TONGUE

DESCRIBE TONGUE UNDER FOLLOWING HEADINGS: A. PARTS ; B. GROSS ANATOMY; C. DORSUM OF TONGUE; D. MUSCLES; E. NERVE SUPPLY; F. BLOOD SUPPLY; G. LYMPHATIC DRAINAGE; H. DEVELOPMENT; I. APPLIED ANATOMY (LE)

Parts

Root

Attached to mandible and hyoid bone

Tip

Anterior free end

Body

Bulk of tongue between root and tip. It has dorsal and ventral surfaces, right and left lateral margins

Gross anatomy:

Dorsal surface:

Convex, divided into anterior 2/3rd and posterior 1/3rd by V shaped sulcus terminalis

Anterior 2/3rd

Median furrow and large number of surface projections called papillae.

Circumvallate papillae

Large, circular, 8-12 in number, arranged in front of sulcus terminalis

Filiform papillae

Narrow with conical projections with pointed tip, more numerous, located throughout the dorsum

Fungiform papillae

Rounded head, narrow base, present at tip and margins

Foliate papillae

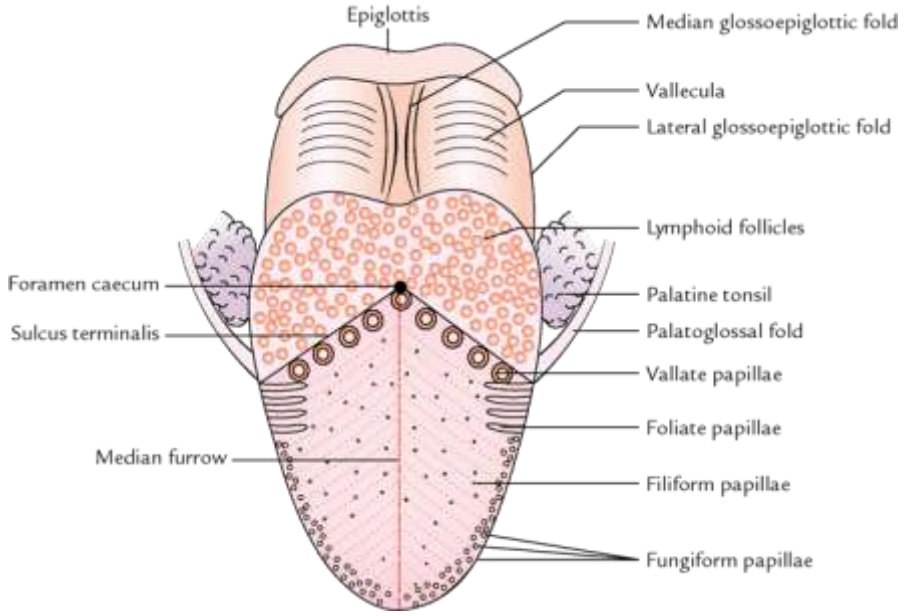
Vertical grooves and ridges near margin in front of sulcus terminalis, rudimentary in humans

Posterior 1/3rd

Presents large number of lymphoid follicles forming lingual tonsil. It is devoid of papillae. Posteriorly mucous membrane is reflected onto the epiglottis as median and 2 lateral glossoepiglottic folds

Ventral surface

Mucous membrane is thin, smooth, reflected onto floor of mouth. The features seen are frenulum lingue, deep lingual veins, plica fimbriata



Muscles:

Intrinsic muscles: superior longitudinal, inferior longitudinal, vertical, transverse muscles

Extrinsic muscles: styloglossus, palatoglossus, genioglossus, hyoglossus

Nerve supply:

NERVE SUPPLY	ANTERIOR 2/3	POSTERIOR 1/3	POSTERIOR MOST PART
GENERAL SENSORY	lingual branch of mandibular nerve	glossopharyngeal	Vagus
TASTE	Chordatympani excluding circumvallate papillae by glosopharyngeal nerve	Glossopharyngeal	vagus
MOTOR	All the muscles are supplied by hypoglossal nerve except palatoglossus by cranial accessory nerve		

Blood supply:

lingual artery and its branches, ascending palatine, ascending pharyngeal, tonsillar,

venous blood drained by dorsal lingual vein

Lymphatic drainage

Tip of the tongue

submental lymph nodes

Root of tongue

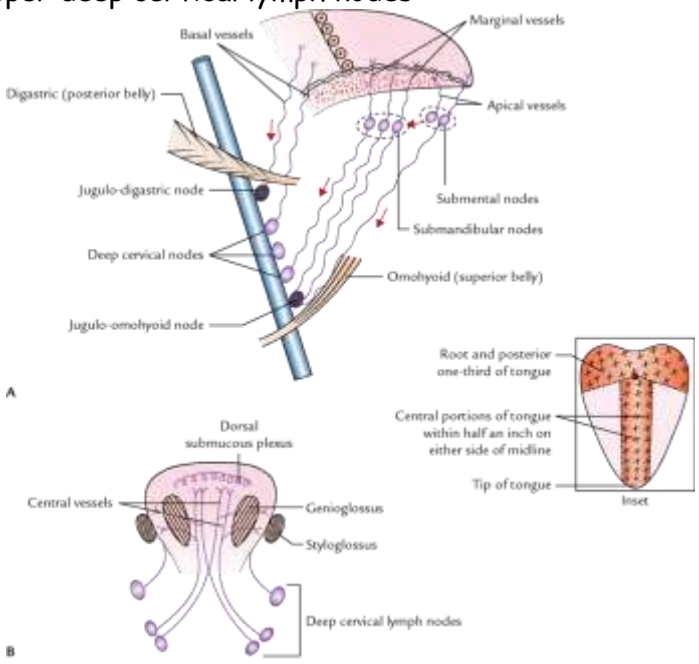
upper deep cervical lymph nodes

Margins of tongue

submandibular lymph nodes

Central part of tongue

upper deep cervical lymph nodes

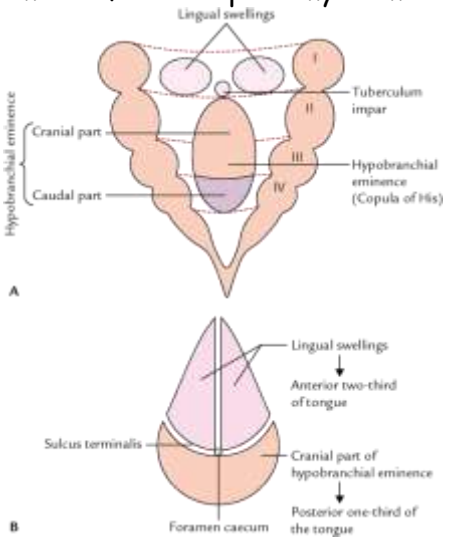


Development:

Mucous membrane of the anterior 2/3rd of tongue develops from fusion of pair of lingual swellings with tuberculum impar

Mucous membrane of the posterior 1/3rd of tongue develops from hypobranchial eminence

Muscles develop from last four occipital myotomes



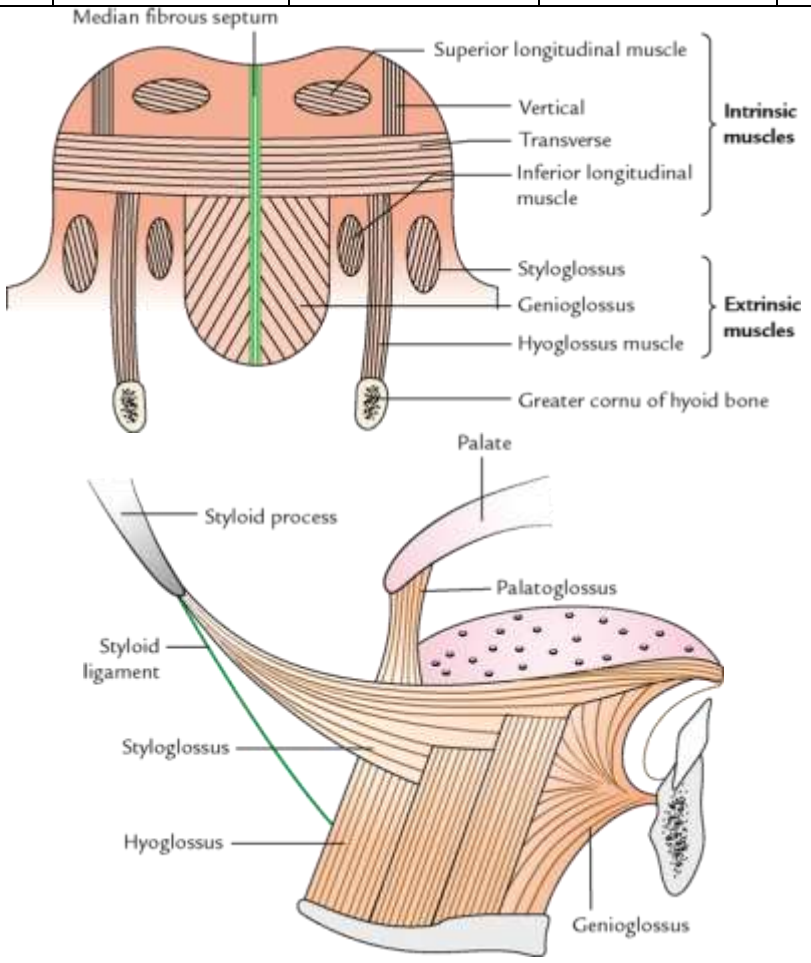
Applied anatomy:

When genioglossus is paralysed the tongue tends to fall back and abstruct the airway which may lead to suffocation and death.

NAME MUSCLES OF TONGUE. GIVE A. ORGIN; B. INSERTION; C. NERVE SUPPLY; D. ACTIONS. ADD A NOTE ON ITS DEVELOPMENT (LE)

Muscle	Origin	Insertion	Nerve supply	Actions
Extrinsic muscles				
genioglossus	Upper genial tubercles of mandible	Inferior surface of the tongue from body of hyoid bone to tip of tongue	Hypoglossal nerve	Protrusion of tongue
hyoglossus	Greater horn and body of hyoid bone	Inferior surface of tongue lateral to genioglossus	Hypoglossal nerve	Depresses the tongue
styloglossus	Lateral part of tip of styloid process	Inferior aspect of tongue lateral to hyoglossus	Hypoglossal nerve	Retraction of tongue
palatoglossus	Palatine aponeurosis of soft palate	Sides of tongue at the junction of anterior 2/3rd and posterior 1/3rd	Cranial accessory	Elevates the tongue and opposes it with soft palate
Intrinsic muscles				
Superior longitudinal Present Beneath mucous membrane.	Median fibrous raphe	Mucous membrane on dorsum of tongue	Hypoglossal nerve	Raises the tip and makes tongue concave
Inferior longitudinal Lies on inferior aspect of tongue.	Body of hyoid	Blends with fibers of styloglossus	Hypoglossal nerve	Lowers the tip and makes the dorsum convex
transverse	Fibrous septum	Mucous membrane at	Hypoglossal nerve	Makes the tongue

		the side of tongue		narrow and elongates
vertical present as Sides of tongue	mucous membrane on dorsal surface	Inferior surface of tongue	Hypoglossal nerve	Flattens and broadens the tongue



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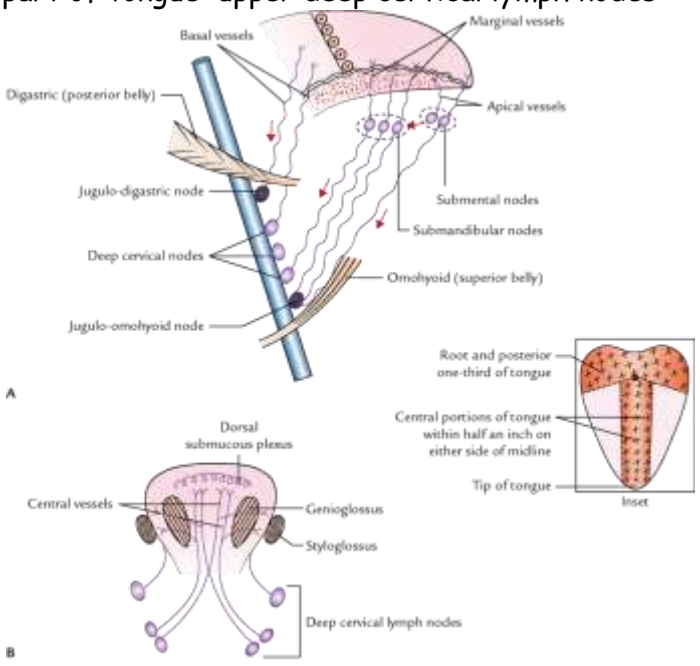
Muscles develop from last four occipital myotomes

NAME THE MUSCLES OF THE TONGUE AND EXPLAIN THEIR ACTIONS AND NERVE SUPPLY (SE)

Muscle	Nerve supply	Actions
Genioglossus	Hypoglossal nerve	Protrusion of tongue
Hyoglossus	Hypoglossal nerve	Depresses the tongue
Styloglossus	Hypoglossal nerve	Retraction of tongue
Palatoglossus	Cranial accessory	Elevates the tongue and opposes it with soft palate
Superior longitudinal	Hypoglossal nerve	Raises the tip and makes tongue concave
Inferior longitudinal	Hypoglossal nerve	Lowers the tip and makes the dorsum convex
Transverse	Hypoglossal nerve	Makes the tongue narrow and elongates
Vertical	Hypoglossal nerve	Flattens and broadens the tongue

TONGUE- LYMPHATIC DRAINAGE (SE)

Tip of the tongue – submental lymph nodes
Root of tongue- upper deep cervical lymph nodes
Margins of tongue: submandibular lymph nodes
Central part of tongue: upper deep cervical lymph nodes



TONGUE- LYMPHATIC DRAINAGE AND DEVELOPMENT (SE)

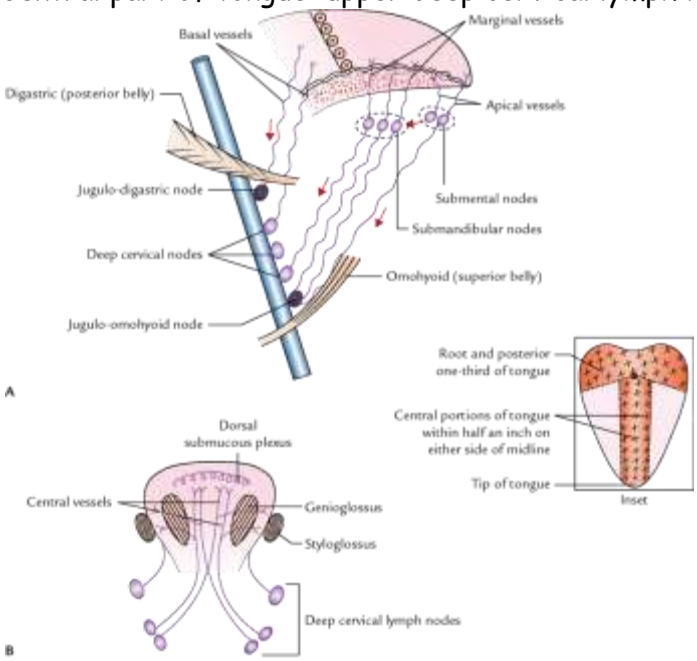
Lymphatic drainage:

Tip of the tongue – submental lymph nodes

Root of tongue- upper deep cervical lymph nodes

Margins of tongue: submandibular lymph nodes

Central part of tongue: upper deep cervical lymph nodes



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Muscles develop from last four occipital myotomes

TONGUE- SENSORY AND MOTOR NERVE SUPPLY (SE) / (SA)

NERVE SUPPLY	ANTERIOR 2/3	POSTERIOR 1/3	POSTERIOR MOST PART
GENERAL SENSORY	lingual branch of mandibular nerve	glossopharyngeal	Vagus
TASTE	Chordatympani excluding circumvallate papillae by glosopharyngeal nerve	Glossopharyngeal	vagus
MOTOR	All the muscles are supplied by hypoglossal nerve except palatoglossus by cranial accessory nerve		