ORAL CAVITY

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OUTLINE OF CONTENTS

- Mouth: vestibule and oral cavity proper
- Lips
- Cheeks
- Palate: hard and soft palate
- Tongue
- The floor of the mouth

OBJECTIVES

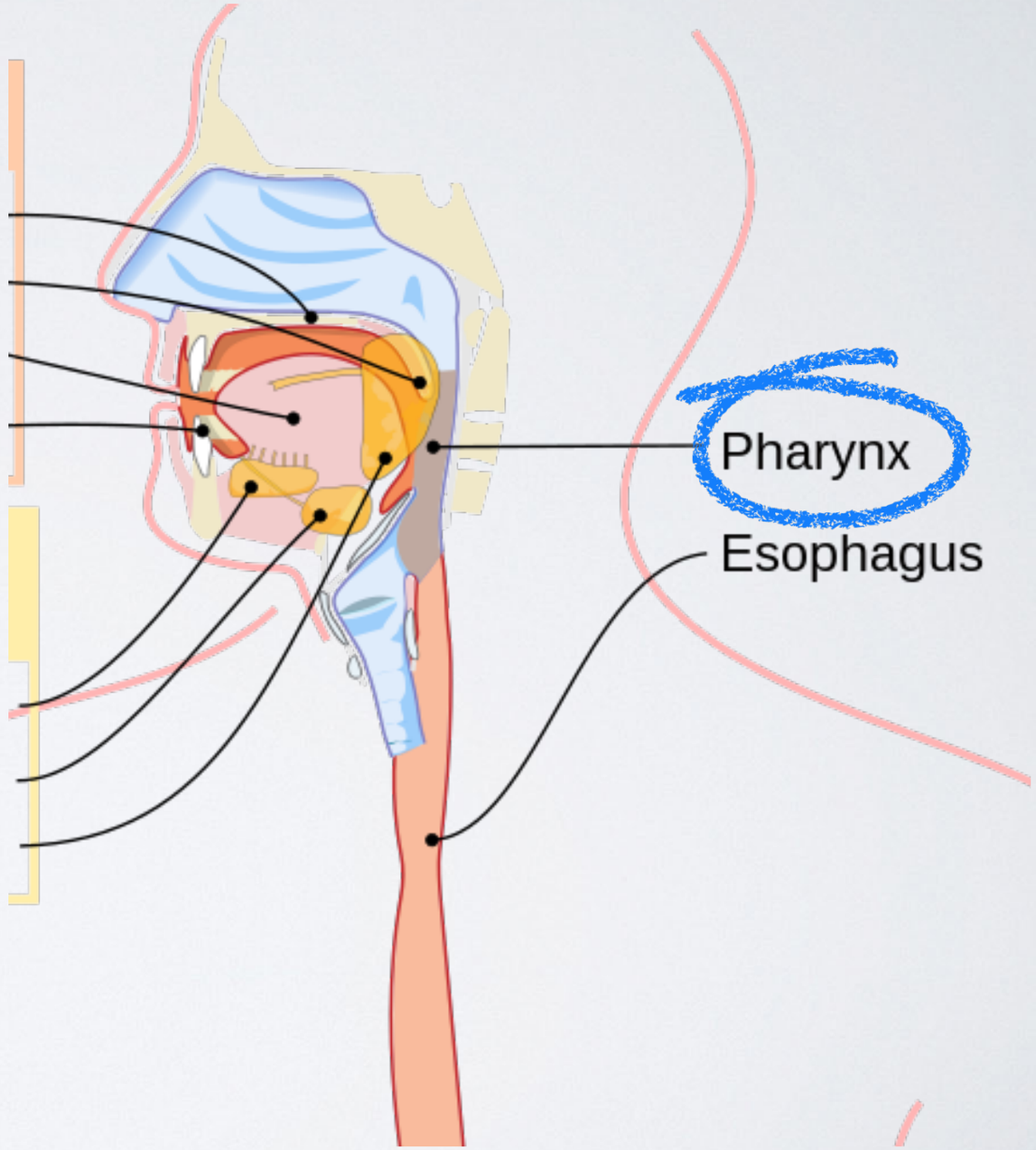
- Describe oral cavity
  - Components
  - Boundaries
  - Characteristics
  - Functions
  - Nerve and blood supply
- Describe the similarities and/or differences between lips and cheek; hard palate and soft palate

ORAL CAVITY

- The first part of digestive system

- Mouth, pharynx, esophagus stomach intestine

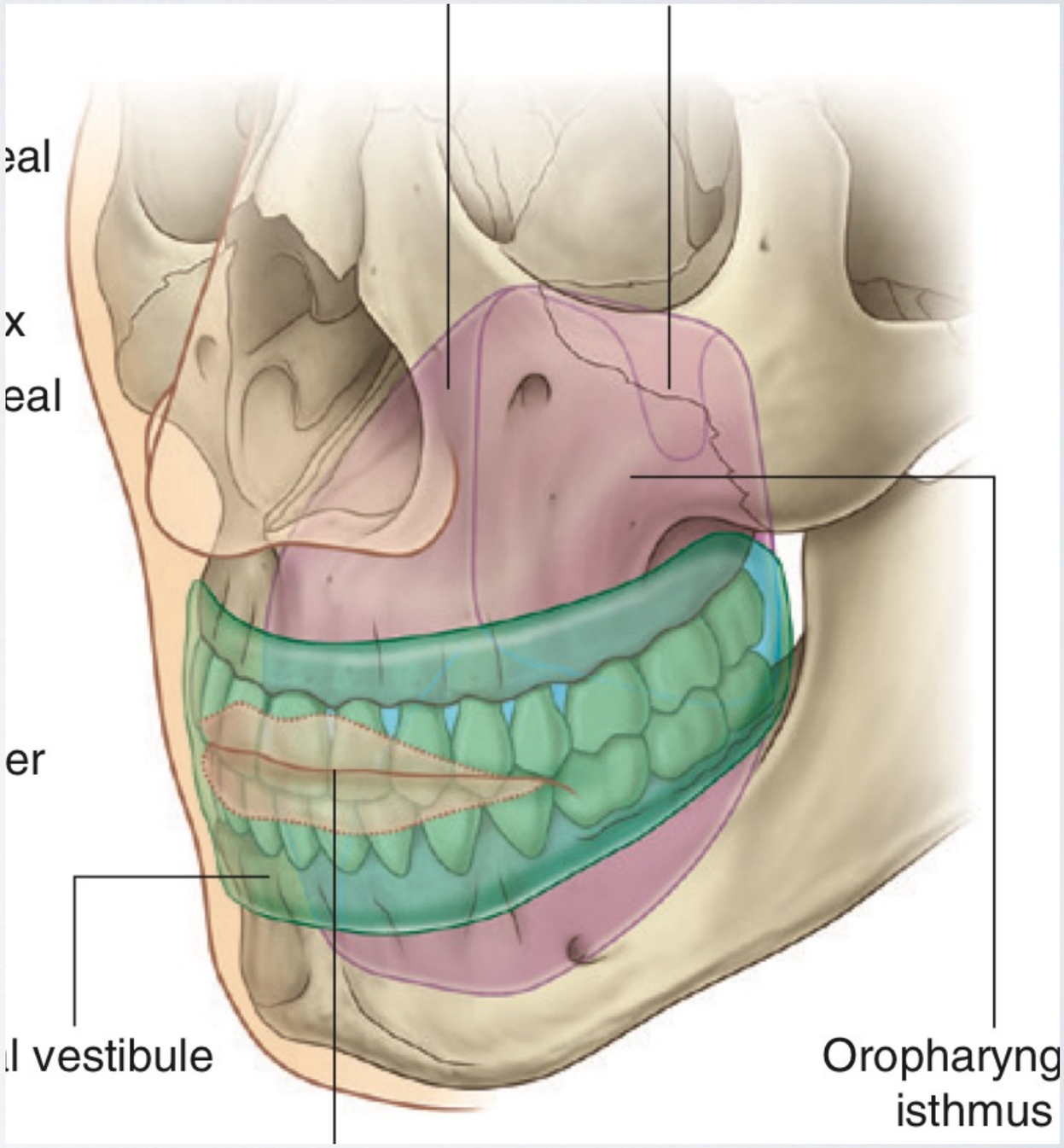
- Mouth comprises teeth gum and other surrounding tissue



ORAL CAVITY

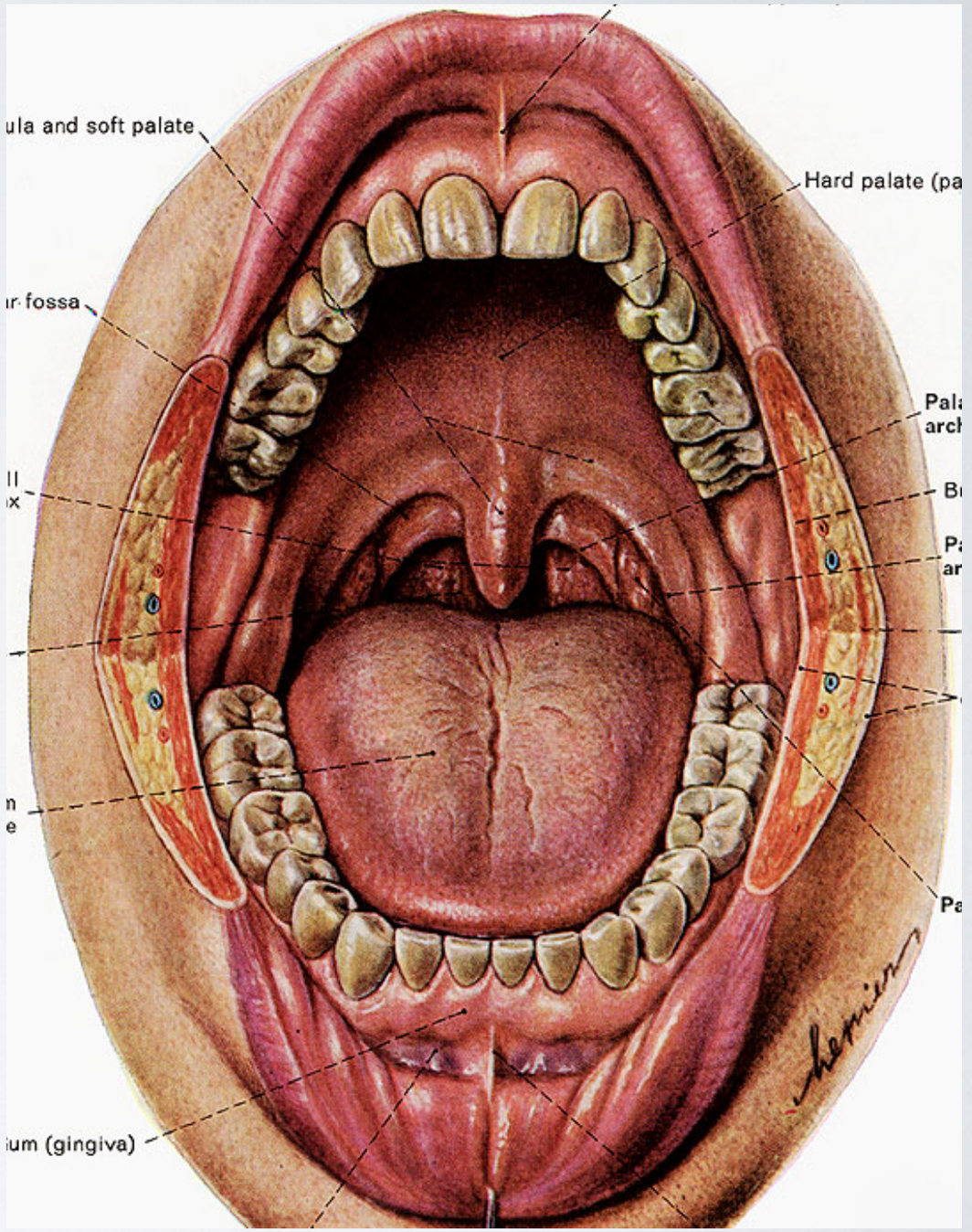
- Divisions of the oral cavity
- Boundary: demarcated by the dental arches

1. Vestibule
    - Smaller external space
    - Between the lips/cheeks and the dental arches
2. Oral cavity proper
    - Larger internal space
    - Extends from behind the teeth to the oropharyngeal isthmus



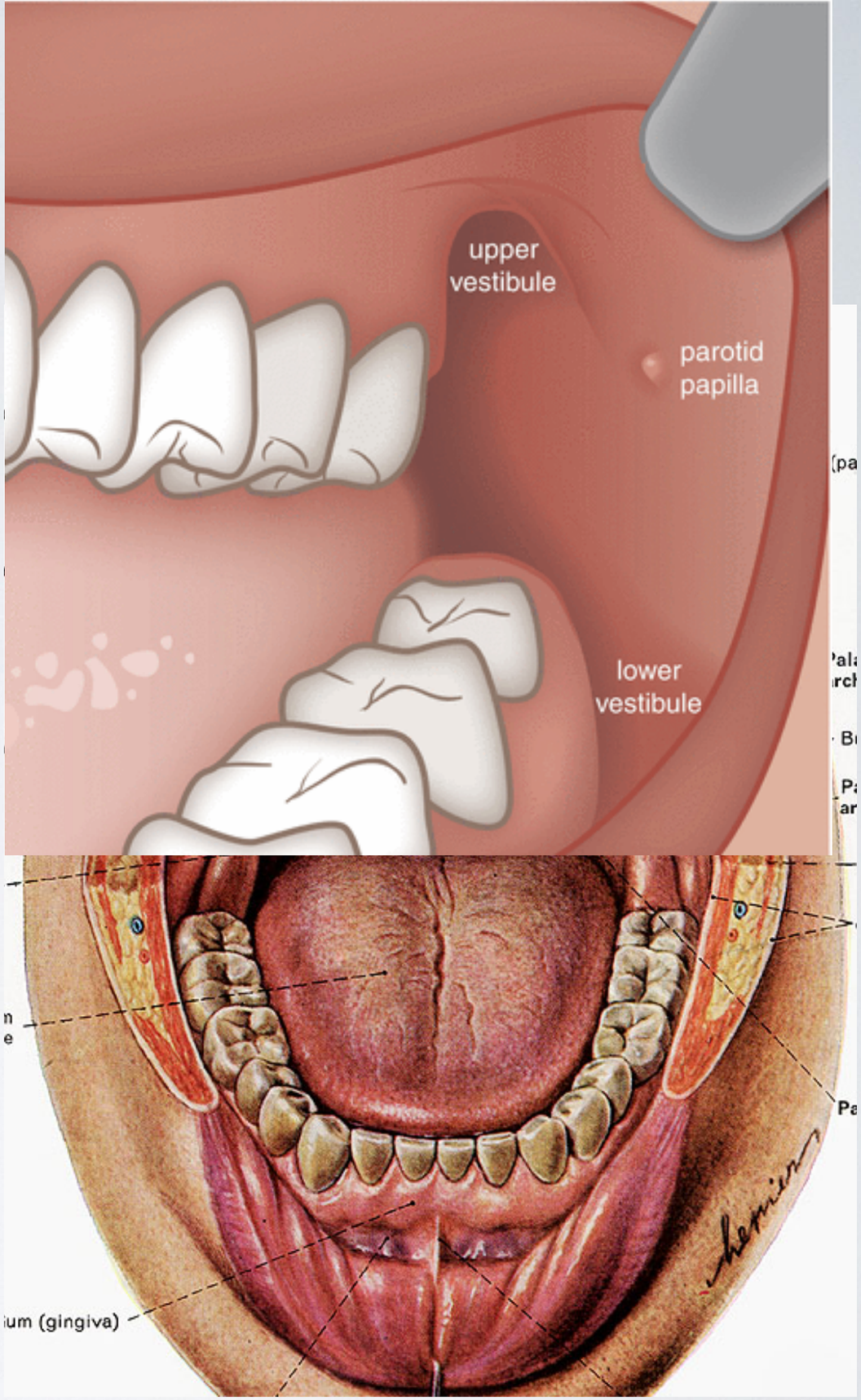
ORAL CAVITY

- Vestibule
  - Mucobuccal fold/ mucolabial fold/ Superior and inferior fornices of the vestibules
- Communication
  - Oral fissure
  - Retromolar space



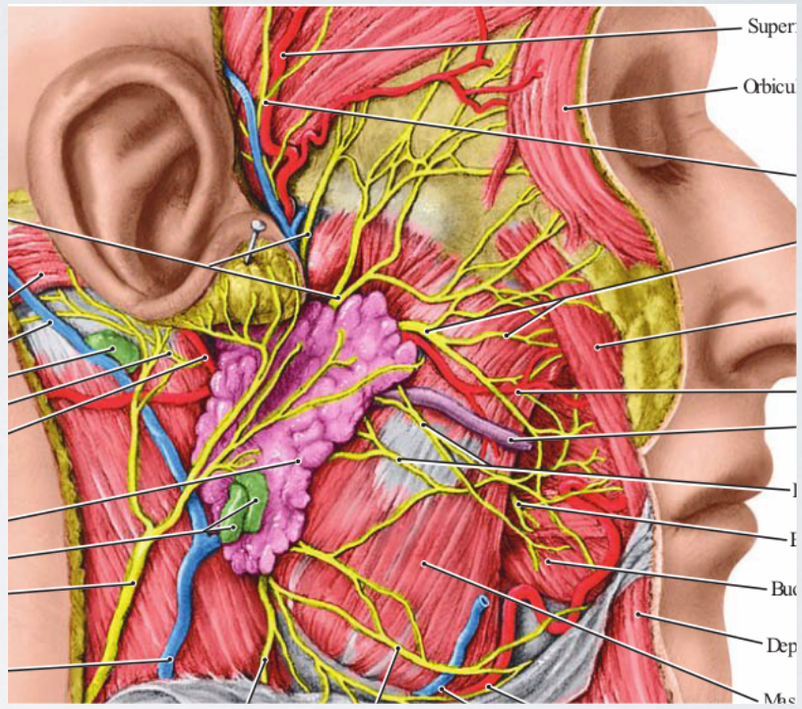
ORAL CAVITY

- Vestibule
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VESTIBULE

- Glandular openings in the vestibule
  - Parotid gland : parotid papilla, where?
  - Minor salivary glands:
    - Labial glands
    - Buccal/molar glands

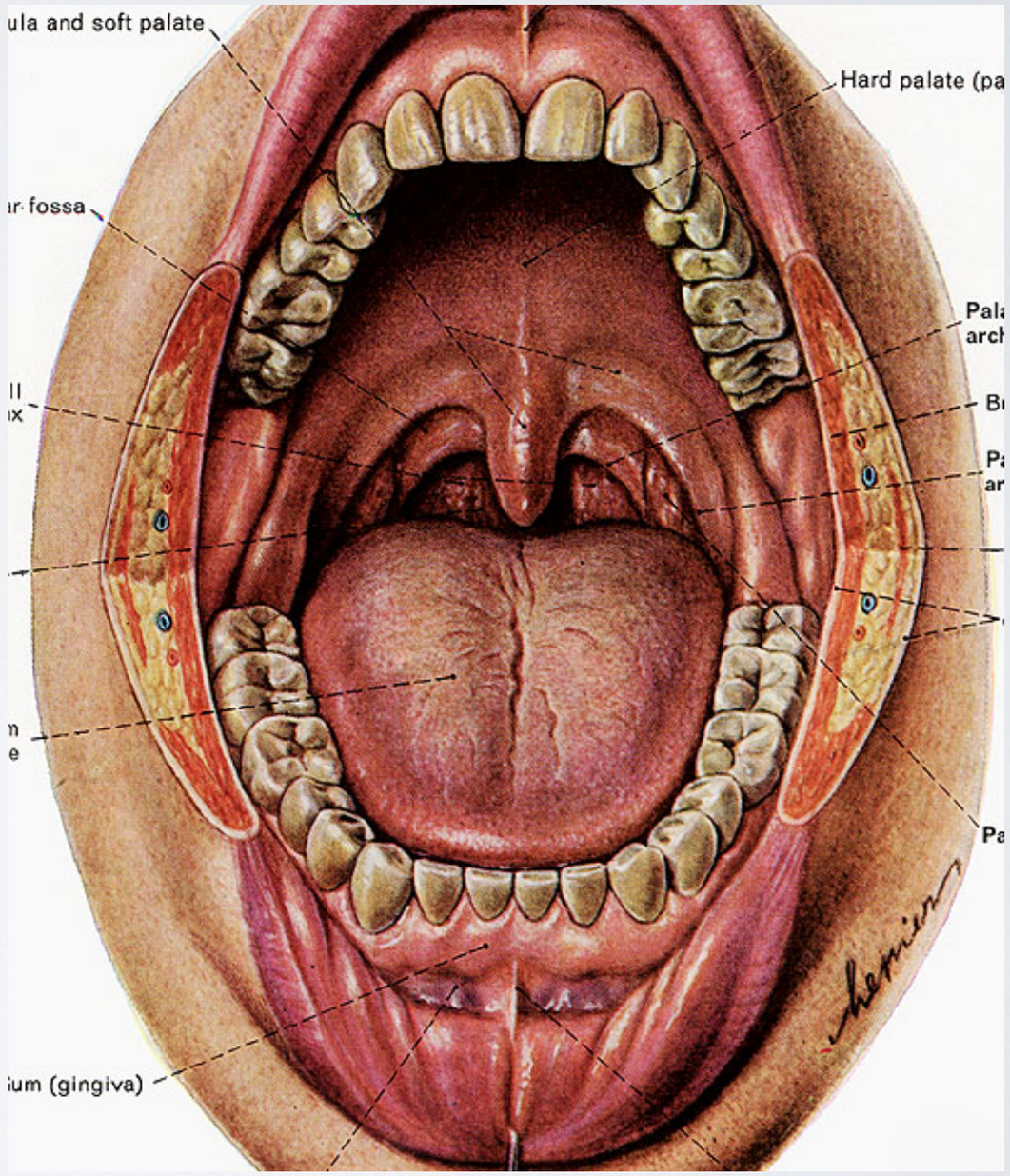




ORAL CAVITY PROPER

Boundaries

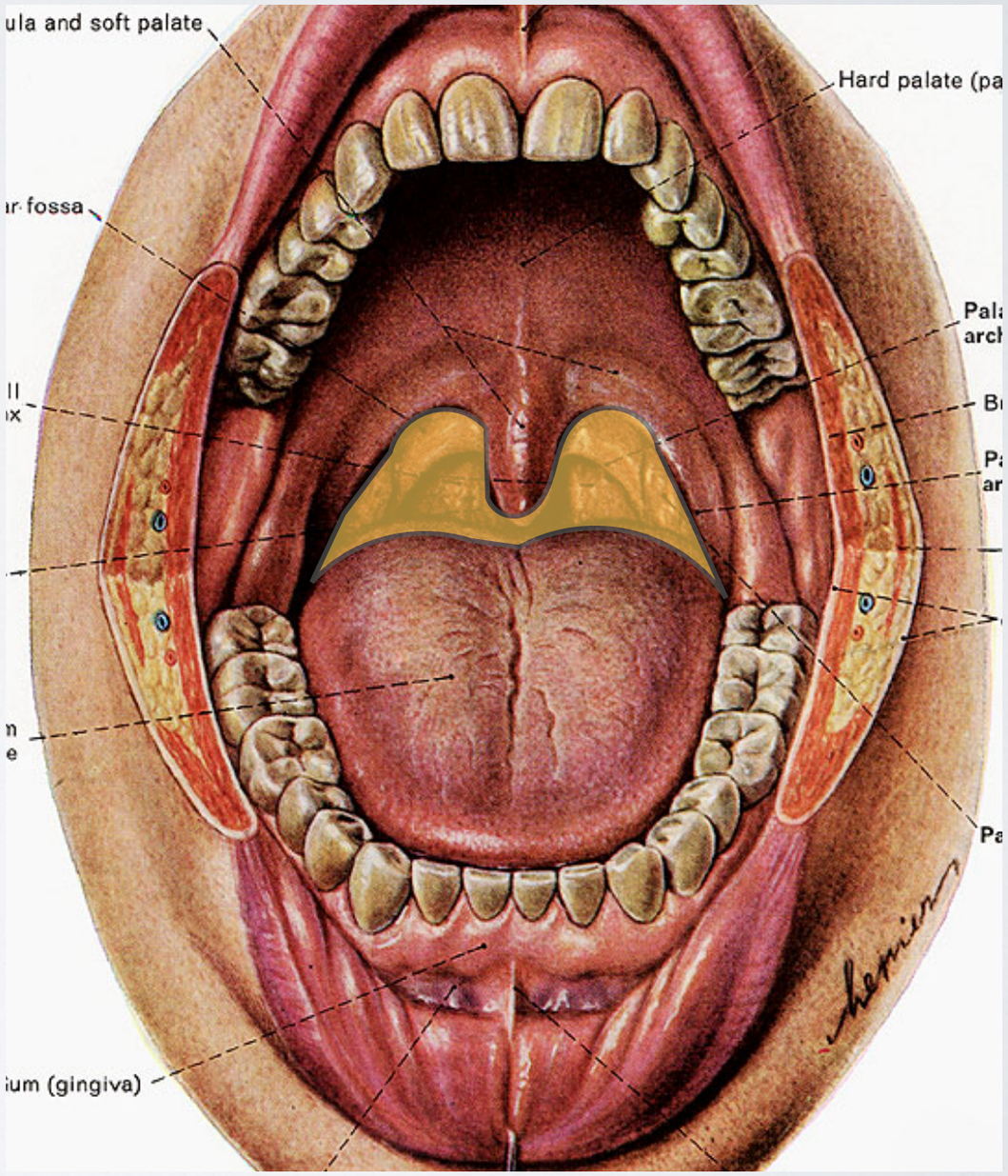
- Alveolar arches
  - Teeth
  - Gum
- Oropharyngeal isthmus
- Palate
- Tongue
- The floor of the mouth



ORAL CAVITY PROPER

Boundaries

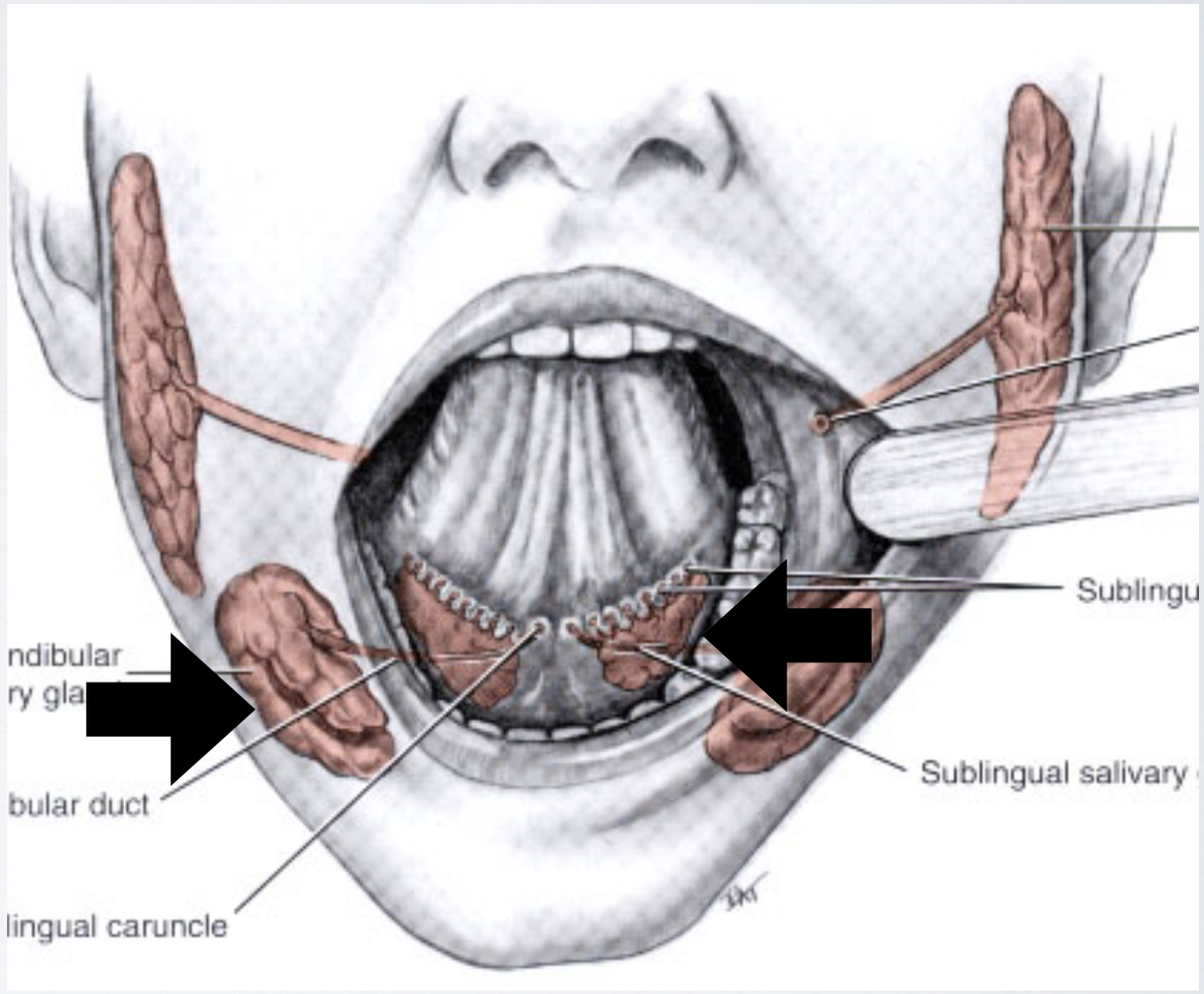
- Alveolar arches
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ORAL CAVITY PROPER

Receive salivary secretion from

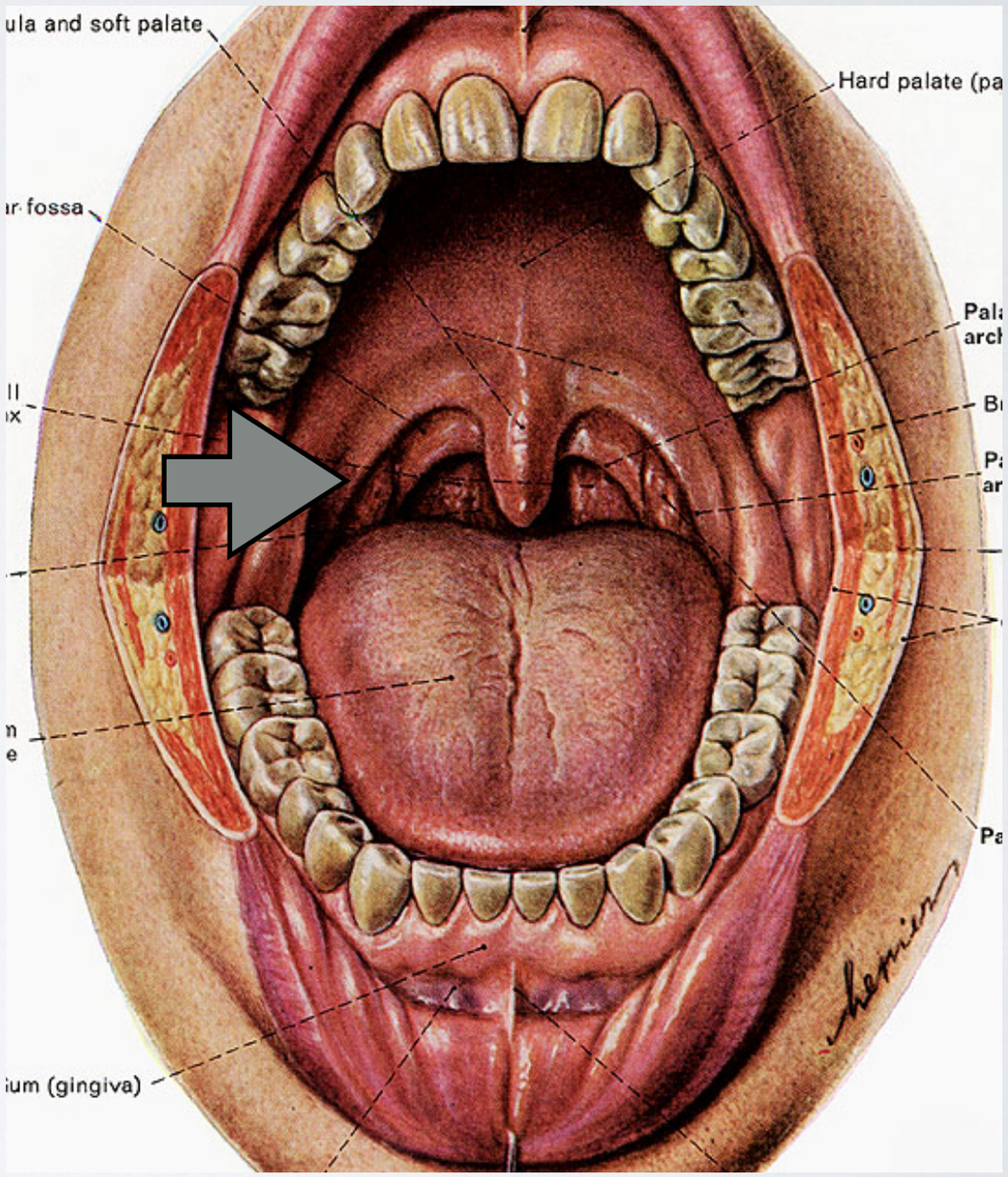
- Submandibular salivary glands
- Sublingual glands



ORAL CAVITY PROPER

Oropharyngeal Isthmus

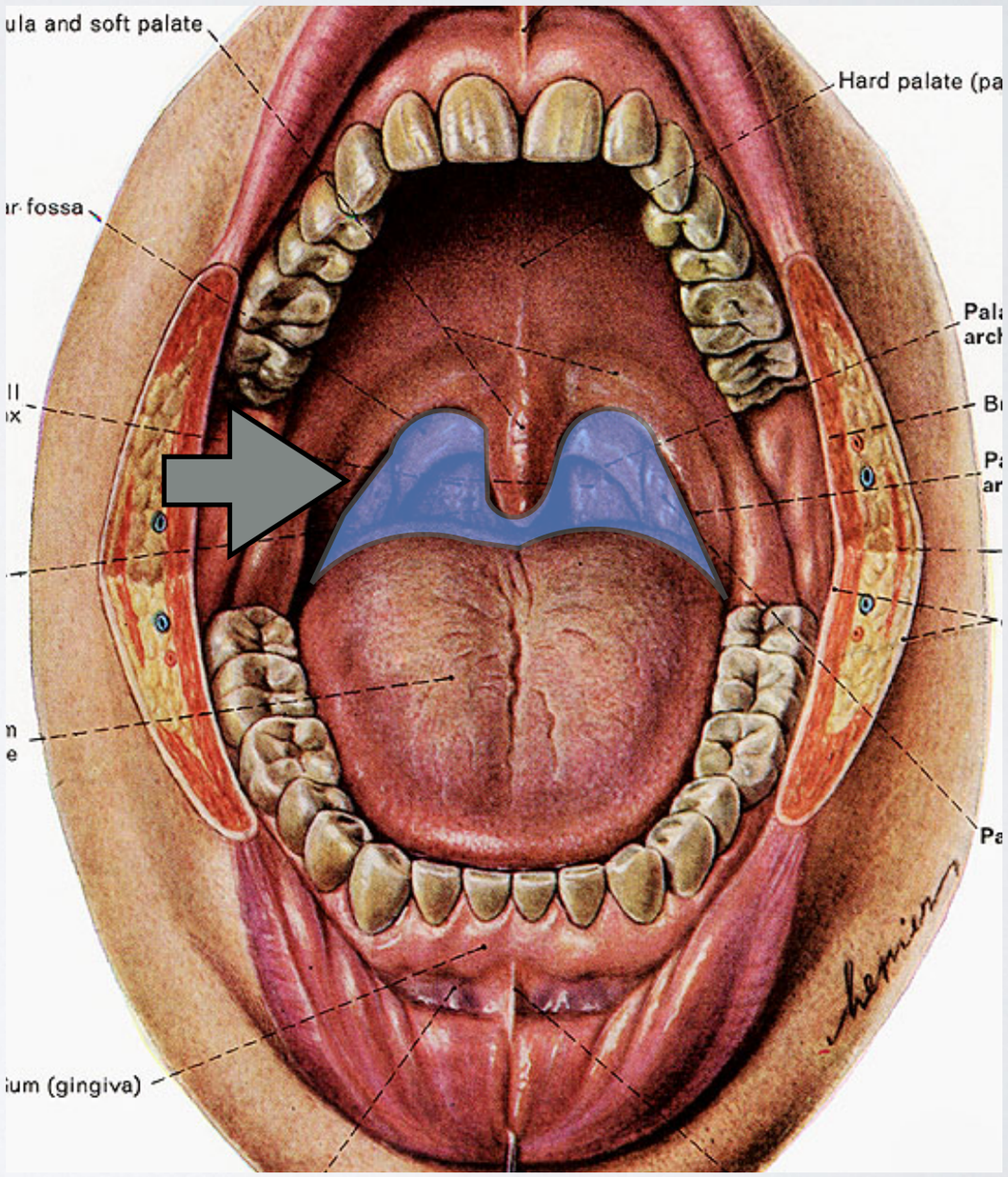
- Junction between oral cavity and pharynx
- Boundary:
  - Soft palate
  - Dorsum of tongue: sulcus terminalis
  - Palatoglossal fold



ORAL CAVITY PROPER

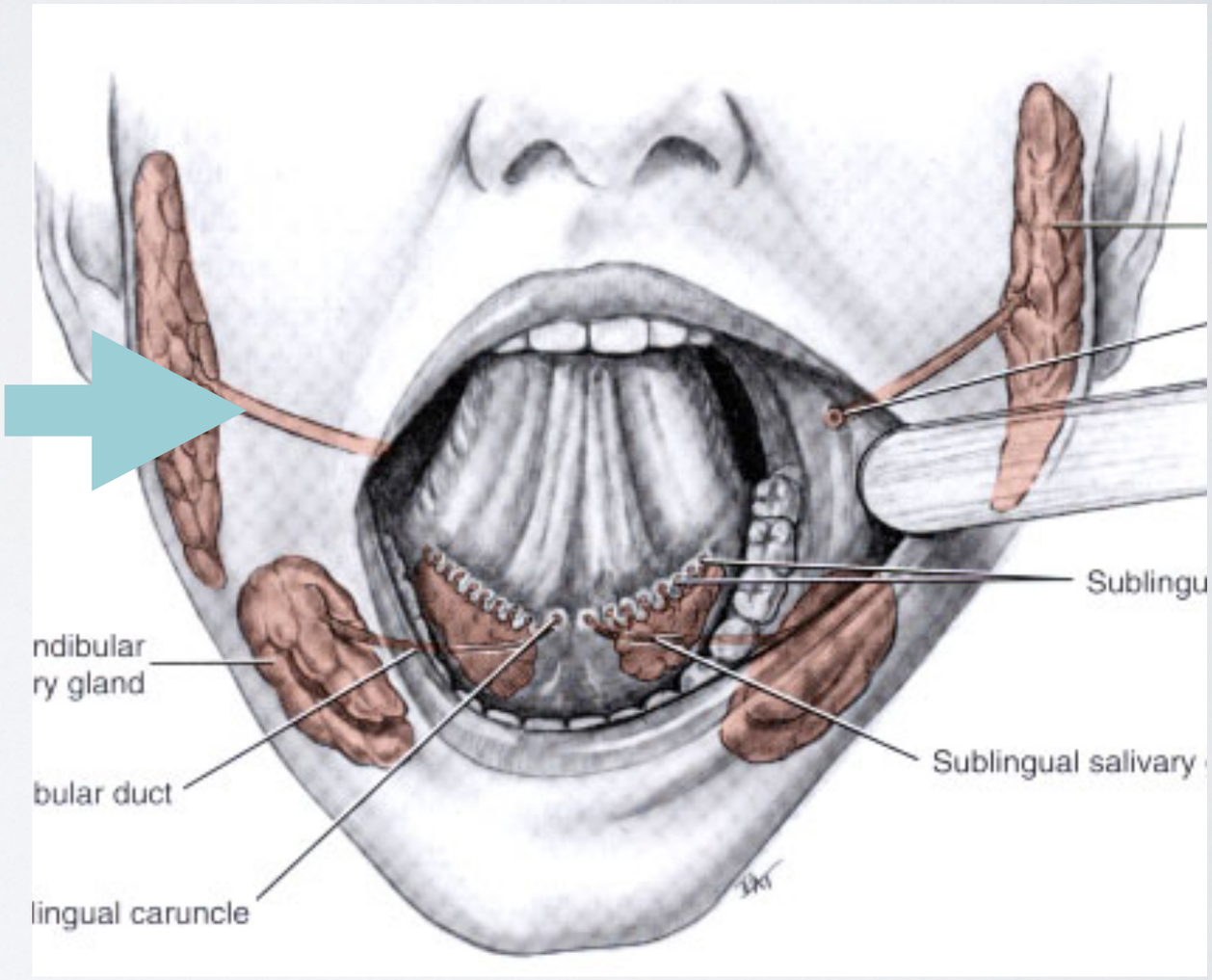
Oropharyngeal Isthmus

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SALIVARY GLAND OPENINGS

- Vestibule
  - Parotid glands
  - Minor salivary glands
- Oral cavity proper
  - Submandibular glands
  - Sublingual glands



LIPS

- Comprise 3 zones

1. Cutaneous zone

2. Transitional Zone

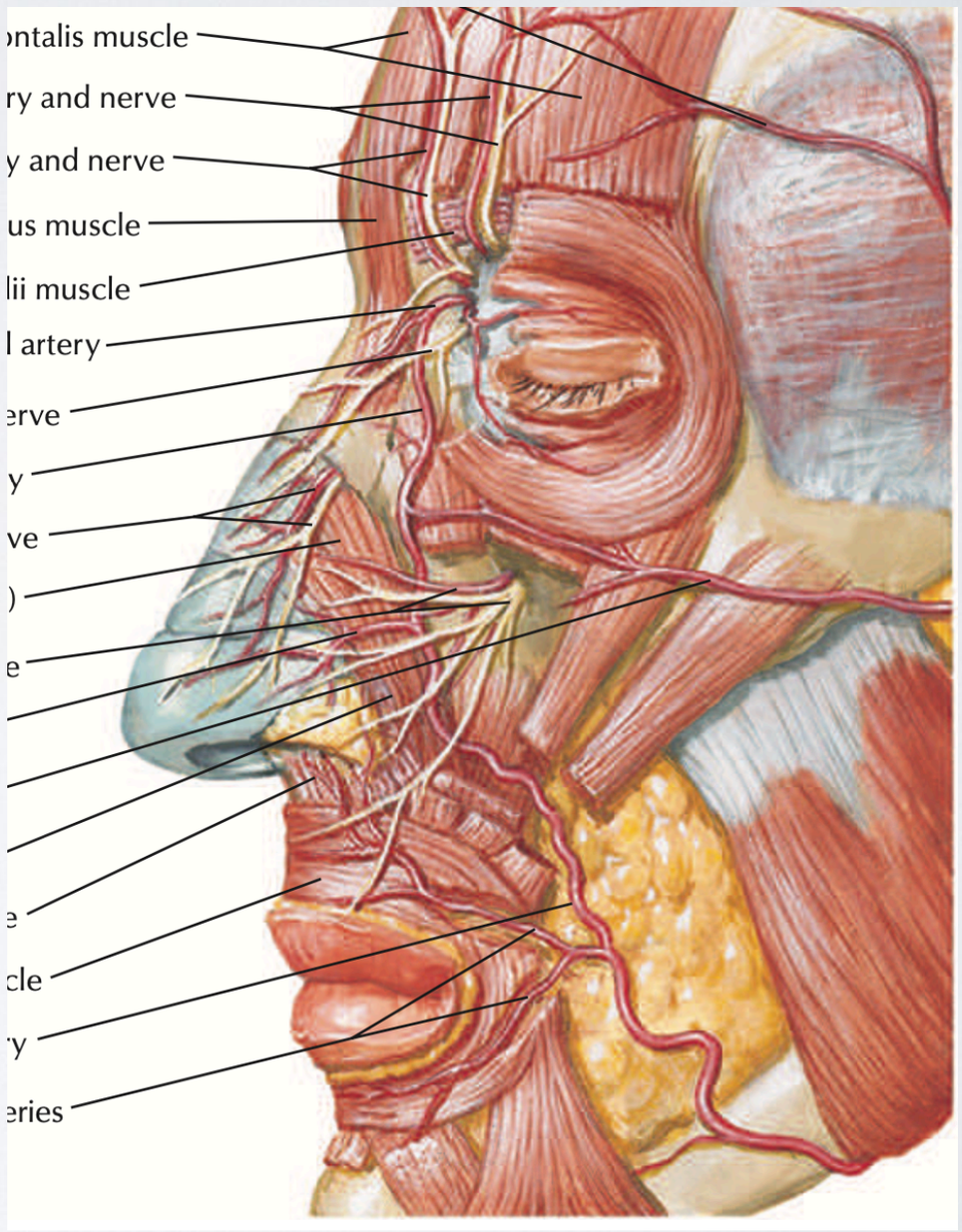
3. Mucosal Zone





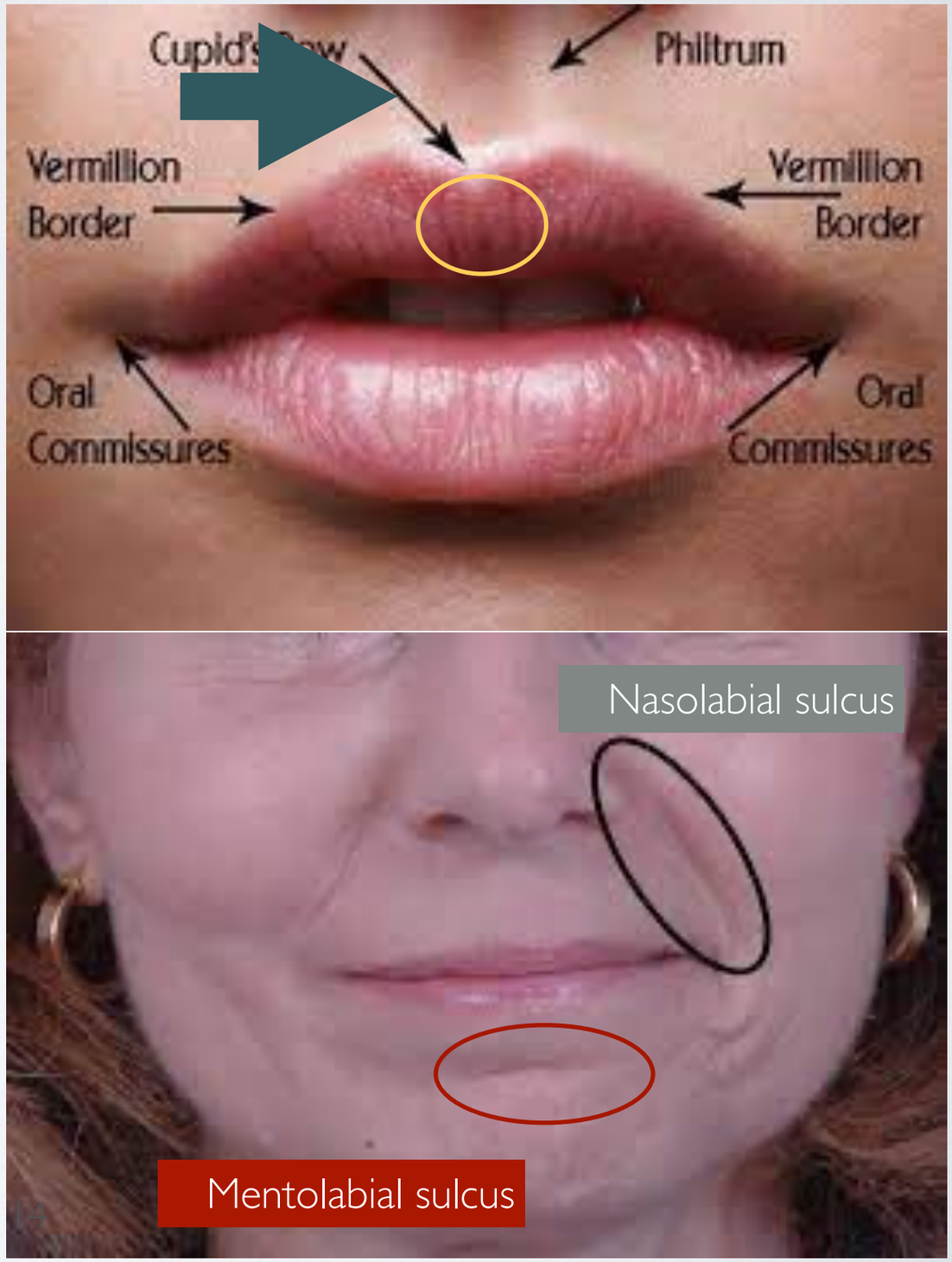
LIPS

- Muscular core: orbicularis oris muscle
- Related structure
  - Superior and inferior labial vv.
  - Nerves: CN V, CN VII



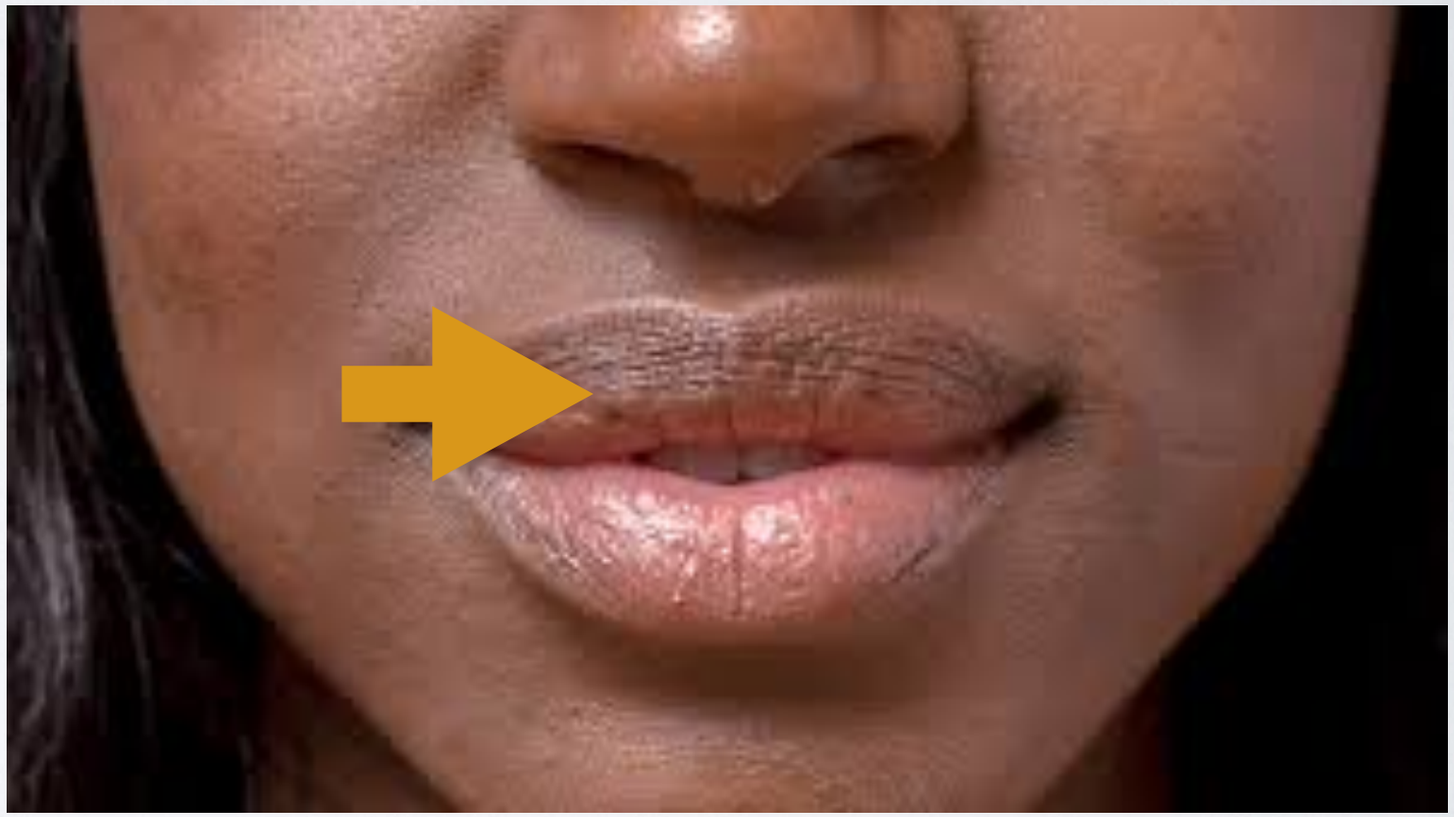
LIPS: CUTANEOUS ZONE

- Philtrum
- Labial tubercle
- Junction
  - Labial commissures: modulus
  - Nasolabial sulcus
  - Mentolabial sulcus



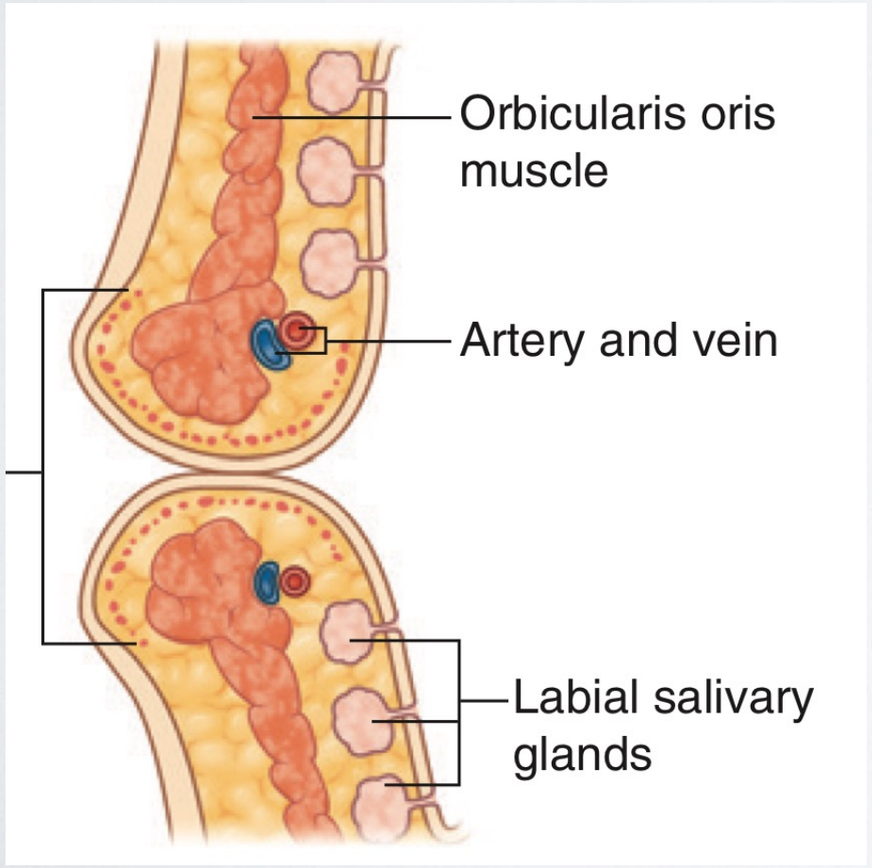
LIPS: TRANSITIONAL ZONE

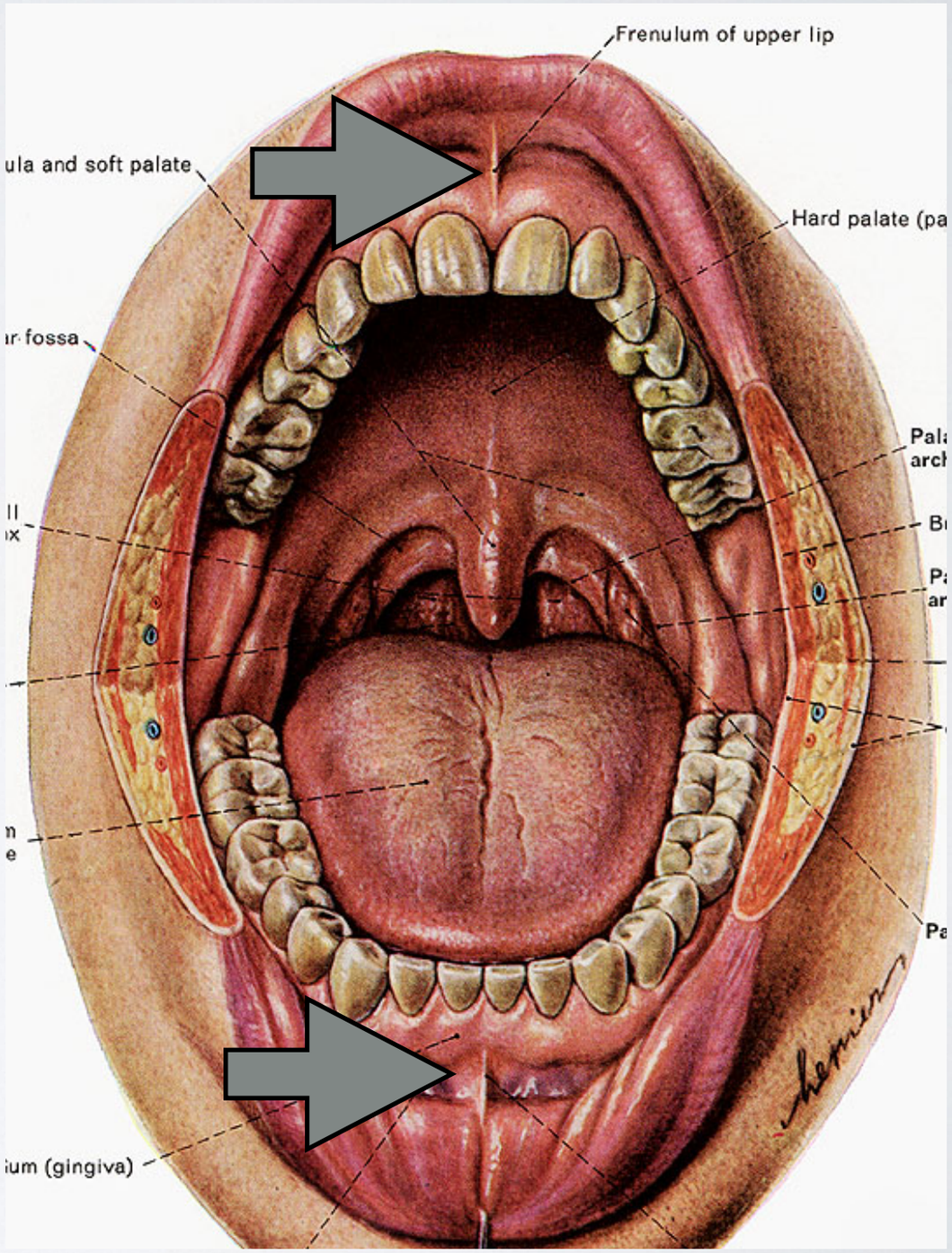
- Reflect blood vessels underlying epithelium
- Thin skin
- Blood vessels close to the surface



LIPS;
MUCOSAL ZONE

- Labial frenulum: a fold of mucosa
- Labial glands open into the oral vestibule





LIPS

- Fordyce granules/spots: sebaceous gland

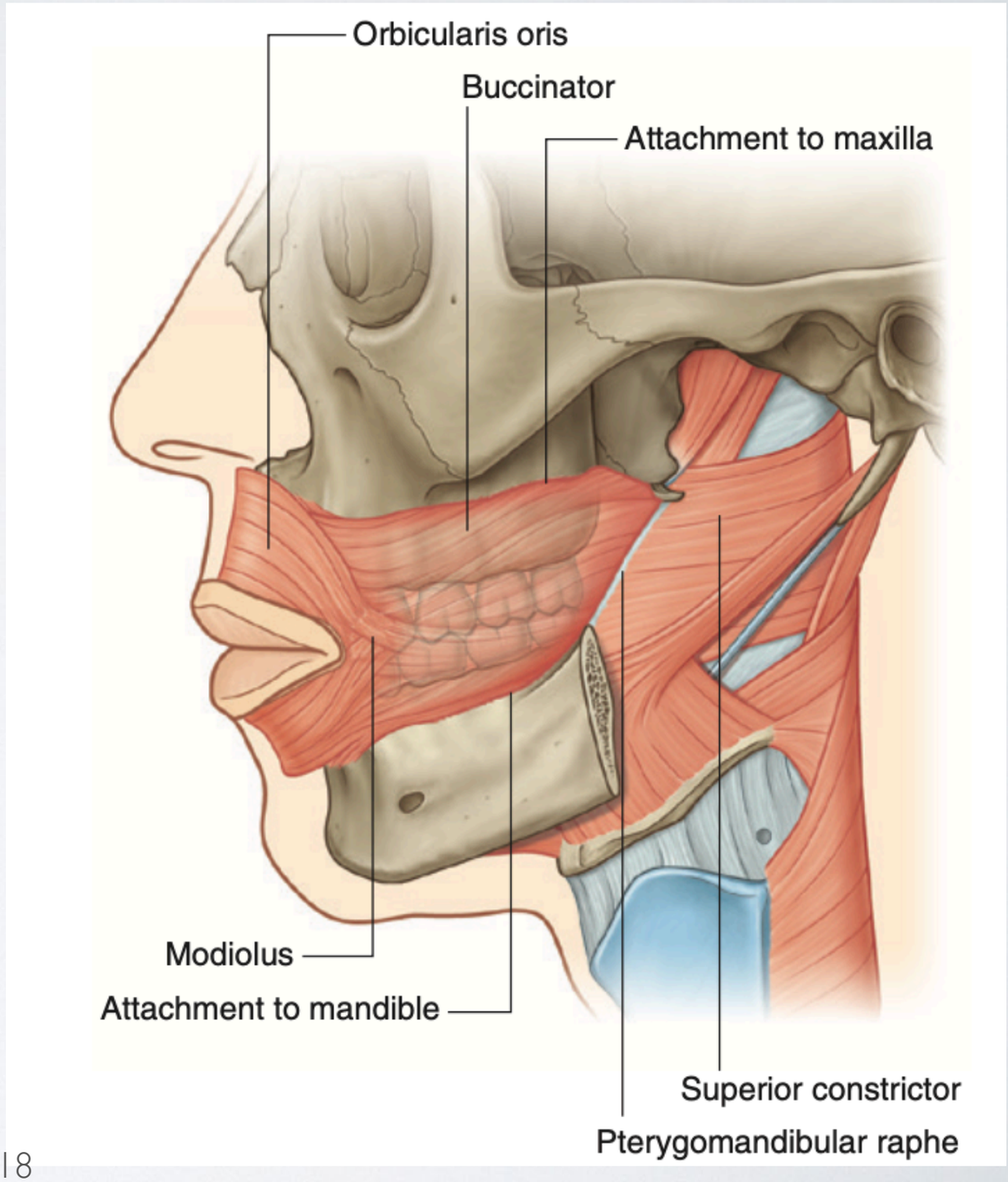
- Normal variation





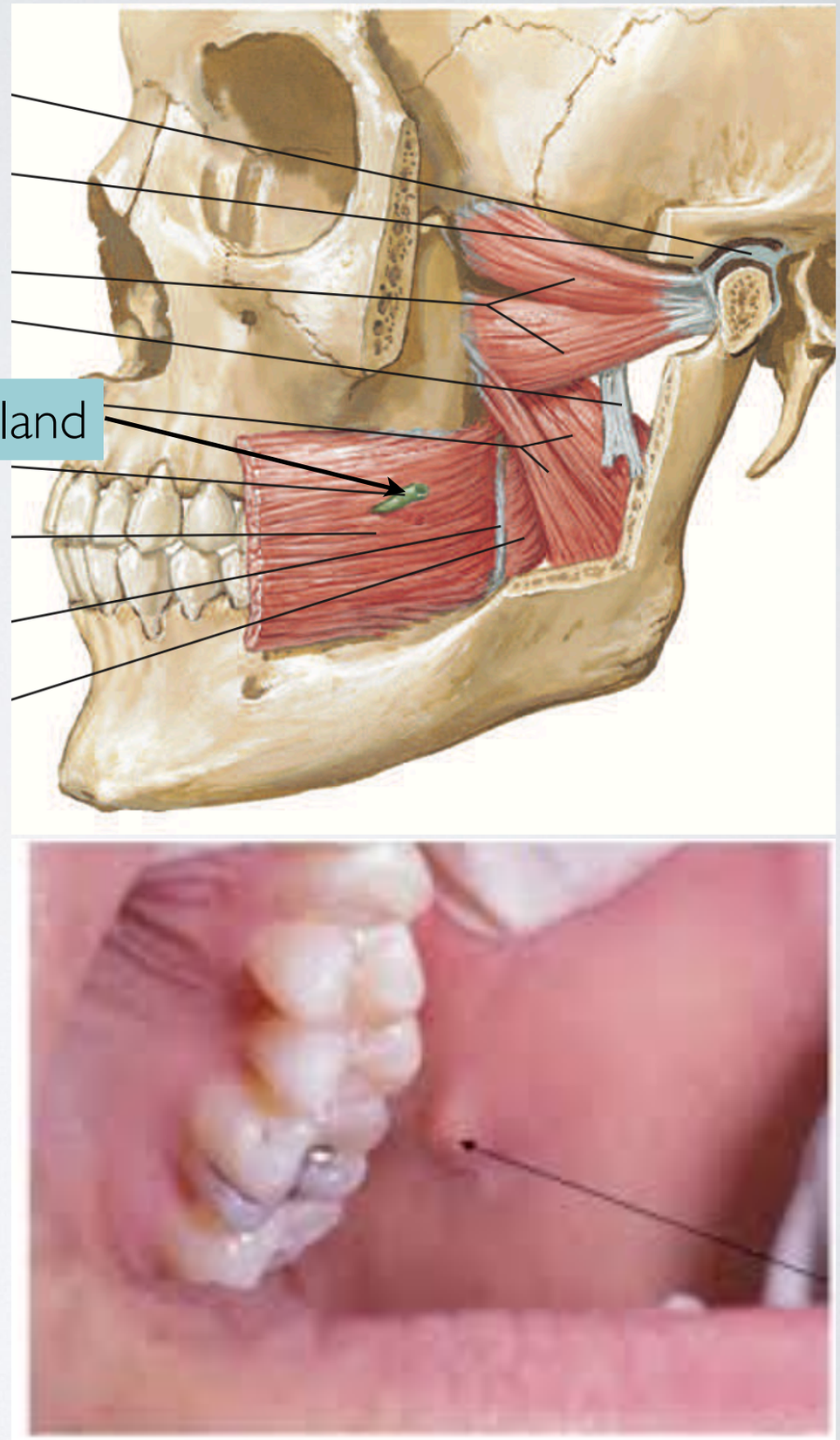
CHEEKS

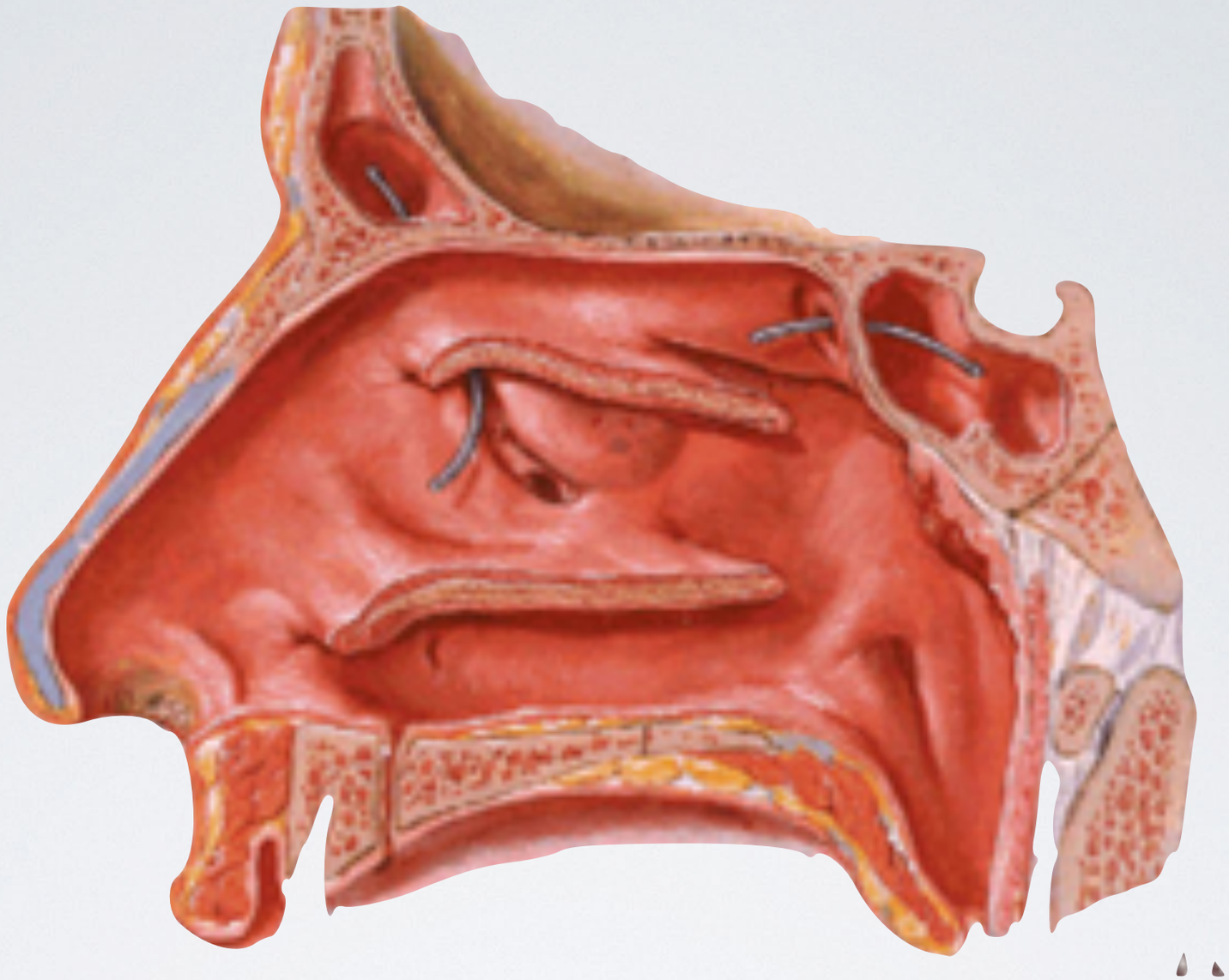
- Forming lateral wall of vestibule and the sides of face
- Muscular core: buccinator muscle
- Continue with lips
- Two zones: cutaneous and mucosal zone



CHEEKS

- Cutaneous zone:
  - Buccal fat pad
  - Buccopharyngeal fascia
- Mucosal zone:
  - Buccal/ molar gland
  - Parotid papilla



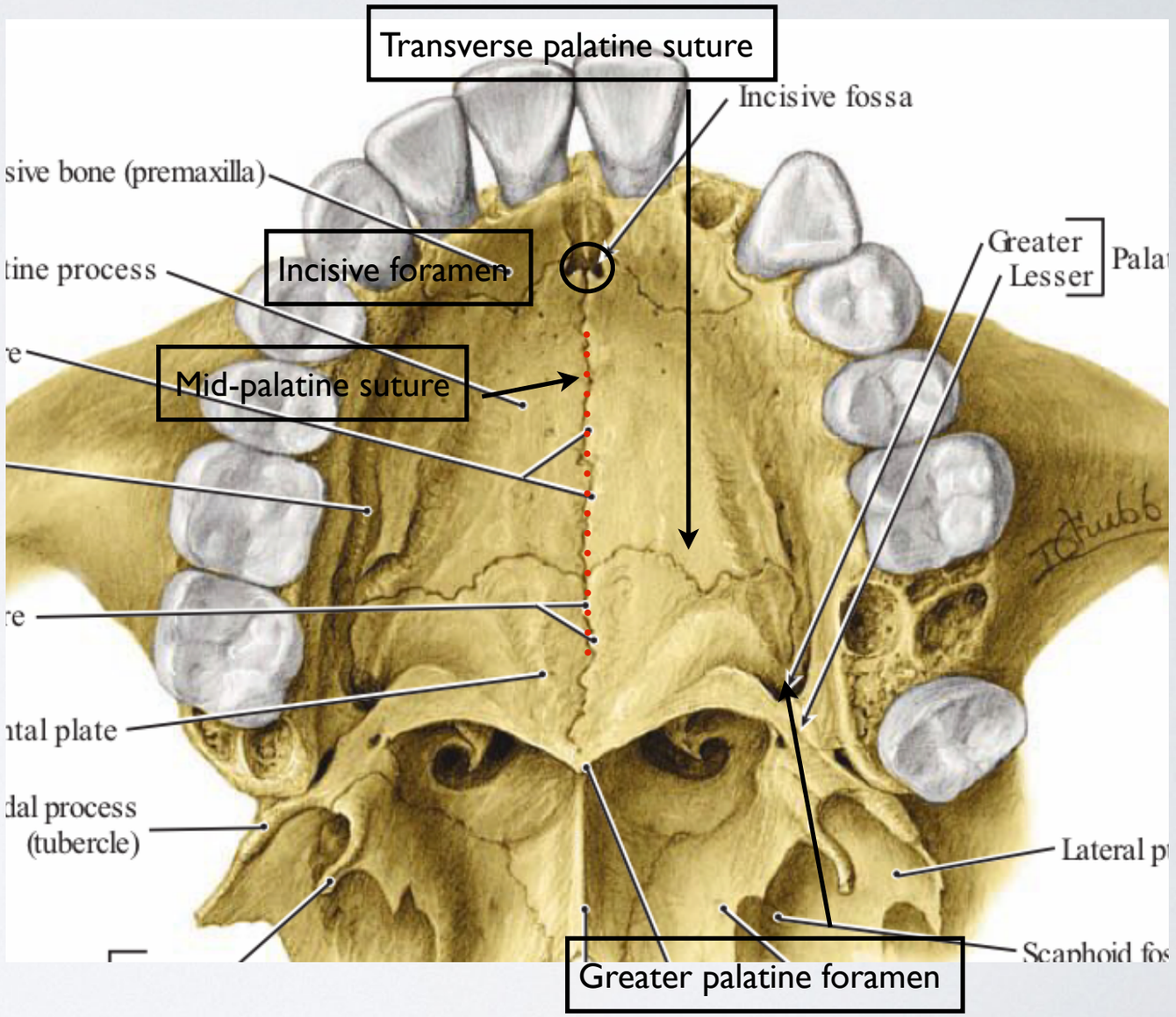


THE PALATES

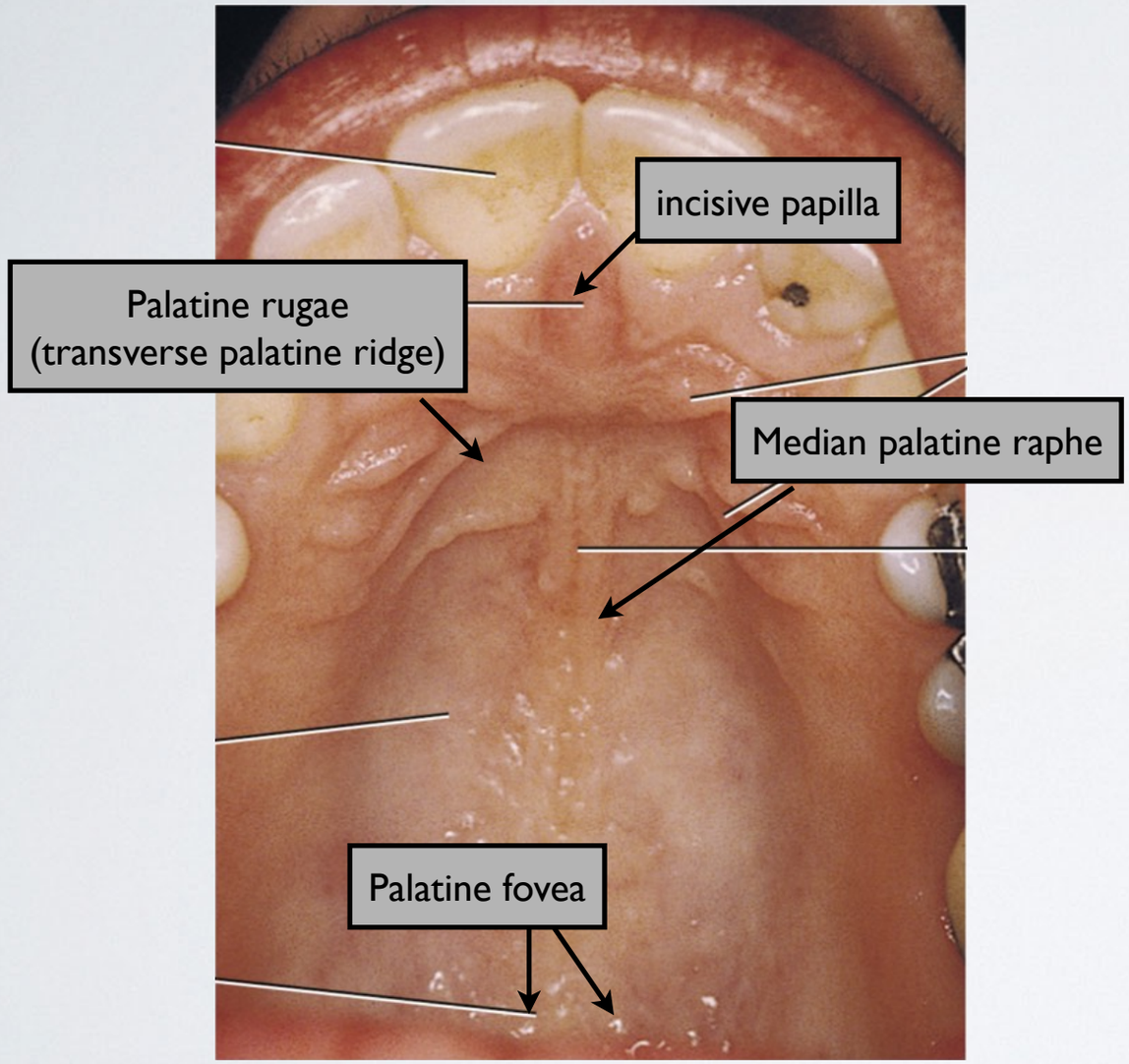
Hard palate
Soft palate

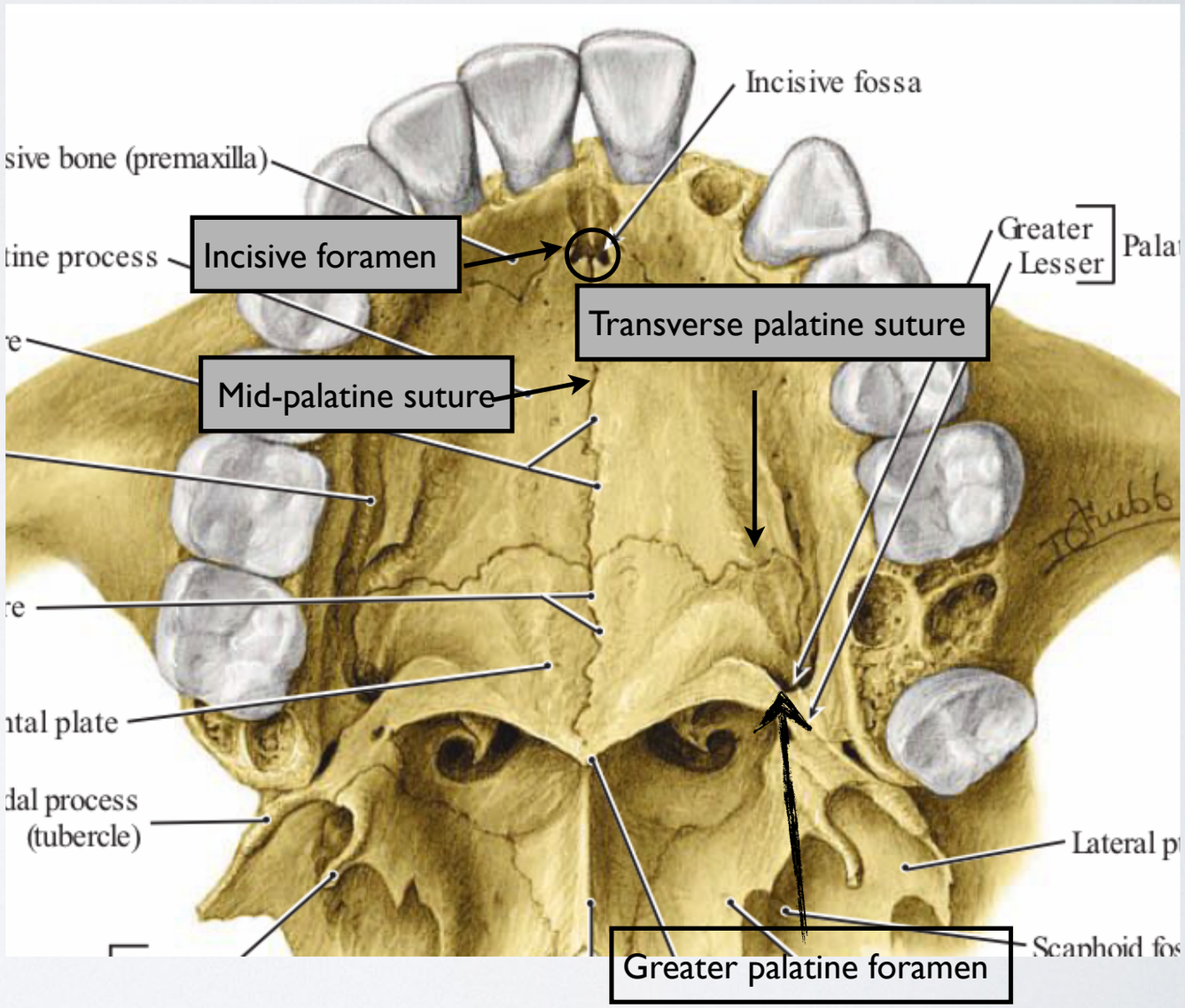
PALATE

- Hard palate
  - Bony framework
    - Palatine processes of maxillae
    - Horizontal plates and pyramidal processes of palatine bones
  - Maxillary alveolar arch
  - Mid-palatine suture
  - Transverse palatine sutures
  - Incisive fossa/ incisive foramen/ incisive canal: nasopalatine n., sphenopalatine vv.
  - Greater palatine foramen



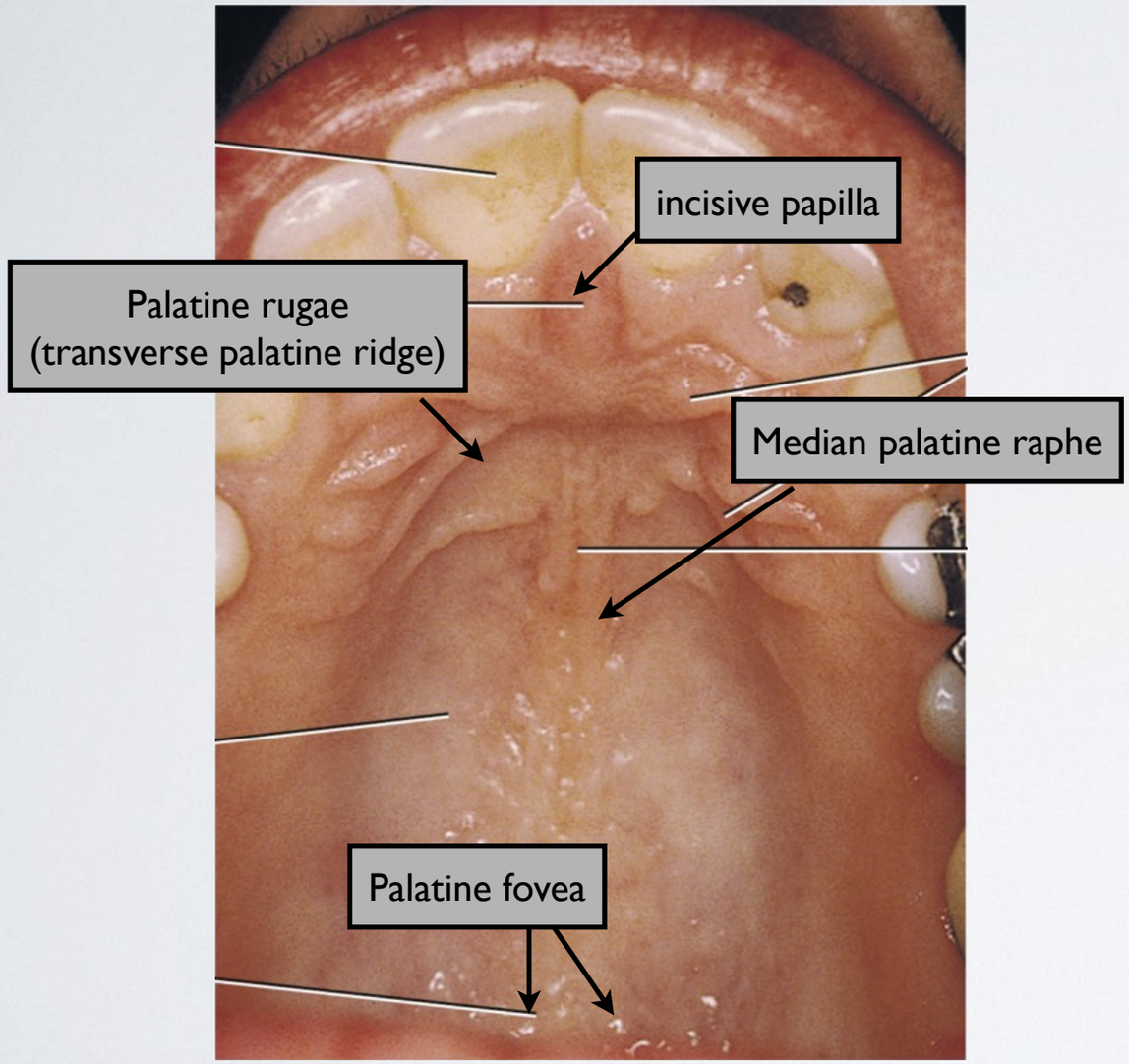
PALATE

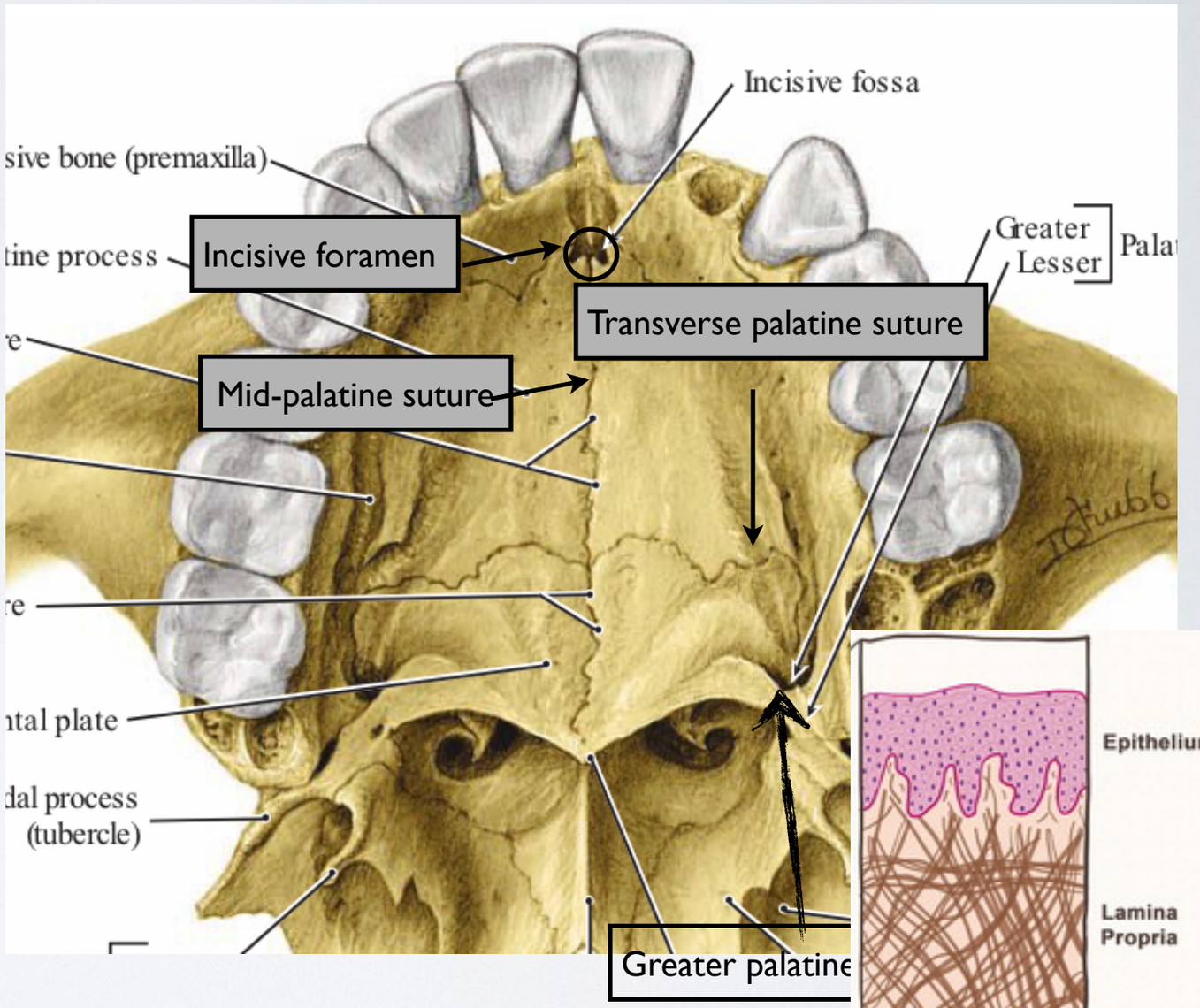




mucosa+periosteum = mucoperiosteum

PALATE



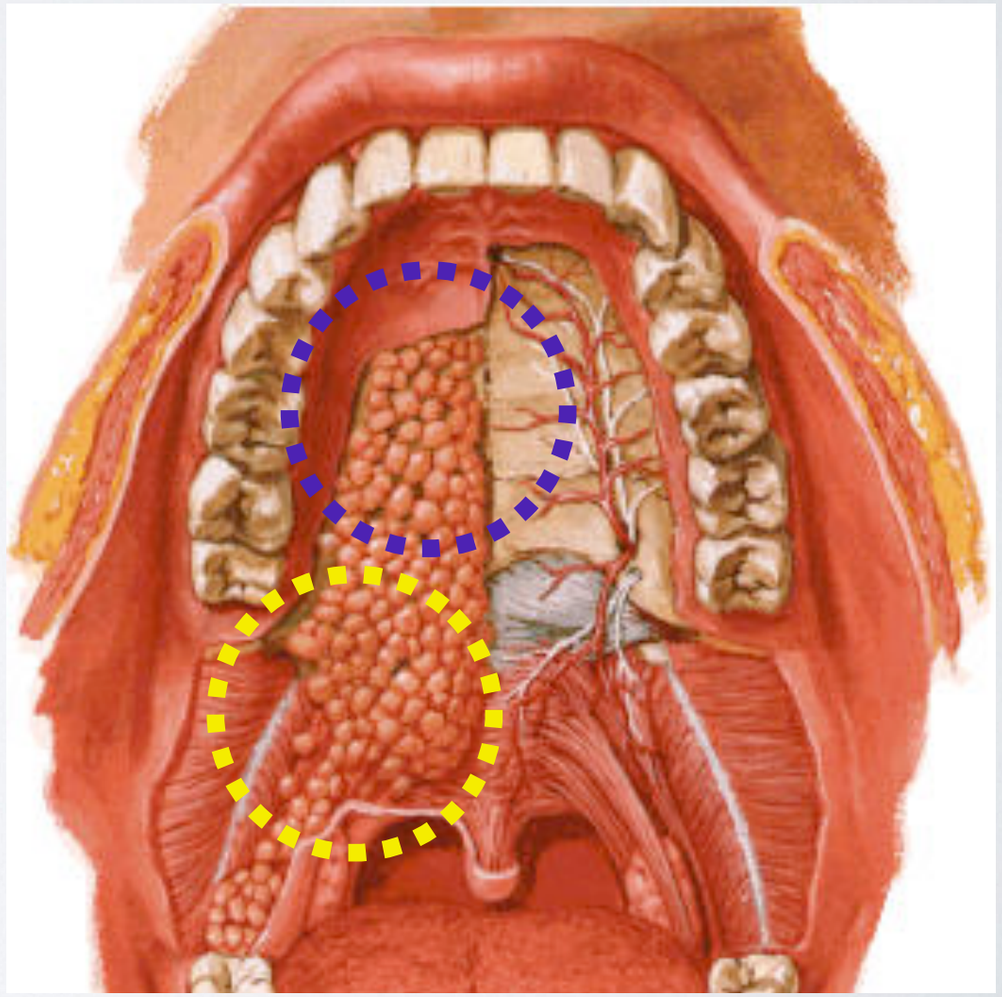


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HARD PALATE

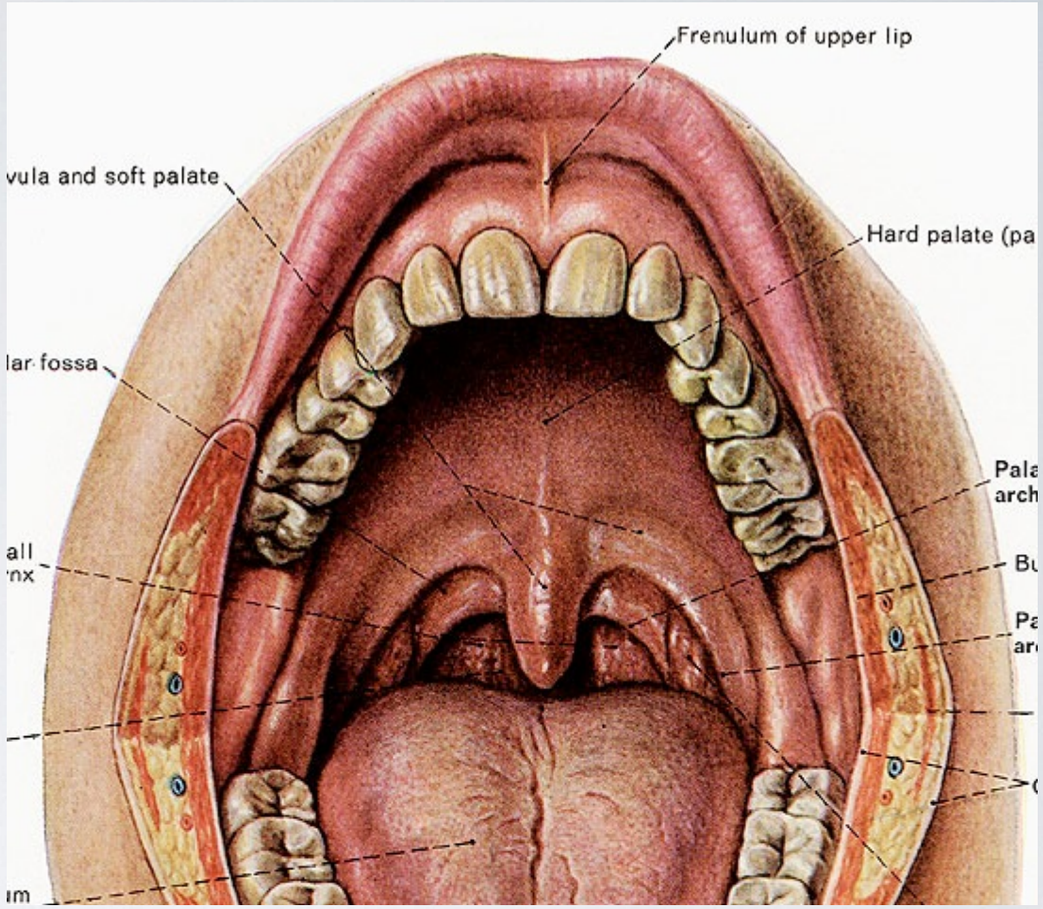
- Lateral region
  - Palatine gland: posterior
  - Adipose tissue: anterior
  - Blood vessels and nerves
- Torus palatinus: exostosis along the median suture

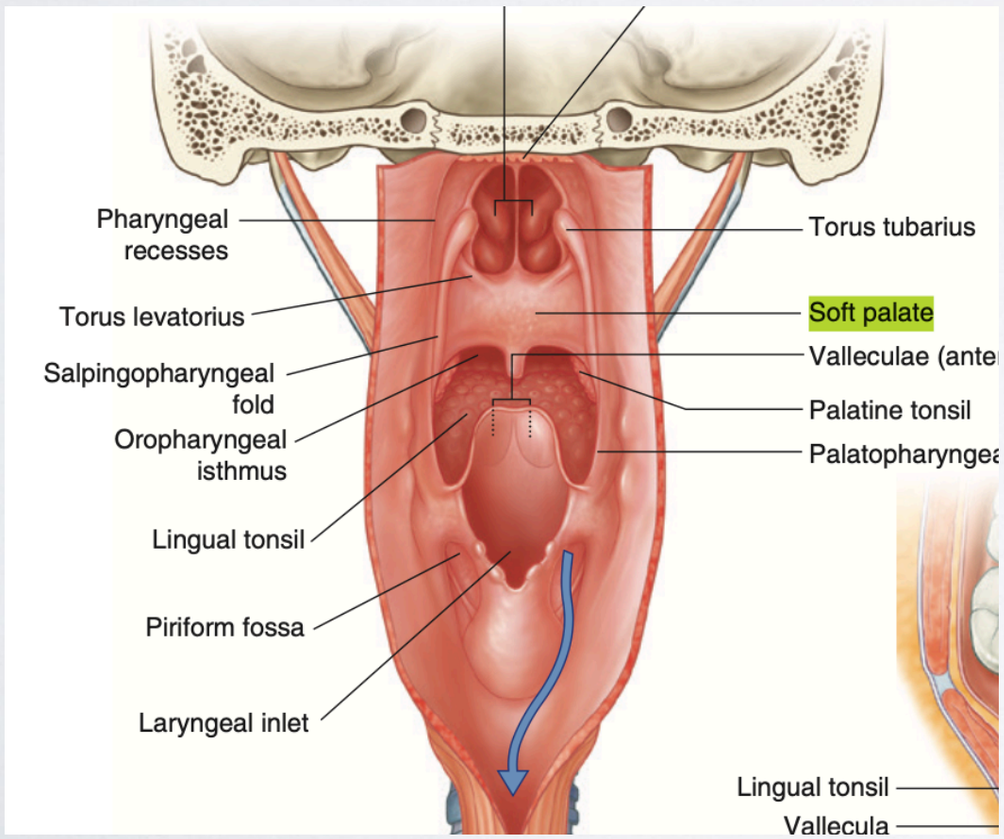


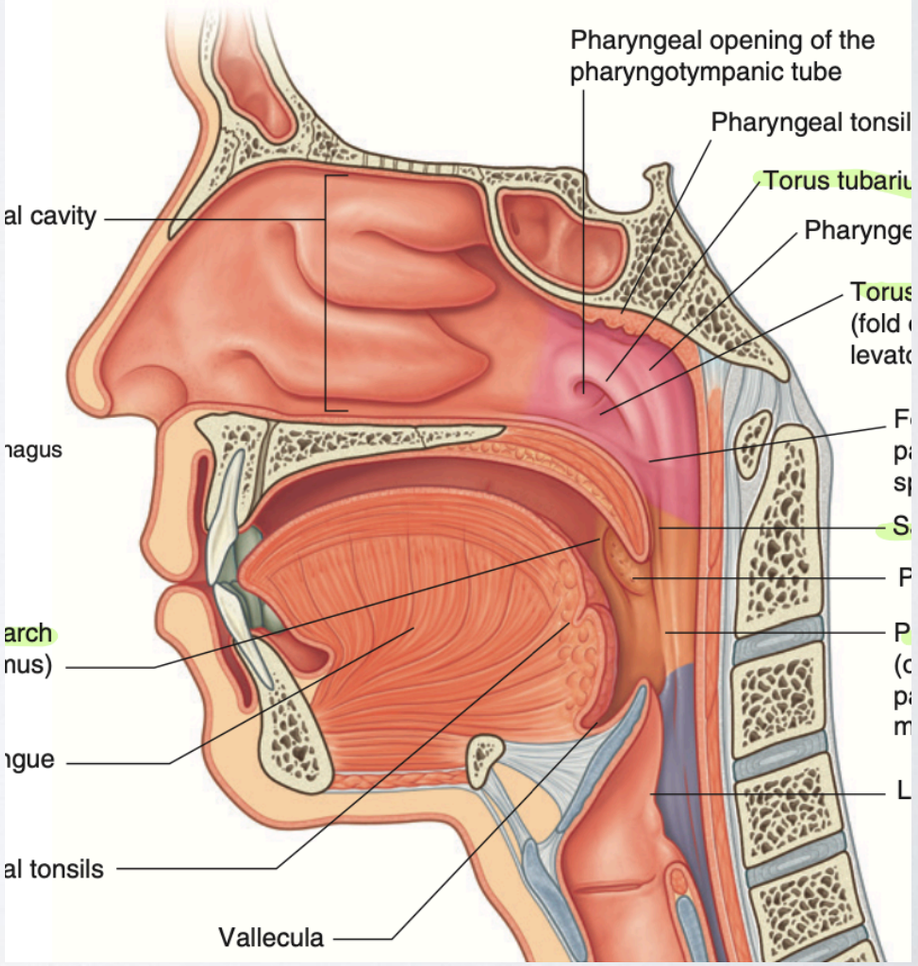


SOFT PALATE

- Fibro-muscular framework
- Posterior free margin & uvula
- Movable fibromuscular fold

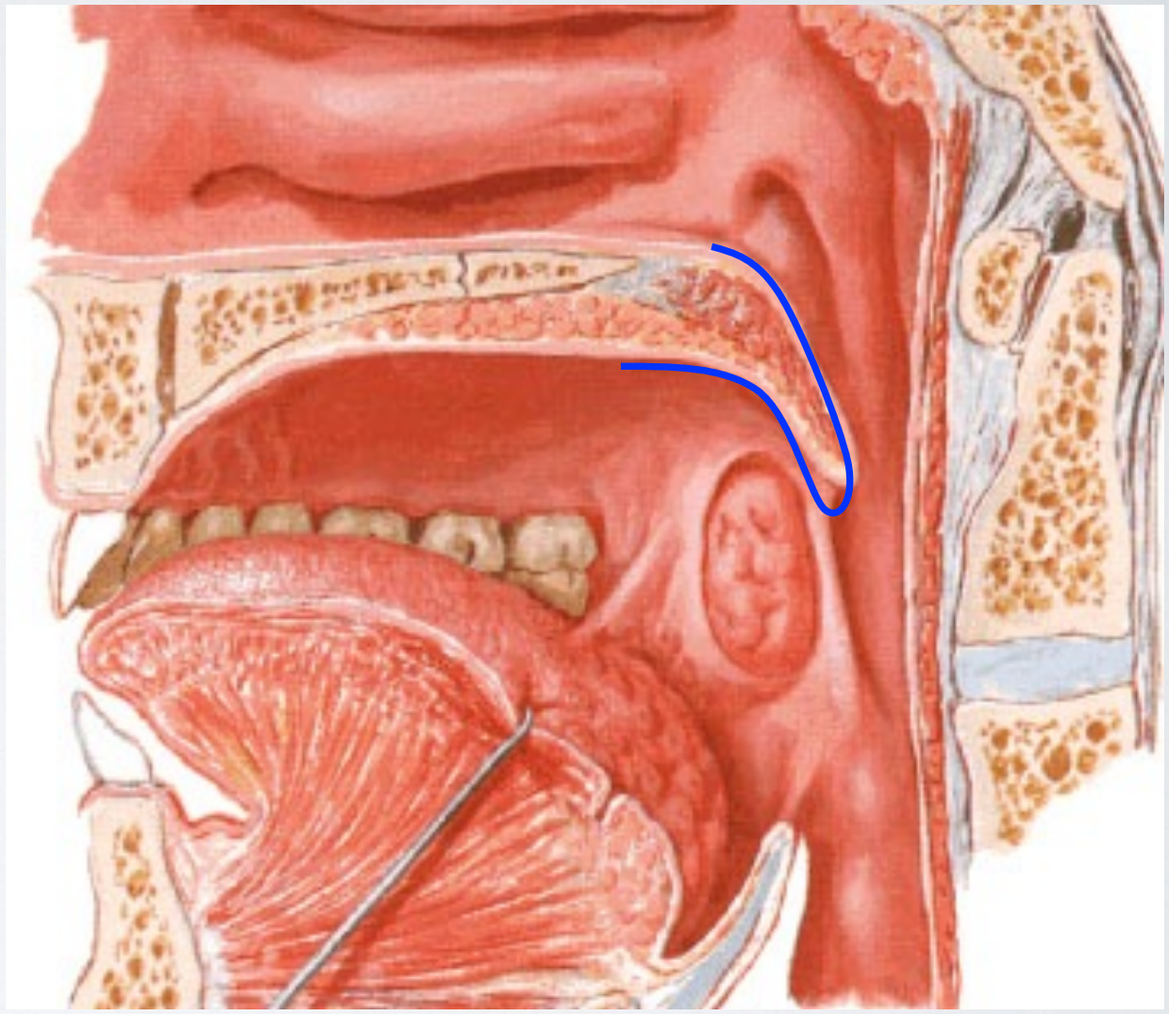






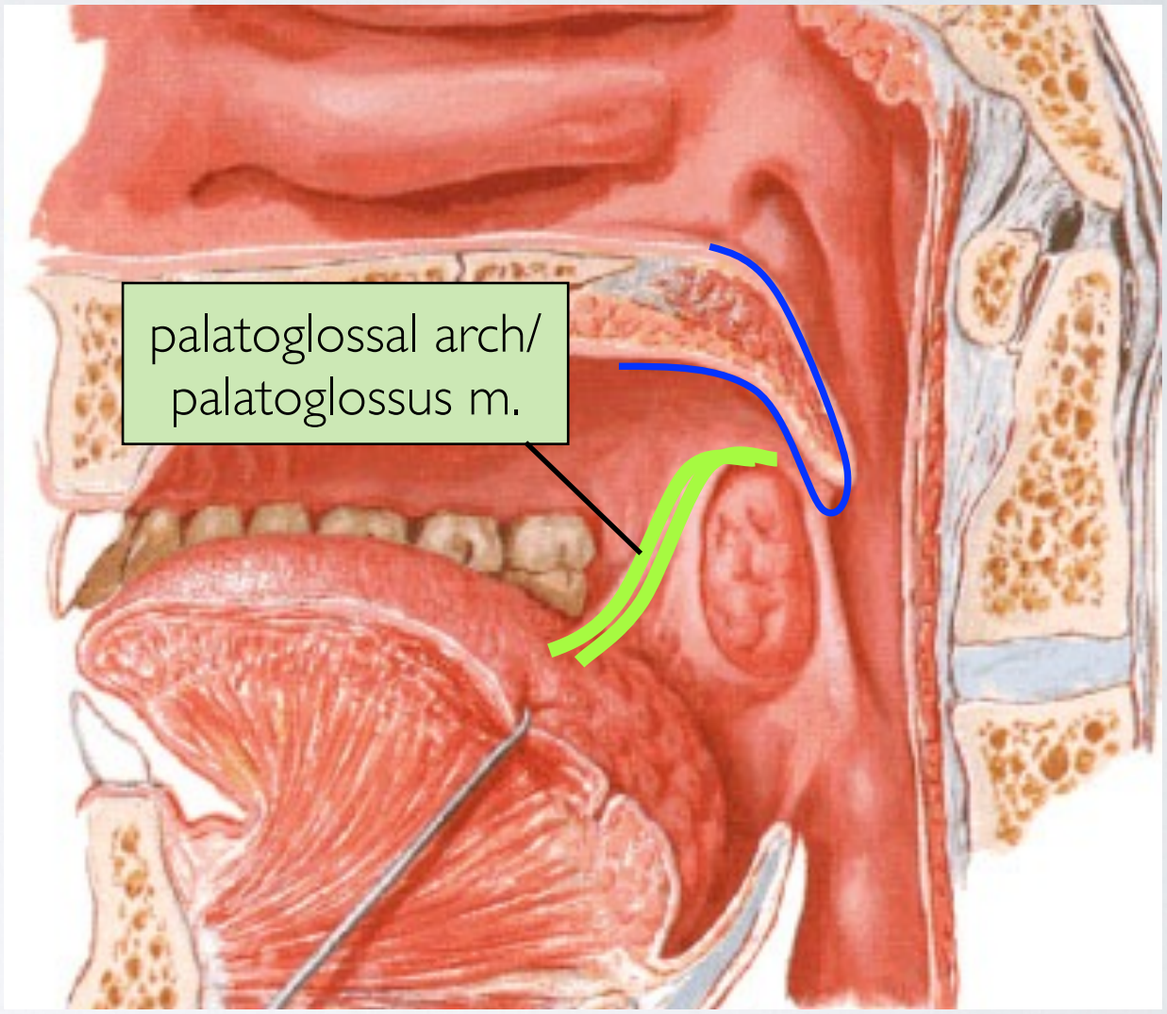
SOFT PALATE

- Associate with two mucous arch
  - Palatoglossal arch: palatoglossus muscle
  - Palatopharyngeal arch: Palatopharyngeus muscle
- Palatine tonsil



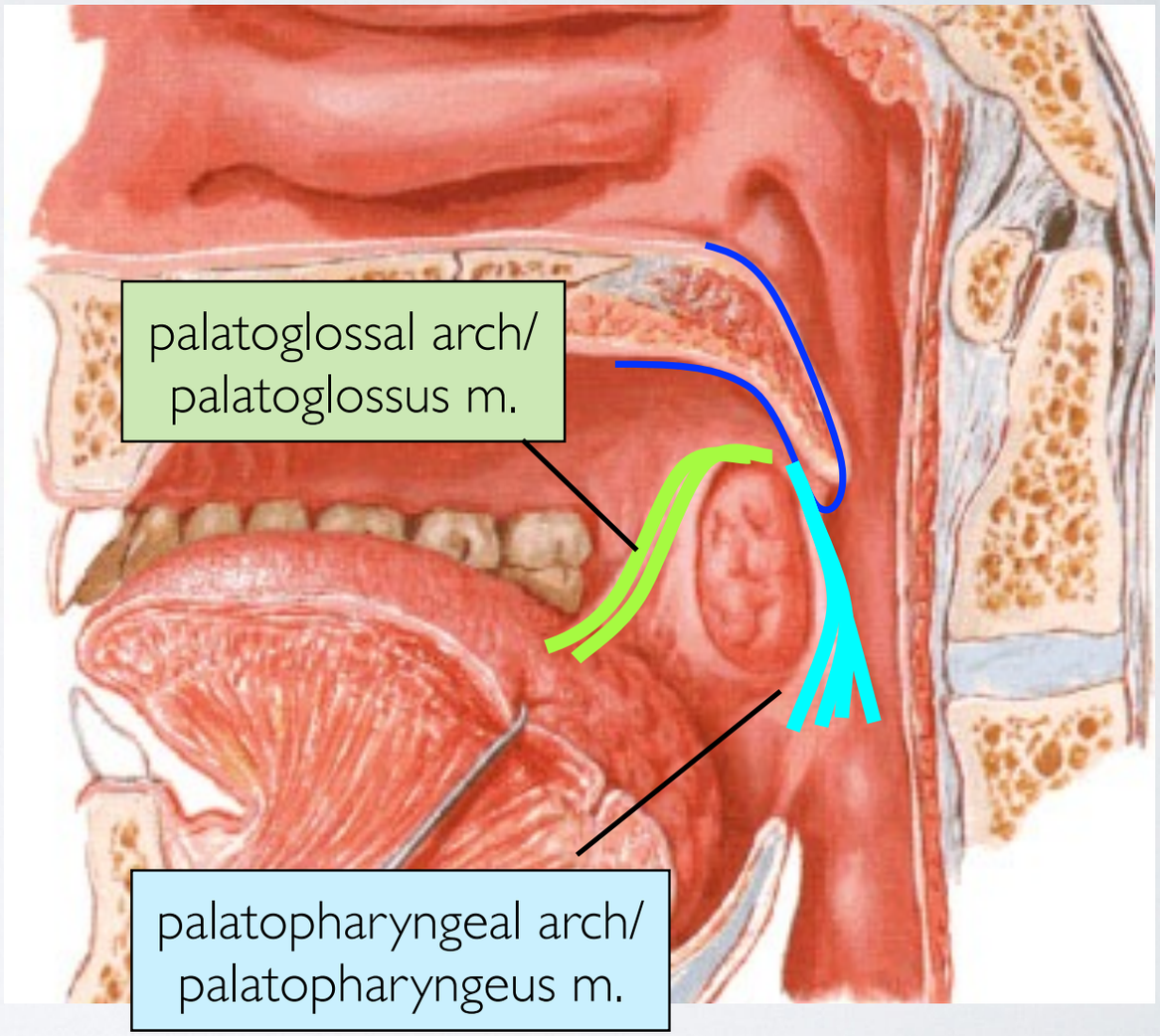
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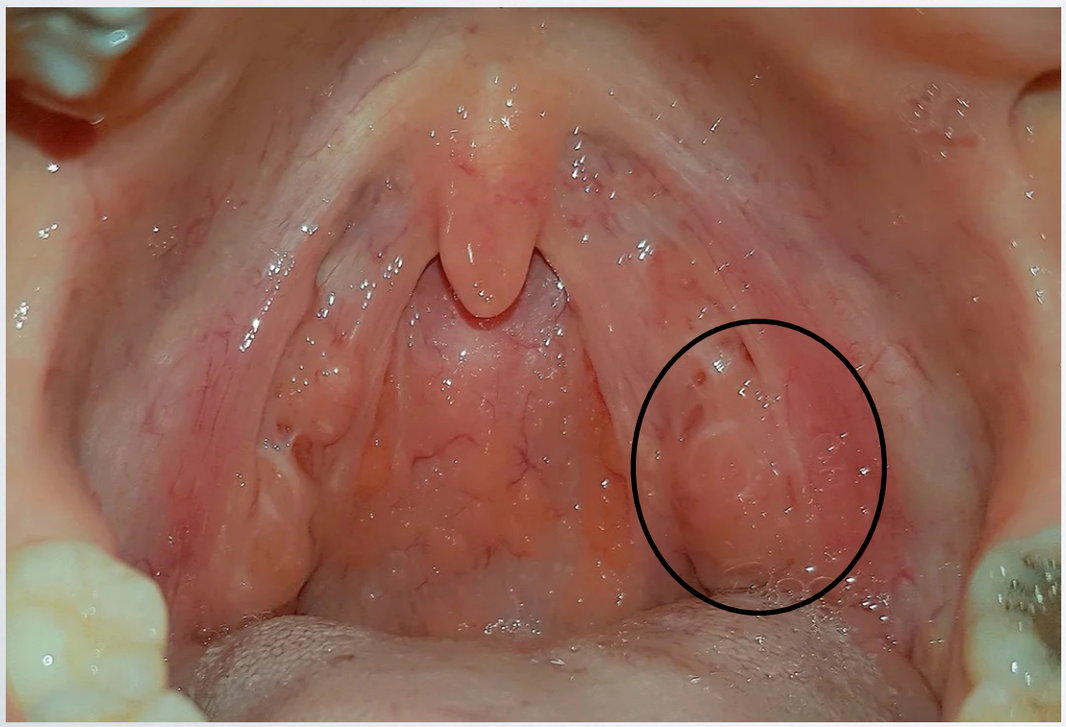
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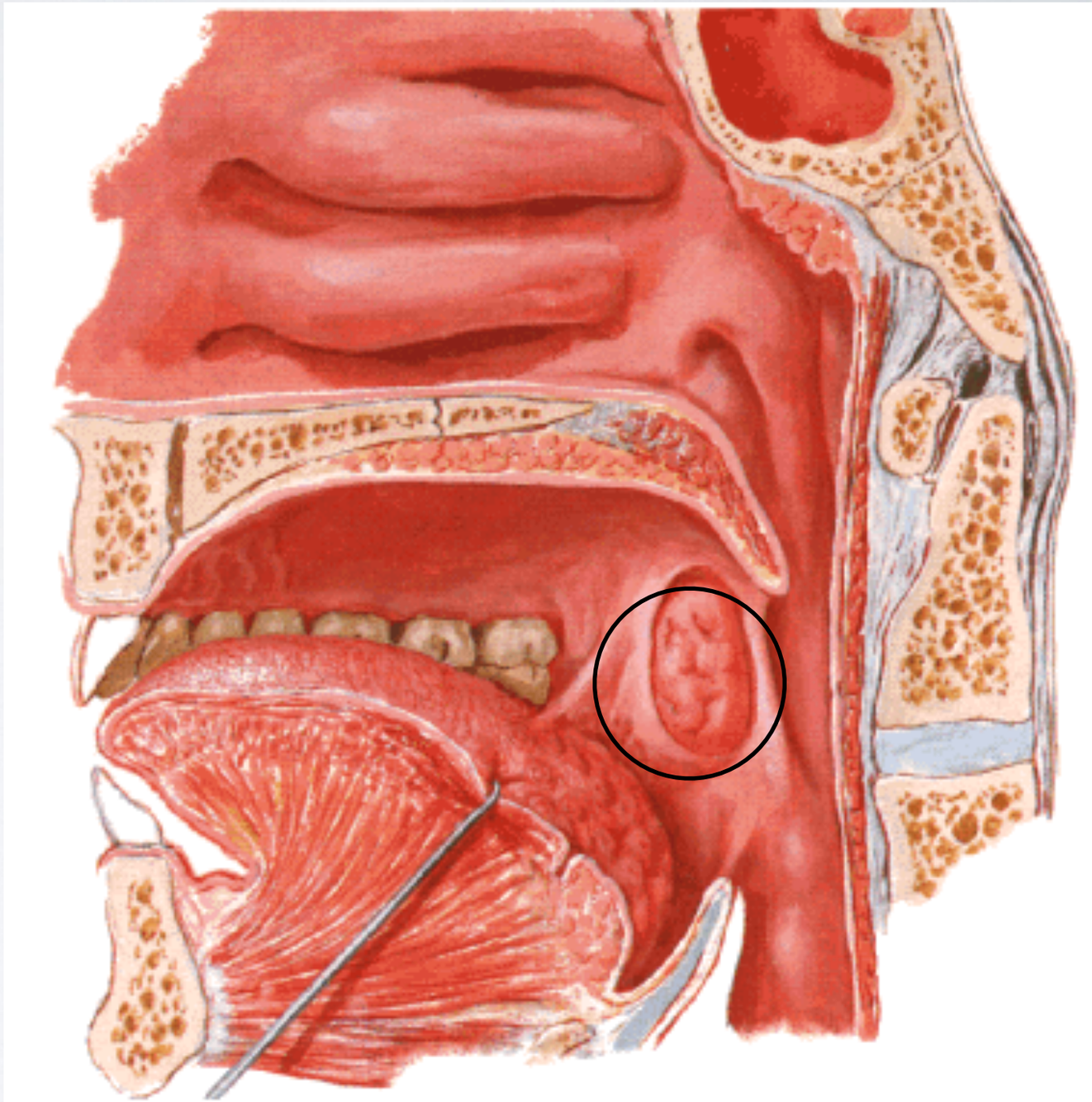


SOFT PALATE

Palatine tonsils

- Between palatopharyngeal and palatoglossal arch
- Posterior to oropharyngeal isthmus

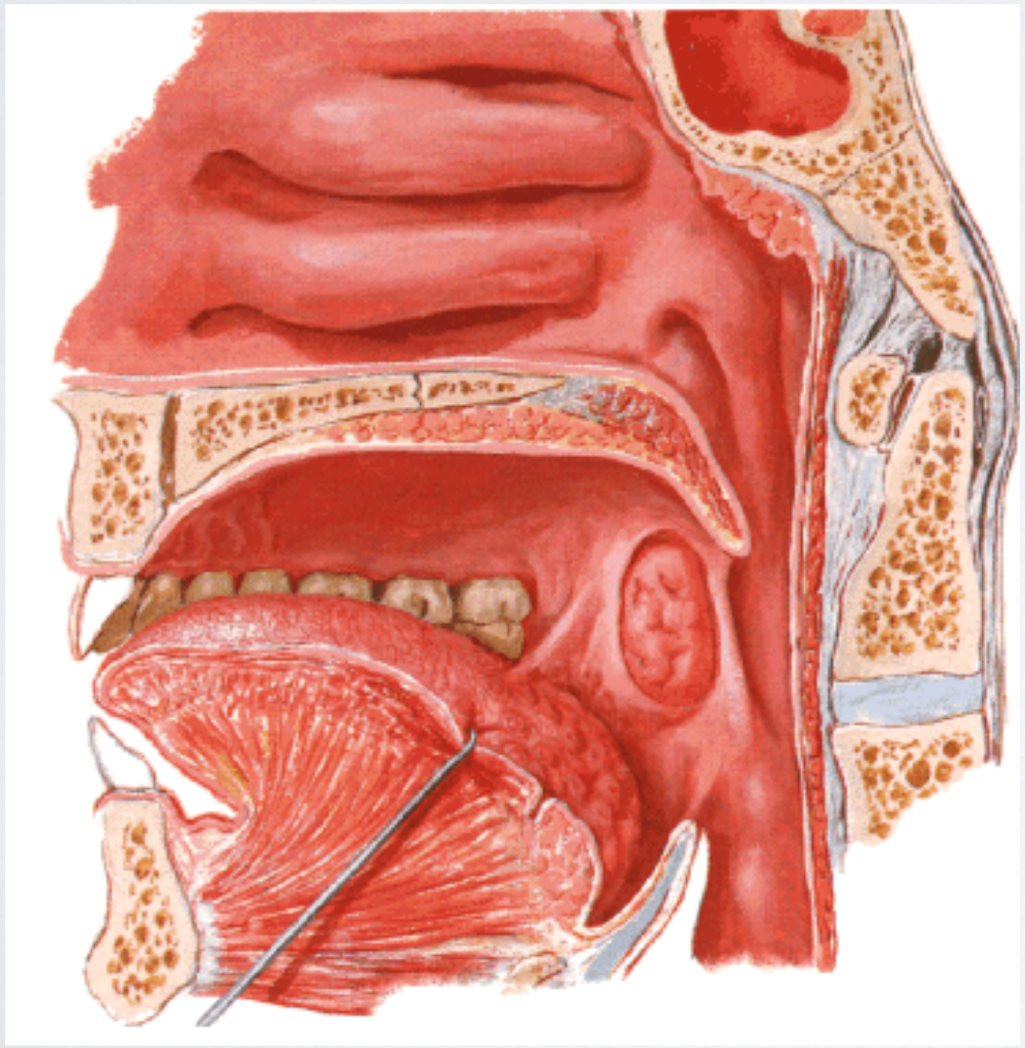


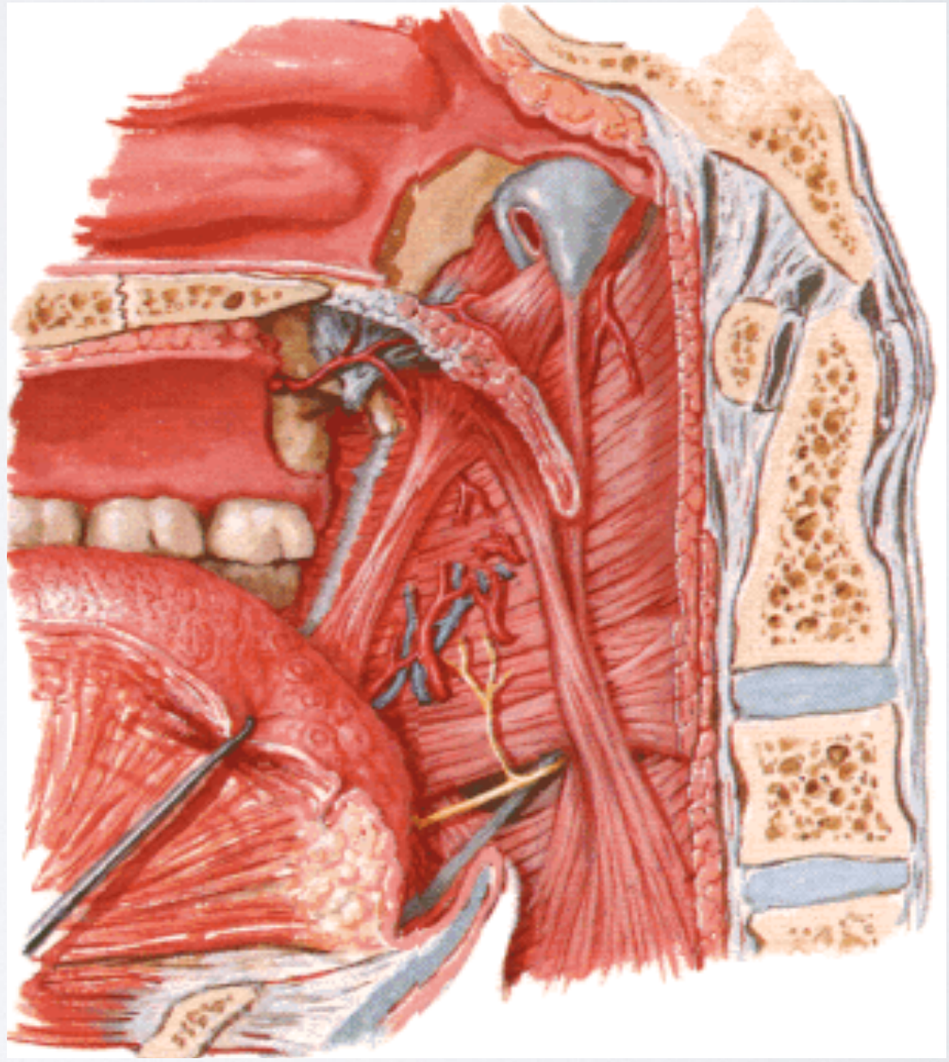


PALATINE TONSILS

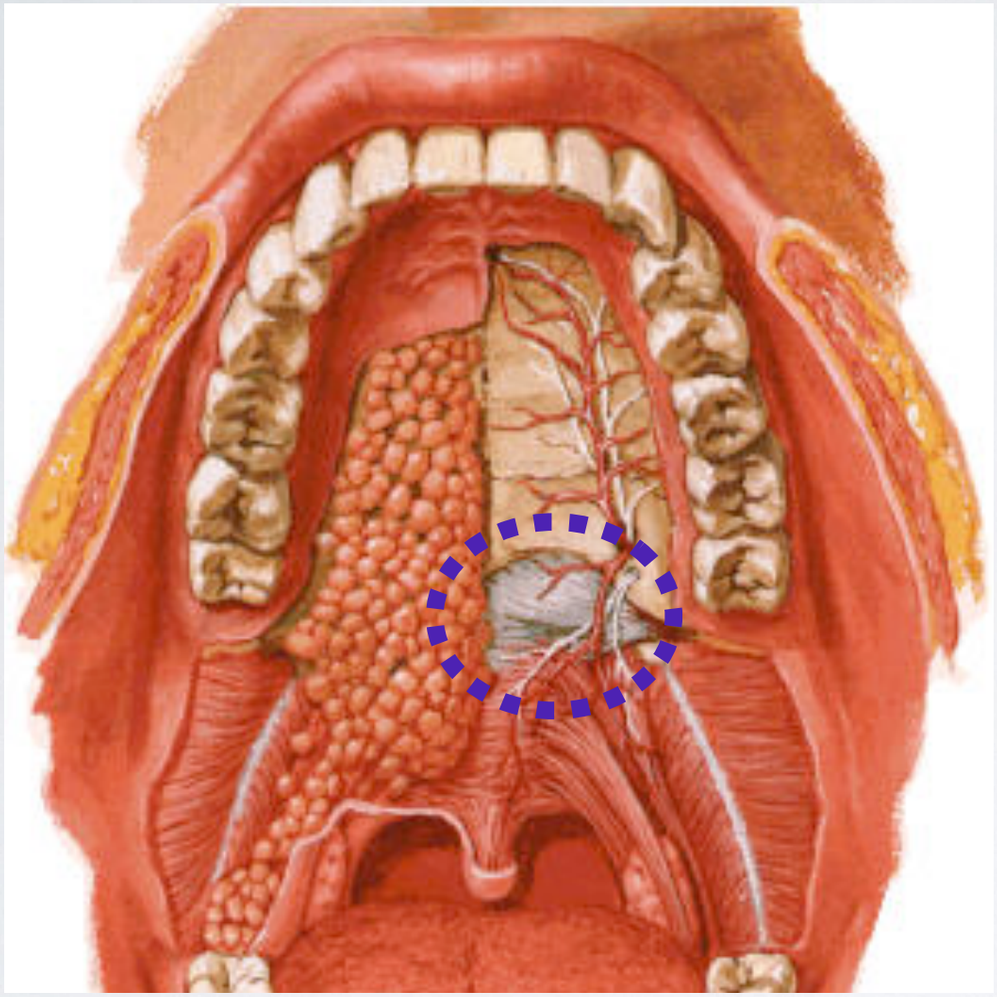
LATERAL WALL

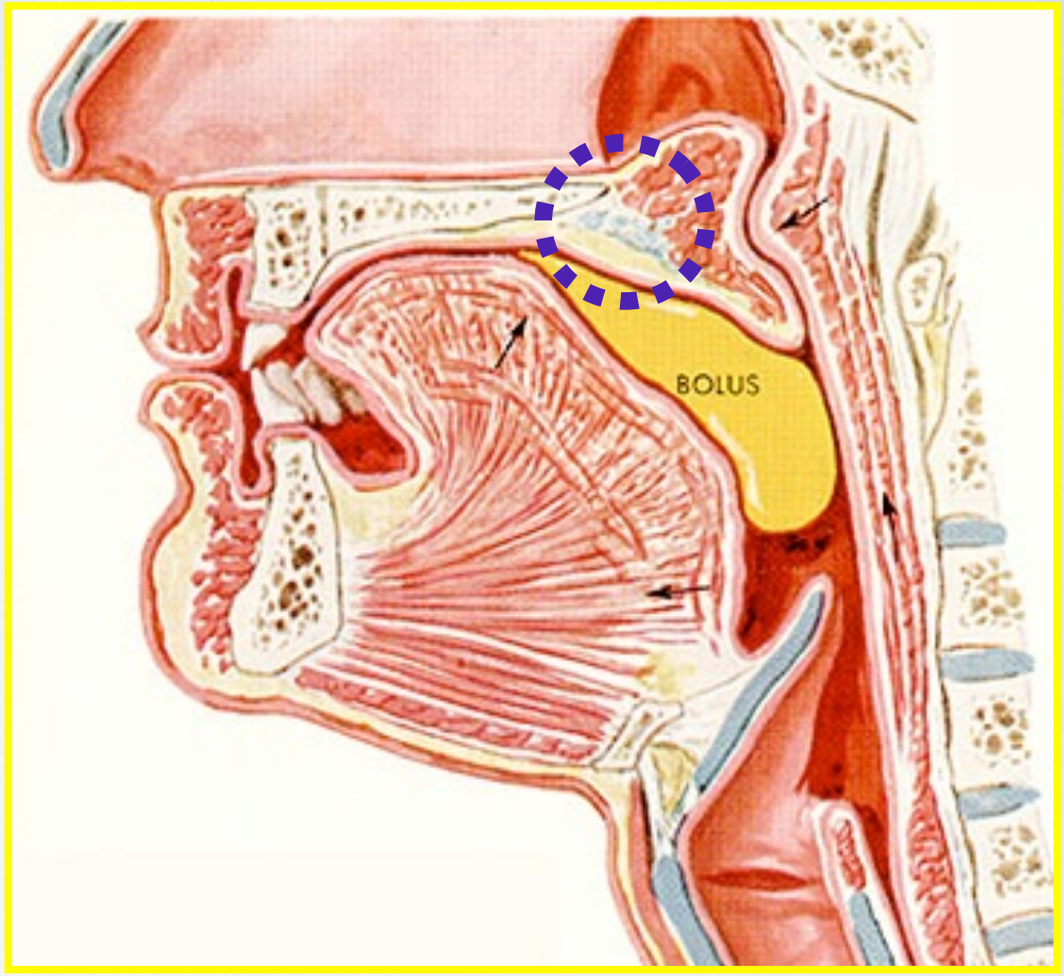
- Superior constrictor muscle





SOFT PALATE



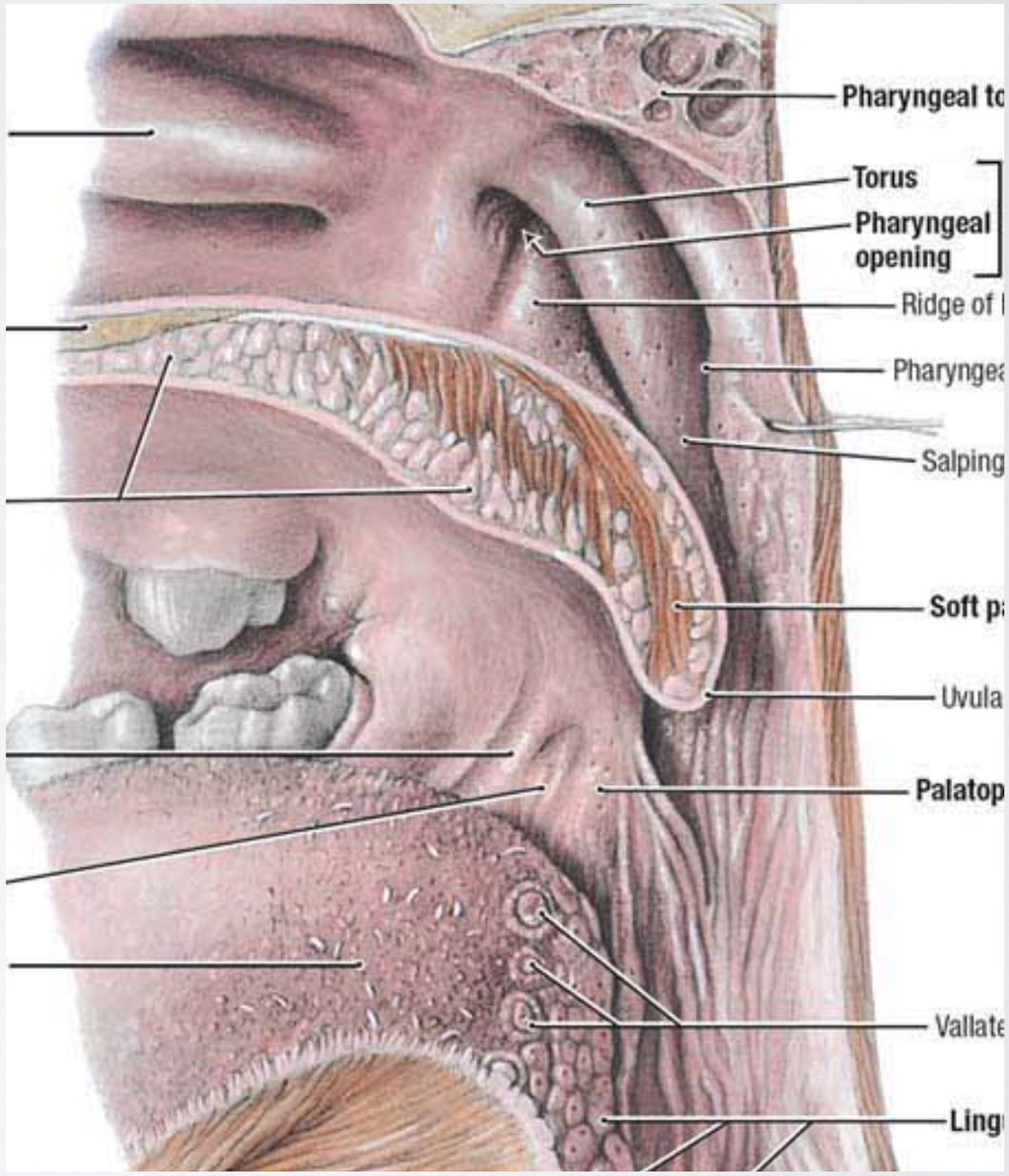


Palatine aponeurosis (Core structure):

- Formed by tendon of tensor veli palatini muscle
- Attach to posterior border of bony palate
- Anterior 2/3 of the soft palate
- Attachment site for all muscles of the soft palate

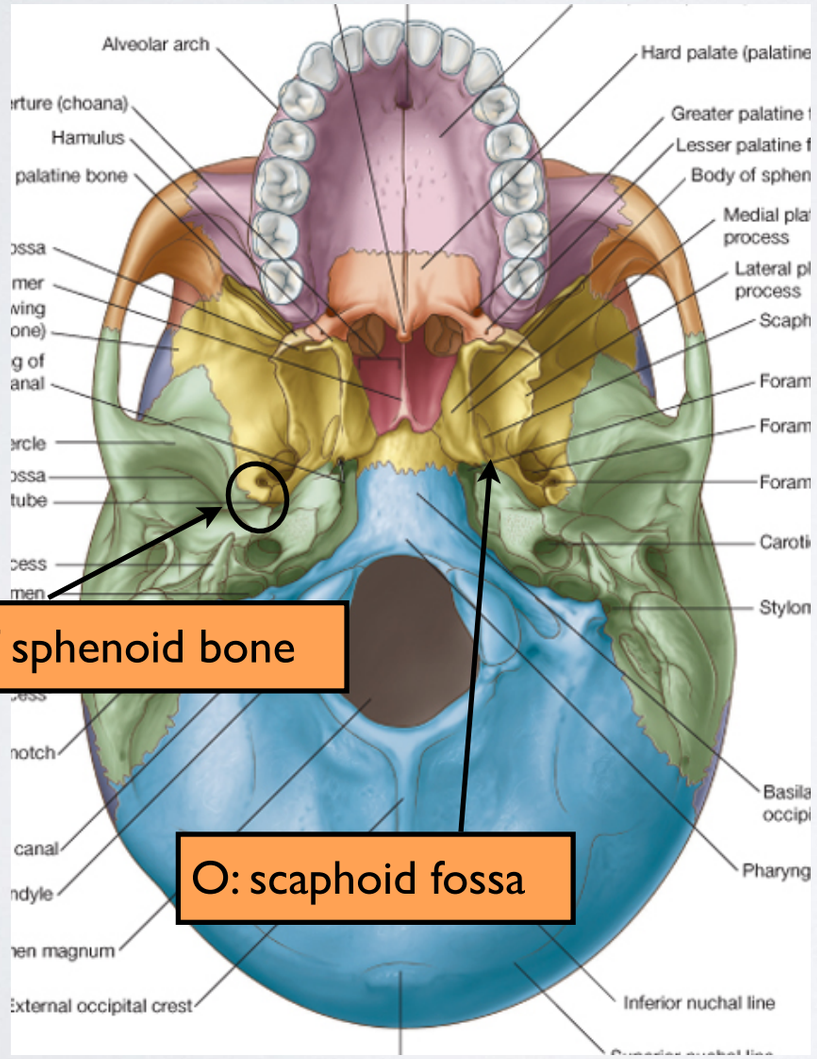
MUSCLES OF SOFT PALATE

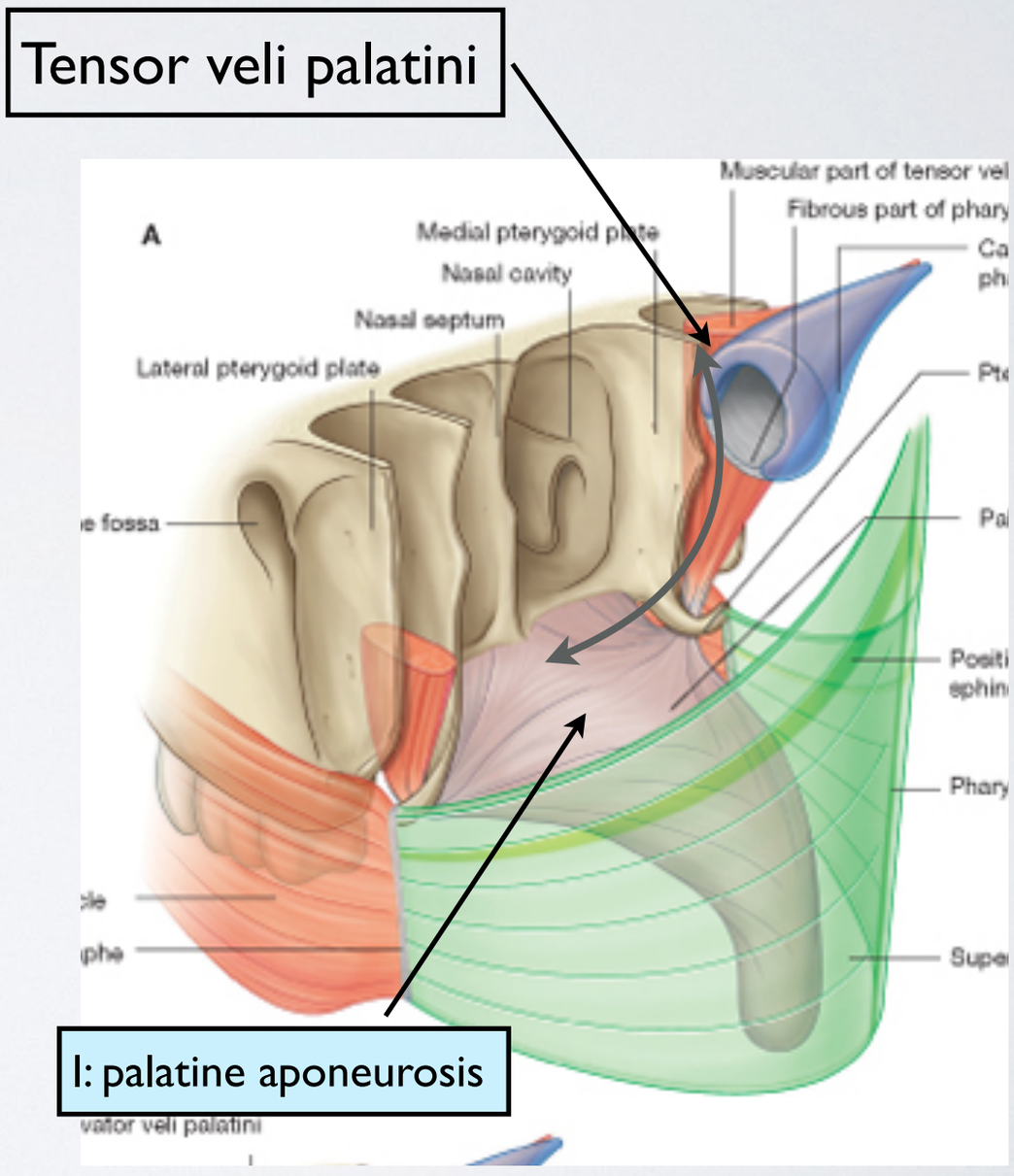
- Tensor veli palatini (tensor palati)
- Levator veli palatini (levator palati)
- Palatoglossus
- Palatopharyngeus
- Musculus uvulae



SOFT PALATE

Tensor veli palatini



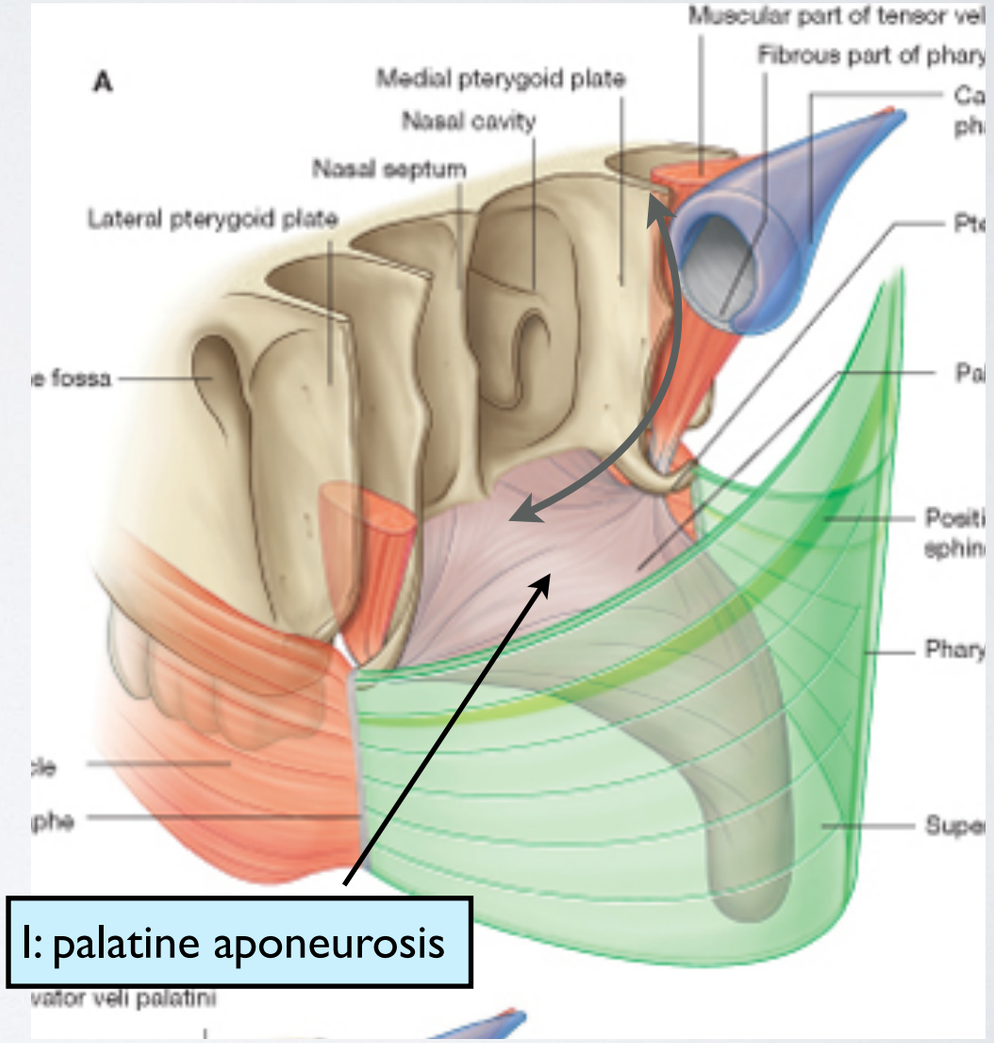


SOFT PALATE

Tensor veli palatini

- O:
  - Scaphoid fossa
  - Spine of sphenoid bone
- I:
  - Palatine aponeurosis
  - Horizontal plate of palatine bone
- A:
  - Tauten and depress anterior part of soft palate
  - Pull the soft palate to one side
  - Open the pharyngotympanic tube

Nerve to medial pterygoid/V3

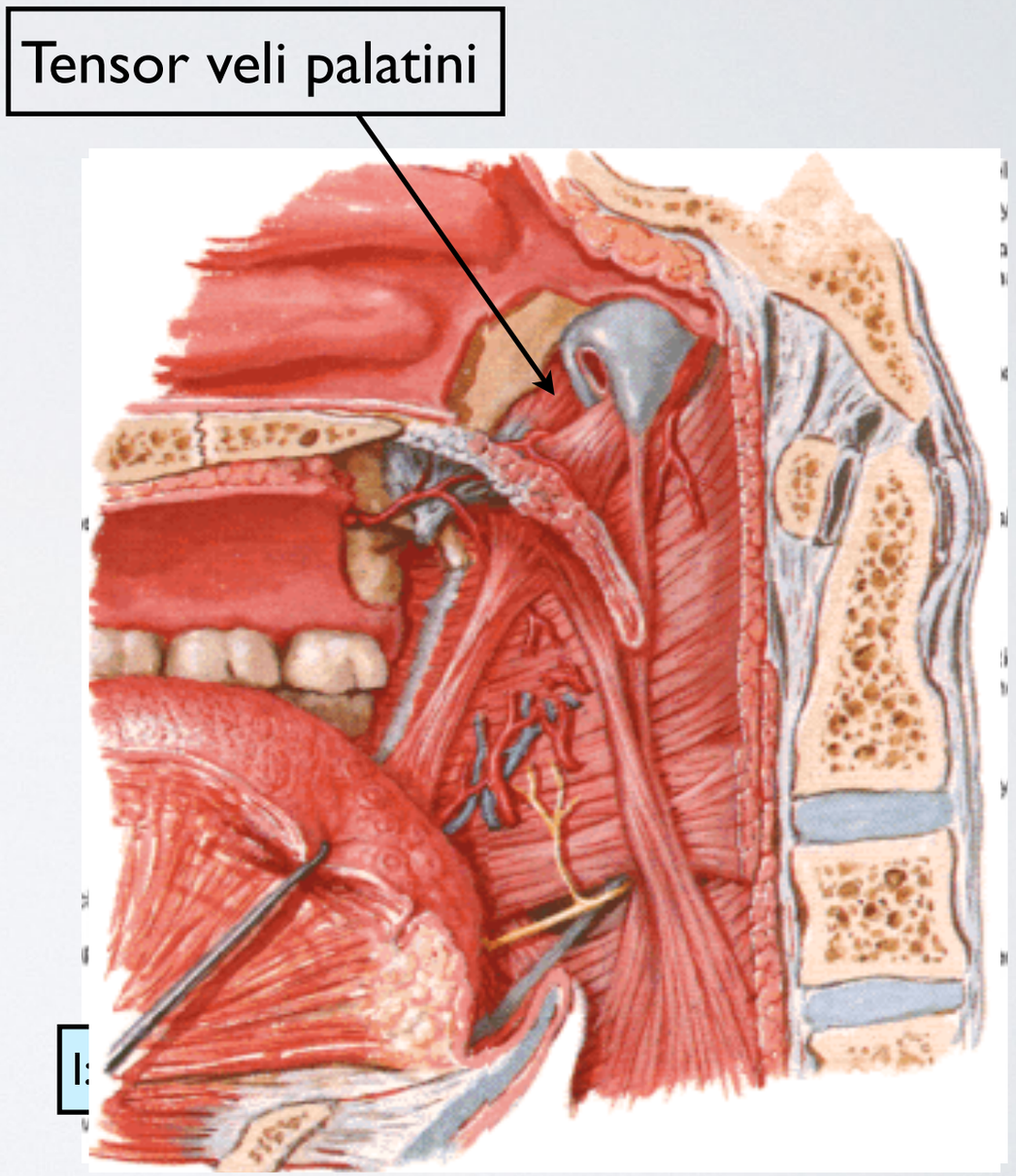


SOFT PALATE

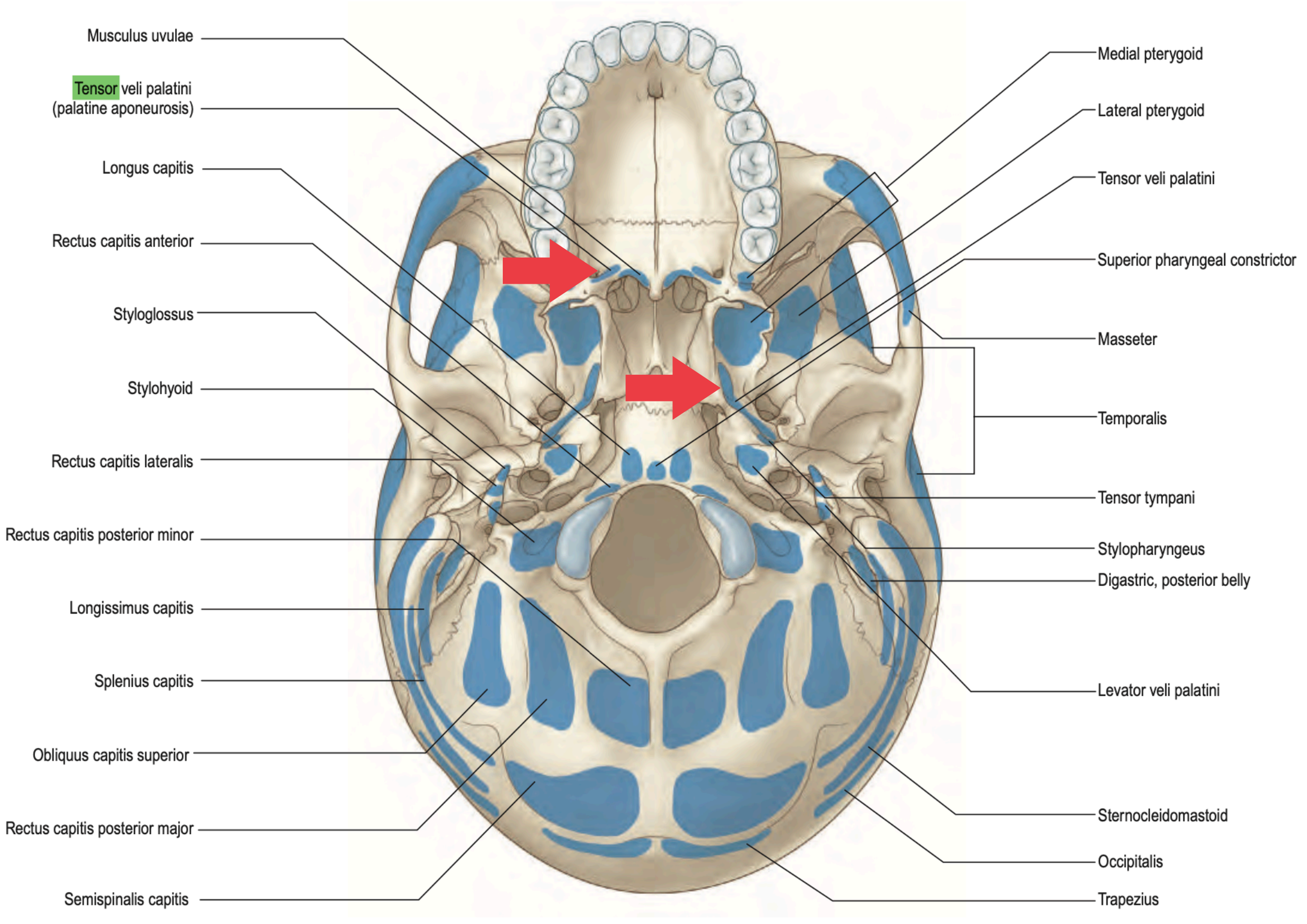
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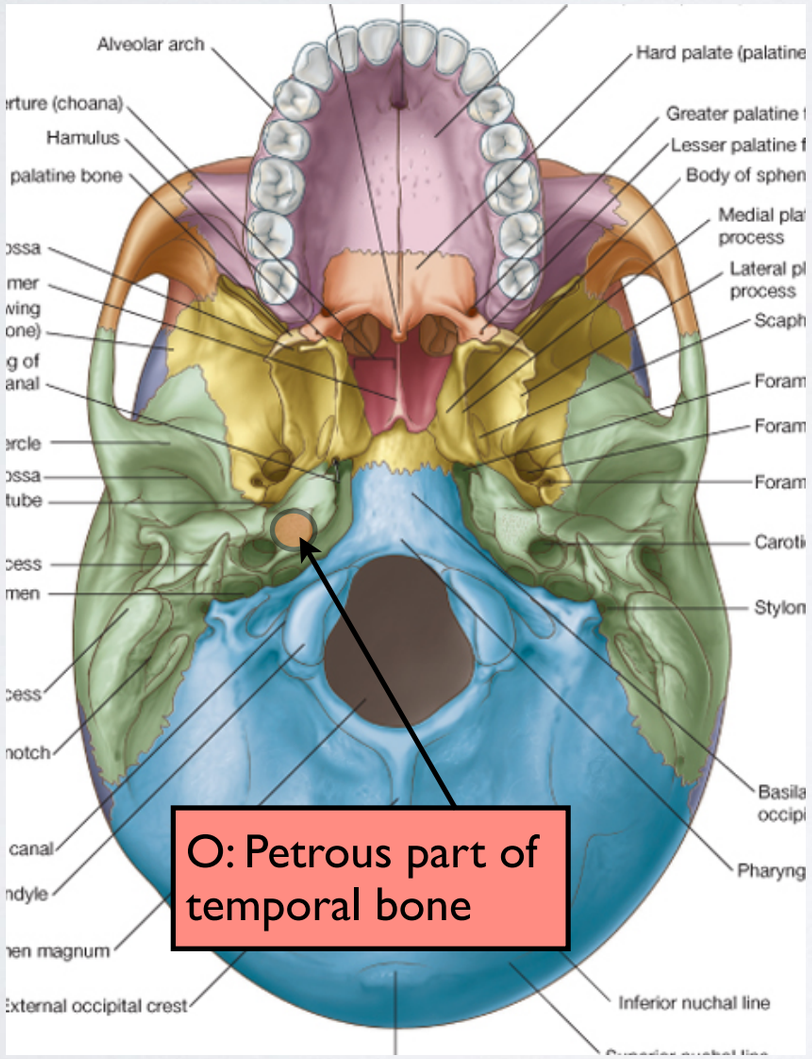


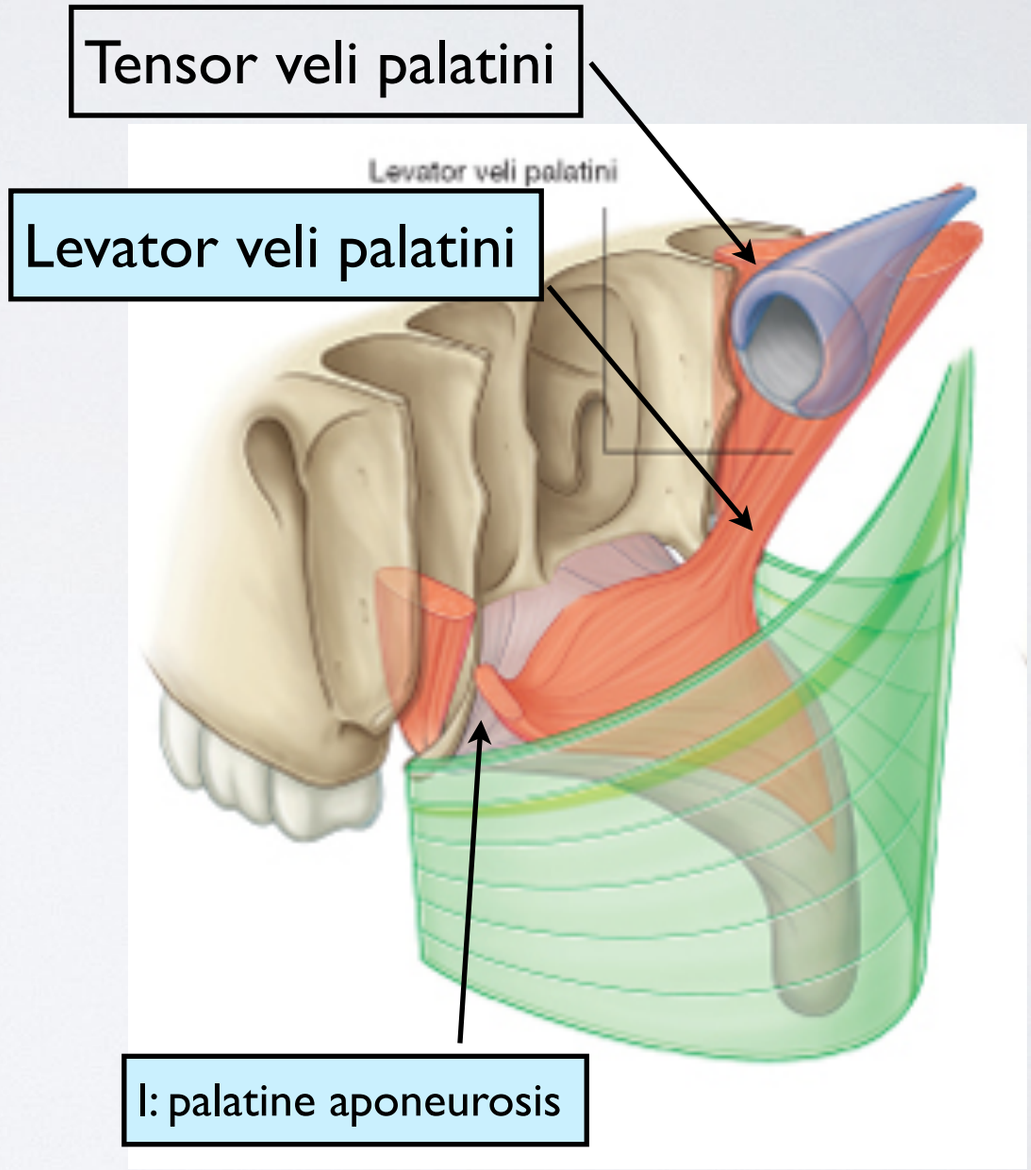
Tensor veli palatini



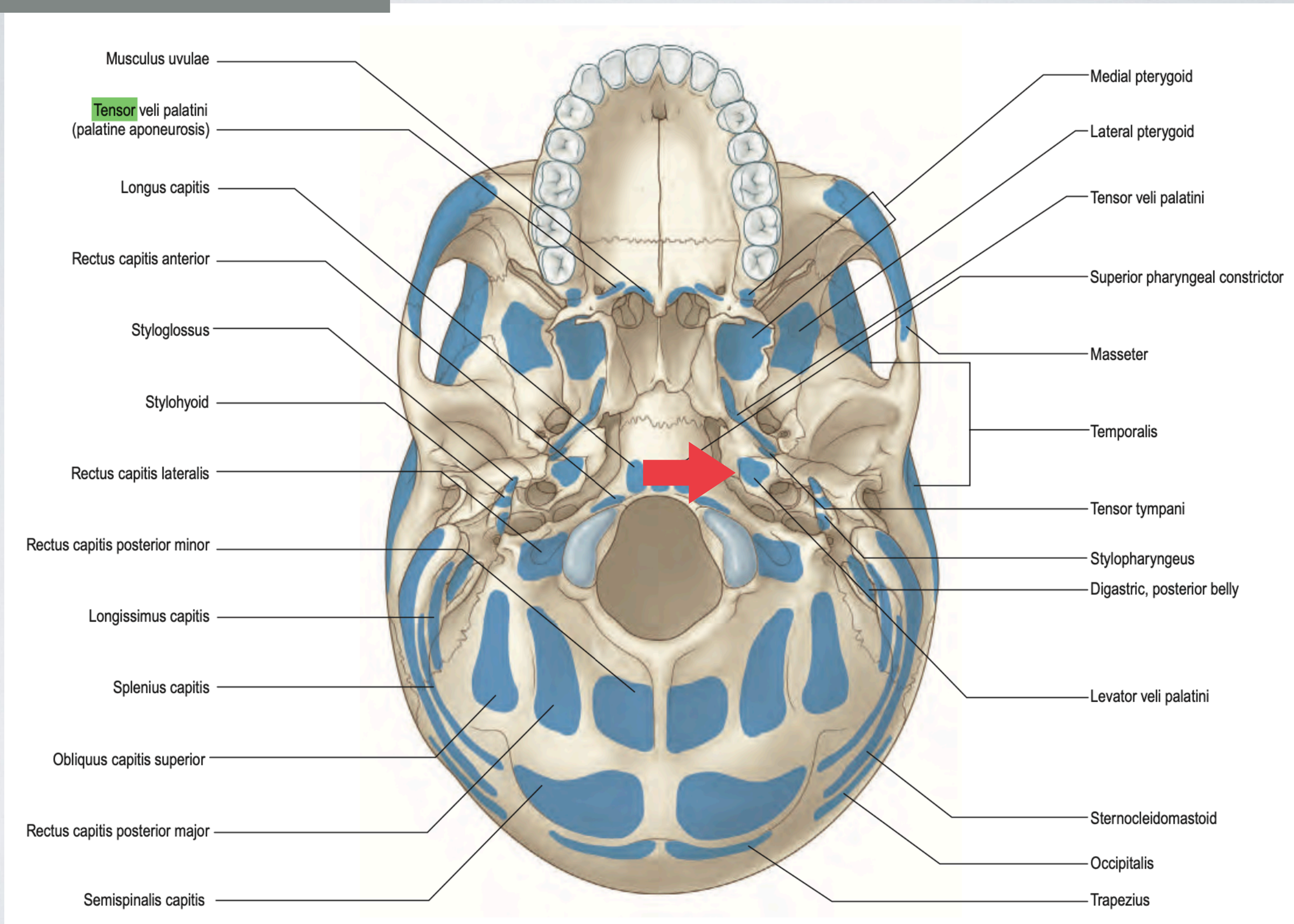
SOFT PALATE

Levator veli palatini





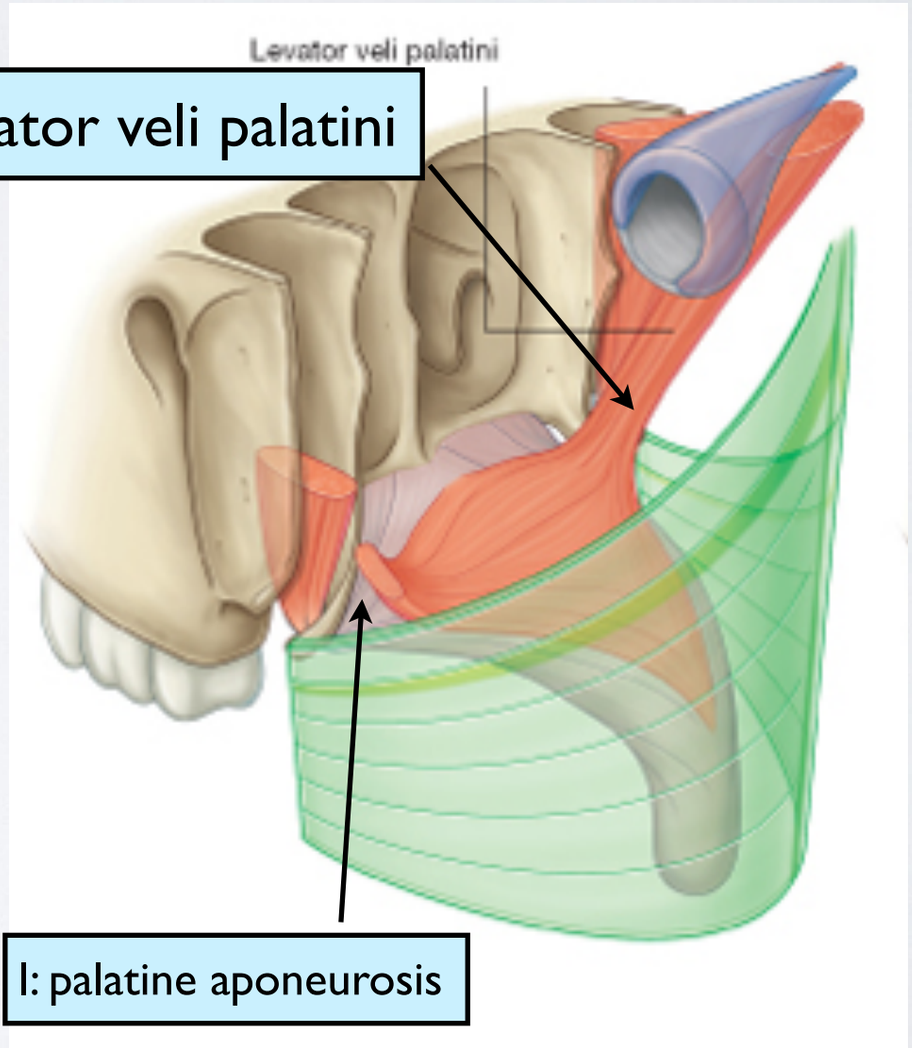
Levator veli palatini



SOFT PALATE

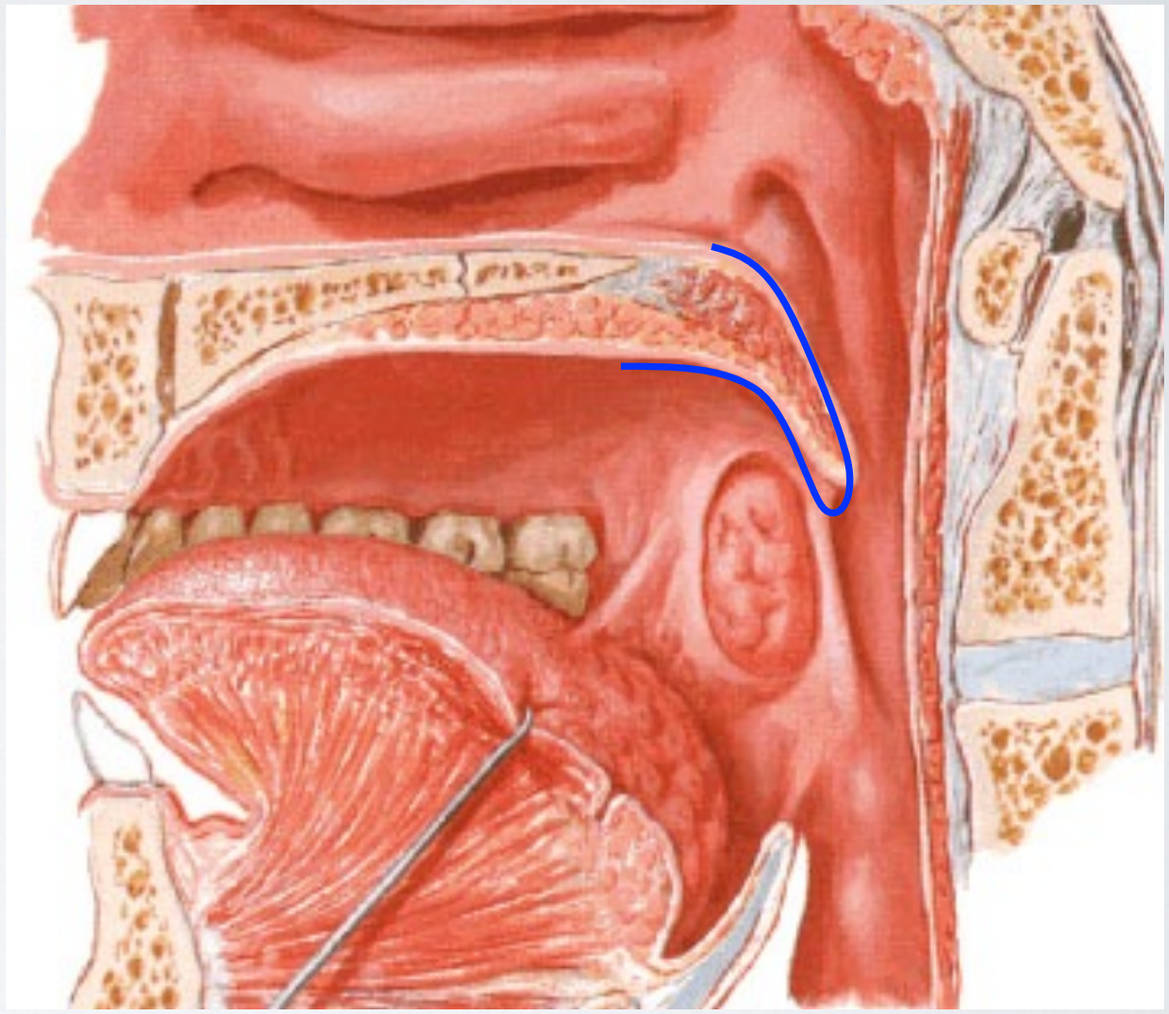
Levator veli palatini

- O: petrous part of temporal bone
- I: palatine aponeurosis
- A:
  - Elevate and backward movement
  - Separate oropharynx from nosapharynx



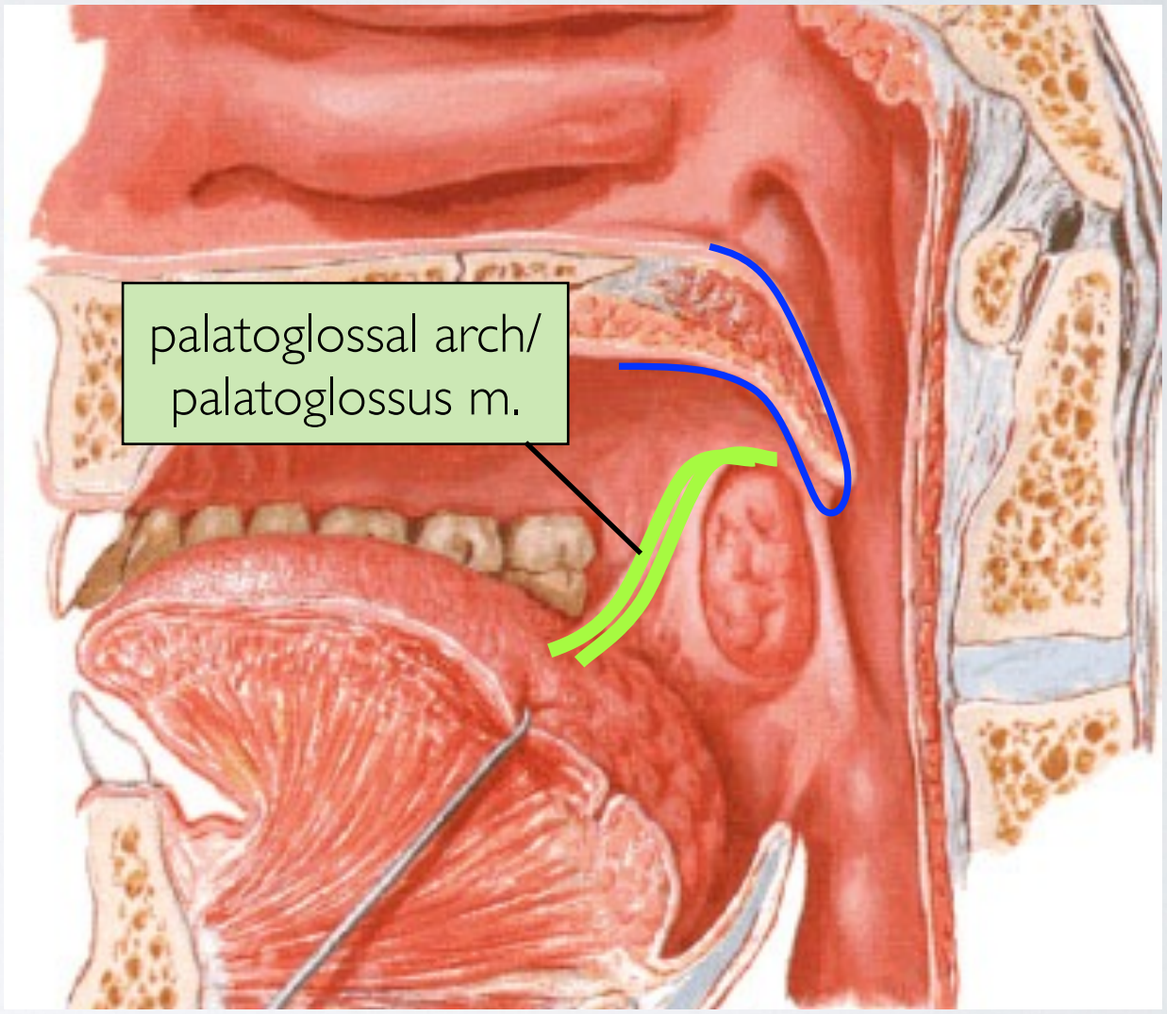
SOFT PALATE

- Associate with two mucous arch
  - Palatoglossal arch: palatoglossus muscle
  - Palatopharyngeal arch: Palatopharyngeus muscle
- Palatine tonsil



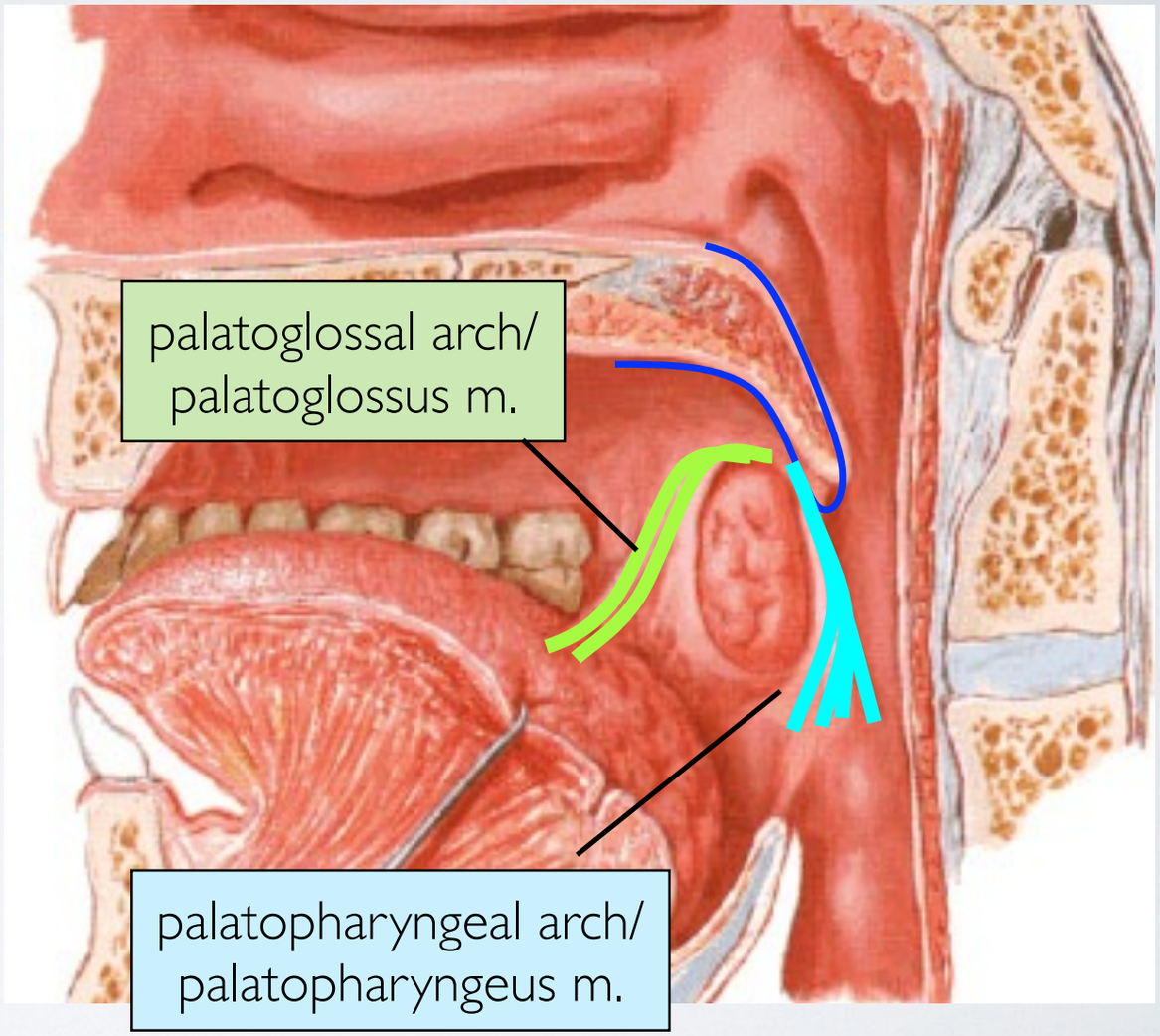
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SOFT PALATE

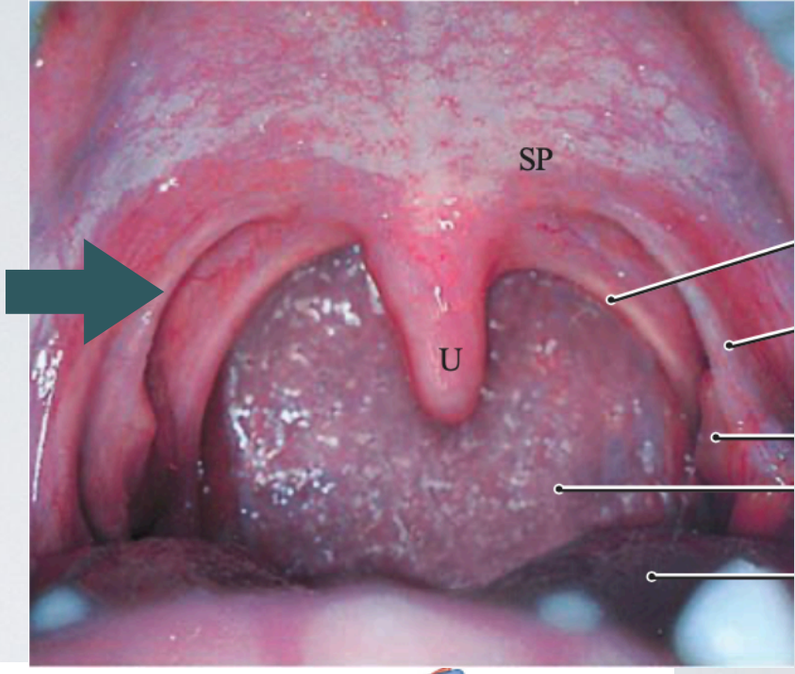
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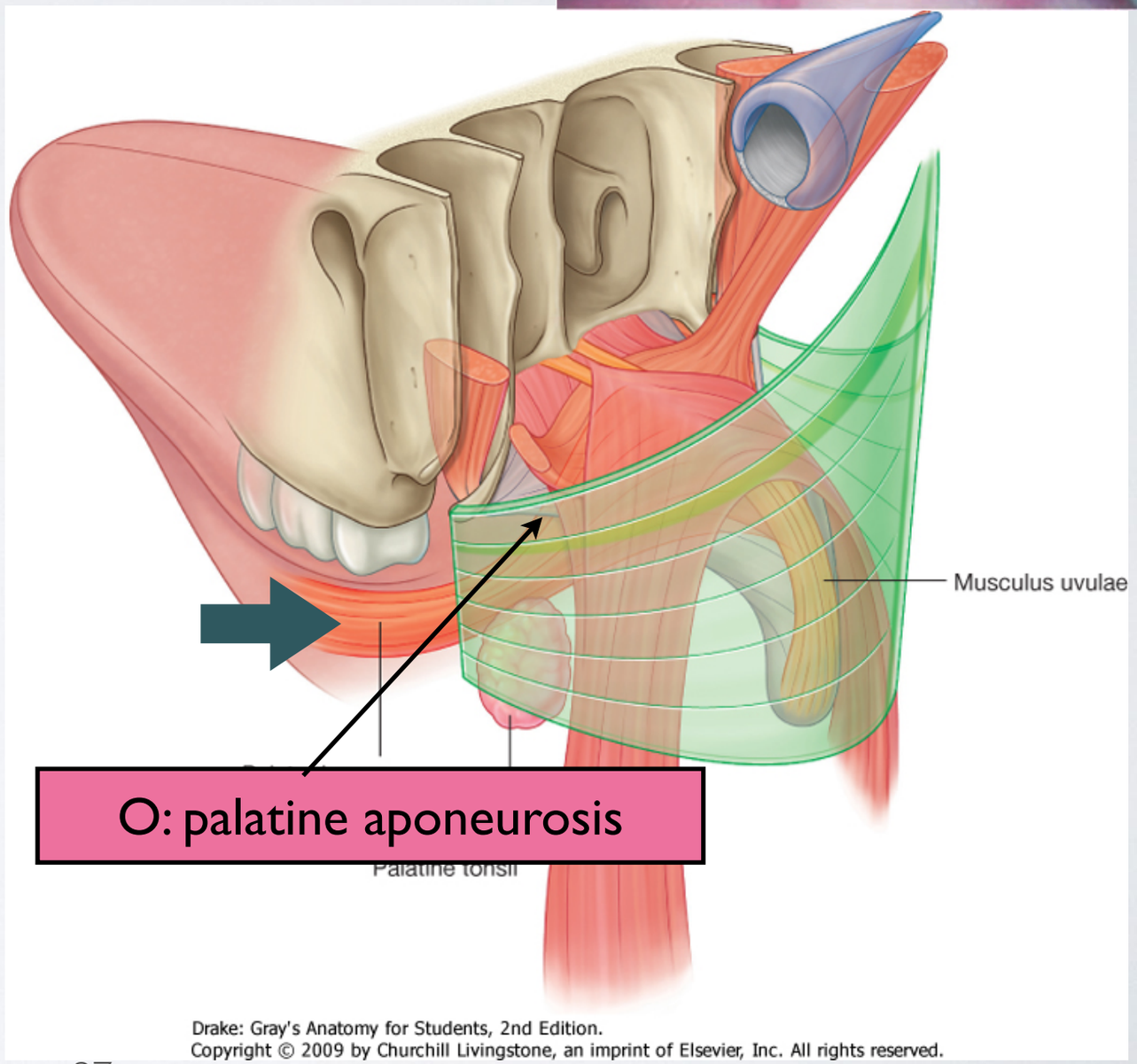


SOFT PALATE

Palatoglossus

- O: inferior surface of palatine aponeurosis
- I: lateral margin of the tongue
- A:
  - Elevate the back of the tongue
  - Depress palate
  - Move palatoglossal fold to midline



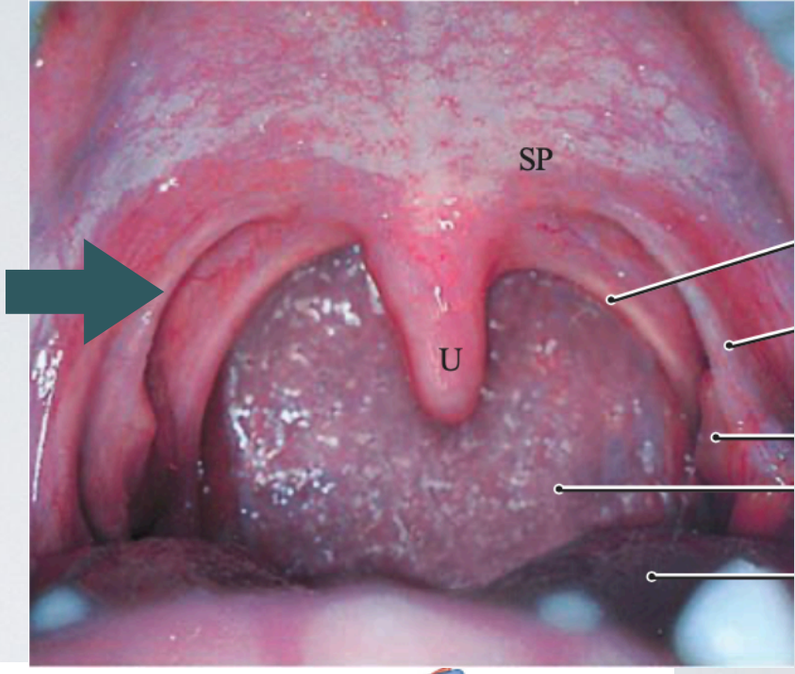


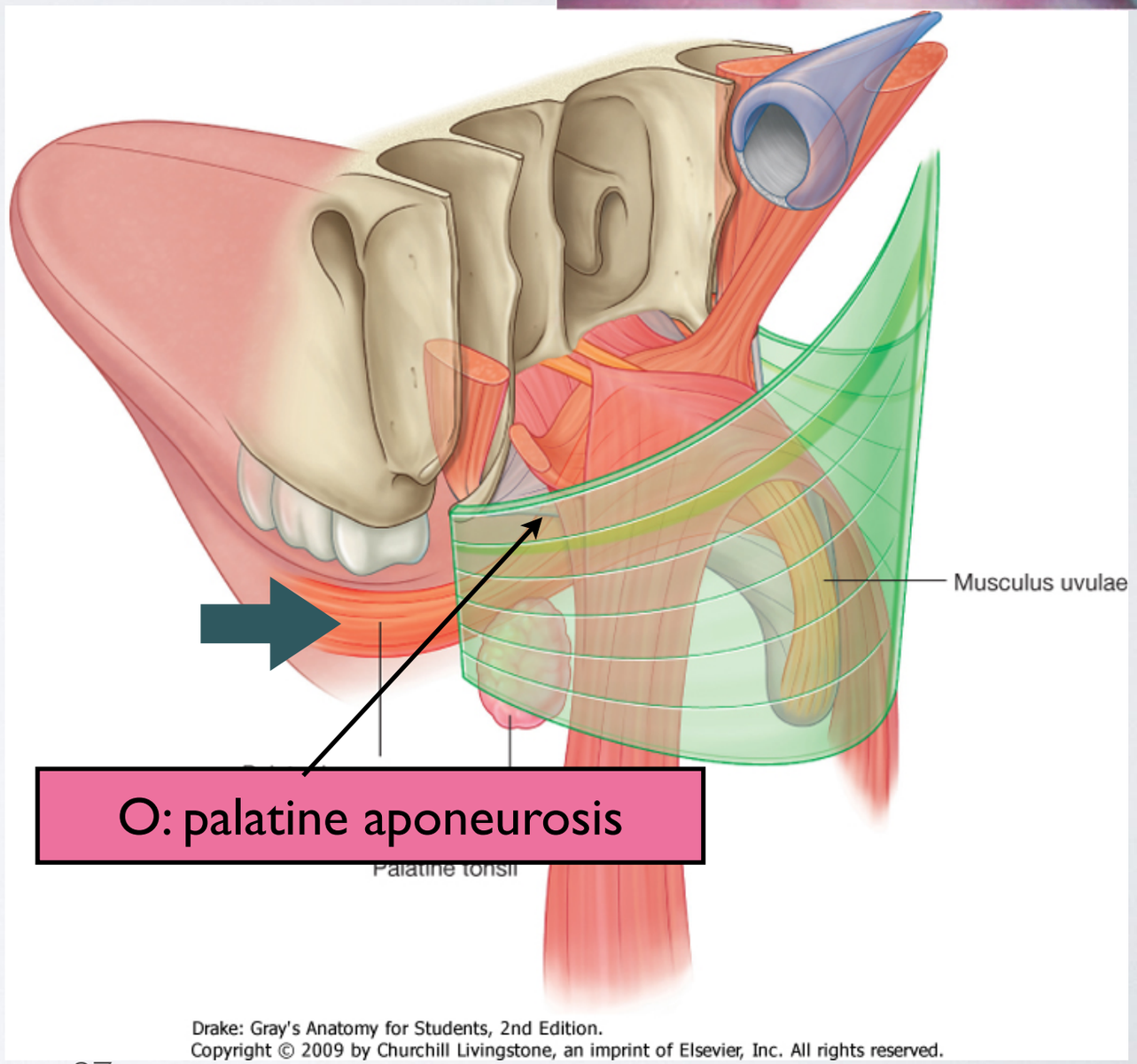
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SOFT PALATE

Palatoglossus

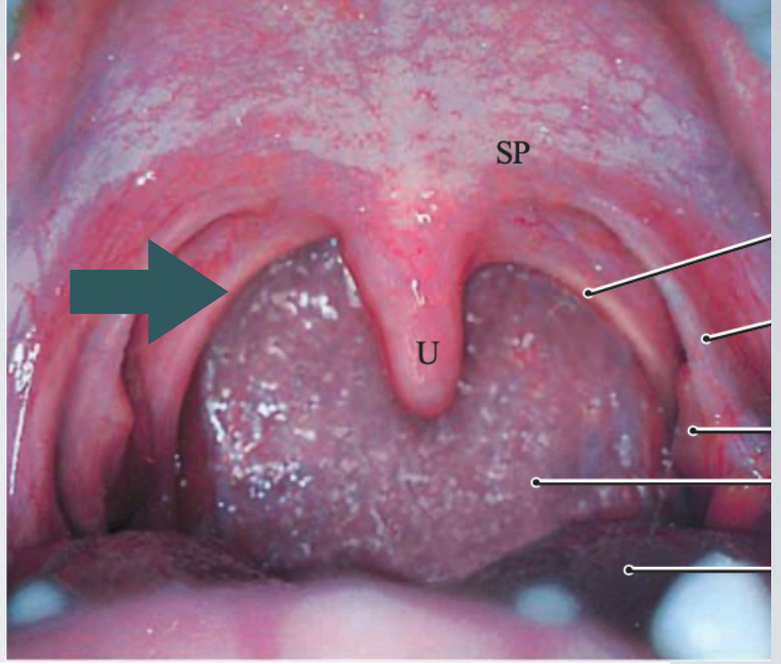
- O: inferior surface of palatine aponeurosis
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SOFT PALATE

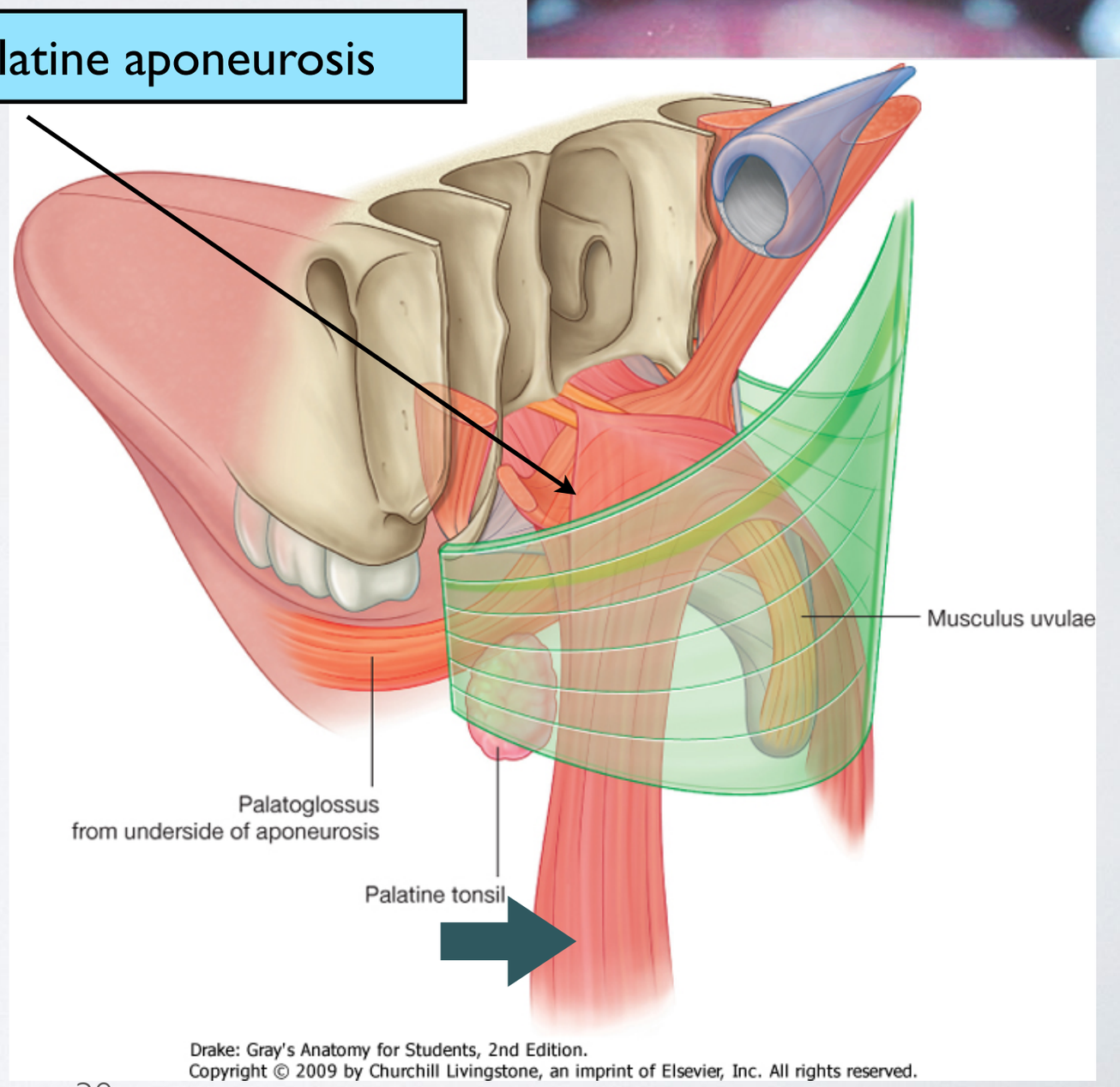


Palatopharyngeus

O: superior surface of palatine aponeurosis

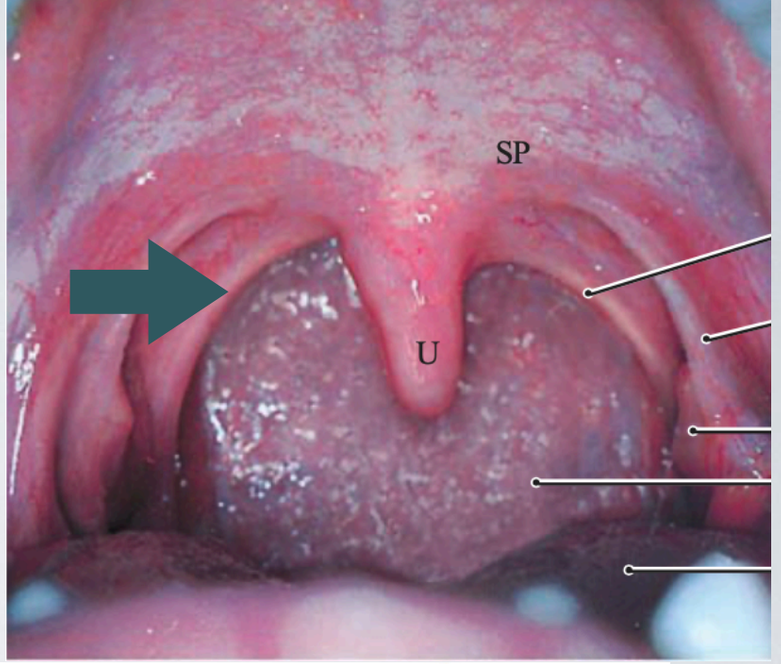
I: wall of pharynx

A: pull the pharynx up, forward and medially



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SOFT PALATE

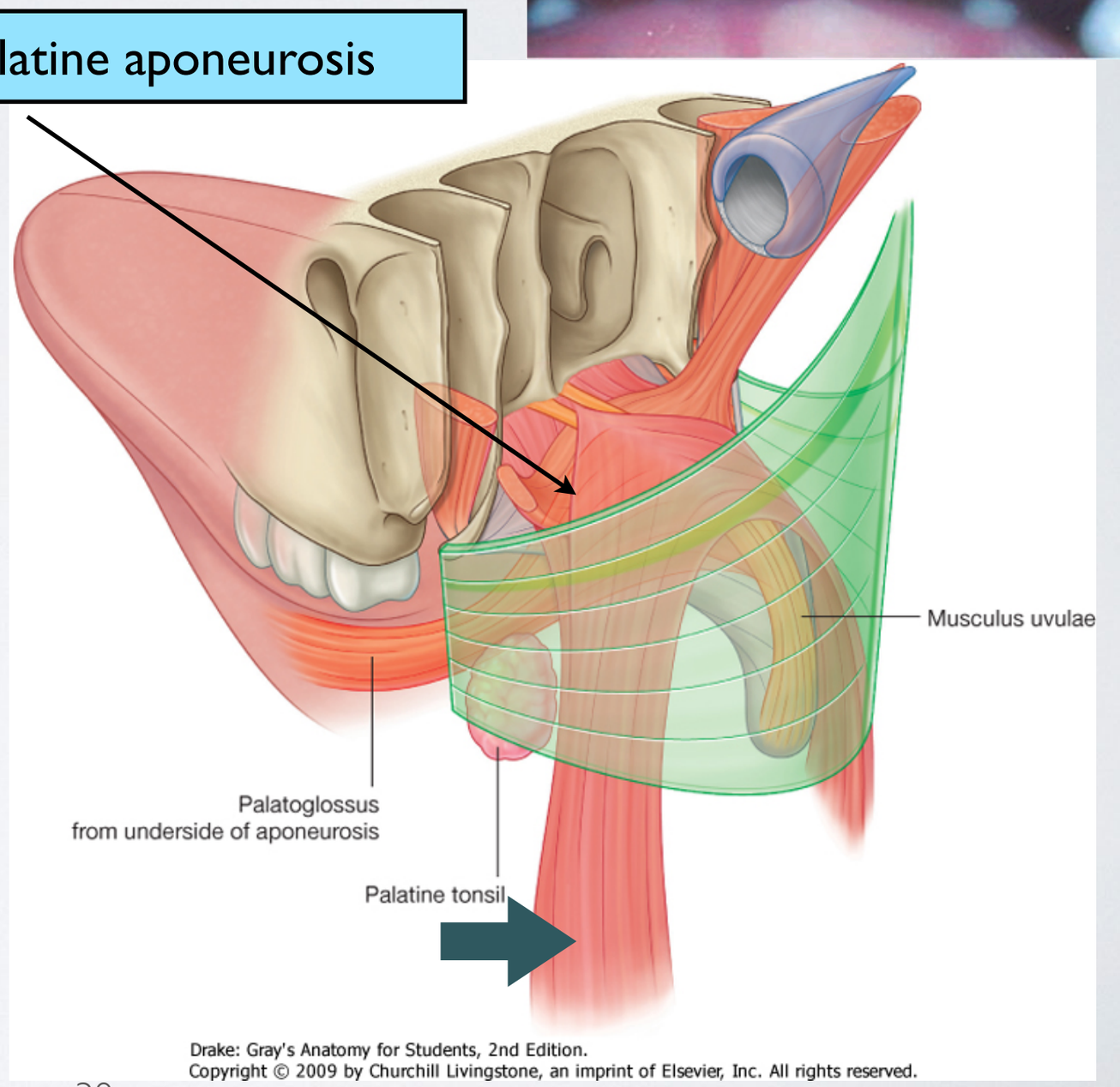


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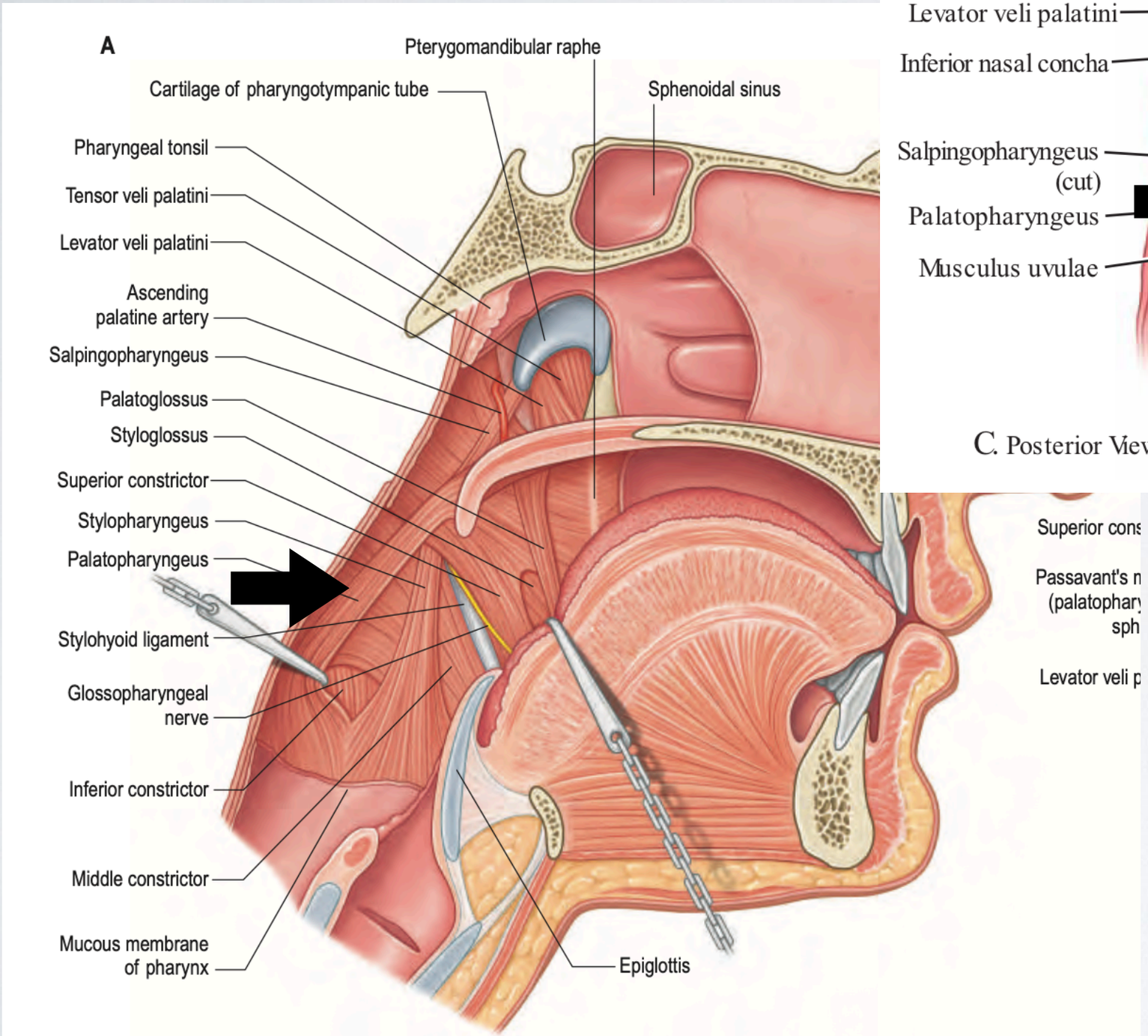
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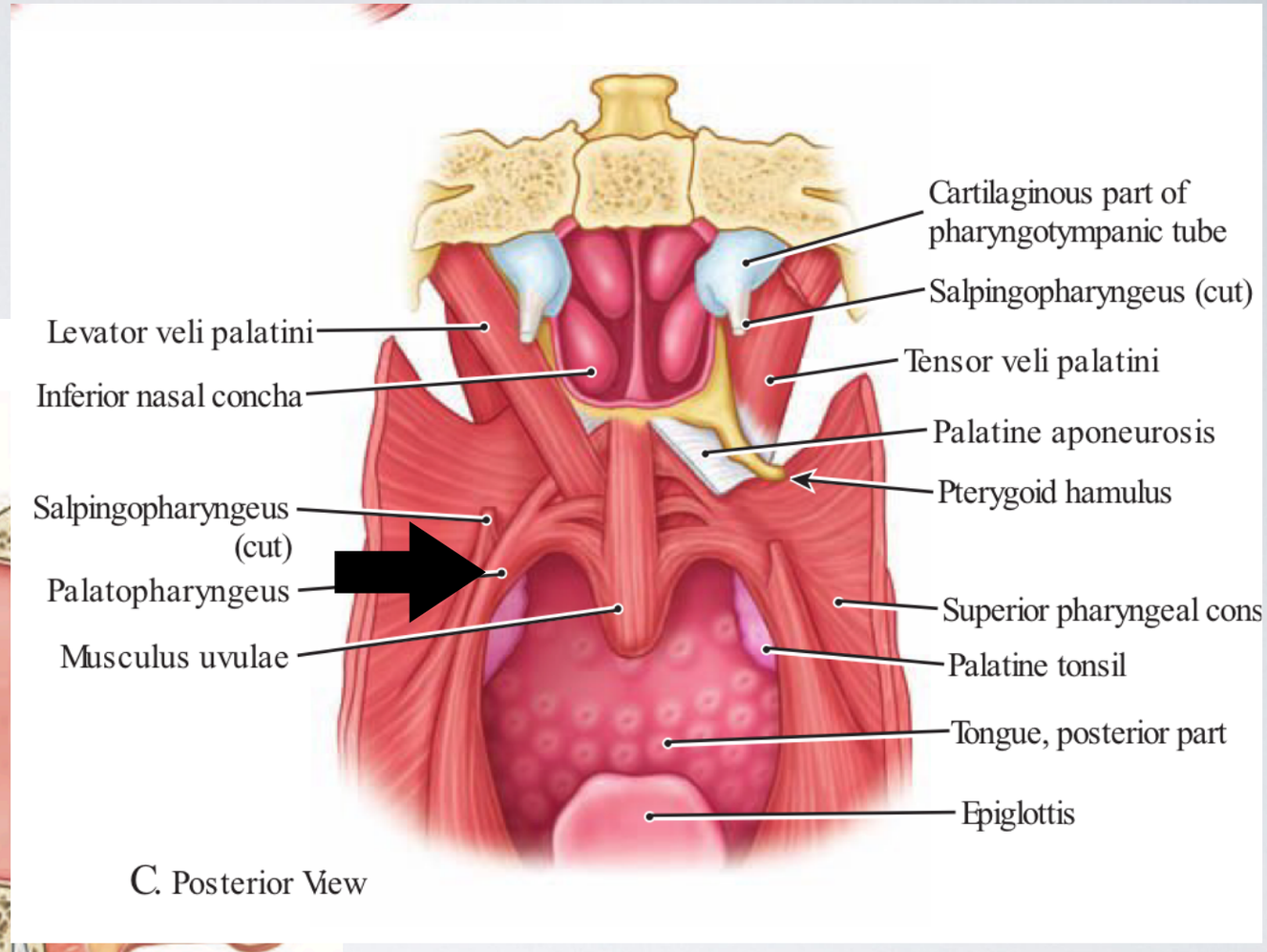
A: pull the pharynx up, forward and medially



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Palatopharyngeus

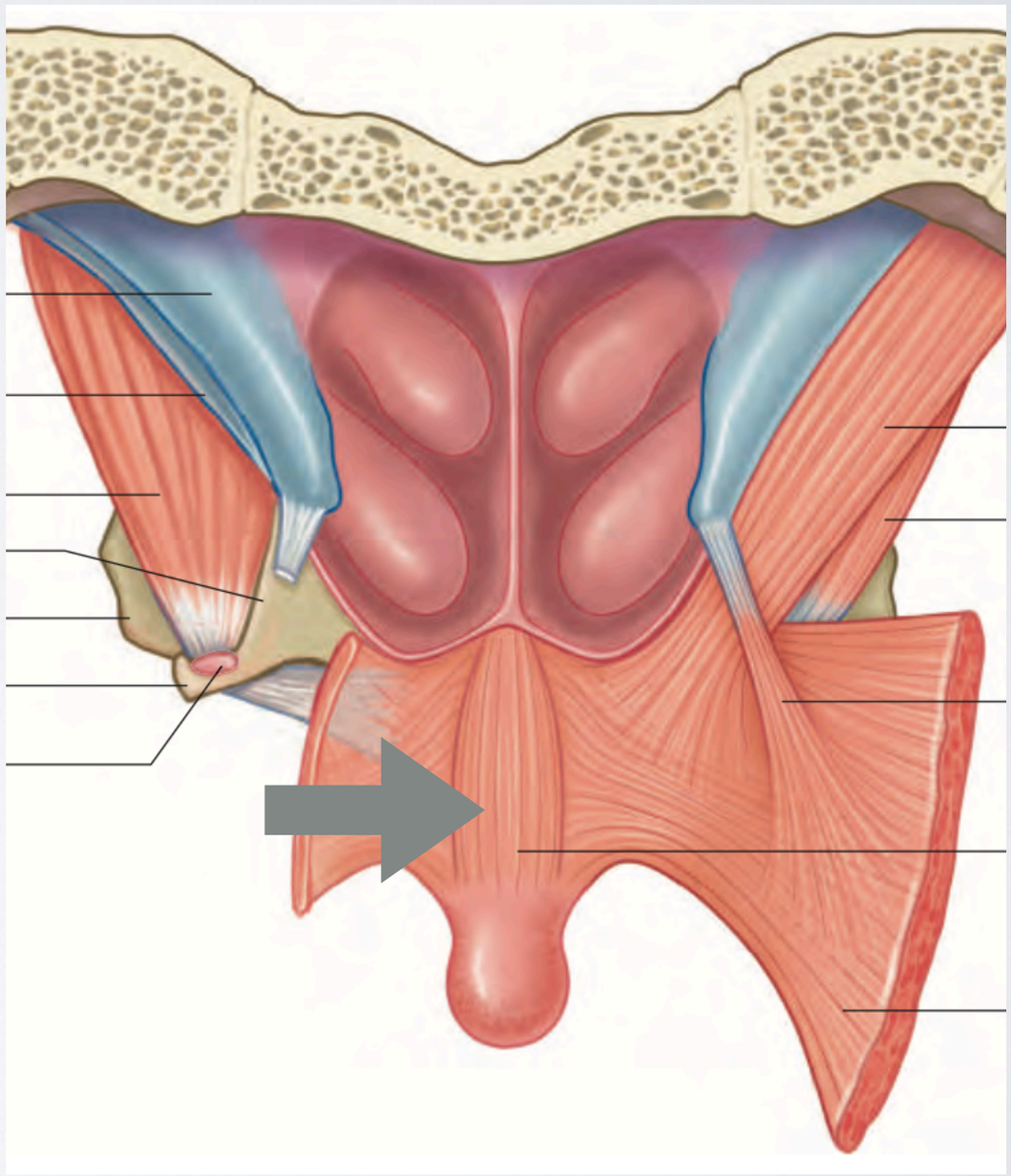




C. Posterior View

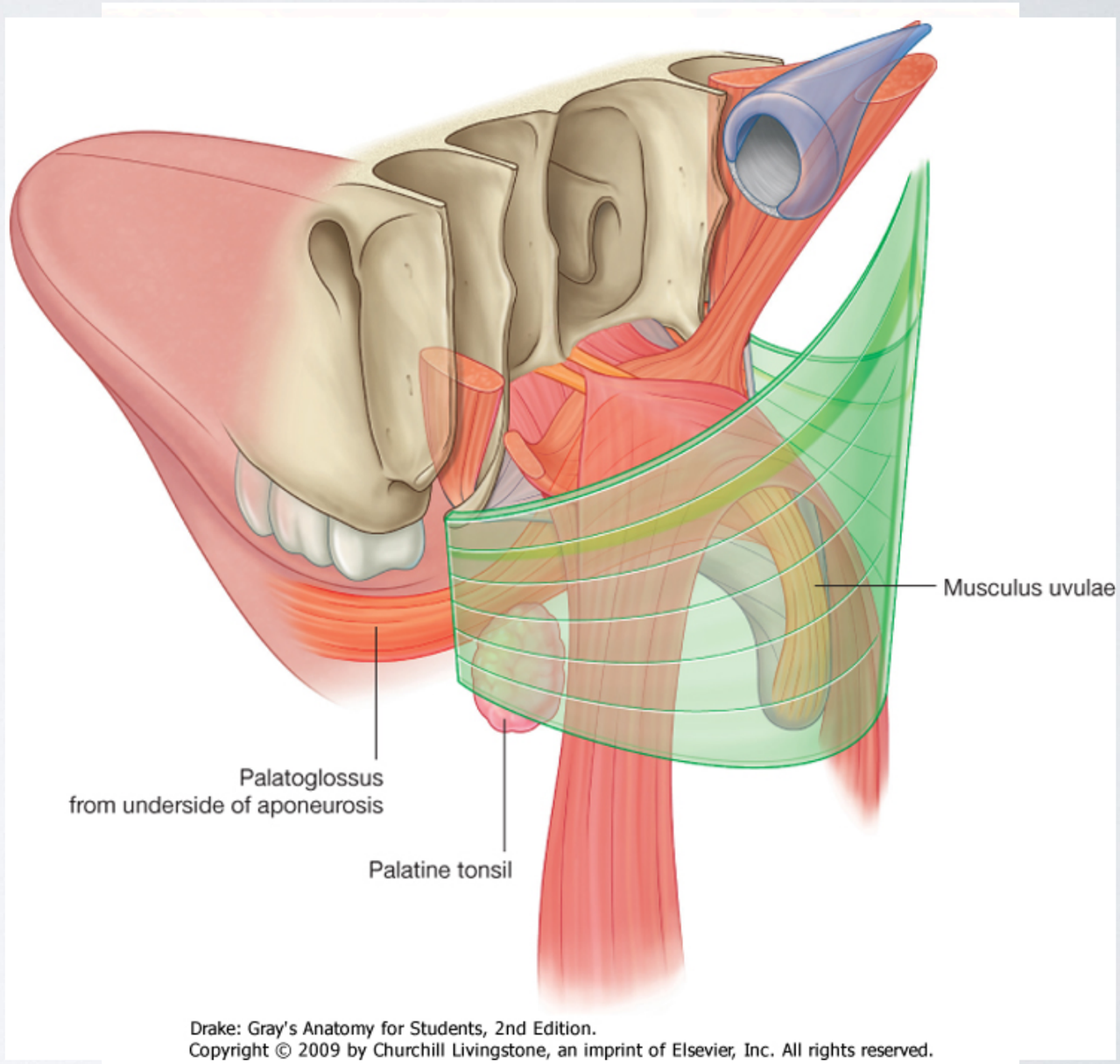
SOFT PALATE

- Musculus uvulae
- O:
  - Posterior nasal spine of palatine bone
  - Superior surface of palatine aponeurosis
- I: beneath the mucosa of uvula
- A: elevate uvula



SOFT PALATE

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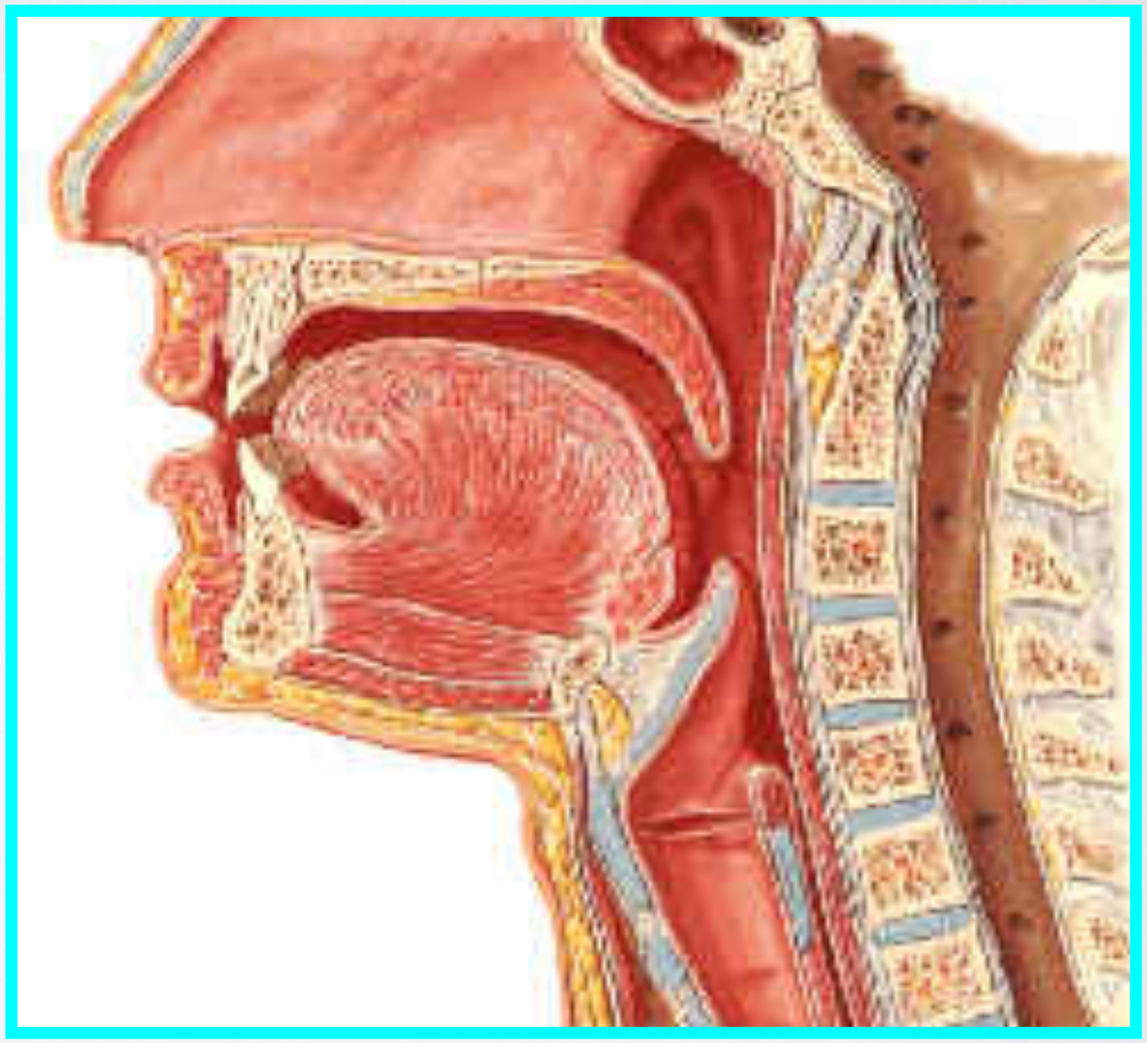


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SOFT PALATE

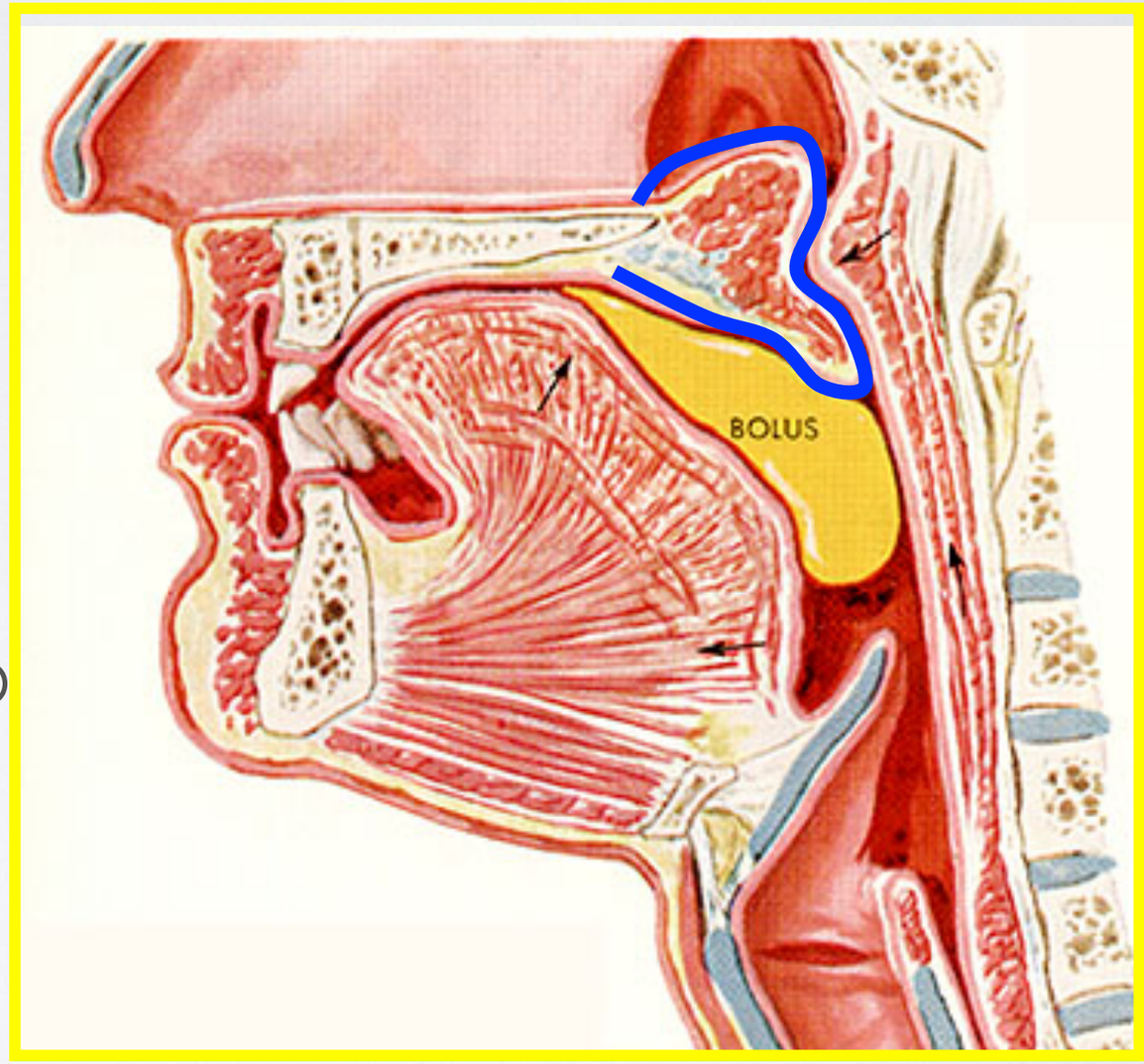
- Form partition between oropharynx and naso-pharynx

- During deglutition: attach to posterior wall of oropharynx



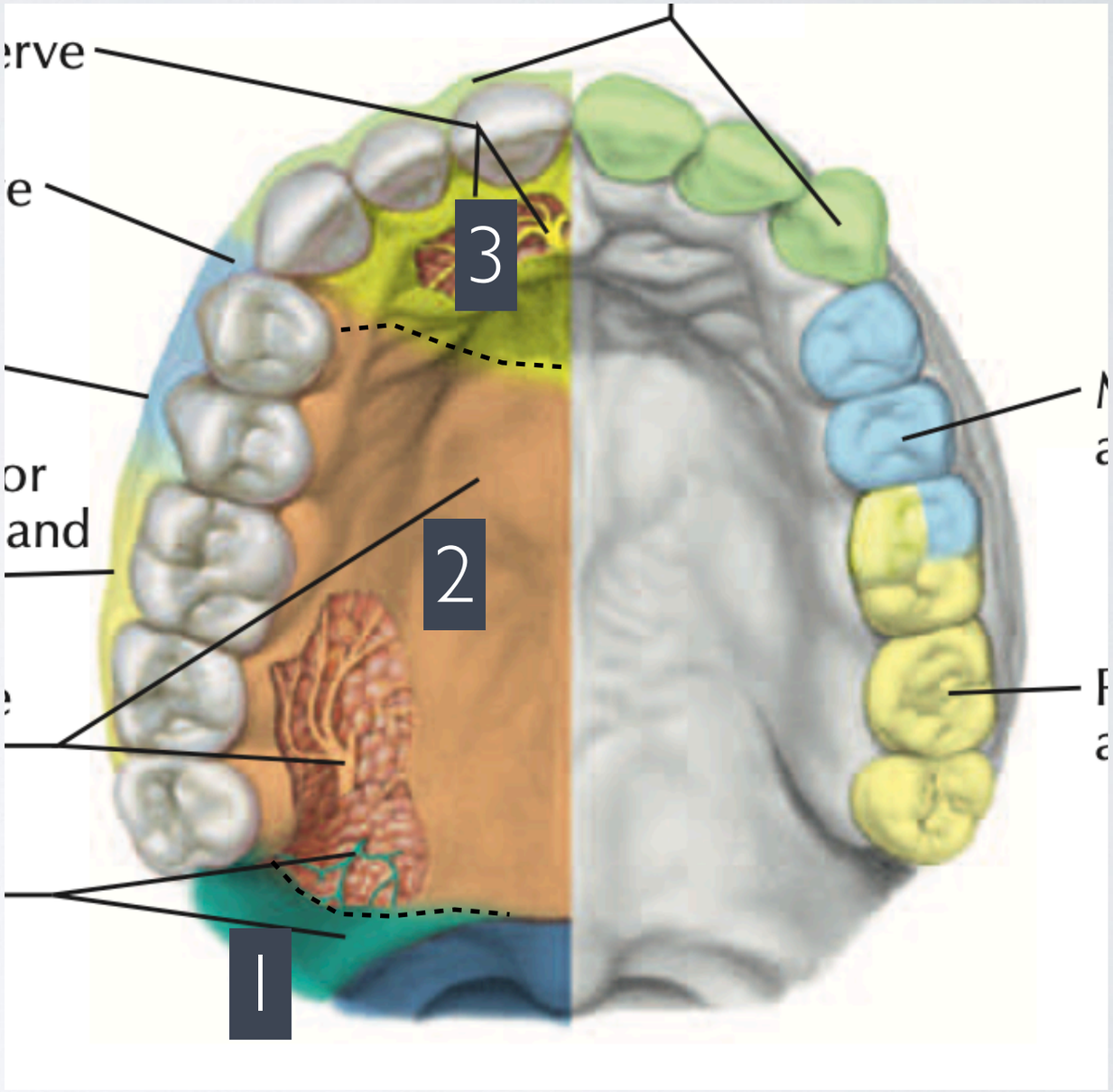
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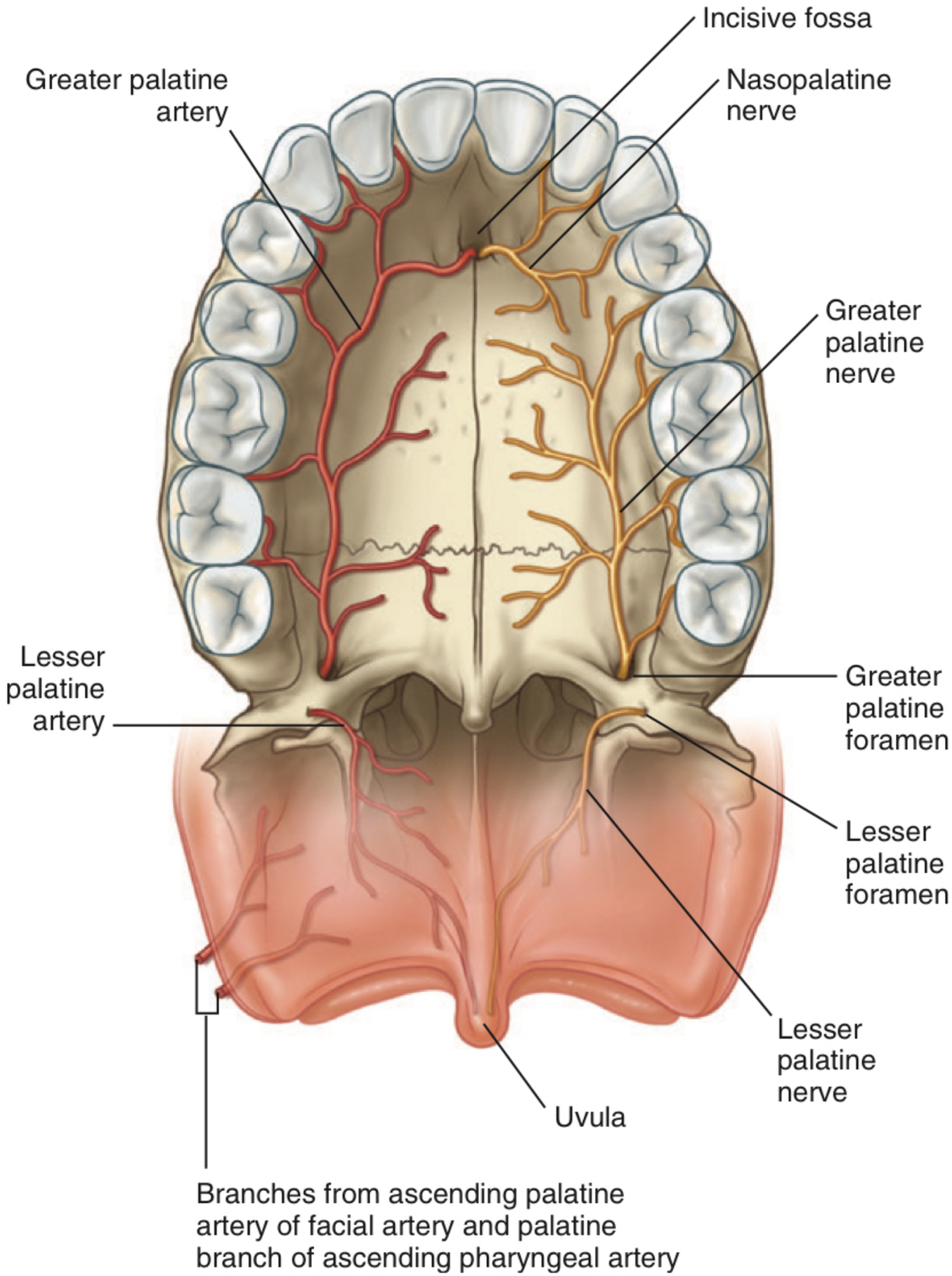
INNERVATION OF PALATE

- General sense: CN V2
  - 1: Lesser palatine nerve
  - 2: Greater palatine nerve
  - 3: Nasopalatine nerve

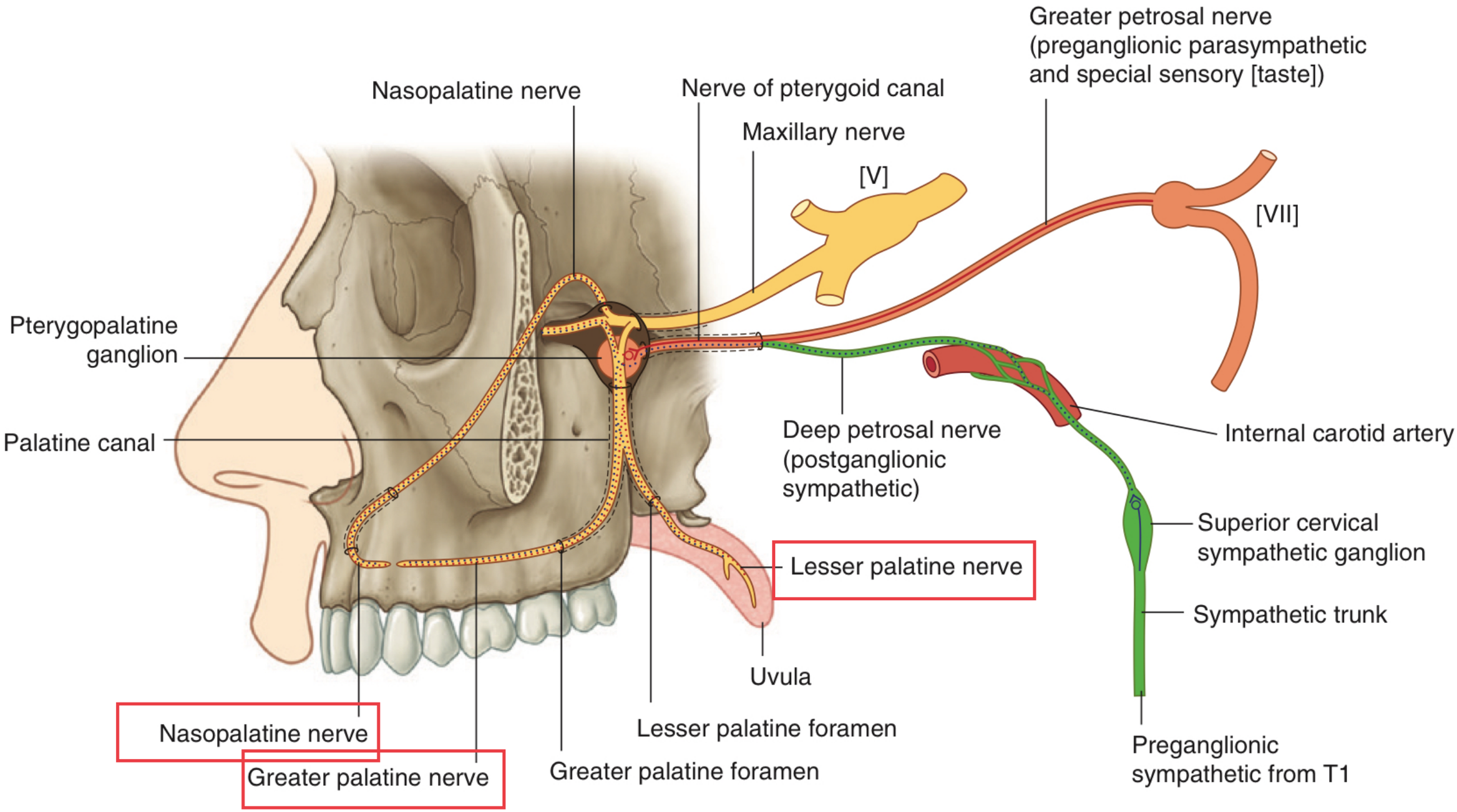


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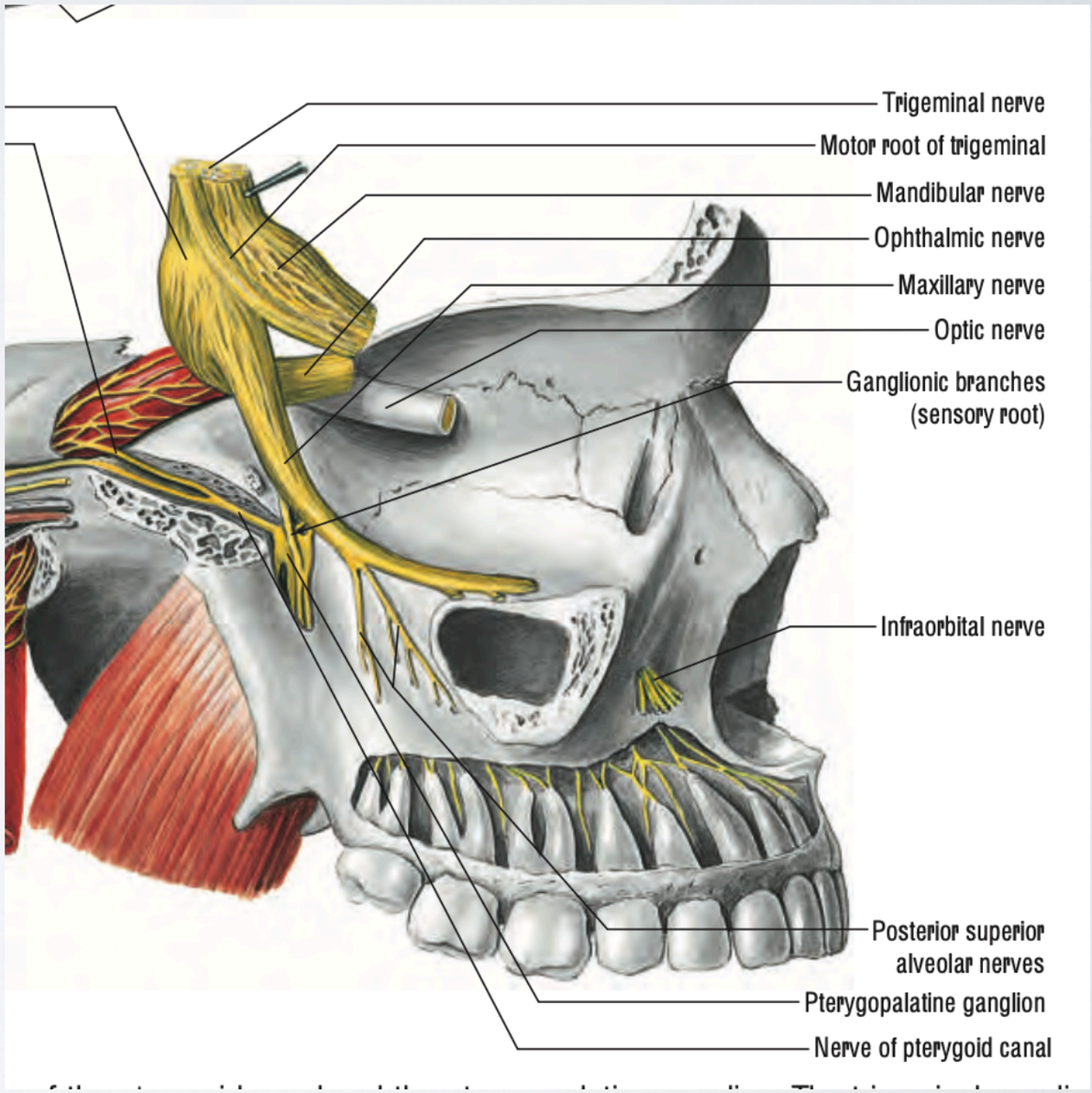


INNERVATION OF PALATE

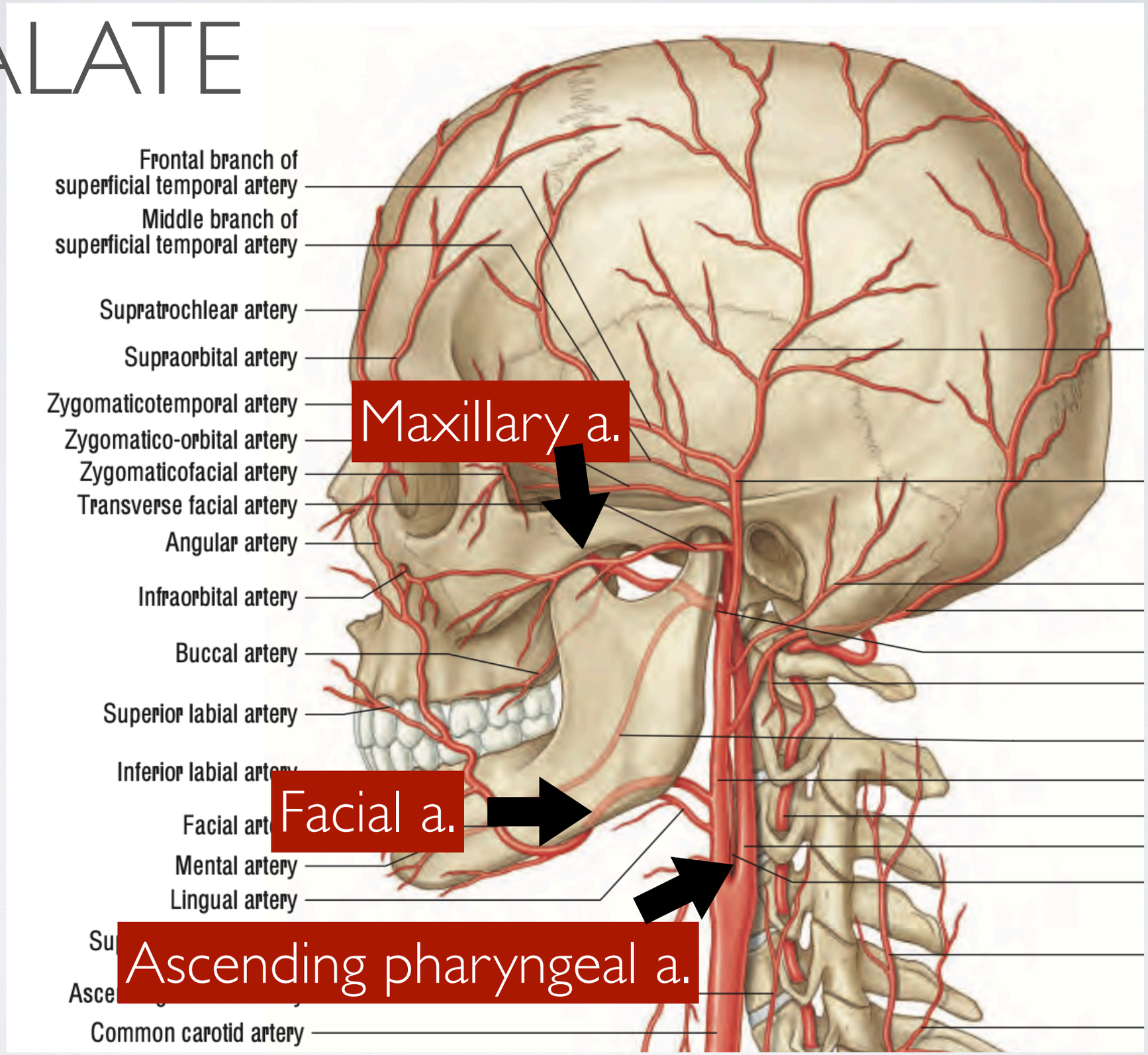


INNERVATION OF PALATE

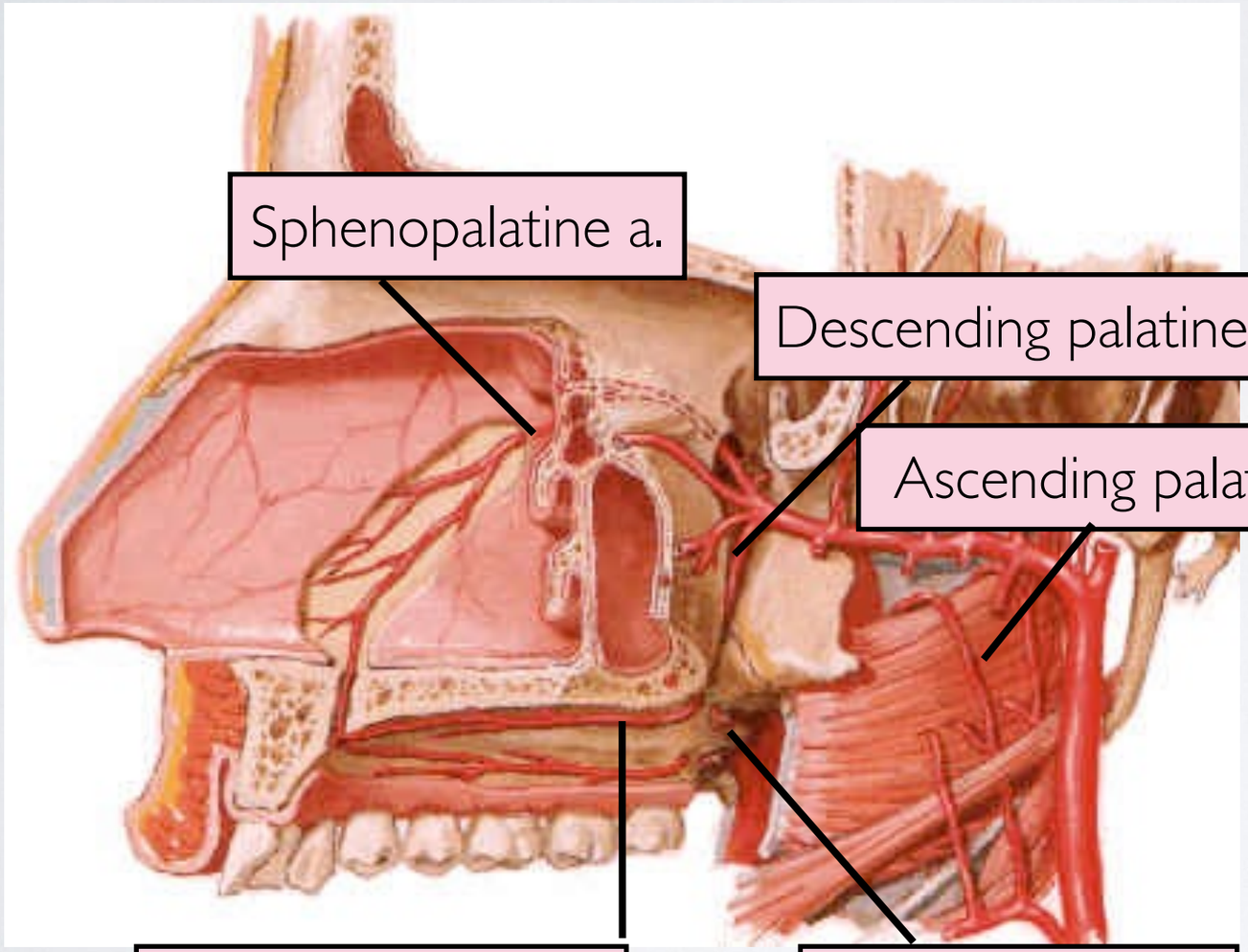
- Motor: pharyngeal plexus (except tensor veli palatini)
- Autonomic: palatine gland
- Sympathetic: superior cervical gangloin
- Parasympathetic: greater petrosal n., pterygopalatine ganglion

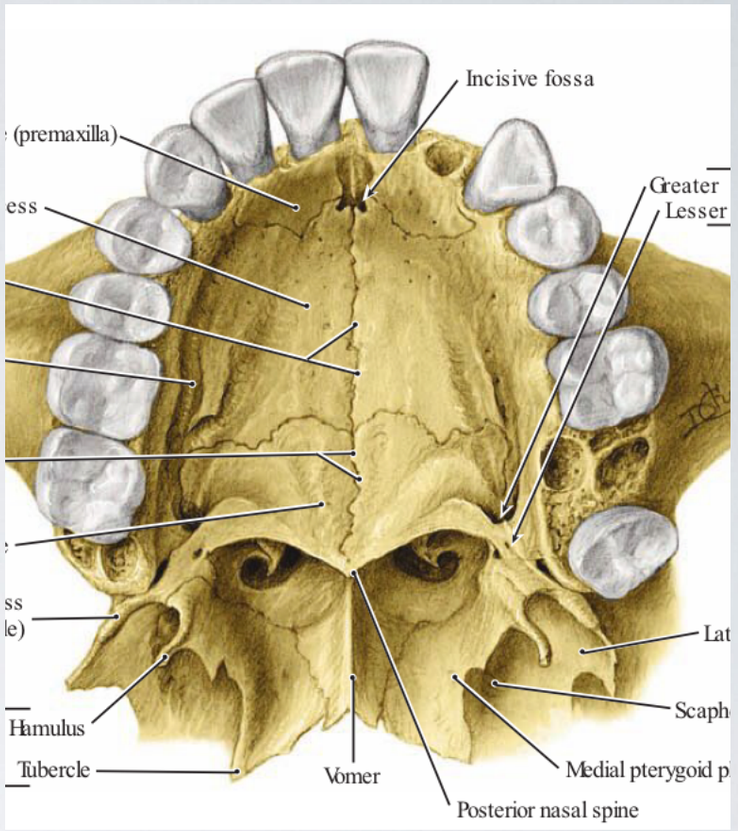


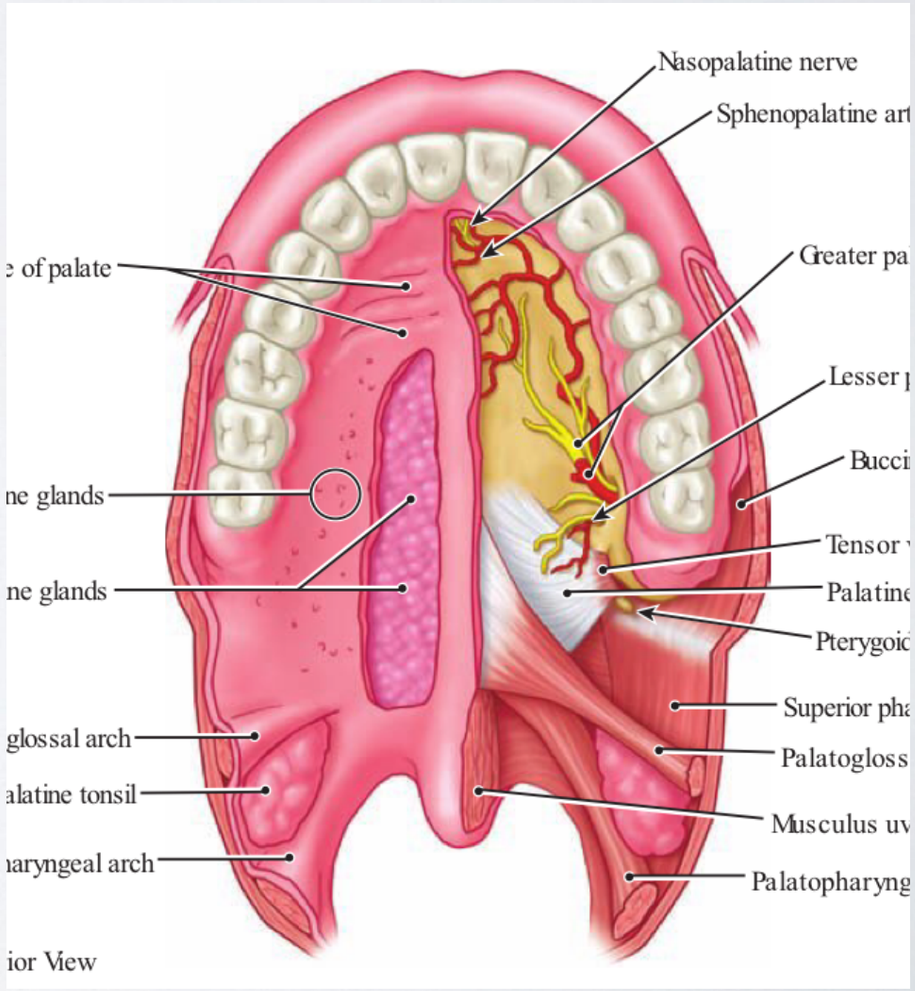
VESSELS OF THE PALATE



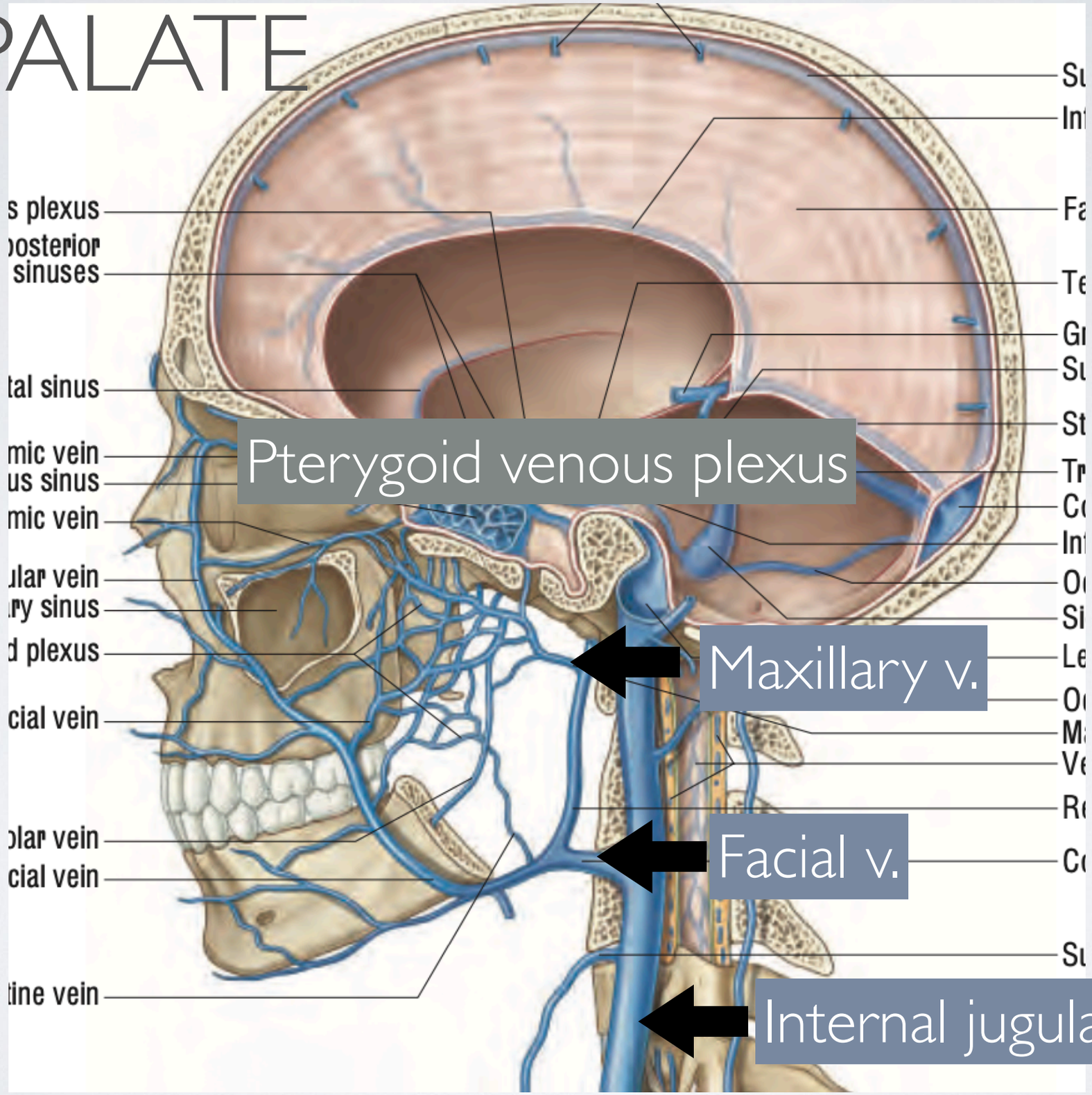
VESSELS OF THE PALATE



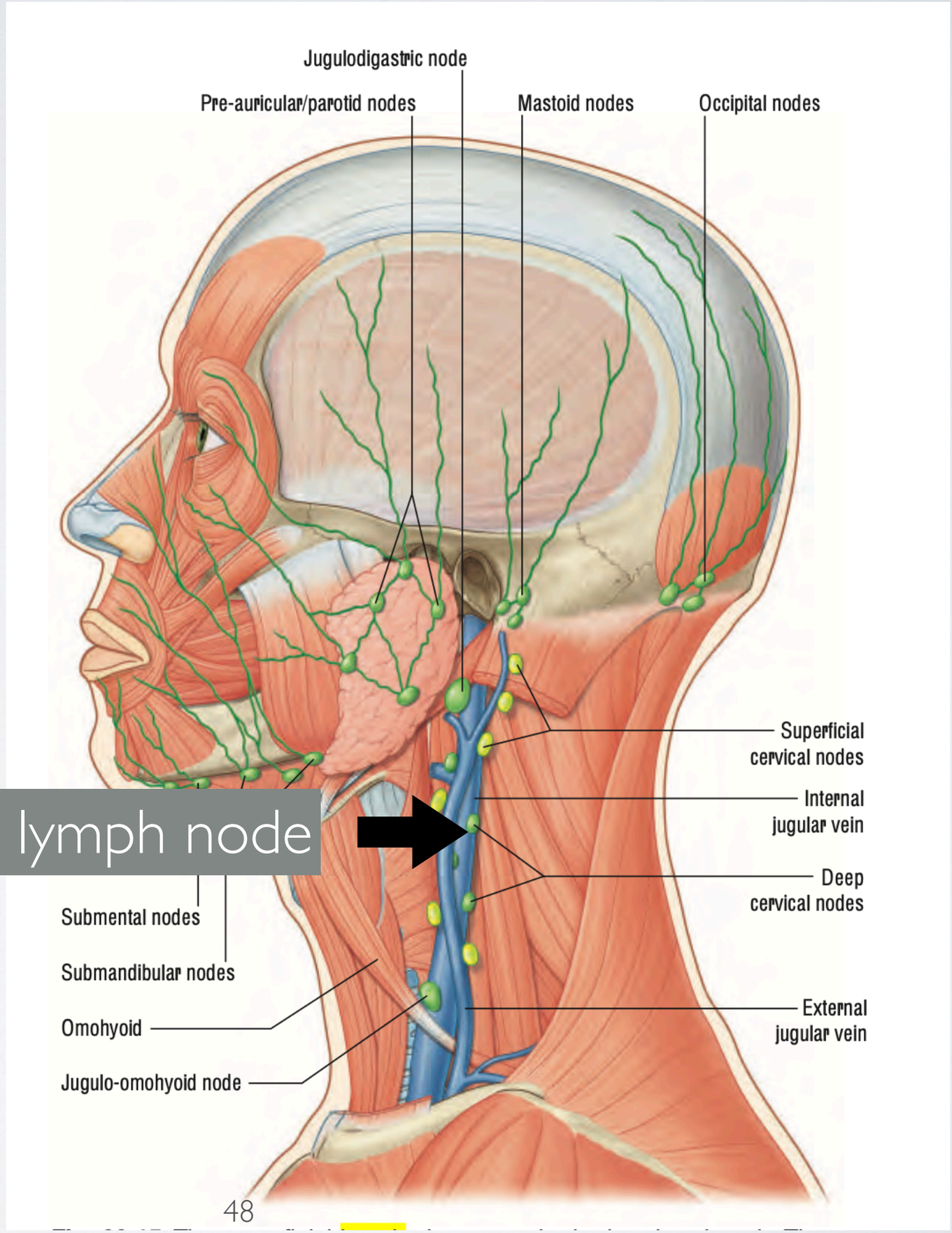




VESSELS OF THE PALATE



LYMPH VESSELS OF THE PALATE



Deep cervical lymph node

OUTLINE OF CONTENTS

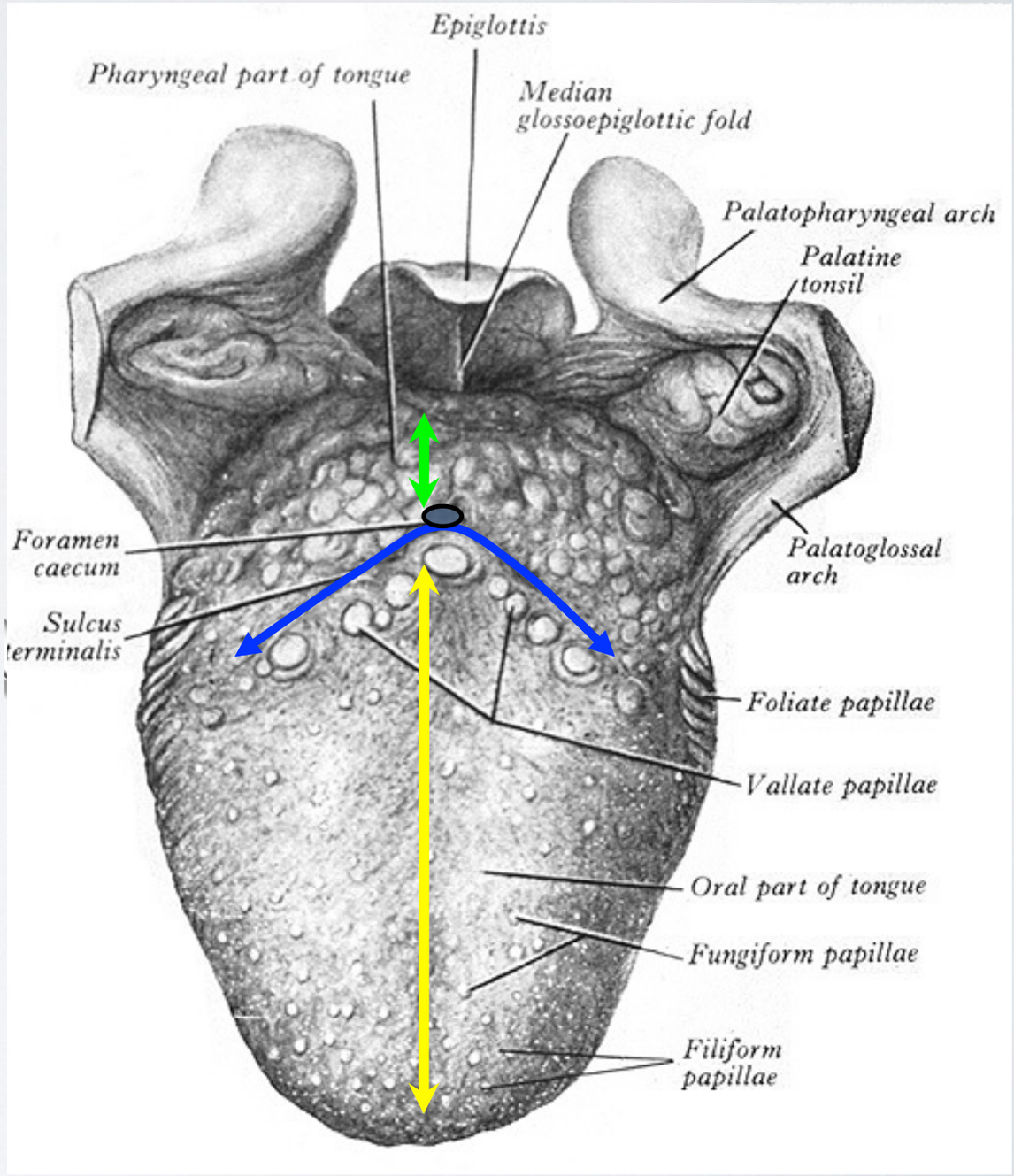
- Mouth: vestibule and oral cavity proper
- Lips
- Cheeks
- Palate: hard and soft palate
- Tongue
- The floor of the mouth

OUTLINE OF CONTENTS

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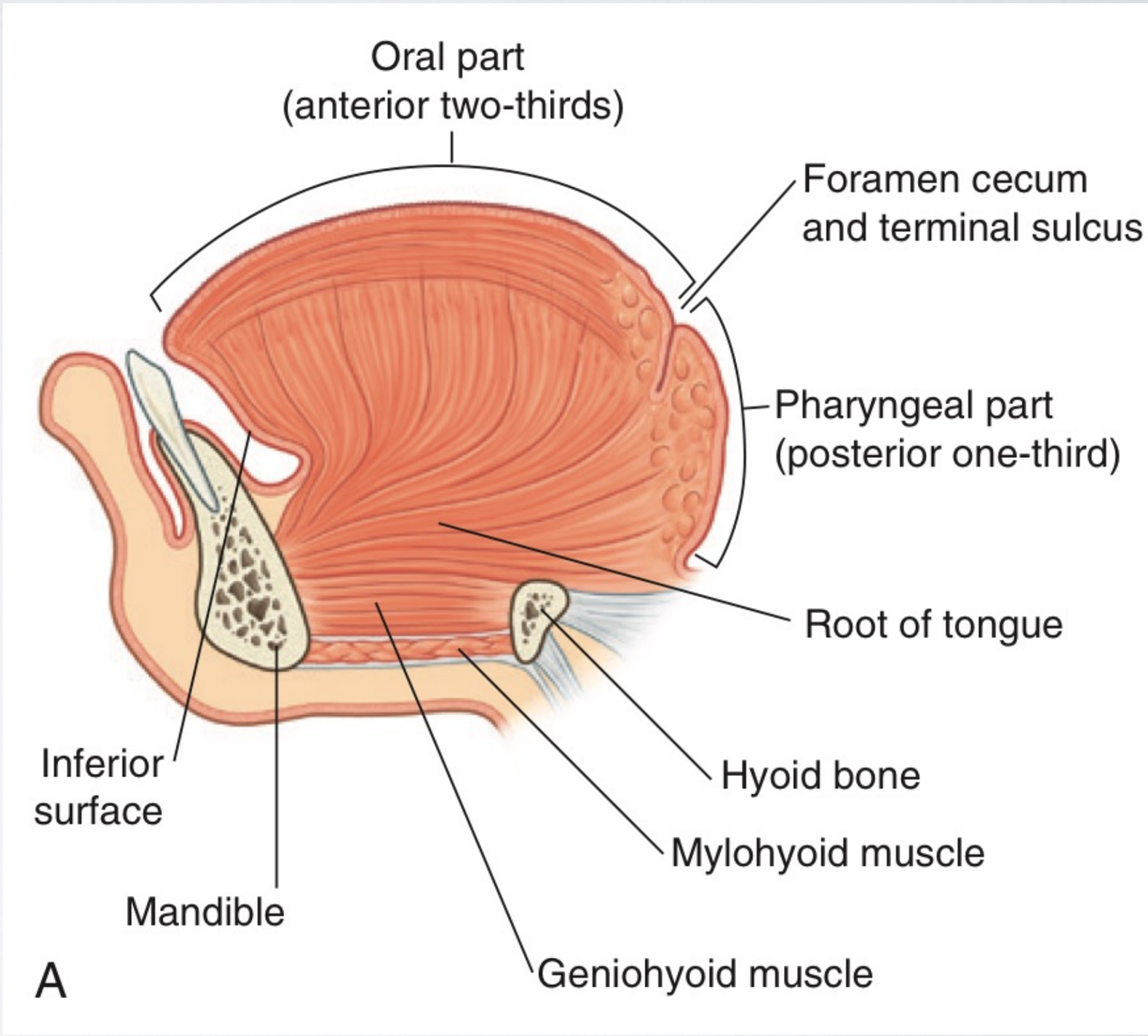
TONGUE

- Functions
  - Sucking/Suckling
  - Chewing
  - Tasting
  - Swallowing
  - Speech
  - Oral cleaning



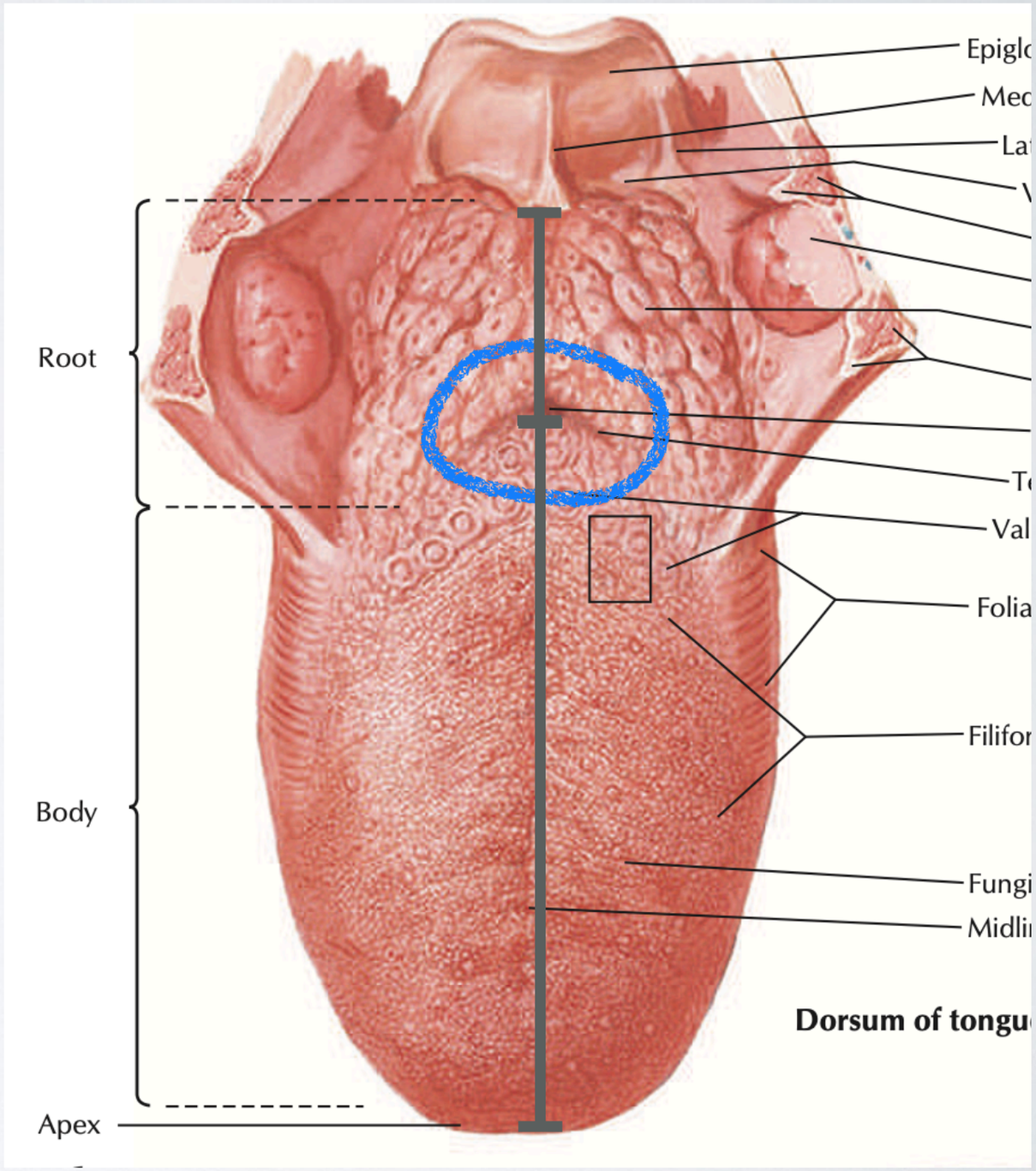
TONGUE

- Parts of tongue
  - Apex
  - Body
  - Root



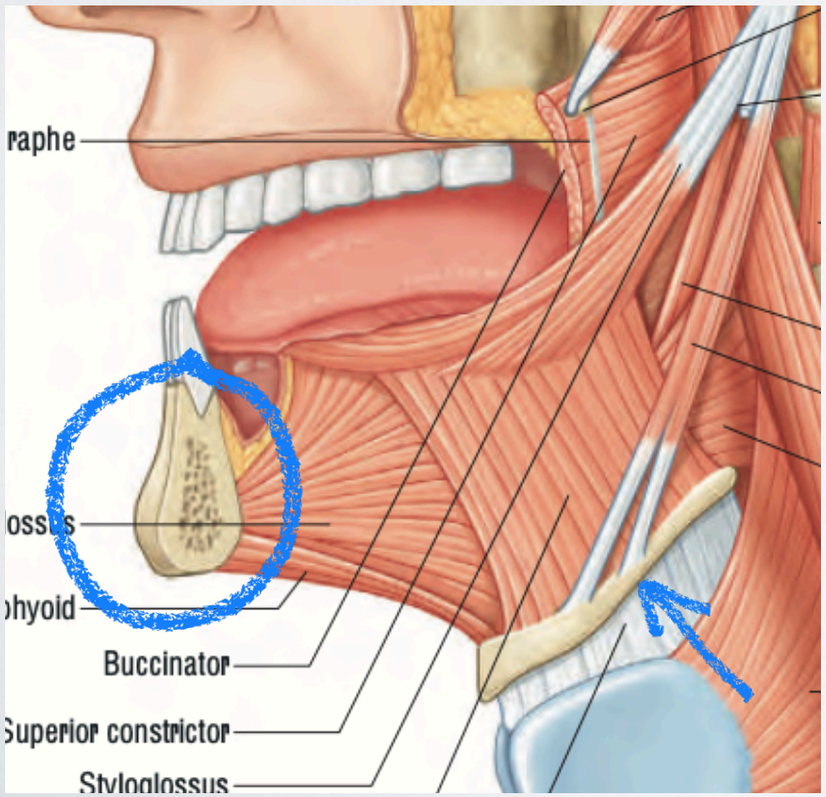
TONGUE

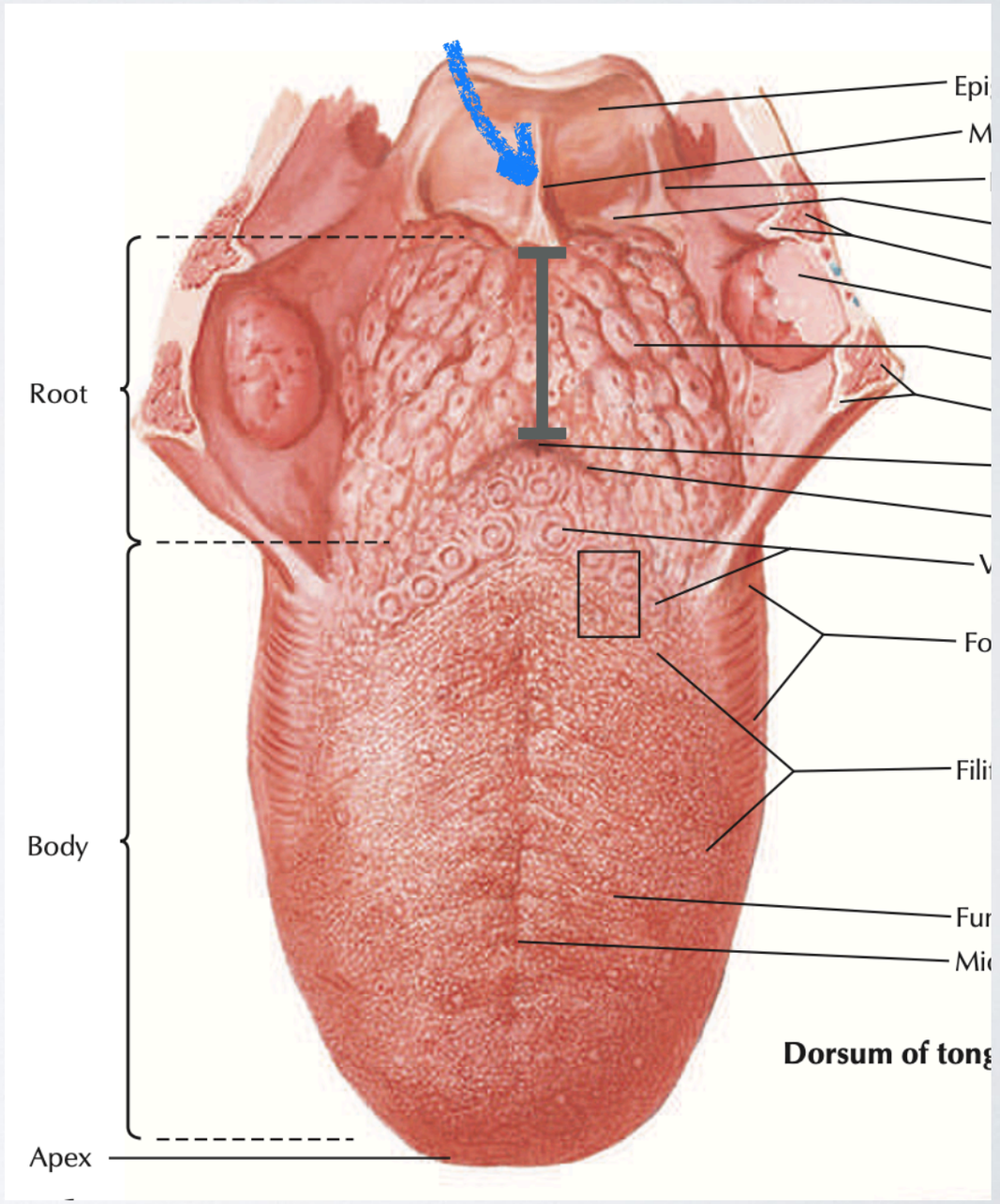
- Dorsum of tongue
  - Sulcus terminalis: inverted V shape diverging from foramen caecum
  - Oral part:
    - Anterior 2/3
    - Lingual papilla
- Pharyngeal part:
  - Posterior 1/3
  - Lingual tonsil



TONGUE

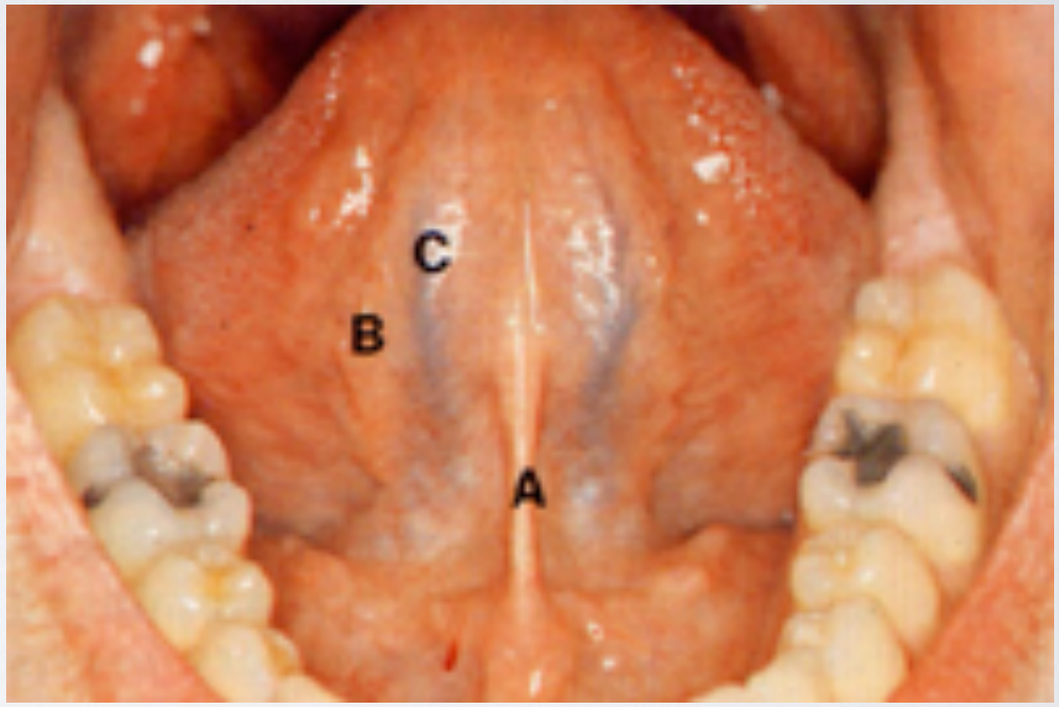
- Attachment
  - Epiglottis: glossoepiglottic folds
  - Mandible: genioglossus m.
  - Hyoid bone: hyoglossus m.

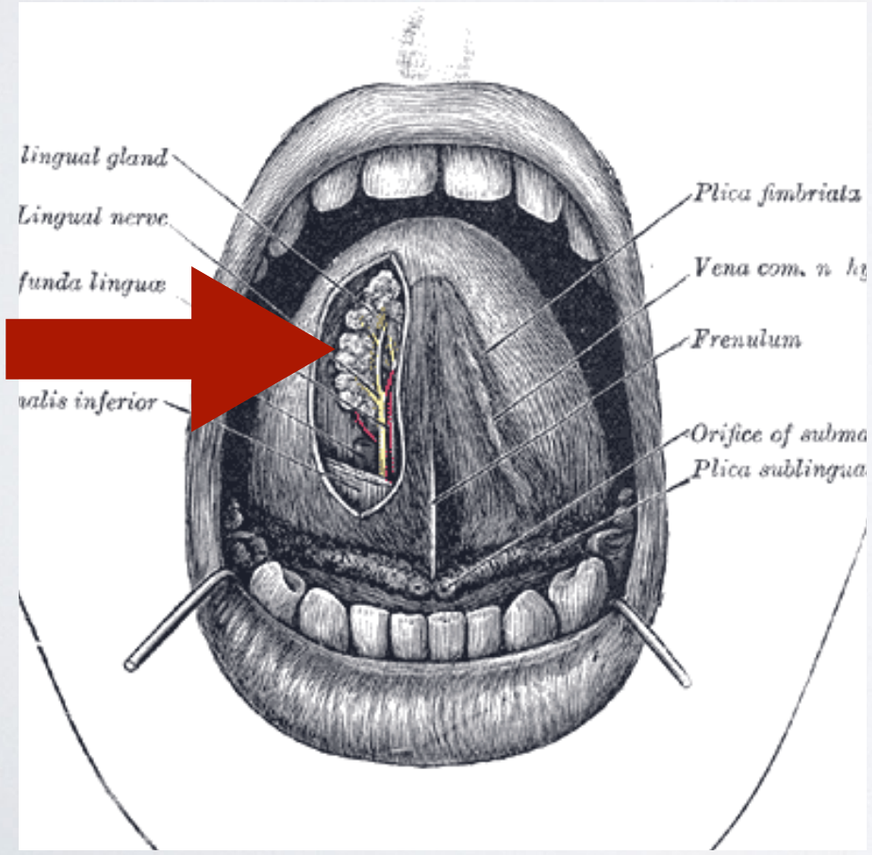


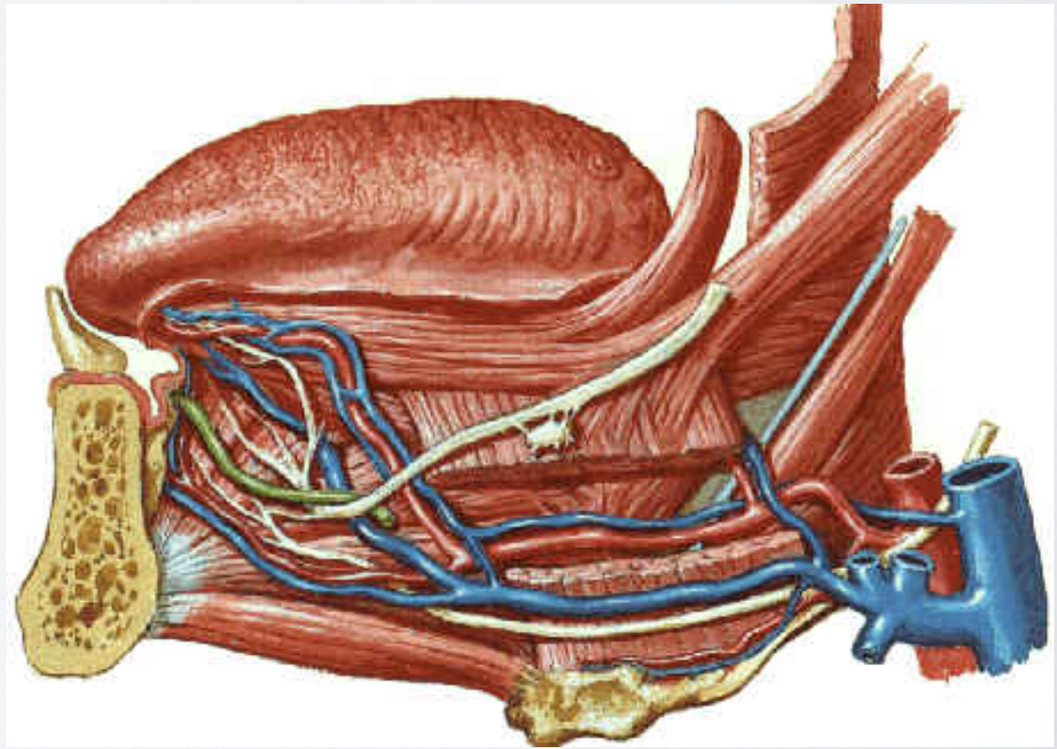


TONGUE

- Inferior surface
  - Attach to floor of mouth by frenulum of the tongue
  - Deep lingual vein
  - Plica fimbriata (fimbriated fold)
  - Anterior lingual glands

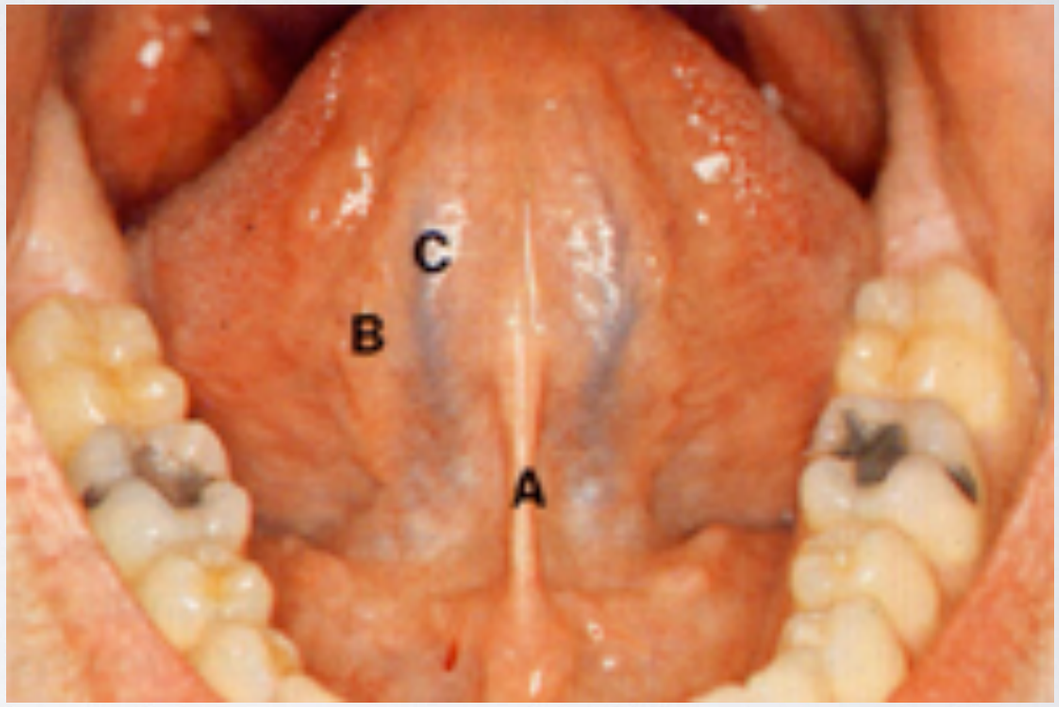


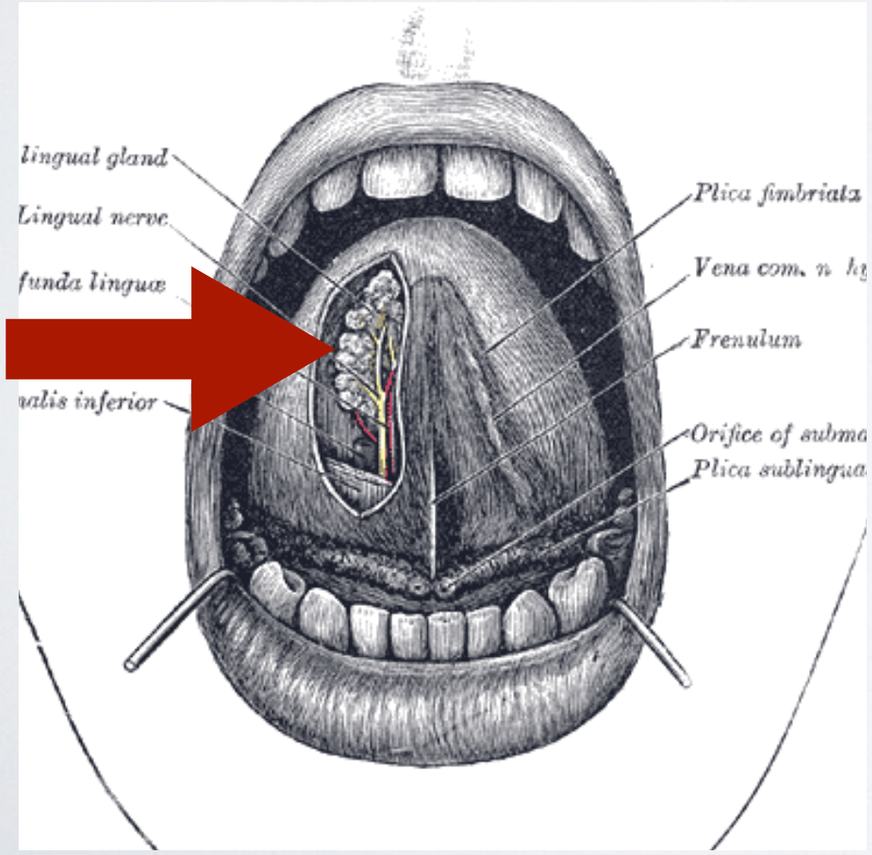


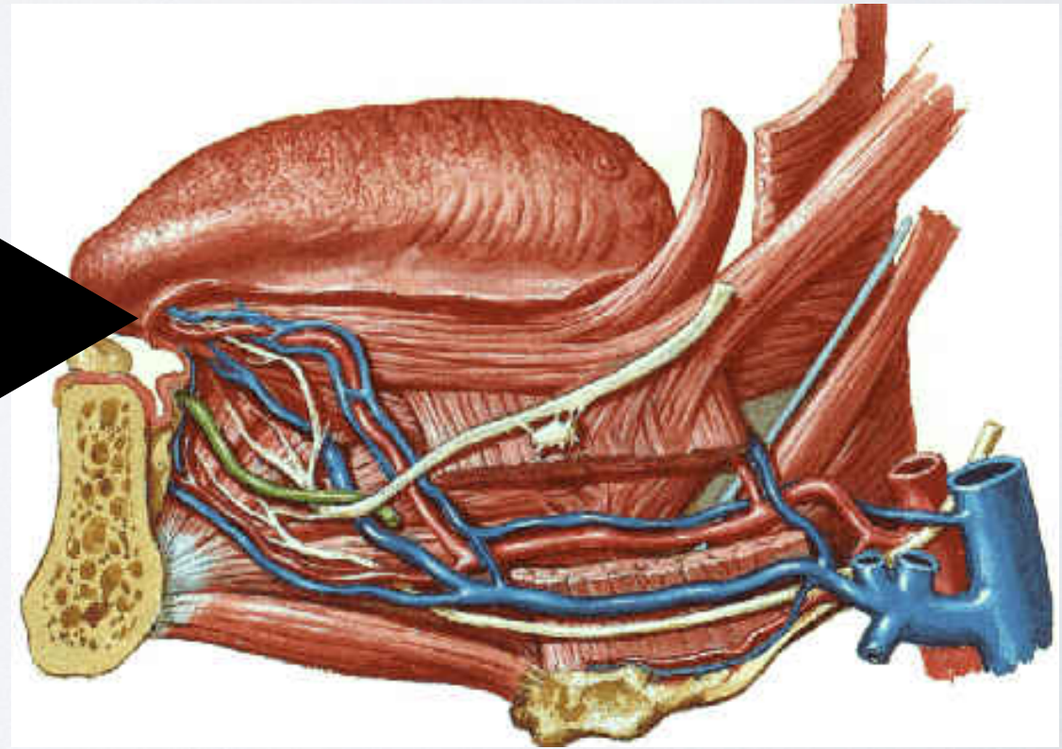


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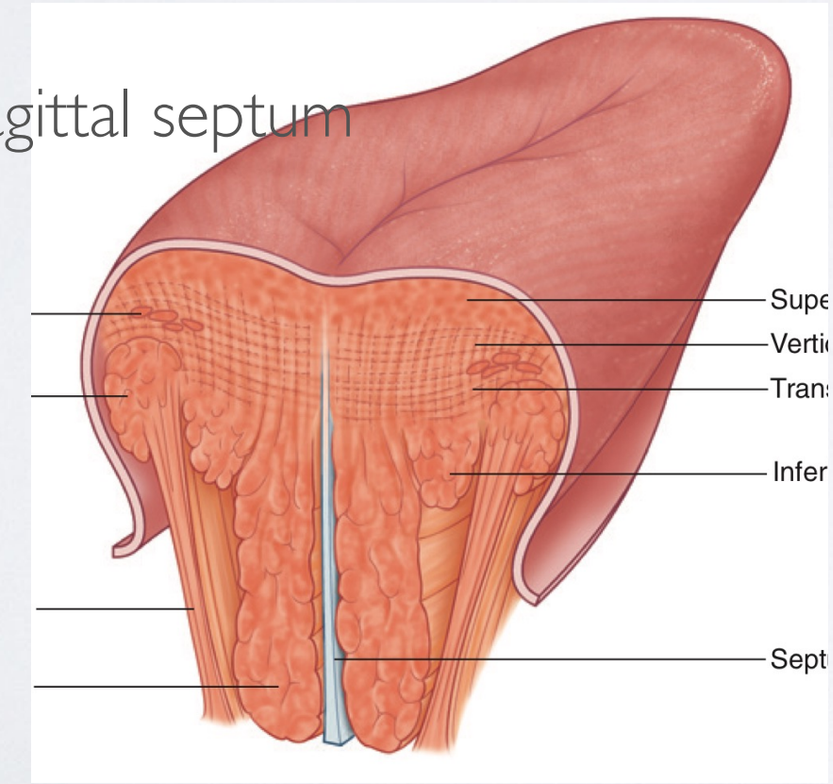


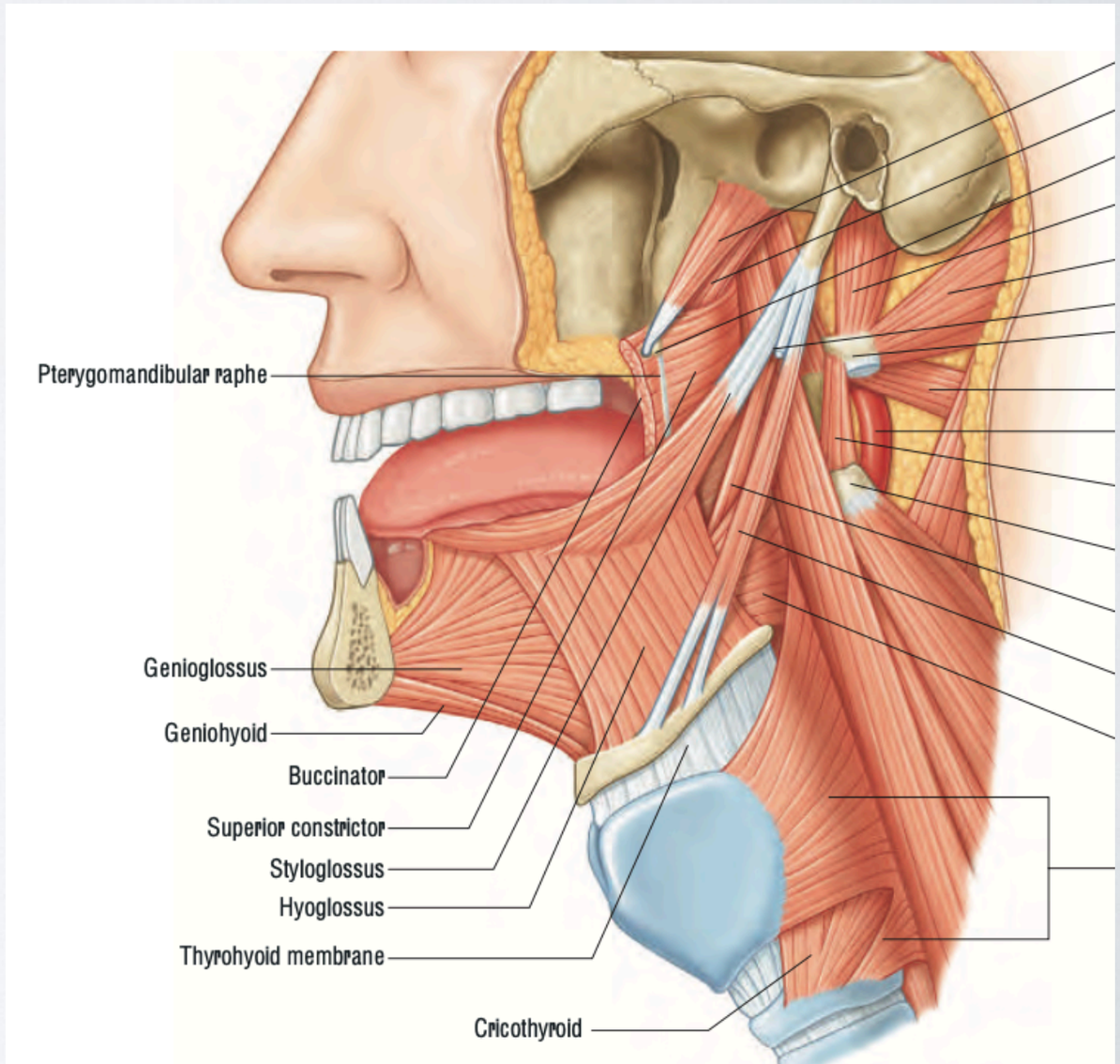




TONGUE

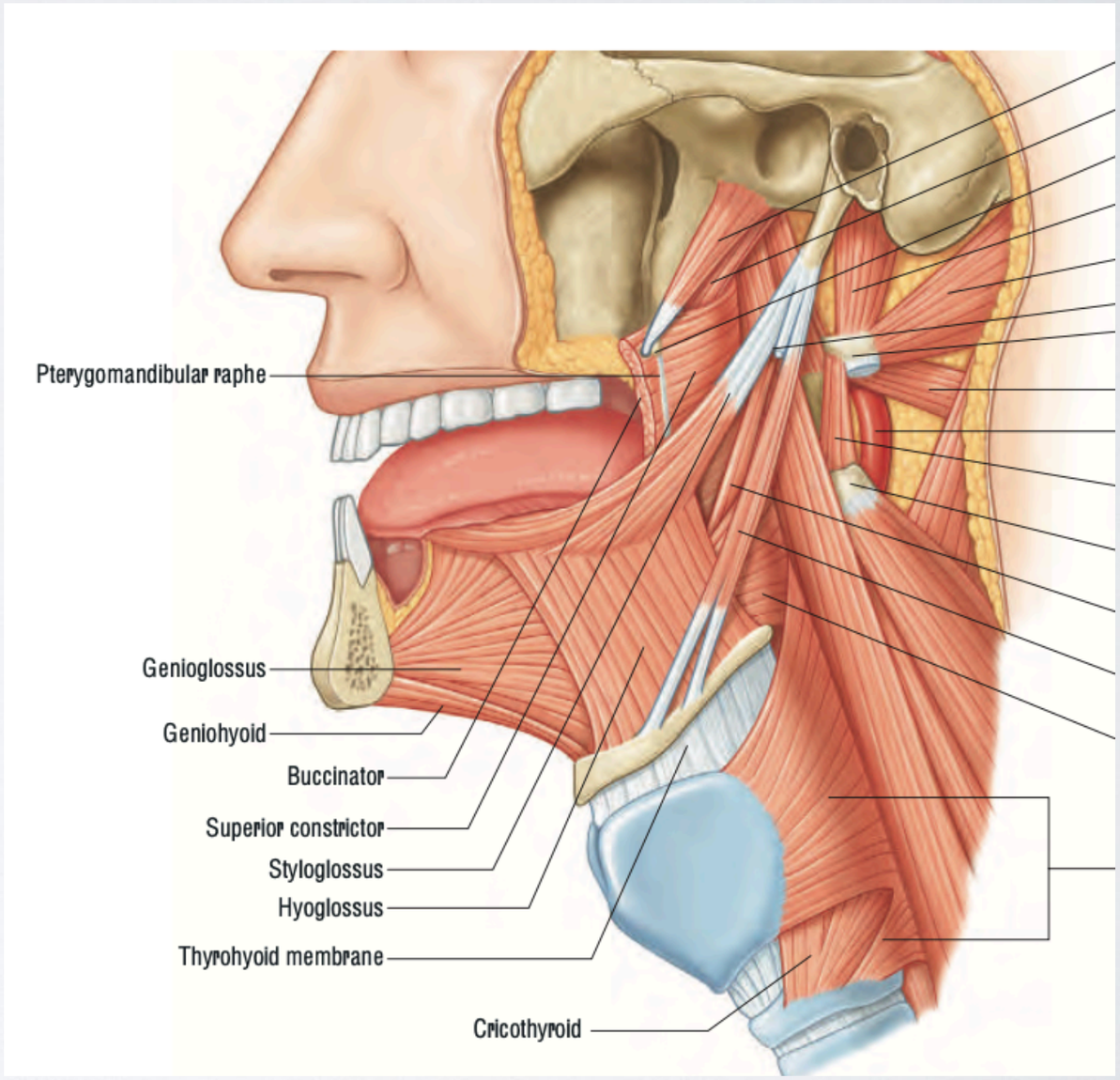
- Muscles of the tongue
  - Extrinsic muscles: tongue movement
  - Intrinsic muscle: shape and size changes
  - Median sagittal septum





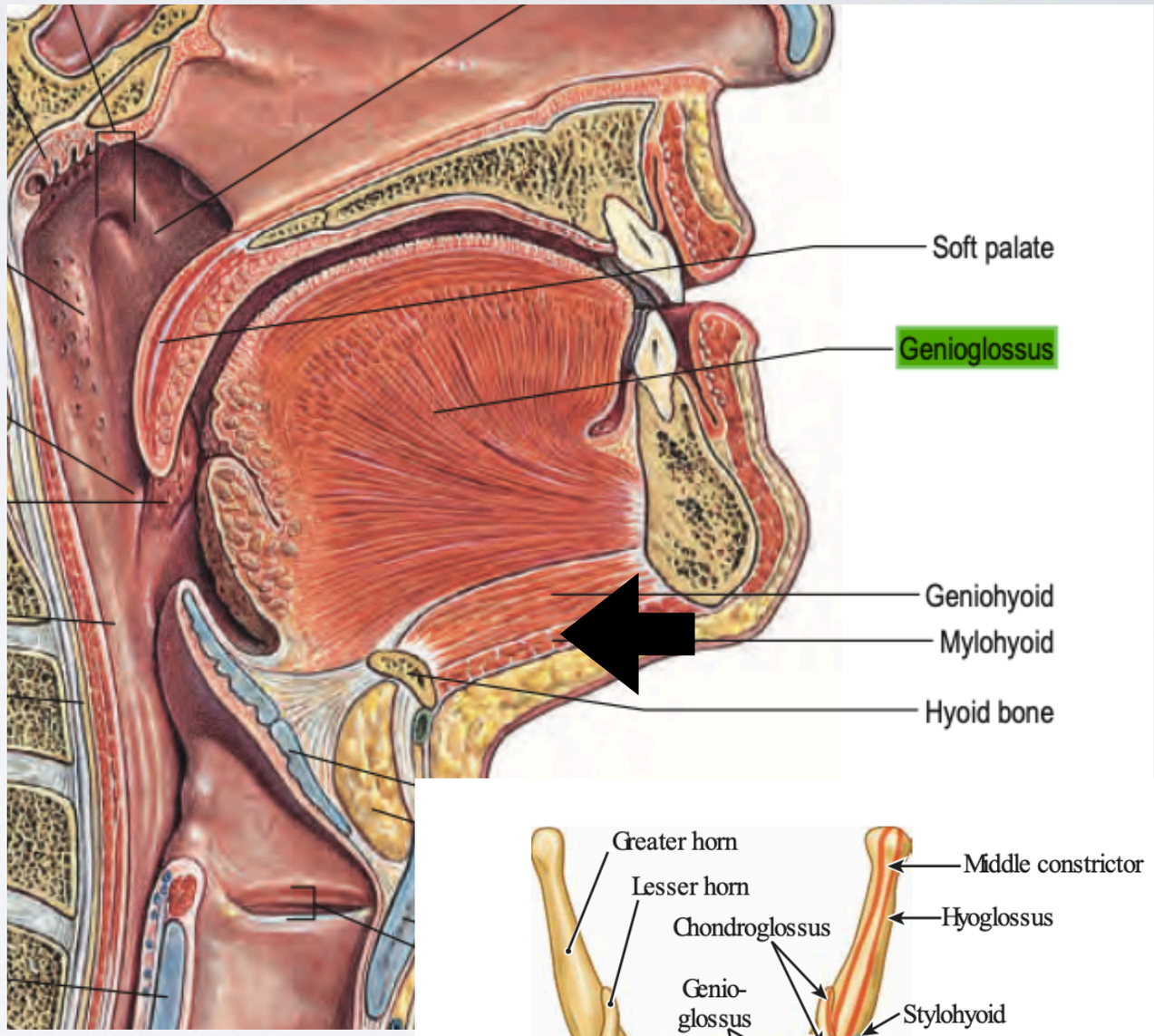
TONGUE

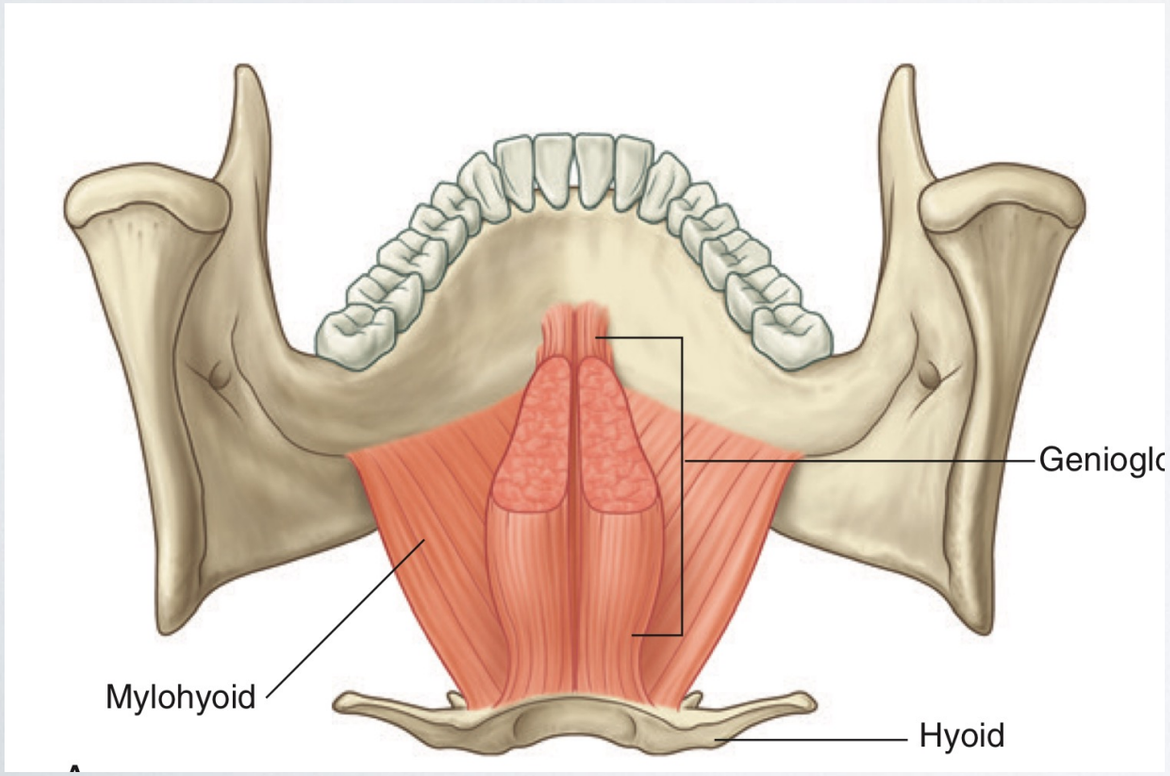
- Extrinsic muscles of tongue
  - Genioglossus
  - Hyoglossus
  - Styloglossus
  - Palatoglossus



EXTRINSIC MUSCLES OF TONGUE

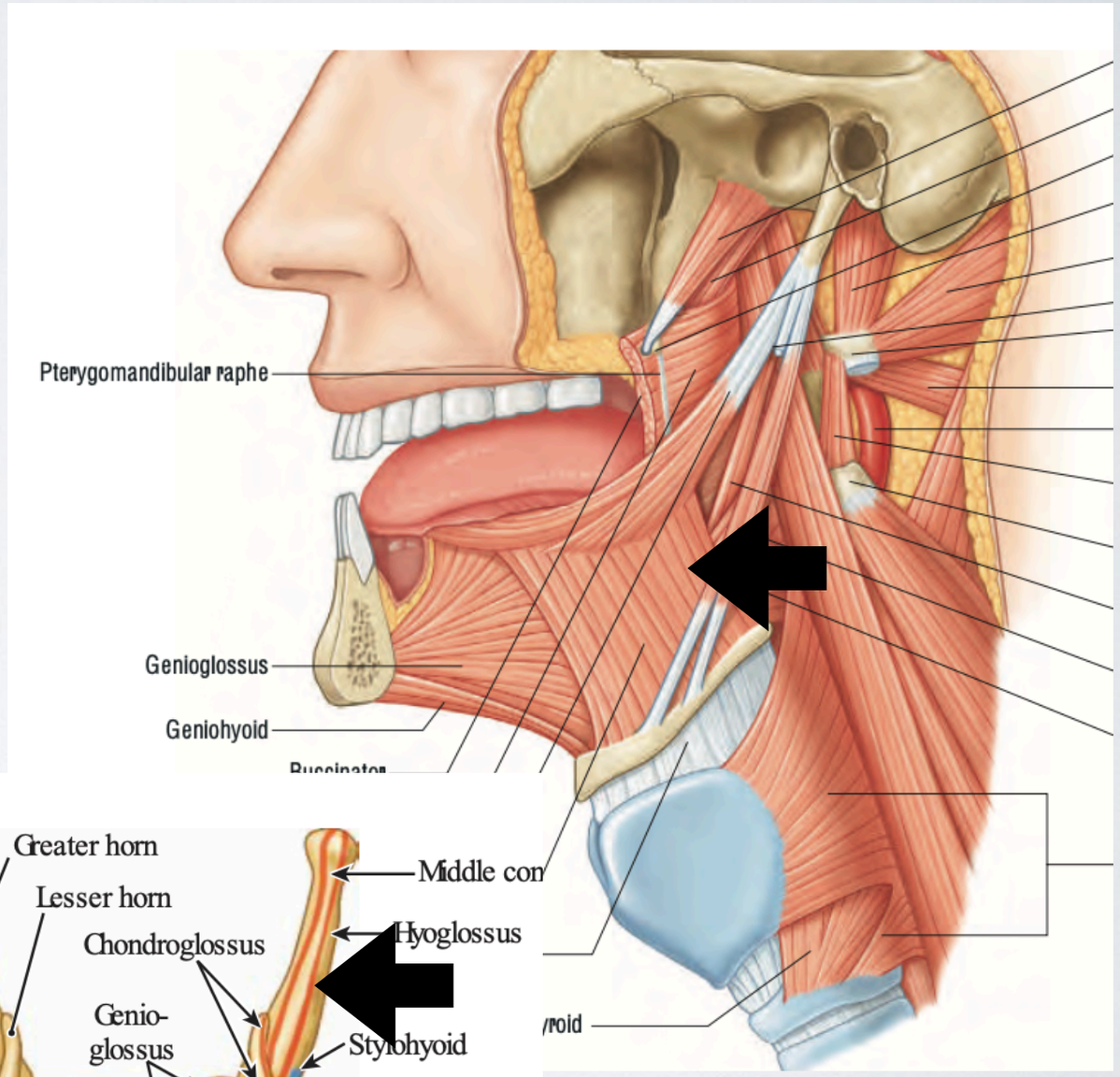
- Genioglossus
  - Fan shape
  - O: superior genial tubercle
  - I: hyoid bone, entire length of tongue

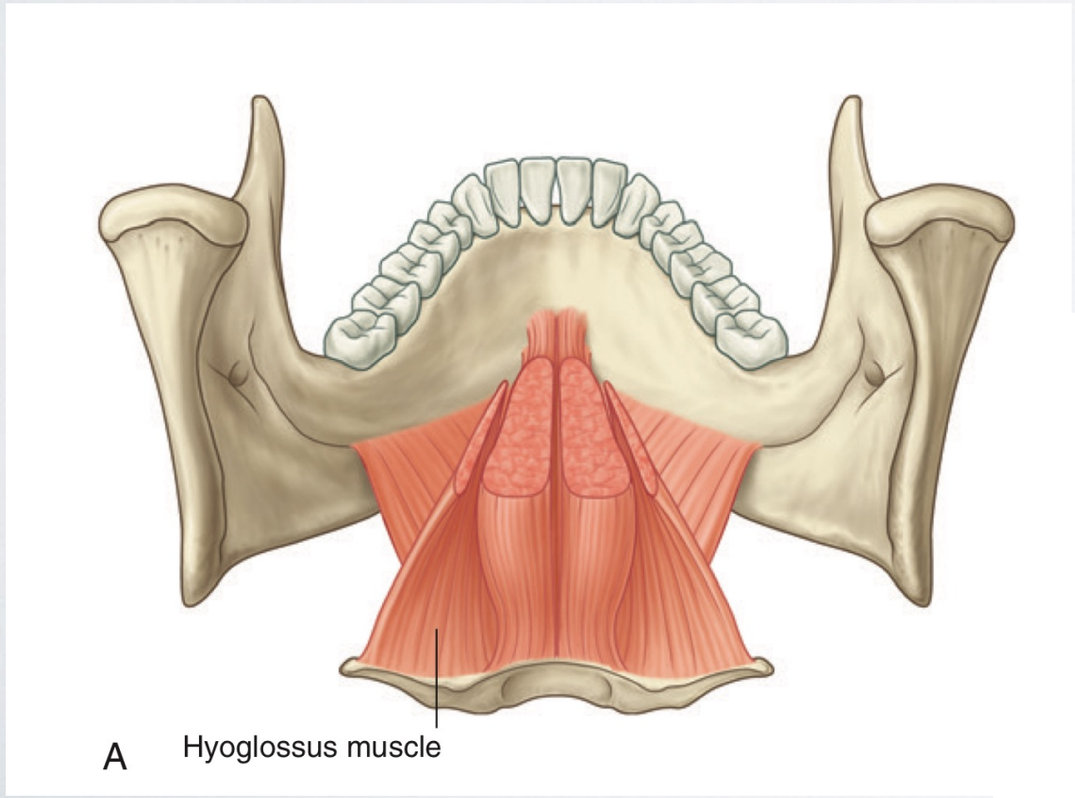


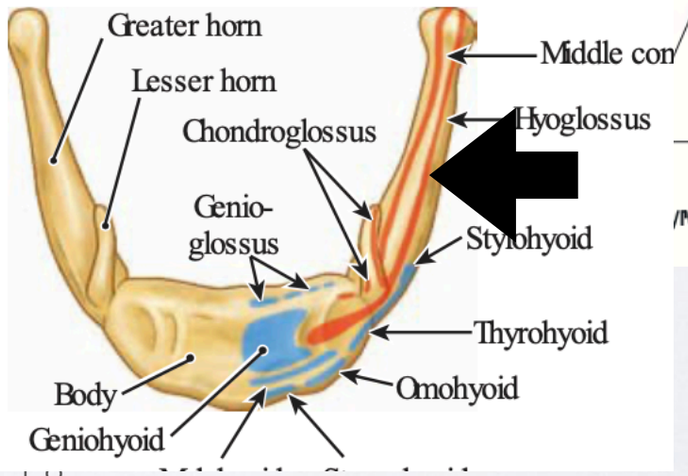


EXTRINSIC MUSCLES OF TONGUE

- Hyoglossus
  - Quadrilateral shape
  - O: body and greater horn of hyoid bone
  - I: lateral surface of tongue

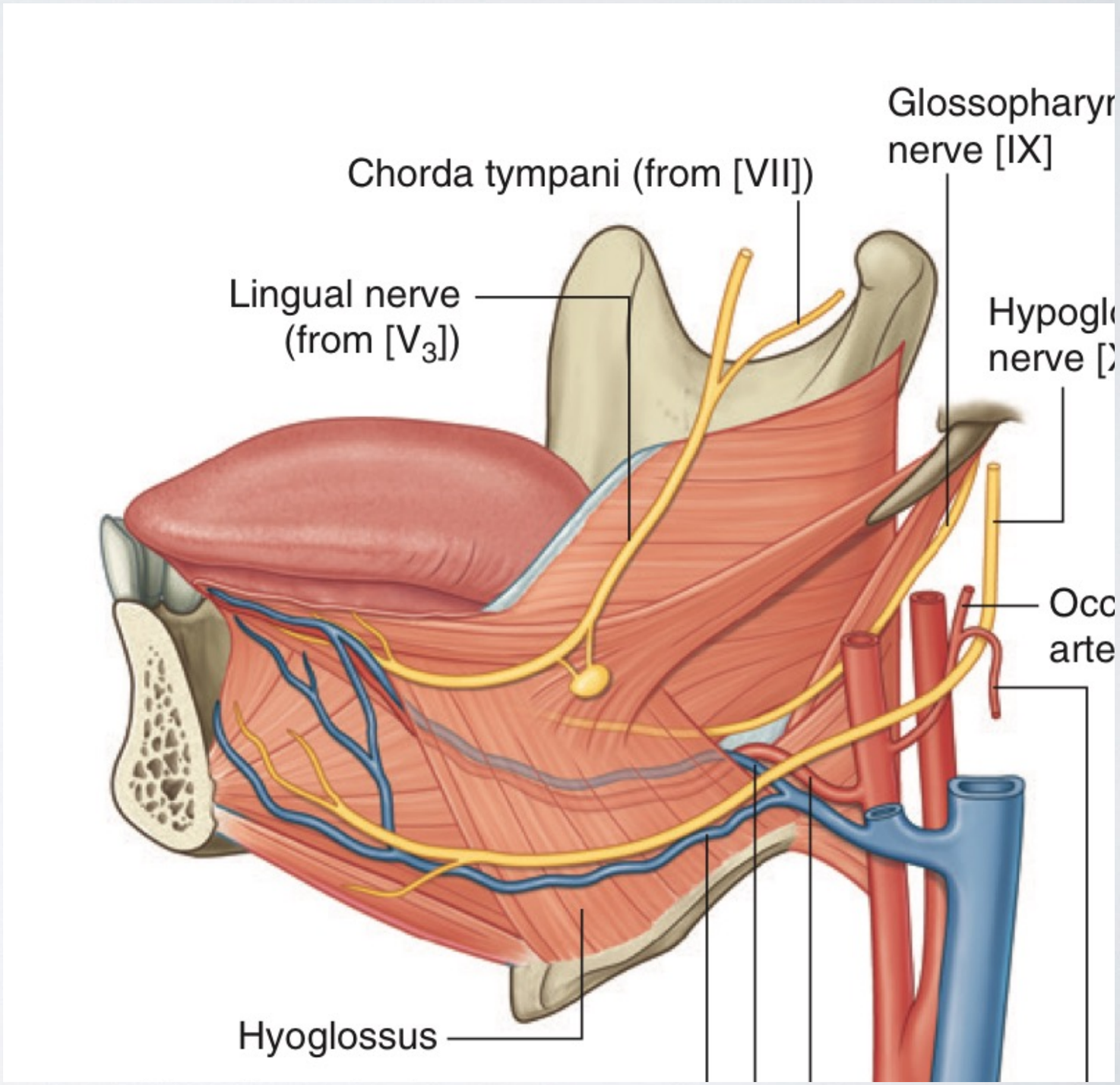






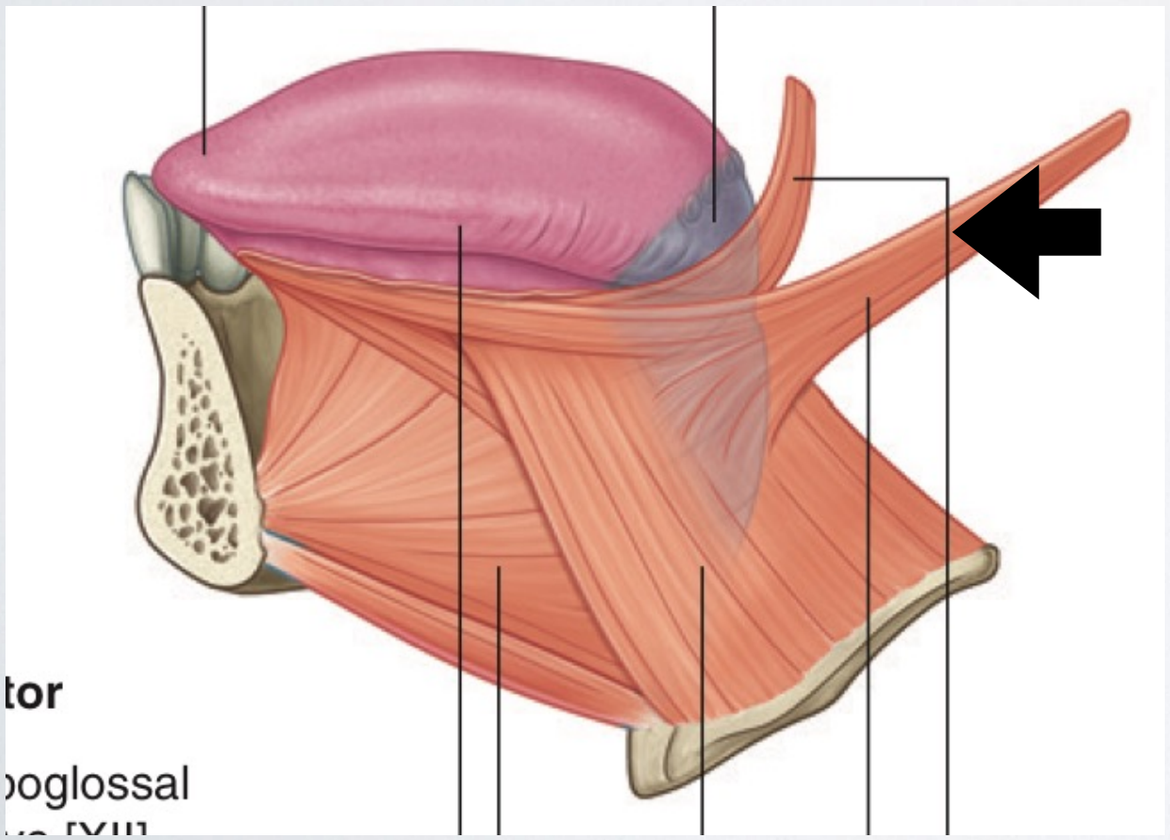
EXTRINSIC MUSCLES OF TONGUE

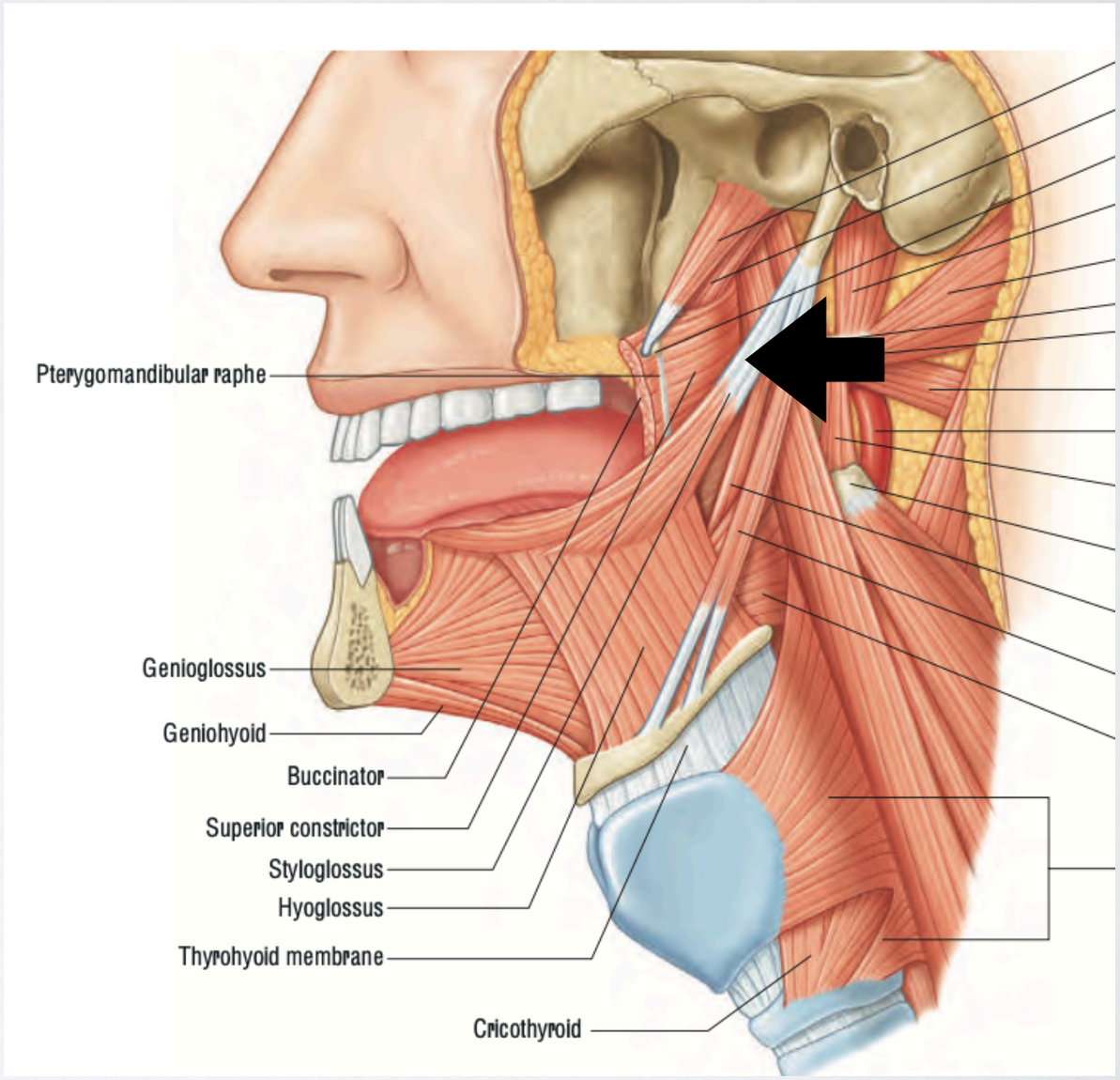
- Hyoglossus relationship
  - Hypoglossal nerve: lateral to the muscle
  - Ligual nerve: lateral to the muscle
  - Lingual artery: medial to the muscle



EXTRINSIC MUSCLES OF TONGUE

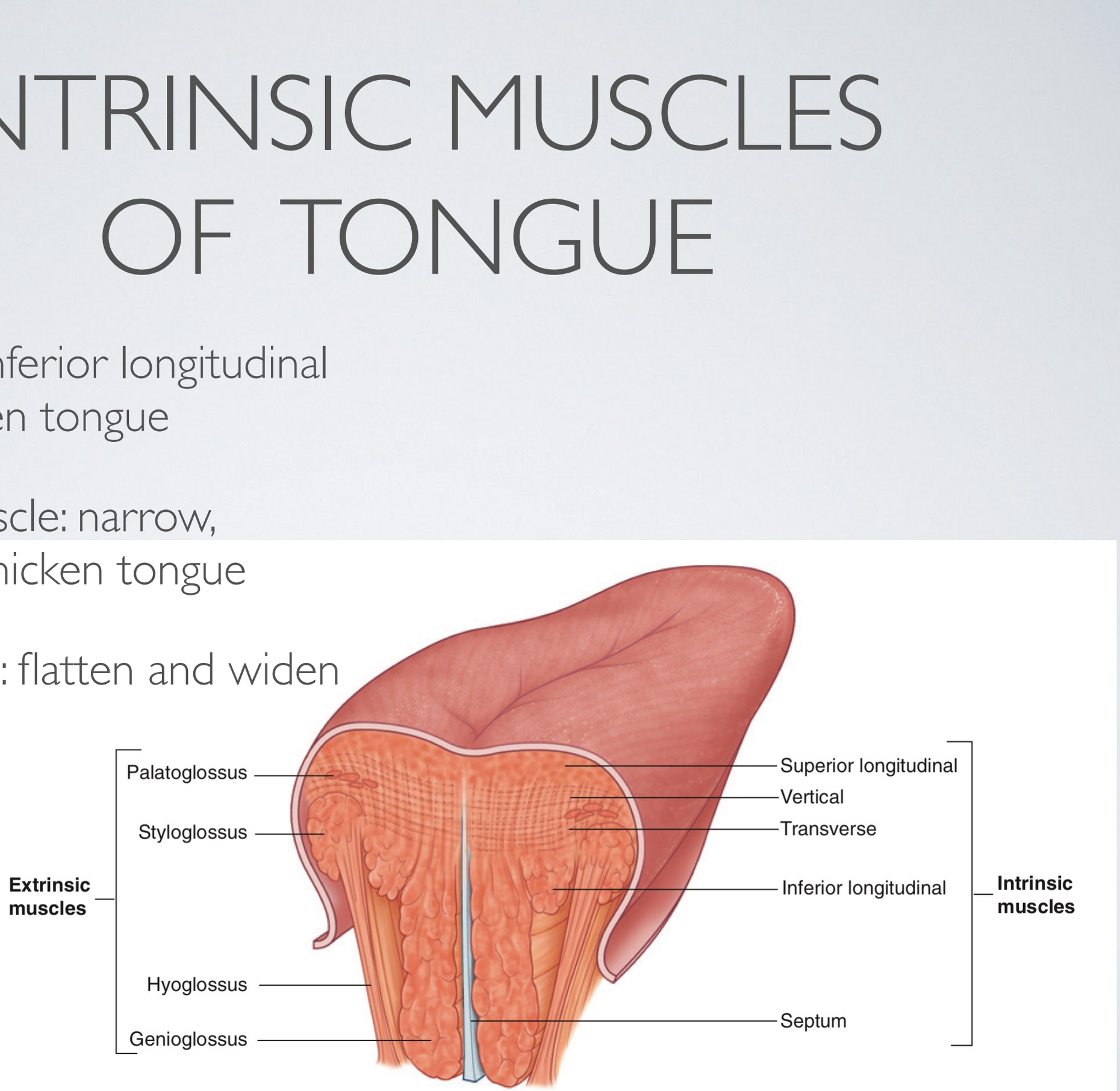
- Styloglossus
  - O: styloid process
  - I: lateral surface of tongue





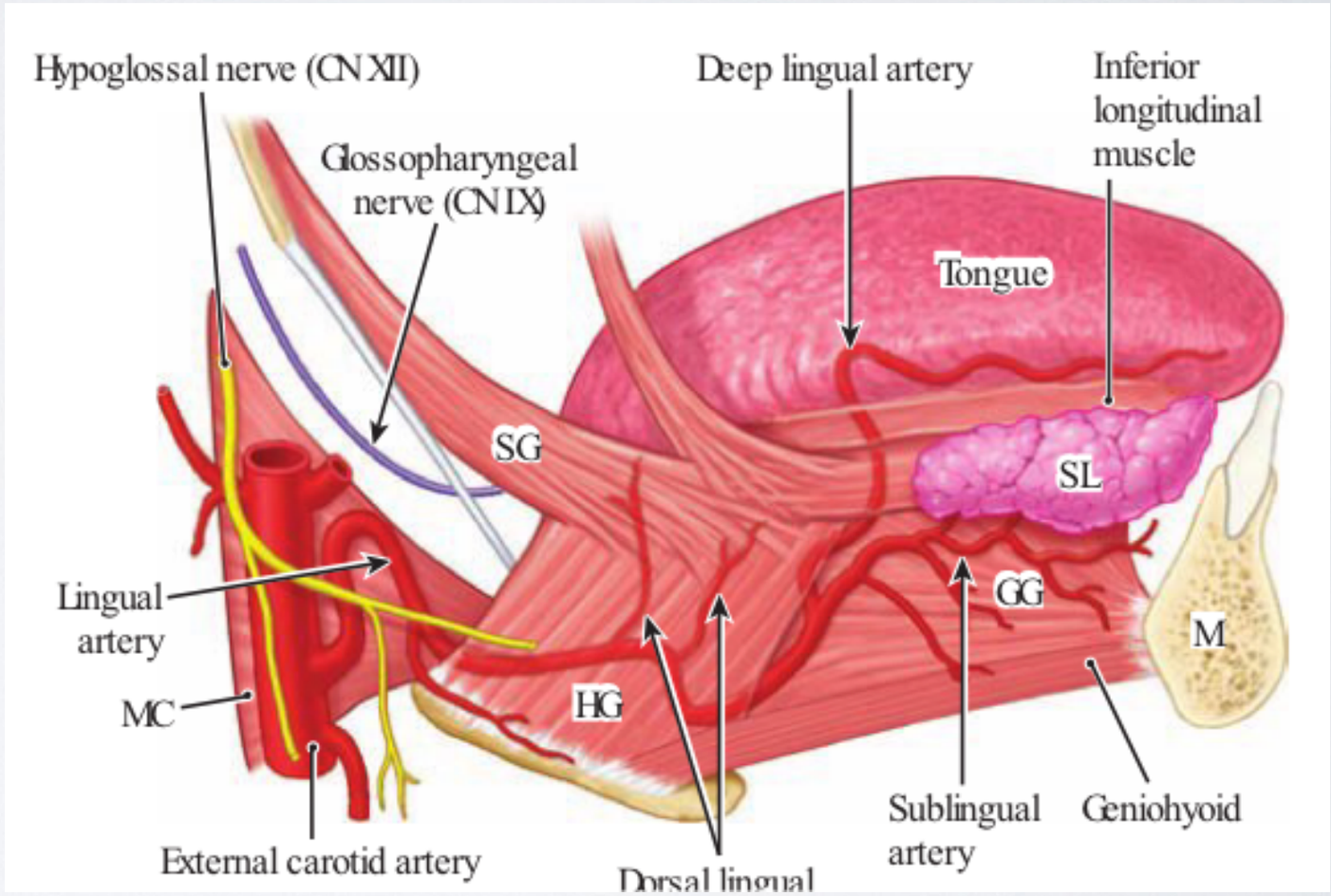
INTRINSIC MUSCLES OF TONGUE

- Superior and inferior longitudinal muscles: shorten tongue
- Transverse muscle: narrow, lengthen and thicken tongue
- Vertical muscle: flatten and widen tongue



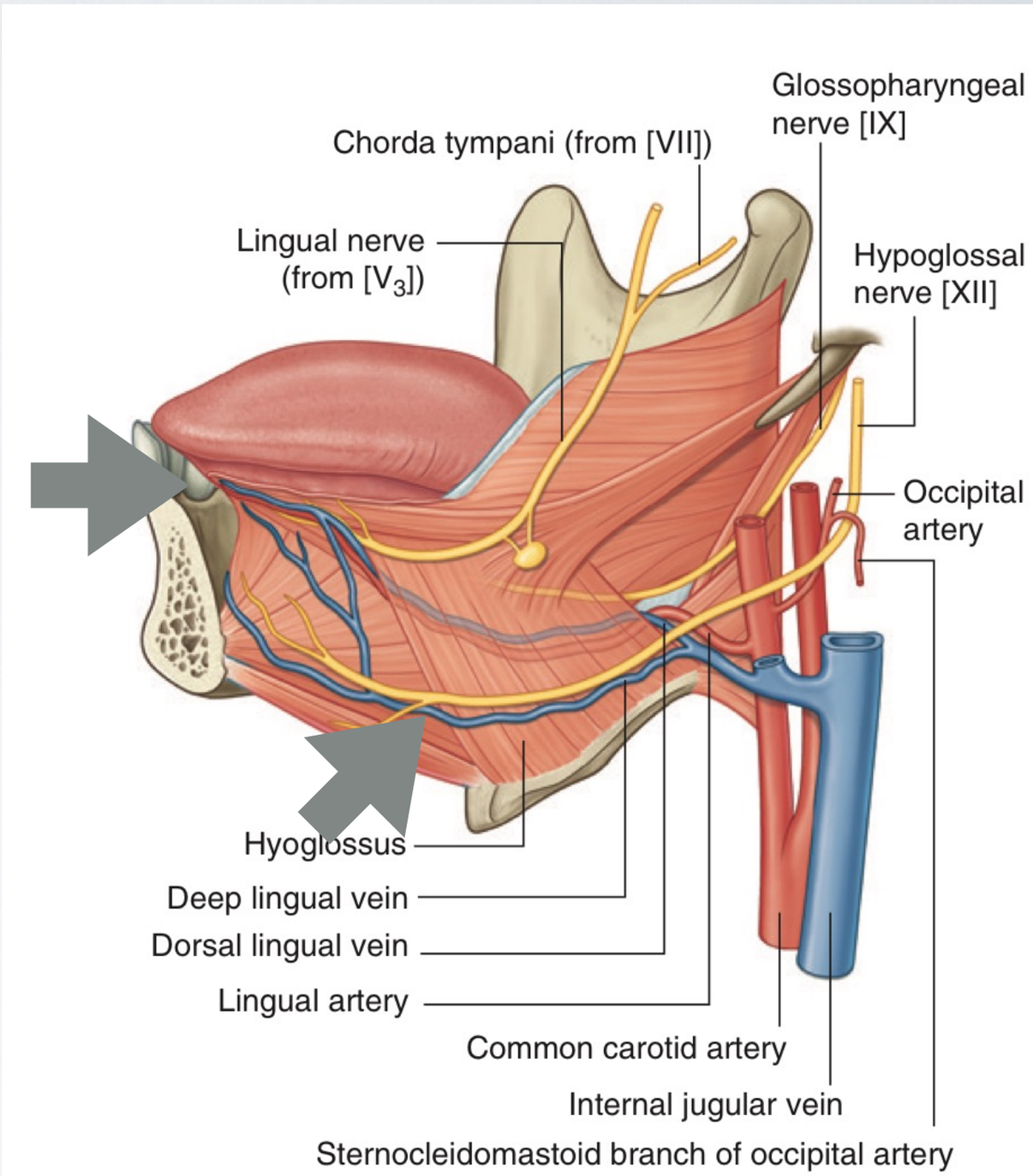
ARTERIAL SUPPLY OF TONGUE

- Lingual artery
  - Dorsal lingual a.
  - Sublingual a.
  - Deep lingual a.



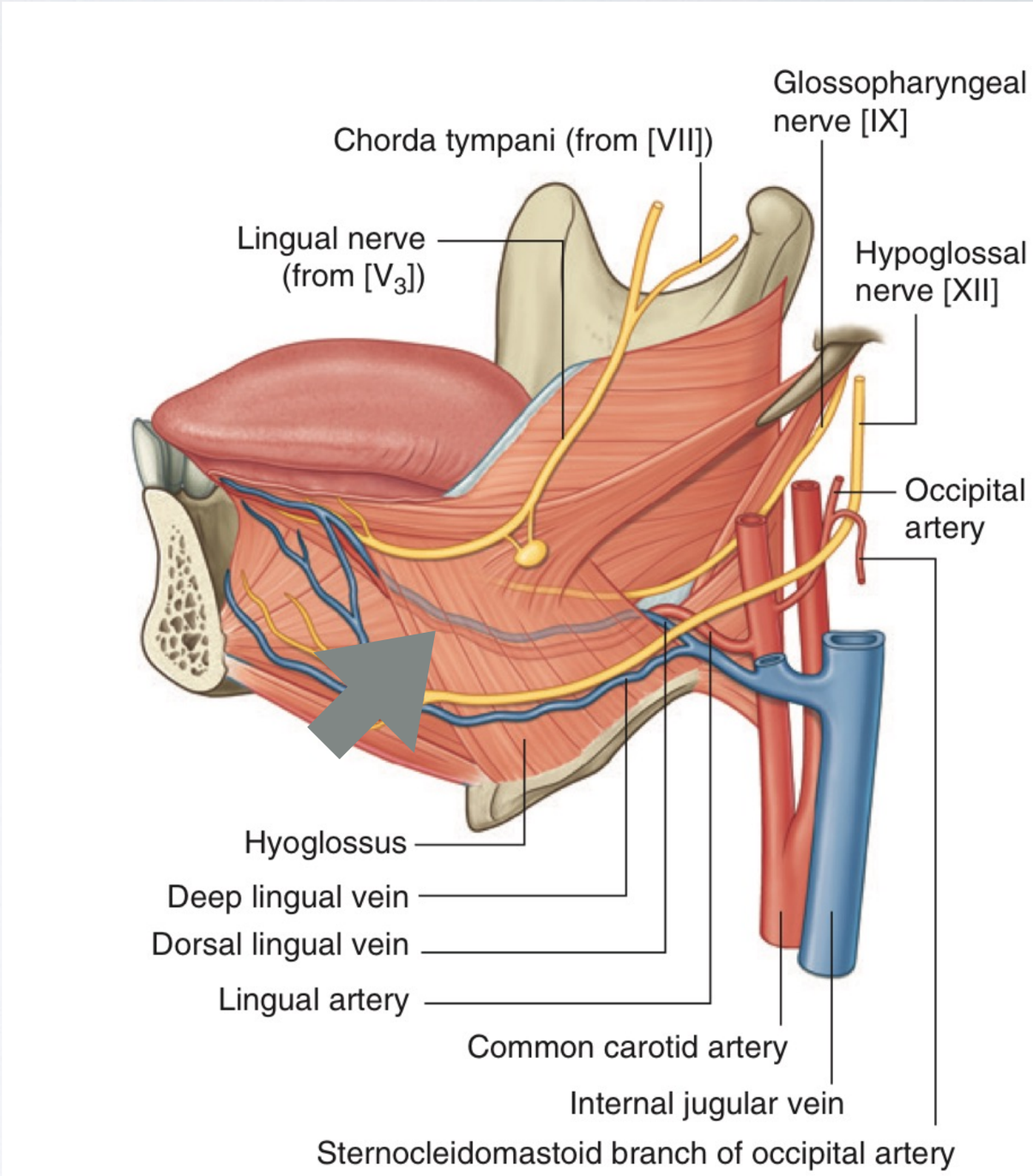
VENOUS DRAINAGE OF TONGUE

- Deep lingual v.
  - Vena comitans nervi hypoglossi
- Dorsal lingual v.



VENOUS DRAINAGE OF TONGUE

- **Dorsal lingual veins**
  - Drain from dorsum and lateral surface of tongue
  - Accompanying with lingual artery
  - Passing between hyoglossus and genioglossus

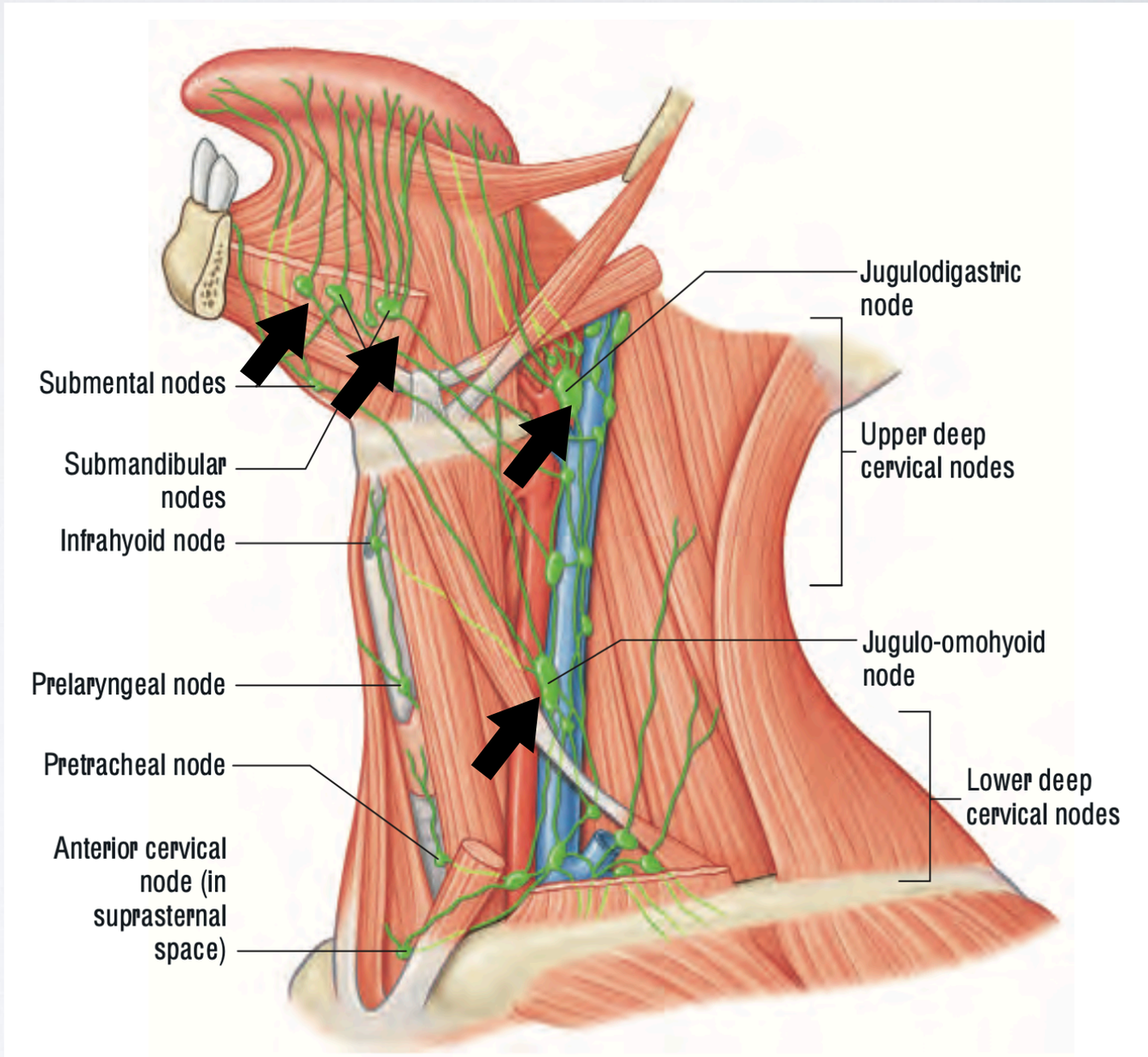


LYMPHATIC DRAINAGE OF TONGUE

- Submental lymph nodes

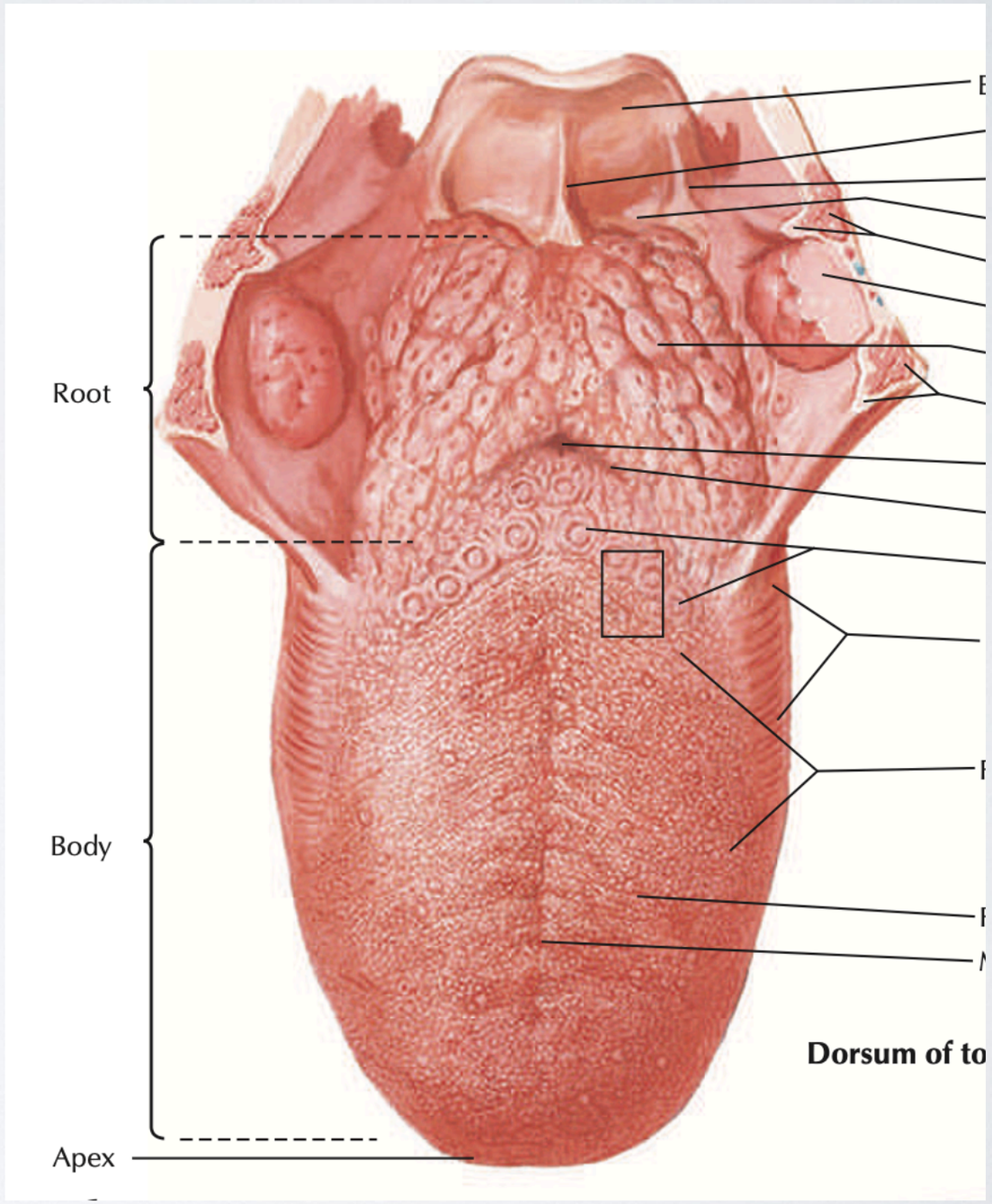
- Submandibular lymph nodes

- Deep cervical lymph nodes

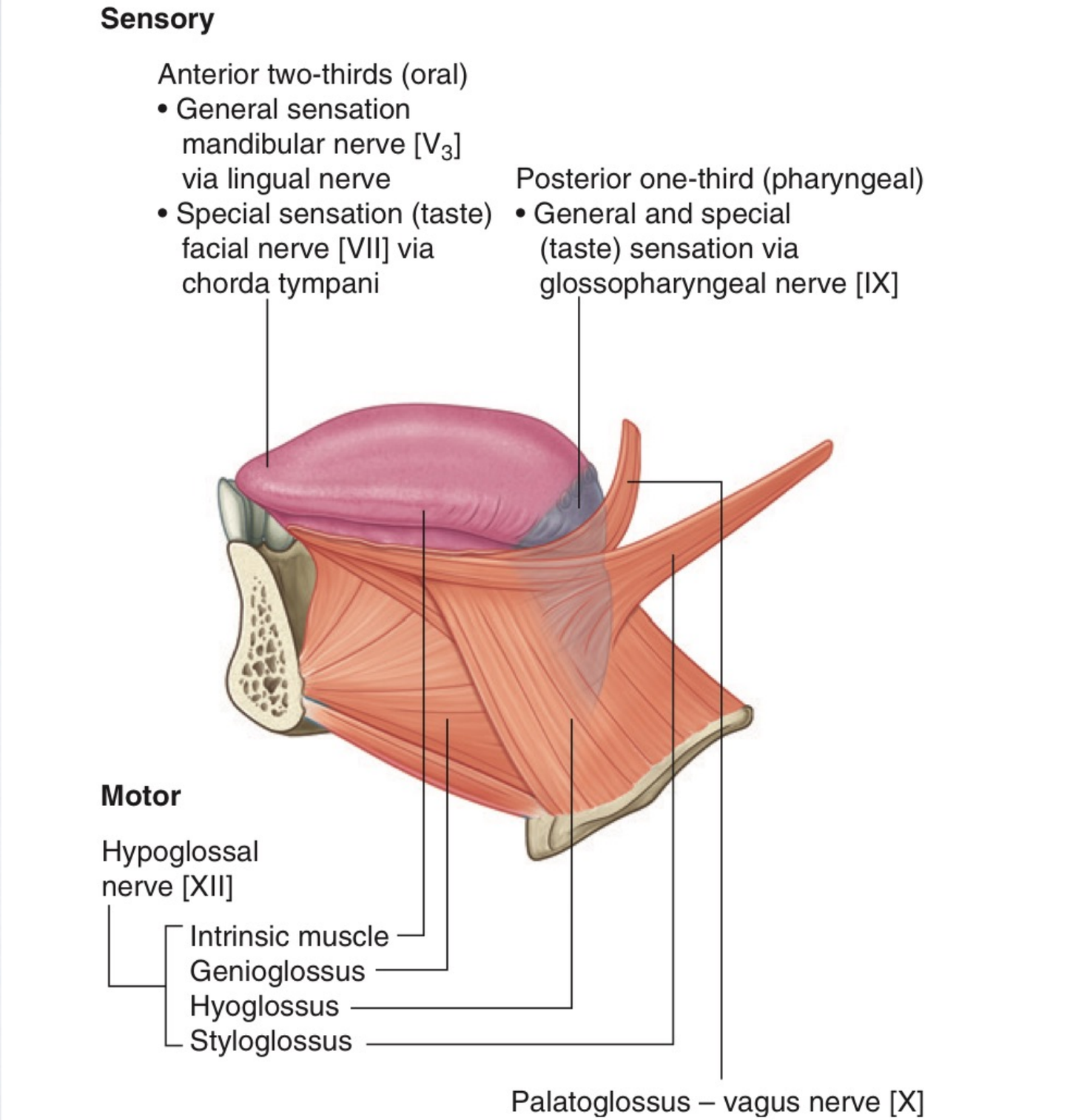


NERVE SUPPLY OF TONGUE

- **Sensory**
  - GSA (general sensation)
    - Anterior 2/3: lingual br of CN V3
    - Posterior 1/3: lingual br of CN IX
  - SVA (taste)
    - Anterior 2/3: CN VII
    - Posterior 1/3: CN IX
    - Valleculae: CN X
- **Motor**: CN XII except palatoglossus m.



NERVE SUPPLY OF TONGUE



OUTLINE OF CONTENTS

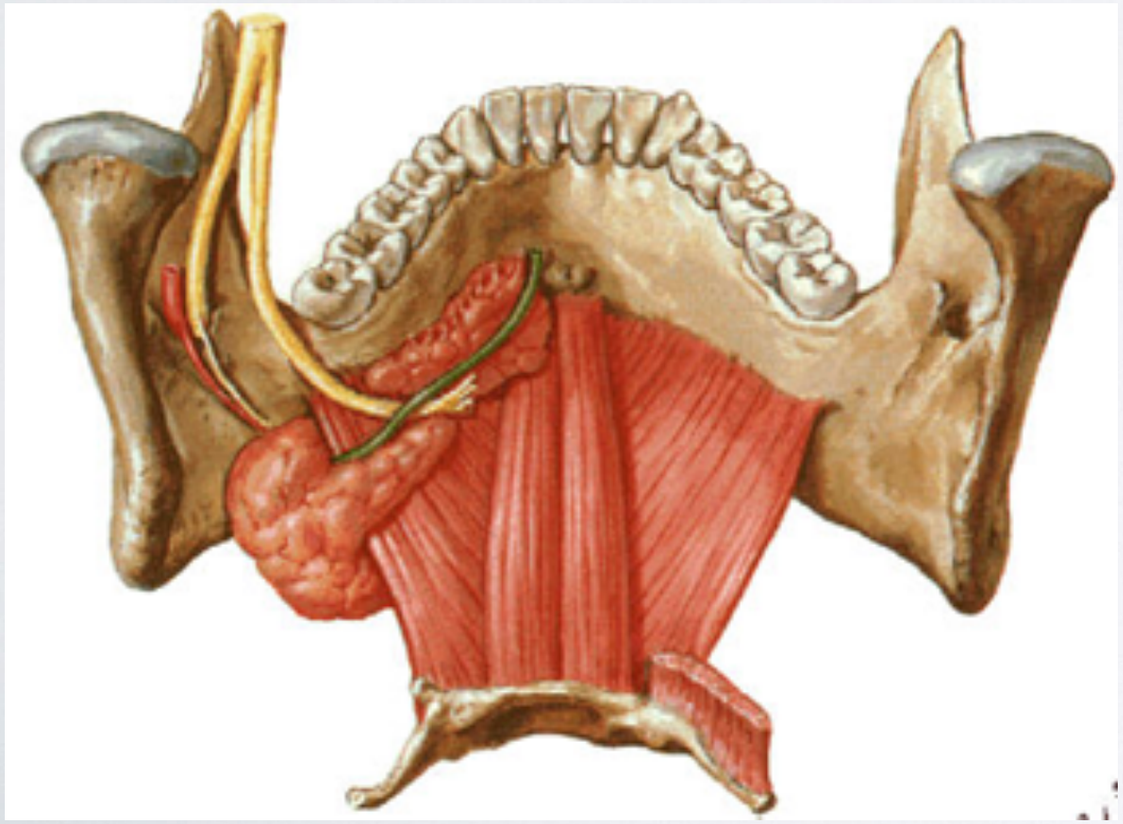
- Mouth: vestibule and oral cavity proper
- Lips
- Cheeks
- Palate: hard and soft palate
- Tongue
- The floor of the mouth

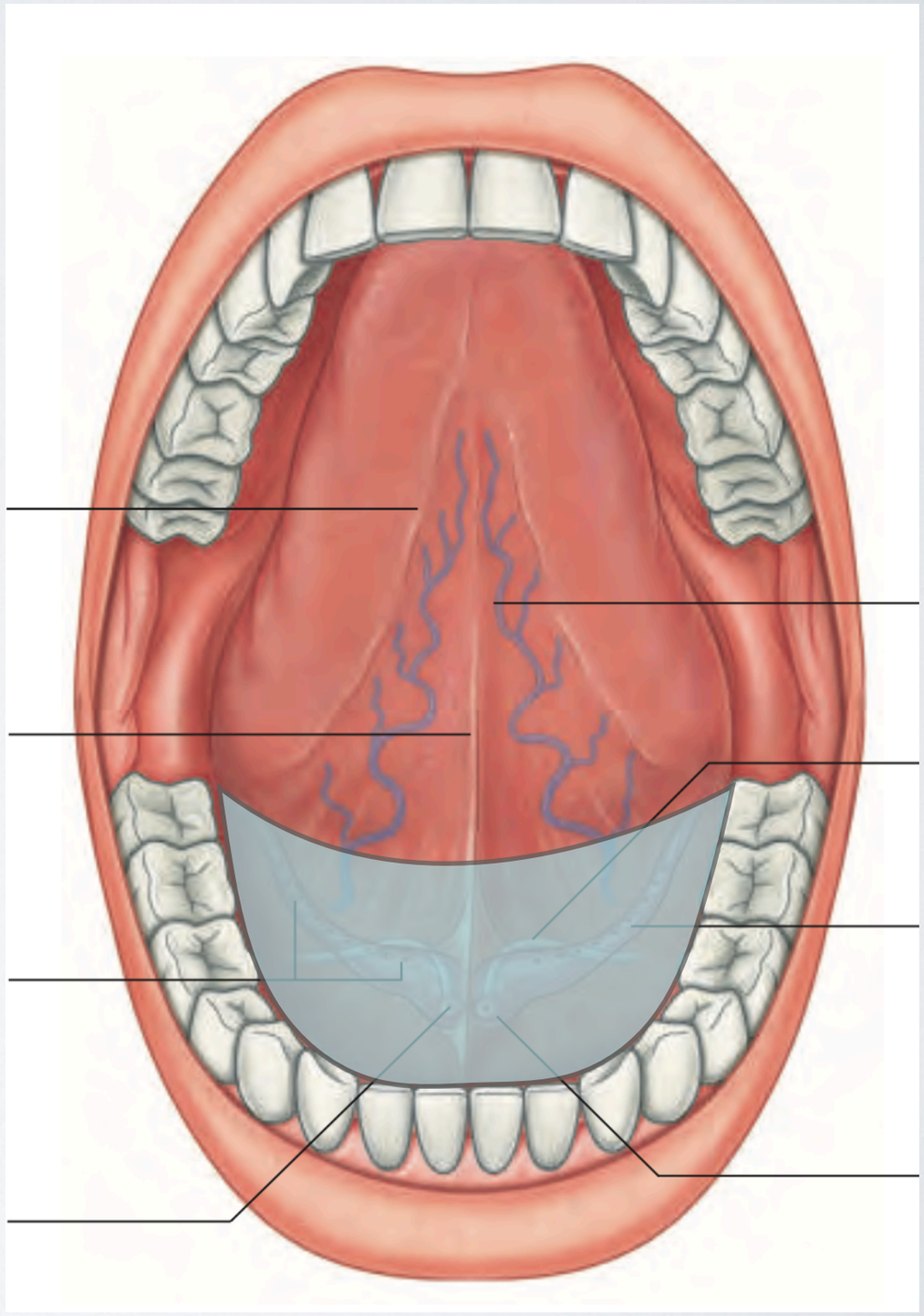
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FLOOR OF MOUTH

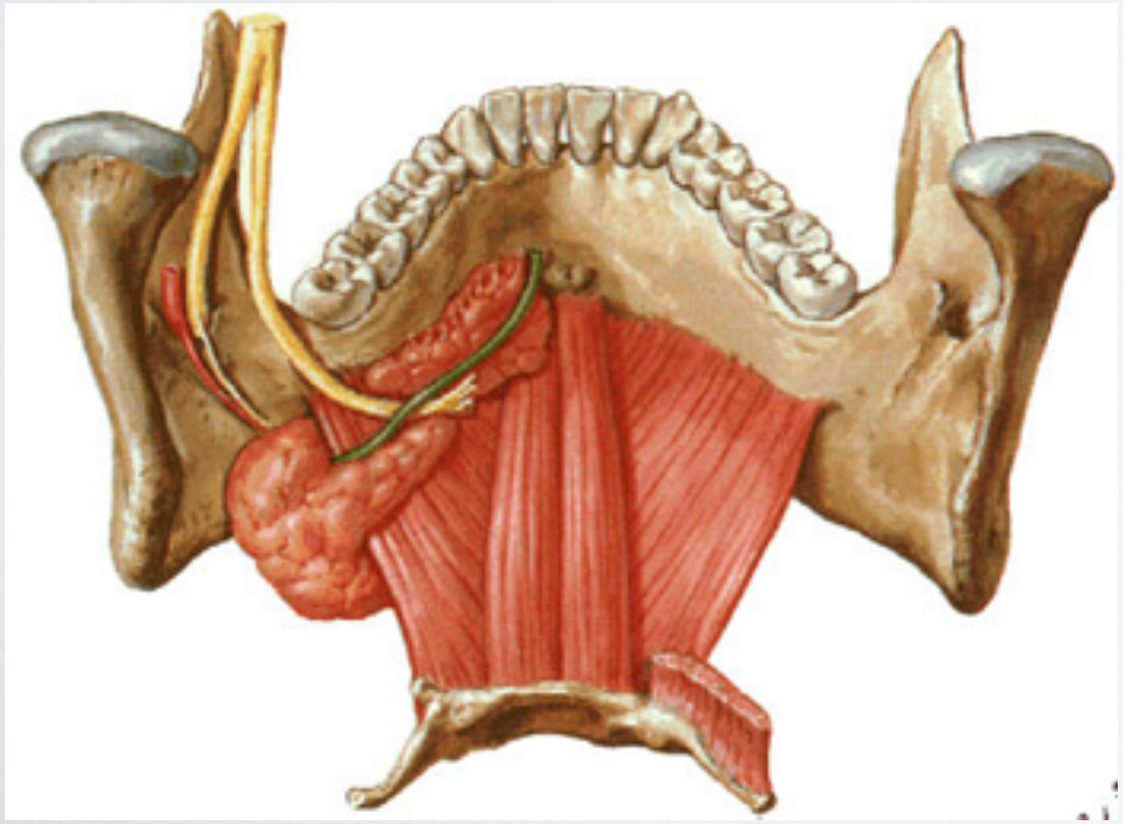
- Mucous membrane covering mylohyoid and geniohyoid muscles

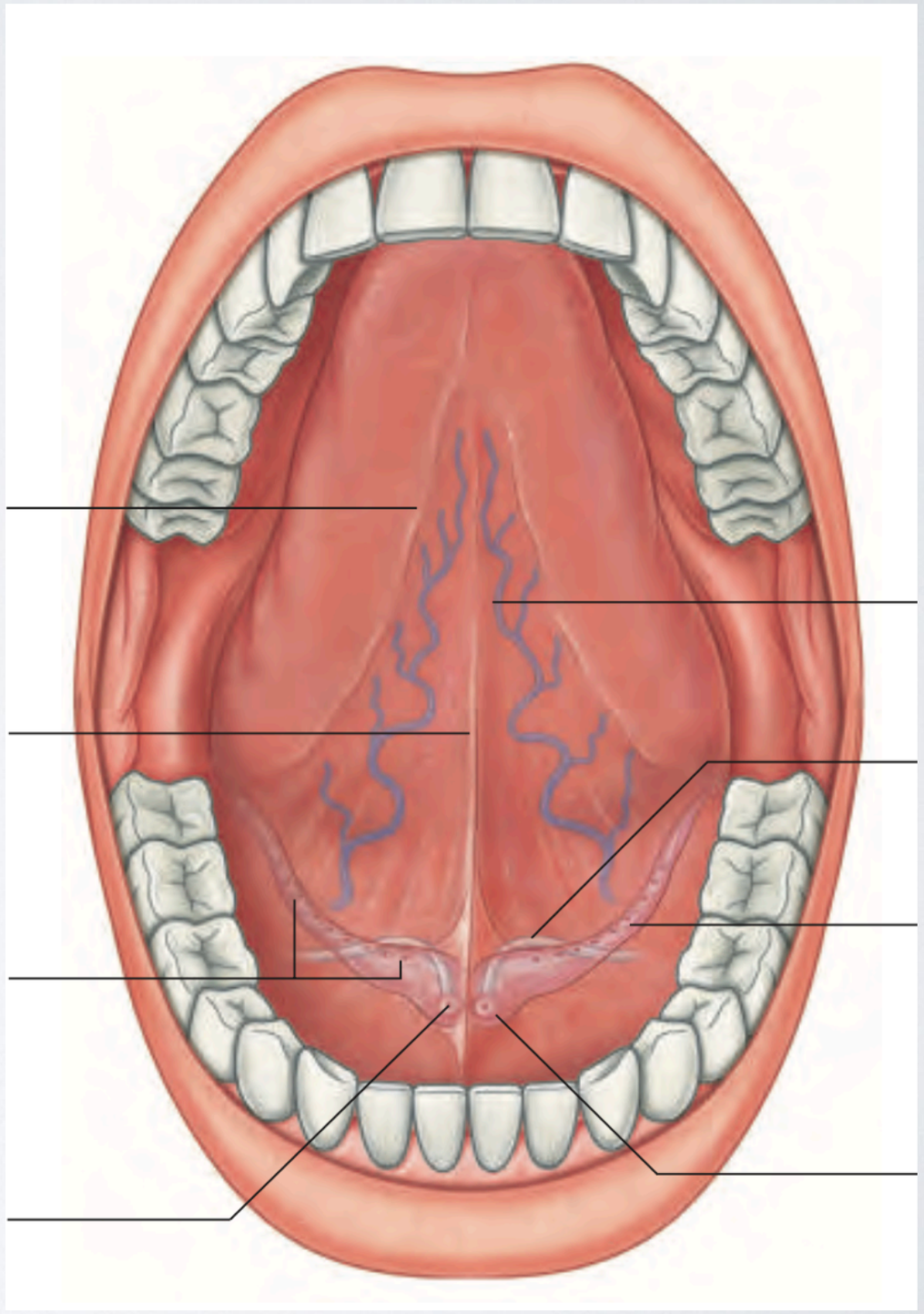




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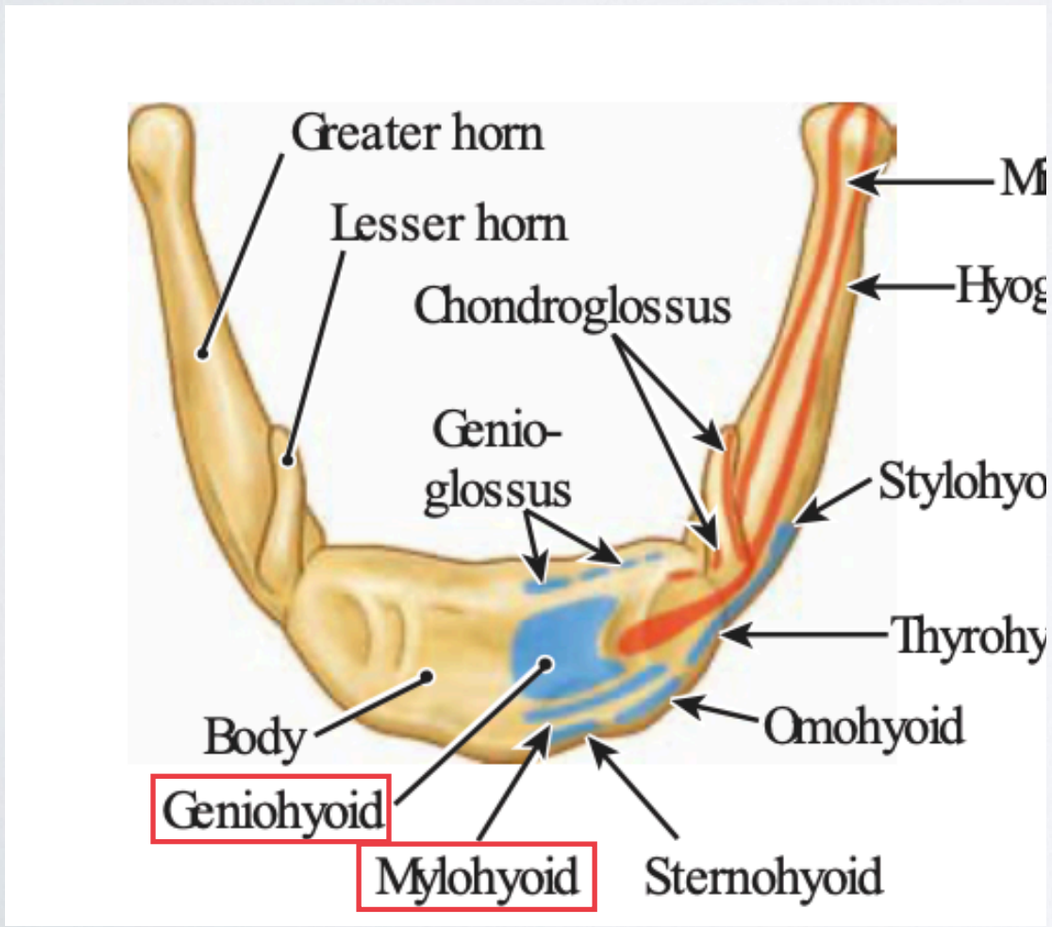
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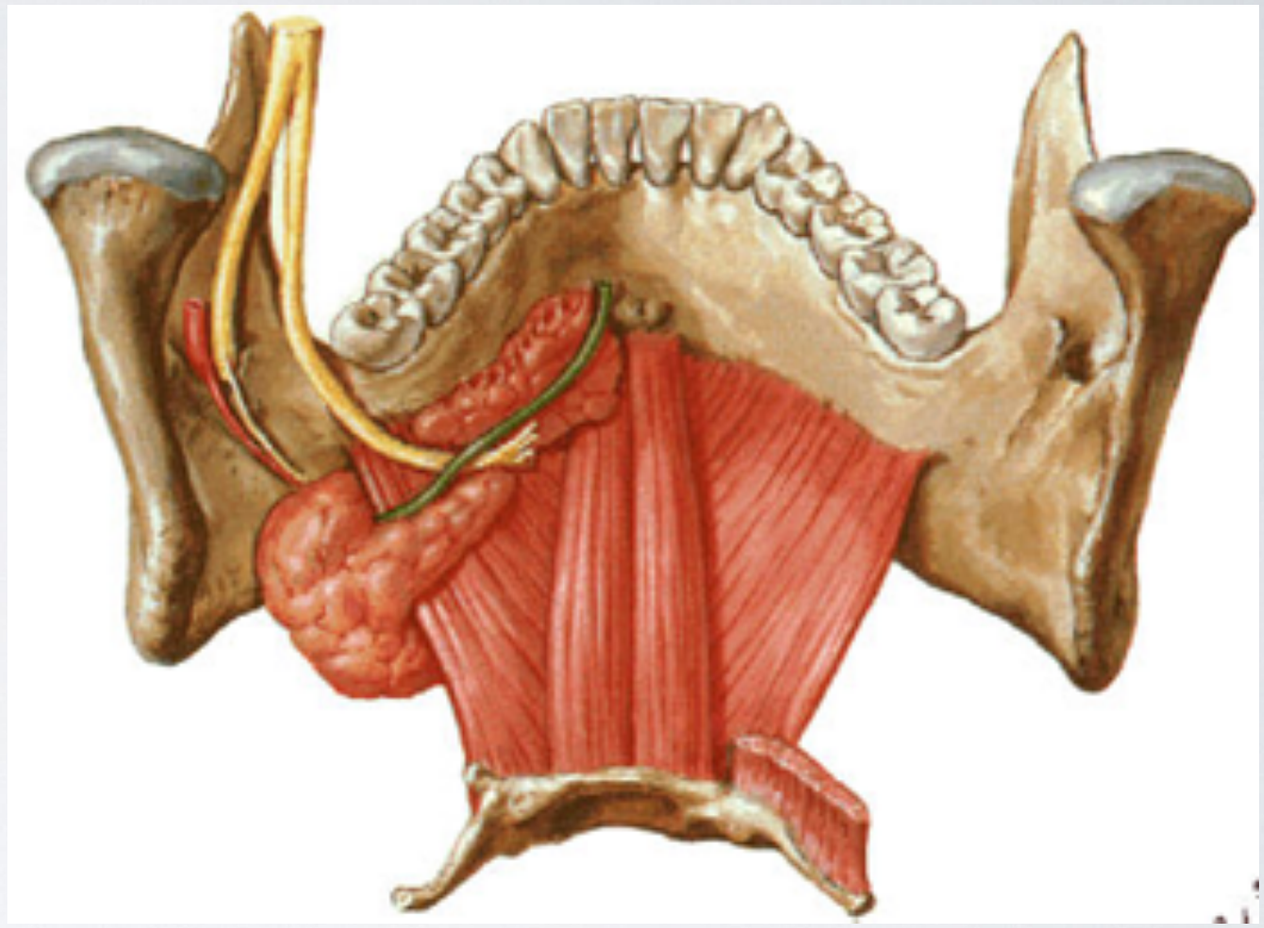




FLOOR OF MOUTH

- Geniohyoid muscle
- Mylohyoid muscle

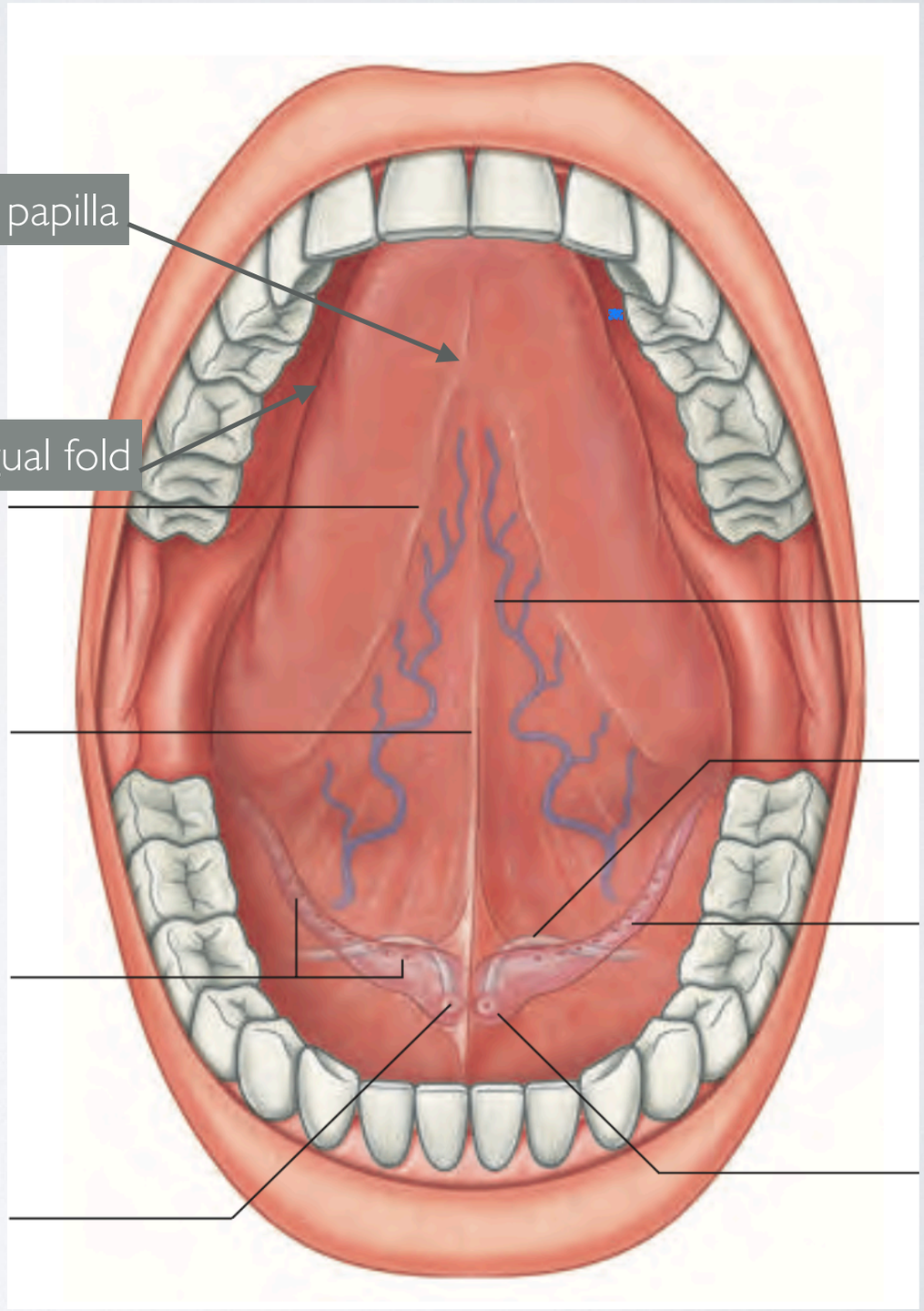


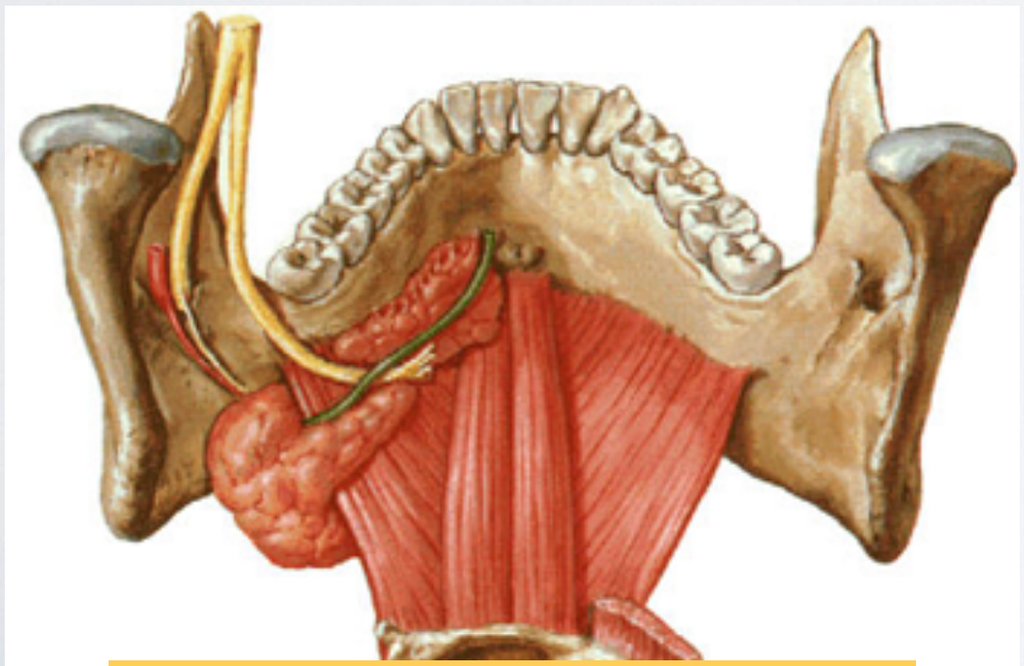


- Actions
  - Move hyoid bone forward and superiorly during swallowing
  - Depress mandible

FLOOR OF MOUTH

- Lingual frenulum (a fold of mucous membrane)
- Sublingual papilla (the opening of submandibular duct)
- Sublingual fold (sublingual galnds and openings of their ducts)

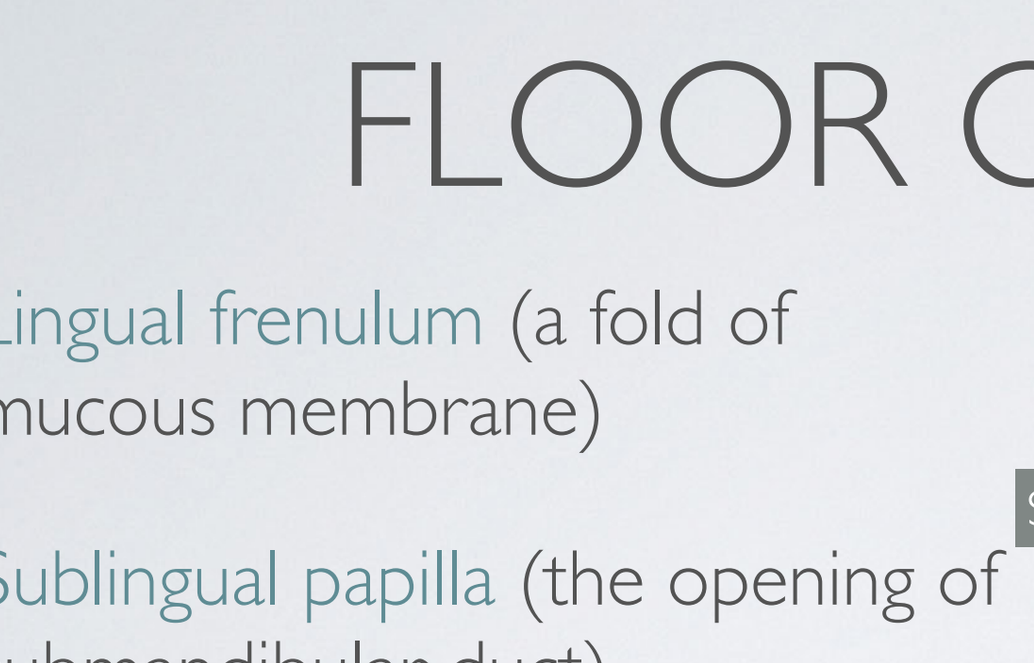




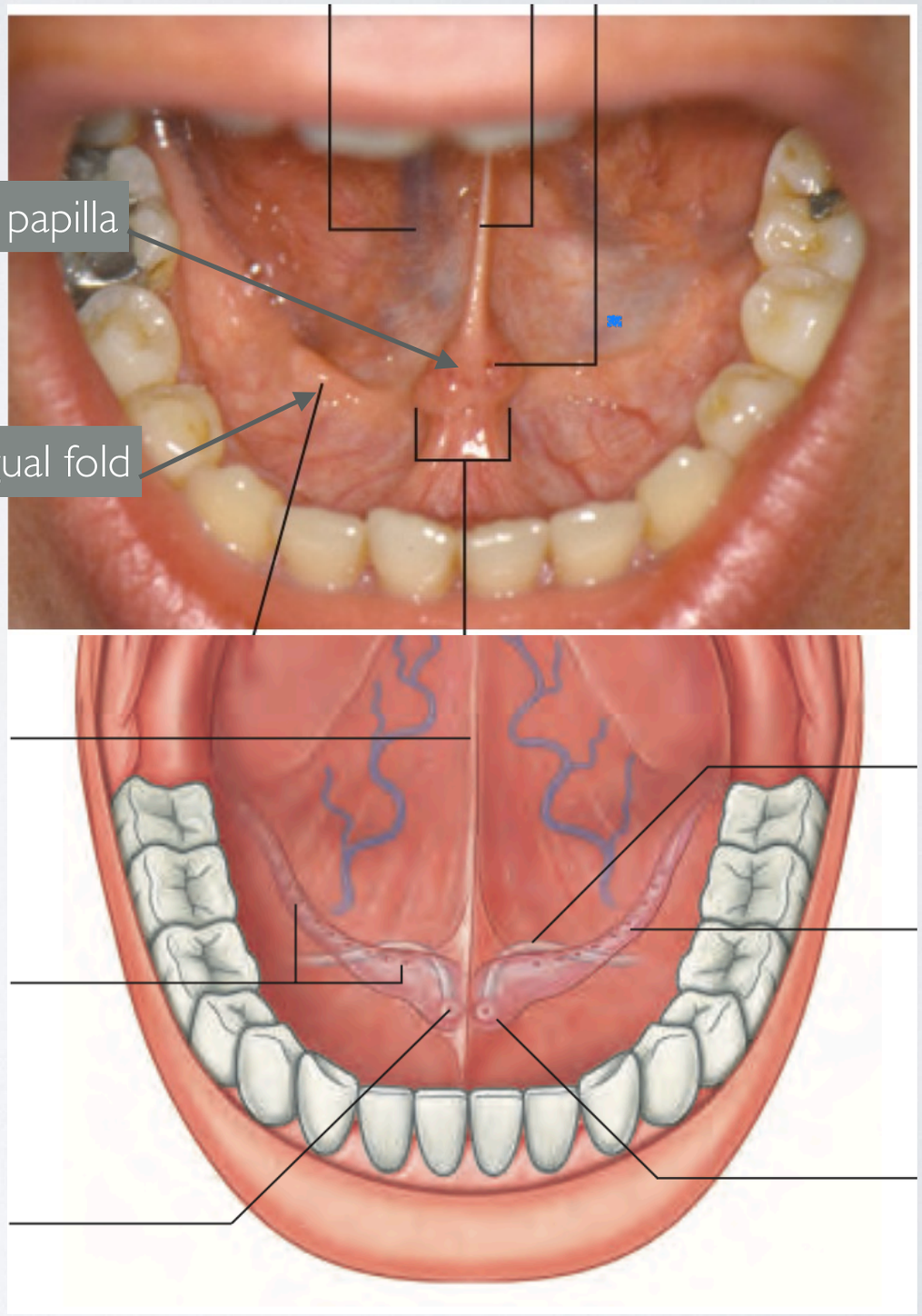
Submandibular duct vs lingual n.

FLOOR OF MOUTH

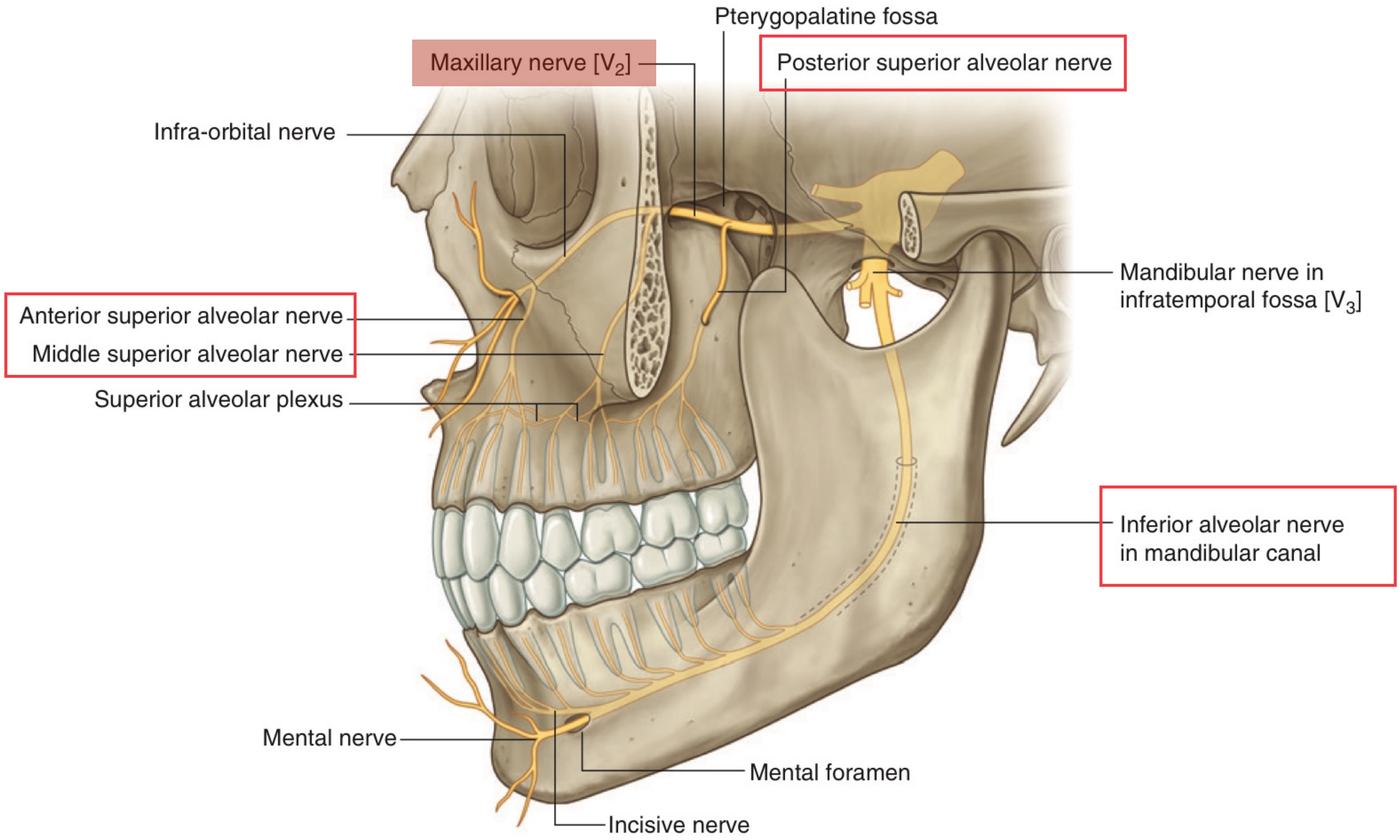
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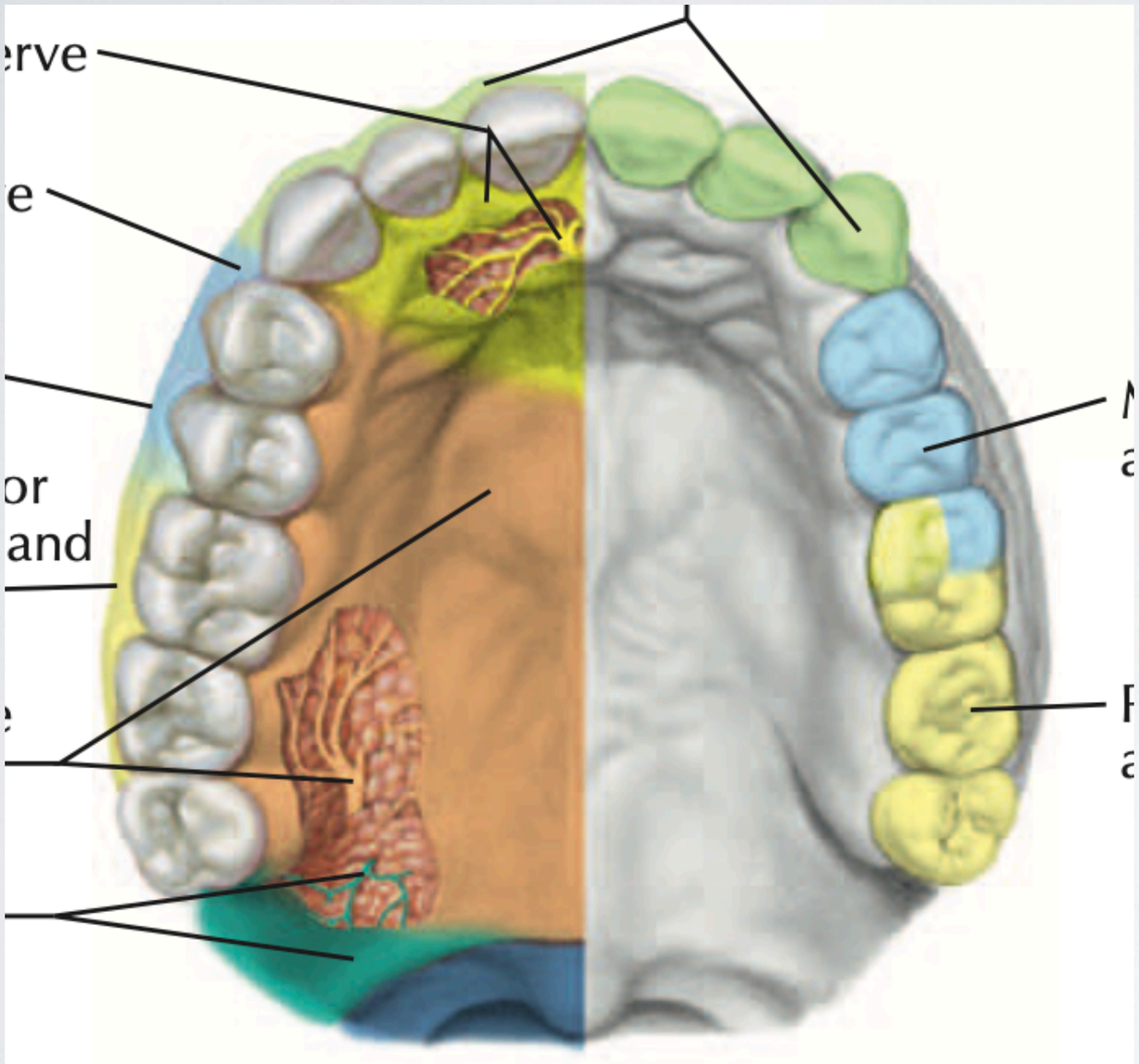
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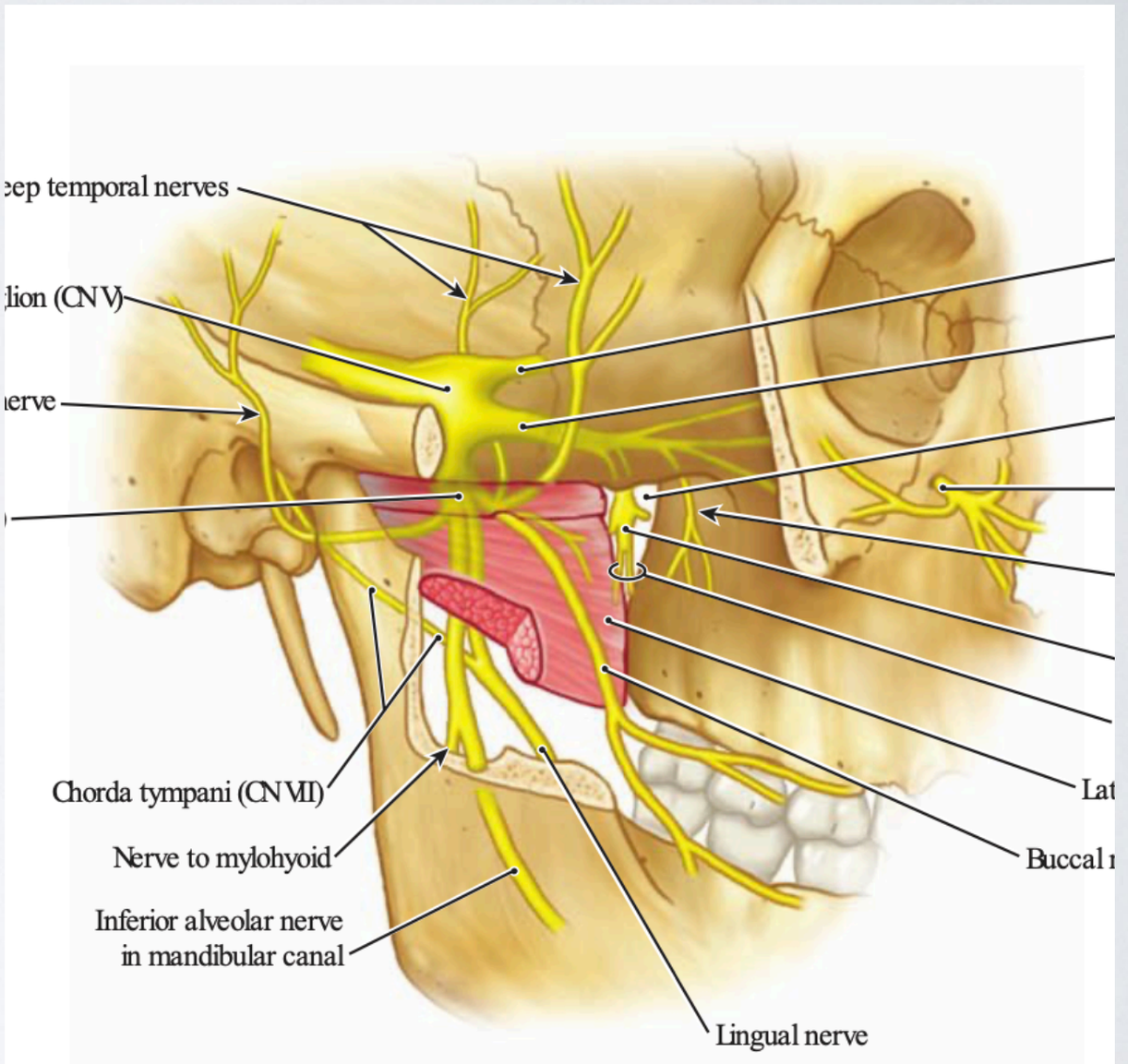
TEETH: INNERVATION



GINGIVAE: INNERVATION



- Posterior superior alveolar n.
- Middle superior alveolar n.
- Anterior superior alveolar n.
- Nasopalatine n.

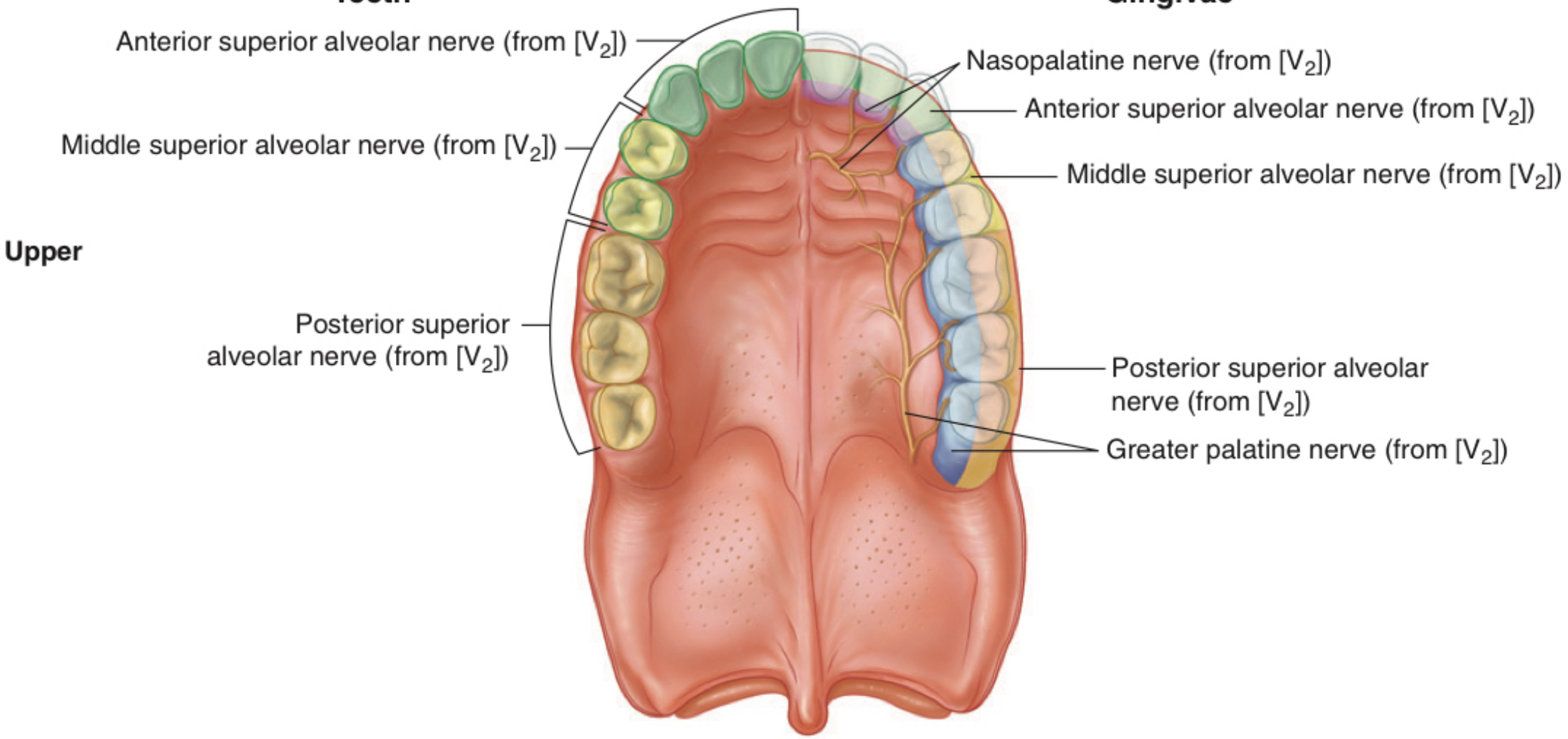


- Greater palatine n.
- Mental n.
- Lingual n.
- Buccal n.

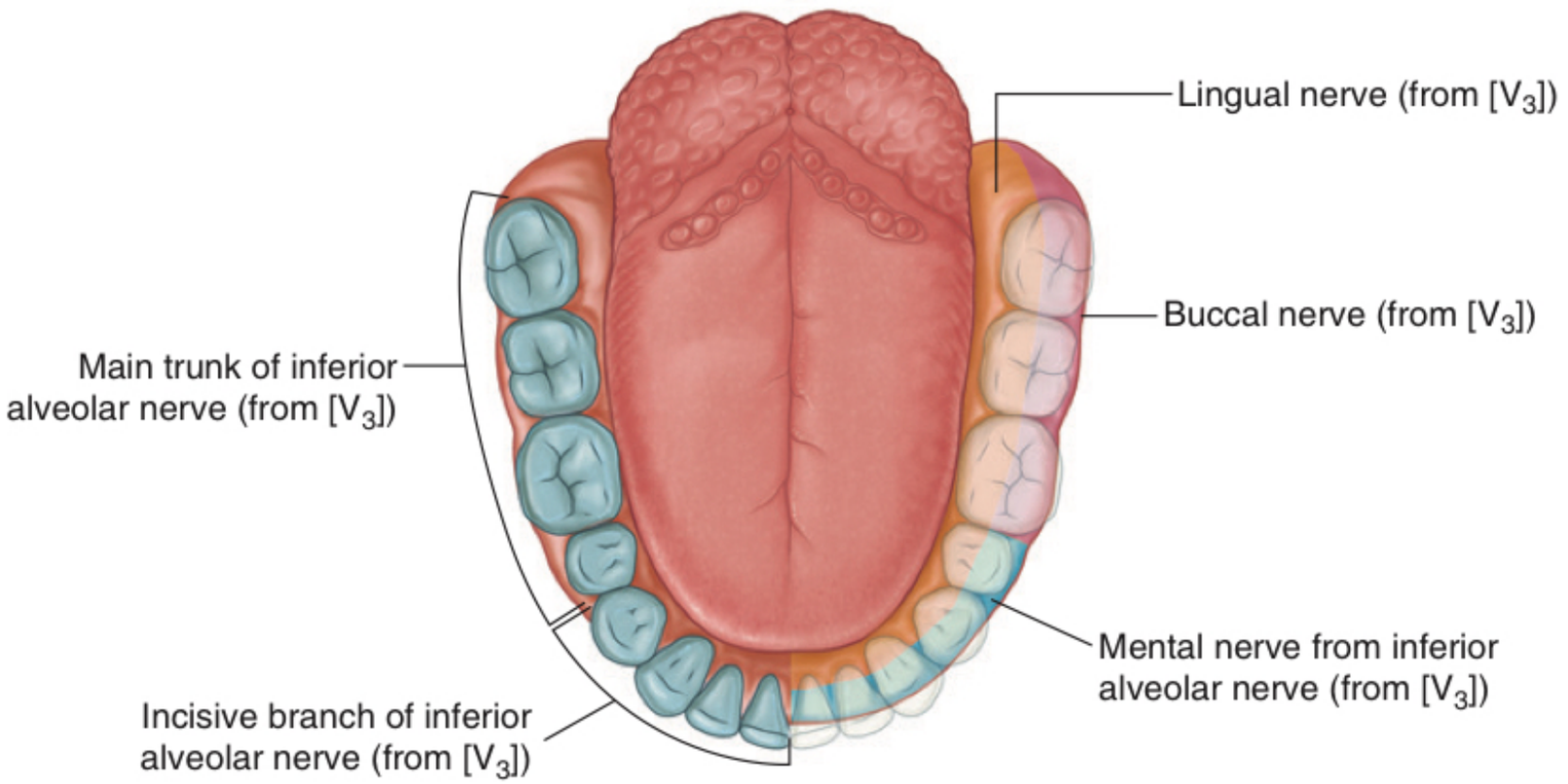
Teeth

Gingivae

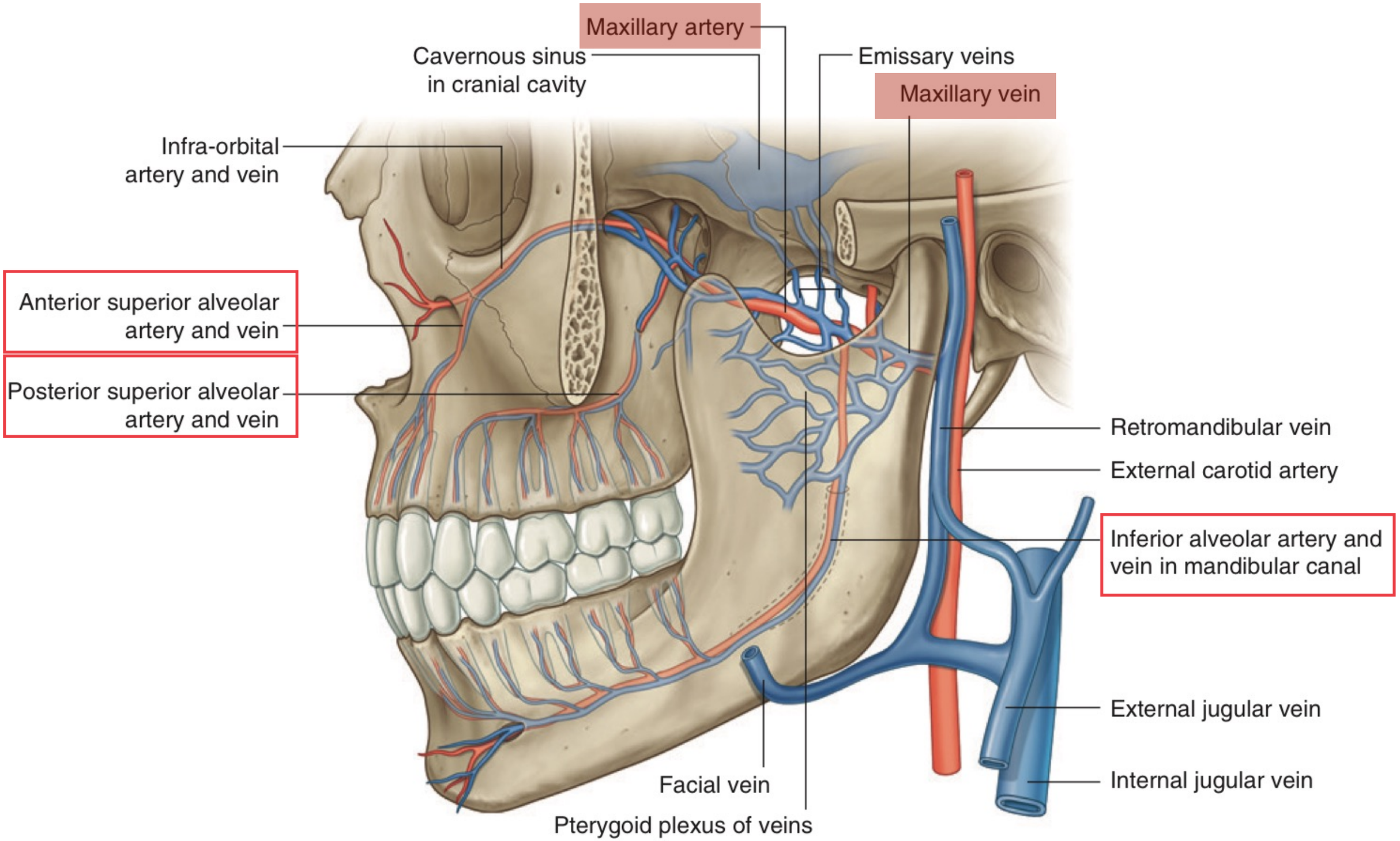
Upper



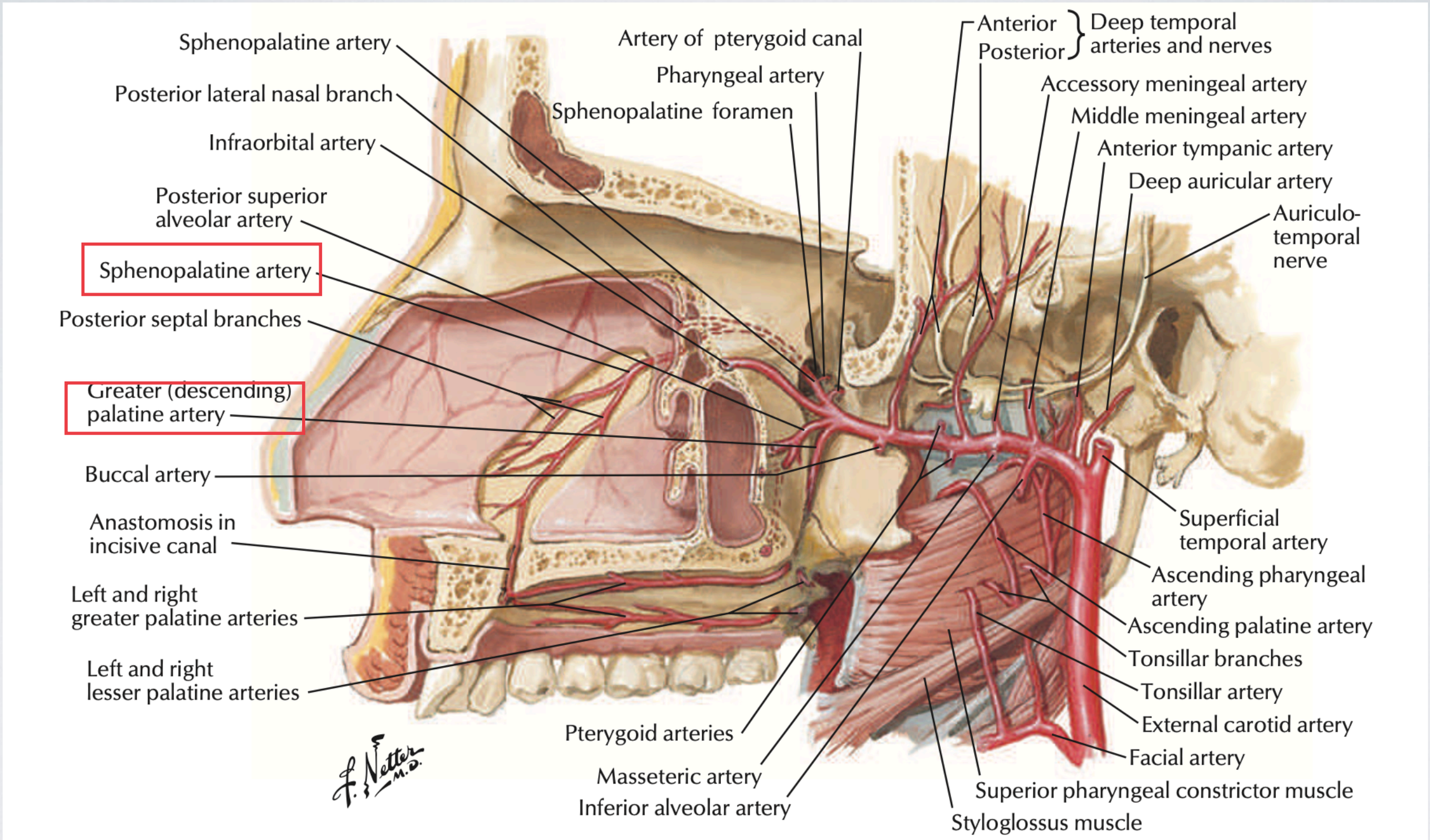
Lower



TEETH:VASCULAR SUPPLY

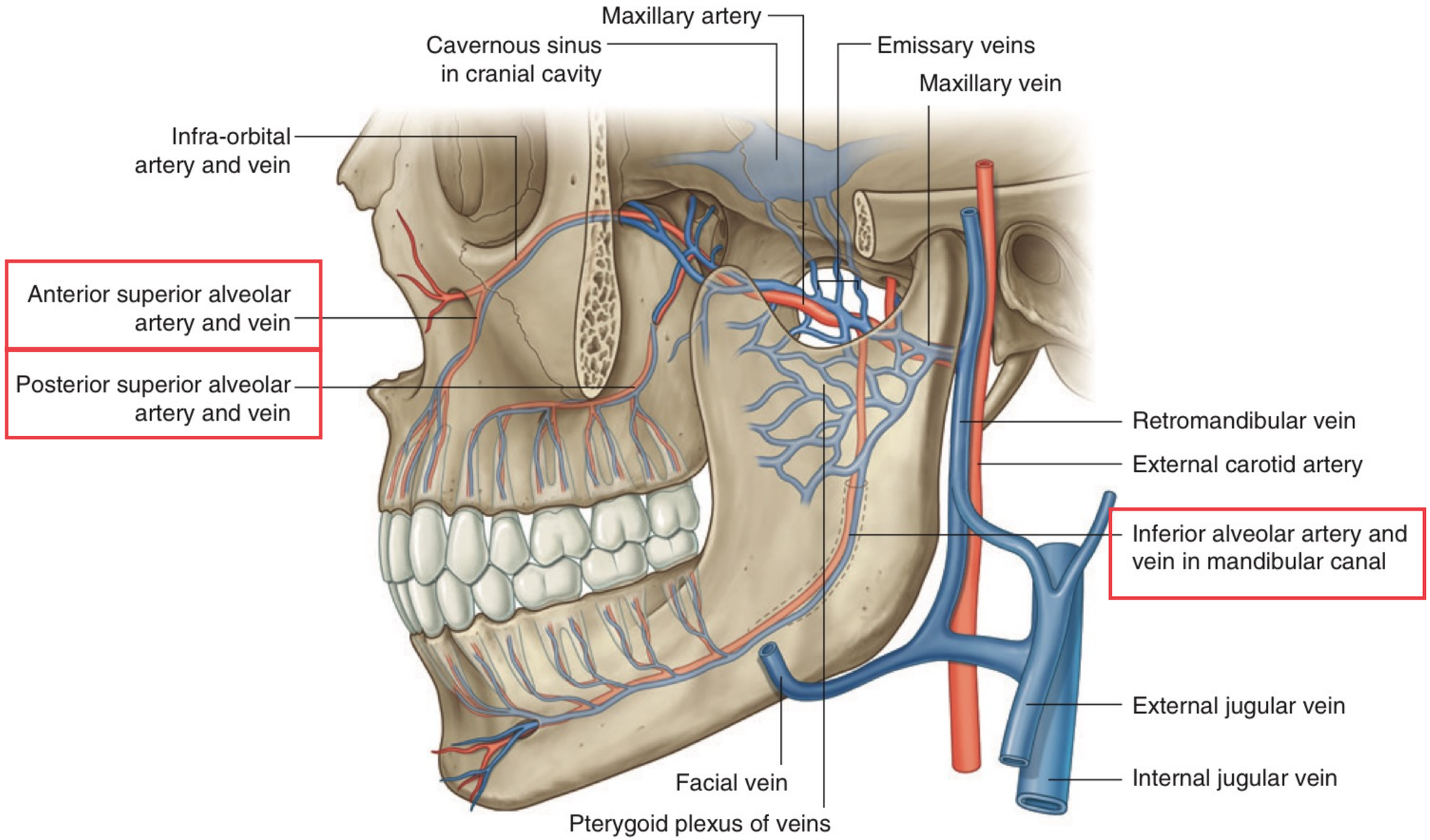


GINVIVAE: ARTERIAL SUPPLY

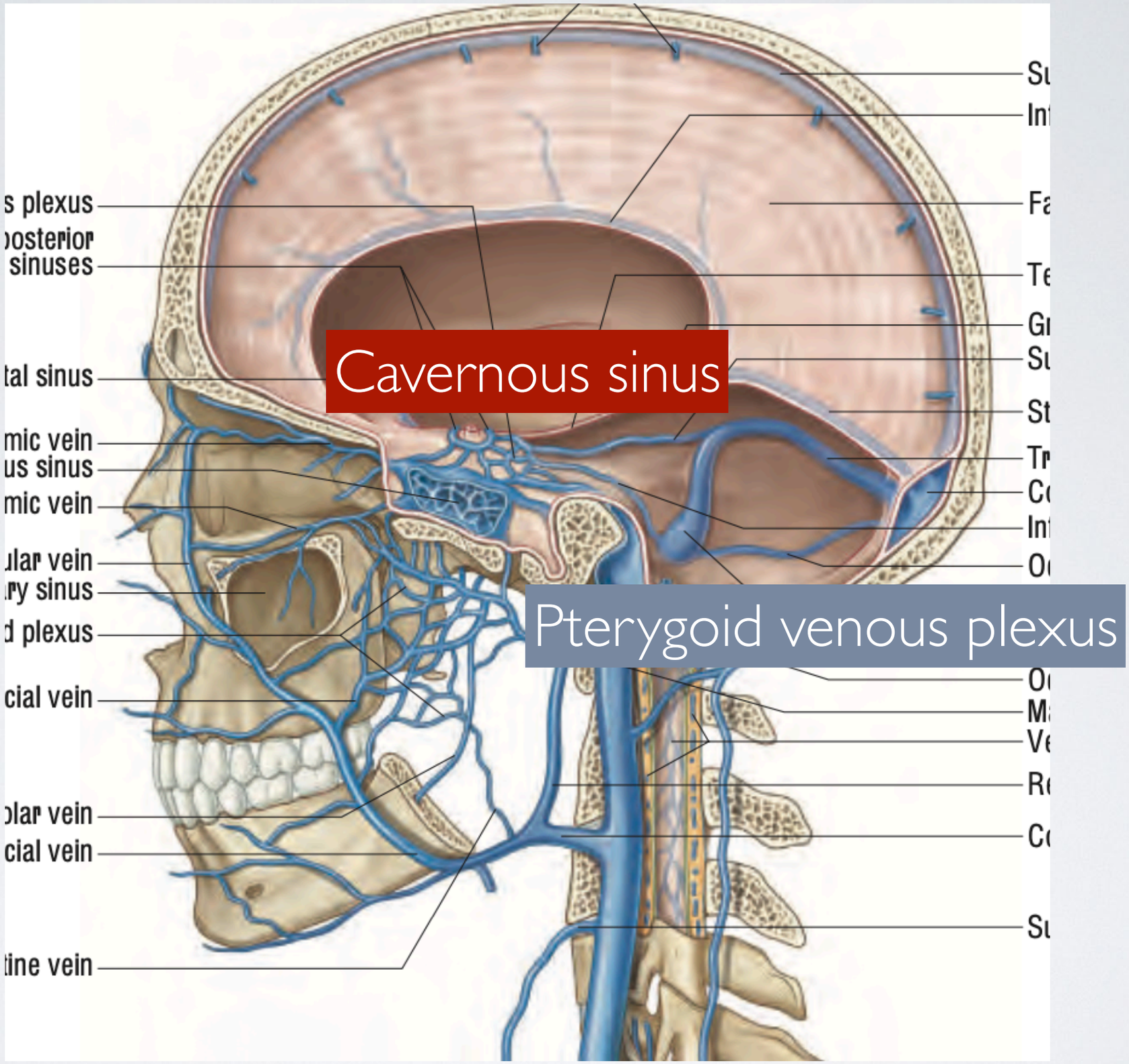


- Posterior superior alveolar a.
- Anterior superior alveolar a.
- Sphenopalatine a.
- Greater palatine a.
- Inferior alveolar a.
- Lingual a.

GINVIVAE: ARTERIAL SUPPLY

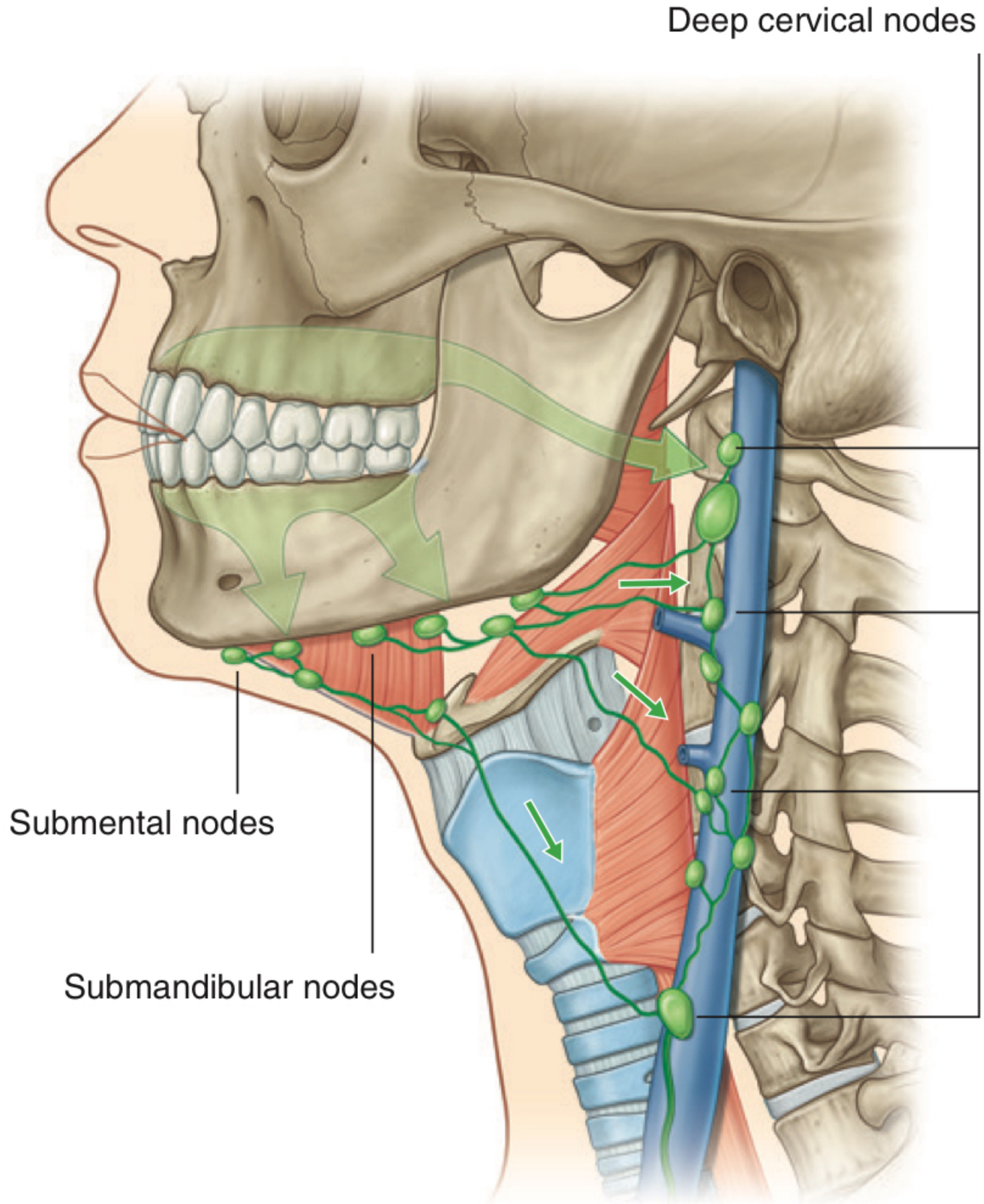


- Posterior superior alveolar a.
- Anterior superior alveolar a.
- Sphenopalatine a.
- Greater palatine a.
- Inferior alveolar a.
- Lingual a.


s plexus
posterior
sinuses
tal sinus
mic vein
us sinus
mic vein
ular vein
ry sinus
d plexus
cial vein
olar vein
cial vein
tine vein
Cavernous sinus
Pterygoid venous plexus

LYMPHATIC DRAINAGE

of the teeth and the gum



“The End”