

# ORBIT-III



Presented by:-  
Dr. Sushma Tomar  
Associate Professor  
Department of Anatomy

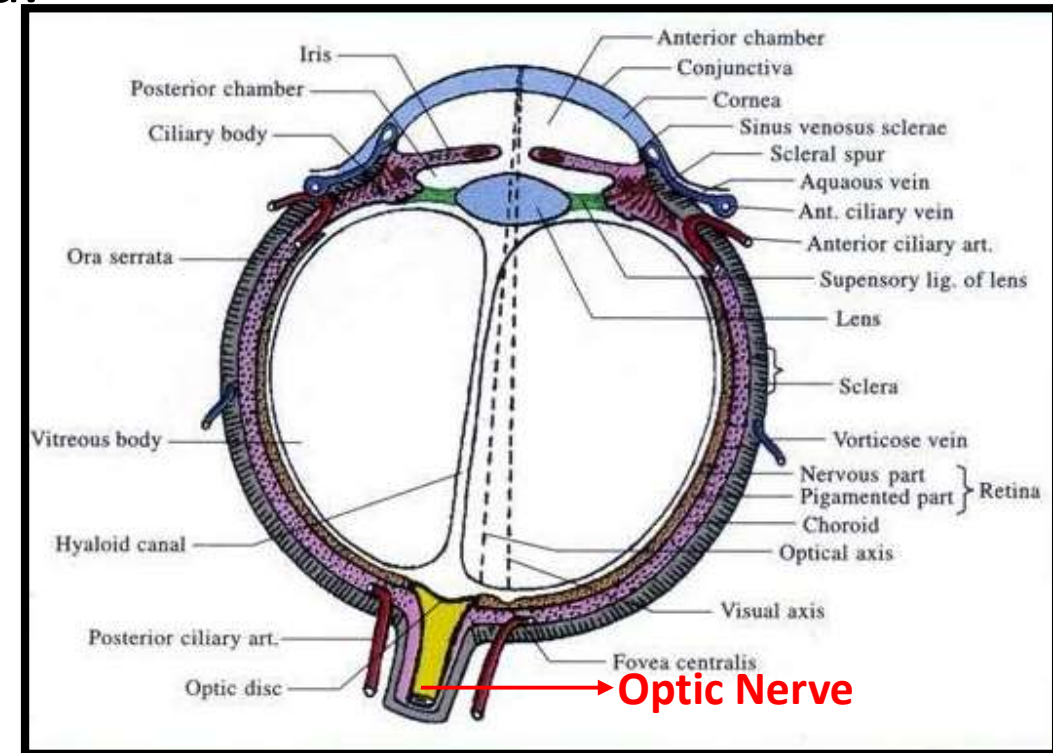
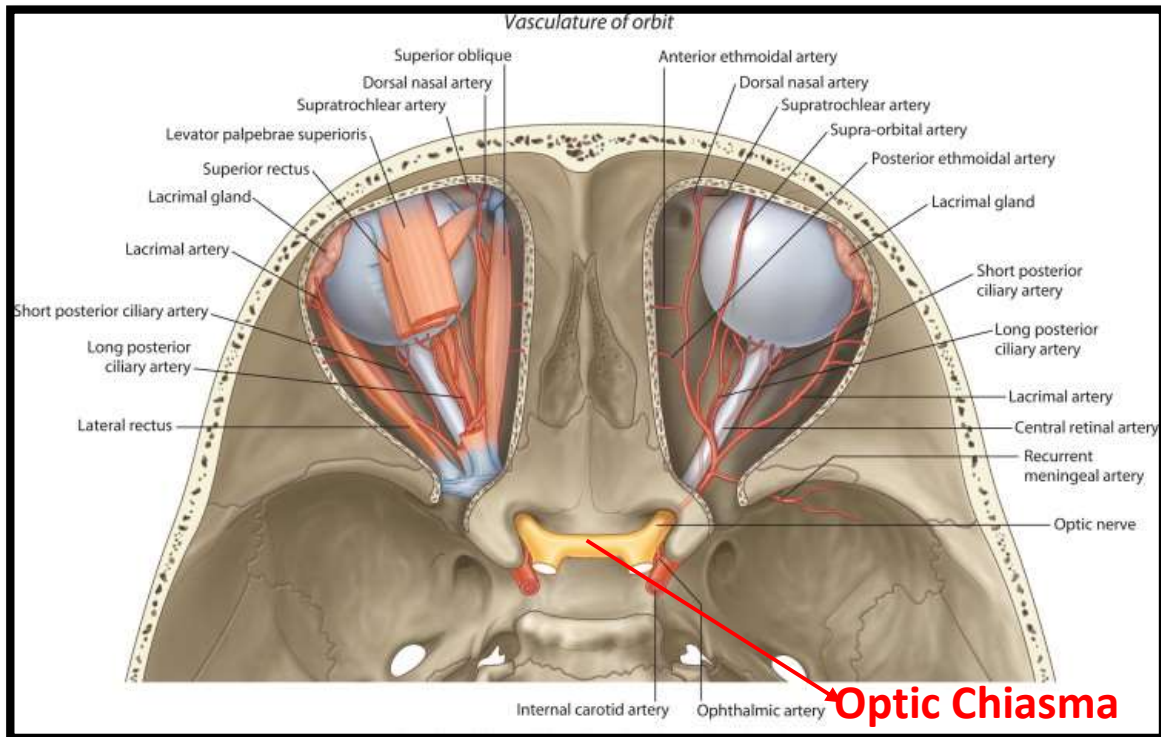
# Lesson Plan

- Optic nerve.
- Trochlear nerve.
- Abducent nerve.
- Ophthalmic nerve & its branches.
- Ophthalmic artery.
- Ophthalmic veins.

# Optic Nerve

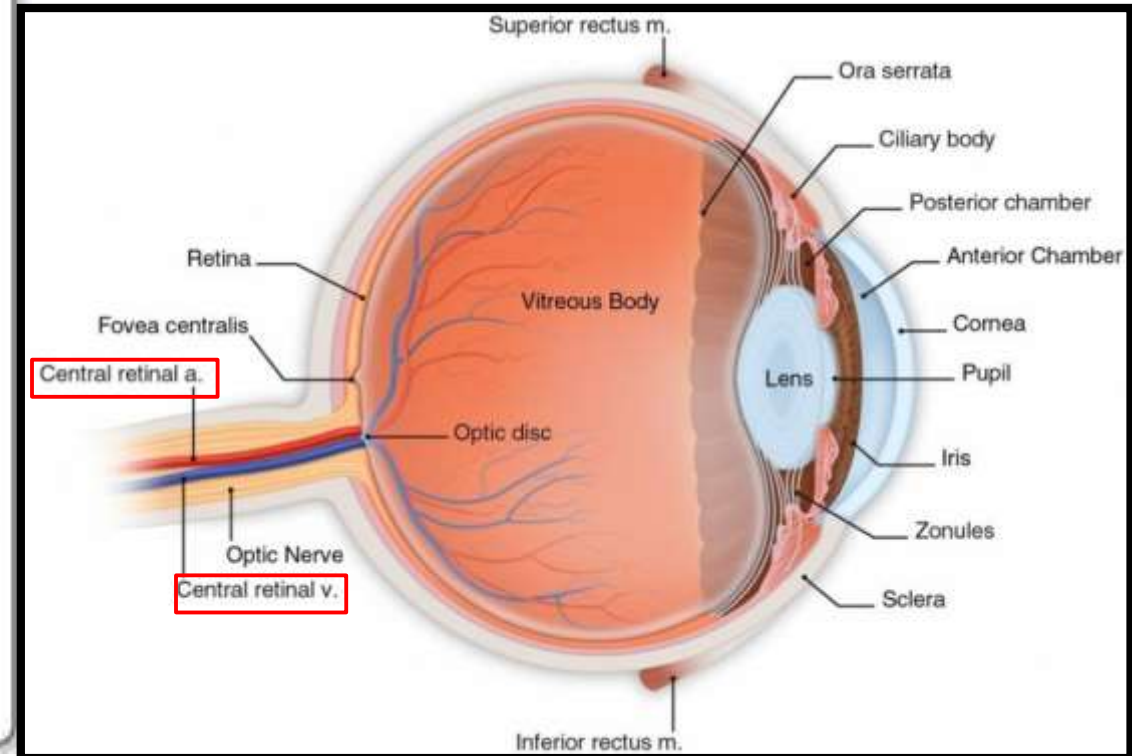
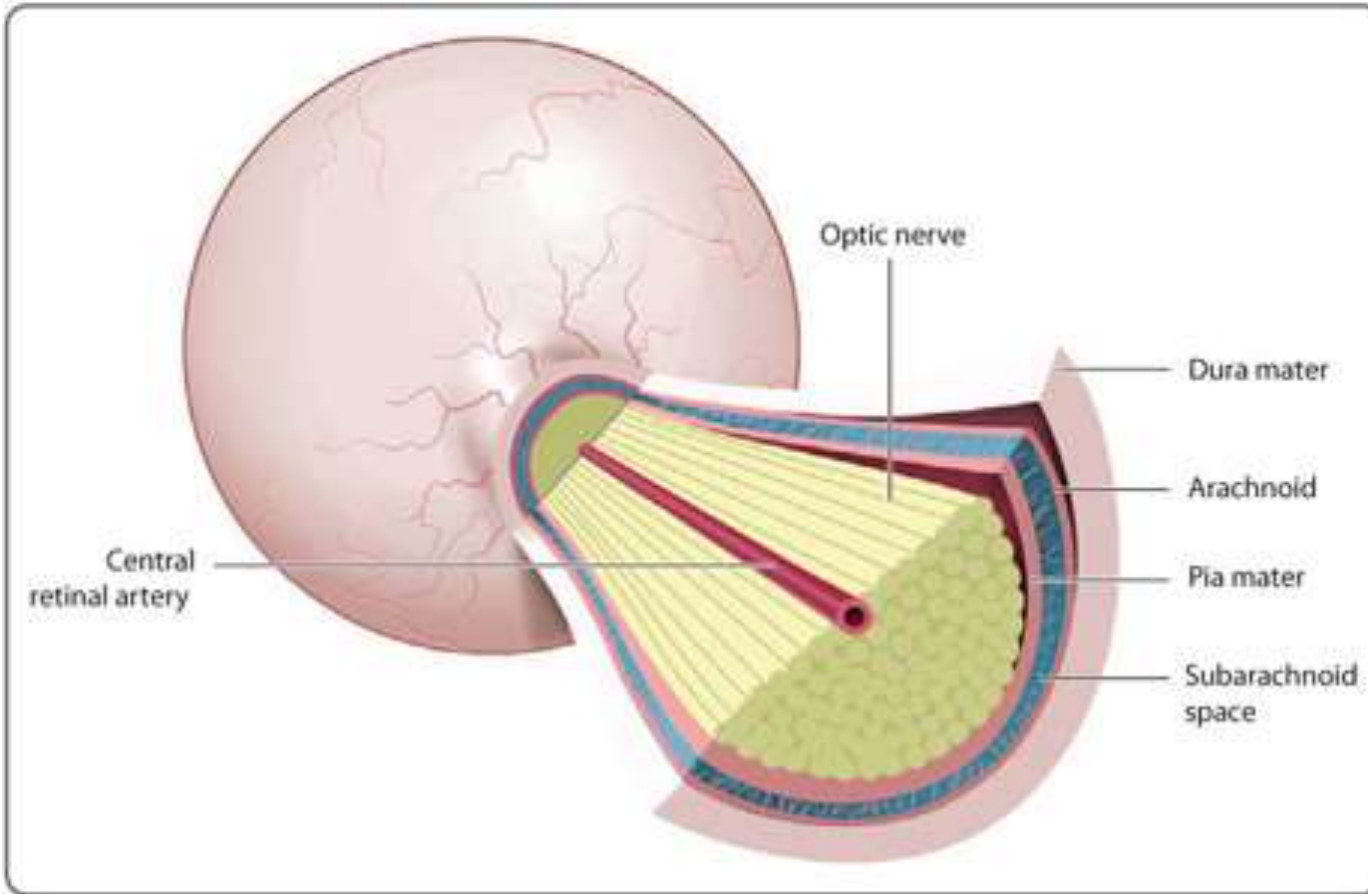
**Length- 4 cm**

- It emerges from the eyeball **3-4cm nasal** to the **posterior pole**.
- Runs backwards and medially.
- Passes through the optic canal to enter the cranial cavity.
- In the cranial cavity, it joins the optic chiasma.



# Optic Nerve contd...

- Optic nerve is enclosed by 3 meningeal sheaths derived from meninges of brain.
- Central artery of retina and central vein of retina pierce the optic nerve about ~ 1.25 cm behind the eyeball.

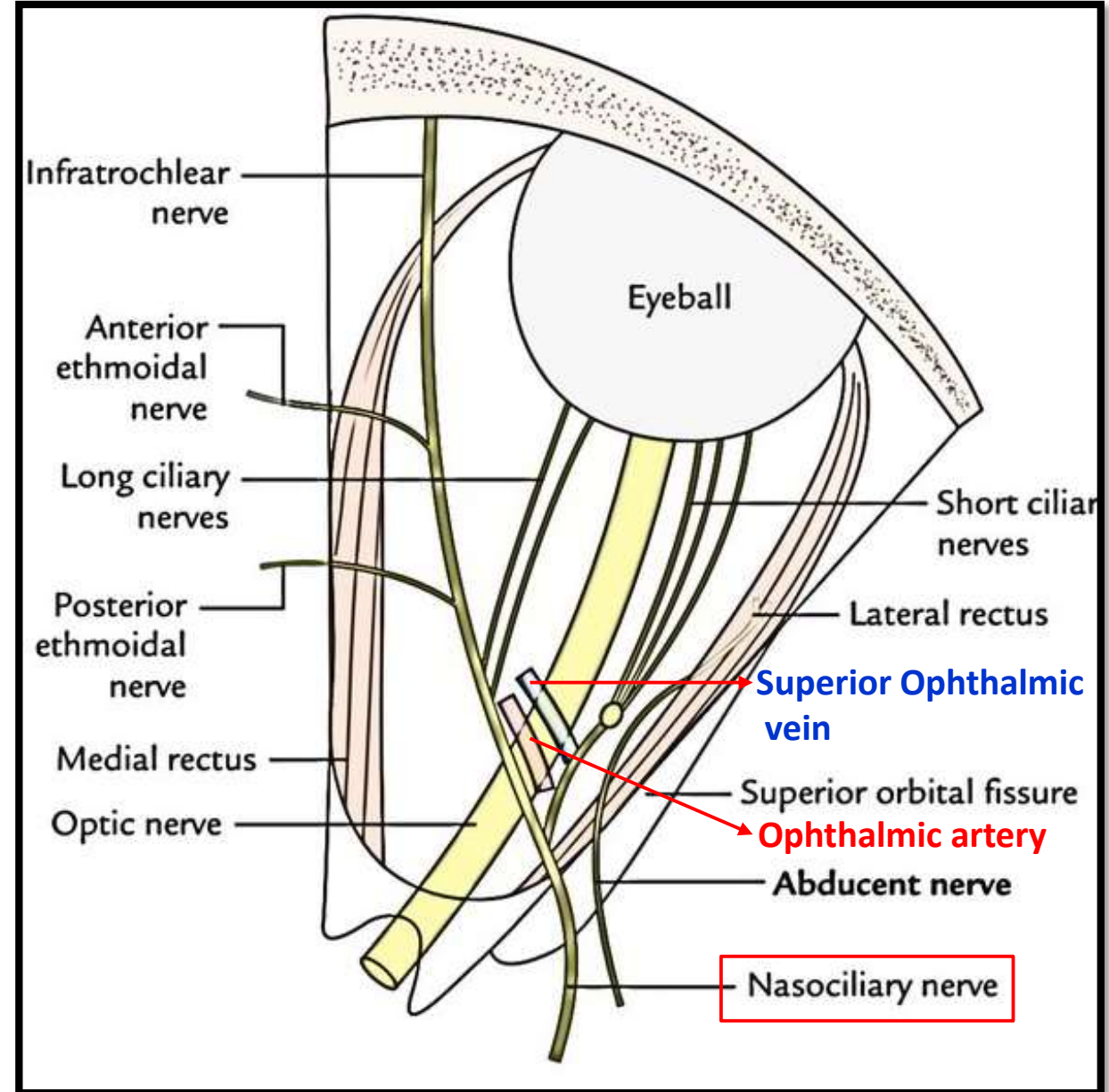




# Optic Nerve contd...

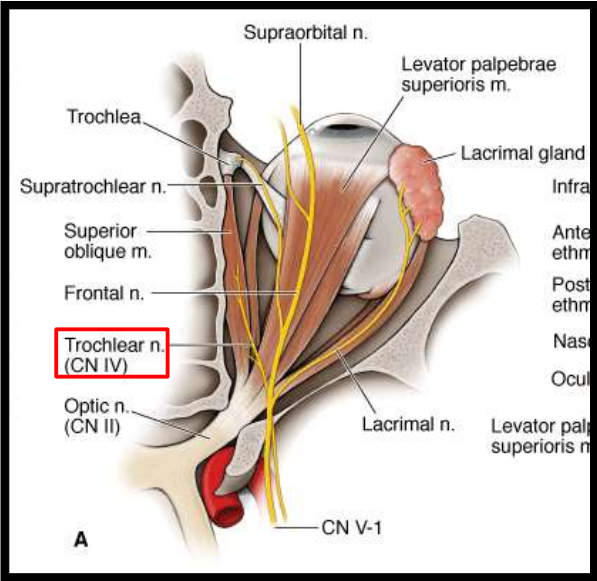
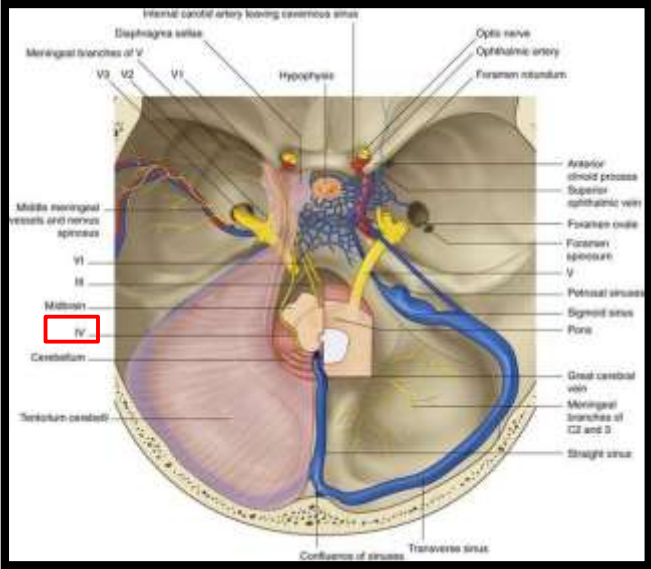
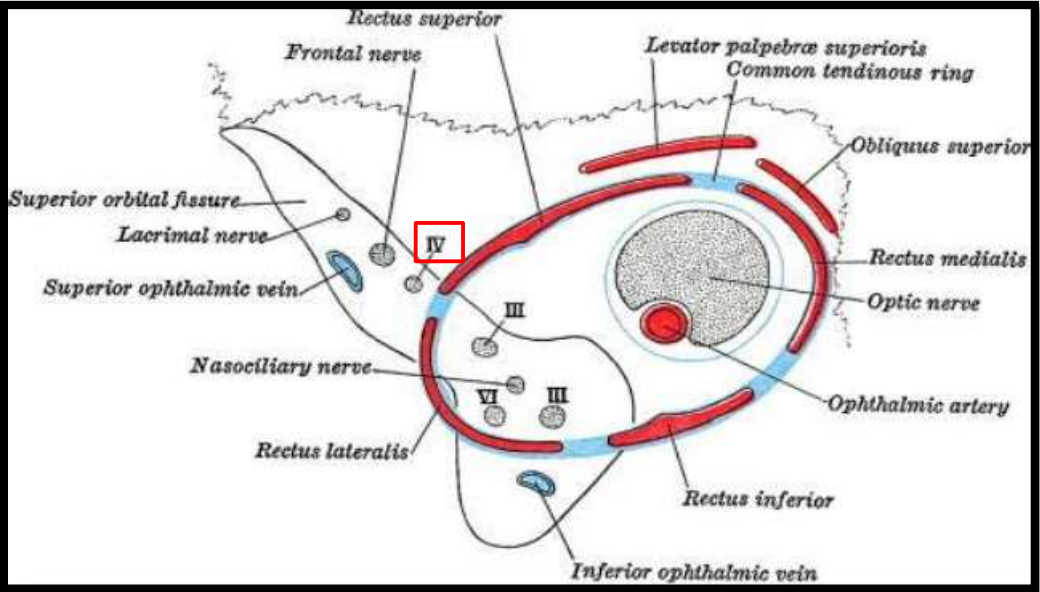
❖ It is crossed superiorly by:

- Superior Ophthalmic vein.
- Ophthalmic artery.
- Nasociliary nerve.



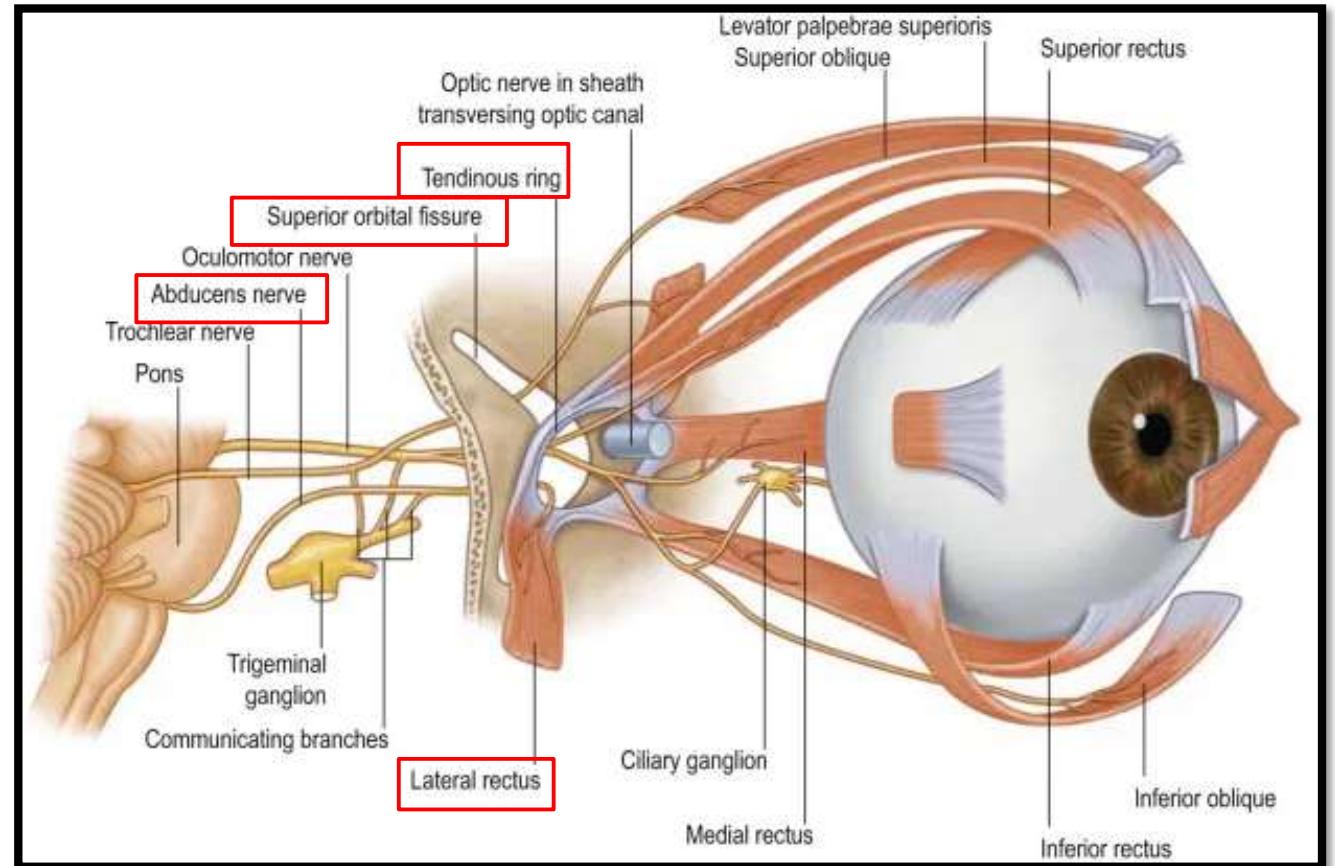
# Trochlear Nerve

- 4<sup>th</sup> cranial nerve.
- Emerges from **dorsal midbrain**.
- Enters the orbit through **superior orbital fissure**, superolateral to the common tendinous ring.
- It supplies **Superior Oblique muscle**.



# Abducent Nerve

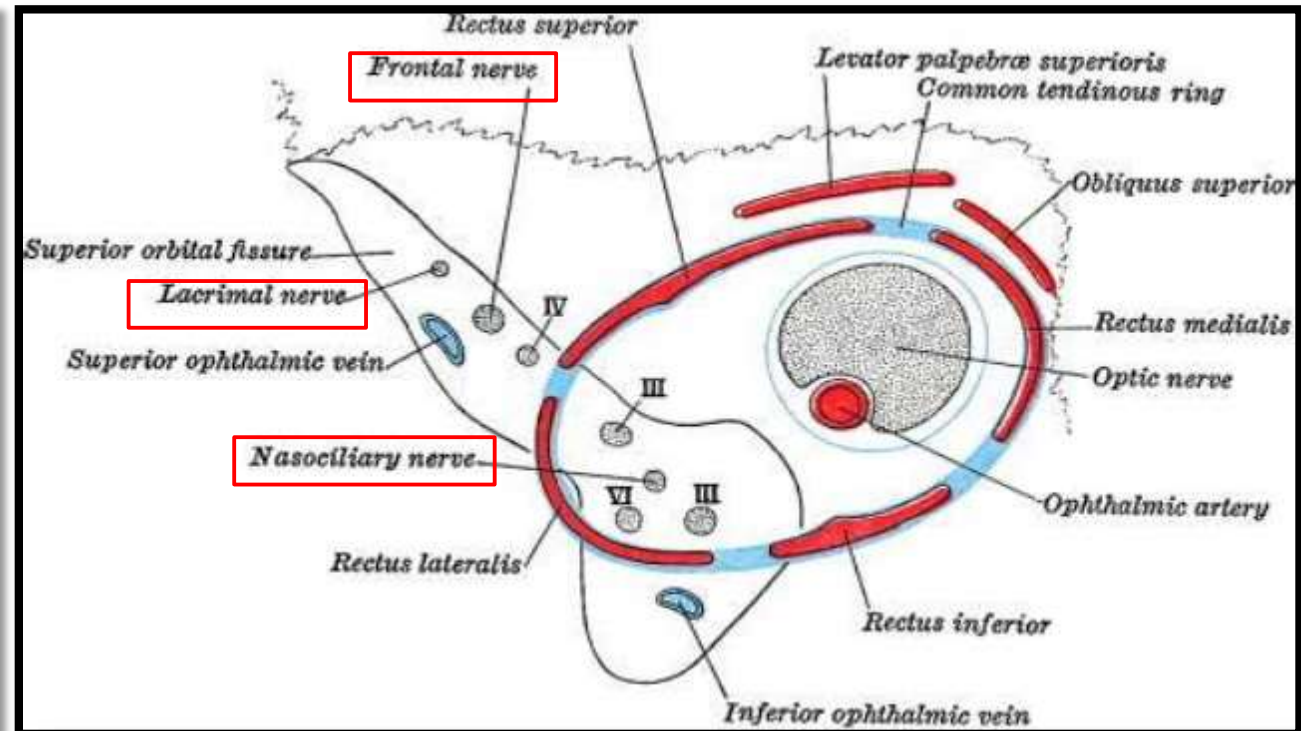
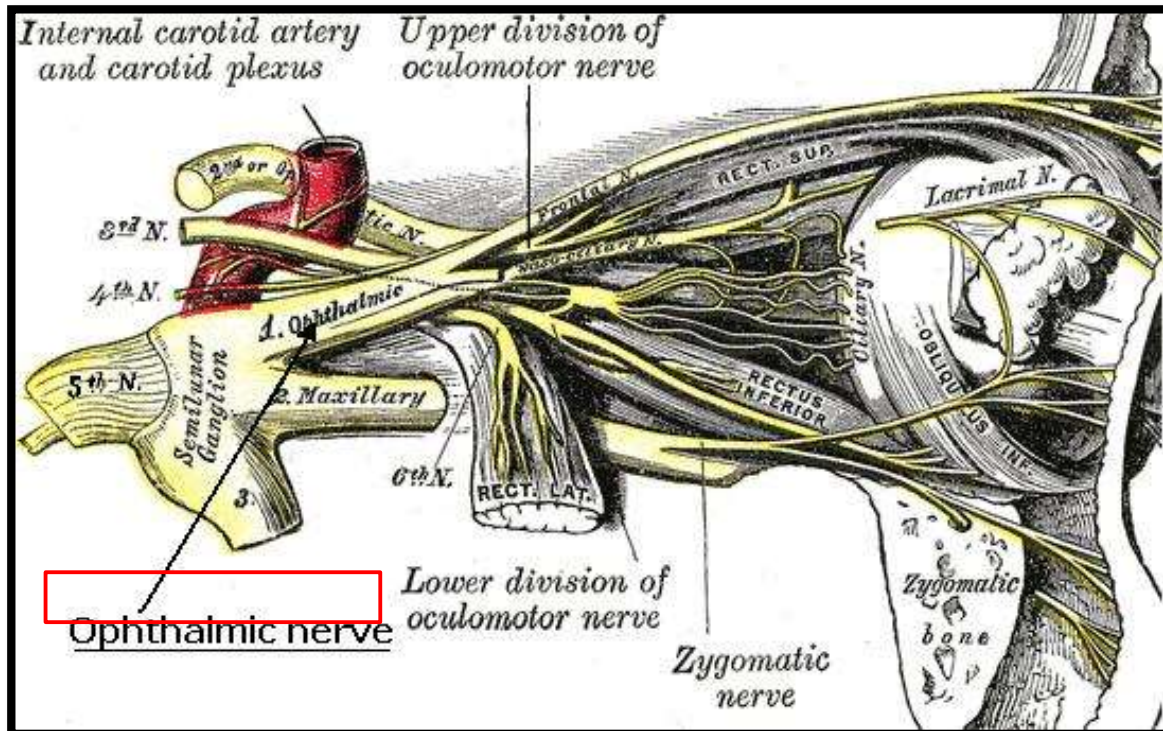
- 6<sup>th</sup> cranial nerve.
- Enters the orbit through **superior orbital fissure** within the common tendinous ring, lateral to two divisions of oculomotor nerve and nasociliary nerve.
- It supplies **Lateral Rectus muscle**.





# Ophthalmic Nerve

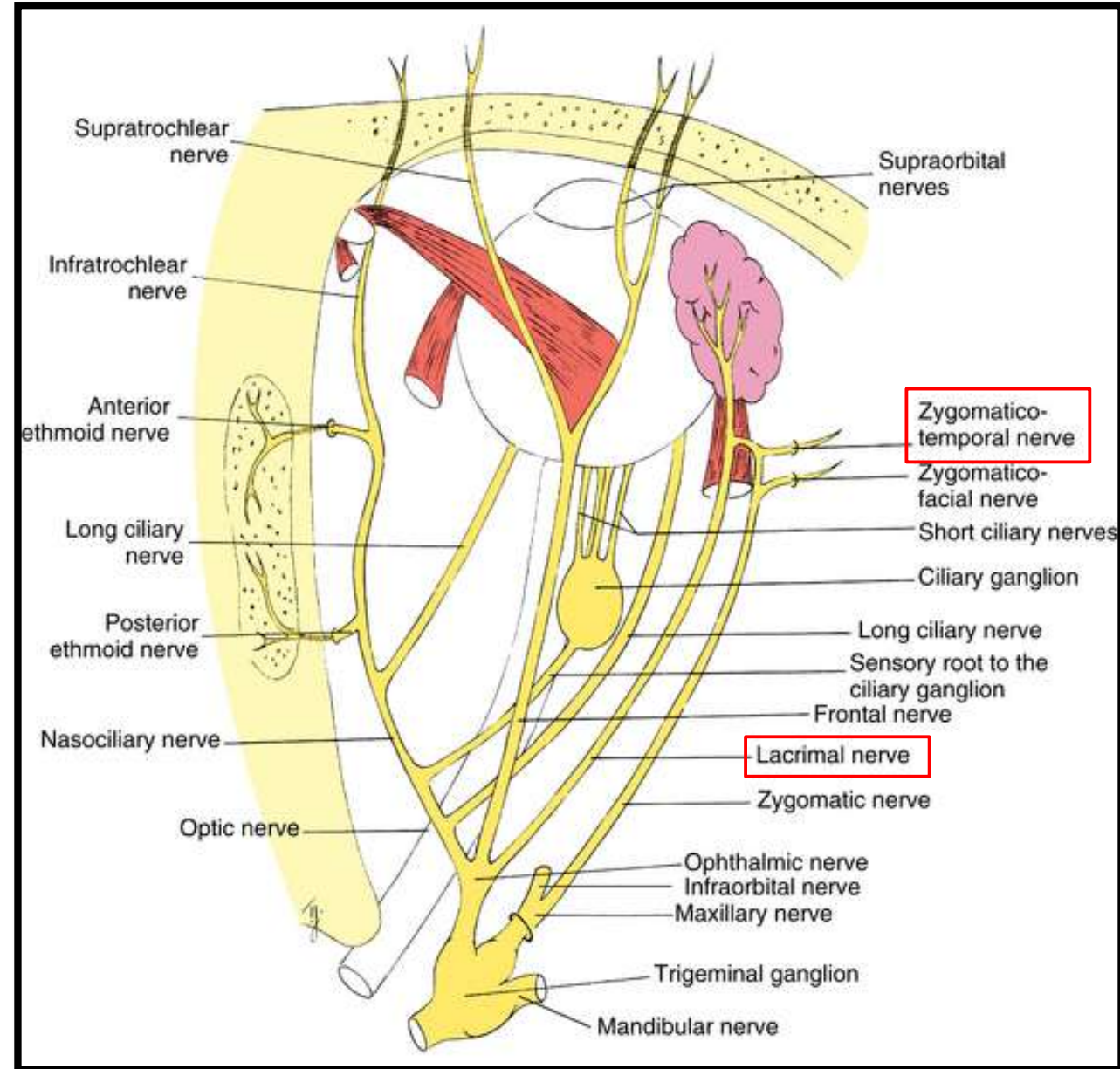
- 1<sup>st</sup> division of Trigeminal nerve (5<sup>th</sup> cranial nerve).
- It is purely sensory.
- It arises from trigeminal ganglion (Semilunar ganglion).
- It enters the orbit through superior orbital fissure by dividing into 3 branches: **Lacrimal**, **Frontal** and **Nasociliary**.





# Lacrimal Nerve

- ❖ Smallest branch of Ophthalmic nerve.
- ❖ Runs along the lateral wall of orbit.
- ❖ It is joined by a communicating twig from Zygomaticotemporal nerve.
- ❖ It supplies:
  - Lacrimal gland.
  - Conjunctiva.
  - Lateral part of skin of upper eyelid.

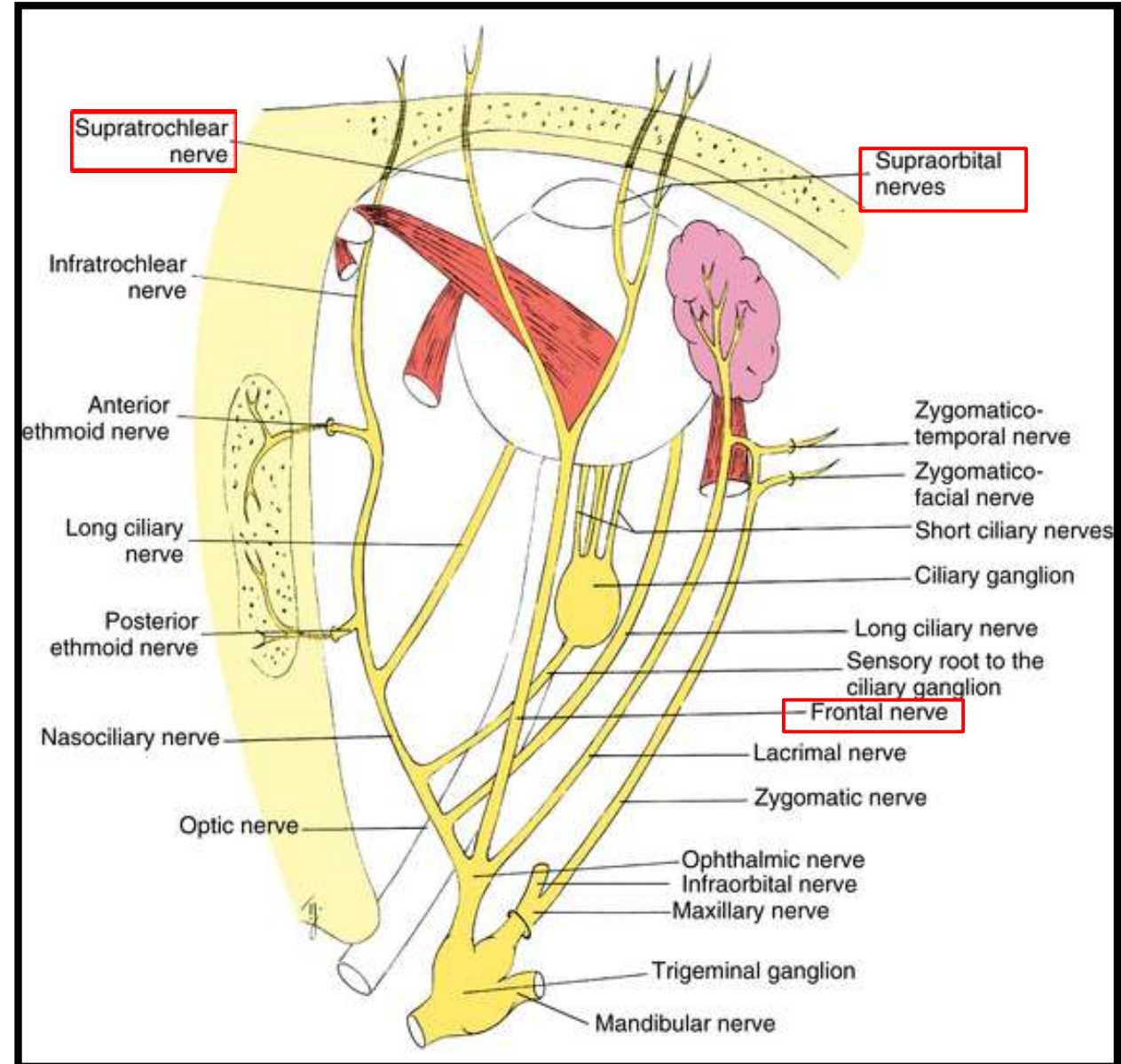


# Frontal Nerve

❖ It is the largest branch of Ophthalmic nerve.

❖ It divides into:

- Supraorbital nerve.
- Supratrochlear nerve.



# Nasociliary Nerve

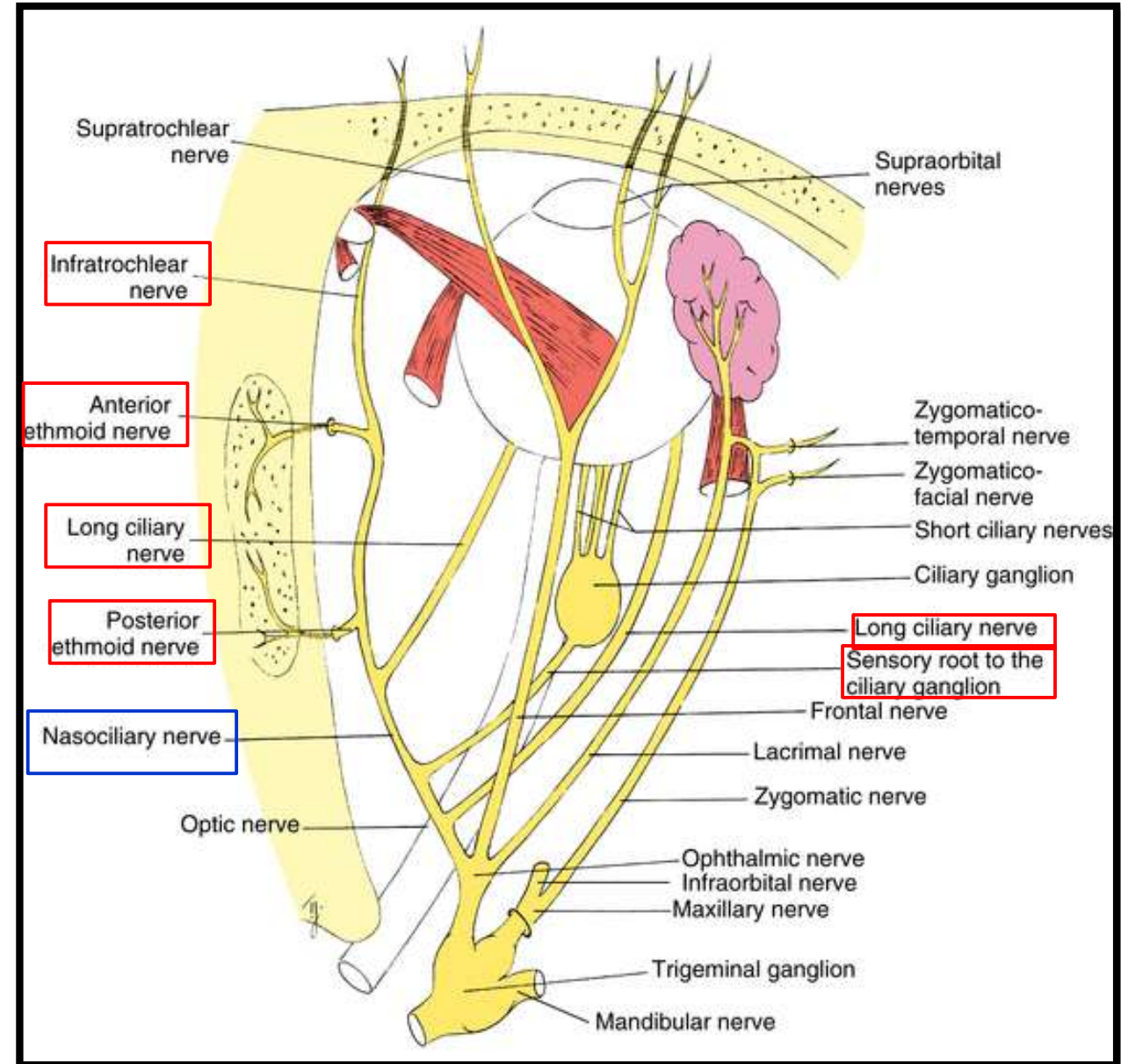
❖ It crosses the optic nerve from above and from lateral to medial side.

❖ It ends by dividing into:

- Anterior Ethmoidal Nerve.
- Infratrochlear Nerve.

## BRANCHES-

- Long ciliary nerves.
- Sensory root to the Ciliary ganglion.
- Posterior Ethmoidal Nerve.





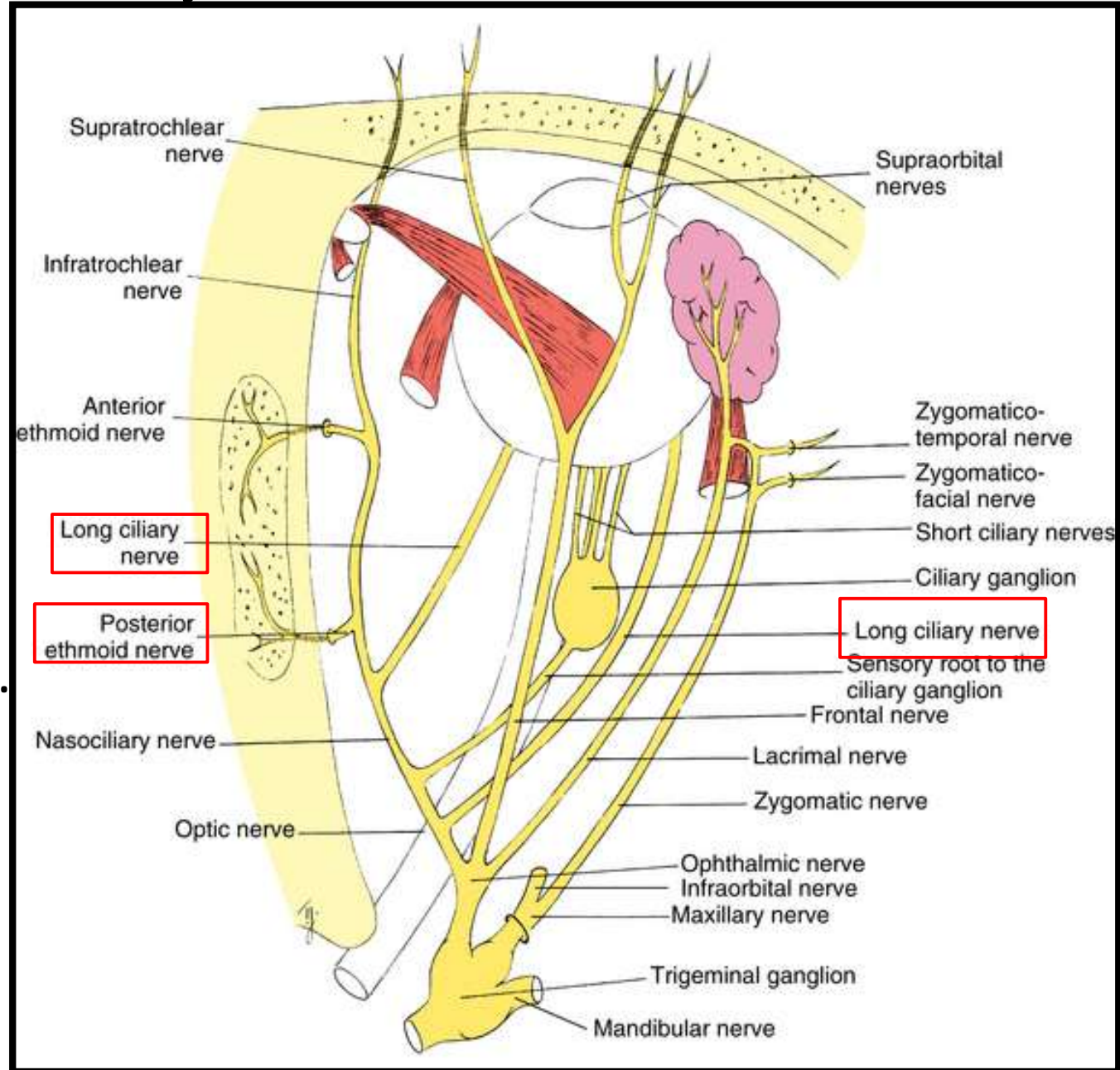
# Branches of Nasociliary Nerve contd...

## Long Ciliary Nerves-

- 2-3 in number.
- Supply:
- Ciliary body.
- Iris.
- Cornea.

## Posterior Ethmoidal Nerve-

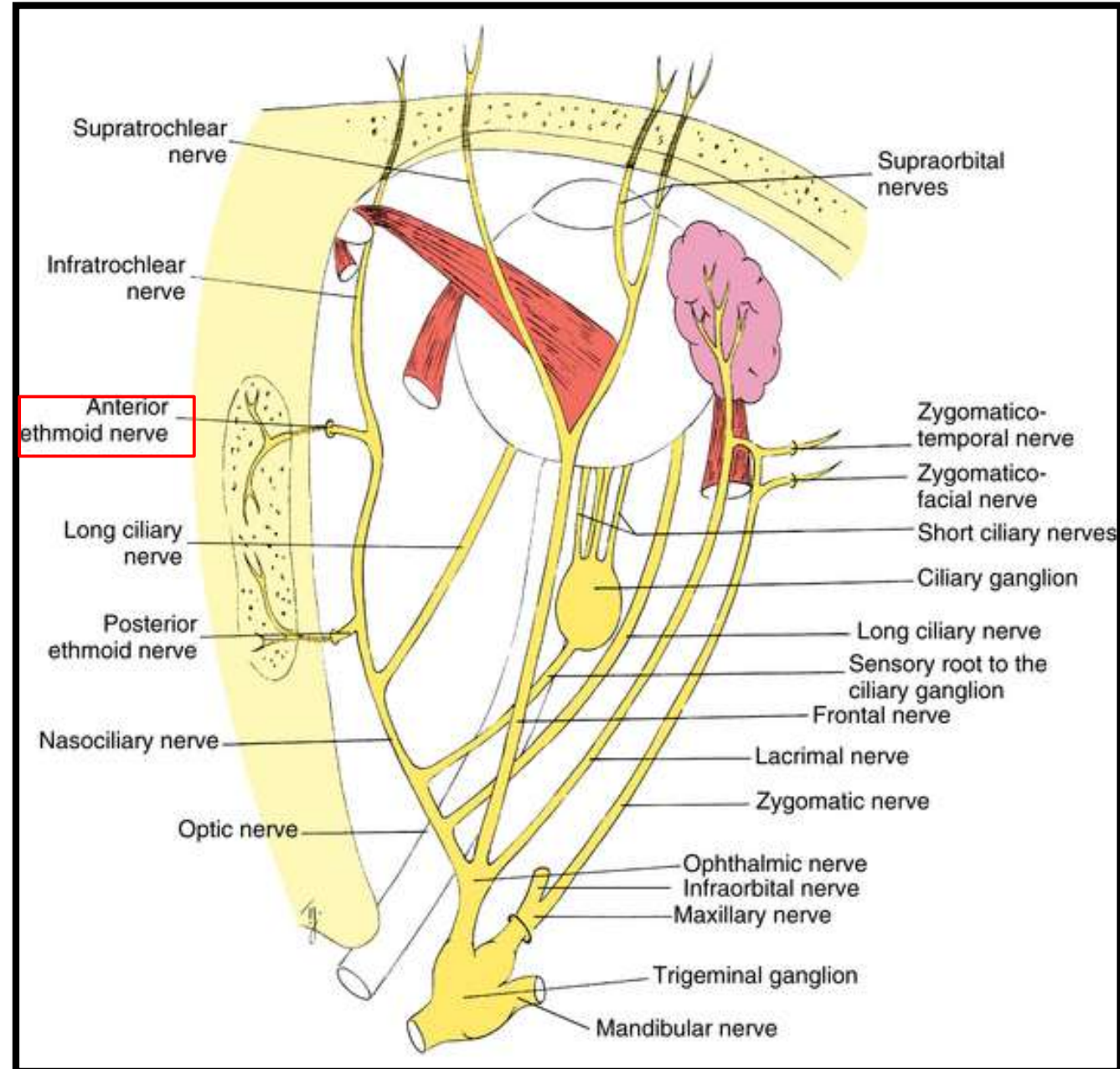
- Enters the posterior ethmoidal foramen.
- Supplies:
- Ethmoidal air sinuses.
- Sphenoidal air sinuses.



# Branches of Nasociliary Nerve contd...

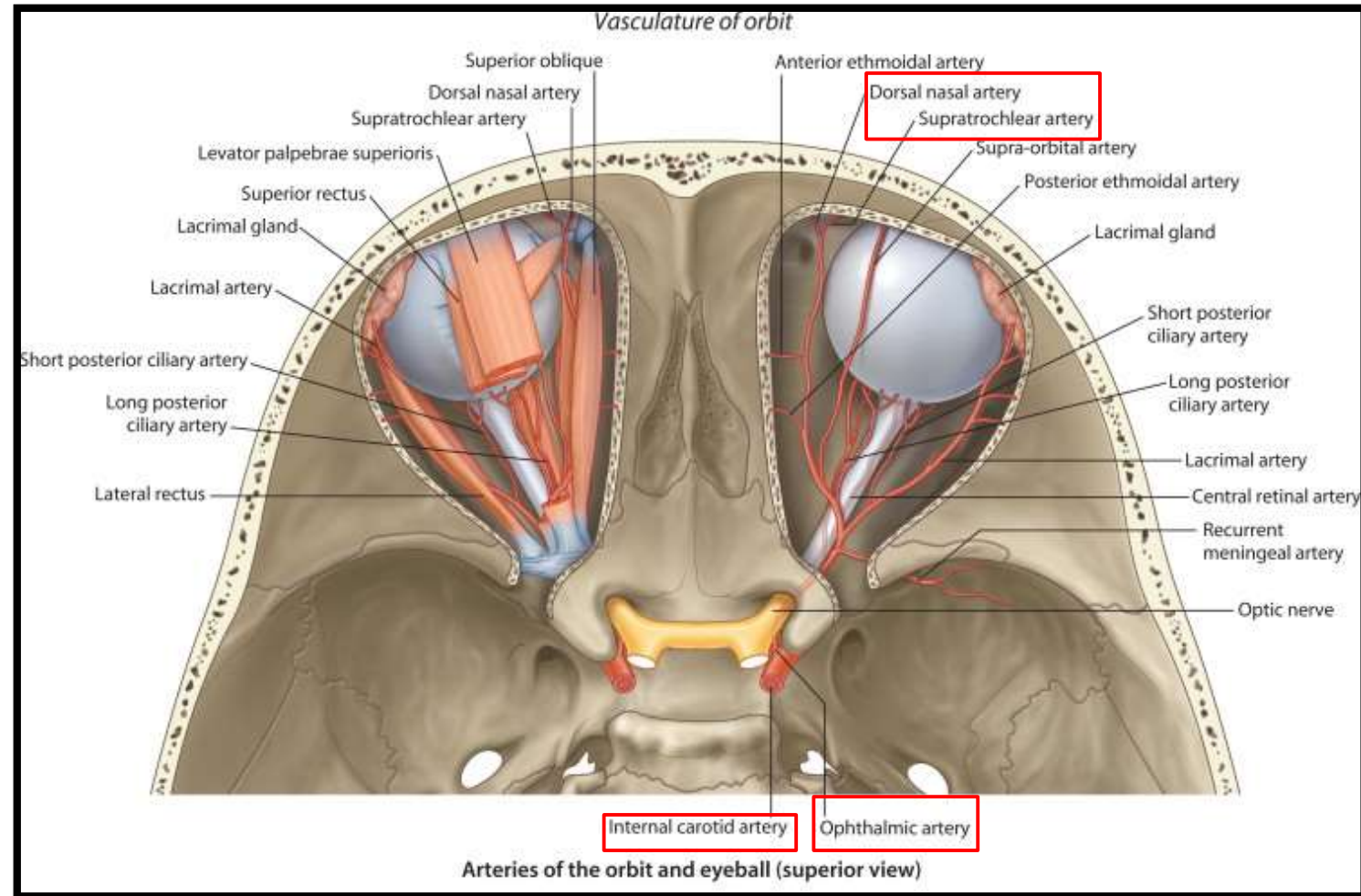
## Anterior Ethmoidal Nerve-

- Enters the anterior ethmoidal foramen.
- Passes through anterior ethmoidal canal.
- Enters the nasal cavity by passing through a slit at the side of crista galli.
- Gives **Internal nasal branches**.
- Leaves the nasal cavity at the lower border of nasal bone as **external nasal nerve**.



# Ophthalmic Artery

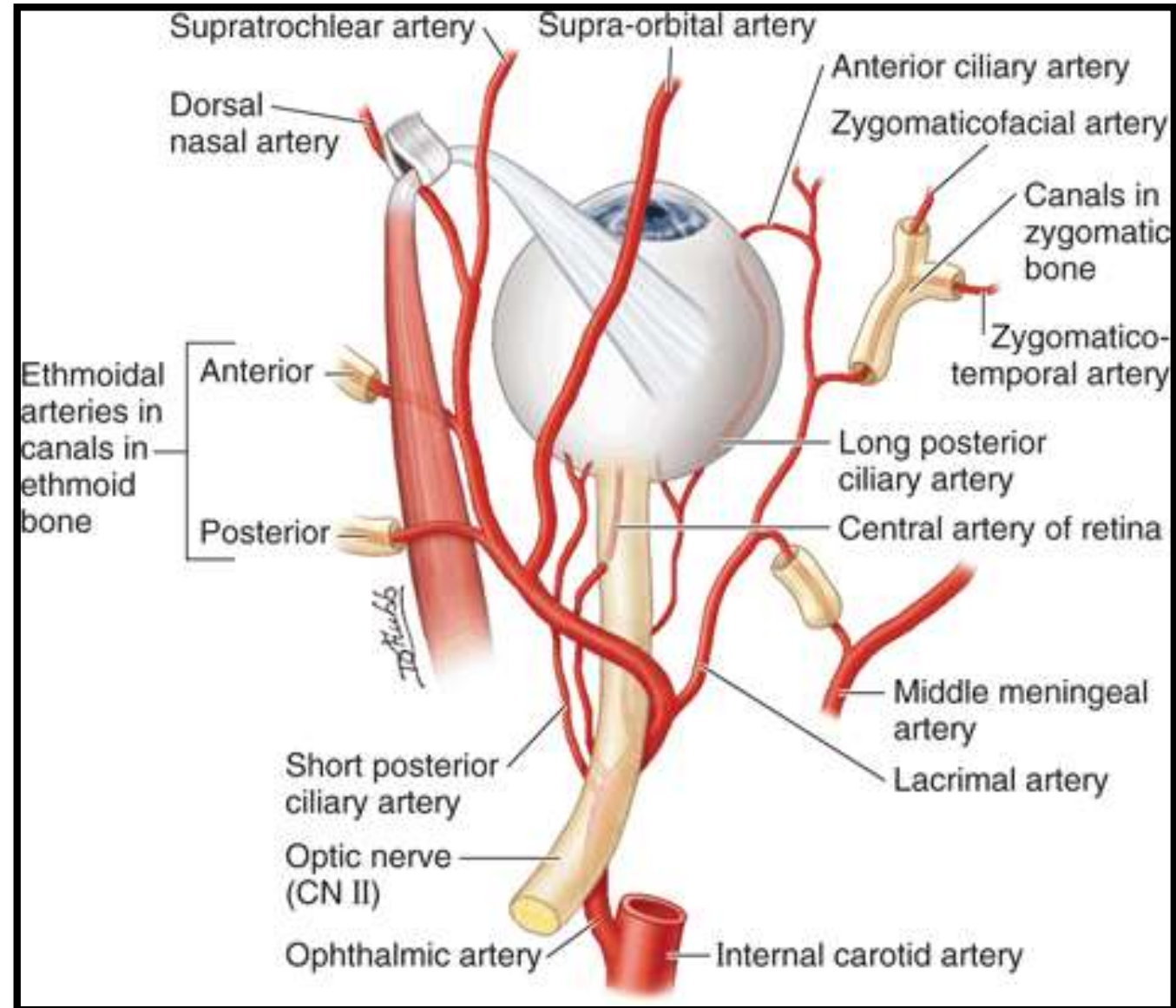
- ❖ It is a branch of Internal Carotid Artery.
- ❖ It enters the orbit through the optic canal, inferolateral to the optic nerve.
- ❖ It crosses the optic nerve superiorly from lateral to medial side.
- ❖ It runs along the medial wall of orbit.
- ❖ Near the medial angle of eye, it terminates by dividing into:
  - Supra-trochlear artery and
  - Dorsal nasal artery.





# Branches of Ophthalmic Artery

- I. To the eyeball.
- II. To the orbital muscles.
- III. Along the lateral wall of the orbit.
- IV. Along the medial wall of the orbit.



# Branches of Ophthalmic Artery

## BRANCHES TO THE EYEBALL:

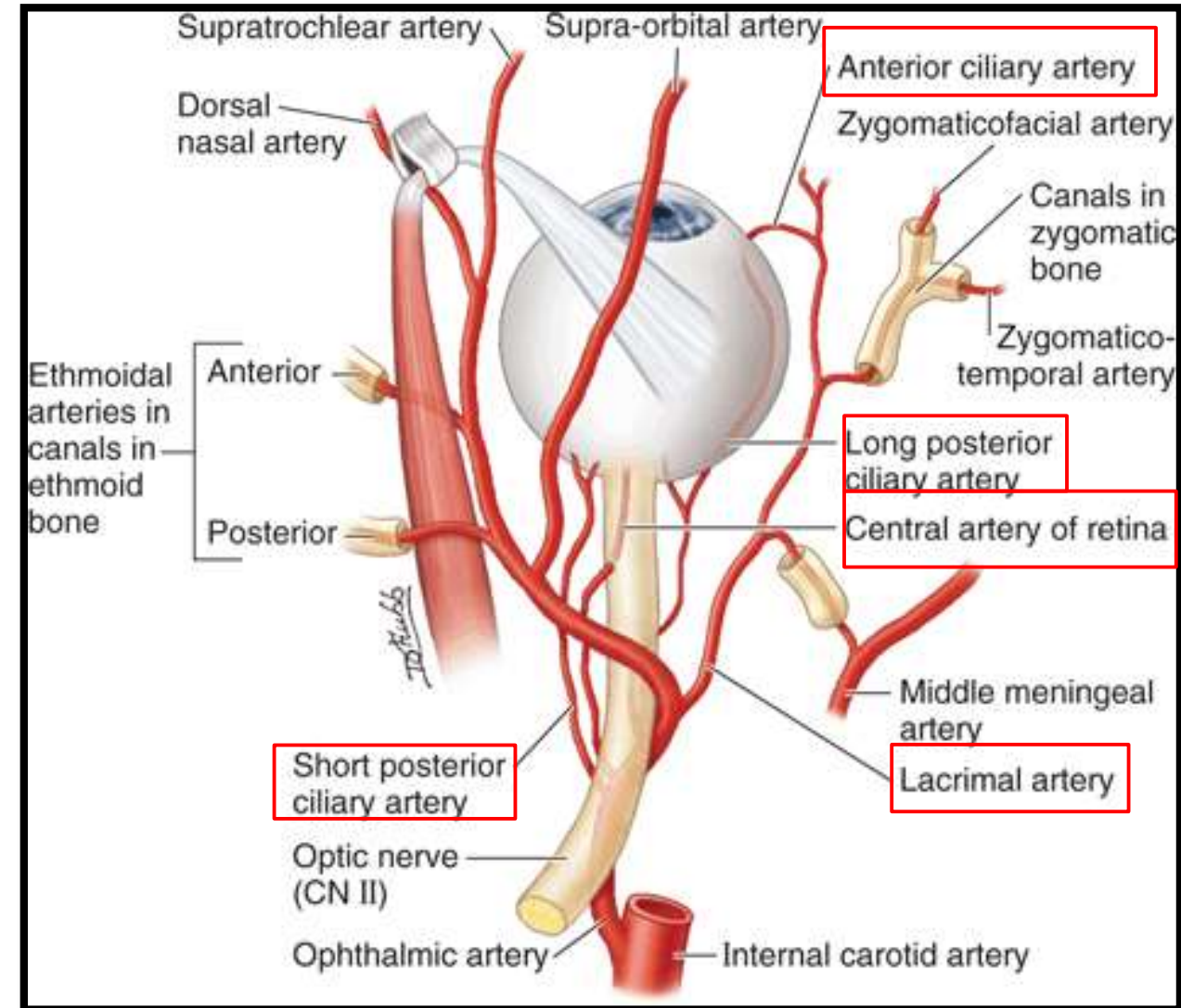
- i. Central artery of retina.
- ii. Posterior ciliary arteries.

## BRANCHES TO THE ORBITAL MUSCLES:

- Anterior ciliary arteries.

## BRANCHES ALONG THE LATERAL WALL OF THE ORBIT:

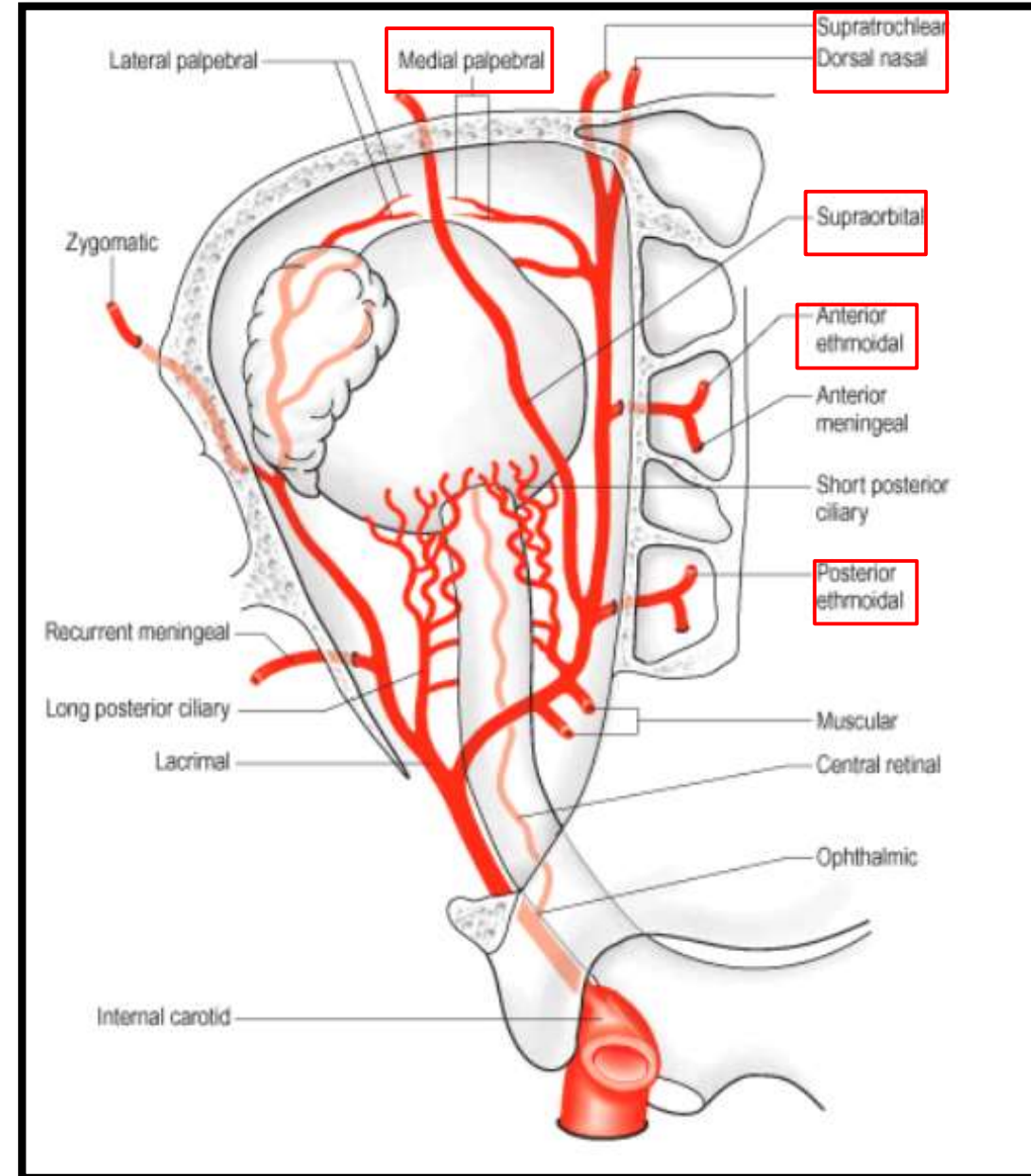
- Lacrimal artery.



# Branches of Ophthalmic Artery

## BRANCHES ALONG THE MEDIAL WALL OF THE ORBIT:

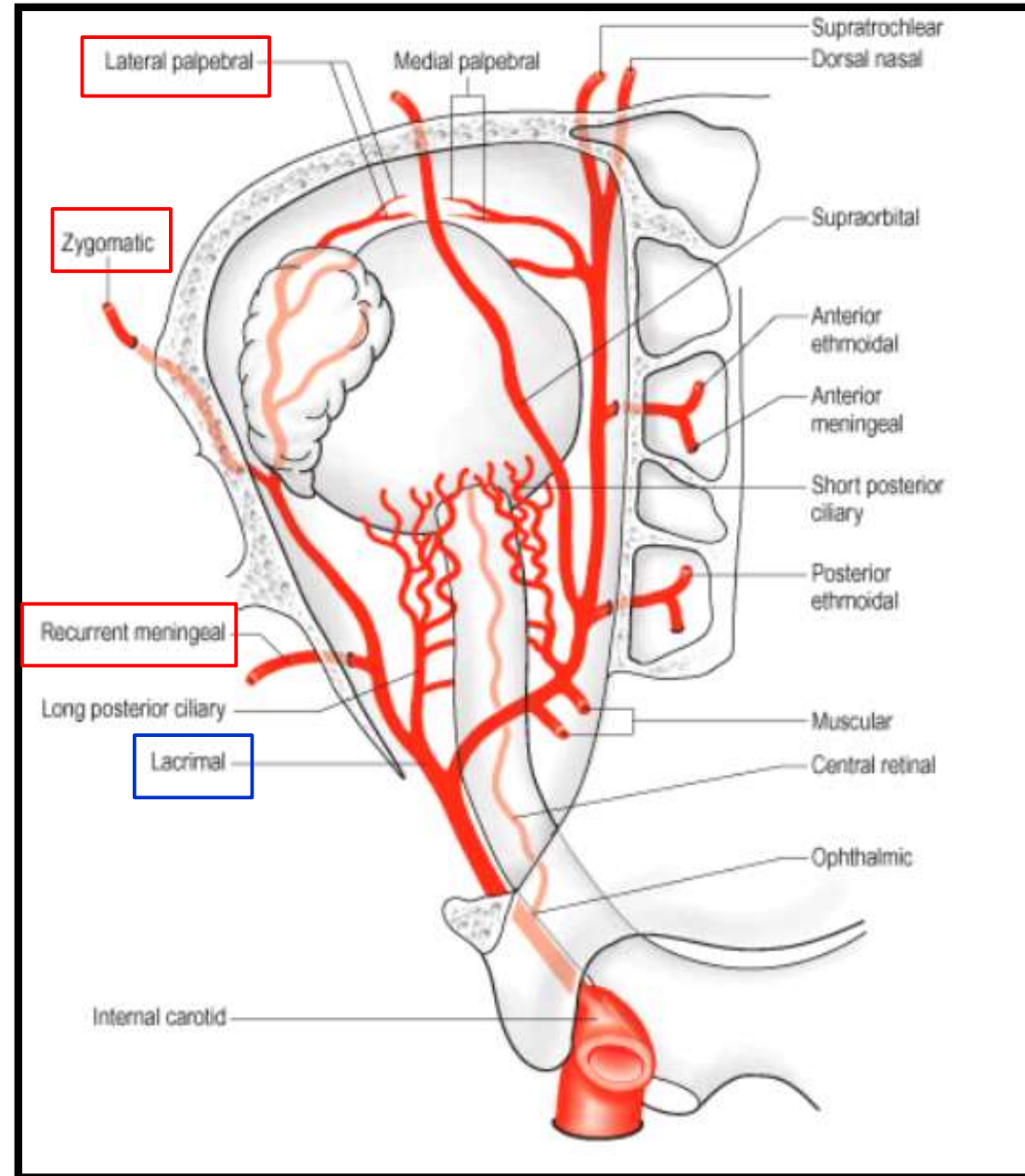
- i. Posterior ethmoidal artery.
- ii. Anterior ethmoidal artery.
- iii. Medial palpebral arteries.
- iv. Supra-orbital artery.
- v. Supra-trochlear artery.
- vi. Dorsal nasal artery.





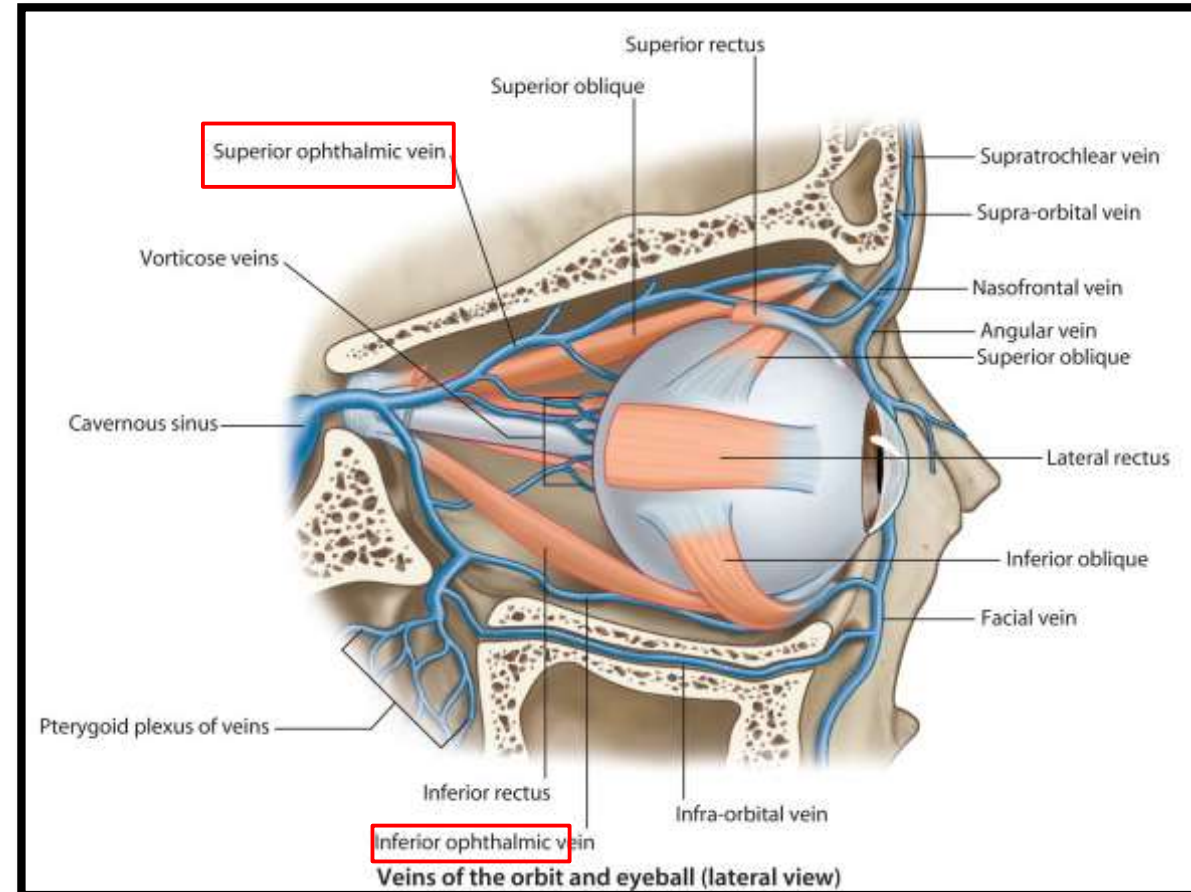
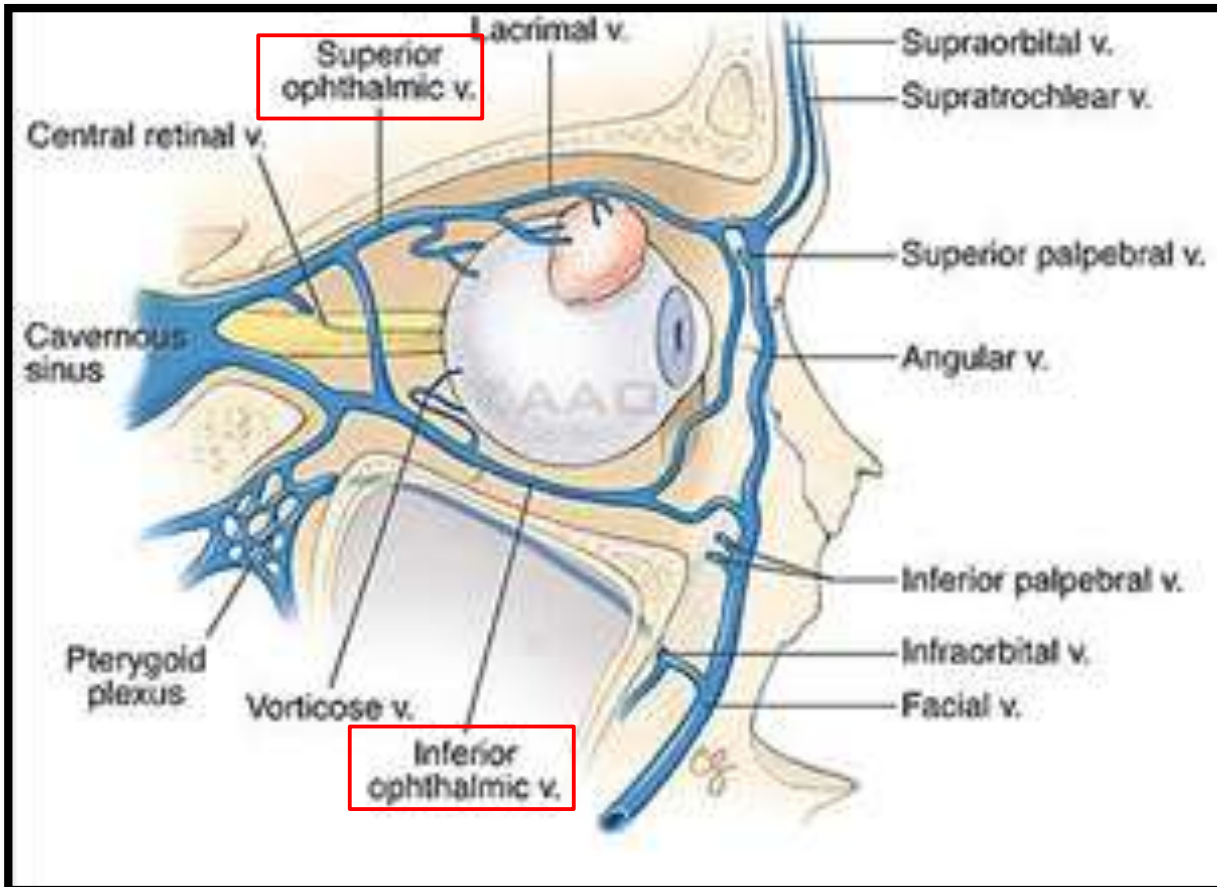
# Branches of Lacrimal Artery

- Glandular branches to lacrimal gland.
- Lateral palpebral arteries.
- Zygomatic artery.
- Recurrent meningeal artery.



# Ophthalmic Veins

- ❖ There are two venous channels in the orbit, the **superior** and **inferior ophthalmic veins**.
- ❖ These pass through the superior orbital fissure to join the cavernous sinus.



*Thank  
you*

