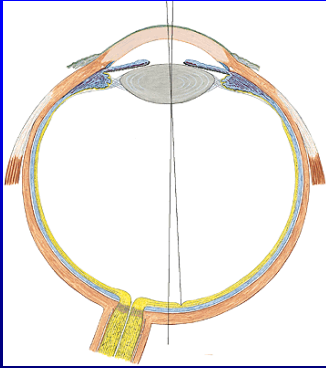
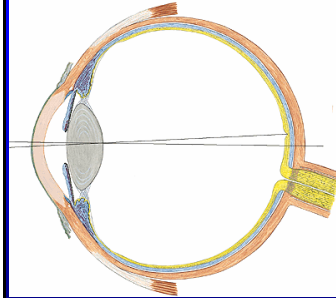


BULBUS OCULI



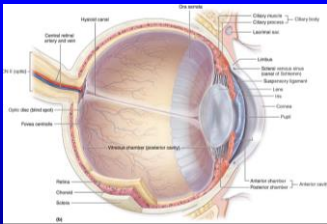
- polus anterior
- polus posterior
- meridiani
- equator
- axis bulbi externus
- linea visus
- Optical power + 60 D

MORPHOLOGY OF BULBUS OCULI



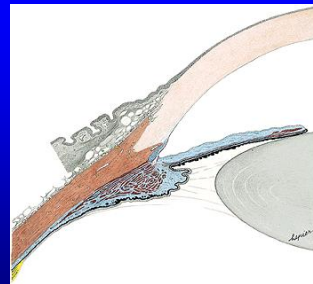
- Tunica fibrosa**
 - Sclera
 - Cornea
- Tunica vasculosa**
 - Choroidea
 - Corpus ciliare
 - Iris
- Tunica interna**
 - Retina

TUNICA FIBROSA - SCLERA



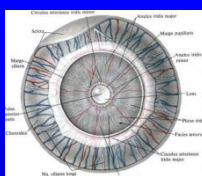
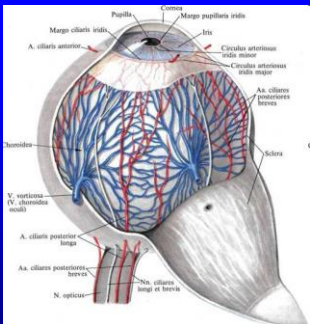
- limbus sclerae**
(vasa ciliaria ant.)
- sinus venosus sclerae**
(Schlemm's canal)
- lamina cribrosa sclerae**
(nn. ciliares breves, longi)
vasa ciliaria post.)
- equator
(vv. vorticocae)
- spatium episclerale**
- spatium perichoroidale**

TUNICA FIBROSA - CORNEA



- Limbus corneae**
(sulcus sclerae)
- Facies ant. corneae**
(vertex corneae, polus ant.)
- Facies post. corneae**
- Epithelium ant. corneae**
- Substantia propria corneae**
- Endothelium corneae**
- Optical power + 40 D

TUNICA VASCULOSA - CHOROIDEA



- aa. ciliares ant.**
- aa. ciliares post. breves**
- aa. ciliares post. longi**
- circulus arteriosus Iridis major**
- circulus arteriosus Iridis minor**

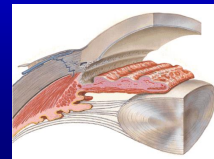
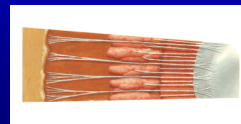
Fibrotic tissue membrane
pigment cells (dark chambre)
vessels

TUNICA VASCULOSA - CORPUS CILIARE

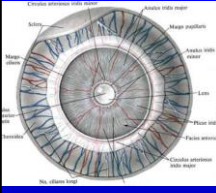


- Corona ciliaris**
processus ciliares, plicae ciliares
- Orbiculus ciliaris**
- Zonula ciliaris**
fibrae zonulares

- Musculus ciliaris**
fibrae circulares, fibrae meridionales



TUNICA VASCULOSA – IRIS



margo ciliaris

margo pupillaris (pupilla)

facies ant. iridis
(anulus iridis major, minor)

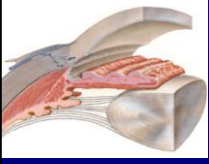
facies post. iridis

STROMA IRIDIS

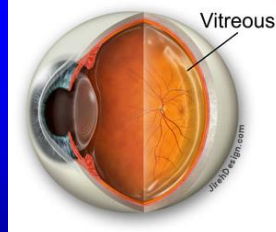
m. sphincter pupillae
(miosis, parasympaticus)

m. dilatator pupillae
(mydriasis, sympaticus)

pigment (eye color)



TUNICA INTERNA – RETINA



Vitreous

ora serrata

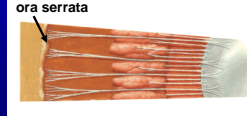
Pars caeca retinae

- pars ciliaris retinae
- pars iridica retinae

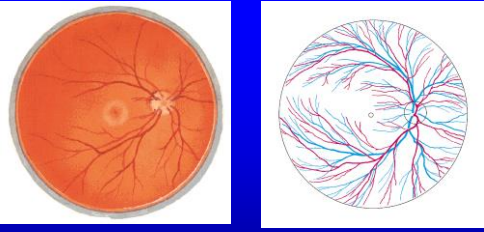
Ora serrata

Pars optica

- photoreceptors (coni, bacilli)



FUNDUS OCULI



Macula lutea

fovea centralis (linea visus)

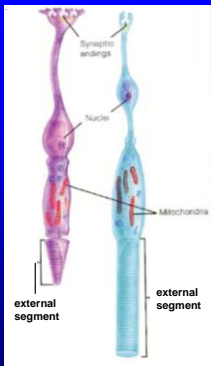
Macula caeca

discus n. optici, papilla n. optici, excavatio disci

Vasa centralia retinae

vasa nasalia retinae sup., inf.,
vasa temporalia retinae sup., inf.
(arteriolae et venulae maculares)

MORPHOLOGY OF RETINA



Stratum pigmentosum

Stratum neuroepitheliale

- coni (6-7 million, macula lutea)
- bacilli (130 million)

Stratum ganglionare retinae

- bipolar neurons

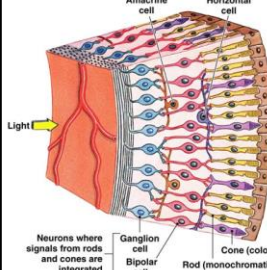
Stratum ganglionare n. optici

- multipolar neurons

external segment

external segment

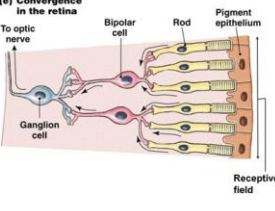
(d) Organization of the retina



Amacrine cell, Horizontal cell, Light, Ganglion cell, Bipolar cell, Cone (color vision), Rod (monochromatic vision)

Neurons where signals from rods and cones are integrated

(e) Convergence in the retina

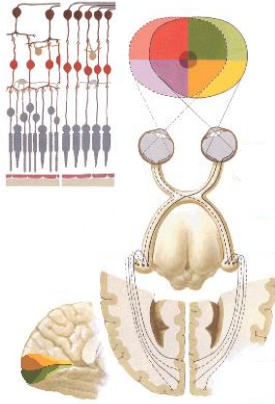


To optic nerve, Ganglion cell, Bipolar cell, Rod, Pigment epithelium, Receptive field

OPTIC TRACT

- 1. neuron**
coni, bacilli
- 2. neuron**
bipolar cells
- 3. neuron**
multipolar cells
- 4. neuron**
corpus geniculatum laterale

Area 17, 18, 19



Radix medialis

- Colliculus sup. (optic-motor reflex)
- Area praetectalis (pupilar reflex)
- Hypothalamus (tr. retino-hypothalamicus, heliostimulation)
- Pulvinar thalami (feedback circuits)
- Ncl. interstitialis (Cajal) FLM
- Substantia nigra

LENS CRYSTALLINA

Facies anterior lentis (polus anterior lentis)

Facies posterior lentis (polus posterior lentis)

Equator lentis (fibrae zonulares)

MORPHOLOGY

- Capsula lentis
- Substantia lentis (fibrae lentis)
- Epithelium lentis
- Cortex lentis
- Nucleus lentis

ACCOMMODATION-LENS

Optic power + 17 – 20 D

a) Looking into the distance

b) Near vision (m. ciliaris)

CORPUS VITREUM

- Camera vitrea bulbi
- Membrana vitrea
- Stroma vitreum
- Humor vitreus
- Fossa hyaloidea
- Canalis hyaloideus a. hyaloidea

CAMERAE BULBI

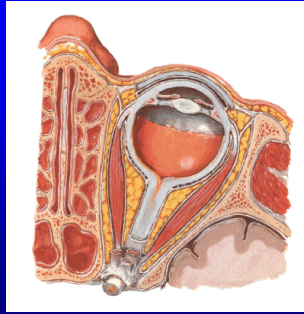
- Camera oculi anterior
- Camera oculi posterior
- Camera vitrea
- Humor aquosus
- Angulus iridocornealis
- Lig. pectinatum anguli iridocornealis
- Spatia iridocornealia
- Sinus venosus sclerae
- Venulae aquosae

MUSCULI BULBI

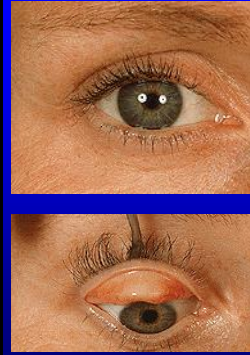
- m. rectus superior, inferior, medialis, lateralis
- m. obliquus superior, inferior
- m. levator palpebrae superioris

FASCIAE ORBITALES

- Periorbit (m. orbitalis)
- Vagina bulbi
- Spatium episclerale
- Corpus adiposum orbitae

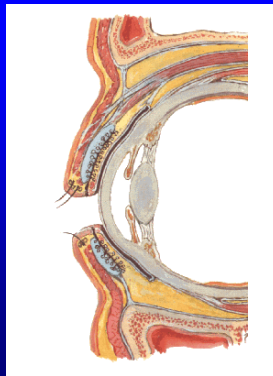
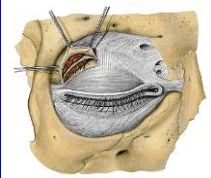


PALPEBRAE



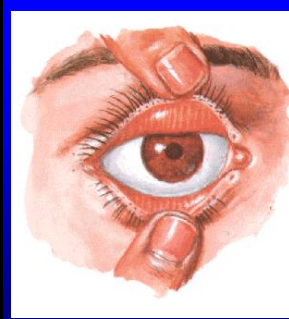
- palpebra superior, inferior
- rima palpebrarum
- angulus oculi medialis, lateralis
- facies anterior, posterior palpebrae
- limbus palpebralis anterior (cilia, gl. sebaciae, gl. ciliares)
- limbus palpebralis posterior
- rivus lacrimalis
- papilla lacrimalis (punctum lacrimale)

EYELID MORPHOLOGY



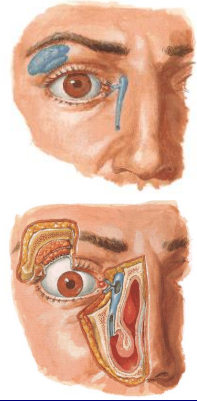
- septum orbitale
- tarsus superior, inferior
gl. tarsales (Meibomi)
- lig. palpebrale med., lat.
- m. tarsalis sup., inf.
- m. orbicularis oculi

CONJUNCTIVA



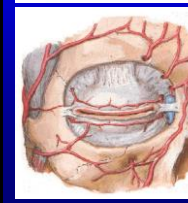
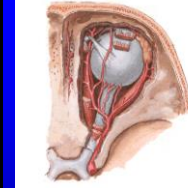
- tunica conjunctiva palpebrarum
- tunica conjunctiva bulbi
- fornix conjunctivae sup., inf.,
- saccus conjunctivae
- plica semilunaris conjunctivae
- lacus lacrimalis
- caruncula lacrimalis
- papilla lacrimalis
- punctum lacrimale

APPARATUS LACRIMALIS

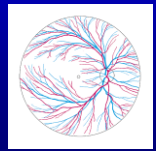


- Gl. lacrimalis (pars orbitalis a palpebralis)
- Ductuli excretorii (fornix conjunctivae sup.)
- Lacrimae
- Punta lacrimalis
- Canaliculi lacrimales (ampulla canaliculli lacrimalis)
- Saccus lacrimalis (fornix sacci lacrimalis)
- Ductus nasolacrimalis (meatus nasi inferior)
- Plica lacrimalis

ARTERIA OPHTHALMICA

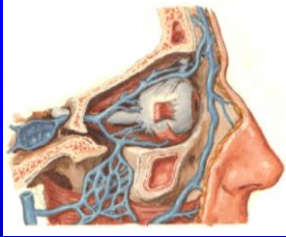


- a. centralis retinae
- a. lacrimalis (aa. palpebrales lat.)
- rr. musculares (a. ciliares ant.)
- a. ciliares posteriores breves et longi (circulus art. iridis major, minor)
- a. supraorbitalis
- a. ethmoidalis post. et ant. (a. meningea ant.)
- aa. palpebrales med.
- a. supratrochlearis
- a. dorsalis nasi



VENAE OPHTHALMICAEv. ophthalmica sup.

- v. nasofrontalis
- vv. palpebrales
- vv. ethmoidales ant., post.,
- v. lacrimalis
- vv. vorticosae
- vv. ciliares
- v. centralis retinae

v. ophthalmica inferior

(fissura orbitalis sup.,
sinus cavernosus)

venous net on the bottom of orbit
(fissura orbitalis inf., plexus
pterygoideus)

Anastomosis with v. facialis (v. faciei profunda, v. angularis),