ANATOMY SUMMARIES MICHAELMAS TERM

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The Skull

Nerves, Bones, Foramen and their Functions

NERVE	BONE	FORAMEN	TYPE	FUNCTION
I – Olfactory Nerve	Cribriform plate of ethmoid bone	Cribriform foramen	Sensory	Smell Olfactory mucosa in nasal cavity
II – Optic Nerve	Sphenoid	Optic Foramen	Sensory	Sight Innervates the eye
III – Oculomotor Nerve **1. Superior branch** **2. Inferior branch**	Sphenoid	Superior Orbital Fissure	Motor	Innervates most of the extrinsic muscles that move eyeball
IV – Trochlear Nerve	Sphenoid	Superior Orbital Fissure	Motor	Innervates single oblique muscle of the eye (cross eyed)
V – Trigeminal Nerve **1. Ophthalmic** **2. Maxillary** **3. Mandible** • **lingual nerve (tongue) curves over hypoglossals and Warton's duct** • **inferior alveolar nerve (gums) – goes through mental foramen** • **Auriculotemporal**	Sphenoid	1. Ophthalmic nerve (Sup. Orbital Fissure) 2. Maxillary Nerve (Rotundum) 3. Mandibular Nerve (Ovale)	Motor and sensory	1. Sensory - forehead to tip of nose Dilation of pupil 2. Sensory - lower eye lid to upper gums and teeth Palate 3. Both: • Motor – muscles of <u>mastication</u> and tensor veli palatini muscle Sensory – sensation bottom gums and teeth, anterior 2/3rd of tongue (tongue lingual nerve)
VI – Abducens Nerve	Sphenoid	Superior Orbital Fissure	Motor	• Lateral rectus muscle of the eye (side to side)

VII – Facial Nerve 1. **Temporal** 2. **Zygomatic** 3. **Buccal** 4. **Mandibular** 5. **Cervical**	Temporal	Internal acoustic meatus	Both	• Motor – Innervates muscles of facial expression • Parasympathetic/ Secretomotor – Activity in the lacrimal, submandibular, sublingual glands, glands in nasal cavity and hard and soft palates • Sensory – Hearing • Special sensory – Anterior 2/3rd of tongue (chorda tympani)
VIII – Vestibulocochlear	Petrous part of temporal bone	Internal Acoustic Meatus	Sensory	Innervates vestibular system and cochlear both in inner ear Hearing and balance
IX – Glossopharyngeal Nerve	Between Occipital and Temporal	Jugular Foramen	Both	• Motor: Stylopharyngeus muscle of the pharynx • Sensory: middle ear and tympanic tube, post. 1/3 tongue, oropharynx Parasympathetic innervation of parotid gland
***X – Vagus Nerve**	Between Occipital and Temporal	Jugular Foramen	Both	• Motor - Laryngeal and pharyngeal muscles • Sensory - Taste • Parasympathetic innervation to all organs in the body
XI - Accessory Nerve	Between Occipital and Temporal	Jugular Foramen	Motor	• Innervates sternocleidomastoid muscle and Trapezius muscle
XI – Hypoglossal Nerve	Occipital Bone	Hypoglossal Canal (inner surface of foramen magnum)	Motor	Innervates Hyoglossus, genioglossus and styloglossus muscles as well as all intrinsic muscles of tongue. Important for swallowing and speech articulation

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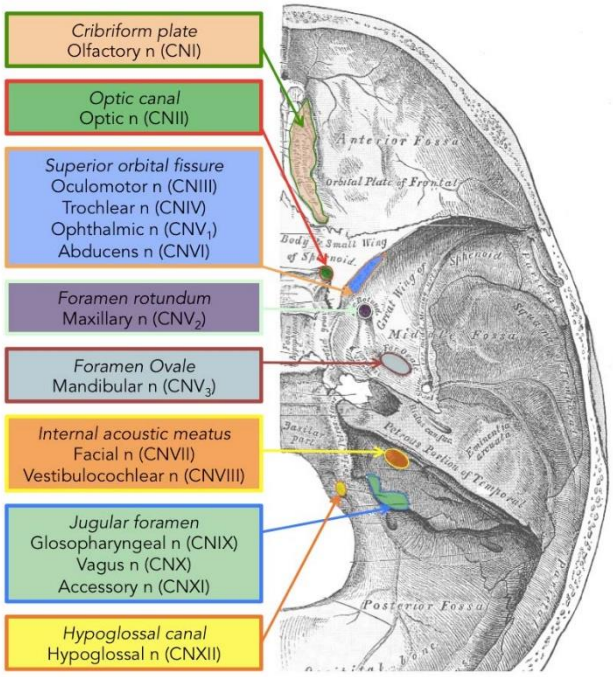

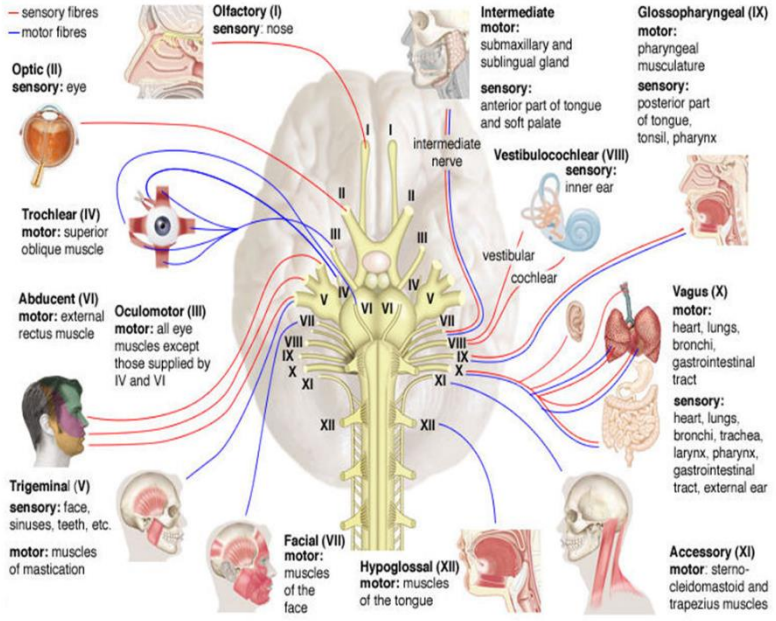

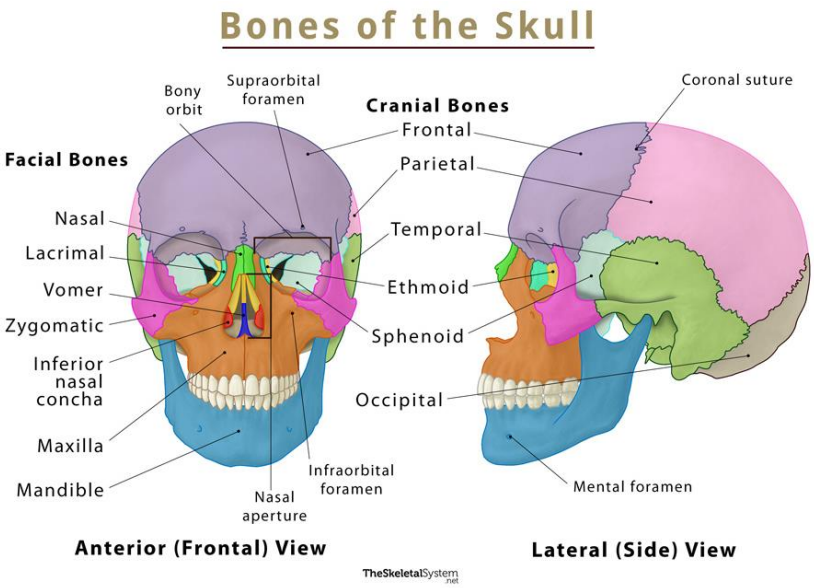

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The Cervical Spine

Vertebrae, Ligaments, Muscles, Structures, Joints and Functions

	ATLAS	AXIS
Definition	First cervical vertebrae	Second cervical vertebrae
Function	• Allows vertical movement • Provides attachment sites for muscles	• Allows horizontal movement • Joins spine and skull
Location	Between cranium and C2	Between C1 and C3
Importance	Holds head upright	Encases brain stem
Joint	Atlanto-occipital	Atlanto-axial
Differences	• Lacks spinous process • Lacks superior articular disc • Lacks inferior articular disc • Section for connection to dens	• Contains spinous process • Contains superior articular disc • Contains inferior articular disc • Contains odontoid process (dens)

Ligaments

Ant. Longitudinal – prevents hyperextension

Post. Longitudinal – forward bend limiting hyperextension

Supraspinous – connect spinous process (above)

Interspinous – connect spinous process (between)

Cruciform of atlas – holds dens in articulation – alar, apical, tectorial membrane

Ligamental flavum – connects laminae

Ligamentum nuchae – cont. of supraspinous

Transverse of atlas – connect lateral masses of atlas and anchor dens

Muscles

SCM – flexion/lateral flexion

Innervated by accessory nerve

Scalene – lateral flexion

Innervated by cervical nerve/brachial plexus

Trapezius – extension

Innervated by accessory nerve

Structures of a typical vertebrae

1. Body
2. Transverse process
3. Transverse foramen
4. Pedicle
5. Superior articular facet
6. Inferior articular process
7. Vertebral foramen
8. Spinous process
9. Lamina
10. Posterior tubercle
11. Anterior tubercle

Joints

Synovial:

Atlanto-occipital – flexion, extension, lateral extension

Atlanto-axial - rotation

Joint of Luschka (C3-C7) – flexion, extension, limit lat. flexion

Structures travelling though transverse foramen

1. Vertebral artery
2. Vertebral vein
3. Sympathetic nerve plexus

Clinical Relevance

Jefferson Fracture of atlas

Hyperextension injury – whiplash

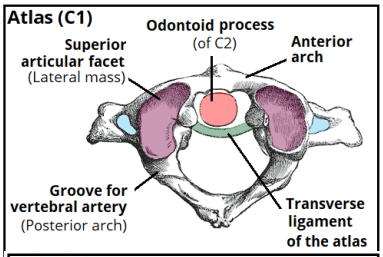
Hangman's fracture – pars interarticularis

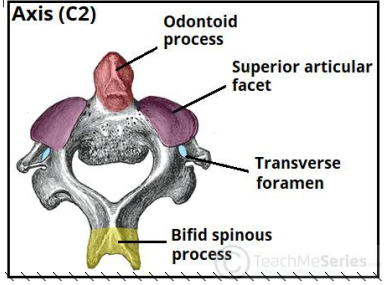
Dens fracture – risk of alveolar necrosis

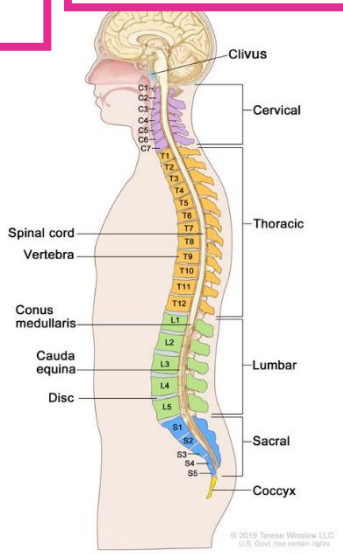
Herniated disc

Osteoarthritis

Movement is flexion, extension, lateral flexion and rotation







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The Nasal Cavity

Muscles, Innervation, Vasculature, Paranasal Sinuses and Functions

	FRONTAL SINUS	SPHENOID SINUS	ETHMOIDAL SINUS	MAXILLARY SINUS
Location	Frontal bone	Sphenoid bone	Between orbit and lateral wall of nose	Laterally/inferiorly to nasal cavities
Vasculature	Internal carotid branch of ethmoidal artery	Pharyngeal branches of maxillary artery	Anterior and posterior ethmoid arteries	Posterior superior alveolar, infraorbital, and posterior lateral nasal arteries
Innervation	Ophthalmic branch of supraorbital nerve	Ophthalmic branch of ethmoidal nerve + maxillary nerve branches	Anterior and posterior ethmoid nerves	Trigeminal branches of maxillary nerve
Clinical	Little's Area epistaxis – 4 arteries combining to create severe nosebleed			
Drainage	Semilunar hiatus (medial meatus)	Sphenoethmoidal recess superior to conchae	Superior meatus	Medial meatus

Function

Resonates voice

Lightens weight of head

Humidifies air

Supports immune defence

External Nose

Nasal root

Bridge

Dorsum nasi

Ala nasi

Apex

Tissue (Epithelial)

Stratified squamous – anterior

Ciliated pseudostratified columnar – nasal fossa

Olfactory – roof of nasal cavity

Boundaries

Ethmoid bone

Vomer

Palatine bone

Maxilla

Septal cartilage

	NASALIS MUSCLE	PROCERUS MUSCLE	DEPRESSOR SEPTI NASI MUSCLE
Origin	Transverse – maxilla Alar - maxilla	Nasal bone	Maxilla
Insertion	Transverse - dorsum of nose Alar – skin of ala nasi	Skin between brows	Nasal septum
Function	Transverse – closes nostrils Alar – opens nostrils	Draws brows down to frown	Assists in opening nostrils

Sensory Innervation

Special Sensory – smell – CN1

Sensation – V1/2 of trigeminal nerve

Motor – CN7 – buccal/zygomatic branch

Nasal Conchae

Superior

Medial

Inferior

Warm/moisten inhaled air

Meatuses

Superior – ethmoid sinus drain

Medial – frontal & maxillary sinus drain

Inferior – nasal lacrimal duct drain

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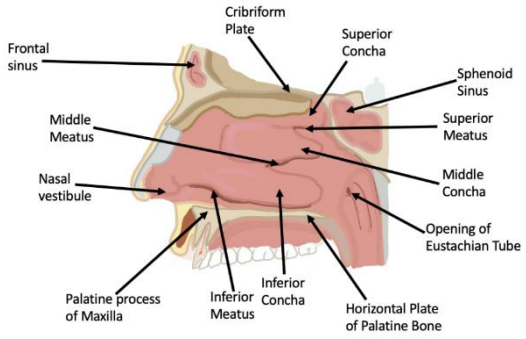
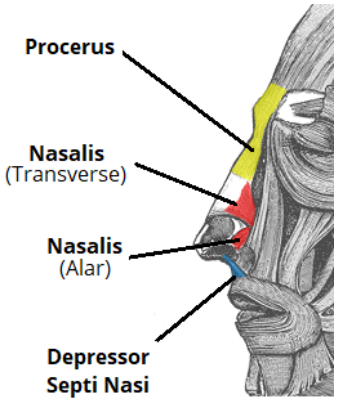
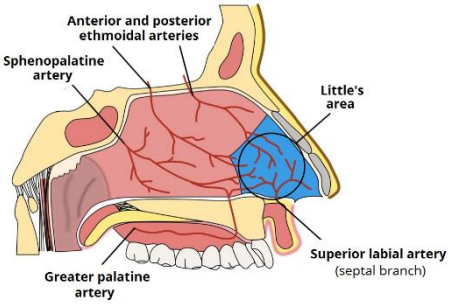






Oral Cavity

Muscles, Boundaries, Innervation, Glands, Lymphatics & Functions

Boundaries

Anterior/lateral – gums, teeth & cheeks

Roof – hard/soft palate

Posterior - oropharyngeal isthmus

Floor – tongue, muscles, mucous membrane

Innervation

Branches of trigeminal nerve

Glossopharyngeal nerve – taste/sensation

Lingual nerve - sensation

Facial nerve - taste

Hypoglossal nerve – all muscles except palatoglossus (vagus nerve)

INTRINSIC MUSCLES	ORIGIN	INSERTION	INNERVATION	FUNCTION
Superior Longitudinal (deep to surface of tongue)	Back of tongue	Submucosal tissue and mucosa	Hypoglossal	Shortens and curls
Inferior longitudinal (between genioglossus and hyoglossus)	Root of tongue	Apex of tongue	Hypoglossal	Shortens, uncurls and downwards
Transverse	Septum of tongue	Submucosal tissue	Hypoglossal	Narrows and lengthens
Vertical	Submucosal tissue	Connective tissue	Hypoglossal	Flattens and widens

Functions

- Digestion
- Communication
- Breathing

Glands

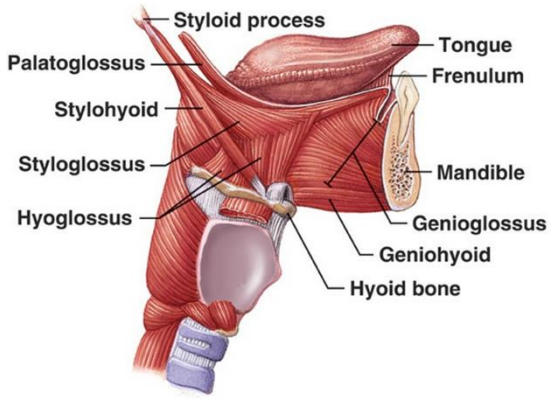
- Parotid
- Sublingual
- Submandibular

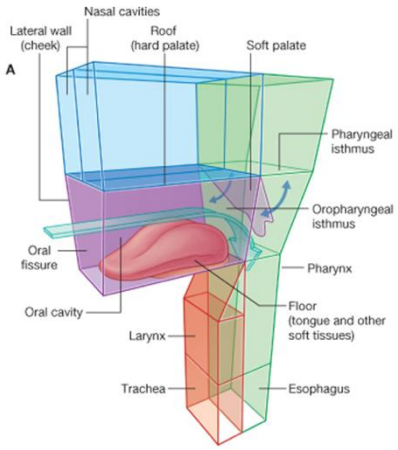
Lymphatic Drainage

Drain into deep cervical nodes along in. jugular vein via lingual vein

EXTRINSIC MUSCLES	ORIGIN	INSERTION	INNERVATION	FUNCTION
Genioglossus	Mental spines	Hyoid	Hypoglossal	• Protrudes • Depresses centre
Hyoglossus	Hyoid bone	Side of tongue	Hypoglossal	• Depresses
Styloglossus	Styloid Process	Side of tongue	Hypoglossal	• Elevates • Retracts
Palatoglossus	Palatine aponeurosis	Side of tongue	Vegas	• Depresses palate

				• Elevates back of tongue





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Temporo-mandibular Joint

Classification, surfaces, innervation, ligaments, vasculature, and movement

Ligaments (extracapsular)

Temporomandibular – zygomatic process of temporal bone to condyle

Spheno-mandibular – sphenoid to inferior surface of mandible

Stylo-mandibular – styloid process to posterior surface of ramus

Vasculature

Superficial temporal artery

Maxillary artery

Includes deep auricular, ascending pharyngeal and axillary arteries

Muscles

1. Masseter – retraction/elevation
2. Medial pterygoid - elevation
3. Lateral pterygoid - protrusion
4. Temporalis – retraction/elevation

Innervation

Auriculotemporal and masseteric branches

Mandibular nerve (CN V3)

Movement is elevation, depression, protrusion, retraction, rotation

Classification – synovial joint (hinge and plane)

Articular Capsule

Encapsulates mandibular fossa + mandibular condyle

Contains articular disk

Contains synovial fluid produced by synovial membrane

Stability

Teeth
Articular eminence
Lateral ligament
Lateral pterygoid
Dislocation

Articular Disk

Cartilaginous tissue

Separates articular bone surfaces

Splits joint into w synovial joint cavities

Joint cavities line by synovial membrane

Attached to medial and lateral poles of mandible

Posteriorly divided into 2 laminae

Articulating surfaces

1. Mandibular condyle/fossa
2. Articular tubercle
3. Mandible head

Covered by fibrocartilage

Functions

Talking

Chewing

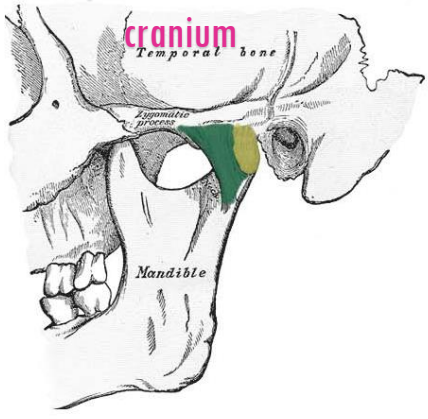
Yawning

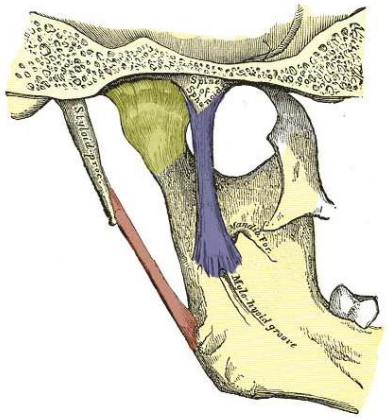
Formed by the articulation of the mandible and the temporal bone of the cranium

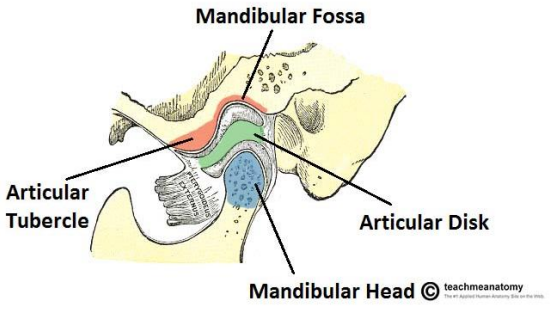
Clinical

Temporomandibular joint dislocation – head of mandible slips out of mandibular fossa = pulled posteriorly

Lockjaw – sustained masseter spasm







Lateral ligament

Sphenomandibular ligament

Stylomandibular ligament

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Pharynx

Boundaries, function, subdivisions, muscles, innervation, and vasculature

Boundaries

Base of skull

Anterior walls of nasal/oral cavity and larynx

Posterior to vertebrae

Pharyngeal isthmus posterior 1/3 tongue

Function

Pathway for air and food

Linking oral and nasal cavities to larynx and oesophagus

Innervation

Pharyngeal plexus supplies all but nasopharynx

Sensory innervation by glossopharyngeal nerve

Motor innervation by vagus nerve (except stylopharyngeus – glossopharyngeal)

SUBDIVISION	LOCATION	FUNCTION
Nasopharynx	Between base of skull and soft palate	Connects naso to tympanic cavity
Oropharynx	Between soft palate and superior epiglottis border	Involved in (in)voluntary swallowing
Laryngopharynx	Between superior epiglottis border and inferior cricoid cartilage border (C6)	Connection point through which food, water, and air pass

Velopharyngeal mechanism – muscular valve from roof of mouth to posterior pharyngeal wall

Vasculature

Via branches of the external carotid artery:

- Ascending pharyngeal artery
- Branches of the facial artery
- Branches of the lingual and maxillary arteries

Venous drainage via pharyngeal venous plexus into internal jugular vein

Function of Pharynx Muscles

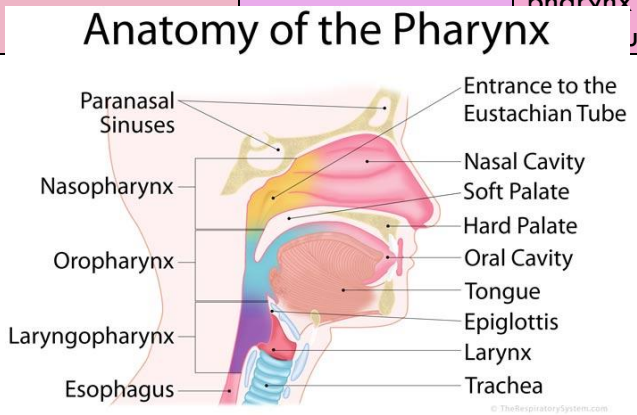
Creates tight seal between velum and pharyngeal walls to separate oral/nasal cavities for talking and eating

Closure accomplished through contraction of 6 velopharyngeal muscles (see below)

MUSCLE	ORIGIN	INNERVATION	INSERTION	FUNCTION
Superior constrictor (circular)	Pharyngeal raphe	Vagus	Mandible and pterygoid hamulus	Constriction of pharynx
Middle constrictor (circular)	Pharyngeal raphe	Vagus	Hyoid bone	Constriction of pharynx
Stylopharyngeus (longitudinal)	Styloid process	Glossopharyngeal	Pharyngeal wall	Elevation of pharynx
Palatopharyngeal (longitudinal)	Palatine aponeurosis	Vagus	Pharyngeal wall	Elevation of pharynx
Salpingopharyngeus (longitudinal)	Pharyngotympanic tube	Vagus	Pharyngeal wall	Elevation of pharynx + closure

Velopharyngeal Muscles

1. Levator veli palatini
2. Musculus uvulae
3. Superior pharyngeal constrictor
4. Palatopharyngeus
5. Palatoglossus
6. Salpingopharyngeus



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Larynx – the voice box

Boundaries, function, muscles, cartilages, innervation, and vasculature

Function

Protection of the vocal cords

Phonation

Breathing

Role in coughing / expulsion of foreign bodies

Role in swallowing

Boundaries

Anterior portion of lower neck

Approx. C3 – C6

Pharynx above

Trachea below

Innervation

Motor - recurrent laryngeal branch of vagus (except for cricothyroid muscle – ext. branch of sup. Laryngeal nerve vagus nerve)

Sensory – int. branch of sup. laryngeal nerve

Vasculature

Sup. and Inferior laryngeal arteries

Clinical

Laryngitis - inflammation of the larynx (voice box)

Characteristics

- Two pairs of vestibular folds ("false folds") vocal folds ("true folds")
- Gap between folds is = rima glottidis
- A small recess in the wall of the larynx between folds is = ventricle
- From which the saccule secrets mucus lubricating the vocal folds
- Lined with ciliated pseudostratified columnar epithelium (respiratory)
- Contact areas of vocal folds and epiglottis covered by stratified squamous epithelium

Extrinsic Muscles

Act to move the larynx superiorly and inferiorly

Supra/infrahyoid - attach to hyoid bone

Suprahyoid – elevates

Stylopharyngeus – elevates

Infrahyoid - depress

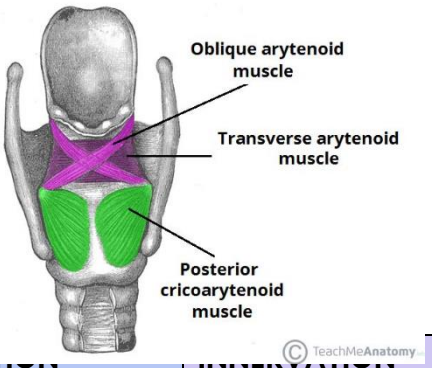
Epiglottis

Plate of elastic cartilage

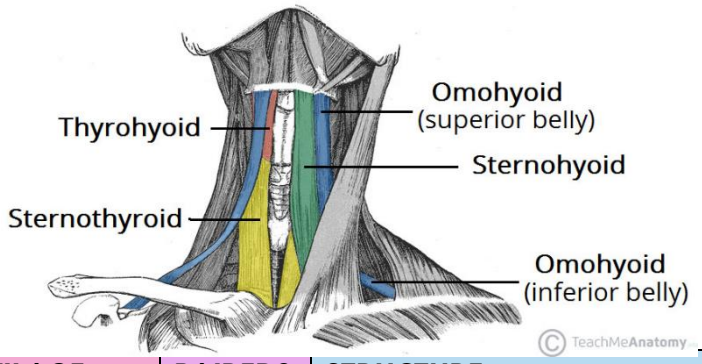
Marks entrance to larynx

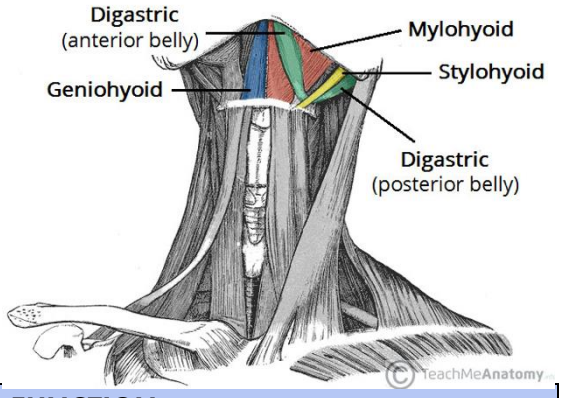
Stalk attached to anterior aspect of TC

During swallowing – flattens = moves post. = close off larynx and prevent aspiration

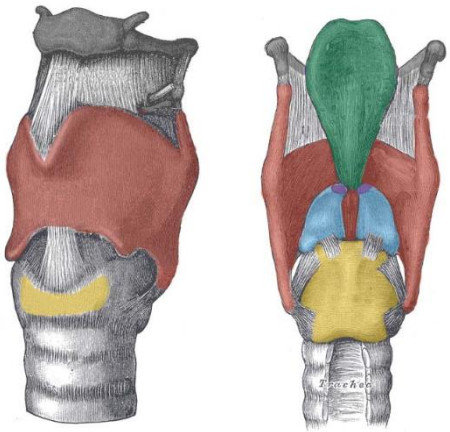


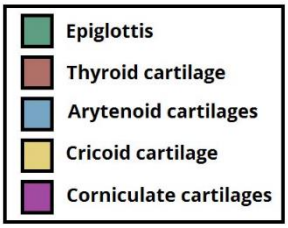
INTRINSIC MUSCLE	ORIGIN	INSERTION	FUNCTION	INNERVATION
Cricothyroid	Cricoid cartilage	Thyroid cartilage	Abduction	Ext. branch of sup. Laryngeal nerve
Posterior Cricoarytenoid	Post. lamina of cricoid cartilage	Muscular process of arytenoid cartilage	Abduction – rima glottidis	Recurrent laryngeal branch of vagus
Lateral Cricoarytenoid	Sup. Surface of CC	Muscular process of AC	Adduction – rima glottidis	
Transverse Arytenoid	Post. surface of arytenoid cartilage	Post. surface of opposite AC	Adduction	
Oblique Arytenoid	Muscular process of AC	Post. surface of apex of AC	Adductor – sphincter of laryngeal inlet	
Thyro-arytenoid	Angles of thyroid	AC	Adduction – sphincter of vestibule/laryngeal inlet	
Vocalis	Lateral surface of vocal process	Vocal ligament and thyroid angle	Adduction – tension in vocal folds	

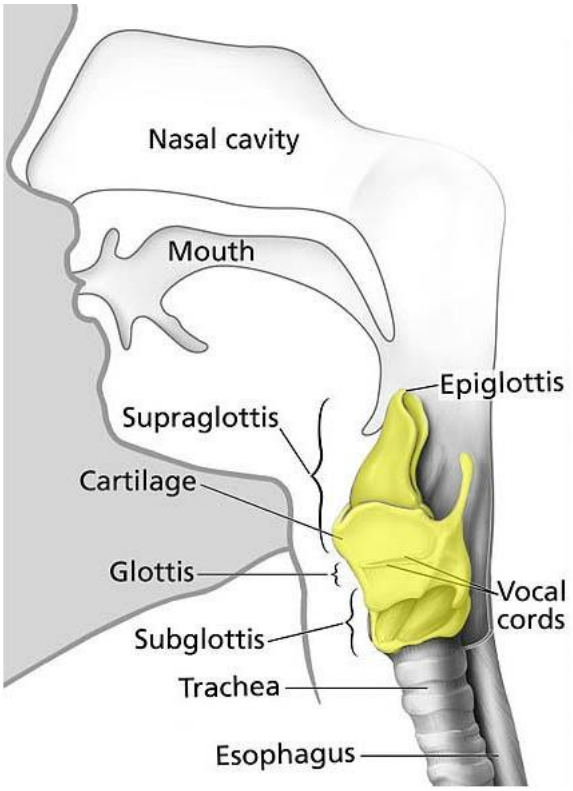




CARTILAGE	PAIRED?	STRUCTURE	FUNCTION
Thyroid (2 laminae)	Unpaired	Connected to hyoid inf. by thyroid membrane	Protects vocal folds Changes vocal pitch
Cricoid (1 lamina post.)	Unpaired	Signet ring shape	Hold upper and lower respiratory tracts together
Epiglottic	Unpaired	From back of tongue all the way down larynx	Closes laryngeal inlet
Arytenoid	Paired	On top of apex	Rotates to vibrate vocal folds
Corniculate	Paired	Sits on top of apex of arytenoid	Anchor for the suprahyoid and infrahyoid strap muscles
Cuneiform	Paired	Suspends from muscles and ligaments	Support the vocal folds







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Muscles of Anterior Neck

SUPRAHYOID MUSCLES: superior to hyoid bone				
MUSCLE	**ORIGIN**	**INSERTION**	**INNERVATION**	**FUNCTION**
Stylohyoid	Styloid	Hyoid Bone	Facial	Raises Hyoid
Digastric (2 bellies) 1. Anterior Belly 2. Posterior Belly	1. Digastric Fossa 2. Mastoid Process	Hyoid Bone Tendon between 2 bellies	1. Inferior Alveolar of V-3 2. Facial	1. Raises Hyoid and opens mouth 2.Raises Hyoid up and back
Mylohyoid (large)	Mylohyoid Line (inside)	Hyoid Bone	Inferior Alveolar of V-3	Support and Elevation of Floor of Mouth Raises Hyoid
Geniohyoid	Mental spine of Mandible	Hyoid Bone	Hypoglossal	Pulls Hyoid upwards and mandible downward

INFRAHYOID MUSCLES: inferior to hyoid bone				
MUSCLE	**ORIGIN**	**INSERTION**	**INNERVATION**	**FUCNTION**
Sternohyoid	Sternum	Hyoid	Ansa Cervicalis	Depresses Hyoid
Sternothyroid	Sternum	Thyroid Cartilage	Ansa Cervicalis	Depresses Hyoid and larynx
Omohyoid	Scapula (shoulder)	Hyoid	Ansa Cervicalis	Depresses and Fixes Hyoid
Thyrohyoid	Thyroid cartilage	Hyoid	Hypoglossal	Depresses Hyoid and Raises larynx

Suprahyoid, infrahyoid, anterior lateral, key points, and borders

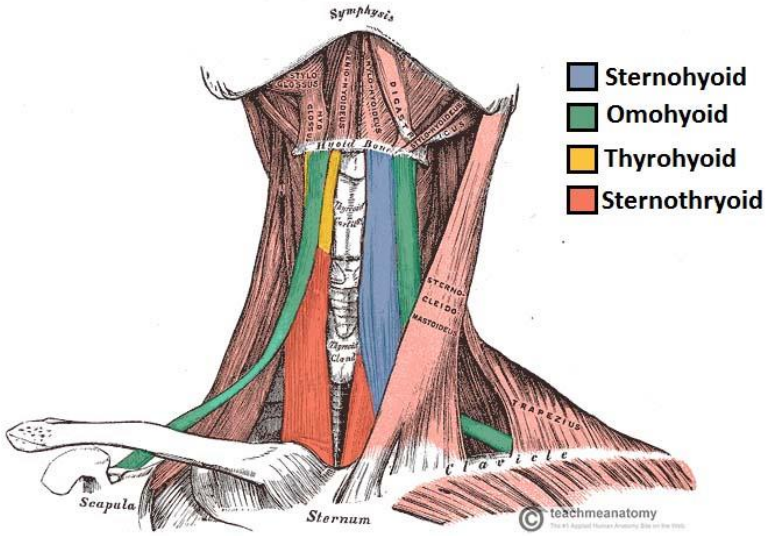
ANTERIOR LATERAL NECK MUSCLES				
MUSCLE	**ORIGIN**	**INSERTION**	**INNERVATION**	**FUNCTION**
Sternocleidomastoid	Sternum Clavicle	Mastoid process	Accessory	Rotation of head Flexion of neck
Trapezius	Occipital bone to thoracic vertebrae	Scapula Clavicle	Accessory	Supports arm Retracts Depresses/rotates shoulder
Scalene 1. Anterior 2. Medius 3. Posterior	1. Transverse process of C3 to C6 2. C2 to C7 3. C7 to C8	Ribs	Buccal plexus	Rotation and flexion of neck

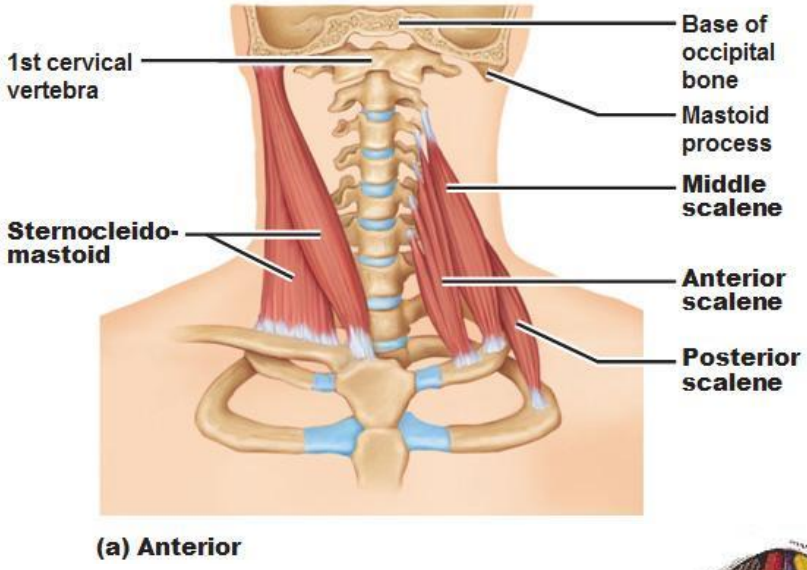
Key Points

- Sensory nerve supply via cervical plexus
- Anterior jugular veins (AJV) unite with EJV
- The AJV may distend pathologically in SVC obstruction
- The infrahyoid 'strap' muscles have an important role in resonance of the voice
- A 'goitre' is a common swelling
- Lymph nodes in this region are sparse in the healthy

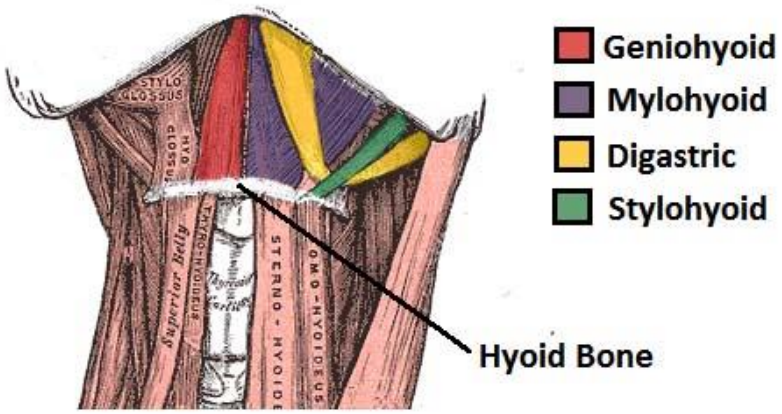
Borders

1. Superiorly - by inferior border of mandible
2. Laterally - by anterior border of sternocleidomastoid
3. Medially - by sagittal line down neck midline





(a) Anterior



KIERA WELSH 2022

Lymphatic System

Functions, organs, tissues, nodes, vasculature, groups

Functions

Absorption of fats and vitamins

Defence against micro-organisms and disease

Distributes immune cells - lymphocytes

Lymph is like plasma (blood)

Lymph vessels carry fluid away from tissues

Series of vessels and nodes that collect and filter excess tissue fluid (lymph), before returning it to the venous circulation

ORGAN	FUNCTION
Spleen	Blood filter and plays a role in the immune response
Thymus	Development and maturation of T lymphocyte cells
Red bone marrow	Maturation of immature lymphocytes

Lymph Organs

1. Spleen
2. Thymus - Thymic corpuscles of Hassell
3. Red bone marrow
4. Tonsils, appendix, walls of the gastrointestinal tract

Lymph Nodes

Kidney shape

Superior lateral deep cervical - Jugulodigastric

Inferior deep lateral cervical - Juguloomohyoid

Supraclavicular - along subclavian artery

Filter foreign particles from blood

Contains T lymphocytes, B lymphocytes, immune cells

Exposed to the fluid as it passes through the node and mount an immune response

Recruits more inflammatory cells into the node

Lymph fluid enters node through afferent lymphatic channels and leaves node via efferent channels

Pathways of Spread

Haematogenous

Direct

Lymphatogenous

Clinical

Lymphoma - cancerous tumours developing from lymphatic cells

Lymph Fluid

Formed: fluid leaves the capillary bed in tissues due to hydrostatic pressure

10% of blood volume becomes lymph.

95% comprised of water.

5% proteins, lipids, carbohydrates, ions, and cells

Lymph Tissue

Immune response

T cells dependent on thymus gland

B cells form lymphoid follicles

Characteristic feature is the lymphoid follicle

Spherical collection of lymphatics with a germinal centre

Lymph Vessels

Transport lymph

Superficial vessels – arise in the subcutaneous tissue, accompanies venous flow, drain into deep vessels.

Deep vessels – drain the deeper structures of the body (internal organs), accompany deep arteries.

- Left jugular lymphatic trunk
- Right jugular lymphatic trunk

Drainage from channels develop into vessels

Vessels empty into lymphatic trunks which converge to form

- Right lymphatic duct (drain lymph from upper R quadrant) + thoracic duct (drains lymph from the rest of the body)

Waldeyer's Ring

Collecting lymphatic tissue surrounding the superior pharynx

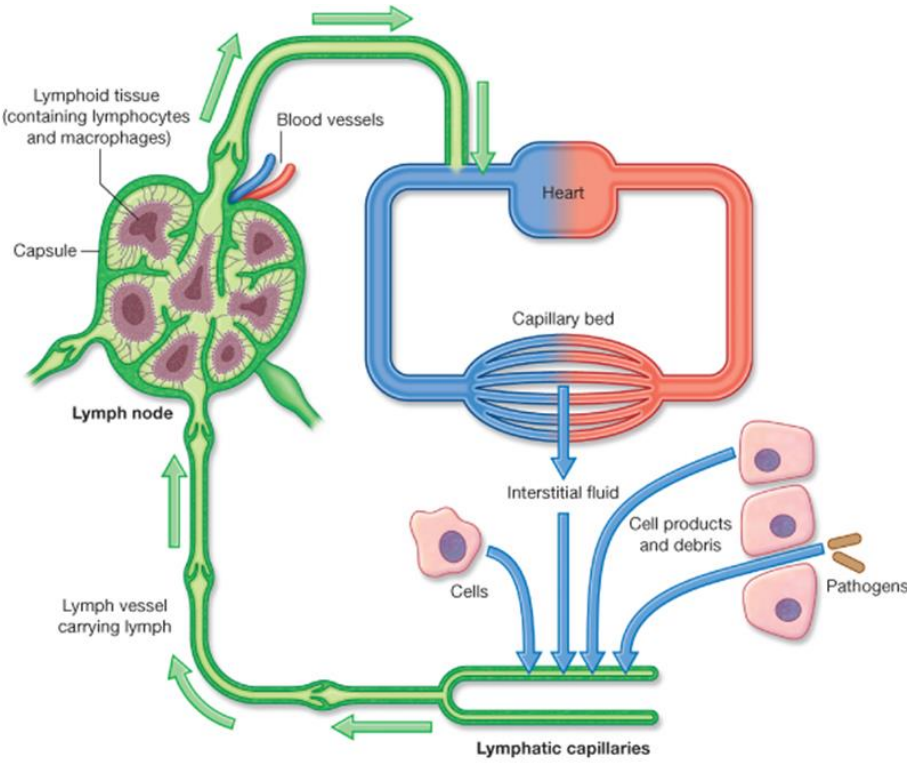
Lymphatic tissue responds to pathogens

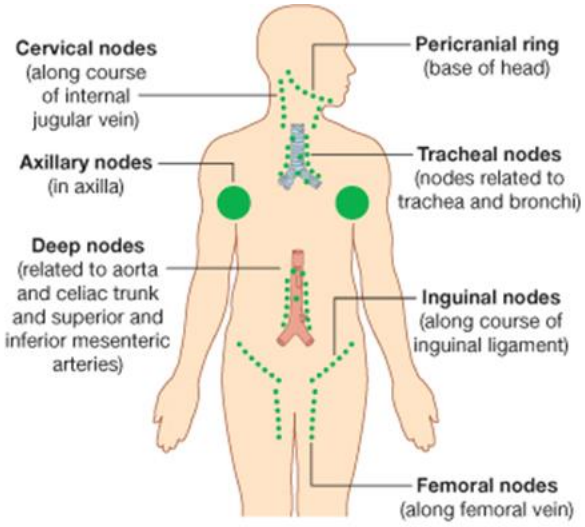
Lingual tonsils

Palatine tonsils

Tubal tonsils

Pharyngeal tonsils





Peri cranial ring around base of skull and along muscles of back of neck

KIERA WELSH 2022

Eyeball

Contents, layers, chambers, vasculature, and muscles

Contents

Lens

Aqueous humour

Vitreous humour

Iris

Posterior chamber

Anterior chamber

Canal of Schlemm

Hyaloid membrane

Suspensory ligament of the lens

Circulation of aqueous humour

1. Filtrate of plasma
2. Secreted by ciliary body and iris
3. Enters the post. Chamber
4. Passes through pupillary aperture into ant. Chamber
5. Re-absorbed into the ciliary veins via canal of Schlemm

Layers

1. Fibrous – sclera, cornea
2. Vascular – choroid, ciliary body, iris
3. Inner - retina

Vasculature

Ophthalmic artery

Branch of the internal carotid artery, arising immediately distal to the cavernous sinus

Muscles

Rectus muscles

1. Sup. Rectus – up and in
2. Inferior Rectus – down and in
3. Median Rectus - in
4. Lateral Rectus – out

Oblique muscles

1. Sup. Oblique – down and out
2. Inf. Oblique – up and out

Chambers

Anterior – between cornea and iris

Posterior – between iris and ciliary process

Filled with aqueous humour – drains via trabecular meshwork

Obstructed drainage = glaucoma

Muscles

Control eye movement

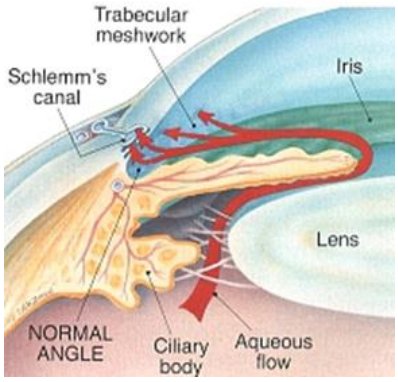
Rectus and oblique

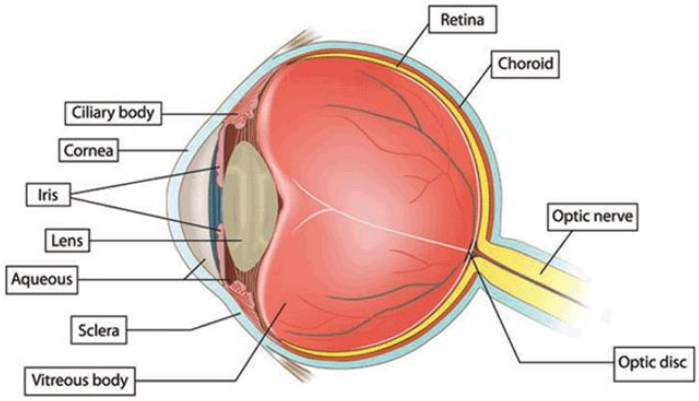
Origin: tendonous ring

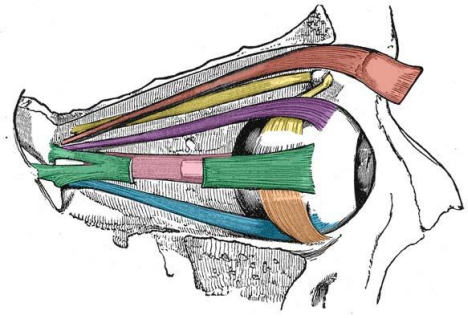
Insertion: sclera

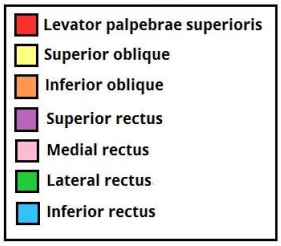
Innervation:

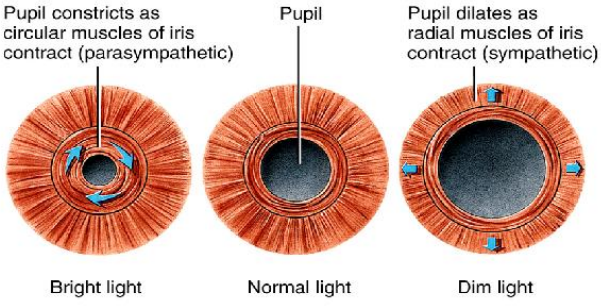
- Sensory – Nasocillary and lacrimal of ophthalmic
- Motor – All oculomotor except for Lateral rectus – Abducens and Sup. Oblique – Trochlear











KIERA WELSH 2022

Salivary Glands

Parotid, Submandibular, and Sublingual

Parotid gland

Location:

Lies in parotid region between mandible and mastoid process

Bound:

- Superiorly – Zygomatic arch
- Inferiorly – Inferior border of the mandible
- Anteriorly – Masseter muscle
- Posteriorly – External ear and sternocleidomastoid

Duct:

Parotid duct

Vasculature:

Posterior auricular and superficial temporal arteries (branches of ext. carotid artery)

Venous drainage via retromandibular vein

Innervation:

Sensory: auriculotemporal nerve of V3

Parasympathetic (stimulated - increases saliva production): Glossopharyngeal nerve

1. C1 innervates gland
2. Nerve of Jacobsen
3. Tympanic plexus
4. Lesser petrosal nerve through foramen ovale
5. Glossopharyngeal nerve
6. Synapses with otic ganglion
7. Auriculotemporal nerve carries fibres from OG

Clinical:

Parotitis: inflammation of parotid gland (infection?)

Sublingual gland

Location:

Floor of oral cavity

Bound:

- Laterally - mandible
- Medially - genioglossus muscle

Duct:

Sublingual duct of Bartholin

Vasculature:

Arterial supply - sublingual and submental arteries (ext. carotid artery)

Venous drainage - sublingual and submental veins

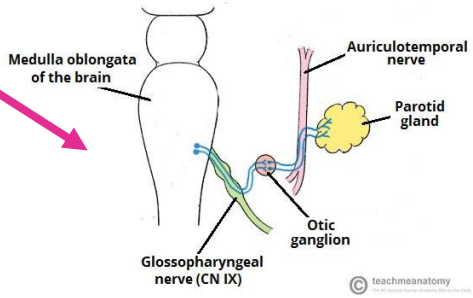
Innervation:

Sympathetic: superior cervical ganglion + int/ext. carotid arteries + facial arteries + sublingual/submental arteries

Parasympathetic: facial nerve via chorda tympani

Clinical:

Ranula (mucous cyst): due to higher mucin content/ruptured gland



Submandibular gland

Location:

Anterior submandibular triangle

Bound:

- Superiorly - inferior mandible body
- Anteriorly - anterior digastric belly
- Posteriorly - posterior digastric belly

Duct:

Wharton's Duct

Vasculature:

Arterial supply - submental artery and sublingual artery

Venous drainage - facial vein and sublingual vein

Innervation:

Sensory: superior cervical ganglion + int/ext. carotid arteries + facial artery + submental arteries

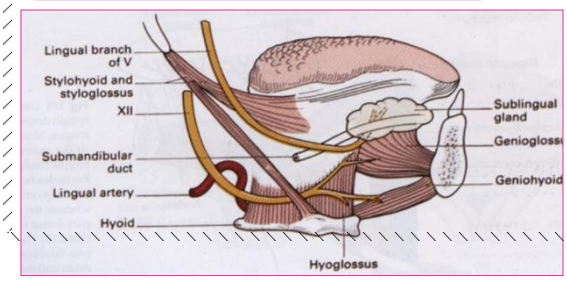
Parasympathetic: facial nerve via chorda tympani

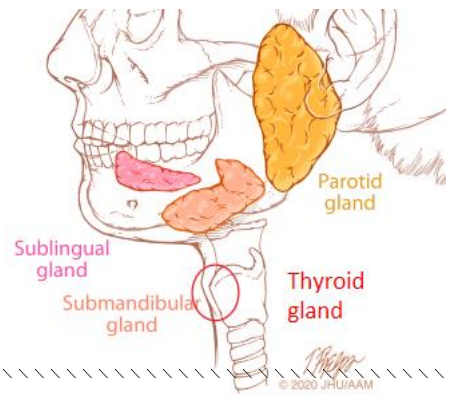
Clinical:

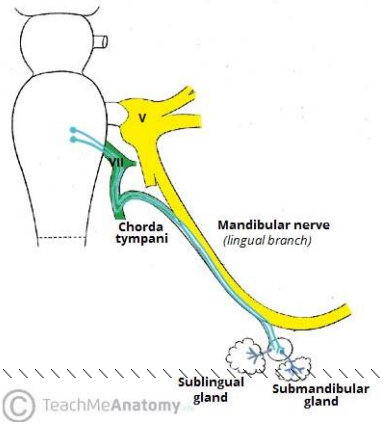
Salivary duct calculi: calcified deposit which can block lumen of duct

Arms of gland:

- Superficial arm - greater portion located partially inferiorly to posterior mandible (outside oral cavity boundaries)
- Deep arm - hooks around posterior margin of mylohyoid and lies on lateral surface of hyoglossus







KIERA WELSH 2022

Thyroid Gland

Location, functions, innervation, and vasculature

Location

Anterior neck

Spans C5-T1 vertebrae

Consists of 2 lobes connected by central isthmus anteriorly (butterfly shape)

Lobes wrapped around cricoid cartilage of superior rings of trachea

Gland within visceral compartment of neck - bound by pretracheal fascia

Bound:

1. Anteriorly in neck
2. Below and lateral to thyroid cartilage
3. Two lateral lobes + isthmus – covering parts of trachea (4th to 6th tracheal rings), the cricoid cartilage and part of the thyroid cartilage
4. Deep to sternohyoid, sternothyroid and omohyoid

Innervation

Parasympathetic: superior laryngeal nerve and recurrent laryngeal nerve

Derived from sympathetic trunk

Do not control secretory function

Vasculature

Arterial supply - superior and inferior thyroid arteries

Venous drainage - venous plexus made up of superior, middle, and inferior thyroid veins

Function

An endocrine gland

Secretes thyroid hormones

Primarily influence metabolic rate, protein synthesis and development

Parathyroid Glands

Function:

- Responsible for production of parathyroid hormone (PTH)
- Acts to increase level of serum calcium

Location:

- Posterior aspect of thyroid gland
- Flattened oval shape
- External to thyroid gland
- Within pretracheal fascia

Vasculature:

- Arterial supply - inferior thyroid artery
- Collateral arterial supply - superior thyroid artery/thyroid ima artery
- Venous drainage - superior, middle, inferior thyroid veins

Innervation:

Derived from thyroid branches of cervical ganglia (vasomotor)

Clinical:

Hypocalcaemia: acute drop in serum calcium caused by damage to PG