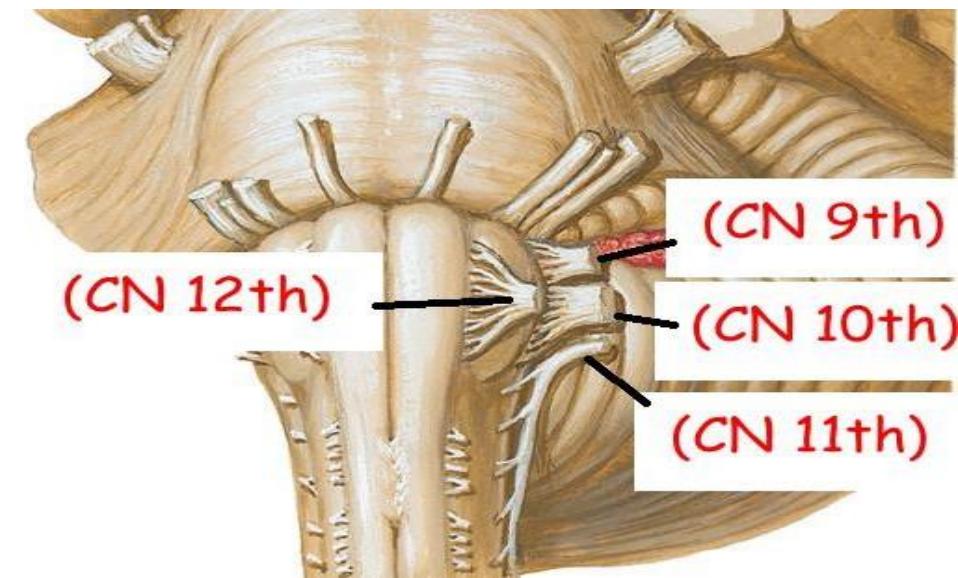


Last 4 CRANIAL NERVES

By
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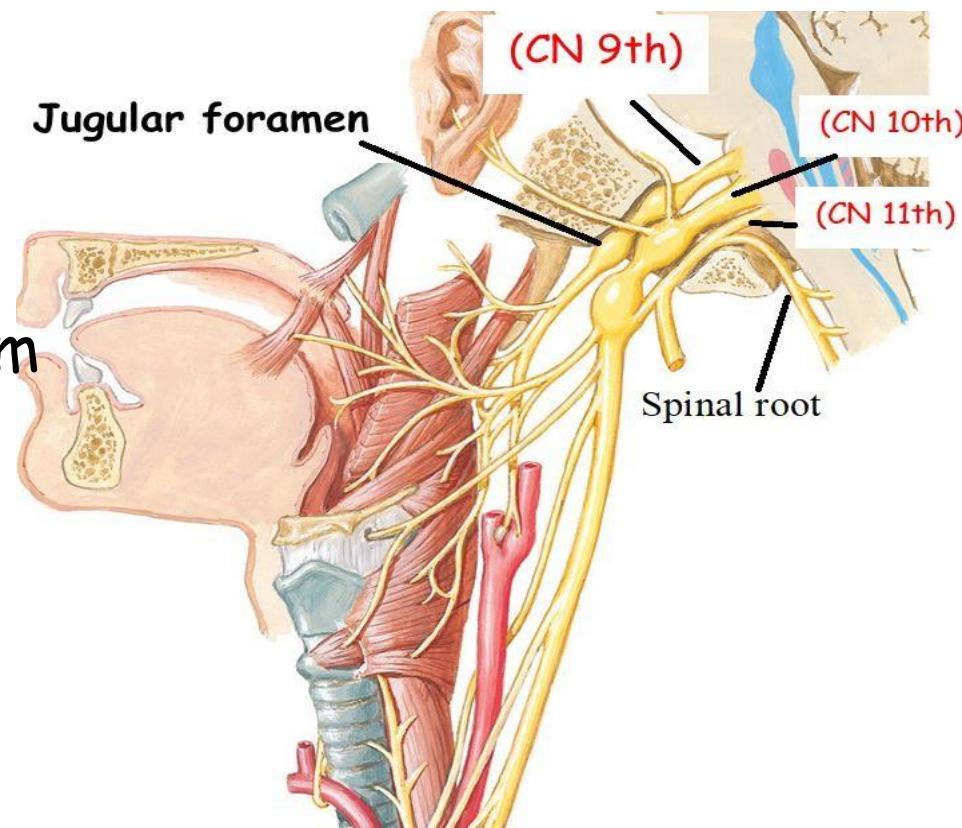
Last 4 cranial nerves

- 1 Glossopharyngeal nerve (CN 9th)
- 2 Vagus nerve (CN 10th)
- 3 Accessory nerve (CN 11th)
- 4 Hypoglossal nerve (CN 12th)



All 4 nerves exit from ventral surface of **medulla oblongata**

The (9th, 10th& 11th) exit from skull through **Jugular foramen** but (CN 12th) through **Hypoglossal canal**



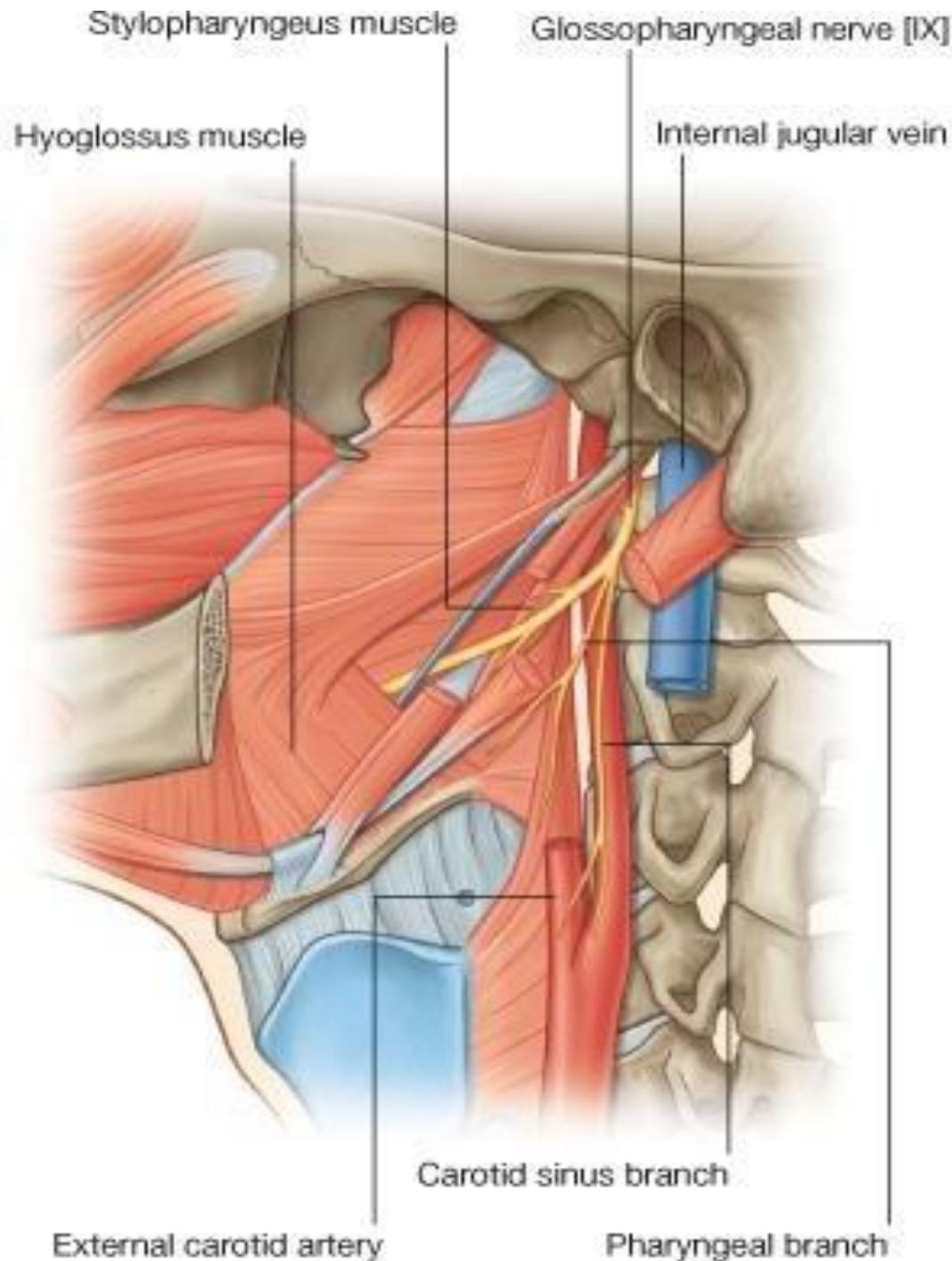
GLOSSOPHARYNGEAL NERVE

9TH CRANIAL NERVE

Type: a mixed nerve.

Course and relations:

descends in the upper part of the carotid sheath till the lower border of the stylopharyngeus muscle where it leaves the sheath and runs forwards deep to the hyoglossus muscle to reach the back of the tongue.



Remember...

Contents of carotid sheath

Upper part	Lower part
Internal carotid artery	common carotid artery
Internal jugular vein	Internal jugular vein
Last 4 cranial nerves	vagus nerve



- 9-glossopharyngeal nerve.
- 10-vagus nerve.
- 11-accessory nerve.
- 12-hypoglossal nerve.

Branches and distribution:

1. **Meningeal branch:** To the meninges of posterior cranial fossa

2. **Tympanic branch:** supply tympanic cavity.

3. **Carotid branch:** To carotid

Sinus and carotid body.

4. **Tonsillar branches:** To palatine tonsil, the pharynx and the auditory tube.

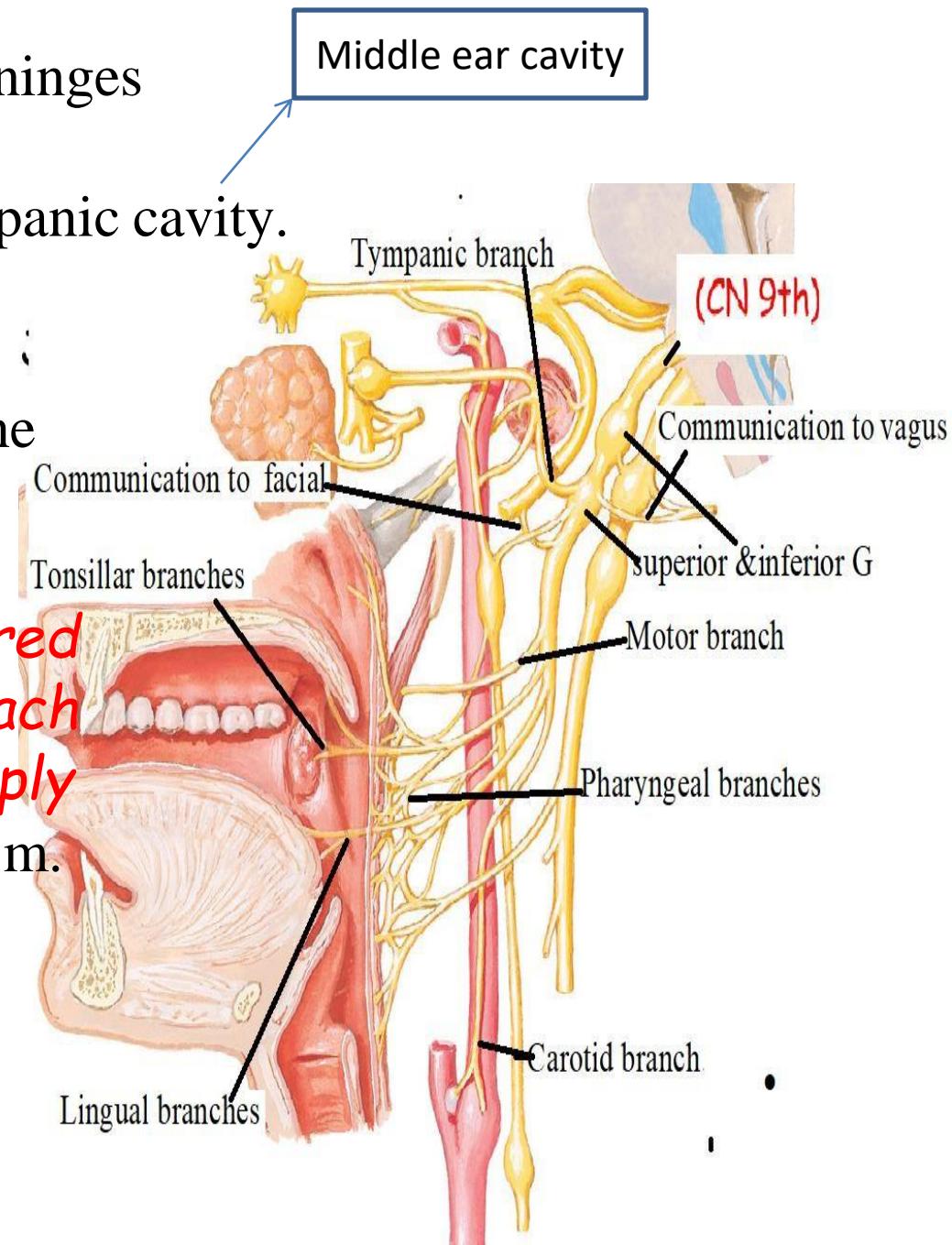
NB: *Tonsillitis causes referred pain in the middle ear, As each of them have same nerve supply*

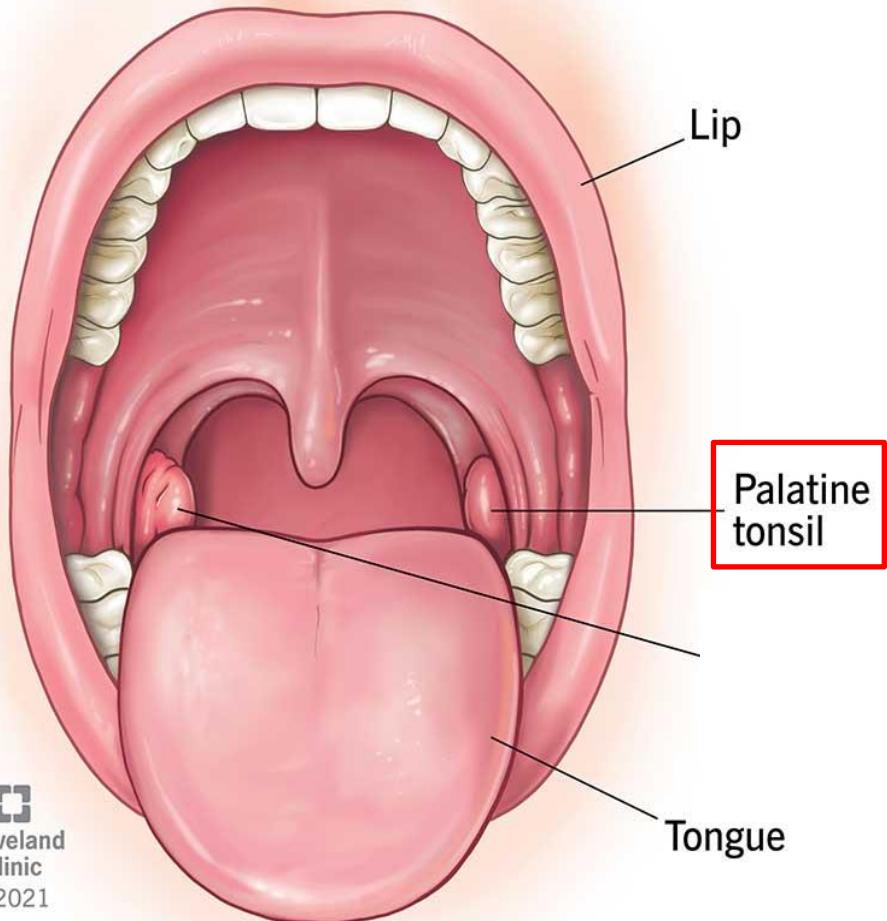
4. **Motor branch:** stylopharynges m.

5. **Terminal branches:**

a. **Lingual branches:** sensory To Mucous membrane & taste from posterior 1/3 of the tongue.

b. **Pharyngeal branches:** To the pharyngeal plexus.





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

Tongue

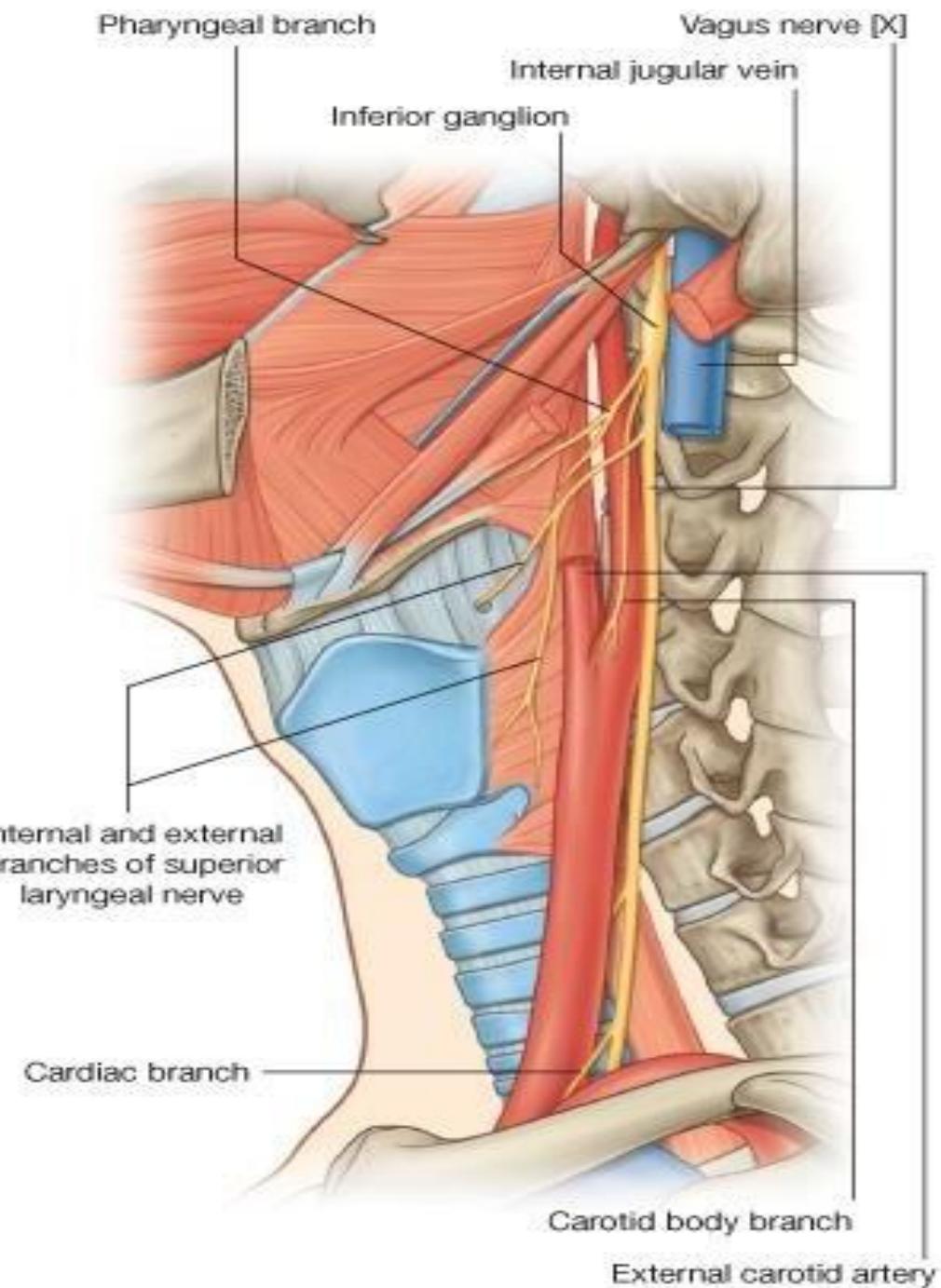
VAGUS NERVE

10TH CRANIAL NERVE

Type: a mixed nerve.

Course and relations:

- Descends in the carotid sheath between the I.J.V. and the I.C.A. then between the I.J.V. and the C.C.A.
- At the root of the neck, It crosses over the 1st part of the **subclavian artery** to enter the thoracic cavity.

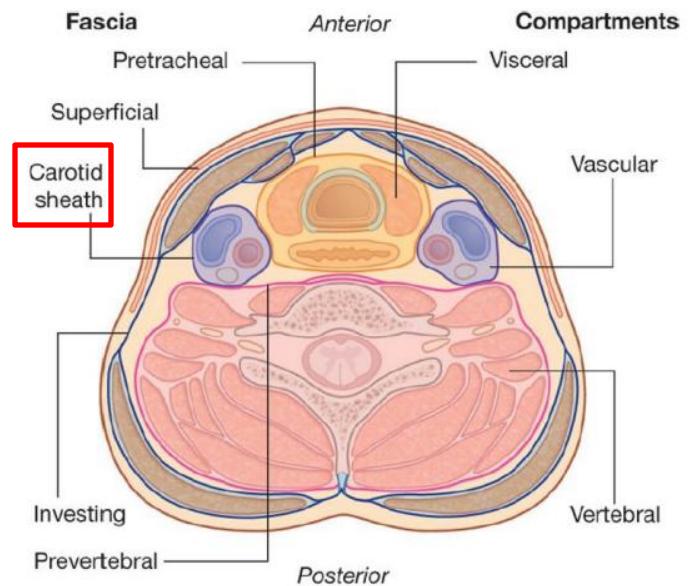


Remember...

Contents of carotid sheath

Upper part	Lower part
Internal carotid artery	common carotid artery
Internal jugular vein	Internal jugular vein
Last 4 cranial nerves	vagus nerve

9-glossopharyngeal nerve.
10-vagus nerve.
11-accessory nerve.
12-hypoglossal nerve.



Branches:

1. **Meningeal branch:** To the meninges of posterior cranial fossa

2. **Auricular branch:** To the external auditory canal and the outer surface of the tympanic membrane.

3. **Carotid branch:** To the carotid sinus and the carotid body.

4. **SUP & INF Cardiac branches:**

To the cardiac plexus.

5. **Pharyngeal branch:** To pharyngeal plexus

6. **Superior laryngeal:** gives

A-External laryngeal branch (motor): supplies the **cricothyroid muscle**.

B-Internal laryngeal branch (sensory):

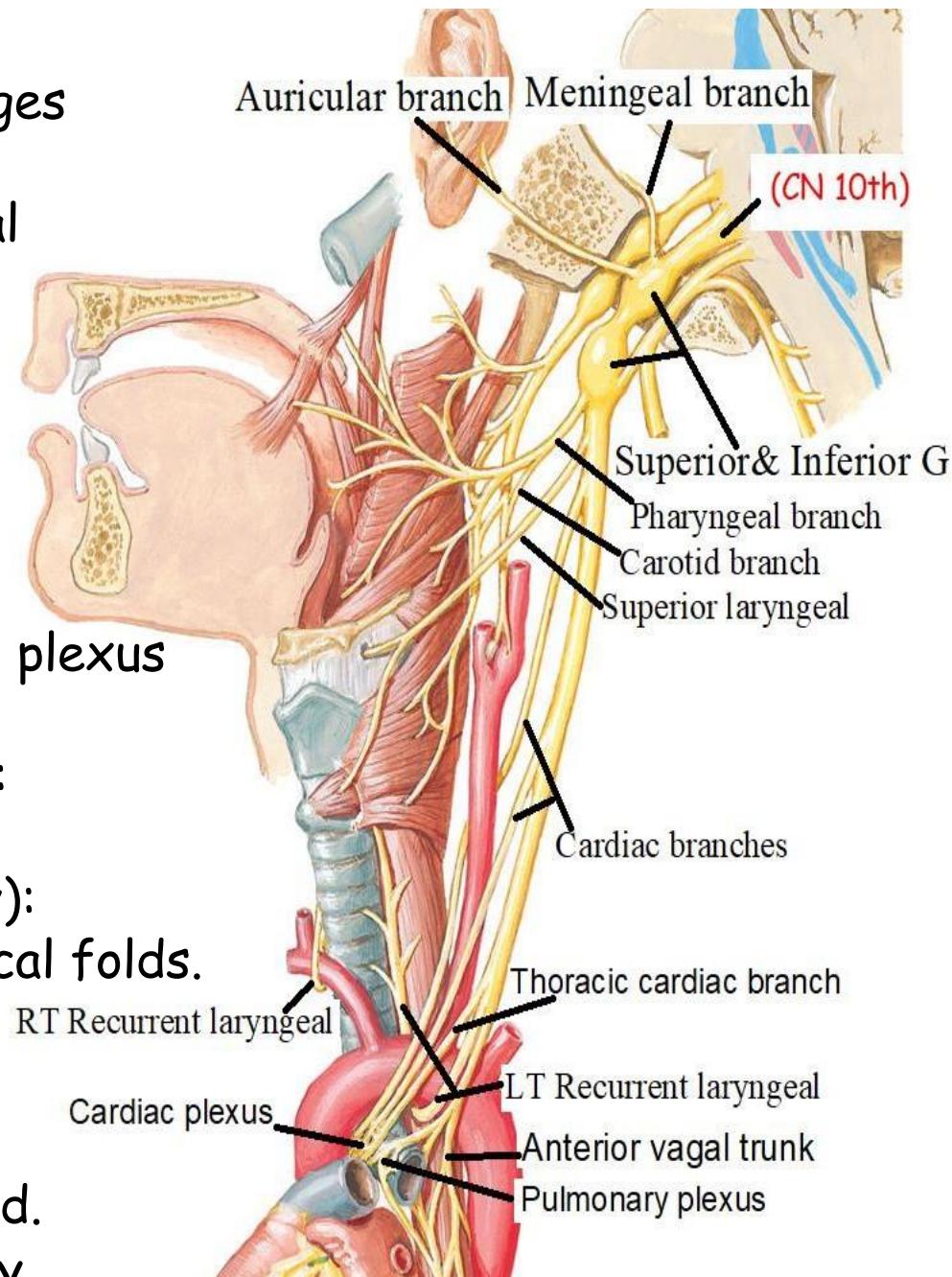
To the laryngeal cavity above the vocal folds.

& Taste from the root of tongue

7. **RT & LT Recurrent laryngeal N:**

- **Motor** → To all the intrinsic muscles of larynx except cricothyroid.

- **Sensory** → To the laryngeal cavity below the vocal folds.



ACCESSORY NERVE

11TH CRANIAL NERVE

Type: a motor nerve.

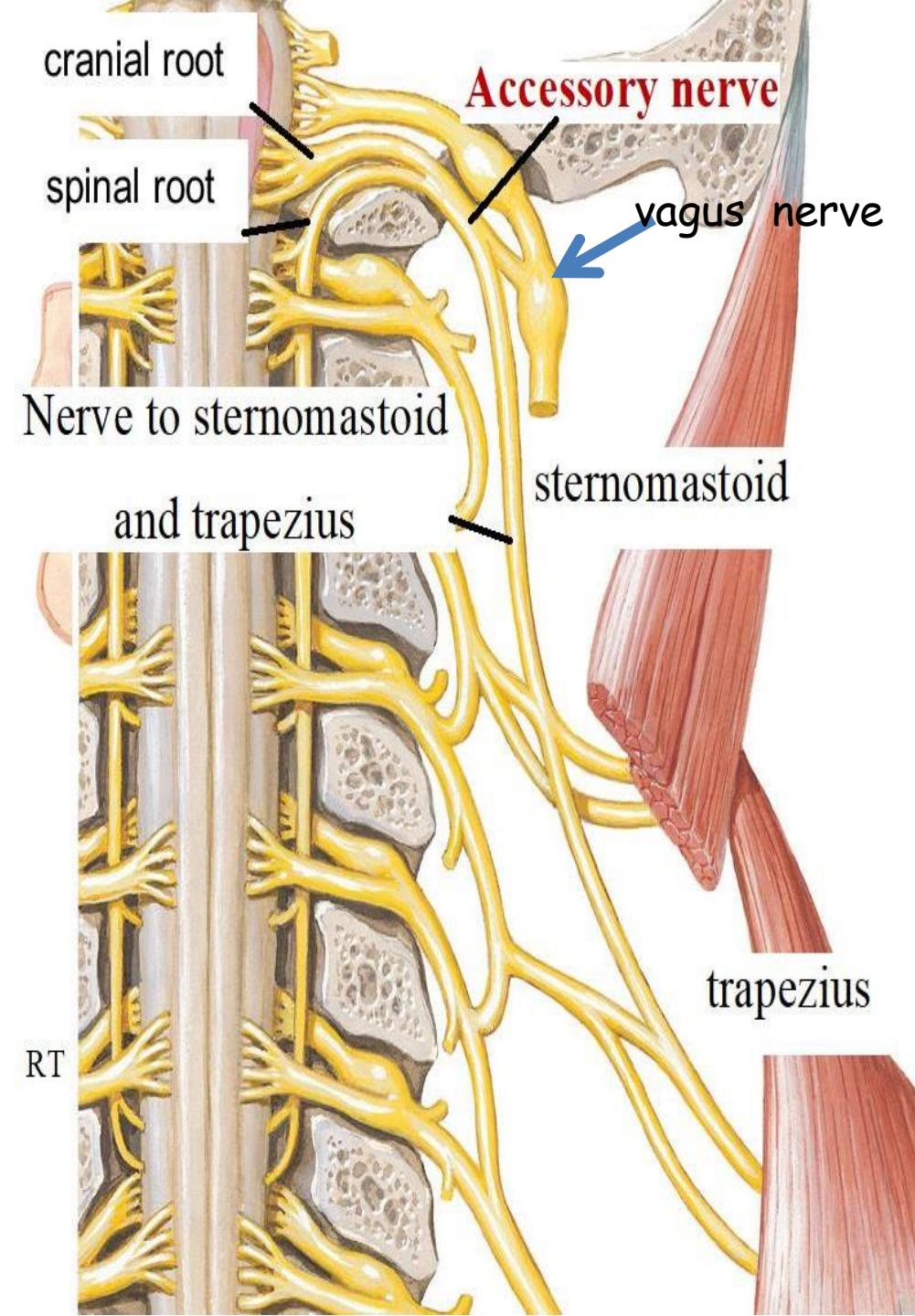
Parts: consists of:

a. **Cranial root:**

- joins the vagus nerve and distributed through its pharyngeal and laryngeal branches.

b. **Spinal root:**

from upper five cervical segments of the spinal cord & sternomastoid supply and trapezius



Pharyngeal plexus (vago-accessory complex)

The chief nerve supply of the pharynx.

***Formation:-** three roots;

1) Motor root: Pharyngeal branch of vagus (cranial accessory)

2) Sensory root: Pharyngeal branch of glosso-pharyngeal nerve.

3) Sympathetic root: Pharyngeal branches of superior cervical

Distribution:-

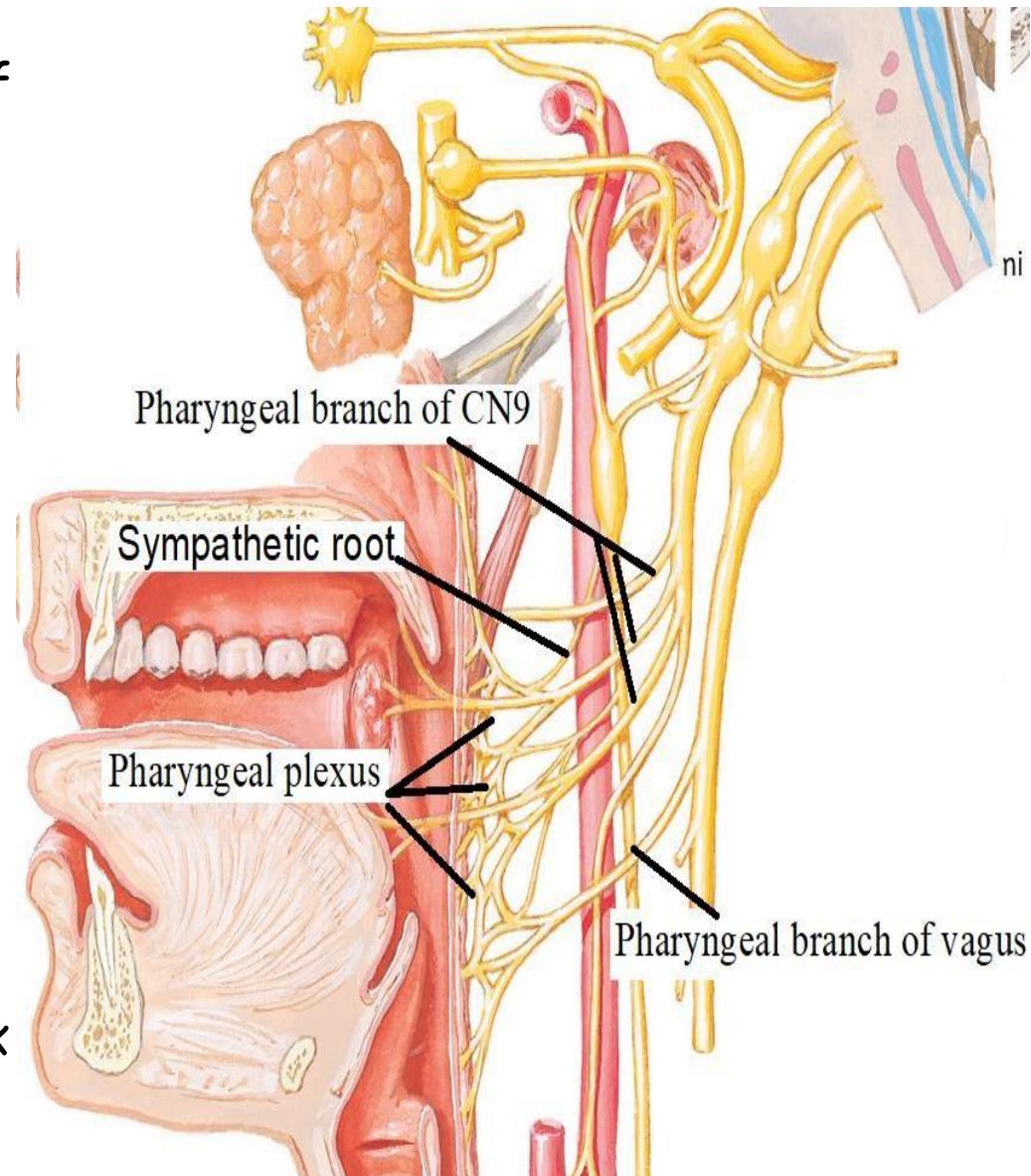
1) Motor root: All muscles of pharynx EXCEPT stylo-pharyngeus which is supplied by glosso-pharyngeal nerve.

→ All the muscles of the palate EXCEPT tensor palati which is supplied by mandibular division of trigeminal (n. to medial pterygoid).

Mucosal membrane

2) Sensory root: M M of pharynx

3) Sympathetic root: smooth muscle fibers of blood vessels of pharynx.



HYPOGLOSSAL NERVE

12TH CRANIAL NERVE

Type: a pure motor nerve.

Course and relations:

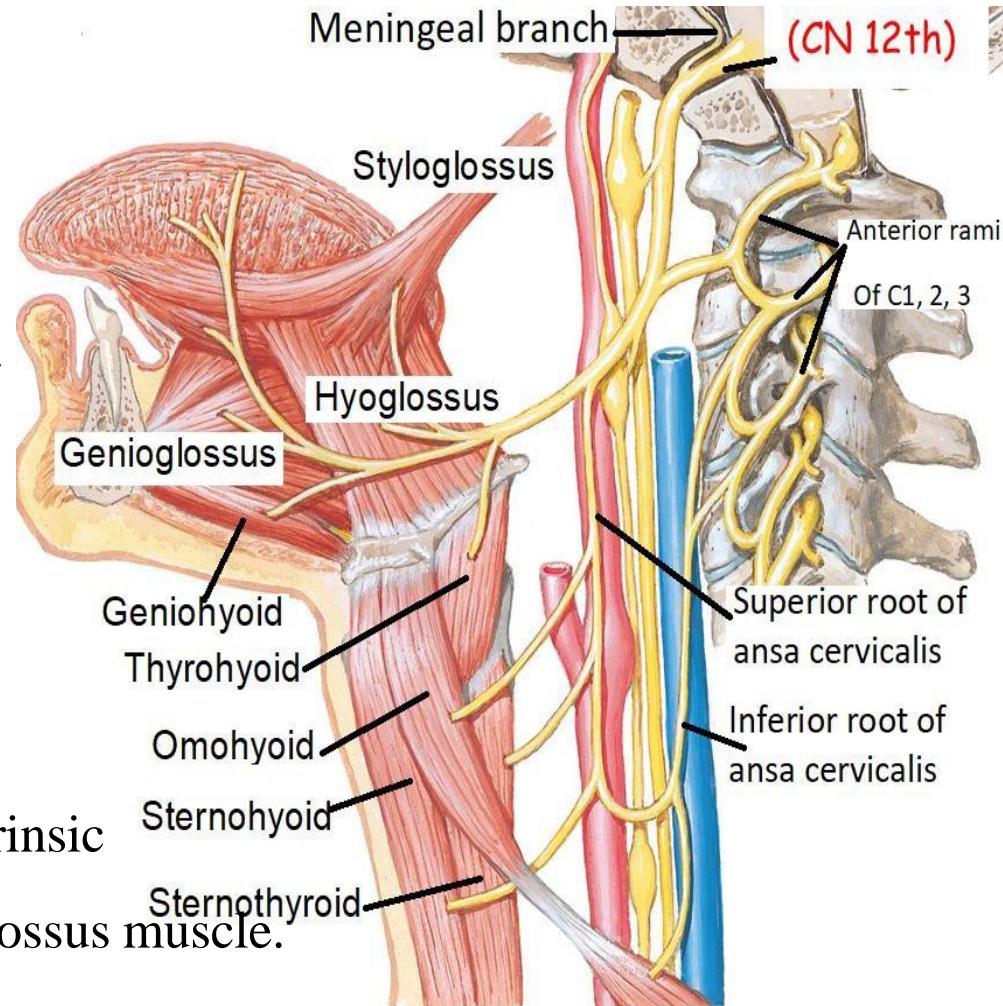
1. descends in the upper part of the carotid sheath & leaves it At the lower border of the posterior belly of digastric to enter the carotid triangle.
2. Then, runs superficial to hyoglossus & genioglossus Ms to enter the tongue.

Branches and distribution:

1. **The nerve itself:** all intrinsic and extrinsic muscles of the tongue except the palatoglossus muscle.

2. From C₁ fibers

1. **Meningeal branch:** to the meninges of the posterior cranial fossa.
2. **Descending branch (descends hypoglossi):** to the ansa cervicalis.
3. **Muscular branches:** to thyrohyoid and genohyoid muscles.



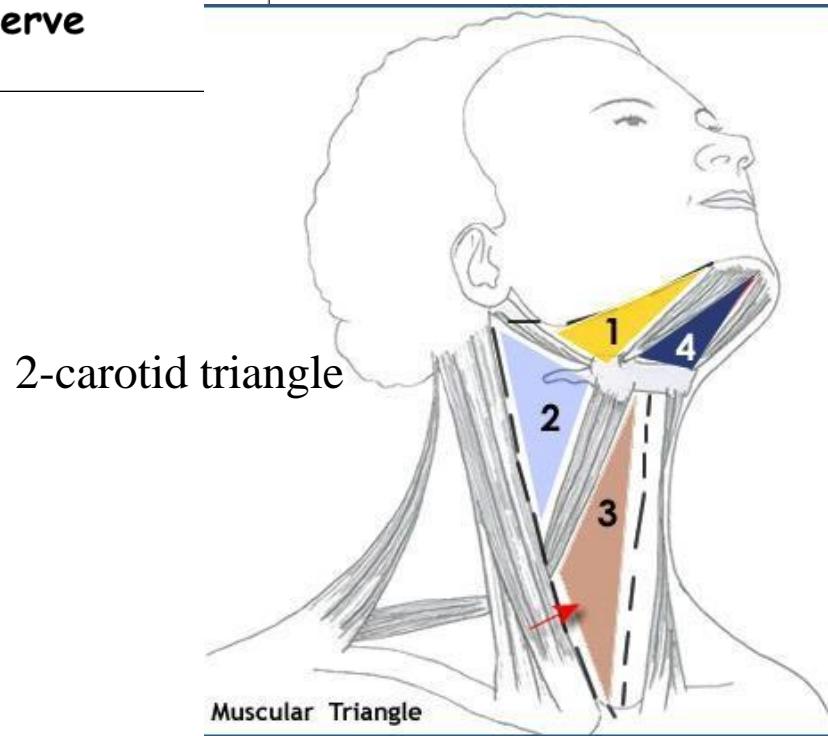
Remember...

Contents of carotid sheath

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Muscular Triangle