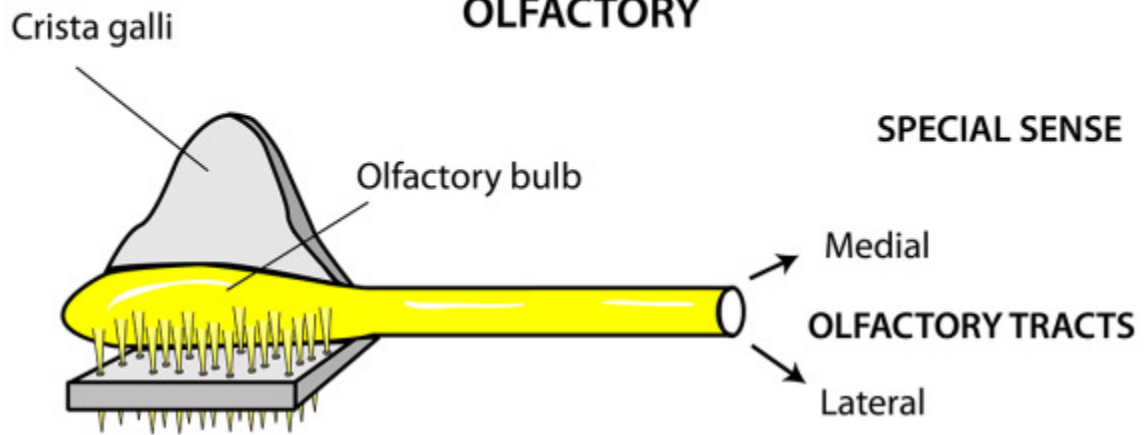


# I OLFACTORY



**SPECIAL SENSE**

Medial  
**OLFACTORY TRACTS**  
Lateral

## 20 OLFACTORY NERVES

- Under surface of cribriform plate
- Upper med & lat nose

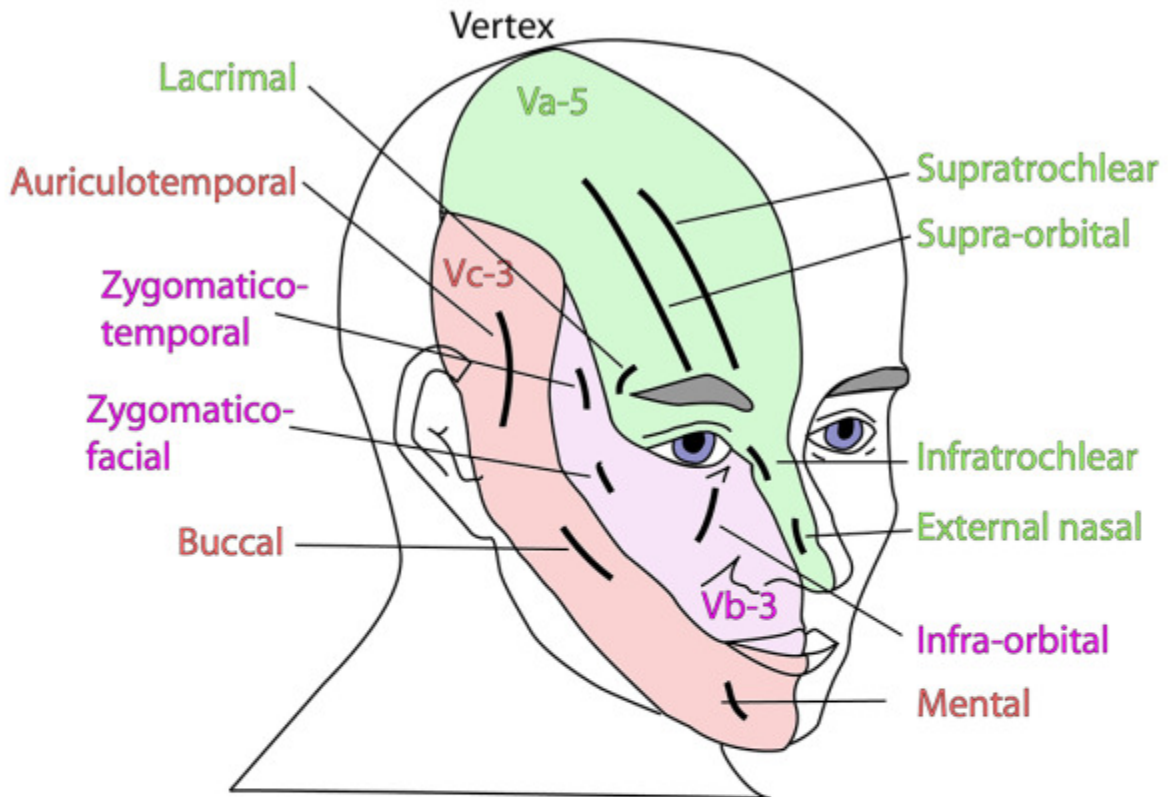
## NUCLEI

- Anterior olfactory (in posterior bulb)
- Anterior perforating substance & Uncus (both in the brain)



## Va OPTHALMIC DIVISION OF TRIGEMINAL

### 5 SENSORY BRANCHES OF Va (TRIGEMINAL) N ON FACE



**Sensory:** Scalp, eye, upper face, sinuses (see above)

**Carries: Parasympathetics** via ciliary ganglion to eye for accommodation and pupil constriction (10 short ciliary nerves), via pterygopalatine ganglion for lacrimal gland.

**Sympathetics** via cavernous sinus to pupil for dilatation (2 long ciliary nerves)

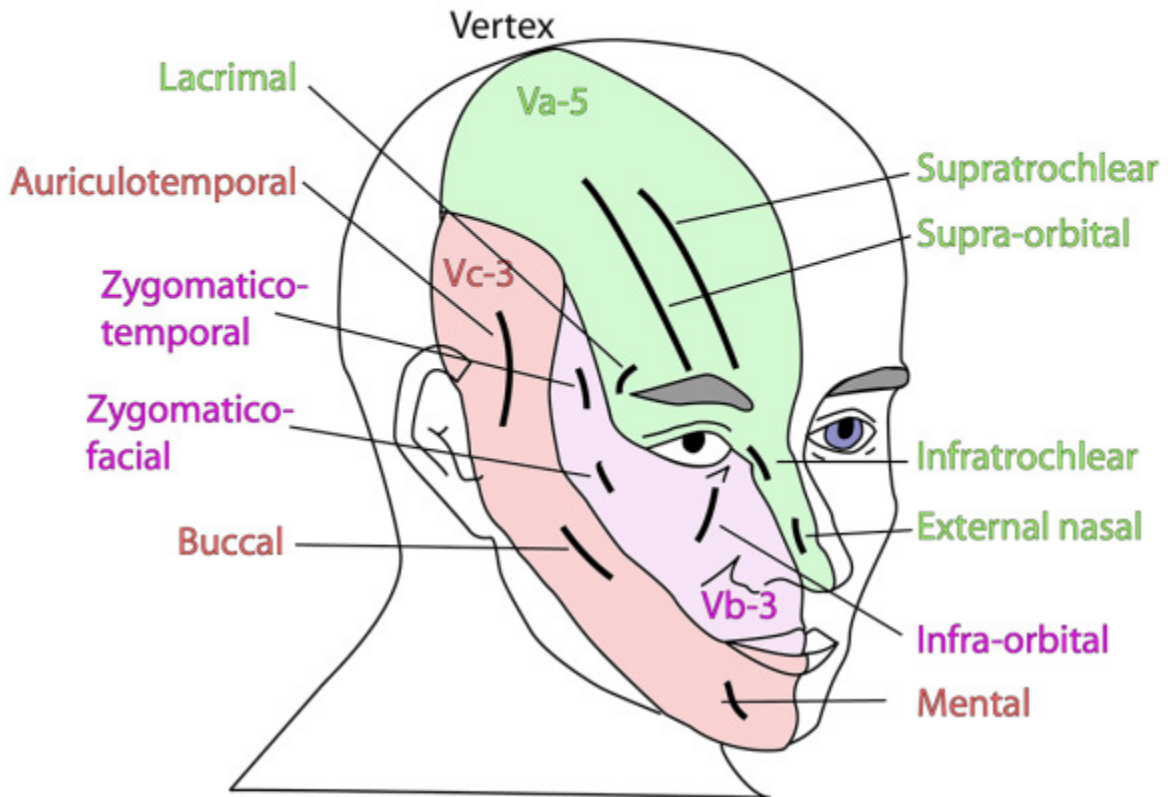
**Main Branches:**

Frontal  
Lacrimal  
Nasociliary

**V carries all parasympathetics to their end organs**

## Vb MAXILLARY DIVISION OF TRIGEMINAL

### 3 SENSORY BRANCHES OF VB (TRIGEMINAL) N ON FACE



**Sensory:** Middle face, palate, sinuses, nasopharynx, nose (see above)

**Carries: Parasympathetics** via pterygopalatine ganglion to lacrimal gland, mucous glands of nose, palate, nasopharynx

**Taste:** Hard & soft palates

**Main Branches:**

Zygomatic

Infra-orbital

**Other:**

Nasopalatine to nasal cavity

Greater & lesser palatine to palate

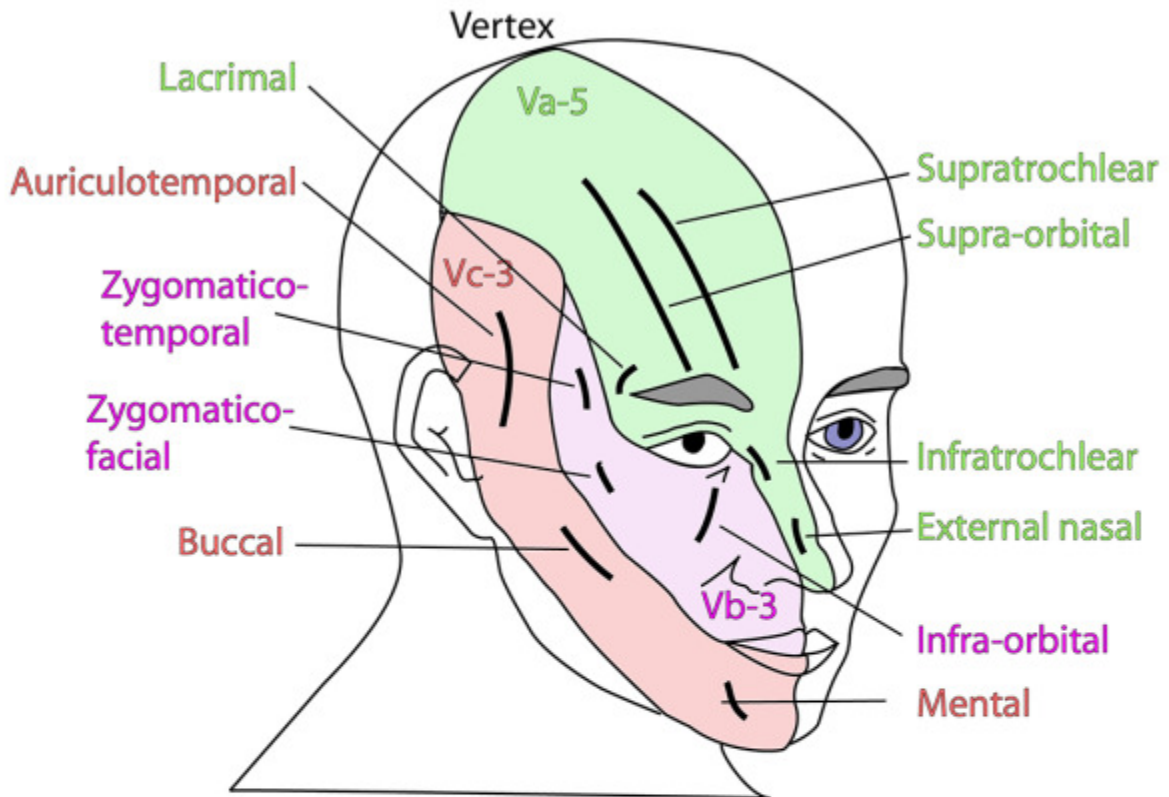
Pharyngeal to nasopharynx

Alveolar to upper teeth

**V carries all parasympathetics to their end organs**

## Vc MANDIBULAR DIVISION OF TRIGEMINAL

### 3 SENSORY BRANCHES OF VC (TRIGEMINAL) N ON FACE



**Sensory:** Lower face, hairy temple, anterior 2/3 tongue (see above)

**Carries: Parasympathetics** via submandibular & otic ganglia to submandibular & sublingual glands, & parotid gland

**Taste:** Anterior 2/3 tongue

**Branchiomotor:** Muscles of mastication, tensors tympani & palati

**Main Branches:**

Auriculotemporal

Buccal

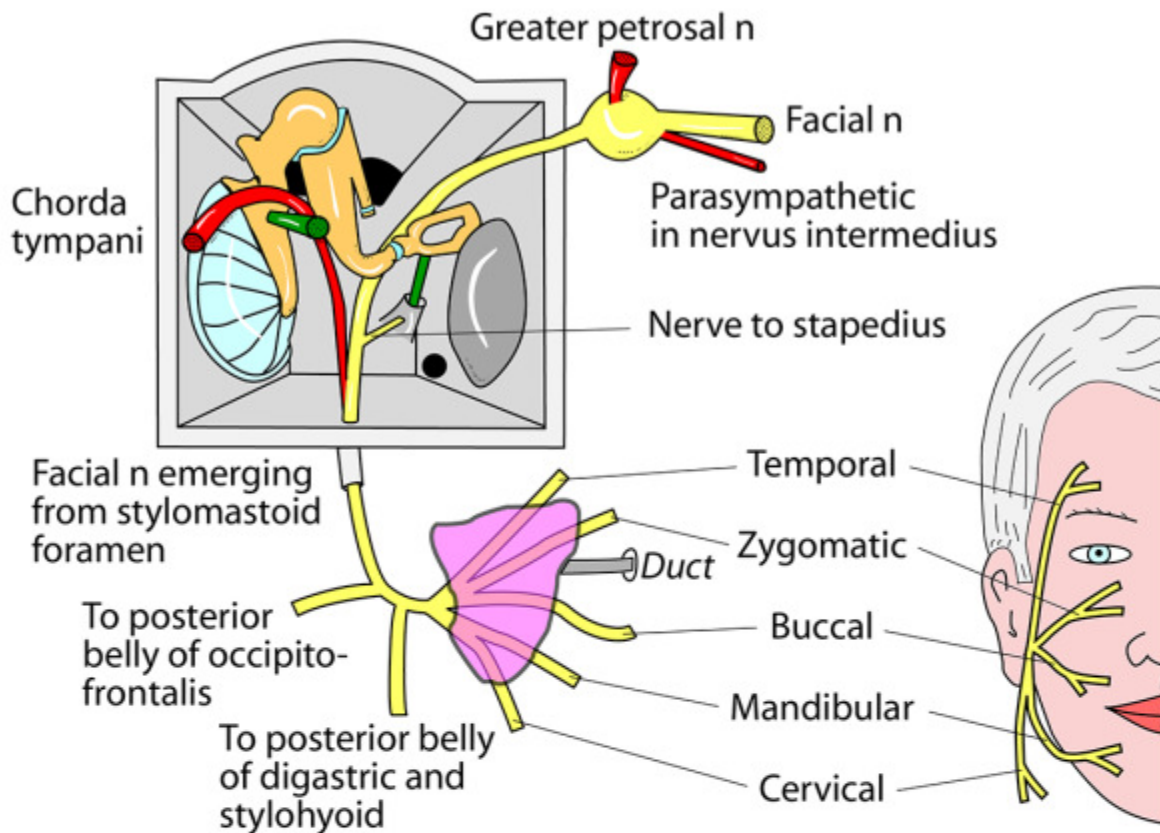
Mental

Lingual

Muscular

**V carries all parasympathetics to their end organs**

## VII FACIAL NERVE



**Branchiomotor:** Muscles of facial expression, stapedius, posterior belly of digastric, stylohyoid, occipitalis

**Carries: Parasympathetic** in greater petrosal nerve to pterygopalatine ganglion then via Vb to "hay fever" glands & via Vb and Va to lacrimal gland.

Chorda tympani to submandibular ganglion and then to submandibular and sublingual glands via Vc

**Taste:** Via nervus intermedius from palate in greater petrosal nerve & from anterior 2/3 tongue via chorda tympani

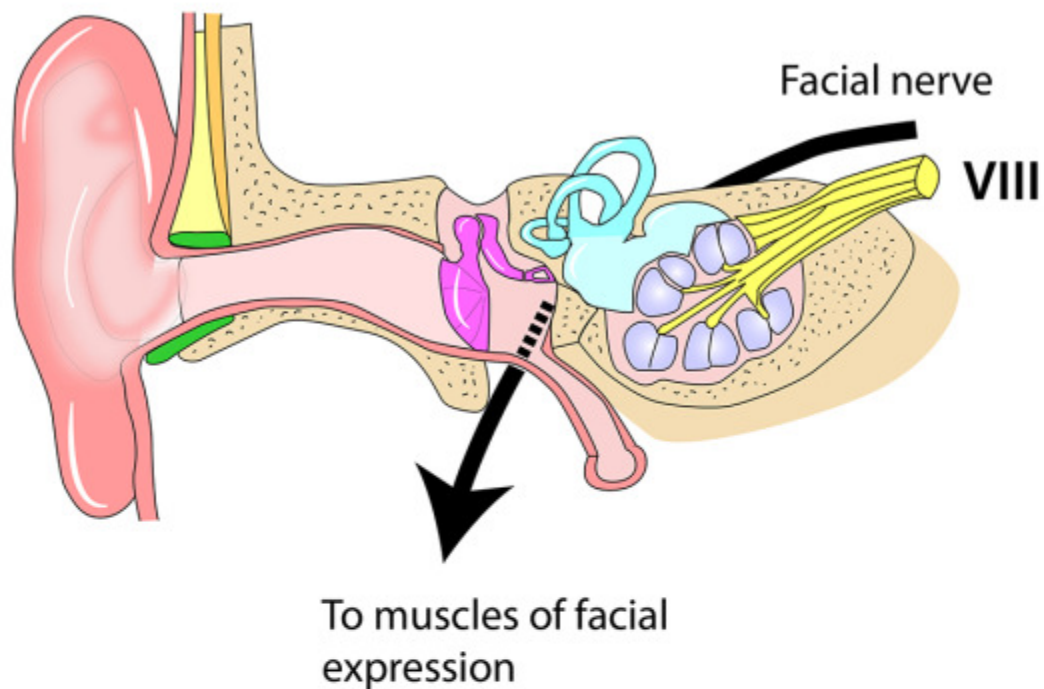
**Sensation:** Small area in external ear and tympanic membrane

**Main branches:**

As above  
greater petrosal  
chorda tympani

**V carries all parasympathetics to their end organs**

## VIII VESTIBULOCOCHLEAR NERVE



### SPECIAL SENSE FOR HEARING & BALANCE

#### HEARING:

From organ of Corti in cochlea

Hair cells to cell bodies in spiral ganglion (in modiolus)

To 2 cochlear nuclei - ventral & dorsal

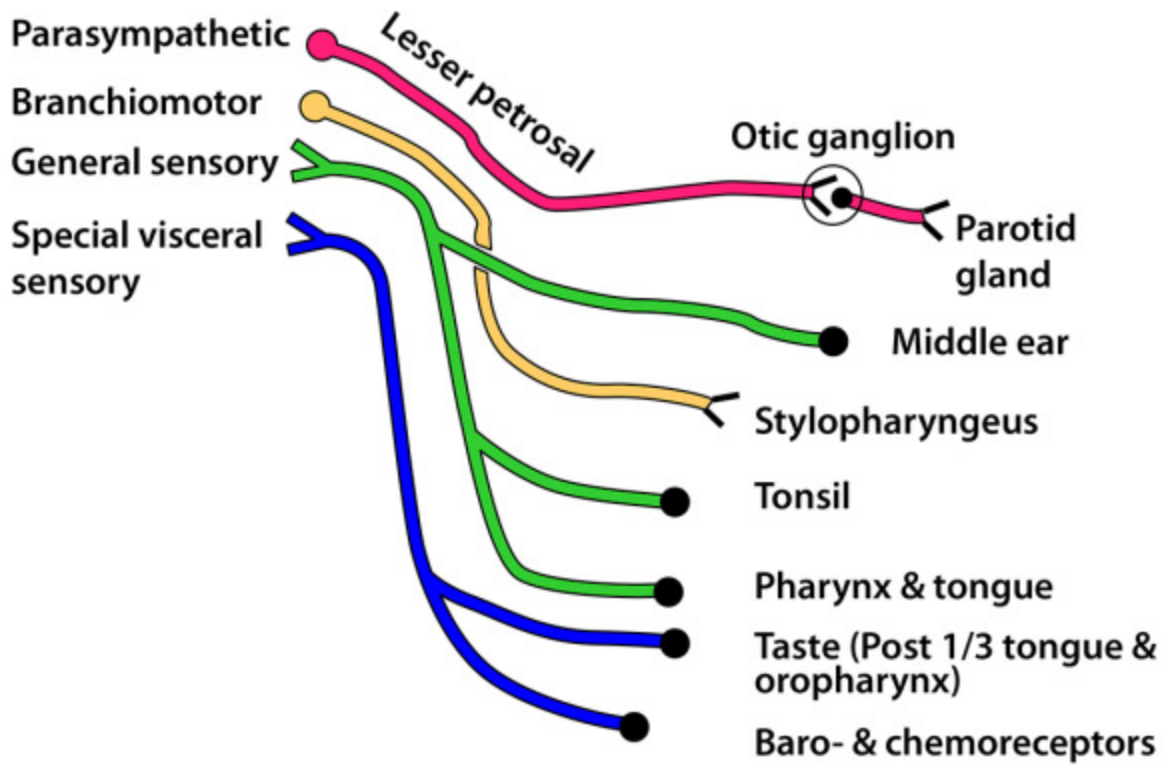
#### BALANCE:

From semicircular canals, utricle & saccule

Cell bodies in vestibular ganglion in outer part of internal acoustic meatus

To vestibular nuclei - medial, lateral, superior, inferior

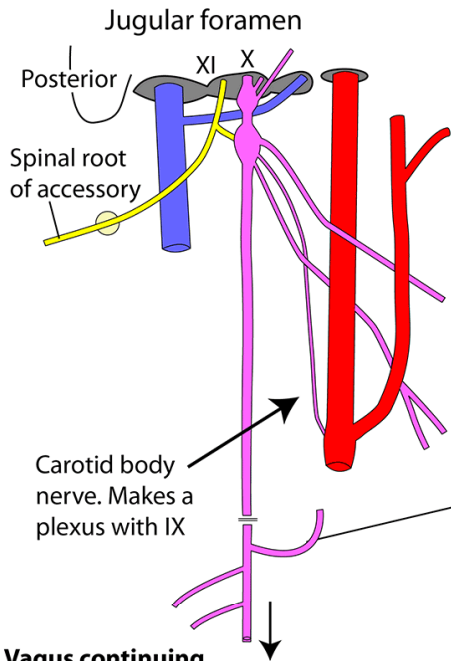
## IX GLOSSOPHARYNGEAL NERVE



### SENSORY:

- Oropharynx
- Posterior 1/3 tongue
- Tonsil
- Middle ear





## VAGUS NERVE 1

**Superior vagal ganglion** - cell bodies:

1. **Meningeal br.** Sensory to posterior cranial fossa
2. **Auricular br.** Sensory to external auditory meatus & part of eardrum (communicates with VII)

**Inferior vagal ganglion** - cell bodies:

1. **Special visceral afferent** (baroreceptors & taste)
2. **General visceral afferent** (detects stretch in heart, lungs, abdominal contents, pharynx & larynx)

**Recurrent laryngeal n.**

1. **Branchiomotor** to muscles of larynx & upper oesophagus
2. **Somatic sensory** to larynx below cords
3. **General visceral afferents** from larynx & pharynx for stretch

**Vagus continuing.**

**Parasympathetic** to pulmonary & oesophageal brs & to coeliac, hepatic & renal plexuses.

Carries **general visceral afferents** from all these organs

**Vagus** arises from 8-10 rootlets on medulla. Associated nuclei are:

**1. Dorsal nucleus of vagus.**

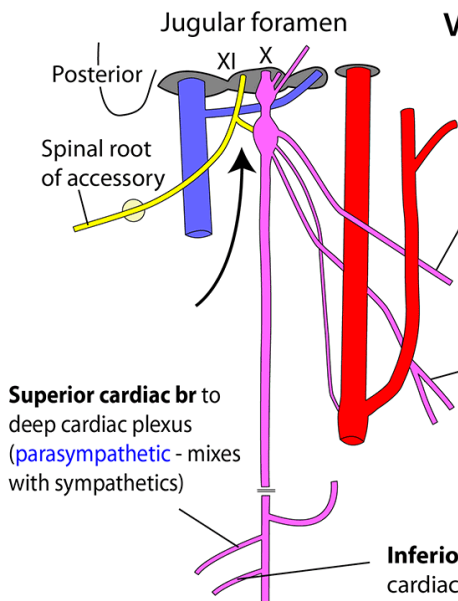
**General visceral efferent (parasympathetic)** to smooth muscle of bronchi, heart, oesophagus, intestine to transverse colon.

**General visceral afferent (sensory)** from above organs.

**2. Nucleus ambiguus.** **Branchiomotor** supply to striated muscle of palate, pharynx, larynx & upper oesophagus (these fibres originate from the cranial root of accessory).

**3. Nucleus solitarius.** **Sensory** for baroreceptors and taste.

**4. Spinal nucleus of trigeminal nerve.** All **somatic sensory** fibres in vagus end here.



## VAGUS NERVE 2

**Pharyngeal br of vagus.**

**Branchiomotor** to pharyngeal plexus for muscles of pharynx & palate (excluding tensor palati).

**All these branchiomotor** fibres arise in the nucleus ambiguus & are "dumped" onto vagus (See large arrow opposite)

**Superior laryngeal n**

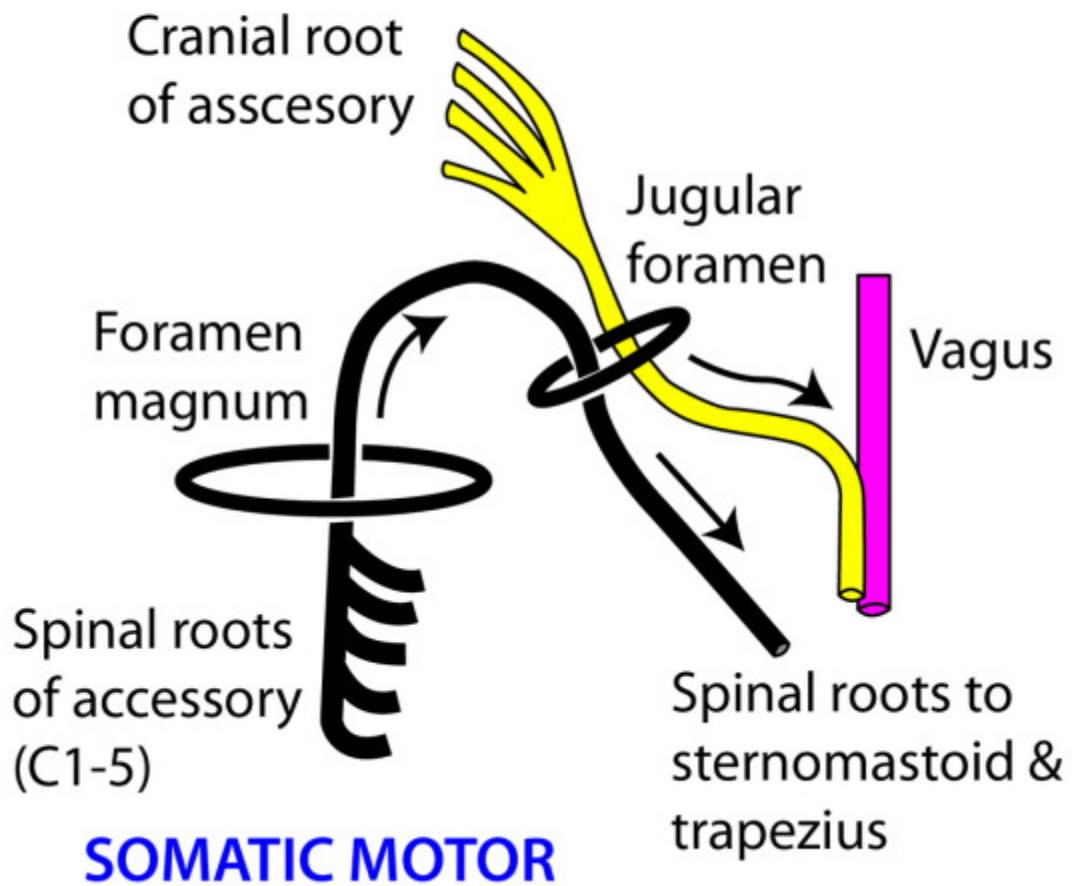
1. Internal br. **Somatic sensory** above cords. Small amount of **taste** in valleculae
2. External br. **Branchiomotor** to cricothyroid

**Inferior cardiac br** to deep & superficial cardiac plexuses (**parasympathetic**)

# XI ACCESSORY NERVE

(Accessory to vagus)

## BRANCHIOMOTOR



# XII HYPOGLOSSAL NERVE

## SOMATIC MOTOR

