

"Tongue"

» Tongue Overview

- The tongue is a mass of striated muscle covered with mucous membrane.

» Lingual Mucous Membrane

> Sulcus Terminalis

- A V-shaped sulcus, the sulcus terminalis, divides the mucous membrane of the upper surface of the tongue into anterior and posterior parts.
- The apex of the sulcus projects backward and is marked by a small pit, the foramen cecum.
- The sulcus divides the tongue into:
 - Anterior two thirds (oral part; body).
 - Posterior third (pharyngeal part; root).

> Foramen Cecum

- The foramen cecum is an embryologic remnant.
- It marks the site of the upper end of the thyroglossal duct.

» Papillae on Upper Surface (Anterior Two Thirds)

> Types of Papillae

- Filiform papillae.
- Fungiform papillae.
- Vallate papillae.

> Vallate Papillae

- The large vallate papillae lie alongside the sulcus terminalis.
- They help identify the sulcus terminalis.

» Posterior Third of Tongue

> Mucous Membrane

- The mucous membrane covering the posterior third of the tongue is:
 - Devoid of papillae.
- Has an irregular surface due to underlying lymph nodules.
 - Lingual Tonsil
- The lymph nodules form the lingual tonsil.

» Inferior Surface of Tongue

- Mucous Membrane Continuation
- The mucous membrane is reflected from the tongue to the floor of the mouth.

- Lingual Frenulum

- In the midline anteriorly, the undersurface of the tongue is connected to the floor of the mouth by a fold of mucous membrane, the lingual frenulum

- Deep Lingual Vein

- On the lateral side of the frenulum, the deep lingual vein can be seen through the mucous membrane.

- Plica Fimbriata

- Lateral to the lingual vein, the mucous membrane forms a fringed fold called the plica fimbriata.

» Tongue Muscles

> Muscle Groups

- The tongue possesses two groups of skeletal muscles:

i) Intrinsic muscles:

- Confined to the tongue.
- Not attached to bone.

ii) Extrinsic muscles:

- Originate outside the tongue.
- Attach to bones and the soft palate.

> Innervation

- The hypoglossal nerve (CN XII) supplies all tongue muscles, except one.
- The palatoglossus is supplied by vagus fibers in the pharyngeal plexus.

» Summary Table

MUSCLE	ORIGIN	INSERTION	NERVE SUPPLY	ACTION
Intrinsic Muscles				
Longitudinal	Median septum and submucosa	Mucous membrane	Hypoglossal nerve	Alters shape of the tongue
Transverse				
Vertical				
Extrinsic Muscles				
Genioglossus	Superior genial spine of the mandible	Blends with other muscles of the tongue	Hypoglossal nerve	Protrudes apex of the tongue through the mouth
Hyoglossus	Body and greater cornu of hyoid bone	Blends with other muscles of the tongue	Hypoglossal nerve	Depresses the tongue
Styloglossus	Styloid process of the temporal bone	Blends with other muscles of the tongue	Hypoglossal nerve	Draws the tongue upward and backward
Palatoglossus	Palatine aponeurosis	Side of the tongue	Vagus nerve (pharyngeal plexus)	Pulls roots of the tongue upward and backward, narrows oropharyngeal isthmus

» Tongue Movements

• Protrusion

- Genioglossus muscles on both sides acting together.

• Retraction

- Styloglossus and hyoglossus muscles on both sides acting together.

• Depression

- Hyoglossus muscles on both sides acting together.

- Retraction and Elevation of Posterior Third
- Styloglossus and palatoglossus muscles on both sides acting together.
- Shape Changes
- Intrinsic muscles.
- Blood Supply
- Lingual artery.
- Tonsillar branch of the facial artery.
- Ascending pharyngeal artery.
- Veins drain into the internal jugular vein.

» Lymph Drainage

- Tip of the Tongue: Submental lymph nodes.
- Sides of Anterior Two Thirds: Submandibular and deep cervical lymph nodes.
- Posterior Third: Deep cervical lymph nodes.

» Sensory Innervation

- Anterior Two Thirds

- Lingual nerve, branch of the mandibular division of trigeminal nerve → general sensation.
- Chorda tympani, branch of the facial nerve → taste.

- Posterior Third

- Glossopharyngeal nerve → general sensation and taste.

"Clinical Notes"

» Tongue Laceration

- A wound of the tongue may occur when the patient's teeth, following a blow on the chin while the tongue is partly protruded, cut the tongue.
- It can also occur:
 - When a patient accidentally bites the tongue while eating.
 - During recovery from an anesthetic.
 - During an epileptic attack.
- Bleeding is halted by:
 - Grasping the tongue between the finger and thumb, posterior to the laceration.
 - This occludes the branches of the lingual artery.

» Hypoglossal Nerve Testing

- Asking the patient to protrude their tongue is a basic test of the function of the hypoglossal nerve.
- Deviation of the tip of the tongue indicates a lesion of the nerve on the same side (ipsilateral nerve) to which the deviation occurs.