

1.

Anatómia oka

Refrakčné chyby.

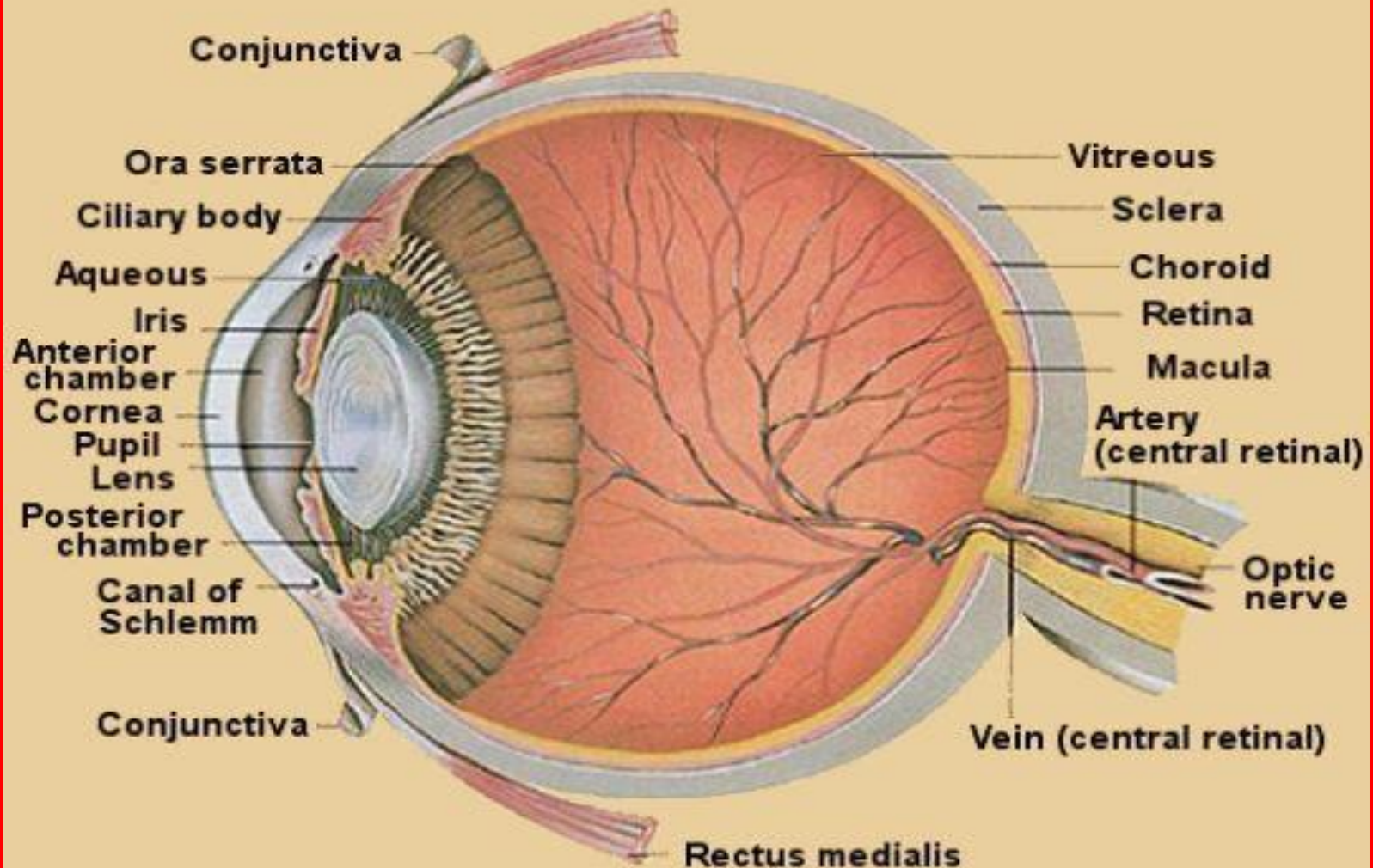
Korekcia refrakčných chýb.

Žiak, P.

Očná klinika JLF UK Martin

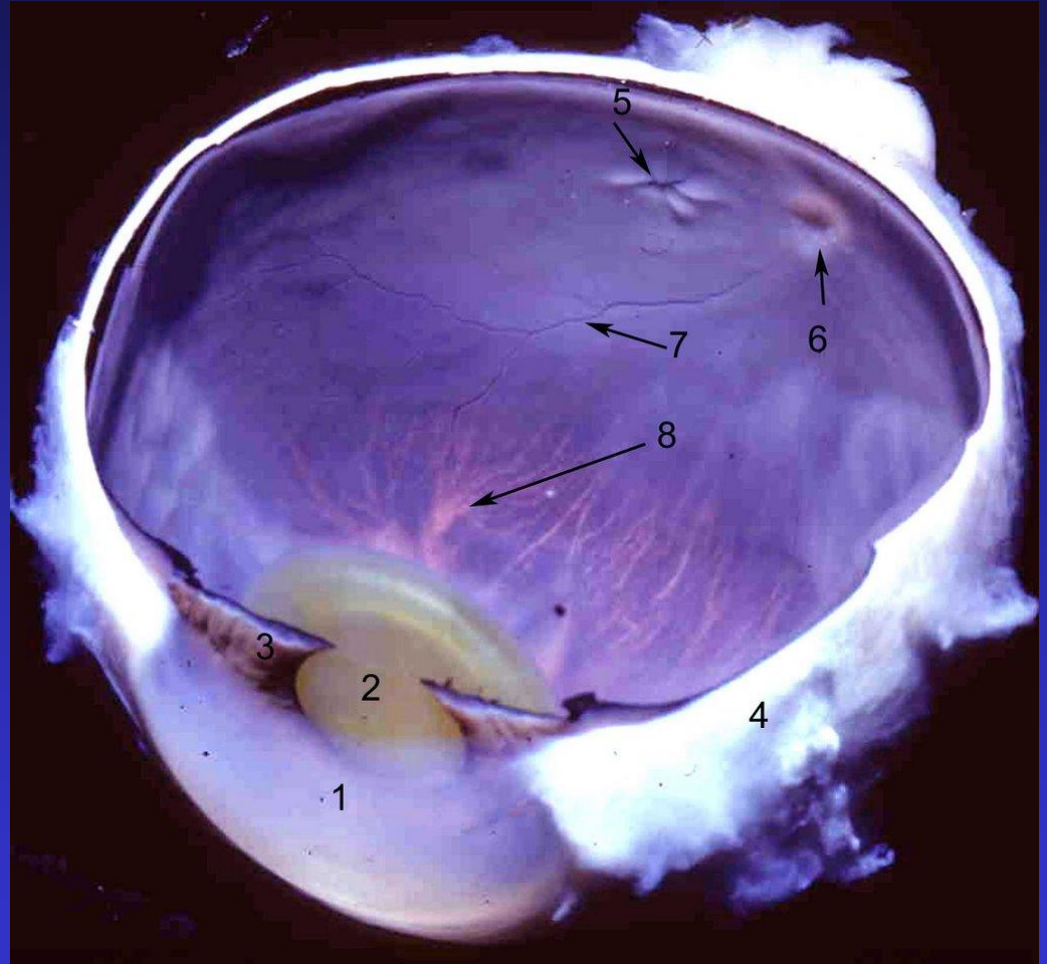
Anatómia oka - prehľad.

Anatómia oka.

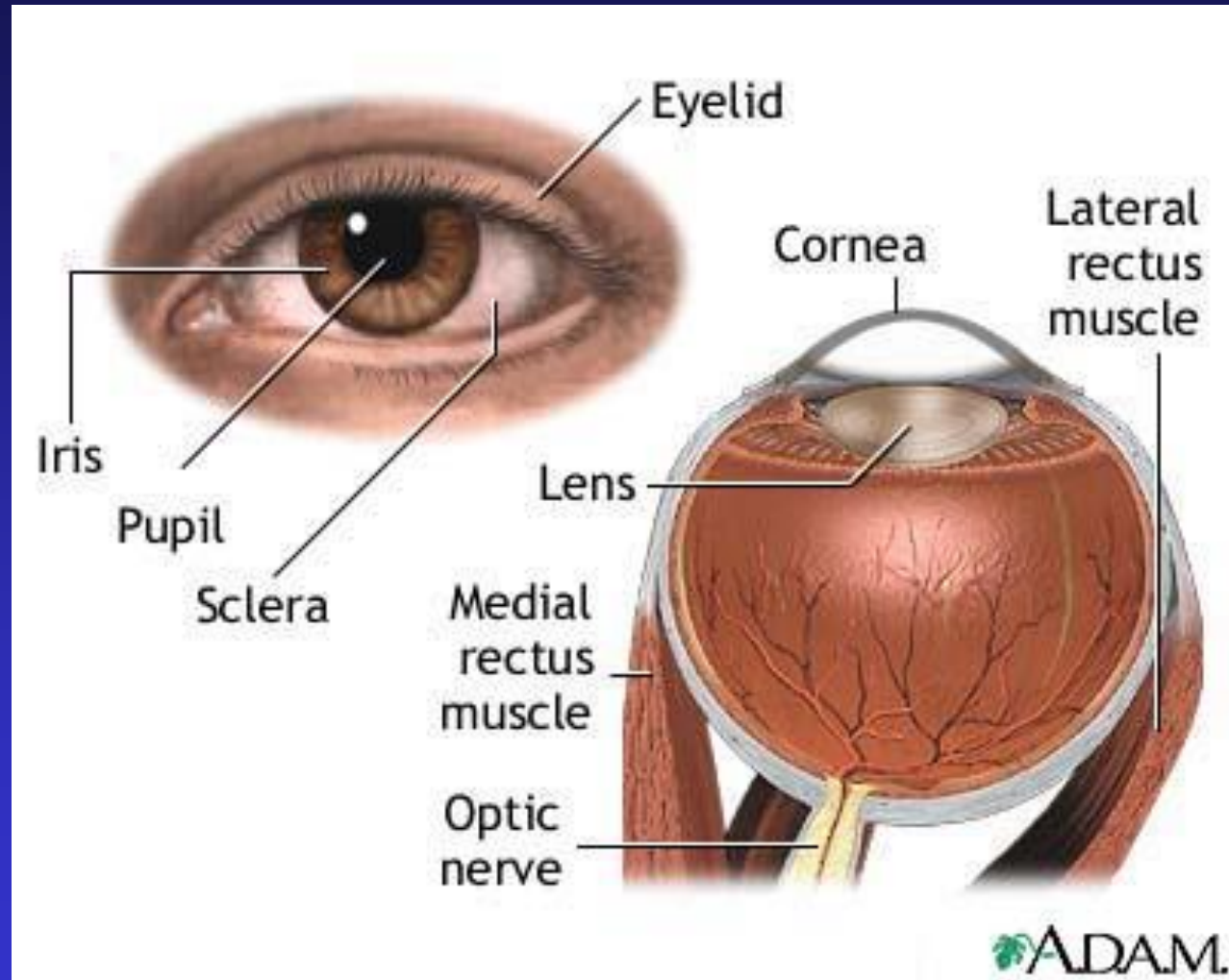


Anatomy of the eye.

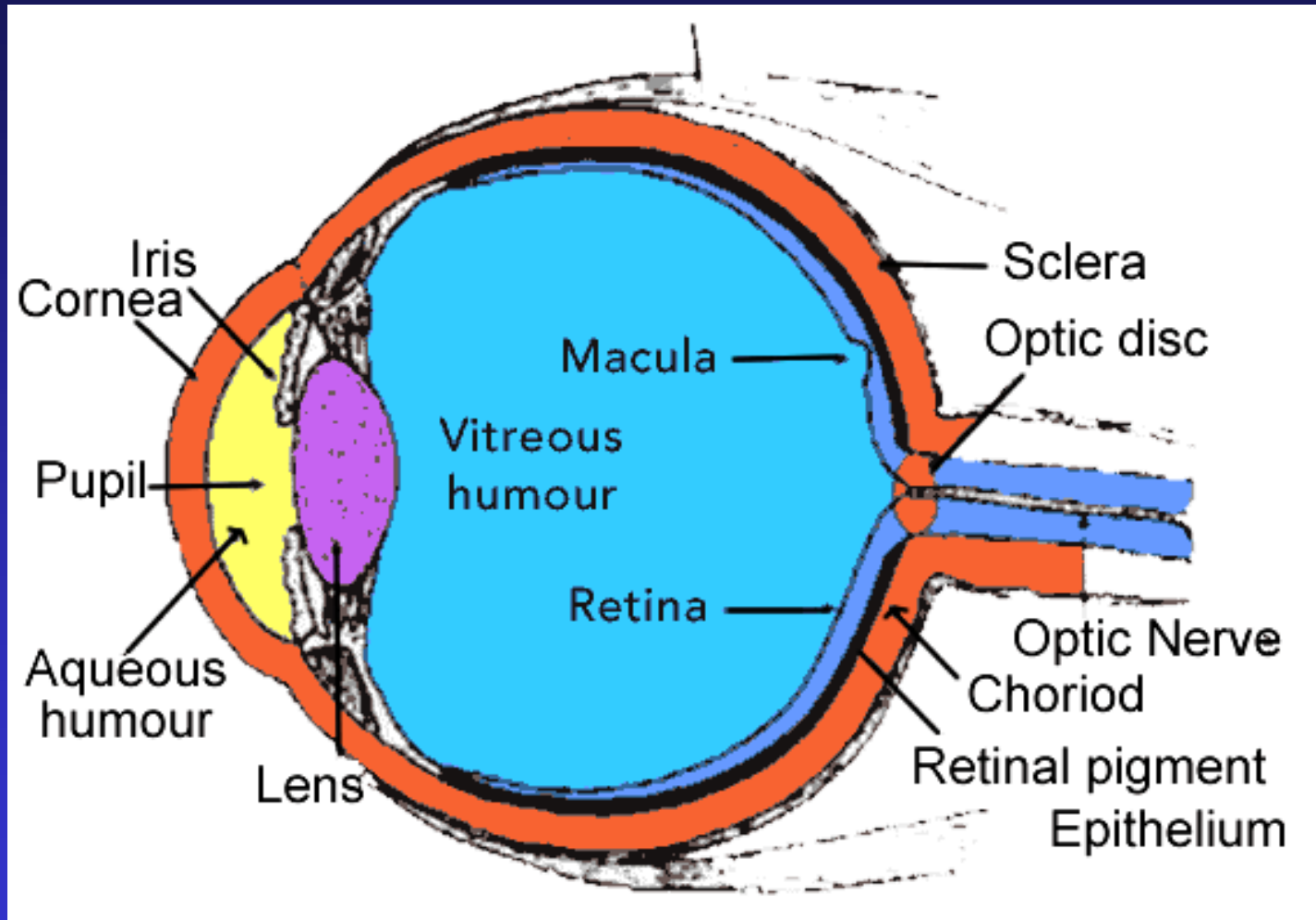
1. Cornea
2. Lens
3. Iris
4. Sclera
5. Macula lutea
6. Optic nerve
7. Retinal vasc.
8. Choroidal vasc.



Anatomy of the eye.



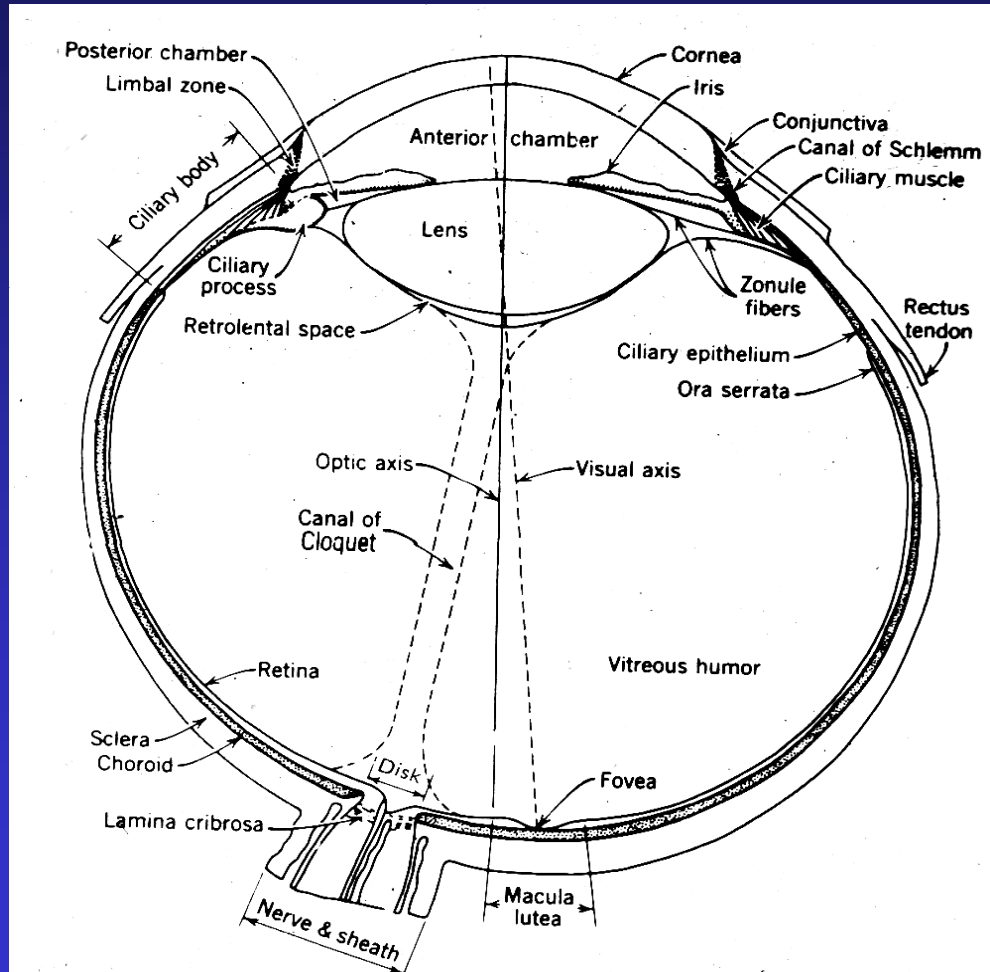
Anatomy of the eye .



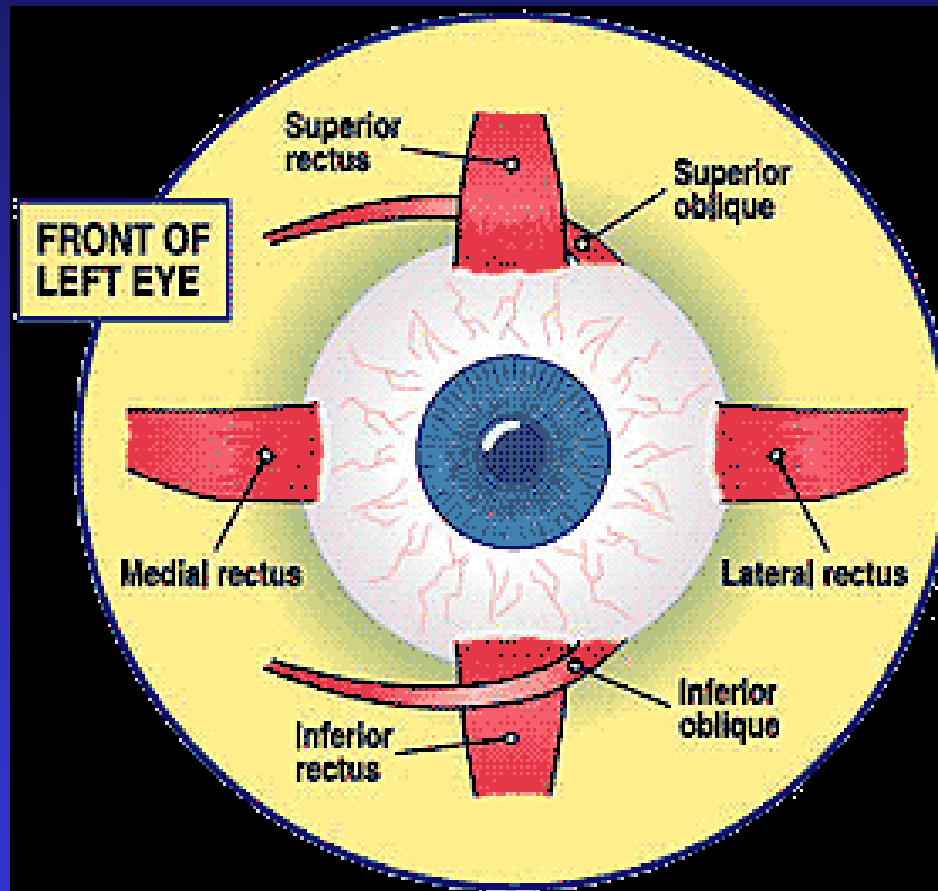
Anatomy of the eye.

Eye shematic.

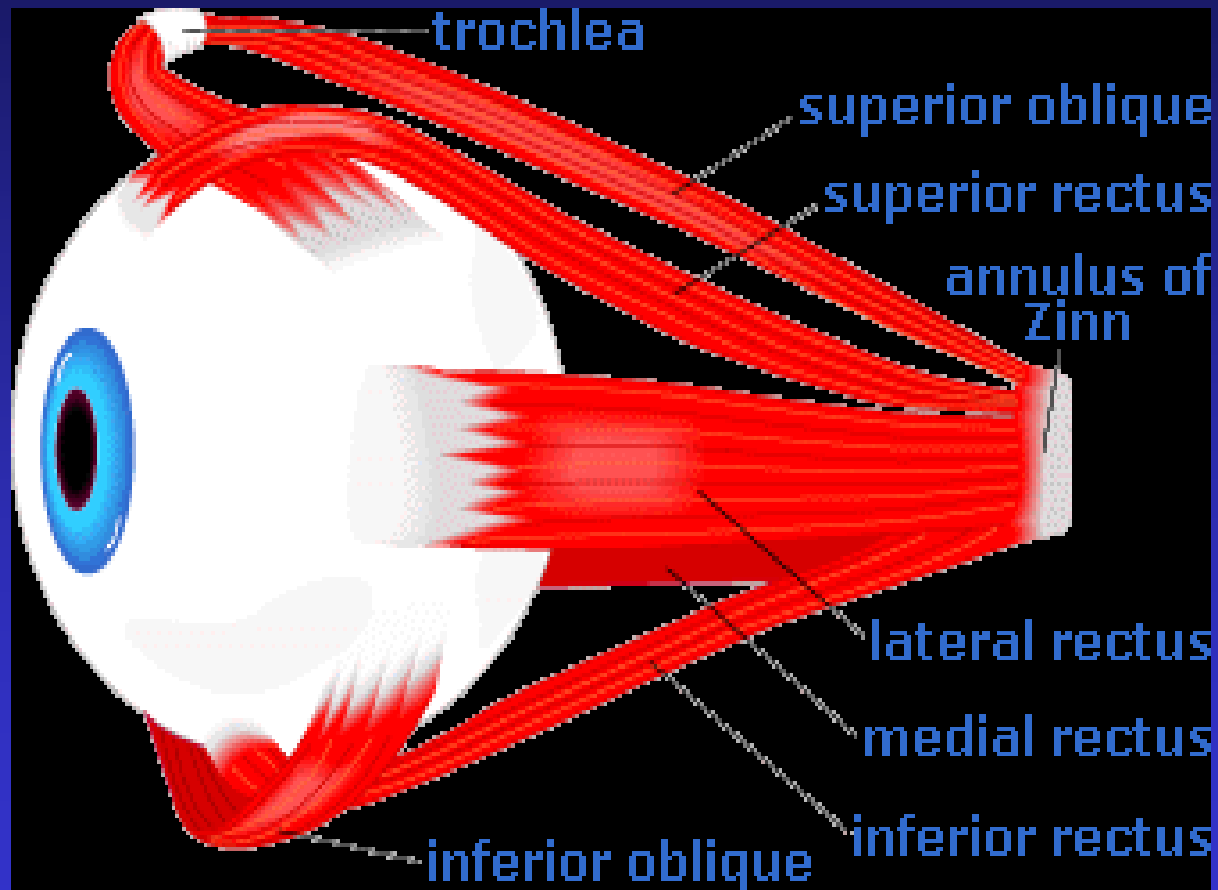
- Axial length 22/24 mm (in/out)
- Cornea +42 Dpt – main optic power
- Lens +22 Dpt
- Totallz cca +65 Dpt



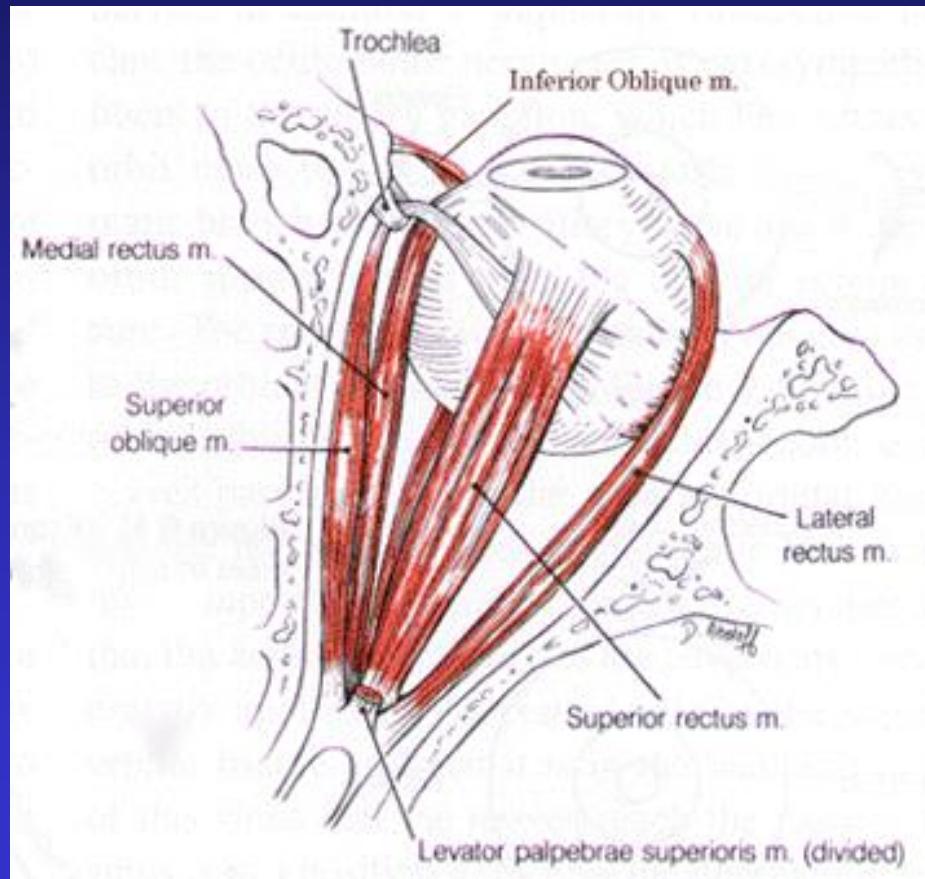
Anatómia oka.



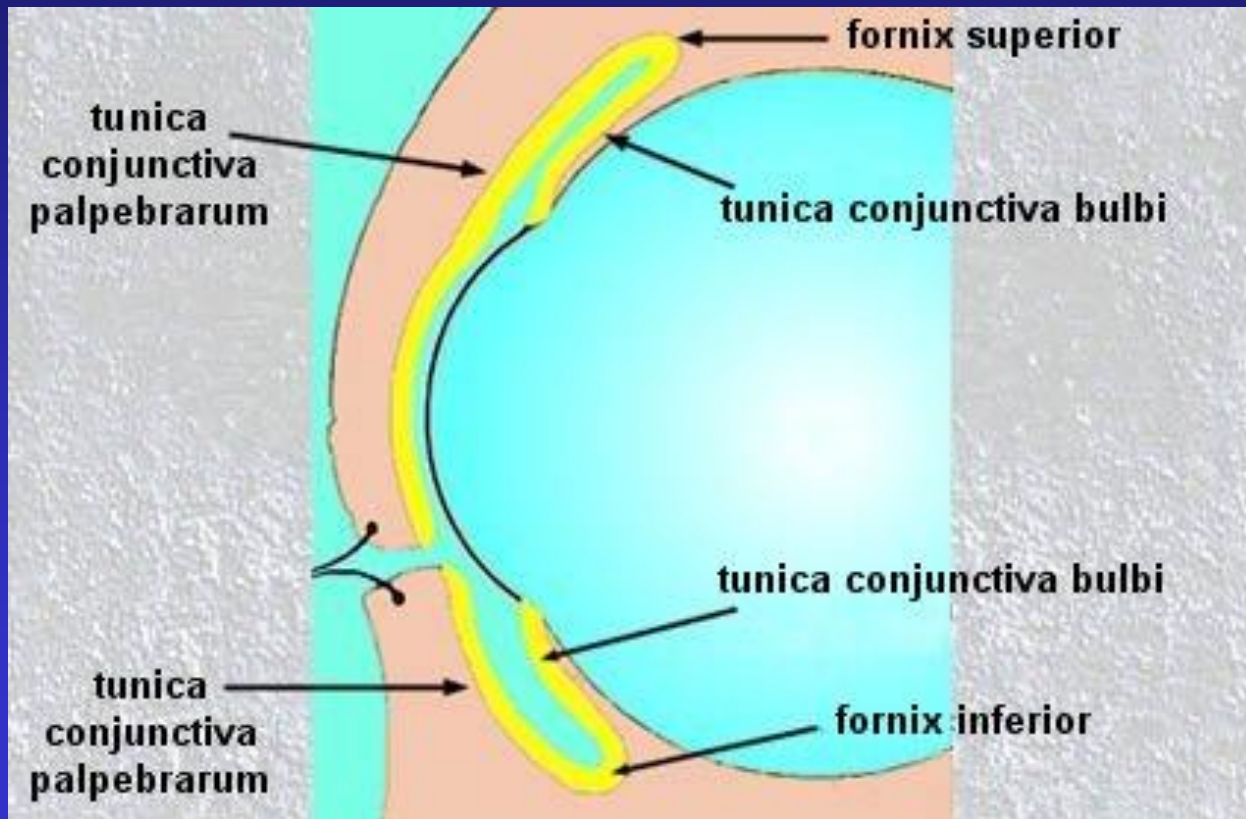
Anatómia oka.



Anatómia oka.

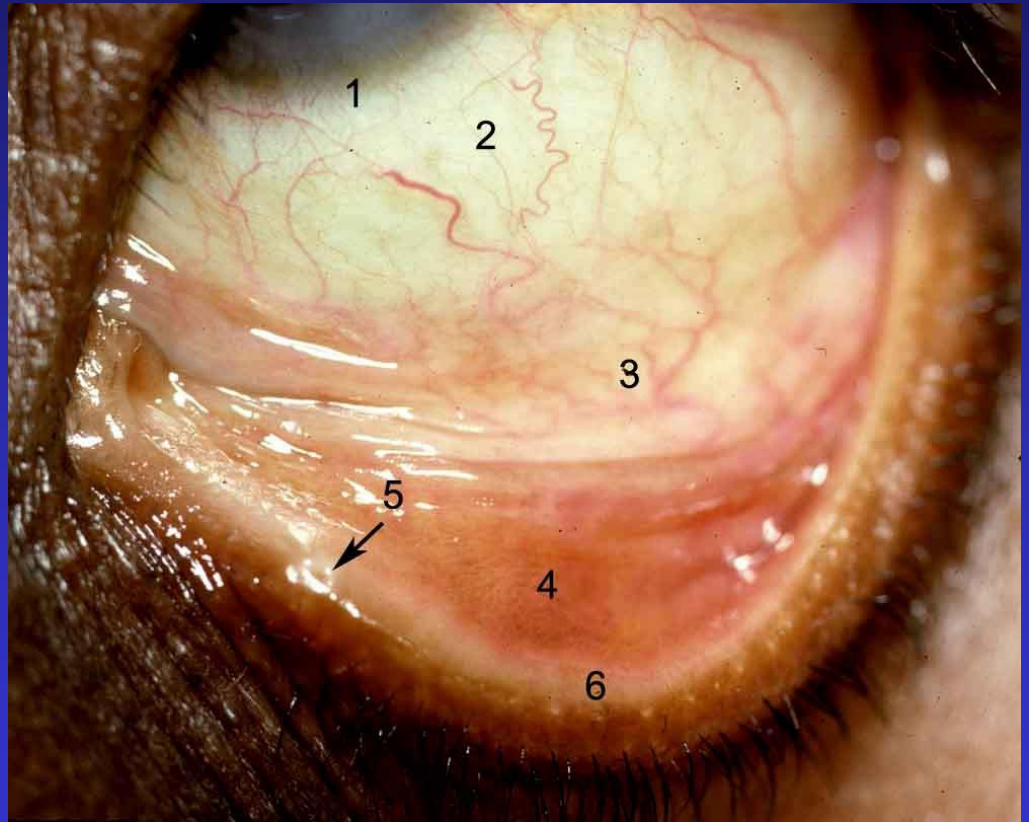


Conjunctiva.

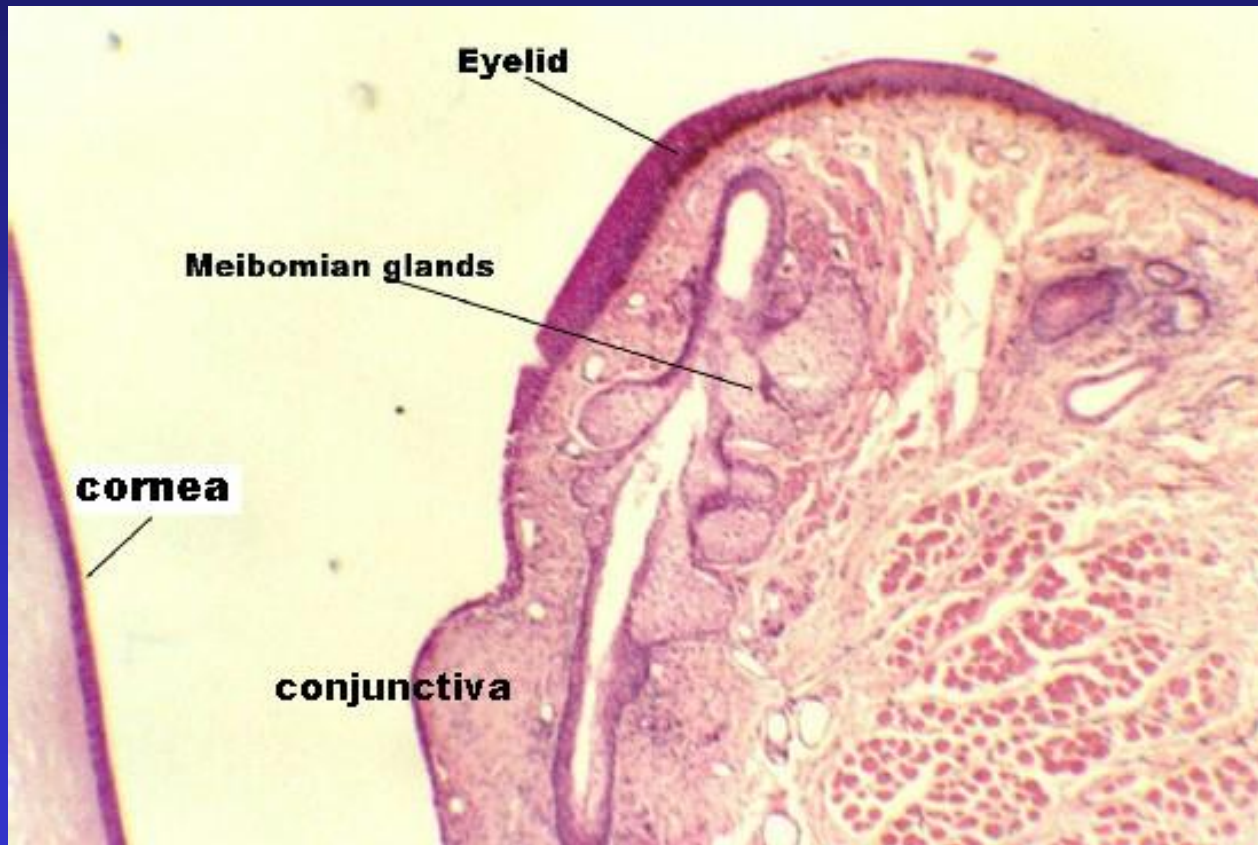


Conjunctiva.

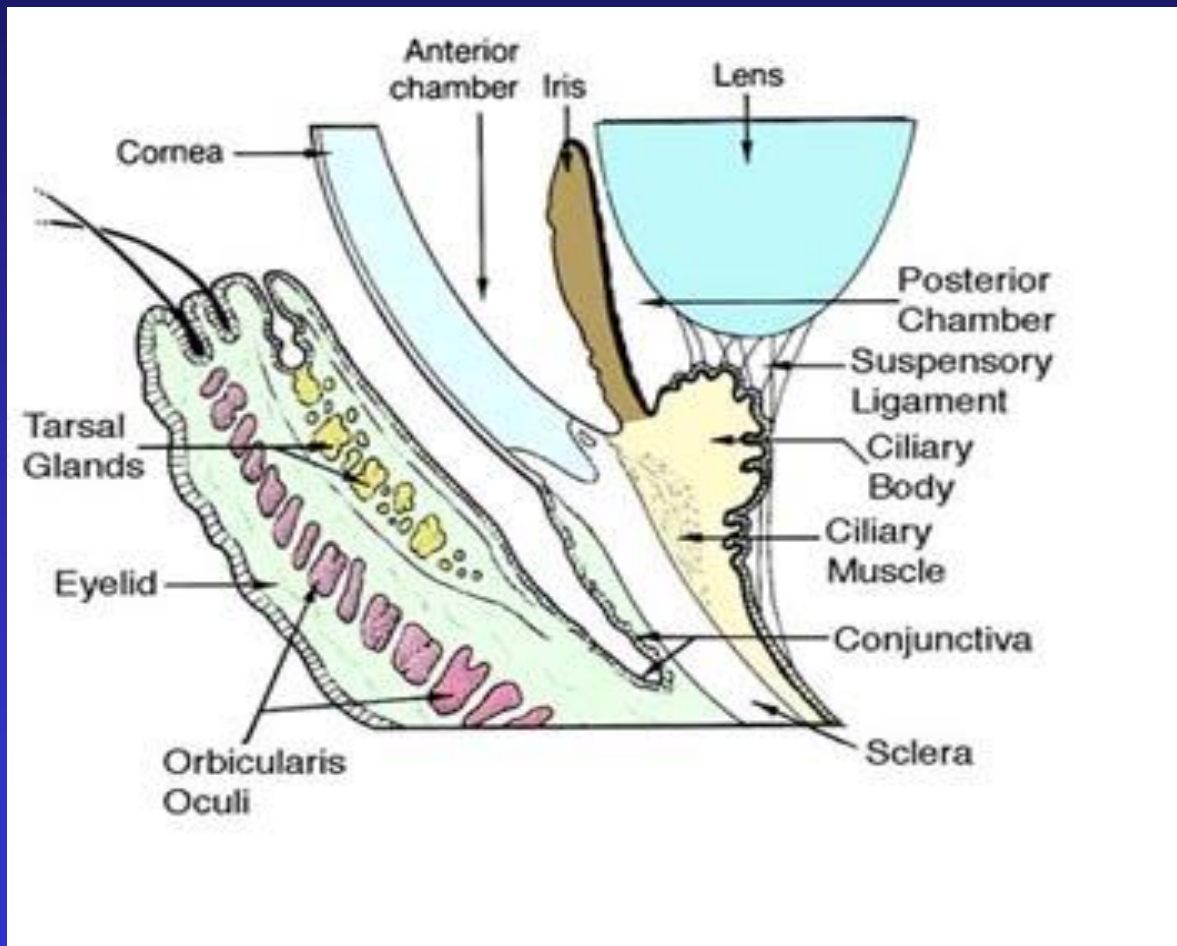
1. Limbus
2. Bulbérna conjunctiva
3. Fornix
4. Tarzálna conjunctiva
5. Punctum lacrimale
6. Margo palpebrae inf.



Conjunctiva.



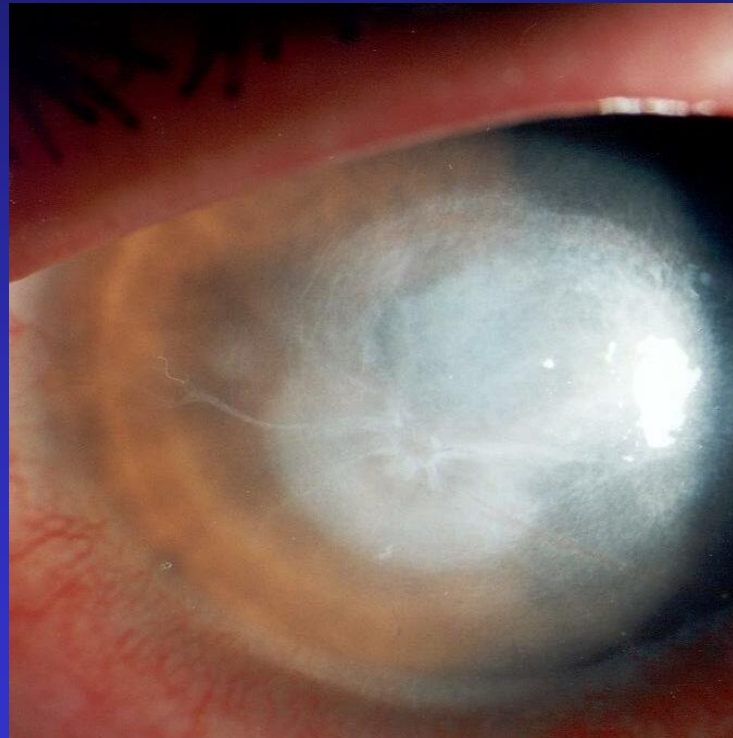
Conjunctiva.



Anatómia oka.

Rohovka – vyš na štrb. Lampe.

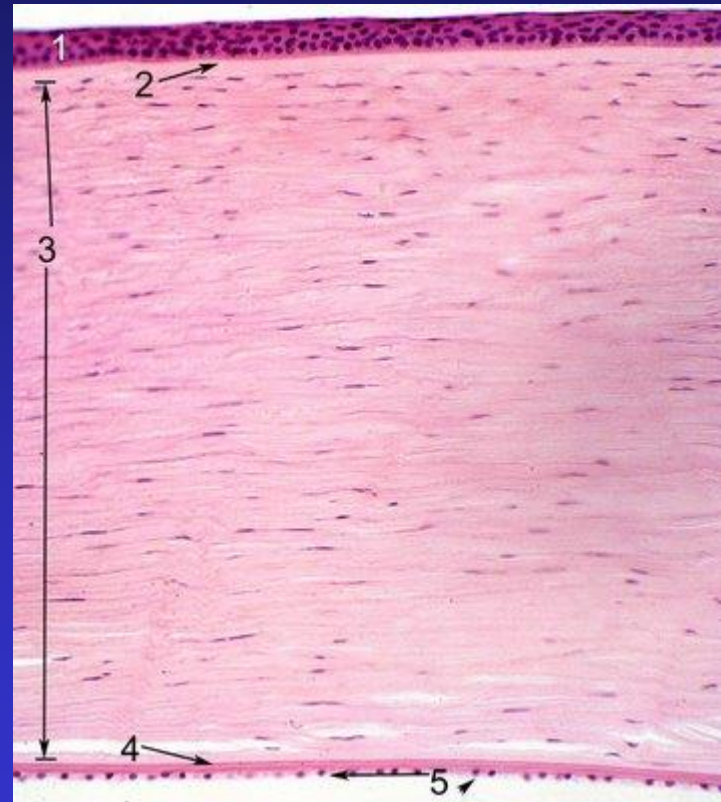
- **Transparencia**
- **Povrch**
- **Hrúbka**
- **Zakrivenie**



Anatomy of the eye.

Cornea.

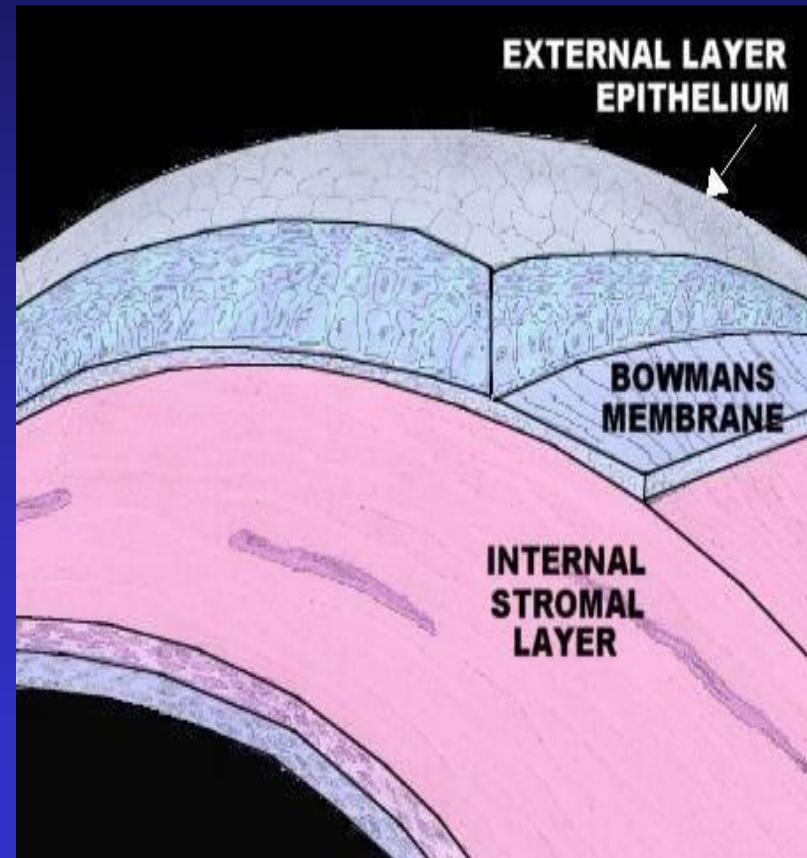
1. Epithelium (multiple layers of epithelial cells. 50u thicknes)
2. Bowman membrane
3. Stroma (collagen fibrils and keratocytes) 500u central thicknes
4. Descemet membrane
5. Endothelium (one cell layer)



Anatomy of the eye.

Cornea.

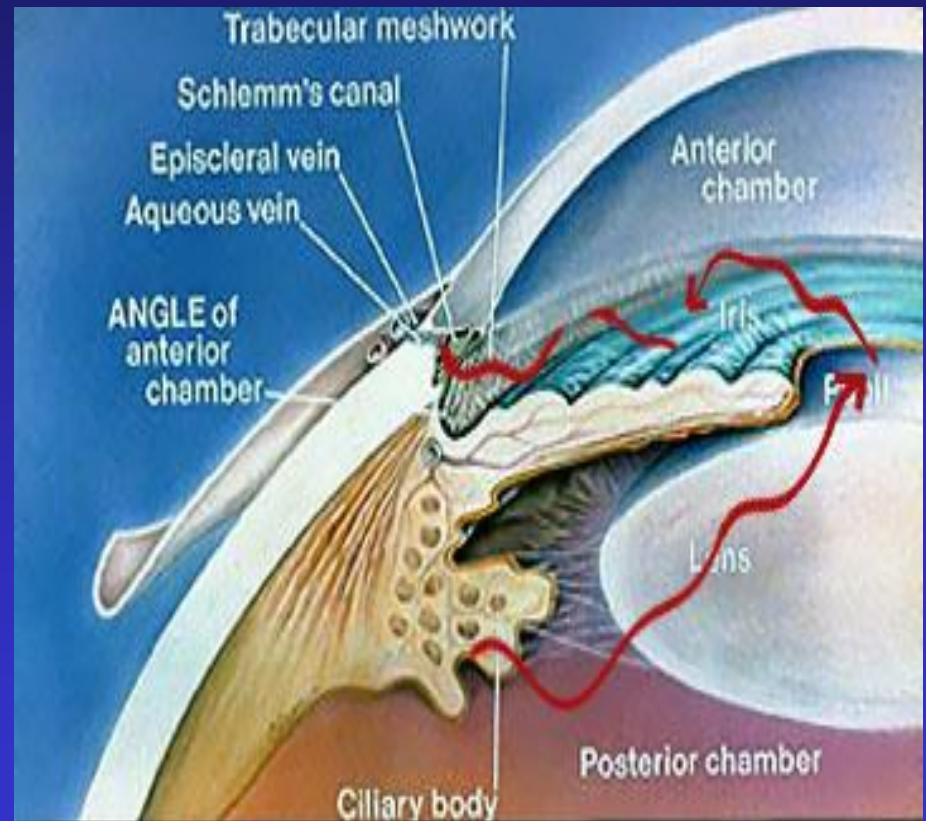
1. Epithelium (multiple layers of epithelial cells. 50u thicknes)
2. Bowman membrane
3. Stroma (collagen fibrils and keratocytes) 500u central thicknes
4. Descemets membrane
5. Endothelium (one cell layer)



Anatómia oka.

Predná komora a komorový uhol.

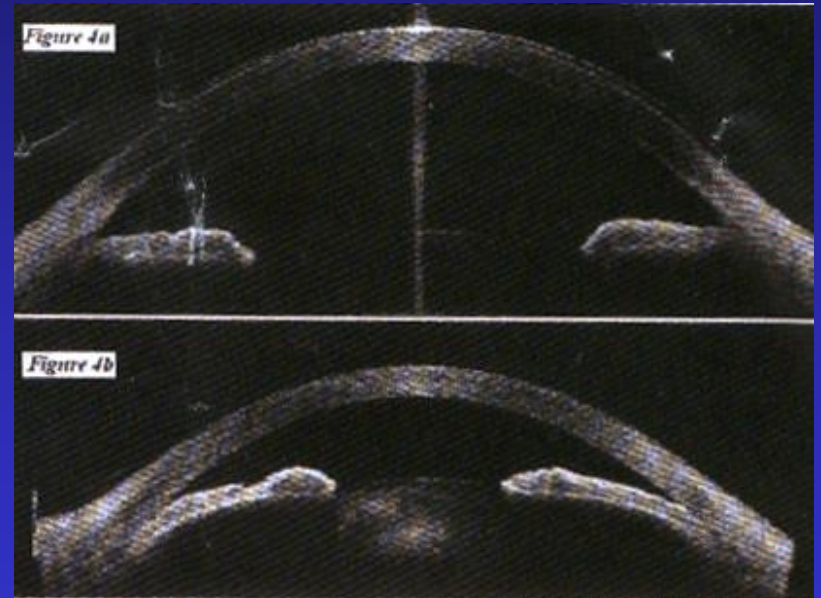
- **Zadná plocha rohovky**
- **Komorový uhol.**
- **Predná plocha dúhovky**
- **Predná plocha šošovky.**
- **Cca 3 mm hĺbka.**



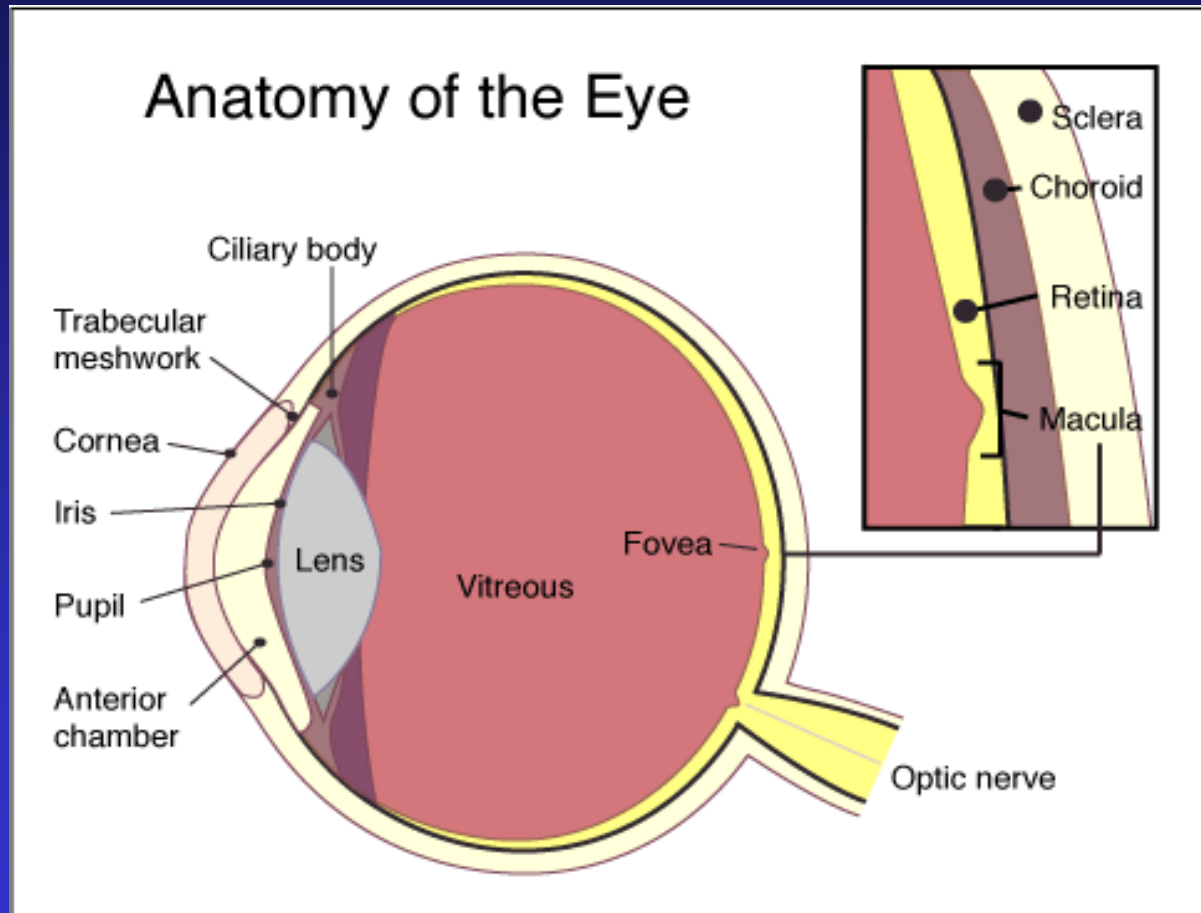
Anatomy of the eye.

Anterior chamber and chamber angle.

- Posterior surface of cornea.
- Angle of ACH
- Anterior surface of iris
- Anterior surface of lens
- Cca 3 mm depth.

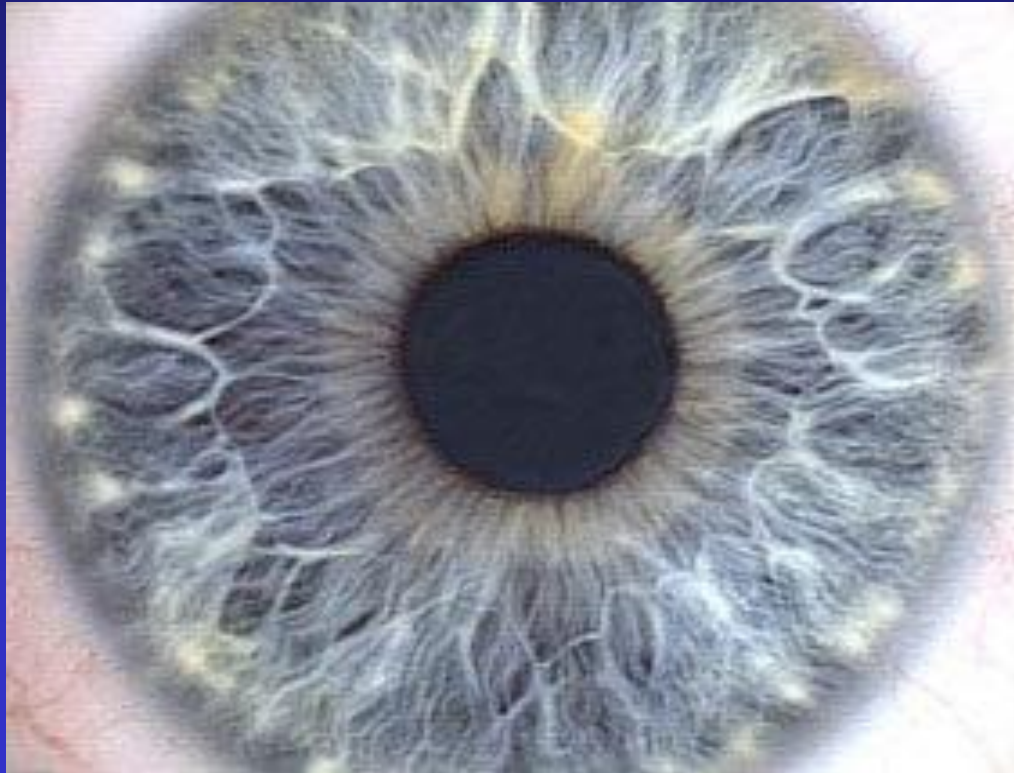


Anatomy of the eye.



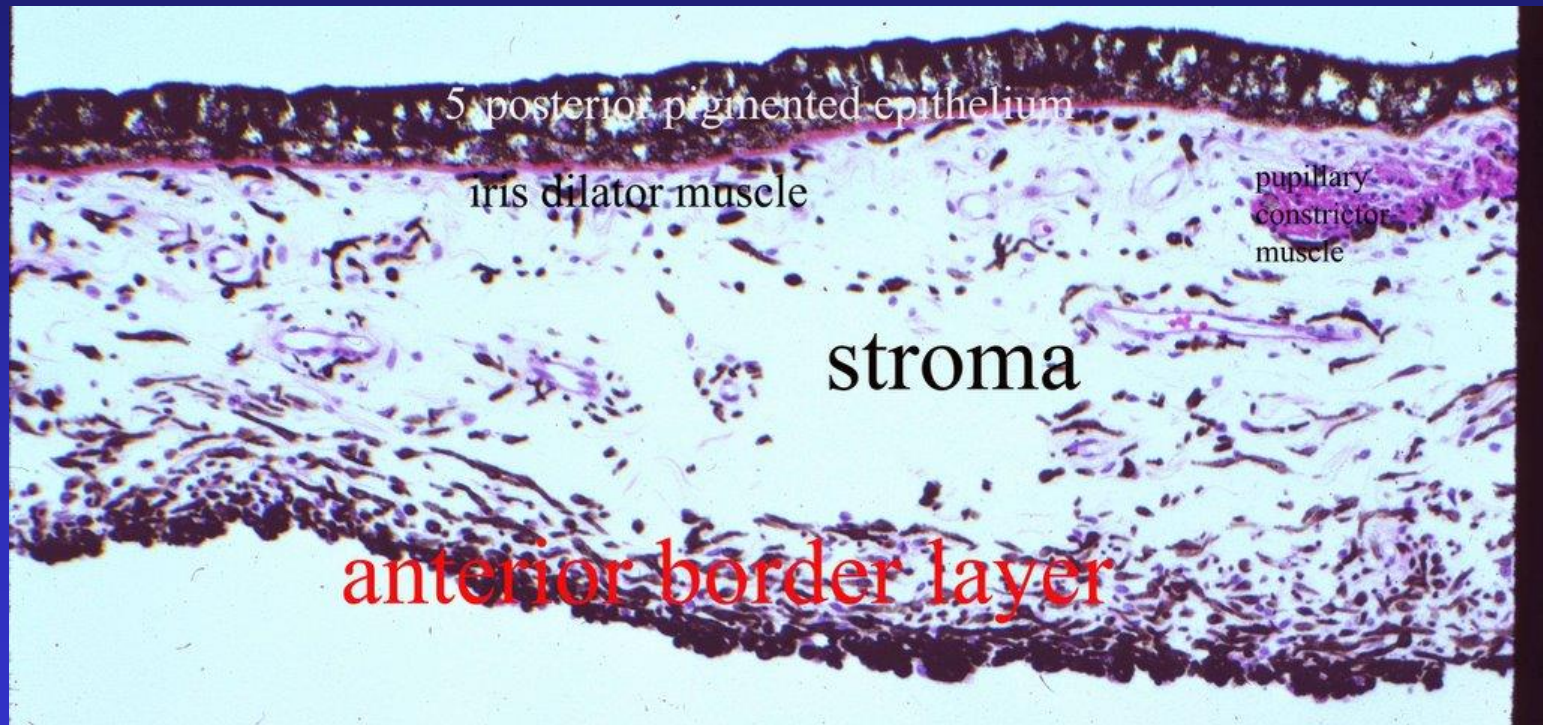
Anatómia oka.

Dúhovka.



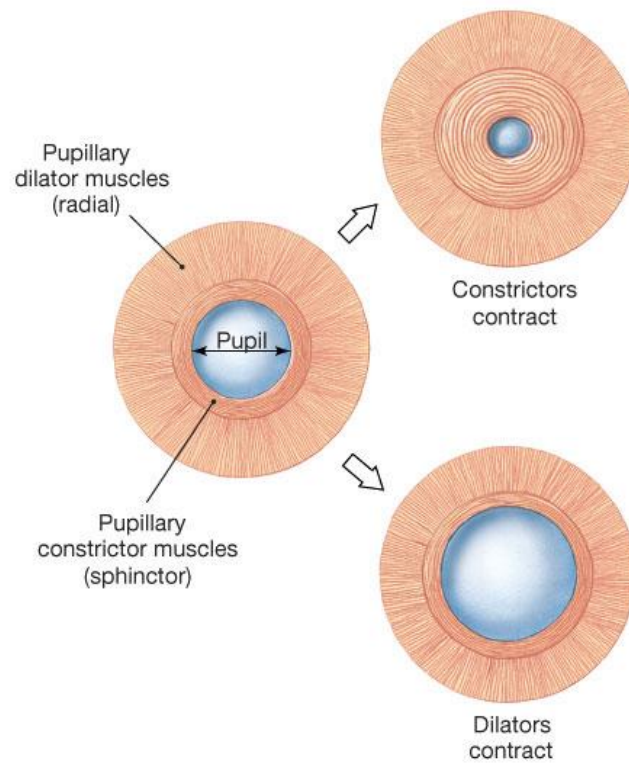
Anatomy of the eye.

Iris.



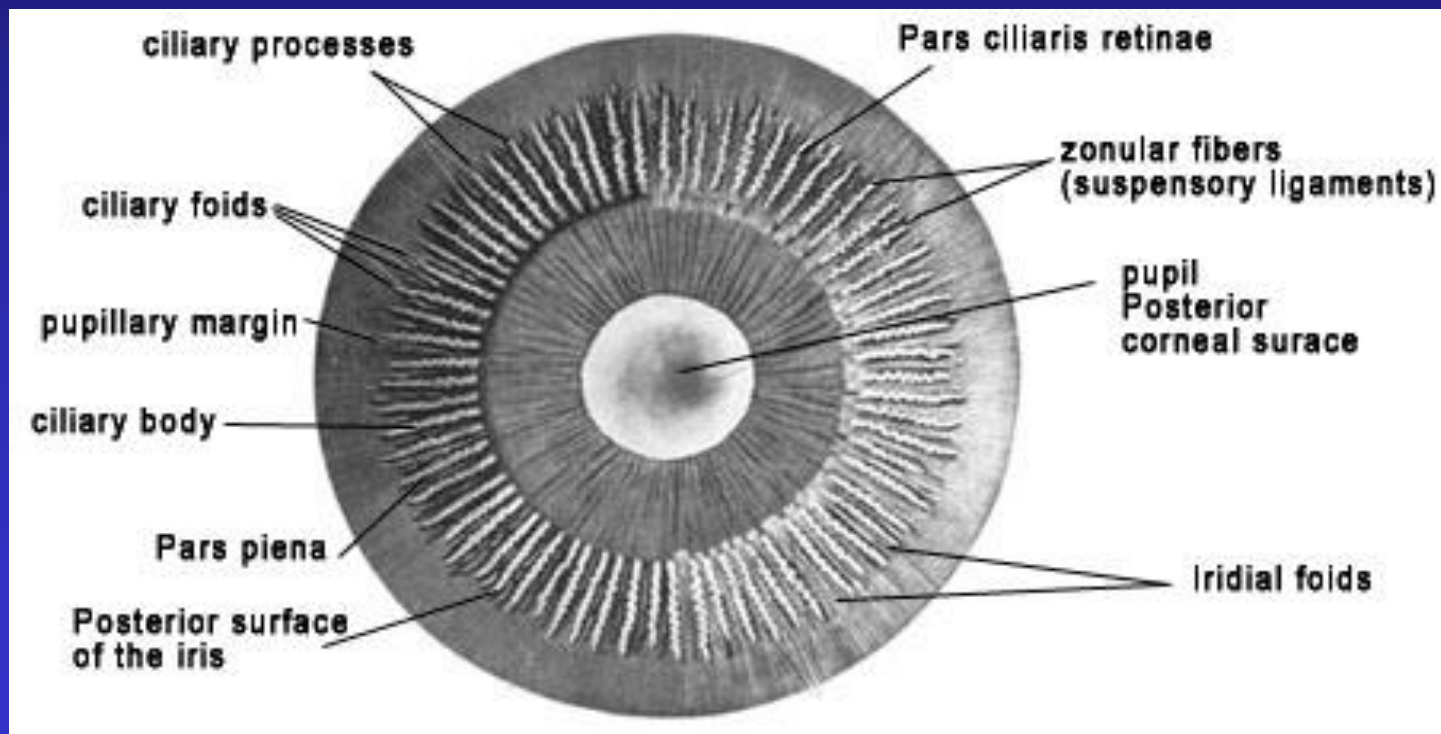
Anatómia oka.

Pupilmotorika.



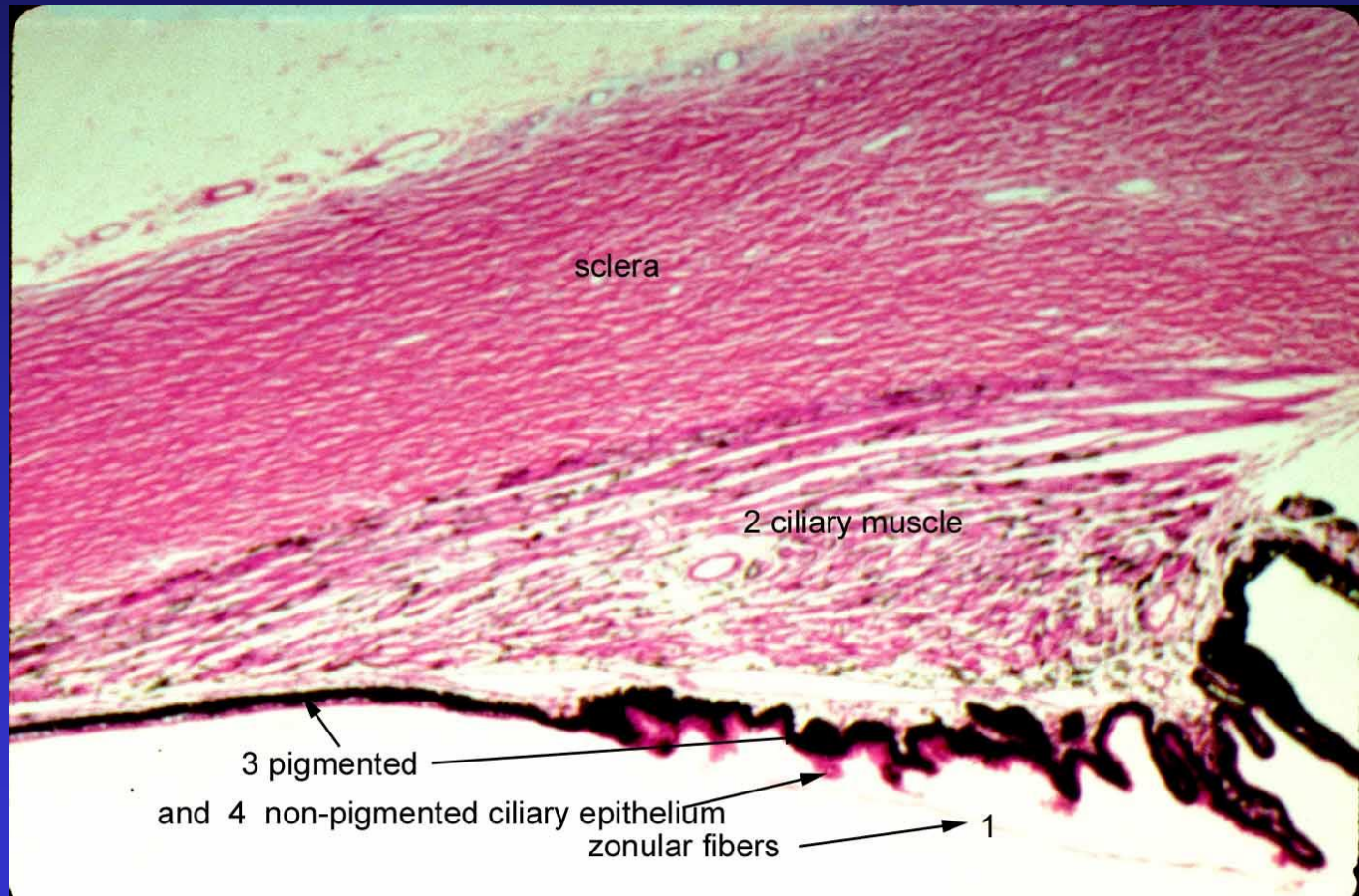
(c) Action of pupillary muscles

Anat3mia oka.



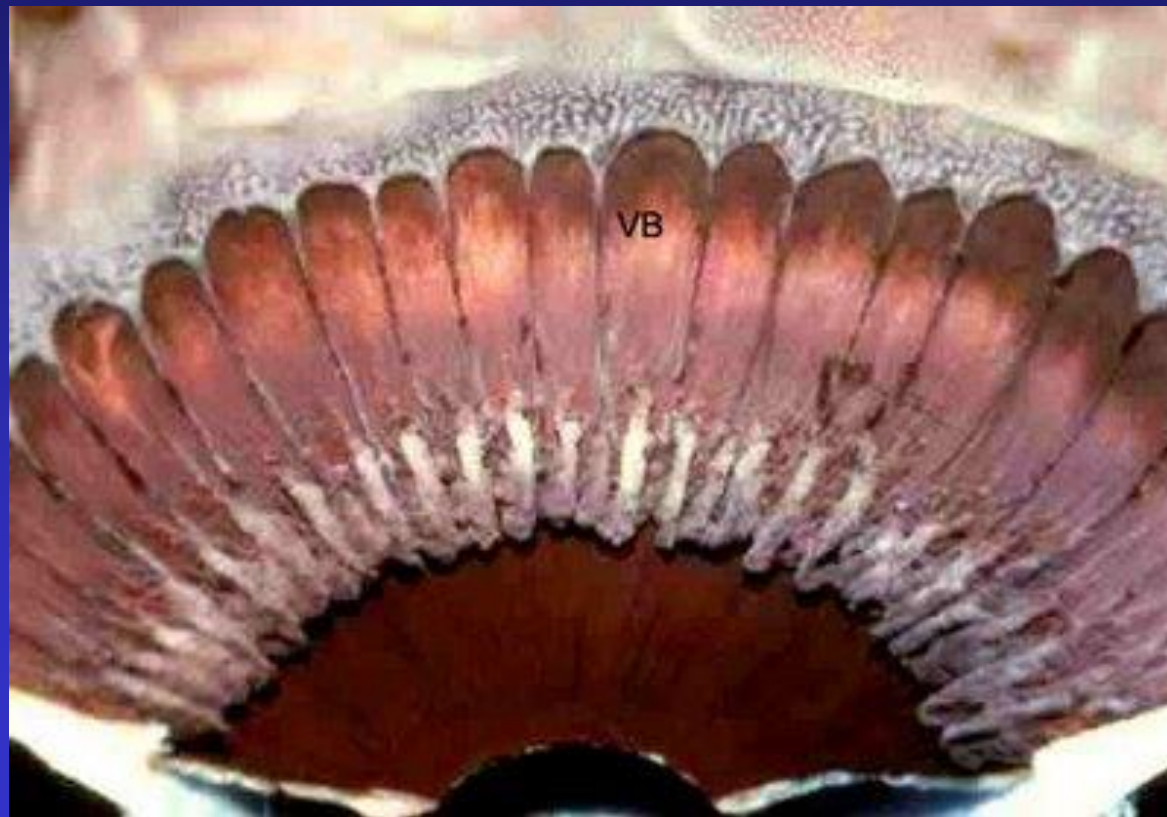
Anatomy of the eye.

Corpus ciliare.



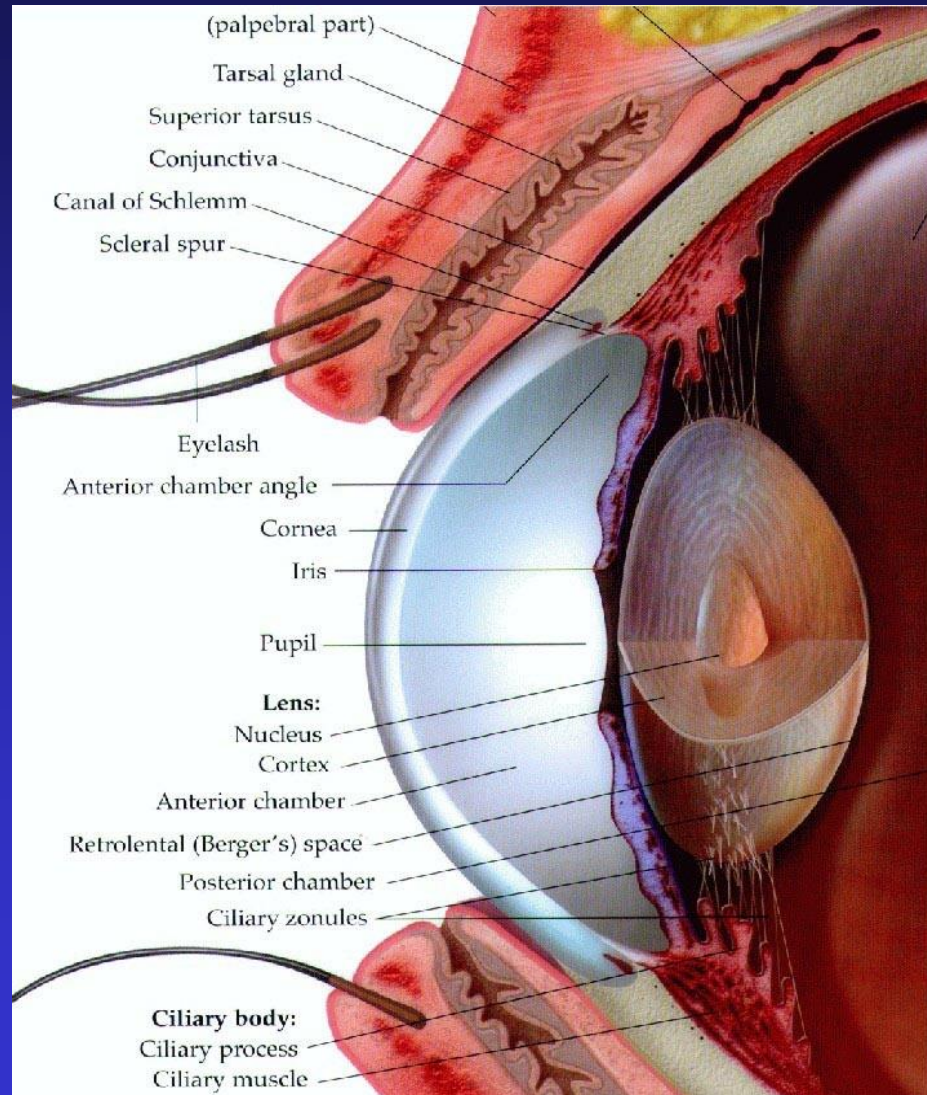
Anatomy of the eye.

Corpus ciliare.



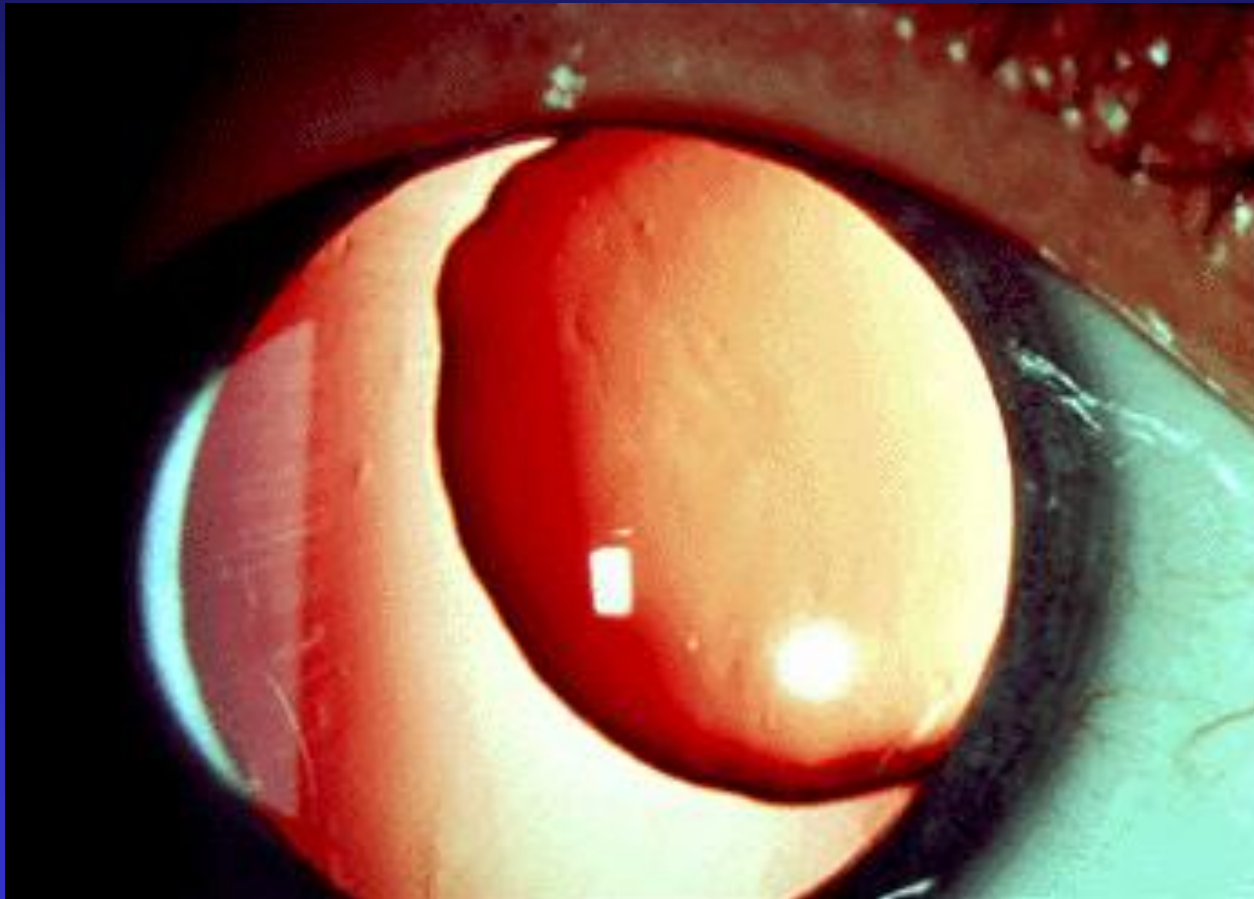
Anatómia oka.

Zonulae ciliares.



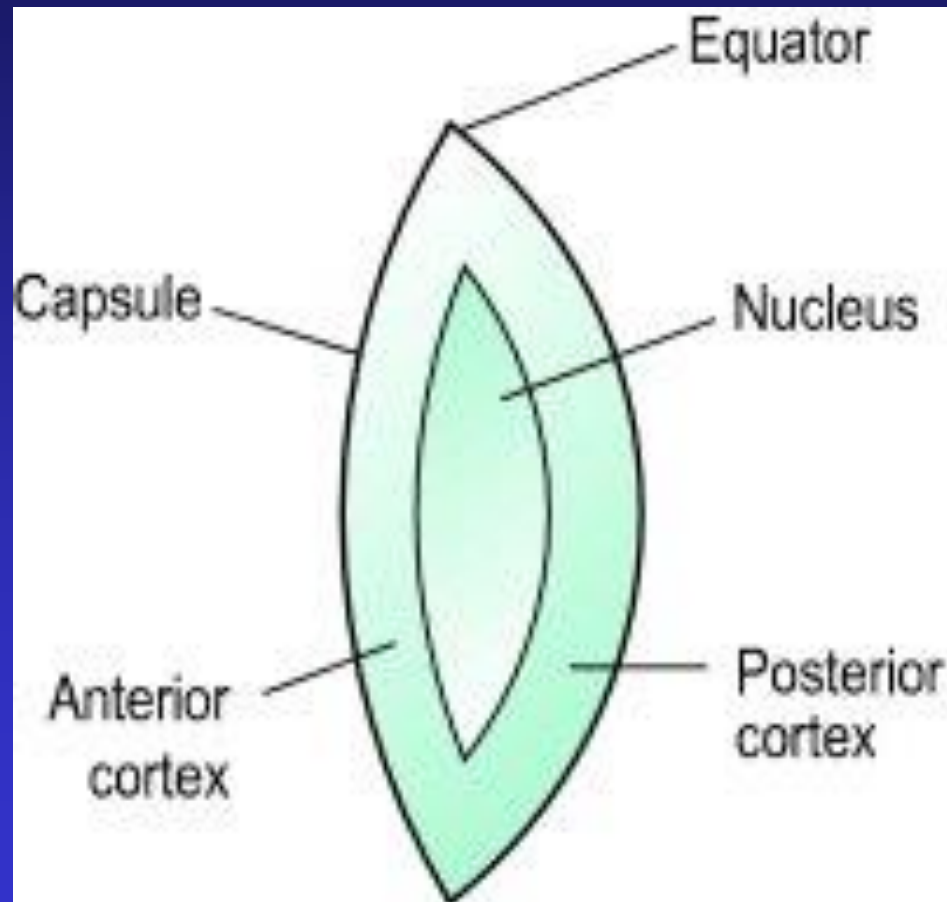
Anatómia oka.

Zonulae ciliares.



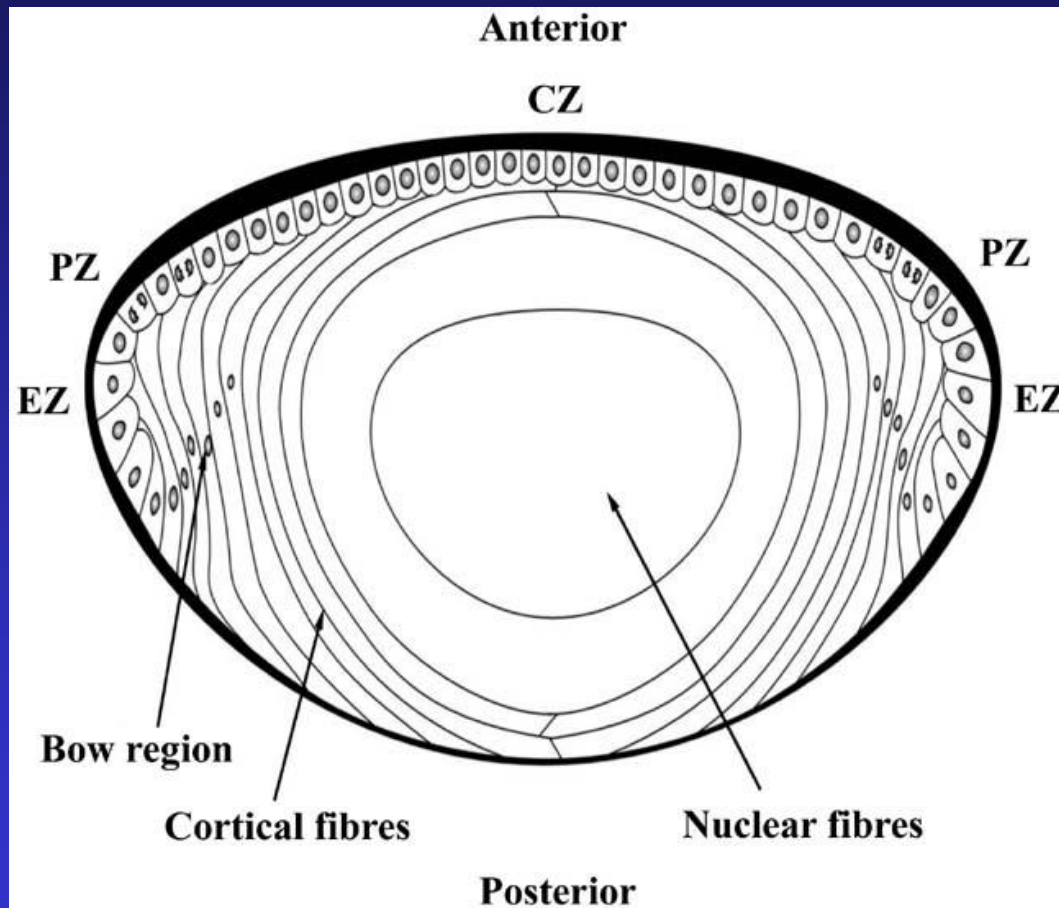
Anatómia oka.

Lens.



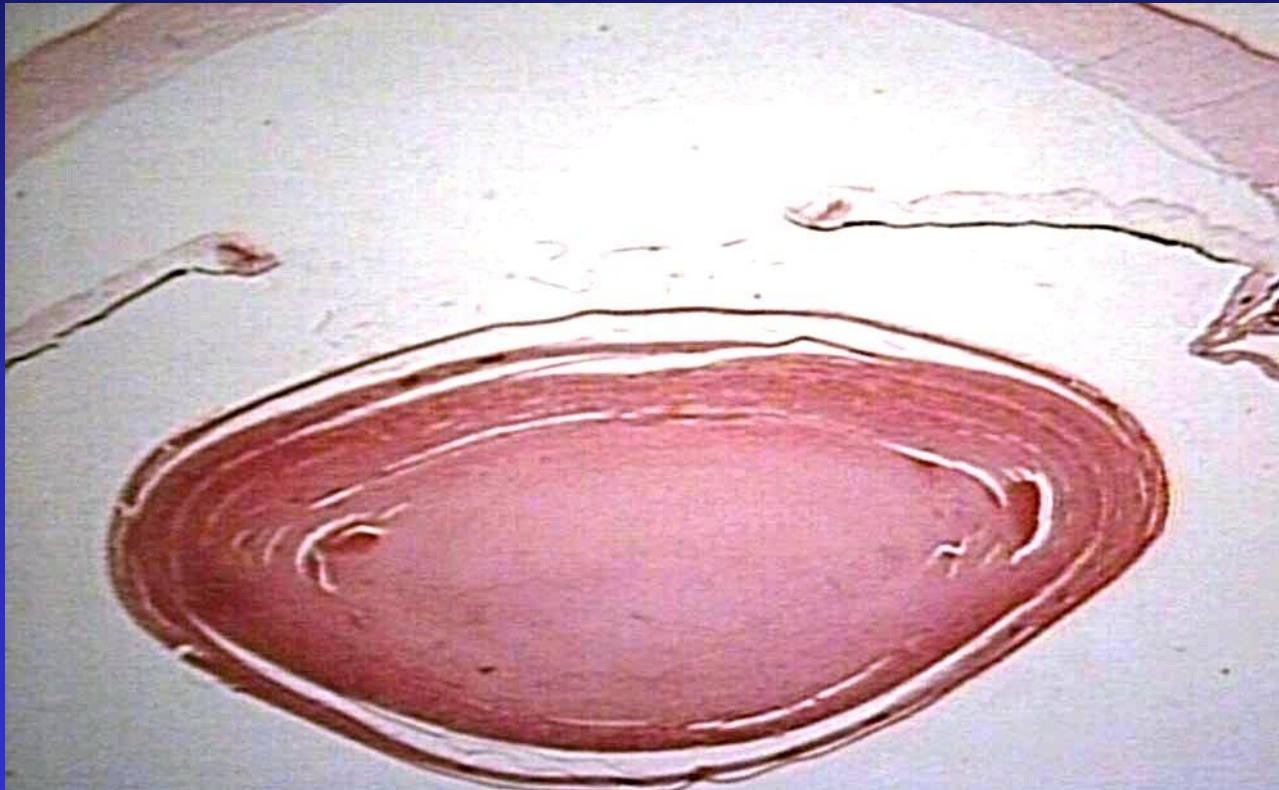
Anatómia oka.

Lens.



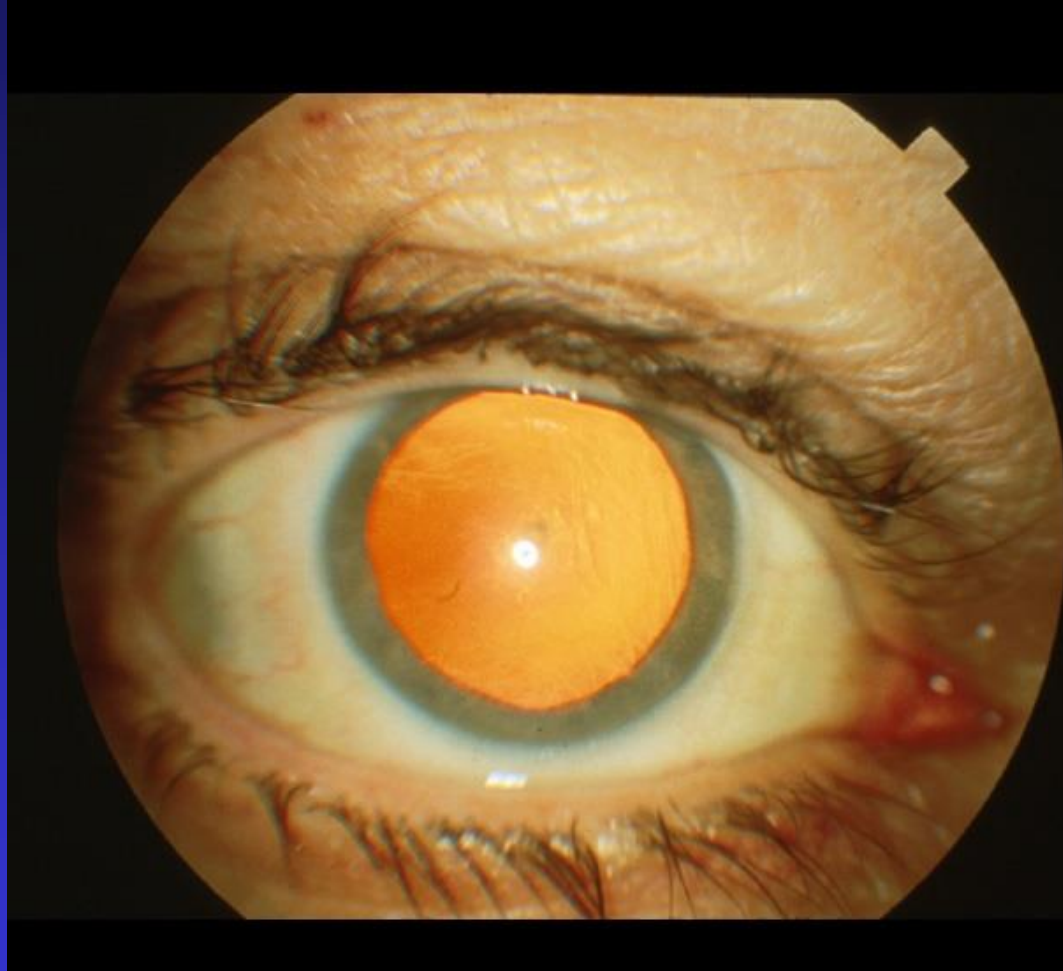
Anatómia oka.

Lens.



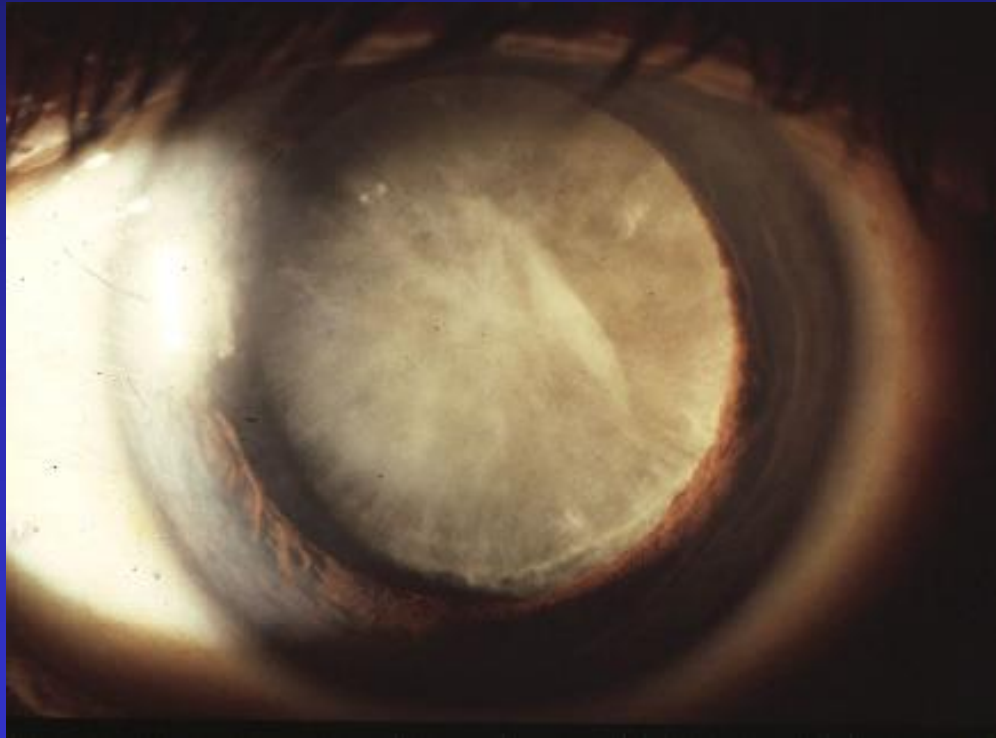
Anatómia oka.

Lens.



Anatomy of the eye.

Lens.



Anatómia oka - kvíz.



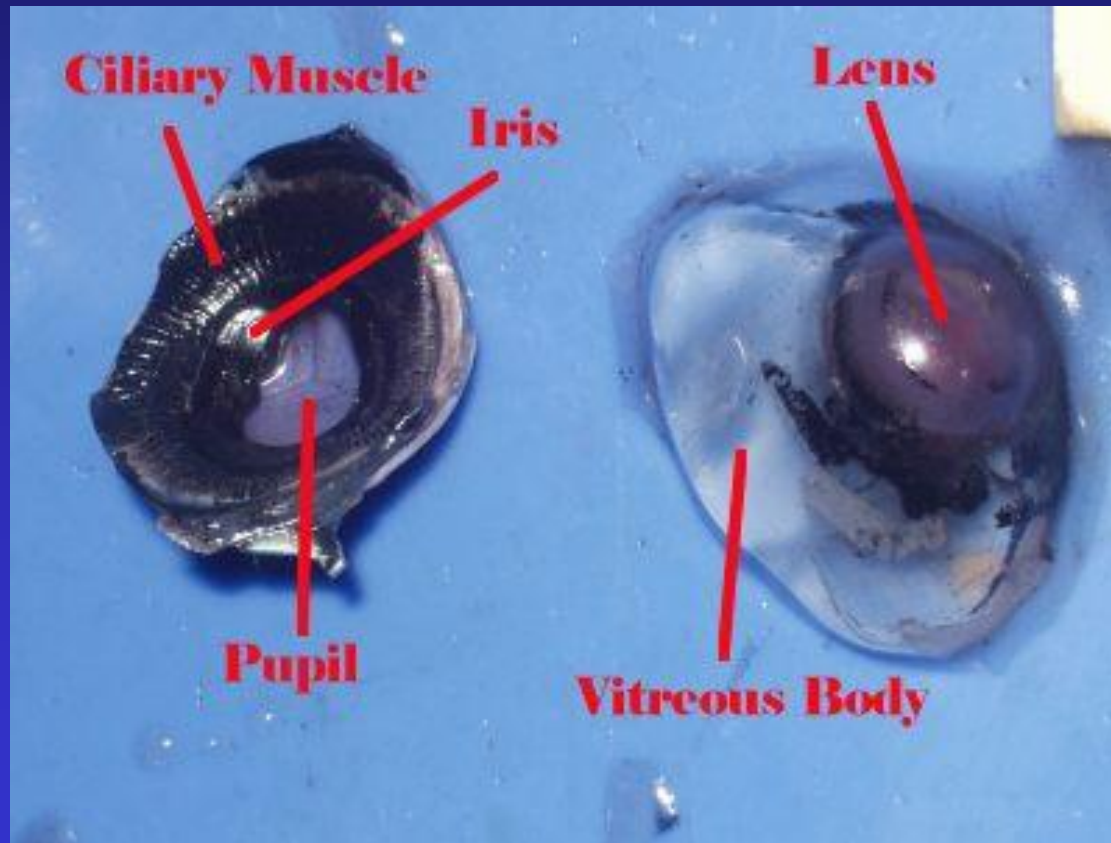
Anatómia oka.

Corpus vitreum.



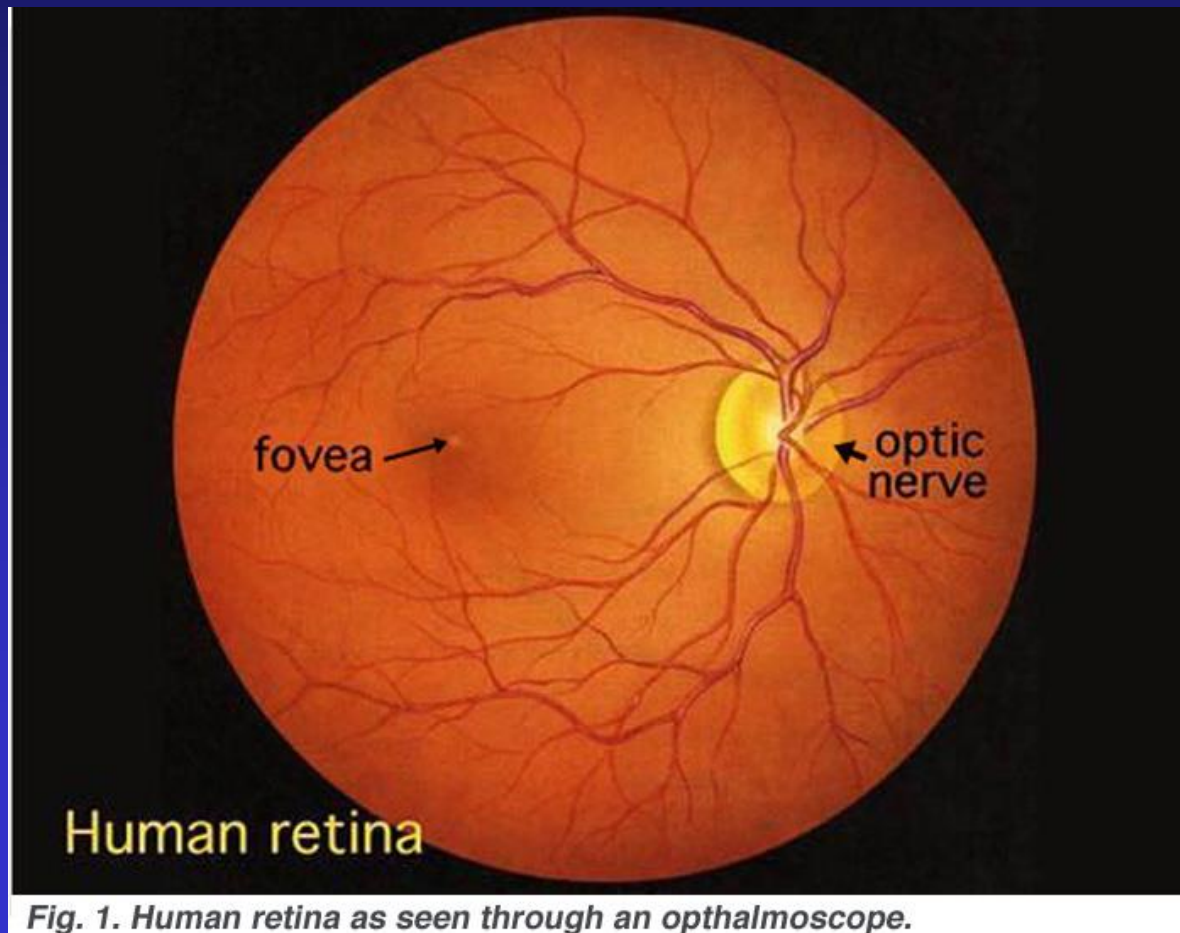
Anatómia oka.

Corpus vitreum.



Anatómia oka.

Retina.



Anatómia oka.

Retina.

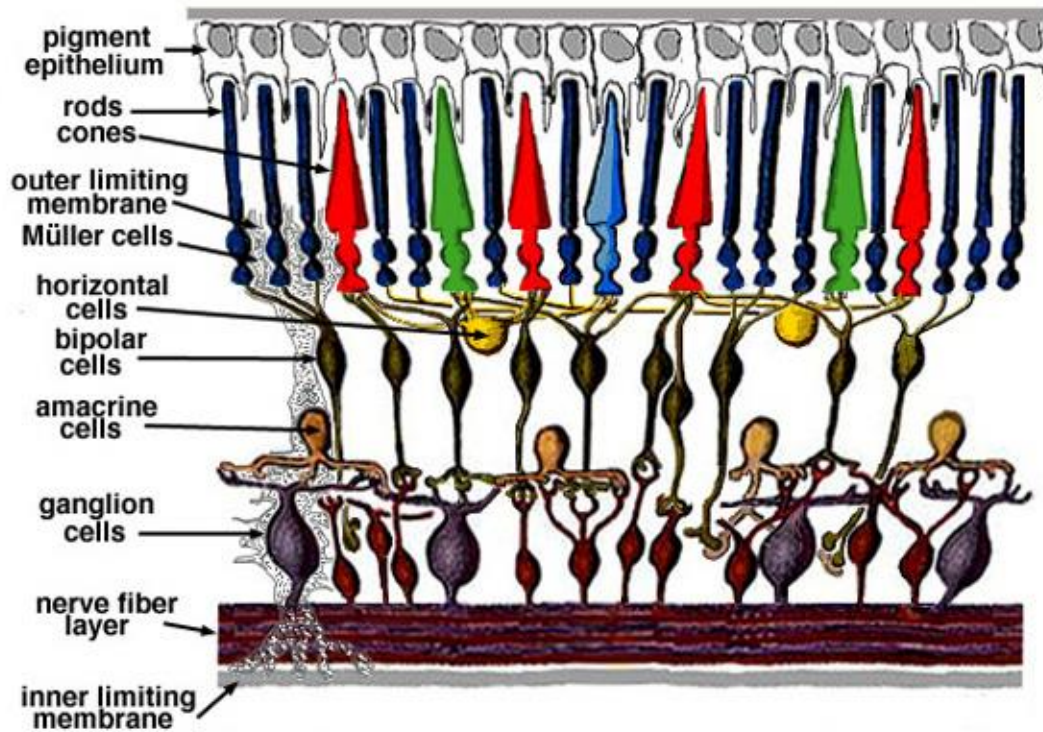
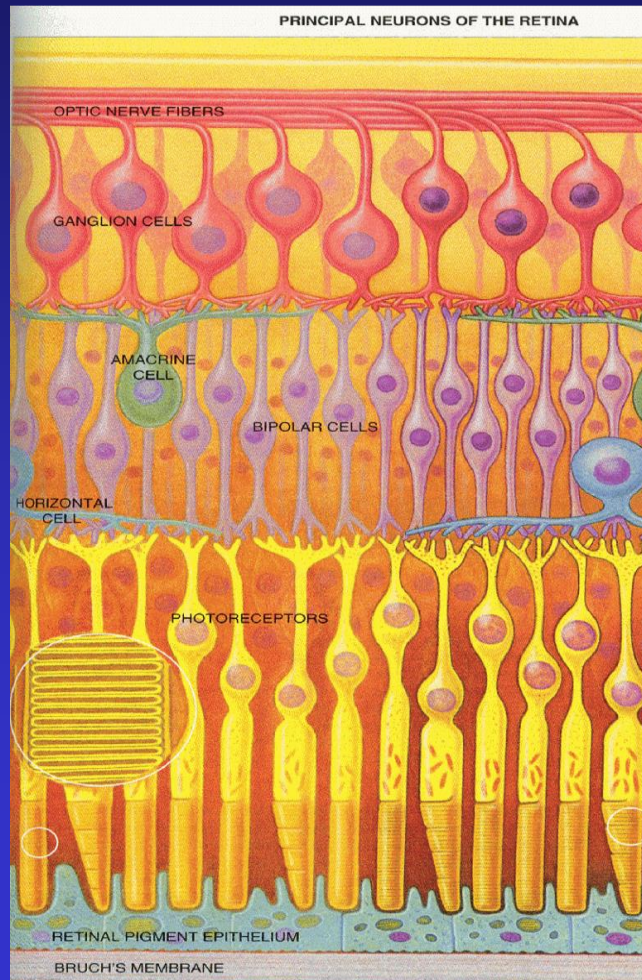


Fig. 2. Simple diagram of the organization of the retina.

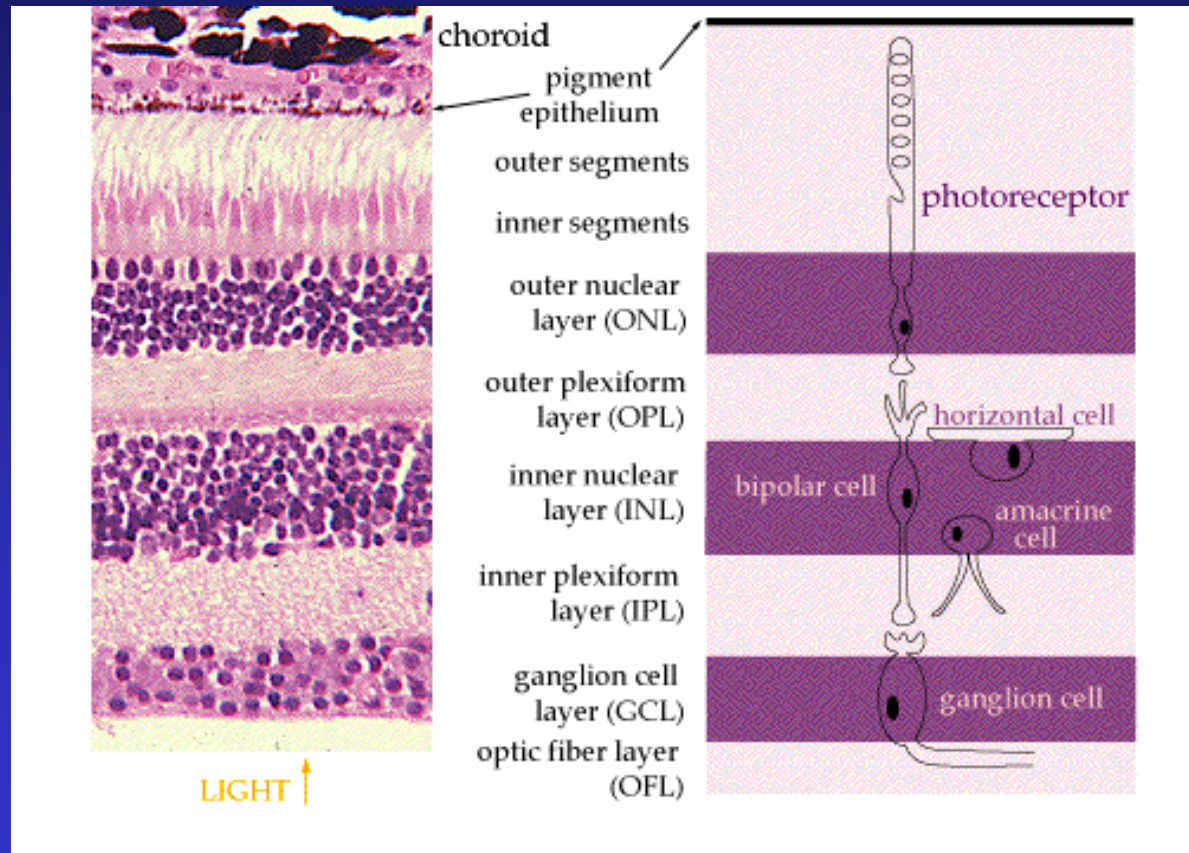
Anatómia oka.

Retina.



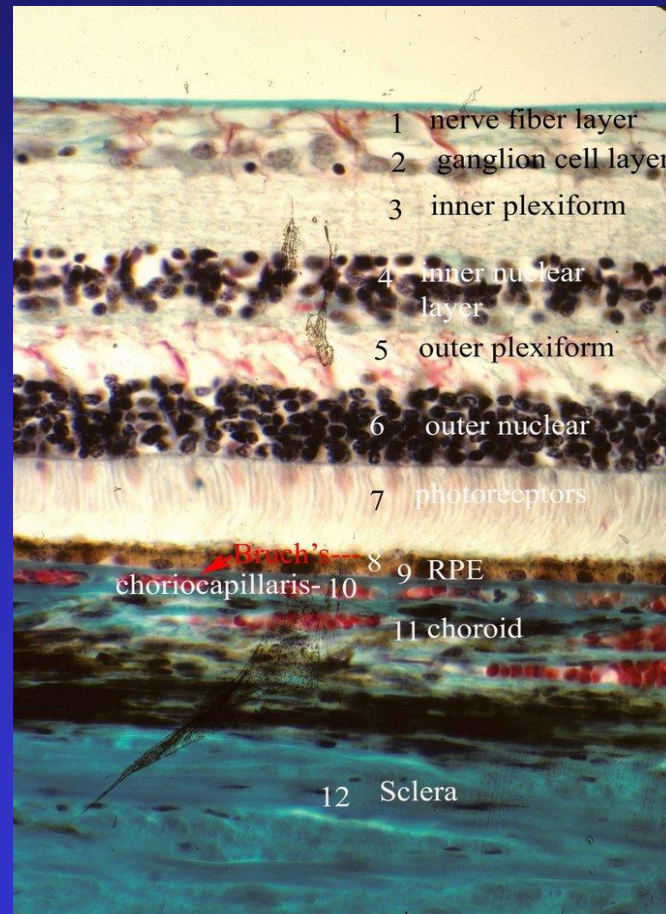
Anatómia oka.

Retina.



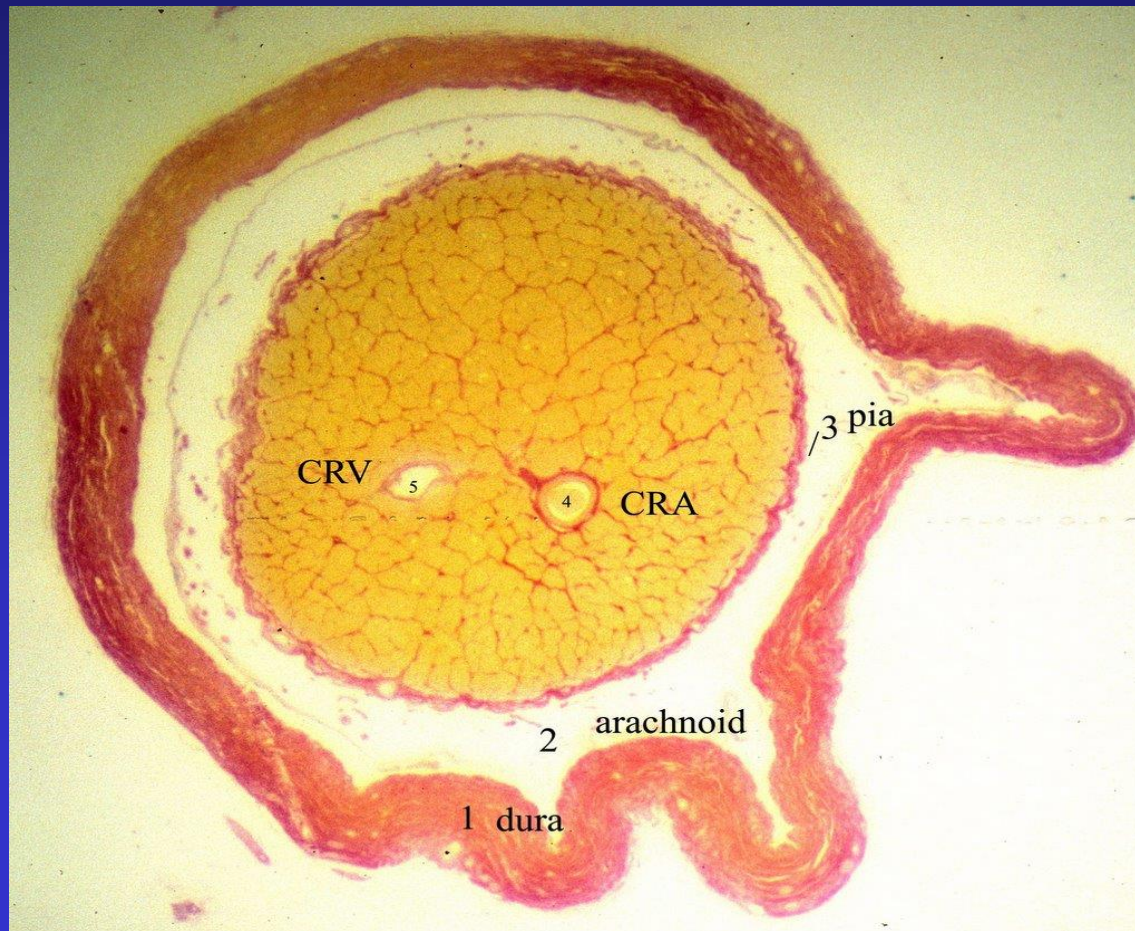
Anatómia oka.

Retina.



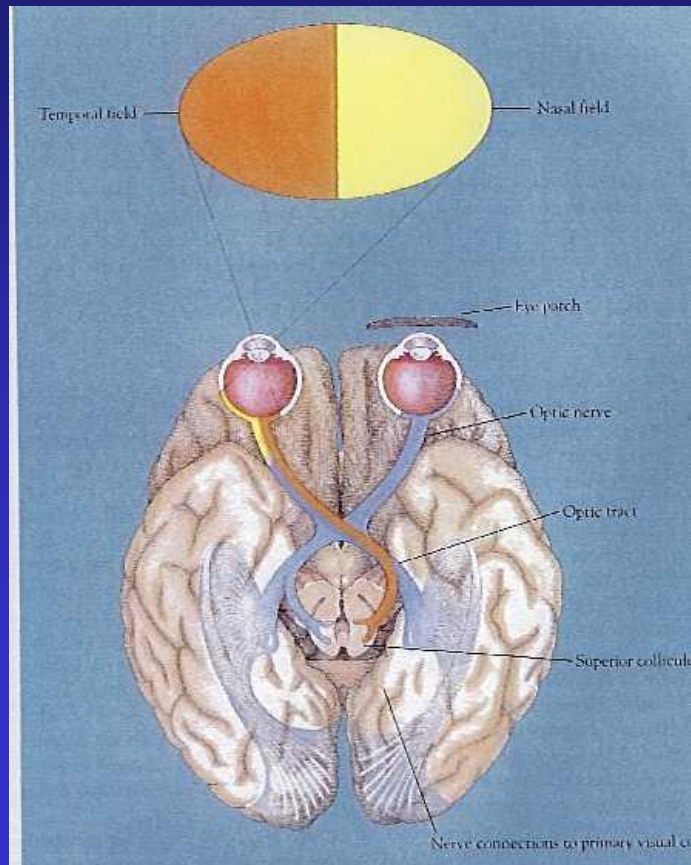
Anatómia oka.

N.opticus.



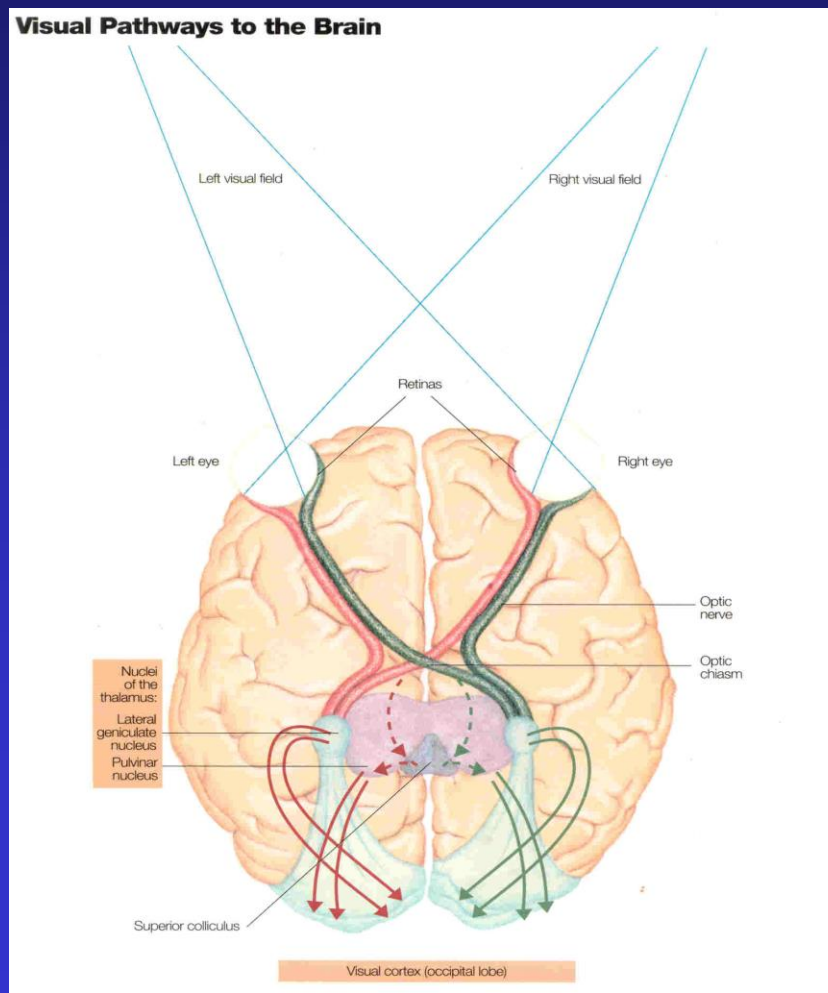
Anatomy of the eye.

Visual pathways.

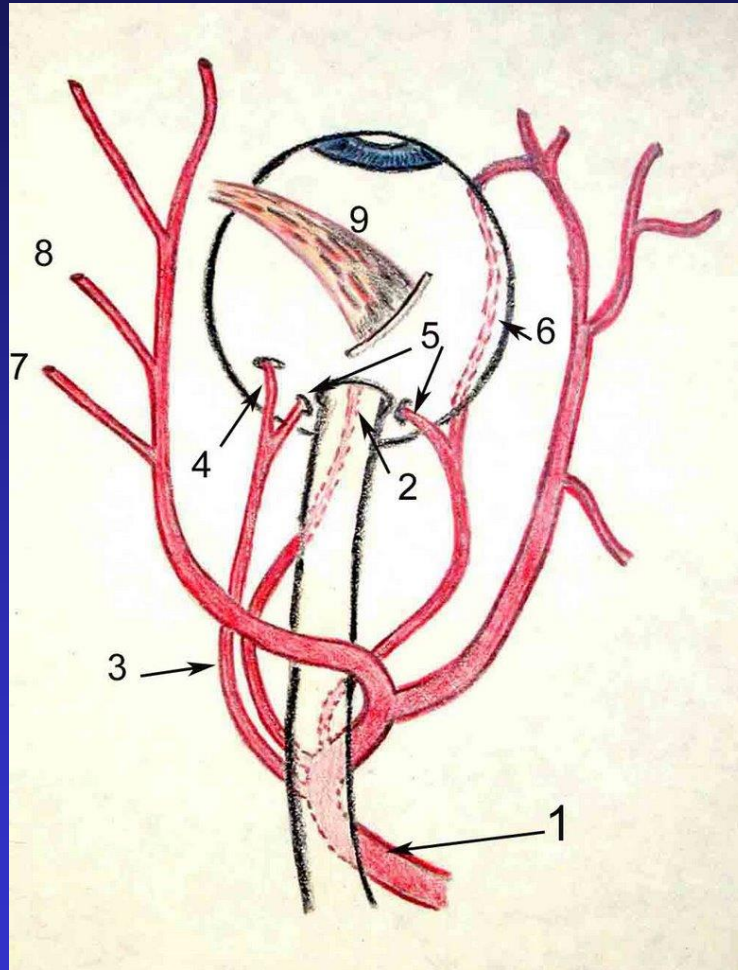


Anatomy of the eye.

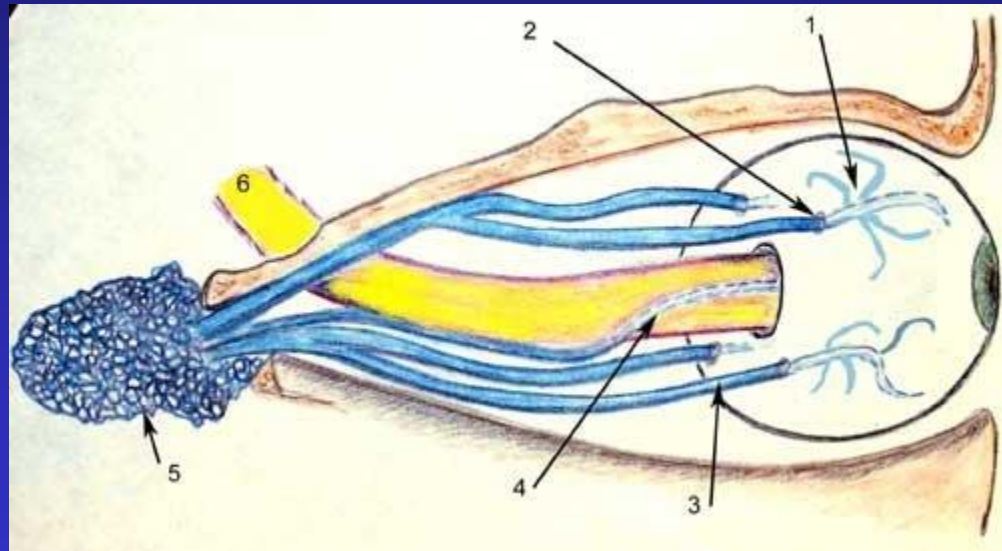
Visual pathways.



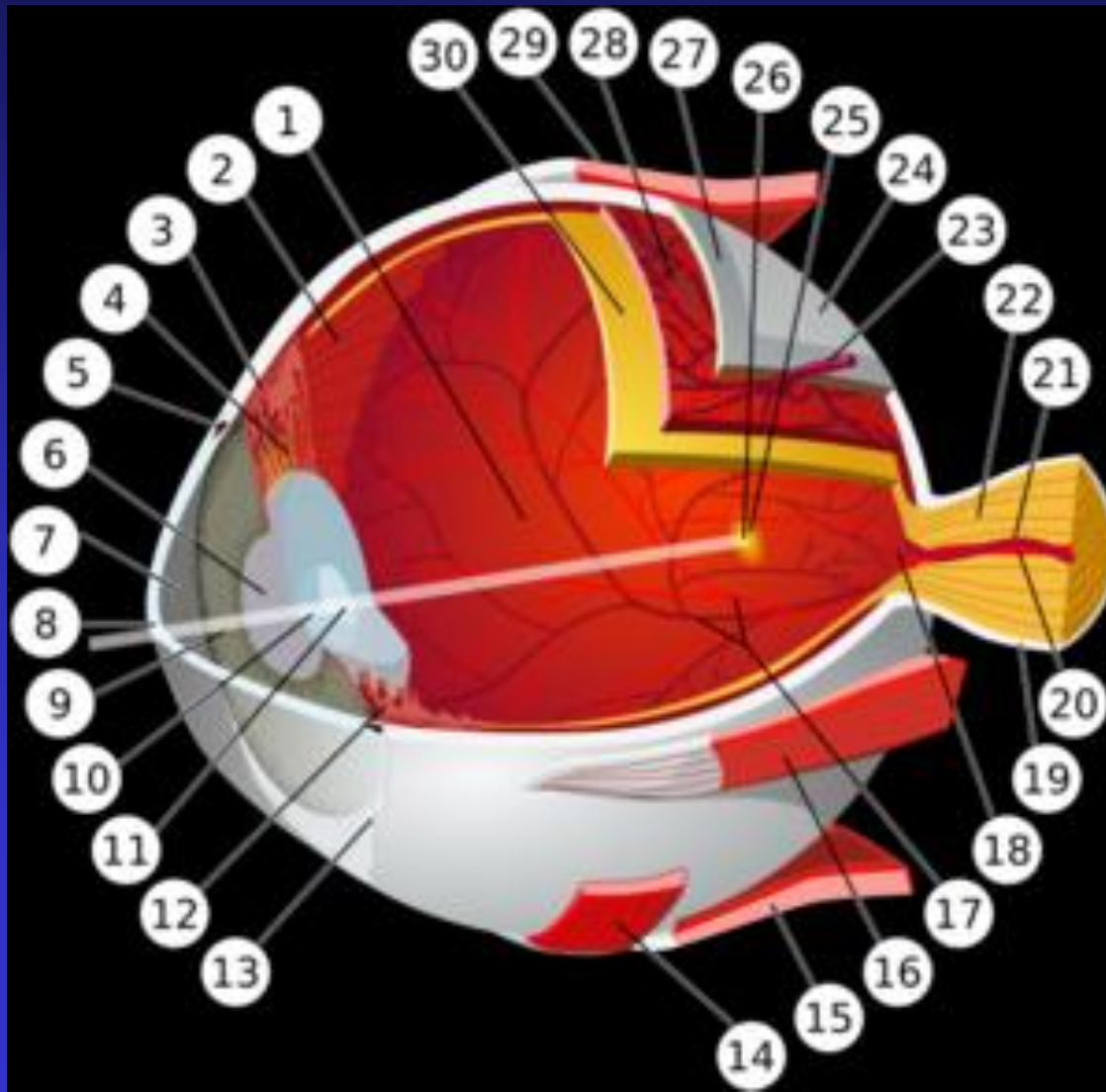
Anatomy of the eye.



Anatomy of the eye.



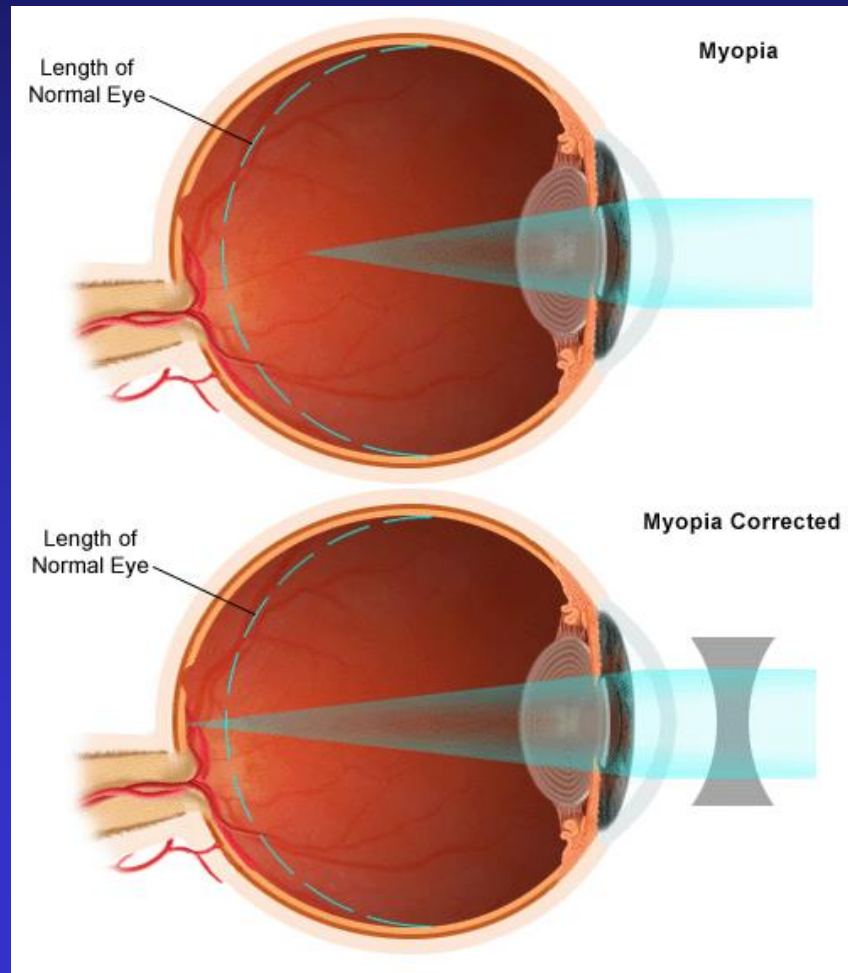
Anatómia oka - kvíz.



Refrakčné chyby.

Refrakčné chyby.

Myopia



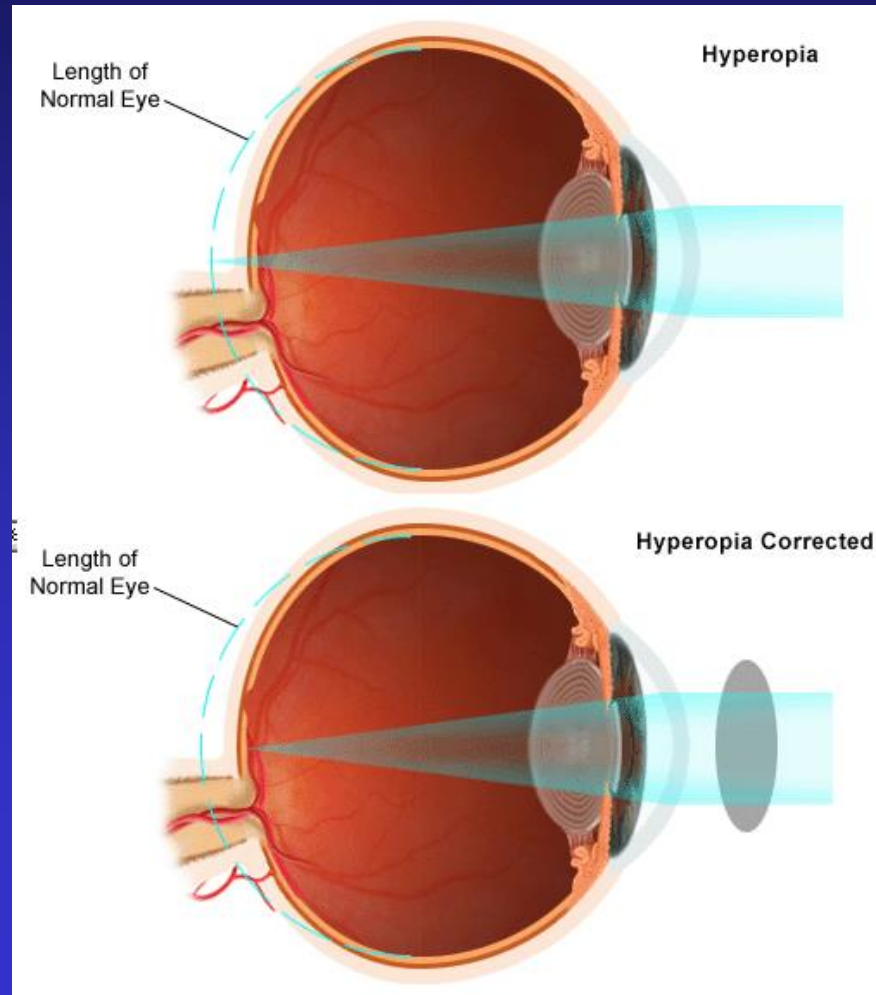
Refrakčné chyby.

Myopia



Refrakčné chyby.

Hypermetropia



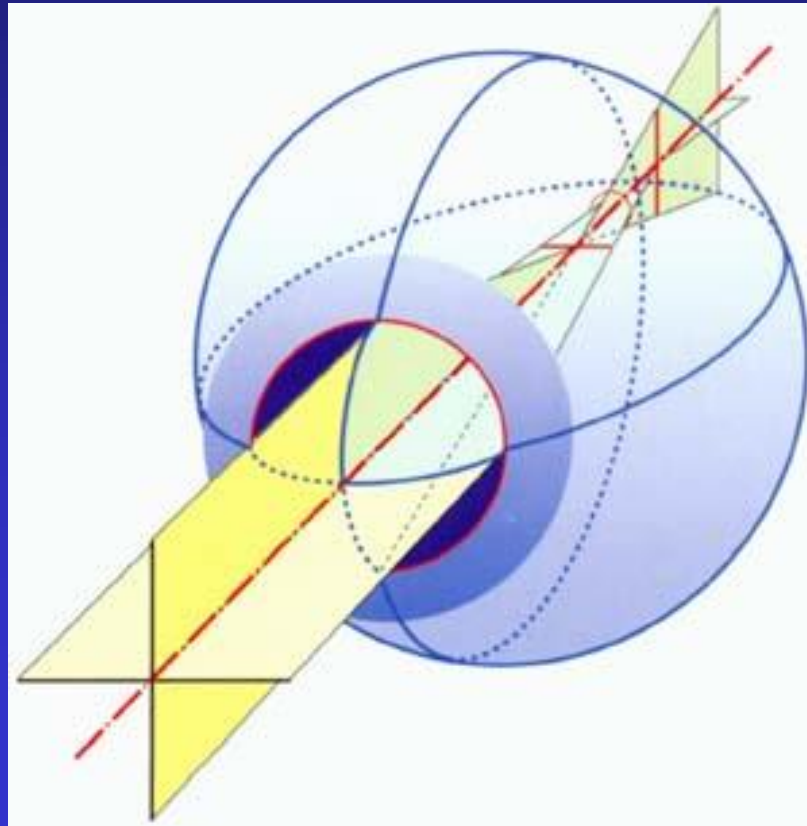
Refrakčné chyby.

Hypermetropia



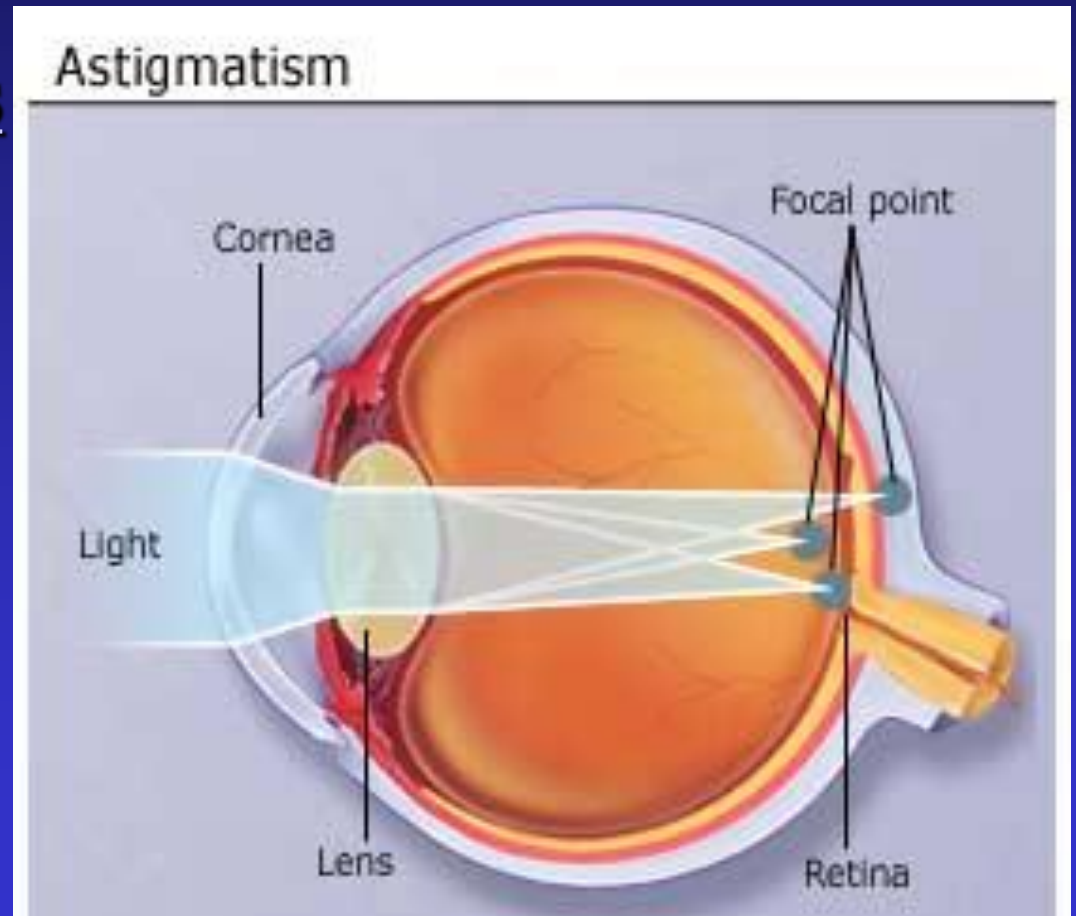
Refrakčné chyby.

Astigmatizmus



Refrakčné chyby.

Astigmatizmus



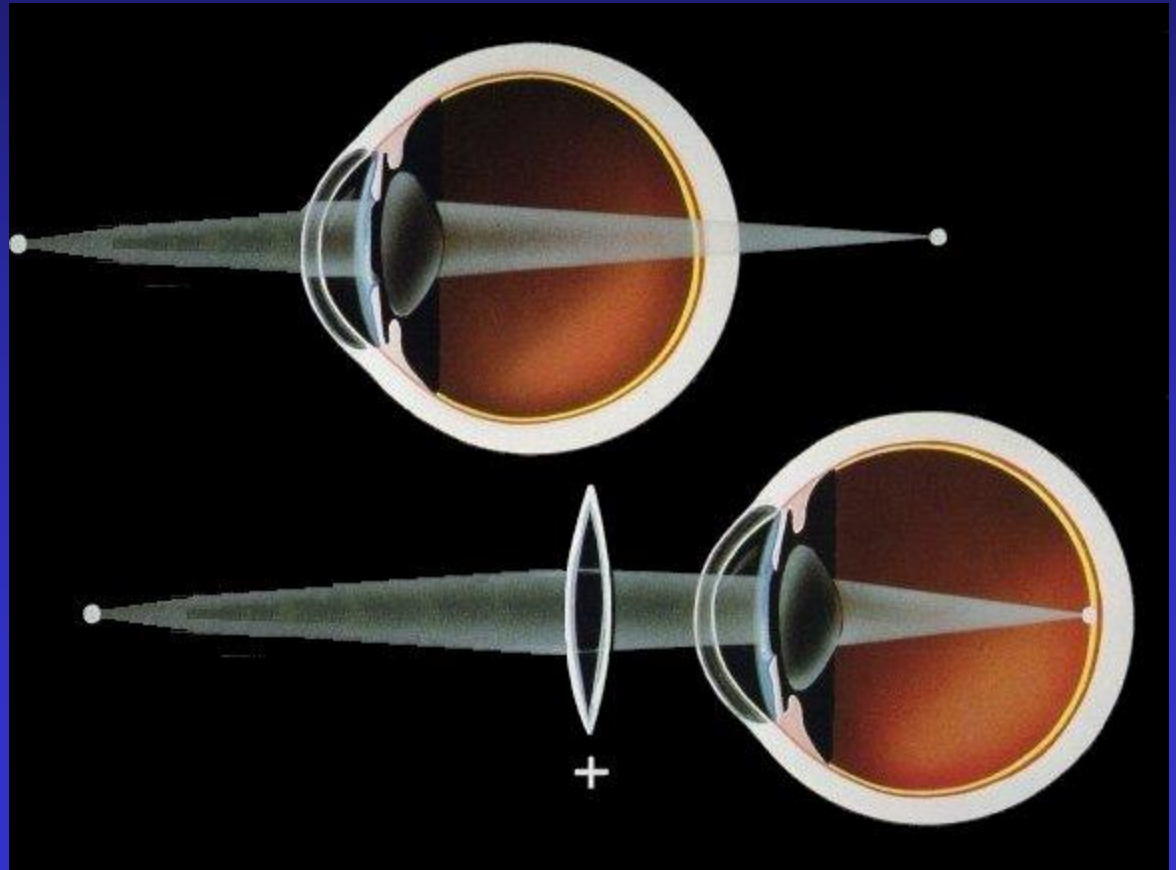
Refrakčné chyby.

Astigmatizmus



Refrakčné chyby.

Presbyopia



Refrakčné chyby.

Presbyopia



Refrakčné chyby - korekcia.

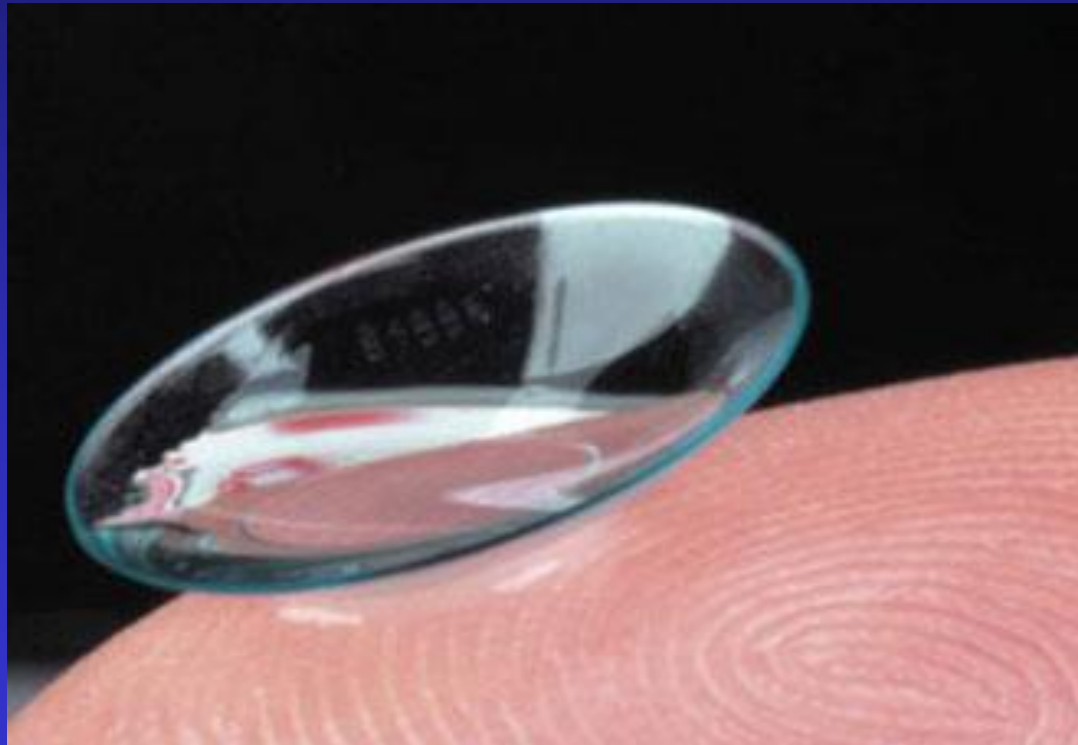
- Okuliare
- Kontaktné šošovky
- Chirurgická korekcia = refrakčná chirurgia.

Refrakčné chyby – KŠ.

- Mäkké hydrofilné
- Tvrdé KŠ (Keratoconus inferior)
- Hybridné = mäkké s tvrdým jadrom.
- Terapeutické KŠ
- Kozmetické
- Multifokálne
- Okluzor

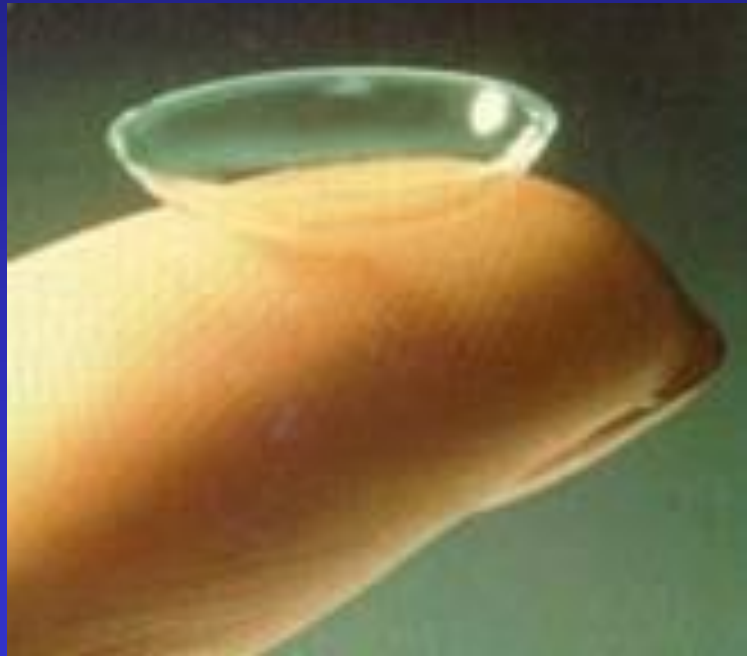
Refractive errors – contact lenses.

- Soft – hydrophile, oxygen permeable



Refractive errors – contact lenses.

- Hard CL (Keratoconus inferior correction)



Refractive errors – contact lenses.

- Hybrid = soft CL with hard inlay – comfortable keratoconus correction



Refractive errors – contact lenses.

- Soft – hydrophile, oxygen permeable
- Hard CL (Keratoconus inferior correction)
- Hybrid = soft CL with hard inlay
- Therapeutic CL – bandage CL, medicaments
- Cosmetic CL – eye color change,
- Multifocal CL – presbyopia correction
- Occlusion CL – CL as occludor
- Stenopeic CL – aniridia correction

Refractive errors – contact lenses.

- Soft – hydrophile, oxygen permeable
- Cosmetic CL – eye color change,



Refractive errors – contact lenses.

- Soft – hydrophile, oxygen permeable
- Cosmetic CL – eye color change,



Refrakčné chyby - korekcia.

- Chirurgická korekcia = refrakčná chirurgia.
- Rohovka – RK, IAK
- excimer PRK
- LASEK
- LASIK
- INTRASTROMALNE
- KERARING
- Princíp – zmena zakrivenia a tvaru rohovky

Refrakčné chyby.

Excimerové lasery UV lúč ArF 193 nm



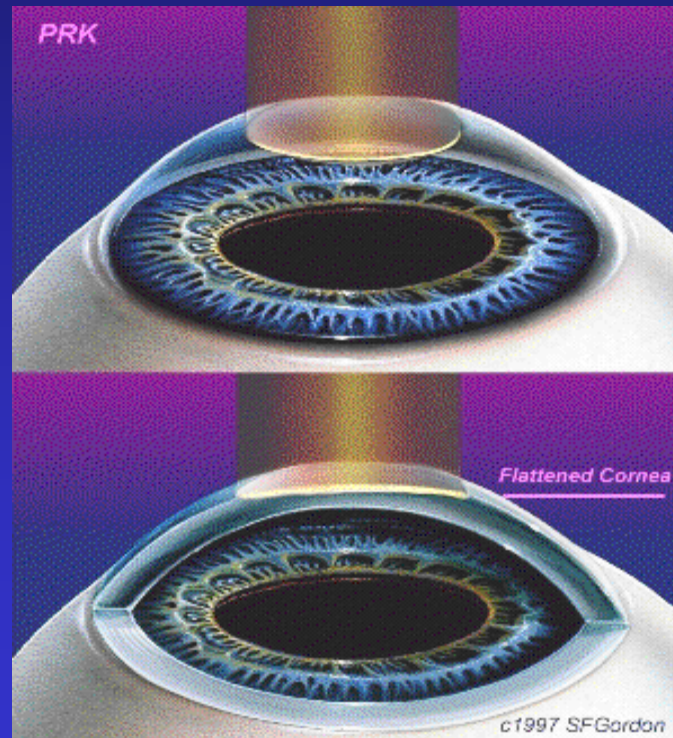
Refrakčné chyby.

Excimerové lasery UV lúč ArF 193 nm



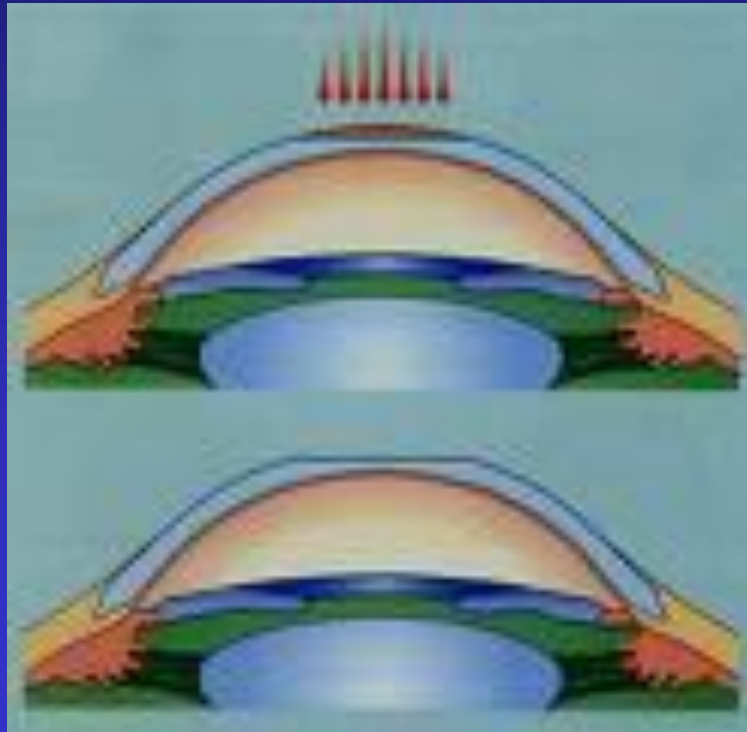
Refrakčné chyby.

PRK



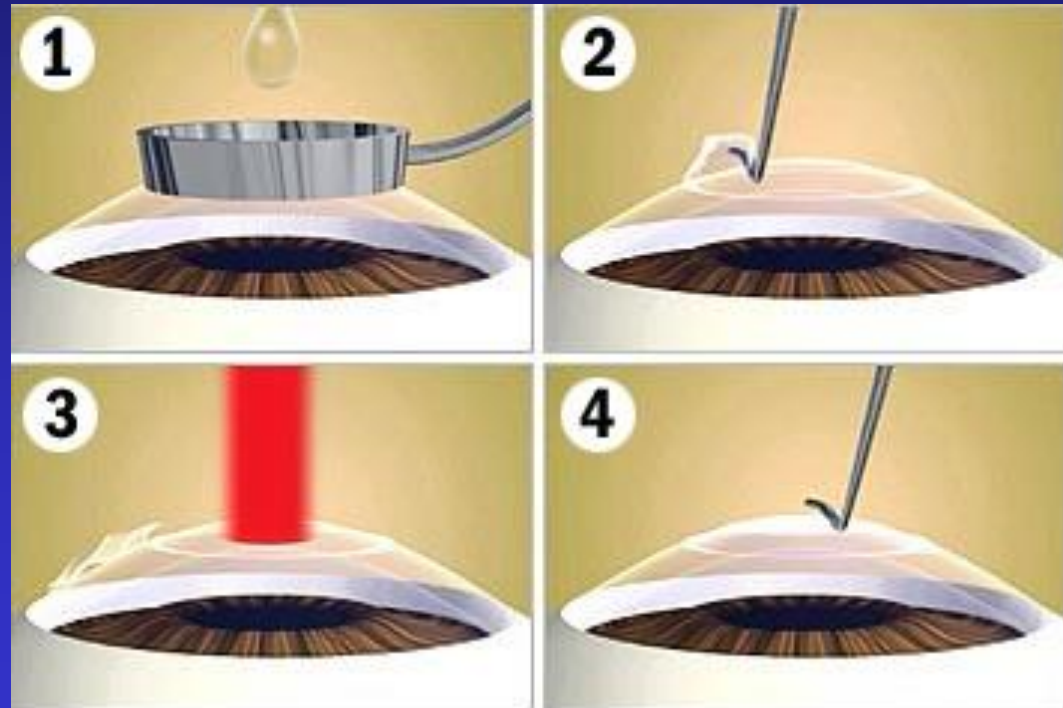
Refrakční chyby.

PRK



Refrakčné chyby.

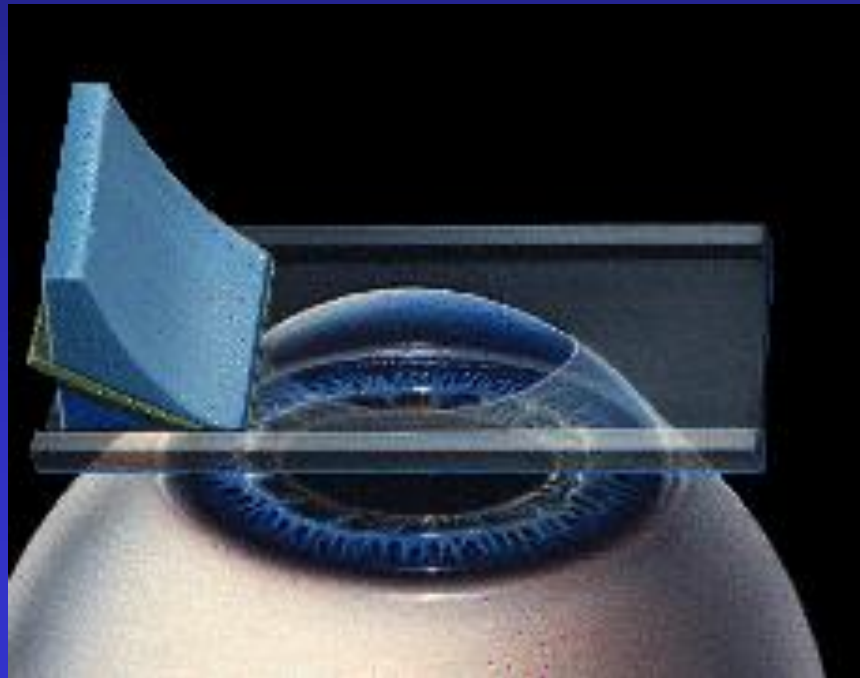
LASEK



American Academy of Ophthalmology;
UCLA Laser Refractive Center at the Jules Stein Eye Institute

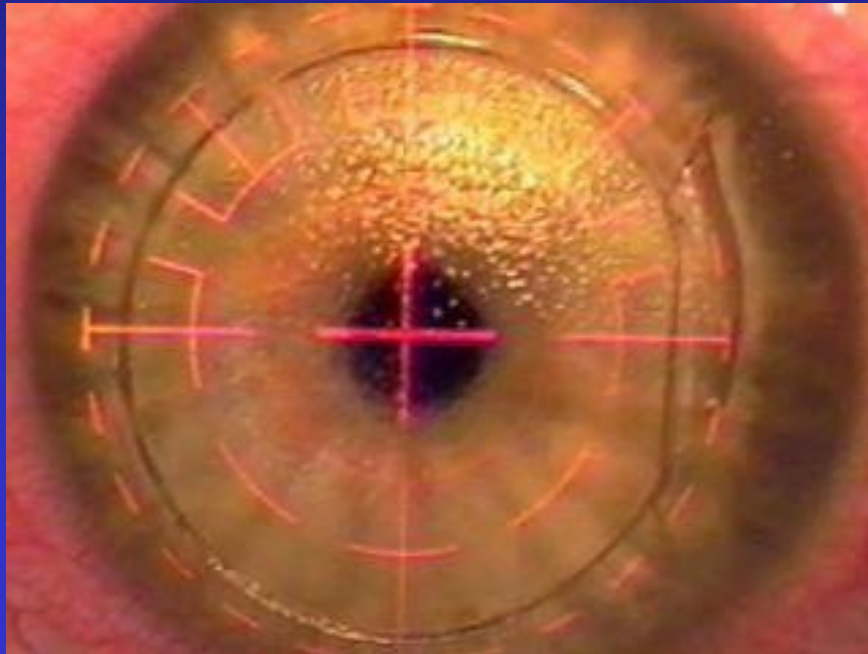
Refrakčné chyby.

LASIK



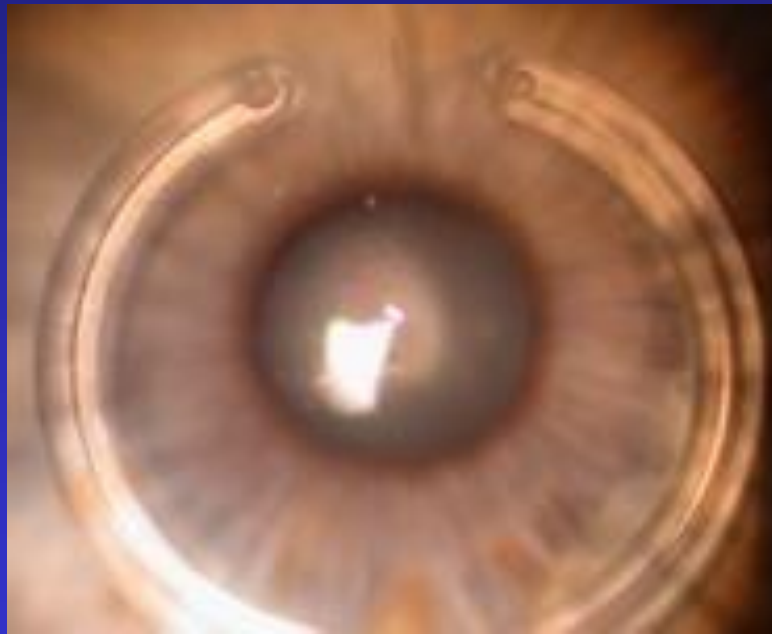
Refrakčné chyby.

INTRASTROMAL



Refrakčné chyby.

KERARING



Refrakčné chyby - korekcia.

- Chirurgická korekcia = refrakčná chirurgia.
- Intraokulárne – implantácia umelej šošovky,
- výmena vlastnej šošovky
- extrakcia vlastnej šošovky

Refrakčné chyby - korekcia.

- Iris claw IOL



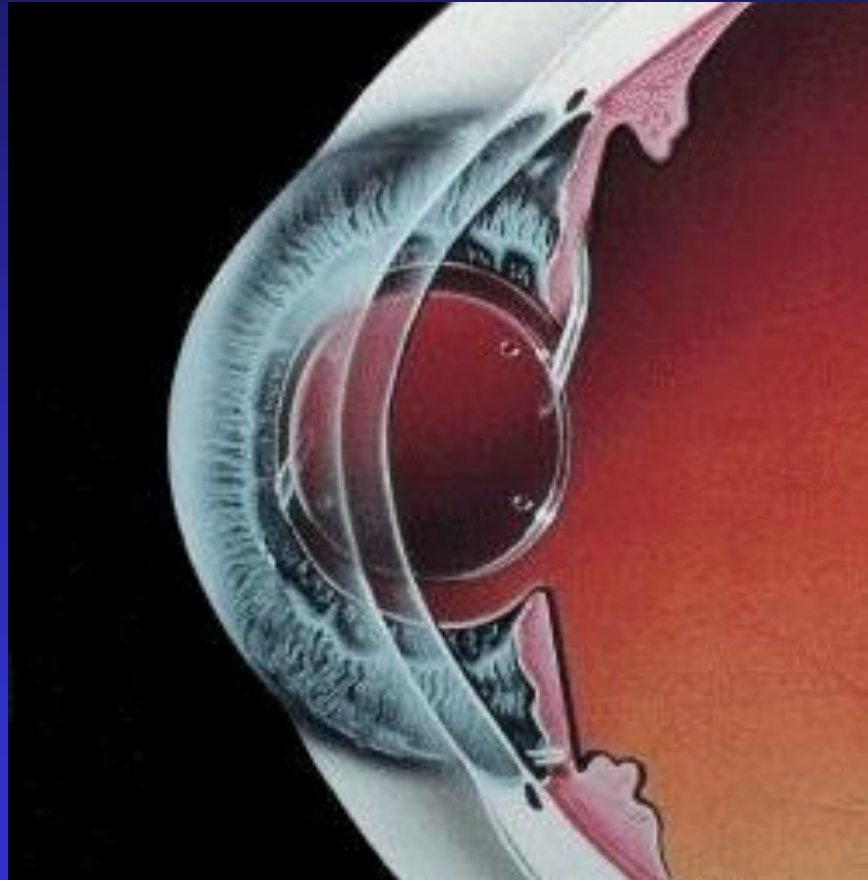
Refrakčné chyby - korekcia.

- ICL



Refrakčné chyby - korekcia.

- CLE



Koniec.

