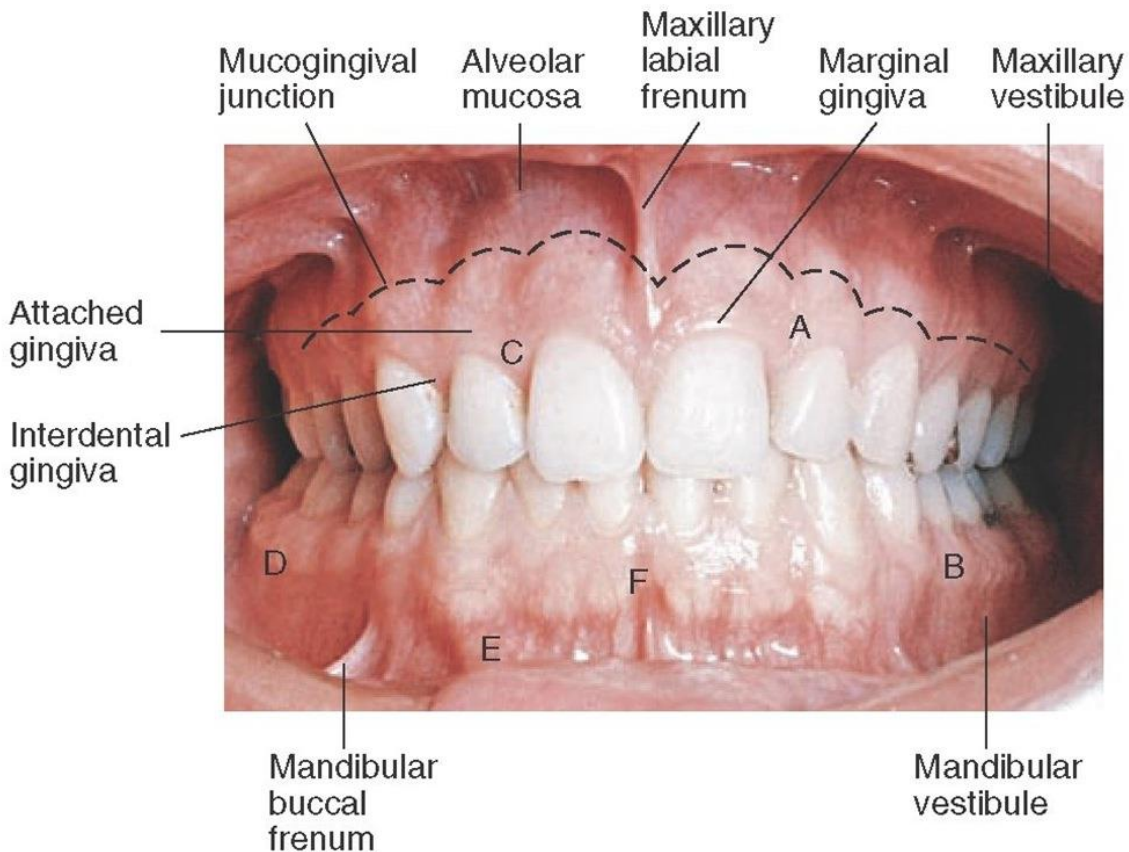


# ORAL (MOUTH) CAVITY

## \* Two Parts:

### I. Vestibule of the mouth:

- It lies between the teeth and gums internally and the cheeks and lips externally. Superiorly and inferiorly limited by the reflection of mucous membrane from lips and cheek to the gums
- **Communicates** with the exterior through the oral fissure
- When the jaws are closed, communicates with the oral cavity proper behind the 3<sup>rd</sup> molar tooth on each side
- **Parotid duct** opens into it opposite the upper 2<sup>nd</sup> molar tooth.
- **The cheek:** Consists of: Skin, buccal pad of fat, buccopharyngeal fascia, **buccinator muscle**, buccal glands (mucous glands) and mucous membrane of the vestibule.



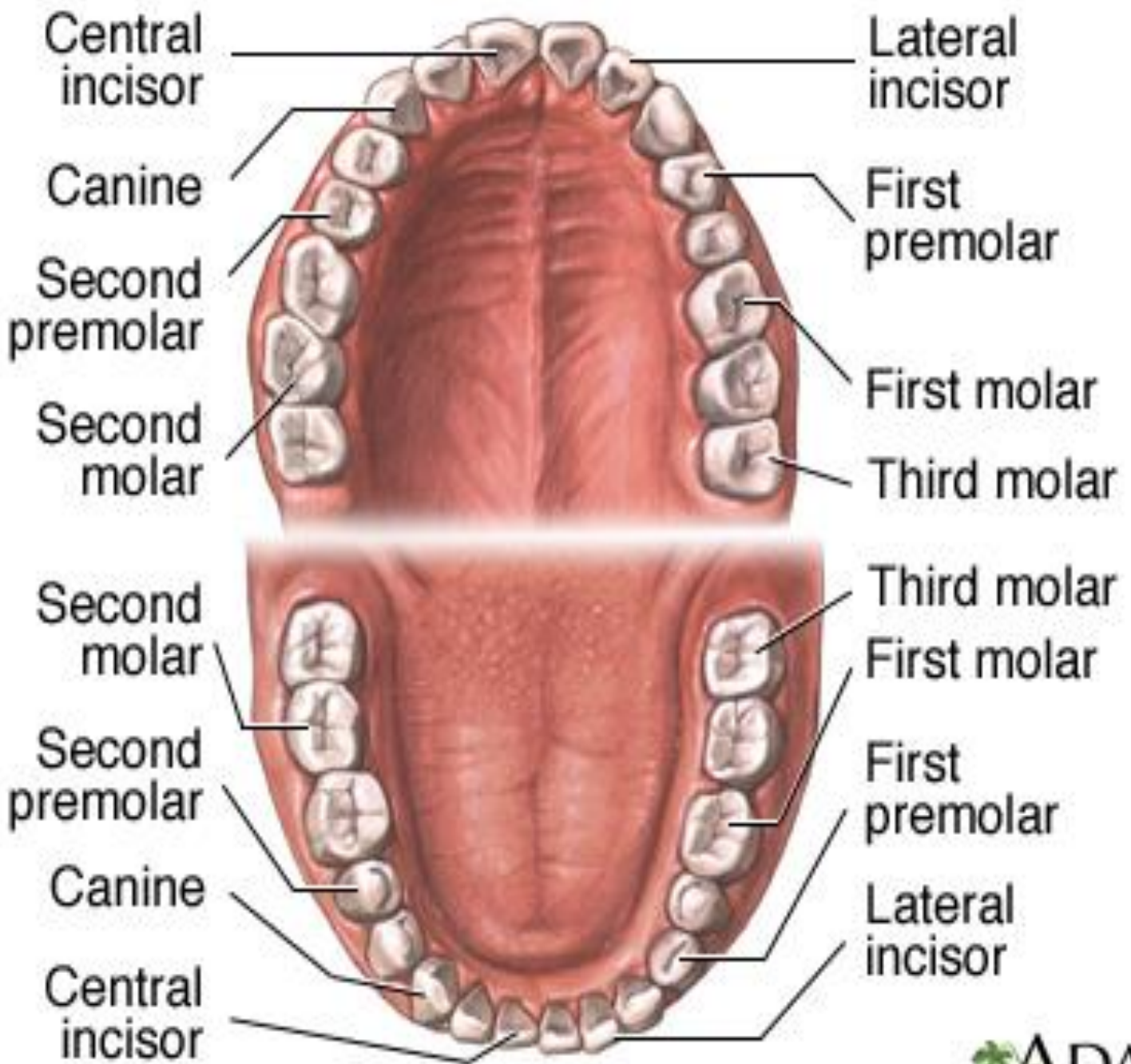
## \*Vestibule of the mouth\*



**I. Mouth cavity proper: Boundaries:**

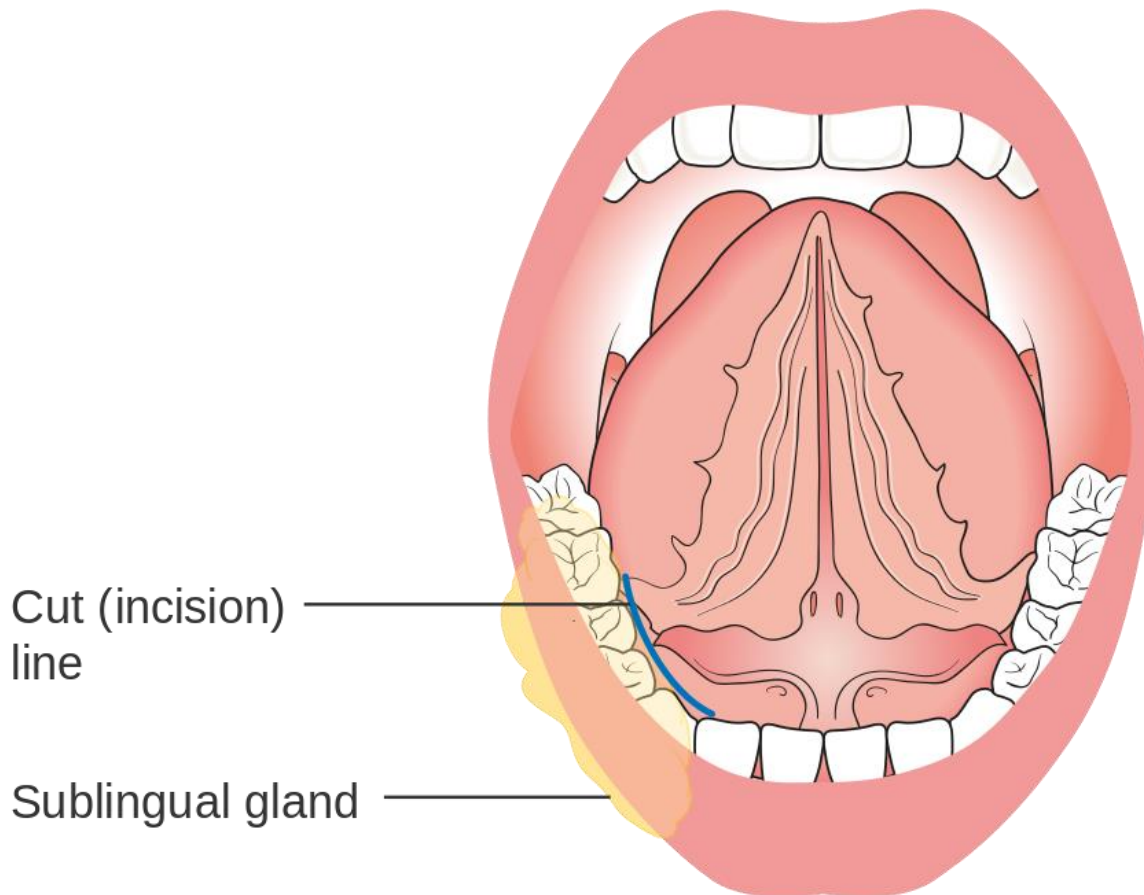
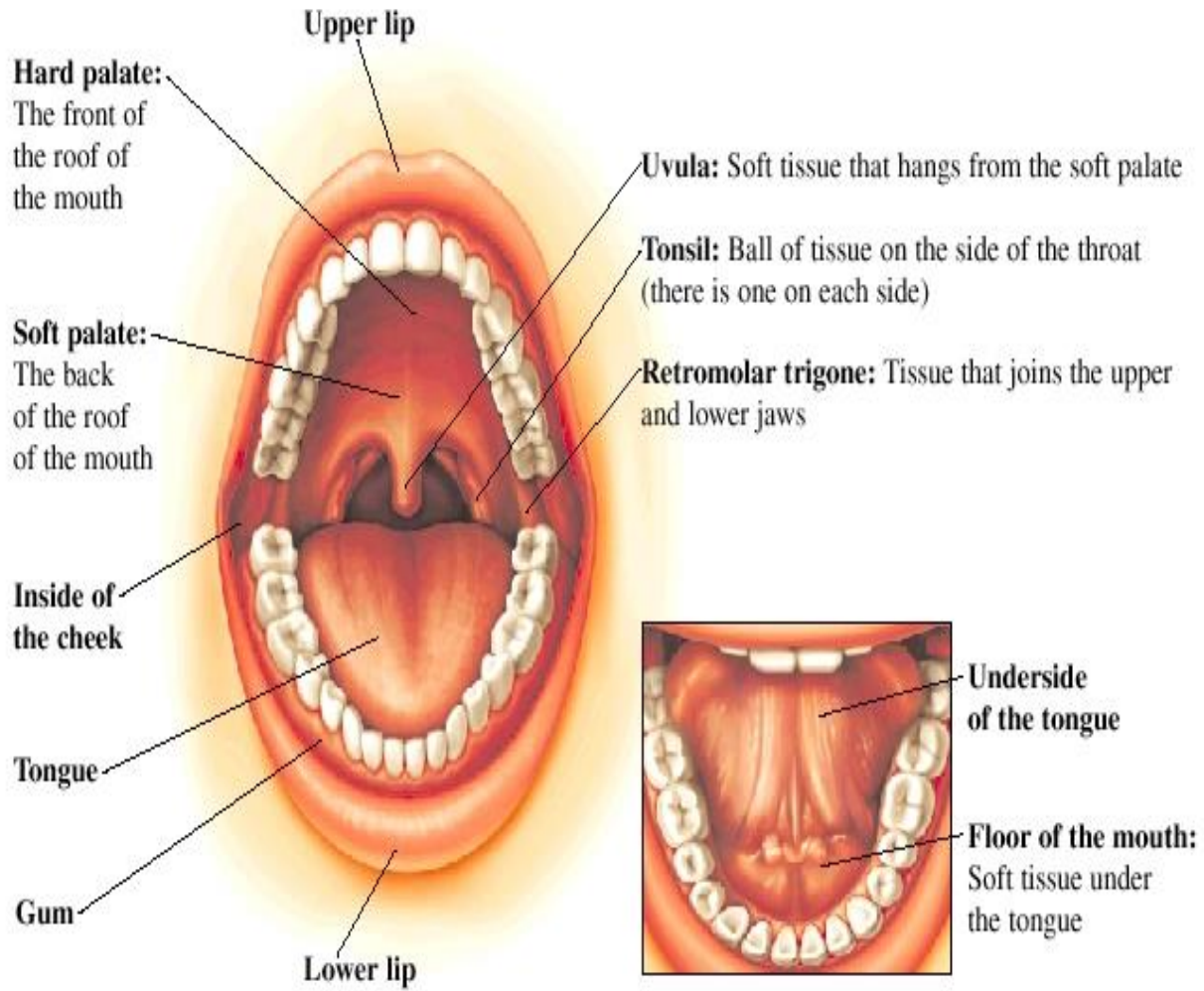
- ***In front and sides:*** The teeth and gums.
- ***Behind:*** It communicates with the oro-pharynx through the **oro-pharyngeal isthmus formed by** soft palate , palate-glossal arch & dorsum of tongue.
- ***Above (Roof):*** Consists of hard and soft palate.
- ***Below (Floor):*** Consists of the following structures:
  - 1- ***Anterior 2/3 of the tongue.***
  - 2- ***Lower (ventral) surface of the tongue:*** showing:
    - a- **Frenulum linguae:** a mucosal fold present in the midline which connects the tongue with the floor of mouth. There are 2 structures lying lateral to it:
      - (1) **deep vein of tongue.**
      - (2) **fimbriated ridge .**
    - b- **Sublingual papilla:** small elevation on each side of the lower end of the frenulum of the tongue, it receives the orifice of the **submandibular duct.**
    - c- **Sublingual fold:** elevated mucous fold produced by **sublingual gland.** It lies lateral to the sublingual papilla and it shows the orifices of the small

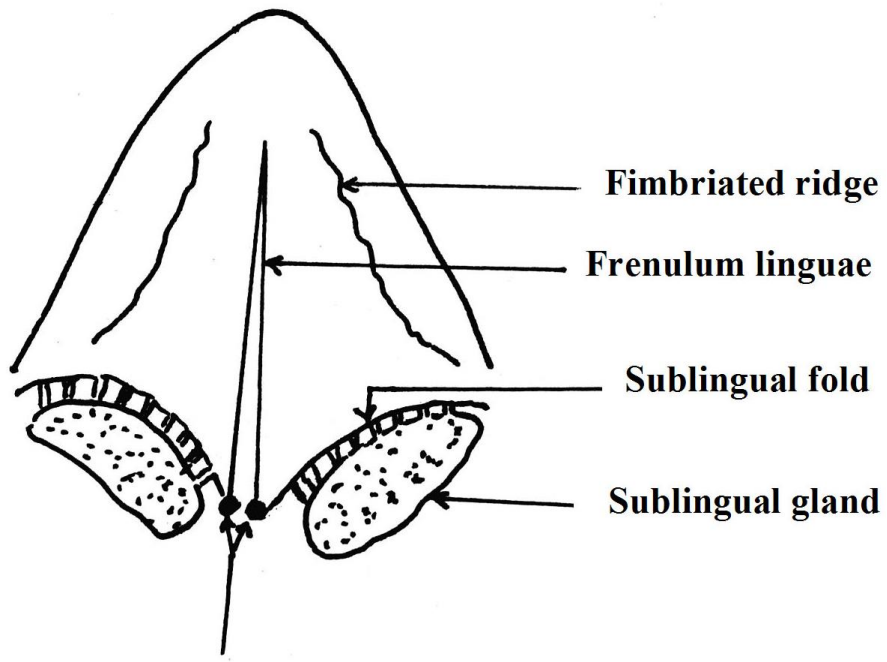
ducts of the sublingual glands.



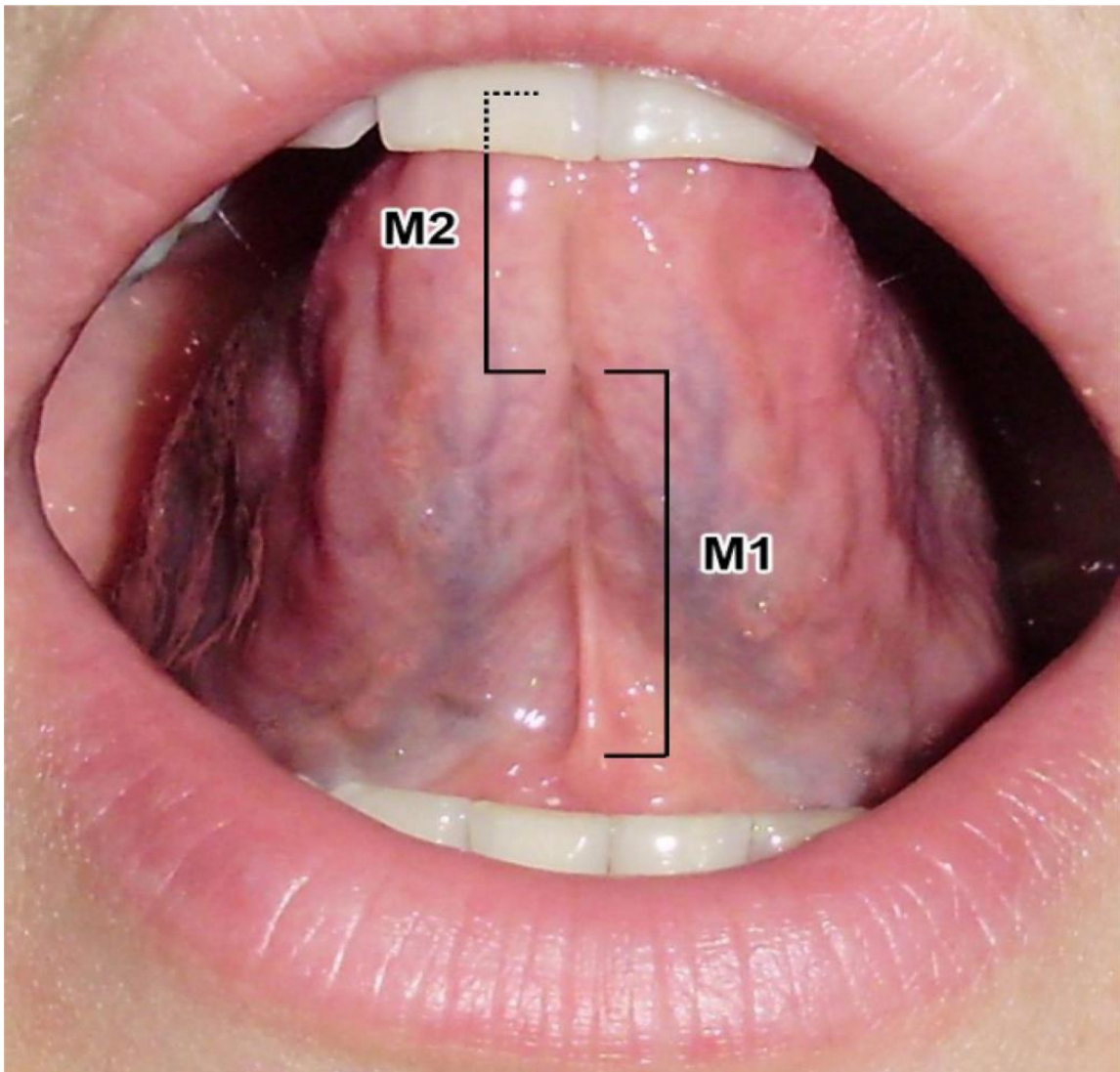
ADAM.

**\*Roof & floor of mouth cavity proper \***

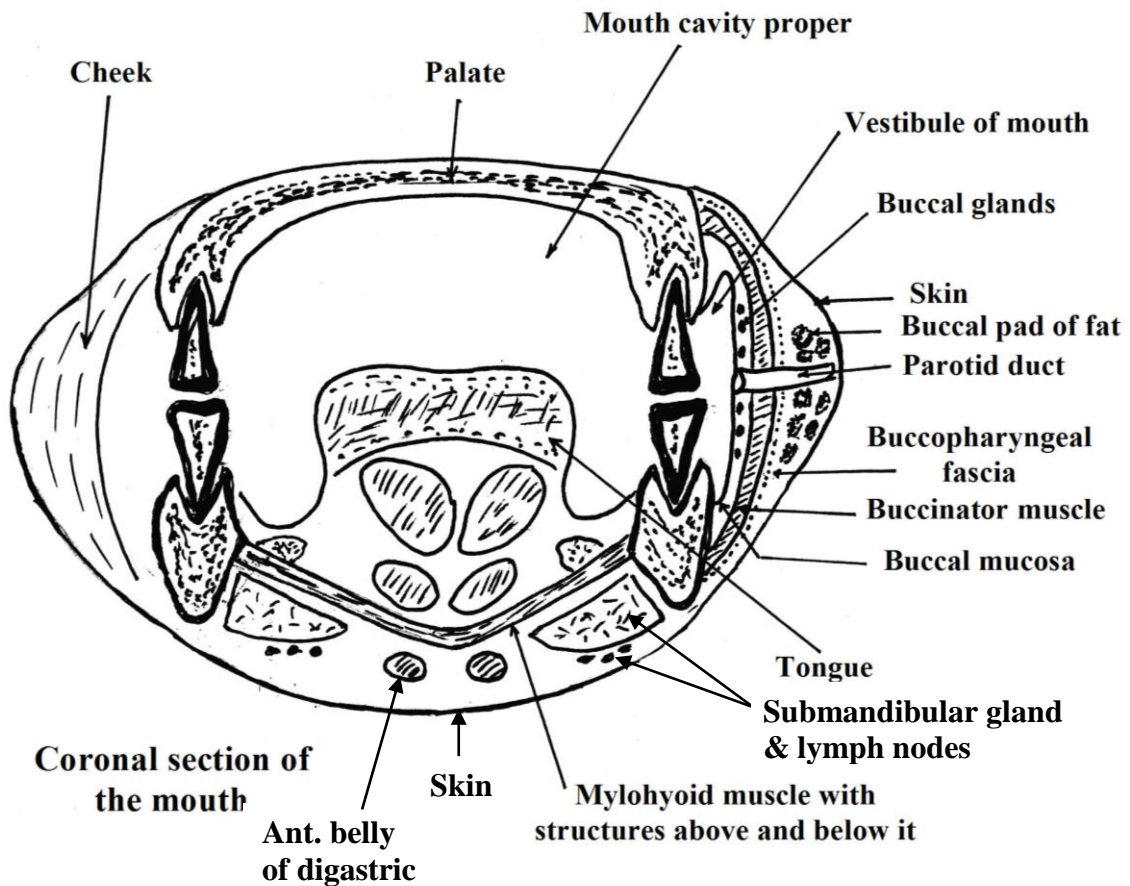
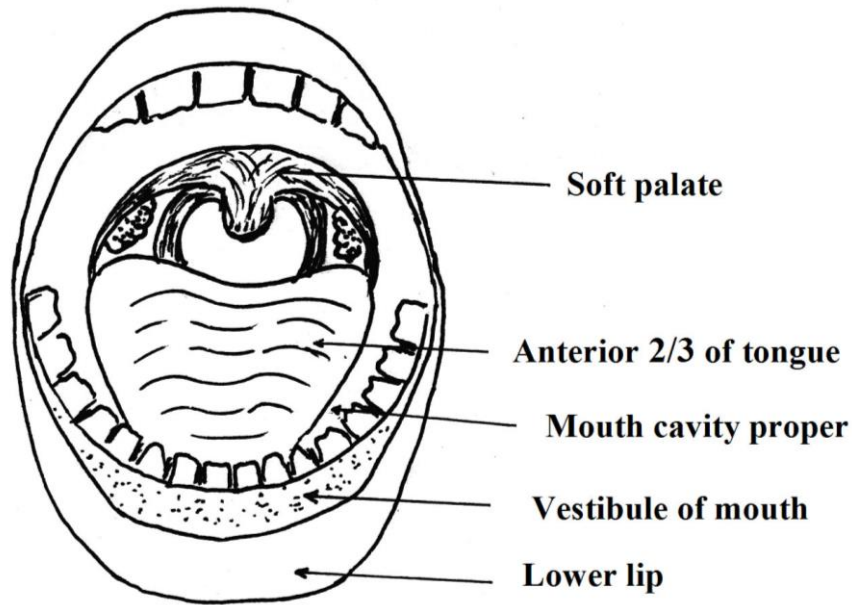




Sublingual papillae



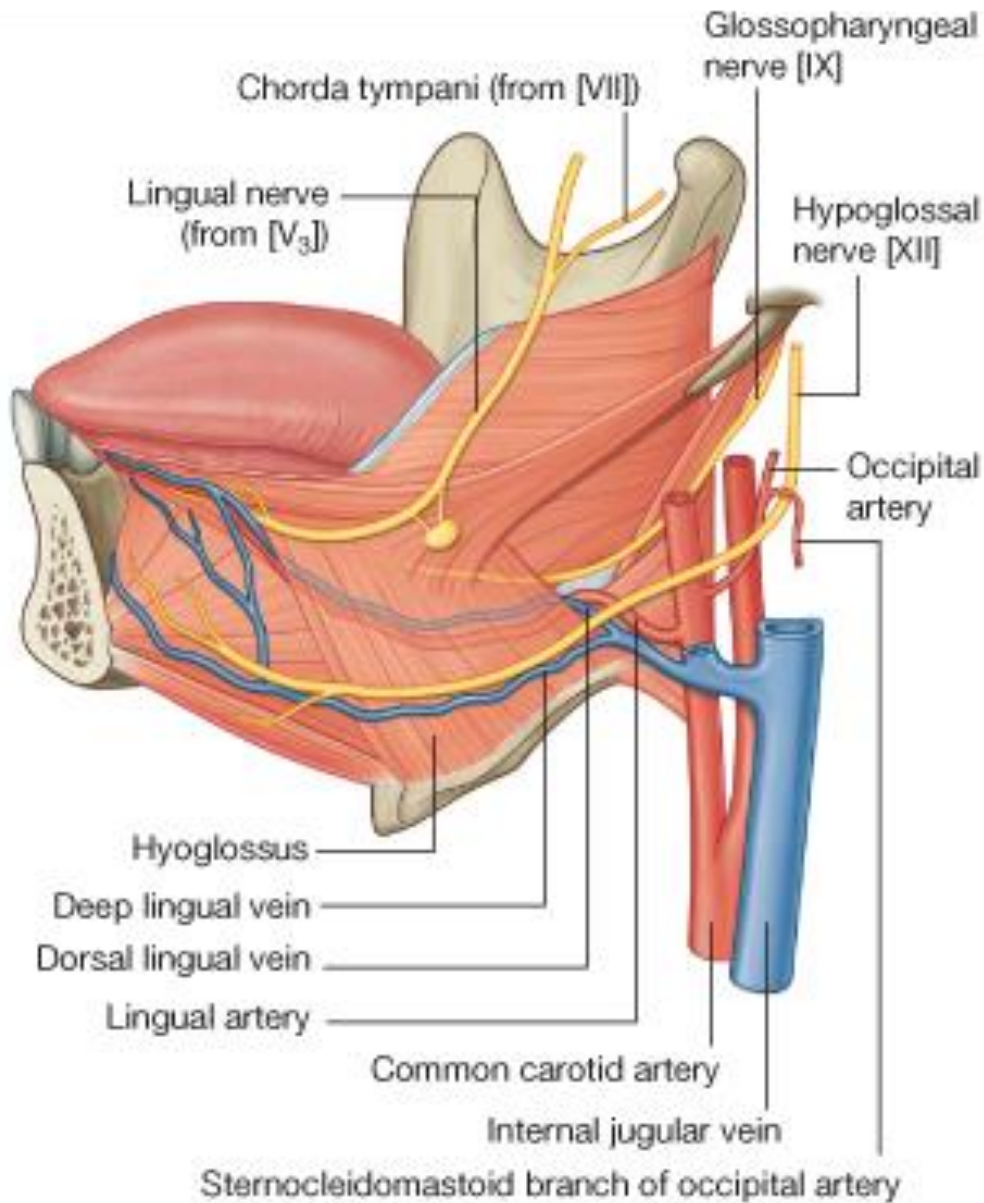
## *Mouth Cavity*

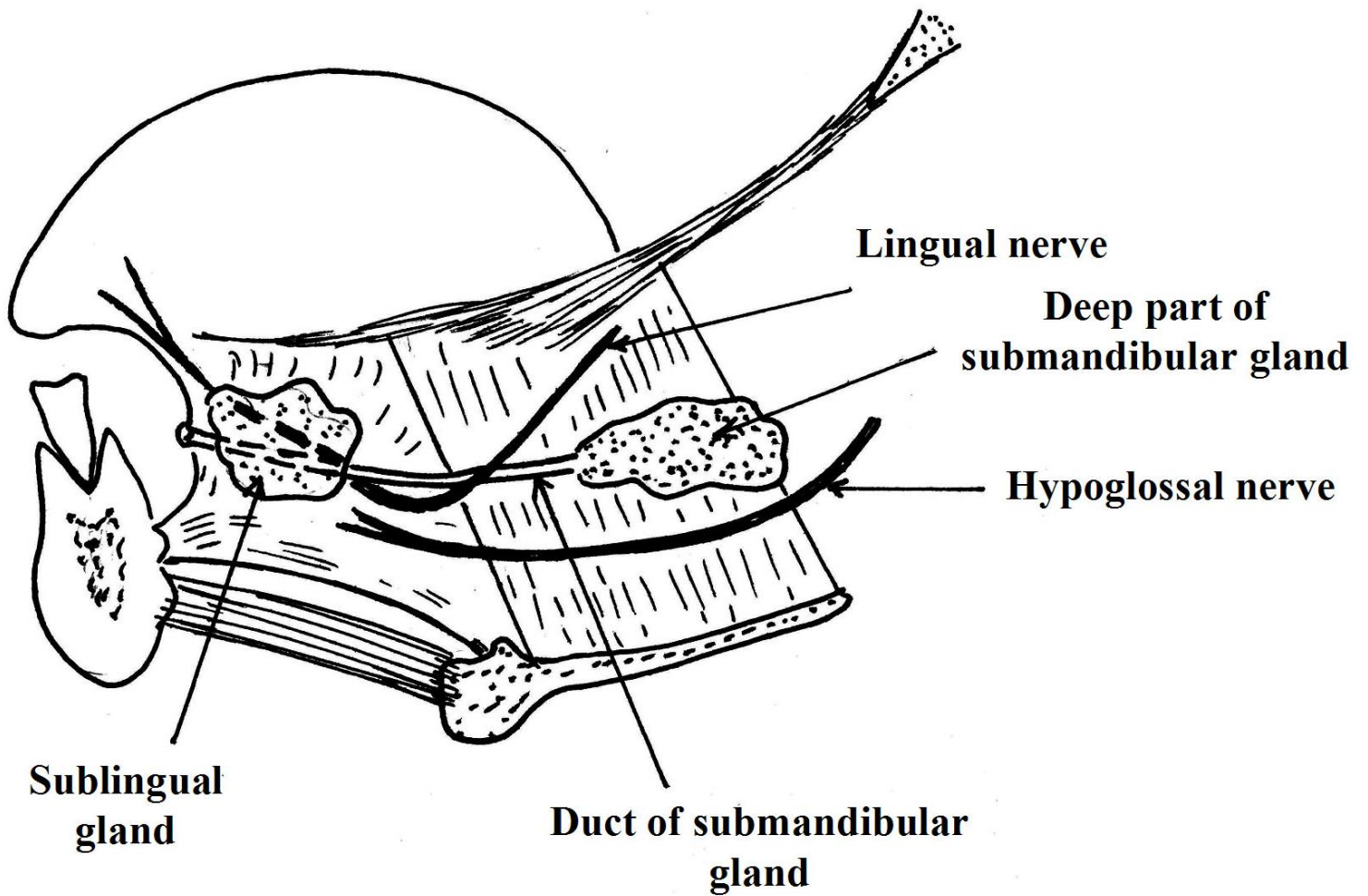


**3- Mylohyoid muscle with structures deep and superficial to it:**

• **Structures present deep to mylohyoid muscles:**

- a- Muscles: geniohyoid, genioglossus and hyoglossus.
- b- Glands: sublingual gland and the deep part of the submandibular gland and its duct.
- c- Nerves: Lingual nerve with submandibular ganglion and hypoglossal nerve.
- d- Blood vessels: Lingual blood vessels.

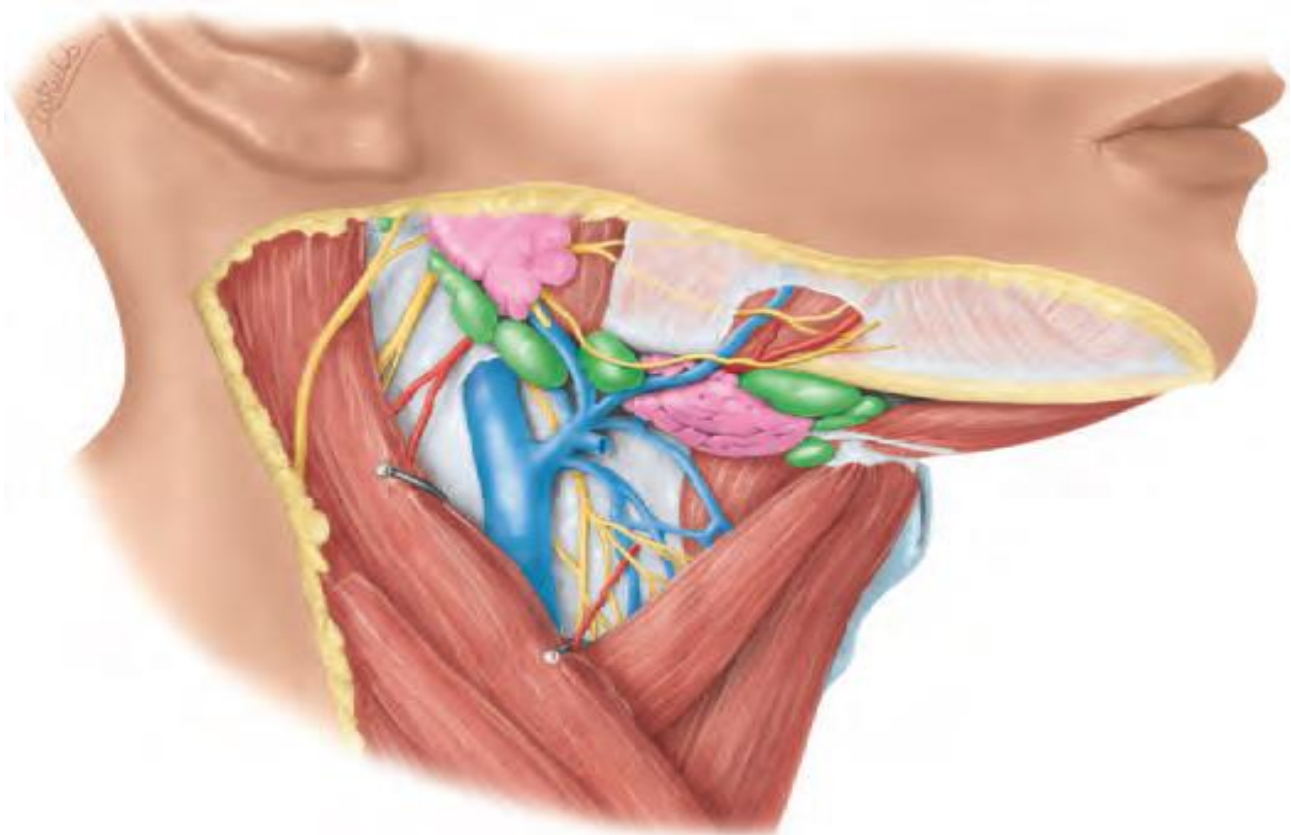
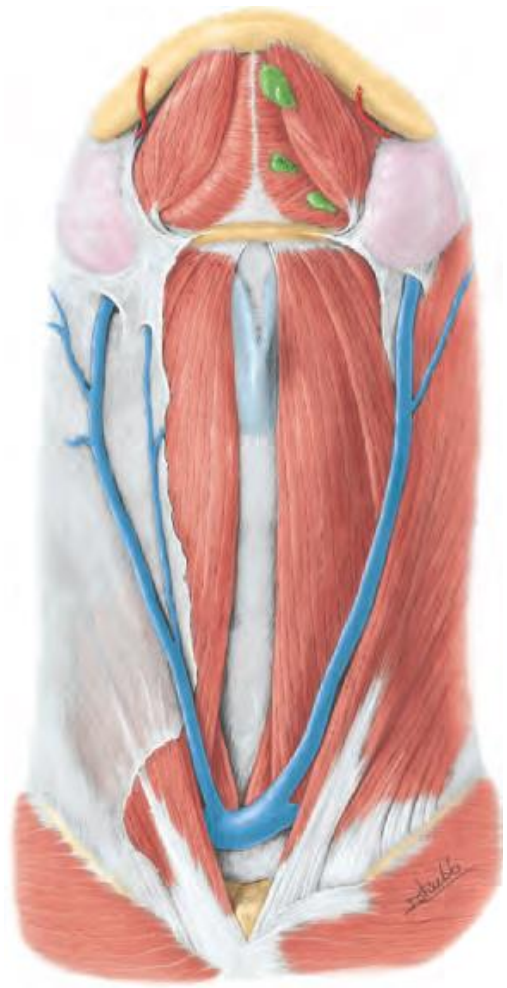
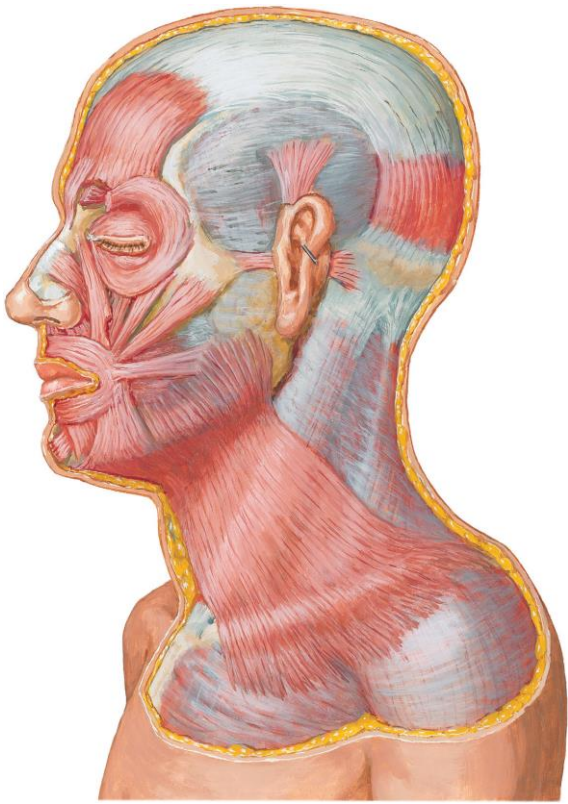




• ***Structures present superficial to the mylohyoid muscle:***

- a- Anterior belly of digastric muscle.
- b- Superficial part of submandibular gland.
- c- Submandibular lymph nodes.
- d- Submental lymph nodes.
- e- Skin, superficial fascia, platysma and investing layer of deep fascia.





# The Tongue

\*The tongue is a mass of muscles covered by mucous membrane.

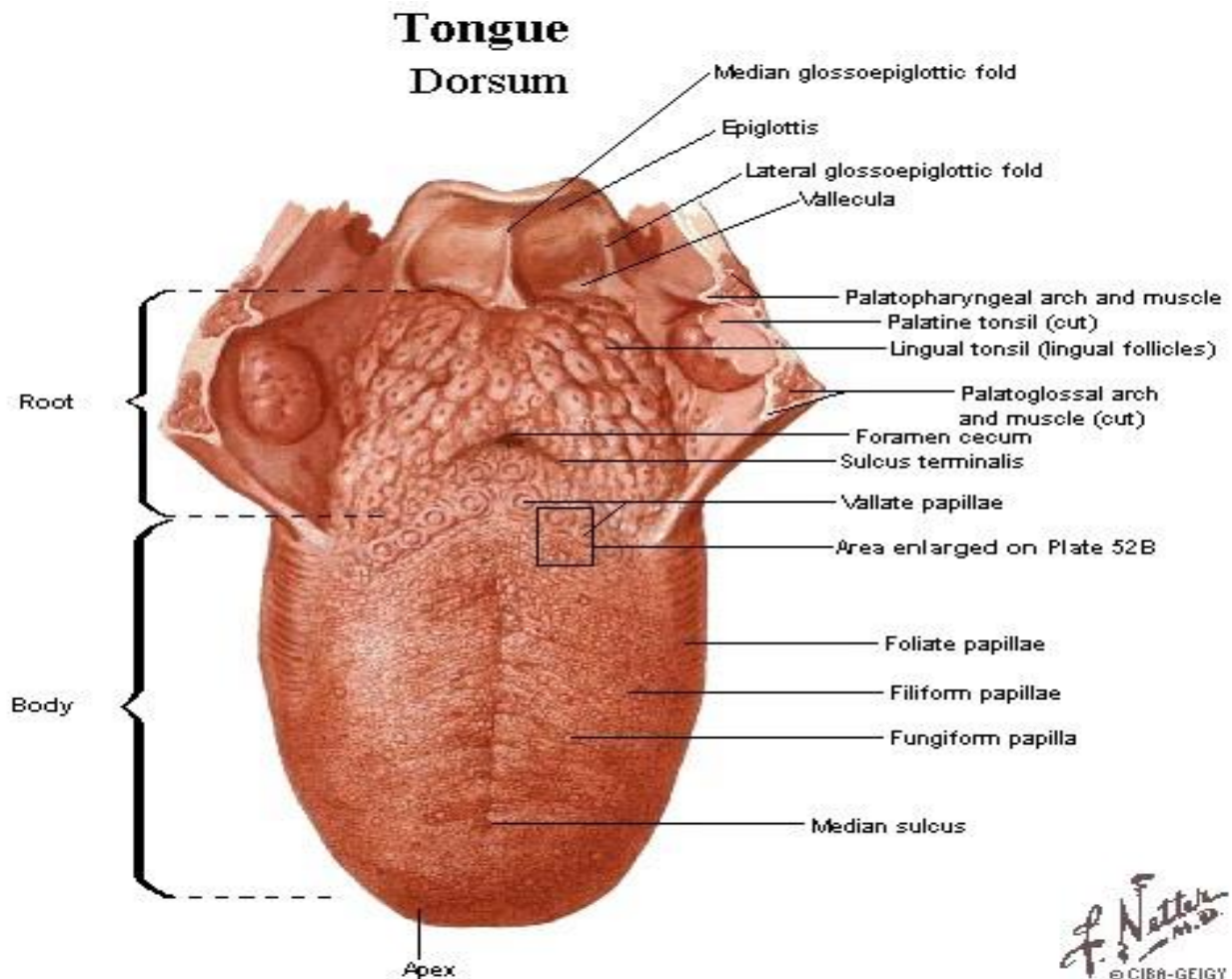
\*It has tip, margins, root, and 2 surfaces (lower ventral and upper dorsal).

## A- The lower (ventral) surface:

- It is the part related to the floor of mouth. It is smooth and has the following characters: **The frenulum linguae , deep lingual vein & Fimbriated ridge ( as before ) .**

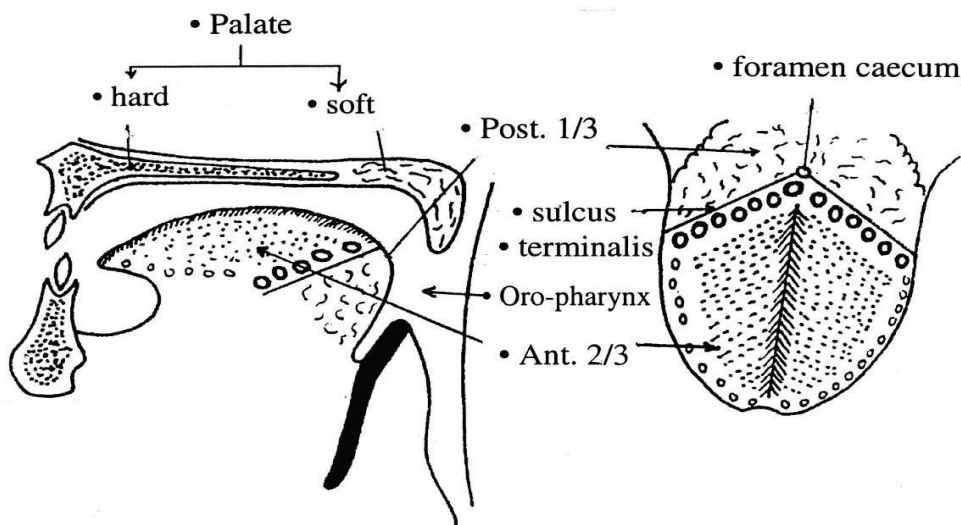
## B- The upper (dorsal) surface:

- It is rough due to lingual papillae and is divided into 2 parts; anterior 2/3 ( which has a median sulcus ) and posterior 1/3 by a V-shaped groove called sulcus terminalis ( with the foramen cecum .



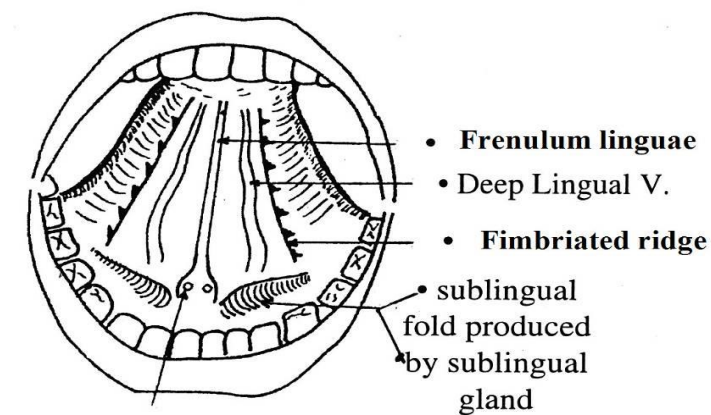
Anterior 2/3	Posterior 1/3
<ol style="list-style-type: none"> <li>1. Oral part lies in the mouth cavity</li> <li>2. Directed upwards</li> <li>3. Contains lingual papillae (filiform, fungiform and vallate)</li> <li>4. It has 2 sensory nerves: lingual ( General sensation ) and chorda tympani nerves ( taste )</li> </ol>	<ol style="list-style-type: none"> <li>1. Pharyngeal part lies in the oropharynx</li> <li>2. Directed backwards</li> <li>3. Contains a mass of lymphoid tissue in the submucosa called lingual tonsil .</li> <li>4. It has one sensory nerve for taste &amp; general sensation : glossopharyngeal nerve</li> </ol>

### *Tongue*



**Sagittal section of tongue**

**Dorsum of tongue**



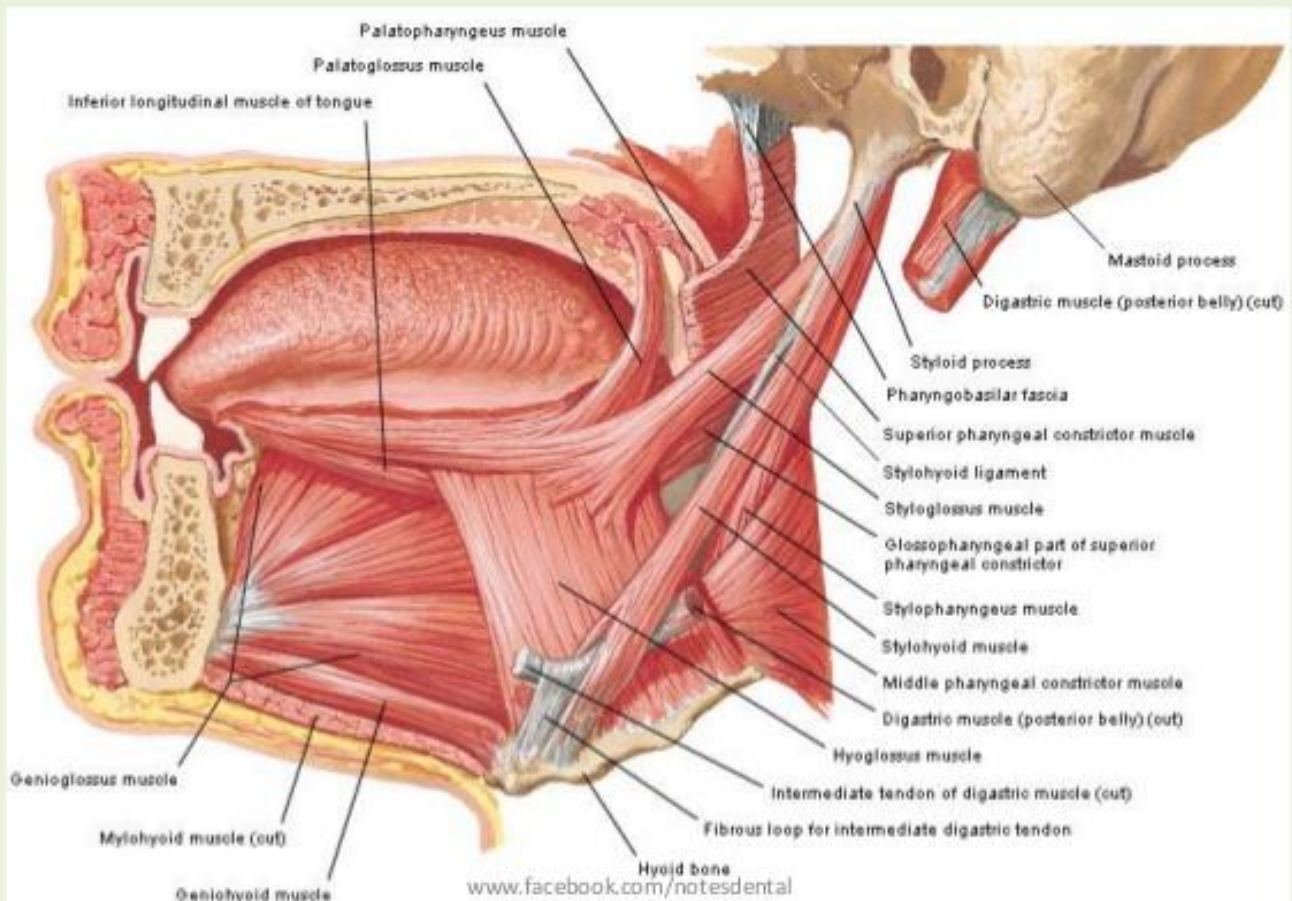
• Sublingual papilla with the opening of submandibular duct

***Lower Surface of Tongue***

**\*Muscles of the tongue:**

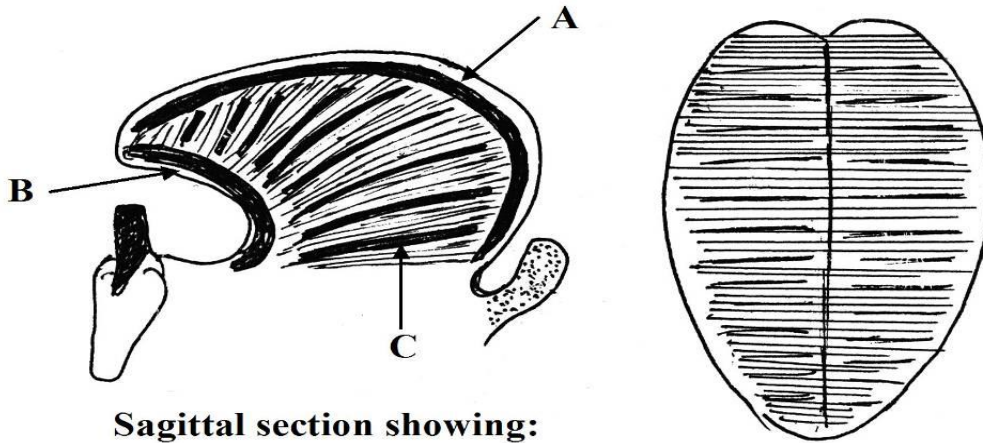
Extrinsic muscles (4)	Intrinsic muscles (4)
<ol style="list-style-type: none"> <li>1. <b>Styloglossus:</b> From the styloid process. It retracts the tongue</li> <li>2. <b>Palatoglossus:</b> From palatine aponeurosis. It elevates the tongue</li> <li>3. <b>Hyoglossus:</b> From hyoid bone. It depresses the tongue</li> <li>4. <b>Genioglossus:</b> From the upper genial tubercle of mandible. It protrudes the tongue</li> </ol>	<ol style="list-style-type: none"> <li>1. <b>Superior and inferior longitudinal, vertical, and transverse .</b></li> <li>2. Begins &amp; ends in the tongue .</li> <li>3. They change the shape of the tongue; turn the tip upwards or downwards .</li> </ol>

## Extrinsic Muscles



**\*Nerve supply of Muscles of the tongue** :All intrinsic and extrinsic muscles of tongue are supplied by the **hypoglossal nerve except** the palatoglossus which is supplied **cranial root of accessory nerve** through pharyngeal branch of vagus.

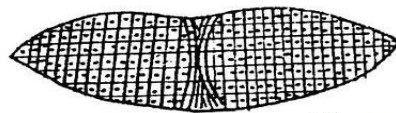
### *Intrinsic Muscles of Tongue*



**Sagittal section showing:**

- **Longitudinal:**
  - **Superior (A)**
  - **Inferior (B)**
- **Vertical (C)**

- **Transverse section showing transverse muscles**

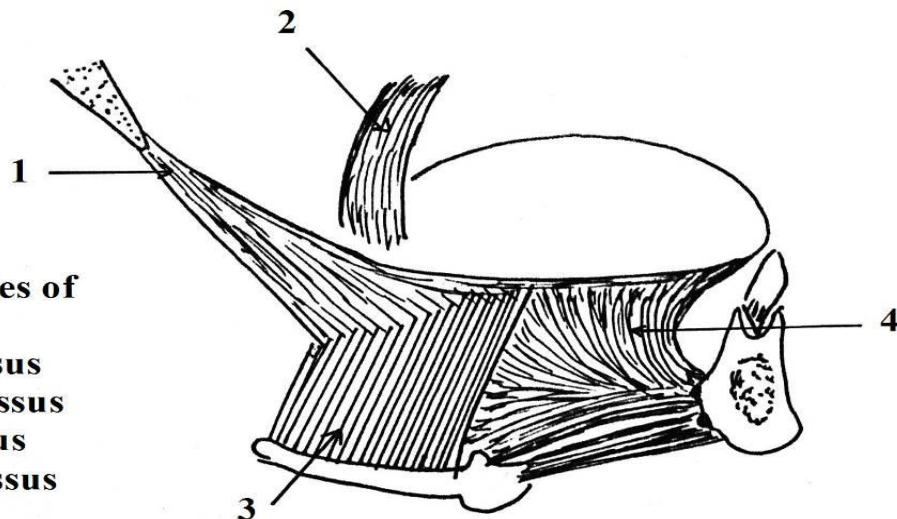


**Coronal section showing:**

- **Vertical muscles**
- **Transverse muscles**
- **Longitudinal muscles**

**Extrinsic muscles of tongue:**

1. **Styloglossus**
2. **Palatoglossus**
3. **Hyoglossus**
4. **Genioglossus**



**\*Blood Supply of the Tongue:**

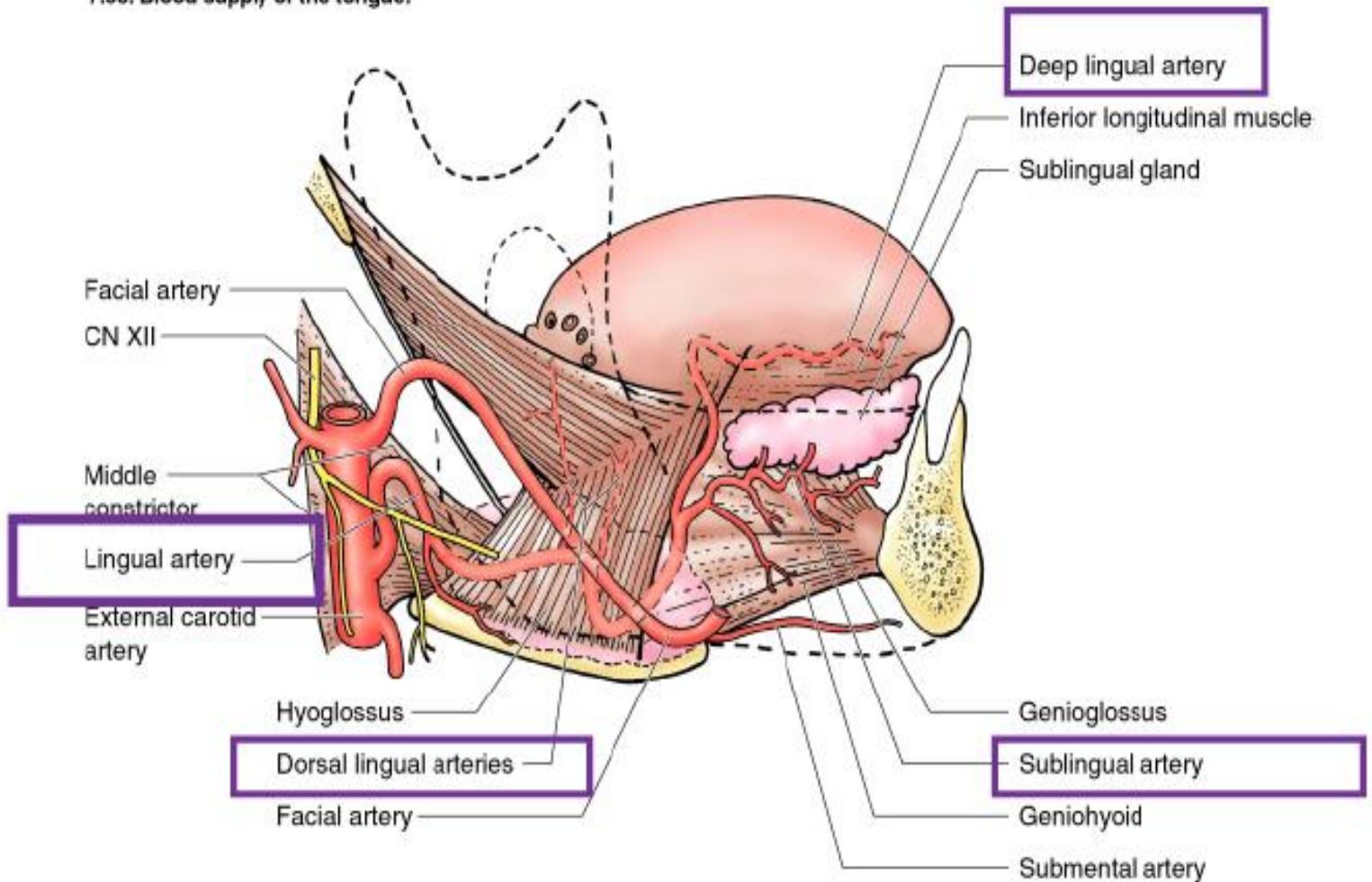
**A- Arterial supply: lingual artery** which is a branch of external carotid gives :

**1- Deep (profunda) lingual artery:** It is the continuation of lingual artery which supplies the anterior 2/3 of tongue.

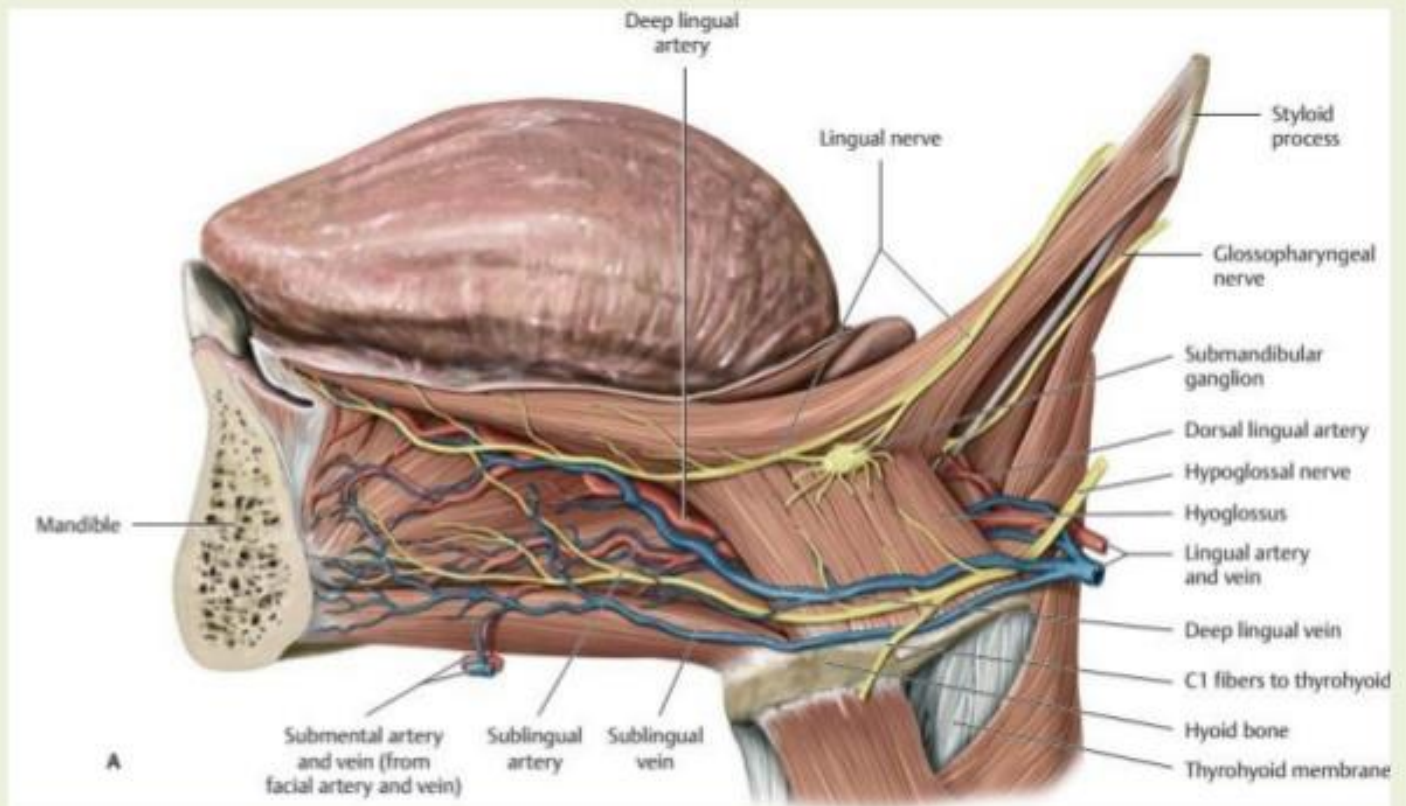
**2- Dorsal lingual arteries:** Arise deep to hyoglossus and ascend to supply the posterior part of the tongue.

# Arterial Supply to the Tongue

7.58. Blood supply of the tongue.



# Neurovascular supply of tongue

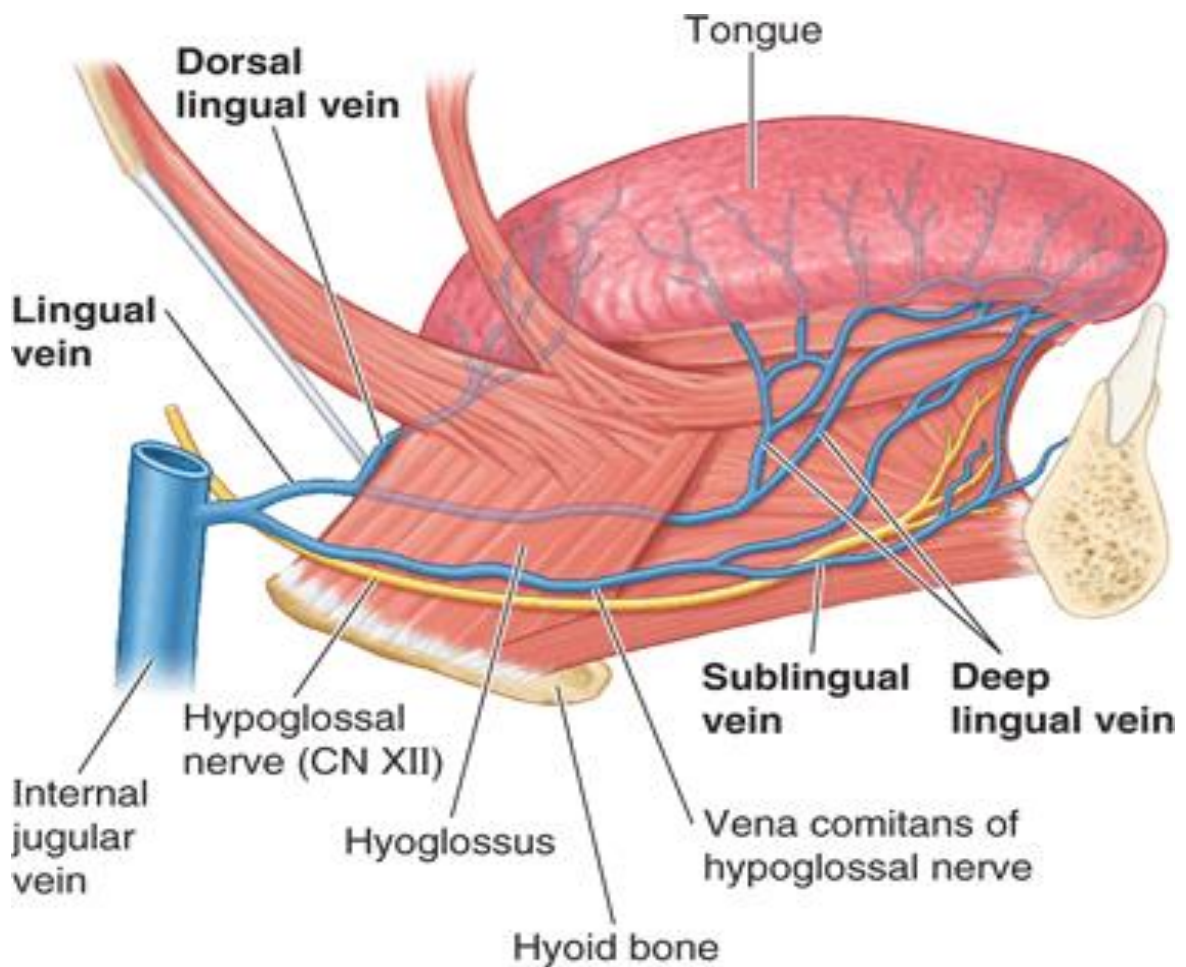
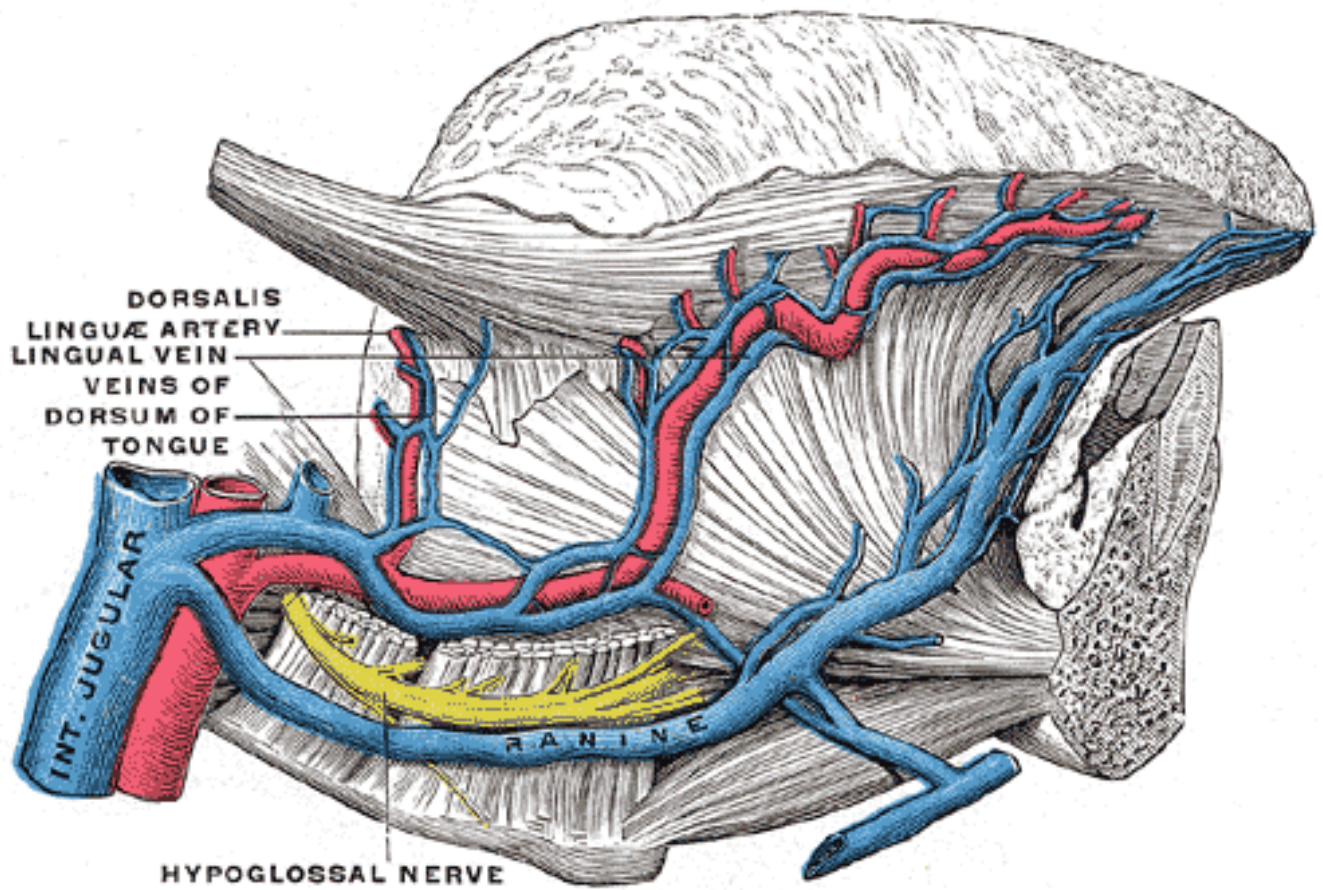


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## B- Veins of the tongue:

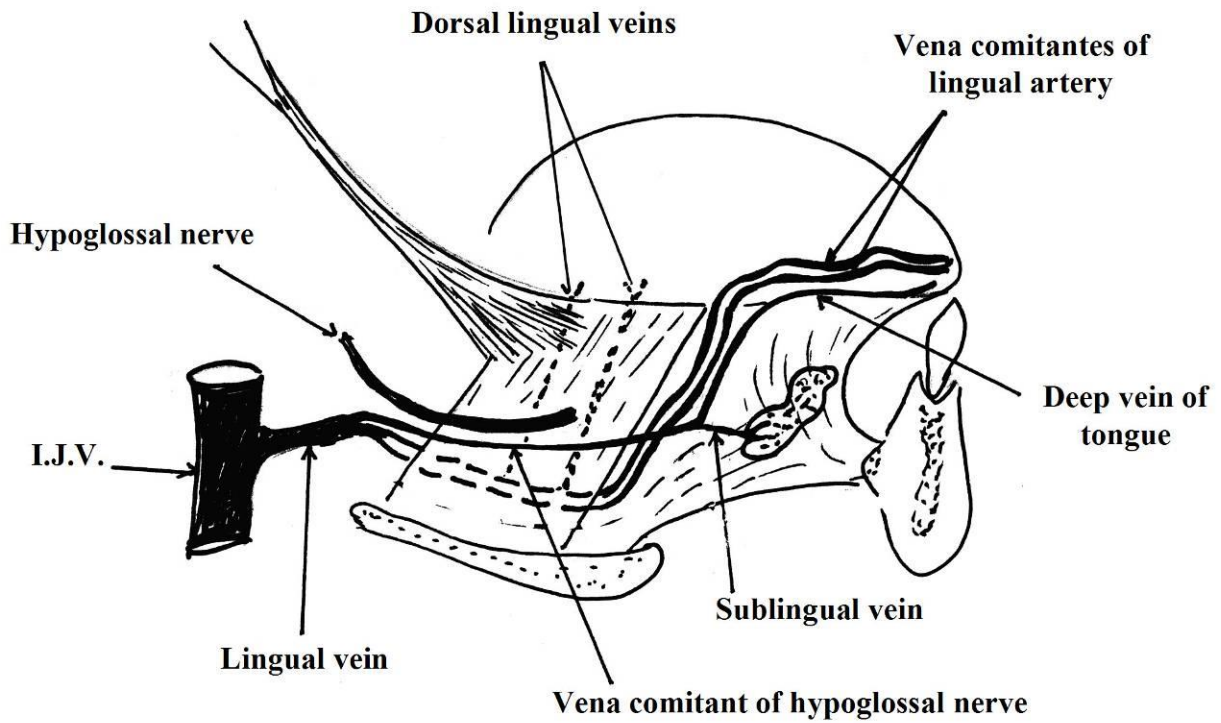
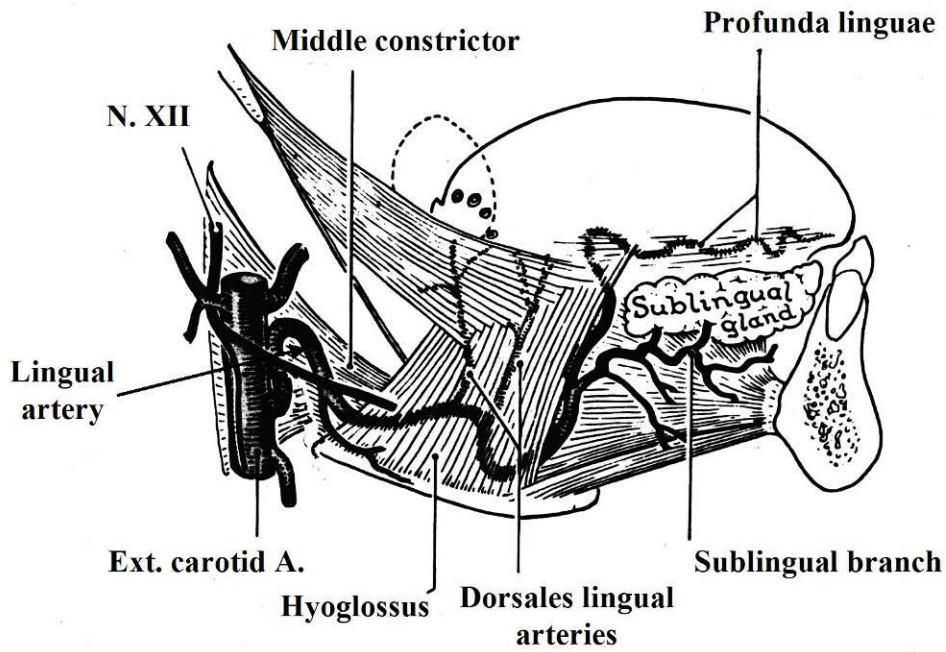
**1- Deep vein of the tongue :** It is the **principal vein** of the tongue which begins at the tip of tongue and runs backwards deep to the mucosa of the lower surface of the tongue. It joins the the vena comitant of lingual artery which runs deep to hyoglossus muscle , where it receives dorsal veins , and finally ends in lingual vein which drains into internal jugular vein.

**2- Sublingual veins join veins accompanying the hypoglossal nerve , pass superficial to hyoglossus muscle , to end in the lingual vein.**





## *Arterial Supply of Tongue*



## *The Veins of the Tongue*

**\*Lymph Drainage of the Tongue:**

**A-Anterior 2/3 of the tongue:**

**1-Lymph vessels from the tip and frenulum of the tongue:** They drain into **submental** lymph nodes.

**2-Lymph vessels from margins of tongue:** They pass to submandibular , on the same side.

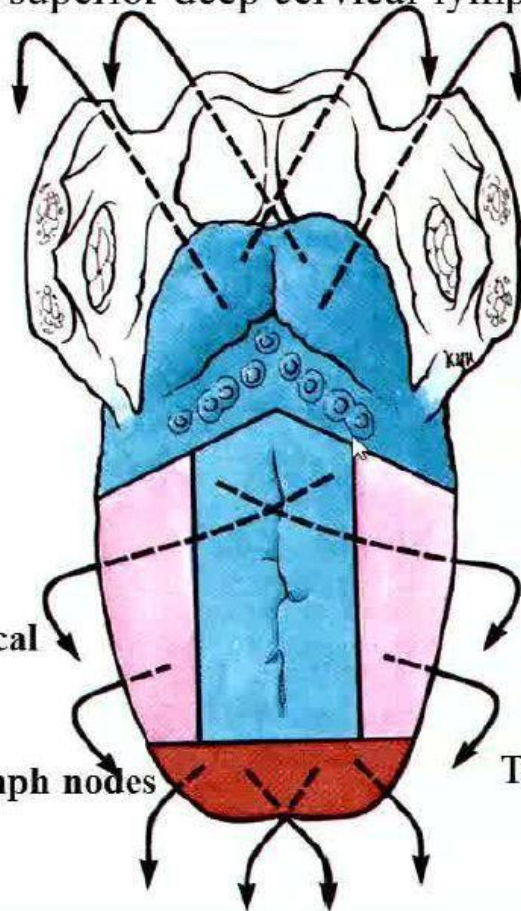
**3-Central 1 cm:** drain in the submandibular lymph nodes of both sides.

**B-Posterior 1/3 of the tongue:**

- Drained by lymph vessels to jugulo-digastric and jugulo-omohyoid lymph nodes ( parts of upper & lower deep cervical groups (on the same side in case of the margins or both sides in case of its central part).

## Lymphatic drainage of the Tongue

To superior deep cervical lymph nodes



To inferior deep cervical lymph nodes

To inferior deep cervical lymph nodes

To submandibular lymph nodes

To submandibular lymph nodes

To submental lymph nodes

**\*Nerve Supply of the Tongue:**

**A- Motor:**

All muscles of the tongue (4 intrinsic and 4 extrinsic) are supplied by hypoglossal nerve except palatoglossus muscle which is supplied cranial root of accessory nerve, through pharyngeal branch of vagus.

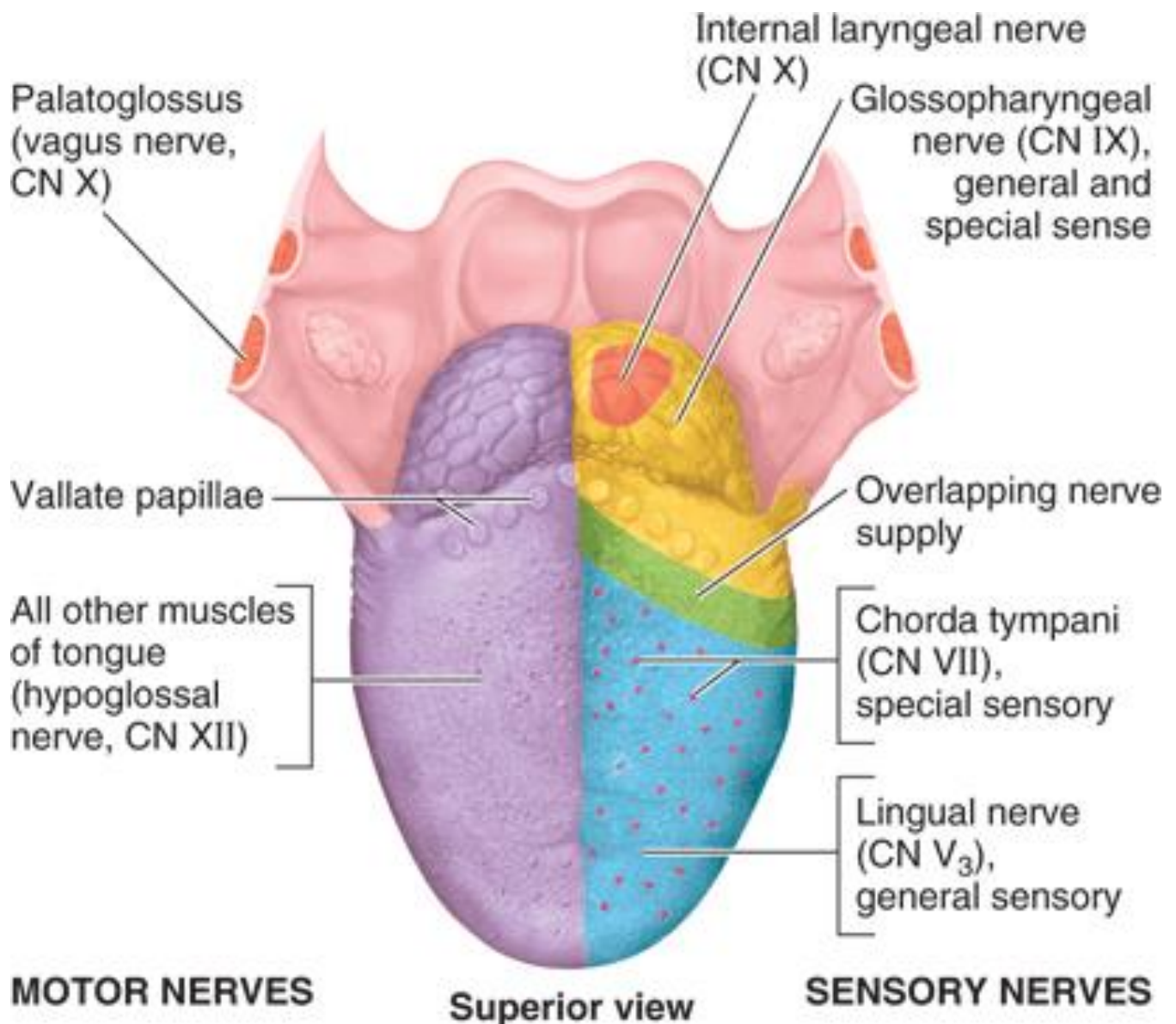
**B- Sensory:**

a- **Anterior 2/3 are supplied by 2 nerves:**

- Lingual nerve: For general sensation (pain, temperature, touch).
- Chorda tympani nerve: For taste sensation.

b- **Posterior 1/3 is supplied by one nerve:**

- Glossopharyngeal nerve: For both general and taste sensation.



# Palate

☉ Lies in the roof of the oral cavity proper.

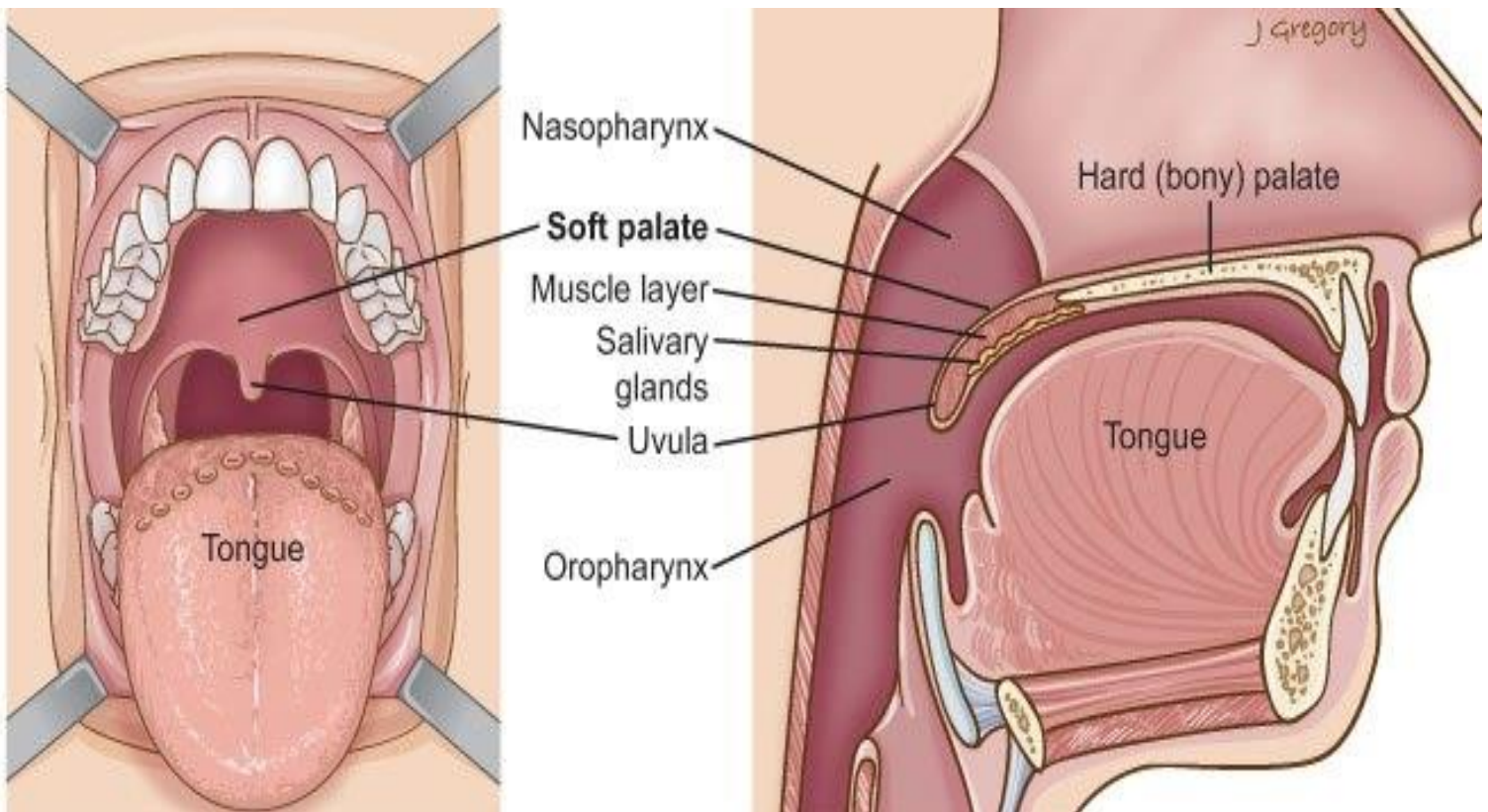
☉ Has two parts:

## 1- Hard (bony) palate anteriorly :

- Lies in the roof of the oral cavity & forms the floor of the nasal cavity
- Bounded by alveolar arches .
- Formed by: ( see skull )

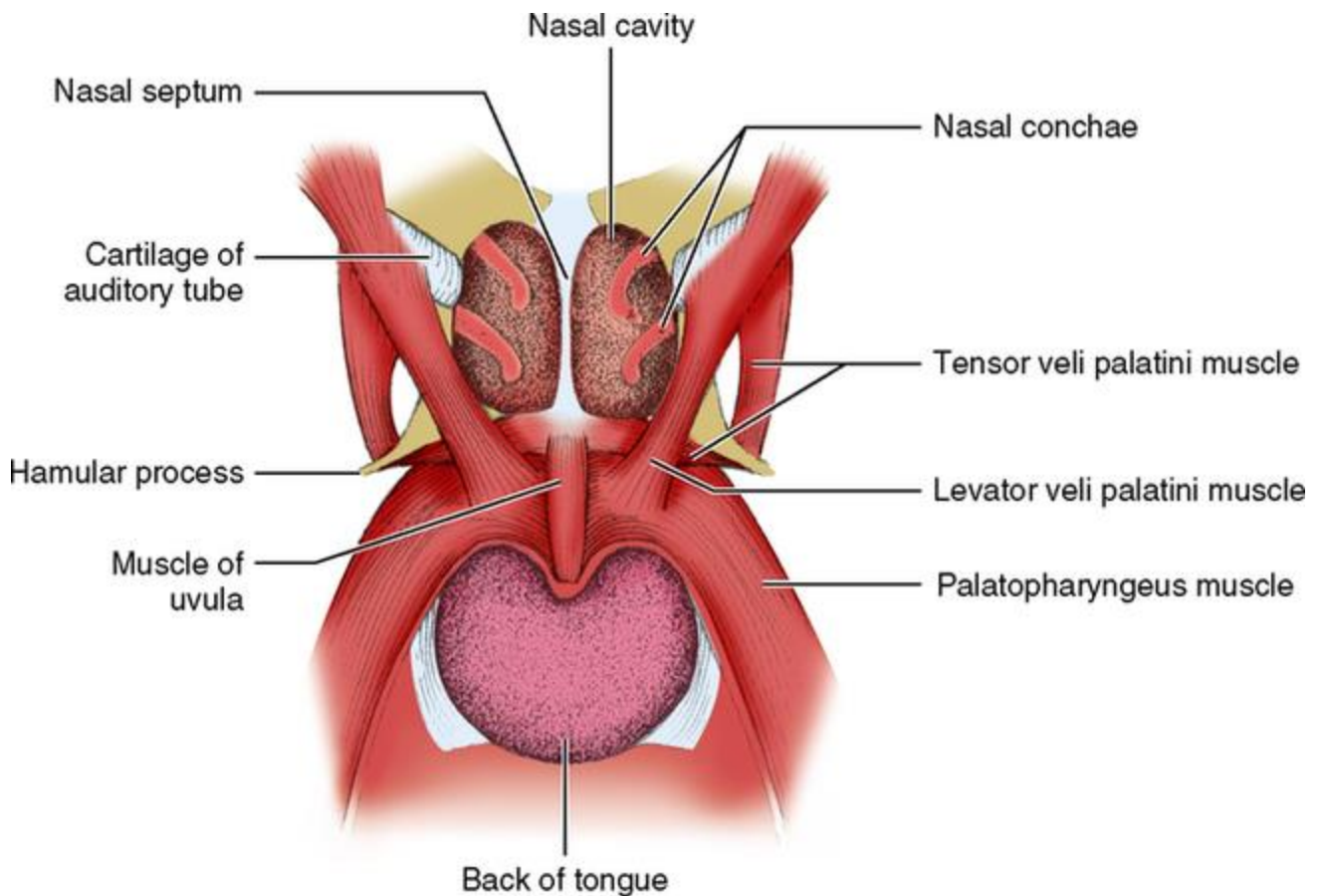
## 2-Soft (muscular) palate posteriorly :

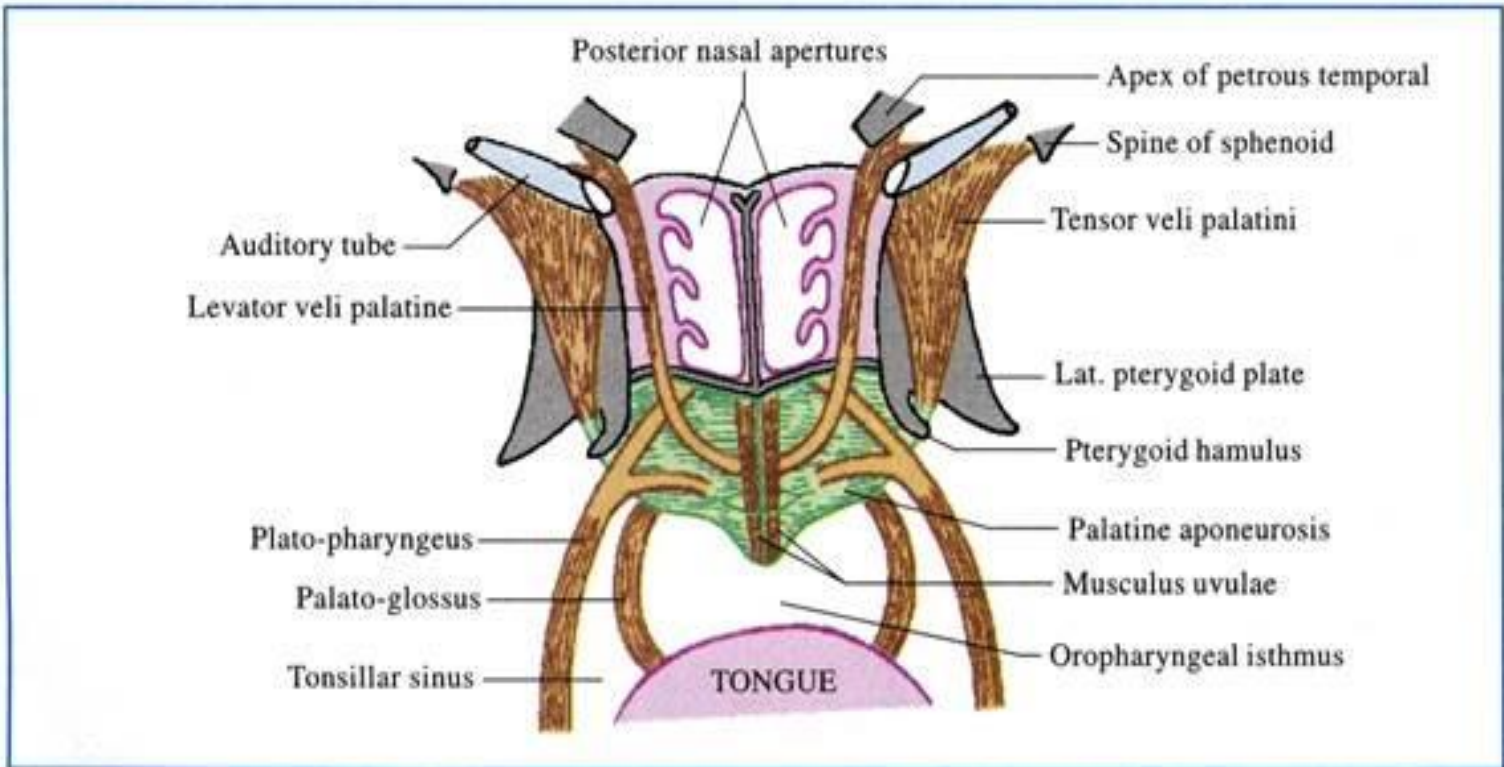
- A **soft movable fleshy septum** between naso-pharynx & oro-pharynx and attached to the **posterior border of the hard palate**
- It **consists of** a fold of mucosa containing palatine aponeurosis, palatine muscles, and mucous glands.
- Palatine aponeurosis is flat tendon of tensor palati muscle .
  - It is attached to posterior border of hard palate .
  - It gives attachment of all palatine muscles .



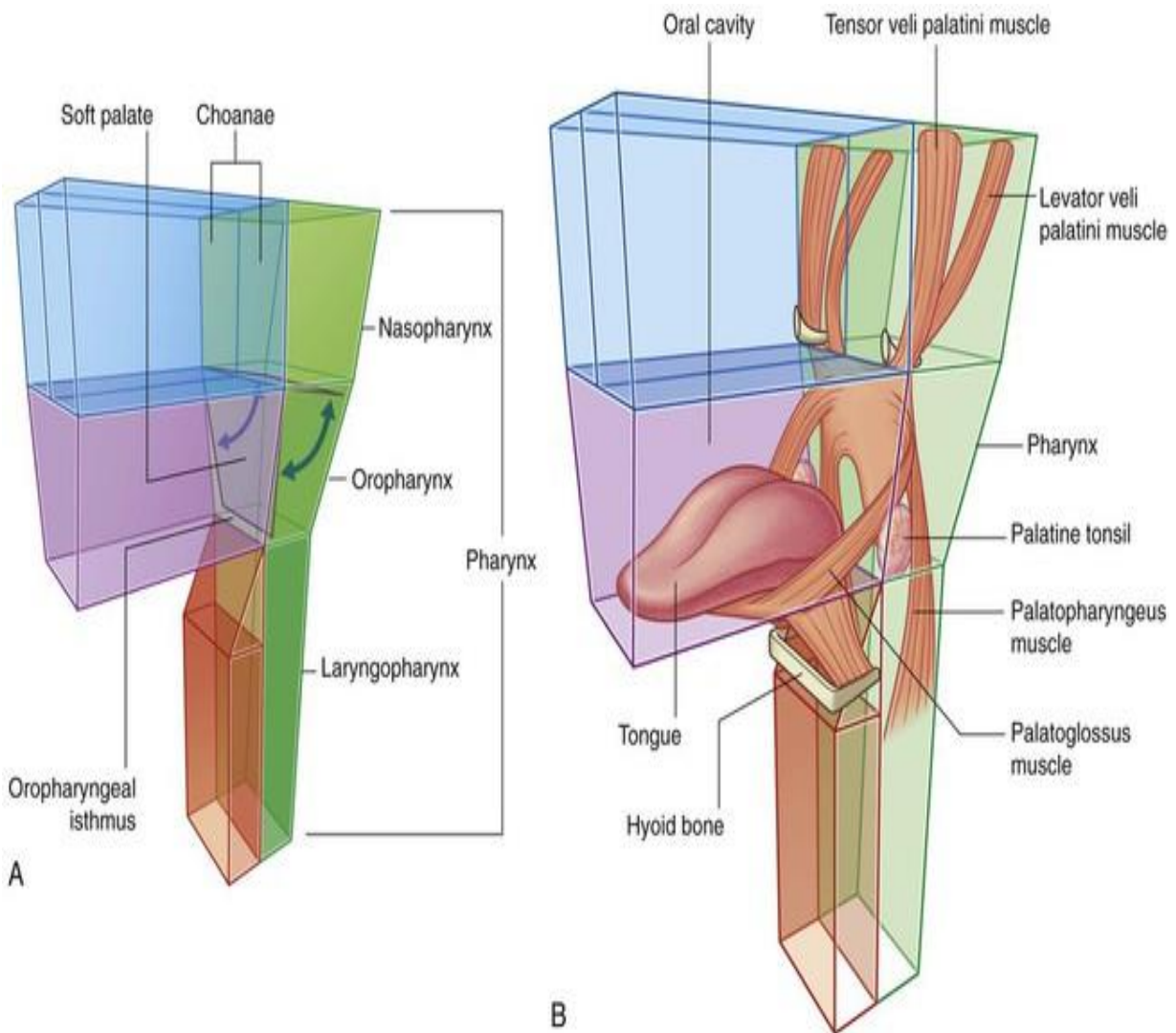
**\*Muscles of Soft Palate :**

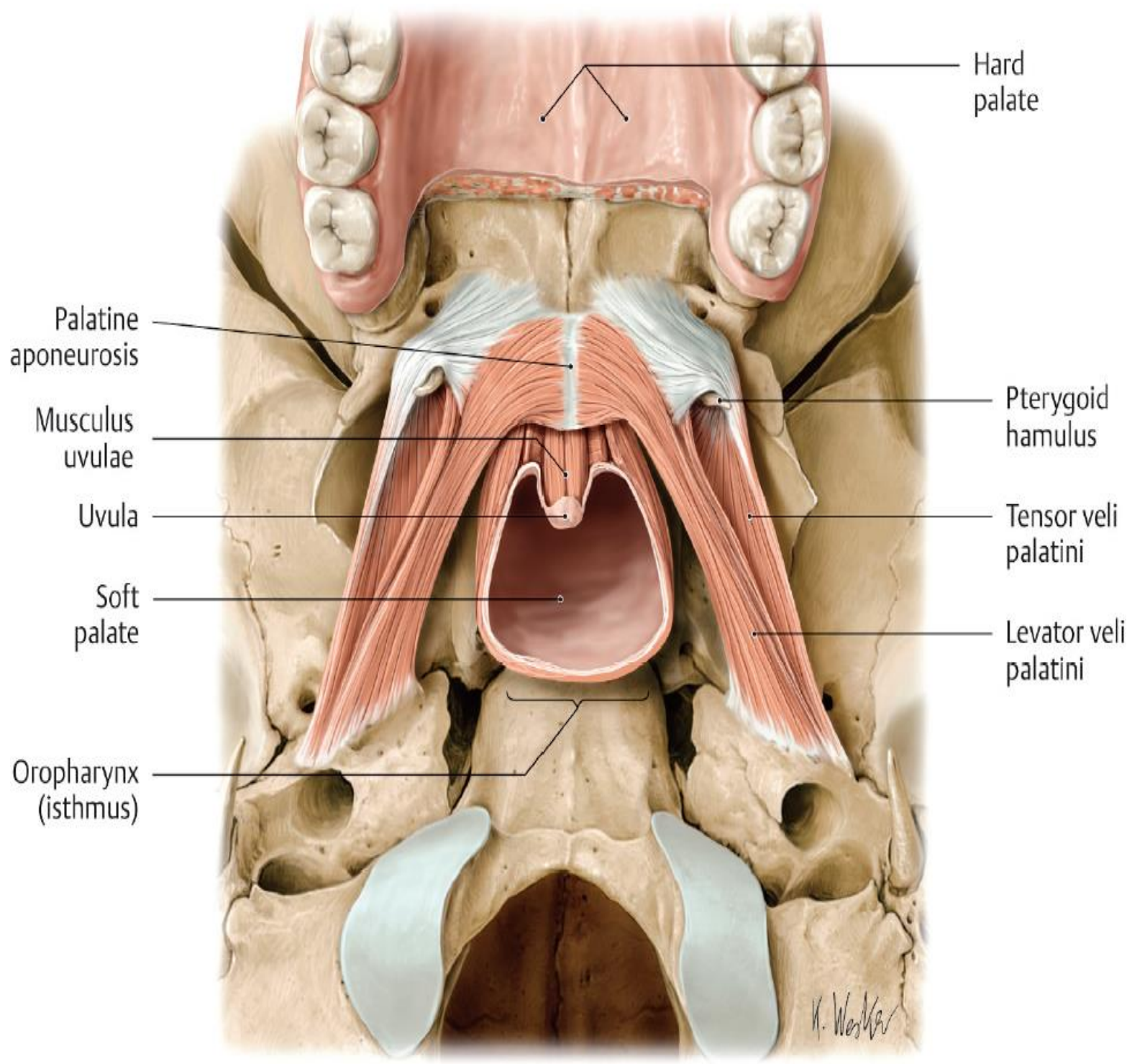
Muscle	Origin	Insertion	Action
<b><i>Tensor palati</i></b>	<ul style="list-style-type: none"> <li>▪ Scaphoid fossa</li> <li>▪ <b>Auditory tube</b></li> <li>▪ Spine of sphenoid</li> </ul>	Its tendon hooks medially around pterygoid hamulus to be inserted into palatine aponeurosis	It makes the soft palate tense
<b><i>Levator palati</i></b>	Petrous part in front of carotid canal and <b>auditory tube</b>	Palatine aponeurosis	Elevates the soft palate
<b><i>Palatoglossus</i></b>	Lower surface of palatine aponeurosis	the tongue	Elevates the tongue and closes oropharyngeal isthmus
<b><i>Palatopharyngeus</i></b>	Upper surface of palatine aponeurosis	Posterior border of thyroid cartilage	Elevates and shortens the pharynx
<b><i>Musculus uvulae</i></b>	<b>a-</b> Posterior nasal spine <b>b-</b> Palatine aponeurosis	Mucosa of uvula	Shortens uvula and prevents eversion of soft palate



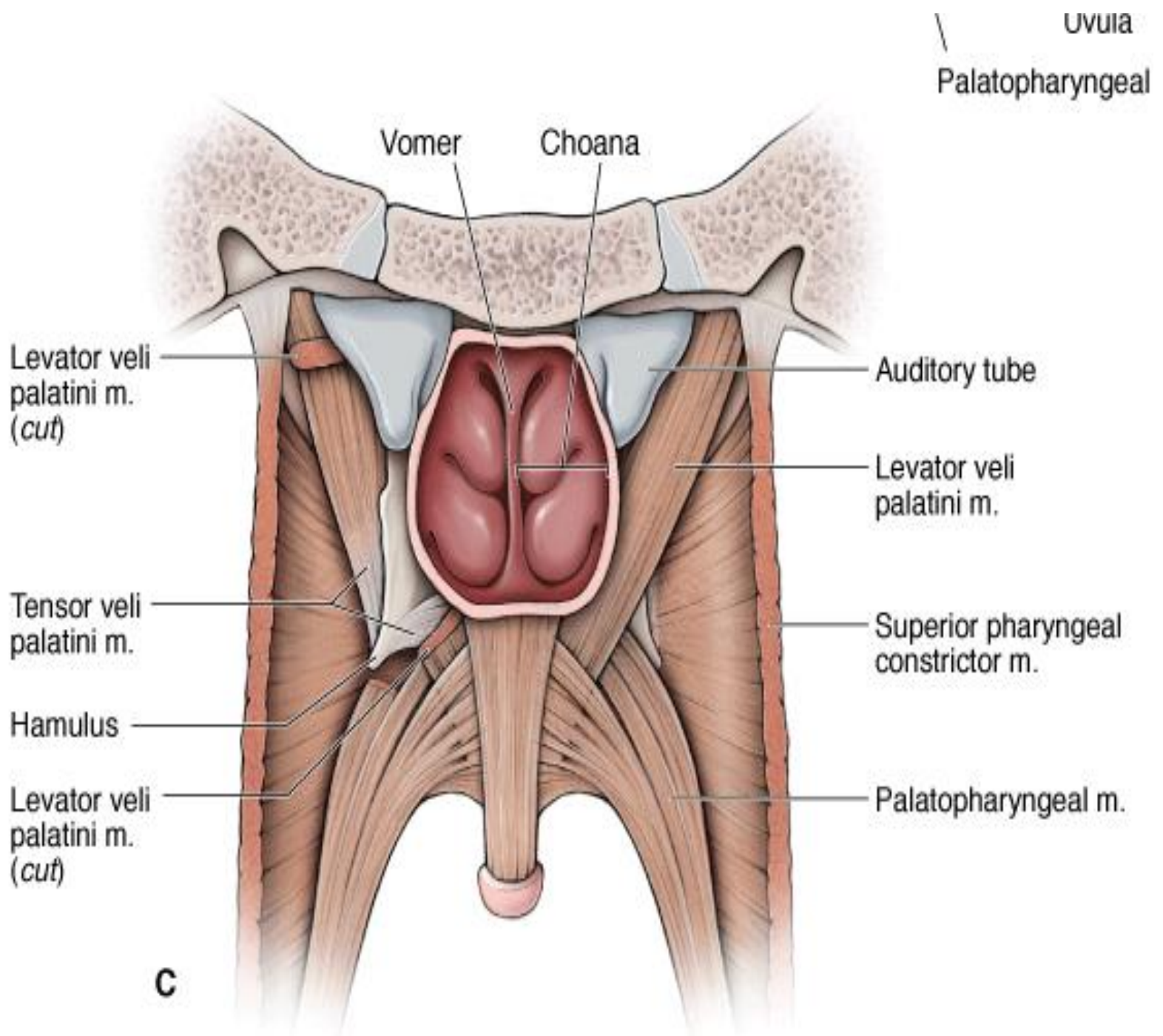


**Fig. 11.5.** Dorsal view of the muscles of soft palate (From the interior of pharynx).





***\*Muscles of Soft Palate \****





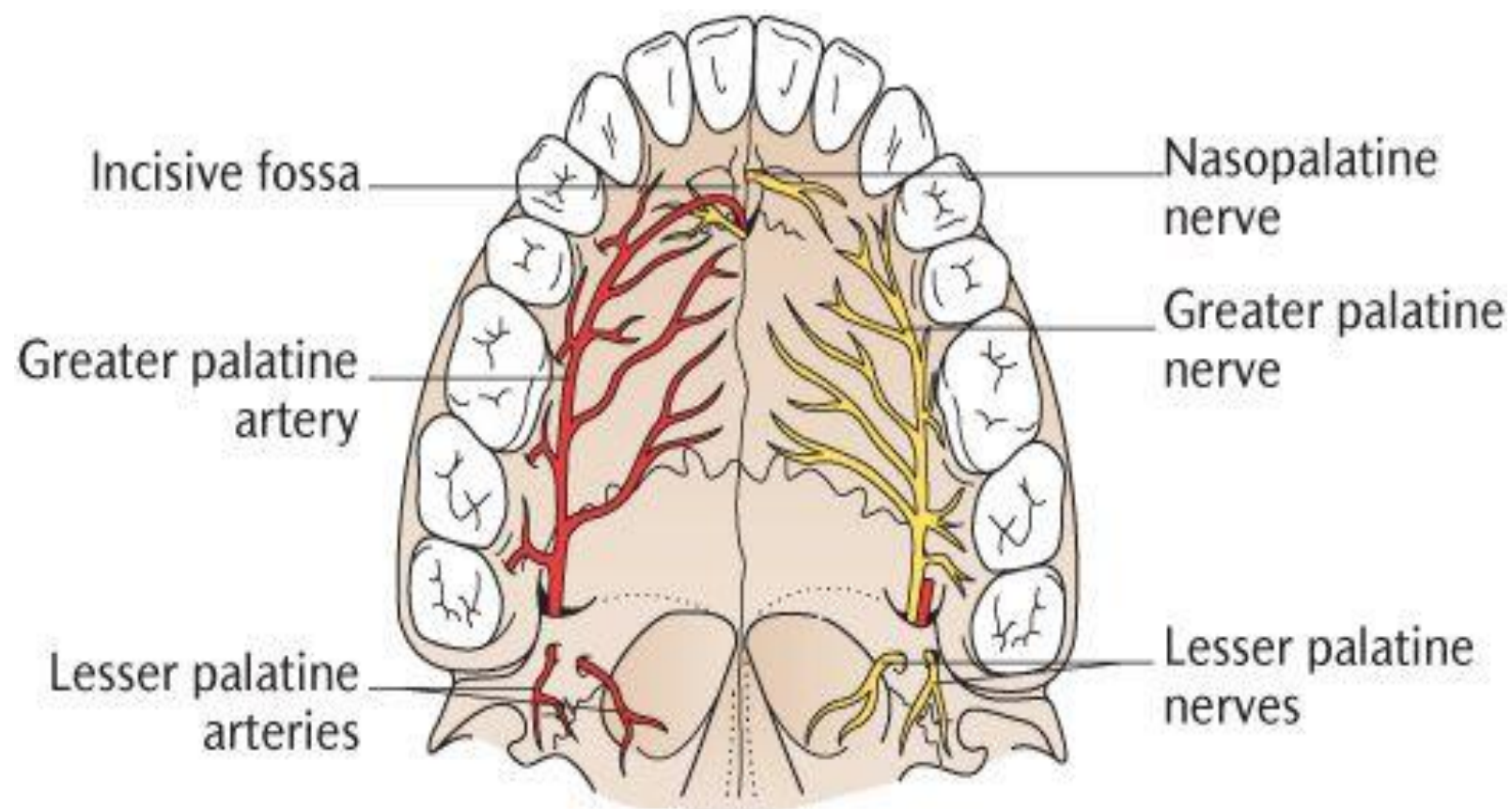
## \*Nerve Supply of Soft Palate:

### A- Motor:

- All muscles of the soft palate are supplied by the **pharyngeal plexus (cranial root of accessory nerve through pharyngeal branch of vagus)**, except **tensor palati** which is supplied by **mandibular nerve** .

### B- Sensory:

- Greater palatine & sphenopalatine ( hard palate ) & lesser palatine ( soft palate ) nerves .



**\*Blood Supply of the Palate:**

**A- Hard palate:**

Greater palatine artery (from maxillary artery).

**B- Soft palate:**

a- Lesser palatine arteries (from greater palatine artery).

b- Ascending palatine artery (from facial artery).

c- Ascending pharyngeal artery (from ECA).

