وَقُل رَّبِّ زِدْنِي عِلْمًا

النادي الطبي

PERIPHERAL NERVOUS SYSTEM

SUBJECT : Anatomy

LEC NO. : 7

DONE BY : Batool Alzubaidi & Hashem Ata

#كلينيكال_إلا_شحطة

Inner Ear and Glossopharyngeal nerve

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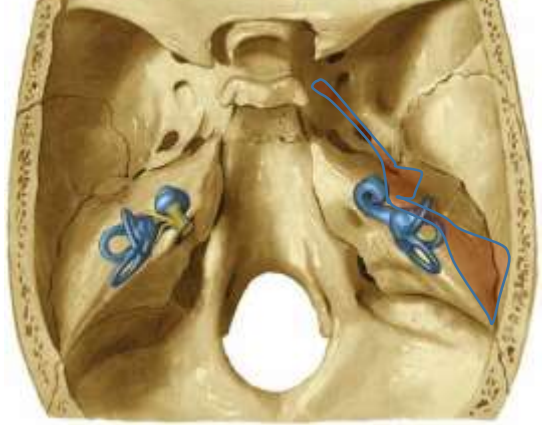
الدكتور حاقد لانه عرفنا الشمال و اليمين بامتحان ال cs
بسؤال ال uvula اما بالاناتومي cns ما عرفنا نميز🤣🤣

Inner Ear

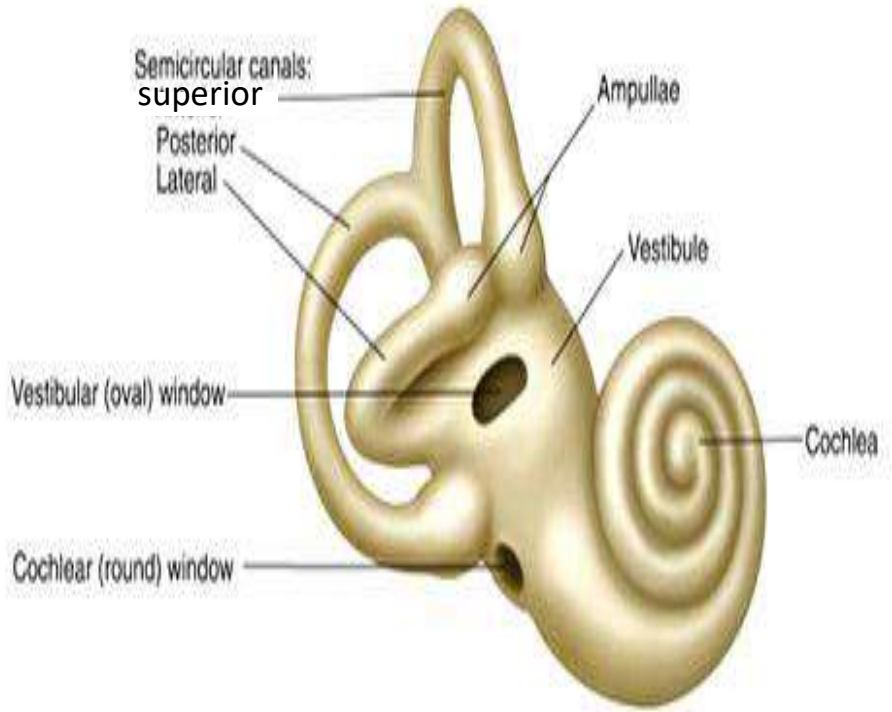


It lies in the petrous part of the temporal bone medial to tympanic cavity (middle ear).

It consists of the bony labyrinth and the membranous labyrinth.

Exoskeleton

A) Bony Labyrinth: It includes the vestibule, cochlea and 3 semicircular canals. It contains the perilymph in which the membranous labyrinth is suspended.



They contain perilymph in which the semicircular ducts are suspended.

جواها سائل و membrane ماخد شكلها بالزبط،
السائل بين ال bone and the membrane

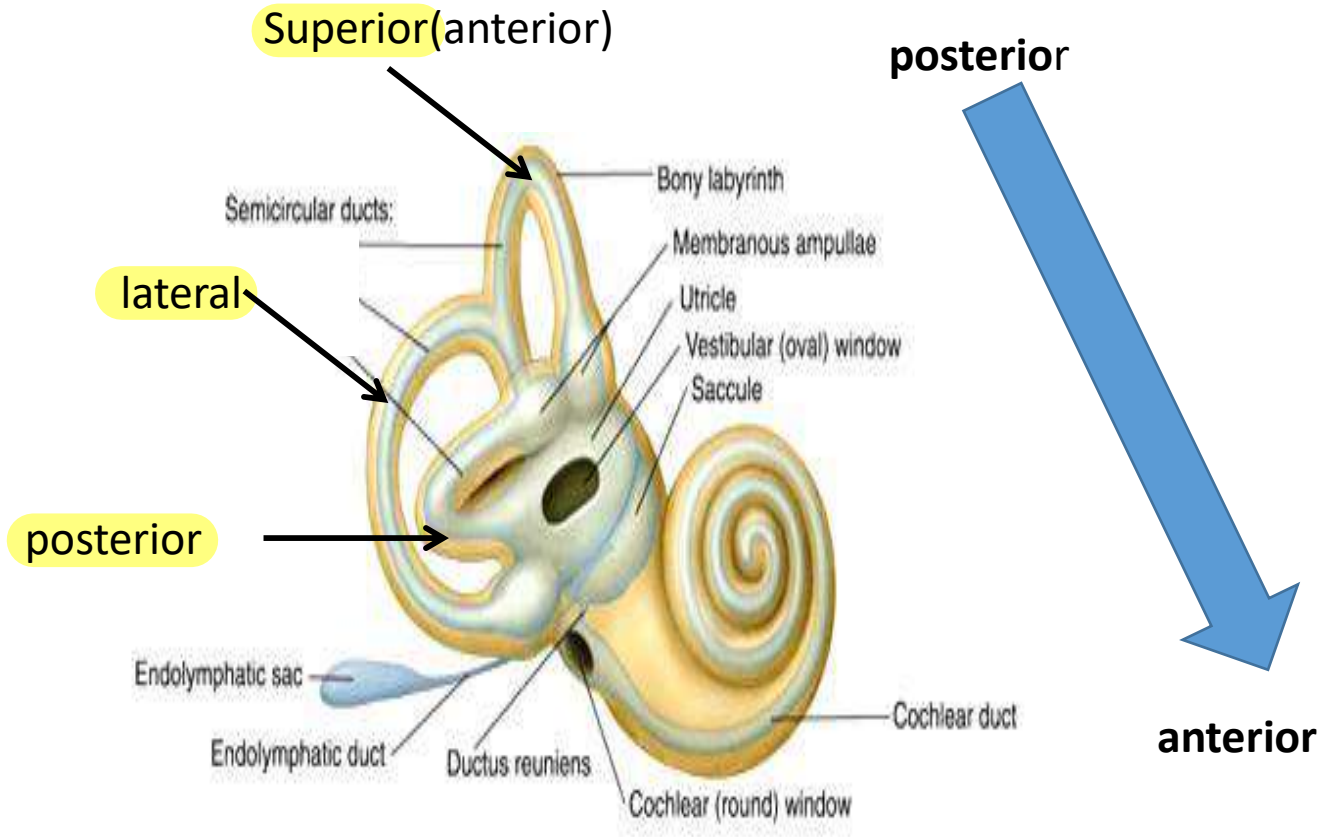
1- Vestibule: **It is the central part of the bony labyrinth.**

Anterior to it lies the cochlea and posterior to it lies the semicircular canals.

2- Semicircular canals: They are 3 in number,

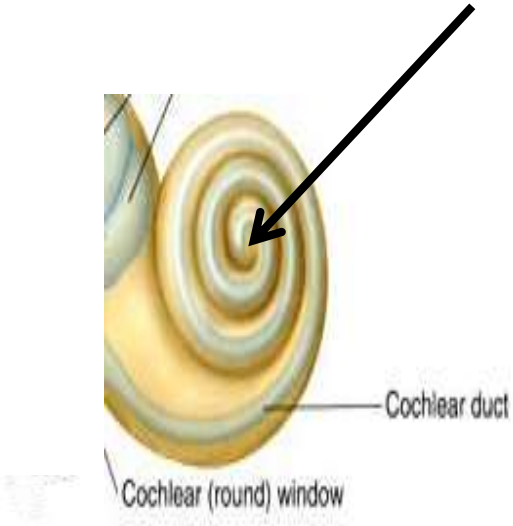
the superior and posterior ones are vertical in position while the lateral one is horizontal in position.

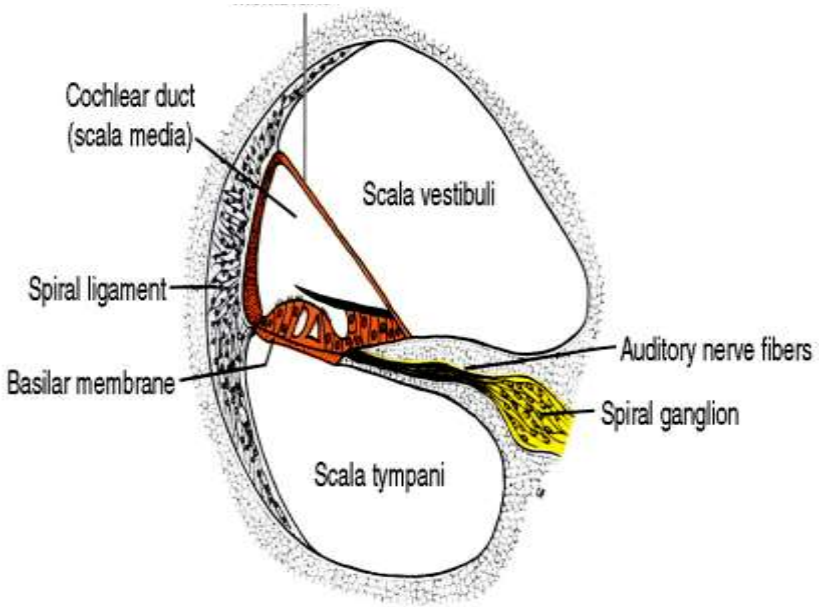
They open into the vestibule.



3- Cochlea: -It resembles a snail and is formed of a central pillar (محور) called **modiolus** and around it a hollow bony tube forms 2¾ turns.

The bony spiral lamina winds around the modiolus and divides the canal into **scala vestibuli** and **scala tympani**.





B) Membranous Labyrinth:

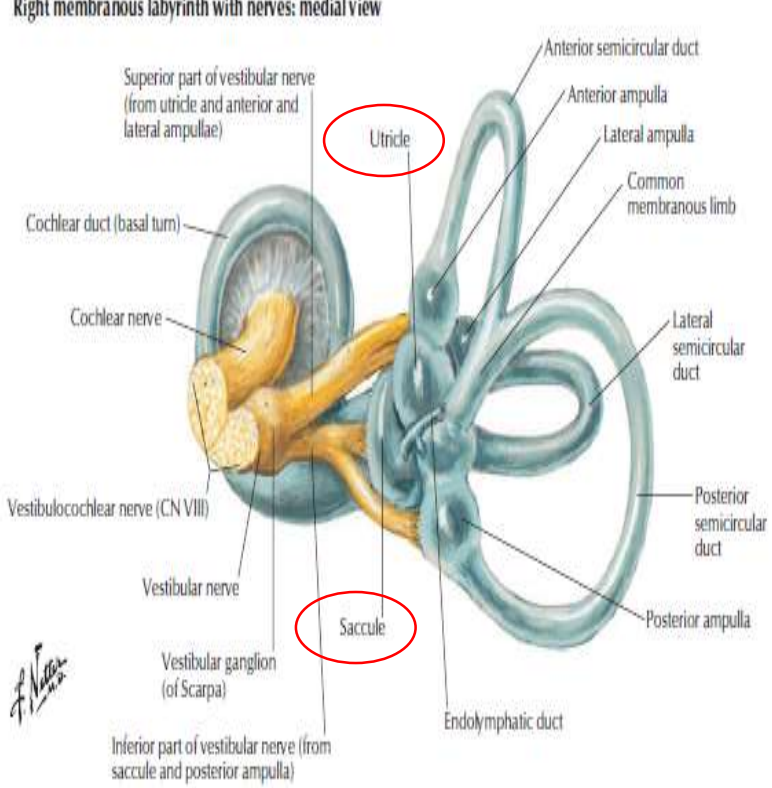
It lies within the perilymph of the bony labyrinth.

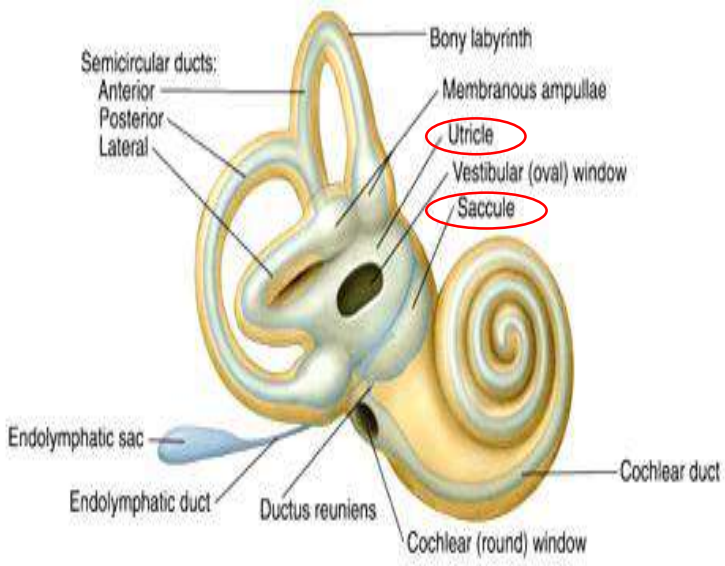
It is filled with endolymph & consists of:

1- Utricle and saccule in the bony vestibule.

2- Semicircular ducts in the semicircular canals.

3- Cochlear duct in the cochlea.





All of them *communicate* with each other.

Receptors present in the wall of the utricle and saccule are sensitive to orientation of the head to gravity.

Receptors in the wall of the semicircular ducts are sensitive to movements of the head i.e. acceleration and deceleration.

تسارع

The organ of Corti in the cochlea contains receptors for hearing.

بحكيلكم الدكتور ايامكم بالكلية هي احلى احلى احلى ايام عمركم بدراستها و امتحاناتها و قرفها و ضحكها على الاقل بتشتم زي ما انت عايز، ما بكون عندك مسؤوليات بيت و شغل مثلا انك بتاخد اجازة من الشغل عشان تمتحن 😂😂...

بحكيلكم الدراسة بالكلية هي اهم اشي الي ما بدرس بالكلية و معتمد ياخد علم بعدين و مصمم يكون حمار بالكلية راح يعيش حمار و يموت حمار و بضل حمار طول عمره😂😂😂 (حكى انتو شاطرين لا تخافوا مش قصده عنكم .. قصده بالدراسة العلم مش العلامات)، الي بتعب و ما بلاقي نتيجة بالامتحانات و العلامات لا تخاف راح تشوف النتيجة لقدام بس ضل اجتهد و الي عنده لامبالاة راح يضل طول عمره حمار

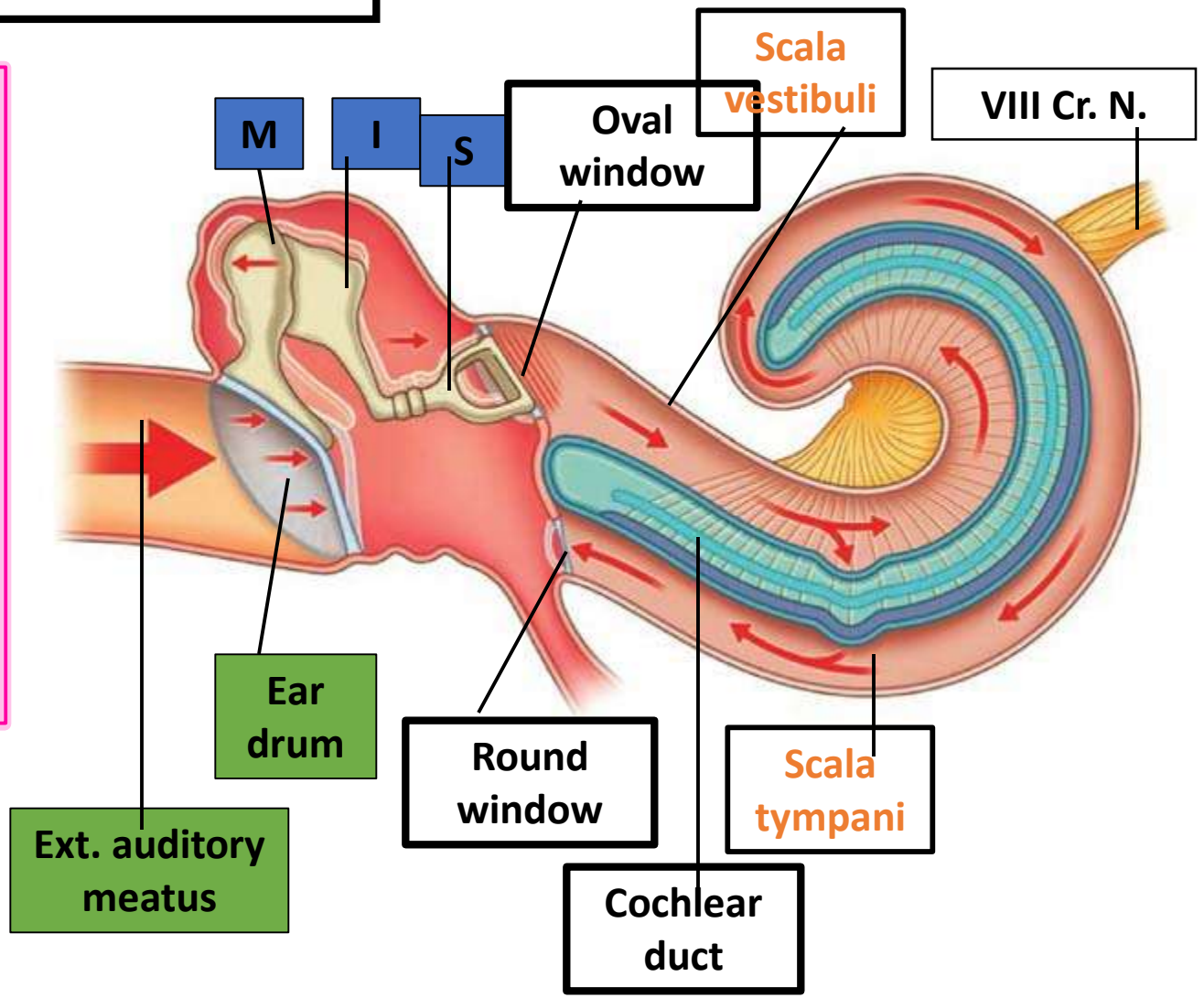
بداية التسارع او التباطئ زي لما تكون بسيارة طيارة او بالمصعد راح تحس فيه انه السرعة عم تزيد او بتقل بعدين بتتعود ما راح تحس بالسرعة الا اذا تغيرت او كانت ثابتة بتضل عادي عارف انك بتتحرك بس ما بتتاثر

Vestibulocochlear (8th cranial nerve)

- ✓ combined nerves (cochlear and vestibular) which enters the brain stem in the pontocerebellar angle.
- ✓ **Vestibular nerve:**. This nerve enters the brain stem to relay in the vestibular nuclei and cerebellum. It is responsible for equilibrium.
- ✓ **Cochlear nerve:** The cochlear nerve enters the brain stem where it relays in the ventral and dorsal cochlear nuclei. It is responsible for hearing.

Sound waves causes vibration of the tympanic membrane. The ossicles transmit the vibrations to the oval window.

الصوت بروح على ال tympanic membrane بعدها بمر على العضمات الصغيرة التلاتة الي بنتهوا بال oval window و هاي بتكمل ك scala vestibuli و راح يمشي فيها الصوت للاخر عشان يروح على scala tympani (هم مفتوحين على بعض) و بعدها بروح على round window .. طيب شو فائدة هاي ال window؟ عشان تعمل absorption لل wave لو انها مش موجودة و كان blind end الصوت راح يضل رايح جاي بدانك رايح جاي عبين ما يعمل distortion

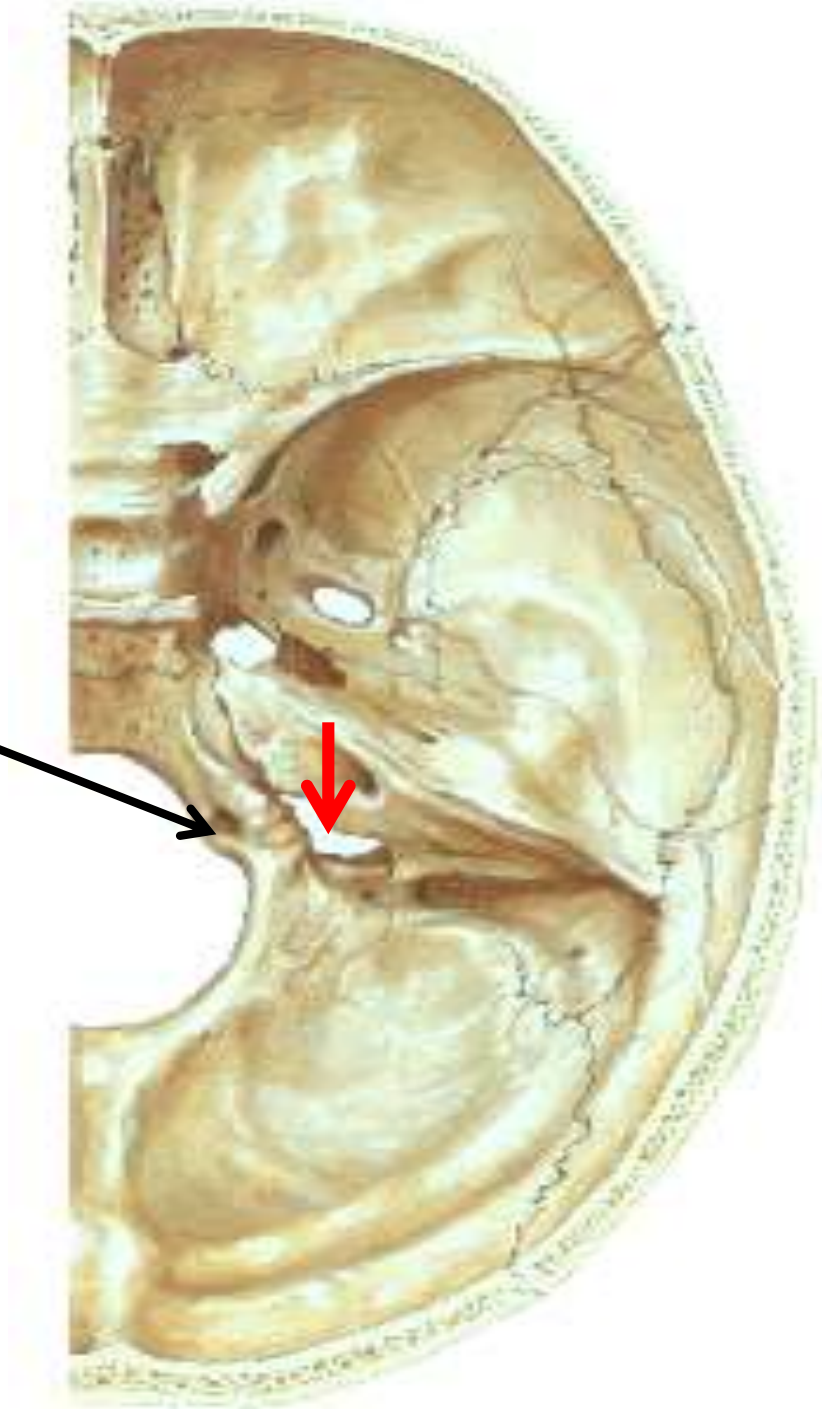


Attachment to brain stem

- Hypoglossal XII at groove between pyramid (P) & olive (O)
- IX , X , XI at groove between olive &Inferior cerebellar peduncle

Exit from skull

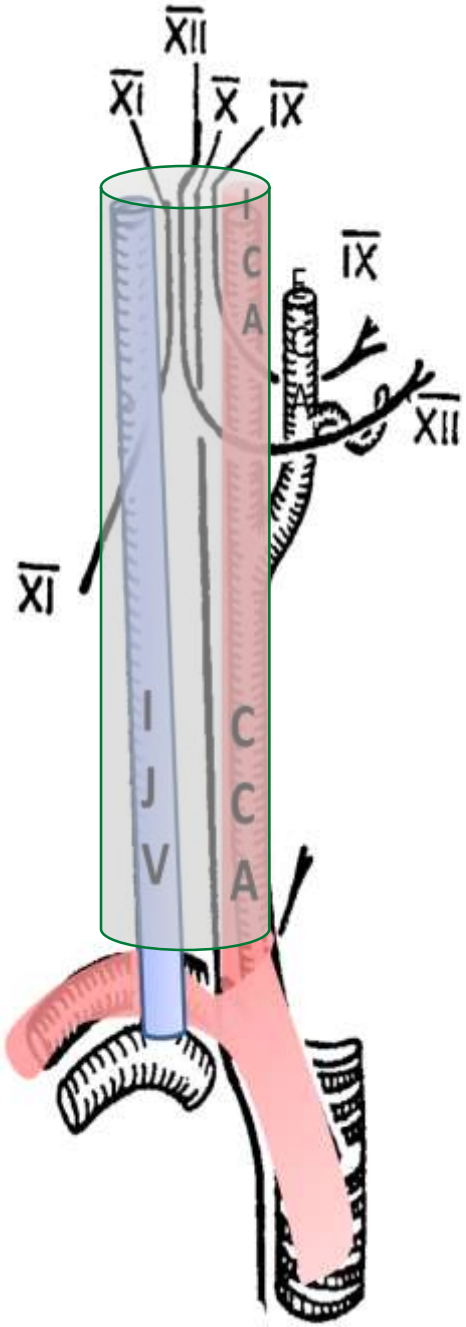
- IX , X , XI through jugular foramen
- XII through hypoglossal canal



last 4 cranial nerves are enclosed in carotid sheath at base of skull

ال accessory بغذي العضلات الي بالخلف ال sternomastoid and trapezius يعني بمشي بال posterior triangle of the neck

العصب ٩+١٢ رايحين لل tongue واحد motor و التاني sensory يعني راح يمشوا بالامام .. اما العصب العاشر بنزل vertical عشان يروح للجسم كله



Artery of inbetween

Glossopharyngeal nerve IX

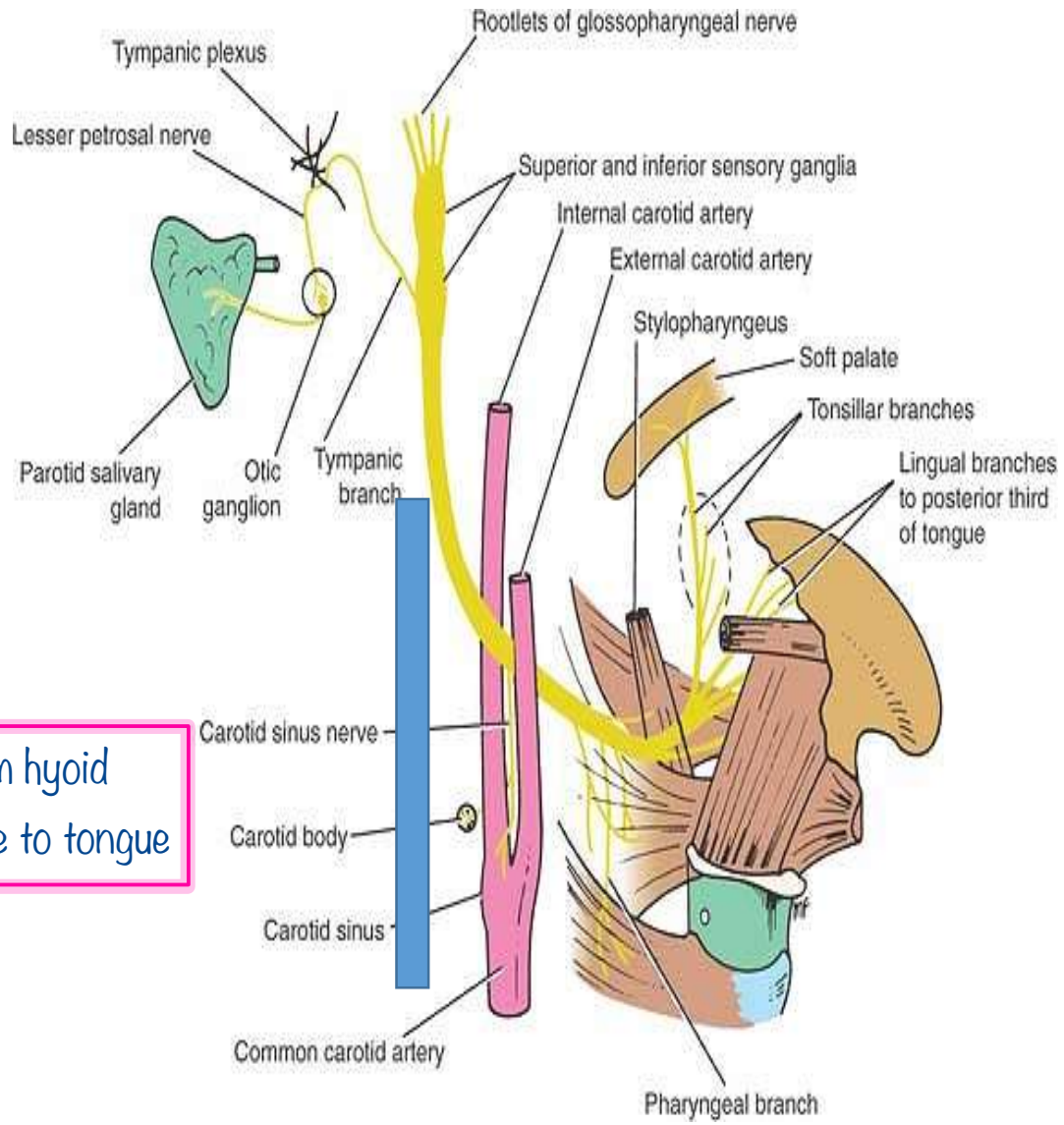
- Superiorly ,glossopharyngeal nerve shows 2 ganglia
- Extracranial course:

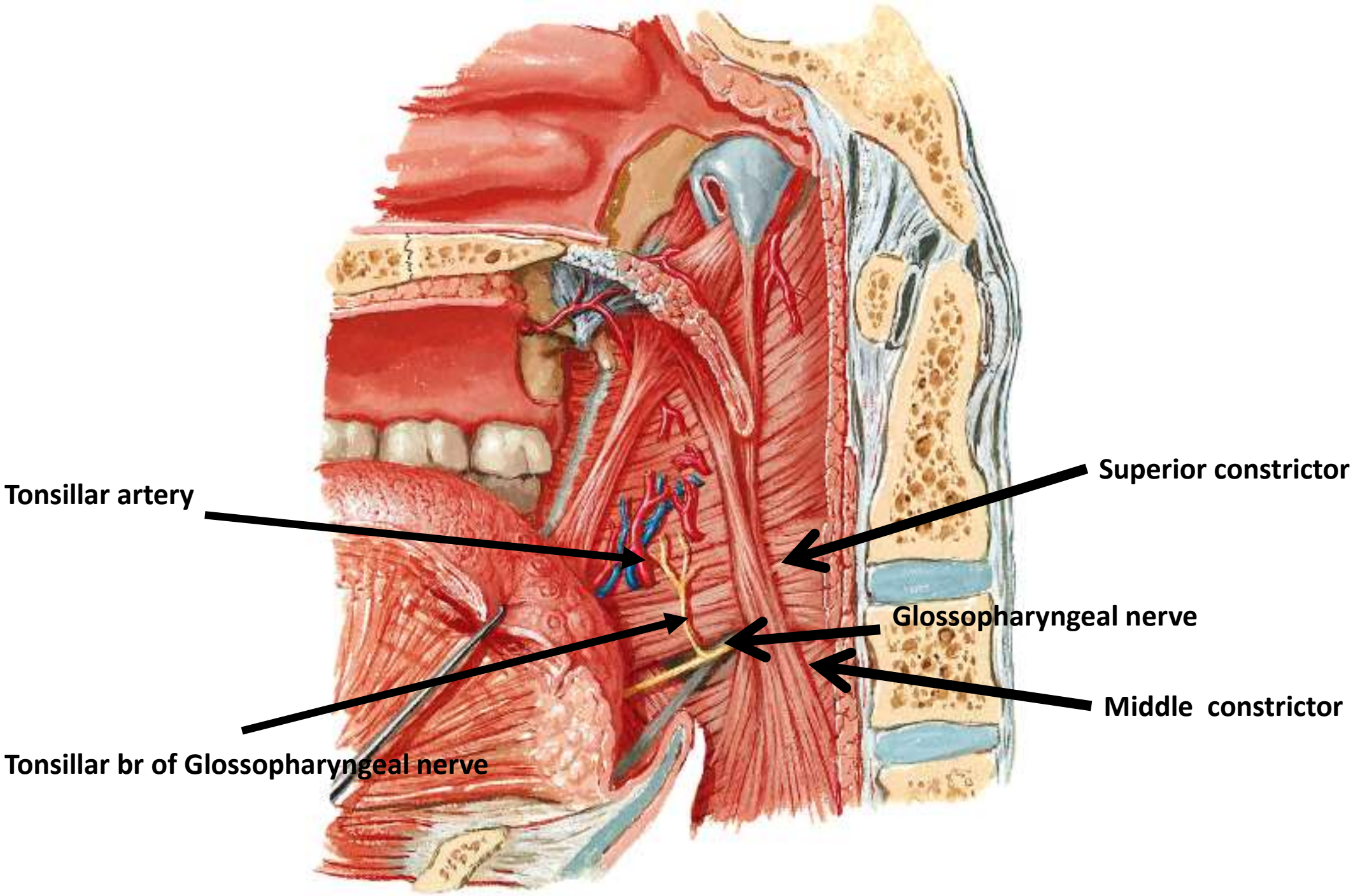
Passes between I.J.V. & I.C.A. (within carotid sheath).

Passes between I.C.A. & E.C.A.

It curves forwards to pass between superior and middle constrictors of pharynx and deep to hyoglossus muscle to be distributed to tonsil, tongue (posterior 1/3 and vallate papillae) and pharynx (mucous membrane).

From hyoid bone to tongue




Tonsillar artery
Superior constrictor
Glossopharyngeal nerve
Middle constrictor
Tonsillar br of Glossopharyngeal nerve

·Branches:-

·Tympanic branch:- enters middle ear & share in forming tympanic plexus (gives the lesser petrosal n. (for parotid gland)+ sensory supply to mucosa of middle ear .

·Carotid branch: supply the carotid sinus & carotid body

·Pharyngeal branch: -share in pharyngeal plexus supply pharynx by sensory fibres.

·Muscular: branch to stylopharyngeus m.

·Tonsillar:- supply palatine tonsil & soft palate.

·Lingual (terminal): to mucosa of posterior 1/3 of tongue, carry general sensation &taste sensation.

ال vagus بسرق جزء من ال glossopharyngeal و جزء من ال cranial part of accessory و بعملوا مع بعض اشي اسمه cranio-vagal complex

BRANCHES

اول branch من فوق و
بعمل ال tympanic plexus

Tympanic plexus

Tympanic br

IX

Lesser petrosal n

Sup & Inf ganglia

لما يعطي ال
stylopharyngeas بكون
ماشي بين ال superior and
middle constrictor muscles
و بكون deep to hyoglossus

Stylopharyngeus ms

Otic ganglion

Parotid gland

Carotid body

Carotid sinus

Pharyngeal br

Tonsillar & Lingual brs

Motor: Hypoglossal (XII), except Palatoglossus: Pharyngeal branch of Vagus (X)

Posterior 1/3

Sensory and Taste: Glossopharyngeal (IX)

Sensory: Lingual branch of V3 from Trigeminal (V)

Taste: Chorda tympani branch of Facial (VII), carried by lingual branch

Anterior 2/3

Relations important

الناس الي شالت منكم لوزها
بعد العملية ببلش عندهم وجع
بالاذن او بيجي ب follicular
pain in ear مع tonsillitis
بس الاذن تاعته سليمة هاد
الالم بكون referred من ال
tonsillar لل tympanic لانه
الهم نفس ال origin .. الي
بشيل اللوز راح يصير
edema بالمكان راح تاثر على
pharyngeal plexus عشان
هيك بكونوا مش قادرين
يبلعوا الاكل من الالم

Applied anatomy

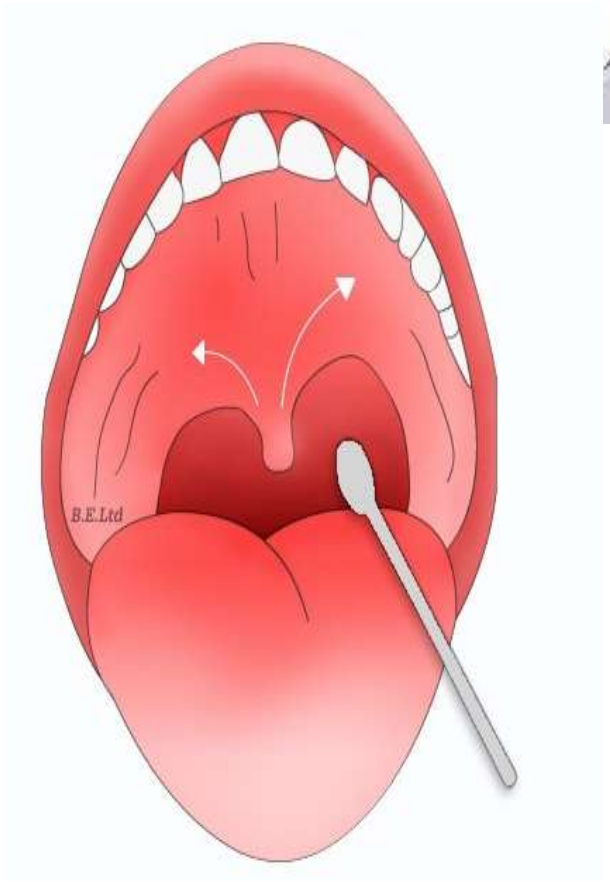
- Gag reflex : touch mucous membrane of tonsil with a wooden spatula....the patient gags

  (the pharyngeal muscles contract)

It is a test for both IX & X cranial nerves

- Test for taste on posterior 1/3 of tongue

Deviation of uvula toward normal side

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Thank you