PALATE

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Lecture ILOS & Objectives:

By the end of this lecture the student should be able to:

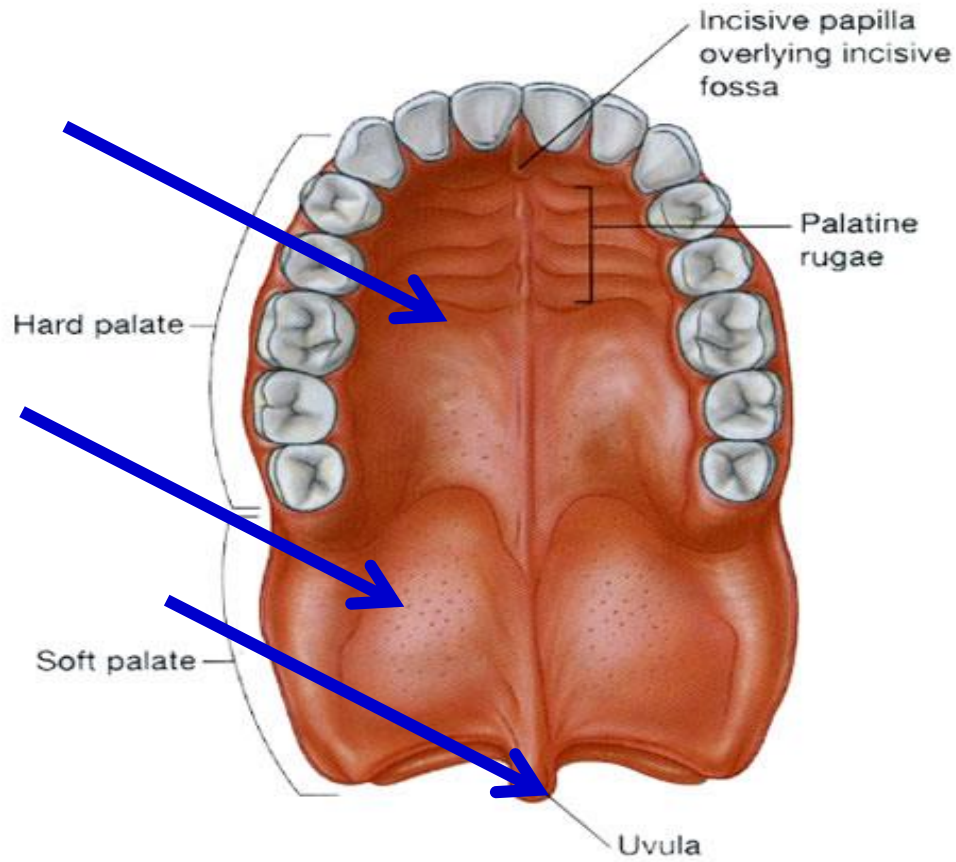
- **Define the palate and its parts.**
- **List the muscles of the palate and identify their nerve supply and actions.**
- **Describe blood supply, nerve supply and lymphatic drainage of the palate**

Palate

It forms the roof of the mouth and the floor of the nasal cavity.

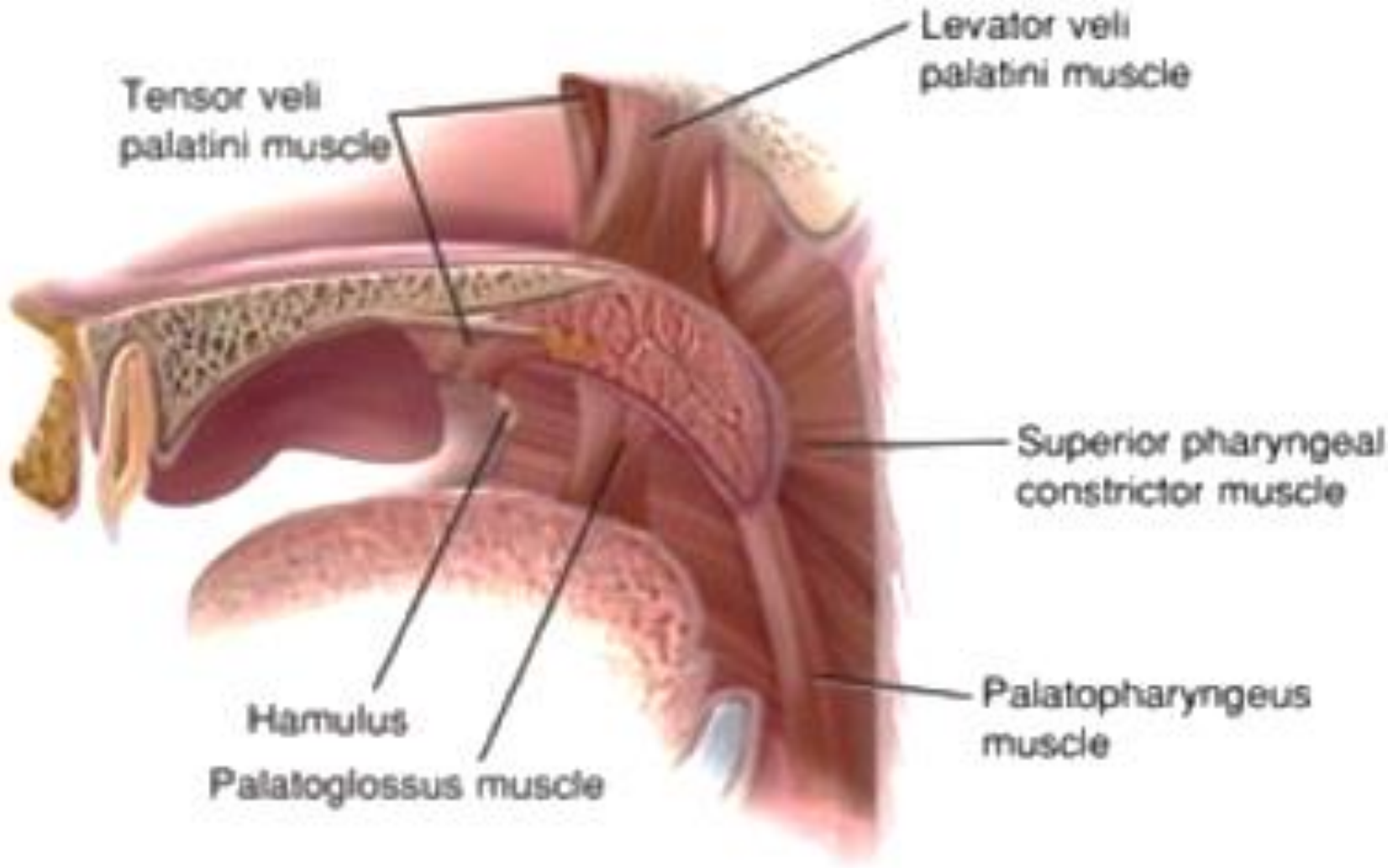
- **It is divided into:**

1. **Hard palate (anterior 2/3)**
2. **Soft palate (posterior 1/3)**



Muscles of Palate

1. Tensor veli palatini
2. Levator veli palatini
3. Palatoglossus
4. Palatopharyngeus
5. Musculus uvulae



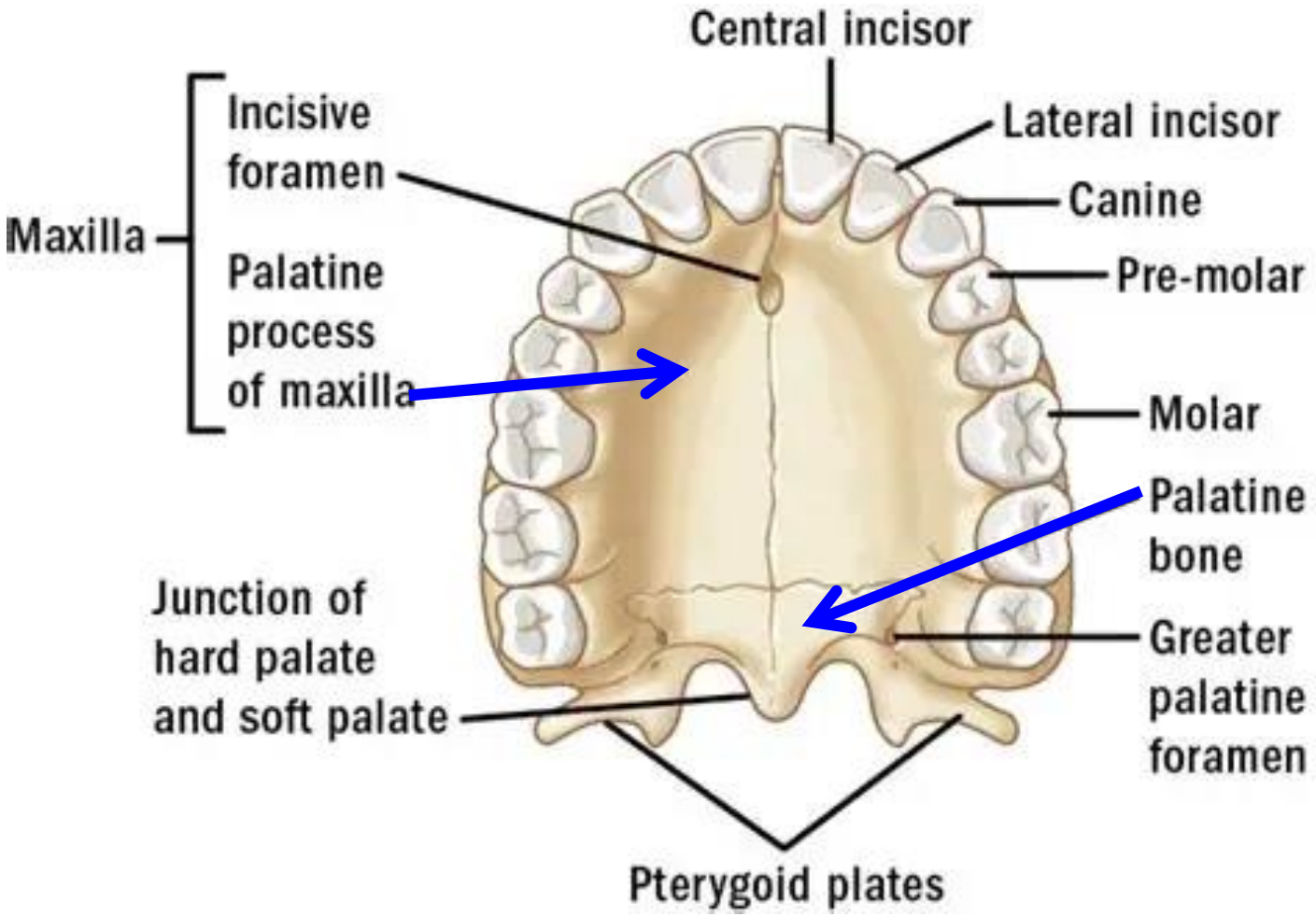
PALATE

Hard Palate:

formed by

1- Palatine processes of maxilla

2- Horizontal plates of palatine bone



PALATE

Soft Palate:

- A mobile fold attached to posterior border of hard palate.
- It is formed of palatine aponeurosis and muscles

Palatine aponeurosis:

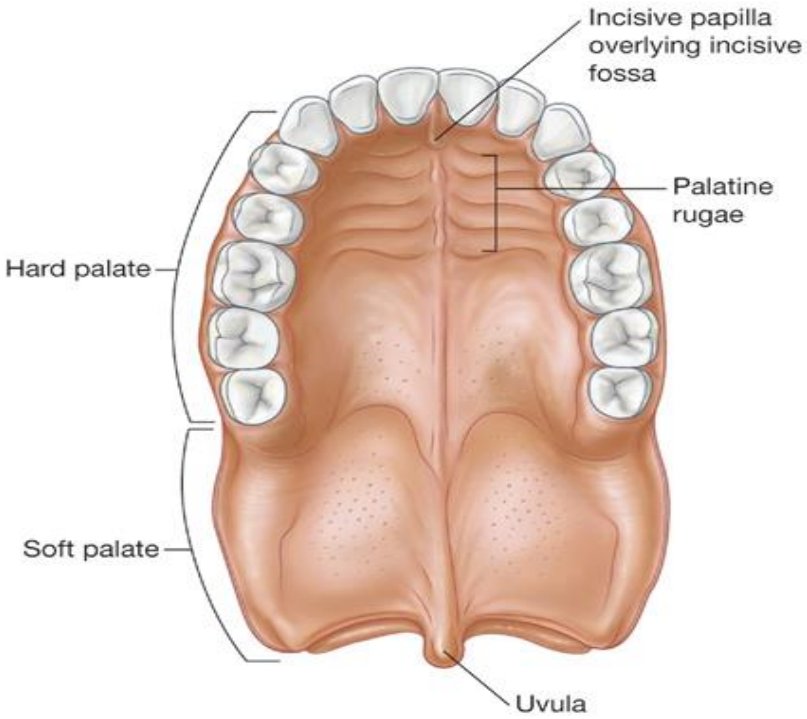
A fibrous sheath, attached to posterior border of hard palate and receives the insertion of palatine muscles

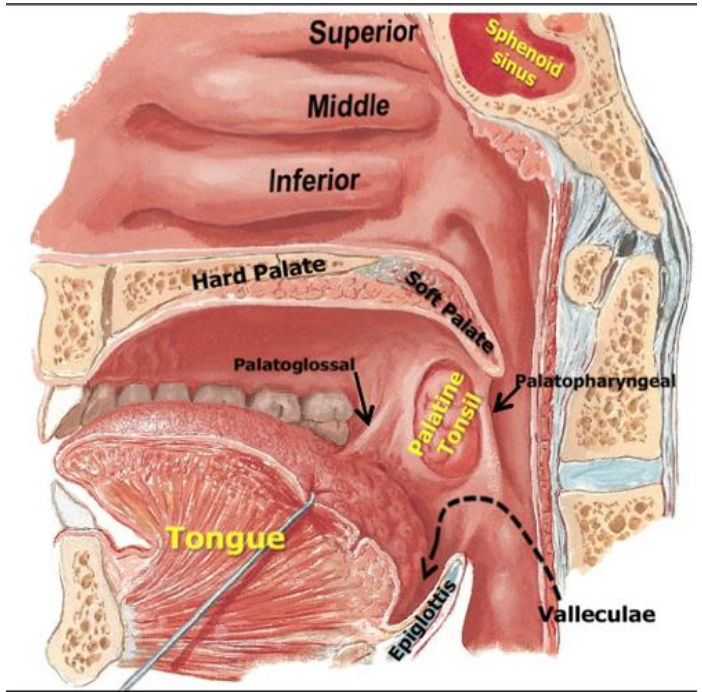
It is the expanded tendon of the tensor palatini .

Uvula:

- A median conical projection from the free border of the soft palate
- From base of uvula 2 mucosal folds extend laterally and downwards on each side:

1. Palato-glossal arch anteriorly
2. Palato-pharyngeal arch posteriorly





Muscles of Palate

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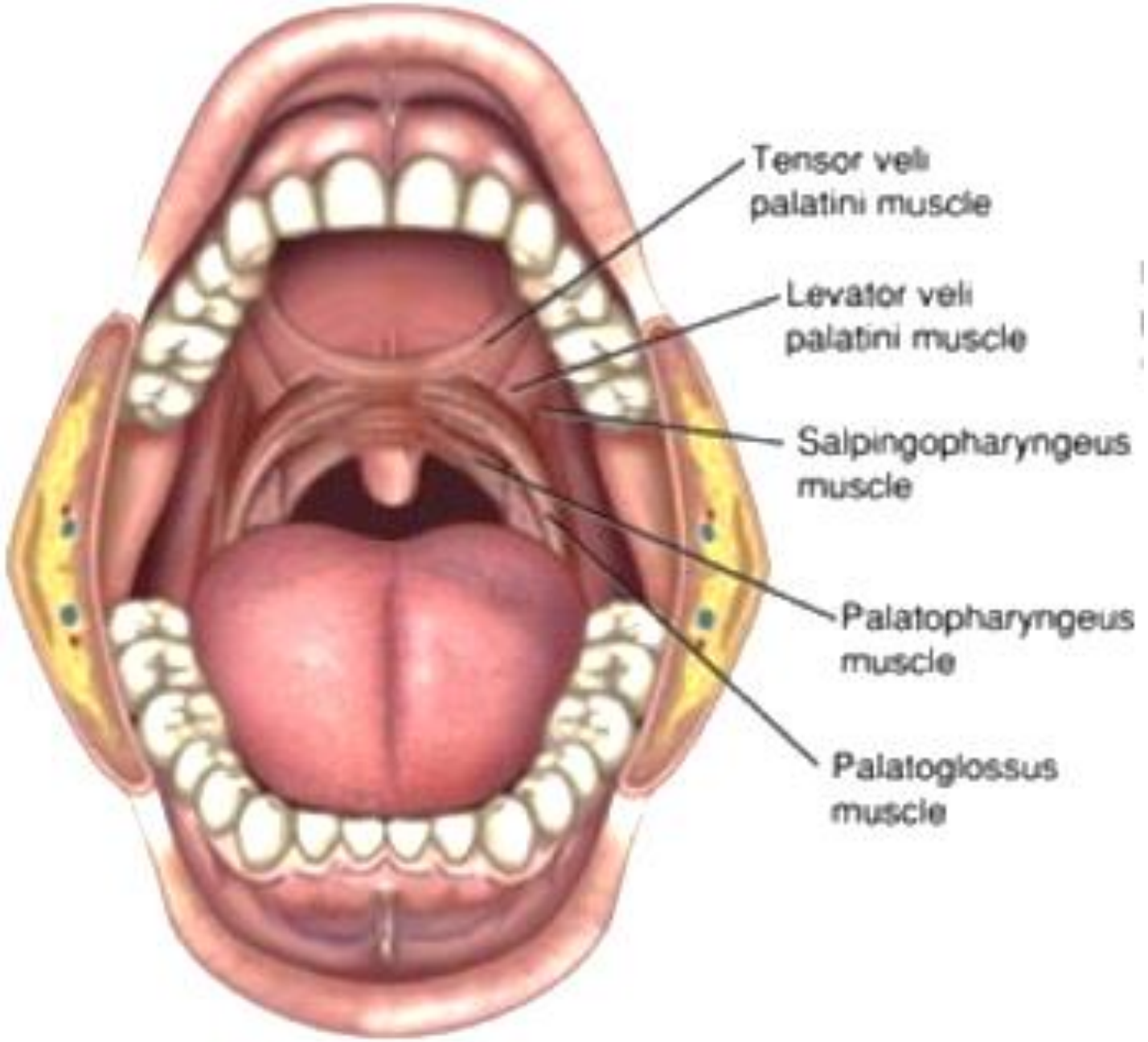
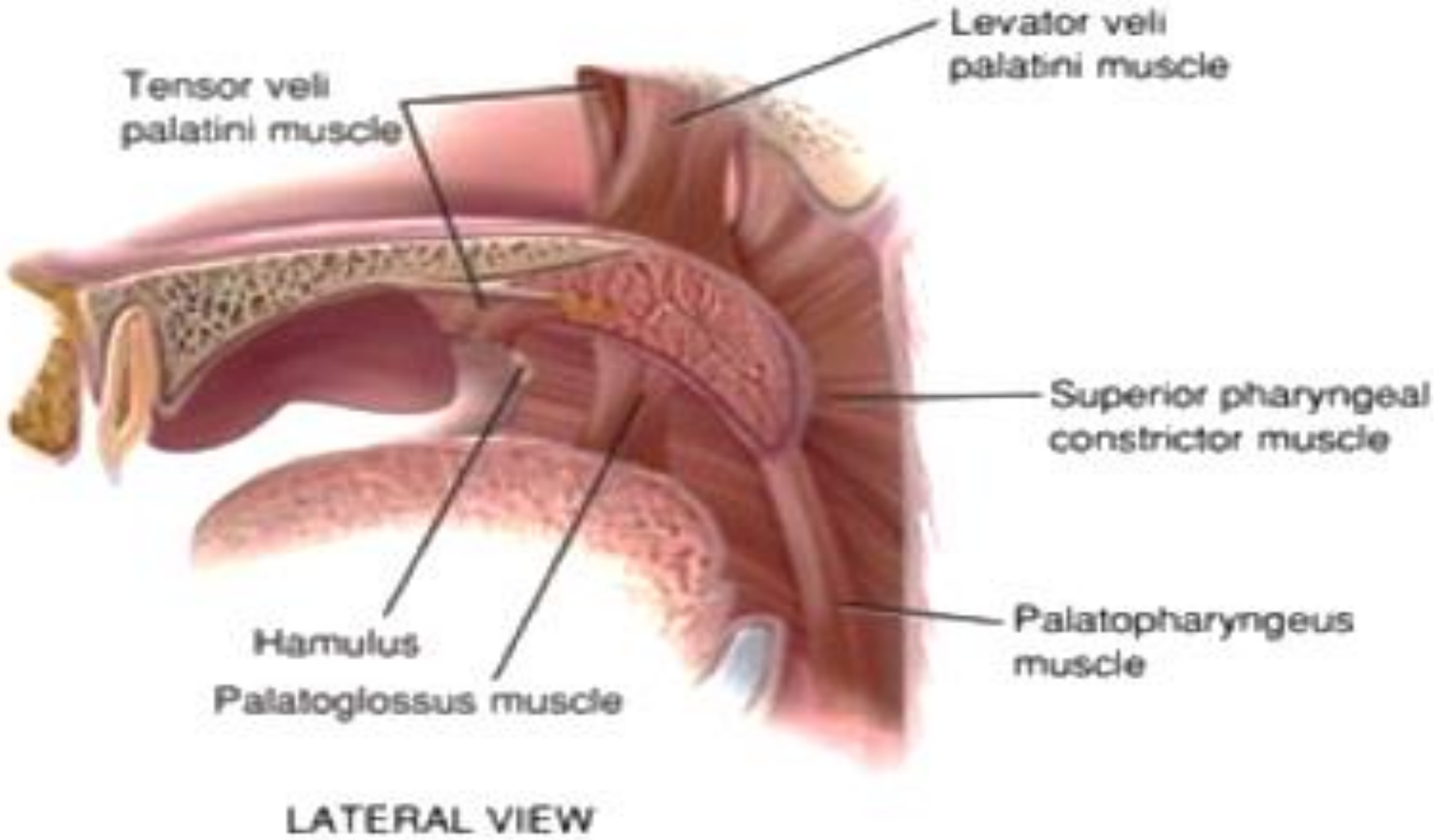


MUSCLES OF THE SOFT PALATE

Muscle	Origin	Insertion	Innervation	Function
Tensor veli palatini	Scaphoid fossa of sphenoid bone; fibrous part of pharyngotympanic tube; spine of sphenoid	Palatine aponeurosis	Mandibular nerve [V_3] via the branch to medial pterygoid muscle	Tenses the soft palate; opens the pharyngotympanic tube
Levator veli palatini	Petrous part of temporal bone anterior to opening for carotid canal	Superior surface of palatine aponeurosis	Vagus nerve [X] via pharyngeal branch to pharyngeal plexus	Only muscle to elevate the soft palate above the neutral position
Palatopharyngeus	Superior surface of palatine aponeurosis	Pharyngeal wall	Vagus nerve [X] via pharyngeal branch to pharyngeal plexus	Depresses soft palate; moves palatopharyngeal arch toward midline; elevates pharynx
Palatoglossus	Inferior surface of palatine aponeurosis	Lateral margin of tongue	Vagus nerve [X] via pharyngeal branch to pharyngeal plexus	Depresses palate; moves palatoglossal arch toward midline; elevates back of the tongue
Musculus uvulae	Posterior nasal spine of hard palate	Connective tissue of uvula	Vagus nerve [X] via pharyngeal branch to pharyngeal plexus	Elevates and retracts uvula; thickens central region of soft palate

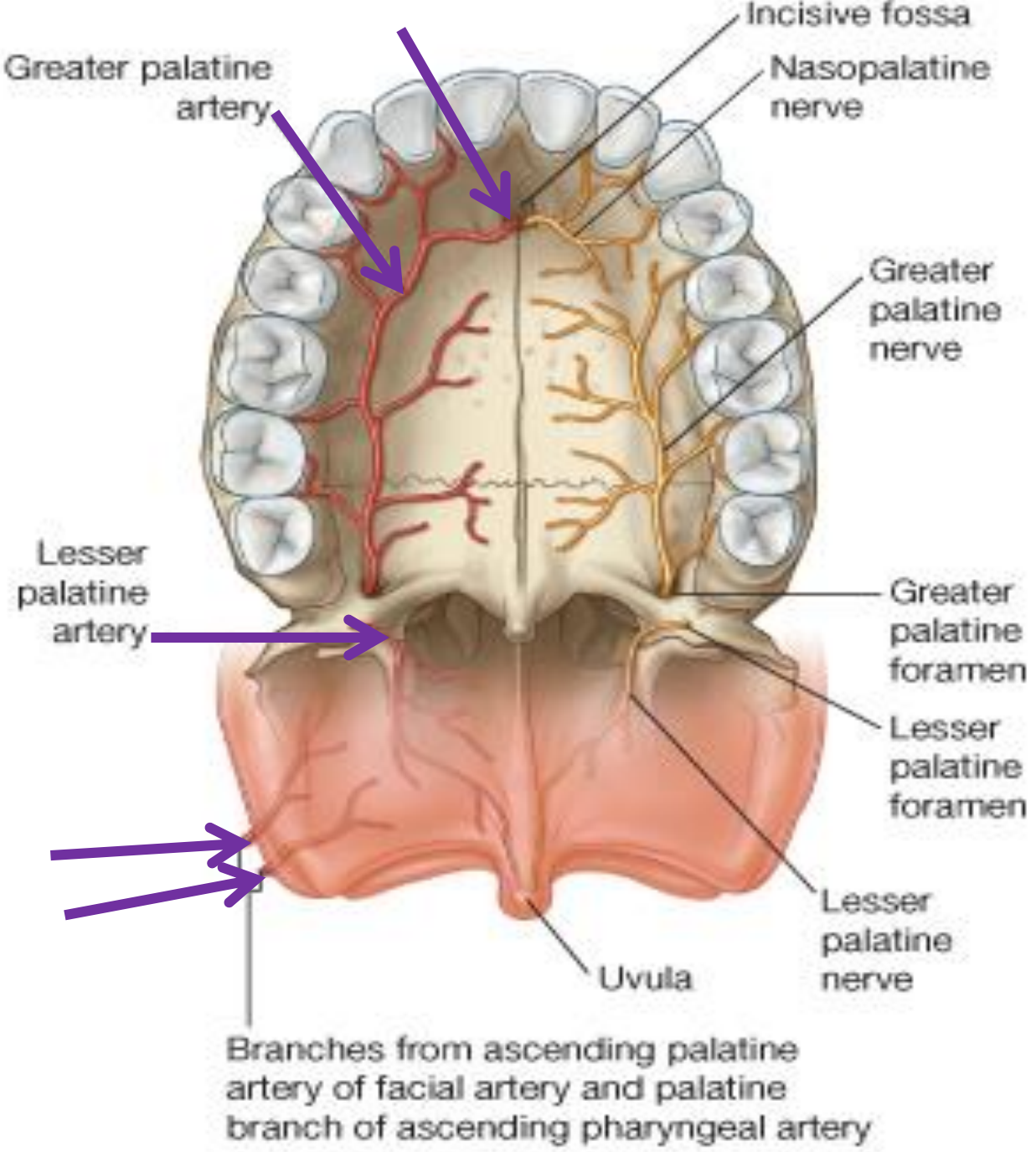
Muscles of Palate



Blood Supply of the palate

Arteries:

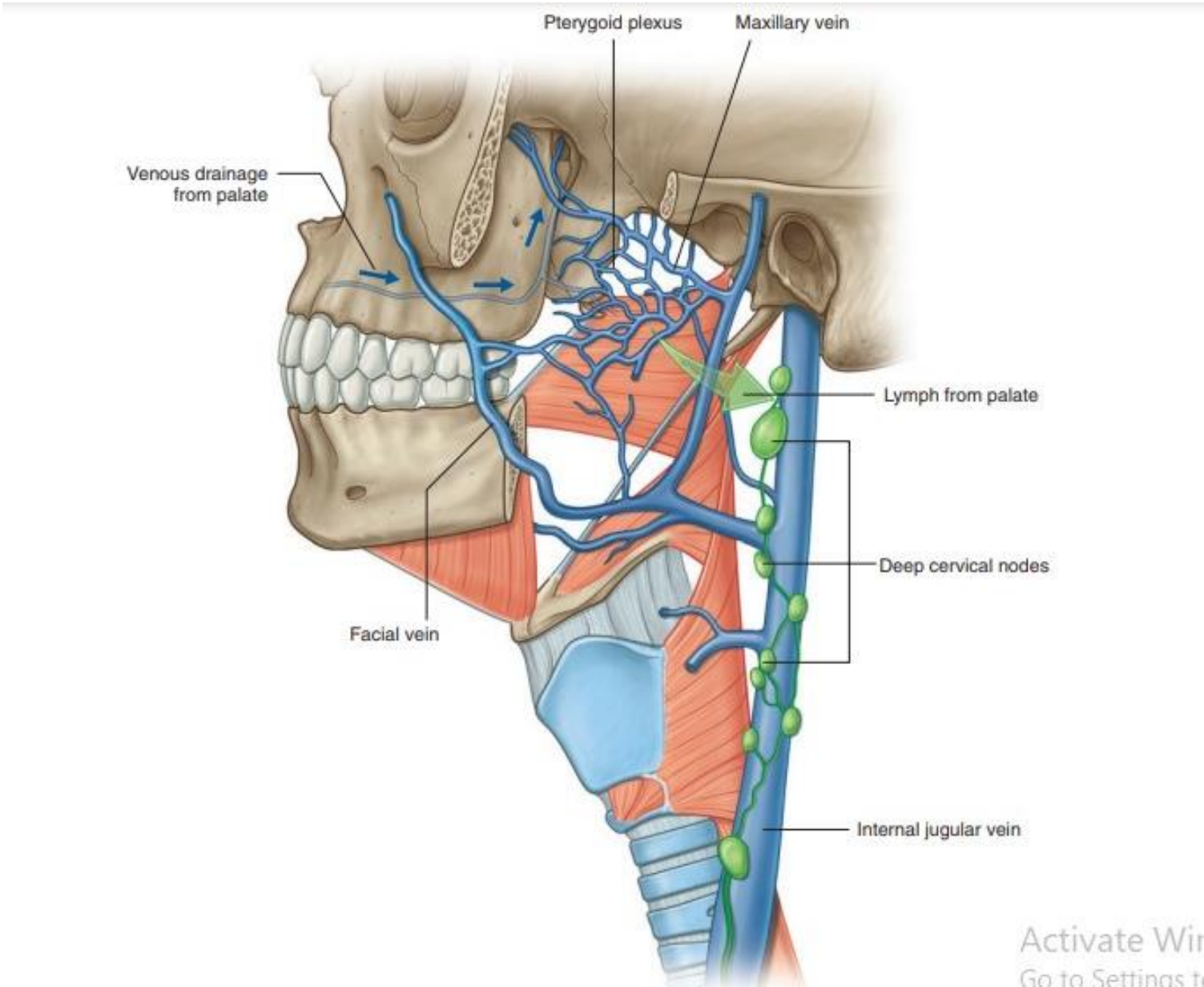
1. Greater palatine, lesser palatine and sphenopalatine arteries from maxillary
2. Ascending palatine artery from facial
3. Ascending pharyngeal artery from external carotid



Veins:

drains into:

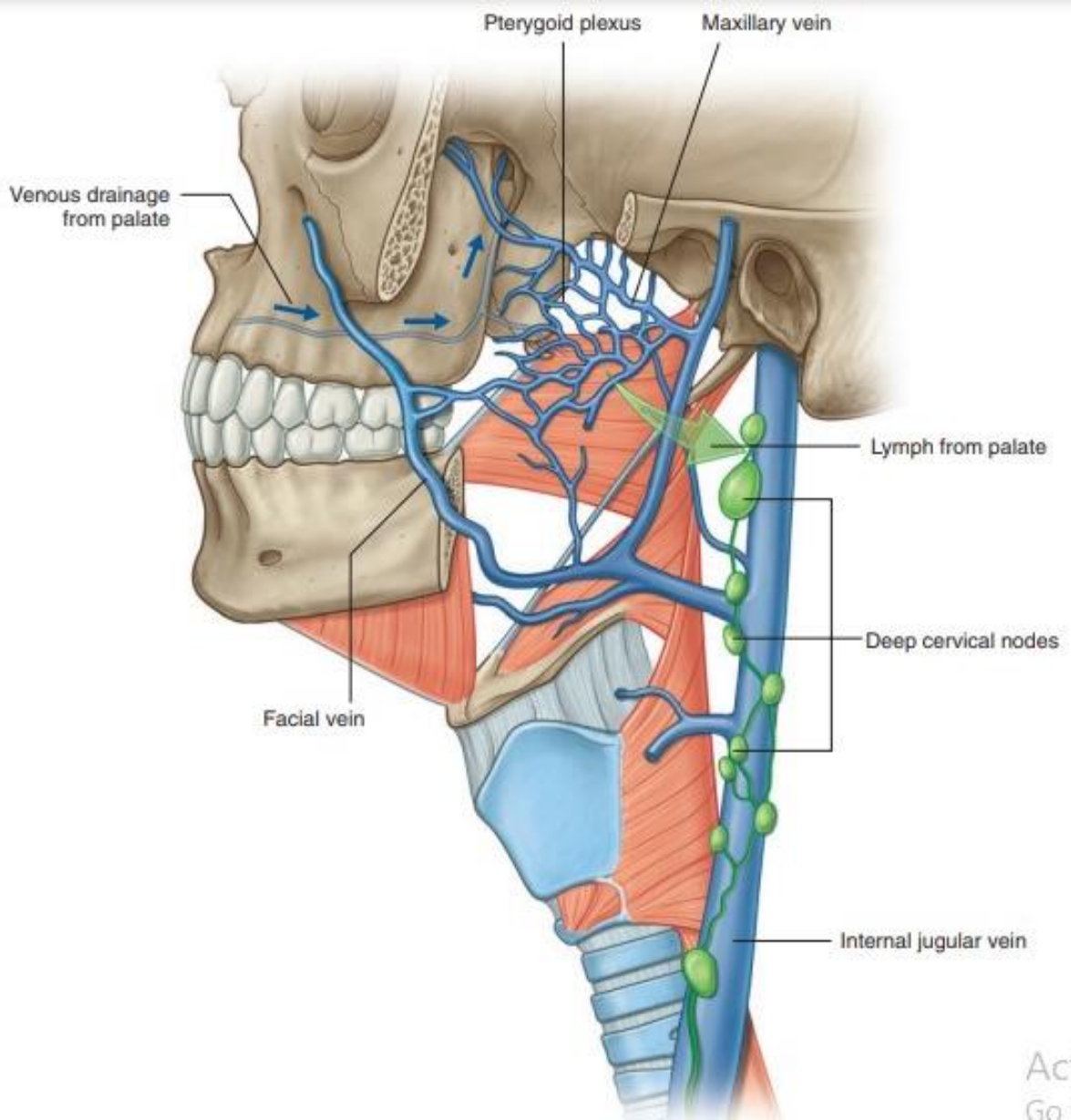
1. Pharyngeal venous plexus
2. Pterygoid venous plexus



Lymphatic Drainage of the palate

Drains into:

1. **Deep cervical lymph nodes**
2. **Retropharyngeal lymph nodes**



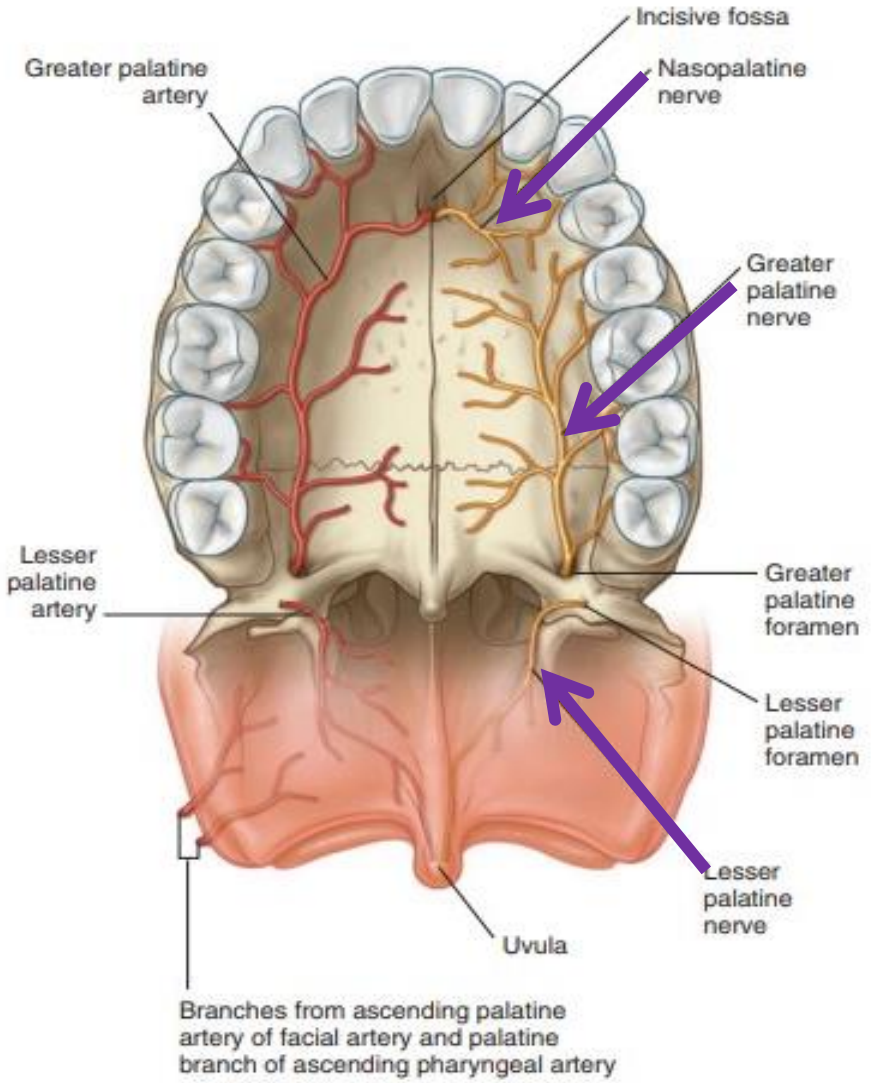
Nerve Supply of the palate

Sensory:

- Glossopharyngeal nerve
- Greater palatine nerve
- Lesser palatine nerve
- Sphenopalatine (nasopalatine) nerve

Motor:

- All the muscles of the palate are supplied by cranial part of accessory nerve through pharyngeal branch of vagus (pharyngeal plexus)
- Except tensor veli palatine is supplied by mandibular nerve through nerve to medial pterygoid muscle



REFERENCES

- Snell`s clinical anatomy by regions ,Tenth Edition
- Gray`s Anatomy for students, Third Edition
- Grant`s Atlas of Anatomy


Thank
you

PHARYNX

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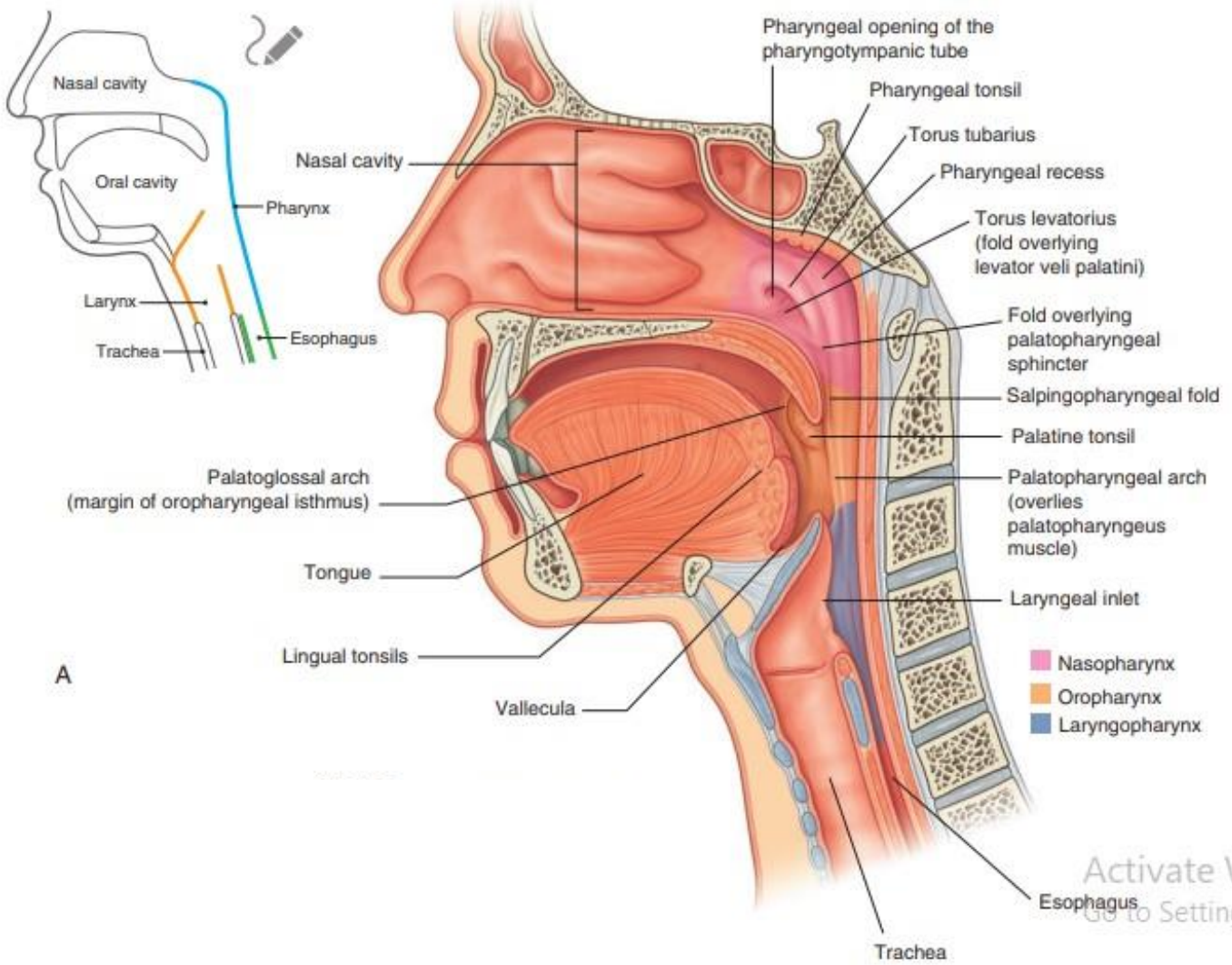
Lecture ILOS & Objectives:

- **By the end of this lecture the student should be able to:**
- **Define the pharynx, its length, extension and list its parts.**
- **List the structures in the lateral wall of nasopharynx, oropharynx and laryngopharynx.**
- **Enumerate the circular and longitudinal muscles of the pharynx, their nerve supply and actions.**
- **Identify the relations of constrictors of the pharynx.**
- **Define nerve supply ,blood supply and lymphatic drainage of the pharynx**

PHARYNX

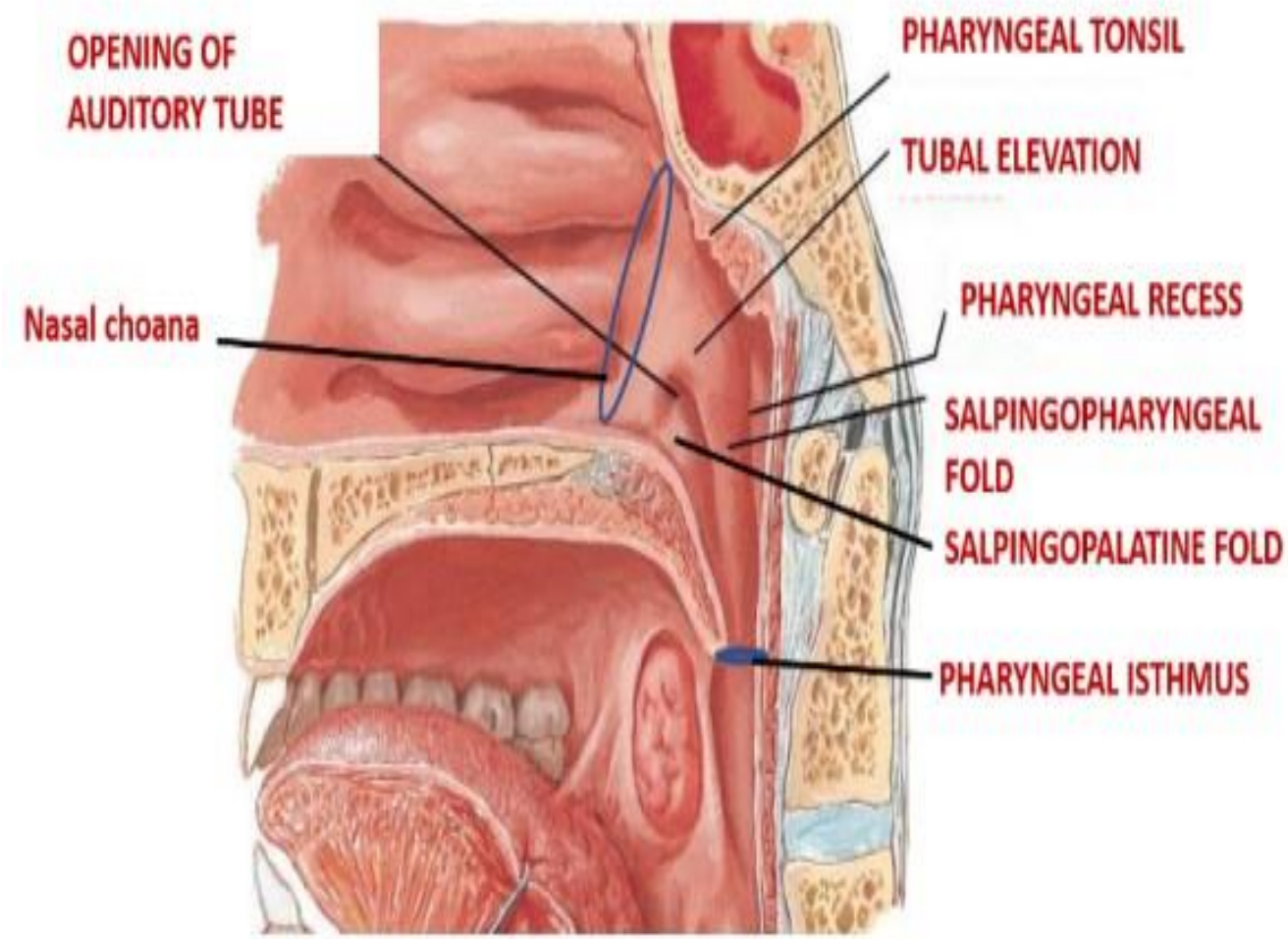
- It is a fibromuscular tube 13 cm in length
- It extends from base of skull to 6th cervical vertebra.
- It lies behind nasal cavity, oral cavity and larynx
- It is divided into:

1. Nasopharynx
2. Oropharynx
3. Laryngopharynx



Lateral wall of nasopharynx:

1. Auditory tube opening
2. Tubal elevation
3. Pharyngeal recess is a depression behind tubal elevation
4. Salpingopharyngeal fold is a vertical fold of mucous membrane runs from tubal elevation and contains salpingopharyngeus muscle



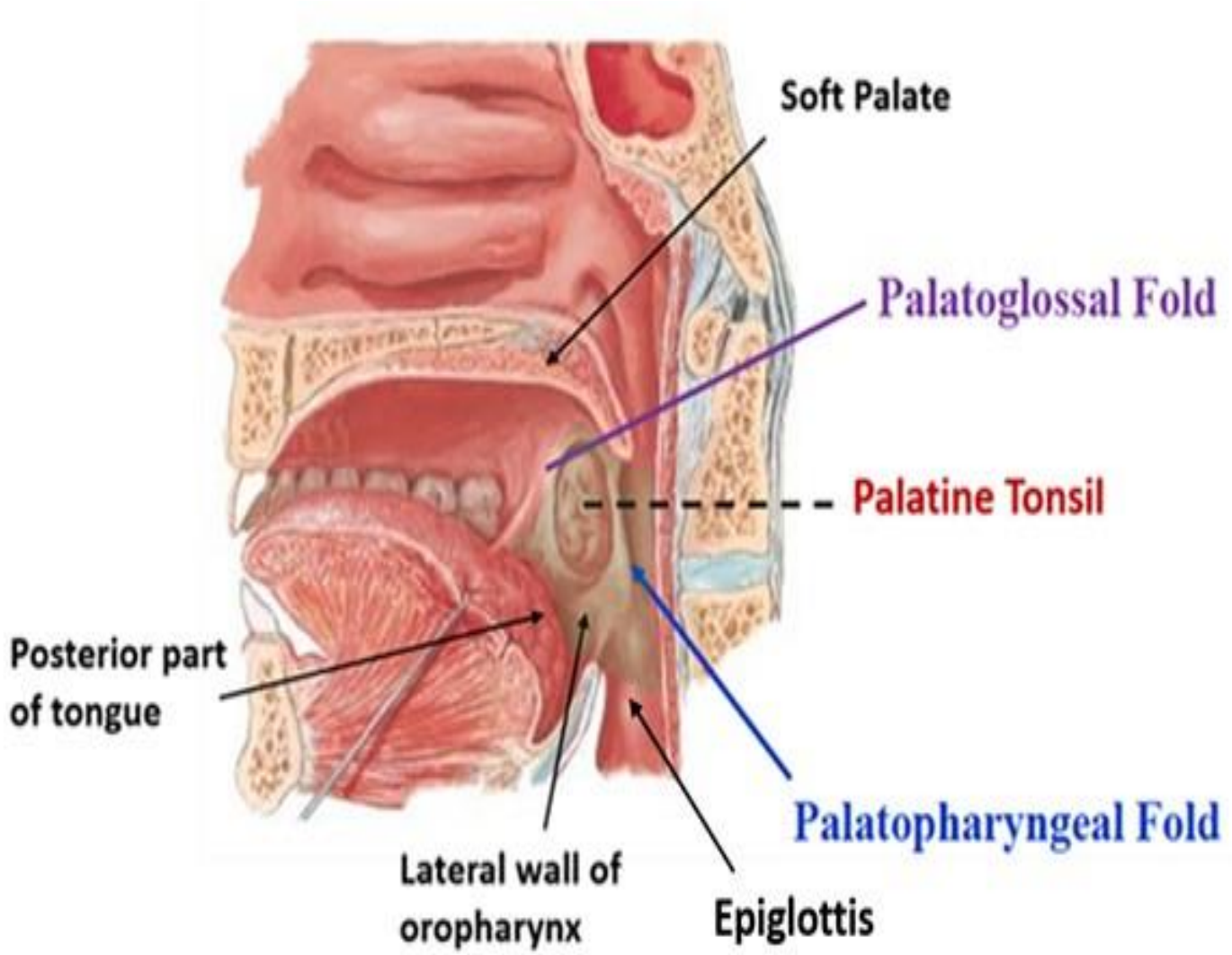
Lateral wall of oropharynx:

- **Tonsillar sinus** lies between 2 mucosal folds:

1- Palatoglossal fold (arch)

2- Palatopharyngeal fold (arch)

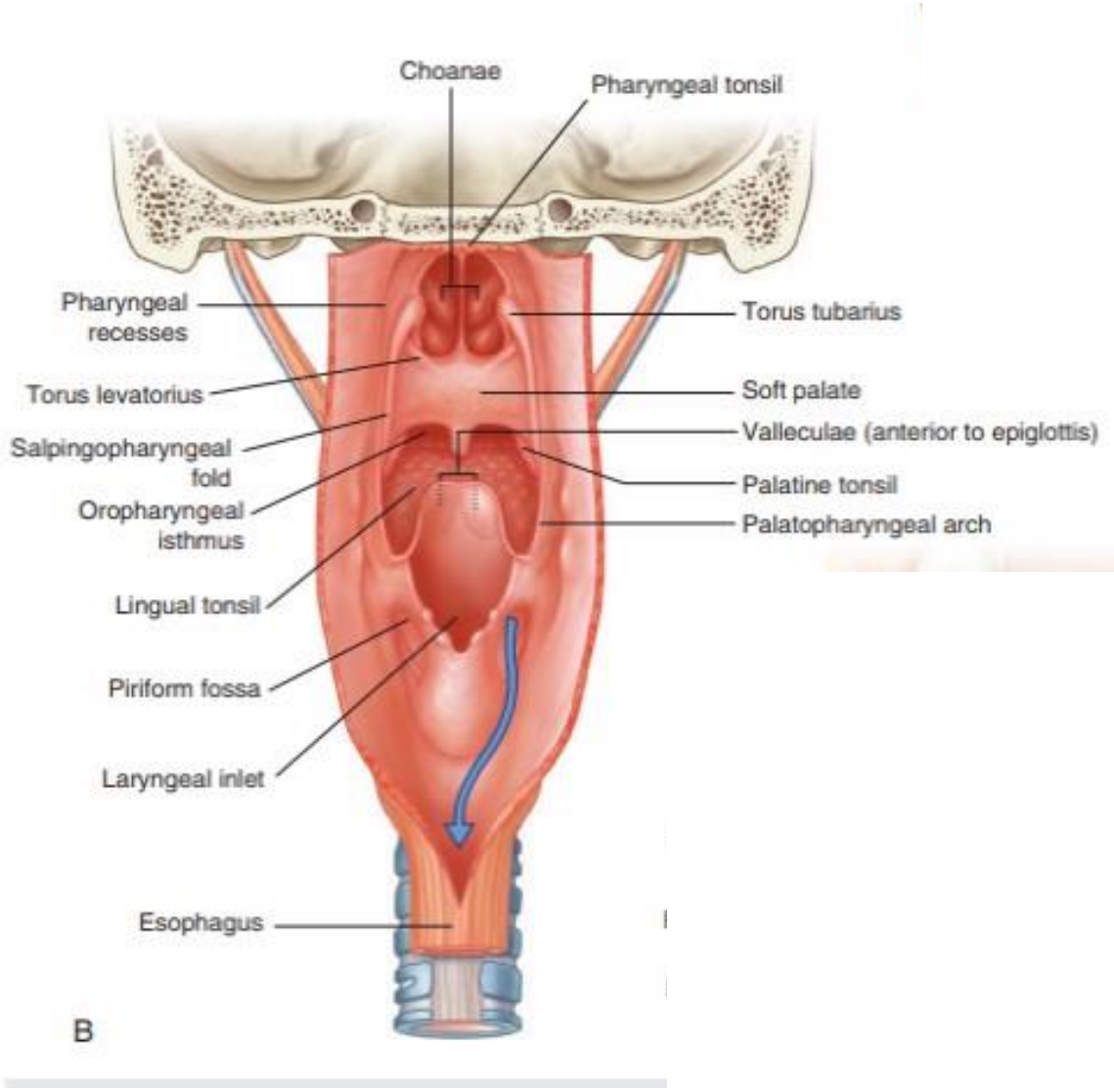
- **Palatine tonsil** in the tonsillar fossa (sinus)



Lateral wall of laryngopharynx:

- **Pyriform fossa (sinus):**

It is a depression one on each side of inlet of larynx



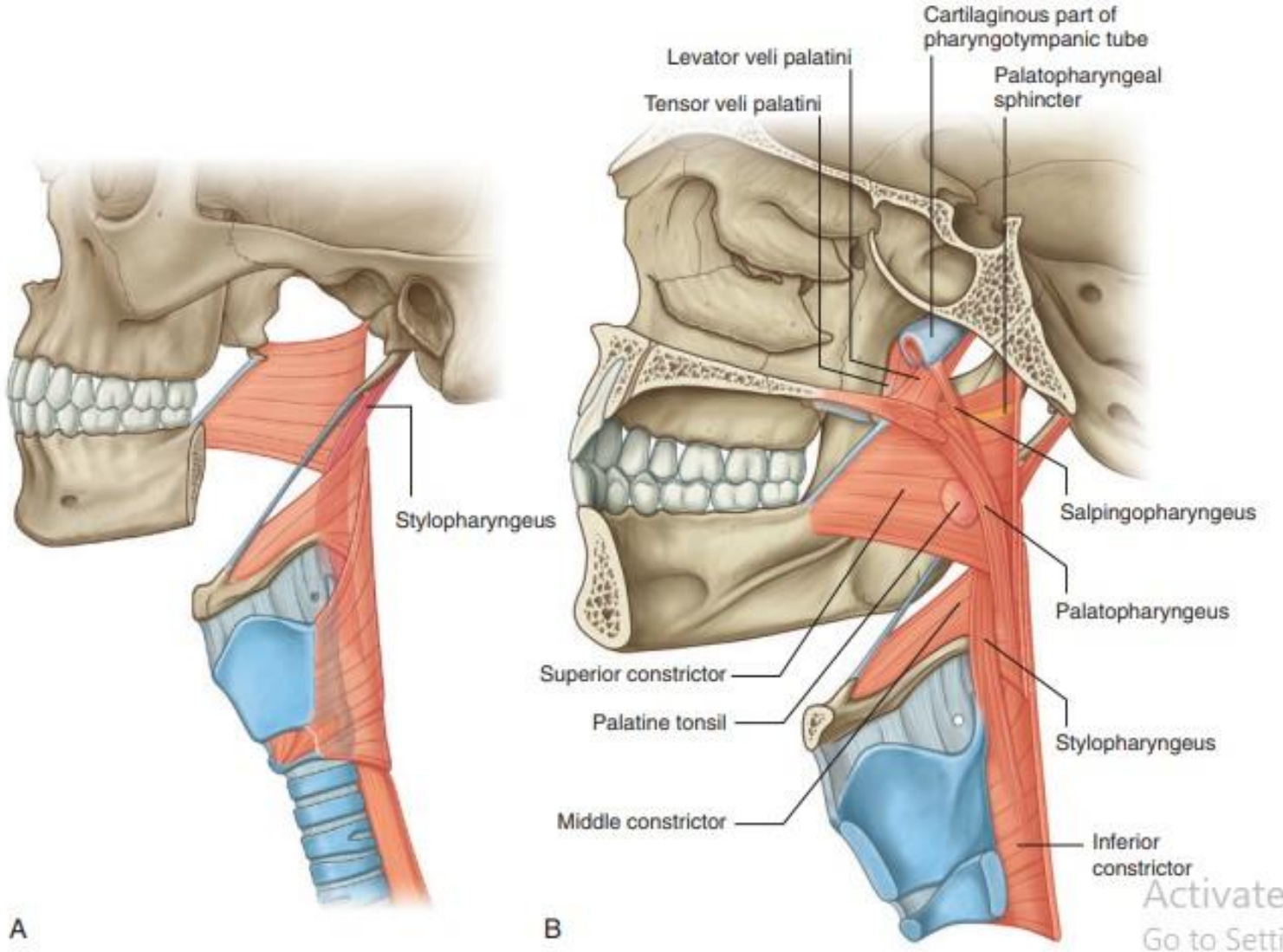
Muscles of the pharynx

1. Outer circular layer (Constrictors of the pharynx)

- ✓ Superior constrictor
- ✓ Middle constrictor
- ✓ inferior constrictor

2. Inner longitudinal layer:

- Stylopharyngeus
- Salpingopharyngeus
- Palatopharyngeus



1. Outer circular layer:

Muscle	Posterior attachment	Anterior attachment	Innervation	Function
Superior constrictor	Pharyngeal raphe	Pterygomandibular raphe and adjacent bone on the mandible and pterygoid hamulus	Vagus nerve [X]	Constriction of pharynx
Middle constrictor	Pharyngeal raphe	Upper margin of greater horn of hyoid bone and adjacent margins of lesser horn and stylohyoid ligament	Vagus nerve [X]	Constriction of pharynx
Inferior constrictor	Pharyngeal raphe	Cricoid cartilage, oblique line of thyroid cartilage, and a ligament that spans between these attachments and crosses the cricothyroid muscle	Vagus nerve [X]	Constriction of pharynx

2. Inner longitudinal layer:

Muscle	Origin	Insertion	Innervation	Function
Stylopharyngeus	Medial side of base of styloid process	Pharyngeal wall	Glossopharyngeal nerve [IX]	Elevation of the pharynx
Salpingopharyngeus	Inferior aspect of pharyngeal end of pharyngotympanic tube	Pharyngeal wall	Vagus nerve [X]	Elevation of the pharynx
Palatopharyngeus	Upper surface of palatine aponeurosis	Pharyngeal wall	Vagus nerve [X]	Elevation of the pharynx; closure of the oropharyngeal isthmus

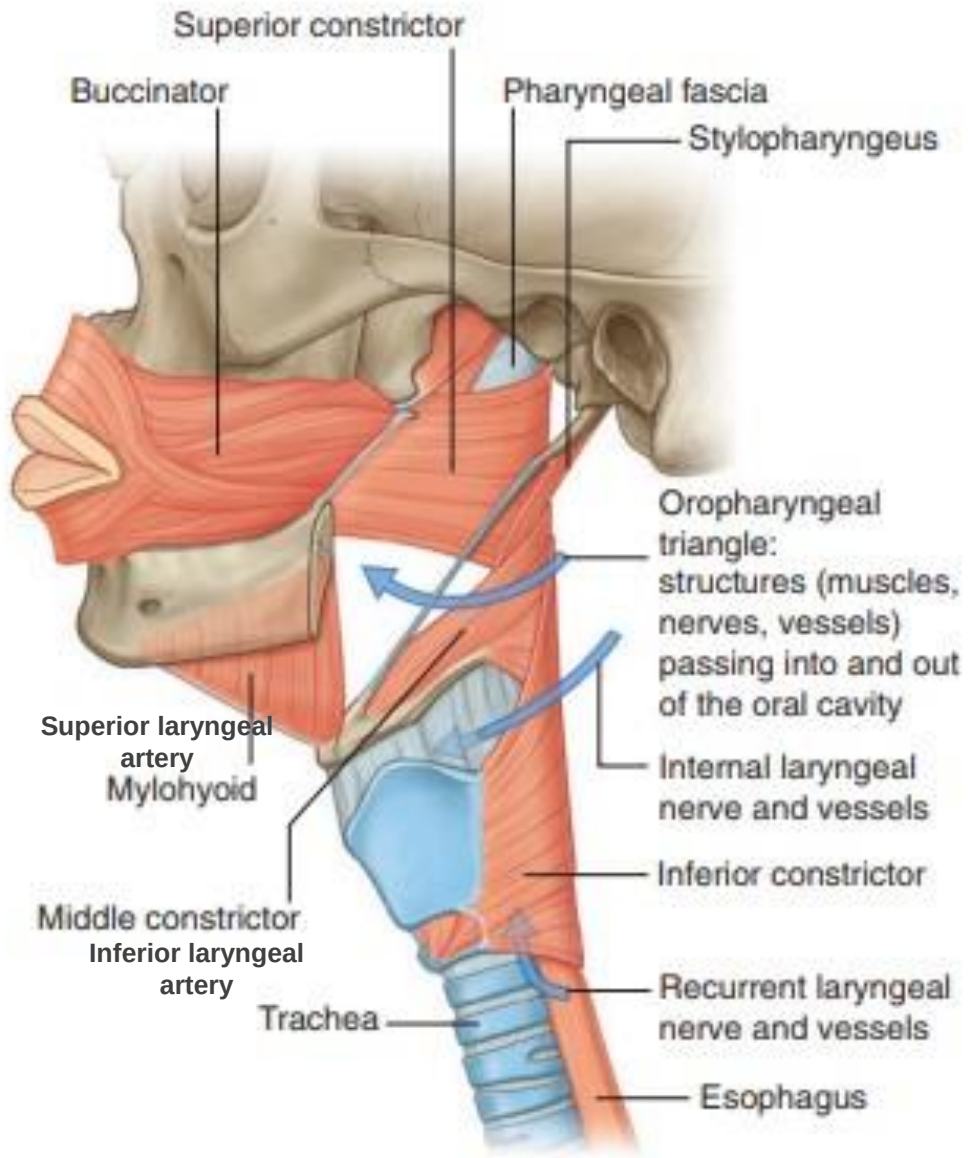
Gaps in the pharyngeal wall and structures passing through them

1. Between base of skull and upper border of superior constrictor
- **Auditory tube**
- **Levator palati muscle**

2. Between lower border of superior constrictor and upper border of middle constrictor
- **Stylopharyngeus muscle**
- **Glossopharyngeal nerve**

3. Between lower border of middle constrictor and upper border of inferior constrictor
- **Internal laryngeal nerve**
- **Superior laryngeal artery**

4. Below lower border of inferior constrictor
- **Recurrent laryngeal nerve**
- **Inferior laryngeal artery**



Nerve supply of pharynx

Sensory nerve supply :

1. Nasopharynx:-

Maxillary nerve

1. Oropharynx:

Glossopharyngeal nerve

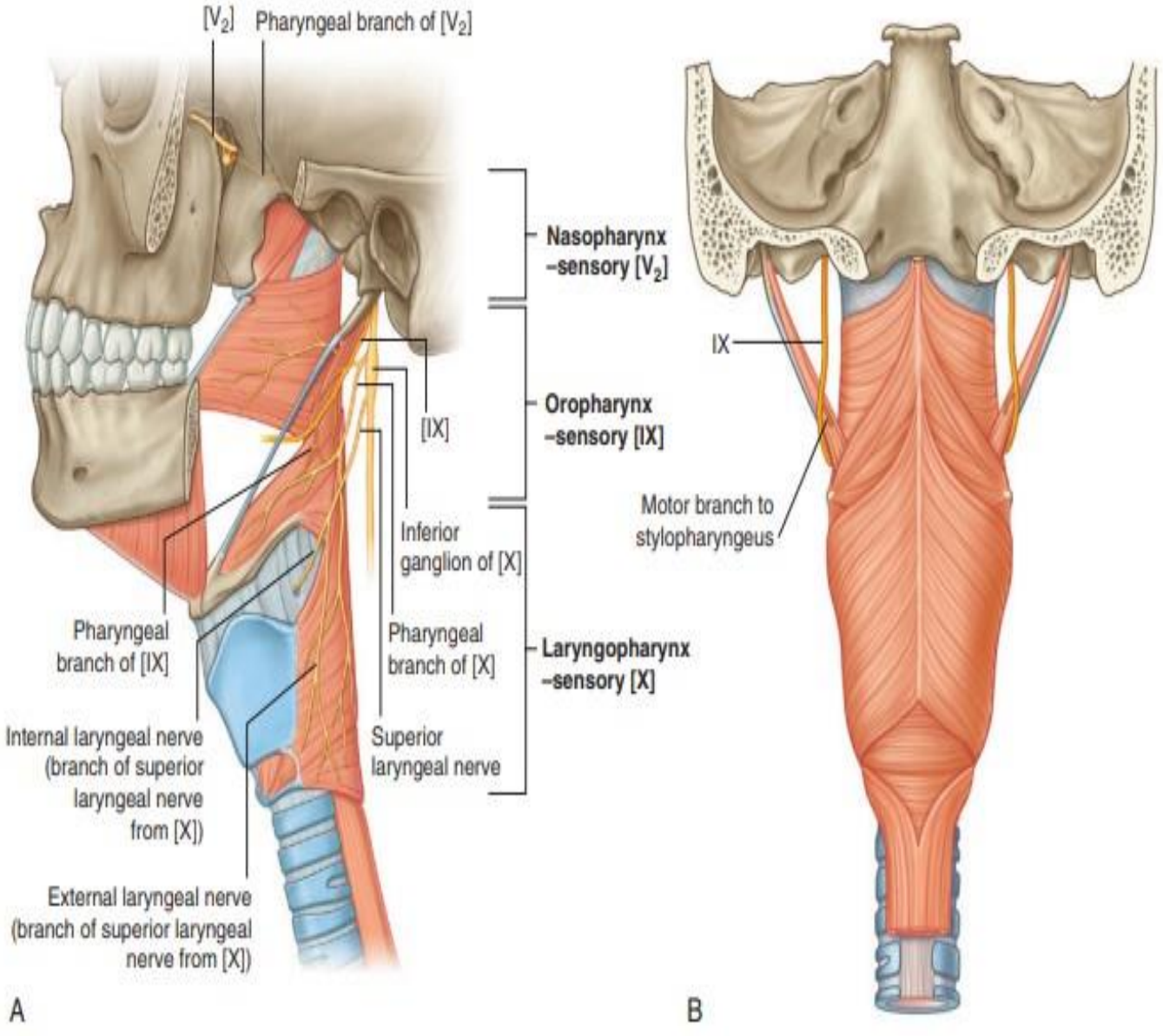
1. Laryngopharynx:

Internal laryngeal branch of vagus nerve

Motor:

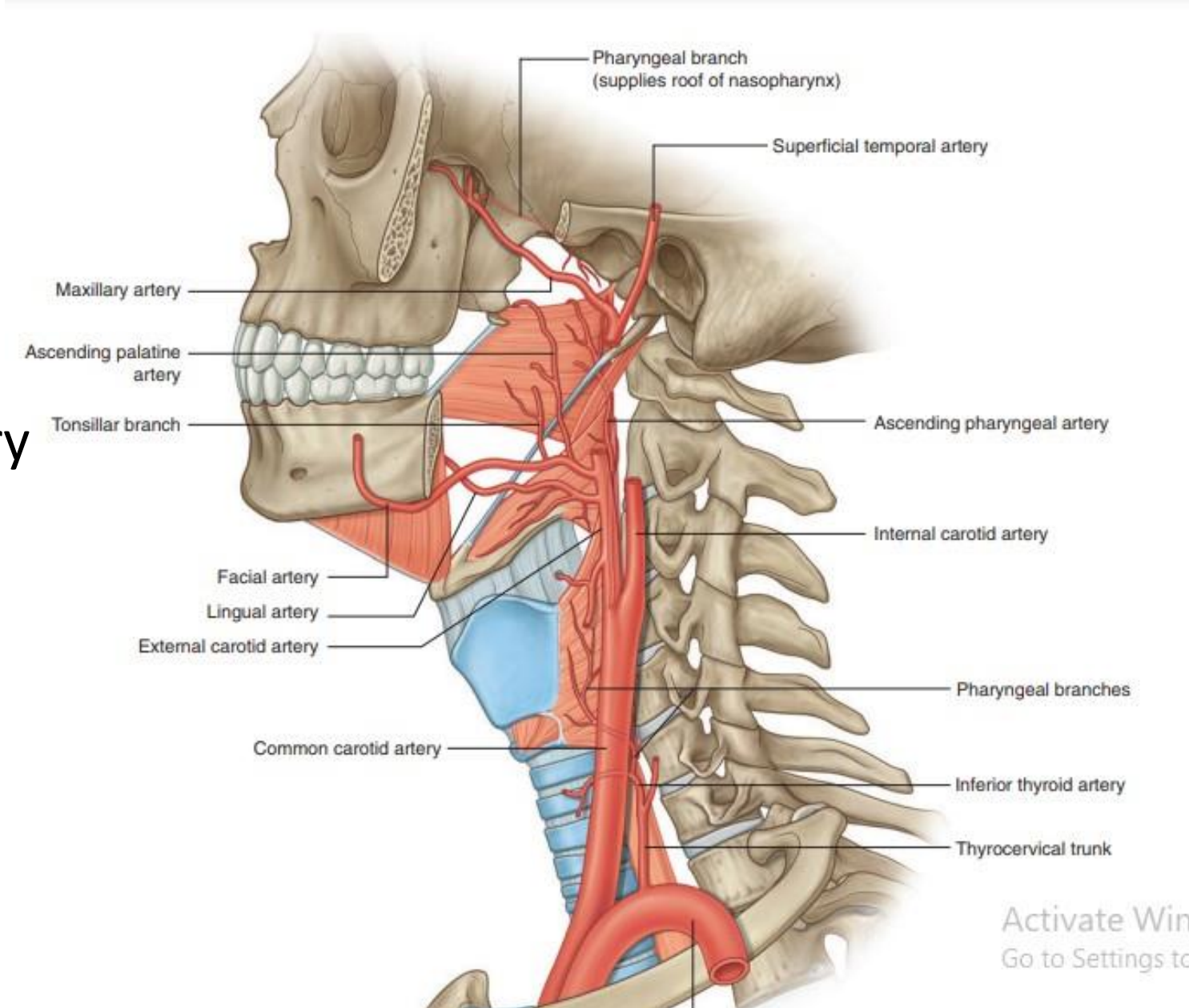
ALL muscles of pharynx are supplied by cranial root of accessory through pharyngeal plexus

Except stylopharyngeus which is supplied by glossopharyngeal nerve.



Arterial supply of the pharynx:

1. Ascending pharyngeal artery
2. Tonsillar branches of facial artery
3. Maxillary artery
4. Lingual artery



Venous drainage:

Pharyngeal veins drains into **pharyngeal plexus** which lies on outer wall of pharynx.

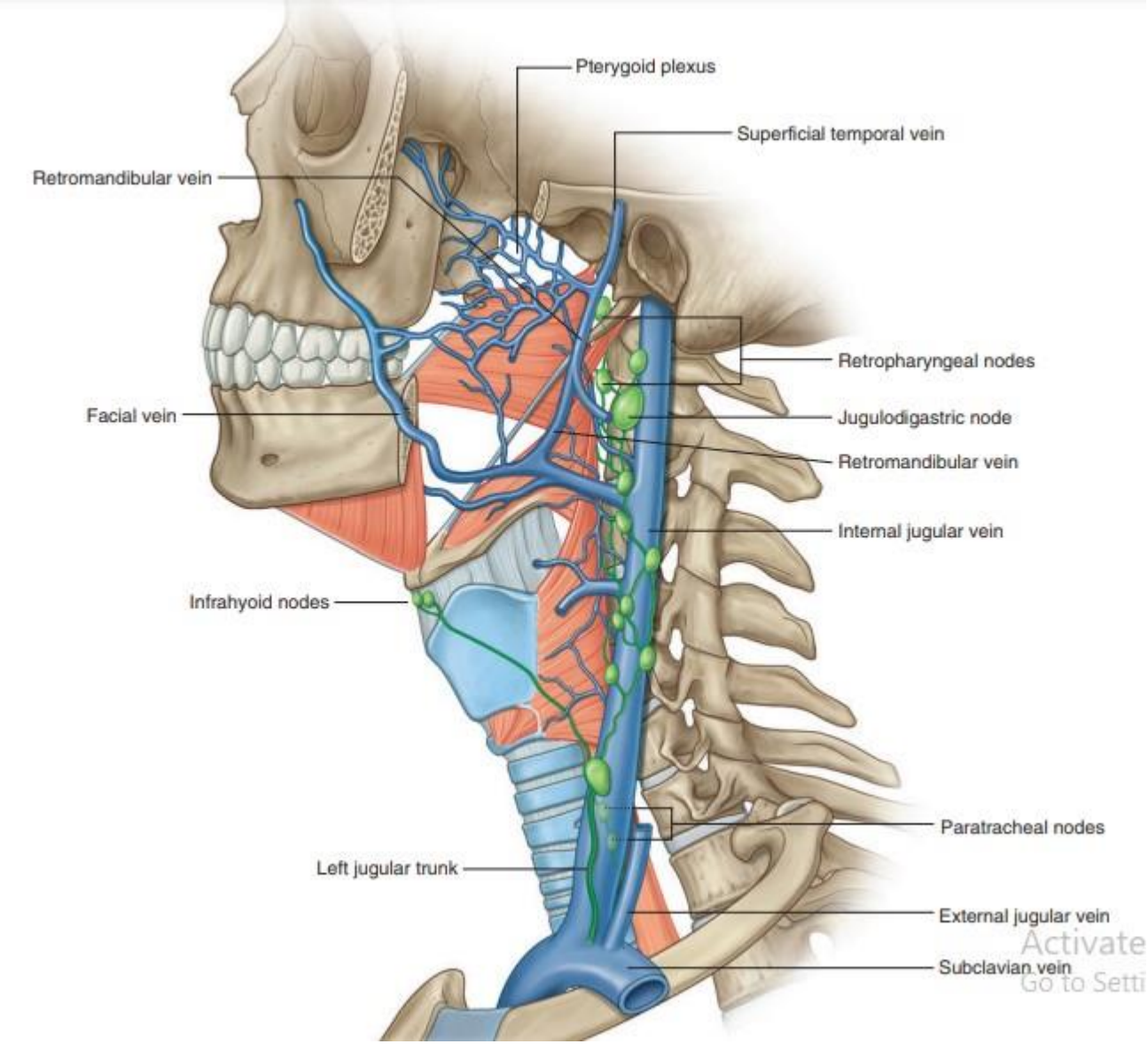
It communicates with:

a) Pterygoid plexus
b) Cavernous sinus

Lymphatic drainage:

Lymphatic vessels of pharynx drain into:

- Retropharyngeal lymph nodes
- Deep cervical lymph nodes



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