

Anatomy of Oral Cavity

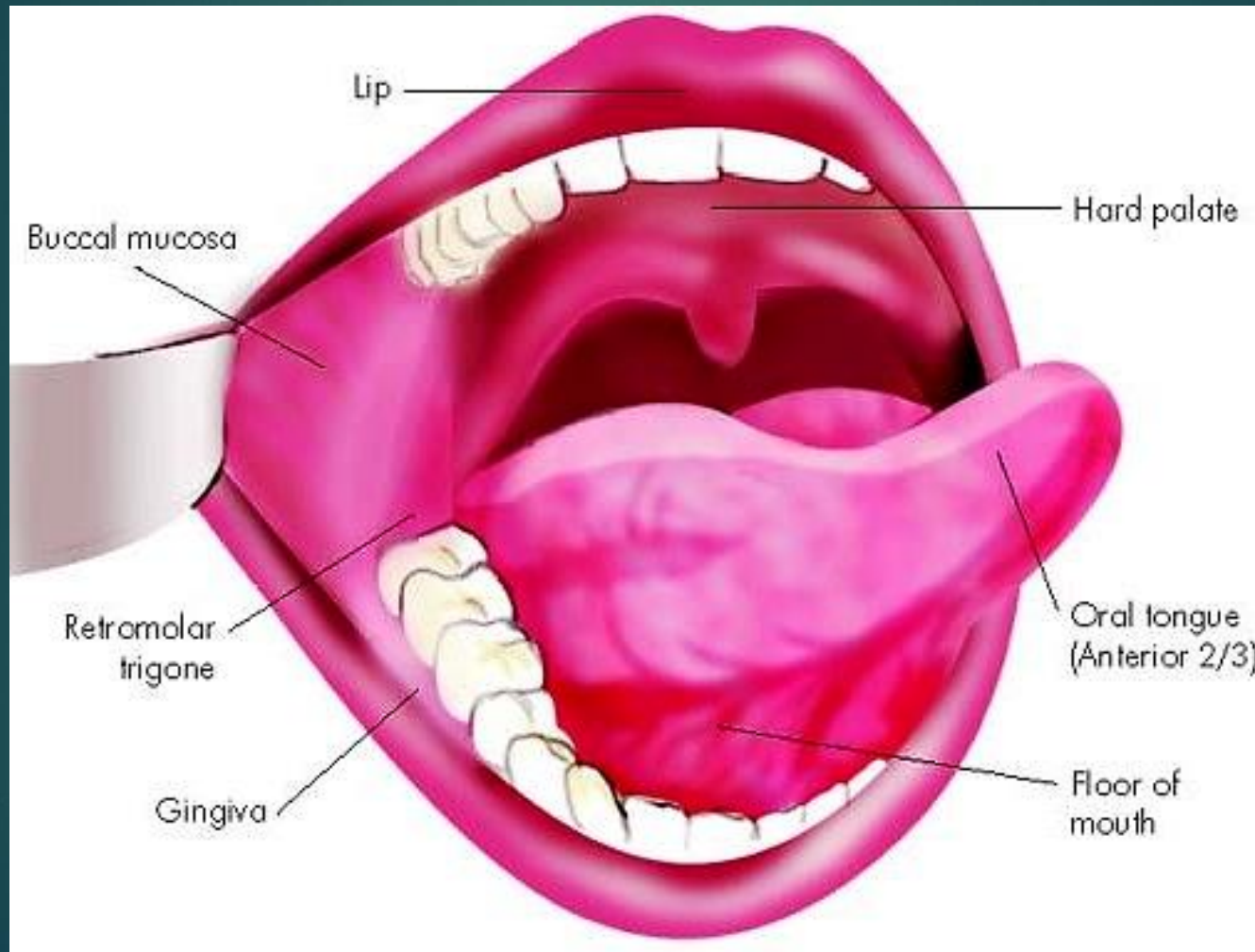
DR. MAAN AL-ABBASI



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

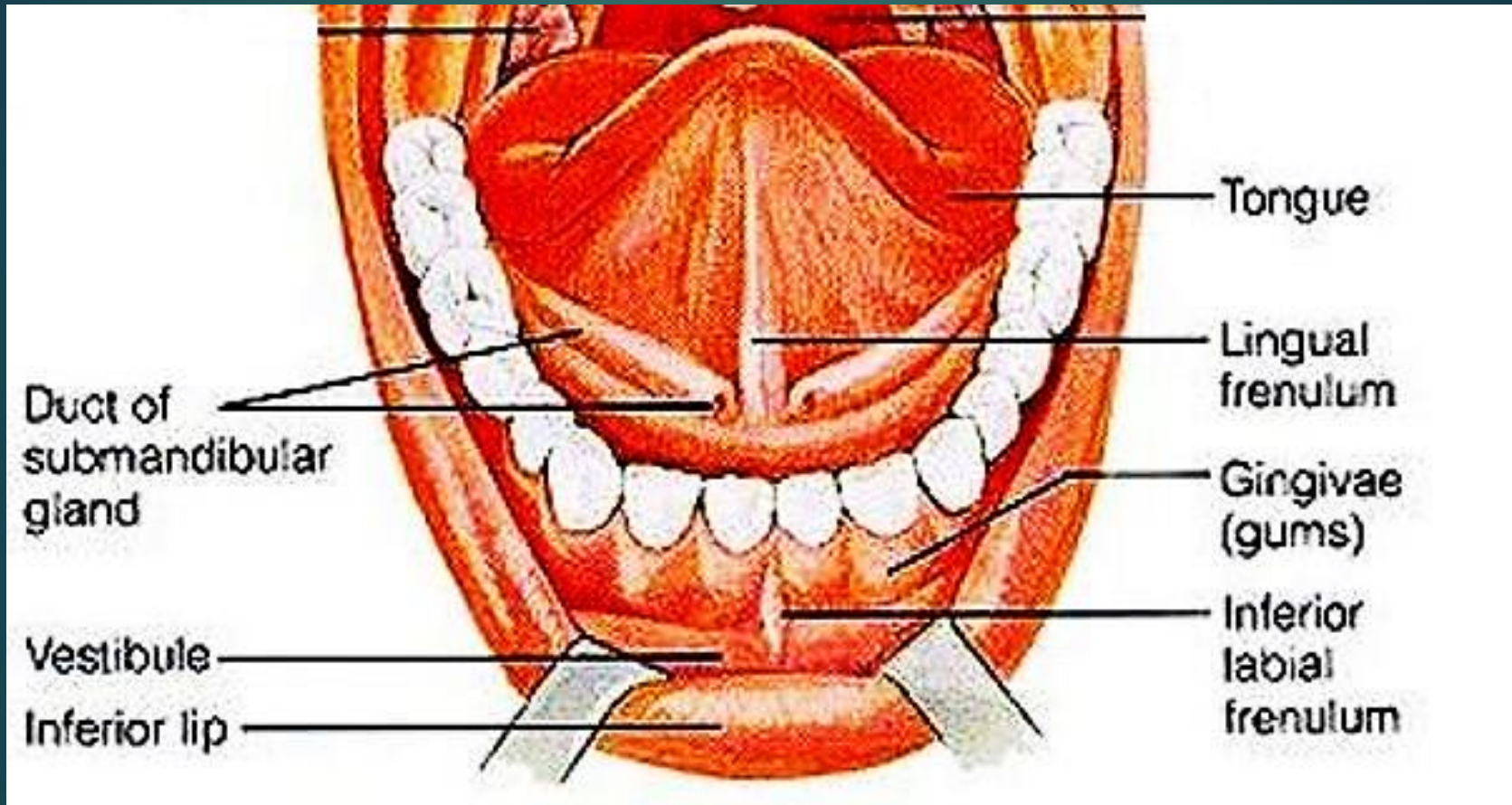


Oral Cavity
Proper

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

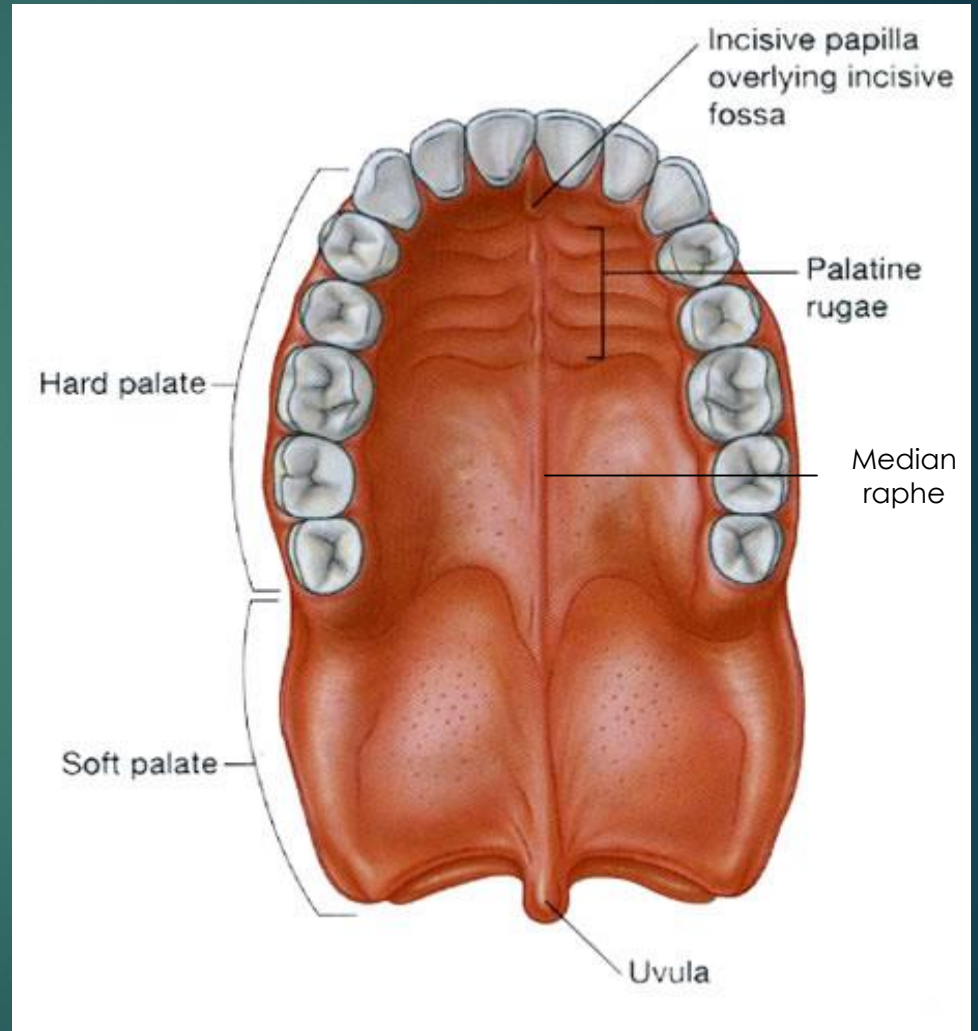
- **Roof:** by greater palatine and nasopalatine nerves (branches of **maxillary nerve**)
- **Floor:** by lingual nerve (branch of **mandibular nerve**)
- **Cheek:** by buccal nerve (branch of **mandibular nerve**)

o Motor

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

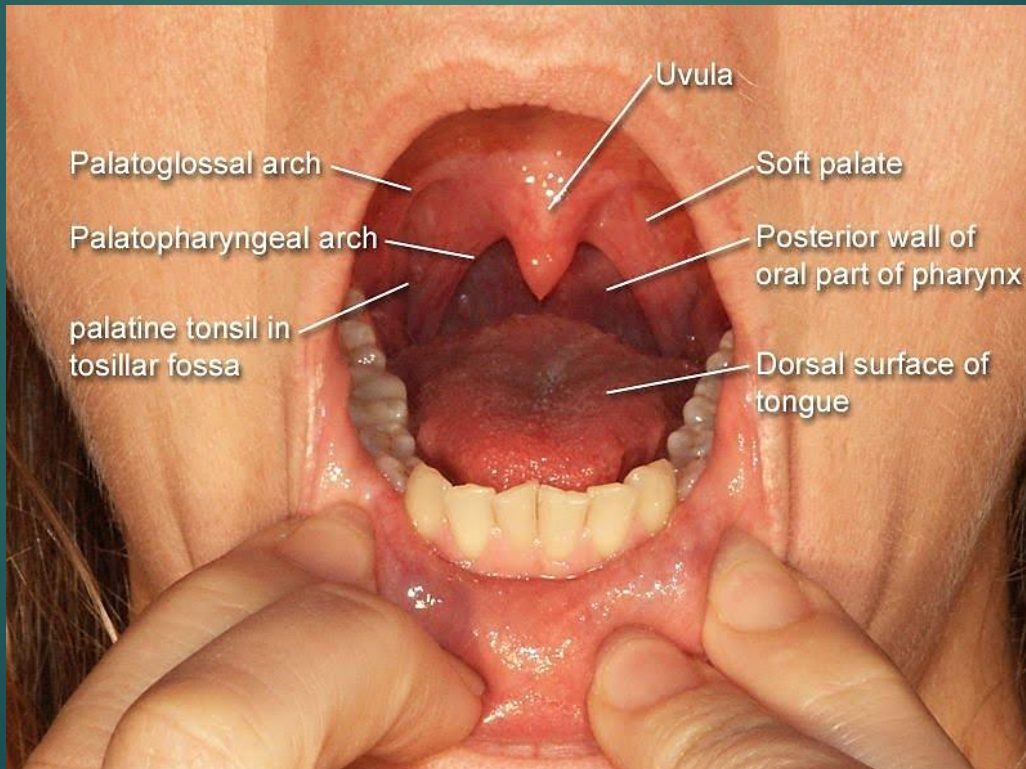
HARD PALATE

- 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



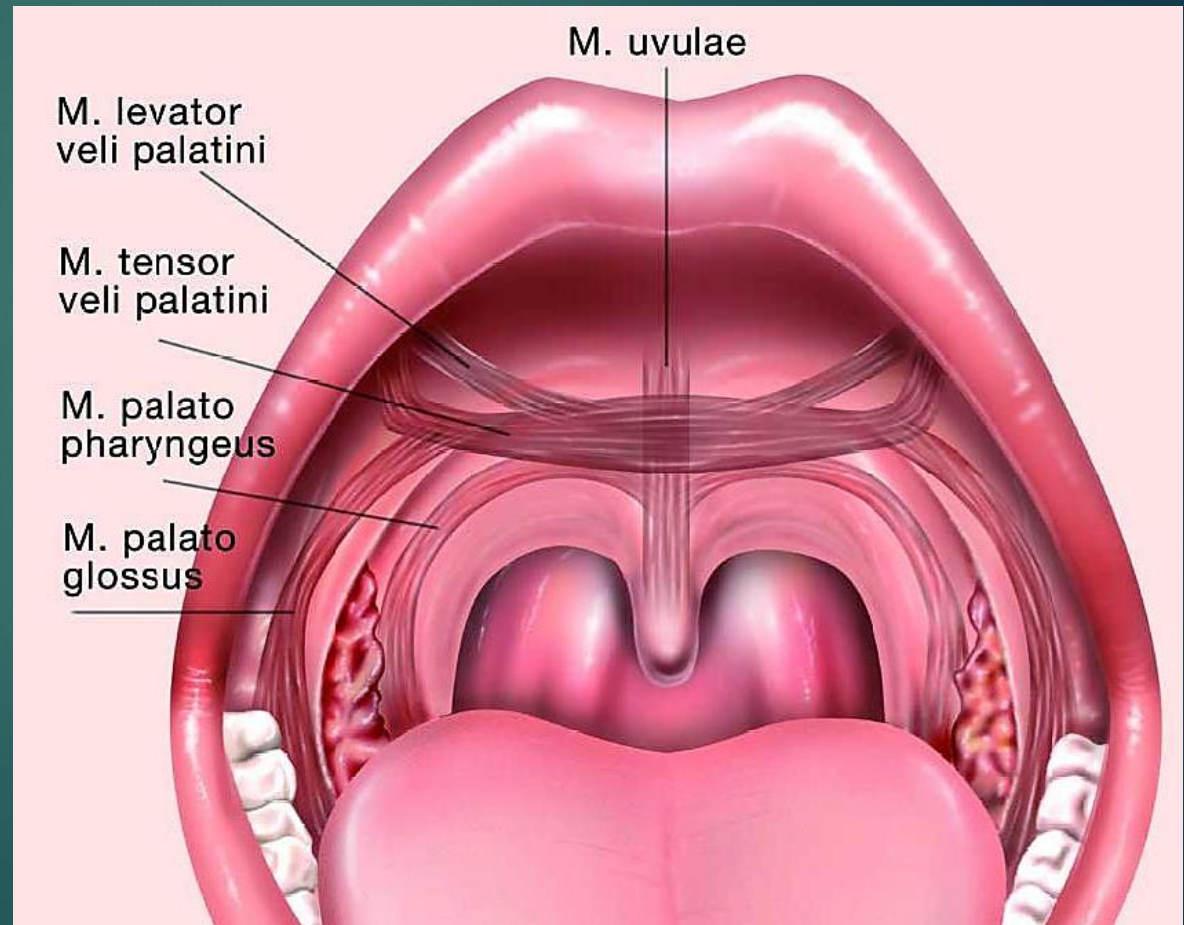
Muscles of Palate

raises the uvula

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

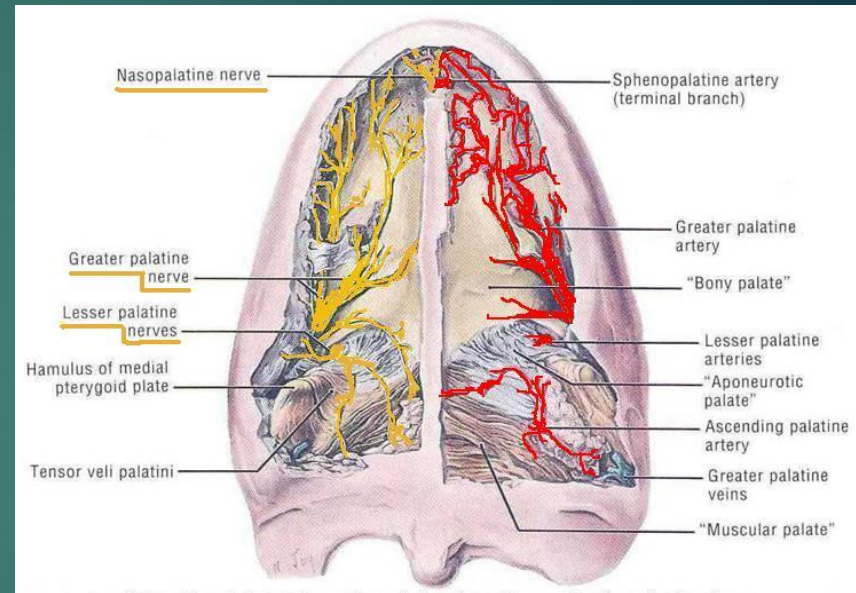
tenses the soft palate

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

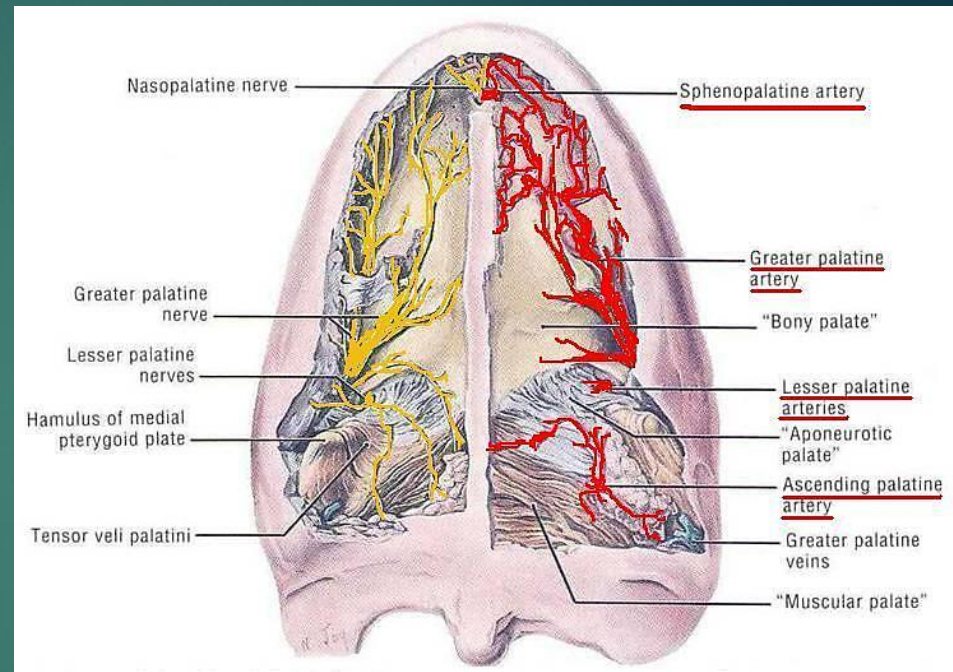


Motor Nerve Supply

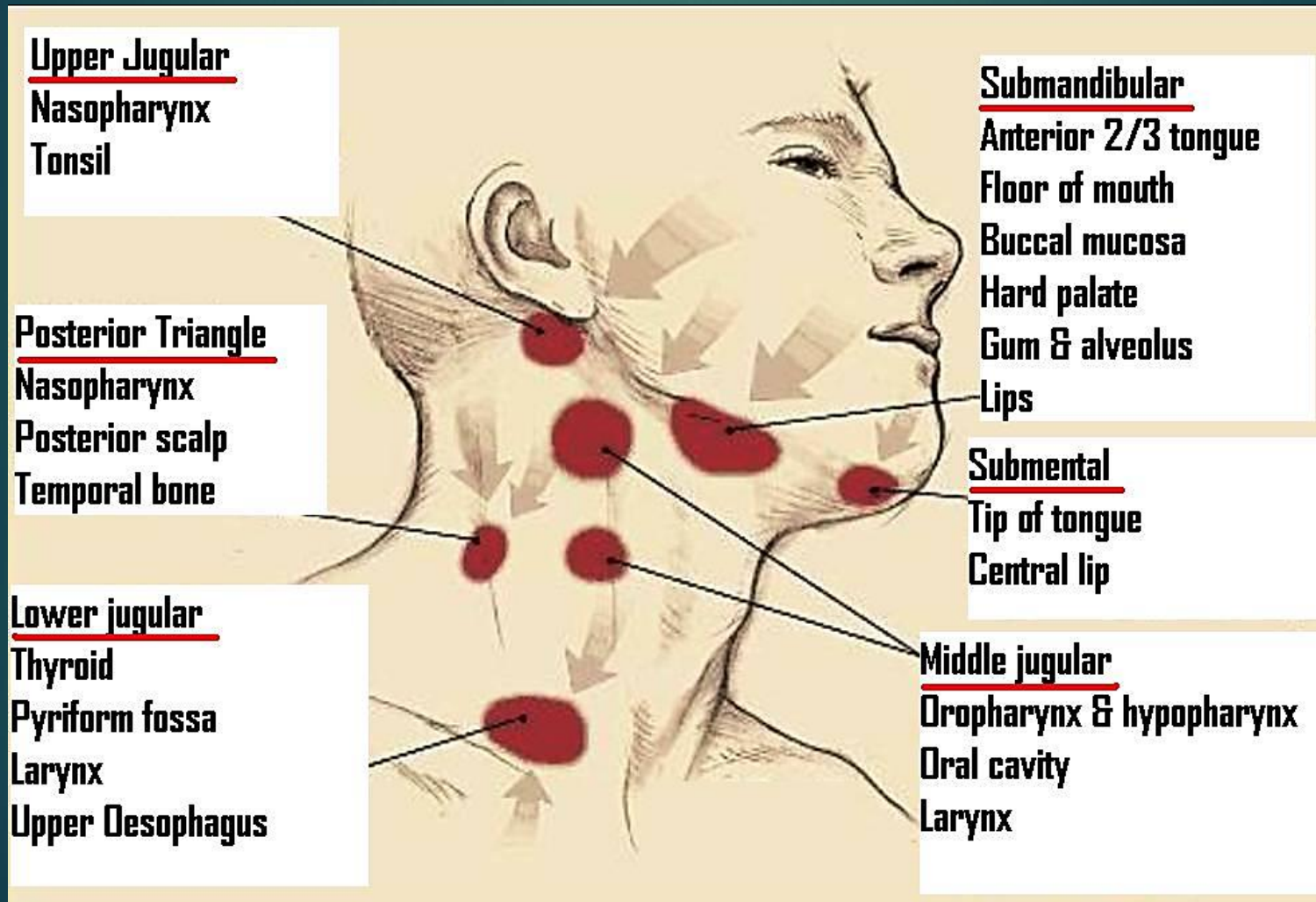
- ▶ All the muscles are supplied by the:
 - Pharyngeal plexus
- ▶ Except **tensor veli palatine** that supplied by:
 - Nerve to medial pterygoid, a branch of the mandibular division of the **trigeminal nerve**

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



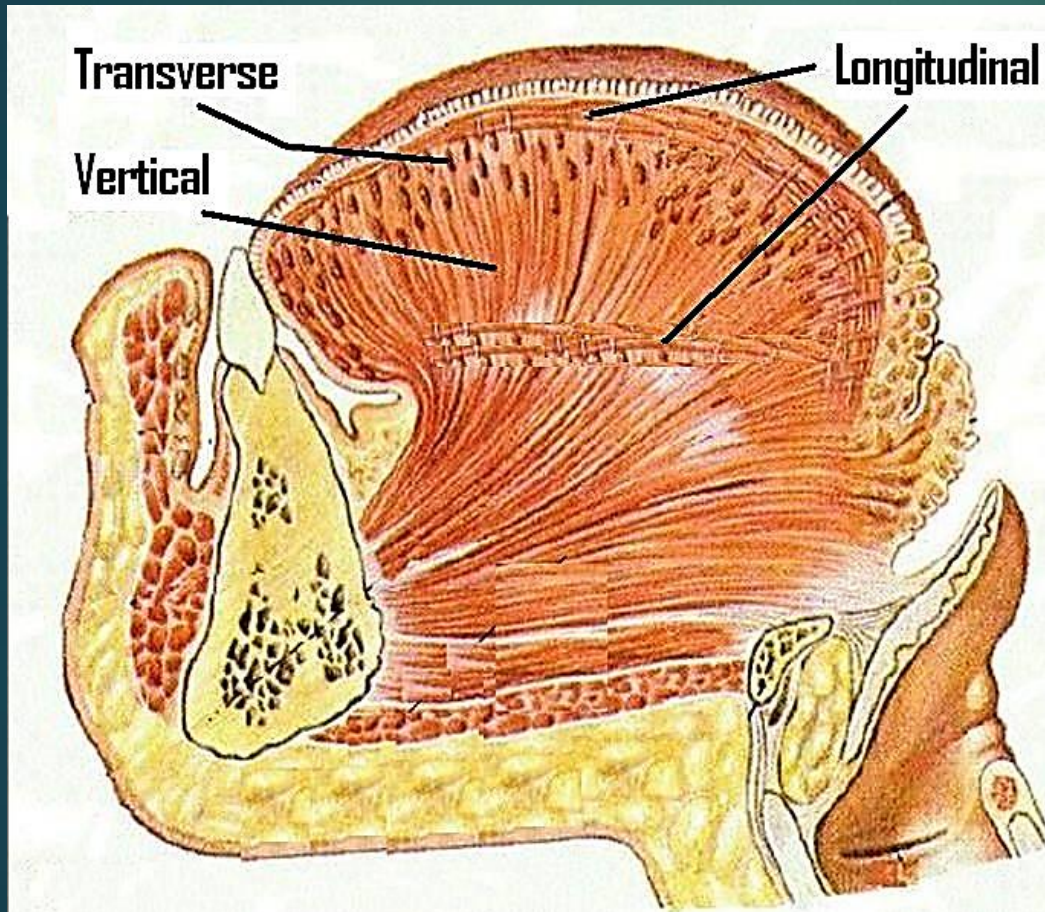
Lymphatic drainage



The Tongue

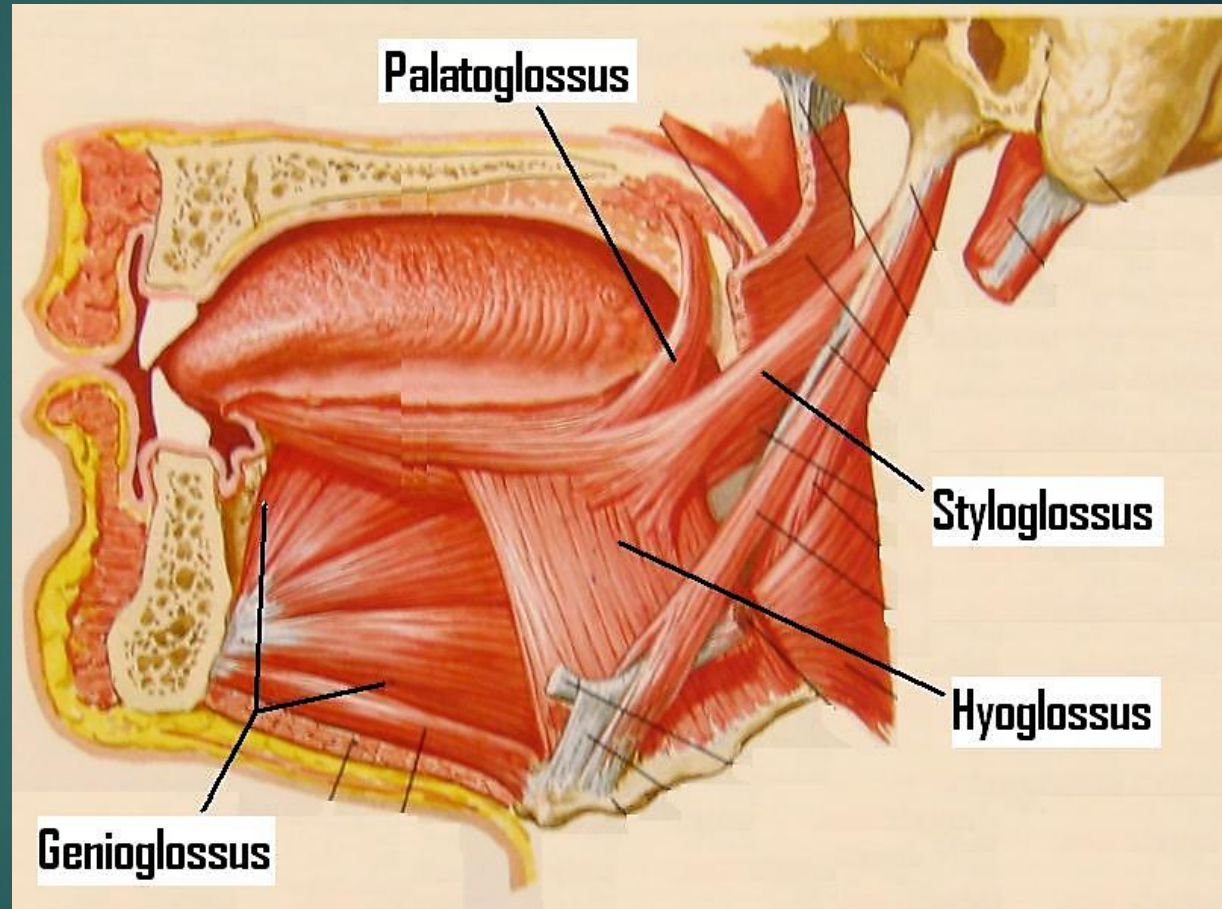


Intrinsic tongue muscles



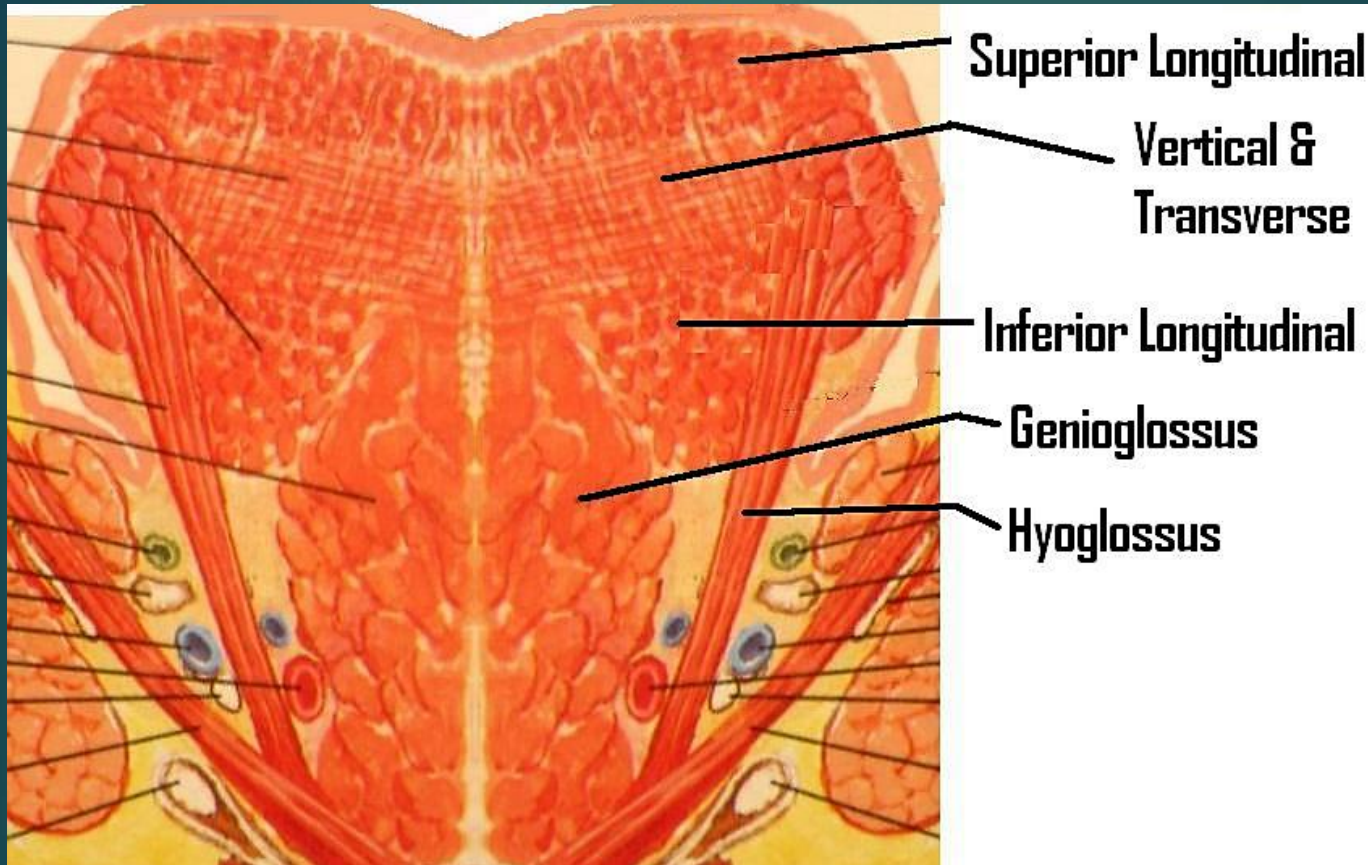
- **Inferior Longitudinal:** moves tip up & down
- **Superior Longitudinal:** moves tip up & down
- **Transverse:** narrows & lengthens tongue
- **Vertical:** flattens & depresses tongue

Extrinsic tongue muscles



- **Styloglossus:** Pulls tongue up & back
- **Palatoglossus:** Pulls tongue back

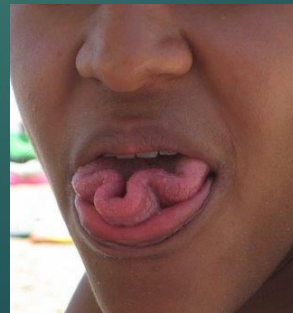
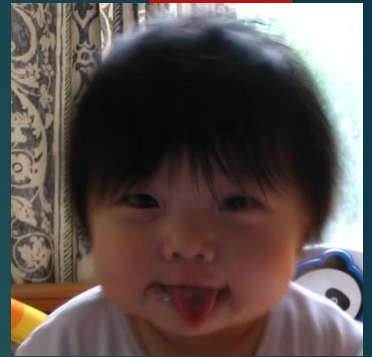
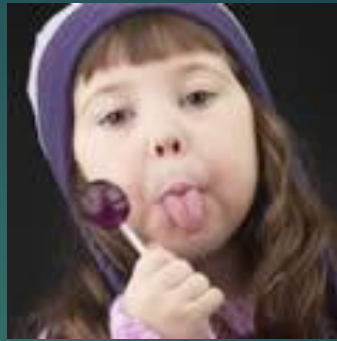
Coronal section of tongue



- **Genioglossus: Prevents tongue from falling back**
- **Hyoglossus: Depresses tongue**

Movements

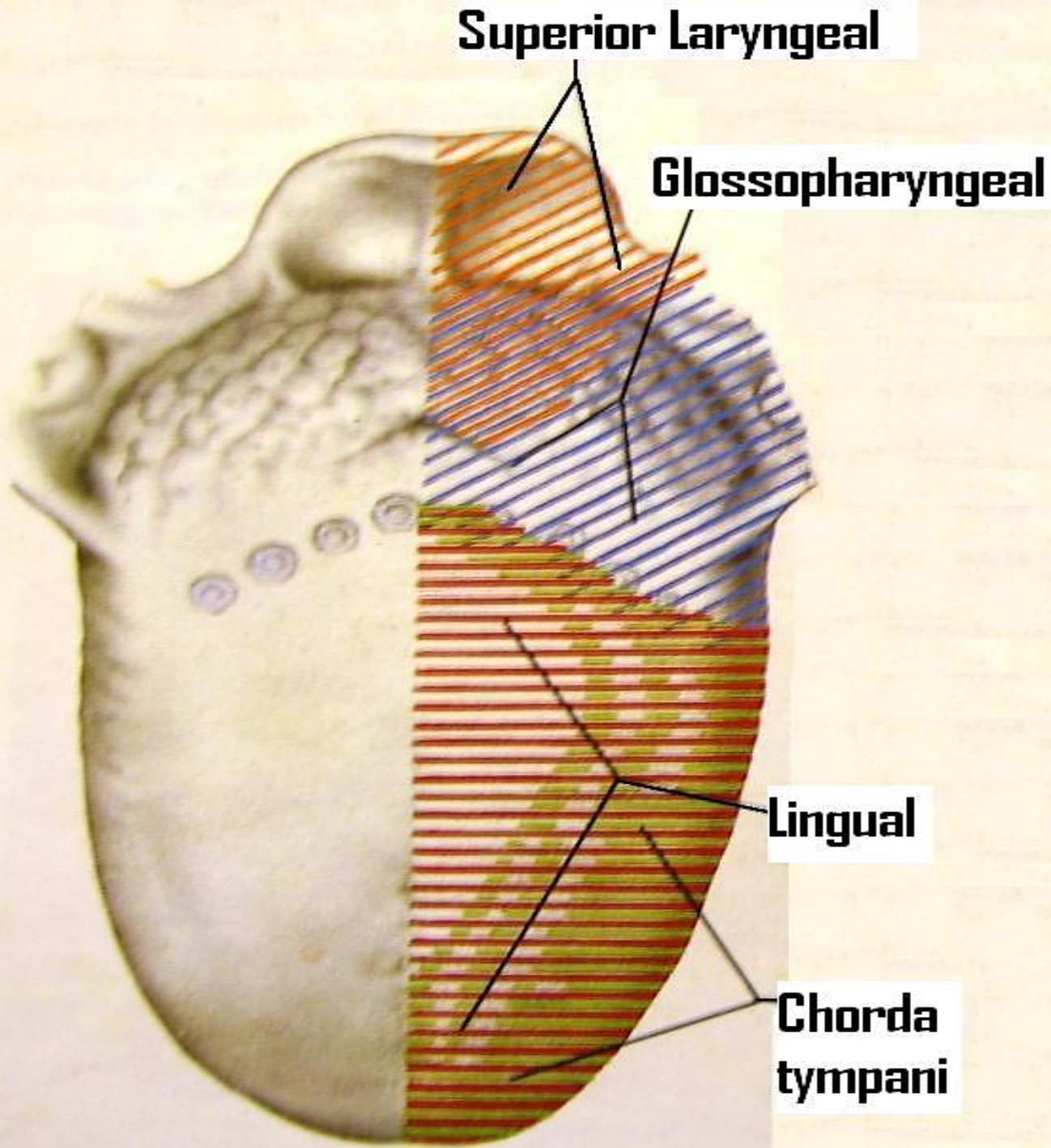
- ▶ **Protrusion:**
 - Genioglossus on both sides acting together
- ▶ **Retraction:**
 - Styloglossus and hyoglossus on both sides acting together
- ▶ **Depression:**
 - Hyoglossus and genioglossus on both sides acting together
- ▶ **Elevation:**
 - Styloglossus and palatoglossus on both sides acting together



Nerve Supply of Tongue

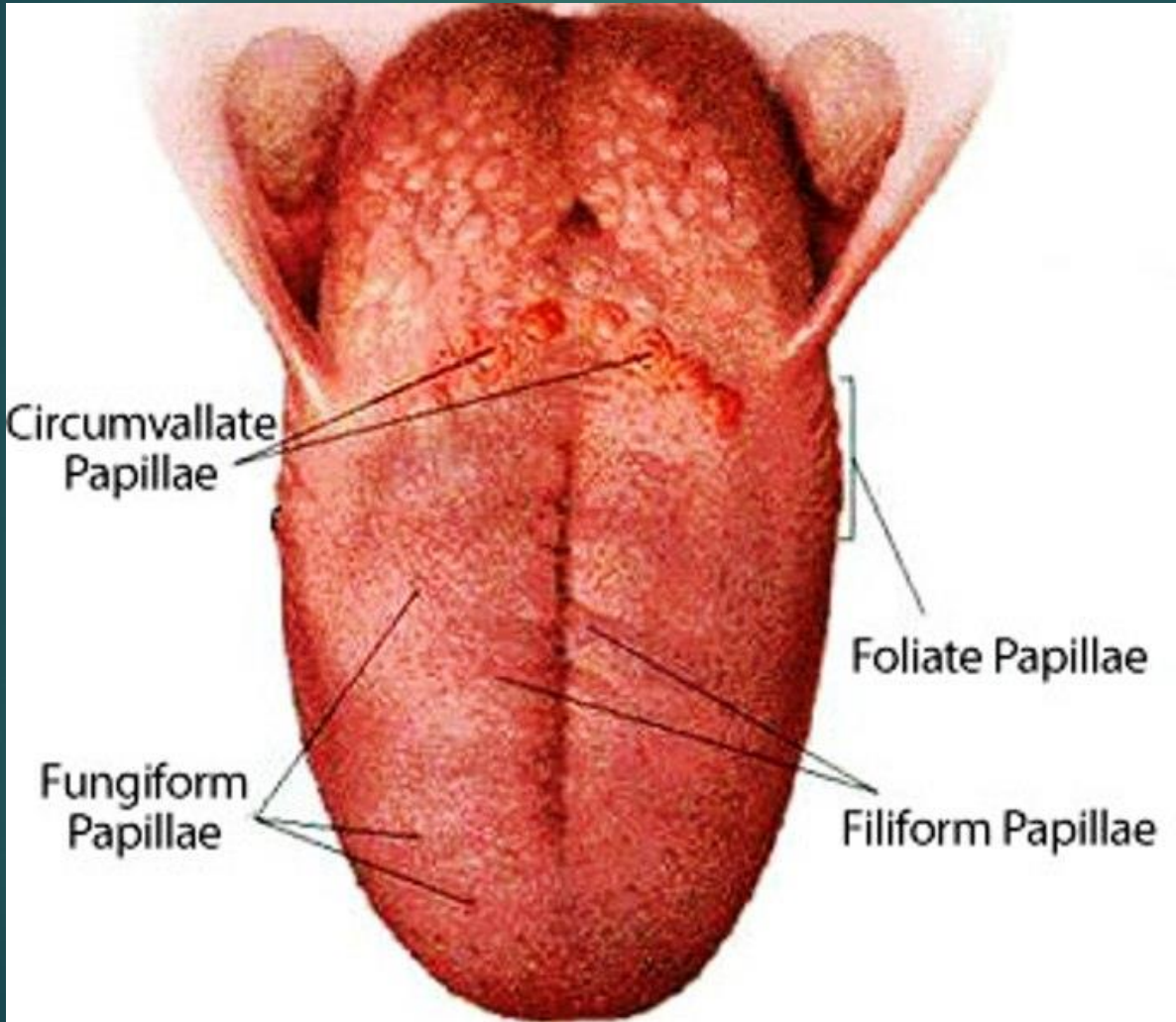
	Anterior 2/3	Posterior 1/3
Sensory	Lingual	Glossopharyngeal
Motor	Hypoglossal ***	
Taste	Chorda tympani	Glossopharyngeal

*** except palatoglossus which is supplied by pharyngeal plexus

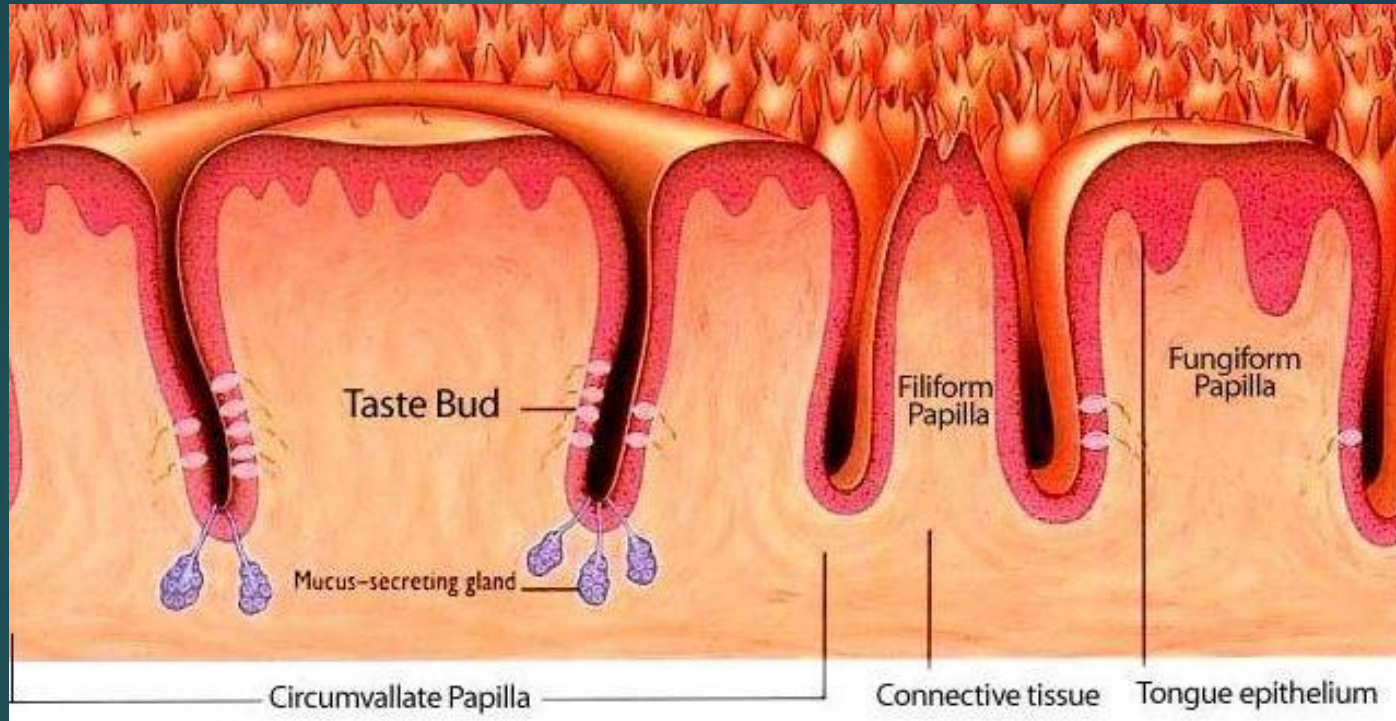


**Nerve
Supply
of
Tongue**

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

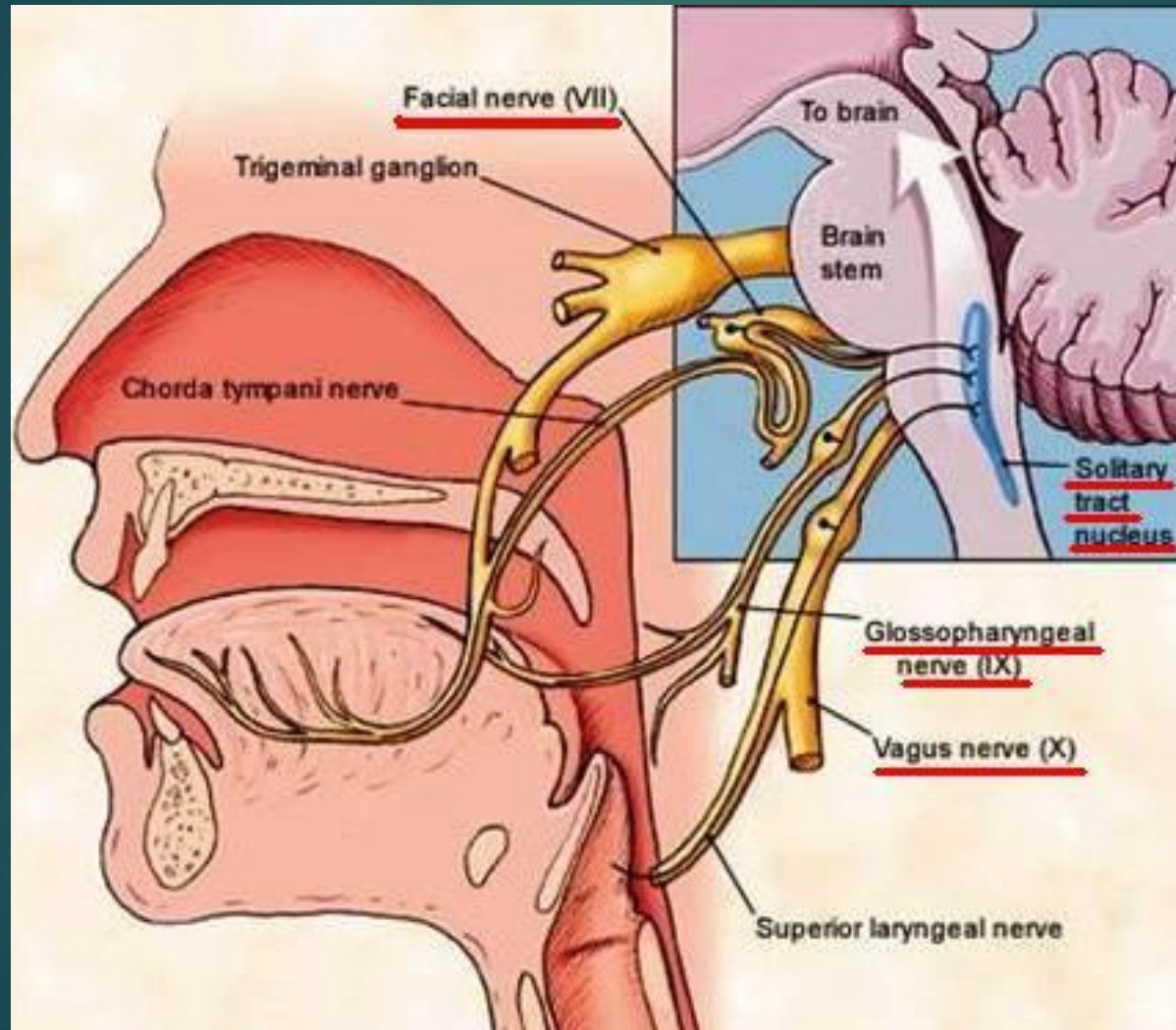
Filiform: centre of tongue, have no taste buds

Tongue Map ?



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

Taste Pathway



Blood Supply

► Arteries:

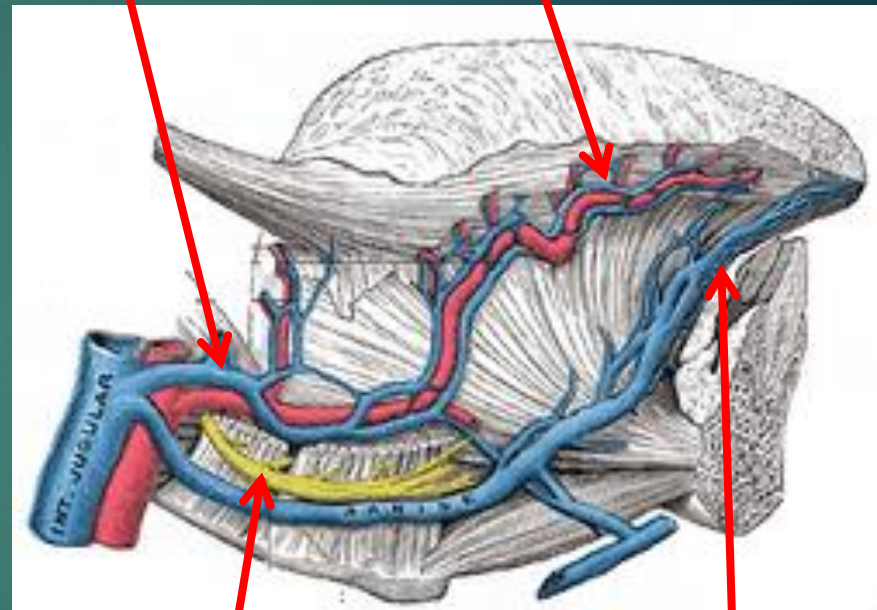
- Lingual artery
- Tonsillar branch of facial artery
- Ascending pharyngeal artery

► Veins:

- Lingual vein, ultimately drains into the internal jugular vein

Lingual
artery & vein

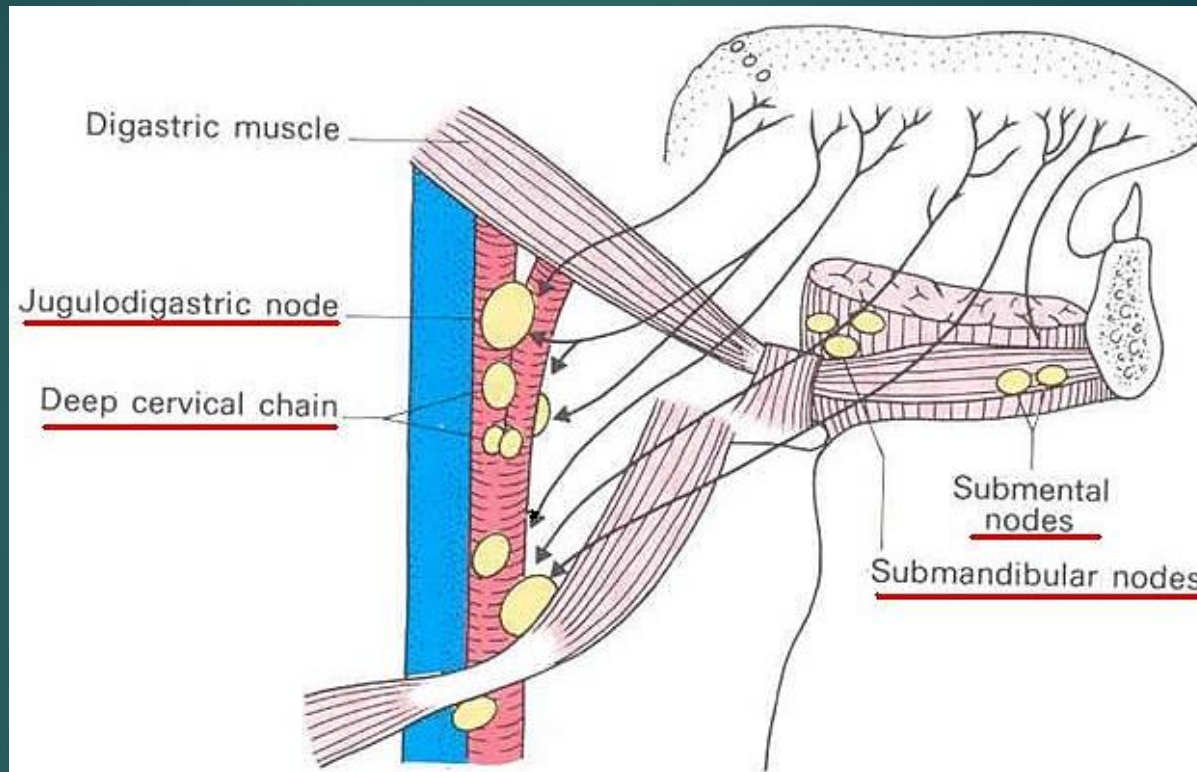
Dorsal lingual
artery & vein



Hypoglossal
nerve

Deep lingual
vein

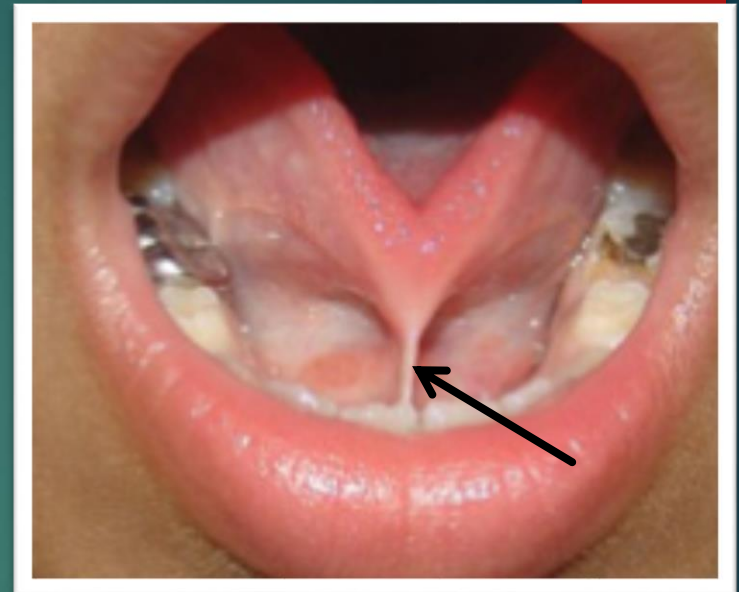
Lymphatic Drainage



- ▶ 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



Thank You

