SALIVARY GLANDS

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2ND YEAR MBBS
KGMC

Learning Objectives

- Glands and its classification
- Exocrine glands and its classification
- Salivary glands and its classification
- Relations of different glands
- Blood supply
- Nerve supply
- Lymph drainage
- Surface anatomy
- Clinical correlates

Gland;An organ which produces and releases substances that perform a specific function in body.

- Glands are basically divided into;

1. Endocrine glands:secretes their products through basal lamina and lacks a duct system for example:pituitary, thyroid and adrenal glands.
2. Exocrine glands:secretes their product through a duct

for example:sweat,lacrimal and salivary glands

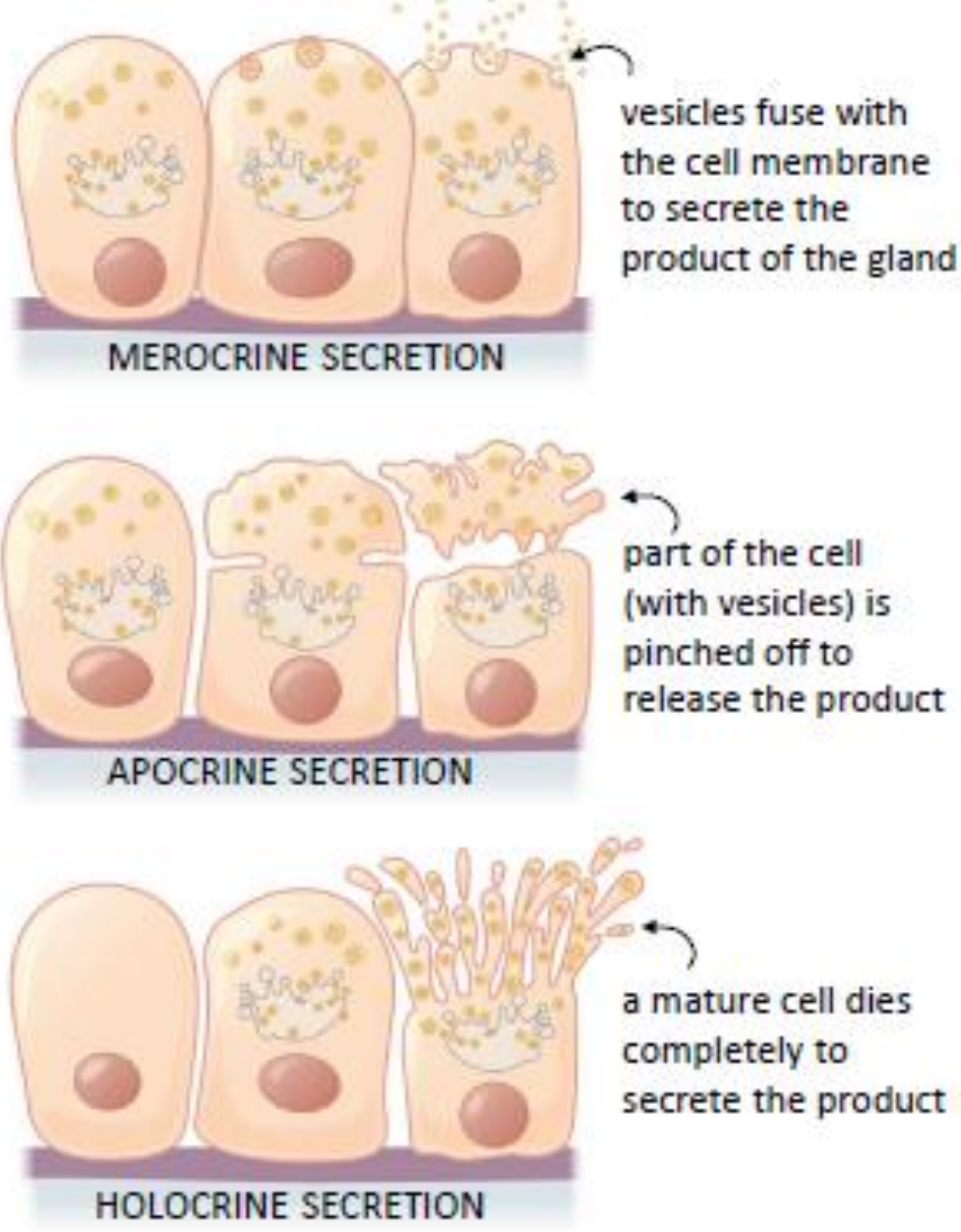
Groups of exocrine glands

Merocrine or eccrine glands	• Cells secrete their substances by exocytosis e.g mucous and serous glands
Apocrine glands	• A portion of secreting cell's body is lost during secretion e.g mamilary and axillary glands
Holocrine glands	• The entire cell disintegrates to secretes its substances e.g sebaceous glands

Salivary glands

DEVELOPMENT AND GROWTH

- Salivary glands arise from the ectoderm of the oral cavity.
- During embryonic life salivary gland is formed at specific location of the oral cavity through the growth of bud of oral epithelium in to underlying mesenchyme.
- Parotid & submandibular glands appear during 6th week of intrauterine life.
- Sublingual gland during 7-8th week of I.U life.
- Minor salivary glands begin their development during 3 rd month of I u life



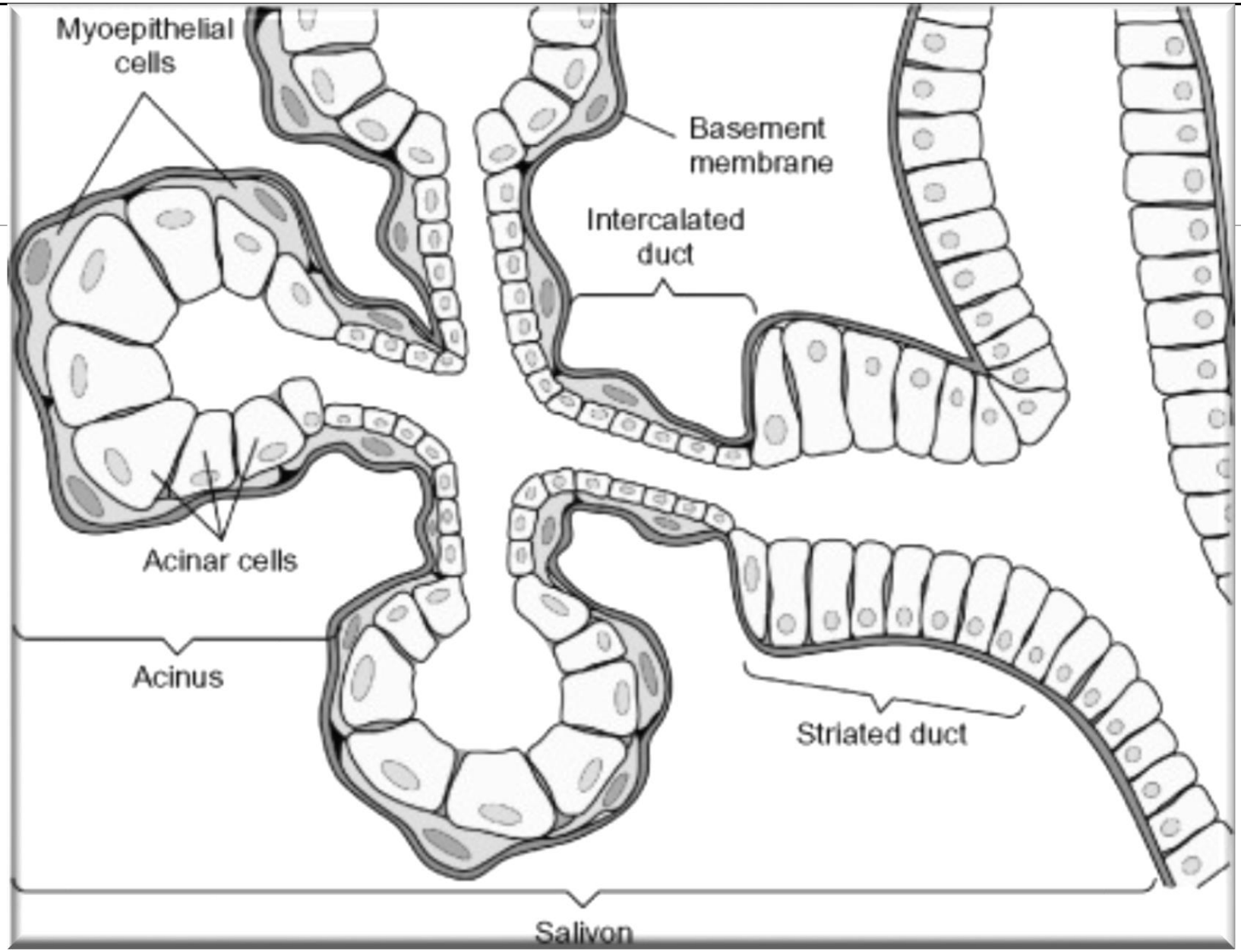
Categories of exocrine glands

Serous glands	• Secretes a watery,often protein rich product
Mucous glands	• Secretes a viscous product,rich in carbohydrates[e.g glycoproteins]
Sebaceous or oil glands	• Secretes a lipid product

Salivary glands; are compound,tubule acinar,merocrine,exocrine glands the ducts of which open into oral cavity

- Oral cavity is kept moist by a film of fluid called saliva that coats teeth and mucosa
- Saliva is a complex fluid
- Salivon;is the functional unit of salivary gland that consists of;acinar cells,tubular ducts and myoepithelium
- Smell,thought,taste and sight of food stimulates salivation
- Sleep,dehydration,fatigue and fear inhibits salivation

diagrammatically



Classification of salivary glands on the basis of size and location

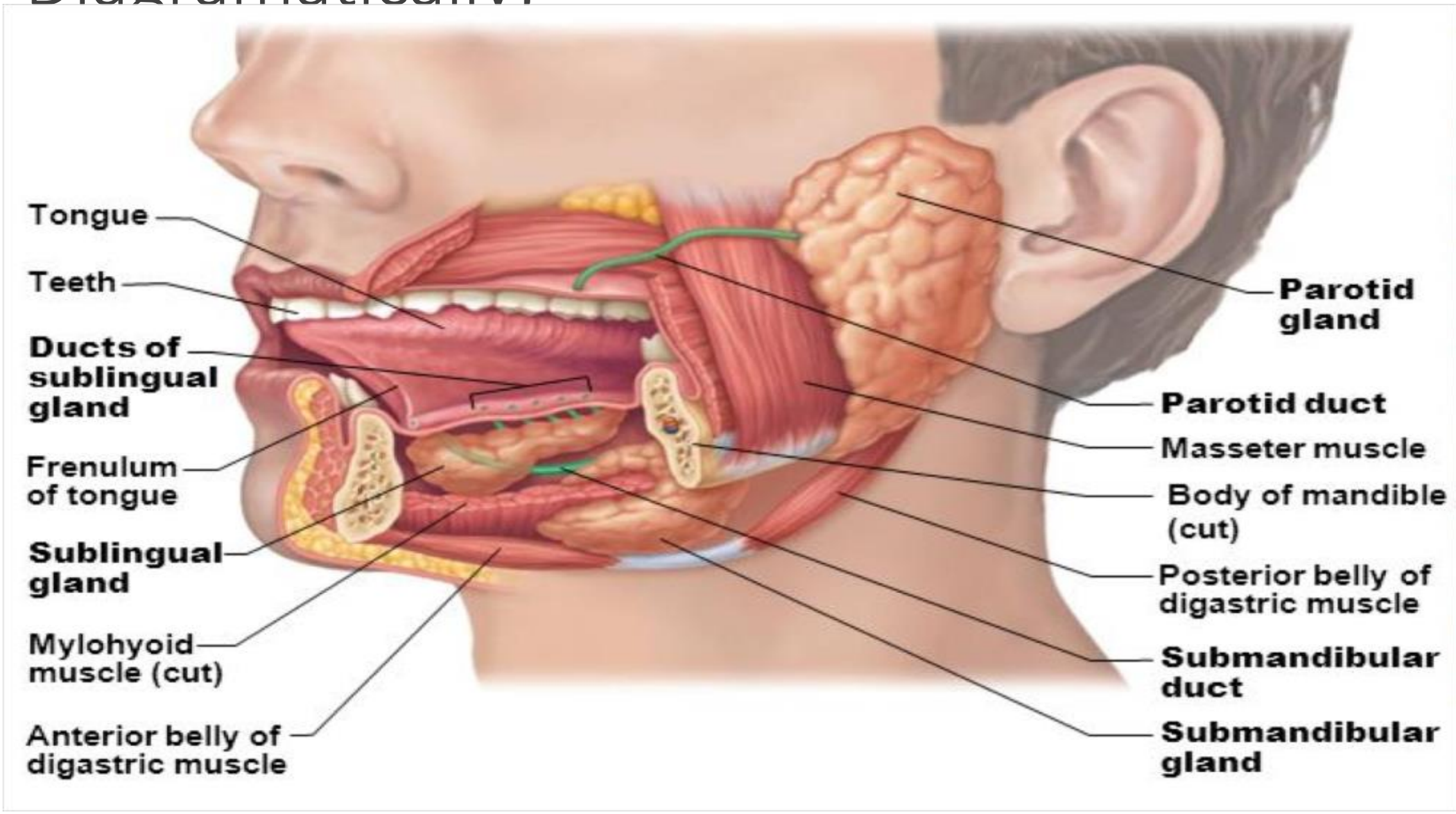
Major or extrinsic salivary glands

- Large in size and located outside the oral cavity.e.g parotid,sublingual and submandibular salivary glands

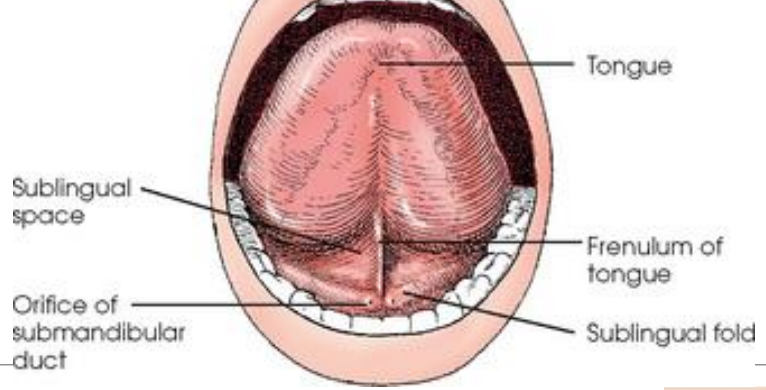
Minor or intrinsic salivary glands

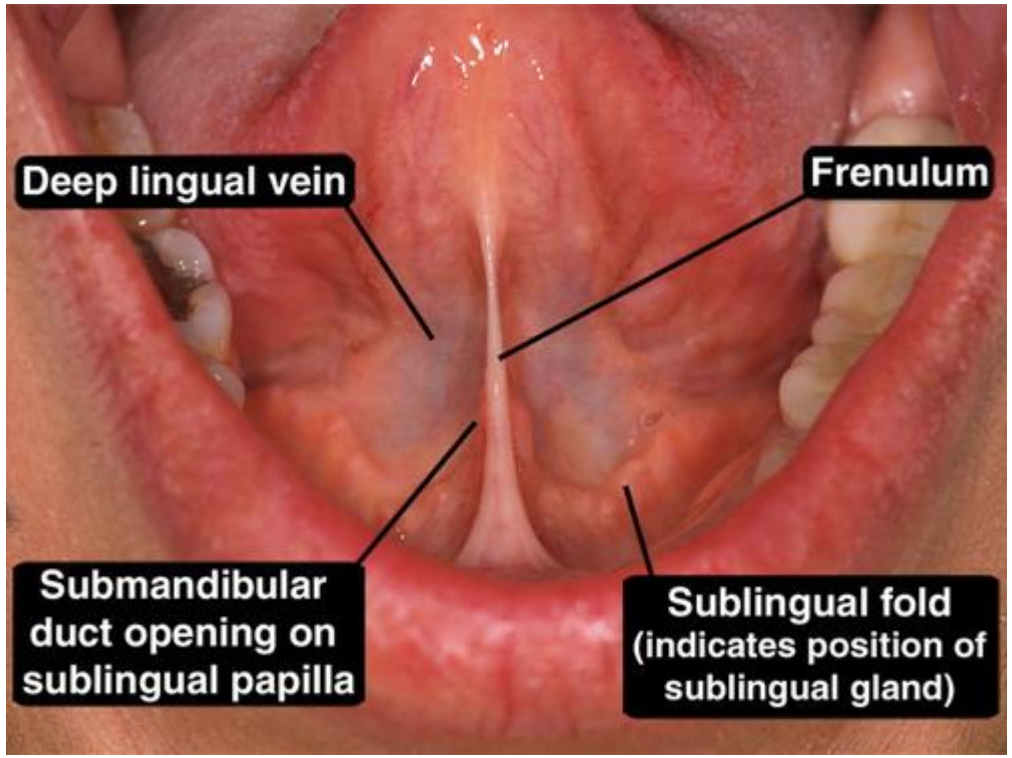
- small,numerous and located within oral cavity. E.g lingual,palatal,buccal,retromolar,glossopalatine and labial salivary glands
- Present in submucosal layer

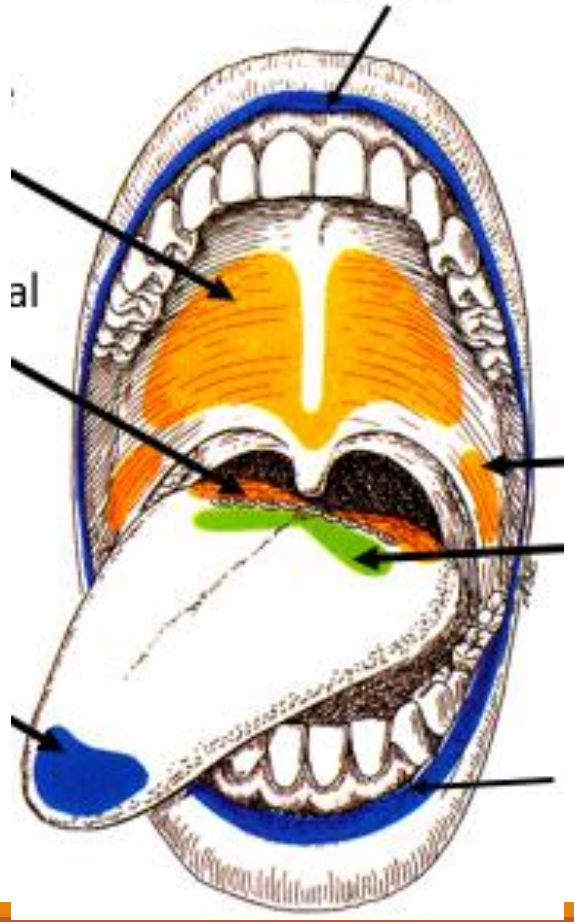
Diagramatically:

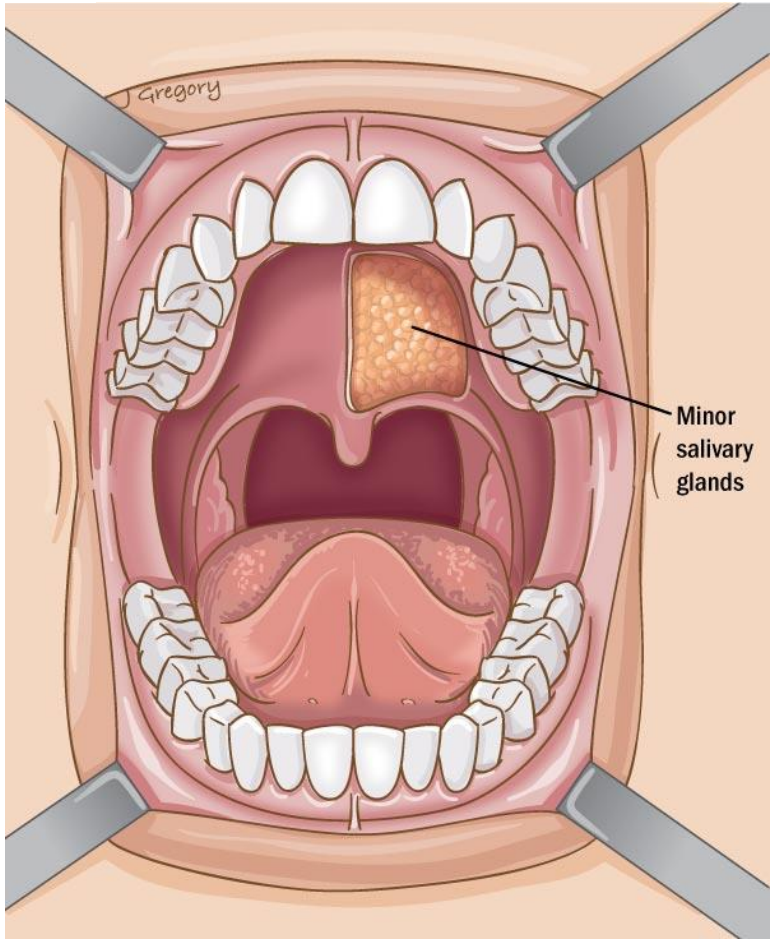


Minor glands





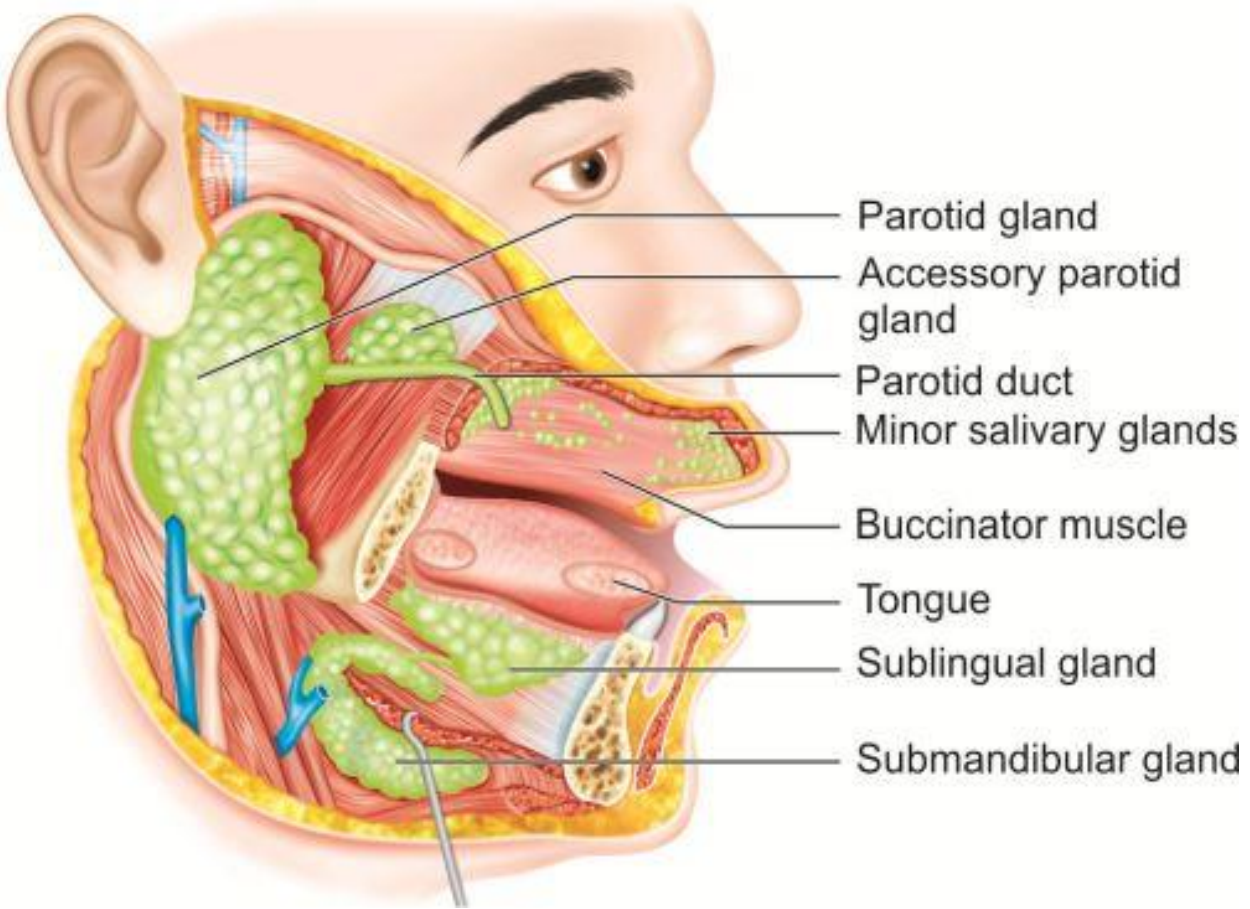




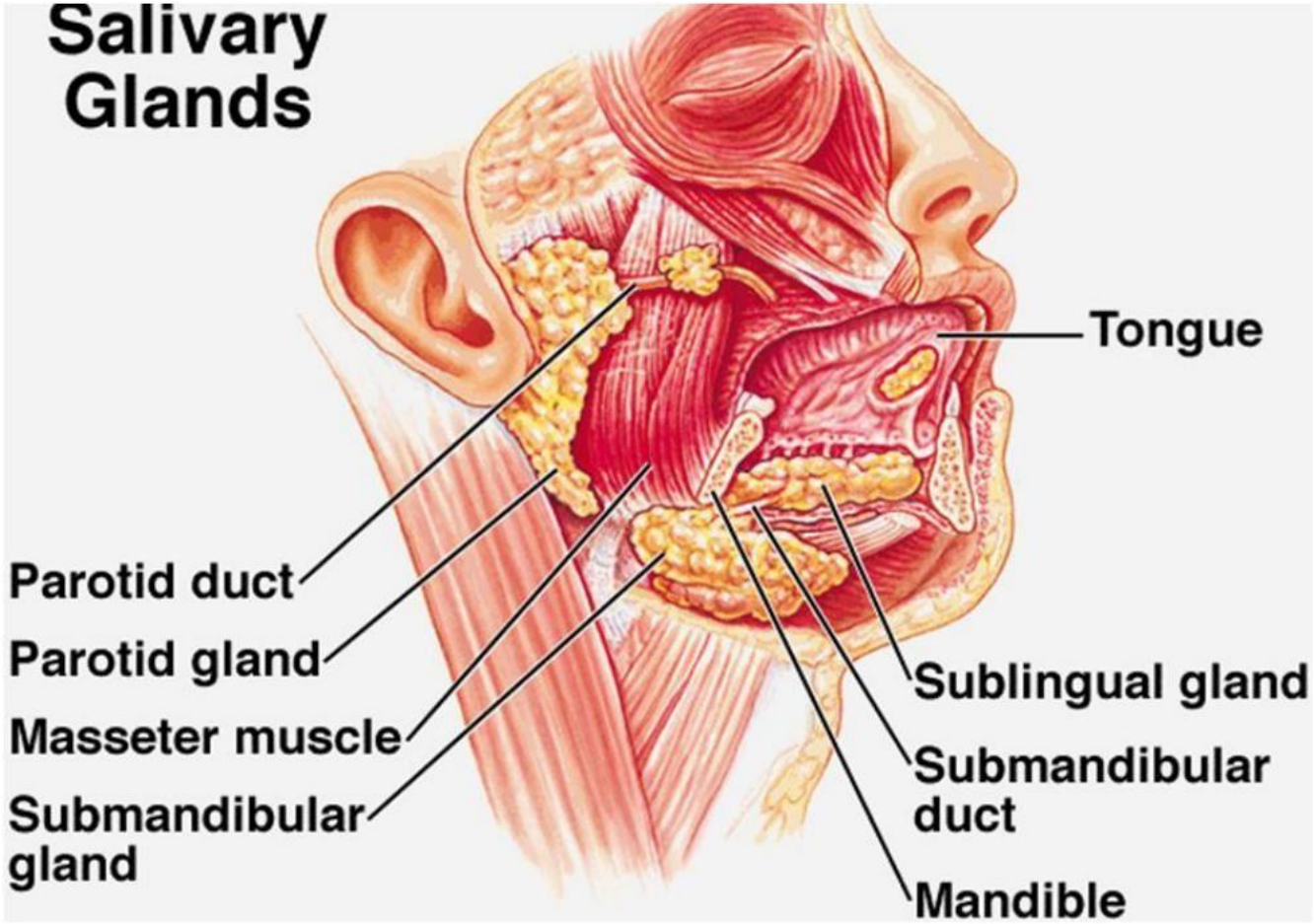
Based on type of secretion salivary glands types;

- ✓serous secreting glands;secretes more watery enzymes rich[digestive such as lingual lipase e.g lingual lipase]e.g parotid and von ebner's gland
- ✓Mucus secreting glands;secretes thick,proteins rich such as glycoproteins secretionse.gglands of blandin and nuhn,glosso palatine glands
- ✓Mixed glands;secretes mixture of both serous and mucus secretions.e.gsubmandibular and sublingual[it is mainly mucus secreting] glands

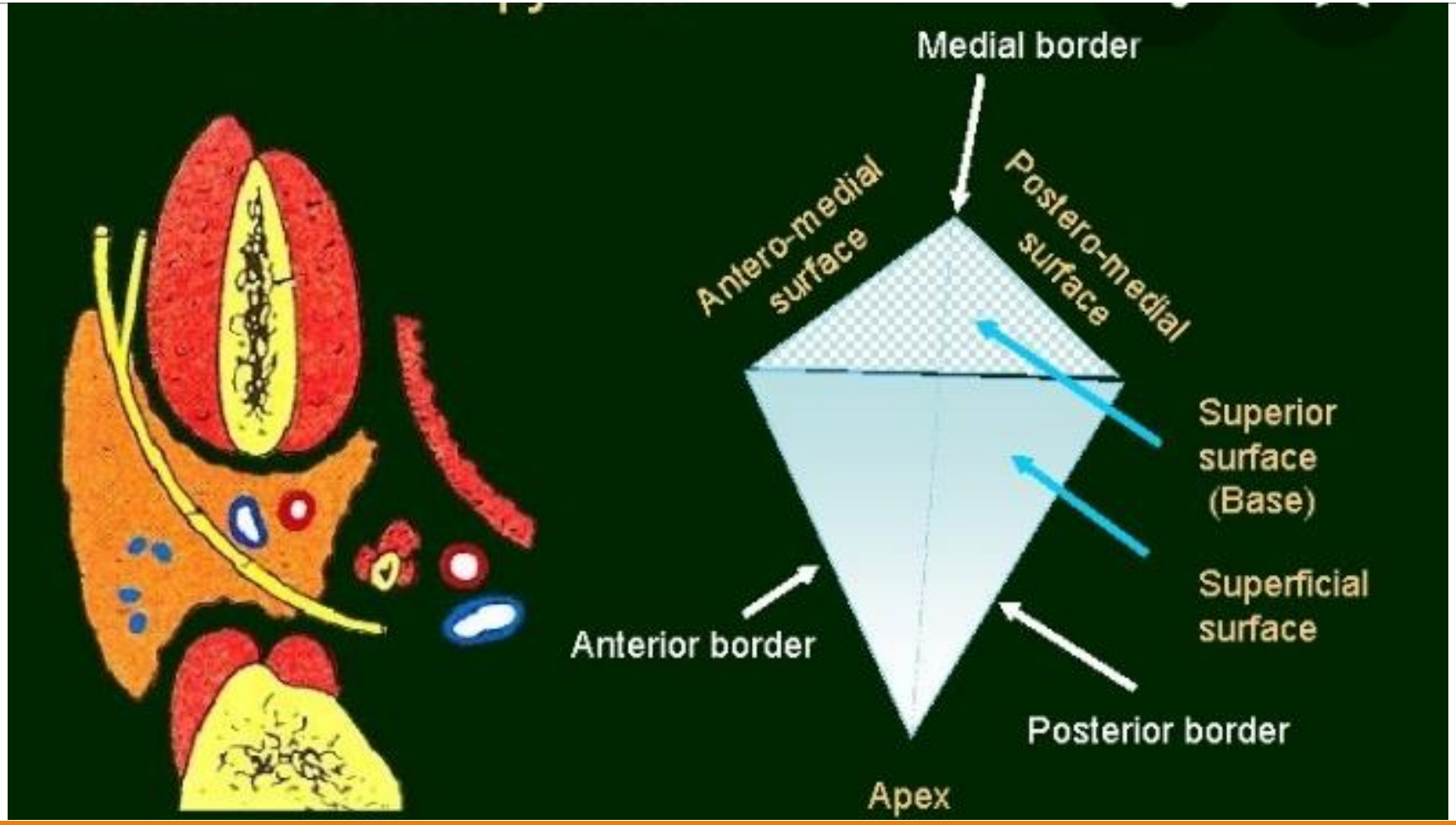
Parotid gland;largest gland[para means around and otic means ear]

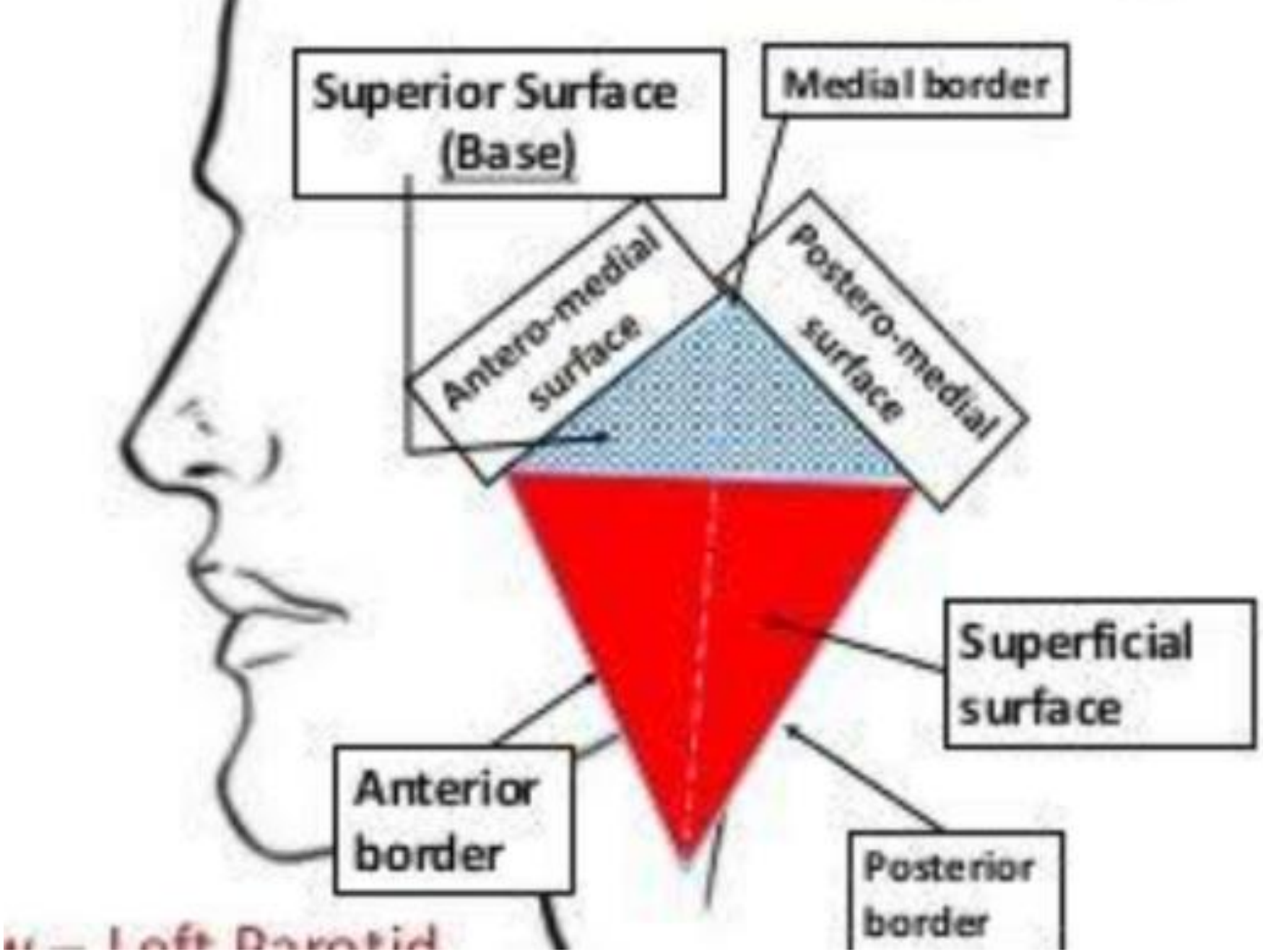


Purely serous gland,15 grams weight its superficial portion lies in front of external ear and deep part filling retromolar fossa



3 borders;anterior,posterior and medial border. 4 surfaces[superior,anteromedial posteromedial and superficial surface




Superior Surface
(Base)
Medial border
Antero-medial
surface
Postero-medial
surface
Superficial
surface
Anterior
border
Posterior
border

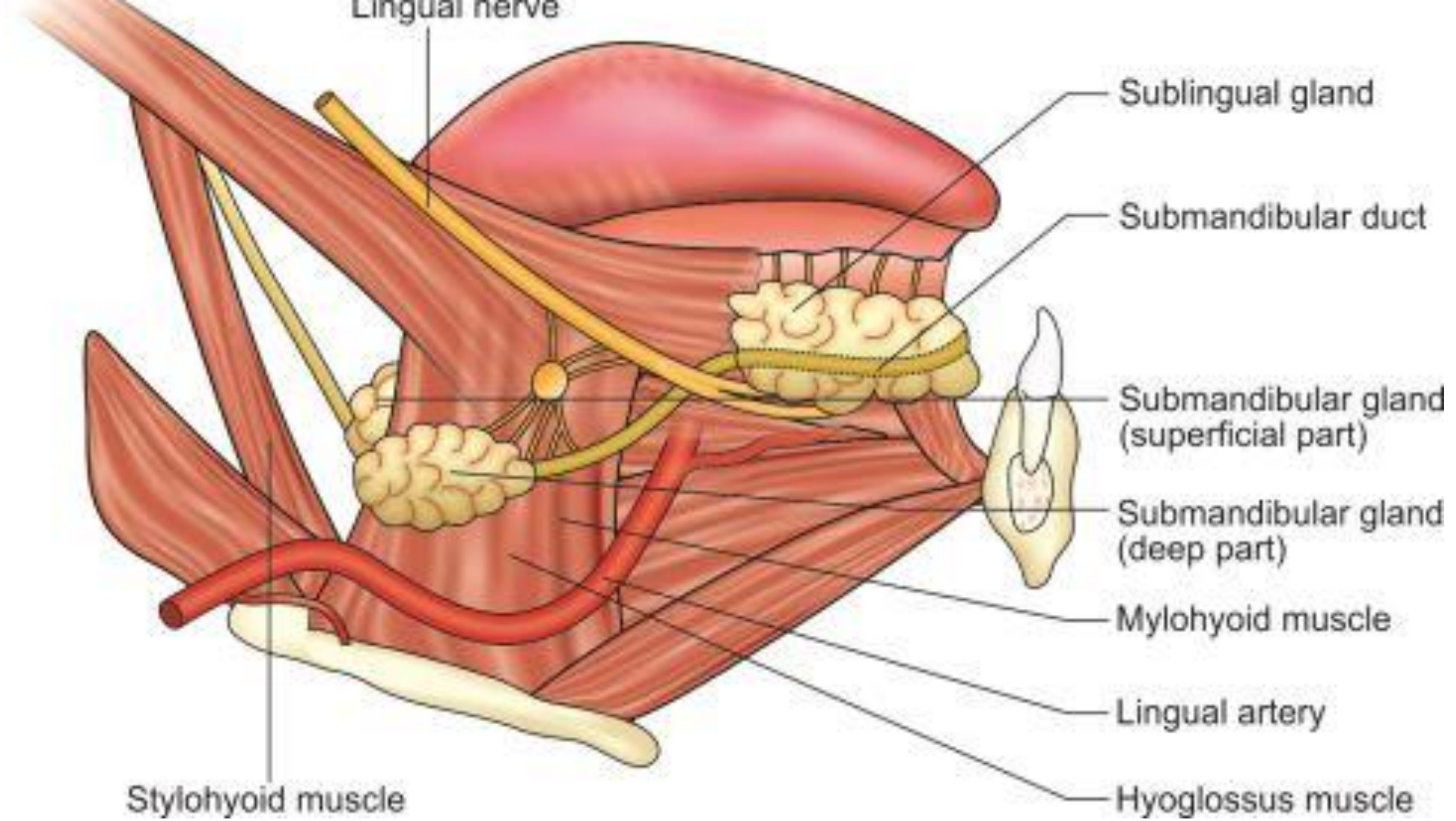
Relations of submandibular gland;

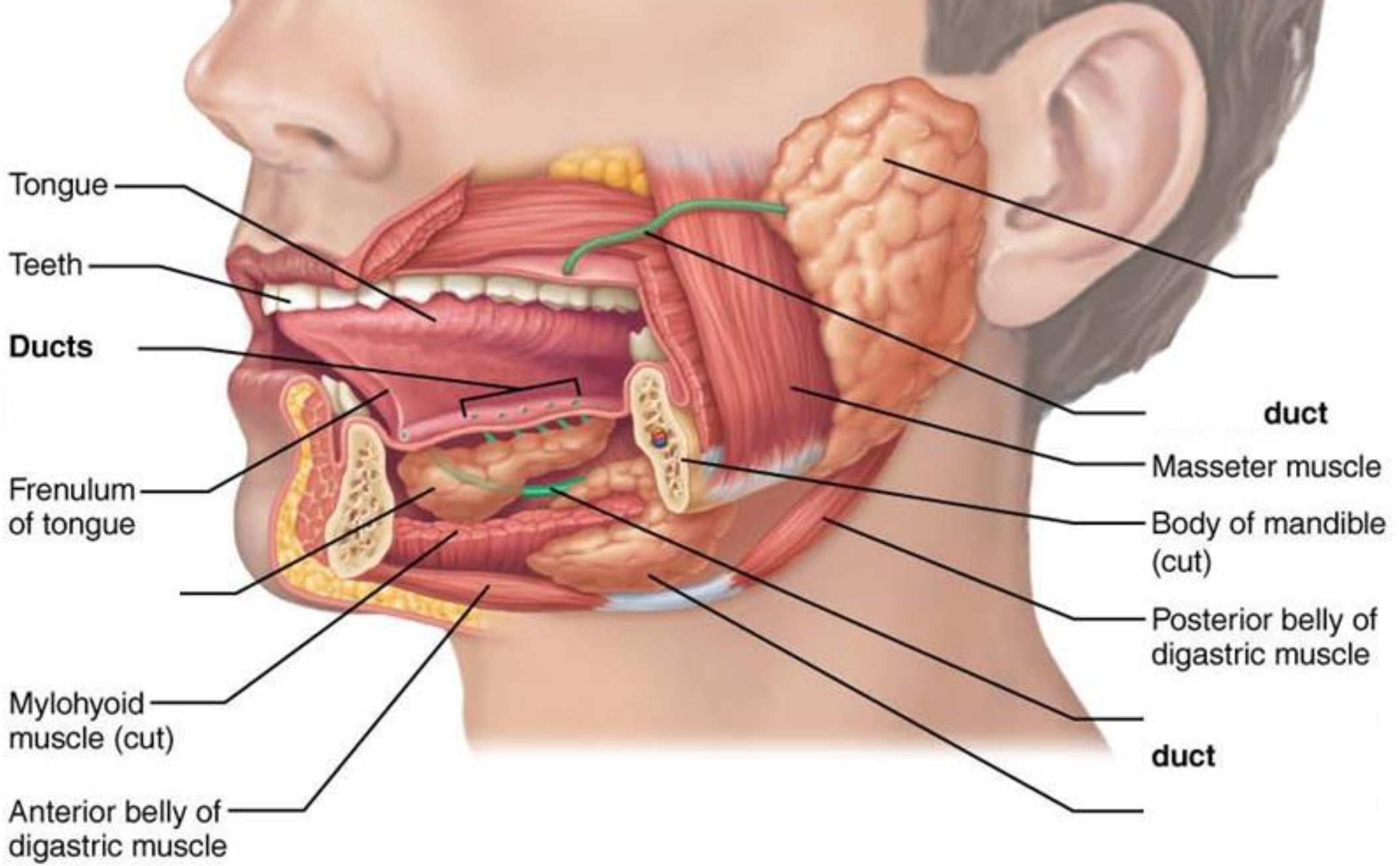
anteriorly;anterior belly of digastric

posteriorly;posterior belly of digastric,stylohyoid and parotid gland

Medially;mylohyoid,hypoglossus,lingual nerve,submandibular ganglion and hypoglossal nerve

Laterally;submandibular fossa of mandible'inferolaterally covered by investing layer of deep cervical fascia,platysma and skin


Lingual nerve
Sublingual gland
Submandibular duct
Submandibular gland
(superficial part)
Submandibular gland
(deep part)
Mylohyoid muscle
Lingual artery
Hyoglossus muscle
Stylohyoid muscle


Tongue
Teeth
Ducts
Frenulum of tongue
Mylohyoid muscle (cut)
Anterior belly of digastric muscle
duct
Masseter muscle
Body of mandible (cut)
Posterior belly of digastric muscle
duct

Relations of sublingual gland;

anteriorly;gland of opposite side

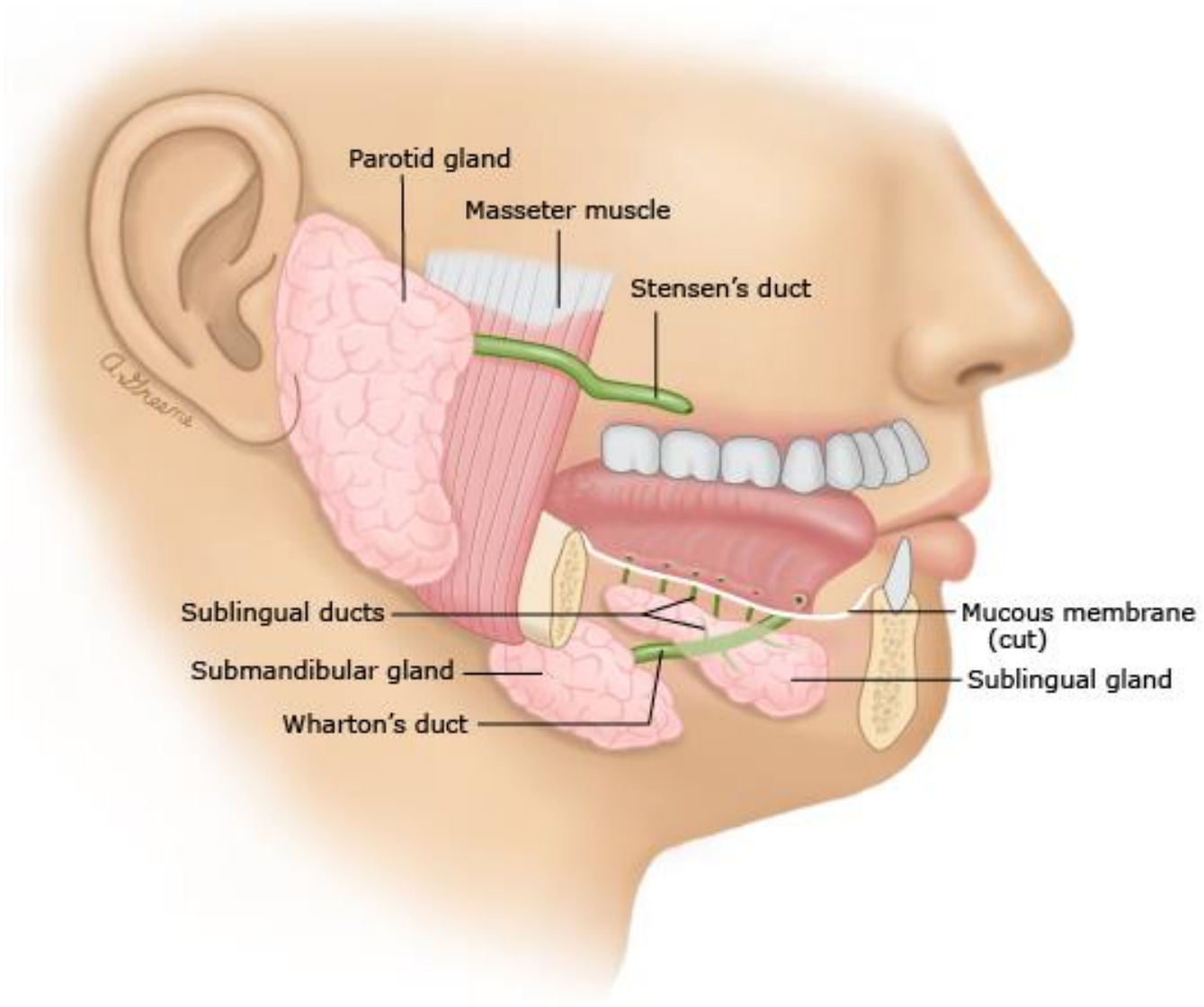
posteriorly;deep part of submandibular gland

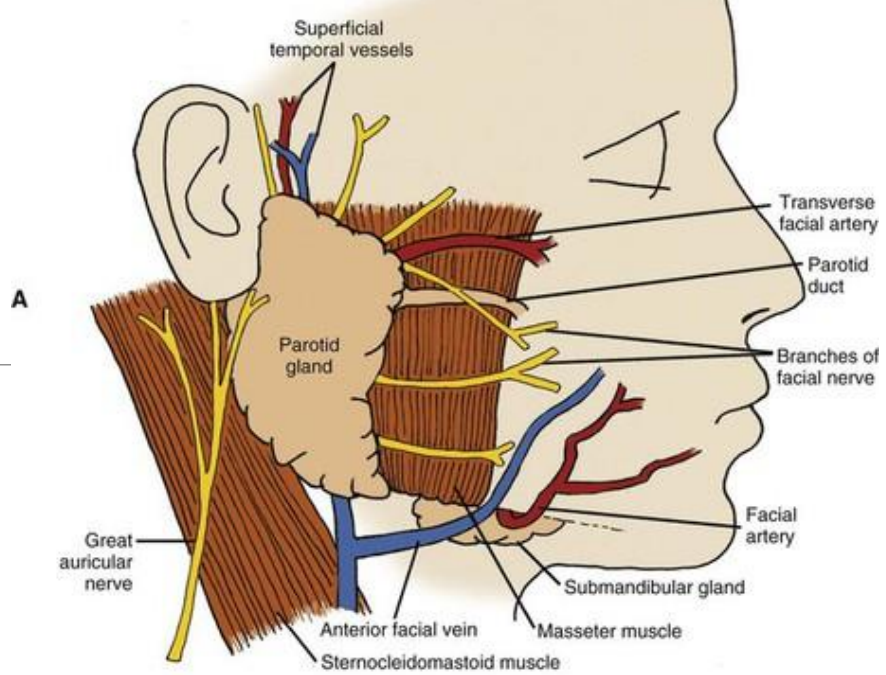
Medially;genioglossus muscle,lingual nerve and submandibular duct

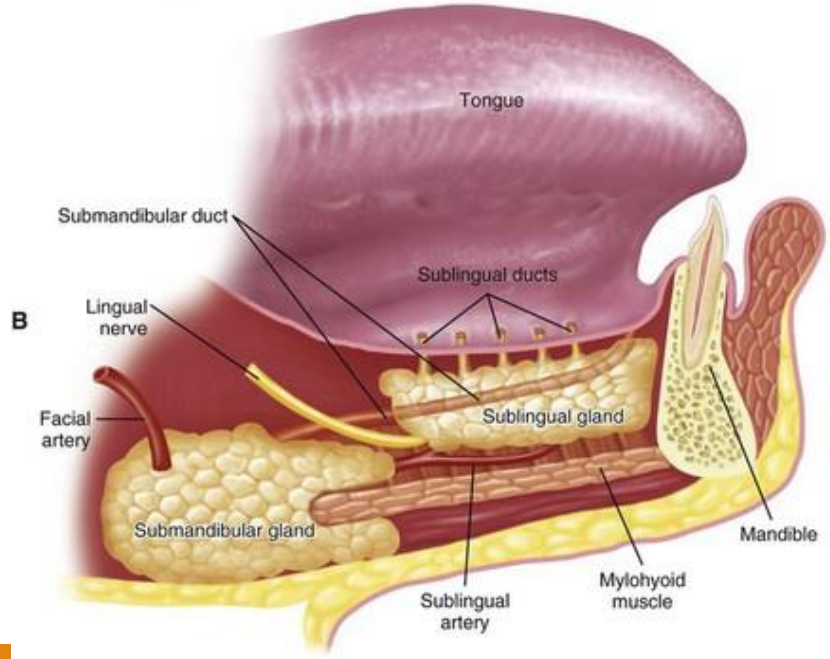
Laterally;sublingual fossa of mandible

Superiorly;mucous membrane of floor of mouth,that forms sublingual fold

Inferiorly;mylohyoid muscle

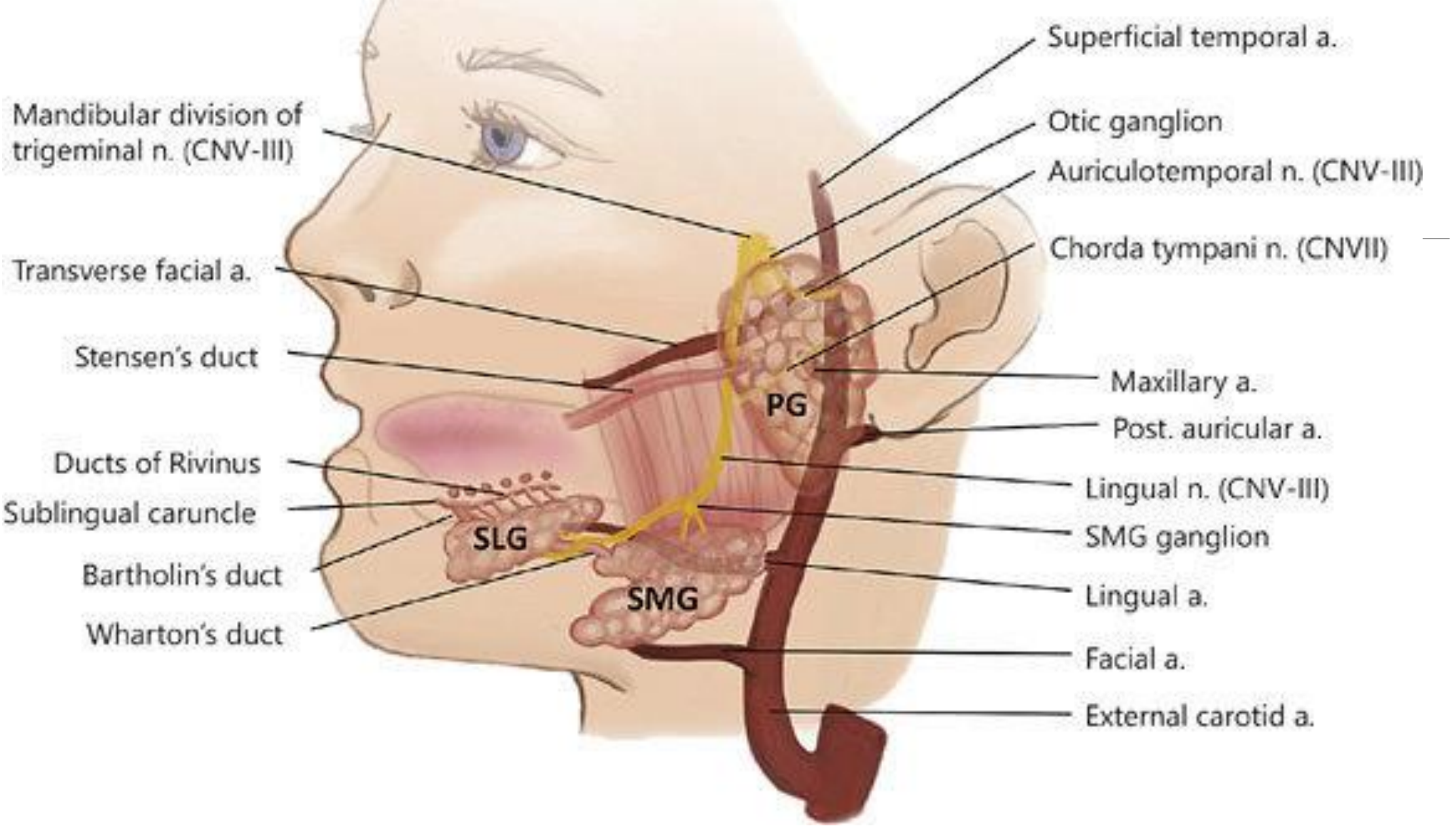

Parotid gland
Masseter muscle
Stensen's duct
Sublingual ducts
Mucous membrane (cut)
Submandibular gland
Sublingual gland
Wharton's duct

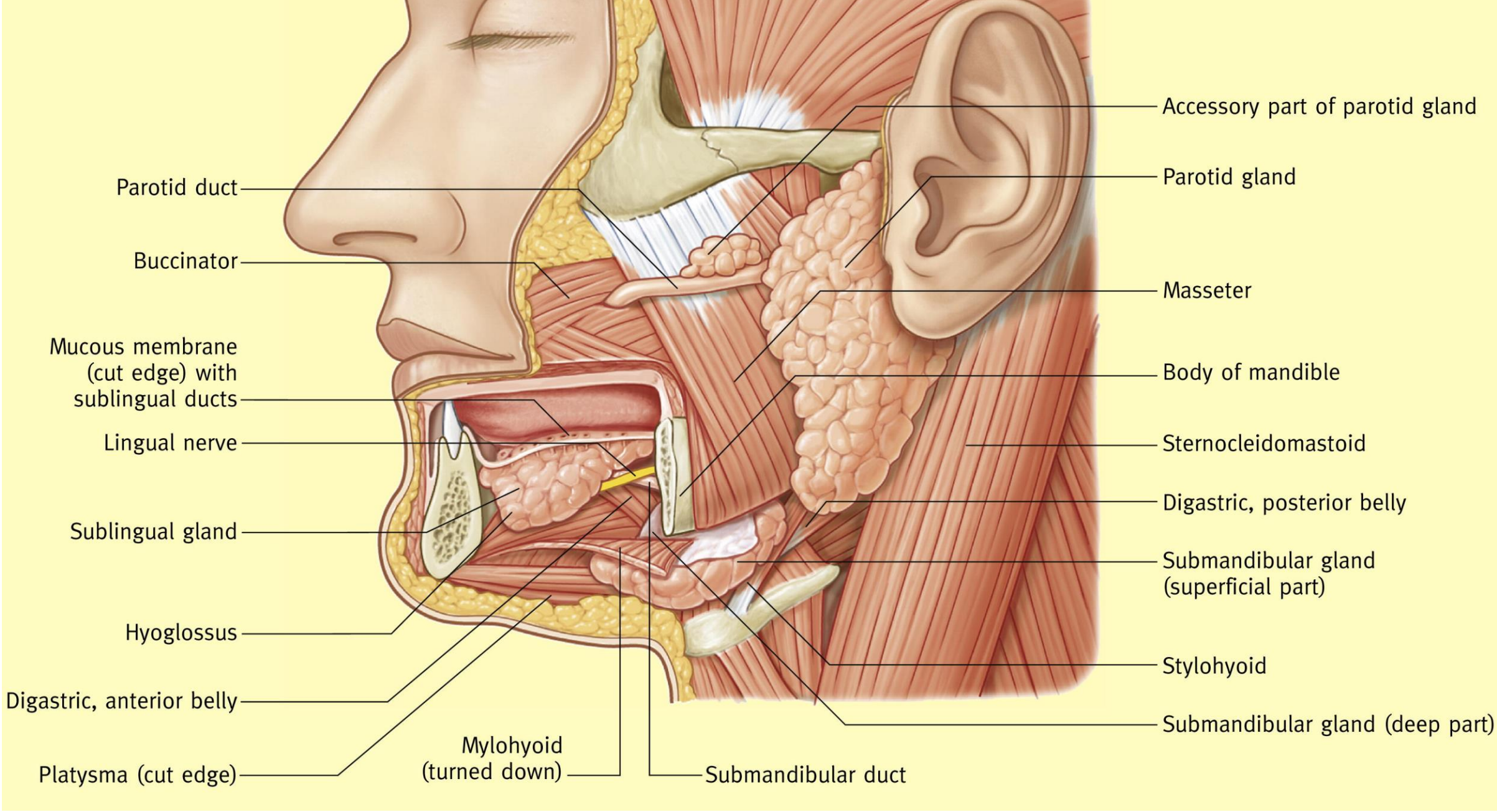

A
Superficial temporal vessels
Transverse facial artery
Parotid duct
Parotid gland
Branches of facial nerve
Facial artery
Great auricular nerve
Submandibular gland
Anterior facial vein
Masseter muscle
Sternocleidomastoid muscle

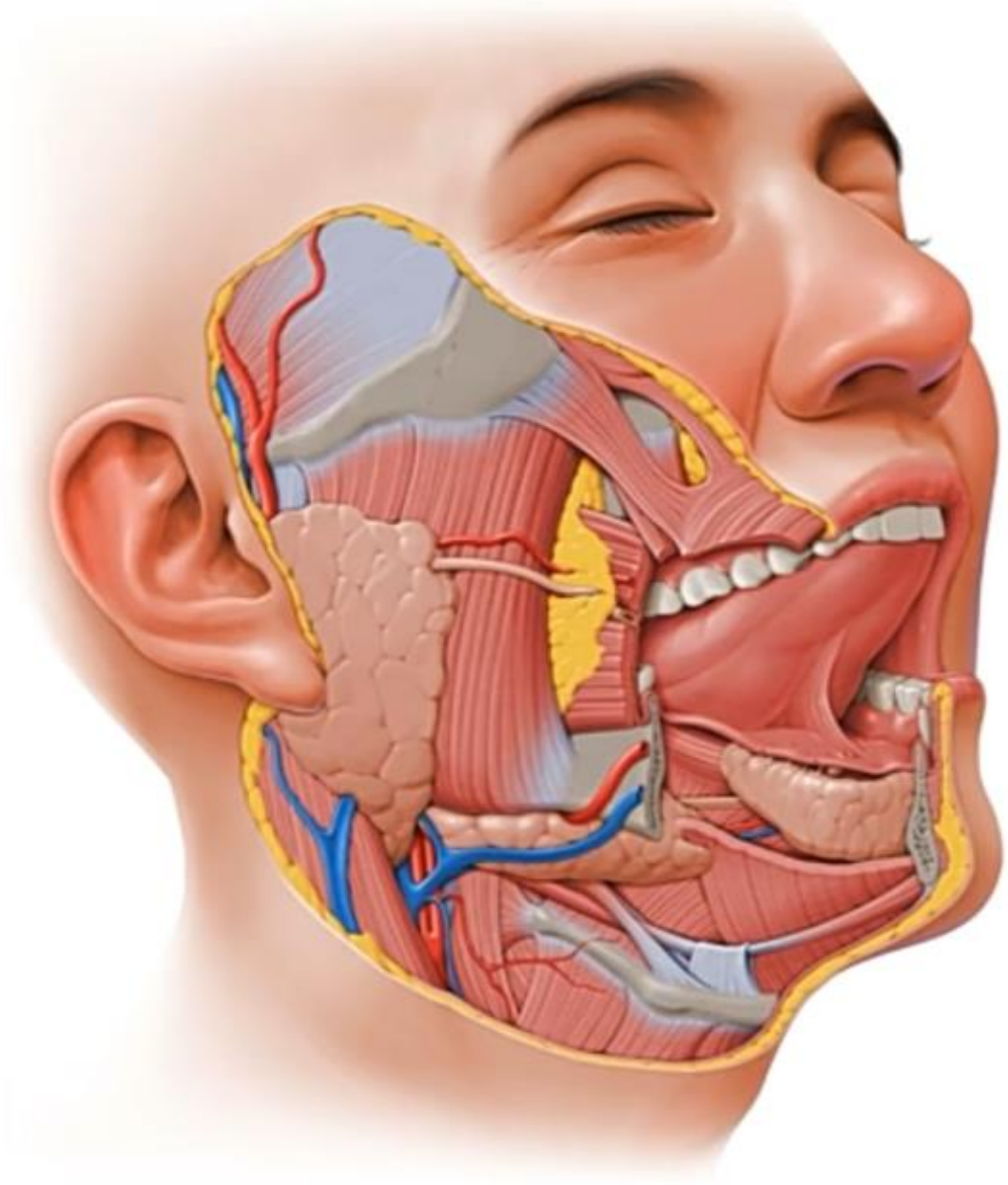

B
Tongue
Submandibular duct
Sublingual ducts
Lingual nerve
Facial artery
Sublingual gland
Submandibular gland
Mandible
Mylohyoid muscle
Sublingual artery

❖ Parotid gland open through a duct in oral cavity called stensen's duct

- ❖Submandibular ducts open in mouth through wharton's duct
- ❖Sublingual ducts open in mouth through a 10 to 20 ducts called bartholins duct that drain its secretions into duct of rivinus
- ❖Size order;parotid>submandibular>sublingual
- ❖Amount of saliva produce;submandibular>parotid >sublingual


Mandibular division of trigeminal n. (CNV-III)
Transverse facial a.
Stensen's duct
Ducts of Rivinus
Sublingual caruncle
Bartholin's duct
Wharton's duct
Superficial temporal a.
Otic ganglion
Auriculotemporal n. (CNV-III)
Chorda tympani n. (CNVII)
Maxillary a.
Post. auricular a.
Lingual n. (CNV-III)
SMG ganglion
Lingual a.
Facial a.
External carotid a.
PG
SLG
SMG


Accessory part of parotid gland
Parotid gland
Parotid duct
Buccinator
Masseter
Mucous membrane (cut edge) with sublingual ducts
Body of mandible
Lingual nerve
Sternocleidomastoid
Digastric, posterior belly
Sublingual gland
Submandibular gland (superficial part)
Hyoglossus
Stylohyoid
Digastric, anterior belly
Submandibular gland (deep part)
Mylohyoid (turned down)
Platysma (cut edge)
Submandibular duct



Blood supply;

1.Sublingual gland receives blood supply from;

Sublingual artery[a branch of lingual artery]

Submental artery[a branch of facial artery]

Same names of veins drain sublingual gland and hence follows same path as arteries follows

2.Submandibular gland receives arterial supply from;

Sublingual and submental artery but submental vein mainly drains this gland later anastomose with sublingual vein

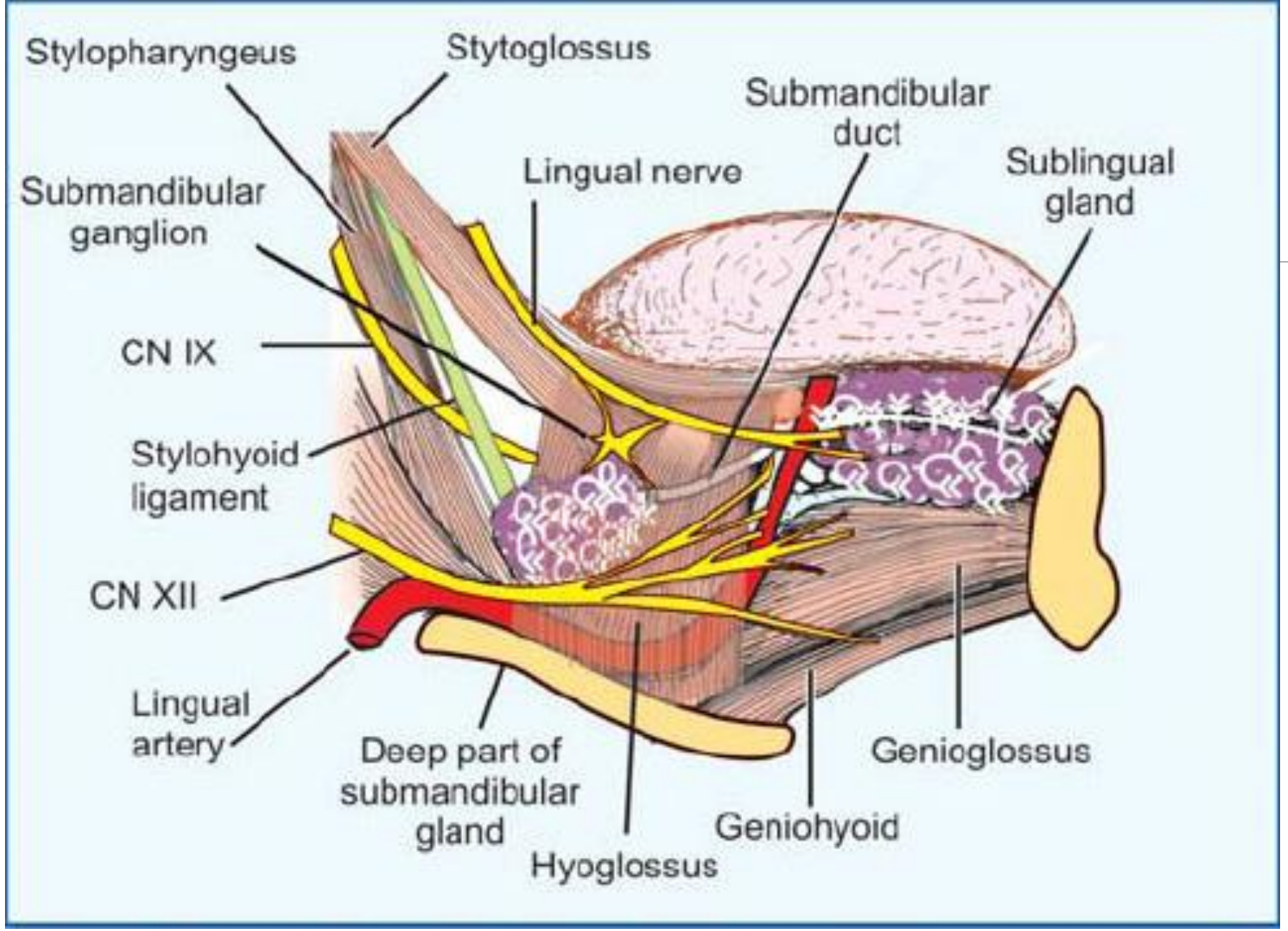
3.Parotid gland receives arterial supply from;superfiacial temporal artery

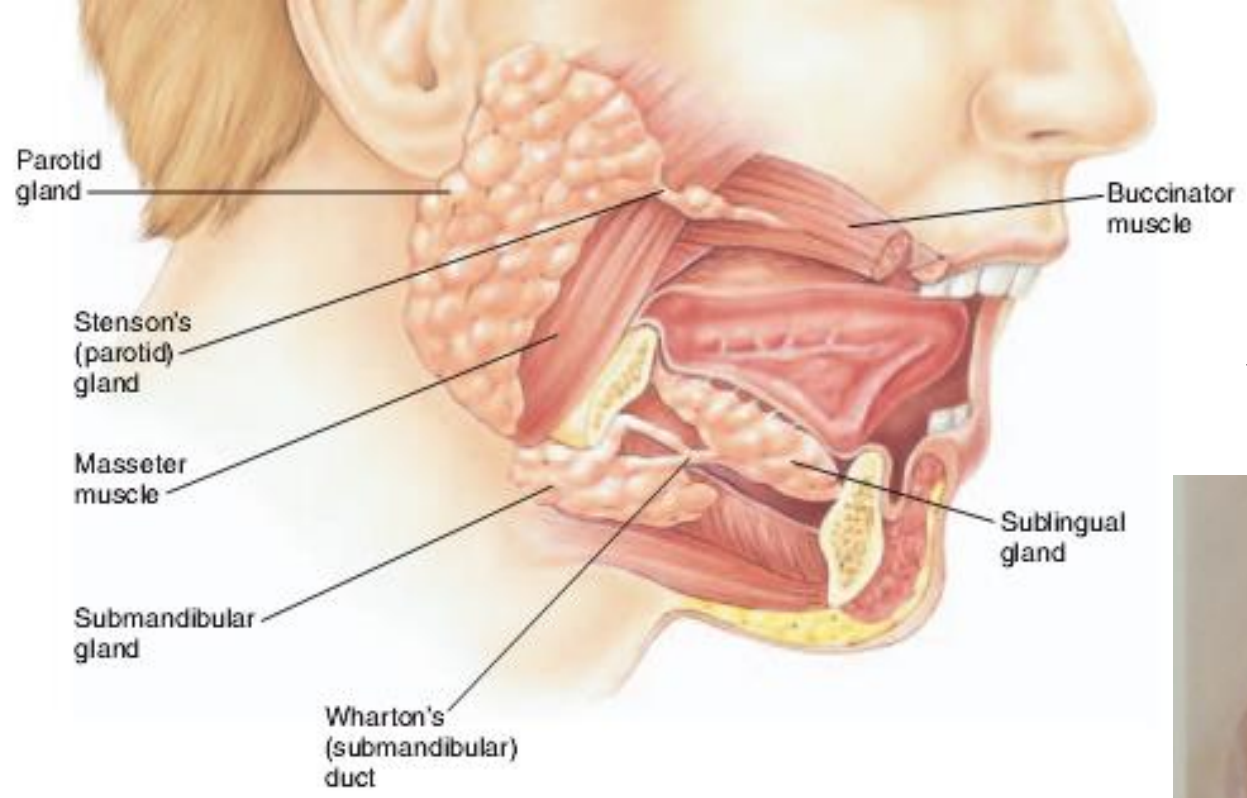
Maxillary artery and transverse facial artery

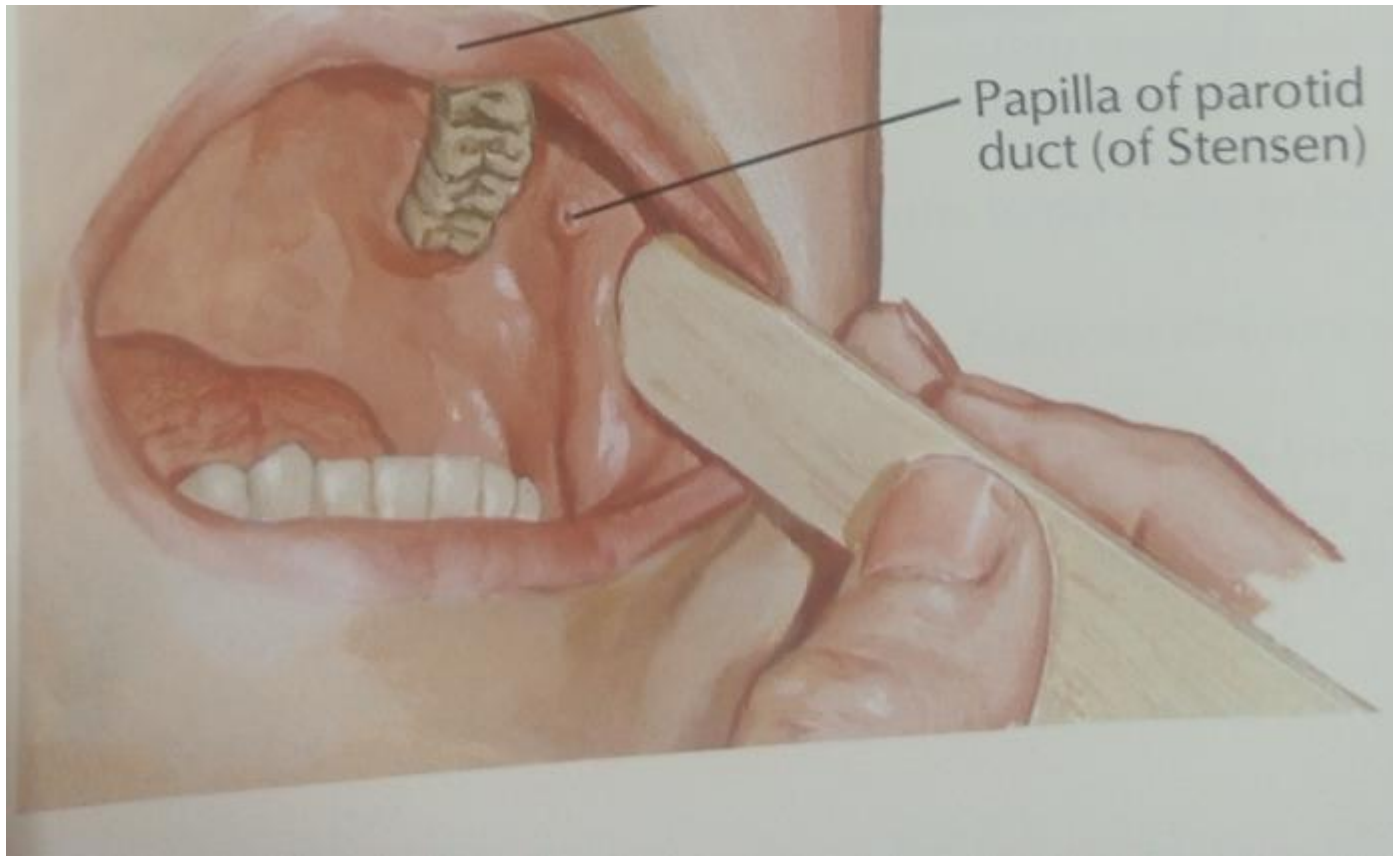
Retromandibular vein drains parotid gland

Nerve supply;

Parotid gland	• Receives parasympathetic innervation from 9th nerve
Sub mandibular and lingual	• Receives parasympathetic innervation from 7th nerve
Sympatetic innervation	• From superior cervical ganglion supplies these 3 glands and produces mucous secretions

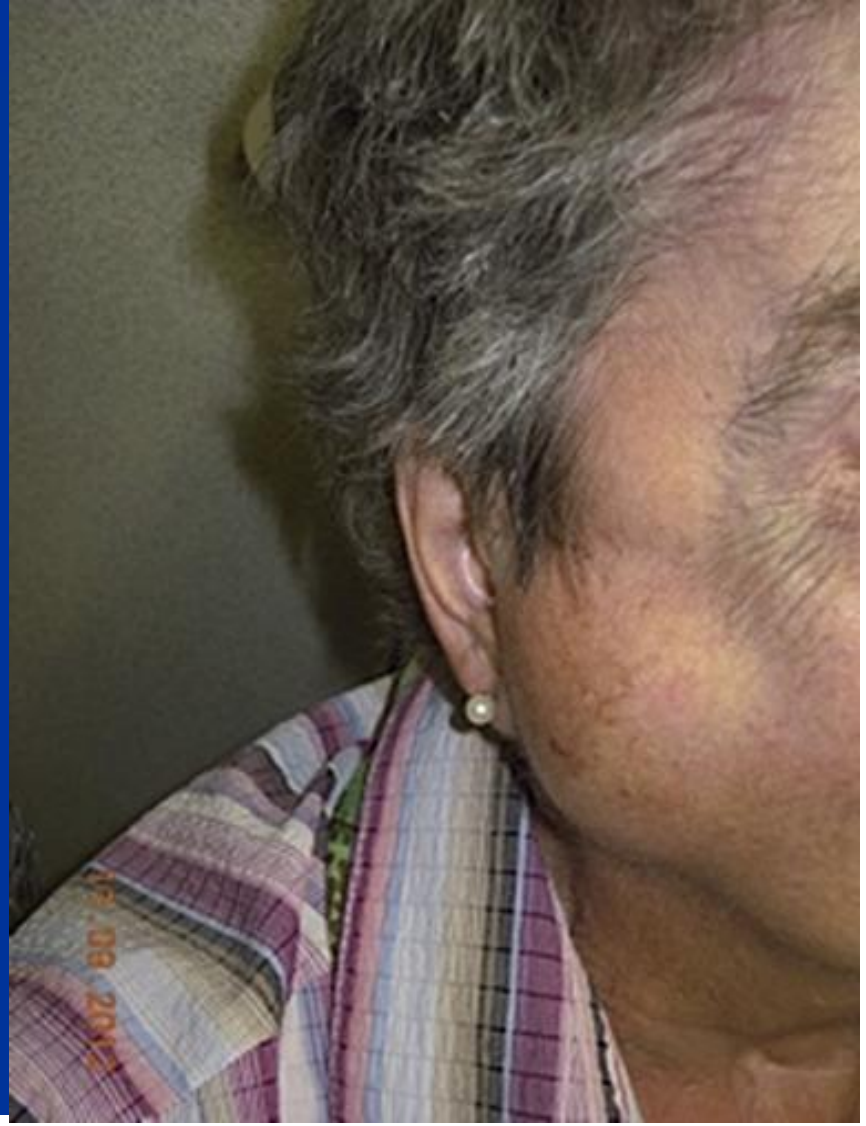

Stylopharyngeus
Stytoglossus
Submandibular duct
Lingual nerve
Sublingual gland
Submandibular ganglion
CN IX
Stylohyoid ligament
CN XII
Lingual artery
Deep part of submandibular gland
Hyoglossus
Geniohyoid
Genioglossus


Parotid gland
Buccinator muscle
Stenson's (parotid) gland
Masseter muscle
Sublingual gland
Submandibular gland
Wharton's (submandibular) duct


Papilla of parotid duct (of Stensen)

Acute Suppurative

- More common in parotid gland.
- Suppurative parotitis, surgical parotitis, post-operative parotitis, surgical mumps, and pyogenic parotitis.
- The etiologic factor most associated with this entity is the retrograde infection from the mouth.
- 20% cases are bilateral



Submandibular Gland Lithiasis

- Diagnosis
- Clinical examination , clinial feature and radiographic examination
  - Pain and sudden enlargement of gland while eating
  - Palpation of stone submandibular duct
  - Occlusal radiograph (80%)

THANK YOU


ALLAH
MADE YOU A
MUSLIM BECAUSE HE
WANTS TO SEE YOU
IN JANNAH, ALL
YOU'VE TO DO IS
PROVE THAT YOU'RE
WORTHY OF IT.