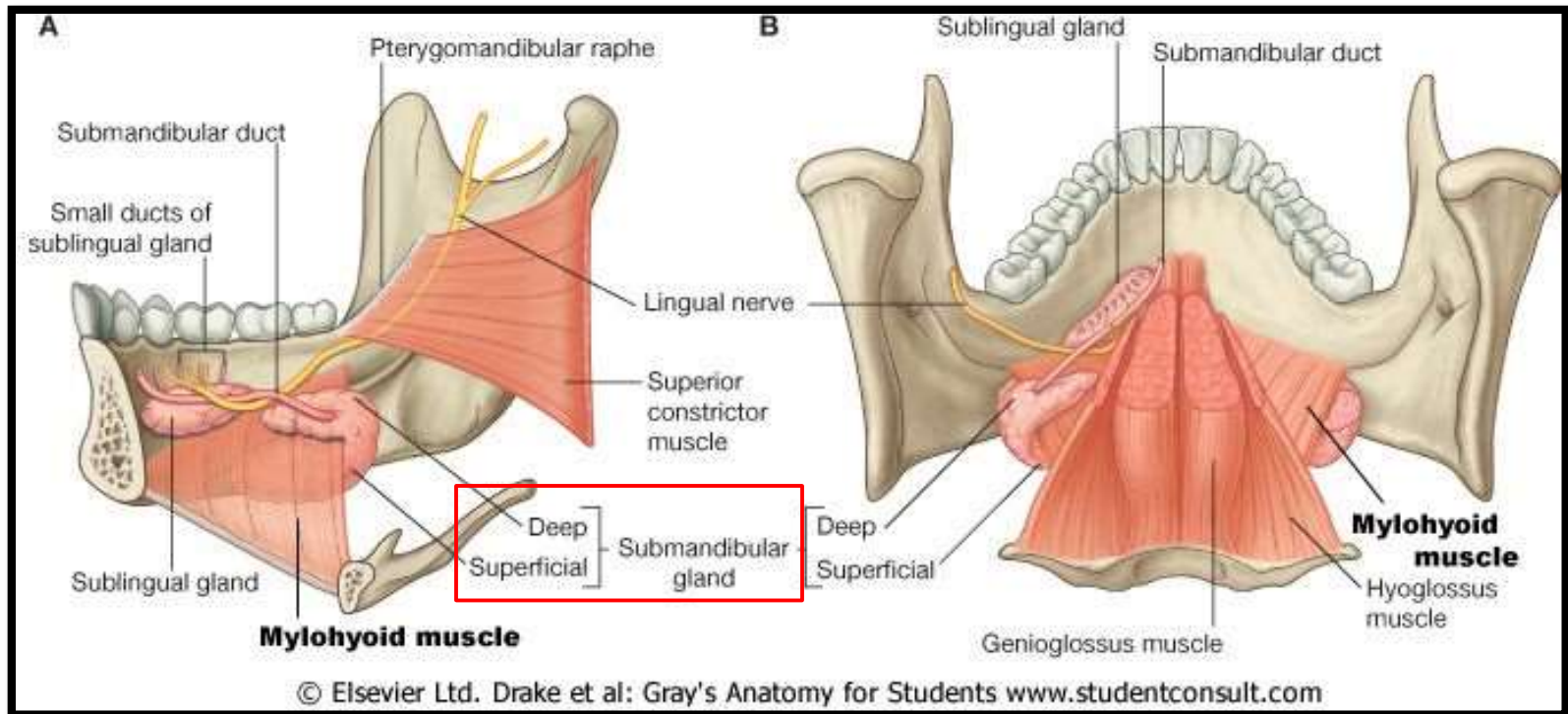


PARTS

2

- Larger superficial part
- Smaller deep part.

❖ Two parts are continuous with each other around the posterior border of the mylohyoid muscle.



Superficial Part

Presenting parts-

2 Ends—

➤ Anterior

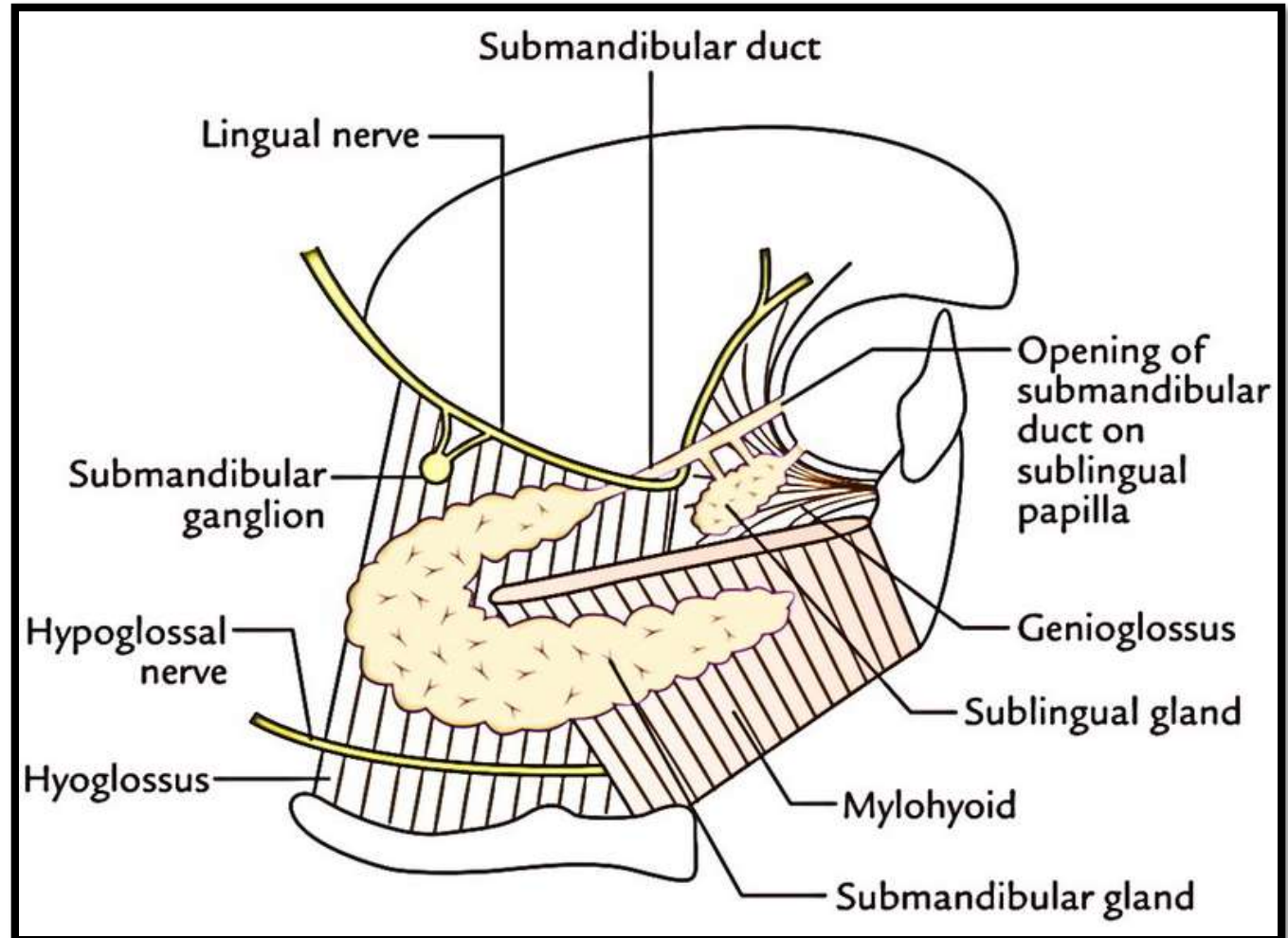
➤ Posterior

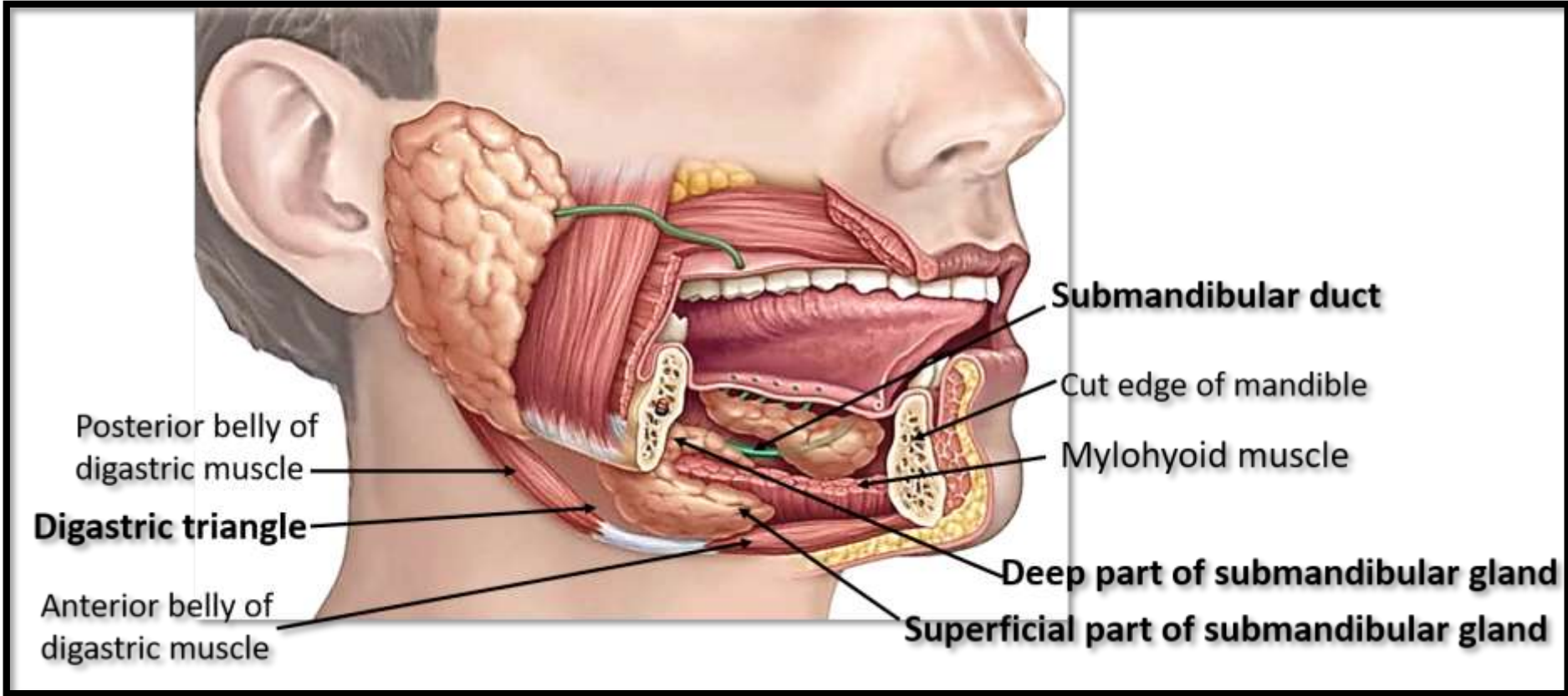
3 Surfaces—

➤ Inferior

➤ Lateral

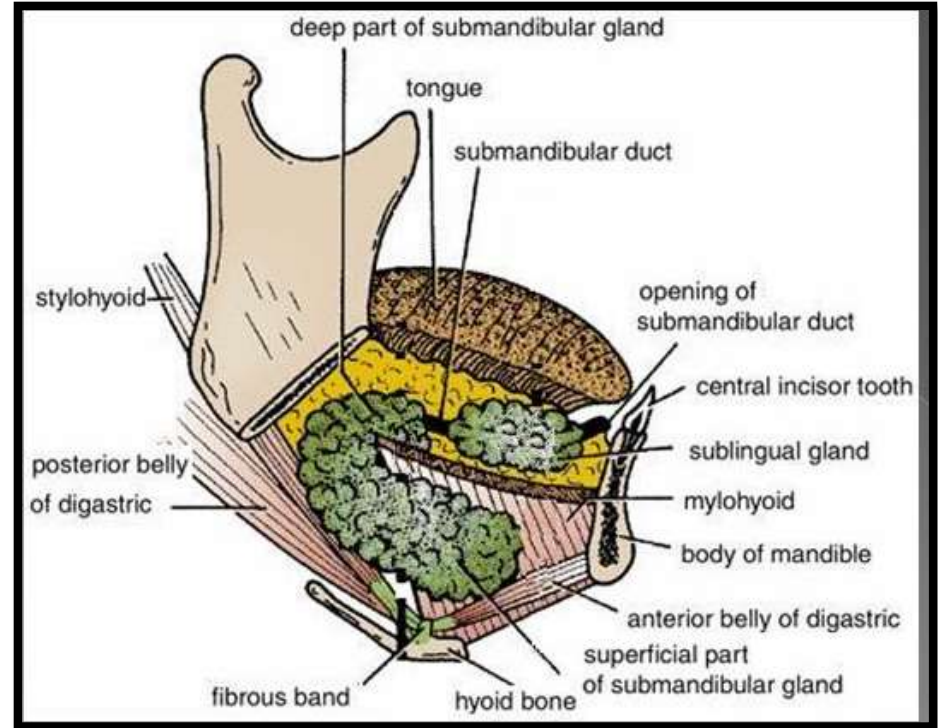
➤ Medial





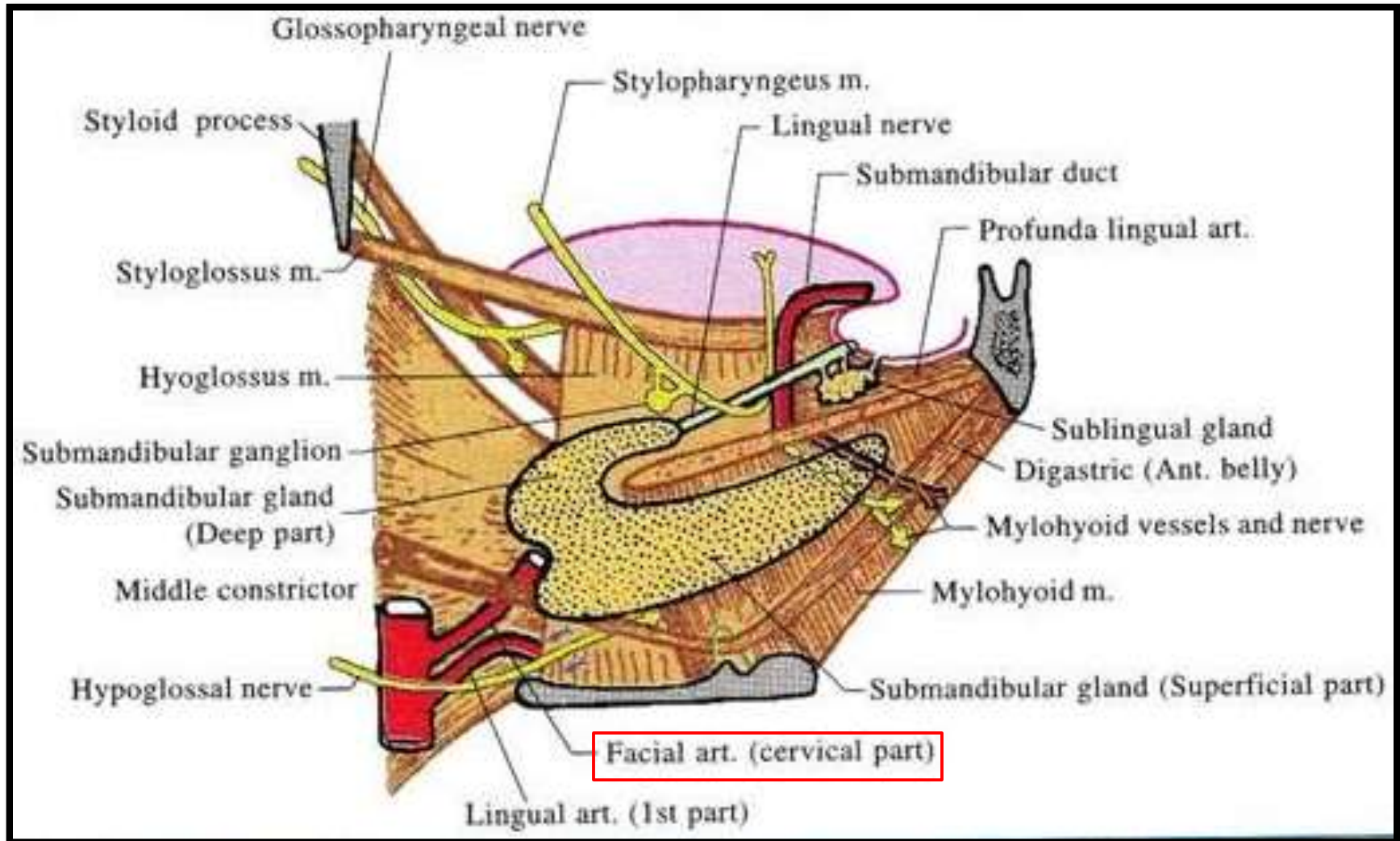
Ends

- **Anterior end** extends upto the anterior belly of digastric muscle.
- **Posterior end** extends upto stylomandibular ligament which separates the submandibular gland from parotid gland.



Ends contd...

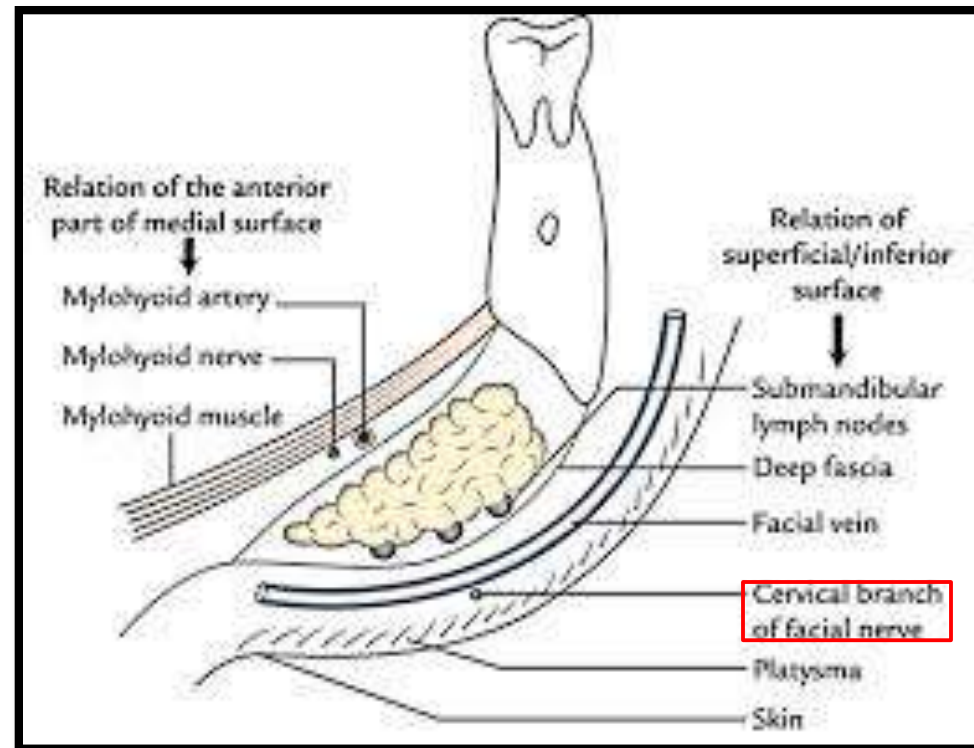
- **Posterior end** presents a groove for the ascending limb of facial artery.



Inferior surface (Superficial surface)

Relations:

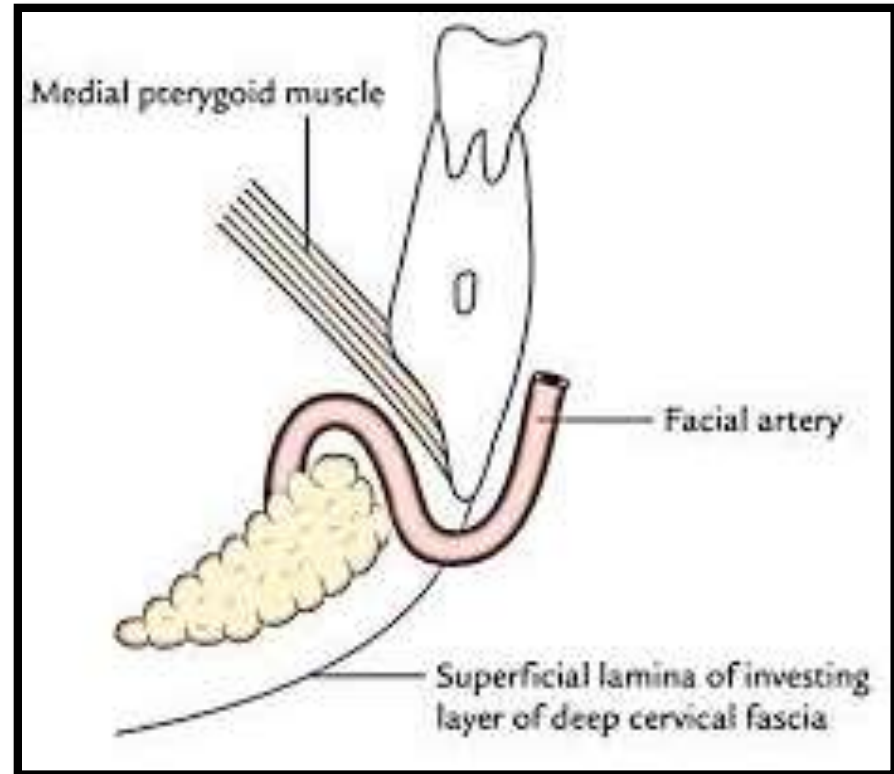
- ❖ Covered by:
 - Skin
 - Superficial fascia
 - Deep cervical fascia
- ❖ Crossed by **facial vein** and **cervical branch of facial nerve**, under cover of platysma.
- ❖ Submandibular lymph nodes, beneath the investing layer of deep cervical fascia.



Lateral Surface

Relations:

- Submandibular fossa of the mandible
- Medial pterygoid muscle close to its insertion
- Facial artery
- ❖ Facial artery loops downward and forward between the bone and the gland, and winds around the lower border of body of the mandible at the antero-inferior angle of the masseter to reach the face.

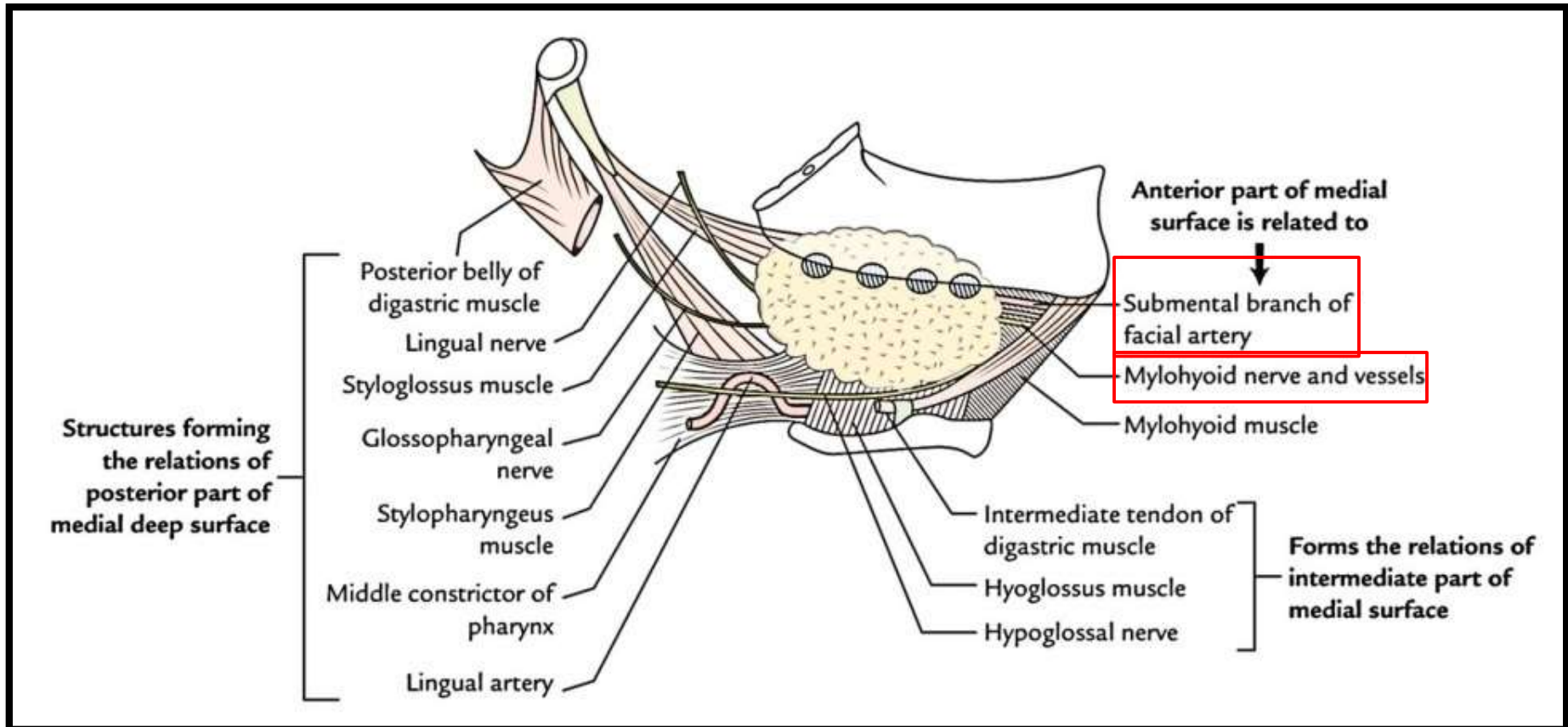


Medial Surface

- Its relations are divided into three parts: anterior, middle and posterior.

Anterior part:

- Rests on mylohyoid muscle; separated by the mylohyoid vessels and nerves, and submental branch of the facial artery.

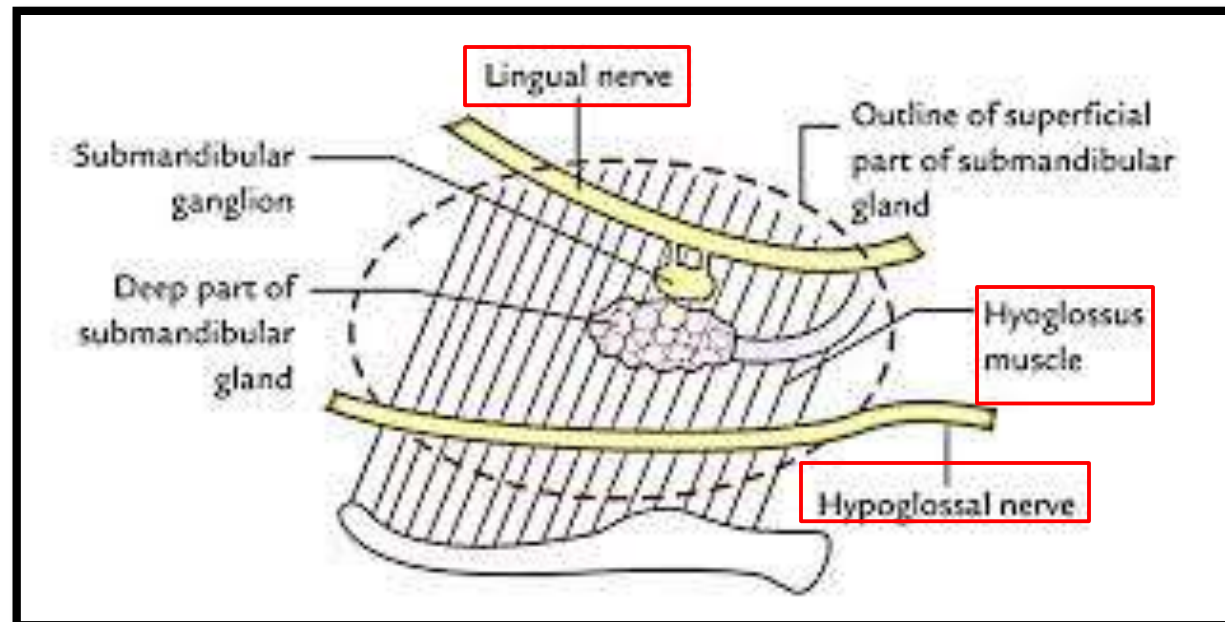


Medial Surface contd...

Intermediate part:

Rests on:

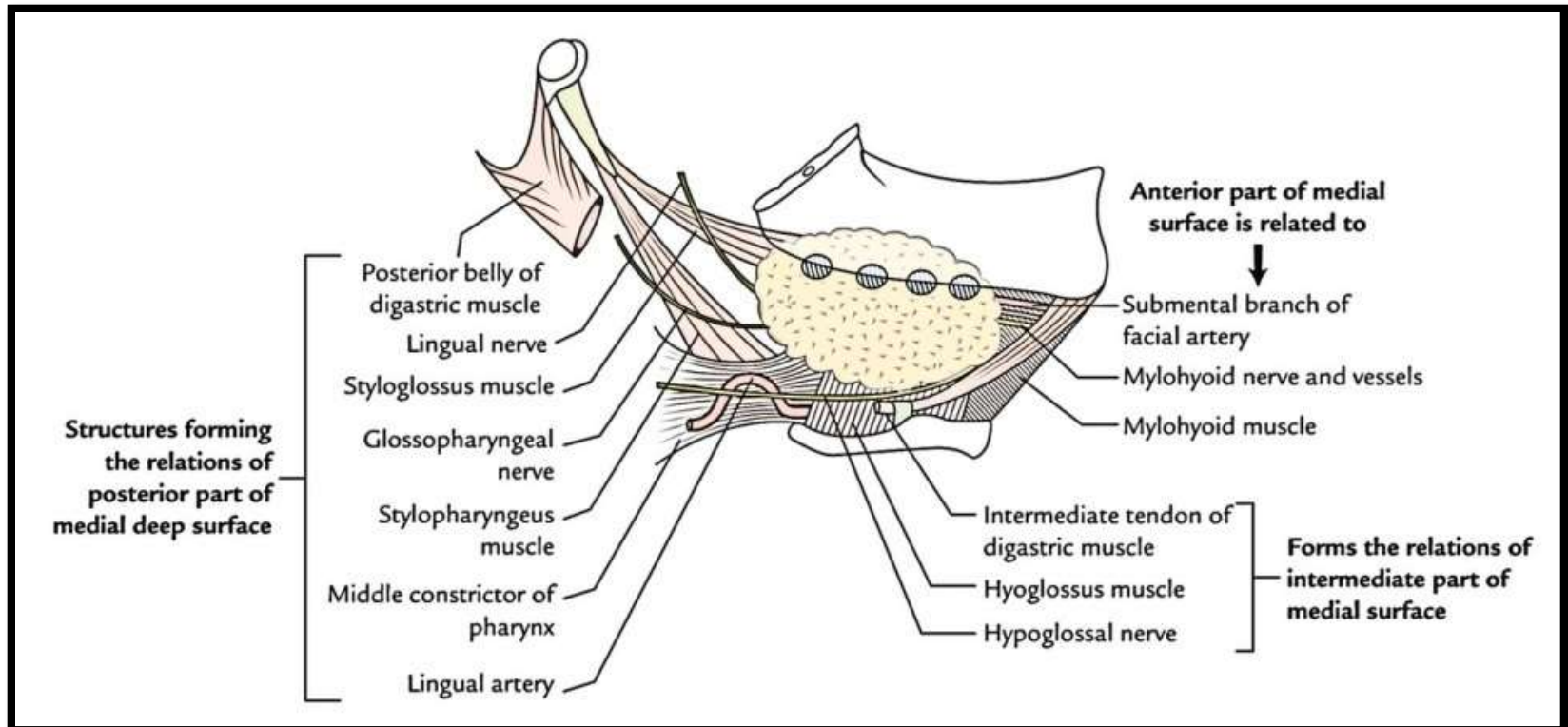
- Hyoglossus muscle
- Lingual nerve
- Submandibular ganglion
- Hypoglossal nerve



Medial Surface contd...

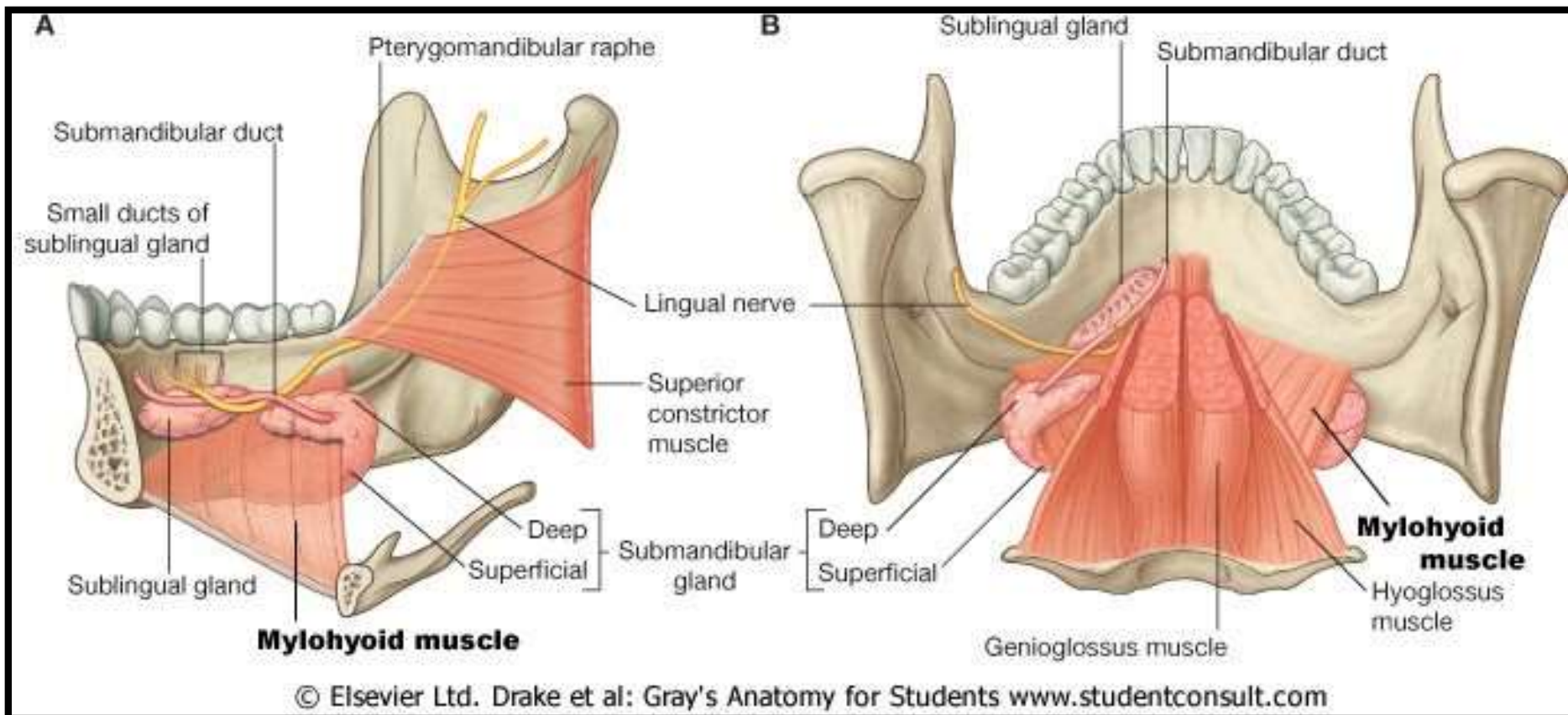
Posterior part : related to

- Styloglossus muscle
- Stylohyoid ligament
- Glossopharyngeal nerve
- Wall of pharynx



Deep part

- Extends forward in the interval between the mylohyoid and hyoglossus upto the posterior end of sublingual salivary gland.



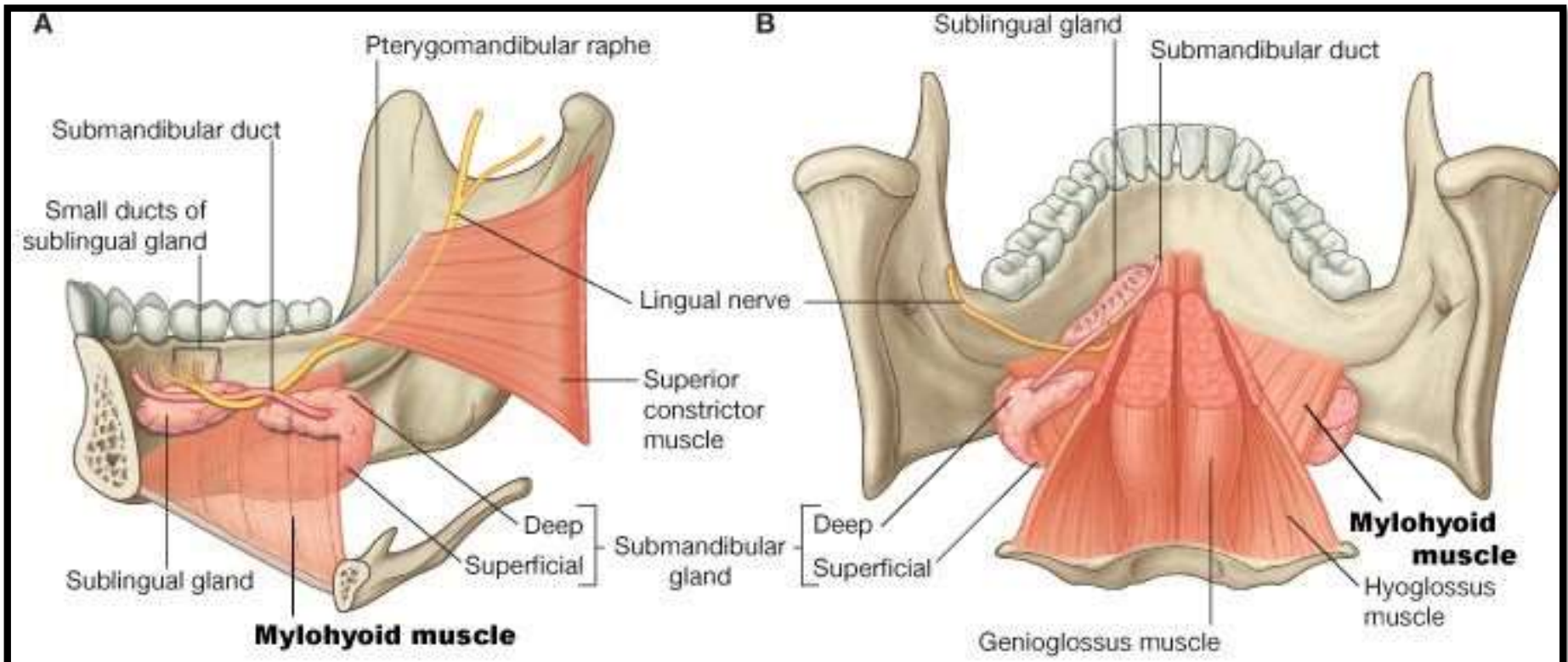
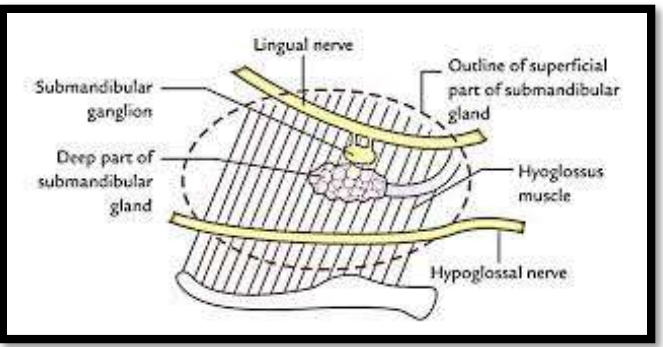
Relations of Deep part

Laterally-Mylohyoid

Medially-Hyoglossus

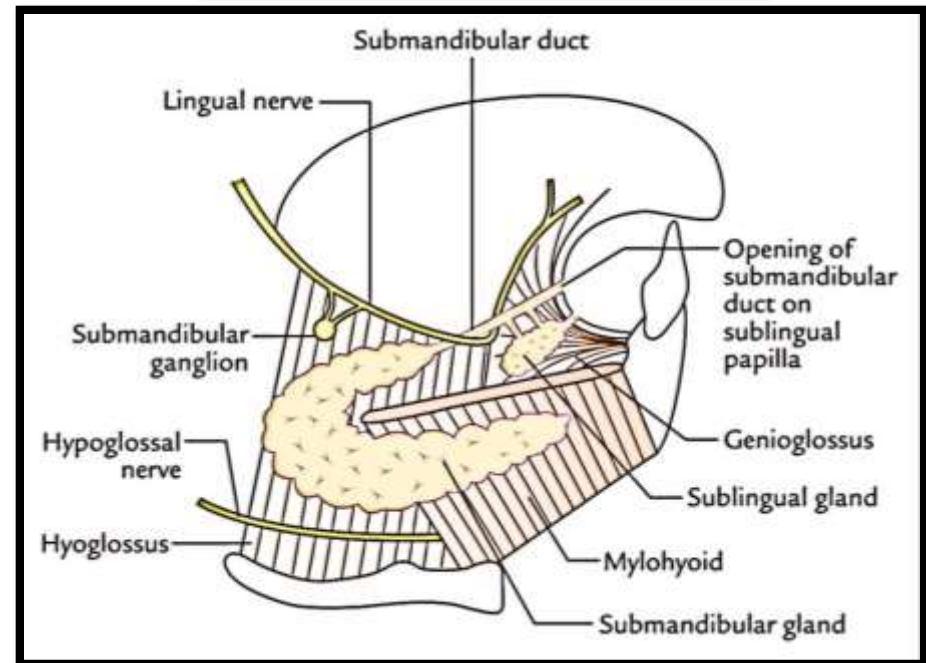
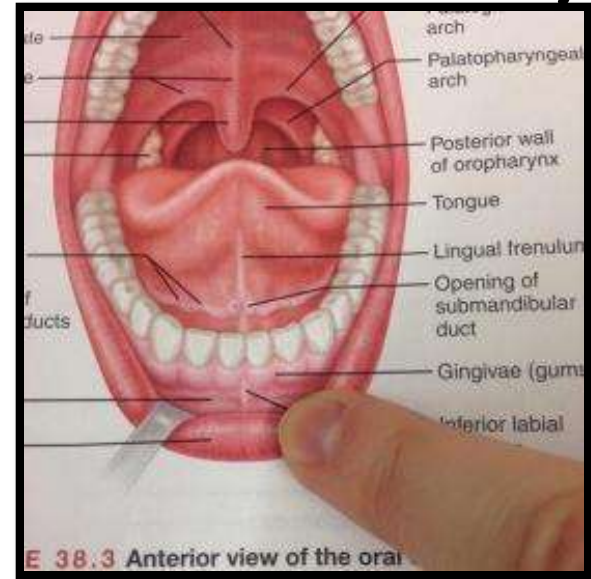
Above-Lingual nerve and submandibular ganglion

Below-Hypoglossal nerve accompanied by a pair of veins.

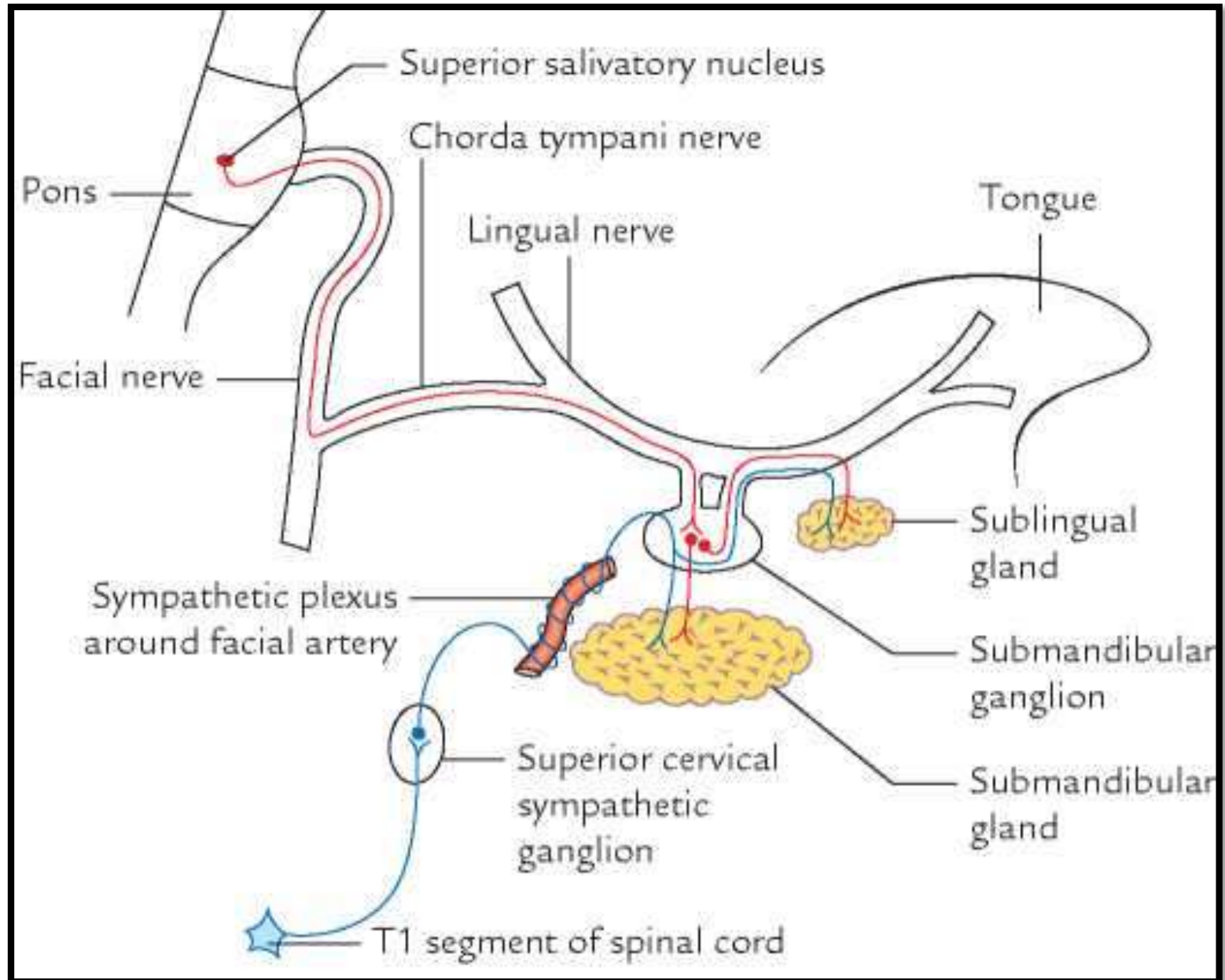


Submandibular duct (Wharton's duct)

- ~ 5 cm long.
- Emerges at the anterior end of deep part.
- Runs forward on the hyoglossus between lingual and hypoglossal nerves.
- Crossed by lingual nerve, near the anterior border of hyoglossus.
- Continues forward between sublingual gland and genioglossus muscle.
- Opens into the oral cavity on the summit of **sublingual papilla** at the side of frenulum of tongue.



Nerve Supply



Clinical Correlates

❖ Formation of calculi-

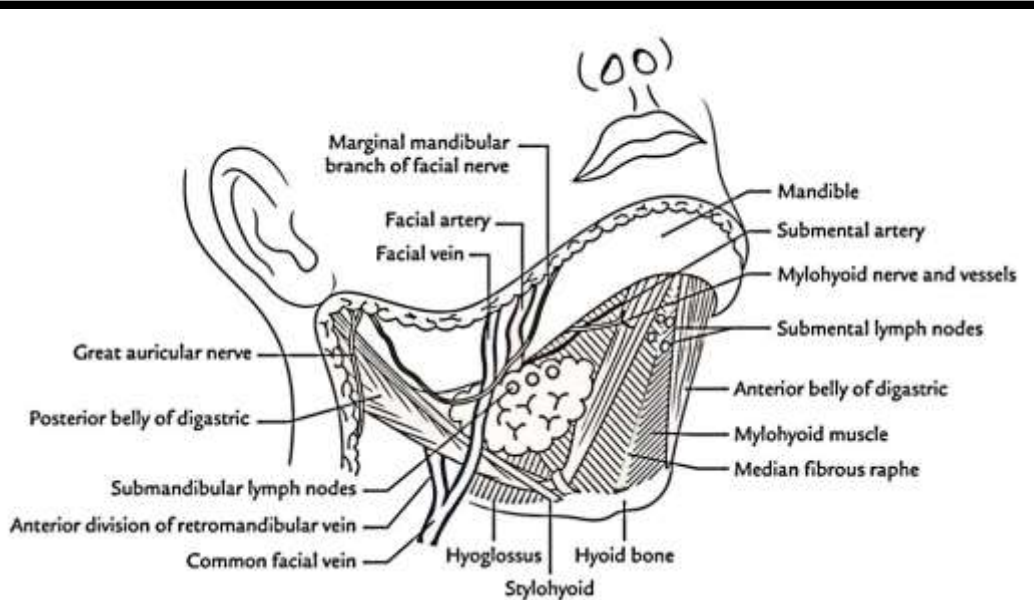
➤ It is more common in submandibular gland and its duct for two reasons:

- Secretion is more viscid.
- Duct takes a tortuous and upward course (against gravity).

❖ Skin incision for removal of calculus or tumour from submandibular gland-

- 4 cm below the angle of mandible.

❖ Bimanual Palpation of Submandibular gland-



Sublingual Gland

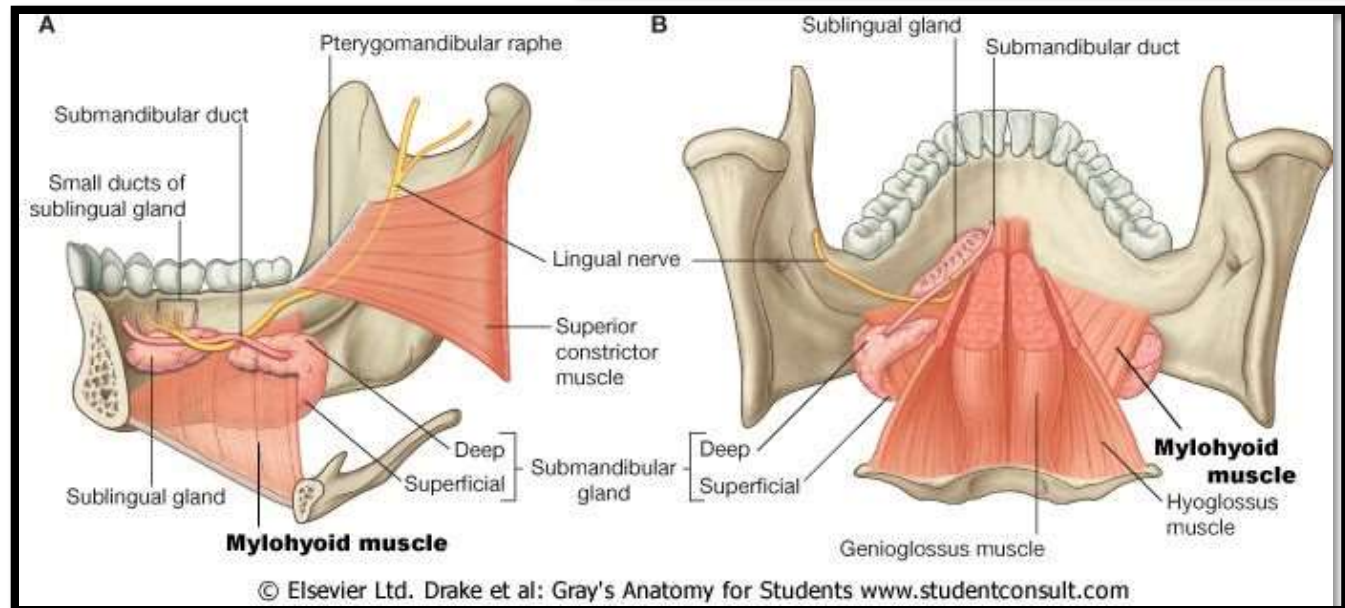
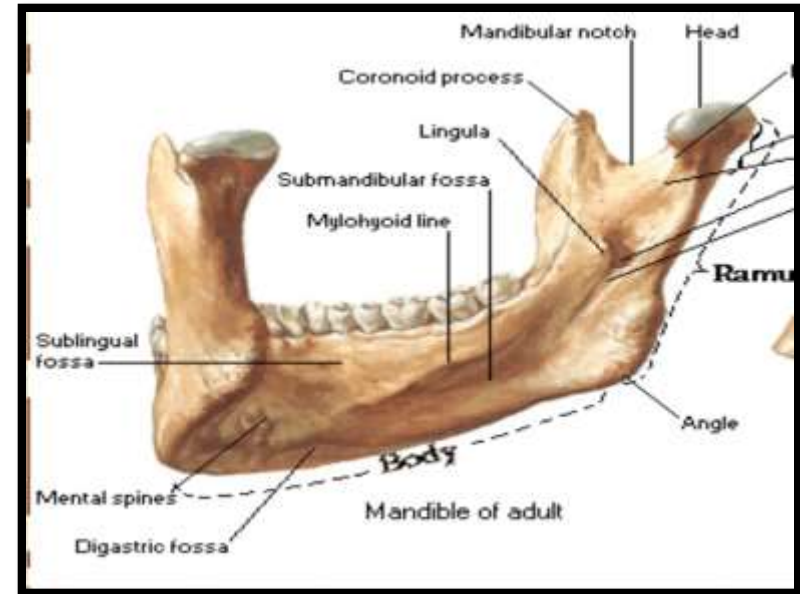
- It is the **smallest** of the three large salivary glands.
- Mostly mucous in nature.

SHAPE-almond shaped.

WEIGHT- 3 to 4 gm

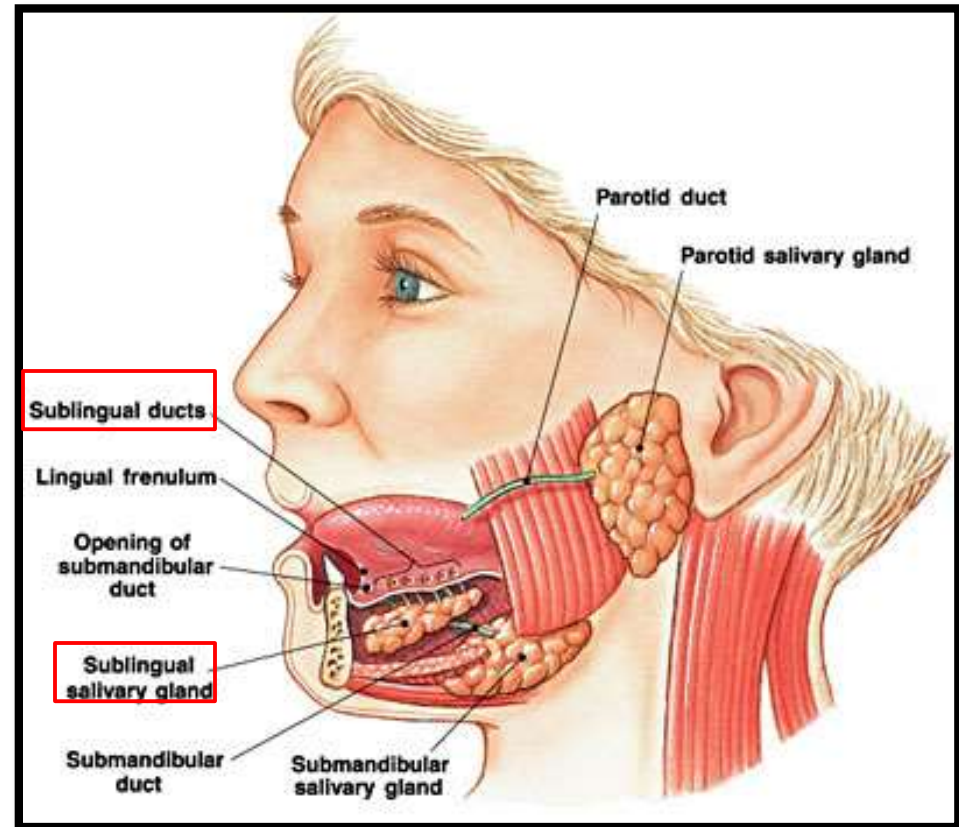
LOCATION-

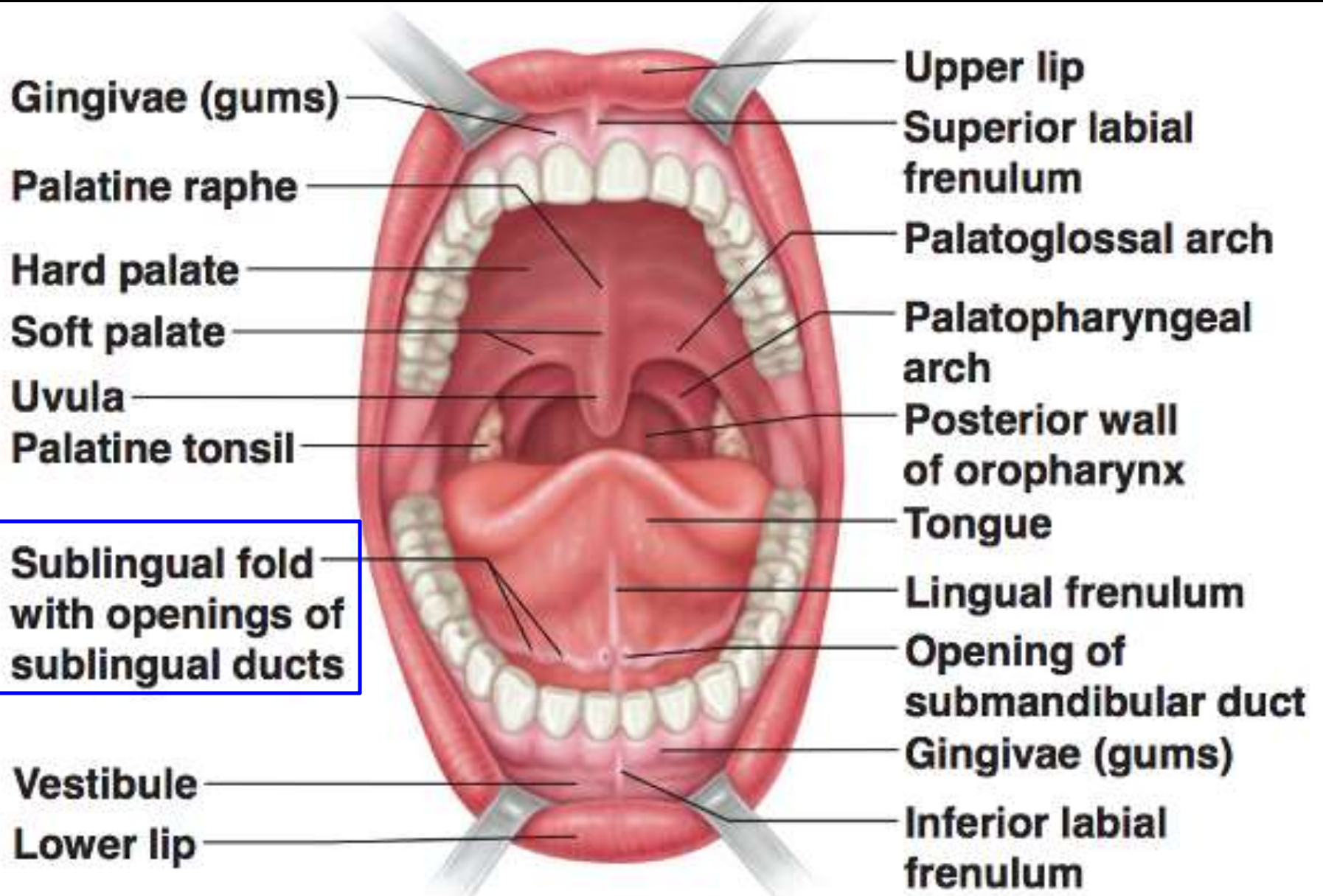
- In the floor of the mouth between the mucous membrane and mylohyoid muscle.
- Lodges in the **sublingual fossa of the mandible**.



Ducts of Sublingual Gland

- The gland possesses about **8 to 20** ducts:
- Most of the ducts (ducts of **Rivinus**) open separately in the floor of the mouth on the summit of the **sublingual fold**.
- Some ducts from the anterior part of the gland unite to form the **sublingual duct (duct of Bartholin)**.
- **Duct of Bartholin** opens into the submandibular duct.





(b) Anterior view

Sublingual Gland contd...

Arterial supply:

- The gland is supplied by the **sublingual** and **submental** arteries.

Lymphatic drainage:

- The lymphatics drain into **submental** and **submandibular** nodes.

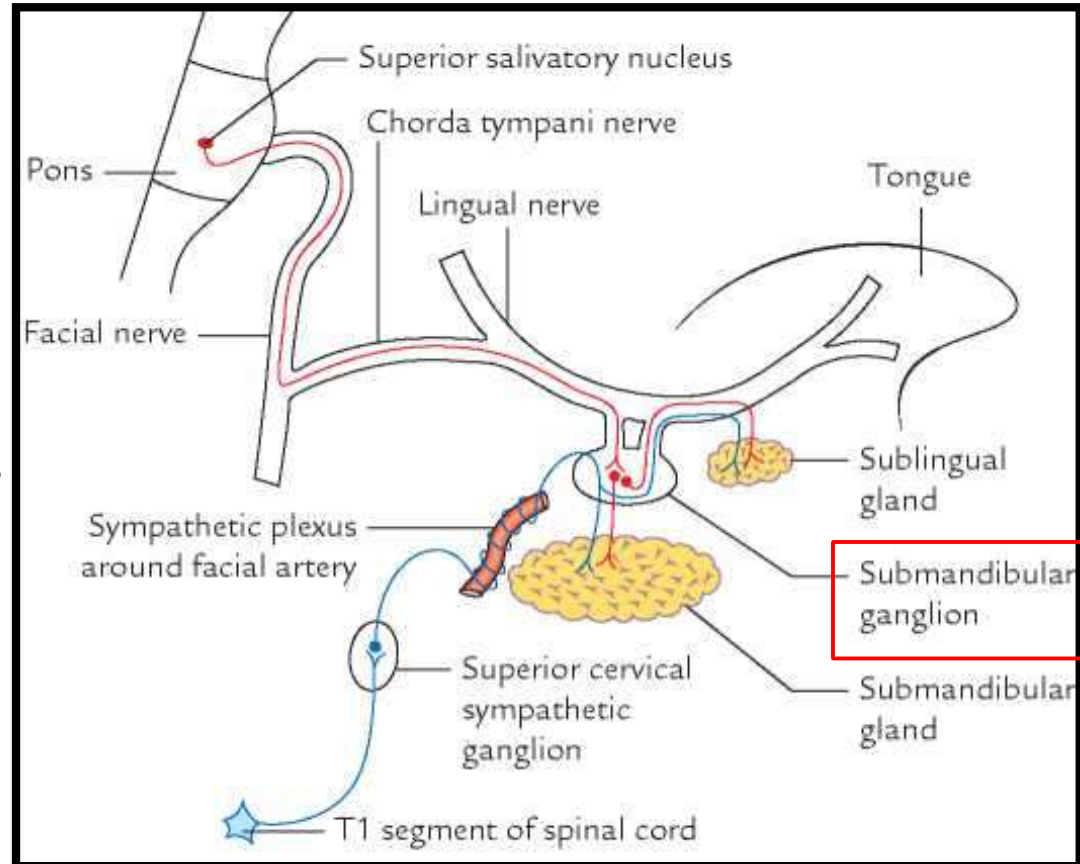
Submandibular Ganglion (Langley's Ganglion)

- It is a **parasympathetic** ganglion.
- A **relay station** for secretomotor fibers of **submandibular** and **sublingual** salivary glands.

CONNECTIONS-

Topographically- with the **lingual** nerve.

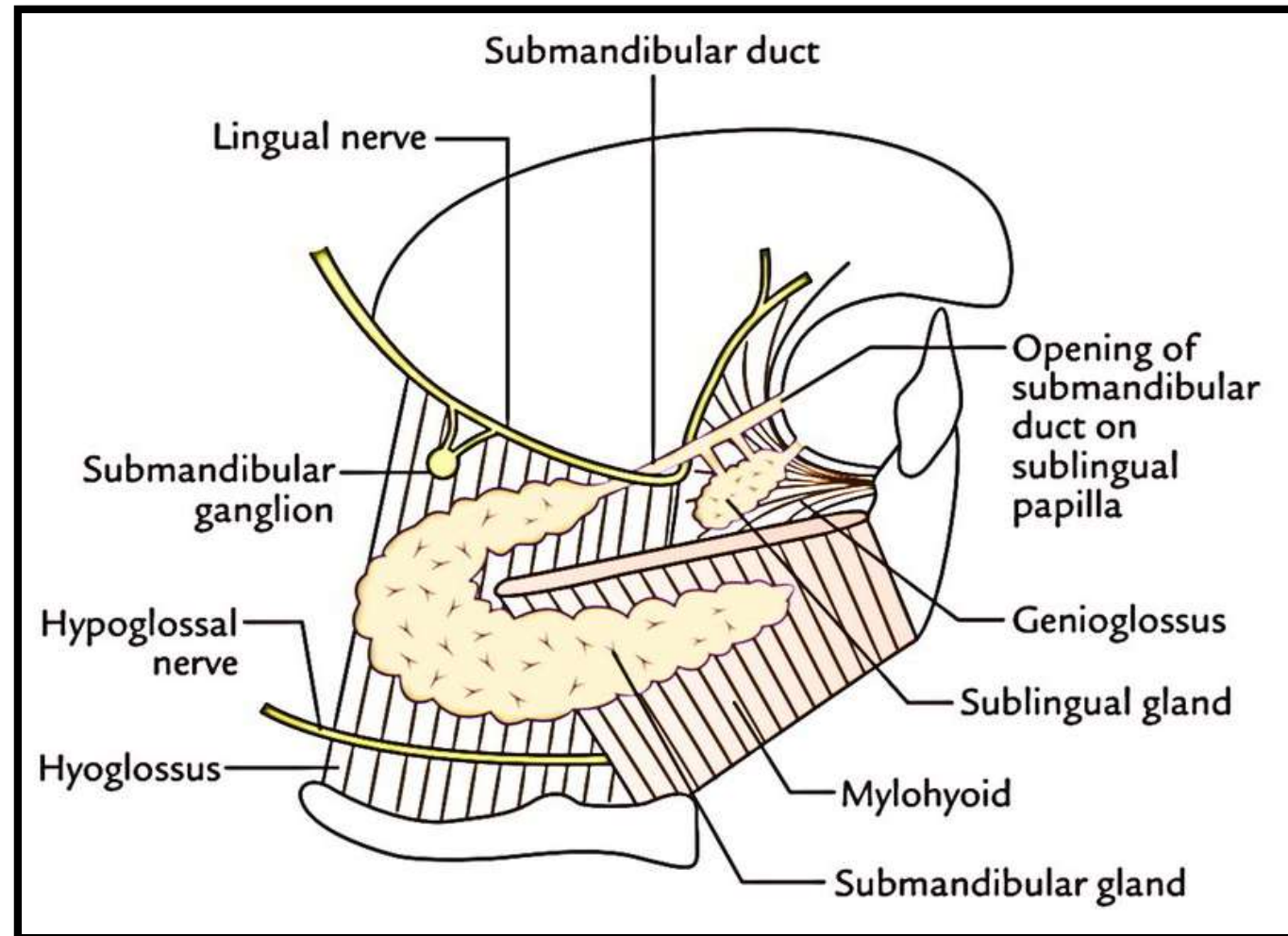
Functionally- with the **facial** nerve (through its chorda tympani branch).



Submandibular Ganglion contd...

LOCATION-

- ❖ On outer surface of **hyoglossus** muscle.
- ❖ It is suspended from the lingual nerve by **two roots**:
 - Posterior.
 - Anterior.



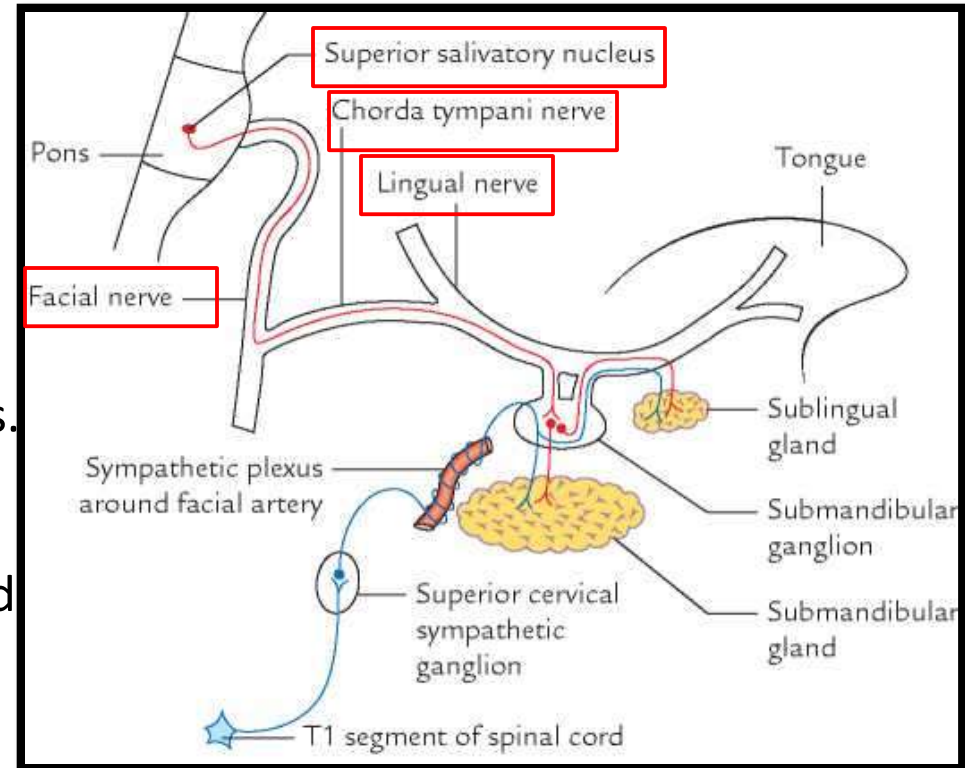
Submandibular Ganglion contd...

ROOTS- 3

- Parasympathetic.
- Sympathetic.
- Sensory.

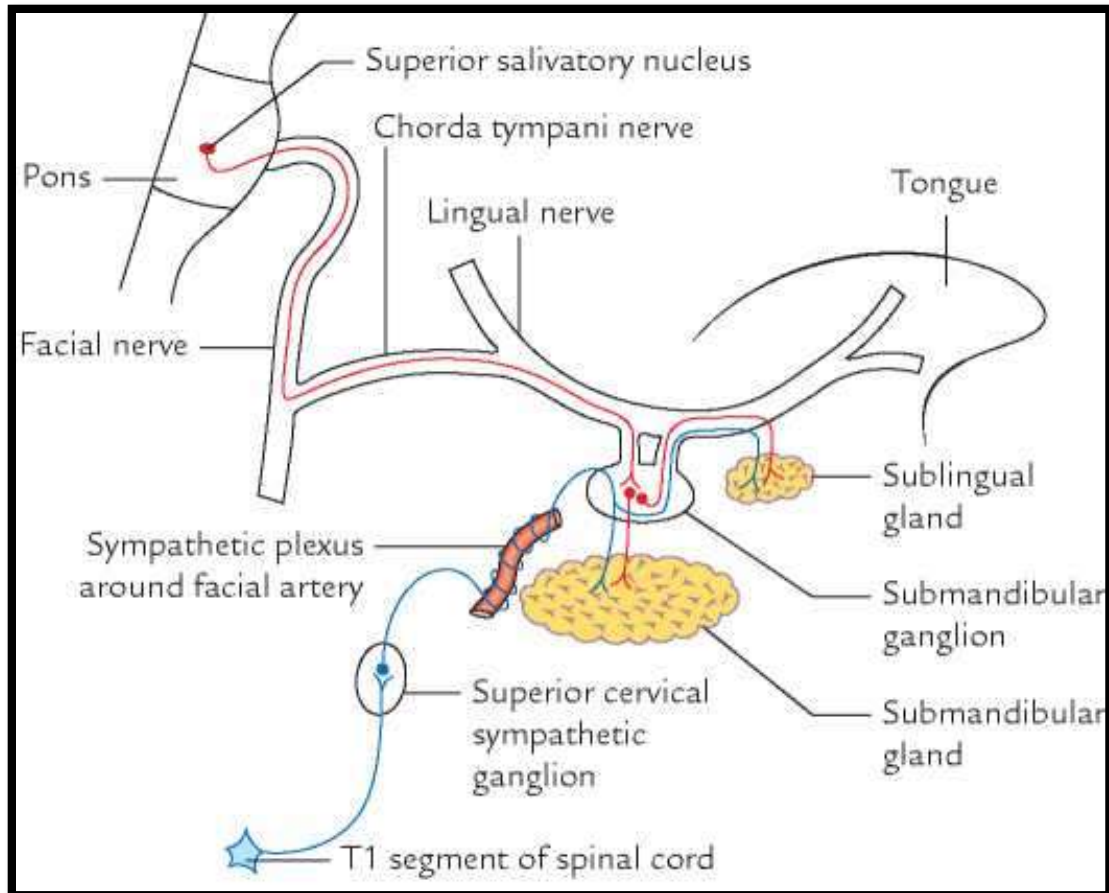
Parasympathetic or motor root:

- Derived from lingual nerve.
- The preganglionic fibres arise from **superior salivatory nucleus** in the pons.
- Preganglionic fibres pass successively through the facial, chorda tympani and lingual nerves and reach the submandibular ganglion.
- Preganglionic fibres relay in submandibular ganglion.



Parasympathetic or motor root contd...

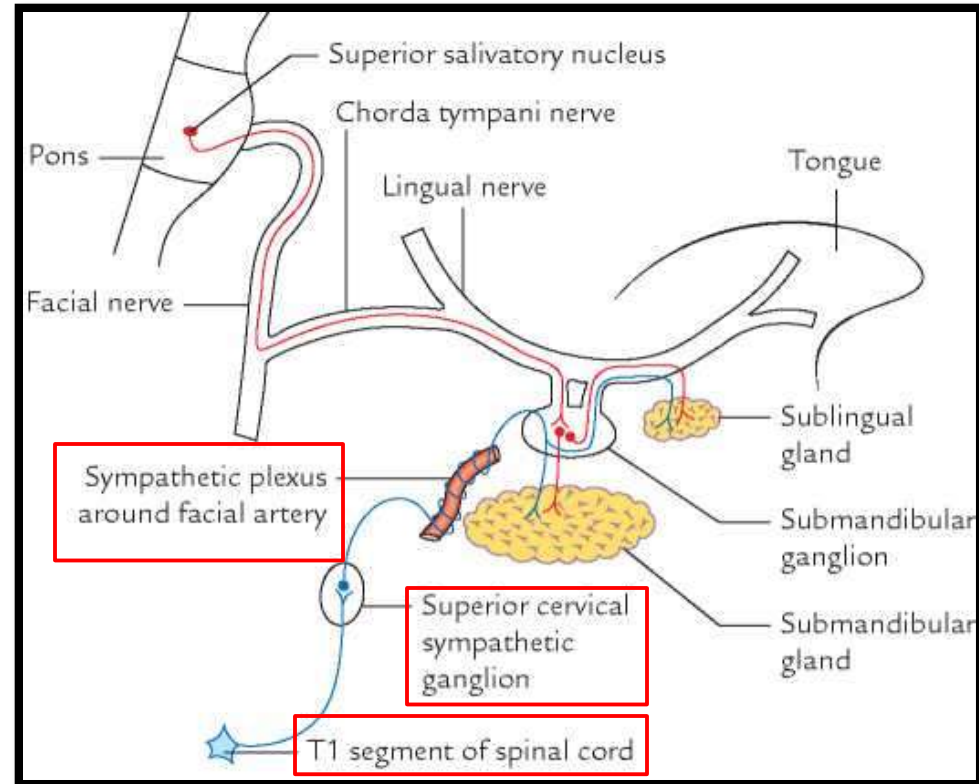
- Postganglionic fibres directly supply the submandibular gland by five or more branches.
- Some postganglionic fibers join the lingual nerve through the anterior root and supply the sublingual gland.



Submandibular Ganglion contd...

Sympathetic Root:

- It is derived from a plexus around the **facial artery** which is formed by postganglionic sympathetic fibres.
- Postganglionic sympathetic fibres arise from **superior cervical sympathetic ganglion** of the sympathetic trunk.
- These fibres pass through the submandibular ganglion **without relay**.
- These fibres supply the blood vessels of submandibular and sublingual salivary glands.



A circular graphic with a thin black border. Inside the circle, the words "Thank you" are written in a black, elegant cursive script. The word "Thank" is on the top line, and "you" is on the bottom line, both centered horizontally. The letters are fluid and connected, with a classic calligraphic style.

Thank
you