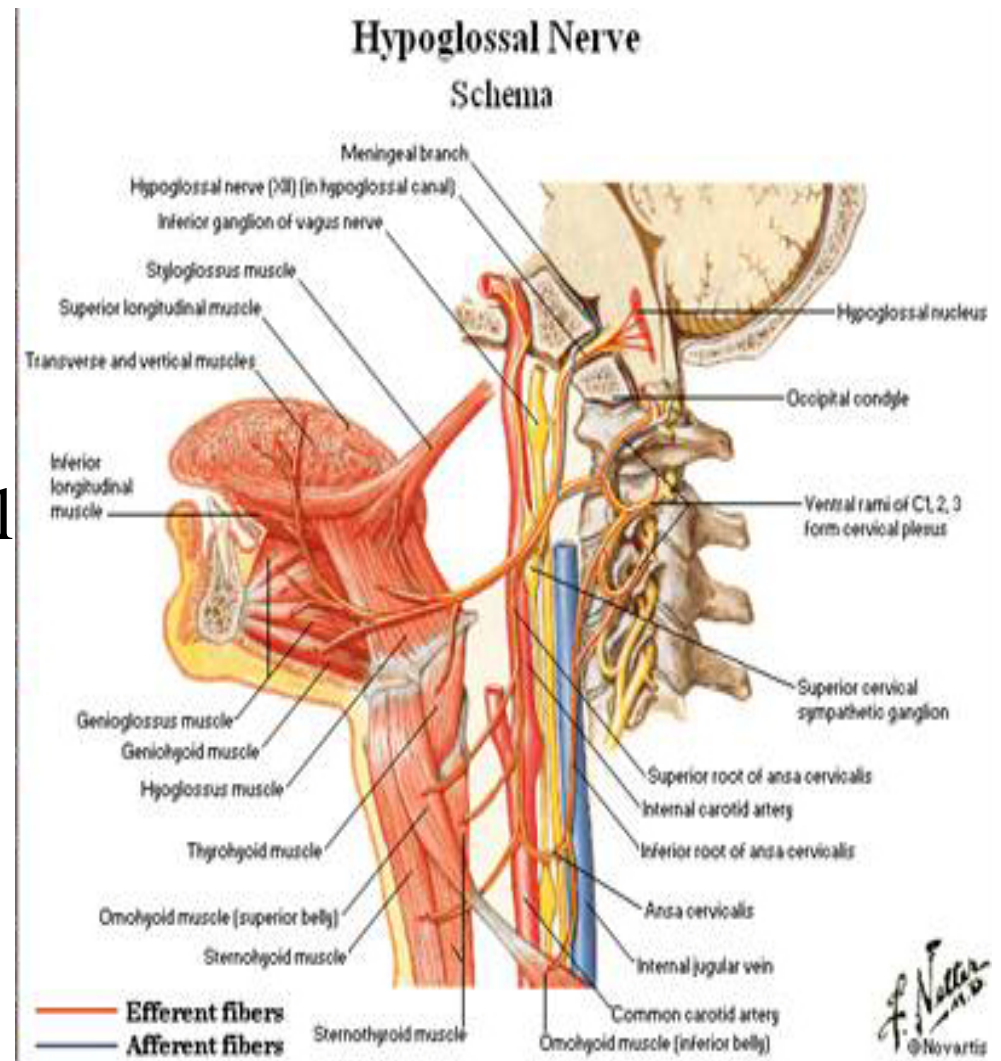


Hypoglossal nerve

- XII cranial nerve
- entirely motor, somatic efferent column
- Innervates all muscles of tongue except palatoglossus
- Represents fusion of four pre-cervical nerves (ventral roots) i.e. spinal in behaviour, but cranial in outlook
- In series with 3rd, 4th, 6th, ventral roots of spinal nerves



DEEP ORIGIN

elongated nucleus 2cm long

- Upper end situated in hypoglossal triangle (4th ventricle)

- CENTRAL

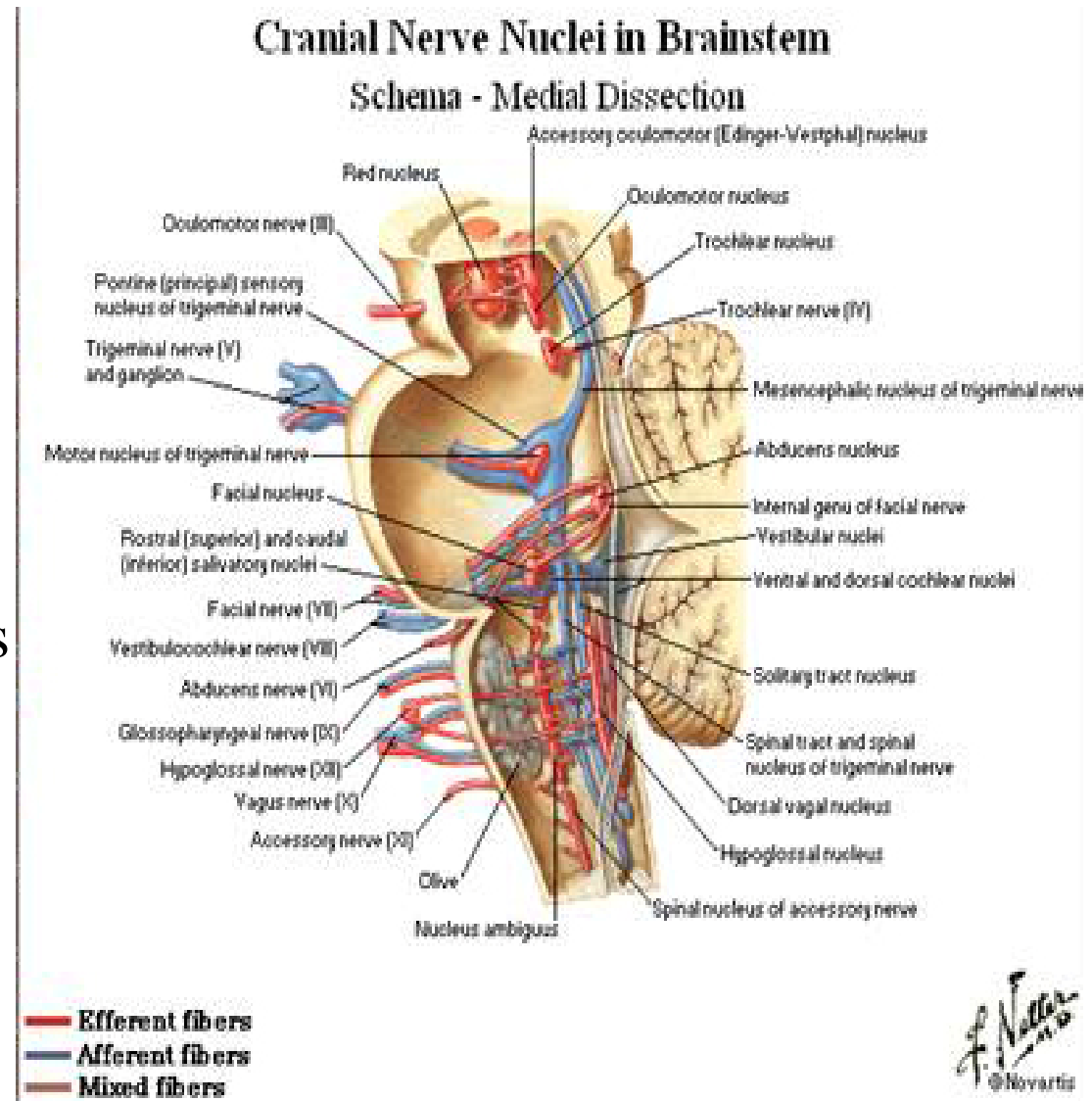
CONNECTIONS:

- motor & pre-motor cortex(cortico-nuclear)
- cerebellum via nu.intercalatus

S/F ORIGIN

10-15 rootlets emerge through anterolateral sulcus medulla oblongata

Hypoglossal nerve



Hypoglossal nerve

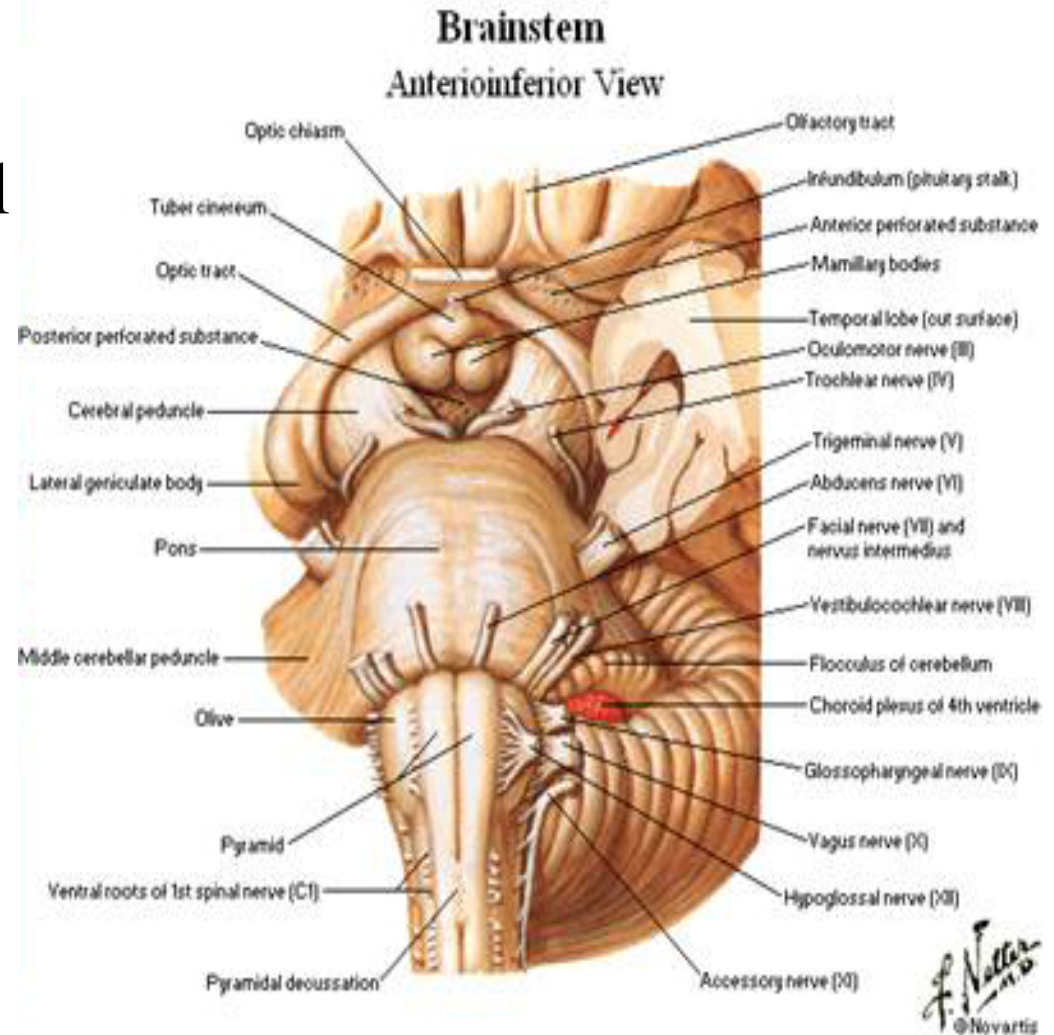
- **Course & relations**

Intracranial- rootlets pass behind 4th part of vertebral art

assemble in two bundles

Each pierces the duramater & unite in the lower part of hypoglossal canal

-a single trunk



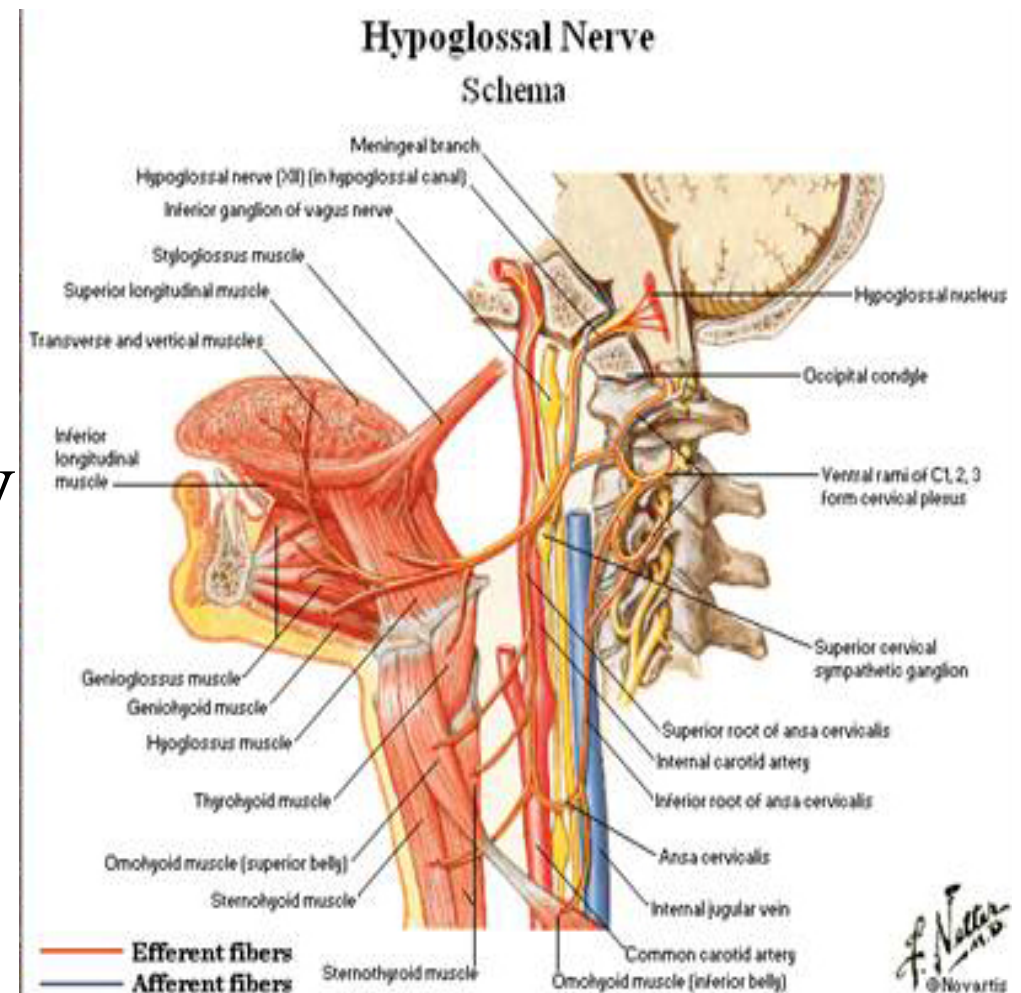
Hypoglossal nerve

Extracranial- at exit deeply placed than IJV, ICA, 9th, 10th, 11th

nerve passes laterally around the inferior ganglion of vagus

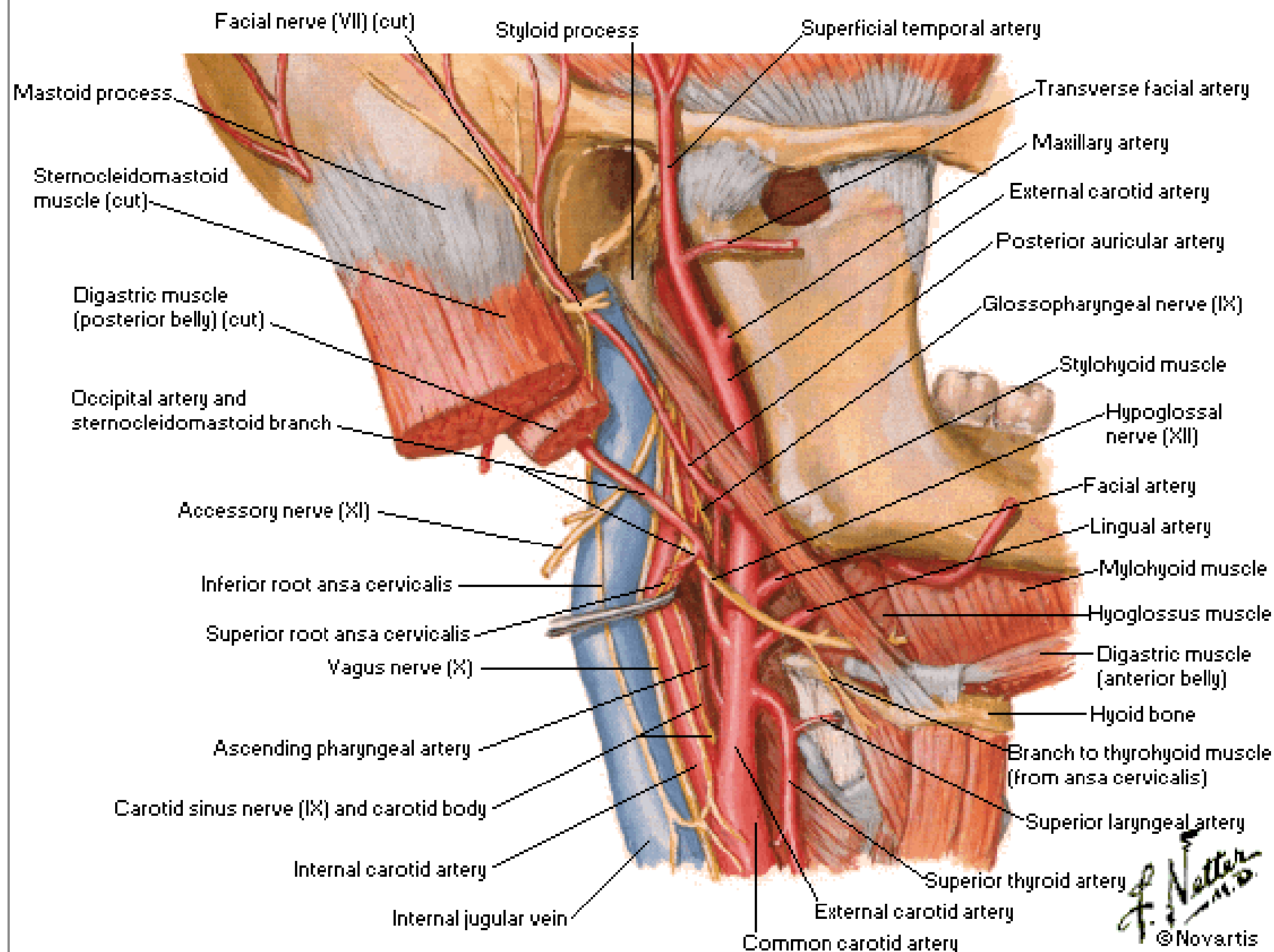
vertically placed between IJV & ICA in front of vagus

Deep to post. Belly of digastric & stylohyoid muscles, at level of angle of mandible appears in the carotid triangle



Carotid Arteries - Parotid Fossa

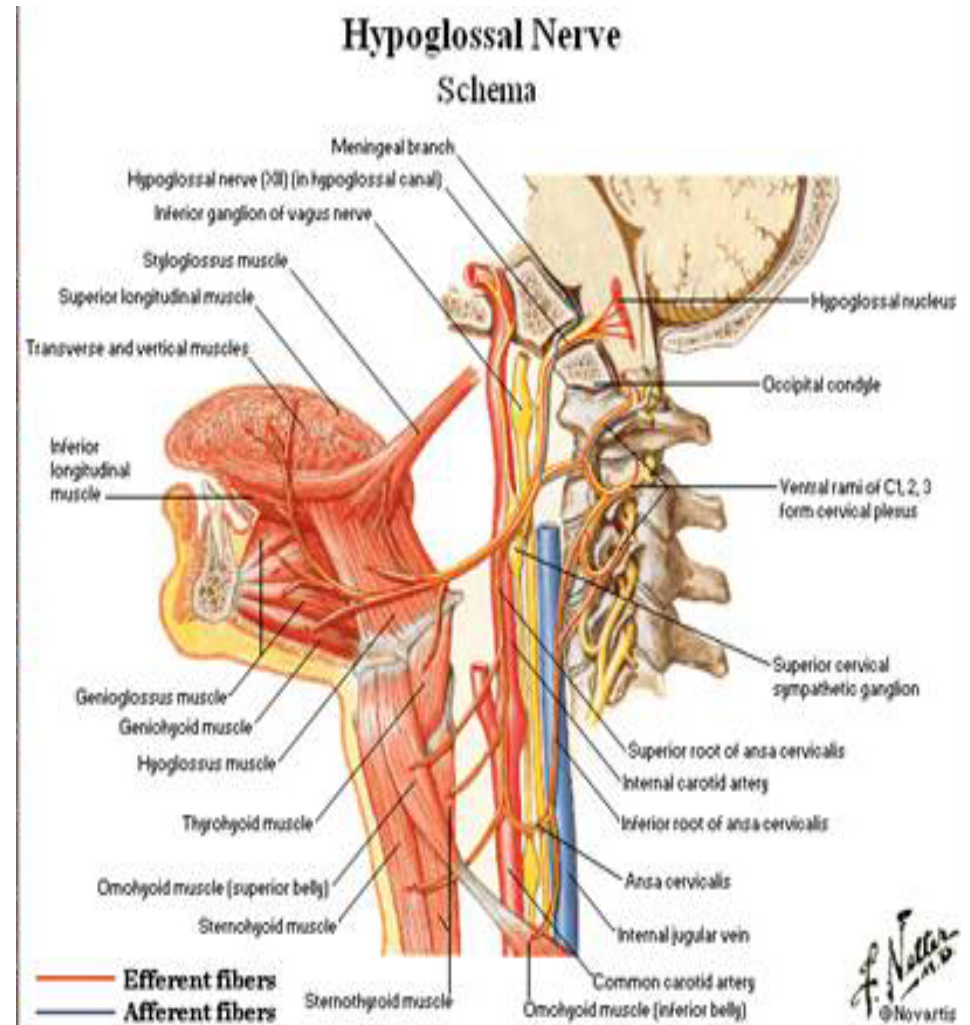
Right Lateral Dissection



Extracranial-In carotid triangle ,crosses s/f to ICA, ECA,loop of 1st part of lingual arteries (superficial part)

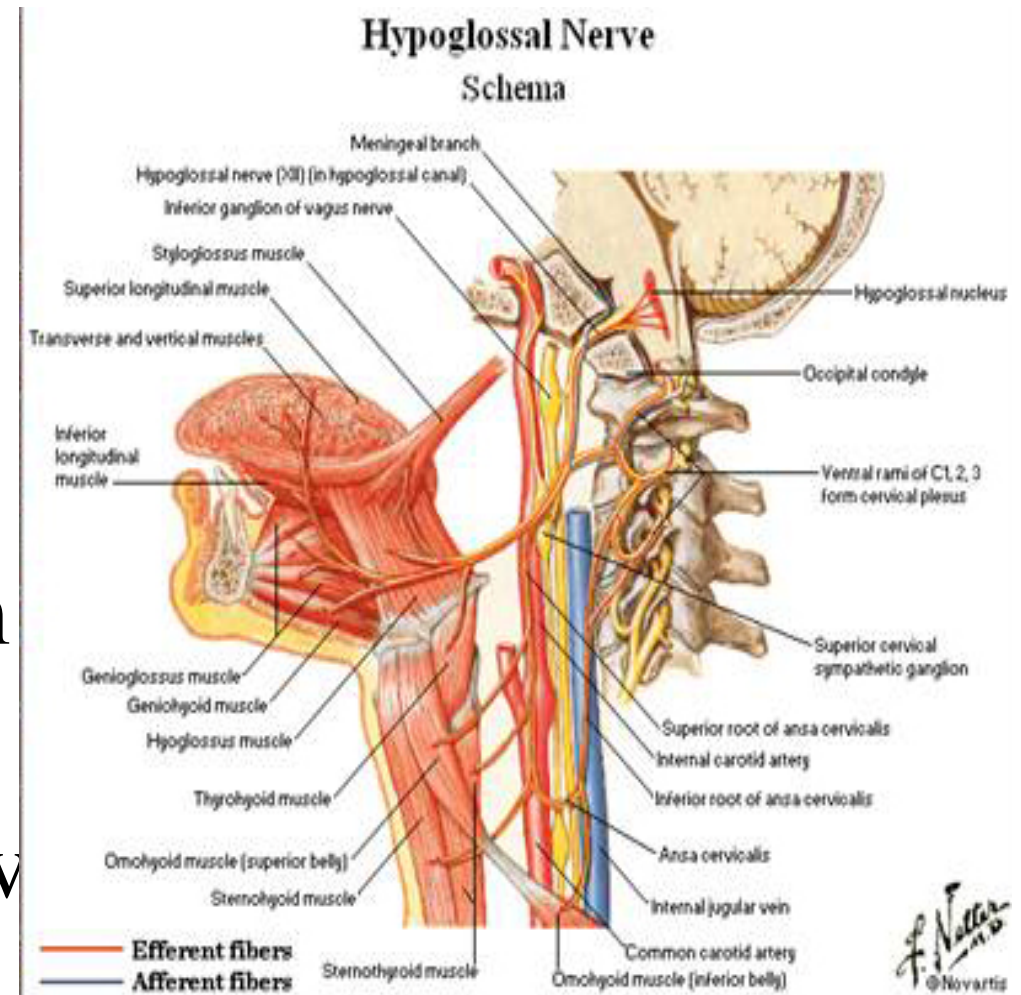
- Passes forward & upward above gr. Cornu of hyoid,appears in digastric triangle

Hypoglossal nerve



HYPOGLOSSAL NERVE

- Rests on hyoglossus, deep to hyoglossus related 2nd part of lingual art., on hyoglossus successively above deep part of s/m gland & its duct, s/m ganglion & lingual nerve



- **finally passes deep to mylohyoid ,pierces genioglossus & reaches the substance of tongue**

BRANCHES

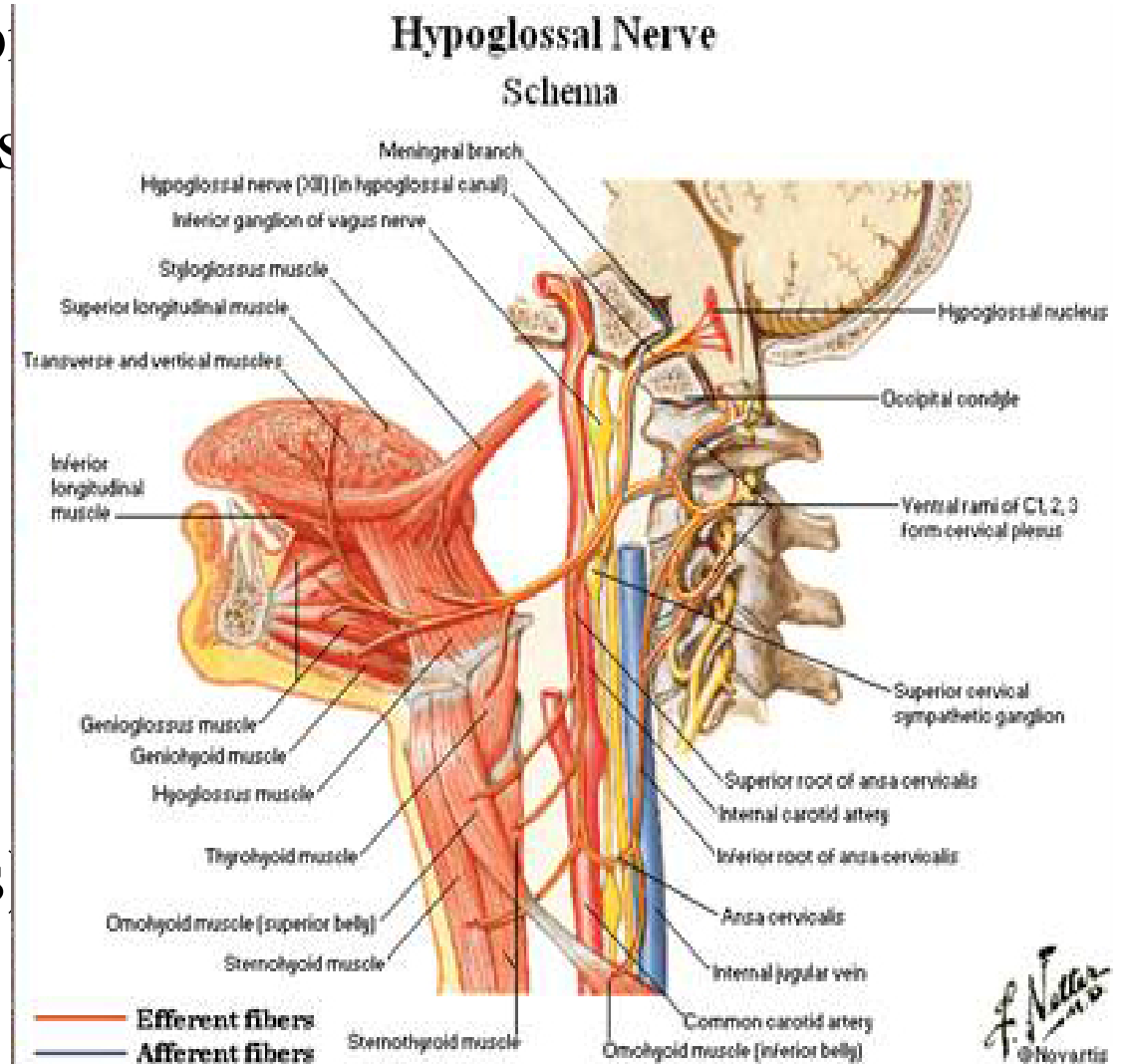
Communications-

- sup. Cervical ganglion
- inf. Ganglion of vagus
- loop of C1 & C2
- pharyngeal plexus
- lingual nerve

Distribution-

- meningeal
- descending (superior ramus of ansa cervicalis)
- nerve to thyrohyoid
- muscular

Hypoglossal nerve



HYPOGLOSSAL NERVE

Applied anatomy

Unilateral injury-tip tilts towards paralysed side

Atrophy

Larynx deviated to sound side

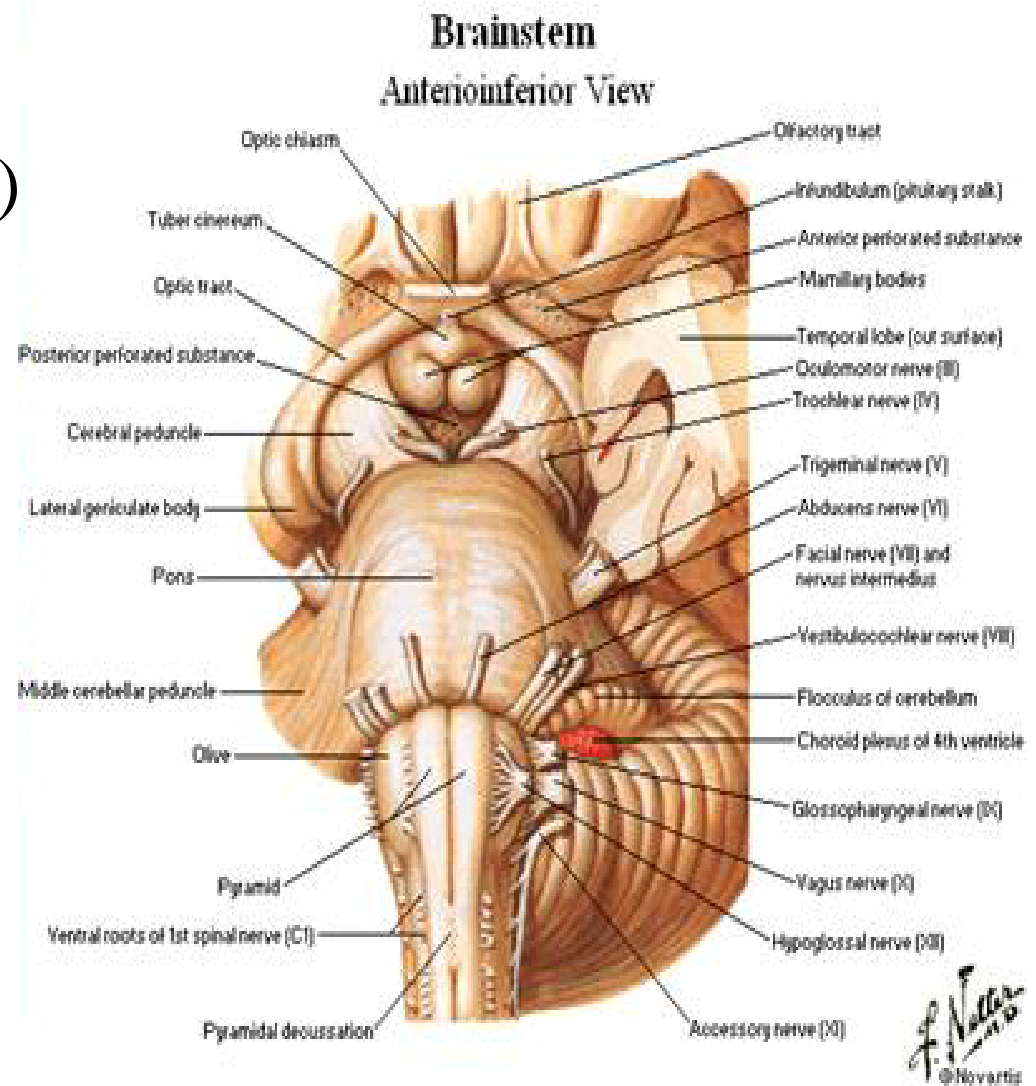
Attention

tip of forceps applied to the concave side

AND

- X cranial nerve
- Emerge from medulla oblongata
- Extensive distribution (vagus or wandering nerve)
- Cranial part of parasympathetic system
- Each nerve
 - **-cervical**-two ganglia
 - superior or jugular(close to jugular foramen ,gsa)
 - inferior or nodose(gva & sva) ganglion
 - **-thoracic**
 - **-abdominal**

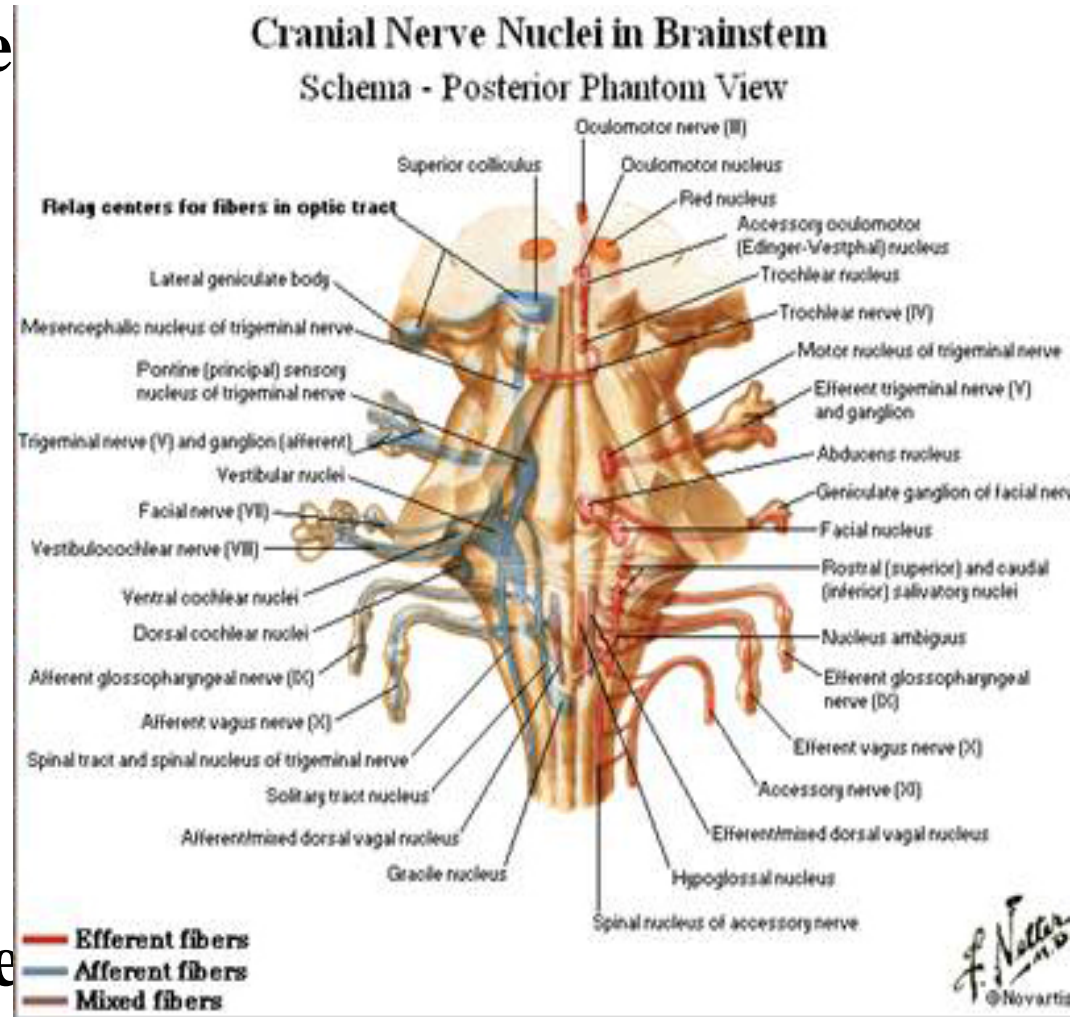
VAGUS NERVE



- **NUCLEAR ORIGIN & THEIR FUNCTIONAL COMPONENTS**

Vagus nerve

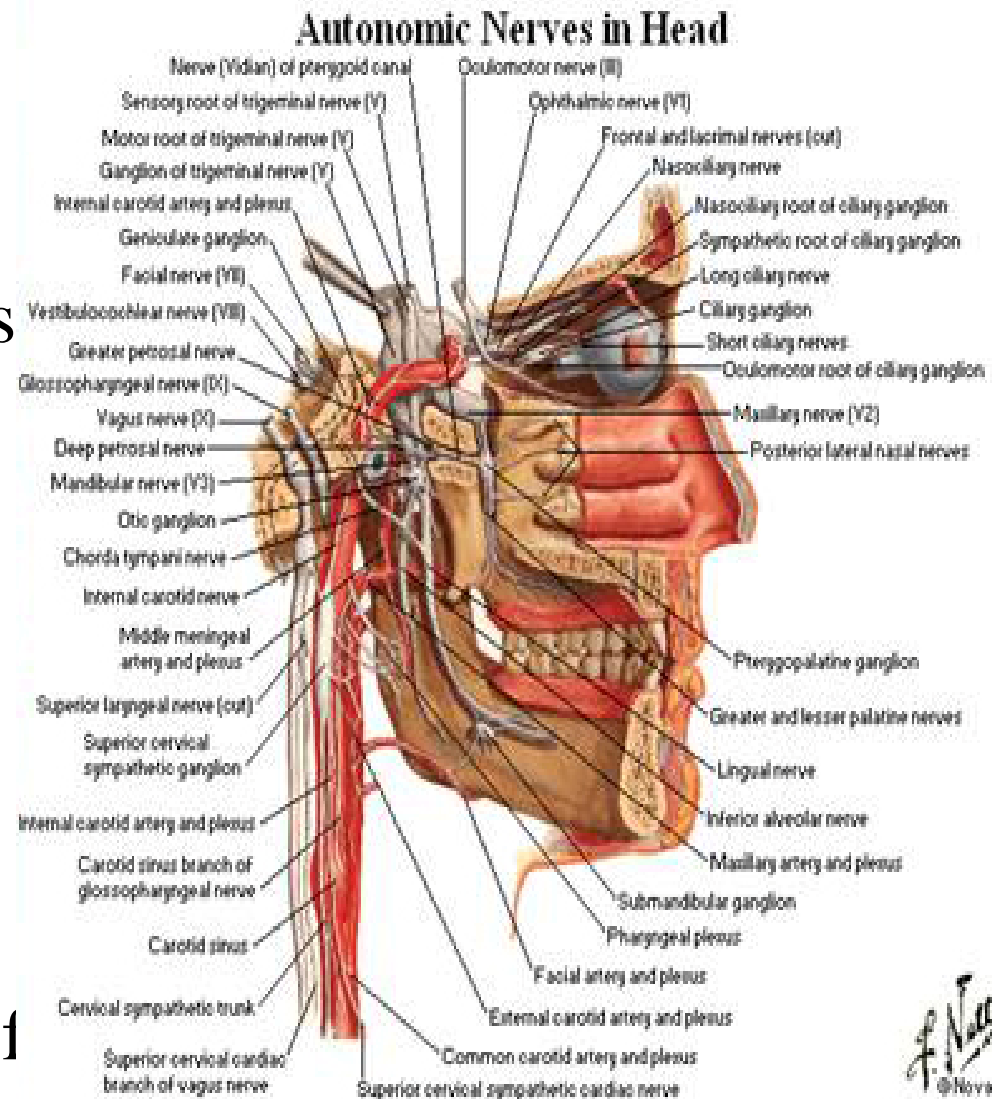
- a) nucleus ambiguus-sve
- b) dorsal nucleus of vagus-gva & gve
- c) nucleus of tractus solitarius-sva
- d) nucleus of the spinal tract of trigeminal nerve-gsa



VAGUS NERVE

course & relations

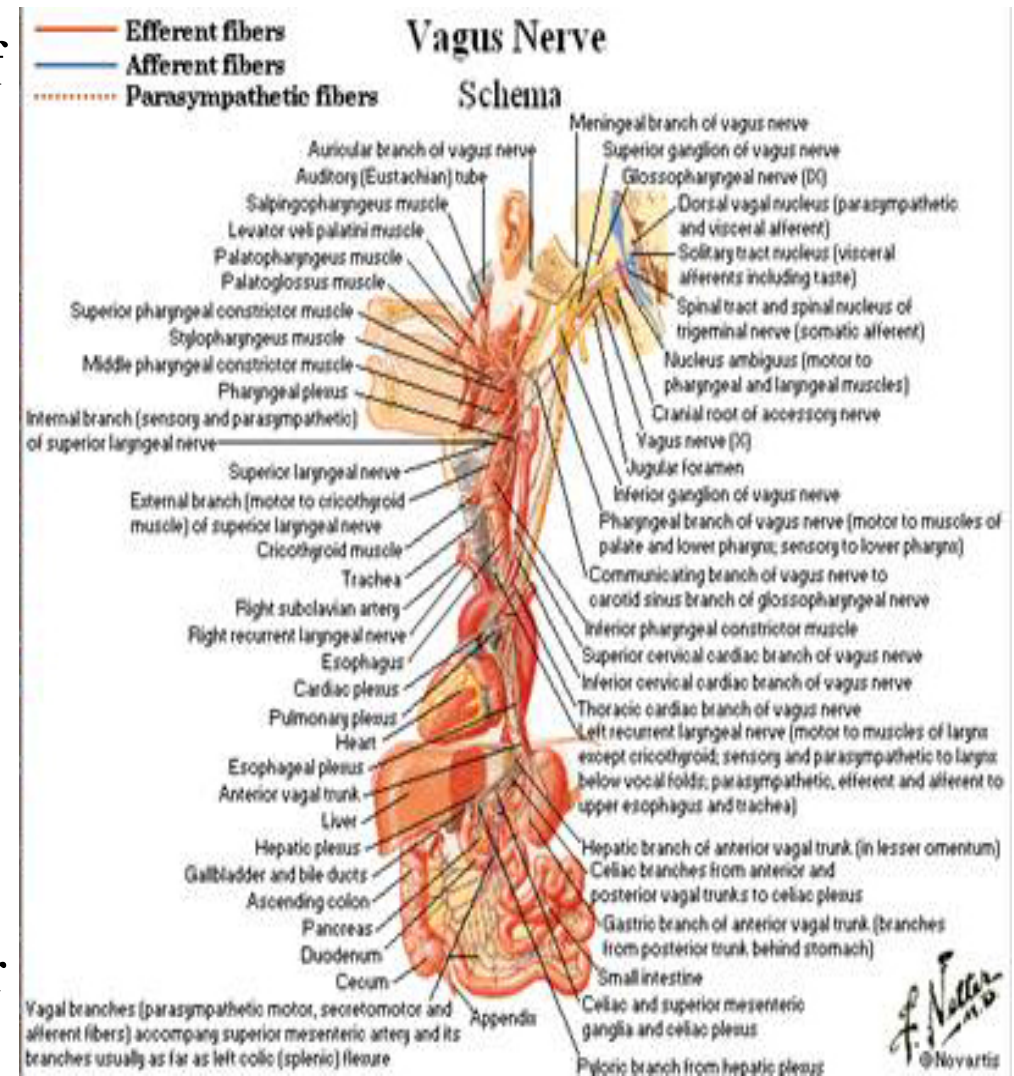
- **A-H& D**
- Emerge through postero-lateral sulcus of m. oblongata
- Pass laterally to intermediate compartment of jugular foramen ,rootlets unit to form a trunk
- Runs vertically between IJV laterally &ICA,CCA medially
- At root of neck
 Rt.-between IJV & 1st part of subclavian art.
 Lt. betwwen CCA & 1st part of



Thorax

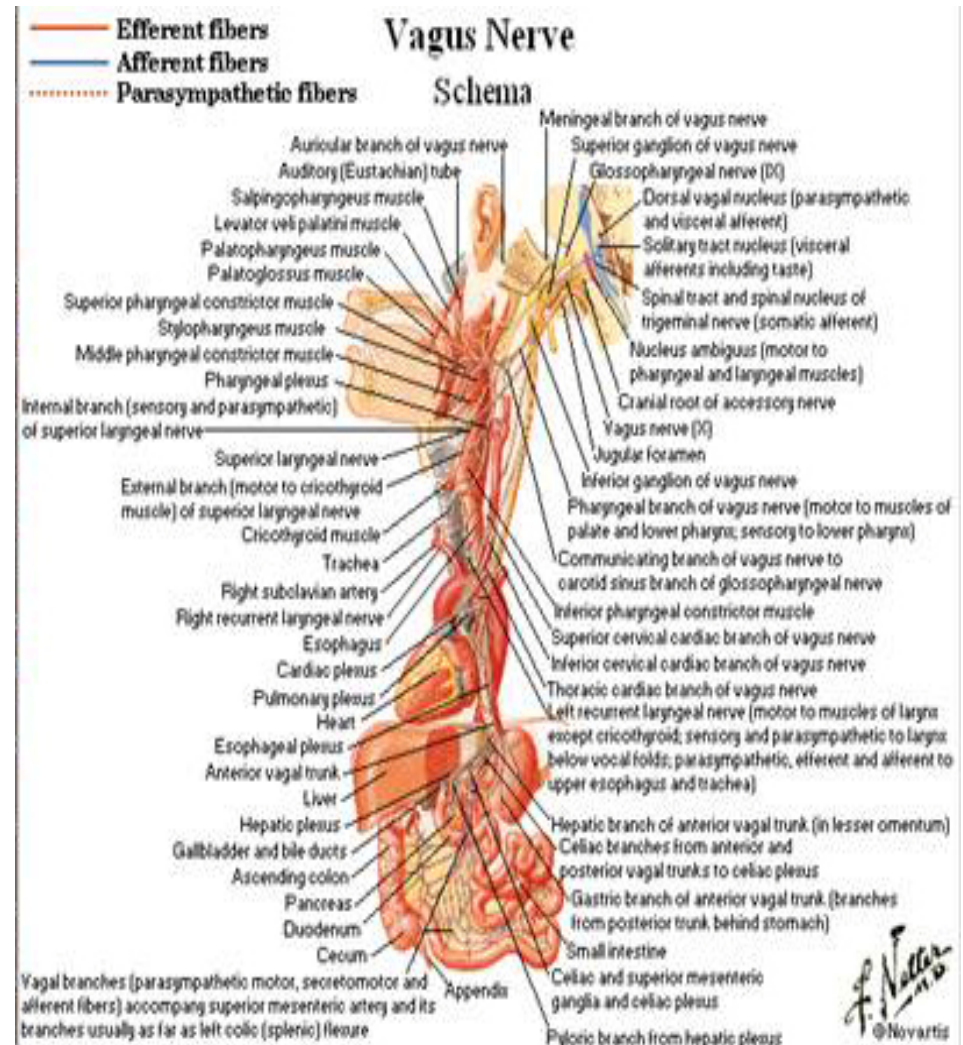
- **Right vagus**-posteromedial to rt. Brachiocephalic v. & SVC, accompanies rt. Surface of trachea
- Above lung root & pleura by arch of azygos v.
- Below passes behind lung root & joins with the sympathetic fibres (T2-T5)-rt. Posterior pulmonary plexus
- Then surround the oesophagus- posterior part of oesophageal plexus
- Finally enter abdomen-posterior vagal trunk

VAGUS NERVE course & relations



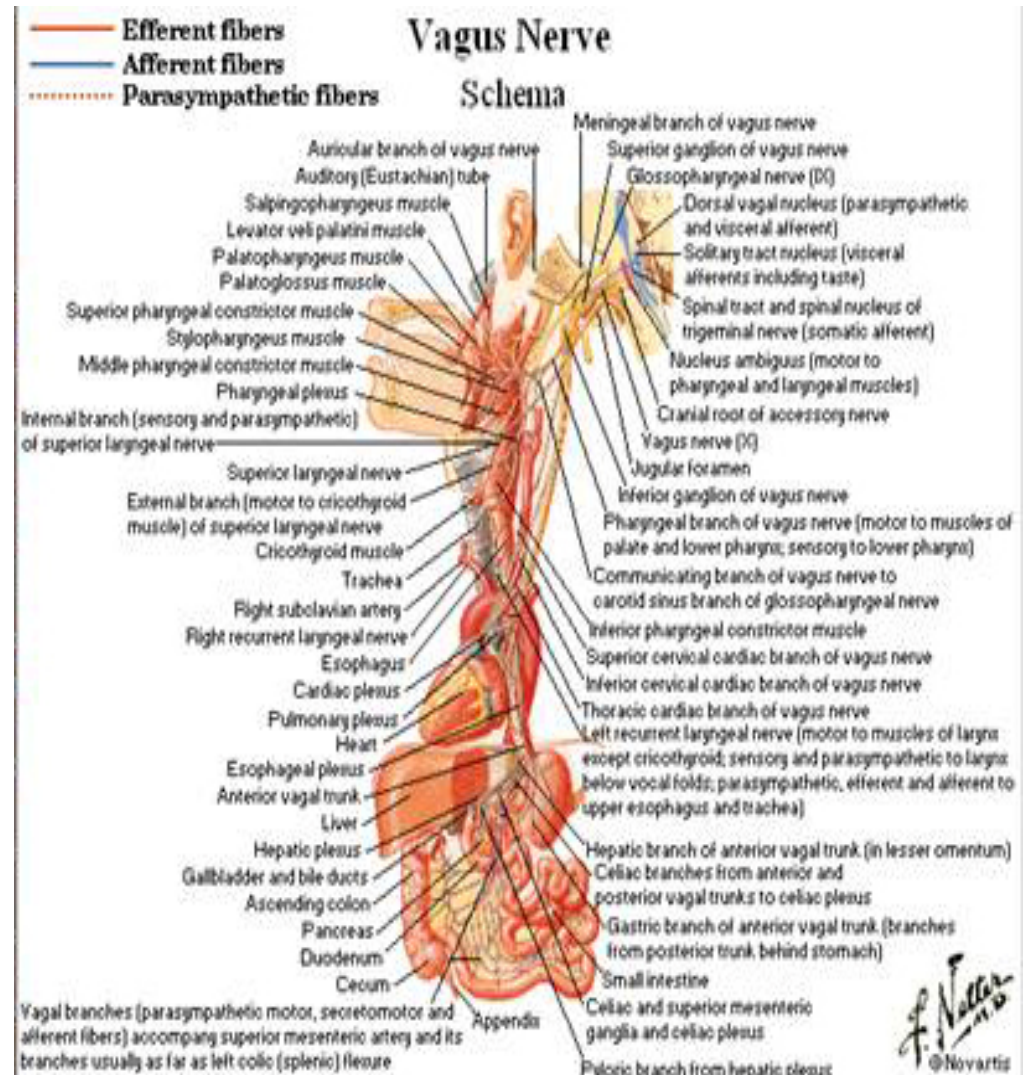
VAGUS NERVE course & relations

- **Left vagus**
- Passes between lt.cca & lt.subclavian art., under cover of lt. brachiocephalic v.
- Above aortic arch crossed superficially by lt. phrenic n.
- Descends crosses ant. & lt. Surface of arch of aorta (crossed by lt. superior intercostal v.)
- Passes behind lung root to form lt. posterior pulmonary plexus
- below form ant. Part of oesophageal plexus
- Enters abdomen-anterior vagal trunk



VAGUS NERVE course & relations

- Ant. & post. Vagal trunk is formed by both vagus nerves
- Ant.vagal trunk
hepatic>lessor
omentum>porta
hepatis>asc. & descen.
- gastric>stomach
- Post.vagal trunk(rt. Vagus)
- -gastric
- coeliac



- Branches (In neck)

a) From superior cervical ganglion-meningeal

- auricular (Alderman's nerve)

b) From inferior ganglion

- pharyngeal

- superior laryngeal nerve

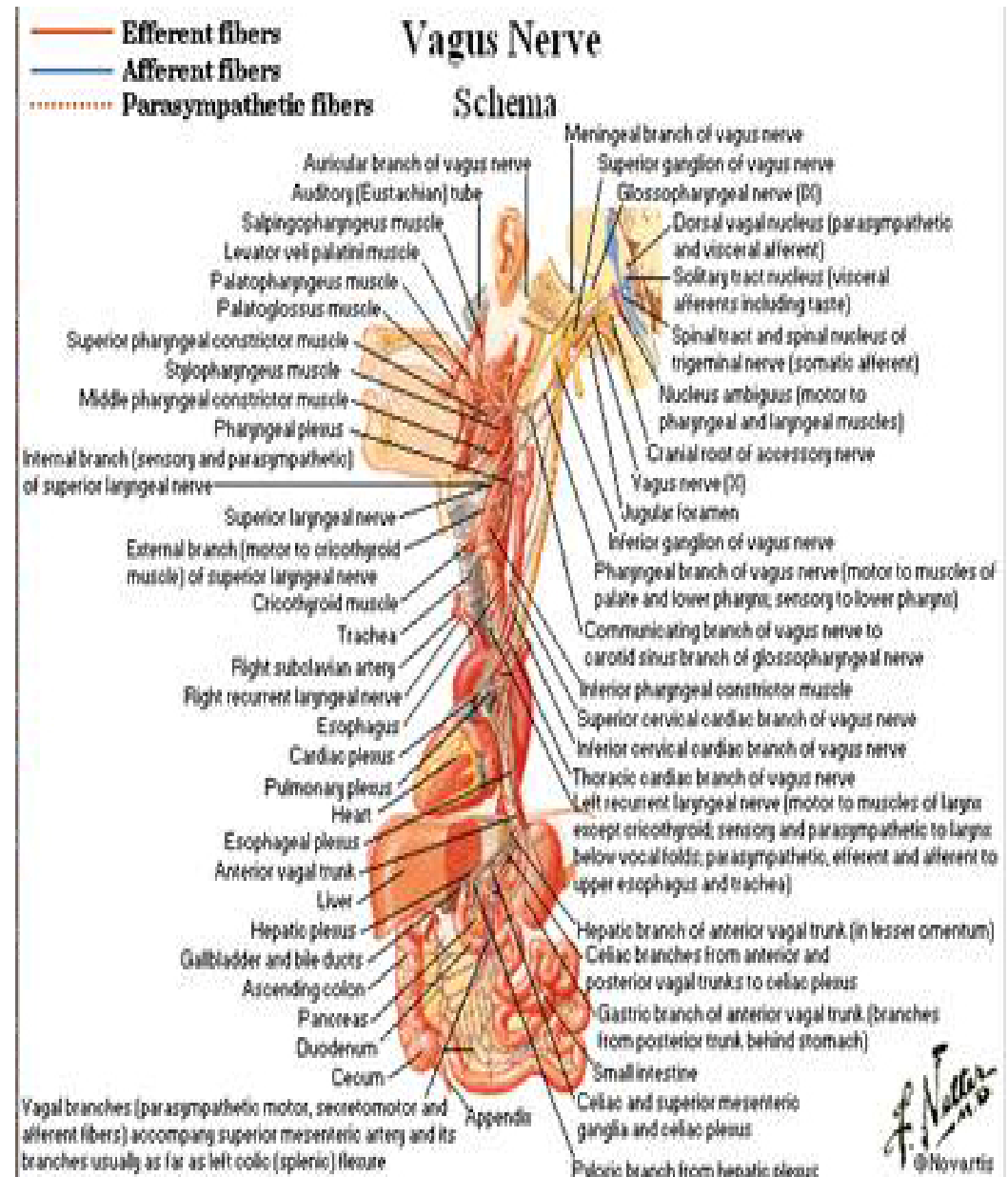
- br. To carotid body

c) From trunk

- cardiac

- rt. Recurrent laryngeal n.

VAGUS NERVE



- **Branches (In thorax)**

- 1)lt. recurrent laryngeal n.

- 2)pulmonary

- 3)cardiac

- 4)oesophageal

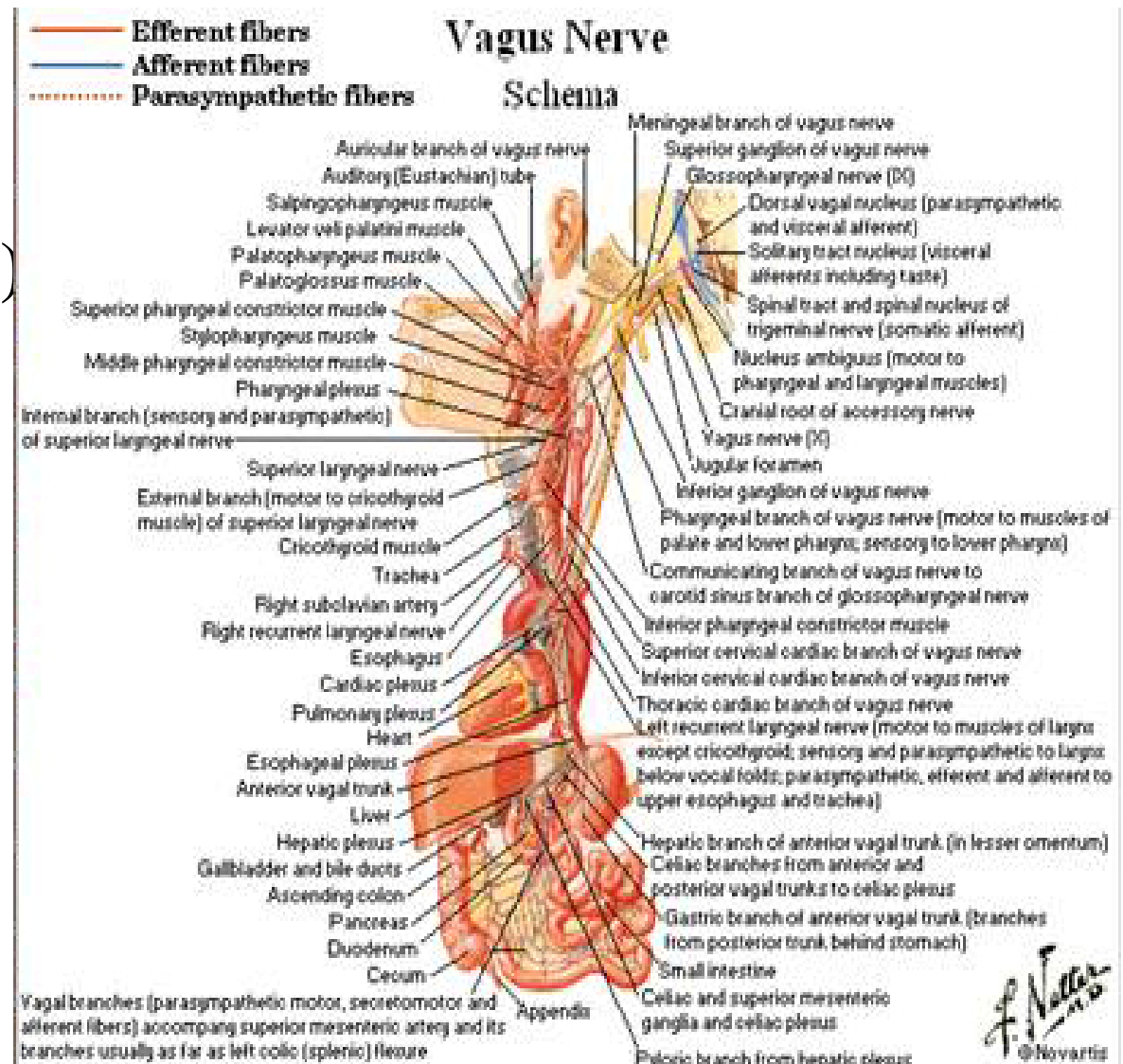
- **Branches (in abdomen)**

- 1)Gastric

- 2)Hepatic

- 3)Coeliac

VAGUS NERVE



APPLIED ANATOMY

- a) Auricular br. Of vagus
irritated by –wax
-cold water

Leads to

coughing/vomiting

even ppt. the cardiac arrest by reflex action

Low grade stimulation increased appetite

- b) Recurrent laryngeal n.
injured-thyroidectomy

-tumour

- aortic aneurysm

Leads to laryngeal problem

- c) Selective vagotomy

-t/t of peptic ulcer(n. of Latarjet of both ant. Post.

Vagal

trunks sectioned