



DIAGNOSTIC & THERAPEUTIC APPROACHES IN OPHTHALMOLOGY

1st Department of Ophthalmology A.U.TH.

Clinic Director: Prof. Panagiotis K Oikonomidis

2nd Department of Ophthalmology A.U.TH.

Clinic Director: Prof. Stavros A. Dimitrakos

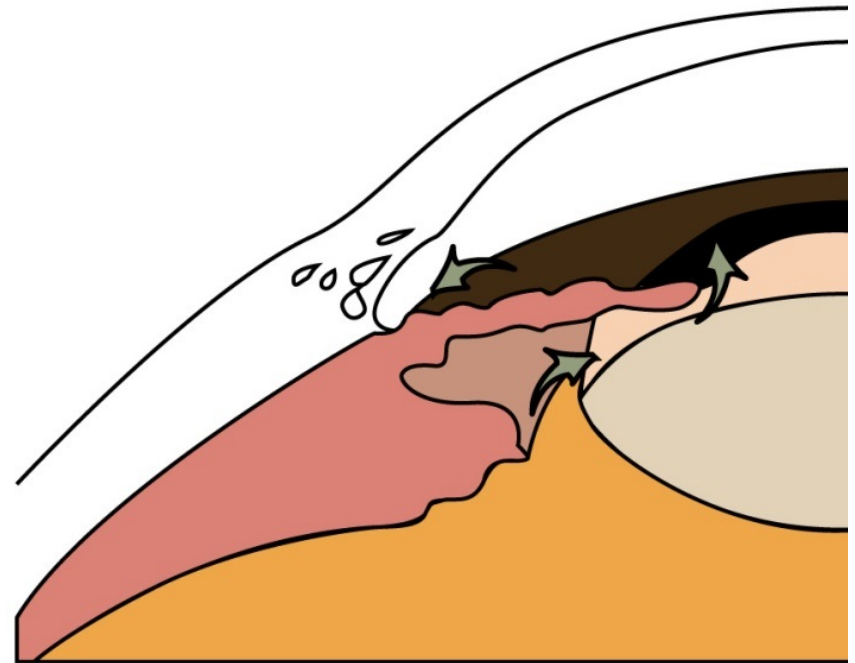
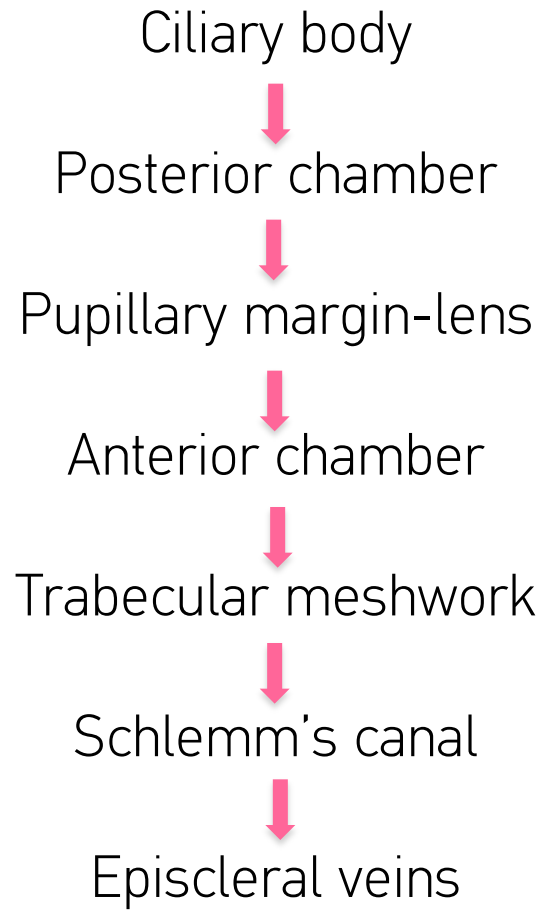


Chapter 7

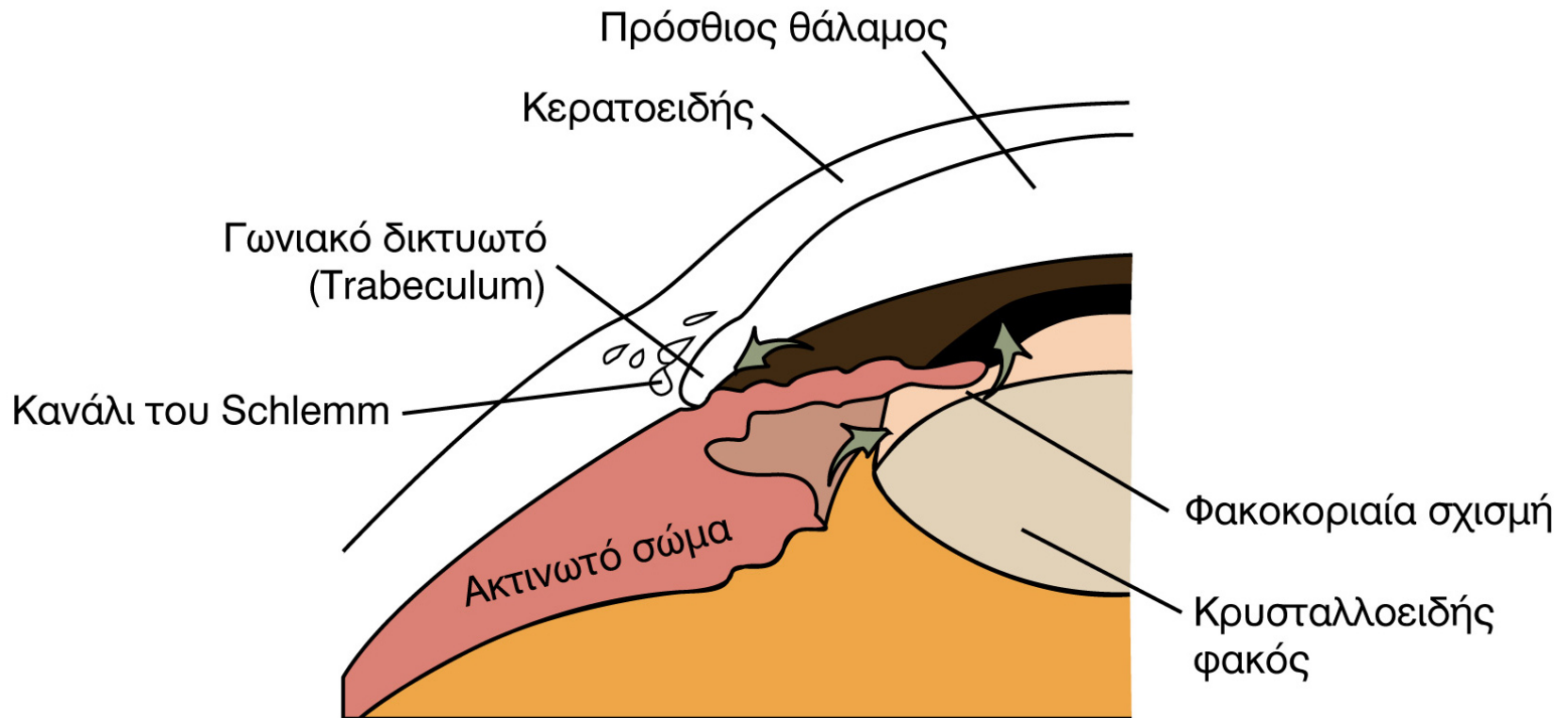
Skills 54-59

- Glaucoma

TS 54 : Aqueous humor production & outflow



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TS 54 : Aqueous humor production & outflow

Obstruction of normal AH flow



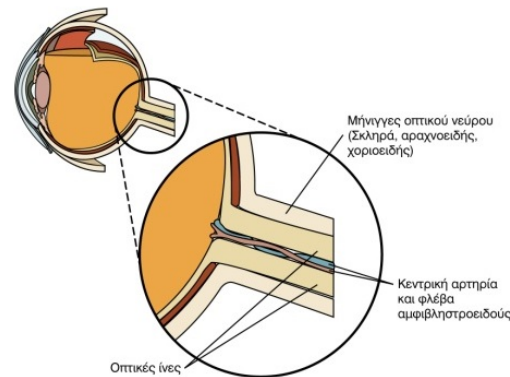
Rise in IOP
(acute or chronic)



Ganglion cells and optic fibres damage
(GLAUCOMA)



TS 55 : Pathophysiology of glaucoma

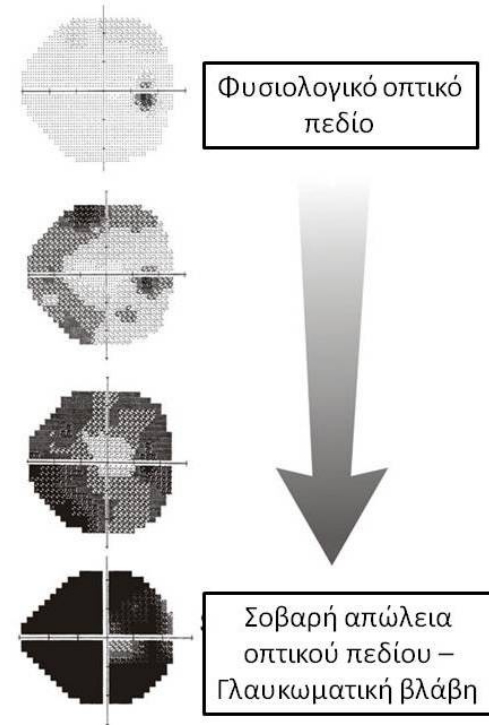
- **Chronic rise** in IOP is the most common and well-studied risk factor for glaucoma



- **Asymptomatic** in early stages
- Creates **negative**, non-central scotomas (patient unaware of the condition)
- Optic disk cupping= indicator of optic nerve **atrophy**

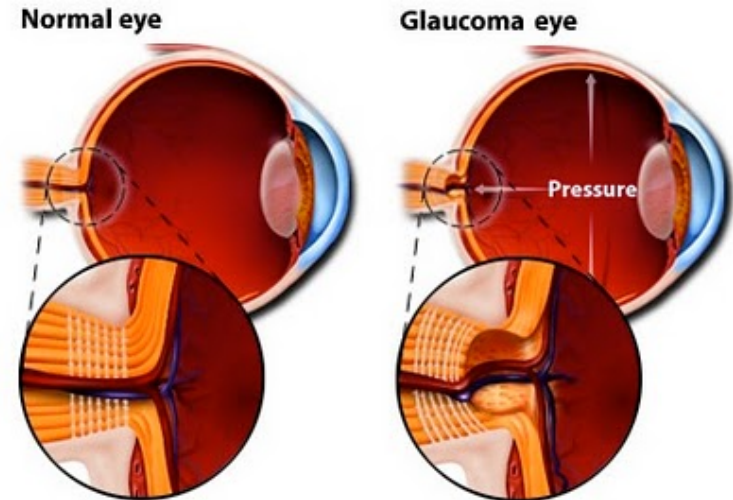
TS 55 : Chronic glaucoma defects

- Scotomata
 - Arcuate scotomas
 - Bjerrum's scotomas
 - Nasal step (Roenne's step)
 - Total, central-sparing defect (very advanced glaucoma)
-  Contrast sensitivity
-  Light adaptation



TS 55 : High IOP and Glaucoma

- Raised IOP is not the cause but rather **the main risk factor for Glaucoma**
- Chronic Glaucoma is a **multifactorial neuropathy**



Evidence

- Normal Tension Glaucoma & raised IOP without glaucoma (**ocular hypertension**) are well known clinical entities

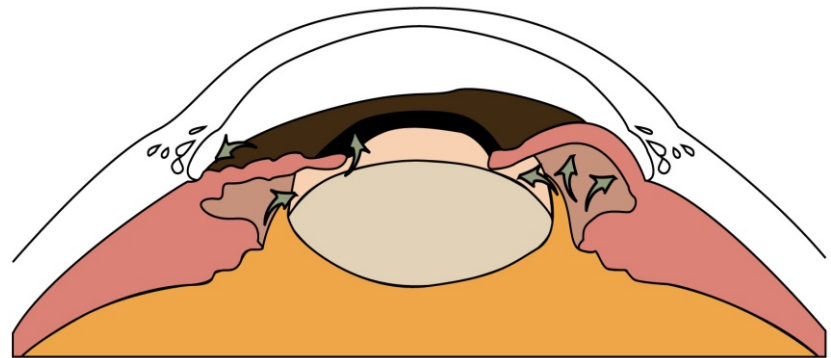
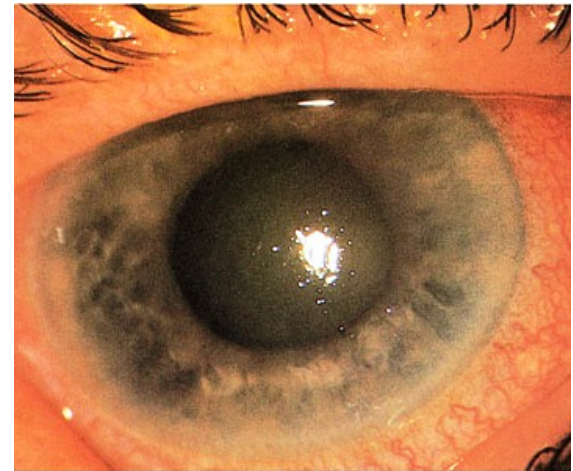
TS 56 : Acute angle closure glaucoma

- Deep ocular pain
- Nausea-vomit
- Reduced VA
- Coloured halos around light sources



TS 56 : Acute angle closure glaucoma

- Conjunctival injection
- Mid-dilated, non-reactive pupil
- Shallow anterior chamber
- Corneal opacification
- Raised IOP



TS 56 : Acute angle closure glaucoma

- Admission to hospital

- a) Drops **Dexamethasone** (anti-inflammatory)

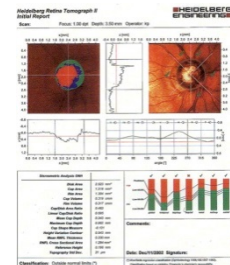
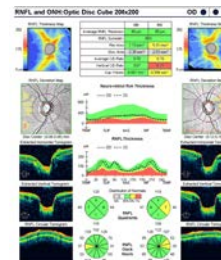
- b) Topical and systematic agents for reducing production of Aqueous (**Dorzolamide**, per os **Acetazolamide** 250 mg, **Mannitol** i.v)

- c) **Myotic agents** (Pilocarpine 2% every 10')

- After corneal transparency is achieved the patient must receive a **YAG iridotomy**

TS 57 : Early glaucoma screening

- IOP measurement
- Automated Perimetry → scotomas
- Fundoscopy → Disk cupping
- OCT,HRT → Optic fibres thinning



TS 58 : Congenital glaucoma

- Optic neuropathy accompanied with raised IOP
- Globe is extensible in newborns and infants
- Therefore, raised IOP causes abnormally big eyes (buphthalmos)



TS 59 : Secondary glaucoma - Causes

- I. Uveitic glaucoma
- II. Phaco-antigenic (proteins of mature lens)
- III. Exfoliating glaucoma (exfoliating material)
- IV. Pigmentary glaucoma (pigment dispersion)
- V. Steroid-related glaucoma (usually drops)
- VI. Neovascular glaucoma (Diabetic retinopathy, Central retinal vein occlusion)

Electronic Referrals – 7th Chapter

1. <http://cdn.intechopen.com/pdfs-wm/23814.pdf>
2. <http://www.glaucoma-association.com/what-is-glaucoma/flow-of-aqueous-humour.html>
3. <http://emedicine.medscape.com/article/1206147-overview>
4. <http://emedicine.medscape.com/article/798811-overview>
5. <http://www.eyecareamerica.org/eyecare/conditions/glaucoma/simulator.cfm>
6. http://www.eugs.org/eng/EGS_guidelines.asp
7. <http://gonioscopy.org/>
8. http://www.researchgate.net/publication/7470938_Five_rules_to_evaluate_the_optic_disc_and_retinal_nerve_fiber_layer_for_glaucoma/file/9fcfd511041e90912d.pdf
9. http://www.worldglaucoma.org/AfricaSummit/Download/Budenz_Visual_Field_Basics.pdf
10. <http://emedicine.medscape.com/article/1206081-overview>