

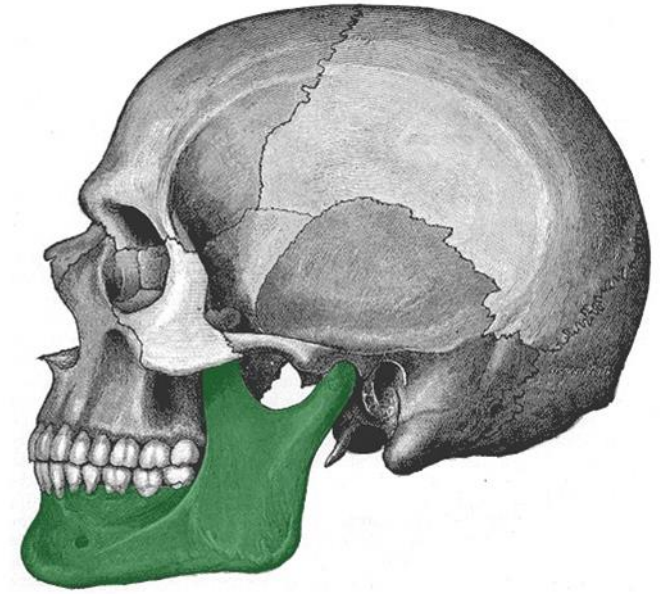
The Oral Cavity

Firas Al-Hameed

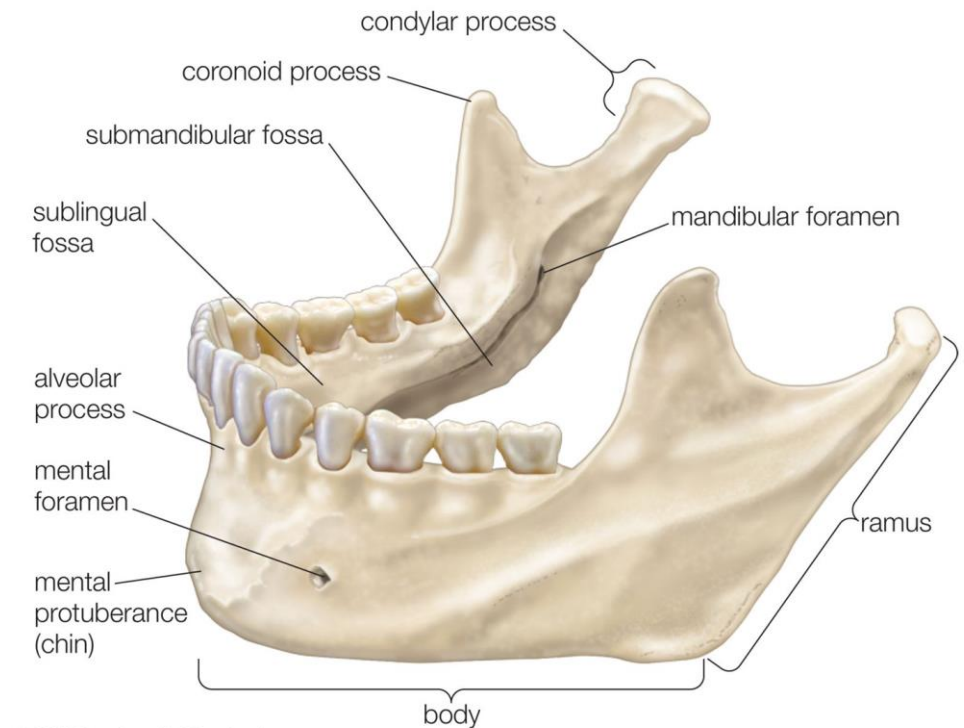
Thi-Qara Medical School

The Mandible

- Is the largest and strongest bone of the face.
- It also articulates on either side with the temporal bone, forming the temporomandibular joint.
- Consists of:
 - Horizontal body (anteriorly) and two vertical rami (posteriorly).
 - The body and the rami meet on each side at the angle of the mandible.



- The body has two borders:
 - Alveolar border (superior) – contains 16 sockets to hold the lower teeth.
 - Base (inferior) – site of attachment for the digastric muscle medially
 - The body is marked in the midline by the **mandibular symphysis**. This is a small ridge of bone that represents the fusion of the two halves during development
- Rami (2)
 - Head (condyle) – situated posteriorly, and articulates with the temporal bone to form the temporomandibular joint.
 - Neck – supports the head of the ramus, and site of attachment of the lateral pterygoid muscle.
 - Coronoid process – site of attachment of the temporalis muscle

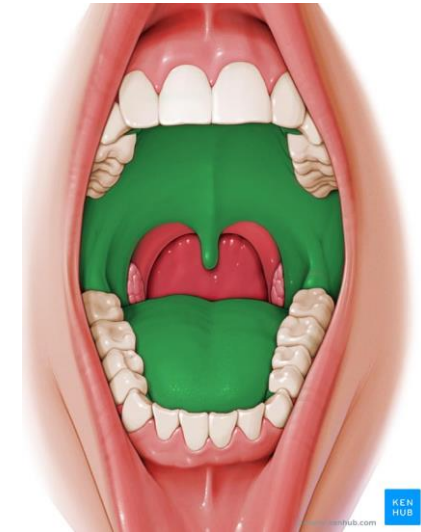
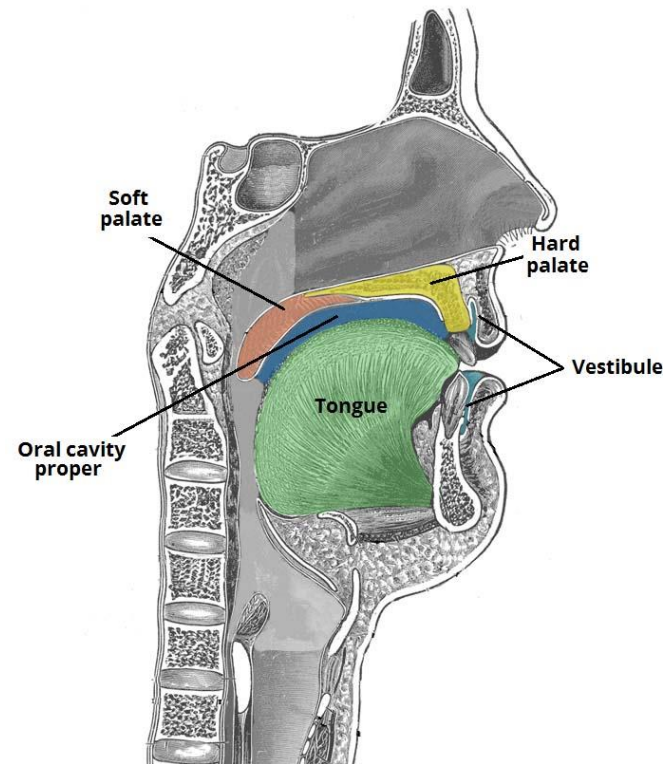


Foramina of the mandible

- The **mandibular foramen** is located on the **internal surface** of the ramus of the mandible. It serves as a conduit for the **inferior alveolar nerve and inferior alveolar artery**.
- The **mental foramen** is positioned on the **external surface** of the mandibular body, below the second premolar tooth. It allows the inferior alveolar nerve and artery to exit the mandibular canal. When the inferior alveolar nerve passes through the mental foramen, it becomes the **mental nerve** (innervates the skin of the lower lip and the front of the chin).

Divisions of the Oral Cavity

- The oral cavity spans between the oral fissure (anteriorly – the opening between the lips), and the oropharyngeal isthmus (posteriorly – the opening of the oropharynx).
- The vestibule
- The mouth cavity proper.



Vestibule

- Situated anteriorly.
- It is the space between the lips/cheeks, and the gums/teeth.
- The vestibule communicates with the mouth proper via the space behind the third molar tooth, and with the exterior through the oral fissure.
- Opposite the **upper second molar tooth**, the **duct of the parotid** gland opens out into the vestibule, secreting salivatory juices.

Mouth Proper

- lies posteriorly to the vestibule.
- The tongue fills a large proportion of the cavity of the mouth proper.

Boundaries

Roof

- Hard and soft palates.

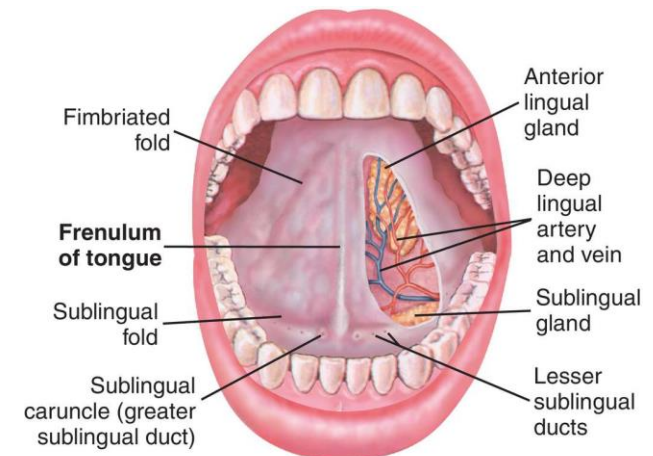
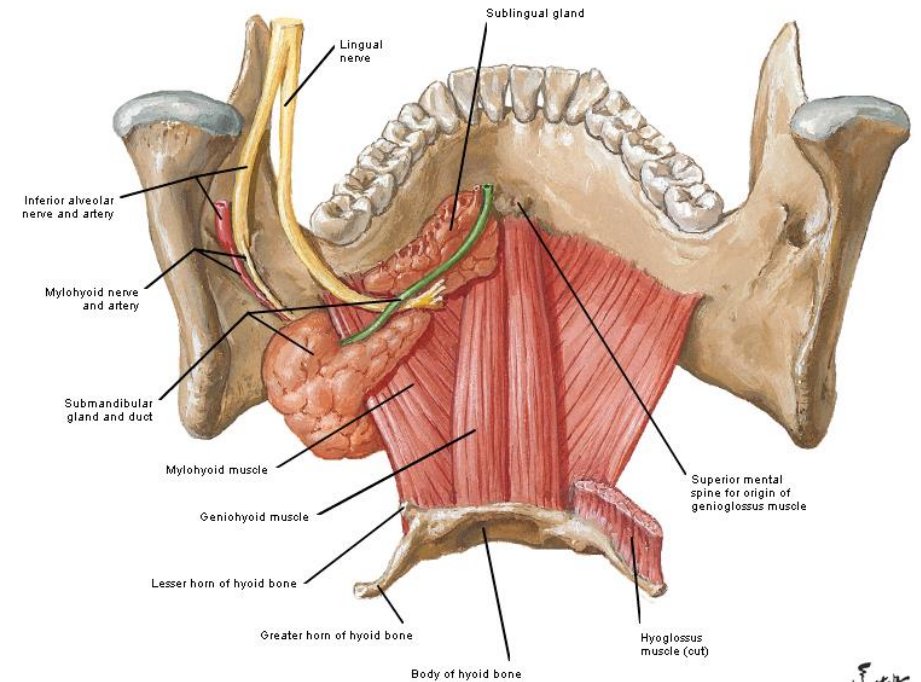
Cheeks

- Formed by the **buccinator muscle**, which is lined internally by the oral mucous membrane.
- Buccal branches of the facial nerve (CN VII).

Floor

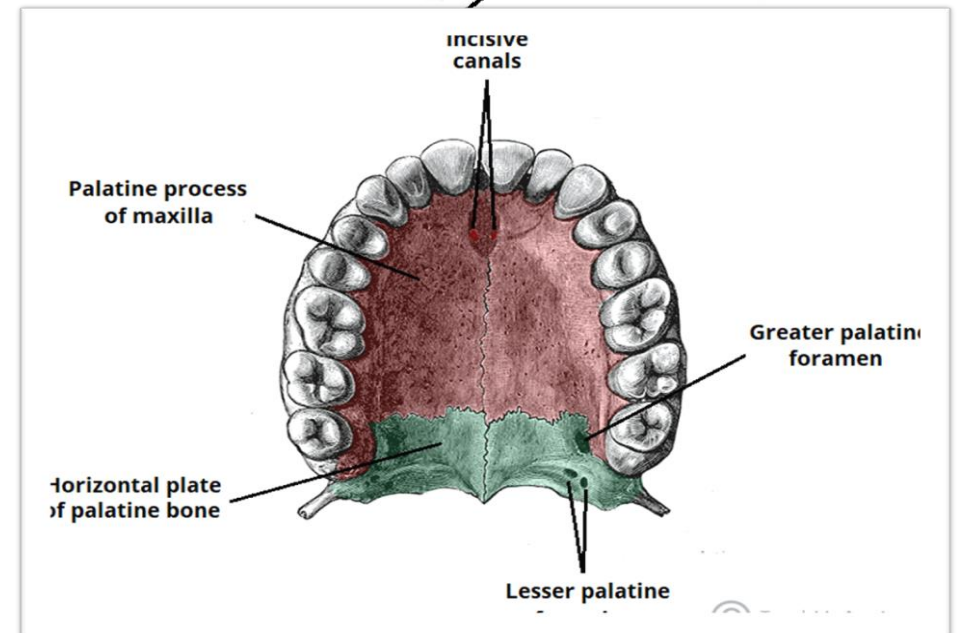
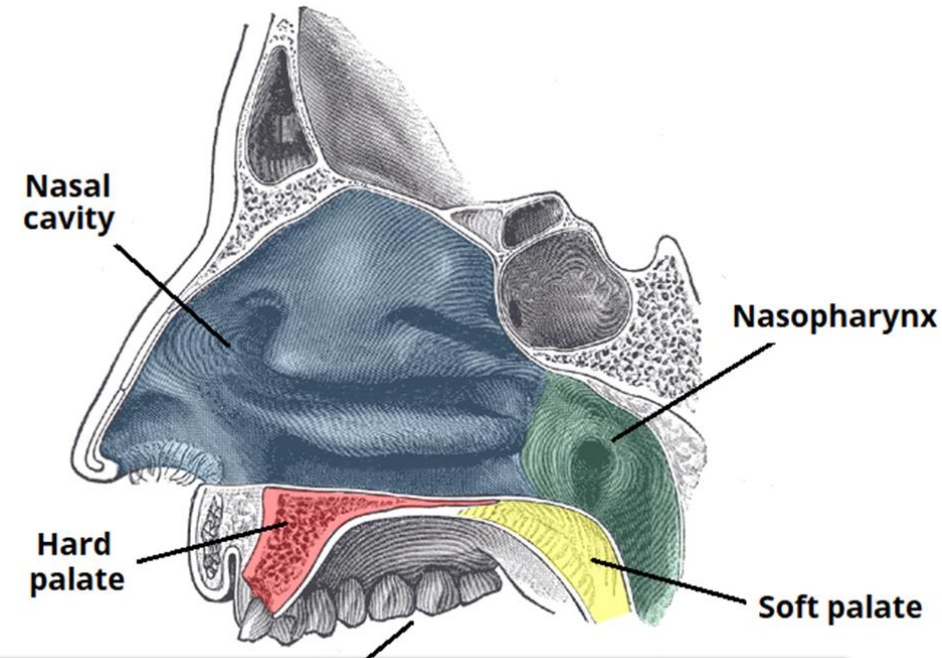
- Muscular diaphragm –
 - Bilateral **mylohyoid muscles**.
 - Provides structural support to the floor of the mouth, and pulls the larynx forward during swallowing.
- Geniohyoid muscles – pull the larynx forward during swallowing.
- Tongue – connected to the floor by the **frenulum of the tongue**, a fold of oral mucosa.
- Salivary glands and ducts.

Floor of Mouth - Musculature
Posterosuperior View



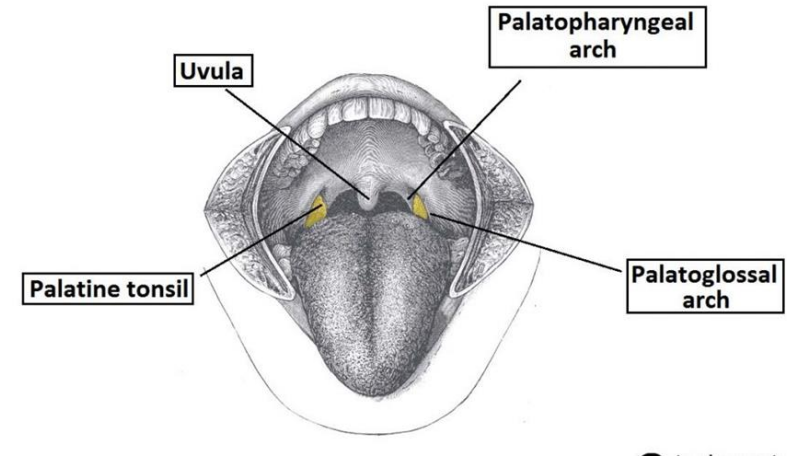
The Palate

- Also known as the 'roof of the mouth').
- It is separated into two distinct parts:
 - Hard palate – comprised of bone. It is immobile.
 - Soft palate – comprised of muscle fibres covered by a mucous membrane.
 - The hard palate positioned anteriorly and the soft palate posteriorly.
- Forms a division between the nasal and oral cavities.
- Reflecting this, the superior and inferior palatal surfaces have different mucosal linings:
 - Superior aspect of palate (nasal cavity) – respiratory epithelium.
 - Inferiorly aspect of palate (oral cavity) – oral mucosa, populated by secretory salivary glands.



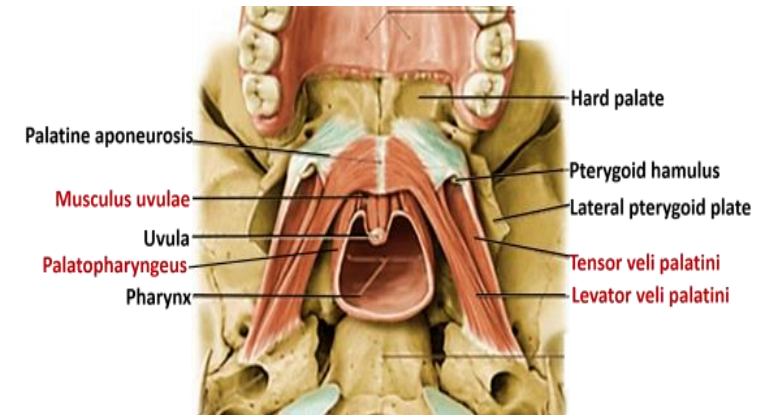
Soft palate

- The soft palate is a posterior continuation of the hard palate. In contrast to the hard palate, it is a muscular structure. It acts as a valve that can lower to close the oropharyngeal isthmus, and elevate to separate the nasopharynx from the oropharynx.



Muscles of the Soft Palate

- Tensor Veli Palatini
Function: Tenses the soft palate.
- Levator Veli Palatini
Function: Elevation of the soft palate.
- Palatoglossus
Function: Pulls the soft palate towards the tongue.
- Palatopharyngeus
 - Function: Tenses soft palate and draws the pharynx anteriorly on swallowing.
- Musculus Uvulae
 - Function: Shortens the uvula.



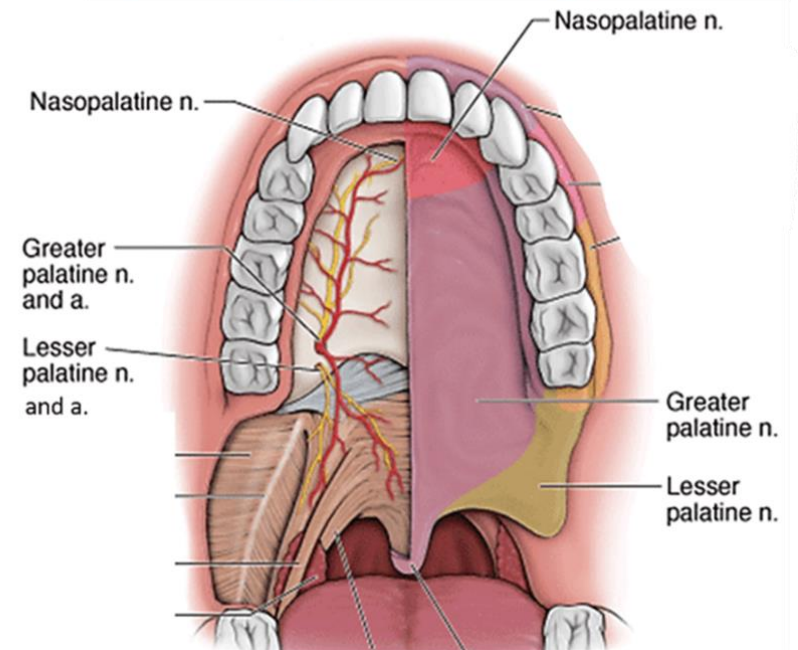
- Vasculature

- Greater palatine arteries, which run anteriorly from the greater palatine foramen.
- In addition, the anastomosis between the lesser palatine artery and ascending palatine artery provide collateral supply to the palate.

- Innervation

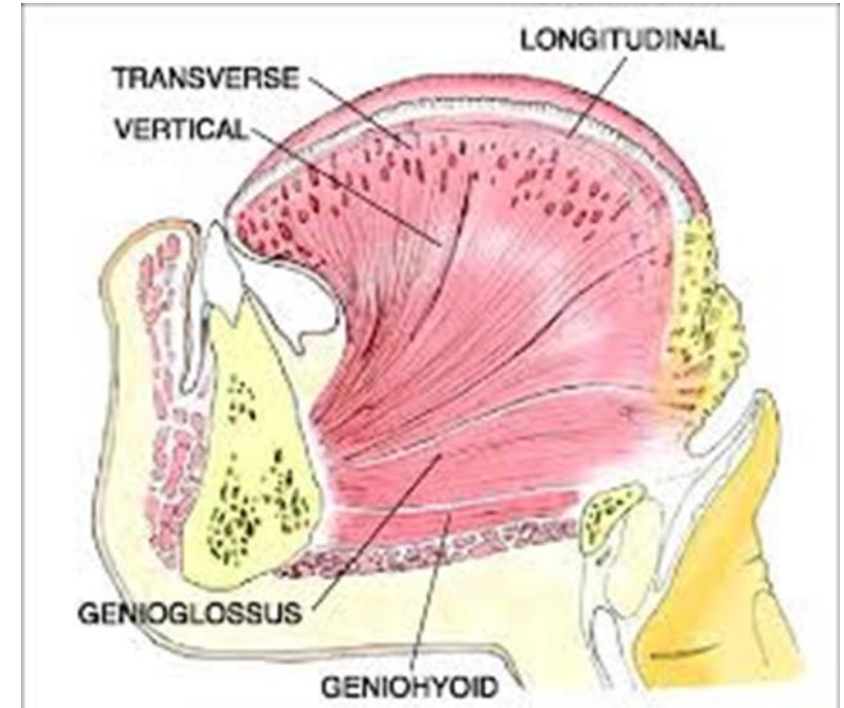
- Sensory innervation : branches of the trigeminal nerve (CN V).
- Muscles are all innervated by the pharyngeal branch of the **vagus** nerve (CN X) – apart from Tensor veli palatini – which is innervated by a branch of CN **V3**.

Sensory nerve supply and arterial supply of Palate



Tongue Intrinsic Muscles

- There are four paired intrinsic muscles of the tongue and they are named by the direction in which they travel
- Longitudinal (superior and inferior) , transverse and vertical muscles of the tongue.
- These muscles affect the shape and size of the tongue and have a role in facilitating speech, eating and swallowing.
- Motor innervation : Hypoglossal nerve (CNXII).



Extrinsic Muscles

Genioglossus

- Attachments:
 - Arises from the mandibular symphysis.
 - Inserts into the body of the hyoid bone and the entire length of the tongue.

Hyoglossus

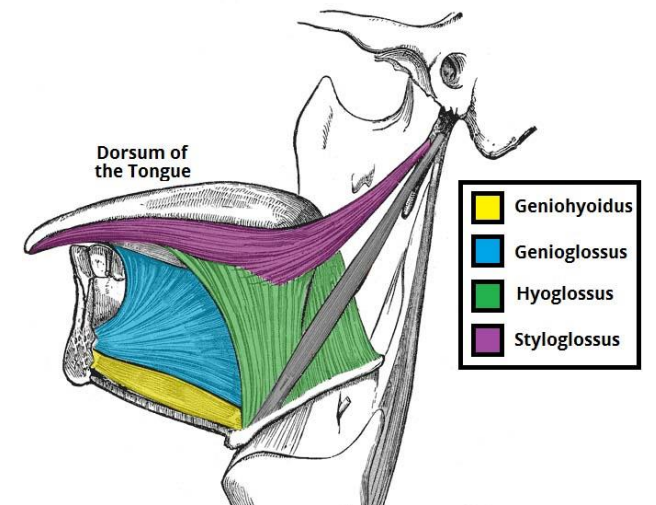
- Attachments:
 - Arises from the hyoid bone and inserts into the side of the tongue

Styloglossus

Attachments:

- Originates at the styloid process of the temporal bone and inserts into the side of the tongue

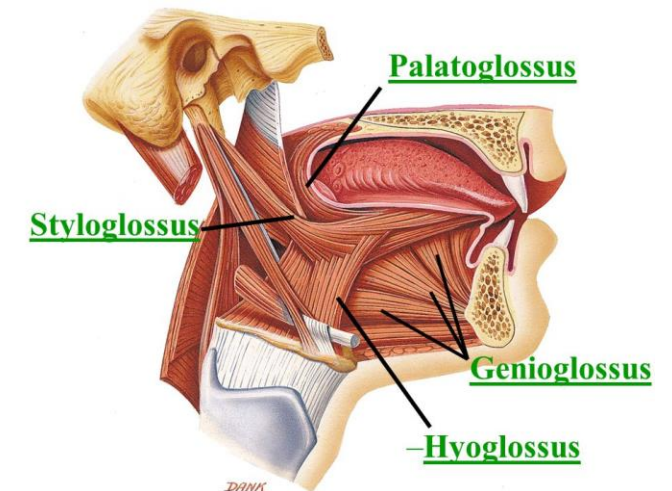
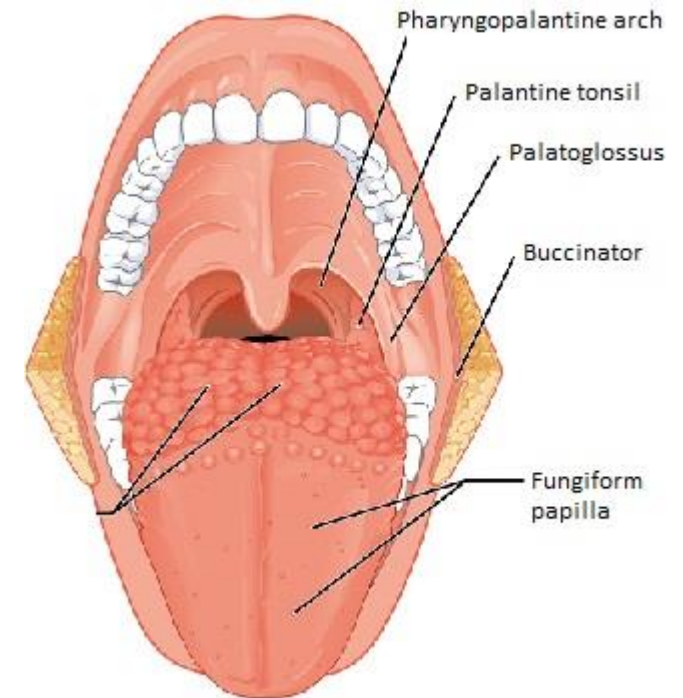
Innervation : Motor innervation via the hypoglossal nerve (CNXII).



Palatoglossus

- Attachments:
 - Arises from the palatine aponeurosis and inserts broadly across the tongue
- Innervation: Motor innervation via the **vagus** nerve (CNX).

Function: altering the tongue's position allowing for protrusion, retraction, and side-to-side movement.



Sensory innervation

- Anterior 2/3
 - General sensation: lingual nerve- mandibular nerve (CN V3)- **trigeminal nerve** (CNV).
 - **Taste**: chorda tympani- the **facial nerve** (CNVII).. This travels through the middle ear, and continues on to the tongue.
- The posterior 1/3 :
 - Both touch and taste are supplied by the **glossopharyngeal nerve** (CNIX).

Vasculature

- The lingual artery (main)
- A branch from the facial artery, called the tonsillar artery, which can provide some collateral circulation.
- Drainage is by the lingual vein.
- **Lymphatic Drainage**
 - Anterior two thirds – initially into **the submental and submandibular nodes**, which empty into the deep cervical lymph nodes
 - Posterior third – directly into the **deep cervical lymph nodes**