

DAMS
 α

ANATOMY



DR SANDEEP MADAAN

Handwritten notes

• CRISP • CONCISE • CONCEPTUAL •

INDEX

ANATOMY

Chapter 1	Head & Neck	01 – 65
Chapter 2.	Upper Limb	66 – 91
Chapter 3.	Thorax	92 – 123
Chapter 4.	Neuroanatomy	124 – 146
Chapter 5.	General Embryology & Histology, General Anatomy	147 – 200
Chapter 6.	Lower Limb	202 – 224
Chapter 7.	Abdomen	225 – 293

Q. Which of the following is supplied by contralateral nucleus?

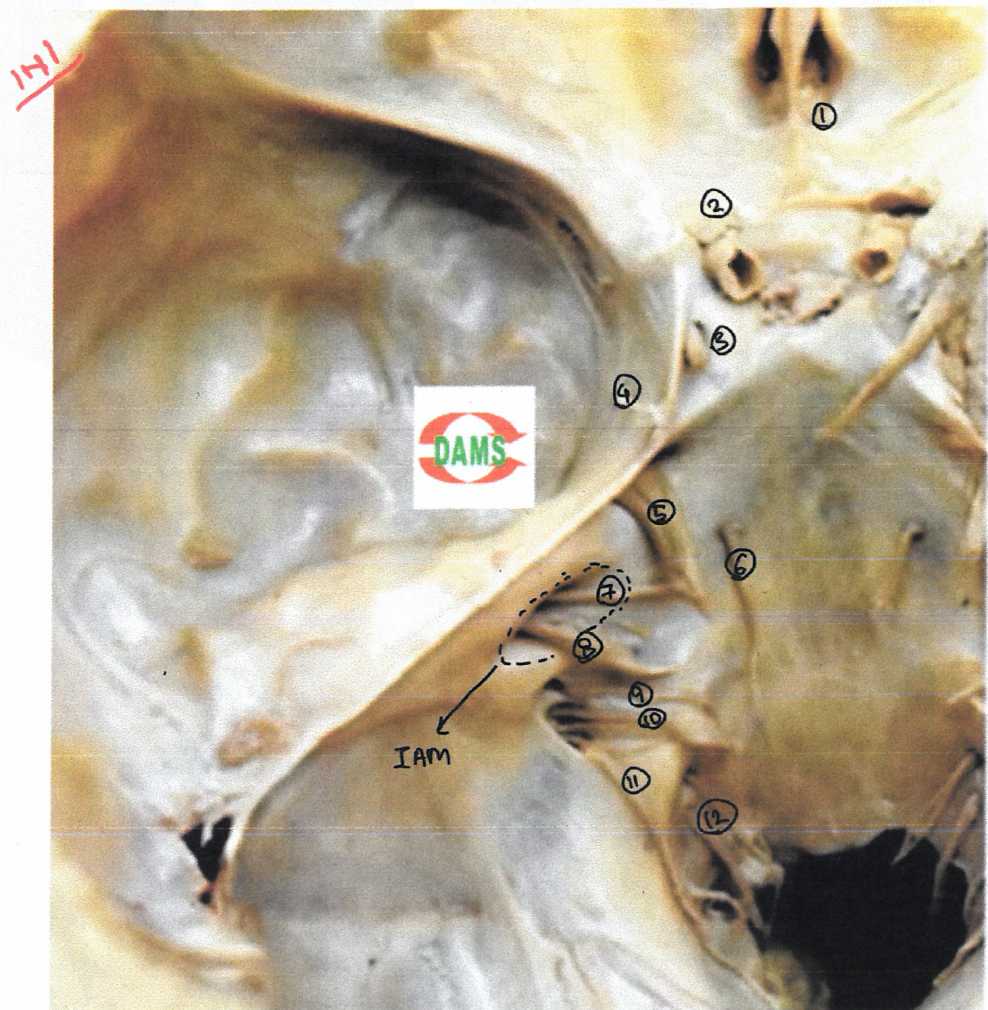
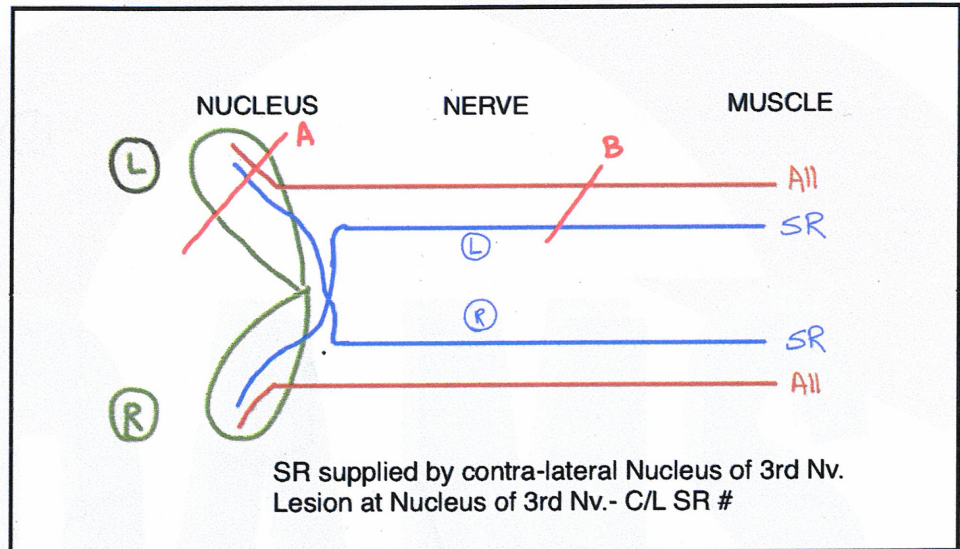
- (I) A. MR
✓ C. So
B. LR
D. IO

- (II) A. MR
✓ C. SR
B. LR
D. IO

Lesion at -

A- All I/L muscles supplied by 3rd Nv. Paralysed on this side **except I/L SR**
Here C/L SR paralysed

B- All I/L muscles supplied by 3rd Nv. Paralysed (Including I/L SR)



Q. Examine the following pic. Which of the following is damaged depending on these findings?

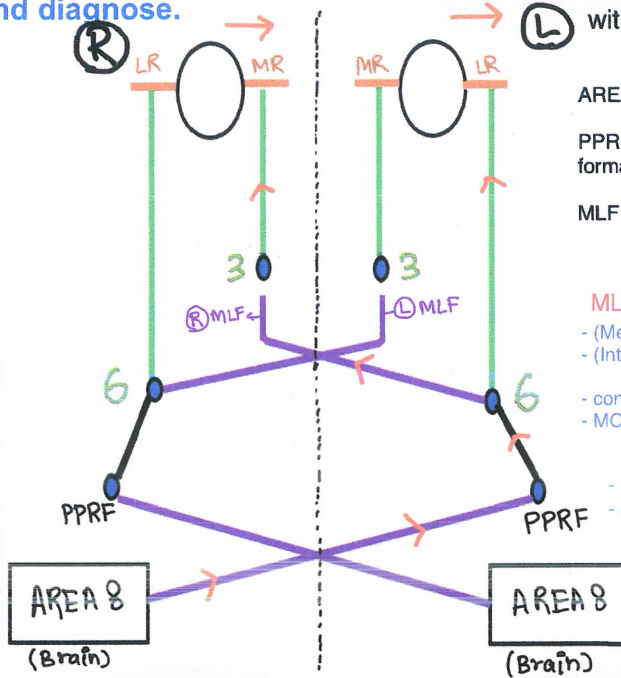
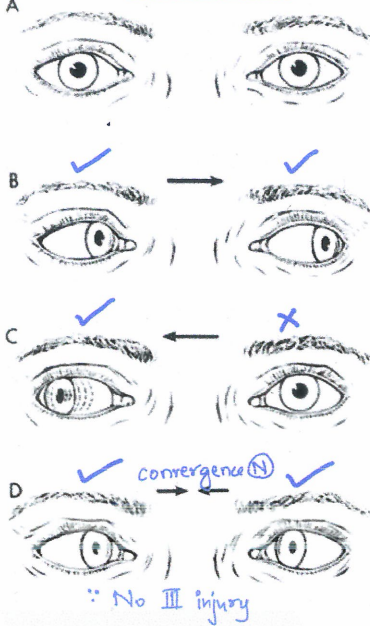


- ✓ A. Abducent nerve
C. Trochlear nerve
B. Facial nerve
D. Oculomotor nerve

Q. Examine the given pic and diagnose.

MLF SYNDROME

1°



Gaze - looking in one direction with both eyes

AREA-8 (Frontal Eye Field)- C/L GAZE

PPRF (Paramedian Pontine Reticular formation)- I/L GAZE

MLF (Medial Longitudinal Fasciculus)

MLF SYNDROME

- (Medial Longitudinal Fasciculus Syndrome)
- (InterNuclear Ophthalmoplegia)

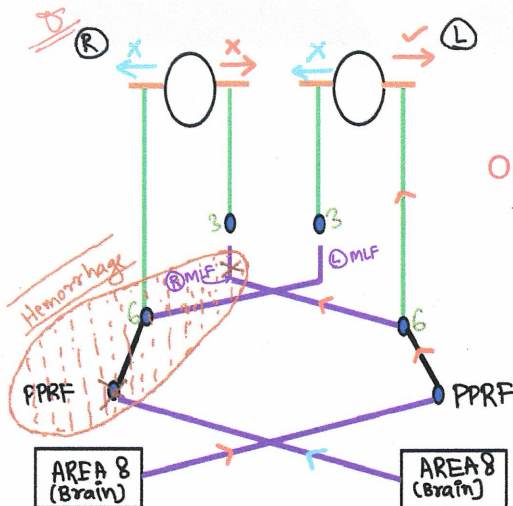
- convergence - PRESENT
- MCC- multiple sclerosis

- individual movements normal
- coordinated movements affected

If Convergence - LOST - 3rd Nv. Injury

ONE and HALF SYNDROME

- # - PPRF & I/L MLF

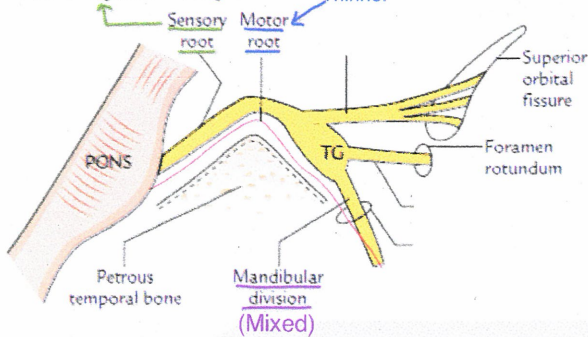


emmedicoz

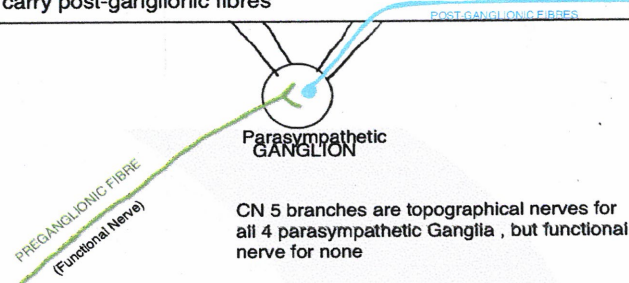
5th Nerve

V1 & V2- Pure Sensory
V3- Mixed Nv

- Thicker
- Forms Trigeminal Ganglion



TOPOGRAPHICAL NERVE- holds Ganglion & it's branches carry post-ganglionic fibres

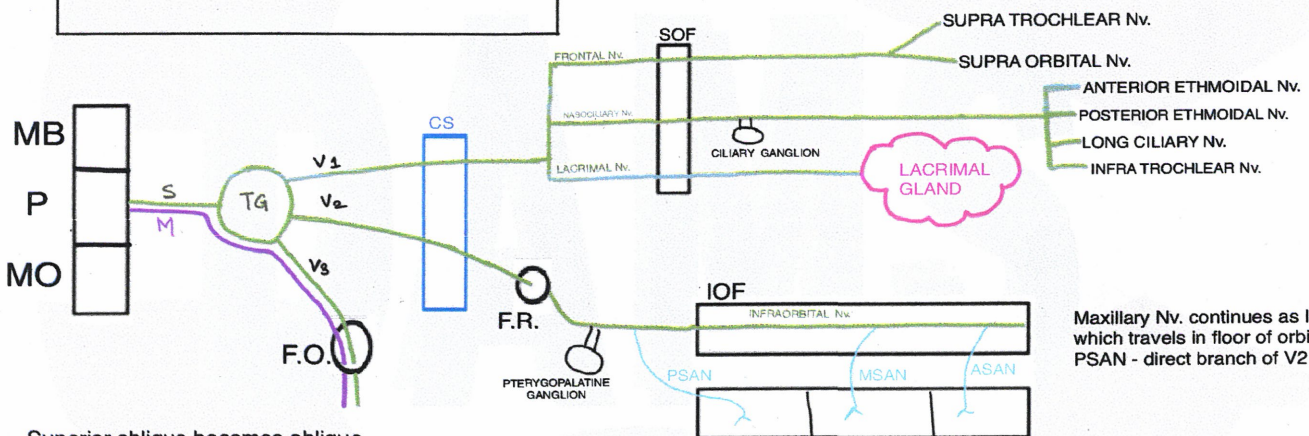


CN 5 branches are topographical nerves for all 4 parasympathetic Ganglia, but functional nerve for none

Nv. Passing through CAVERNOUS Sinus- 3, 4, 6, V1, V2

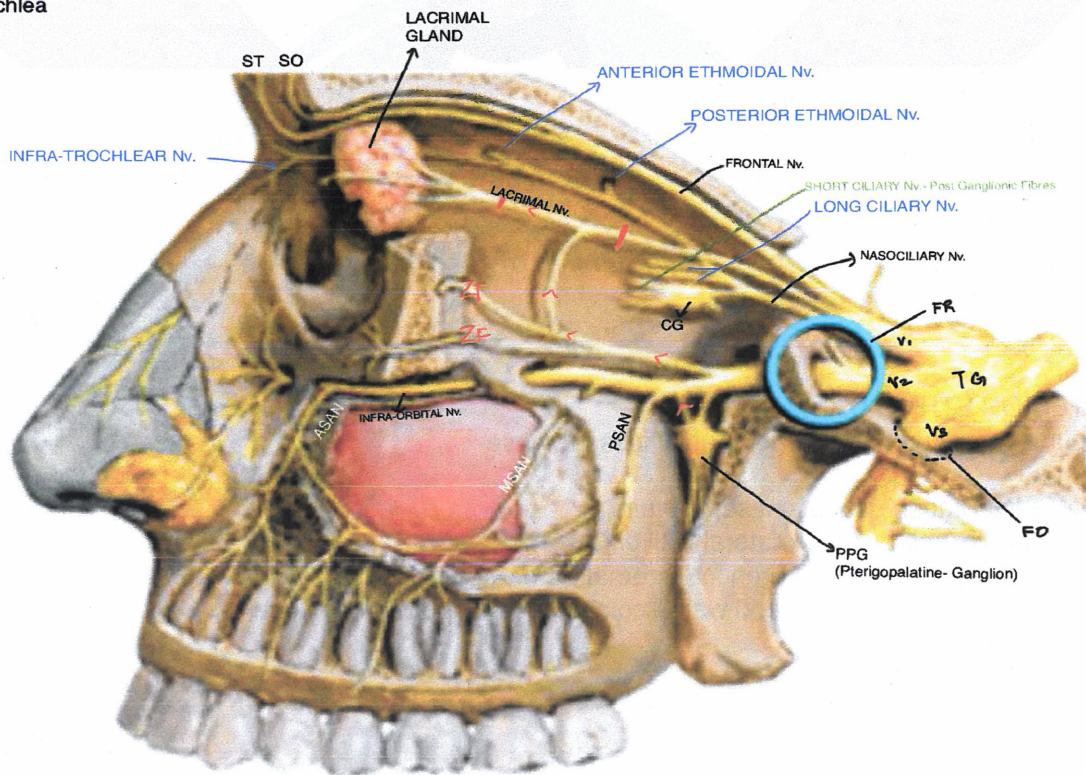
All passing through lateral aspect, EXCEPT- 6th Nv (passes through medial aspect)

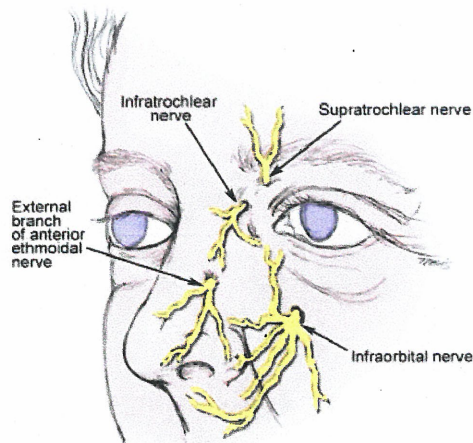
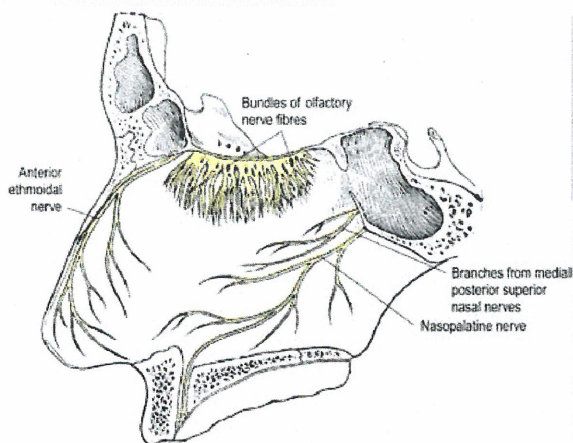
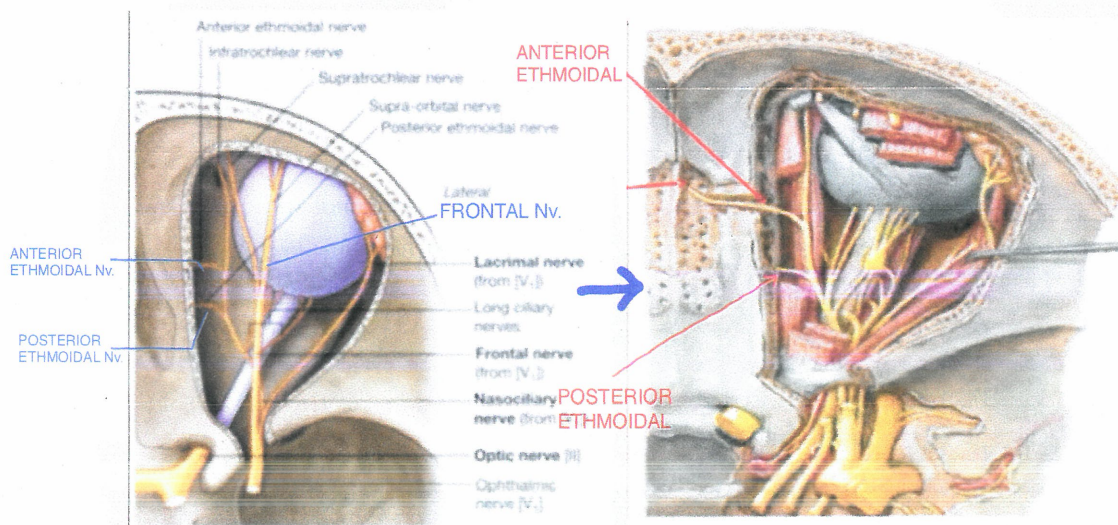
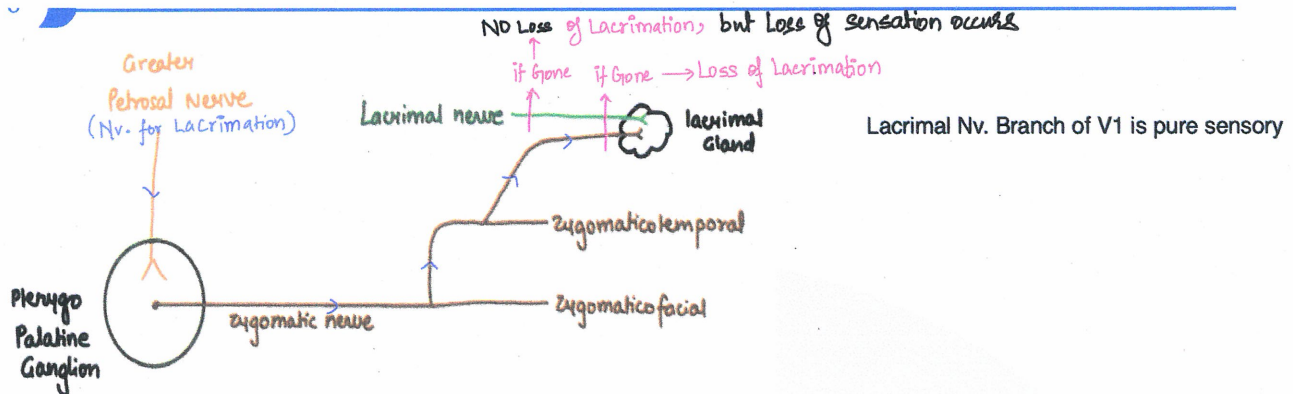
NOT passing through it - V3



Maxillary Nv. continues as Infraorbital Nv. which travels in floor of orbit
PSAN - direct branch of V2

Superior oblique becomes oblique around trochlea

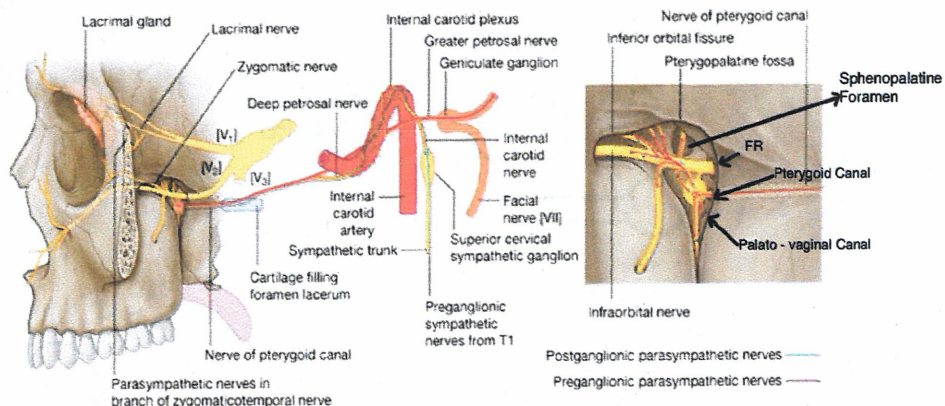




ANTERIOR ETHMOIDAL Nv.

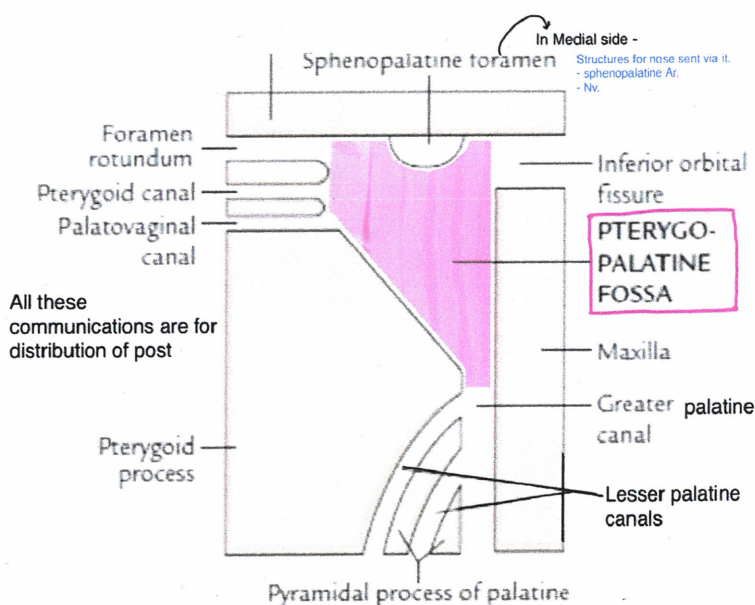
- Course - from orbit to anterior cranial fossa to nose
- in nose
 - Medial Branch - supply nasal septum
 - Lateral Branch - supply lateral wall of nose
 - A branch (external Br. of AE Nv.) pierces lateral wall & comes out to supply Tip of Nose

PTERYGOPALATINE FOSSA



COMMUNICATIONS

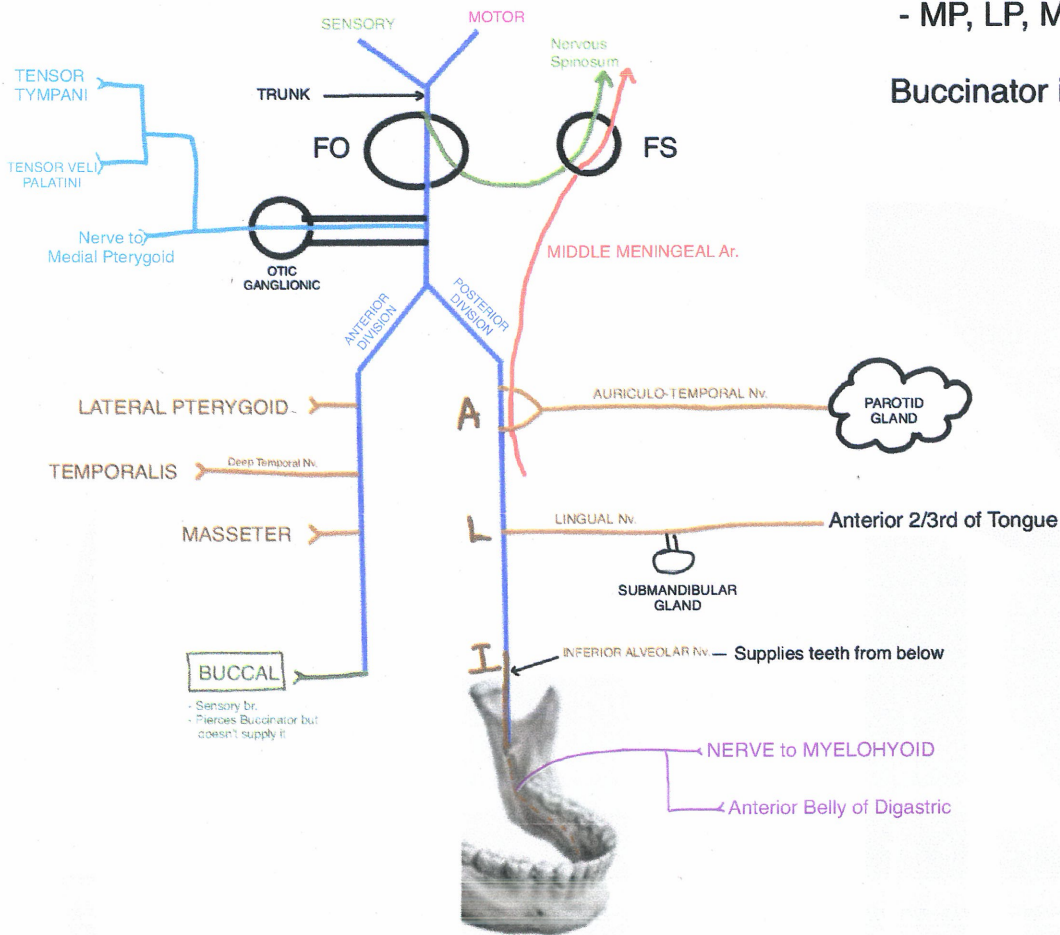
- Anterior - with orbit via inferior orbital fissure
- Posterior - with middle cranial fossa via Foramen Rotundum
 - with Foramen Lacerum via Pterygoid Canal
 - with Pharynx Via. Pterygopalatine canal
- Medially - with nose via Sphenopalatine Fossa
- Laterally - with infero-temporal fossa through pterygomaxillary fissure
- Inferiorly - with oral cavity via greater & lesser palatine canal.



MAIN CONTENTS

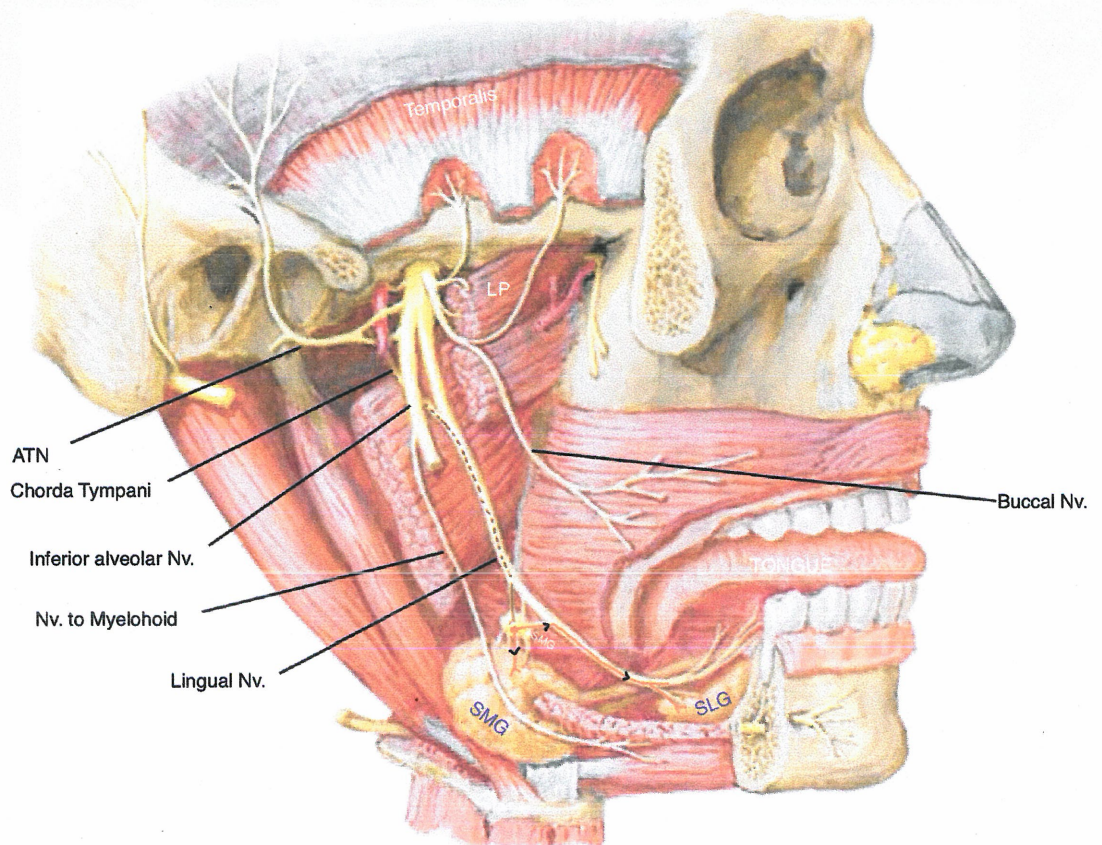
1. Maxillary nerve.
2. Pterygopalatine ganglion.
3. Third part of the maxillary artery.

Mandibular Nerve

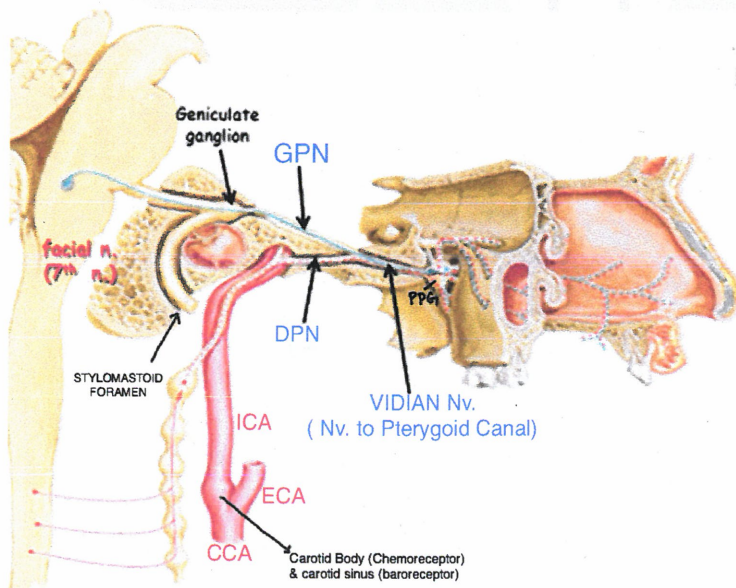
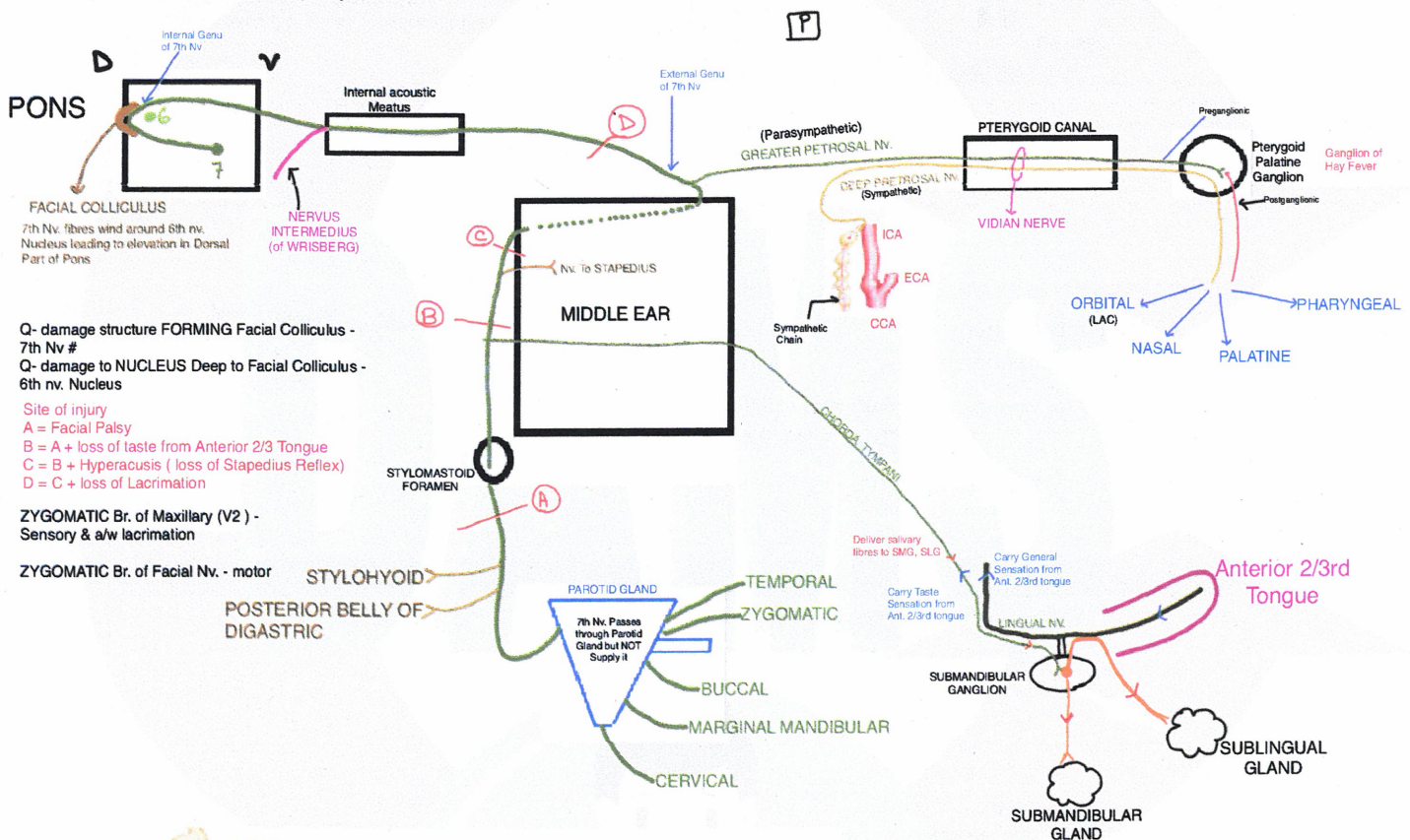
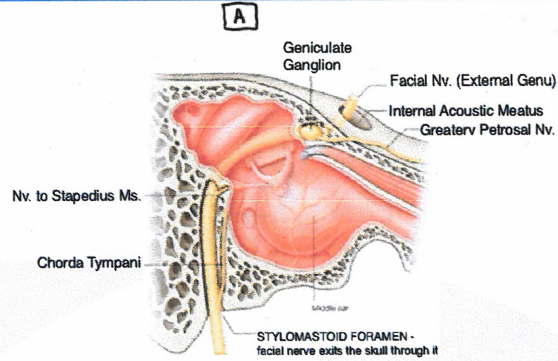
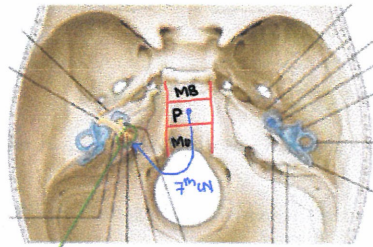


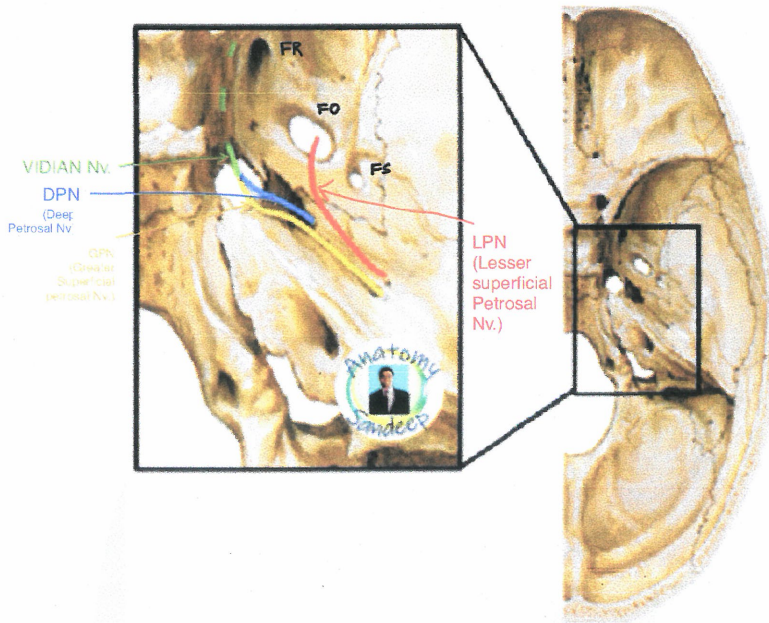
Muscles of mastication
- MP, LP, Masseter, Temporalis

Buccinator is Ms. of facial expression



7th Nerve





AUTONOMICS OF PTERYGOID CANAL

- Greater Petrosal Nerve - Preganglionic parasympathetic from CN VII
- Deep Petrosal Nerve- Postganglionic Sympathetic from Periauricular Plexus
- Nerve to Pterygoid Canal- mixed Preganglionic Parasympathetic, Post Ganglionic sympathetic

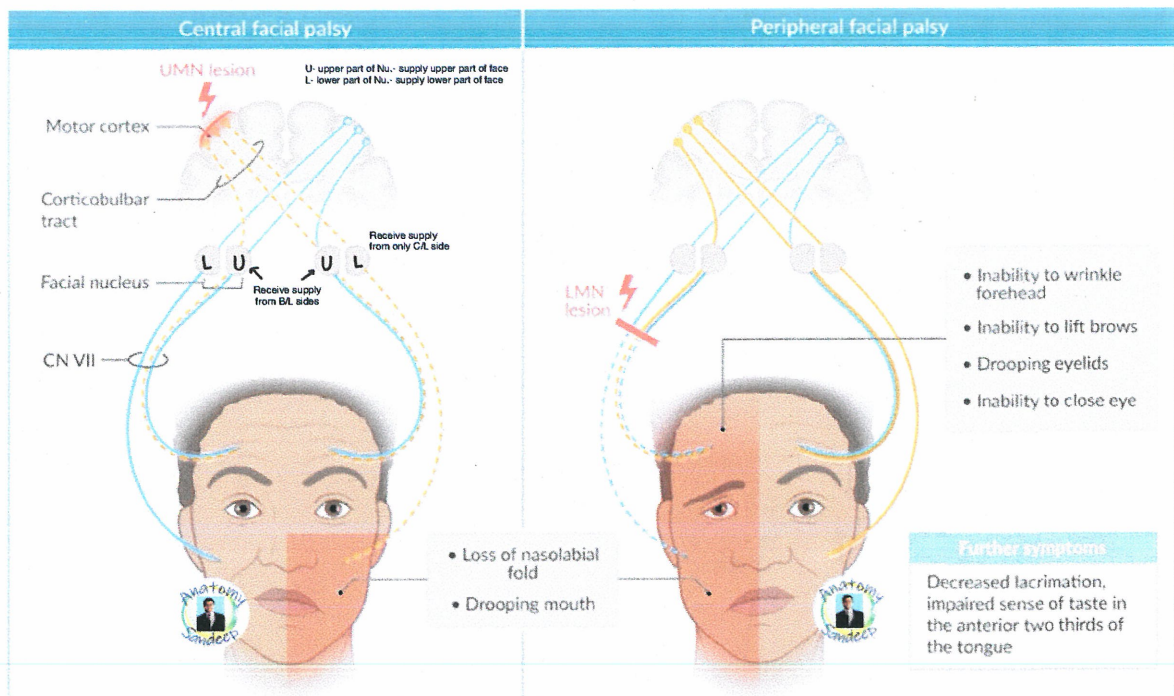
Q. Schirmer's test evaluates the function of:

- a. Greater petrosal nerve
- c. Chorda tympani nerve

- b. Lesser petrosal nerve → Salivation - Parotid Gland
- d. Auriculotemporal nerve

Schirmer test - for lacrimation

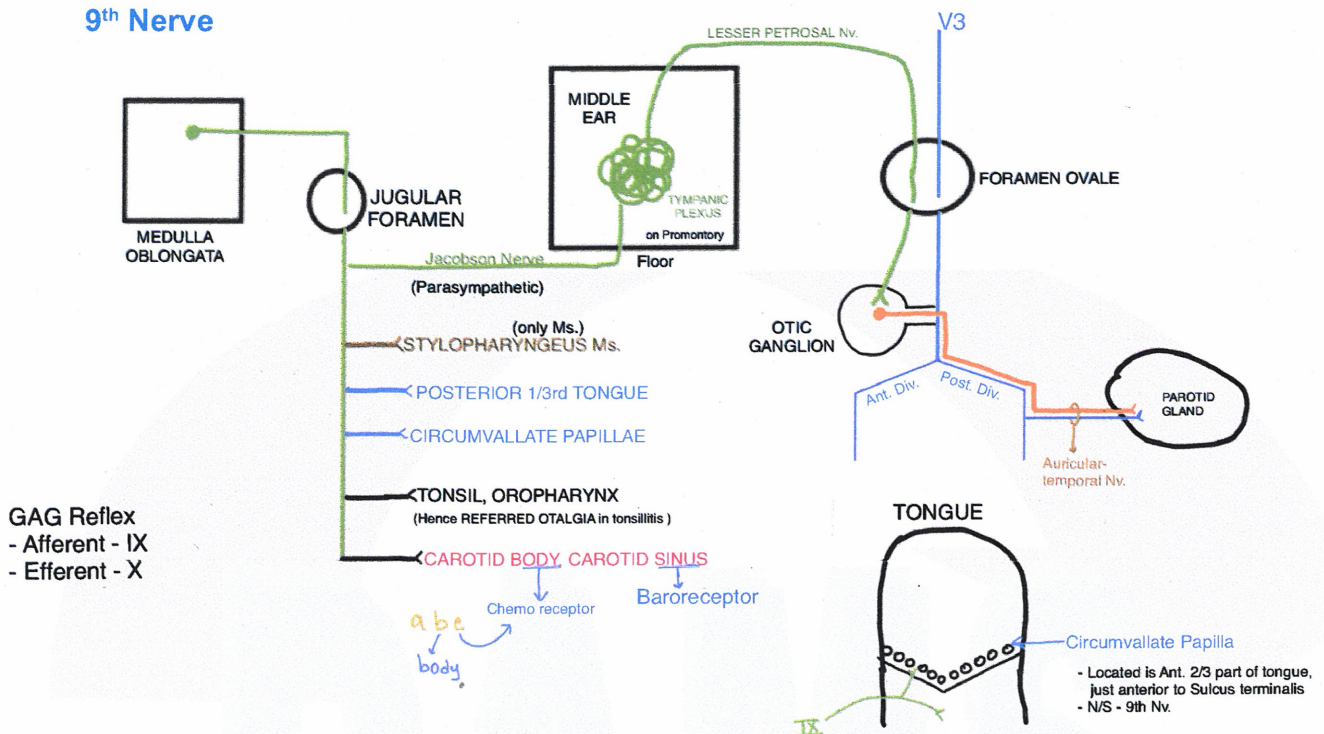
Salivation - SMG, SLG
Taste - Ant. 2/3 Tongue



UMN LESION- only lower 1/2 of C/L side of face involved

LMN LESION → I/L side of face involved

9th Nerve



Q. When removing an impacted mandibular third molar, the oral surgeon must warn the patient of possible lasting numbness of tip of the tongue. This loss of general sensation is due to the damage to the lingual N. *↳ General sensation*

- a. Auriculotemporal N. b. Chorda tympani N.
 ✓ c. Lingual N. d. Mental N.

Nucleus	Functional N.	Ganglion	Topographical N.	Target
EWS	Nerve to inferior oblique (III)	Ciliary	Nasociliary Nv.	- Ciliaris Ms. - Sphincter pupillae
Lacrima	GPN (VII)	Pterygopalatine	V2	Lacrima [palate pharynx nasal]
Superior Salivatory Nu.	Chorda Tympani (VII)	Submandibular	Lingual Nv.	SMG, SLG
Inferior Salivatory Nu.	LPN (IX)	Otic	V3	Parotid

Q. Match Column A with B

Column A

Parasympathetic ganglia

Pterygopalatine ganglion - b

Otic ganglion - a

Submandibular ganglion - e

Ciliary ganglion - f

Column B

preganglionic parasympathetic nerve

a. Lesser Petrosal nerve

b. Greater Petrosal nerve

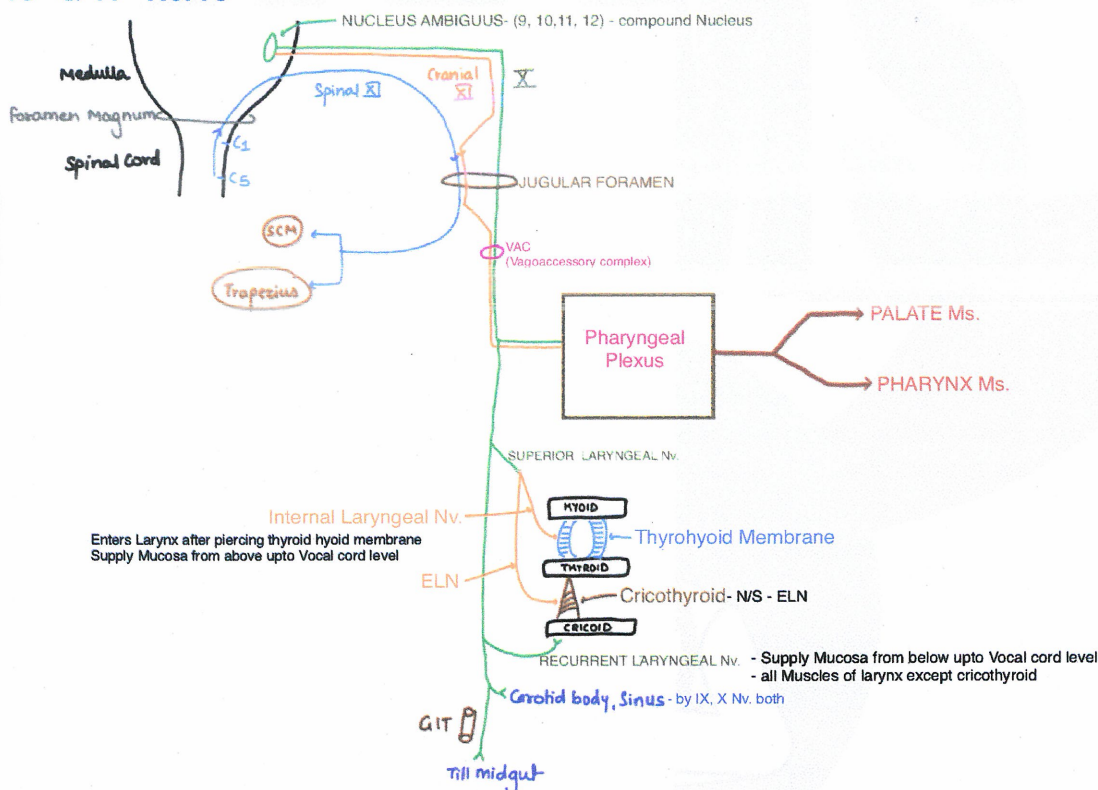
c. Deep Petrosal nerve

d. Lingual nerve

e. Chorda Tympani

f. Nerve to inferior Oblique

g. Nerve to inferior Rectus

10th & 11th Nerve

Q. A 35-year-old man comes to the emergency department complaining that he has food stuck in his throat. His symptoms started 2 hours ago after eating fish at a local seafood restaurant. He has tried coughing and swallowing multiple times in an attempt to clear the food, but has so far been unsuccessful. The patient denies any difficulty with breathing. He does not appear to be in any distress on physical examination. Laryngoscopy reveals a fish bone lodged in the left piriform recess. While trying to retrieve the fish bone, a nerve is injured deep to the mucosa overlying the recess. Which of the following is most likely to be impaired in this patient?

a. Cough reflex

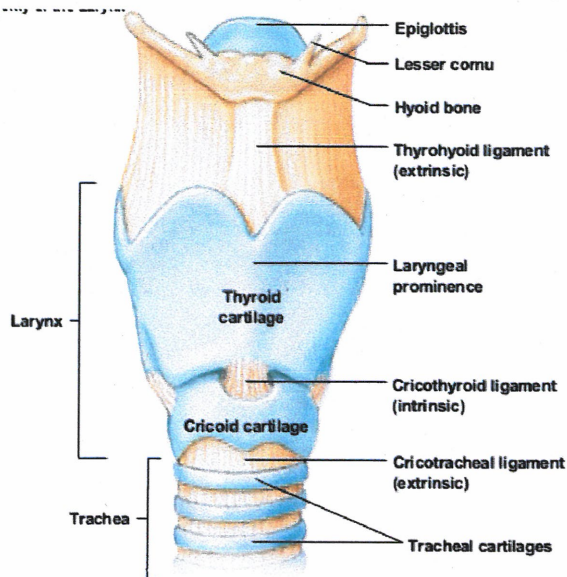
alt ILN injury

b. Gag reflex

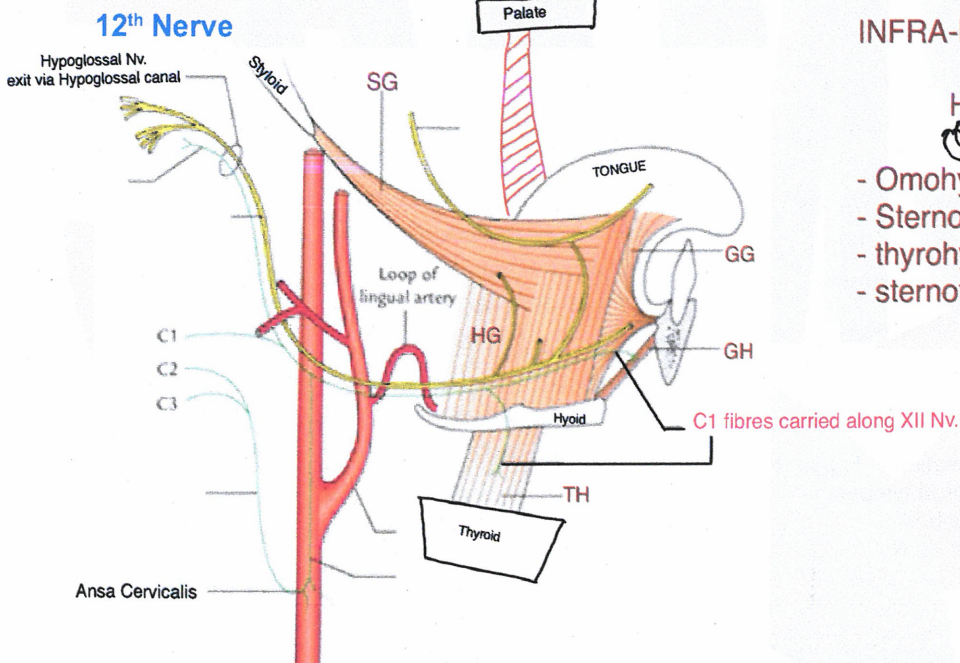
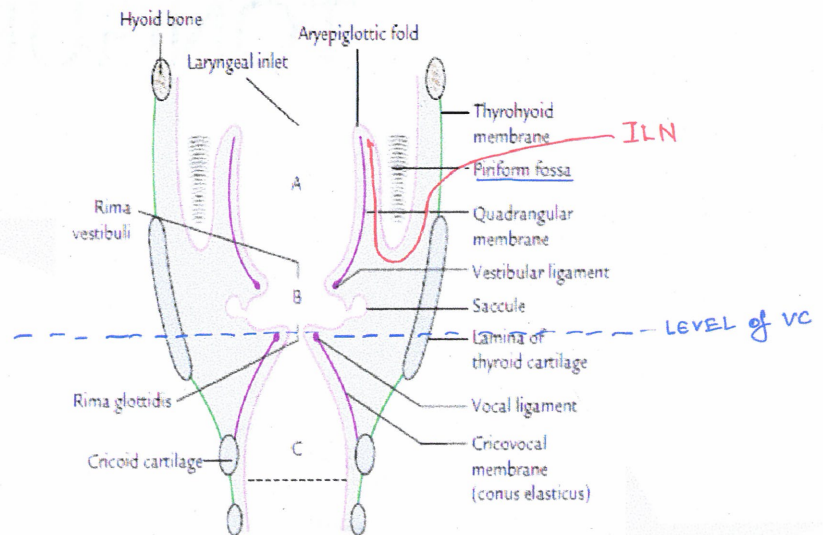
c. Mastication

d. Salivation

- Rule out → Allergic Rxn & Angioedema



Anterior view of the intact larynx



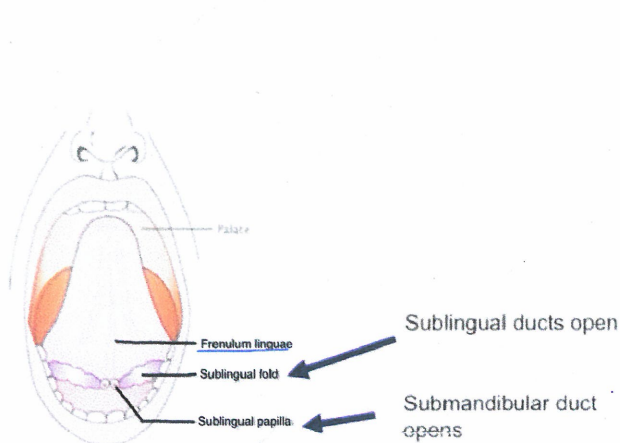
INFRA-HYOID Ms.



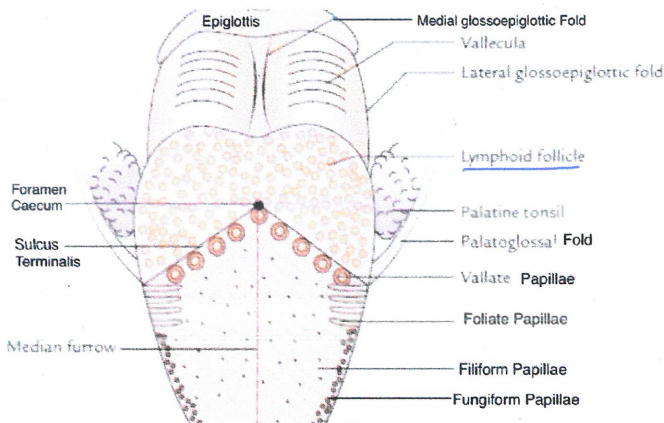
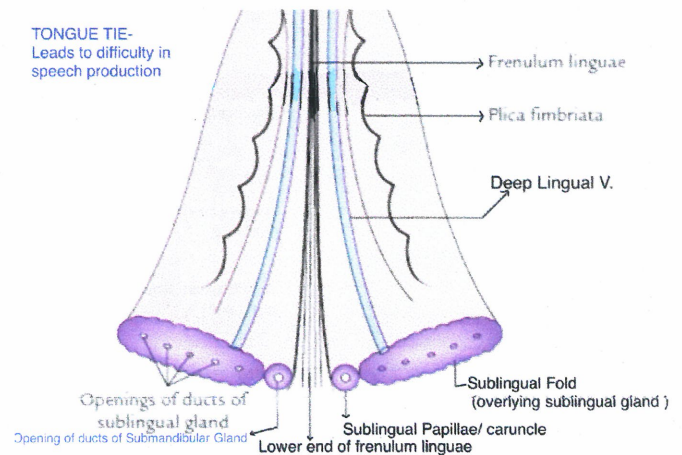
- Omohyoid Ms.
- Sternohyoid Ms.
- thyrohyoid Ms.
- sternothyroid Ms.

All Muscles	Supplied by	Except
Palate	VAC (X)	Tensor Veli Palatini (V3)
Pharynx	VAC (X)	Stylopharyngeus (IX)
Larynx	RLN	Cricothyroid (ELN)
Tongue	XII	Palatoglossus (VAC)
Infrahyoid	ANSA CERVICALIS (Loop made by C1 C2 C3 in cervical region)	Thyrohyoid (C1 via XII)

TONGUE



TONGUE TIE-
Leads to difficulty in
speech production

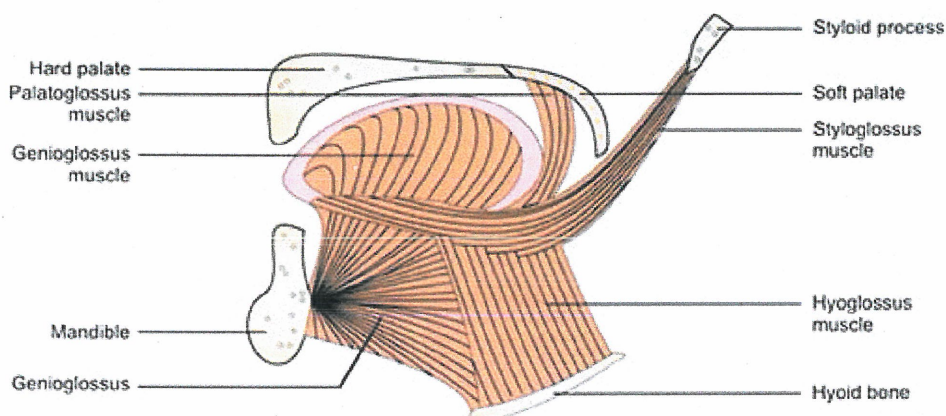


Sensory supply

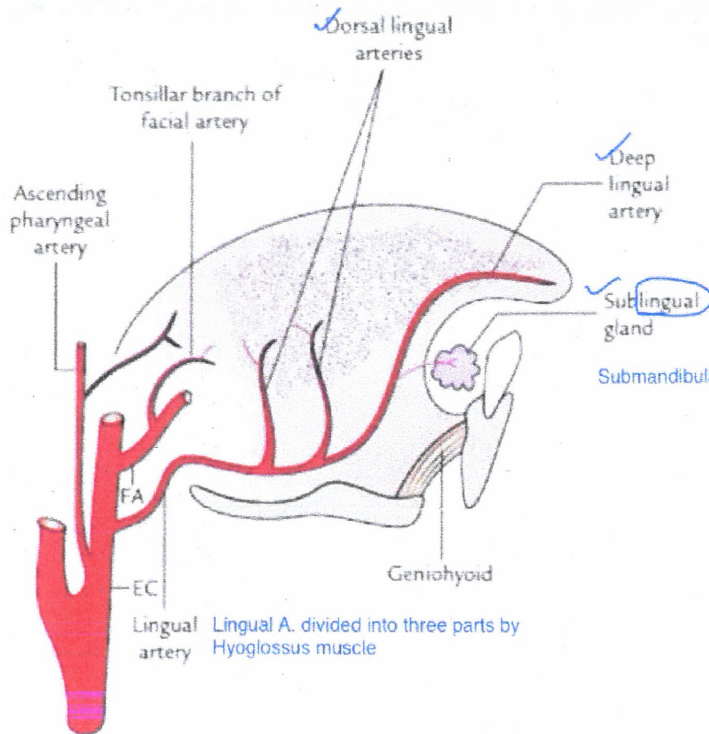
- Anterior 2/3rd — general sensations - lingual Nv.
- taste by chorda tympani
- Posterior 1/3rd - IX - all sensations
- Posterior most - all sensations - ILN

Motor supply — XII

INTRINSIC Ms.	LOCATION	ACTION
Superior longitudinal	Beneath the mucous membrane	shortens the tongue & makes dorsum concave
Inferior longitudinal	Close to inferior surface of Genioglossus & hyoglossus	Short and tongues makes dorsum convex
Transverse	Extends from median septum to margin	Makes tongue narrow, making it elongated
Vertical	At borders of anterior part of tongue	Flatten and widen the tongue



MOVEMENTS	Muscles
Protrusion (Most Important)	Genioglossus
Retraction	Styloglossus
Depression	Hyoglossus
Elevation of posterior 1/3	Palatoglossus
Changes In shape	Intrinsic Ms.



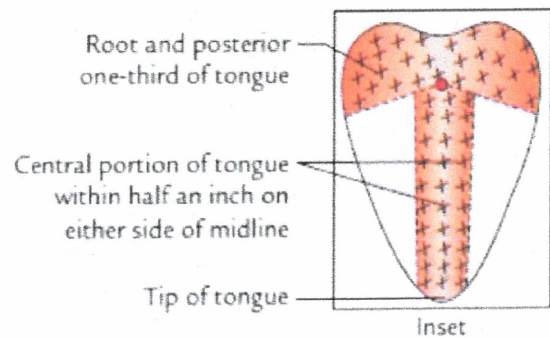
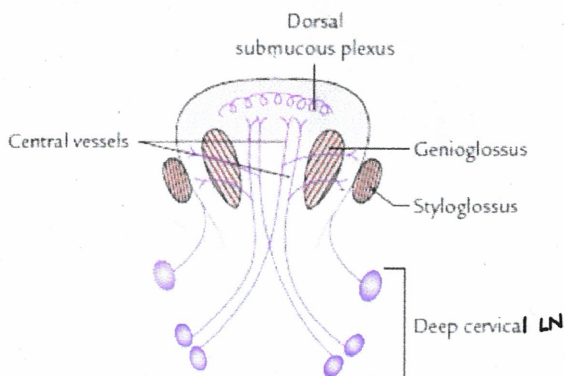
Blood supply - Lingual Ar. -

- divided into 3 parts by Hyoglossus
- branches - dorsal lingual A. & Deep lingual A. -
—supply tongue & sublingual gland

Submandibular gland supplied by facial A.

Lymphatics -

- apex of tongue - Submental LN
- lateral part - Submandibular LN
- Submental LN further drains into SM LN or directly in deep cervical LN
- Deep cervical LN - Jugulo-digastric, jugular-omohyoid
- Central portion, root & posterior part drain in B/L LN

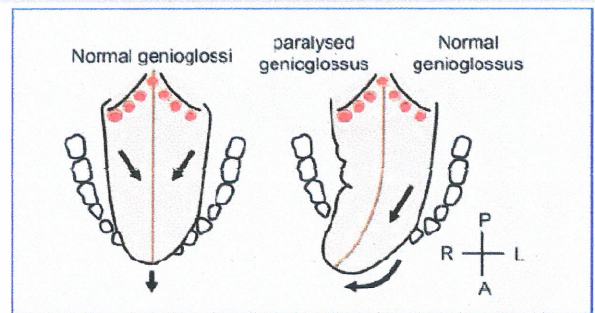


Rule of 17

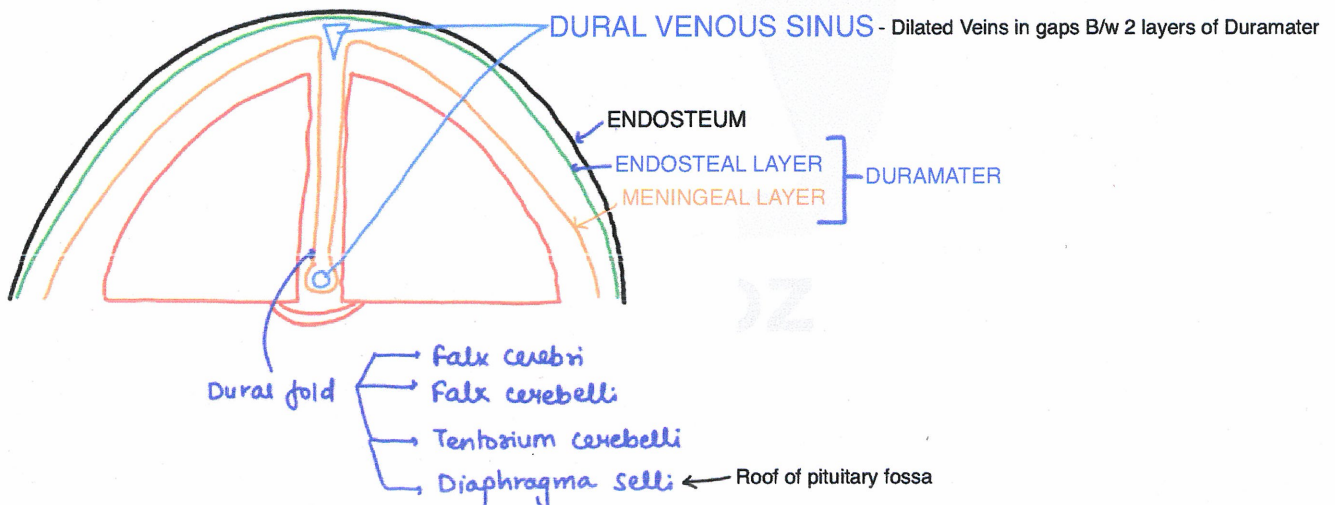
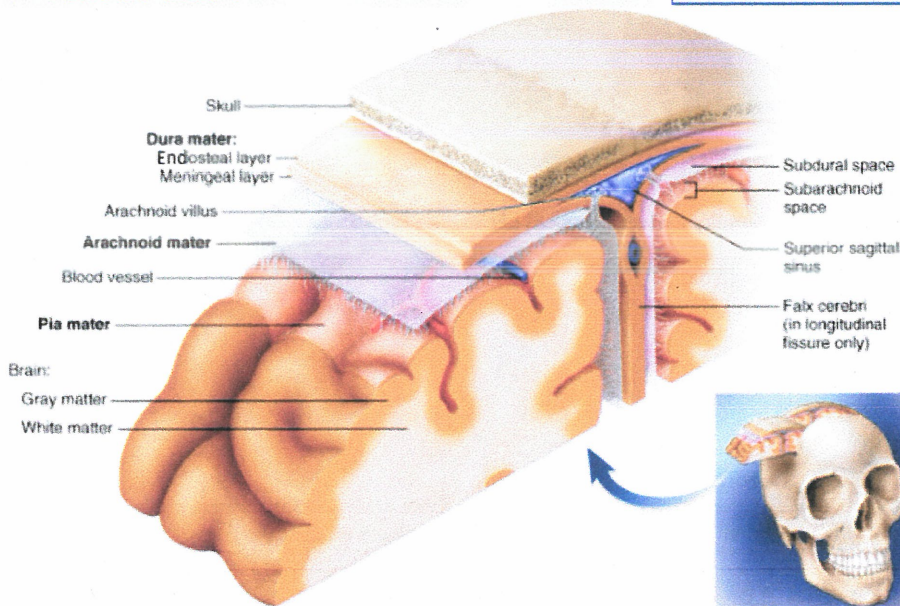
Nerve	Part	Deviation towards
[7 10	Angle of mouth	Deviation AT REST Towards NORMAL side
	Uvula	
[5 12	Jaw	Deviation on Protrusion Towards ABNORMAL side
	Tip of Tongue	

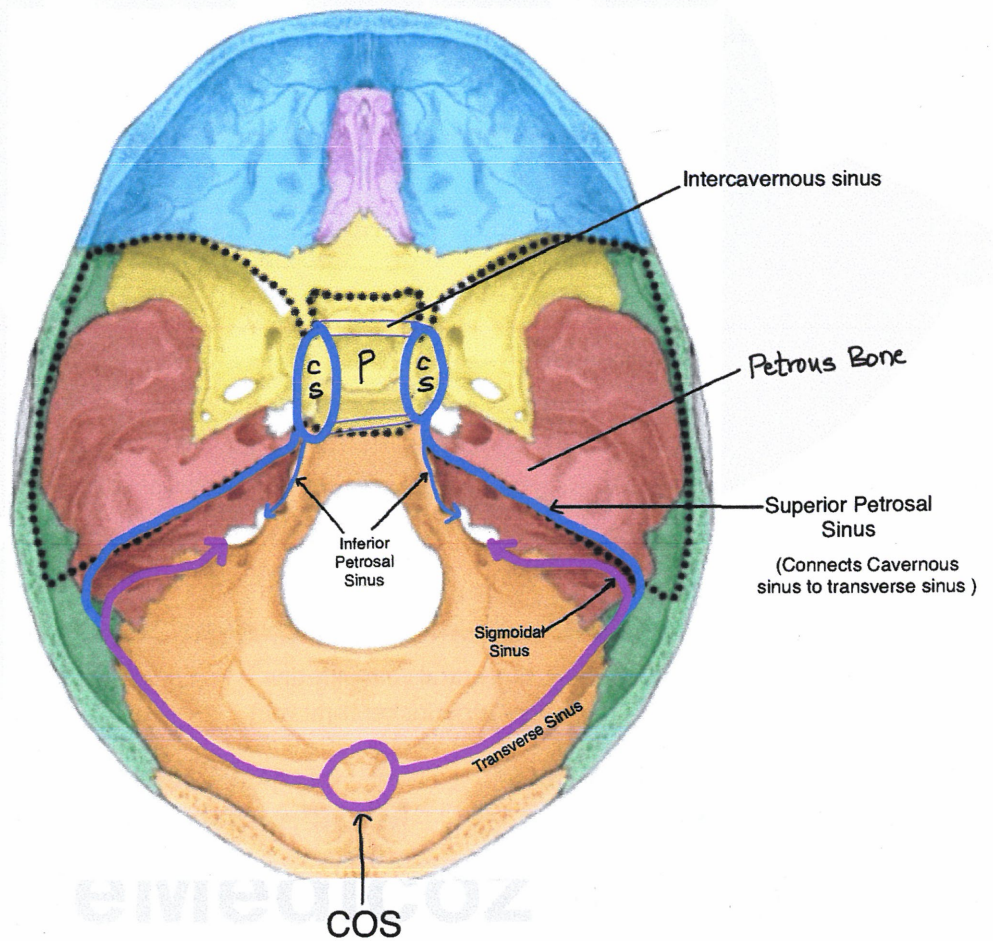
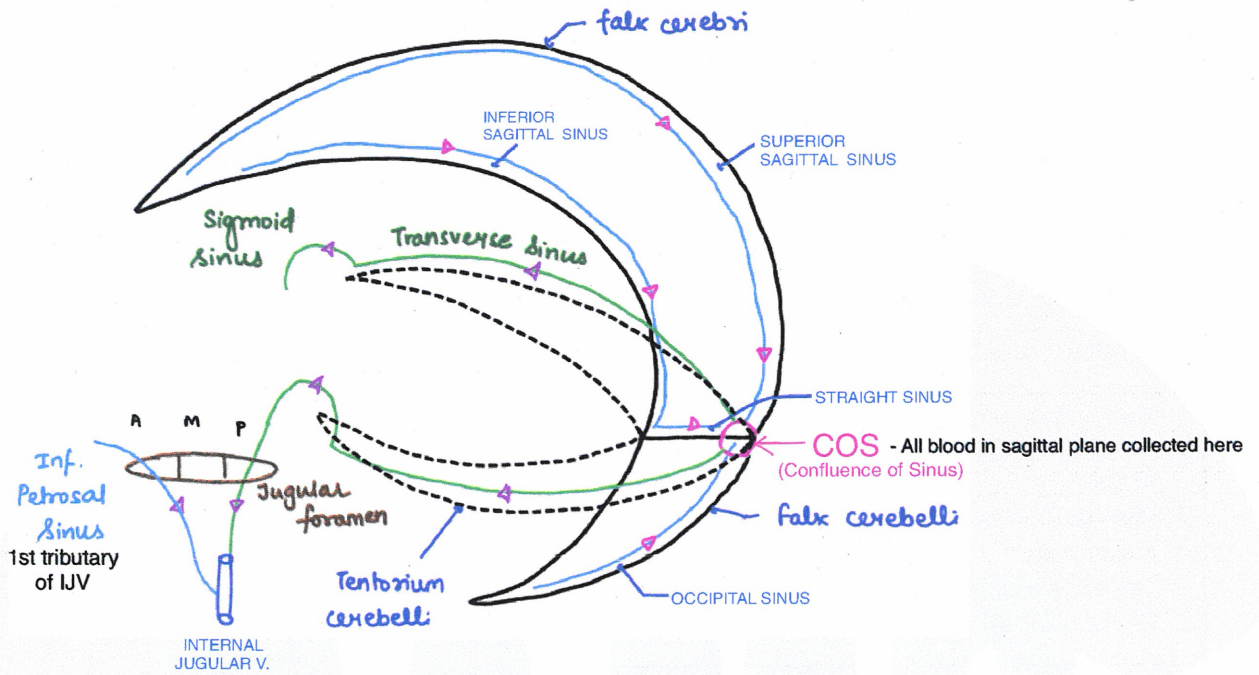
Q. Palsy of right genioglossus causes:

- Deviation of tongue to right side
- Deviation of tongue to left side
- Deviation of soft palate to right side
- Deviation of soft palate to left side



Dural Venous Sinus





Tributaries of the Cavernous Sinus

From orbit

1. Superior ophthalmic vein.
2. Inferior ophthalmic vein.
3. Central vein of retina (sometimes)

From meninges

1. Sphenoparietal sinus.
2. Anterior (frontal) trunk of the middle meningeal vein.

From brain

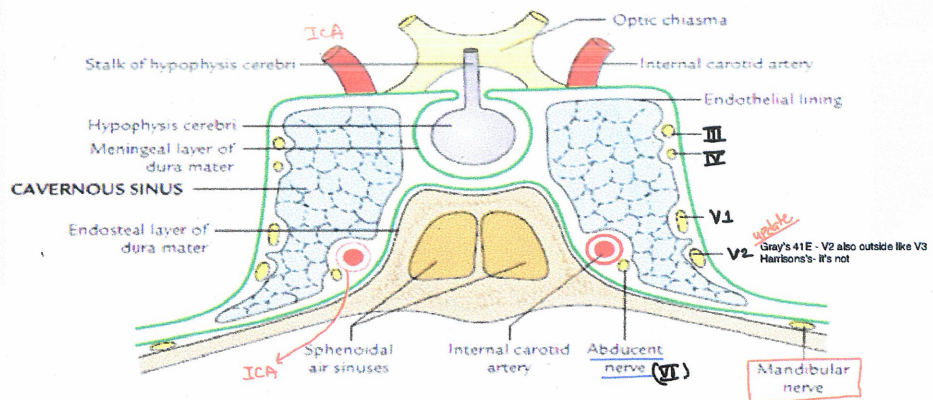
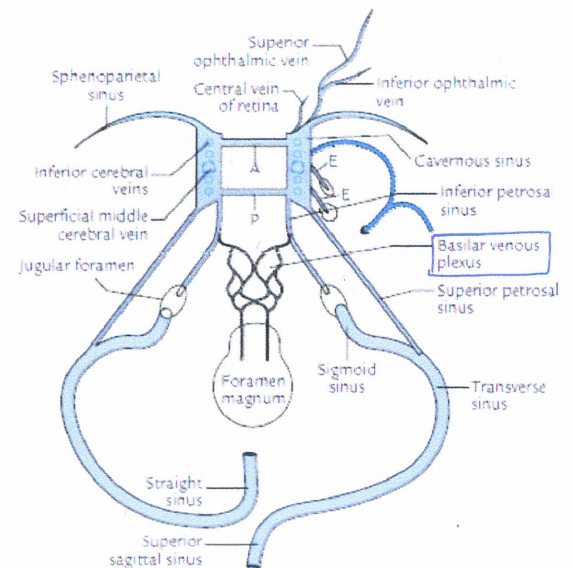
1. Superficial middle cerebral vein.
2. Inferior cerebral veins

~~Superior cerebral V.~~ → As goes to superior sagittal sinus

Communications of Cavernous Sinus

1. Transverse sinus via superior petrosal sinus.
2. Internal jugular vein via inferior petrosal sinus.
3. Pterygoid venous plexus via emissary veins
4. Facial vein via dangerous connection
5. Opposite cavernous sinuses via anterior and posterior intercavernous sinuses.

BASILAR VENOUS PLEXUS- is connected to cavernous sinus on one side and to vertebral venous plexus on other side. Malignant cells in vertebral venous plexus can metastasise & reach to Dural venous sinus



Q. Tributaries of cavernous sinus are all EXCEPT:

- a. Inferior cerebral vein
- b. Central vein of retina
- c. Sphenoparietal sinus
- d. ☒ Superior cerebral vein

Ant. Cranial fossa : Ant. ethmoidal nerve
Post. ethmoidal nerve

Nerve supply of meninges

Middle Cranial fossa : V₂ - Directly
V₃ - via Nervus Spinosus

Post. Cranial fossa : X, XII, C₁, C₂, C₃
Majors