



# Anatomy of Oral Cavity

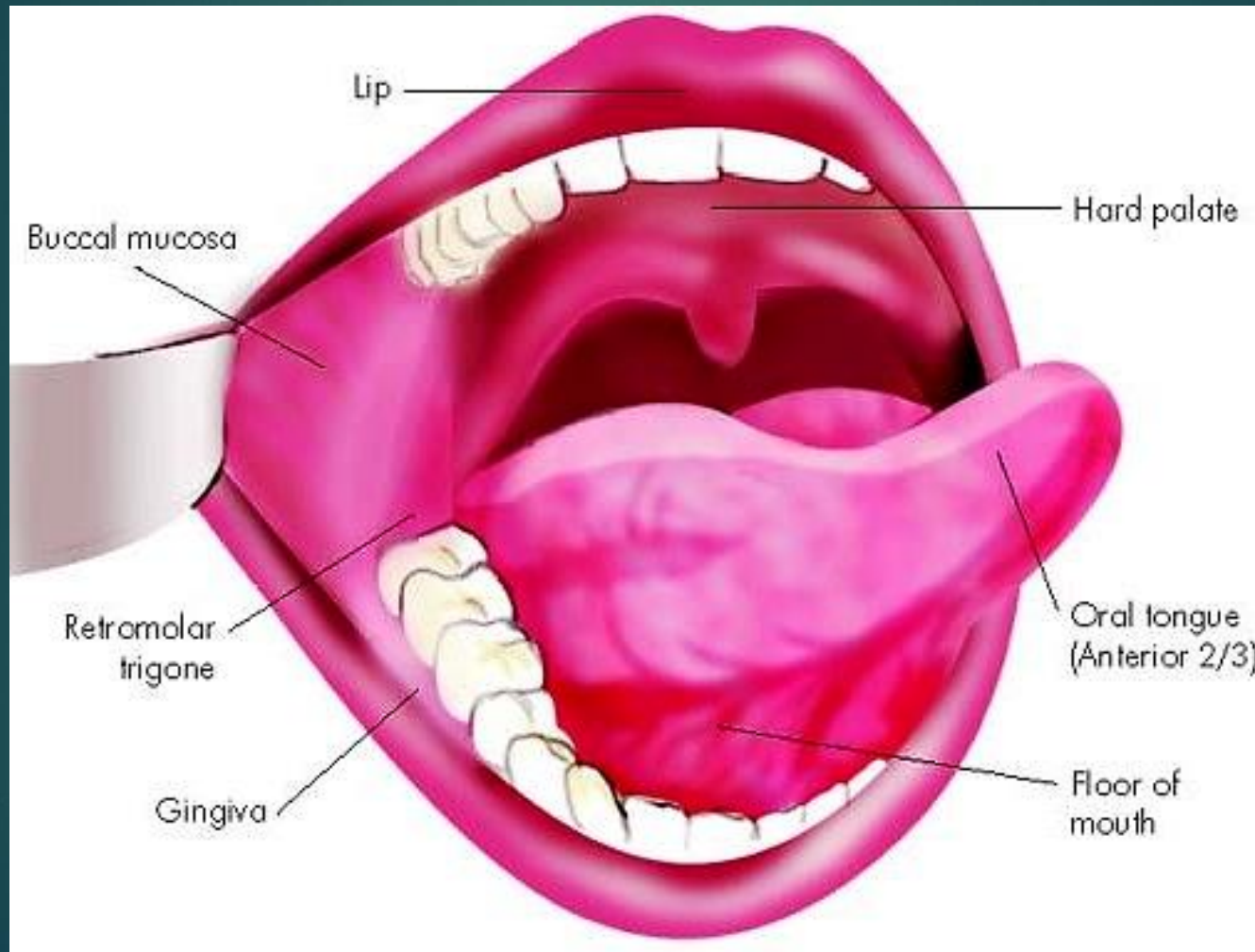
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# By the end of this lecture you should be able to:

1. Differentiate different parts of the oral cavity
2. Describe the blood and nerve supply of mucosa and muscles of palate and tongue
3. Identify the effect of nerve paralysis on those muscles and their related function
4. Summarise the lymphatic drainage of oral cavity

# Parts of Oral Cavity



## II. MOUTH PROPER



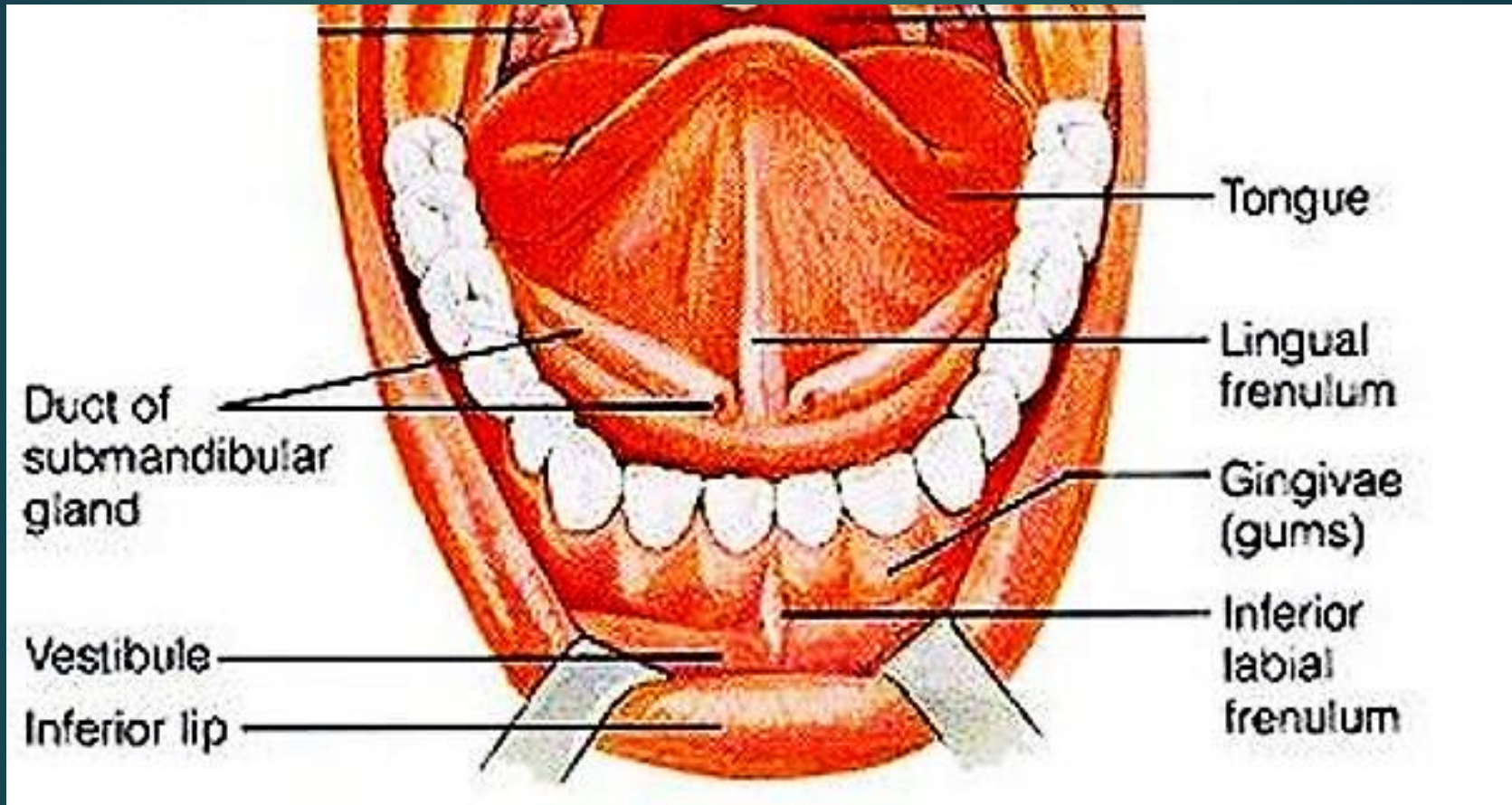
Oral Cavity  
Proper

Oral Vestibule





# Floor of mouth



Each sublingual compartment contains submandibular gland and ducts, lingual and hypoglossal nerve and the sublingual vessels.

# Nerve Supply

## o Sensory

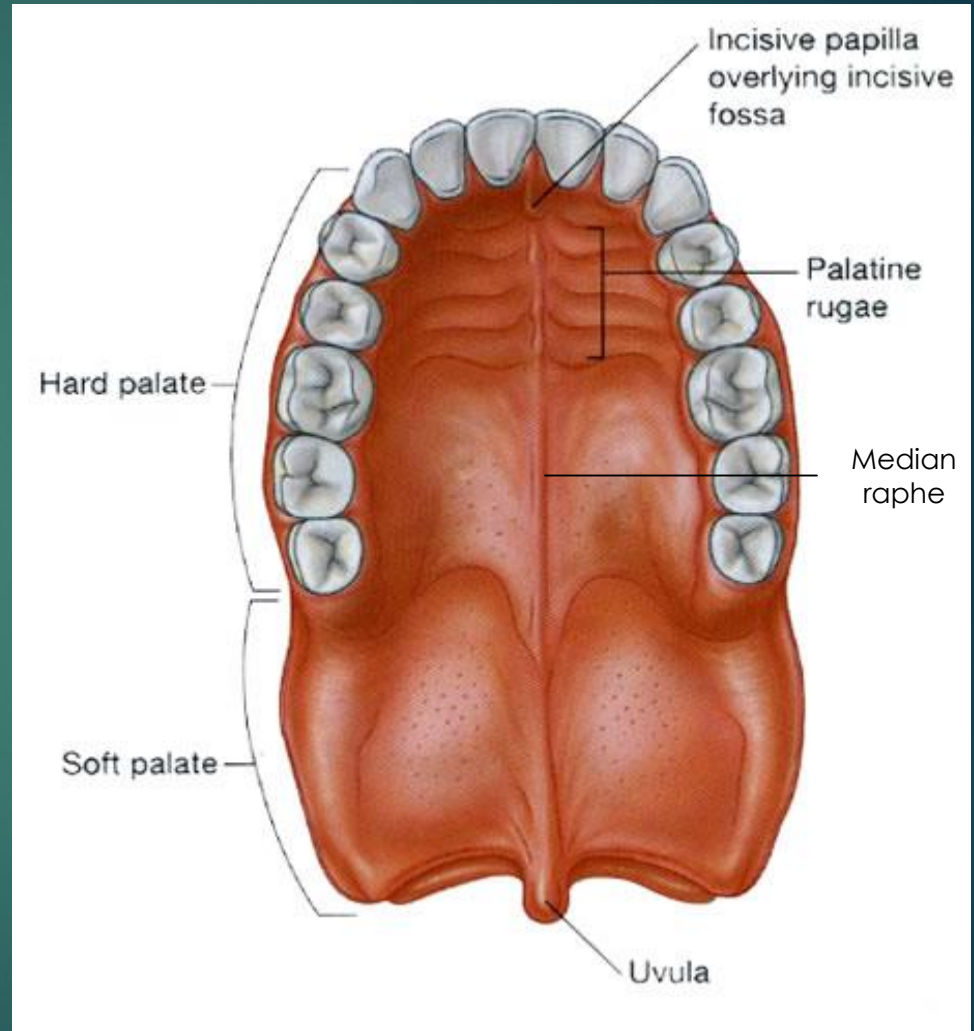
- **Roof:** by greater palatine and nasopalatine nerves (branches of **maxillary nerve**)
- **Floor:** by lingual nerve (branch of **mandibular nerve**)
- **Cheek:** by buccal nerve (branch of **mandibular nerve**)

## o Motor

- Muscle in the cheek (**buccinator**) and the lip (**orbicularis oris**) are supplied by the branches of the **facial nerve**

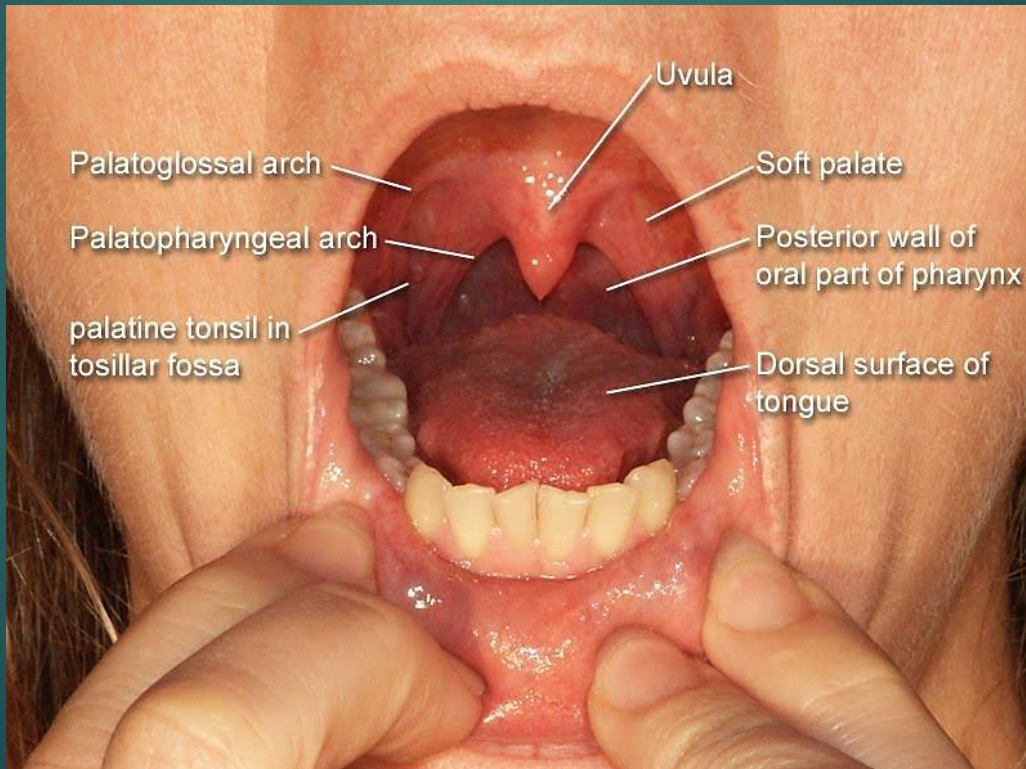
# HARD PALATE

- COVERED BY MUCOUS MEMBRANE AND FORMS A PARTITION BETWEEN THE ORAL AND THE NASAL CAVITY
- THE MUCOUS MEMBRANE AND THE PERIOSTEUM CANNOT BE SEPARATED (MUCOPERIOSTEUM)



# SOFT PALATE

- MOVABLE PORTION AND IS ATTACHED TO THE HARD PALATE
- PALATINE TONSIL IS ALSO CALLED “ISTHMUS OF FAUCES” OR THE TONSILLAR SINUS





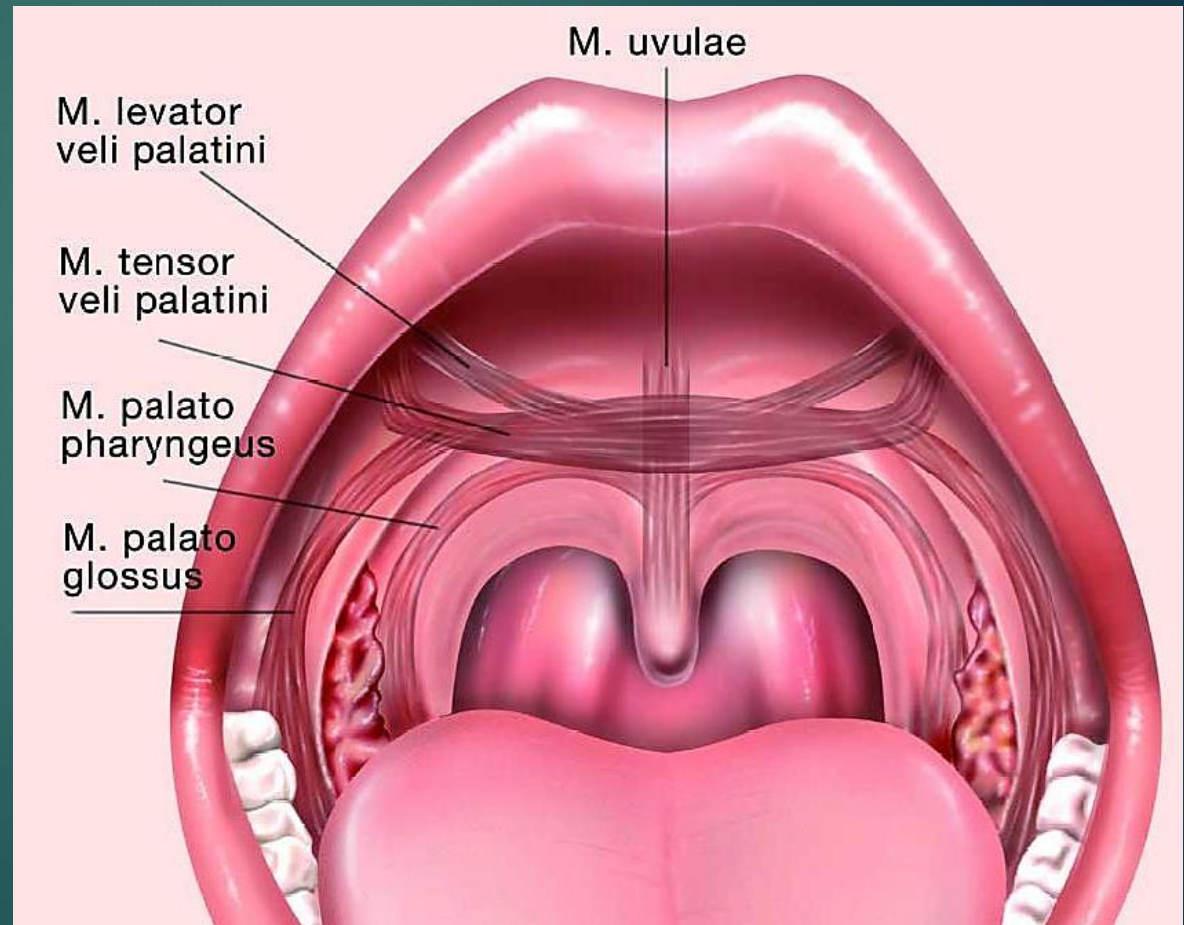
# Muscles of Palate

raises the uvula

brings soft palate in contact with posterior pharyngeal wall, preventing food from going upward into the nasopharynx

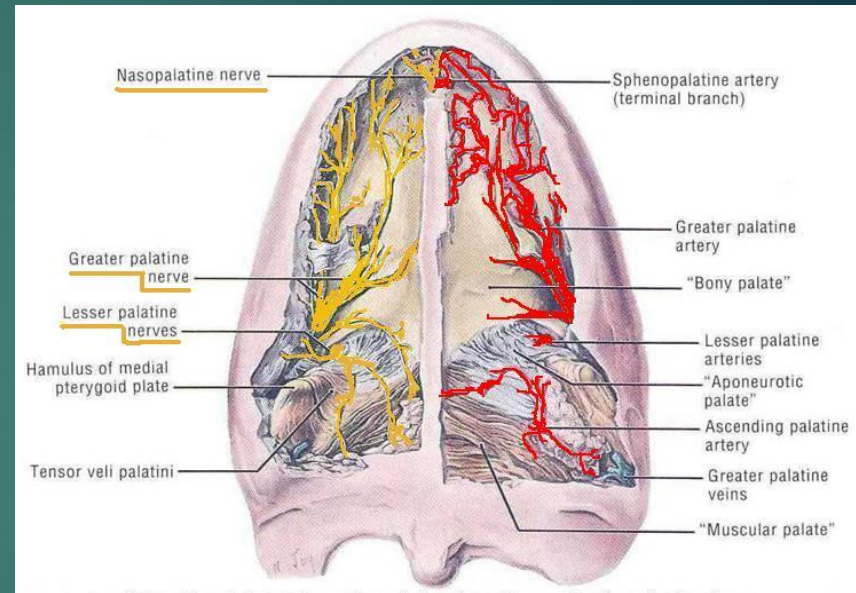
tenses the soft palate

raises the tongue



# Sensory Nerve Supply

- ▶ Mostly by the **maxillary** nerve through its branches:
  - ▶ Greater palatine nerve
  - ▶ Lesser palatine nerve
  - ▶ Nasopalatine nerve
- ▶ **Glossopharyngeal** nerve supplies the region of the soft palate

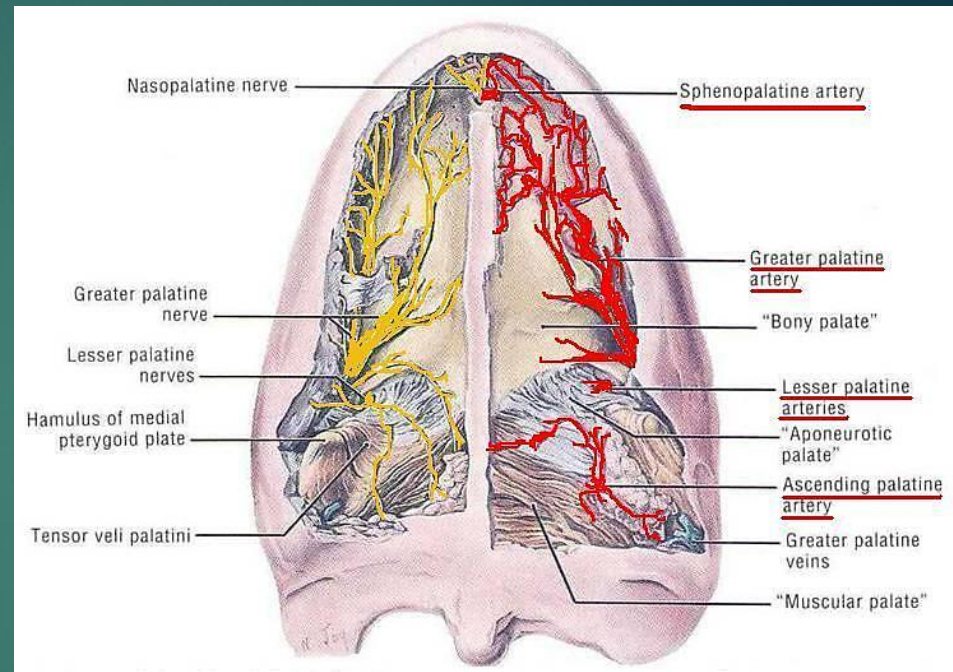


# Motor Nerve Supply

- ▶ All the muscles are supplied by the:
  - Pharyngeal plexus
  
- ▶ Except **tensor veli palatine** that supplied by:
  - Nerve to medial pterygoid, a branch of the mandibular division of the **trigeminal nerve**

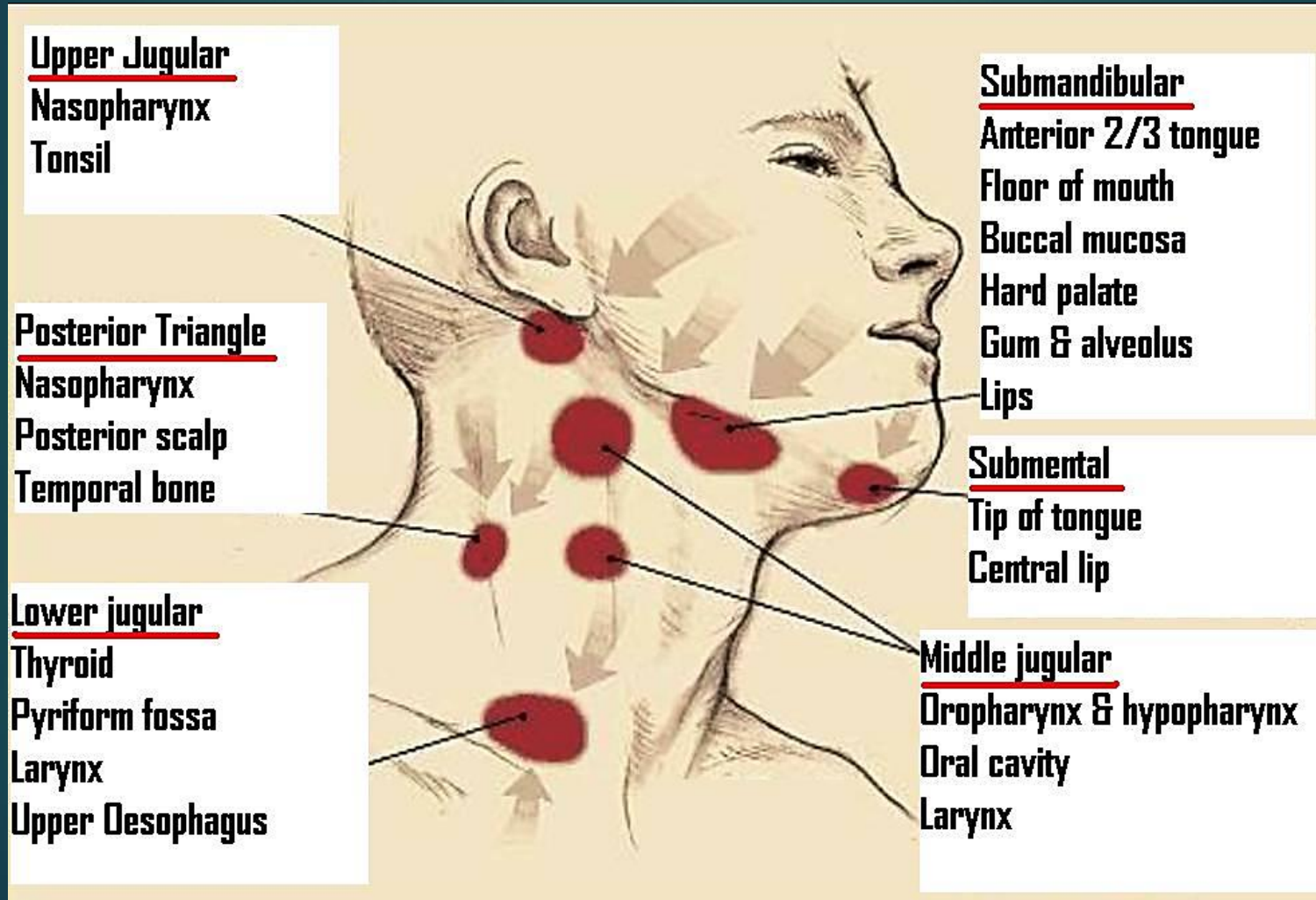
# Blood Supply

- ▶ Branches of the maxillary artery
  - Greater palatine
  - Lesser palatine
  - Sphenopalatine
- ▶ Ascending palatine, branch of the facial artery
- ▶ Ascending pharyngeal, branch of the external carotid artery



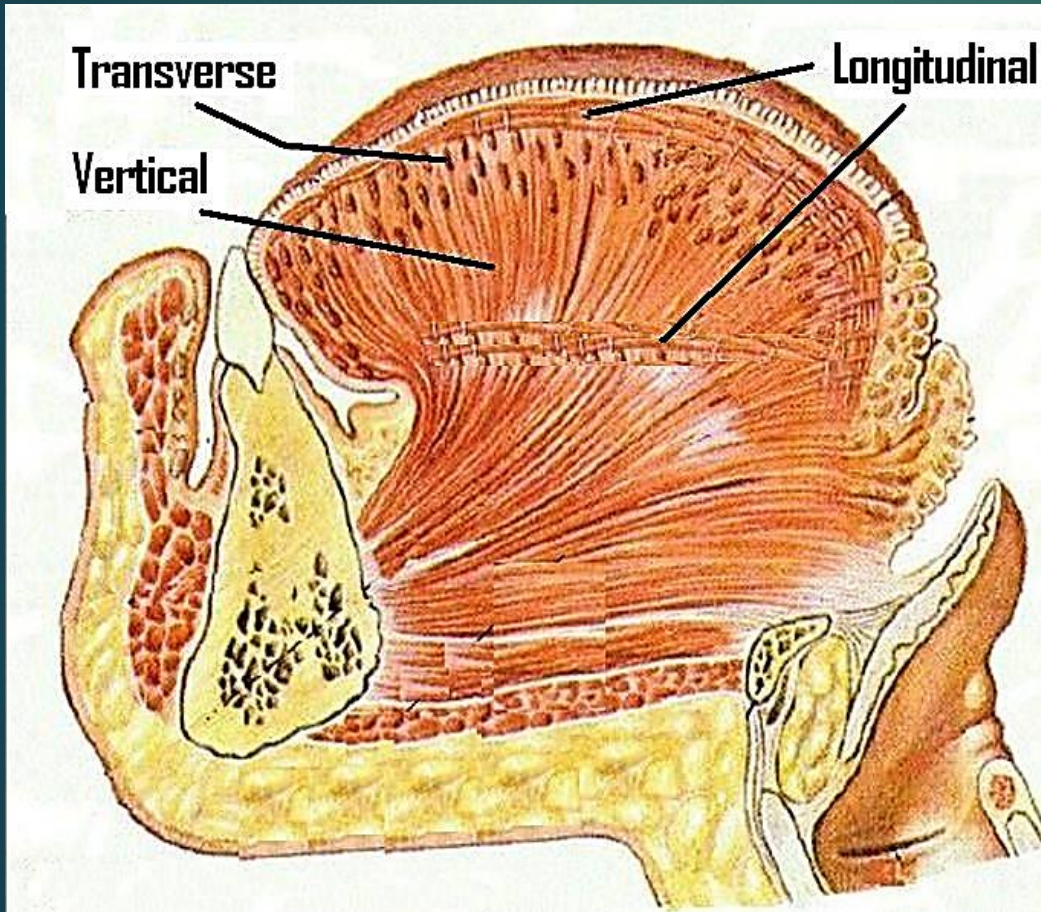


# Lymphatic drainage



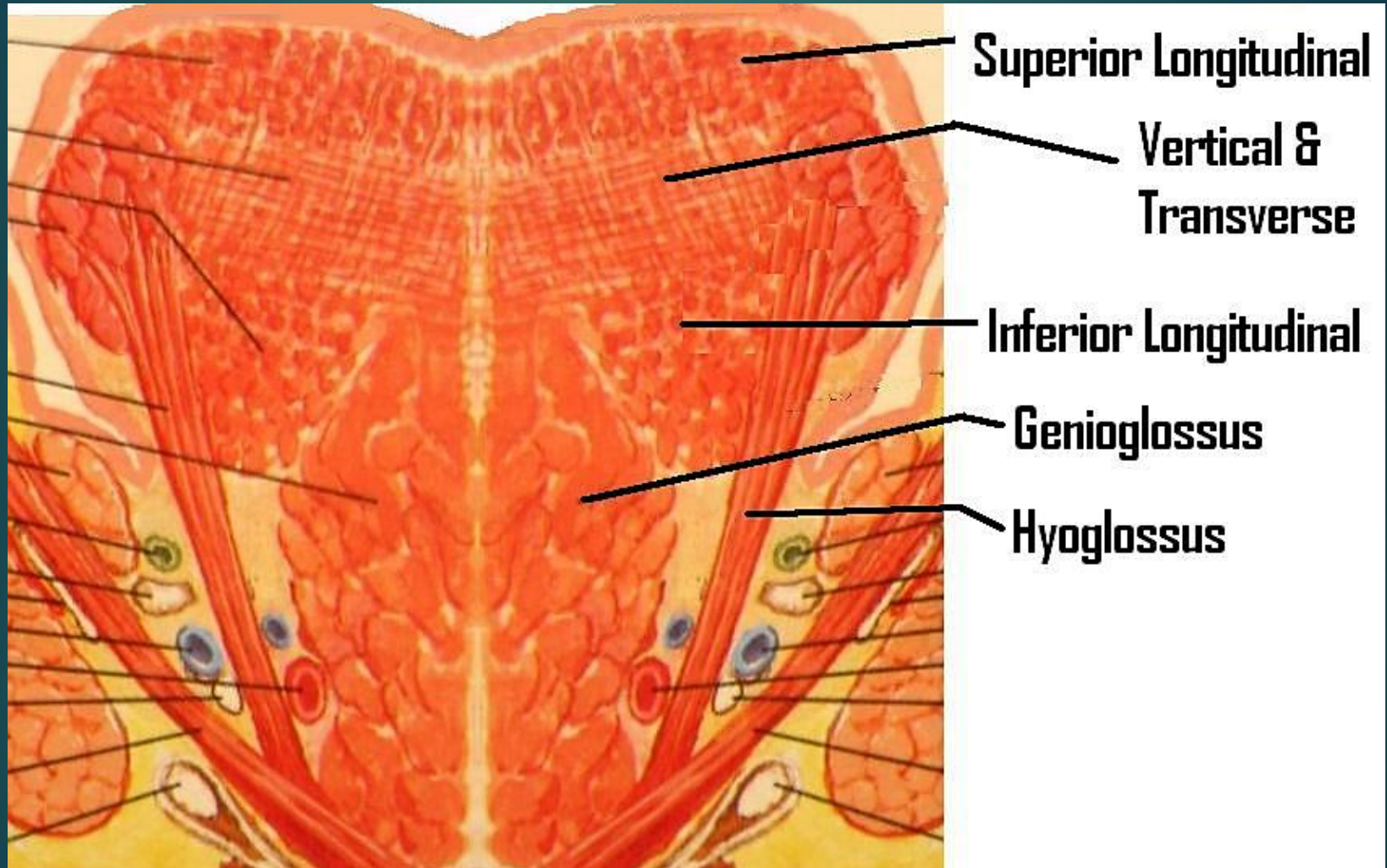


# Intrinsic tongue muscles



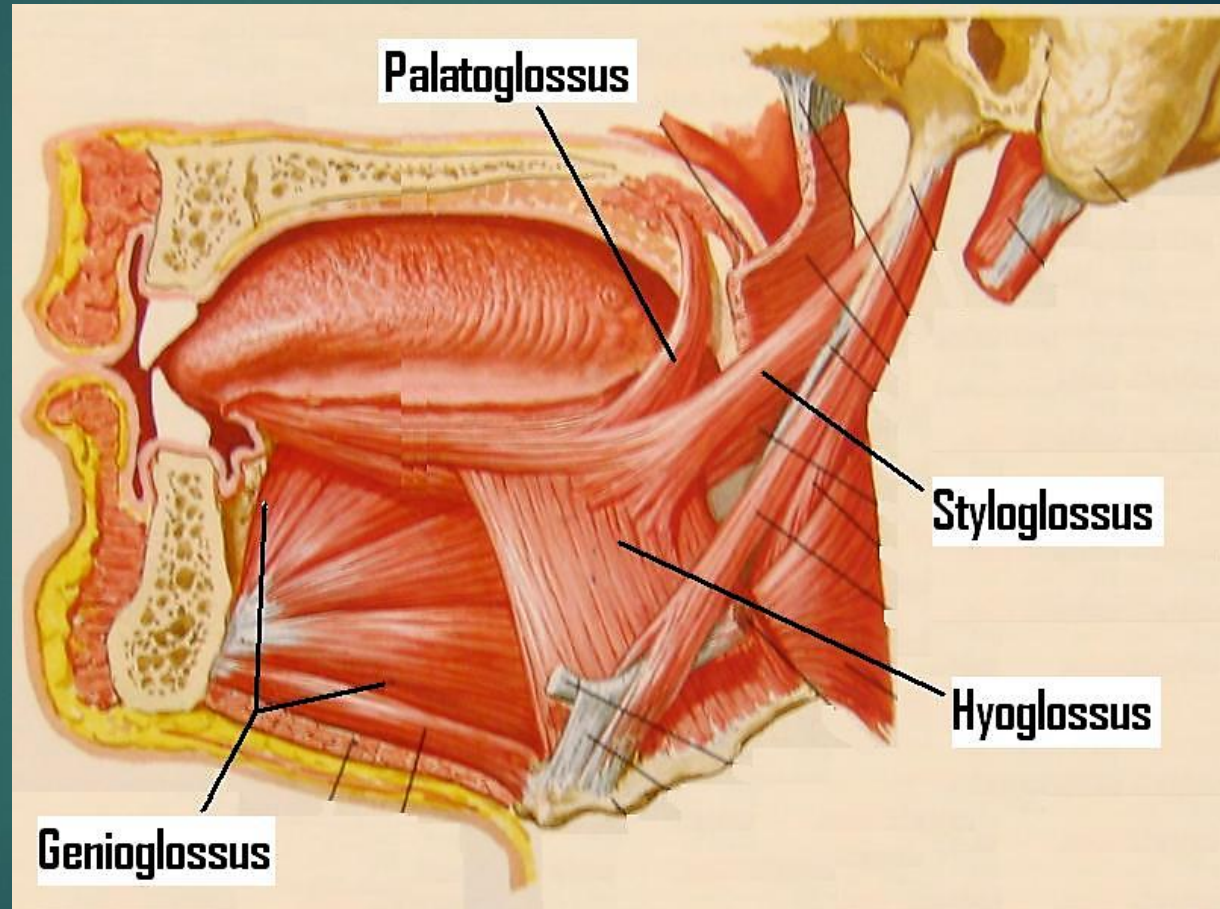
- **Inferior Longitudinal:** moves tip up & down
- **Superior Longitudinal:** moves tip up & down
- **Transverse:** narrows & lengthens tongue
- **Vertical:** flattens & depresses tongue

# Coronal section of tongue





# Extrinsic tongue muscles



- **Styloglossus**: Prevents tongue from falling back
- **Palatoglossus**: Pulls tongue back

# Movements

## ▶ Protrusion:

- Genioglossus on both sides acting together

## ▶ Retraction:

- Styloglossus and hyoglossus on both sides acting together

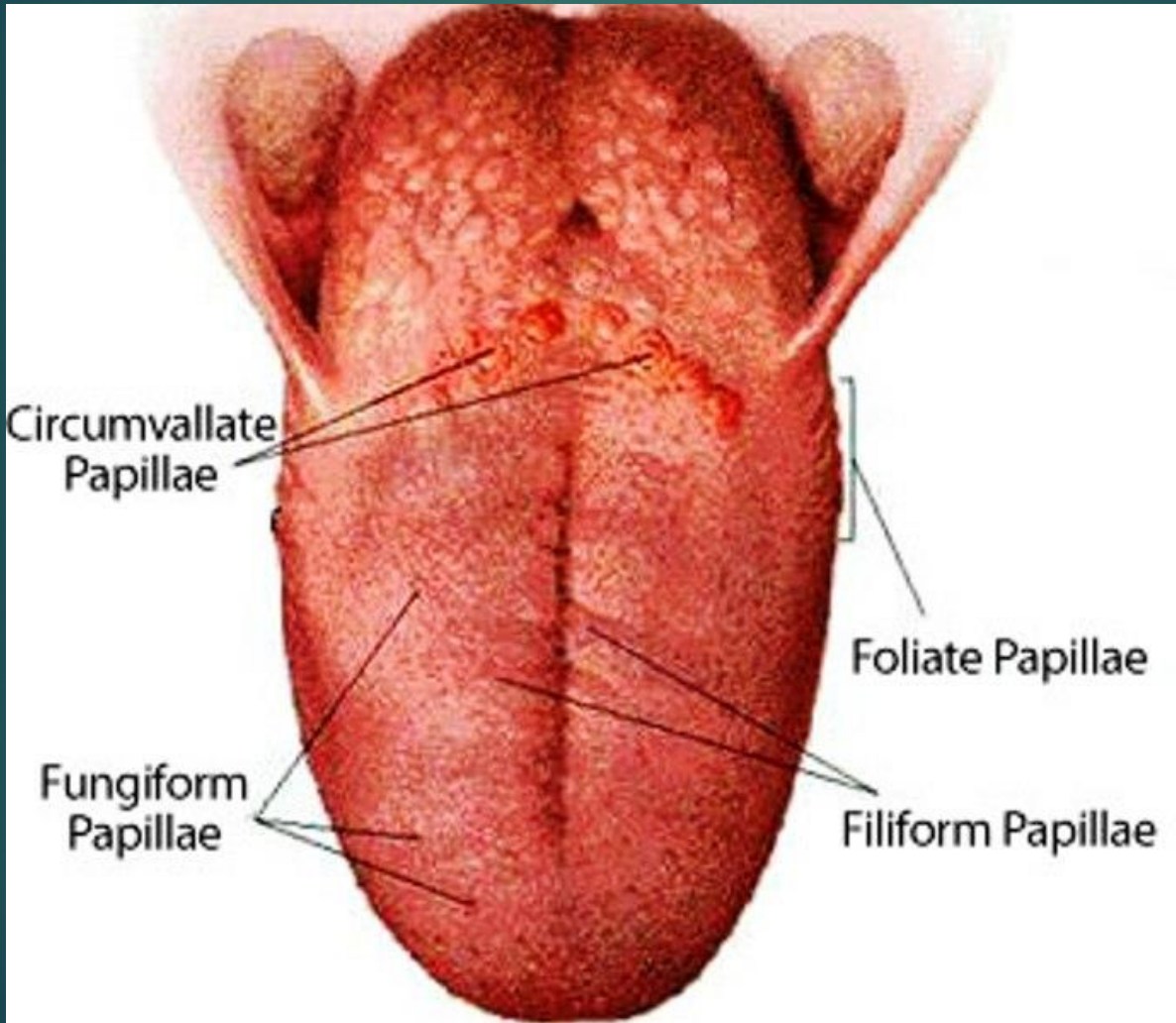
## ▶ Depression:

- Hyoglossus and genioglossus on both sides acting together

## ▶ Elevation:

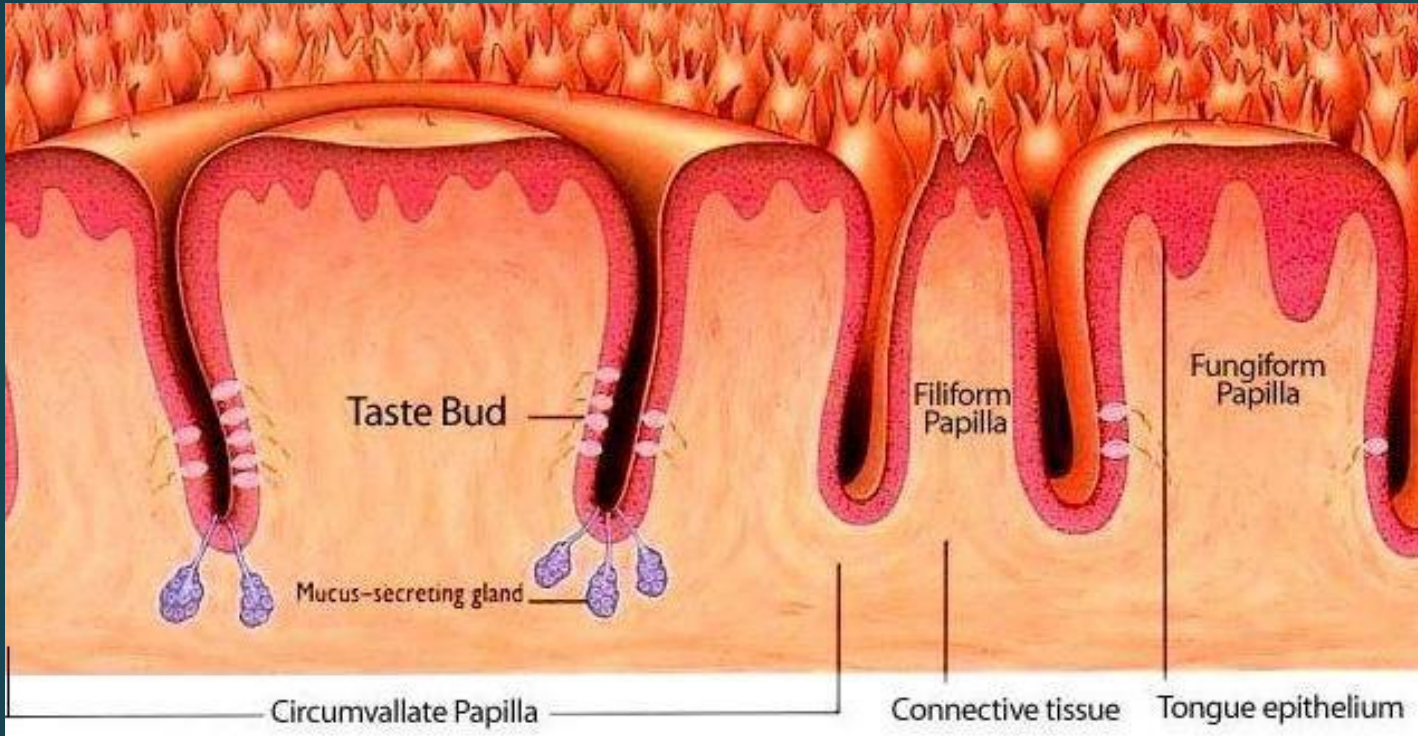
- Styloglossus and palatoglossus on both sides acting together

# Papillae in tongue





# Papillae in tongue



**Fungiform:** at tip & sides of tongue

**Circumvallate:** just in front of terminal sulcus

**Foliate:** at posterior lateral margins of tongue

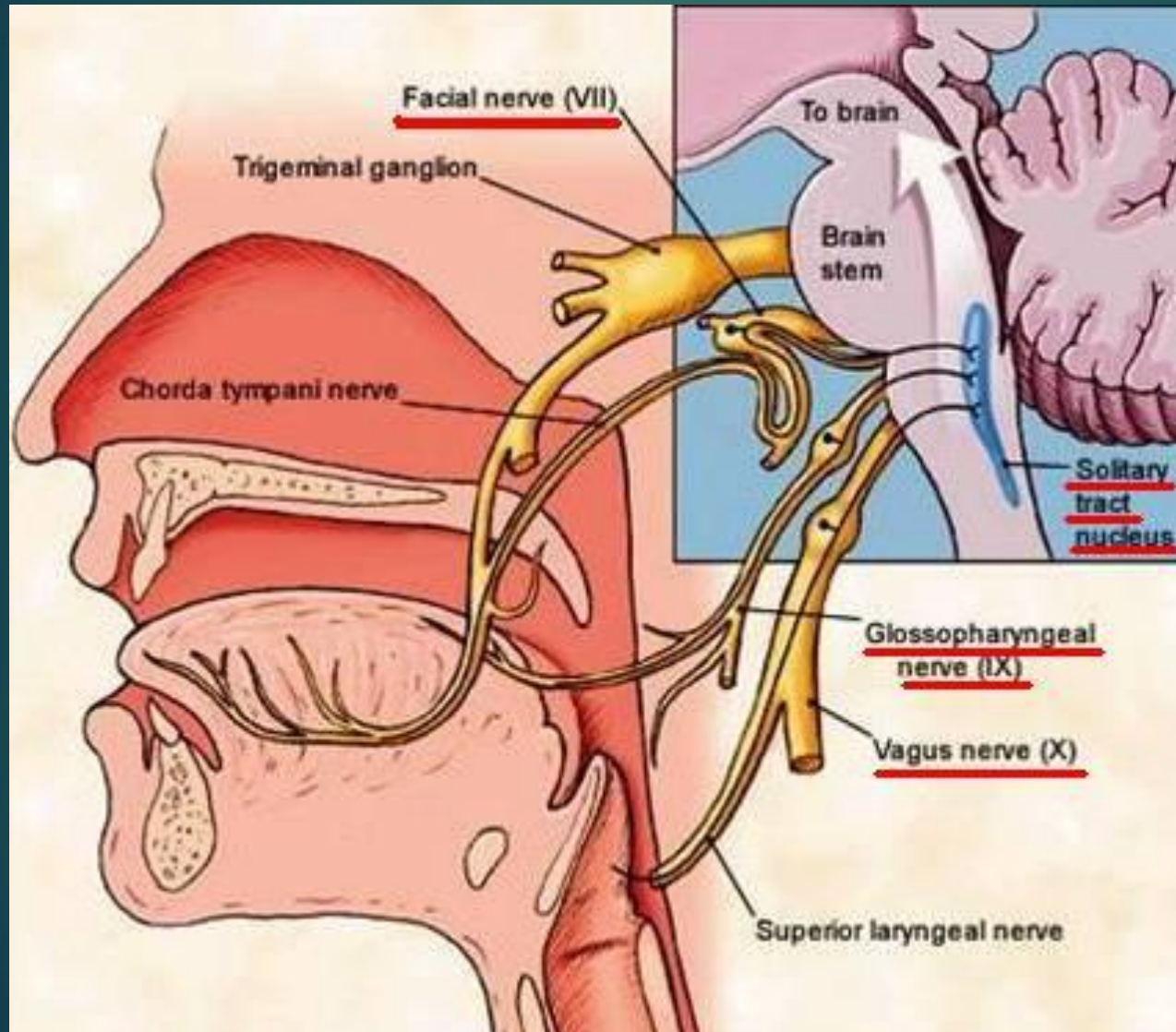
**Filiform:** center of tongue, have no taste buds

# Tongue Map ?

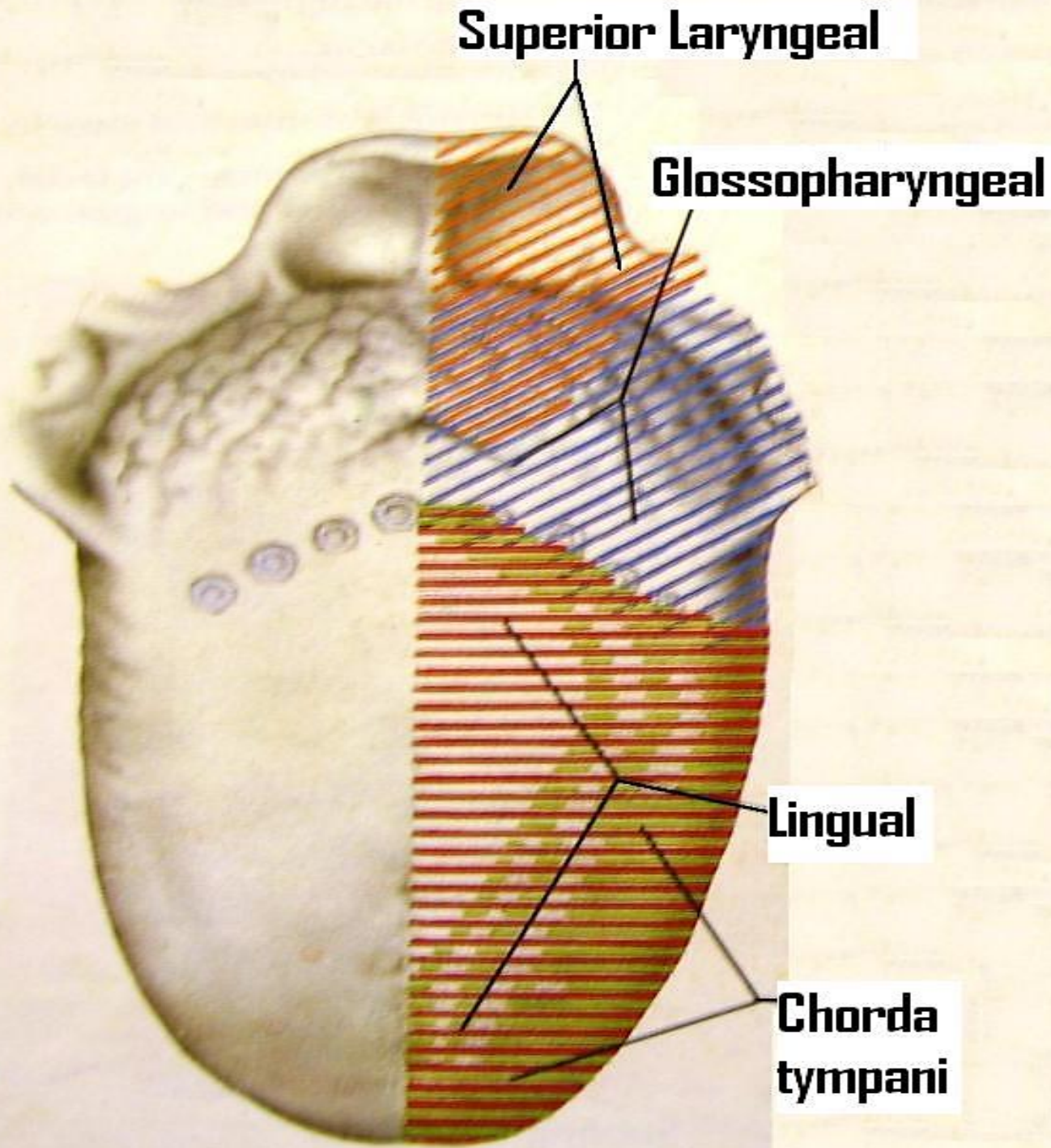


- ▶ Sweet = Sucrose
- ▶ Salty = NaCl
- ▶ Sour = HCl
- ▶ Bitter = Quinine
- ▶ Umami = Glutamate

# Taste Pathway







**Nerve  
Supply  
of  
Tongue**

# Nerve Supply of Tongue

	<b>Anterior 2/3</b>	<b>Posterior 1/3</b>
<b>Sensory</b>	Lingual	Glossopharyngeal
<b>Motor</b>	Hypoglossal ***	
<b>Taste</b>	Chorda tympani	Glossopharyngeal

\*\*\* except palatoglossus which is supplied by pharyngeal plexus



# Blood Supply

## ► Arteries:

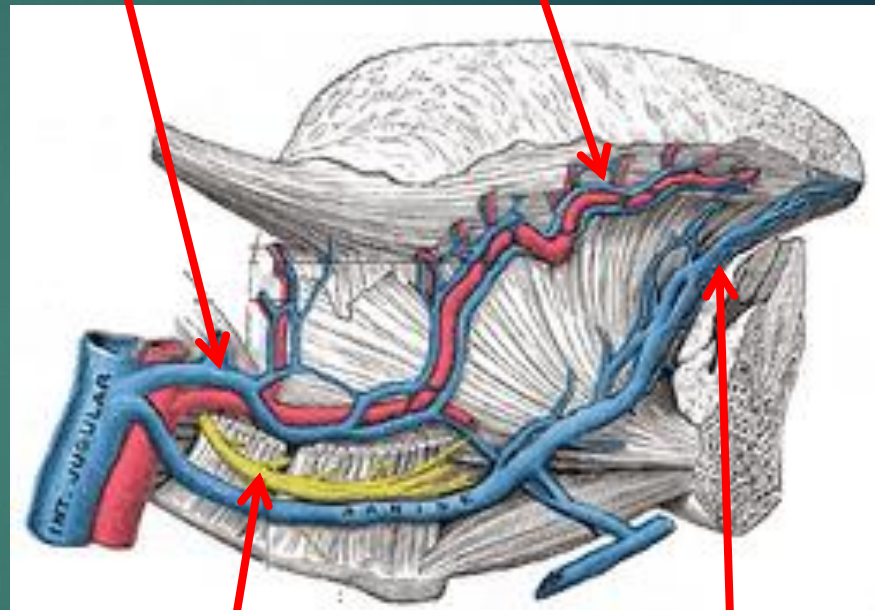
- Lingual artery
- Tonsillar branch of facial artery
- Ascending pharyngeal artery

## ► Veins:

- Lingual vein, ultimately drains into the internal jugular vein

Lingual  
artery & vein

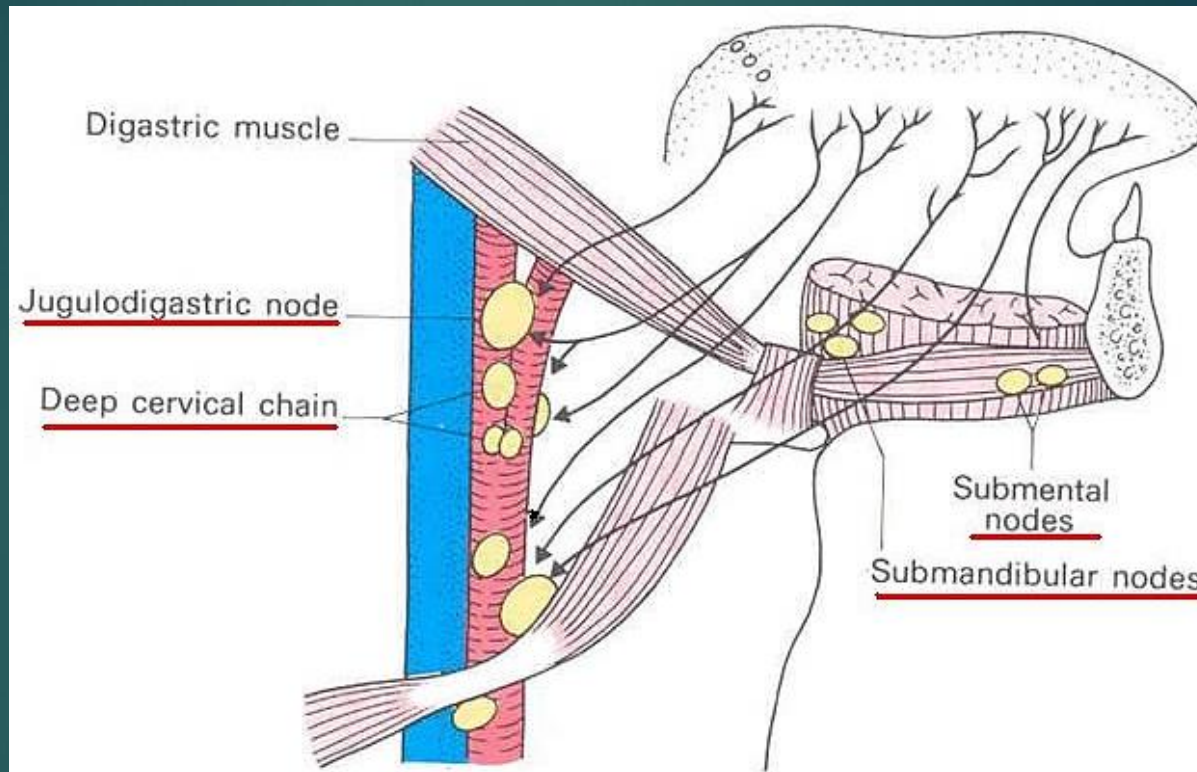
Dorsal lingual  
artery & vein



Hypoglossal  
nerve

Deep lingual  
vein

# Lymphatic Drainage



- ▶ Tip:
  - ▶ **Submental nodes** bilaterally & then deep cervical nodes
- ▶ Anterior two third:
  - ▶ **Submandibular** unilaterally & then deep cervical nodes
- ▶ Posterior third:
  - ▶ **Deep cervical nodes** (jugulodigastric mainly)

# Clinical Notes

- Lacerations of the tongue
- Tongue-Tie (ankyloglossia) (due to large frenulum)
- Lesion of the hypoglossal nerve
  - ▶ The protruded tongue deviates toward the side of the lesion
  - ▶ Tongue is atrophied & wrinkled

