

# **ANATOMY OF** **Mouth cavity**

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# Mouth cavity

**Extend from the lips to the pharynx**

## Boundaries:

The mouth cavity is bounded by the following:

**Superiorly:** hard palate - soft palate.

**Inferiorly :**mylohyoid muscles.

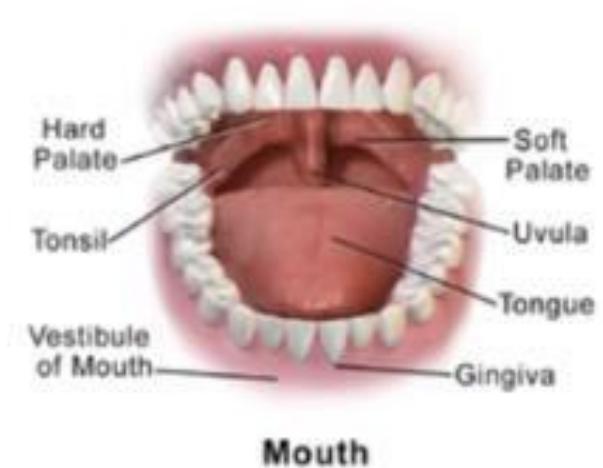
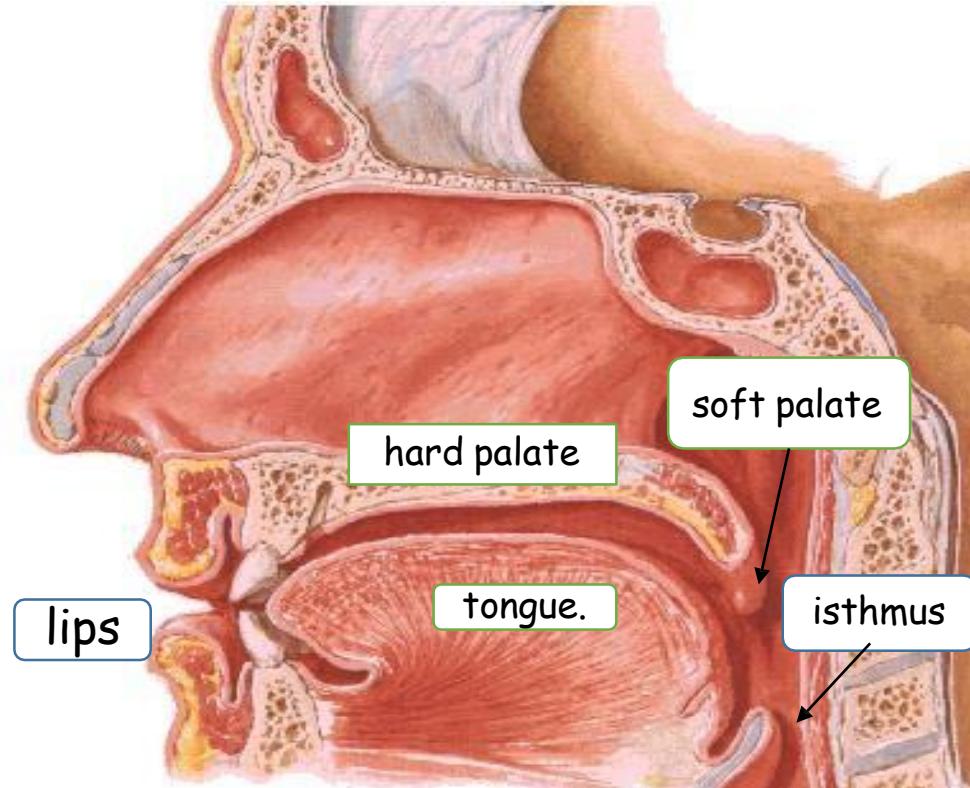
**On both sides:** lips - cheeks.

**Anteriorly:** lips - cheeks.

**Posteriorly:** oropharyngeal isthmus.

### ✚ **The oropharyngeal isthmus:**

it is the communication between the oral cavity and the oropharynx.

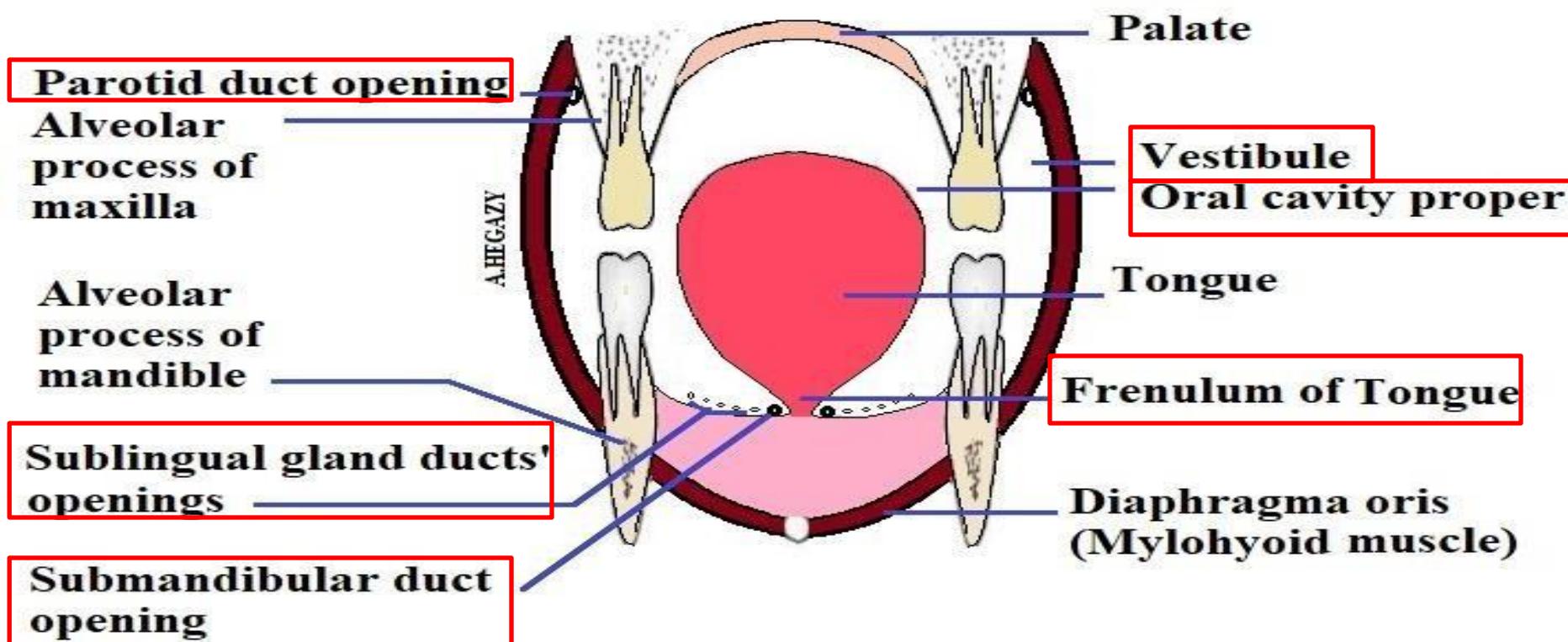


## Divisions:

The mouth cavity is divided by the teeth and the alveolar margin into:

1 **The vestibule**: the cavity on the outer side of teeth and gums. Receiving opening of **Parotid duct** opposite the upper 2<sup>nd</sup> molar tooth

2 **The mouth cavity proper**: the cavity on the inner side of teeth and gums. Receiving opening of both **Submandibular duct** at each side of the frenulum & **Sublingual duct** at the sublingual fold

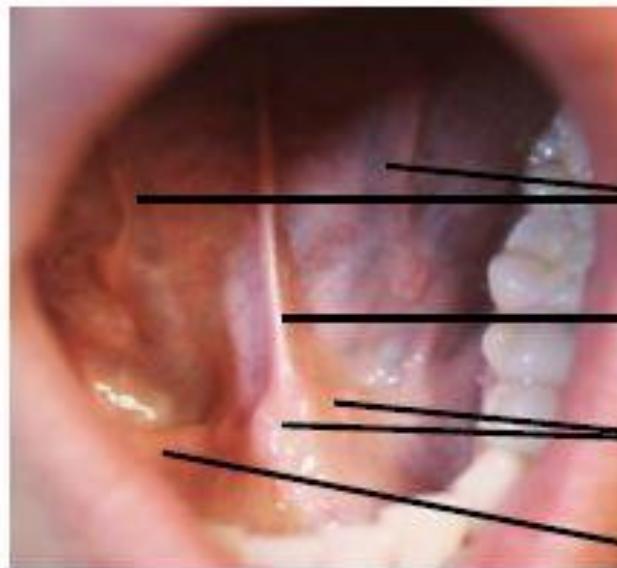




The vestibule



The mouth cavity proper



Frenulum

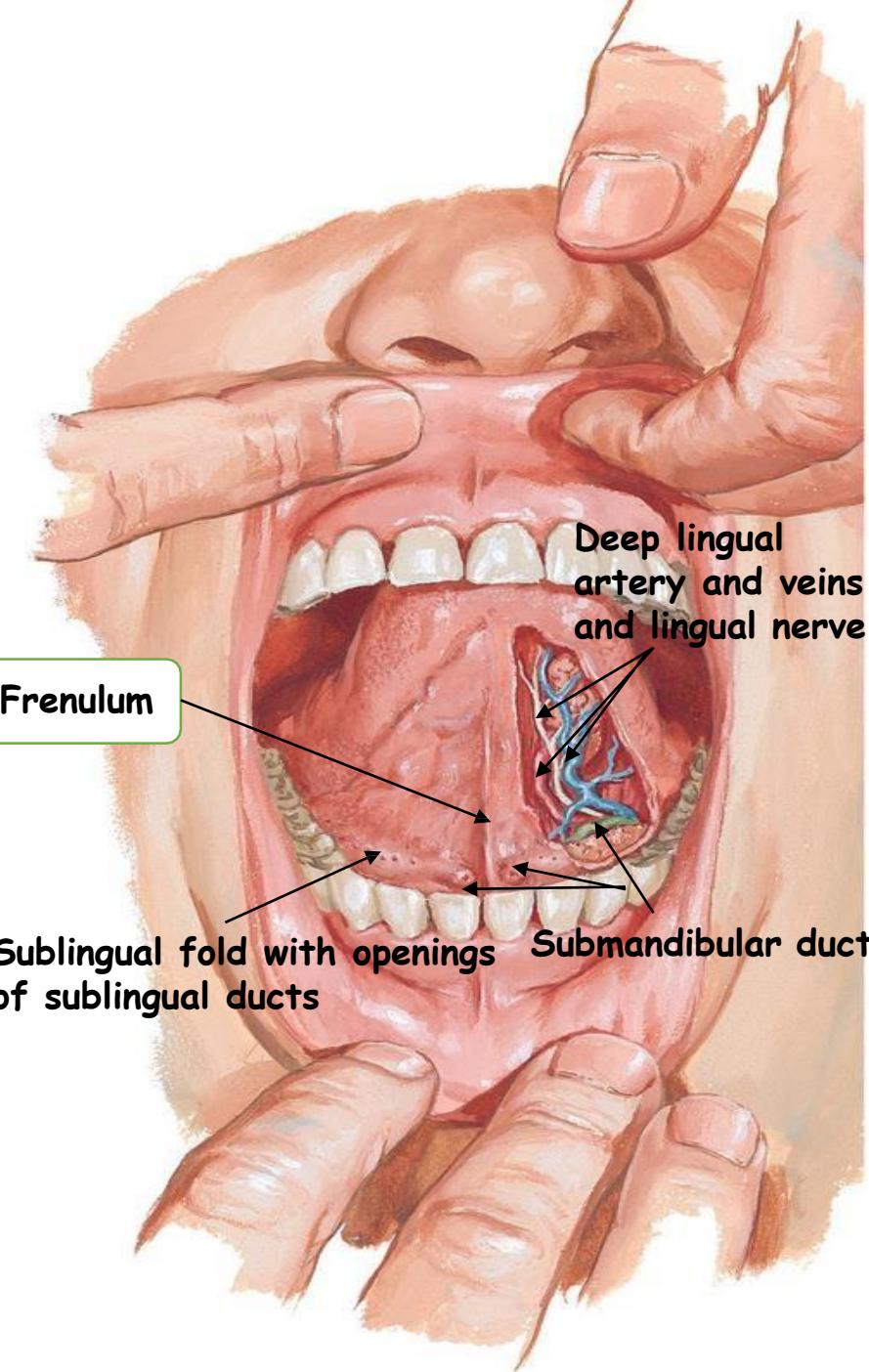
Puncta of submandibular ducts

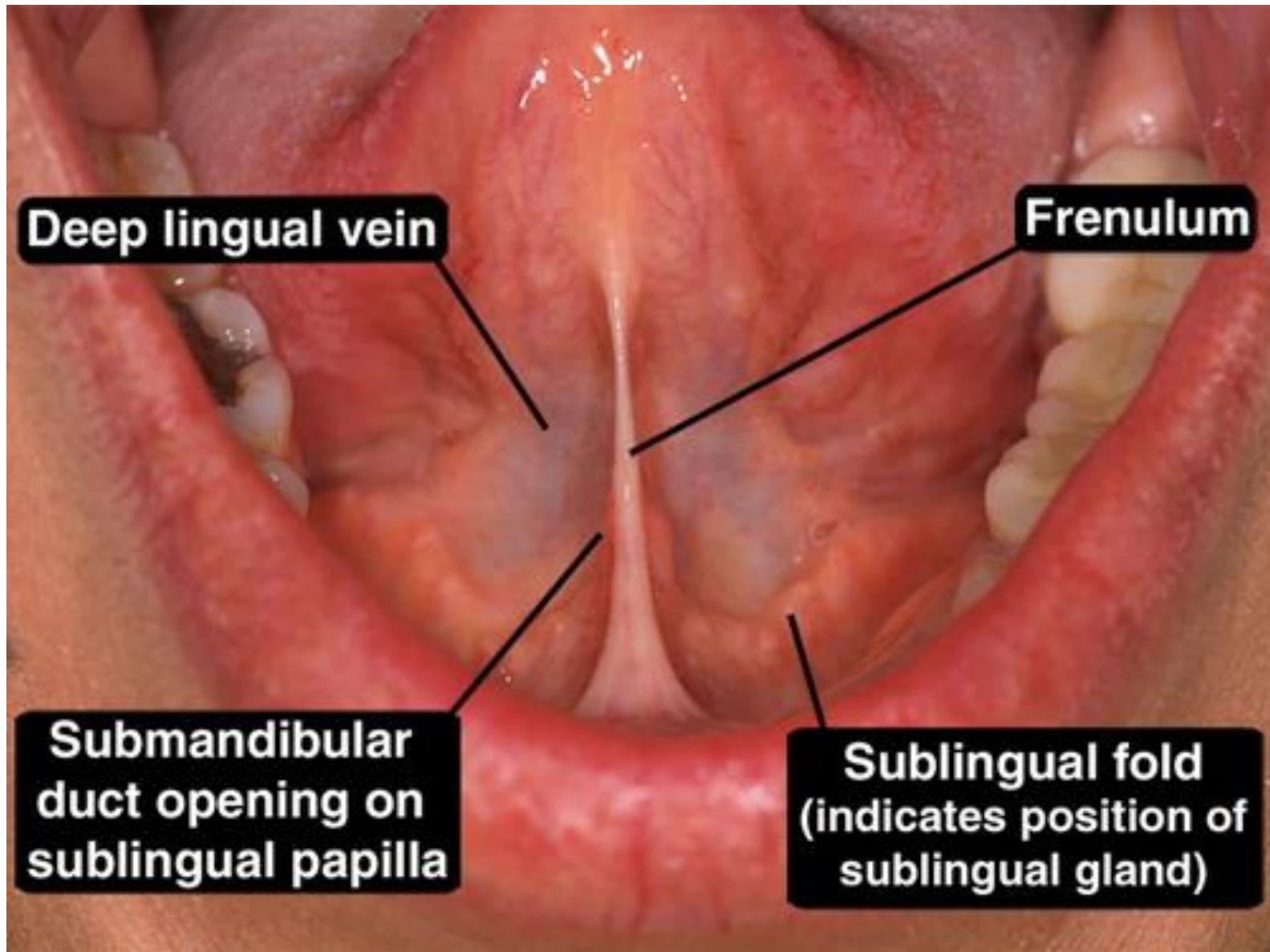
Submandibular duct

# The mucous membrane of the mouth cavity:

## Features:

- **Frenulum of the tongue:** a median fold of the mucous membrane connects under surface of the tongue to floor of the mouth.
- **Sublingual papilla:** an elevation on the floor of the mouth, on each side of the frenulum.
- **Sublingual fold:** an elevation on the floor of the mouth extends posterolaterally, on both sides of the frenulum & produced by the sublingual salivary glands and shows the openings of their ducts.





## Arterial supply of The mucous membrane :

1- Facial artery:    2- Lingual artery:    3- Maxillary artery:

Nerve supply:    Generally, From trigeminal N

### 1- Roof

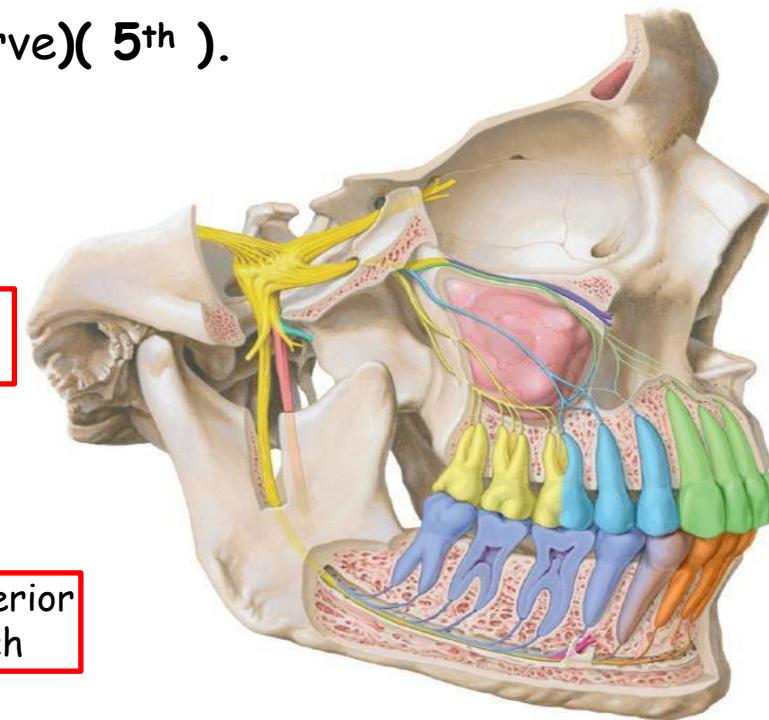
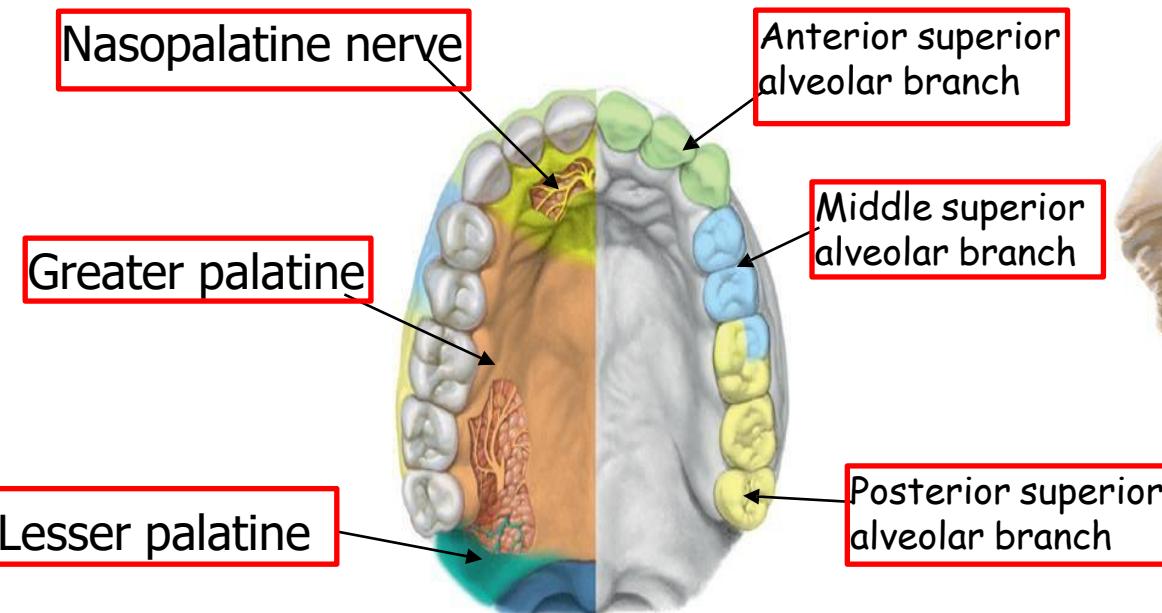
- Greater palatine - lesser palatine - nasopalatine (from sphenopalatine ganglion)

[\(click here to know the clinical correlation to this piece of information\)](#)

- Alveolar branches (from the maxillary nerve)( 5<sup>th</sup> ).[\(click here\)](#)

2- Floor: Lingual nerve (from the mandibular nerve)( 5<sup>th</sup> ).

3- Cheek: Buccal nerve (from the mandibular nerve)( 5<sup>th</sup> ).



Tongue

## Parts of the tongue:

1. **Tip:** tapering anterior free end.
2. **Root:** attached to the floor of the mouth & Transmits the vessels and nerve supply the tongue.

### 3. **Sides (margin)**

-Separated from the teeth by a deep alveolo-lingual sulcus ([next slide](#)).

-Shows 5 vertical folds of mucous membrane called **folia linguae**.

### 4. **Body: has 2 Surfaces**

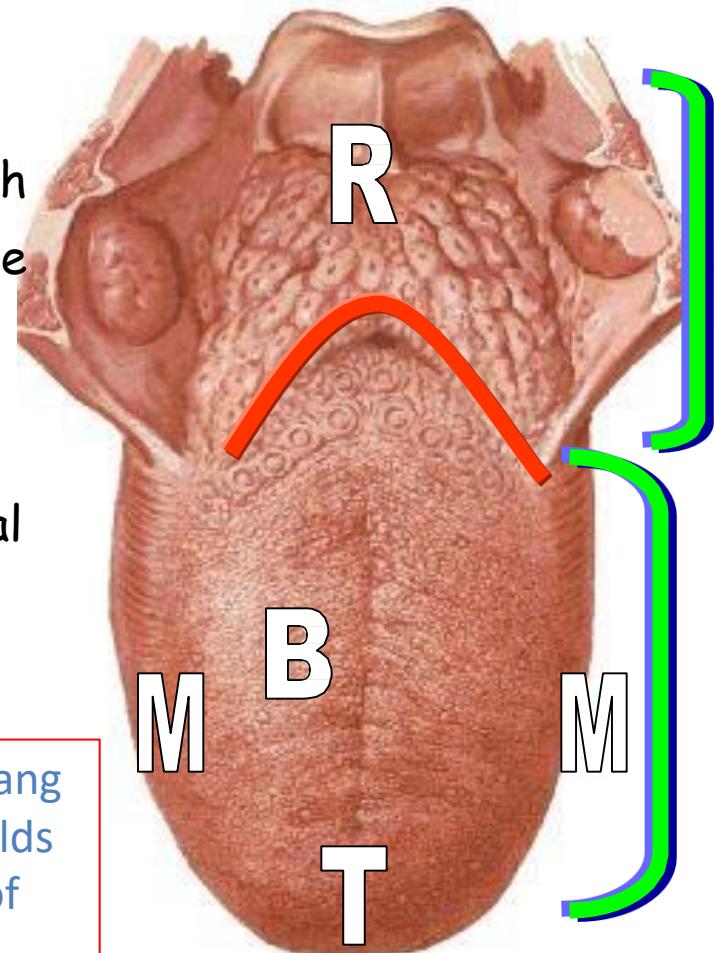
#### a- **Dorsal surfaces:**

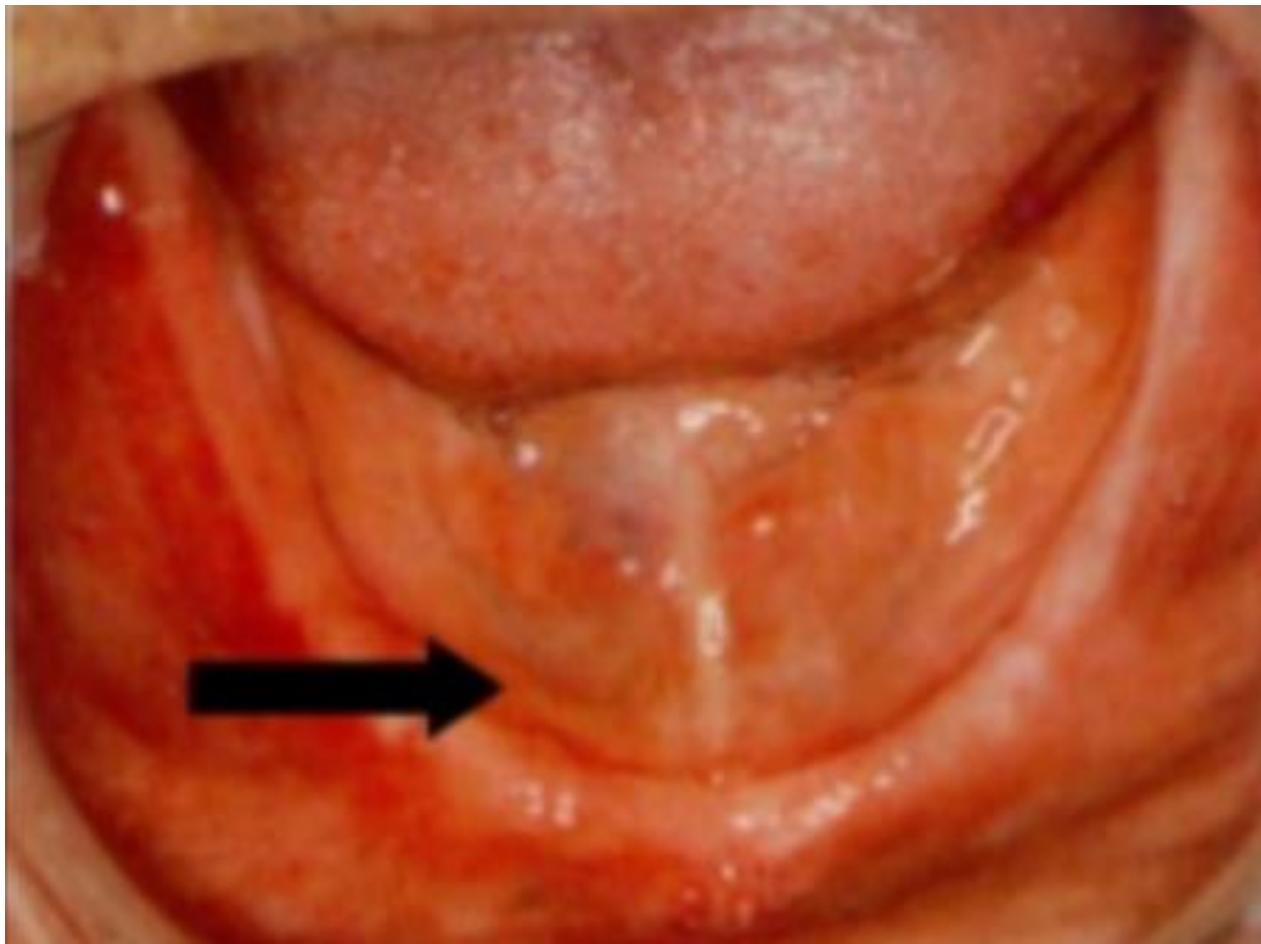
Numerous projections arranged in several transverse folds upon the lateral margins of the tongue

- Directed upwards and backwards

#### b-**Inferior surfaces: *ventral***

Directed downwards towards the floor of the mouth.





alveolo-lingual sulcus

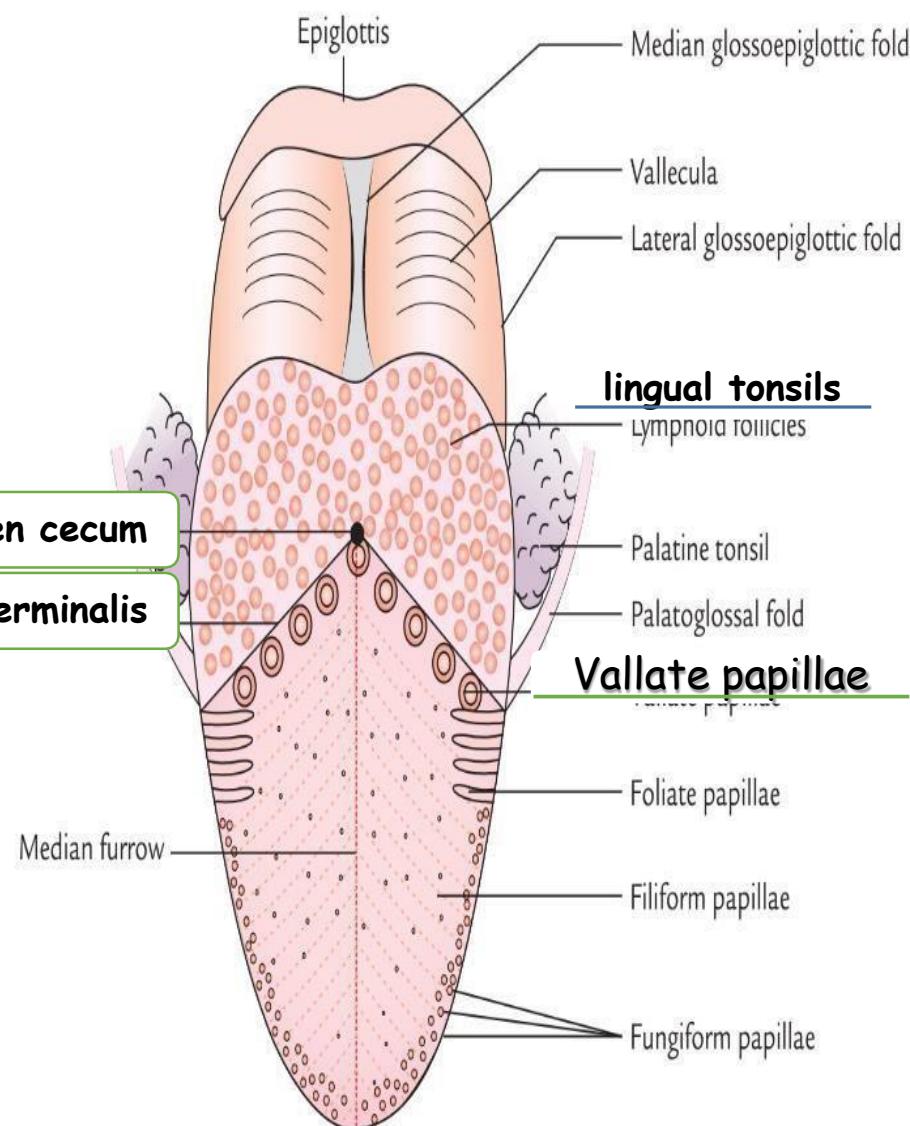
## a. Dorsal surface:

- Divided by V-shaped groove called **(sulcus terminalis)** into:

**1 anterior 2/3:** rough, due to presence of different **lingual papillae**.

**2 posterior 1/3:** smooth, but **irregular** due to presence of underlying **lymphatic Tissue (lingual tonsils)**.

- this is sulcus shows blind opening at the apex called **foramen cecum** which marks the site of **Lingual papillae**.



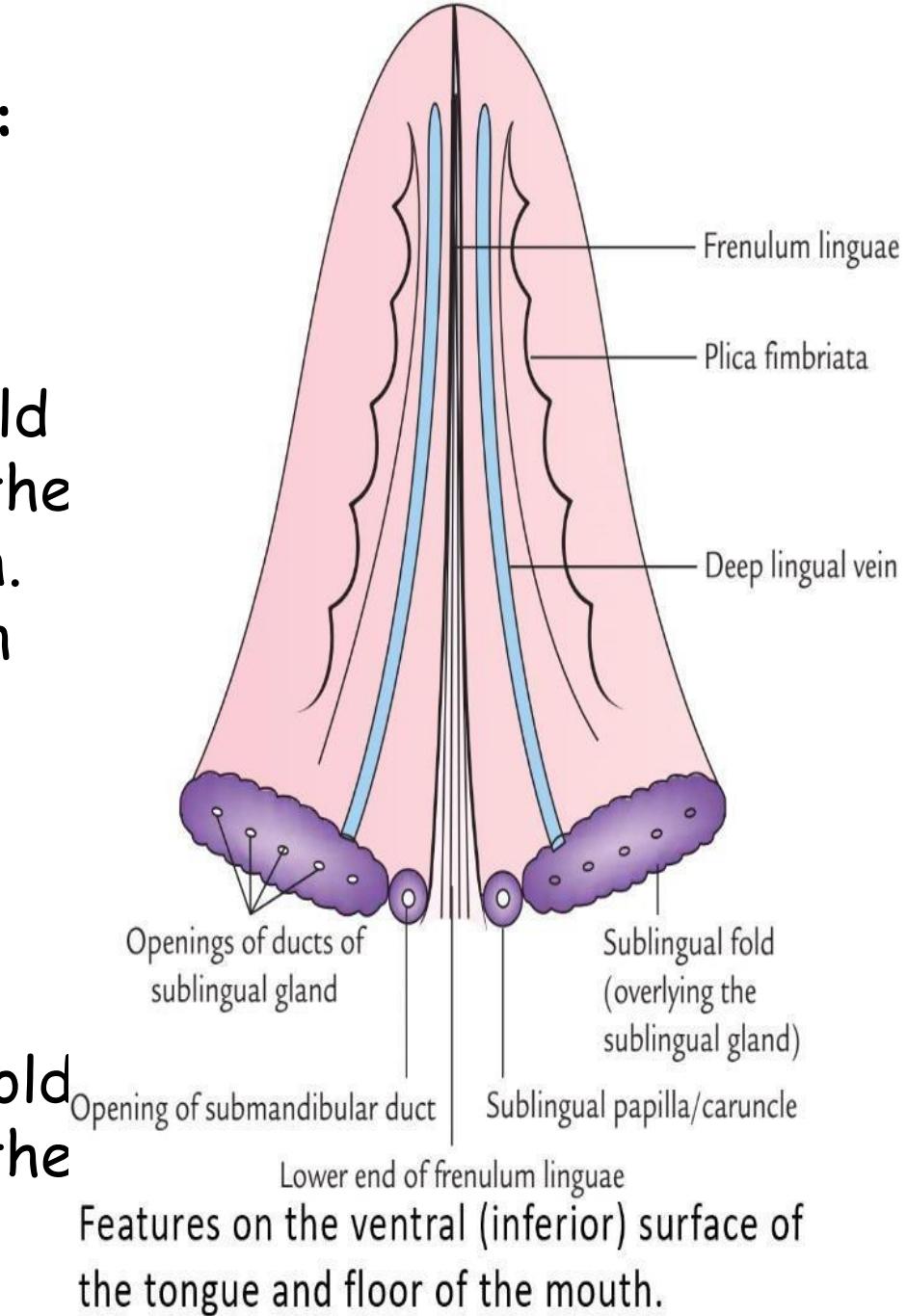
Features on the dorsal surface of the tongue.

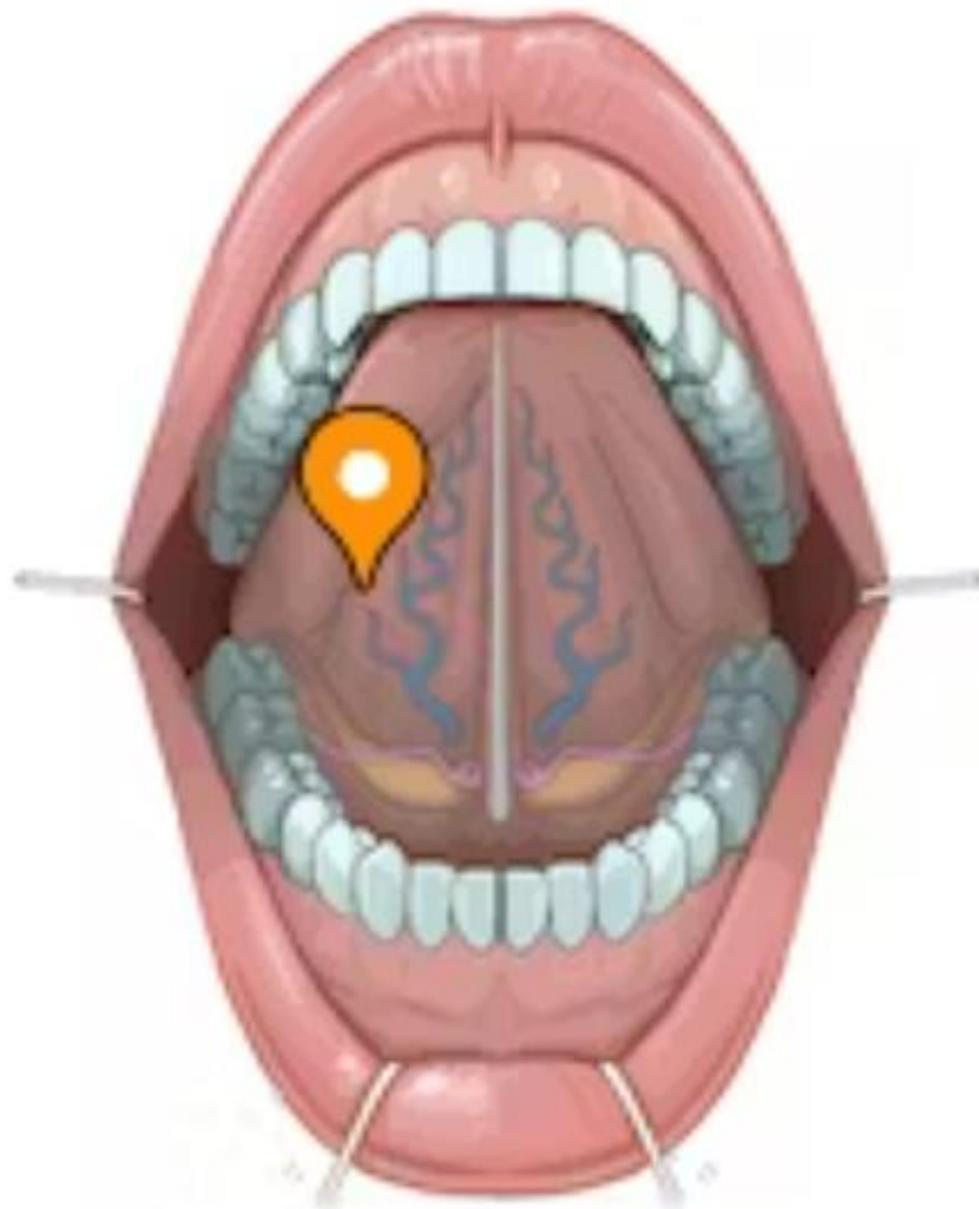
**b- Ventral or Inferior surface:**  
connected to floor of mouth by  
frenulum and covered by  
transparent mucosa & shows:

**1. Frenulum linguae:** a median-fold  
of mucus membrane connecting the  
tongue to the floor of the mouth.

**2. Deep lingual vein:** may be seen  
through mucous membrane on  
either side of frenulum linguae  
(the lingual nerve and lingual  
artery are medial to the vein  
but not visible).

**3. Plica fimbriata:** fimbriated fold  
of mucous membrane lateral to the  
lingual vein. (next slide)

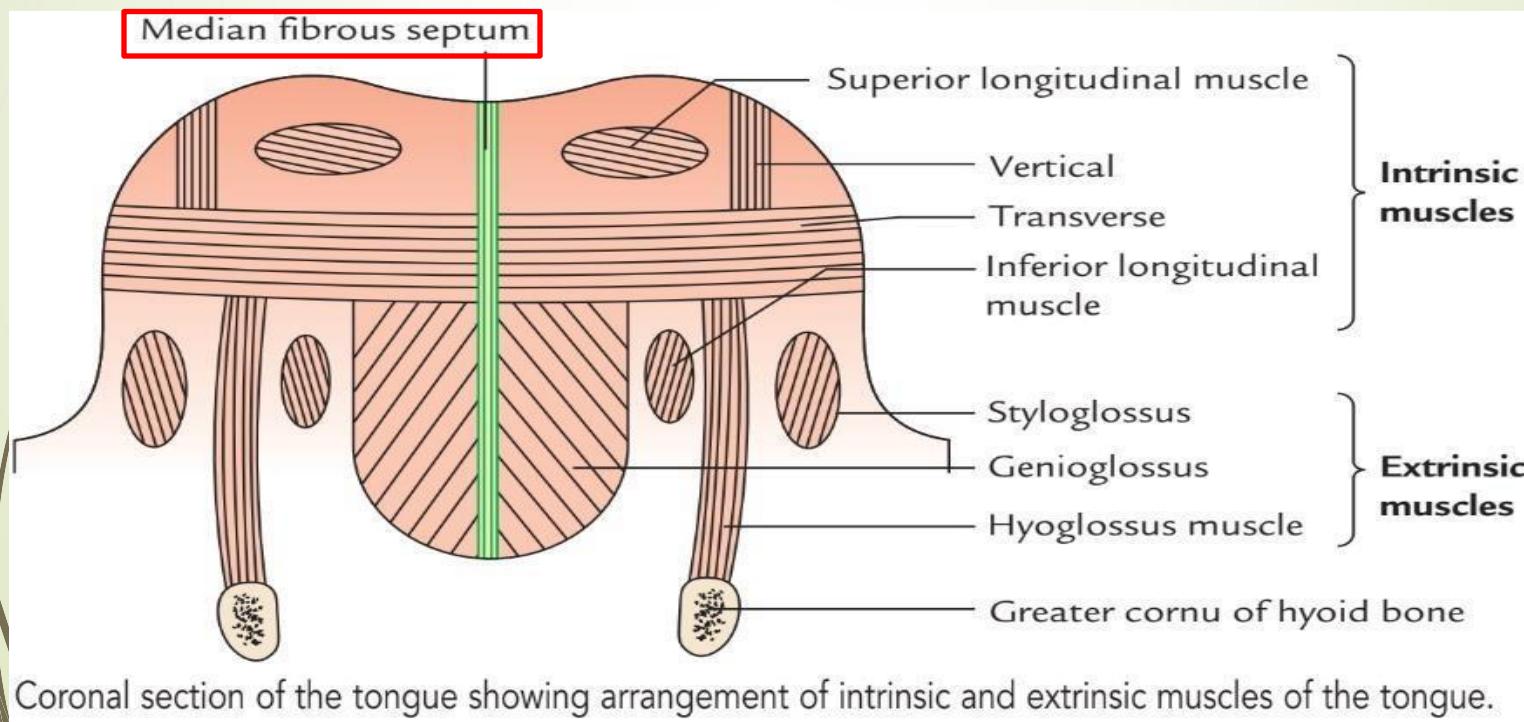




Plica fimbriata

# Muscles of the tongue:

The tongue is divided into 2 halves by a median fibrous septum. Each half contains intrinsic and extrinsic muscle.

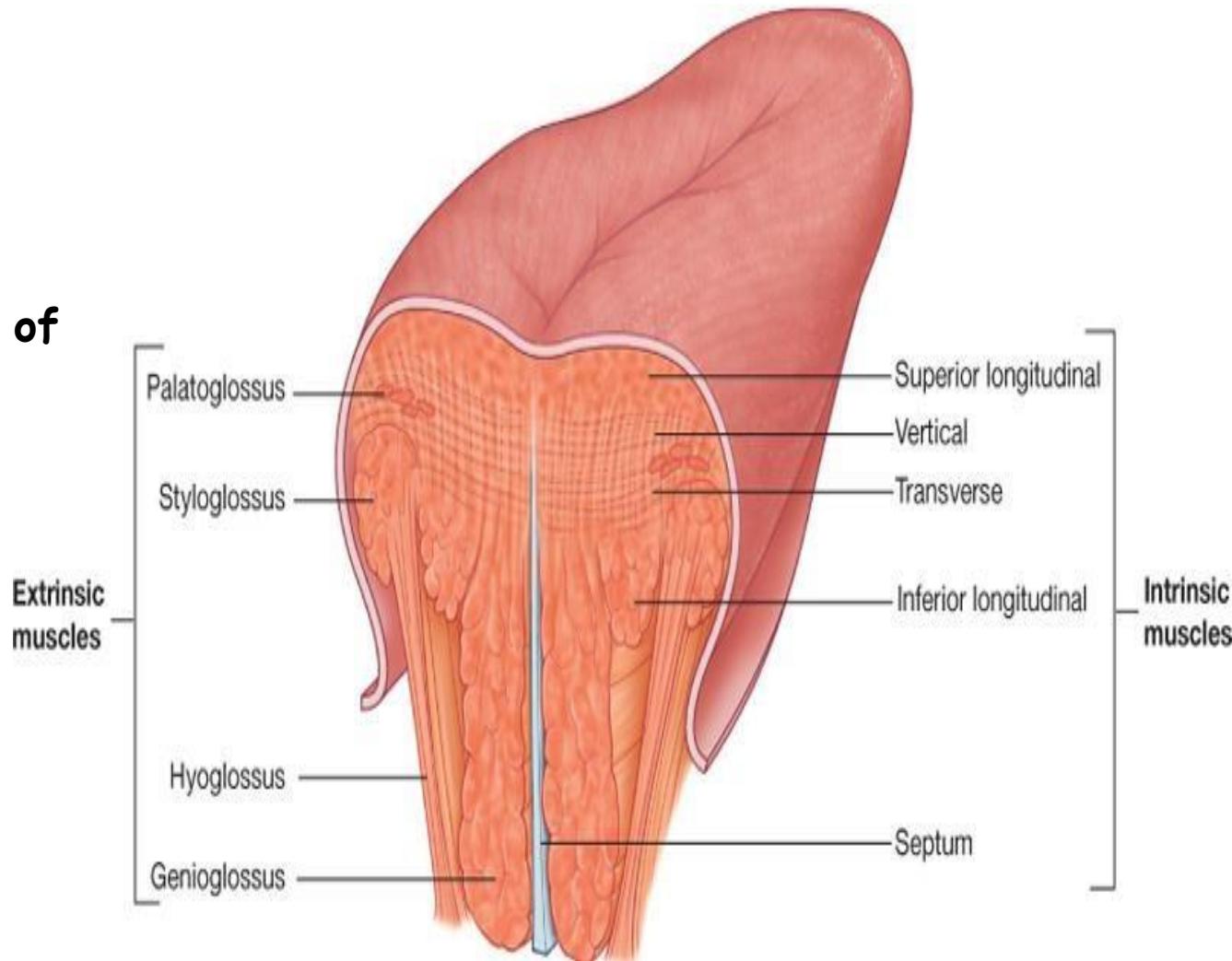


# 1. Intrinsic muscles of tongue

- These muscles are short and confined to the tongue, i.e. they begin and end within the substance of the tongue.
- They are arranged into
  - a- Longitudinal fibers:
  - b- Transverse fibers :
  - C- Vertical fibers :

Action:

They change the shape of the tongue.



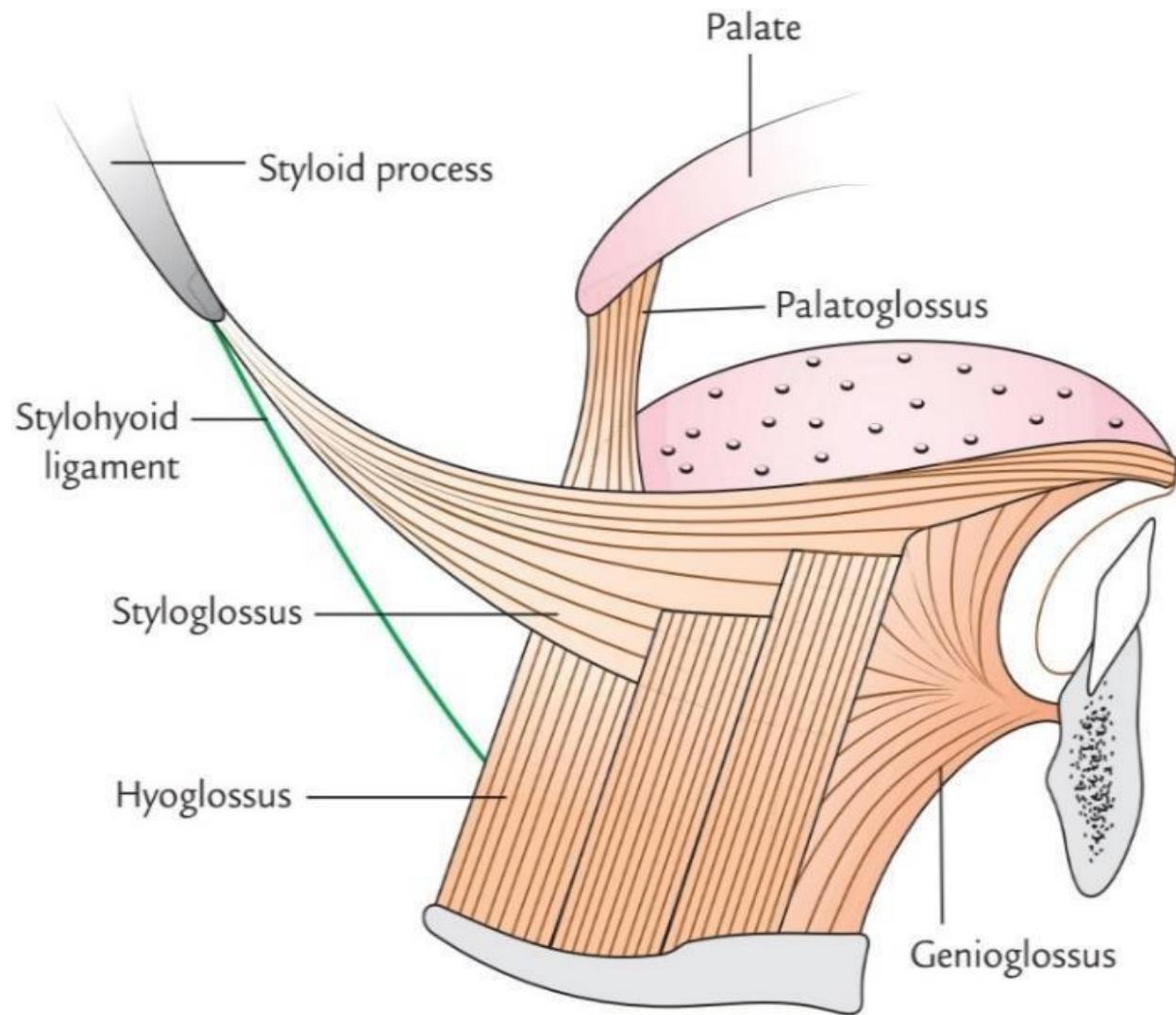
# 1. Extrinsic muscles of tongue

1. Genioglossus.

2. Hyoglossus.

3. Styloglossus.

4. Palatoglossus



Extrinsic muscles of the tongue.

## 1) Genioglossus muscle:

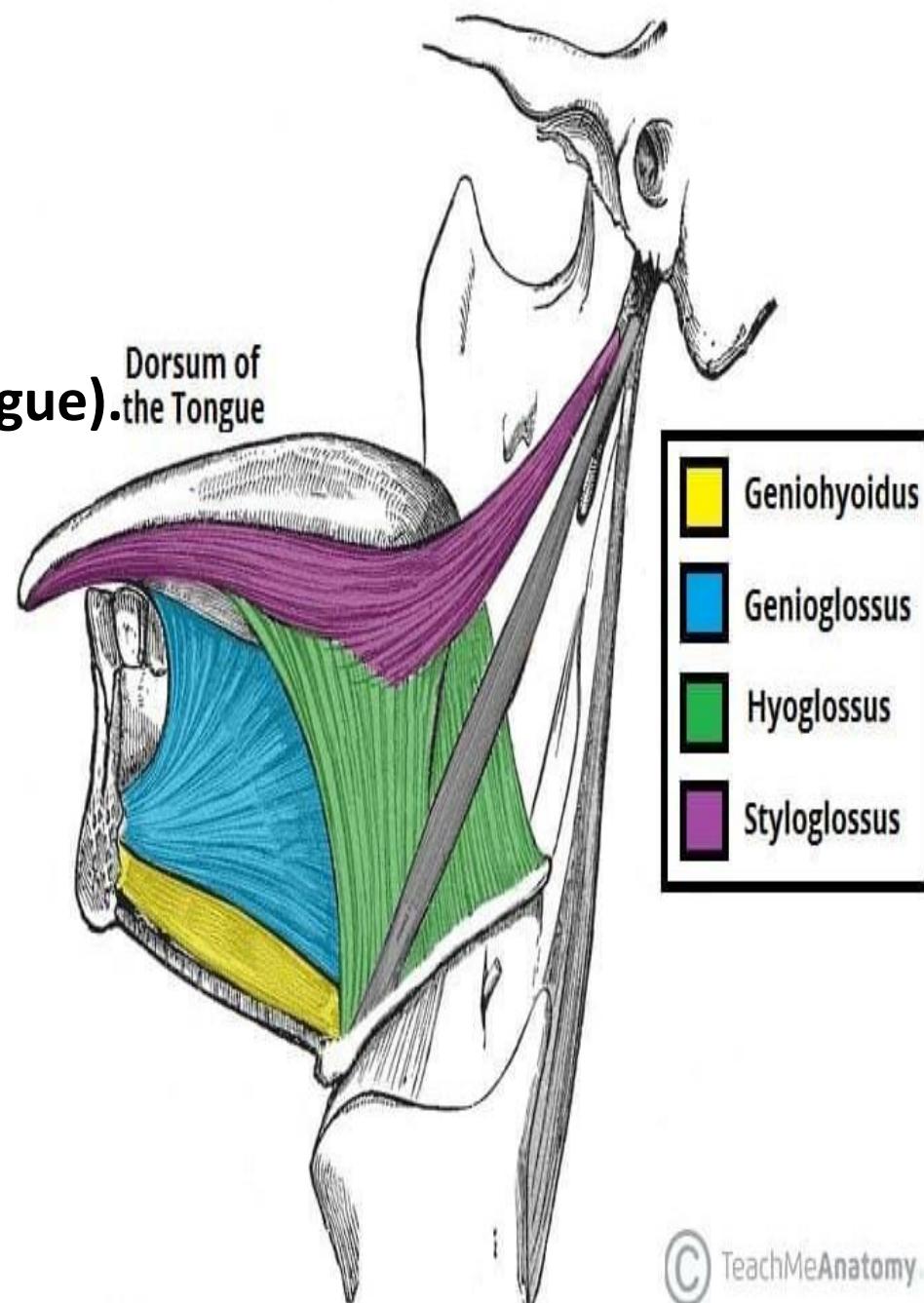
fan shaped

- **Origin:** superior genial tubercle.
- **Insertion:** Inferior surface of the tongue .
- **Action:** depress & protrude the tongue).

## 2) Styloglossus muscle:

elongated slip

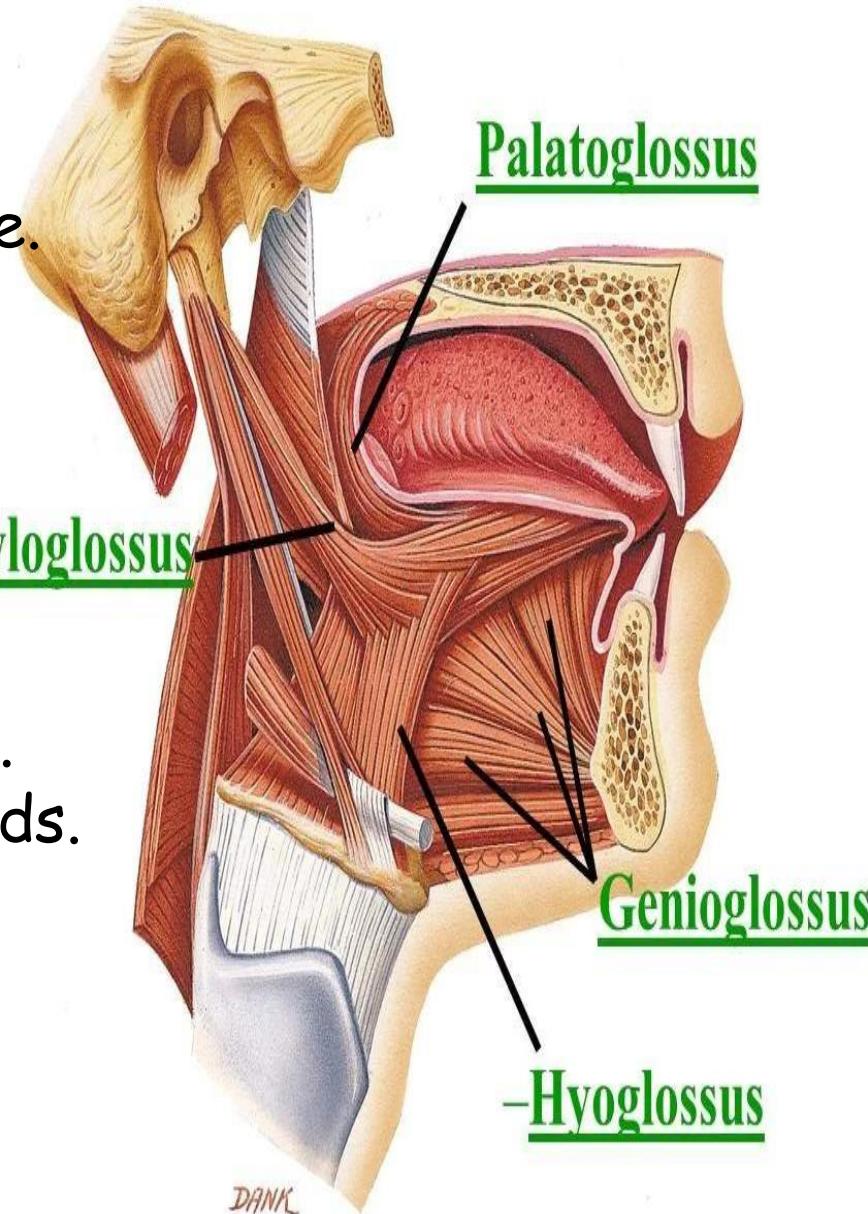
- **Origin:** styloid process & Styломандибуляр ligament.
- **Insertion:** sides of the tongue
- **Action:** retracts the tongue.



### 3) **Hyoglossus muscle:**

flat quadrilateral

- **Origin:** hyoid bony.
- **Insertion:** on the sides of tongue.
- **Action:** depress the tongue



### 4) **Palatoglossus muscle:**

slender slip

- **Origin:** palatine aponeurosis.
- **Insertion:** on the sides of tongue.
- **Action:** elevate the tongue upwards.

# Nerve supply ( innervation )

# 1. Motor innervation

Very important

*ALL the intrinsic and the extrinsic muscles of the tongue are supplied BY*

*Hypoglossal nerve (12 cranial N)*

*EXCEPT*

*palato-glossus THAT IS*

*SUPPLIED BY*

*pharyngeal plexus*

*(cranial -accessory through the vagus)*

## 2. Sensory innervation: General & special

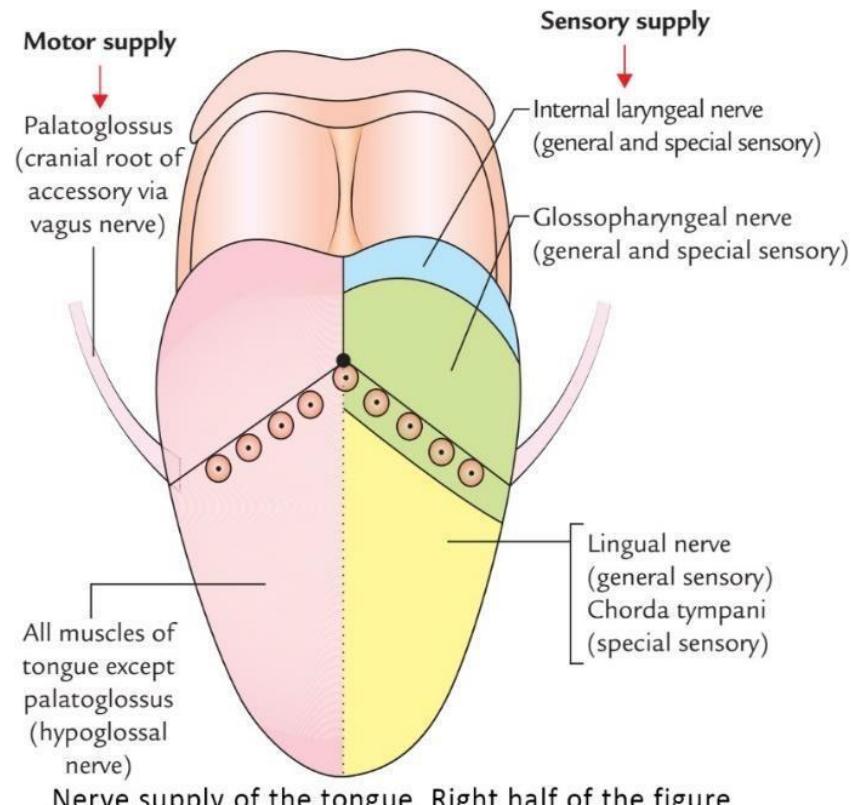
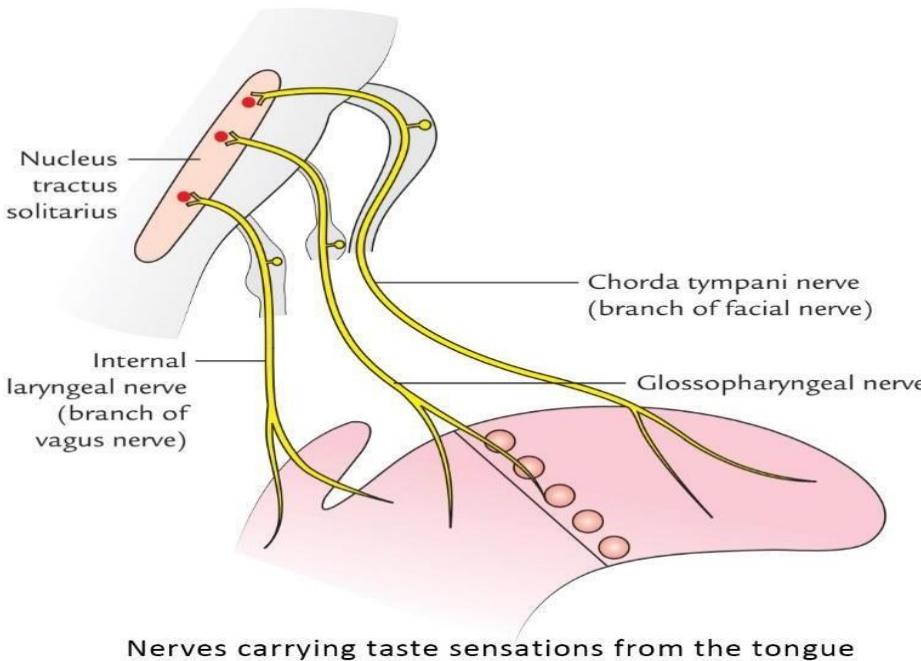
### 1- Anterior 2/3:

a) General sensation: lingual n. (mandibular N)(5<sup>th</sup>)

b) Taste sensation: chorda tympani (facial n.) (7<sup>th</sup> ).

2- Post 1/3 : glossopharyngeal nerve G & T (9<sup>th</sup> ).

3- Root of The Tongue: vagus n via internal laryngeal nerve (branch of sup. Laryngeal n.) (10<sup>th</sup> ).



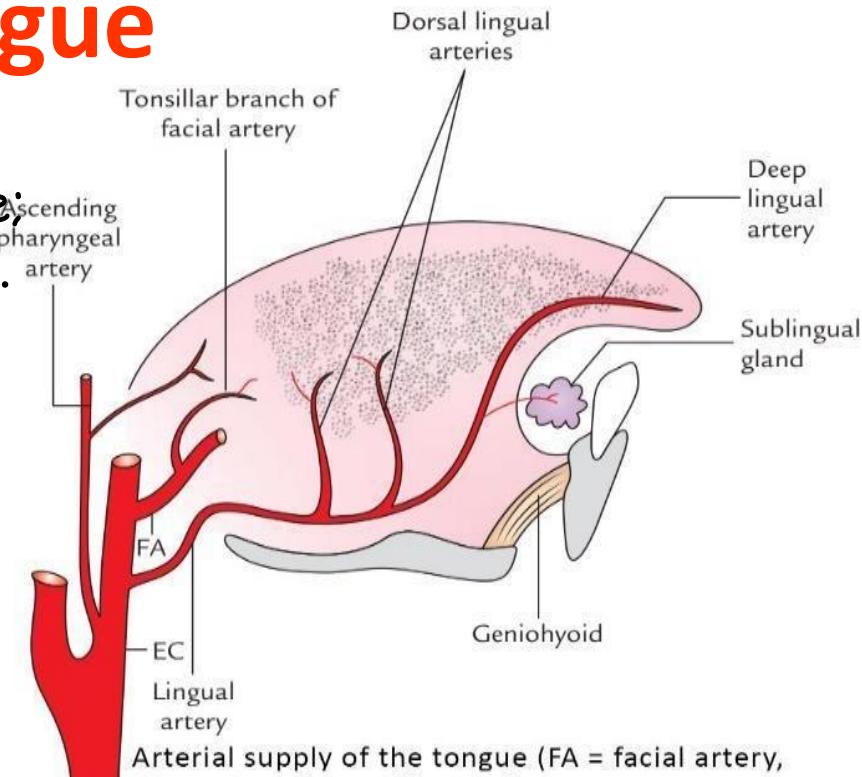
# Blood supply of the tongue

## A. Arterial:

1. lingual artery: chief artery of tongue;
2. Tonsillar branch of the facial artery.
3. Ascending pharyngeal artery.

## B. Venous:

1. lingual vein: drain into I J V.



# Lymph Drainage

- 1-Tip: Submental lymph nodes
- 2-Sides of the anterior two thirds: Submandibular and deep cervical lymph nodes
- 3-Posterior third: Deep cervical lymph nodes

