



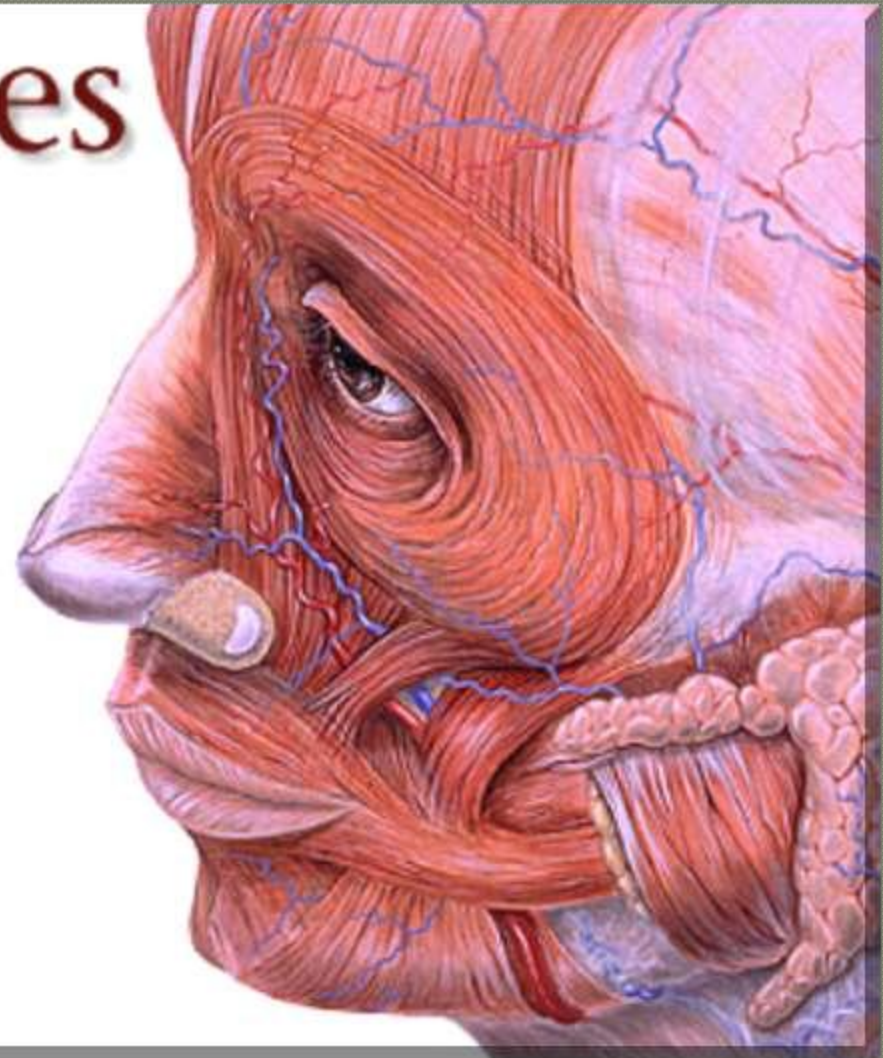
IHS

# INTRODUCTION TO CRANIAL NERVES

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# Cranial Nerves

- I Olfactory
- II Optic
- III Oculomotor
- IV Trochlear
- V Trigeminal
- VI Abducens
- VII Facial
- VIII Vestibulocochlear
- IX Glossopharyngeal
- X Vagus
- XI Accessory
- XII Hypoglossal



# OLFACTORY NERVE

Cranial  
Nerve I

# I. Olfactory Nerve



Sensory



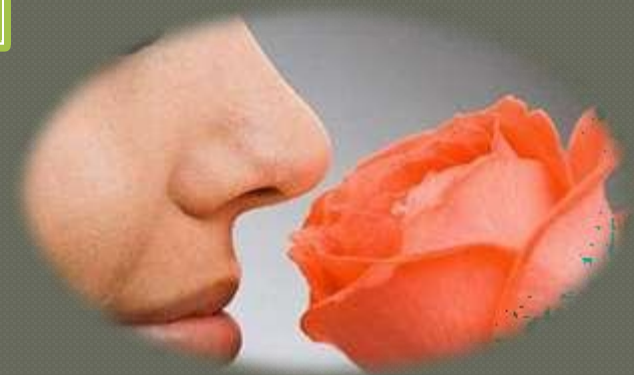
Smell



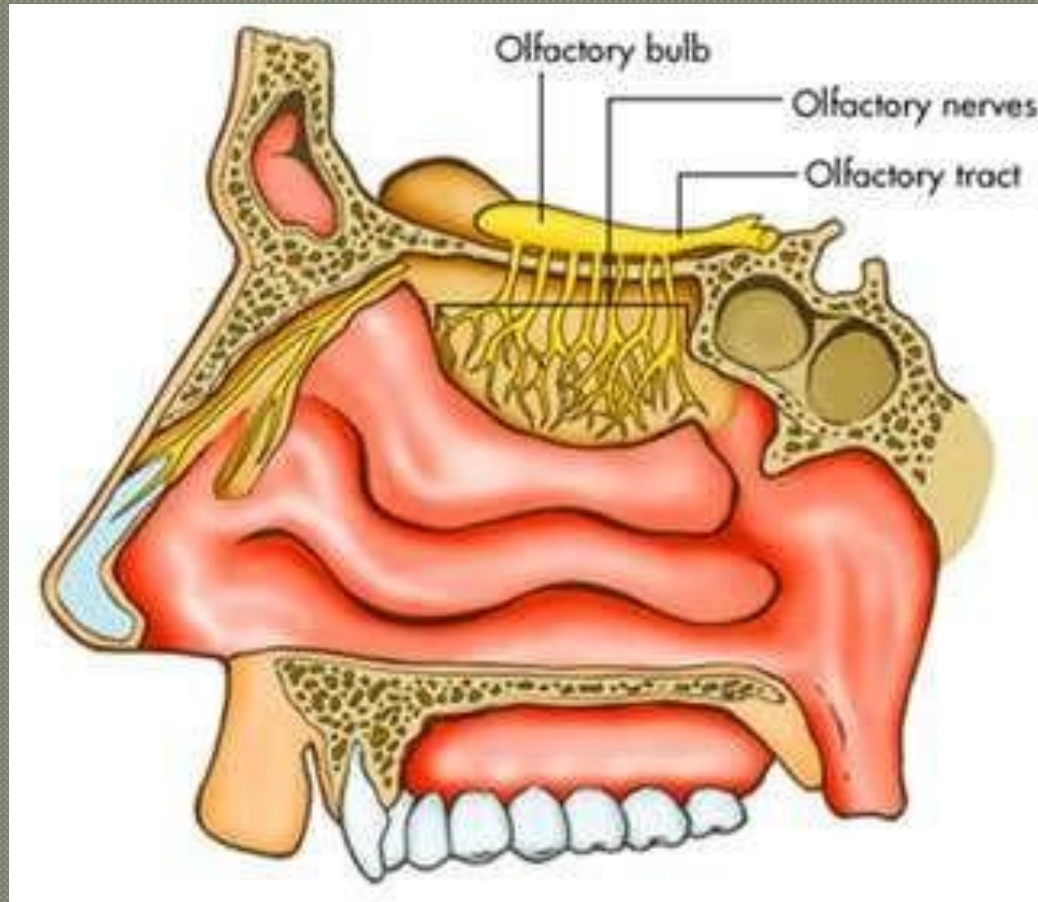
Olfactory receptor nerve cells



Openings in  
cribriform plate of ethmoid



# Olfactory Nerve



# OPTIC NERVE

## Cranial Nerve

### II

## II. Optic Nerve



Sensory



Vision



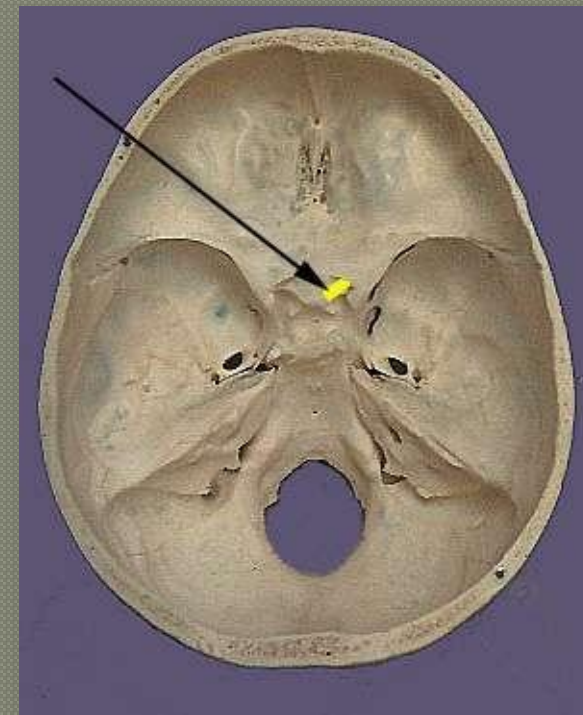
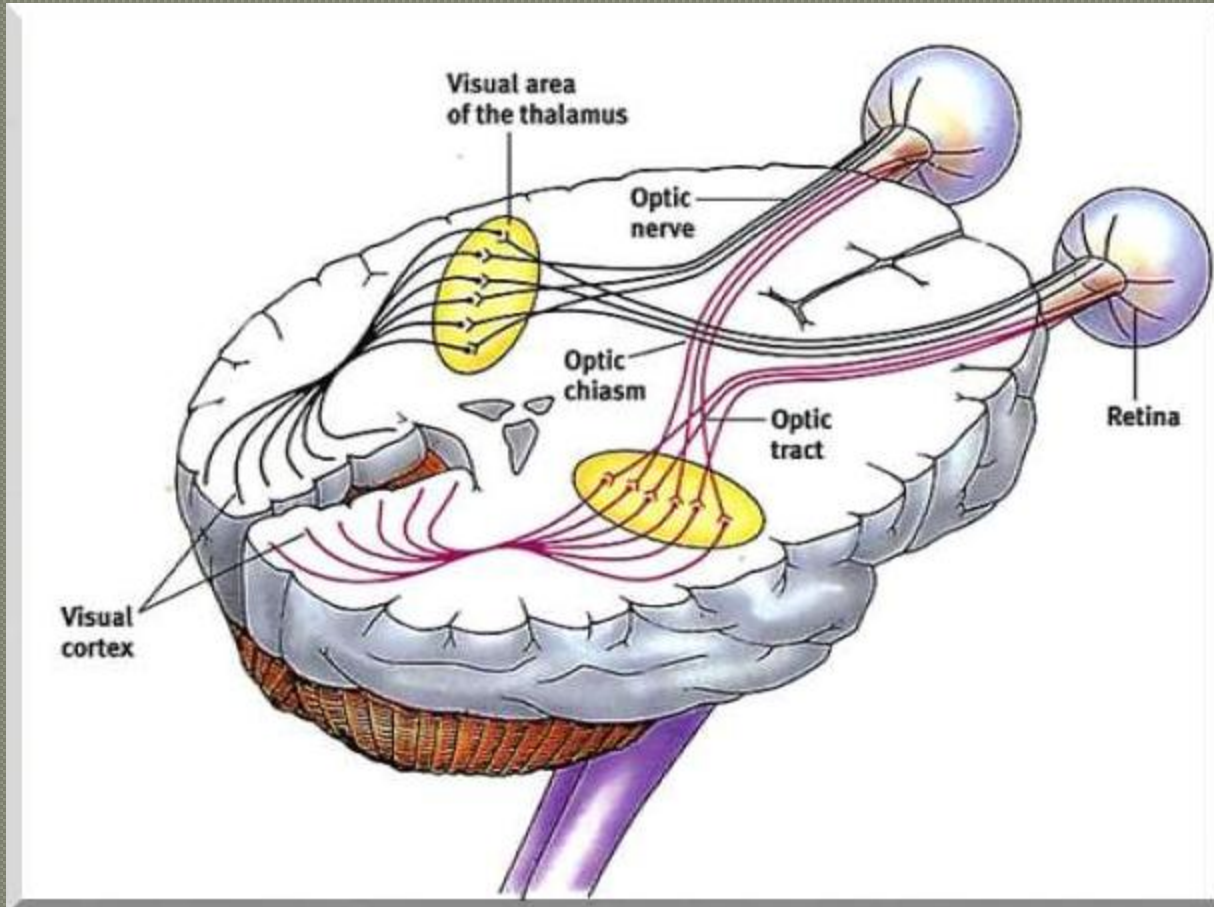
Back of the eyeball



Optic Canal



# II. Optic Nerve





# OCCULOMOTOR NERVE

Cranial Nerve  
III

# III. Oculomotor Nerve

- Motor

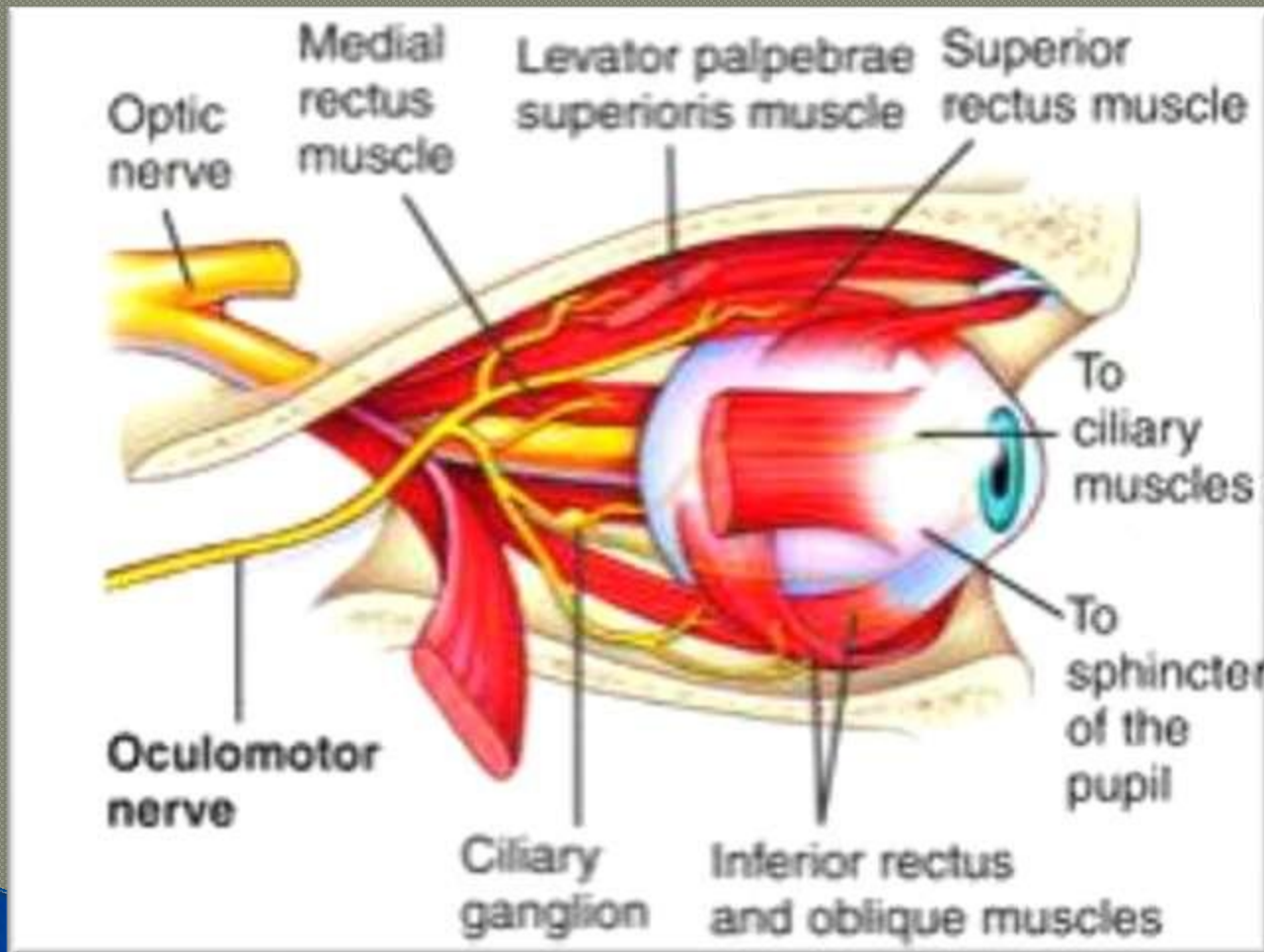
- - Raises upper eyelid
  - Turns eyeball upward, downward and medially
  - Constricts pupil
  - Accommodates the eye



- Anterior surface of the midbrain

- Superior orbital fissure

# III. Oculomotor Nerve



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# TROCHLEAR NERVE

## Cranial Nerve

### IV

# IV. Trochlear Nerve



Motor



Assisting in turning eyeball downward and laterally

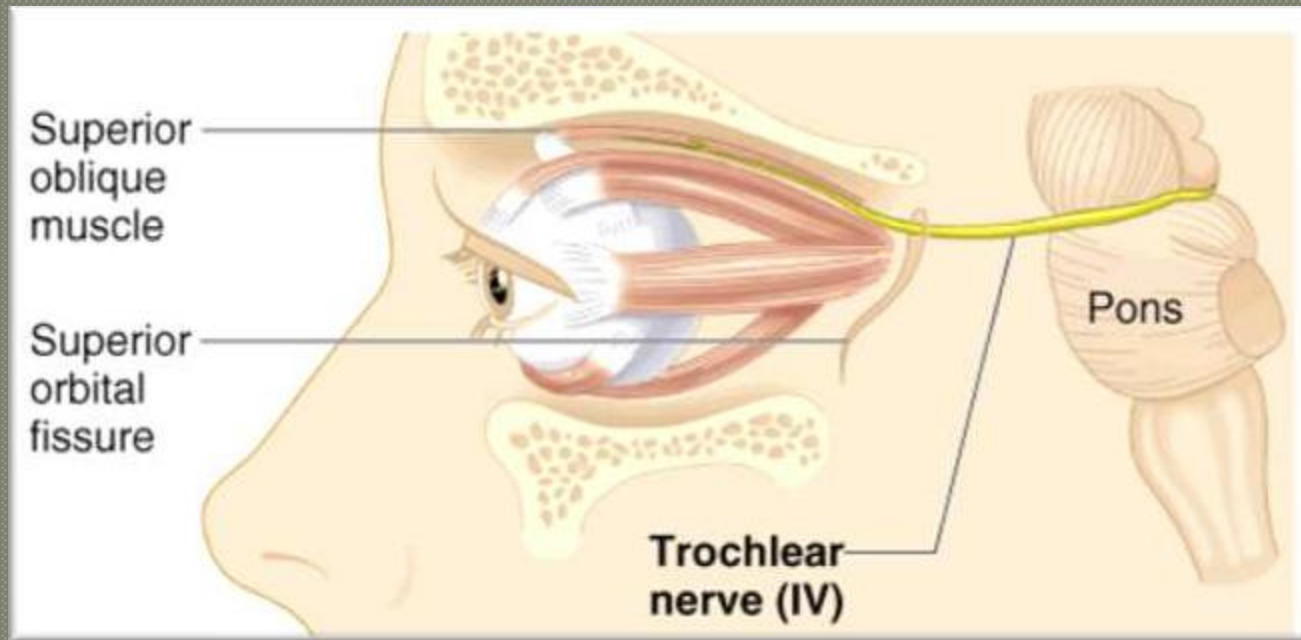


Posterior surface of the midbrain



Superior orbital fissure

# IV. Trochlear Nerve



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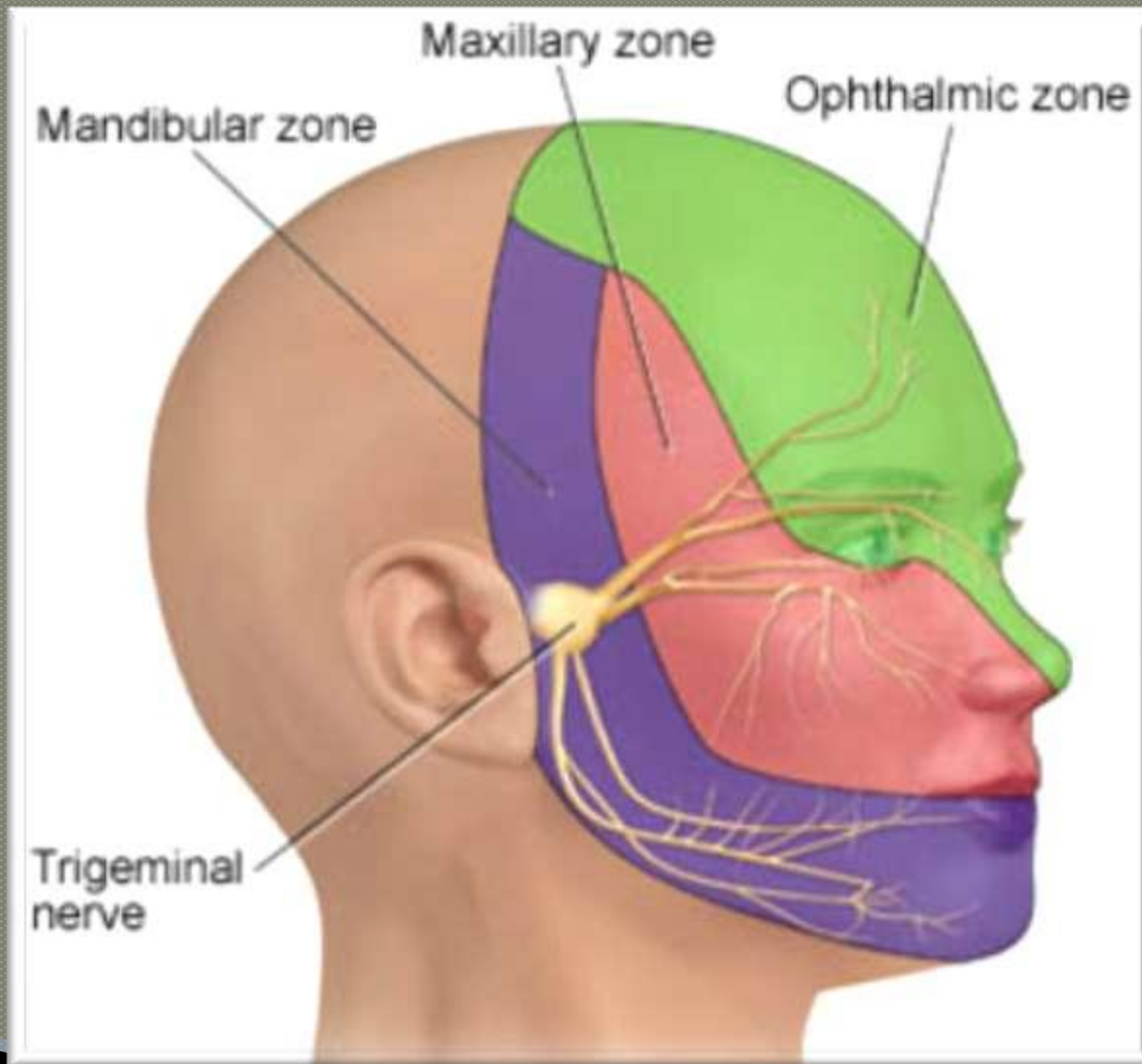
# TRIGEMINAL NERVE

## Cranial Nerve

V

- V1. Ophthalmic Nerve
- V2. Maxillary Nerve
- V3. Mandibular Nerve

# V. Trigeminal Nerve





# V1. Ophthalmic Nerve



Sensory



- ❖ Cornea
- ❖ Skin of forehead
- ❖ Scalp
- ❖ Eyelids and nose
- ❖ Mucous membranes of paranasal sinuses and nasal cavity



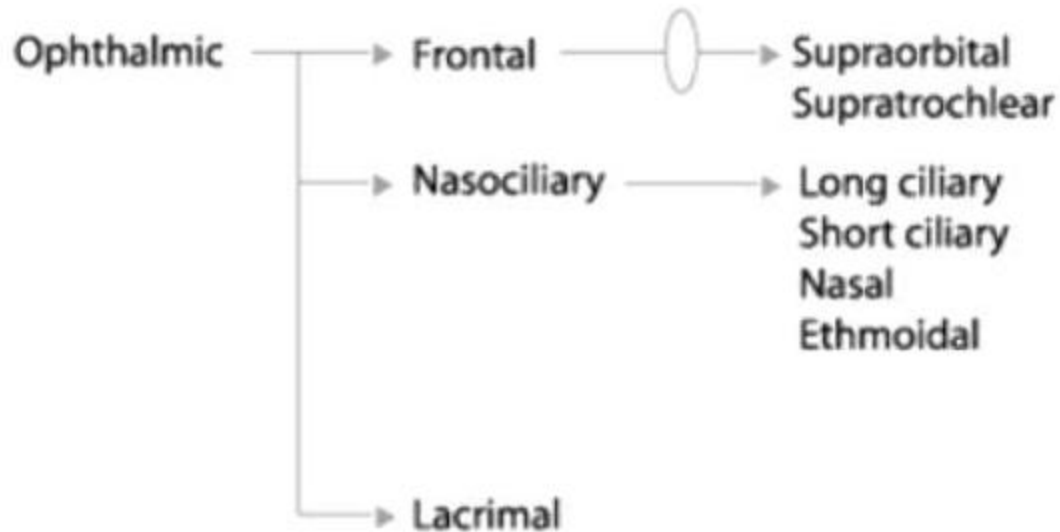
Anterior aspect of the pons



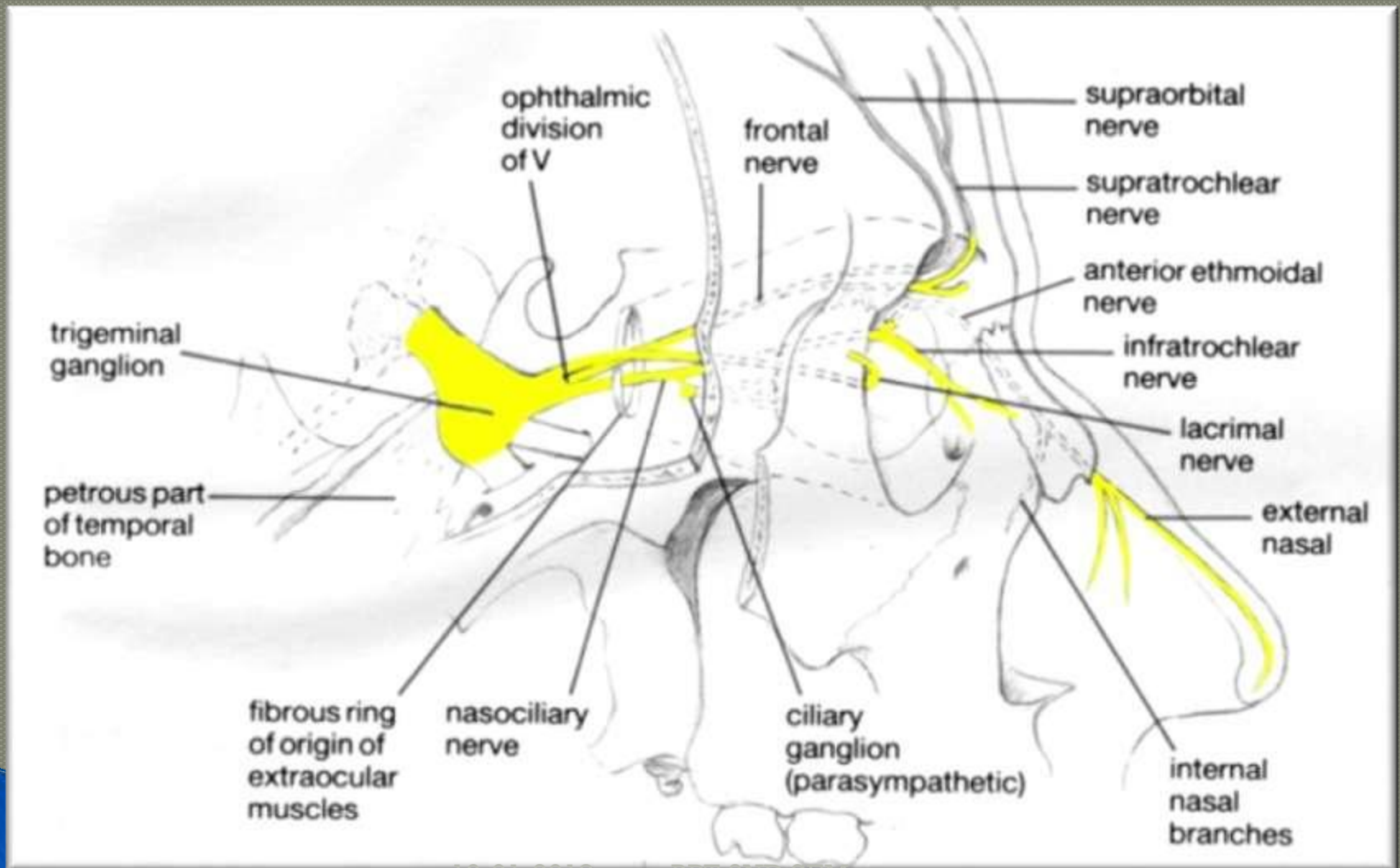
Superior orbital fissure

# V1. Ophthalmic Nerve

## Supraorbital



# V1. Ophthalmic Nerve



# V2. Maxillary Nerve

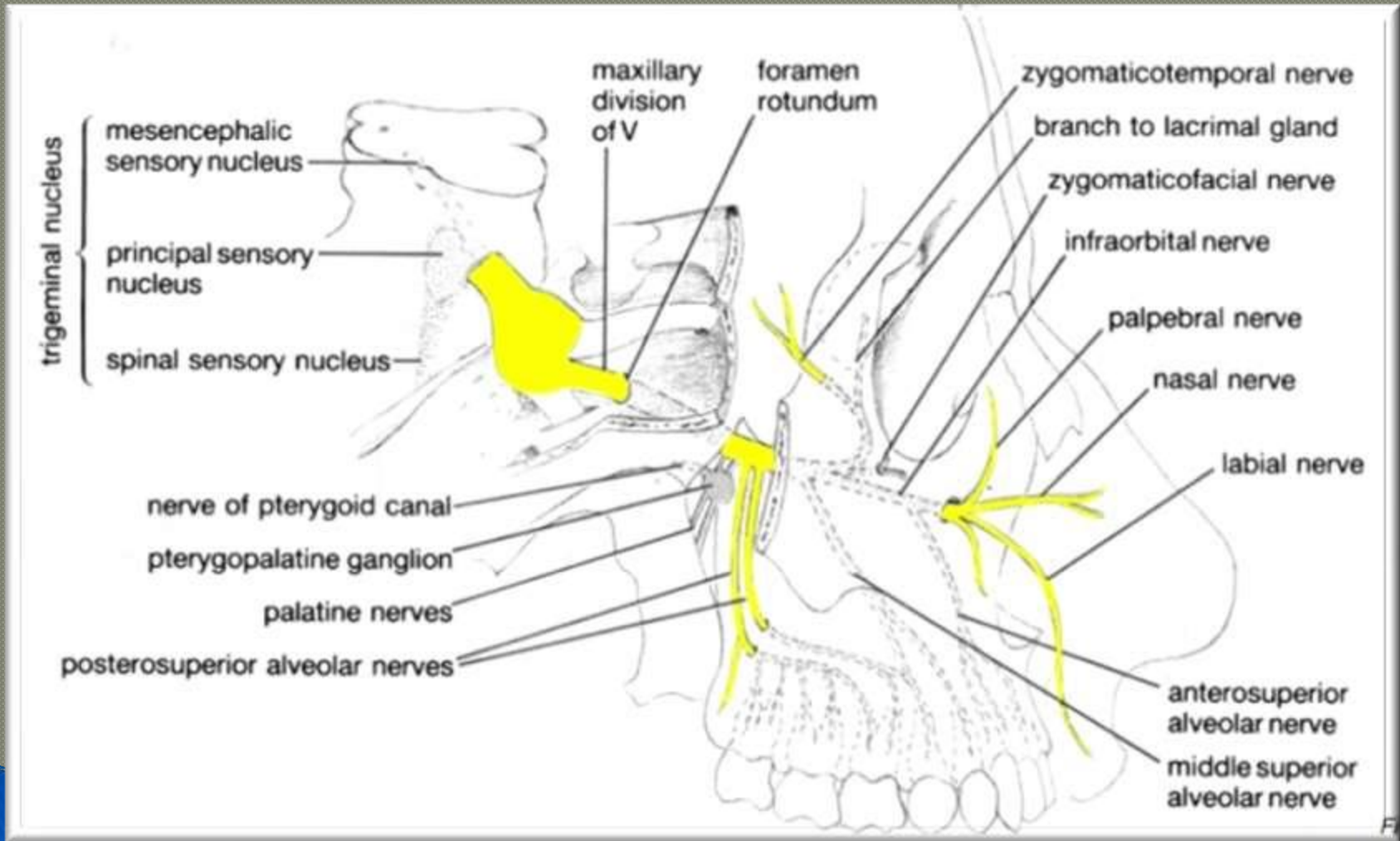
- Sensory

- - Skin of the face over maxilla
  - Teeth of the upper jaw
  - Mucous membrane of the nose, the maxillary sinus and palate

- Anterior aspect of the pons

- Foramen ovale

# V2. Maxillary Nerve



# V3. Mandibular Nerve

- a. Motor

- - Muscles of mastication
  - Mylohyoid
  - Anterior belly of digastric
  - Tensor veli palatine
  - Tensor tympani

- Anterior aspect of the pons

- Foramen Rotundum

# V3. Mandibular Nerve

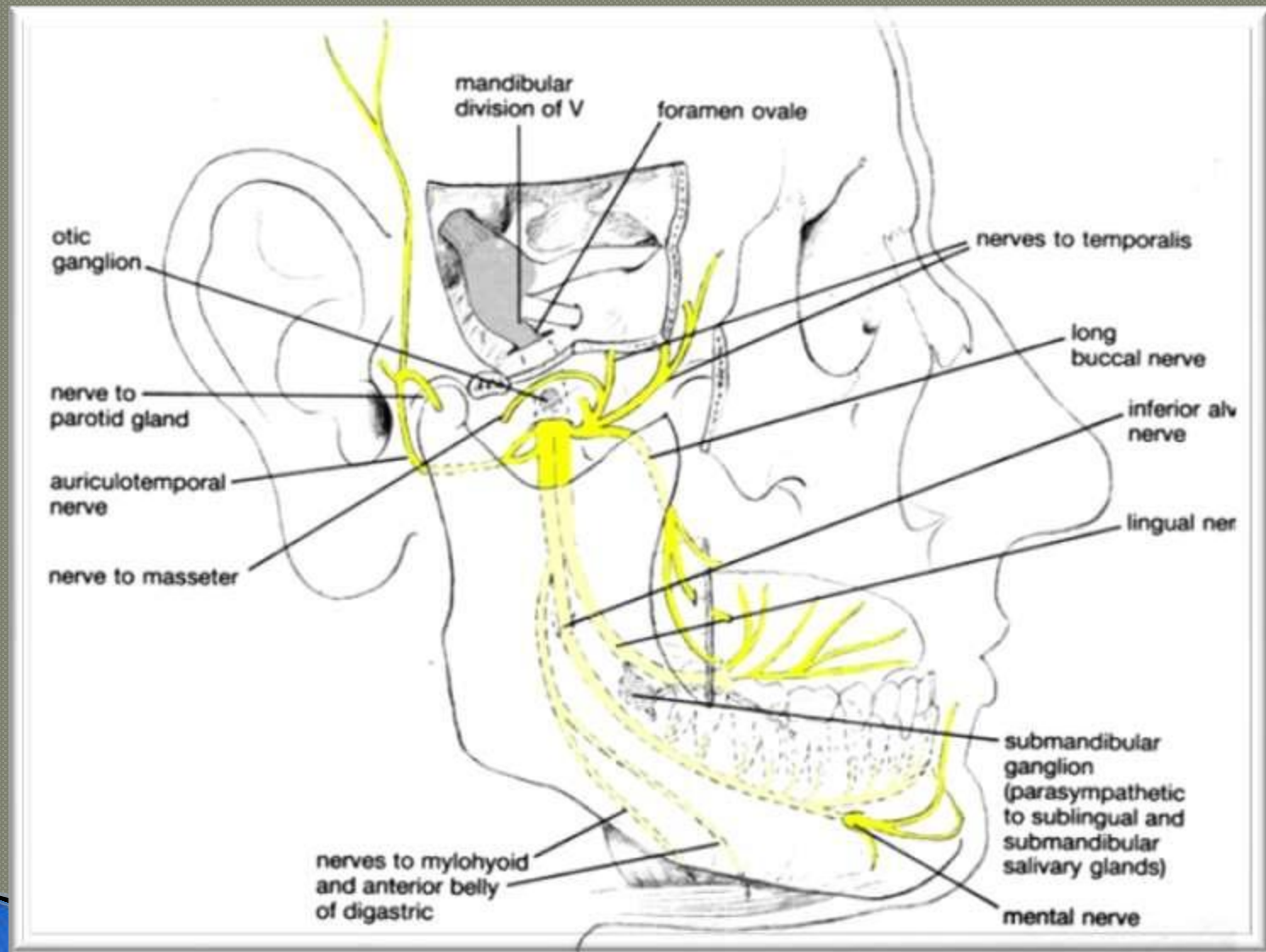
- b. Sensory

- - Skin of cheek
  - Skin over mandible and side of head
  - Teeth of lower jaw and TMJ
  - Mucous membrane of mouth and anterior part of tongue

- Anterior aspect of the pons

- Foramen Rotundum

# V3. Mandibular Nerve





# ABDUCENT NERVE

Cranial Nerve

VI

# VI. Abducent Nerve



Motor



Lateral rectus muscle turns eyeball laterally

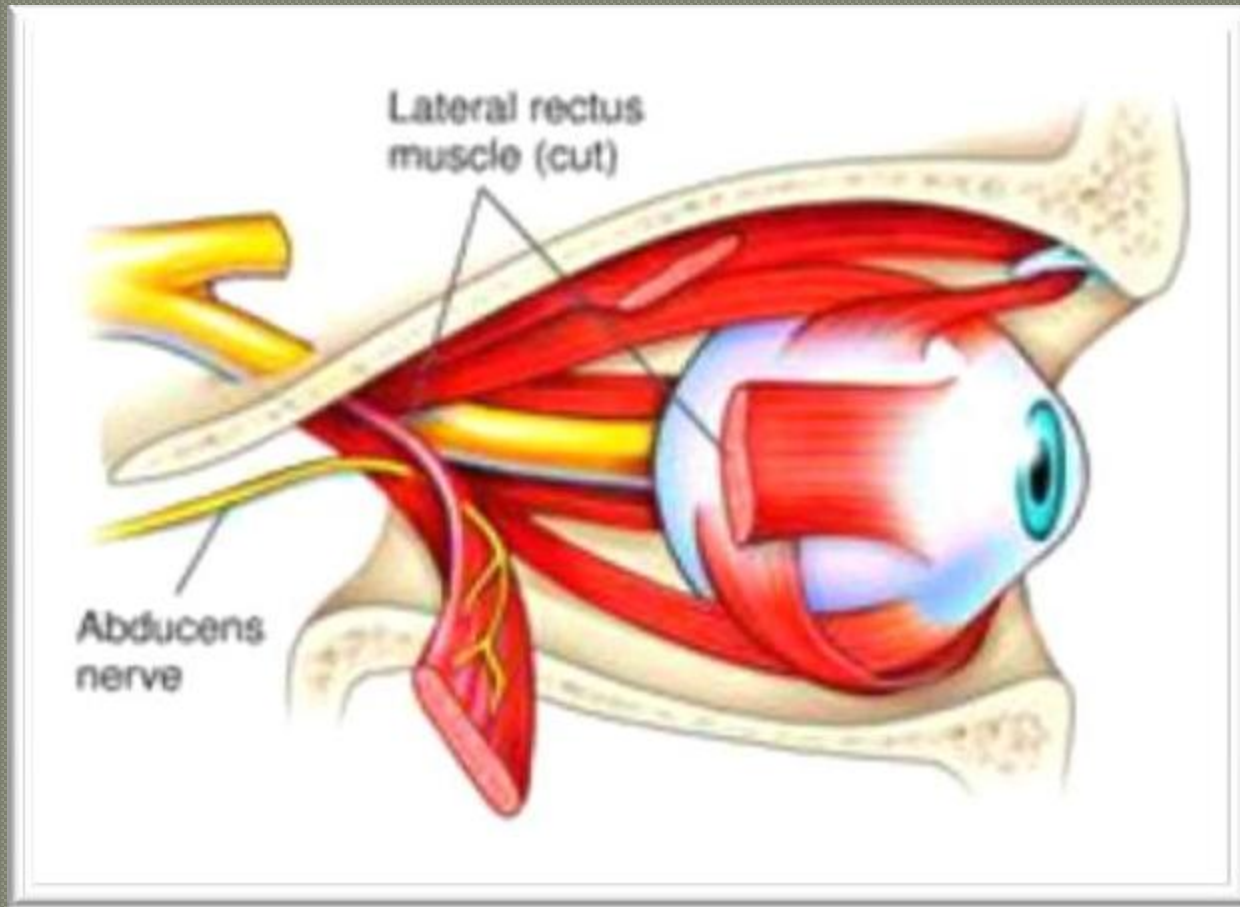


Medulla oblongata



Superior orbital fissure

# VI. Abducent Nerve



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# FACIAL NERVE

## Cranial Nerve

### VII

# VII. Facial Nerve



Mixed



## Motor

- muscles of the face and scalp
- Stapedius muscle
- Posterior belly of digastric
- Stylohyoid muscles



## Sensory

- Taste from ant. 2/3 of tongue, from the floor of the mouth and palate

# VII. Facial Nerve



## Secretomotor

- Submandibular and sublingual salivary glands
- Lacrimal gland
- Glands of nose and palate

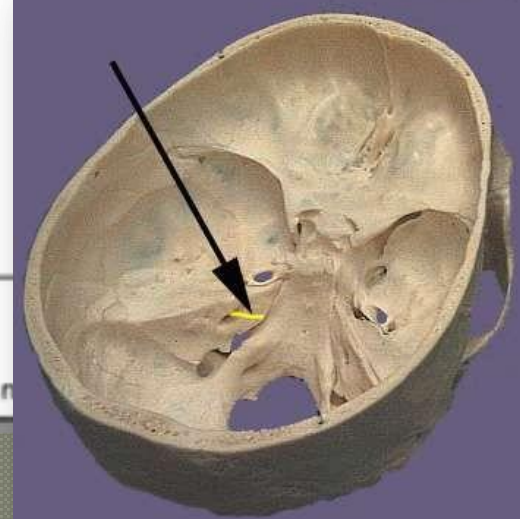
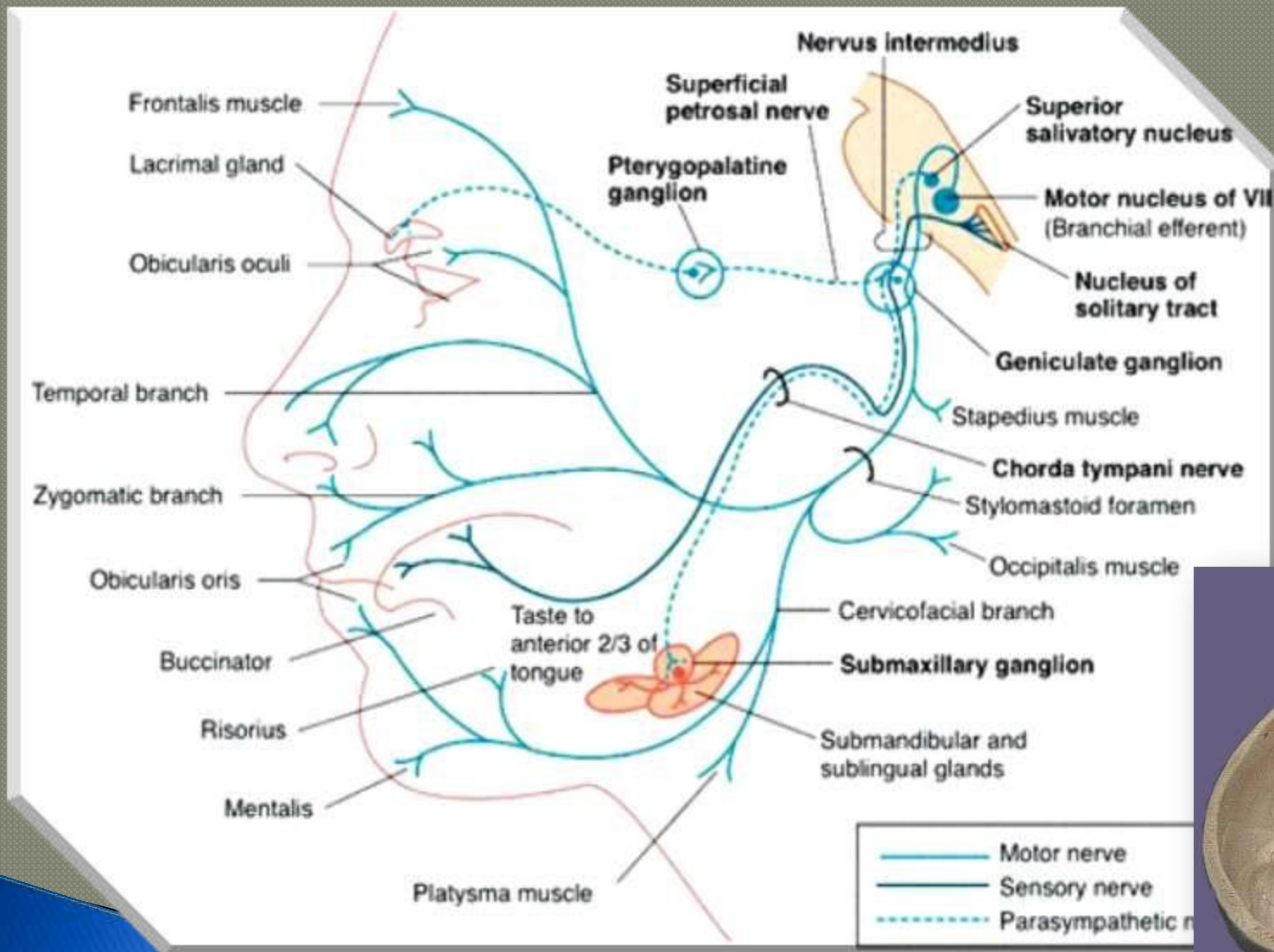


## Medulla oblongata



internal acoustic  
meatus, facial canal, stylomastoid foramen

# VII. Facial Nerve



# VESTIBULOCOCHLEAR NERVE

Cranial Nerve  
VIII

\*Aka Auditory / Acoustic Nerve



# VIII. Vestibulocochlear Nerve

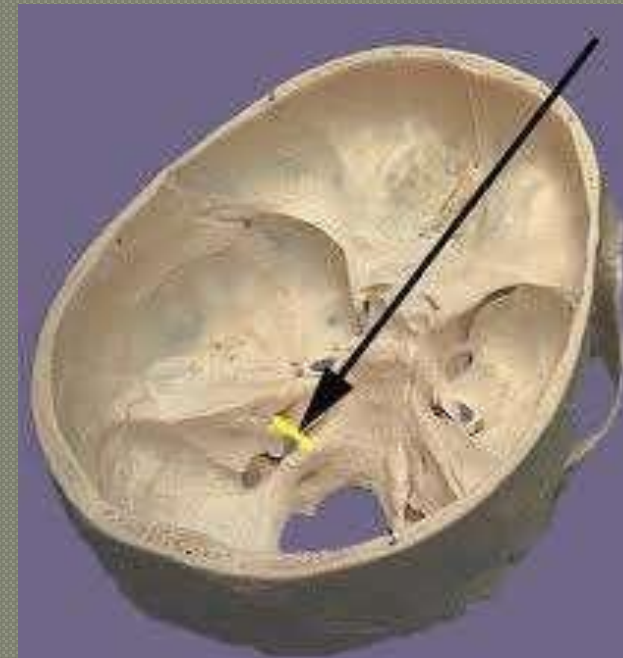
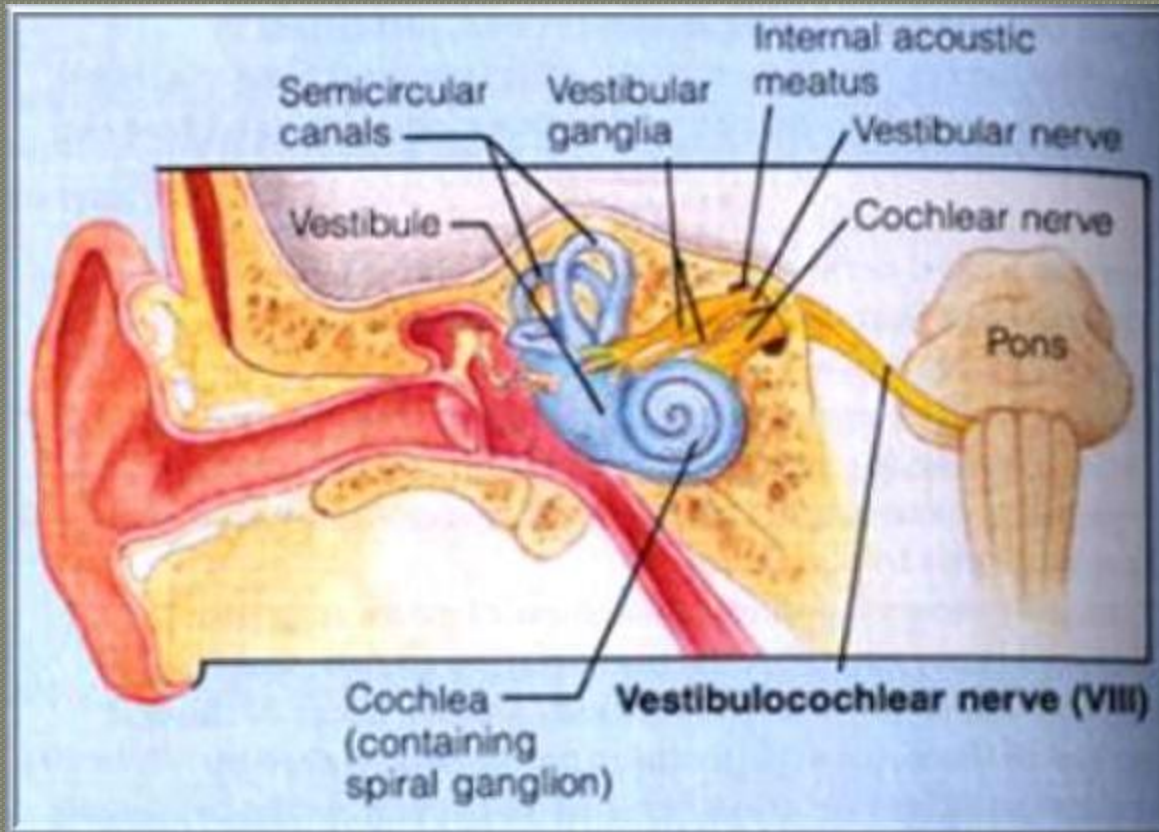
- Sensory

- - Vestibular – Saculae, saccule, semicircular canals – position of head
  - Cochlear – Organ of Corti – hearing

- Medulla oblongata

- Internal acoustic meatus

# VIII. Vestibulocochlear Nerve



# GLOSSOPHARYNGEAL NERVE

## Cranial Nerve IX

# IX. Glossopharyngeal Nerve



Mixed



- **Motor**
- Stylopharyngeus muscle – assists swallowing



- **Sensory**
- General sensation and taste from post. ½ of the tongue and pharynx
- Carotis sinus and carotid body



- **Secretomotor**
- Parotid gland

# IX. Glossopharyngeal Nerve

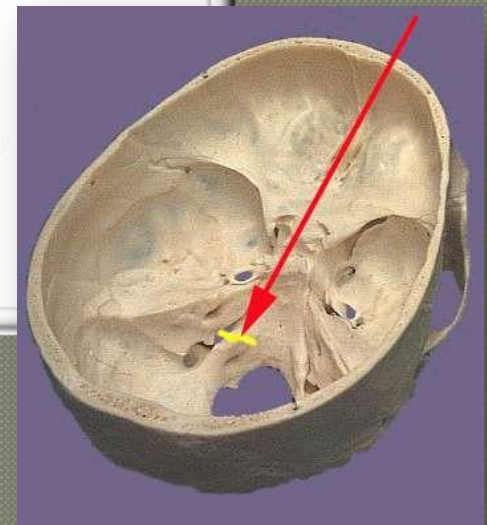
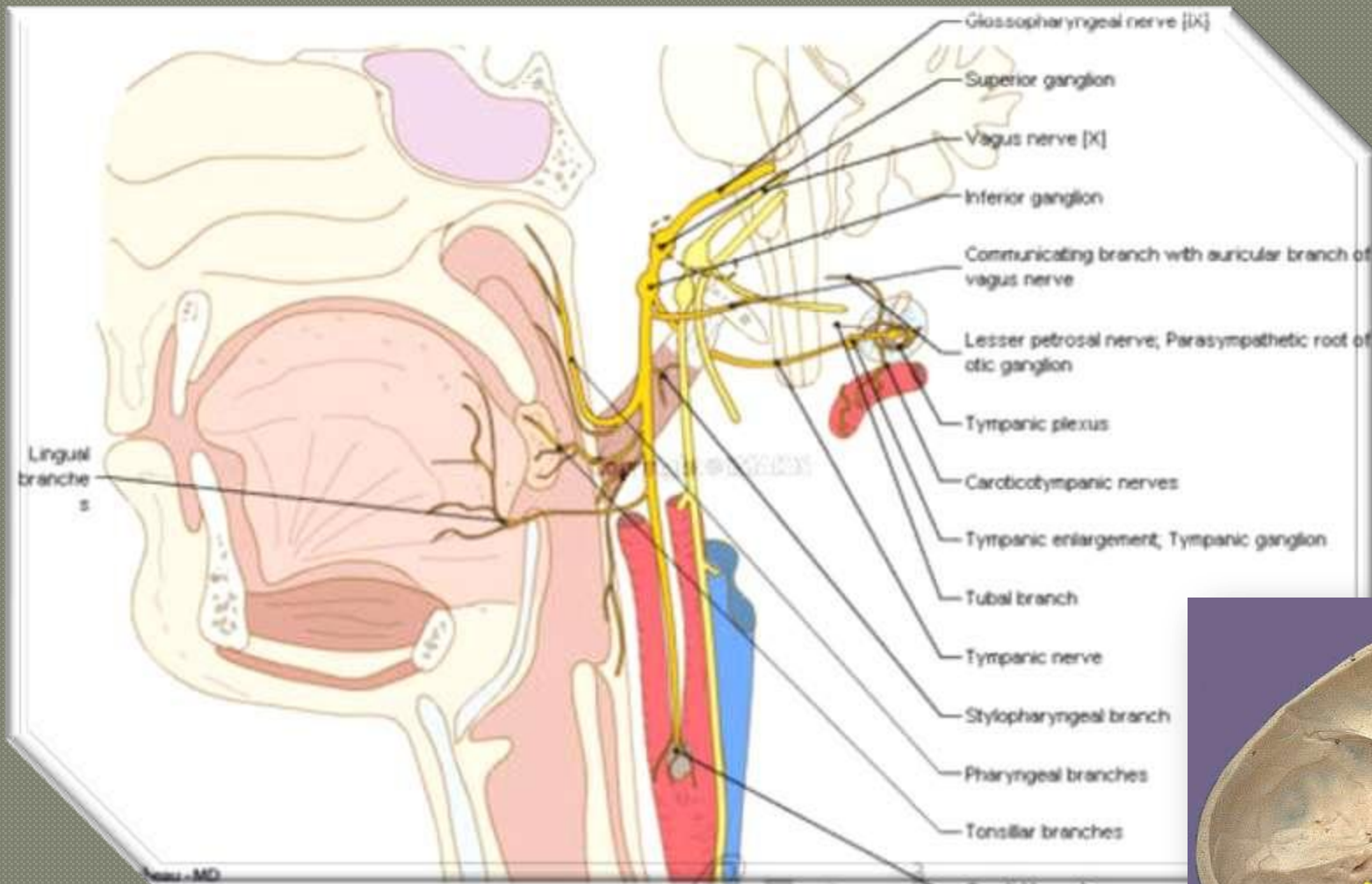


Medulla oblongata



Jugular foramen

# IX. Glossopharyngeal Nerve



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# VAGUS NERVE

## Cranial Nerve

### X

# X. Vagus Nerve



Motor



- ✓ Heart and great thoracic blood vessels
- ✓ Larynx, trachea, bronchi and lungs
- ✓ Alimentary tract from pharynx to splenic flexure of colon
- ✓ Liver, kidney, pancreas



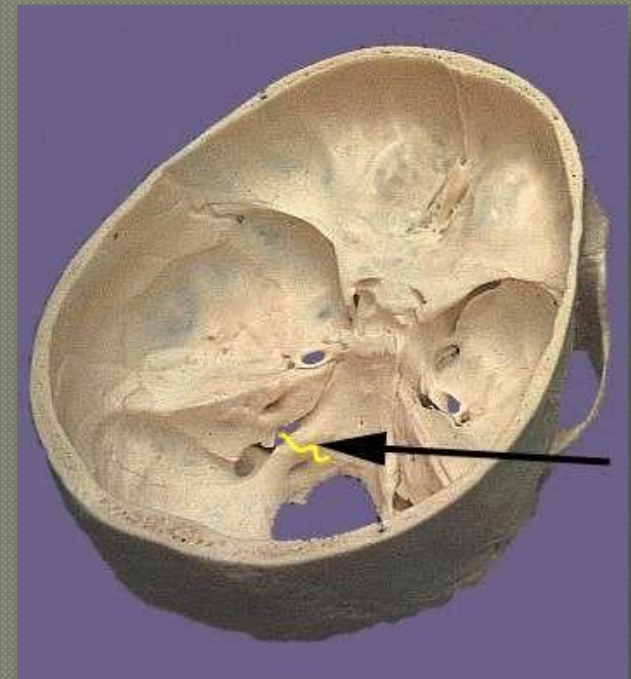
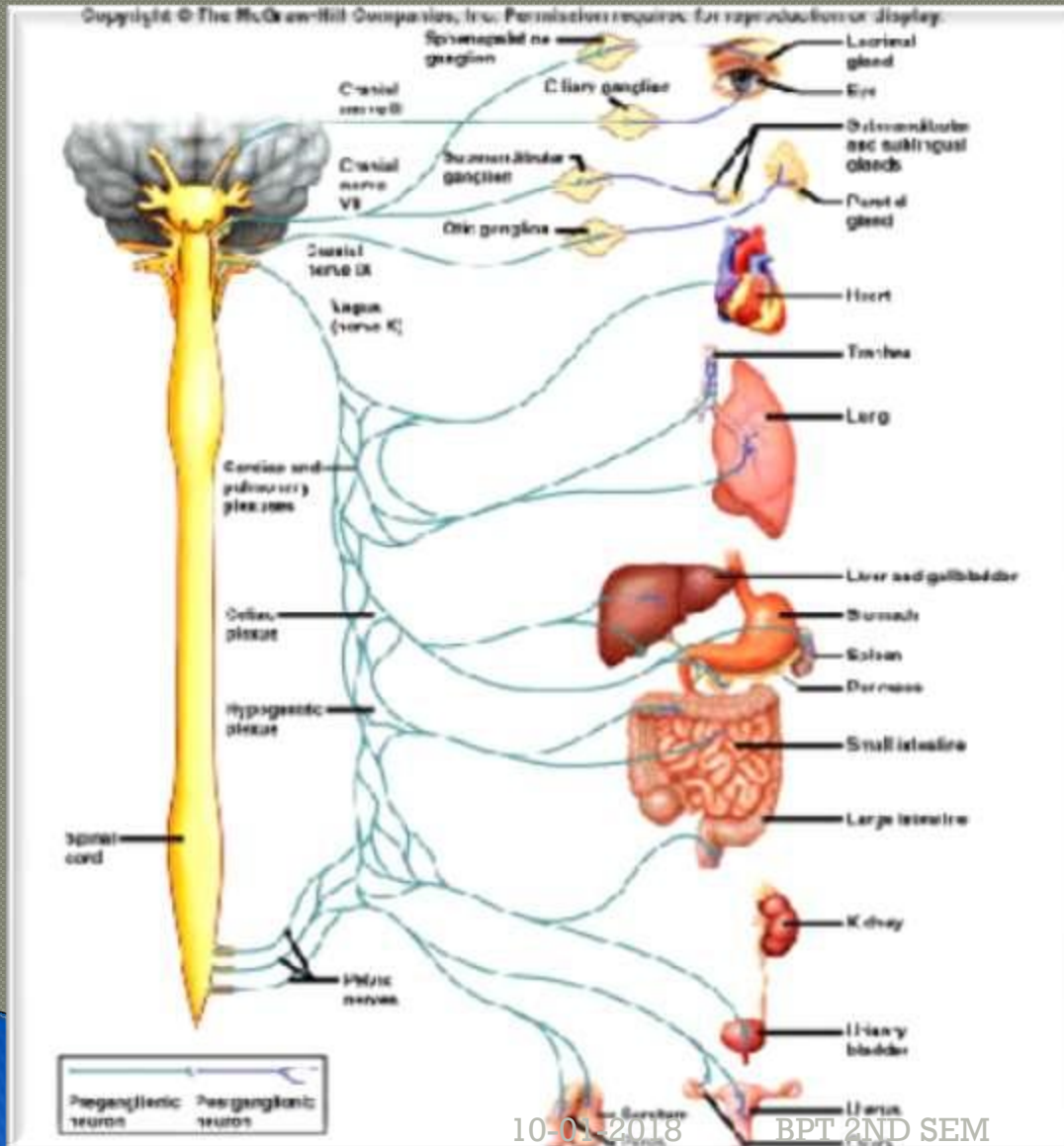
Medulla oblongata



Jugular foramen



# X. Vagus Nerve



# Cranial Nerve XI

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# ACCESSORY NERVE

# XI. Accessory Nerve



Motor



## ❖ Cranial root

- ❖ Muscles of soft palate (except tensor veli palatini)
- ❖ Muscles pharynx (except styopharyngeus)
- ❖ Muscles of larynx (except cricothyroid)



## ❖ Spinal root

- ❖ Sternocleidomastoid and trapezius muscle

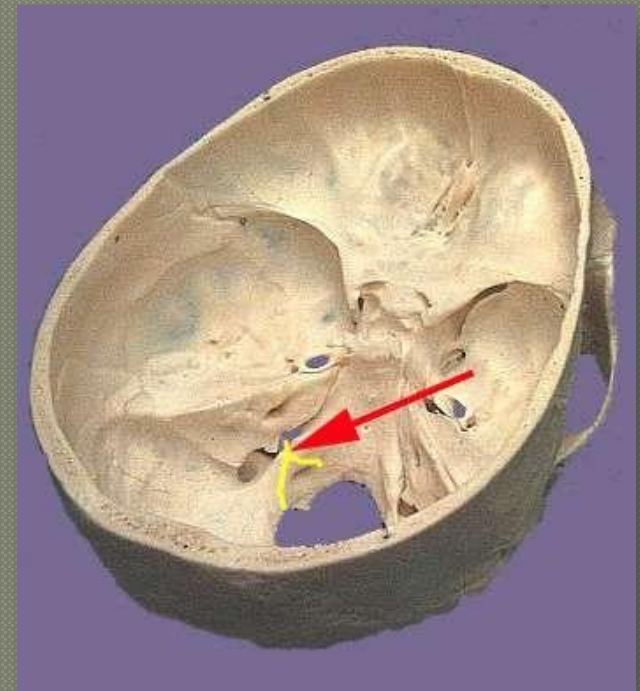
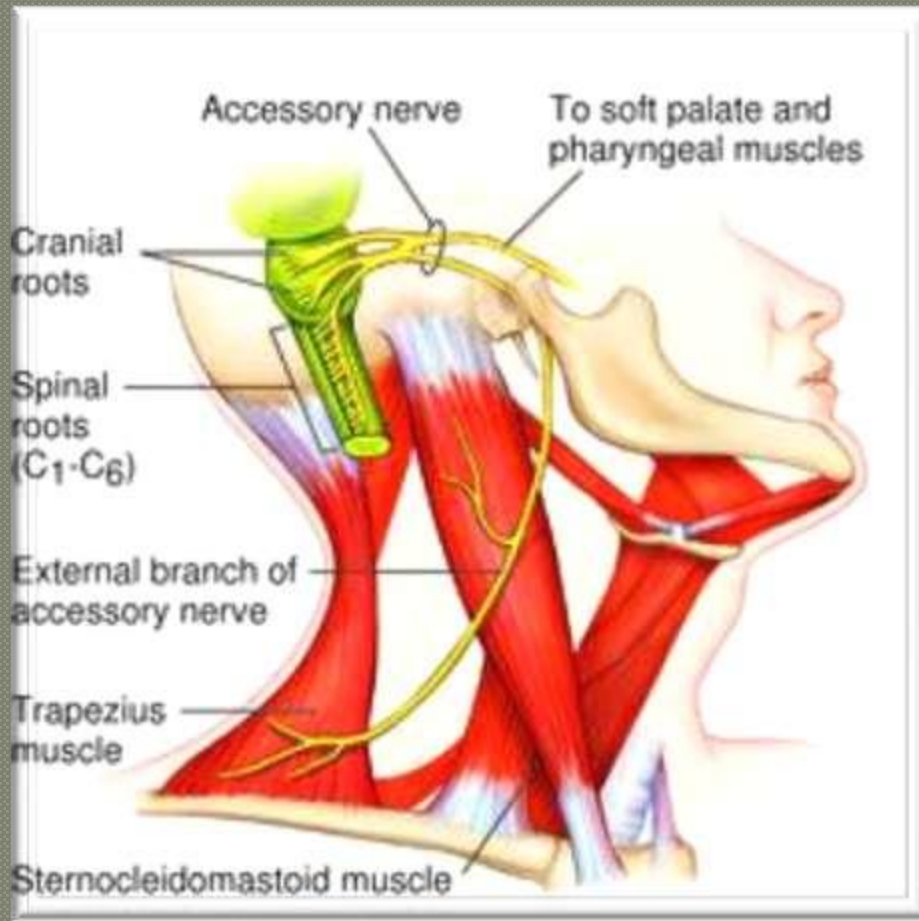


medulla oblongata



Jugular foramen

# XI. Accessory Nerve



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# HYPOGLOSSAL NERVE

## Cranial Nerve

### XII

# XII. Hypoglossal Nerve



Motor



Muscles of tongue (except palatoglossus controlling its shape and movement)

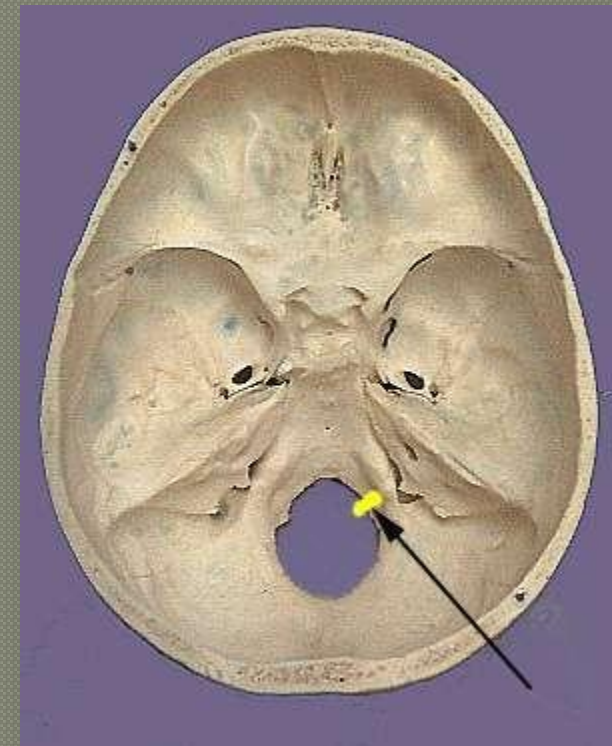
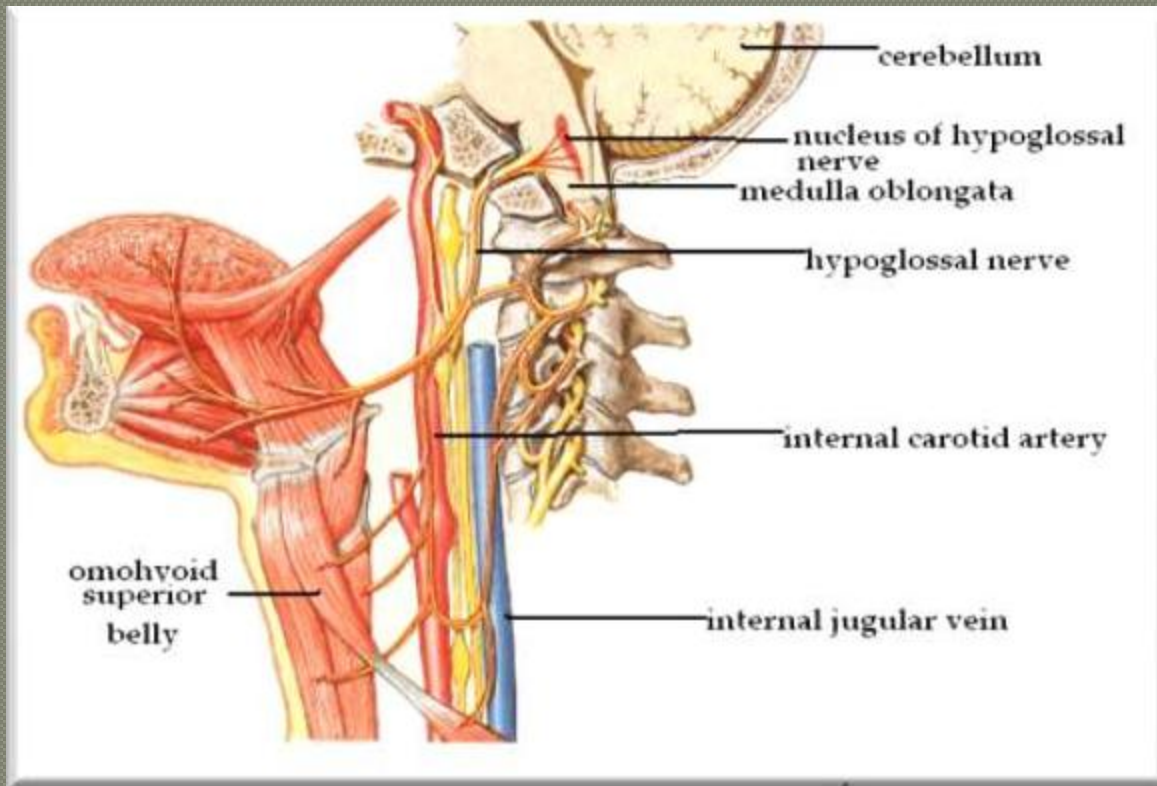


Medulla oblongata



Hypoglossal canal

# XII. Hypoglossal Nerve



*Thank You!*