

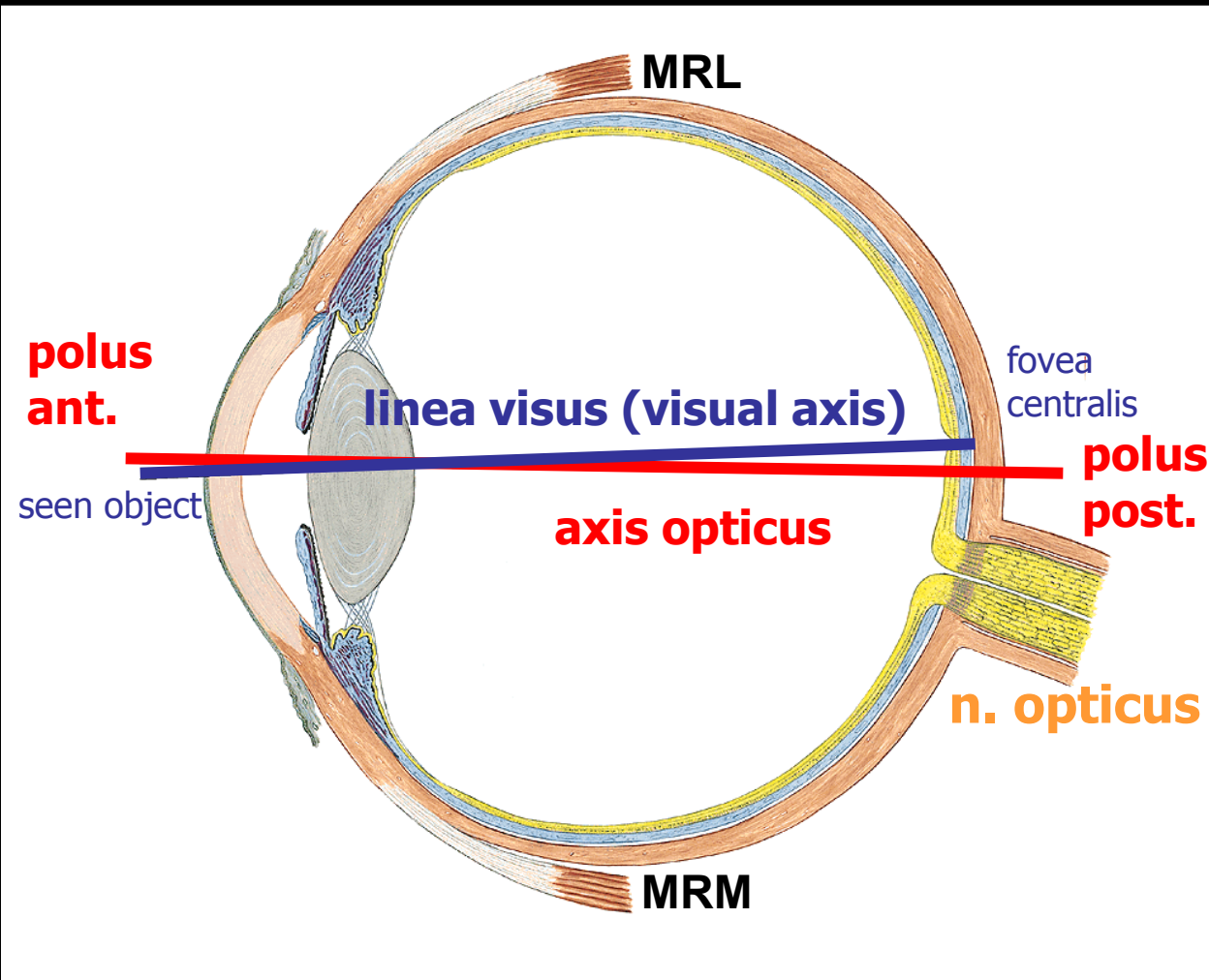
VISUAL APPARATUS



EYEBALL - bulbus oculi

**ACCESSORY VISUAL STRUCTURES - organa
oculi accessoria**

Eyeball (AP diameter 24 - 26 mm)

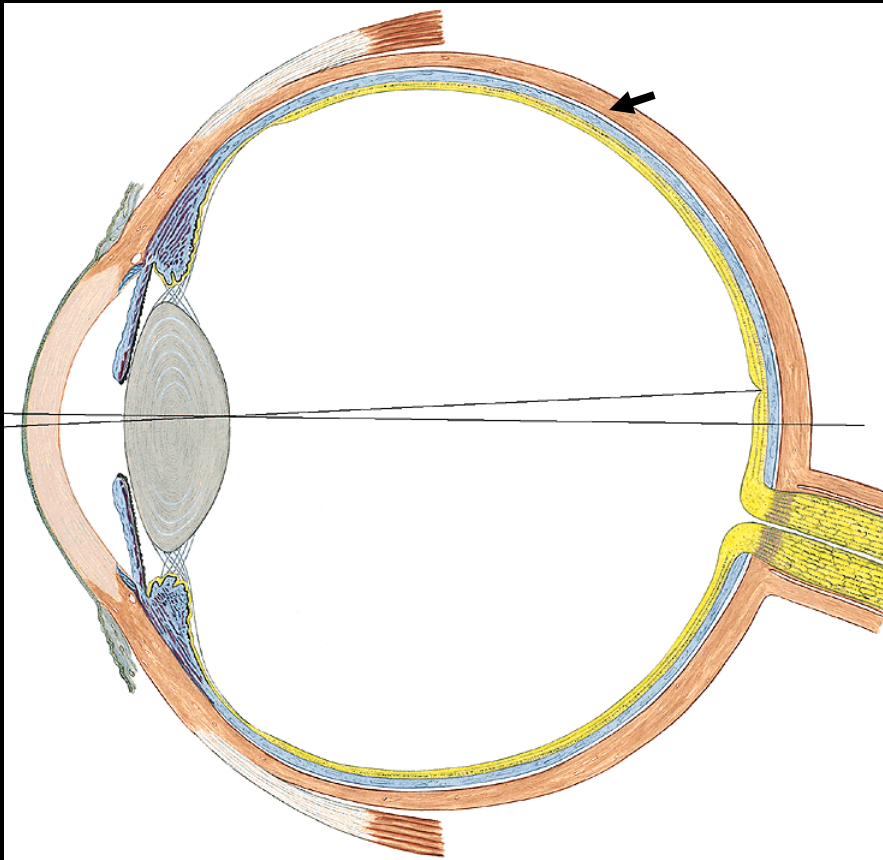


Layers:

- 1. tunica fibrosa**
- 2. t. vasculosa**
- 3. t. interna**

1. tunica fibrosa

fibrous skeleton of the eyeball
attachment of muscles



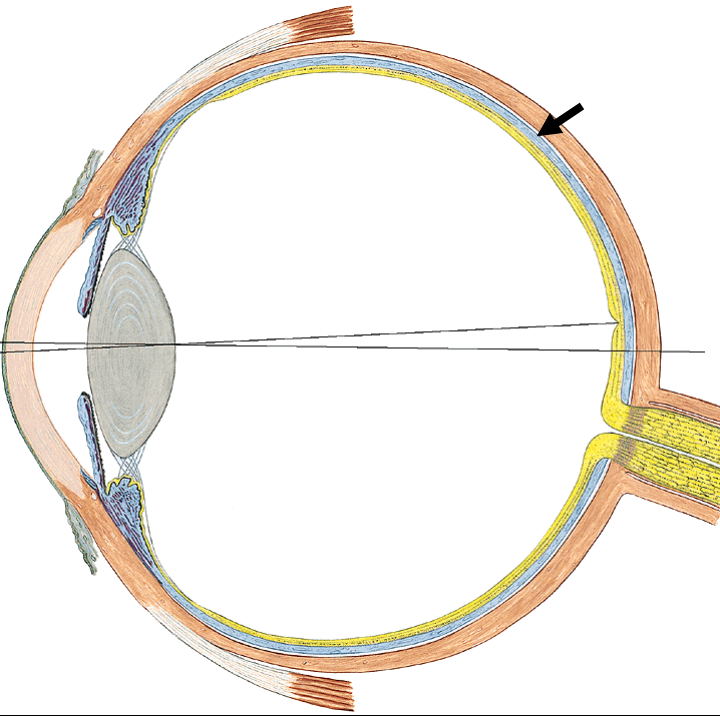
Sclera - post. 5/6

- limbus sclerae
- sinus venosus
- lamina cribrosa

Cornea - ant. 1/6

- limbus corneae
- facies ant. et post.

2. tunica vasculosa



Choroidea (2/3)

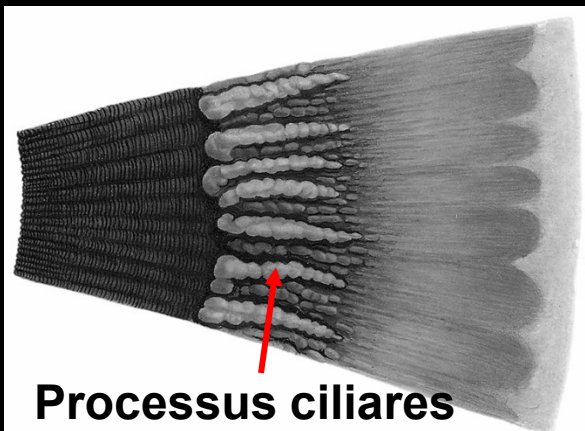
- ✓ supplies the retina
- ✓ pigmented – light-absorbing
- ✓ vascular

Corpus ciliare

- ✓ attachment for the lens
- ✓ controls thickness of the lens
- ✓ secretion of aqueous humor

Iris

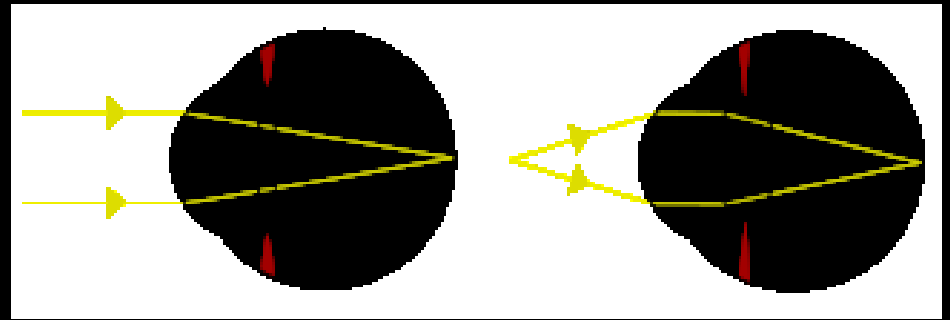
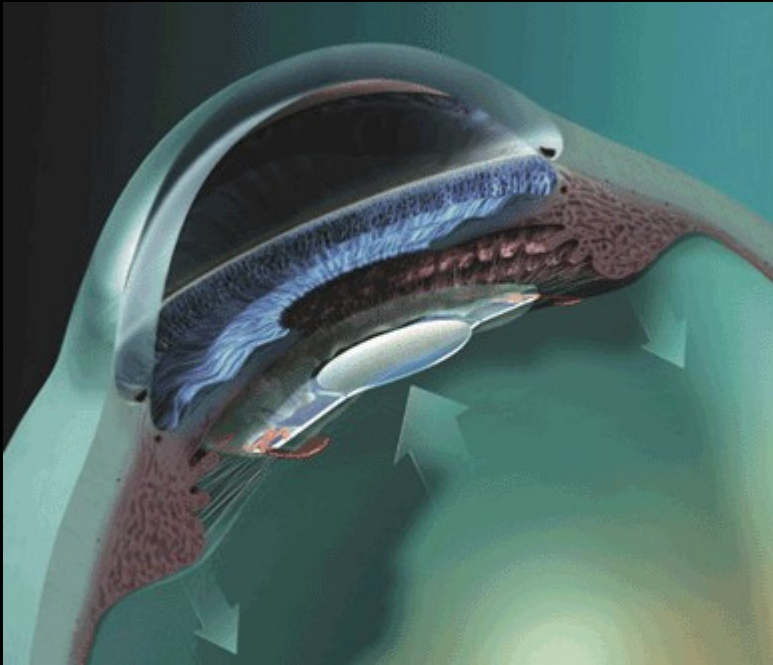
- ✓ contractile diaphragm with a central aperture – **pupilla**
 - facies ant. et post.
 - sphincter, dilator



Processus ciliares

M. ciliaris

Accommodation of the lens

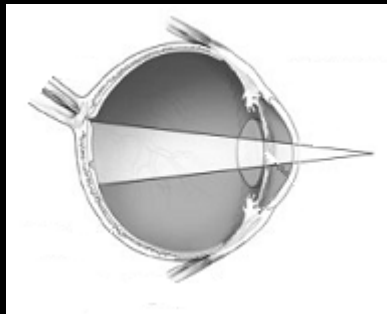


increased convexity of the
lens – refraction suitable
for near vision

Innervation: **E-W ncl. CN III**

M. sphincter pupillae

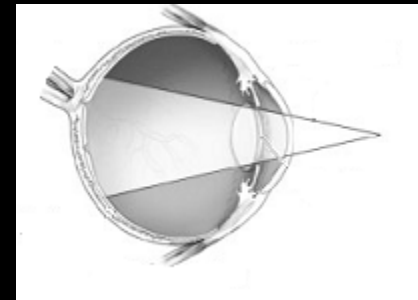
Miosis



E-W ncl. CN III

M. dilatator pupillae

Mydriasis



Symp.ncl.

3. tunica interna

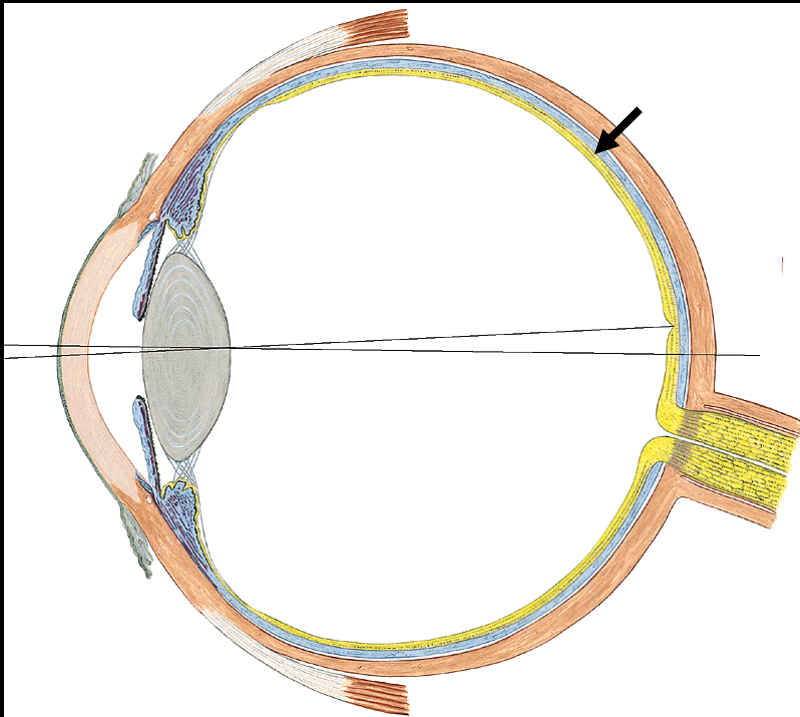
Retina

- pars optica
(rods, cones)

ora serrata

- pars caeca:

p. iridica p. ciliaris



Layers of the retina

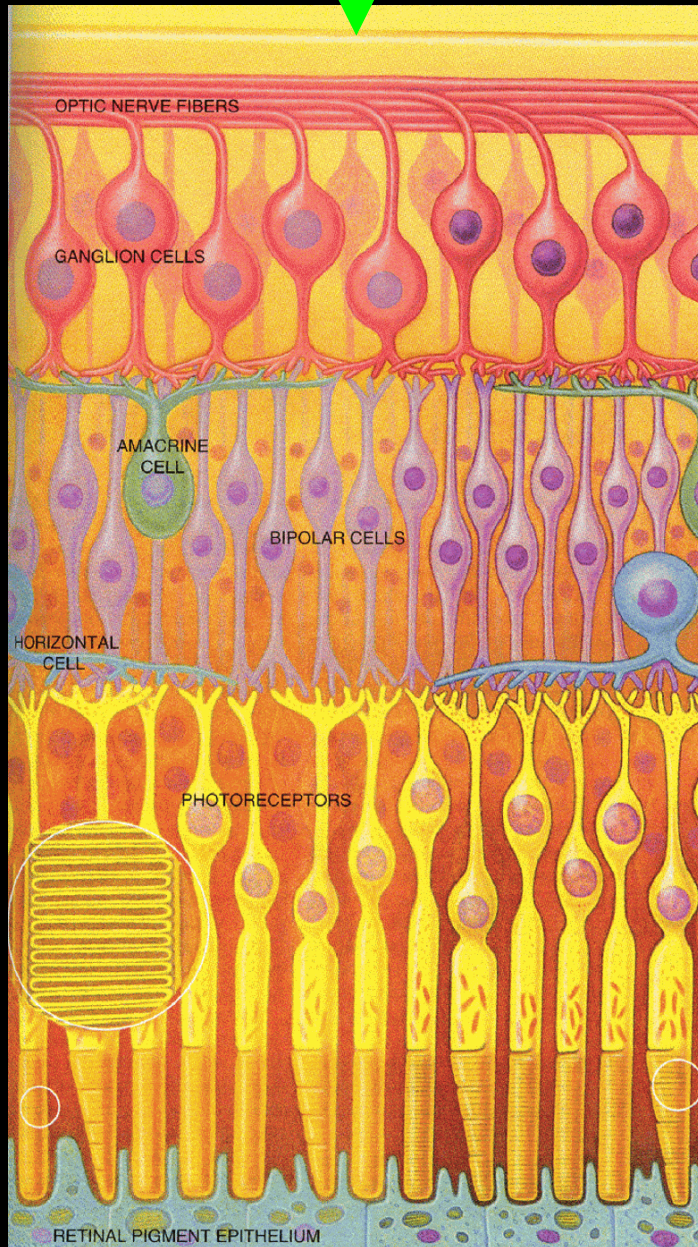
N. opticus

ganglion cells

bipolar cells

**photoreceptors
(rods and cones)**

stratum pigmentosum



Photoreceptors:

Rods

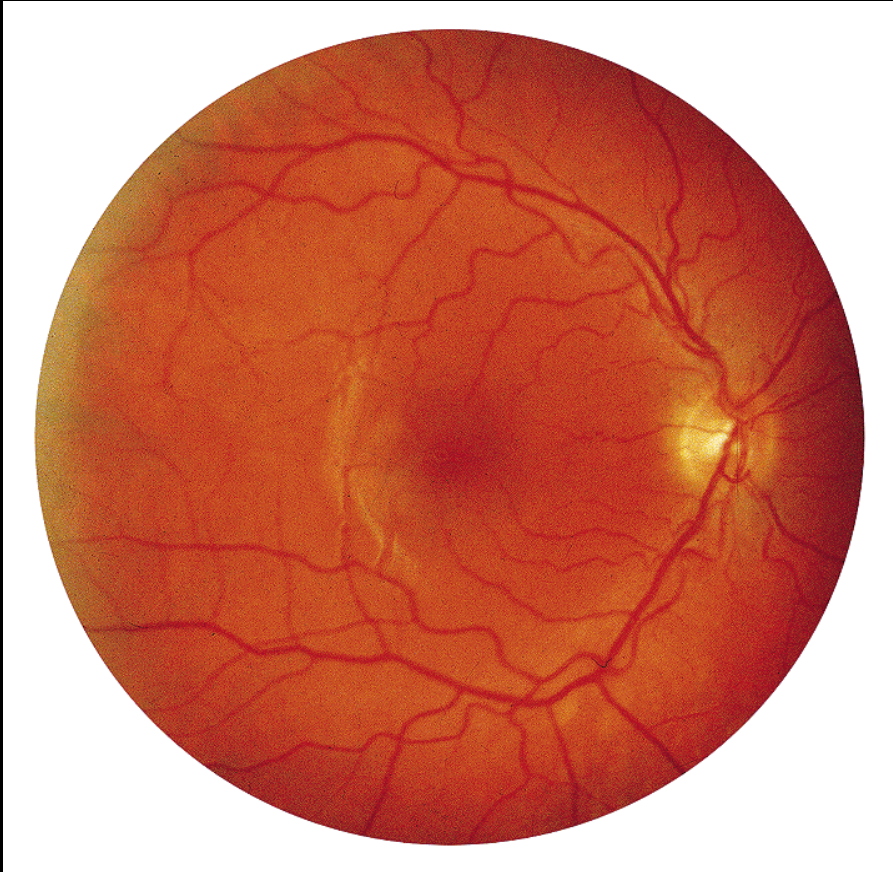
- ✓ 120 million
- ✓ primary source of visual information at night
- ✓ used in peripheral vision

Cones

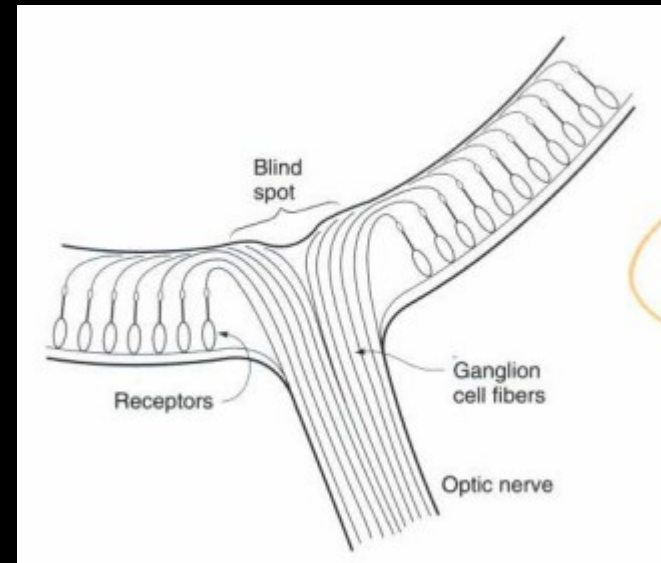
- ✓ 7 million
- ✓ detection of color
- ✓ central fovea – responsible for central vision

Ophthalmoscopy

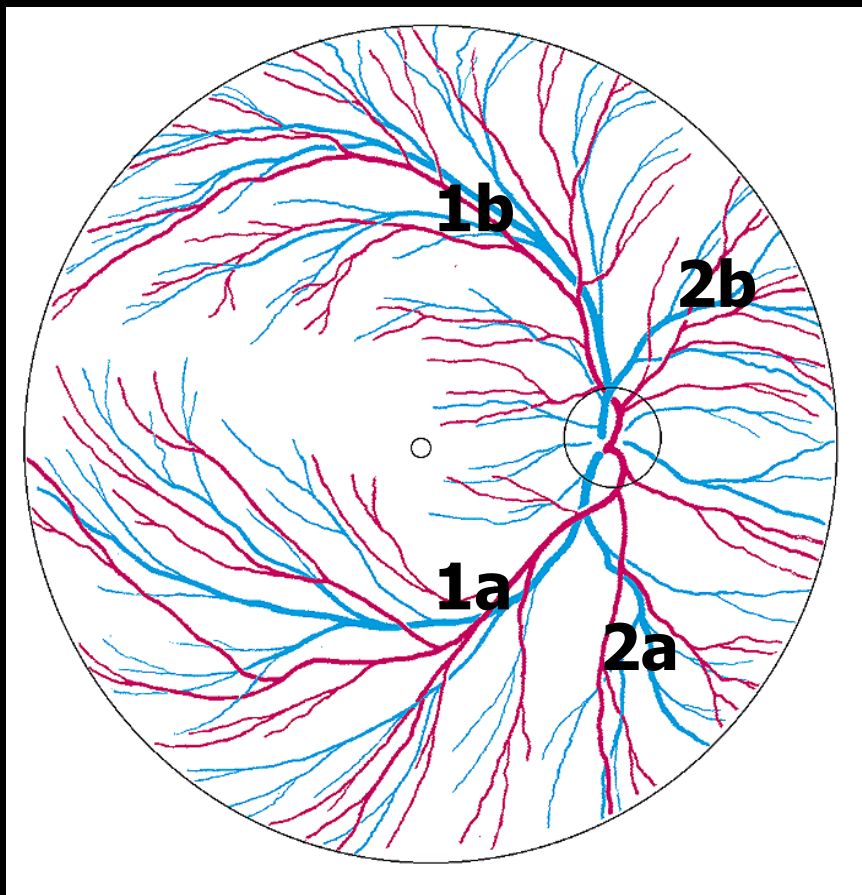
Fundus - OCULA DEXTRA (OD)



**Discus (papilla) n.
optici**



Macula lutea + fovea centralis
- the area of most acute vision



A. et v. centralis retinae

1a,b a. et v. temporalis

2a,b a. et v. nasalis

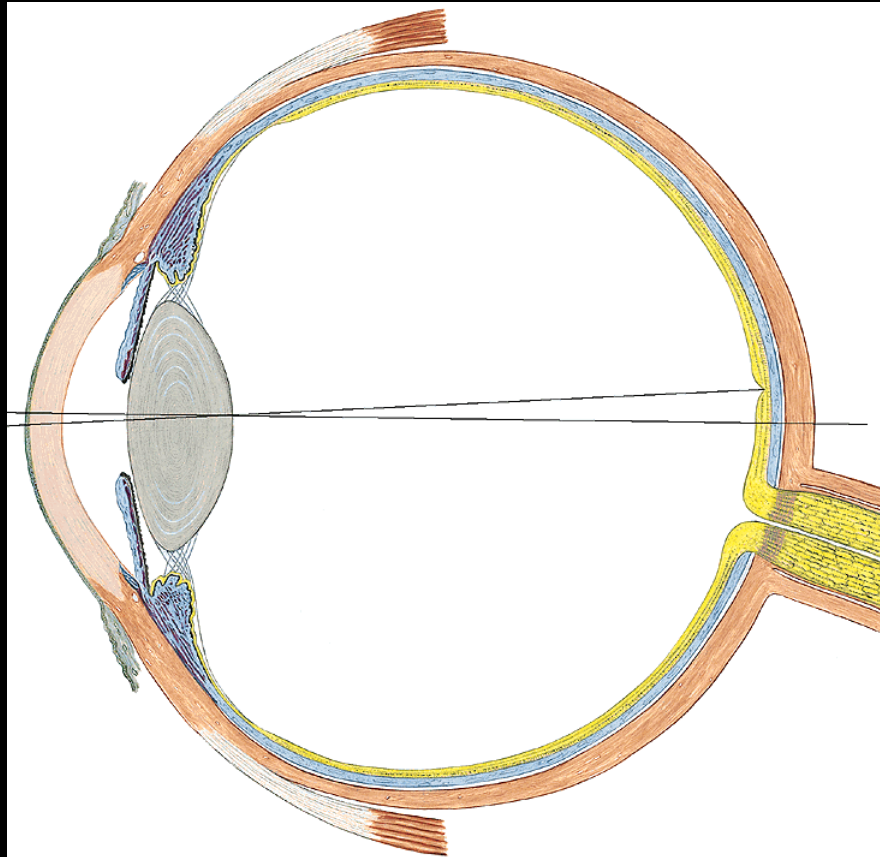
Refractive media of the eyeball:

cornea

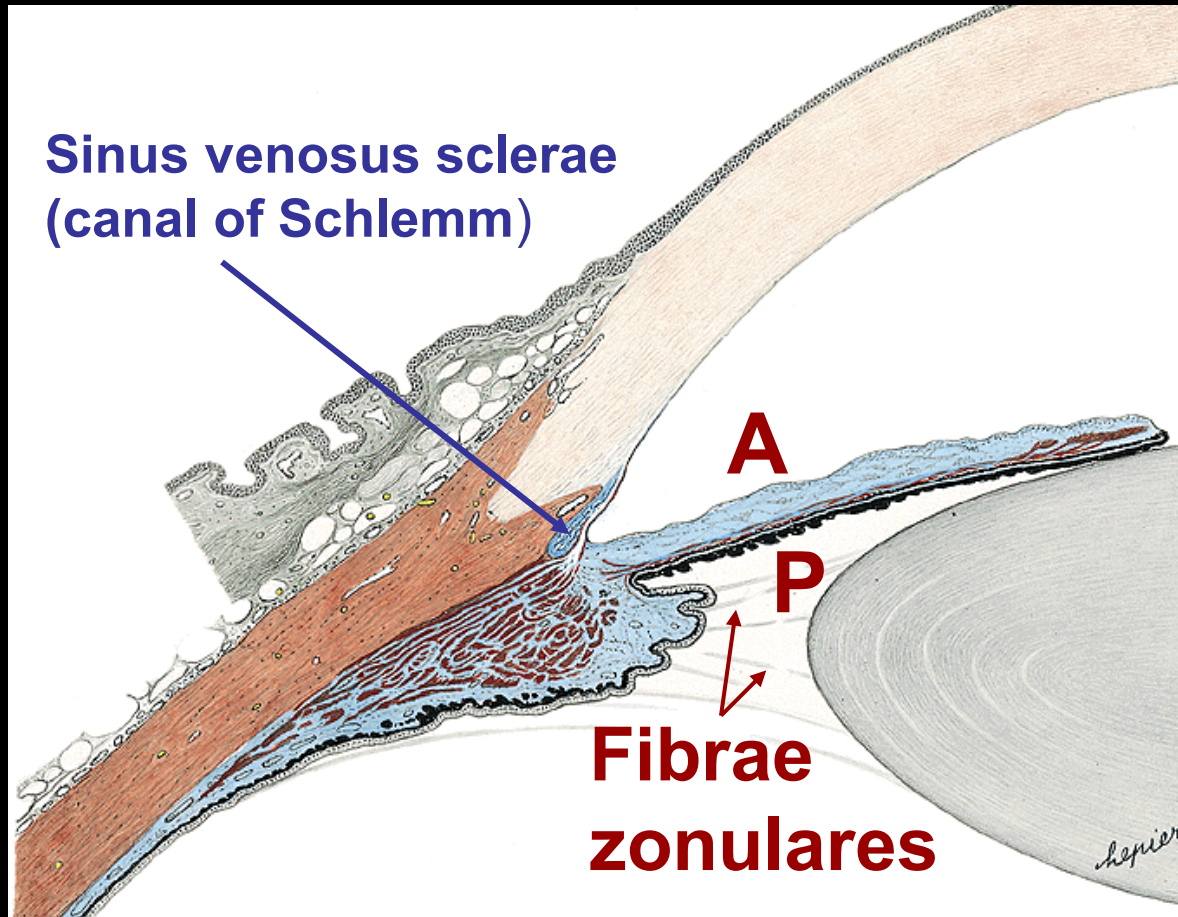
humor aquosus

lens

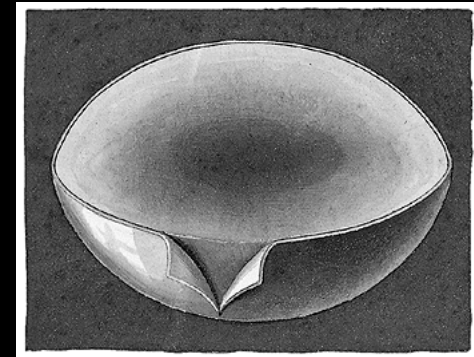
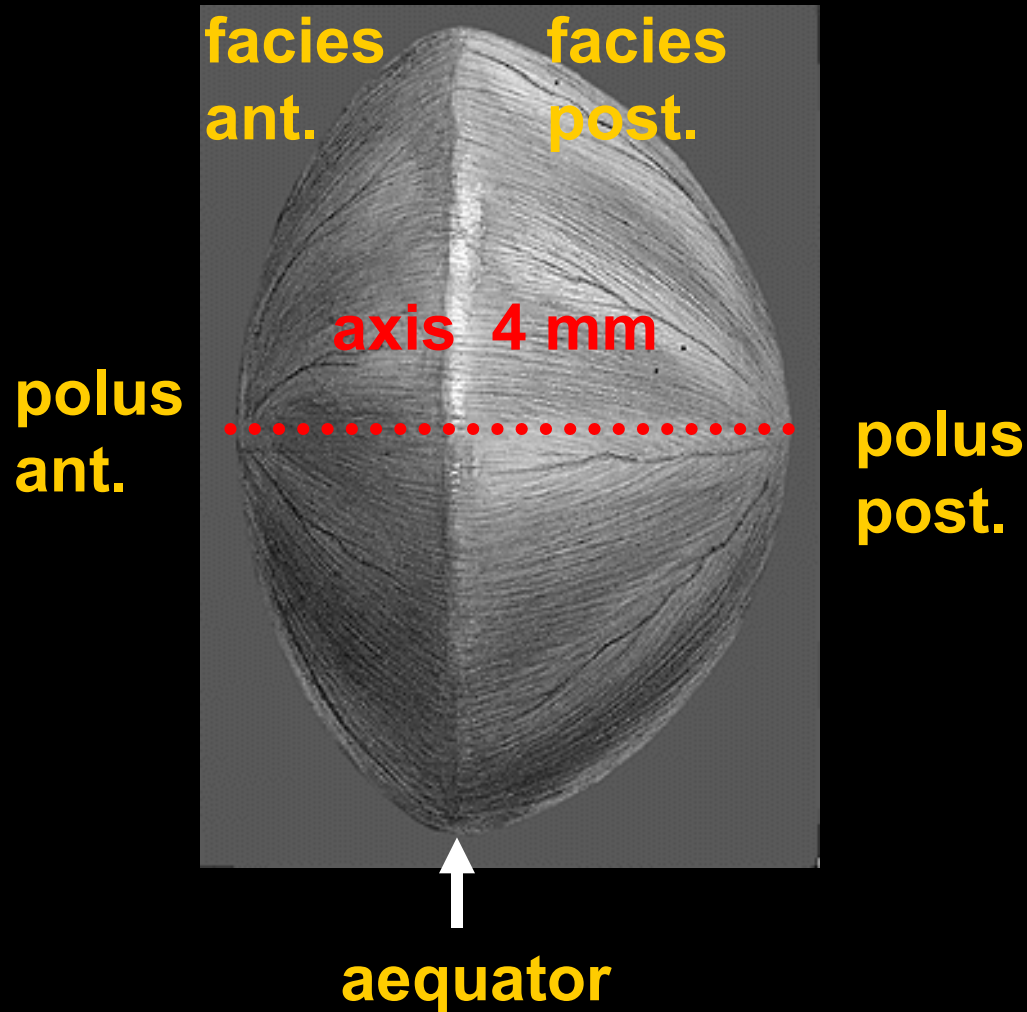
corpus vitreum



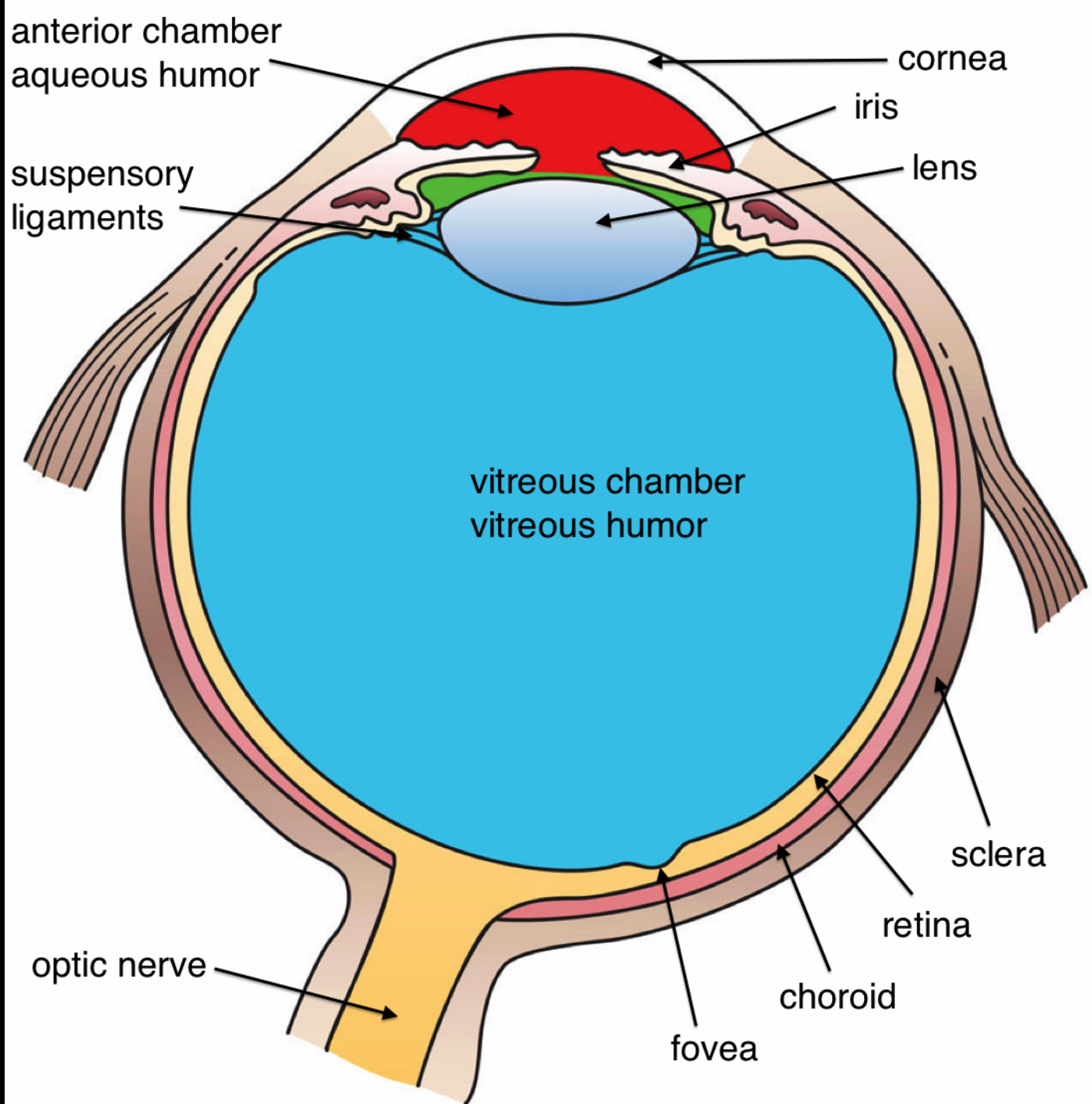
Chambers - camera bulbi ant. et post.
Aqueous humor - humor aquosus

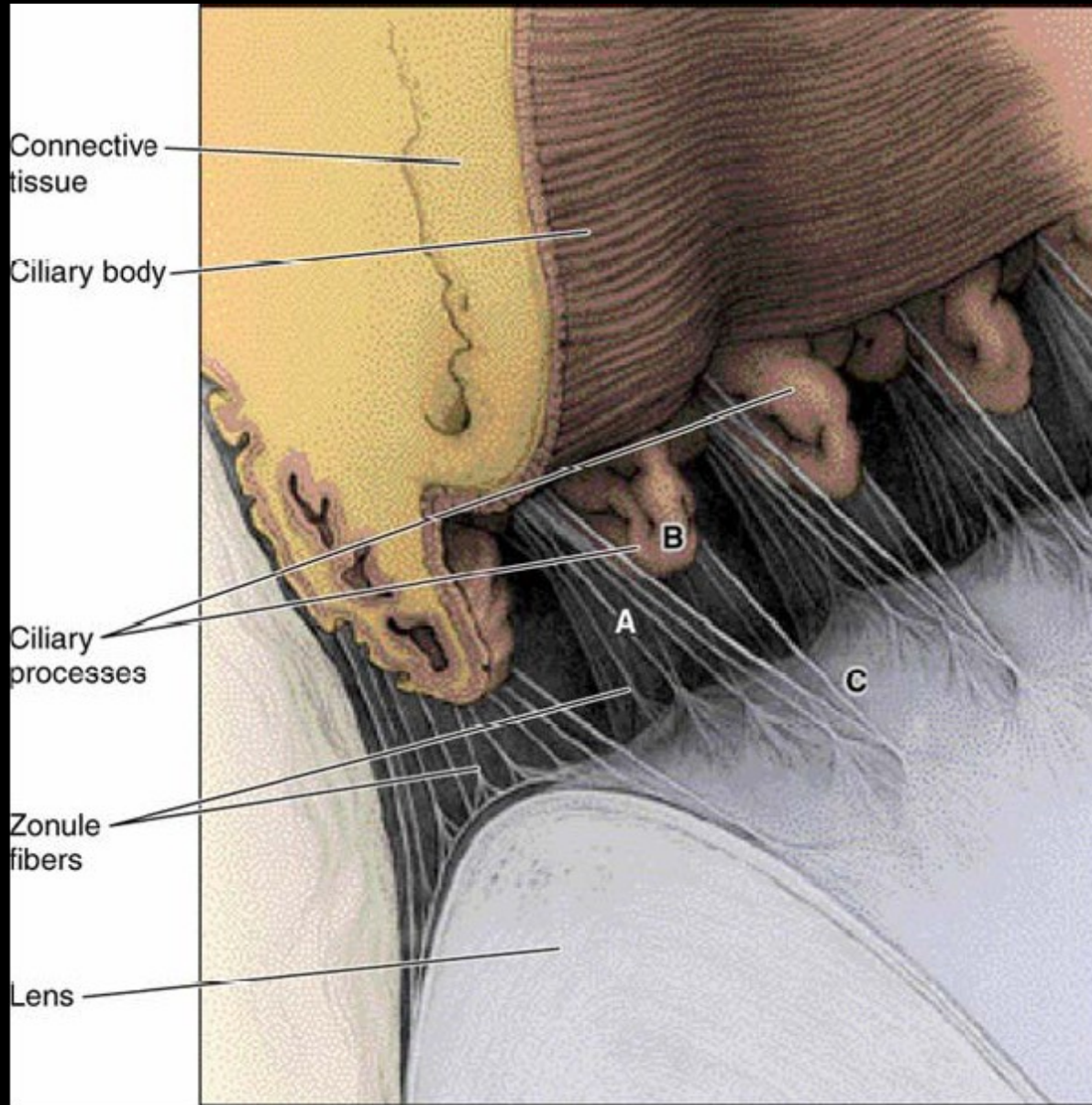


Lens



- capsula lentis
- substantia lentis





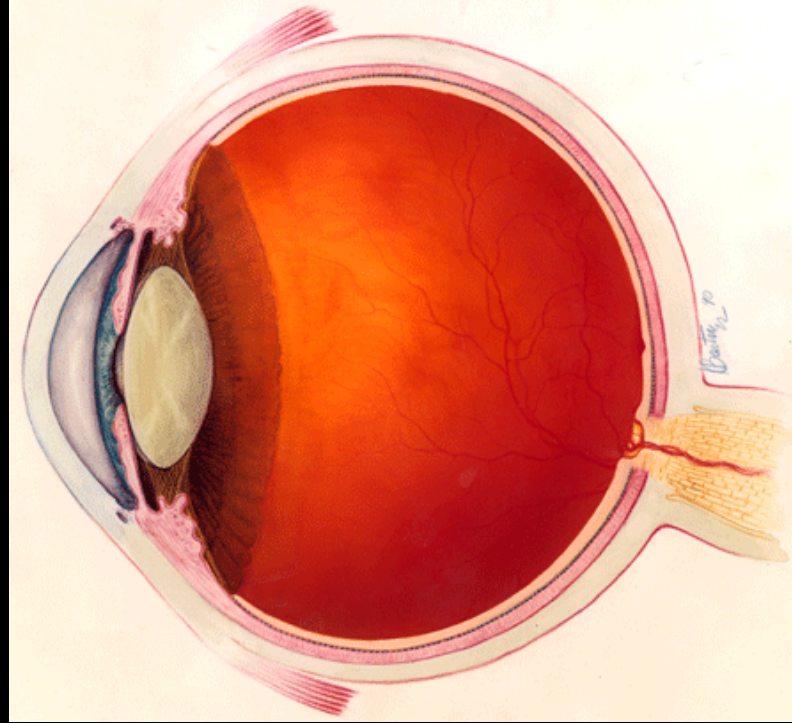
PRESBYOPIA

Cataract



- ✓ loss of transparency - clouding
- ✓ cataract extraction and intraocular lens implantation

Vitreous chamber: corpus vitreum

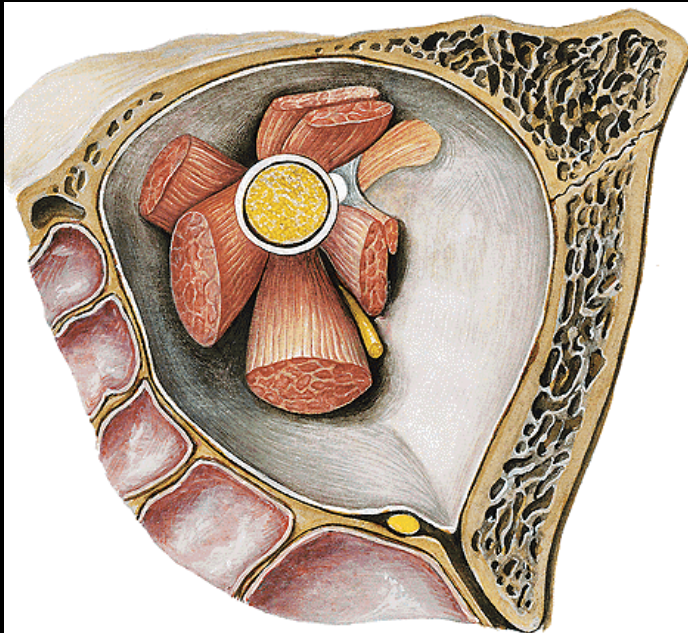


- ✓ **jelly-like substance with watery fluid**
- ✓ **holds the retina in place**
- ✓ **supports the lens**

Extraocular muscles

Non-striated

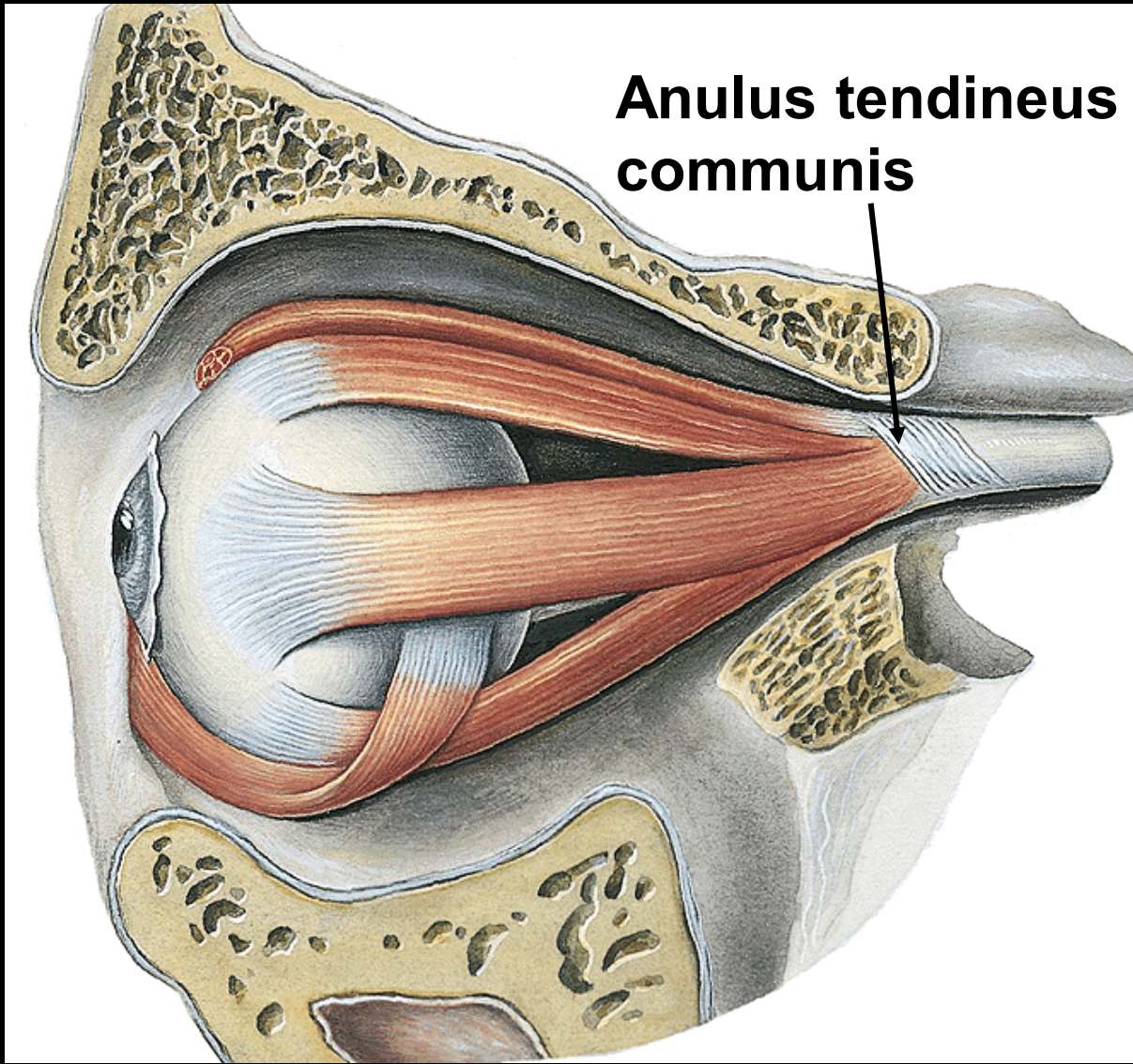
- m. orbitalis (**symp.**)
- mm. tarsales (**symp.**)

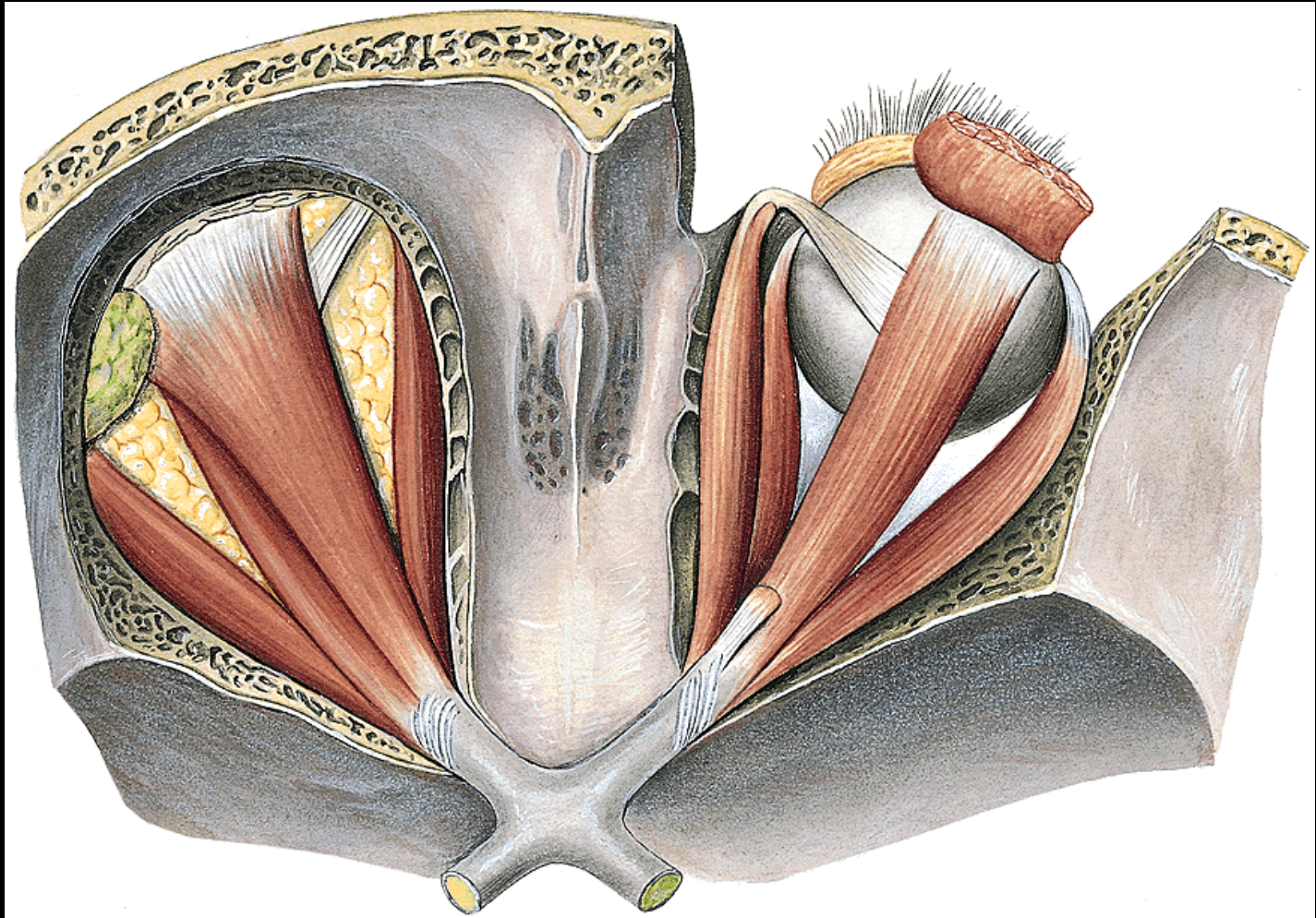


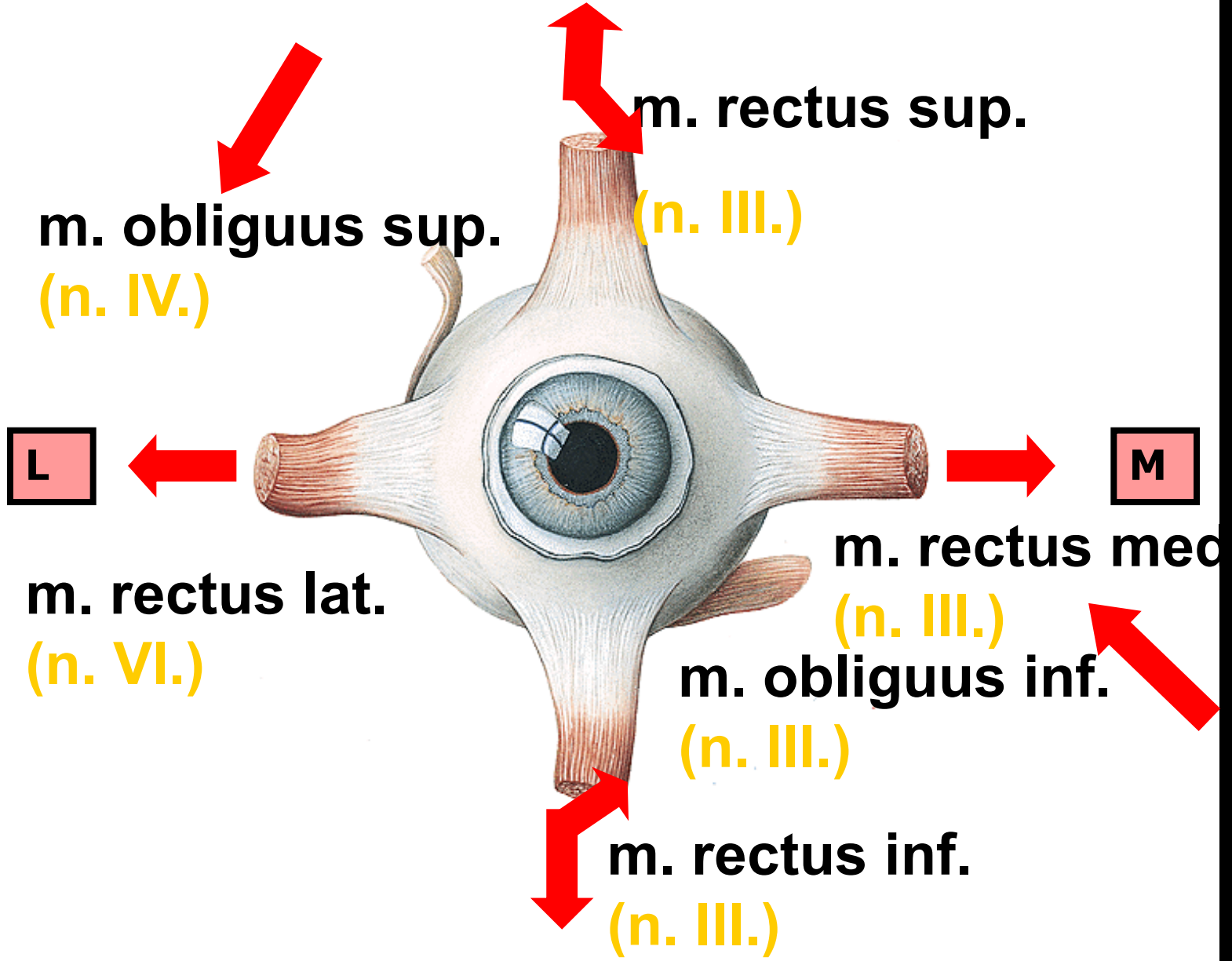
Striated

- m. rectus bulbi sup., inf., med., lat.
- m. obliquus sup., inf.
- m. levator palp. sup.

**Anulus tendineus
communis**







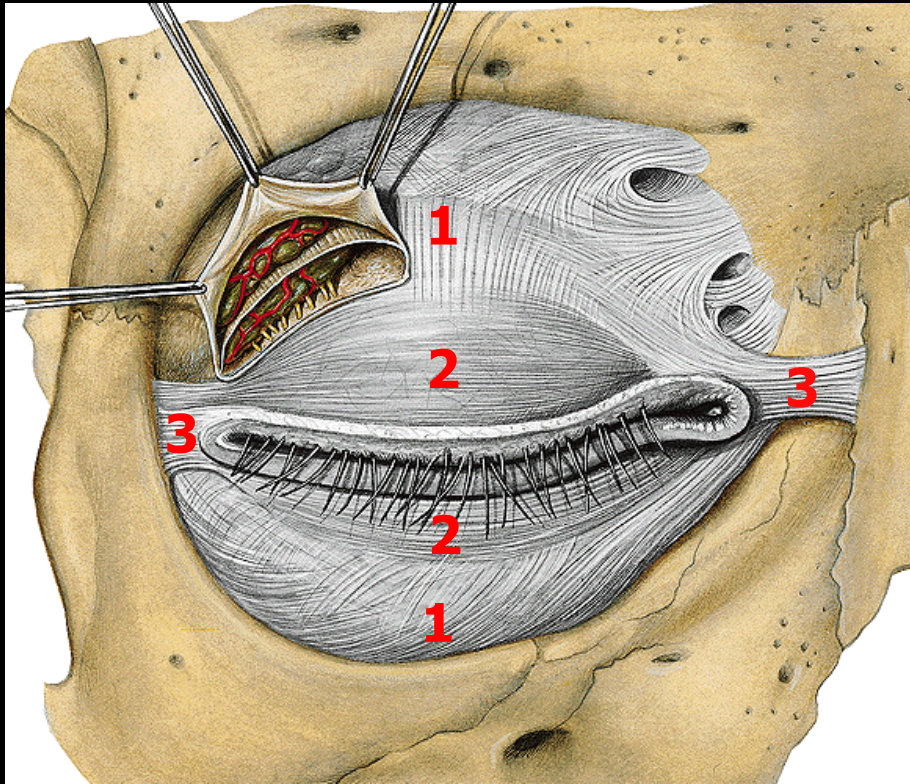
Eyelids - palpebrae

Conjunctiva



- palpebra sup. et inf.
- commisurae palpebr.
- rima palpebrarum
- angulus oculi med. et lat.
(canthus)
- facies ant. et post.

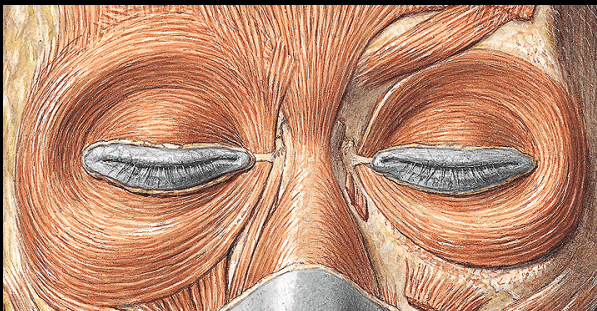
Structure of the eyelid

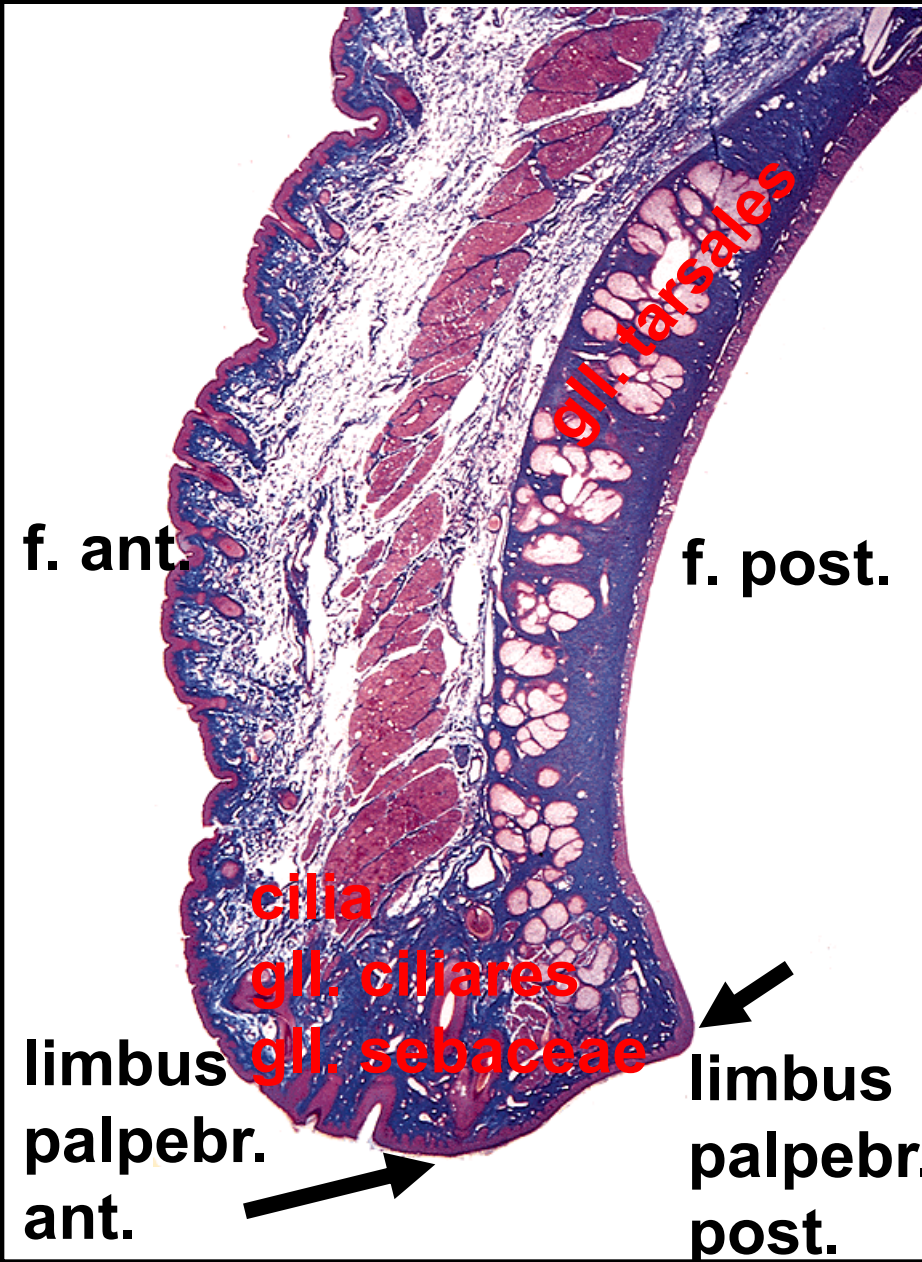


1 septum orbitale

2 tarsus sup. et inf.

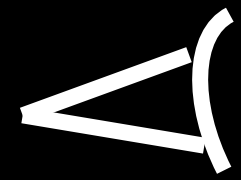
3 lig. palp. med. et lat.





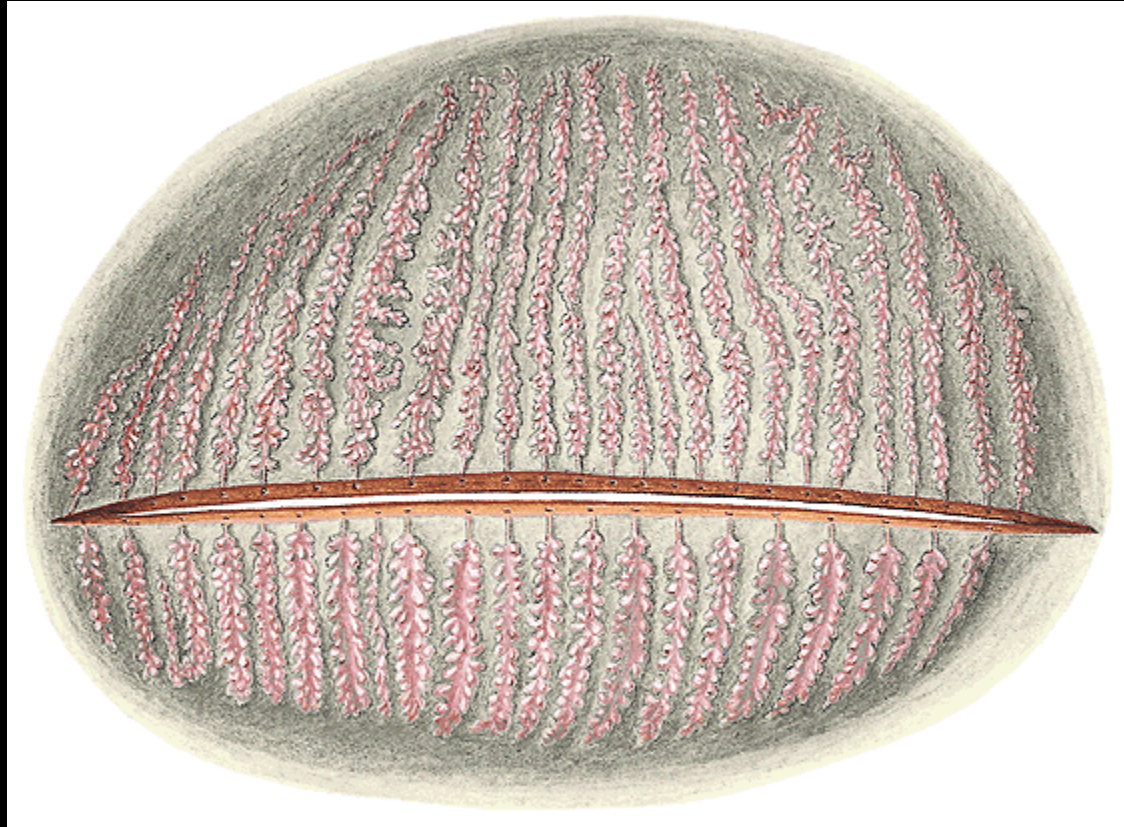
skin

- m. orbicularis oculi
- septum orbitale + tarsi
- conjunctiva

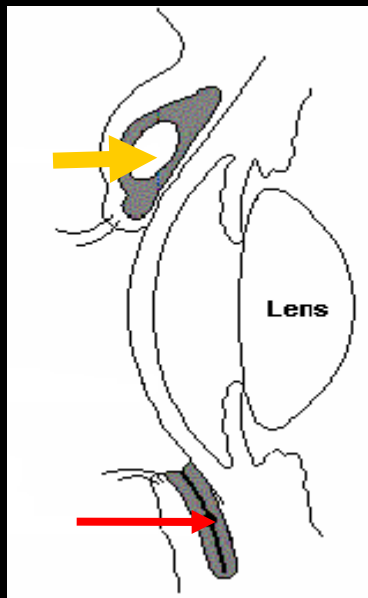


Rivus lacrimalis

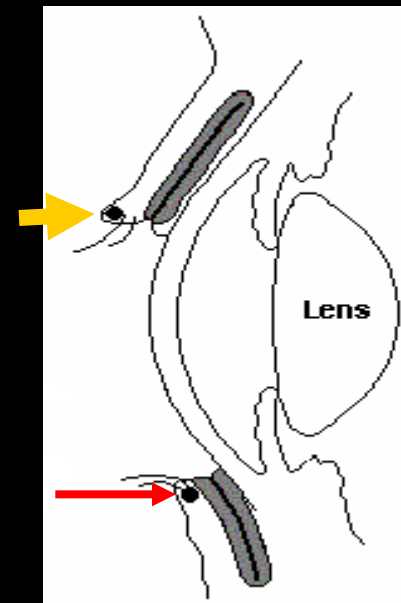
GII. tarsales

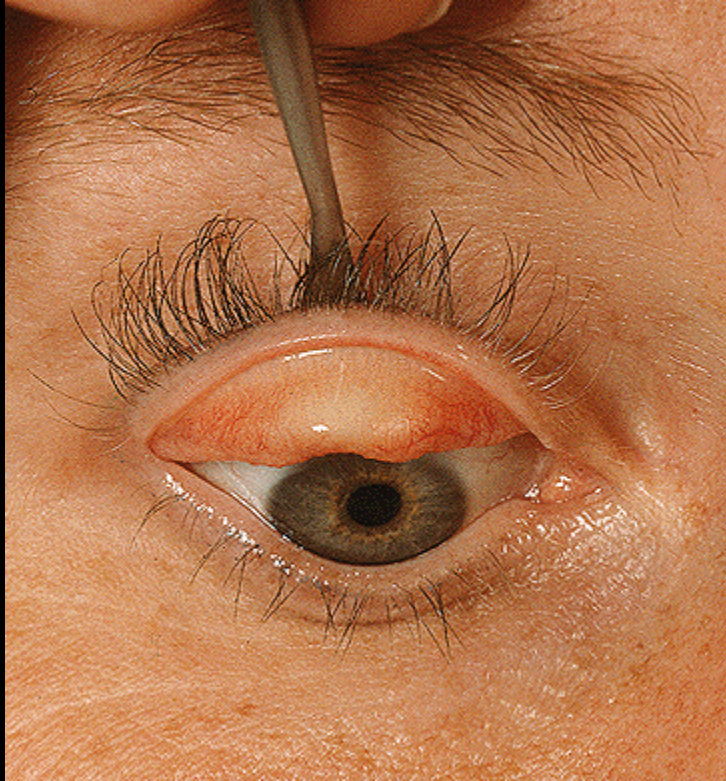


Chalazion (tarsal chalazion)



Hordeolum (stye)

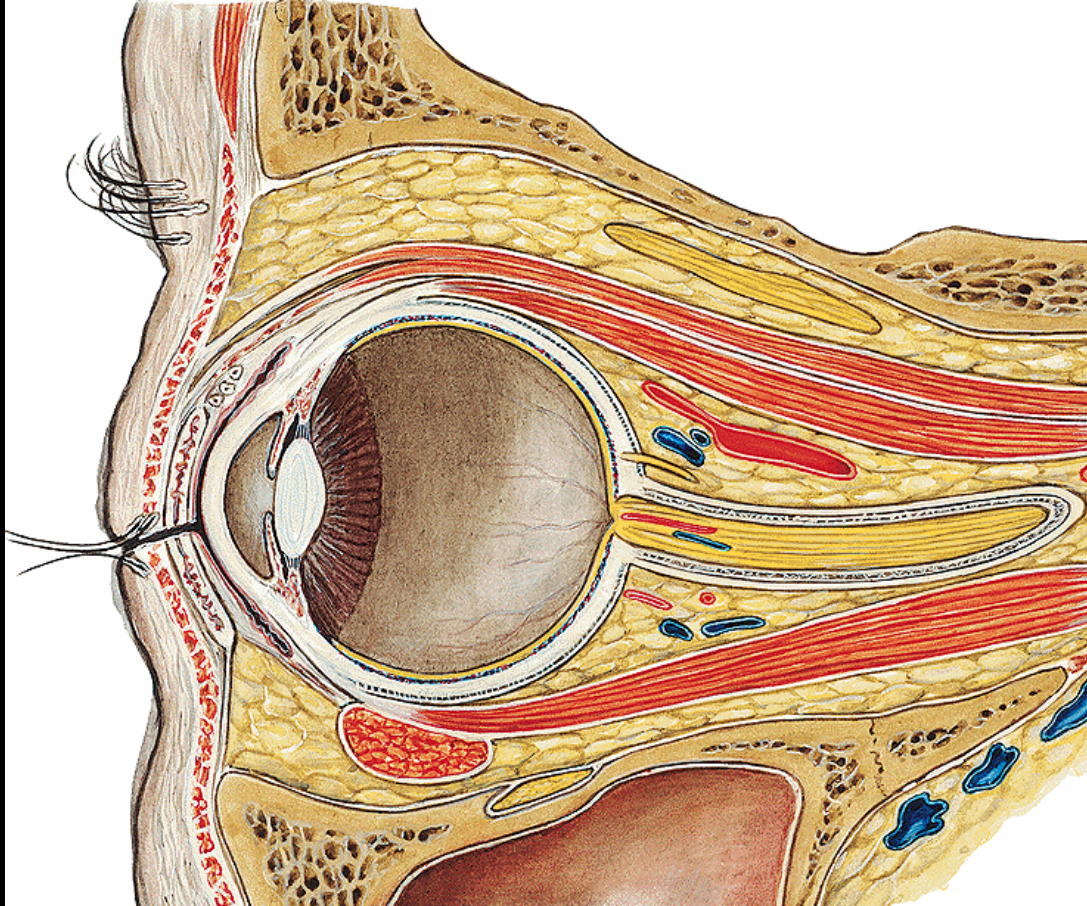




Tunica conjunctiva

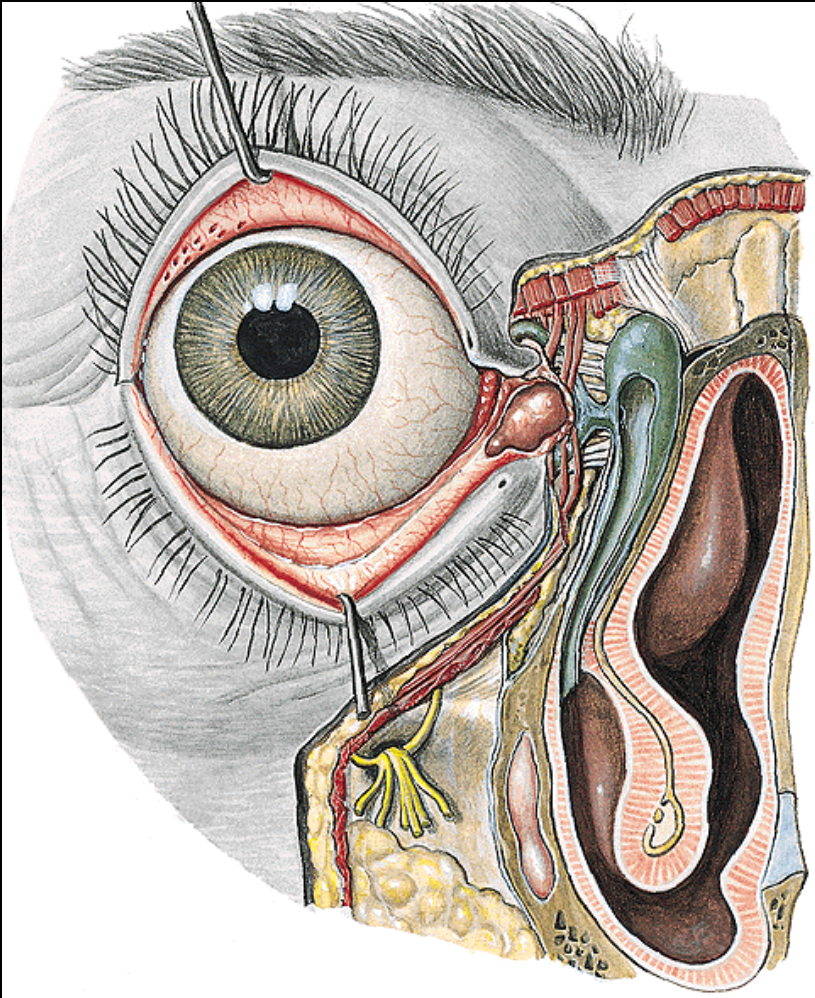
tun. conj. palpebrarum

■ tun. conj. bulbi



Fornix conjunctivae sup. et inf.

Apparatus lacrimalis



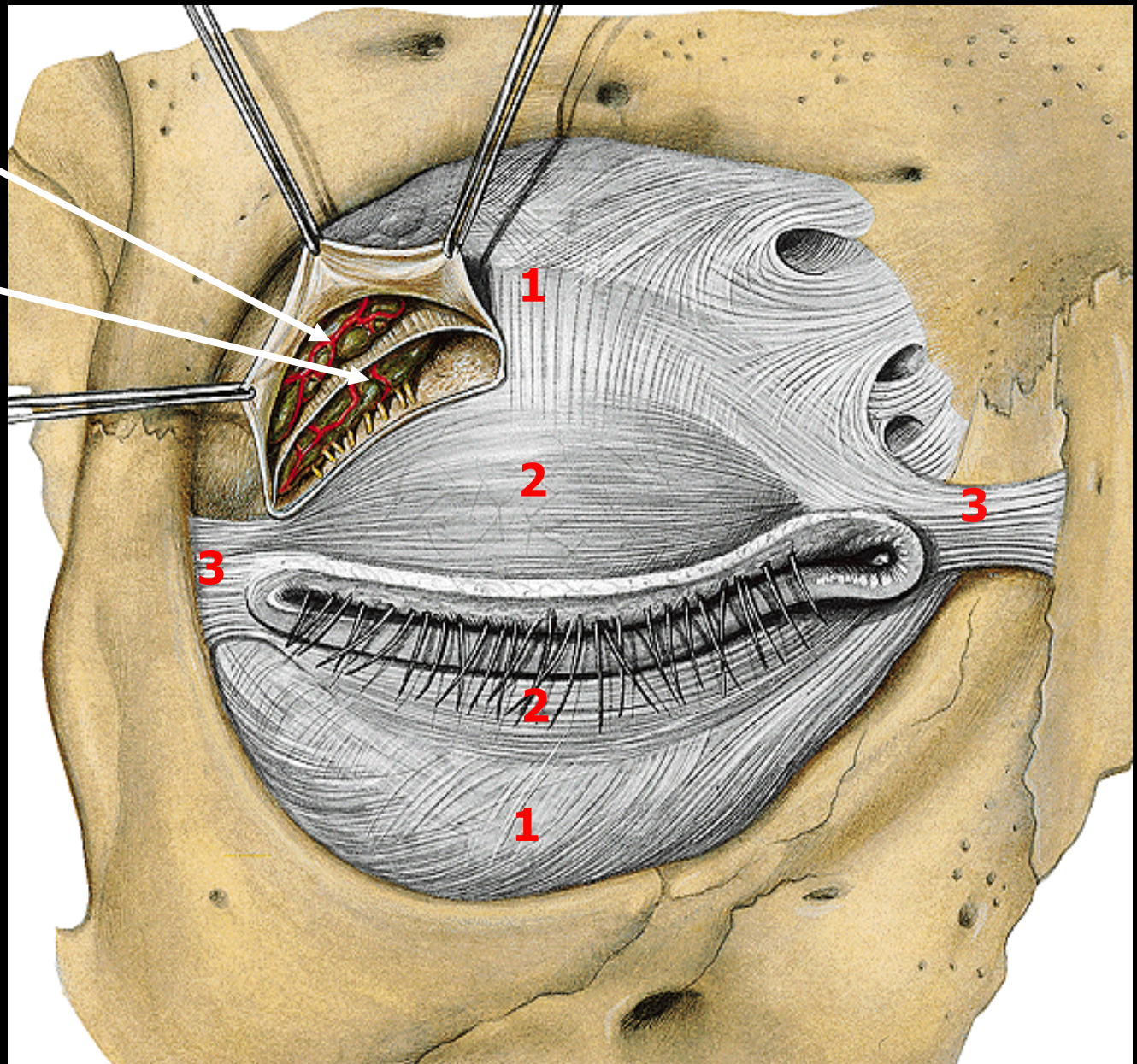
Glandula lacrimalis

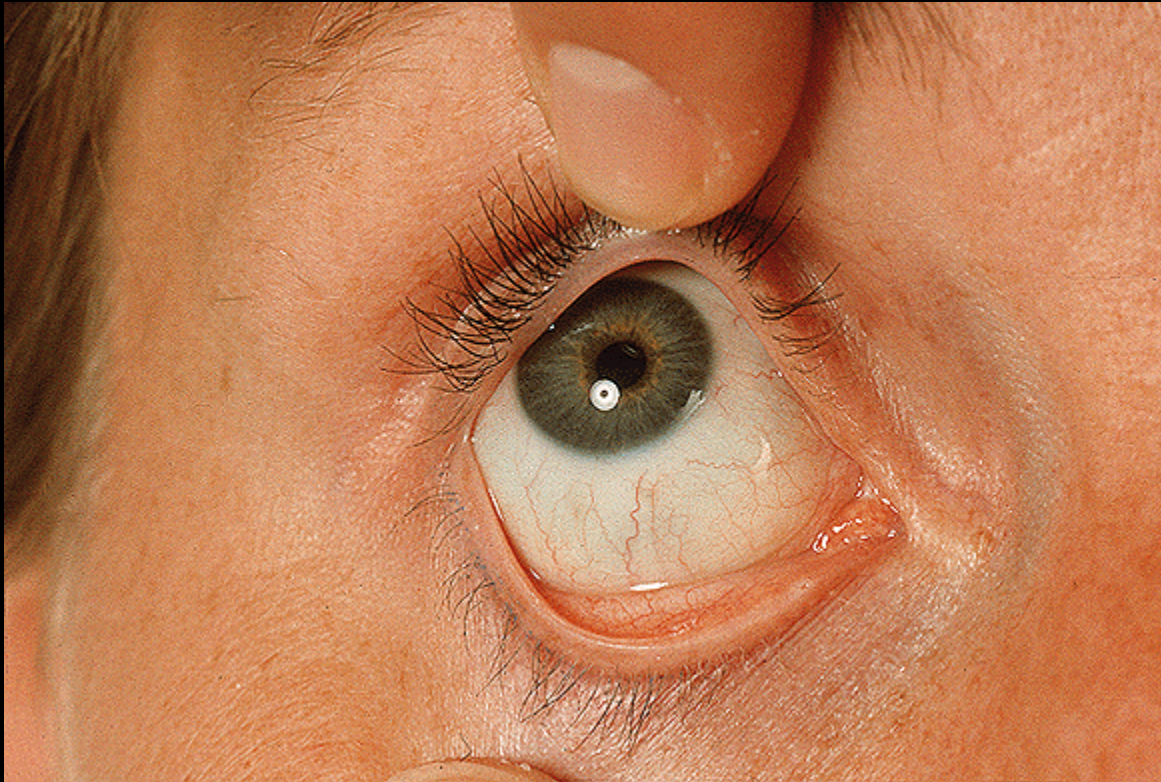
- > ductuli excretorii
- > lacus lacrimalis

- papillae lacrimales
- puncta lacrimalia
- canaliculi lacrimales
- saccus lacrimalis
- ductus nasolacrimalis

Pars orbitalis

Pars palpebralis



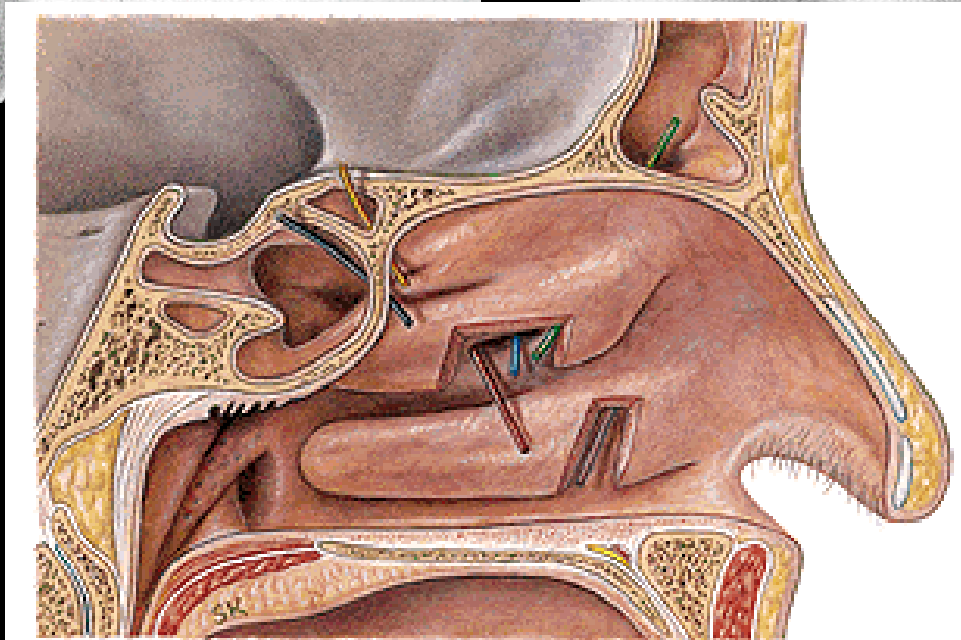
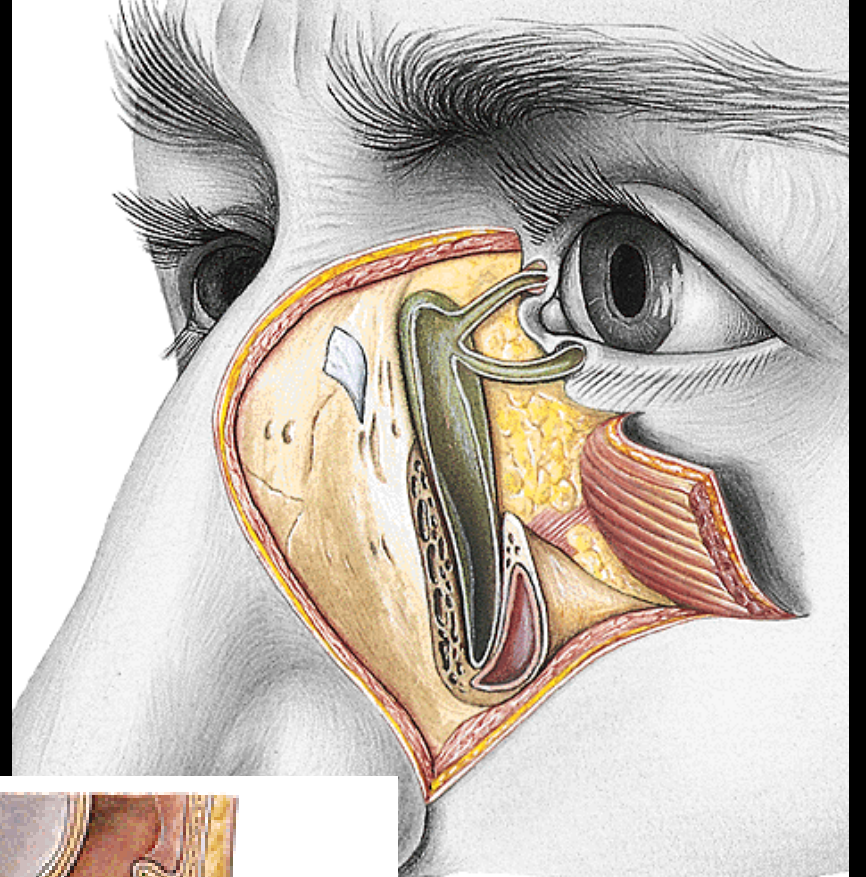
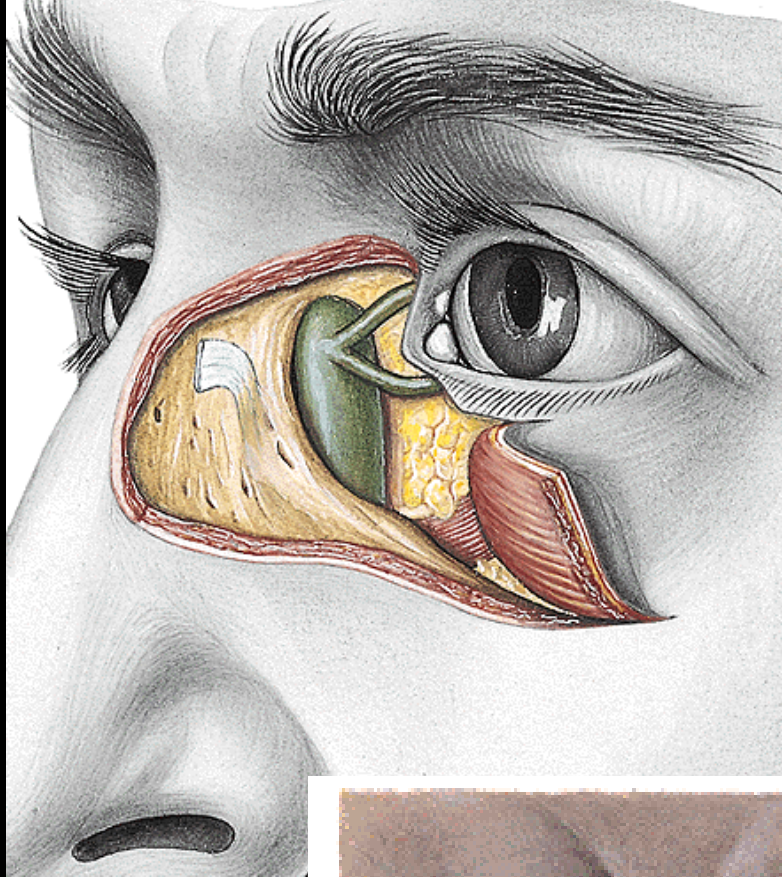


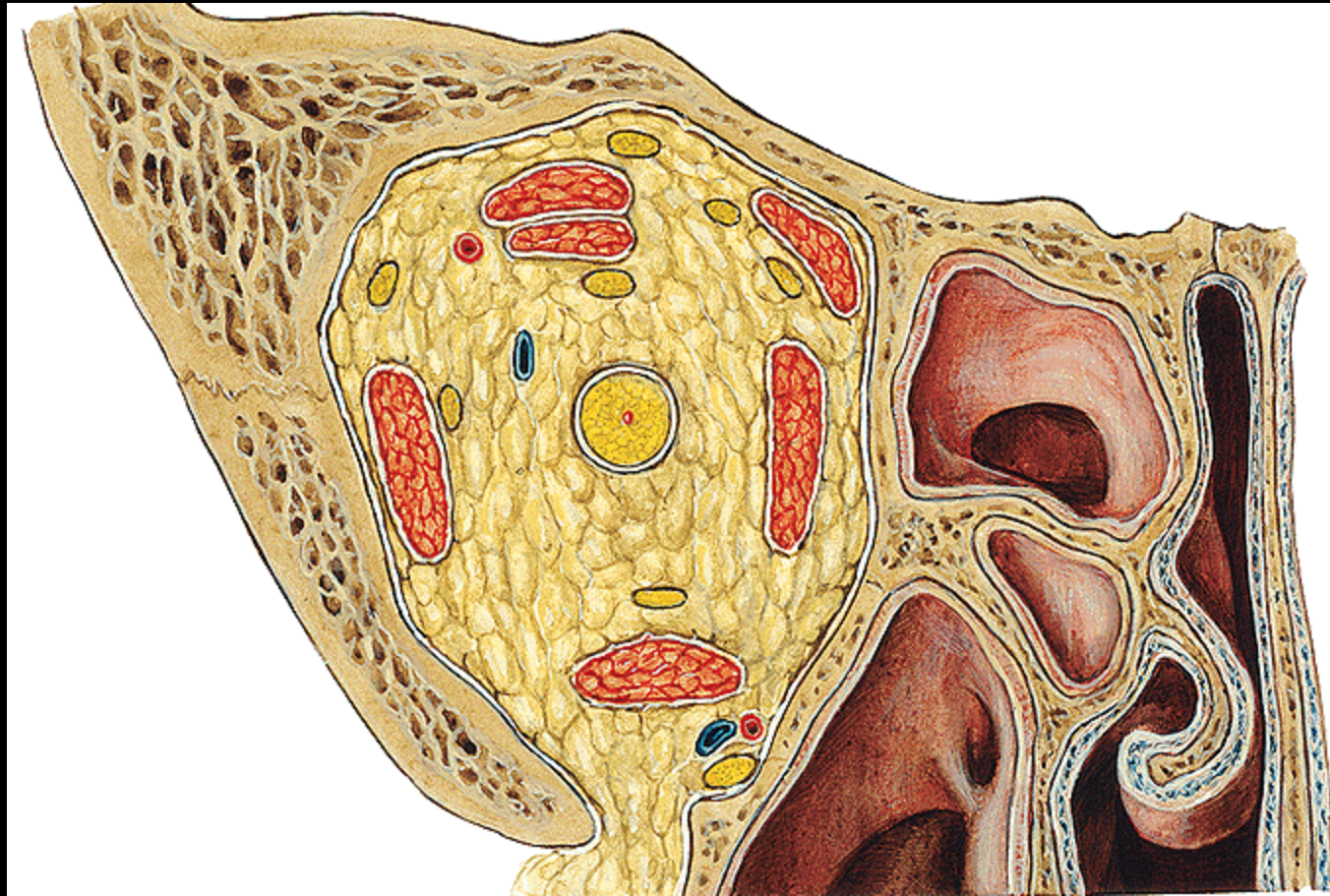
Angulus medialis:

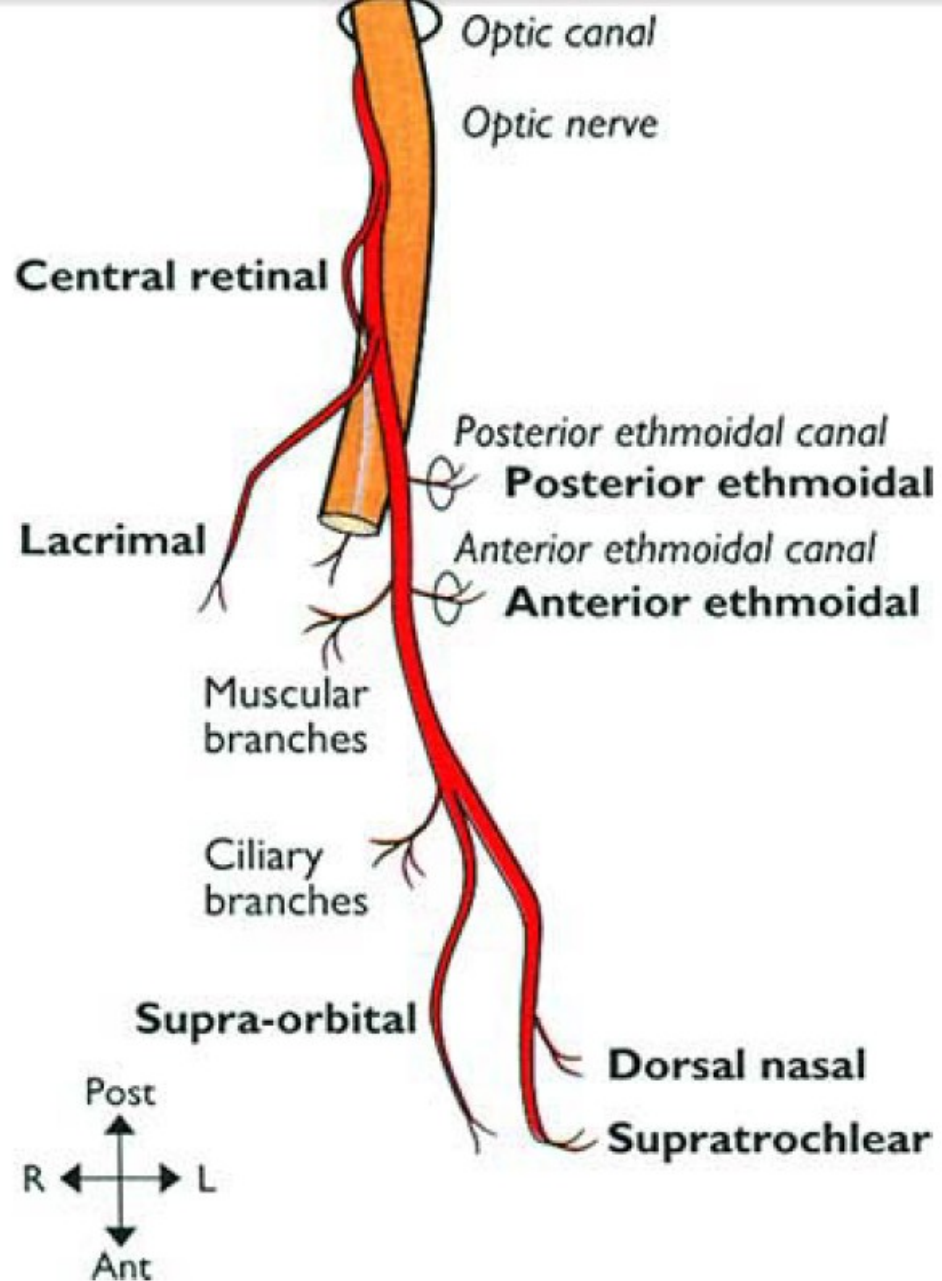
lacus lacrimalis

■ **caruncula lacrimalis**

■ **plica semilun. conjunctivae**





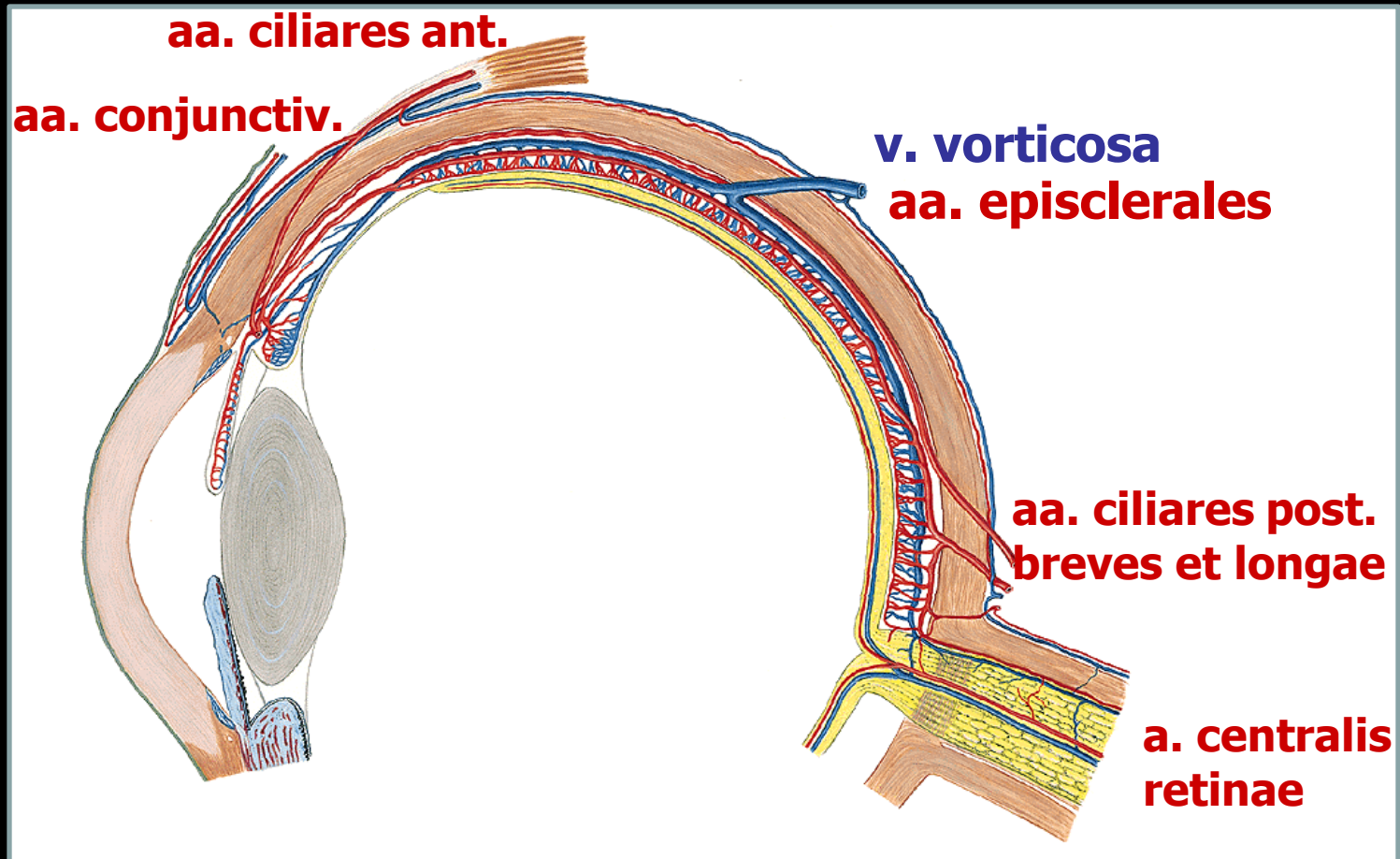


Ophthalmic artery

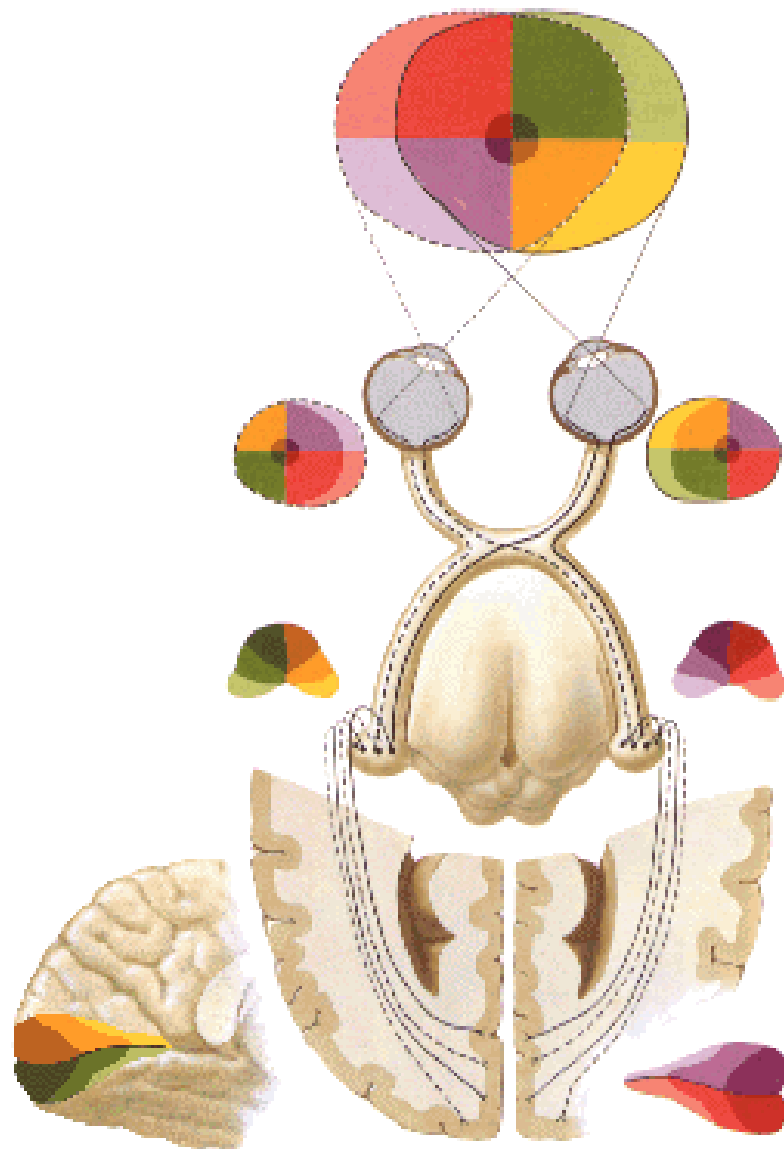
Note: Right side viewed from above

Blood supply

A. ophthalmica
V ophthalmica sup.
V. ophthalmica inf.



Optic Nerve [Visual Pathway] Schema



**Illustrations and photographs were copied from:
Atlas der Anatomie des Menschen/Sobotta.
Putz,R., und Pabst,R. 20. Auflage. München:
Urban & Schwarzenberg, 1993
Netter: Interactive Atlas of Human Anatomy.
Windows Version 2.0**