

THE AGING EYE

mmLearn.org at Morningside Ministries

JOE ZAYAC OD

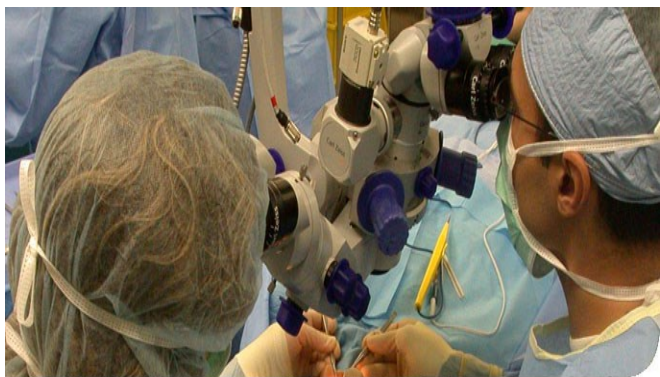
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January 5, 2012

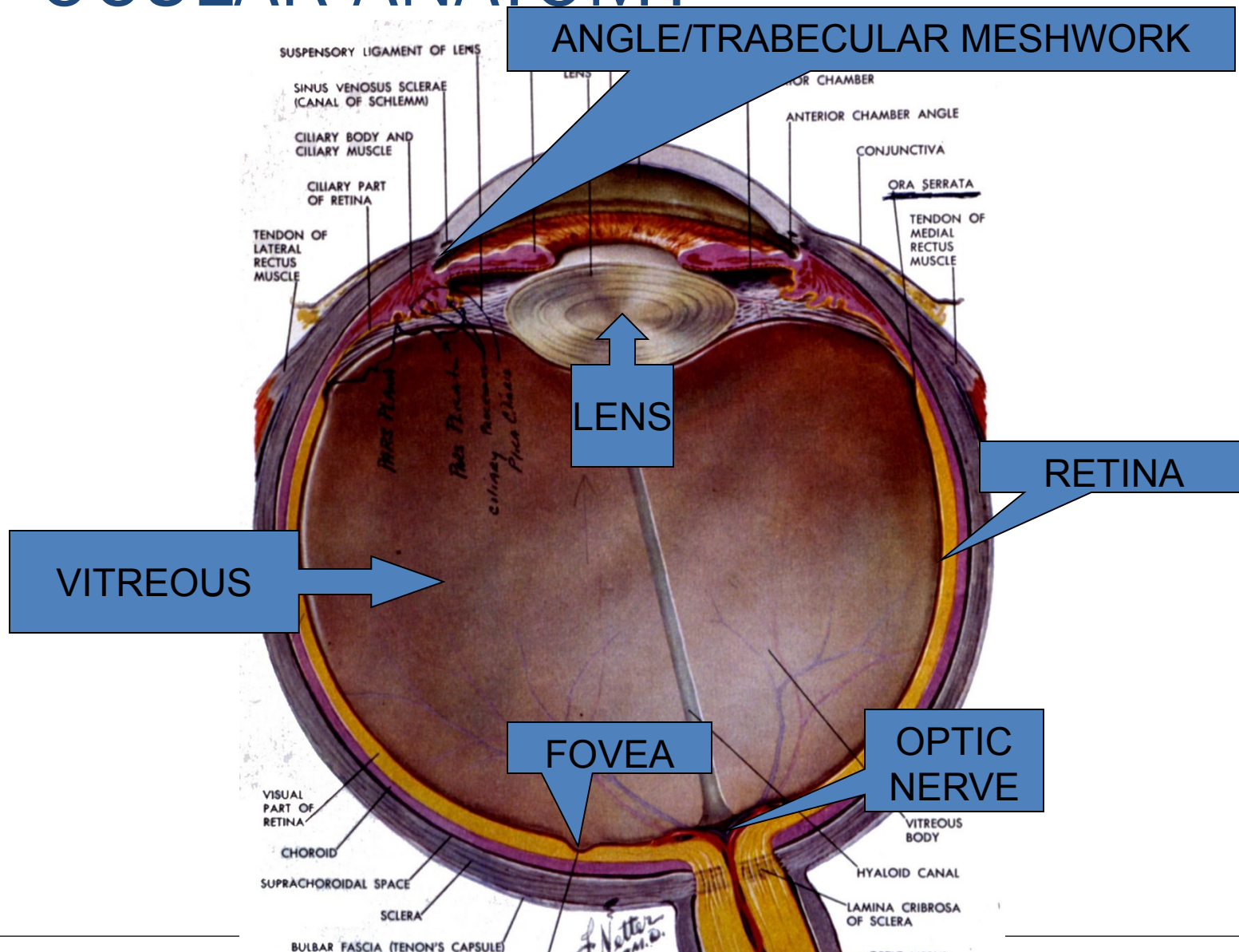
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OCULAR ANATOMY



Visual Acuity

What Does 20/20 mean?

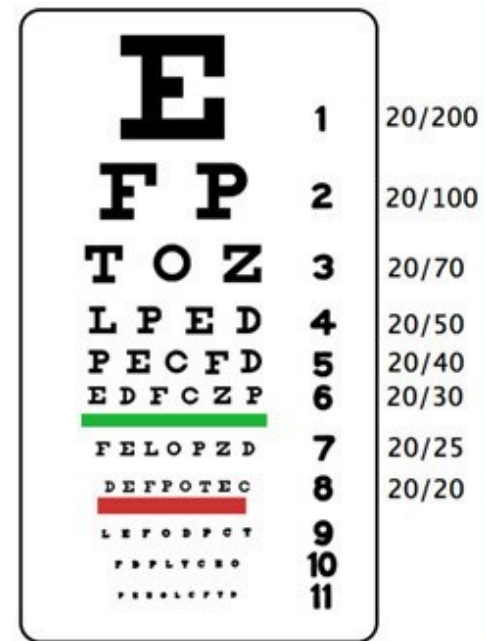
Visual Acuity is expressed as a fraction:

The distance at which the patient reads the chart The distance at which someone with normal vision reads the same line of the chart.

Progression of Visual Acuity:

20/20, 20 /400, 10/200, CF, HM, LP, NLP

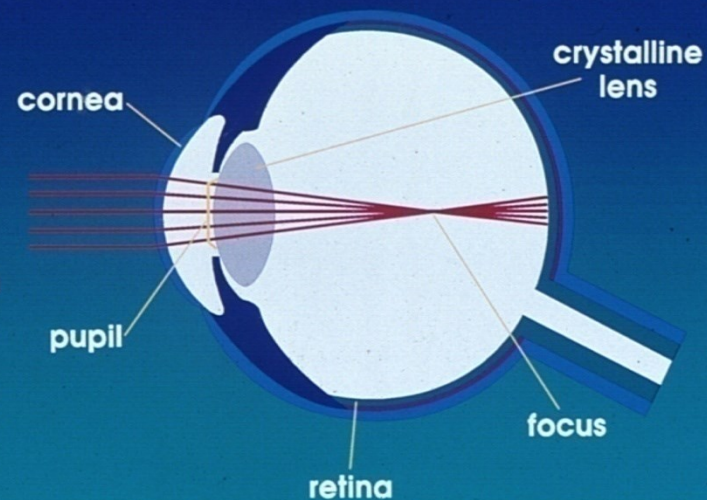
Legal Blindness 20/200 (BCVA) or 20 degree field



REFRACTIVE ERROR

MYOPIA (NEARSIGHTEDNESS)

- Eye too powerful or too big
- Images focus in front of retina
- Visual effects
 - Distance blurry
 - Near usually clear
- Correction
 - 30% of vision correction population
 - Reduce power of the eye
 - Minus lenses
 - Image moves back to retina
 - Spectacles or CLs
 - Refractive surgery



REFRACTIVE ERROR

HYPEROPIA (FARSIGHTEDNESS)

- Eye not powerful enough or too small

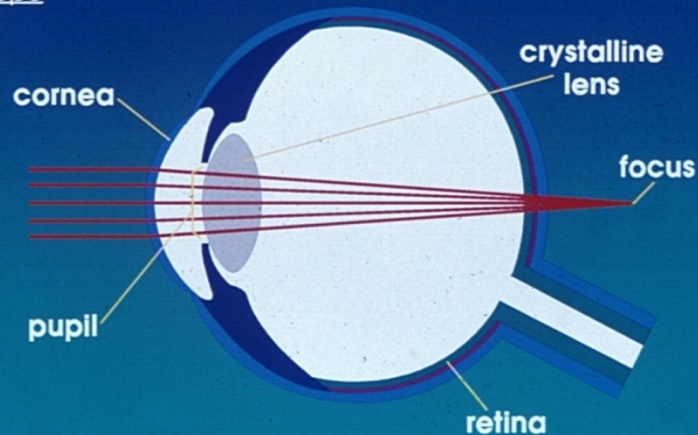
- Images focus behind retina

- Visual effects Pre-presbyope Presbyope

- Distance: Usually clear Blurry
- Near: Usually clear Blurry
- Depends on age & degree of hyperopia

- Correction

- Increase power of eye
- Eye accommodates for distance & near vision
- Strain may cause symptoms
- Plus lenses:
 - Image moves forward to retina
 - Spectacles or CLs



REFRACTIVE ERROR

ASTIGMATISM

- Cornea shape usually responsible
 - Normal shape \cong basketball
 - Astigmatic shape \cong football
- Uncorrected, astigmatism causes a basketball to look like a football
- Correction:
 - Cylinder lenses
 - Usually combined with myopia/hyperopia correction
 - Spectacles or CLs



REFRACTIVE ERROR

ASTIGMATISM

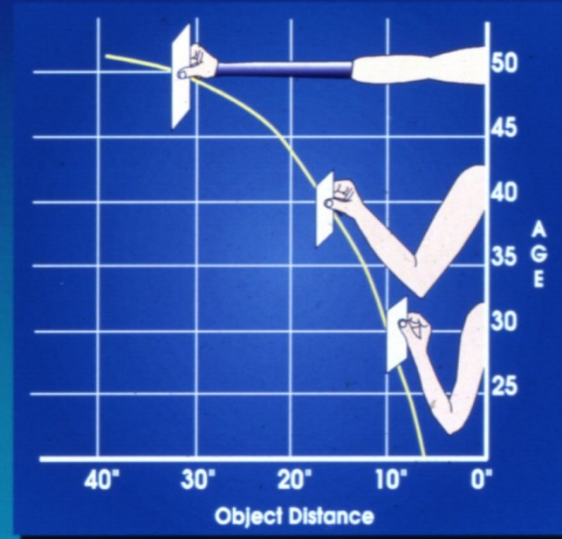
- Cornea shape usually responsible
 - Normal shape \cong basketball
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 - Cylinder lenses
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PRESBYOPIA

PRESBYOPIA

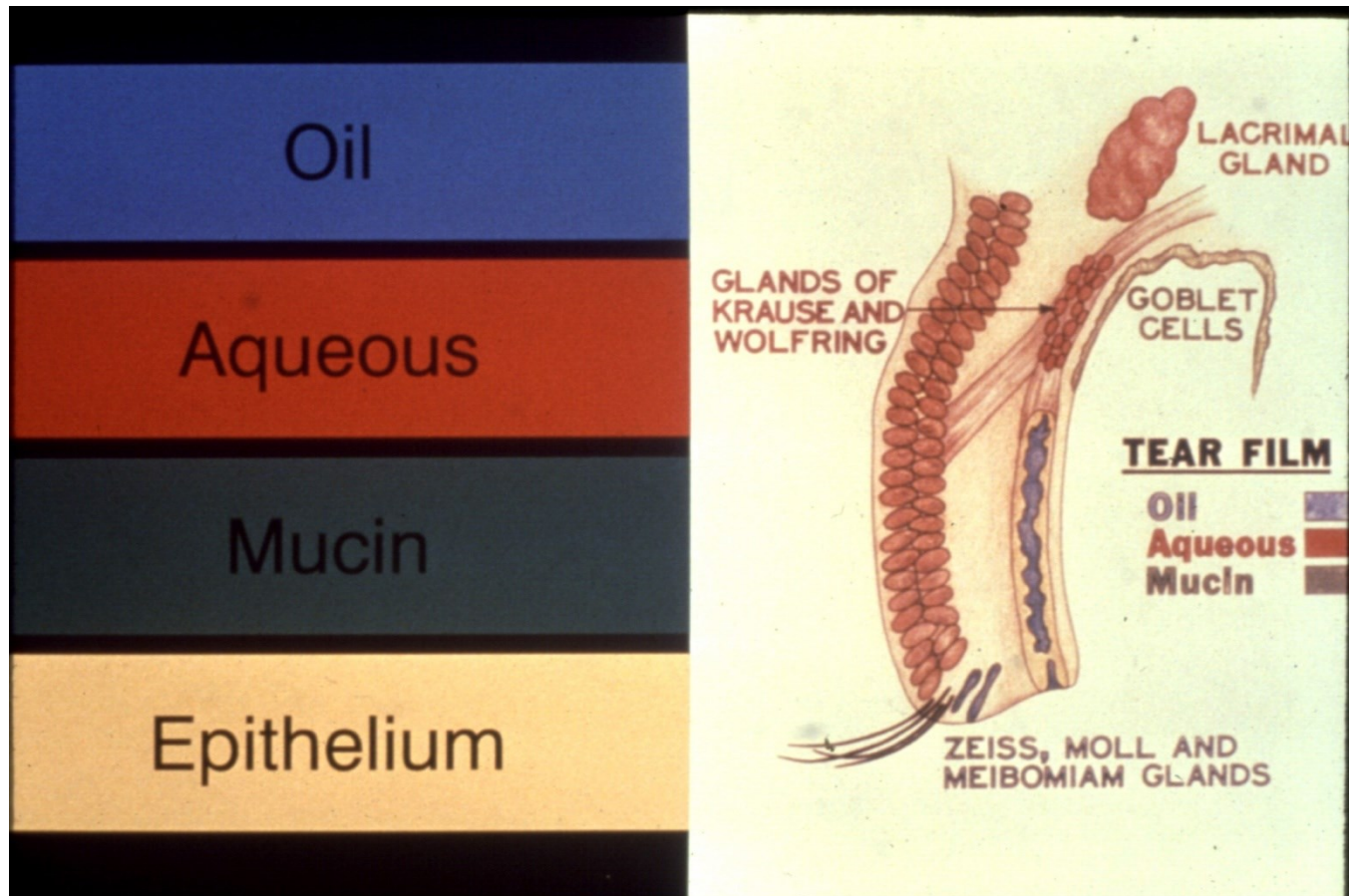
- “Old vision” (Greek)
- Normal aging process
- Near objects held farther away
- Noticeable near age 40



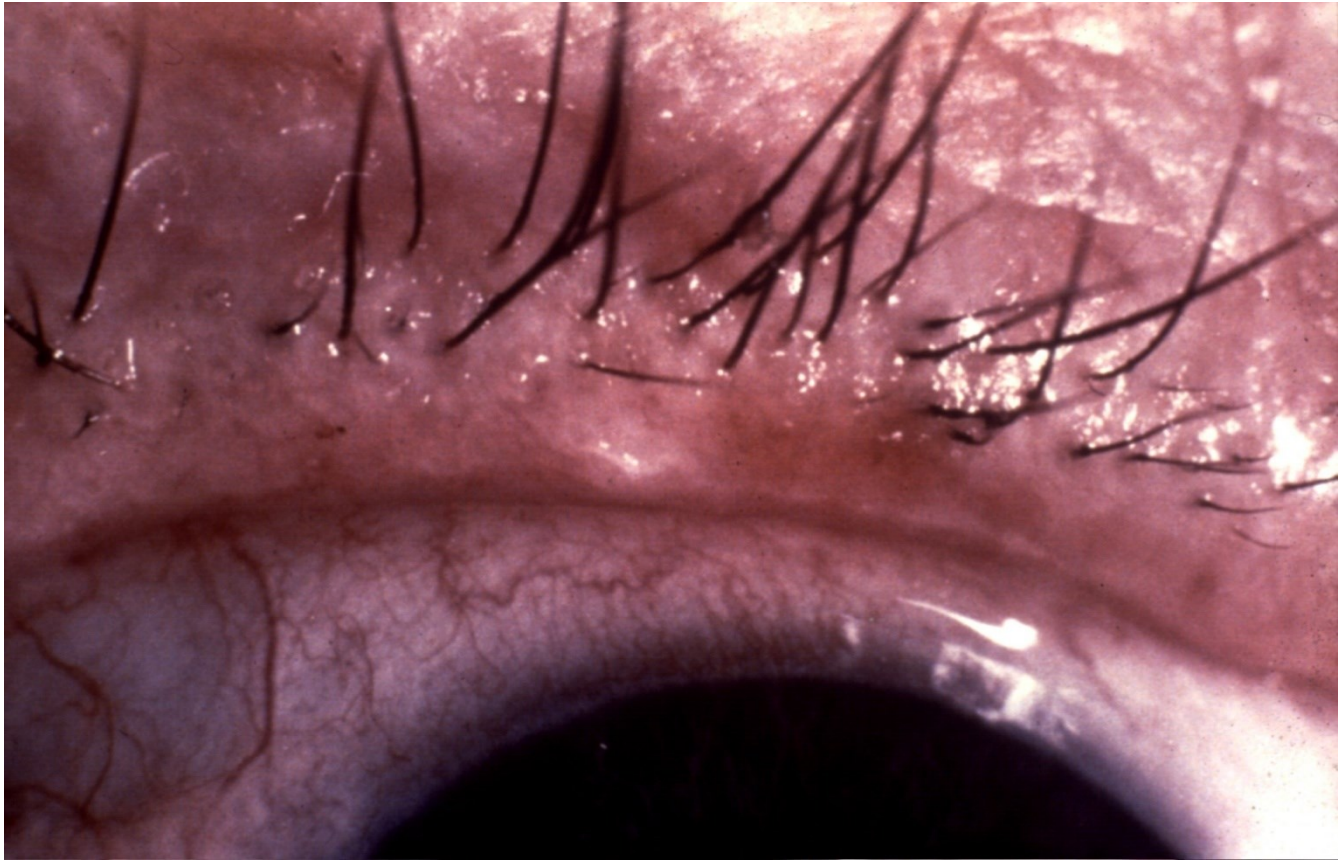
How to Read your Optical Rx

- OD -2.75 – 3.00 x 125
- OS +1.75 -2.00 x 35
- OU Add + 2.50 65/62 PAL
- 1st number is the amount of spherical correction, myopia is negative, hyperopia is positive.
- 2nd number is the amount of astigmatism.
- 3rd number is the alignment of the astigmatism from 0 to 180degrees.
- Add is the additional power added to the distance Rx for reading.

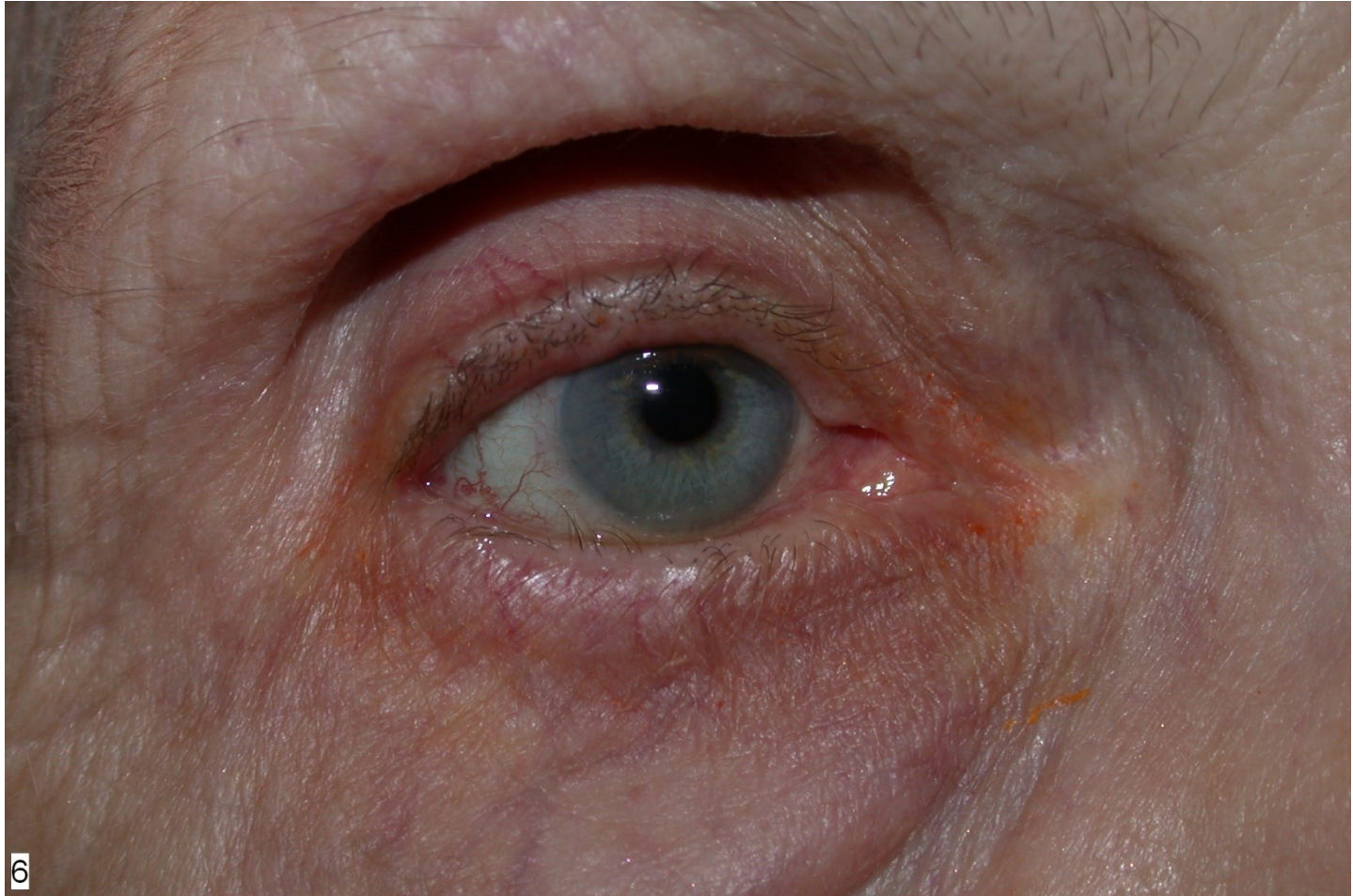
Tear Layer & Lids



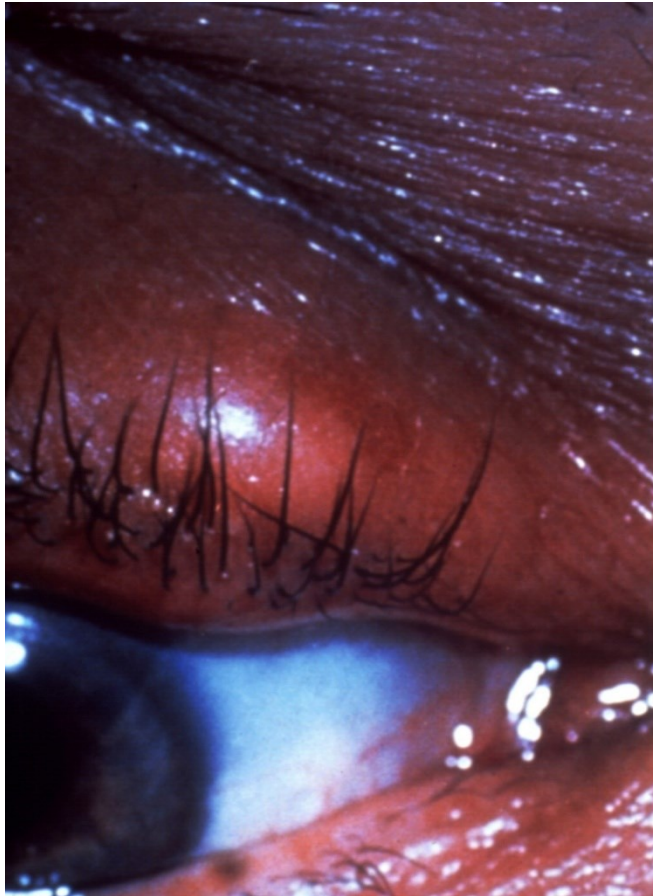
Blepharitis



Lid Complications of Blepharitis



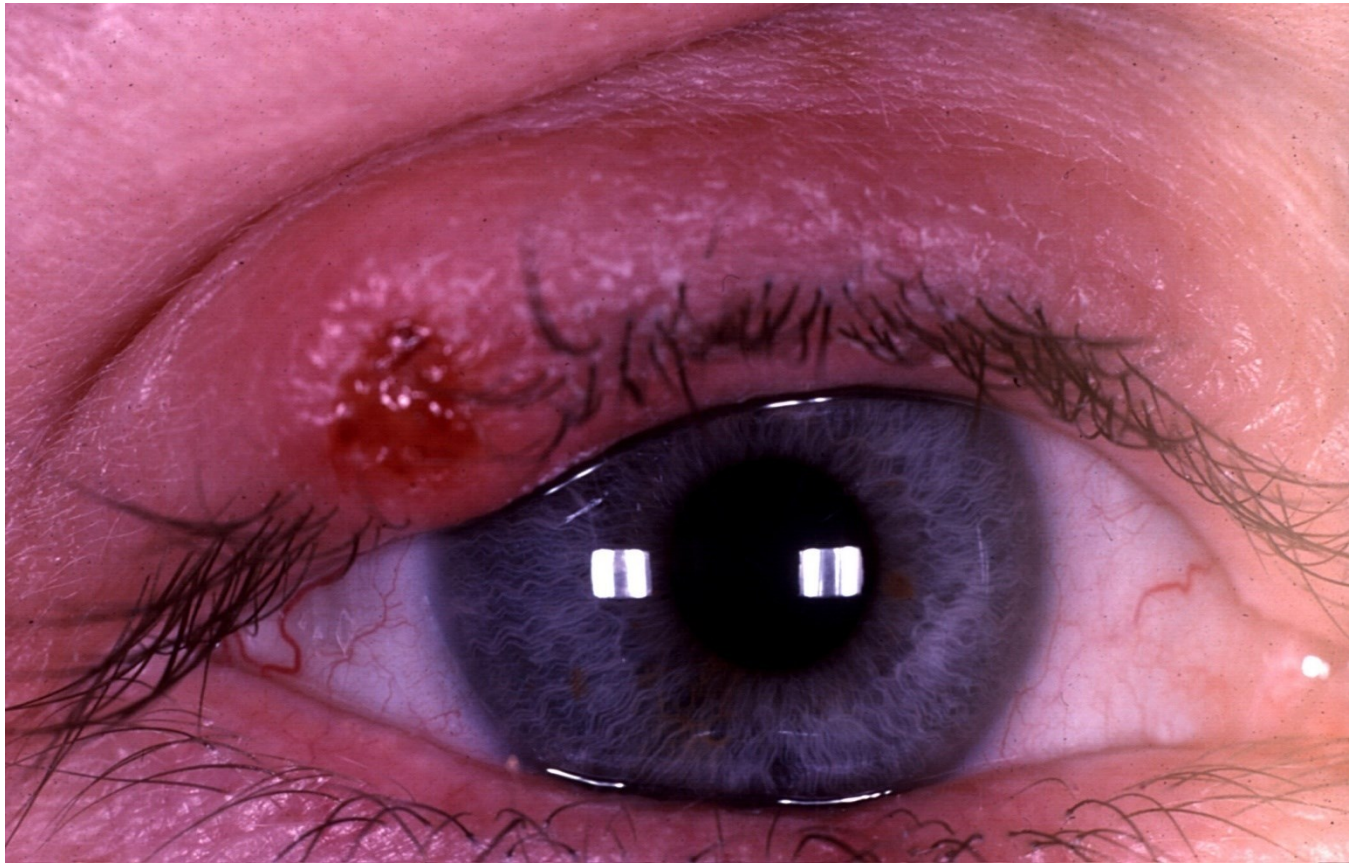
Hordeolum



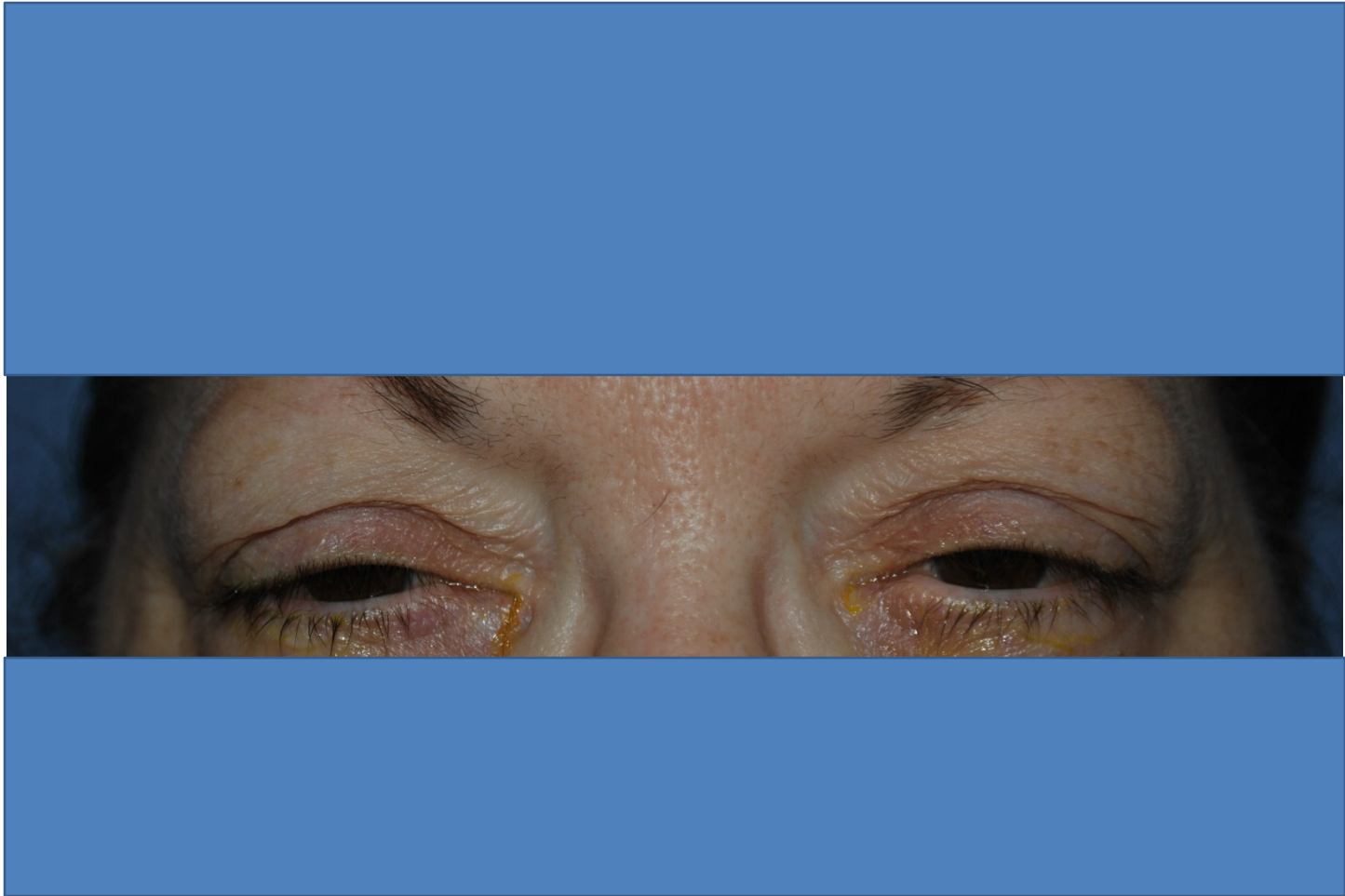
Chalazion



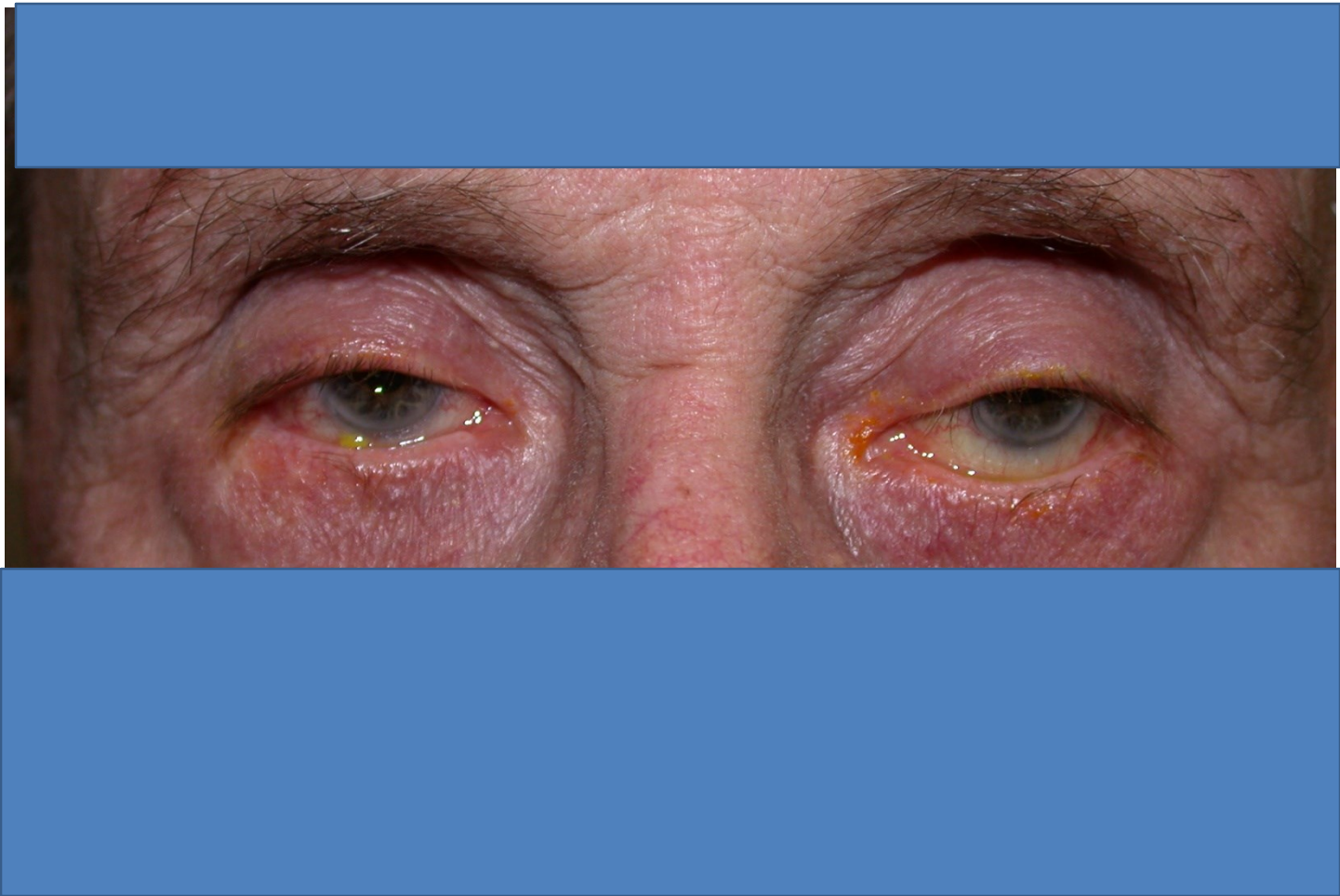
Basal Cell Carcinoma



Dermatochalasis



Ptosis



Unilateral Ptosis with Anisocoria



Horner's syndrome is the combination of drooping of the eye lids(ptosis) and constriction of the pupil (miosis), sometimes accompanied by decreased sweating of the face on the same side; It indicates a problem with the sympathetic nervous system. A sudden onset requires medical attention.

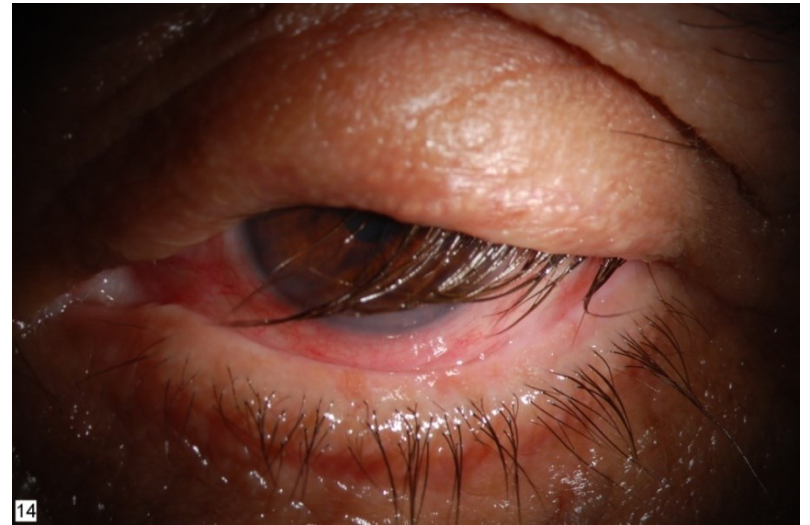
Myasthenia Gravis

- Pupils equal

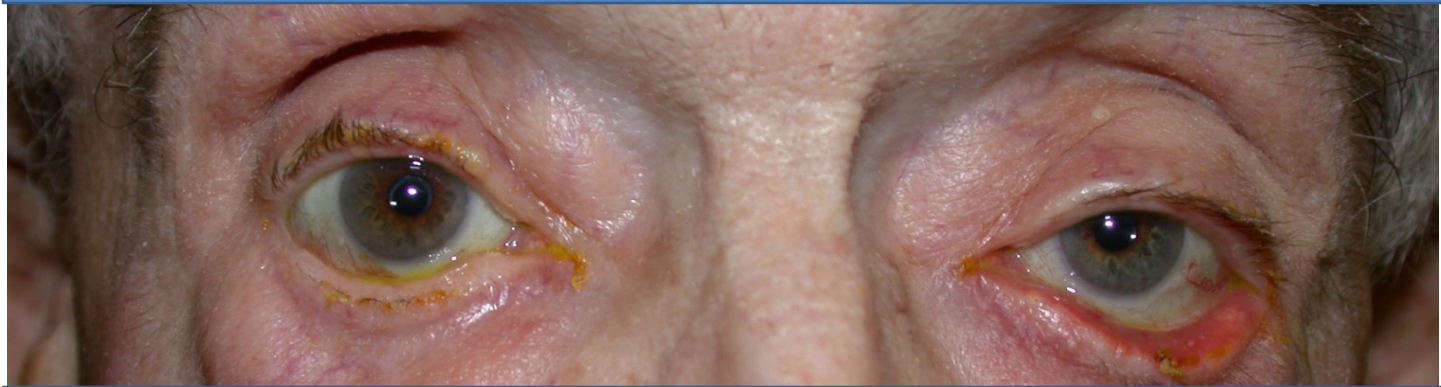


Certain muscles such as those that control eye and eyelid movement, facial expression, chewing, talking, and swallowing are often, but not always, involved in the disorder. The muscles that control breathing and neck and limb movements may also be affected.

Entropion



Ectropion



Conjunctiva

CONJUNCTIVA



- 1. Bulbar**
- 2. Forniceal**
- 3. Palpebral**
 - MARGINAL
 - TARSAL
 - ORBITAL

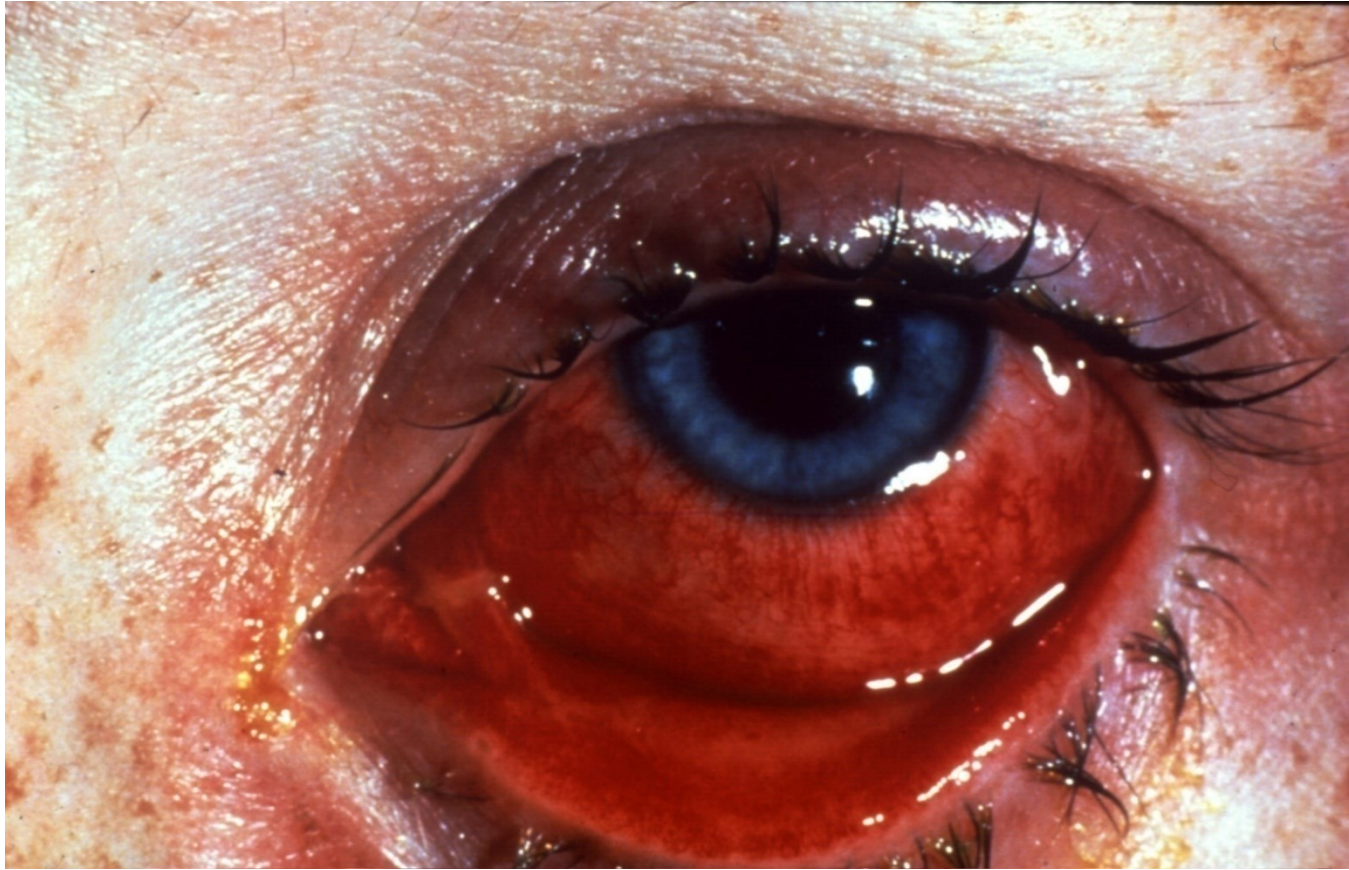
Graves' Disease / Exophthalmus



Sub Conjunctival Hemorrhage



Conjunctivitis



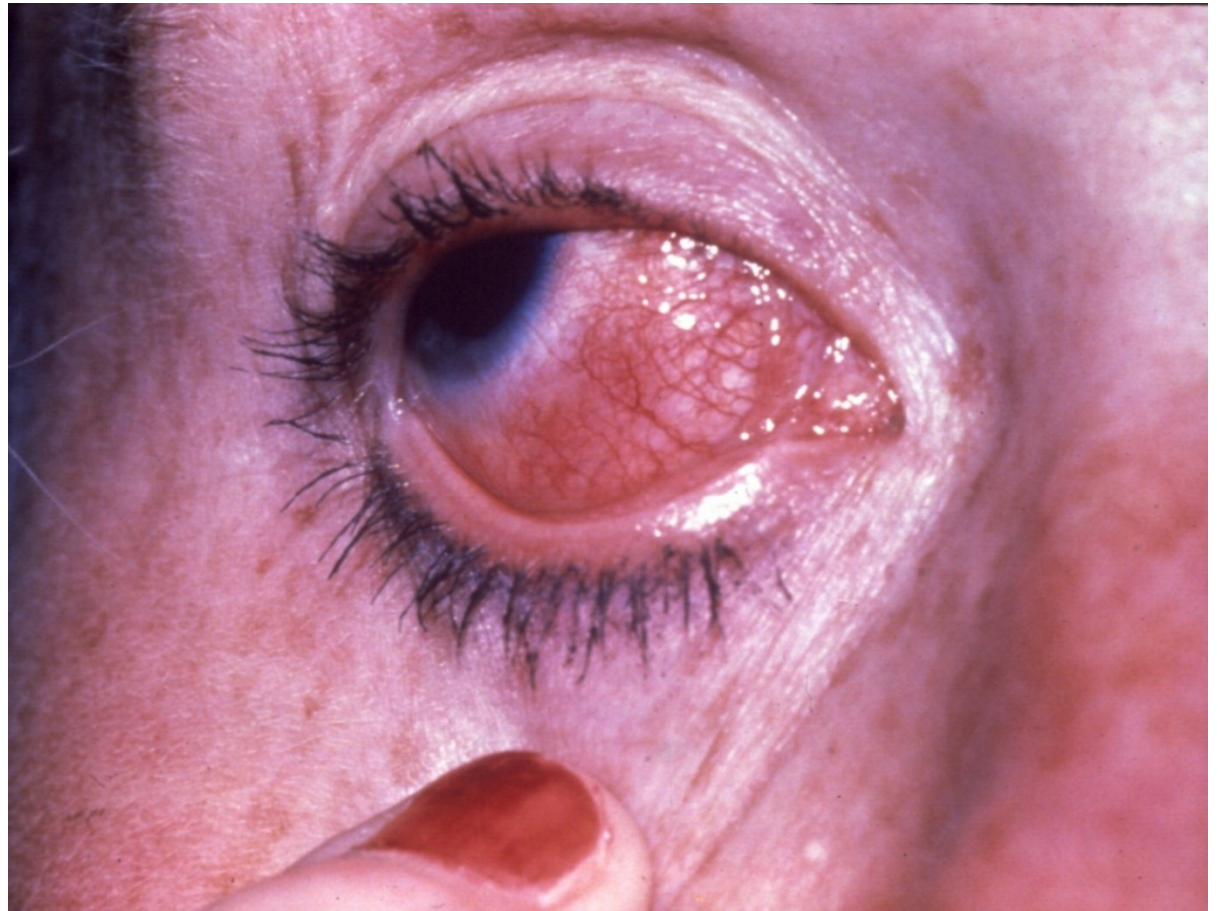
Allergic reaction to eye medication



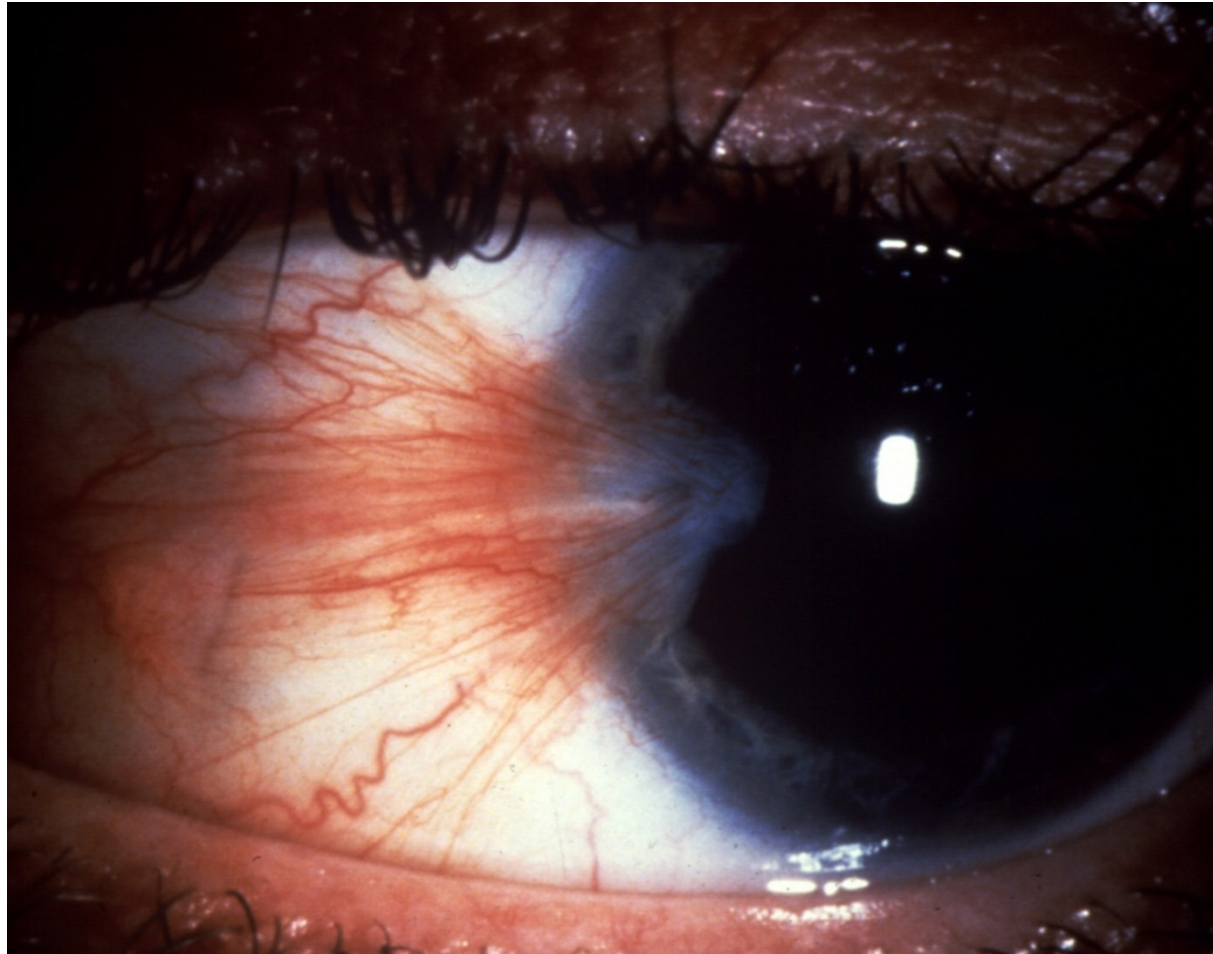
Scleritis

A SERIOUS inflammatory disease affecting the sclera (the white of the eye). Often associated with rheumatoid arthritis.

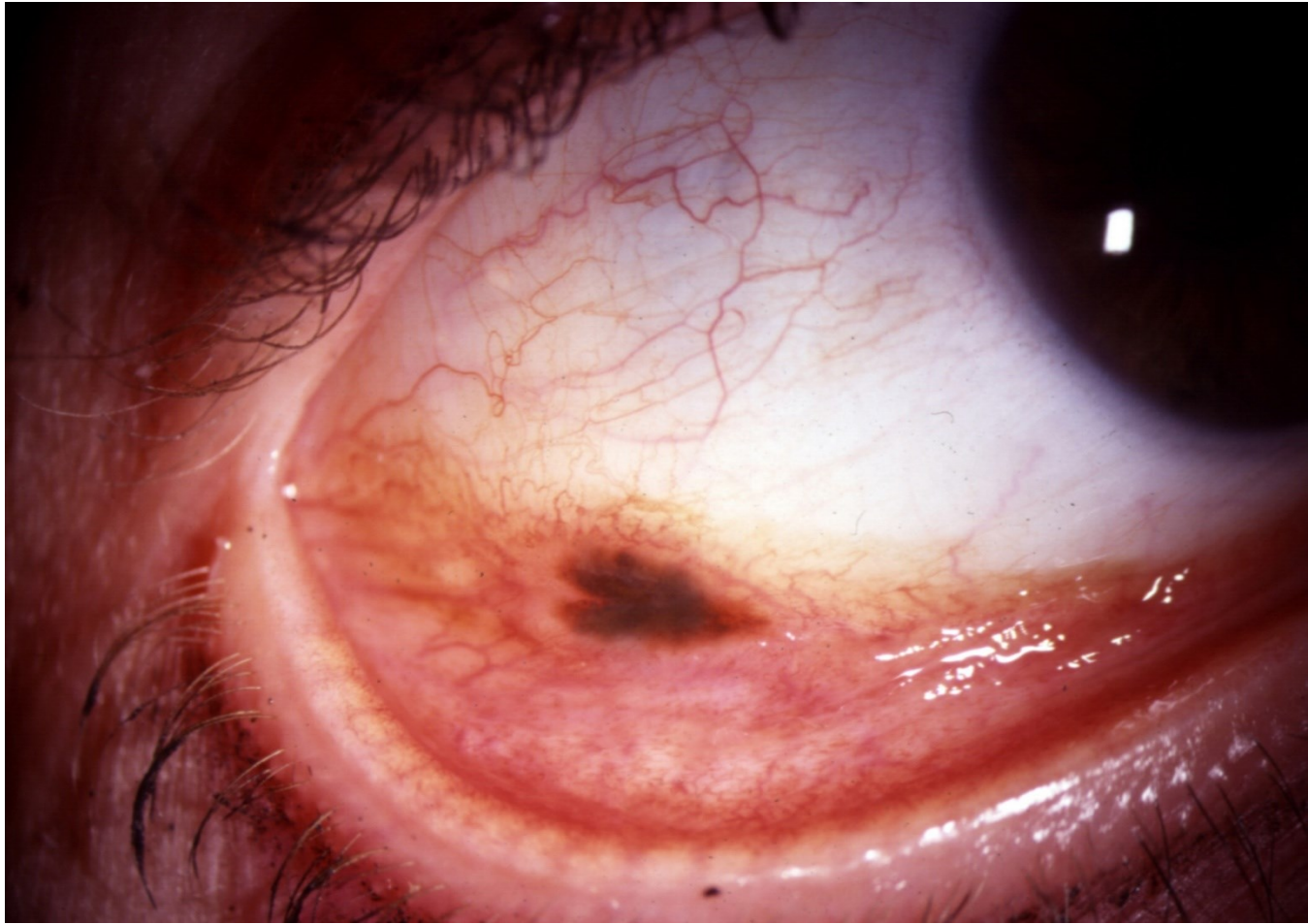
Pain associated with eye movement is a medical emergency.



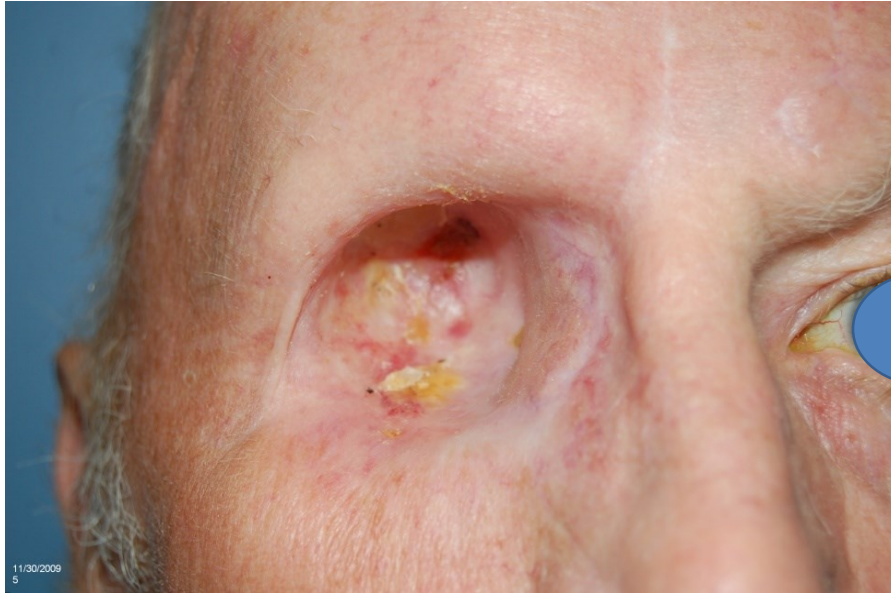
Pterygium



Malignant melanoma



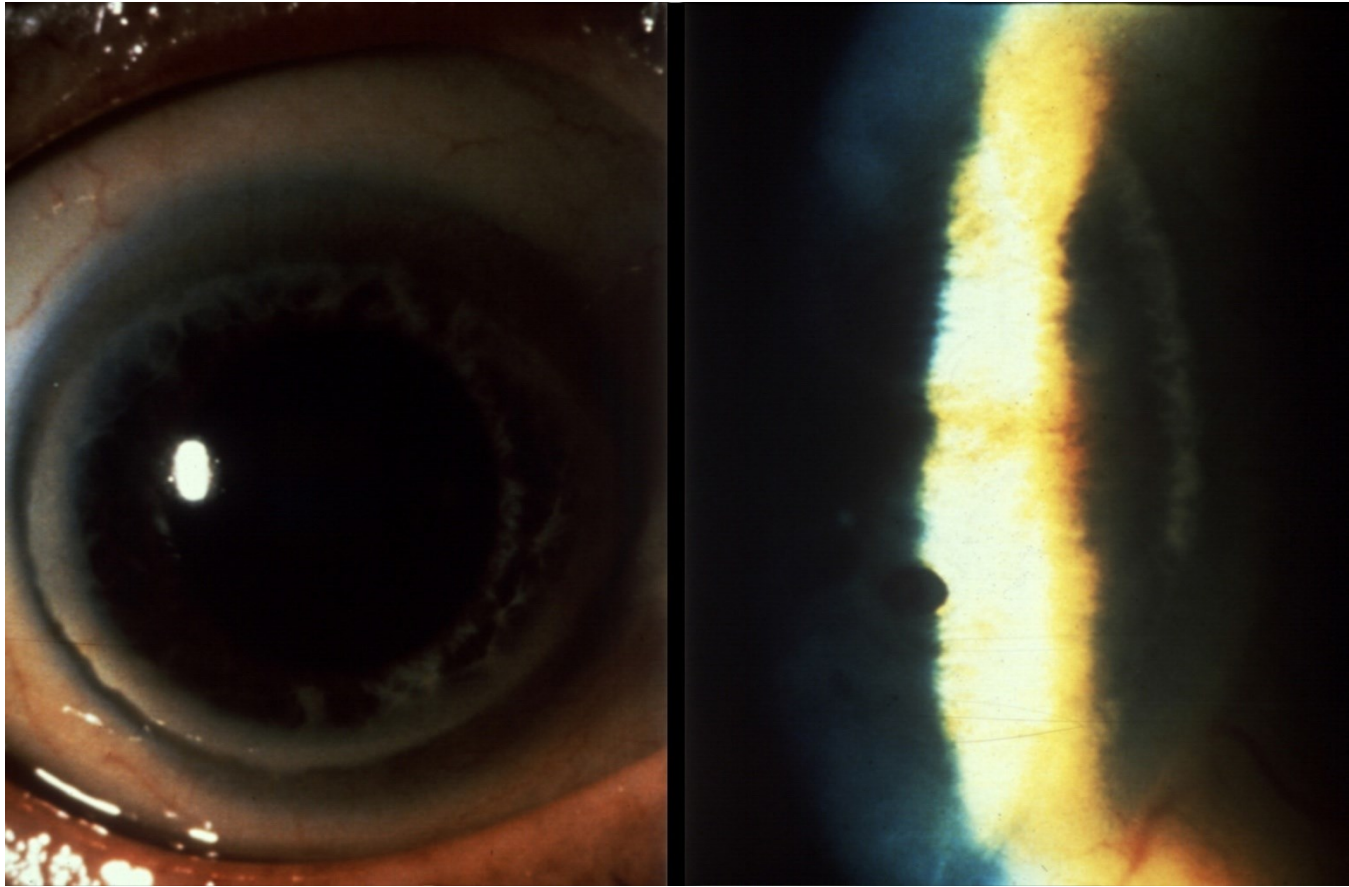
Small “sore” was diagnosed as squamous cell cancer.



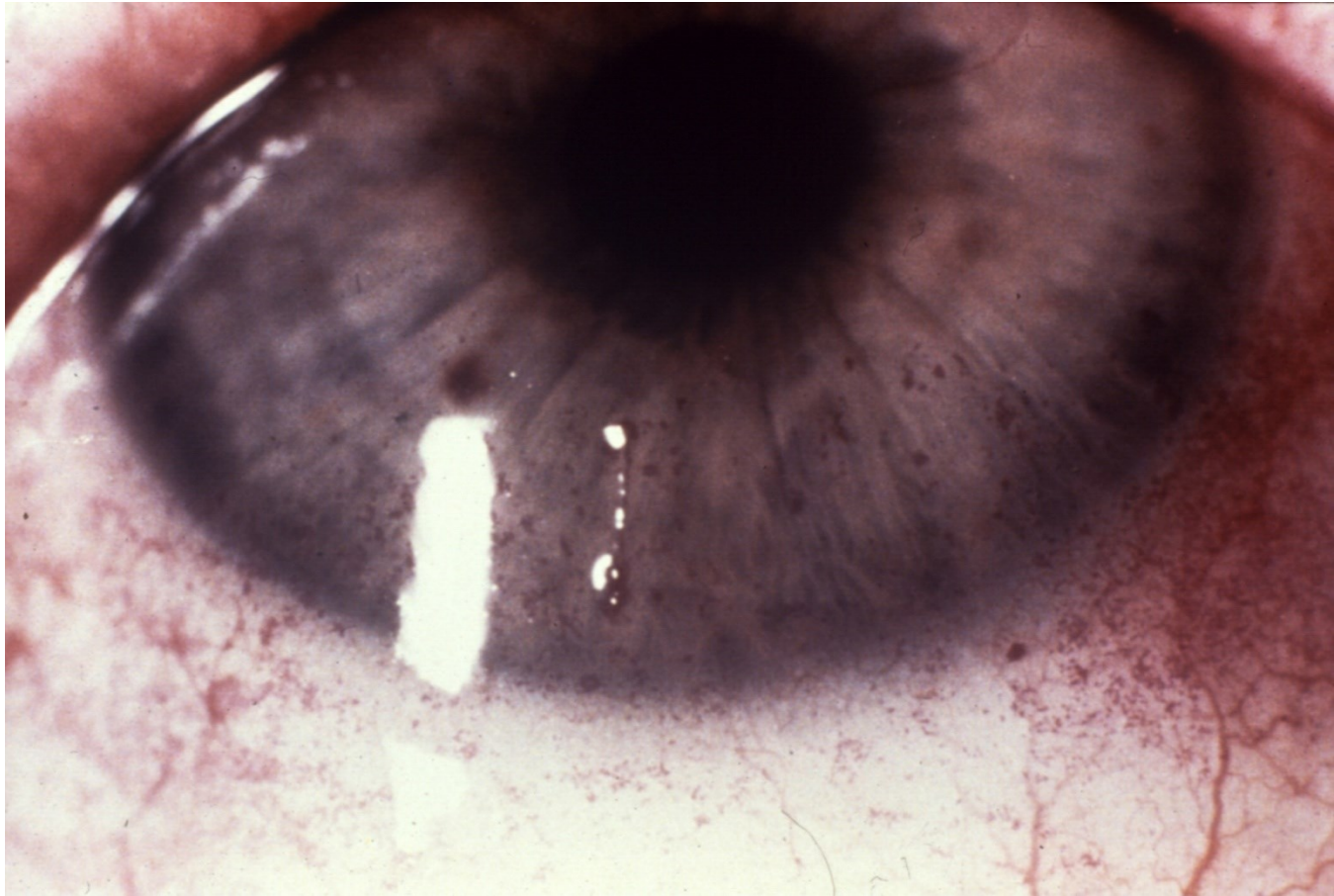
Cornea

- Although the cornea is clear and seems to lack substance, it is actually a highly organized group of cells and proteins. Unlike most tissues in the body, the cornea **contains no blood vessels** to nourish or protect it against infection. Instead, the cornea receives its nourishment from the **tears and aqueous humor** that fills the chamber behind it. The cornea must remain transparent to refract light properly, and the presence of even small blood vessels can interfere with this process. To see well, all layers of the cornea must be free of any cloudy or opaque areas.

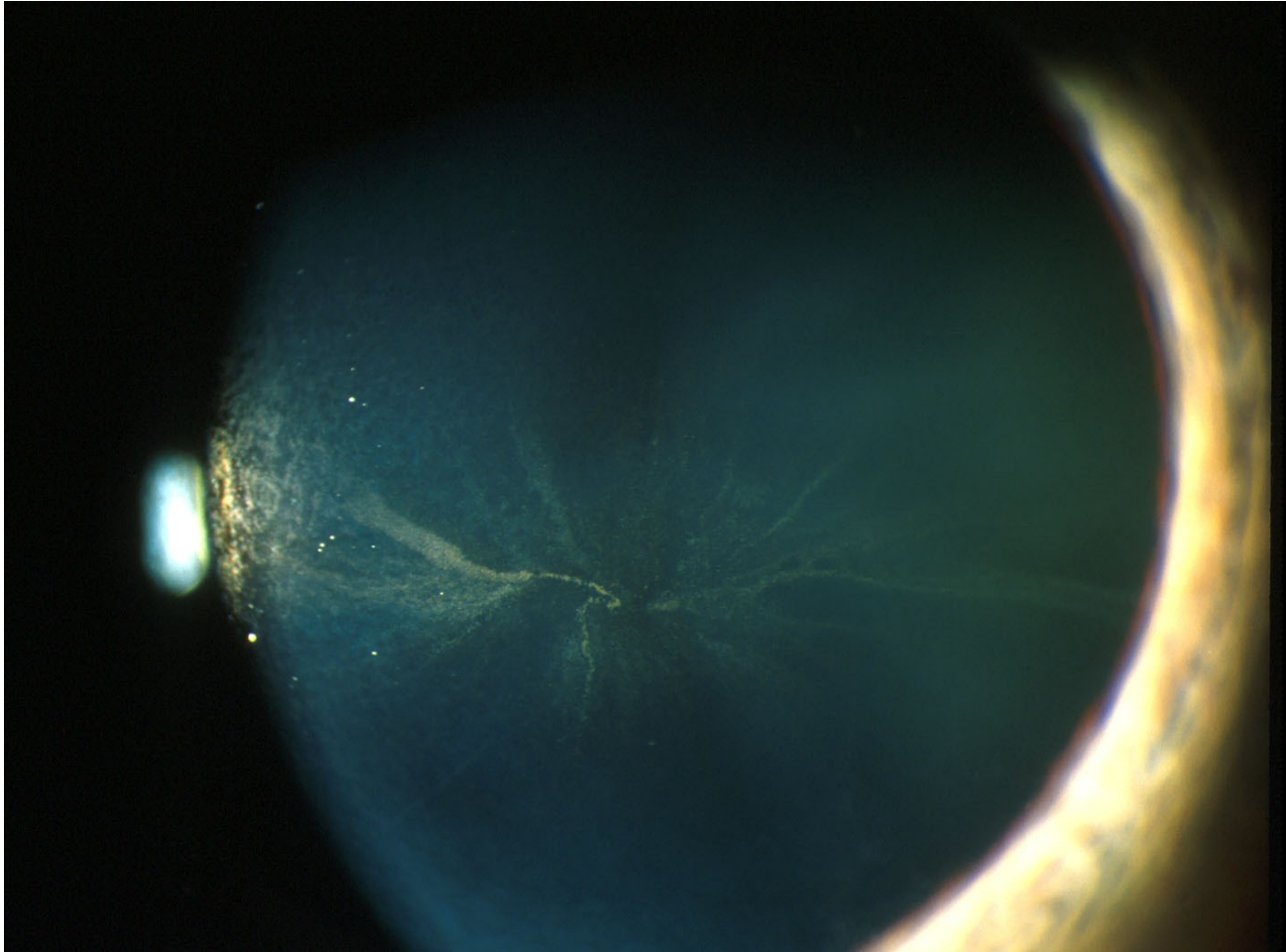
Arcus (Senilis)



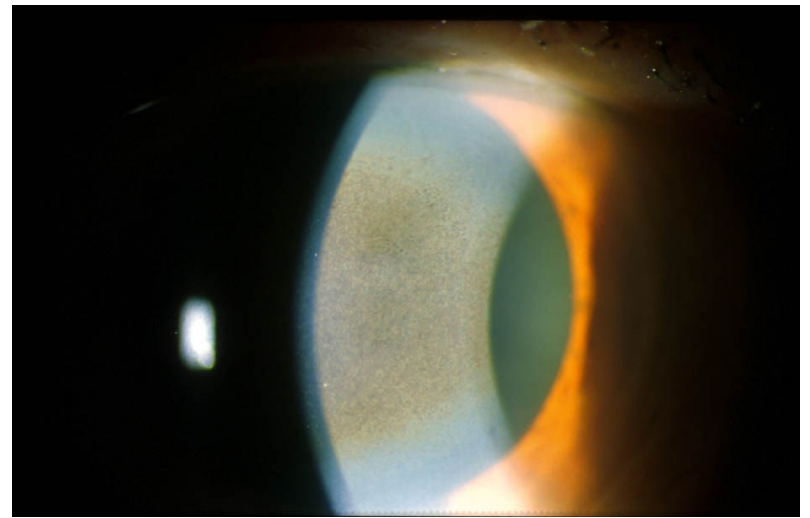
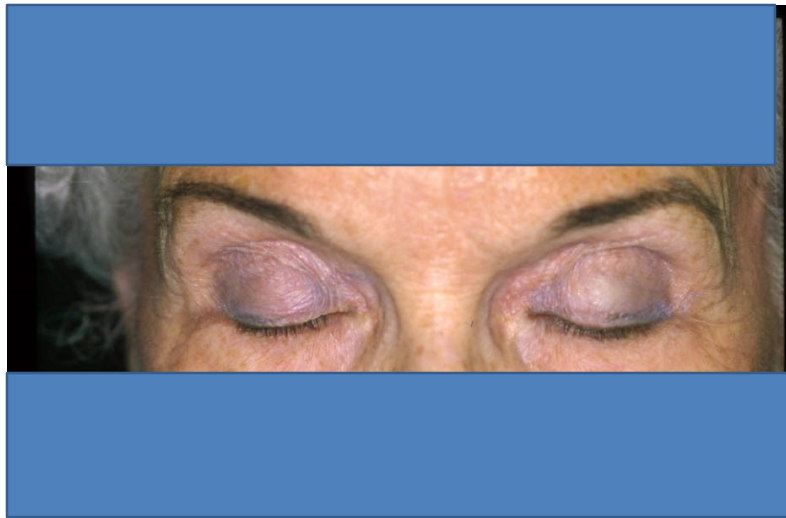
Dry Eye Syndrome



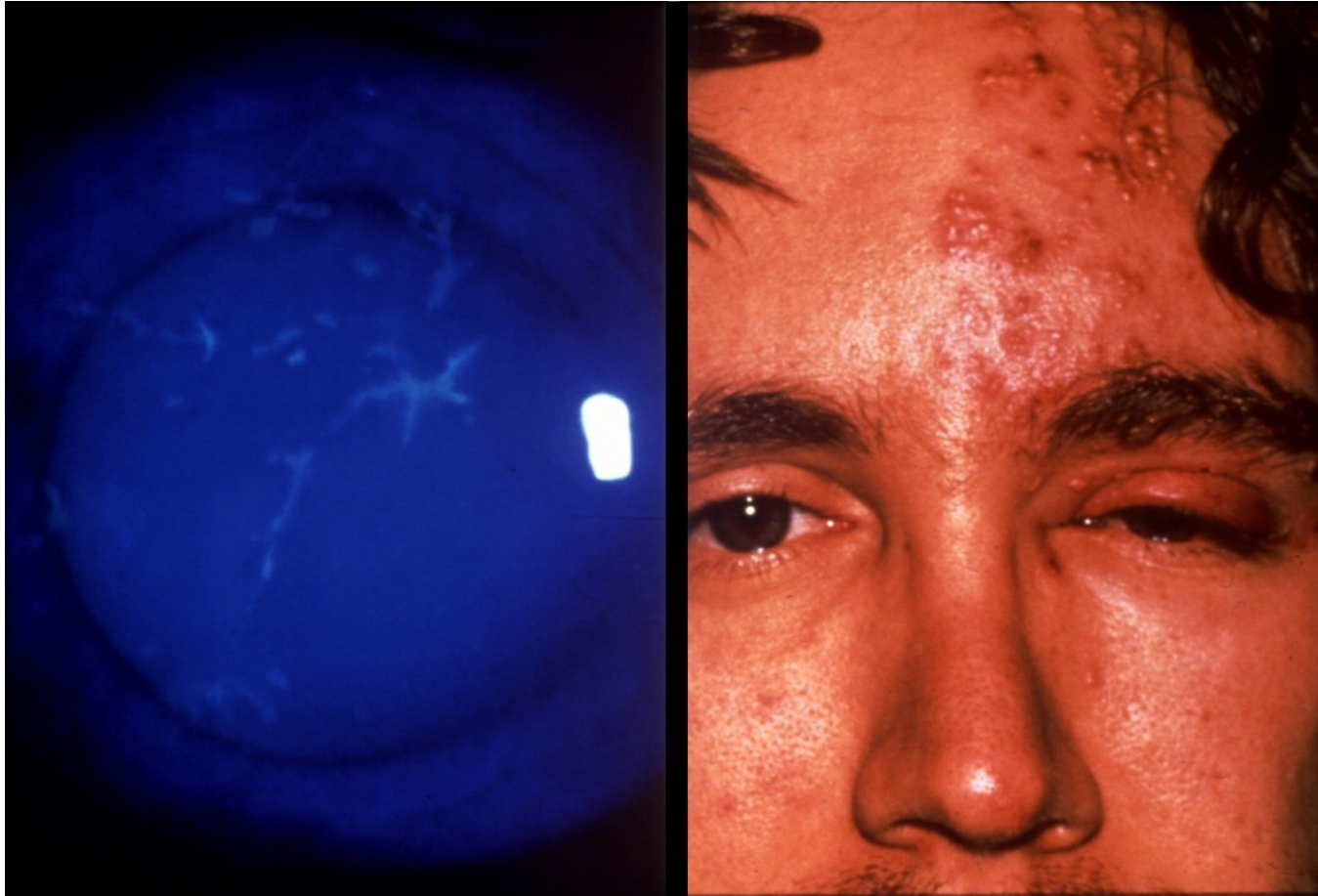
Corneal Whorl



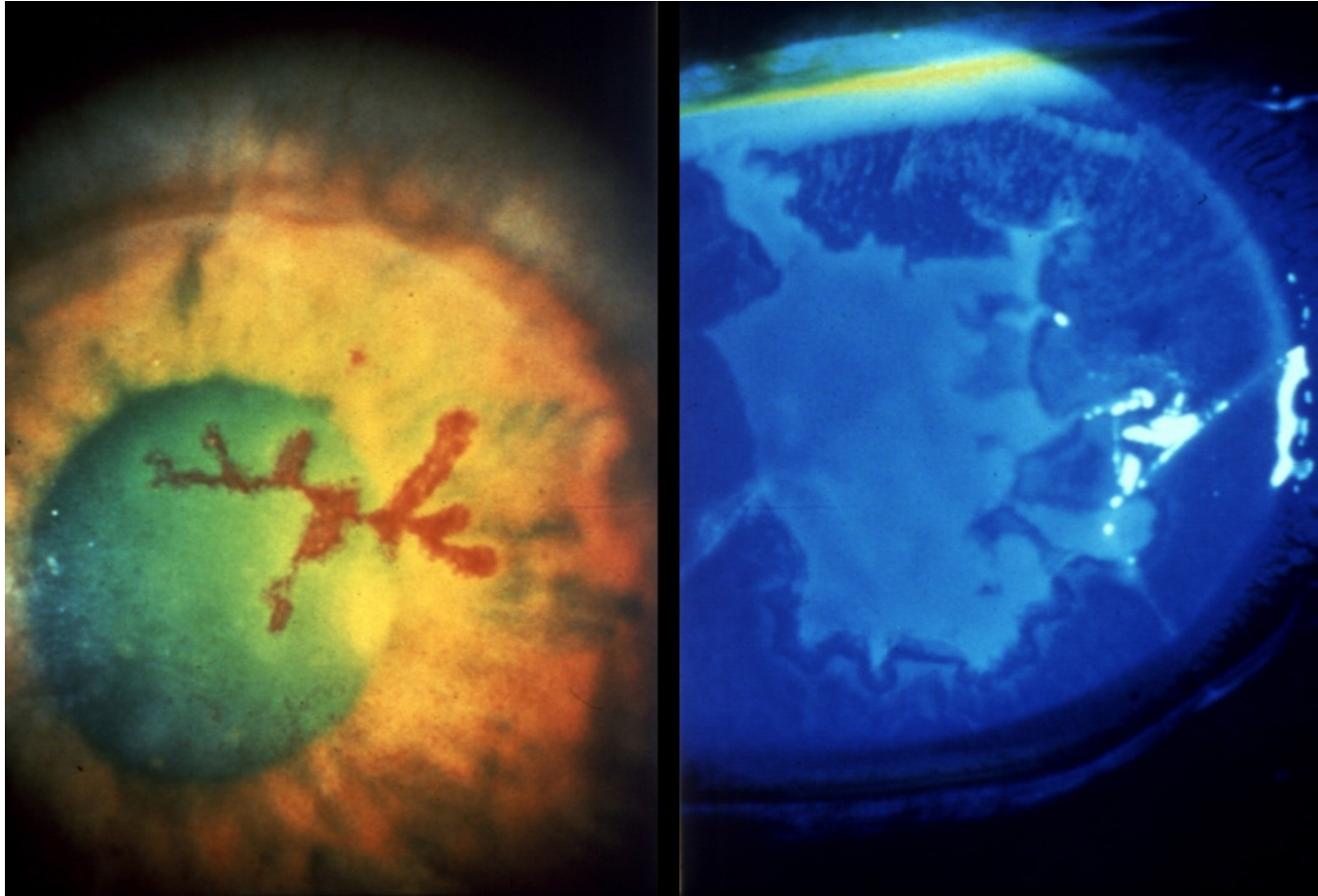
Corneal Stain



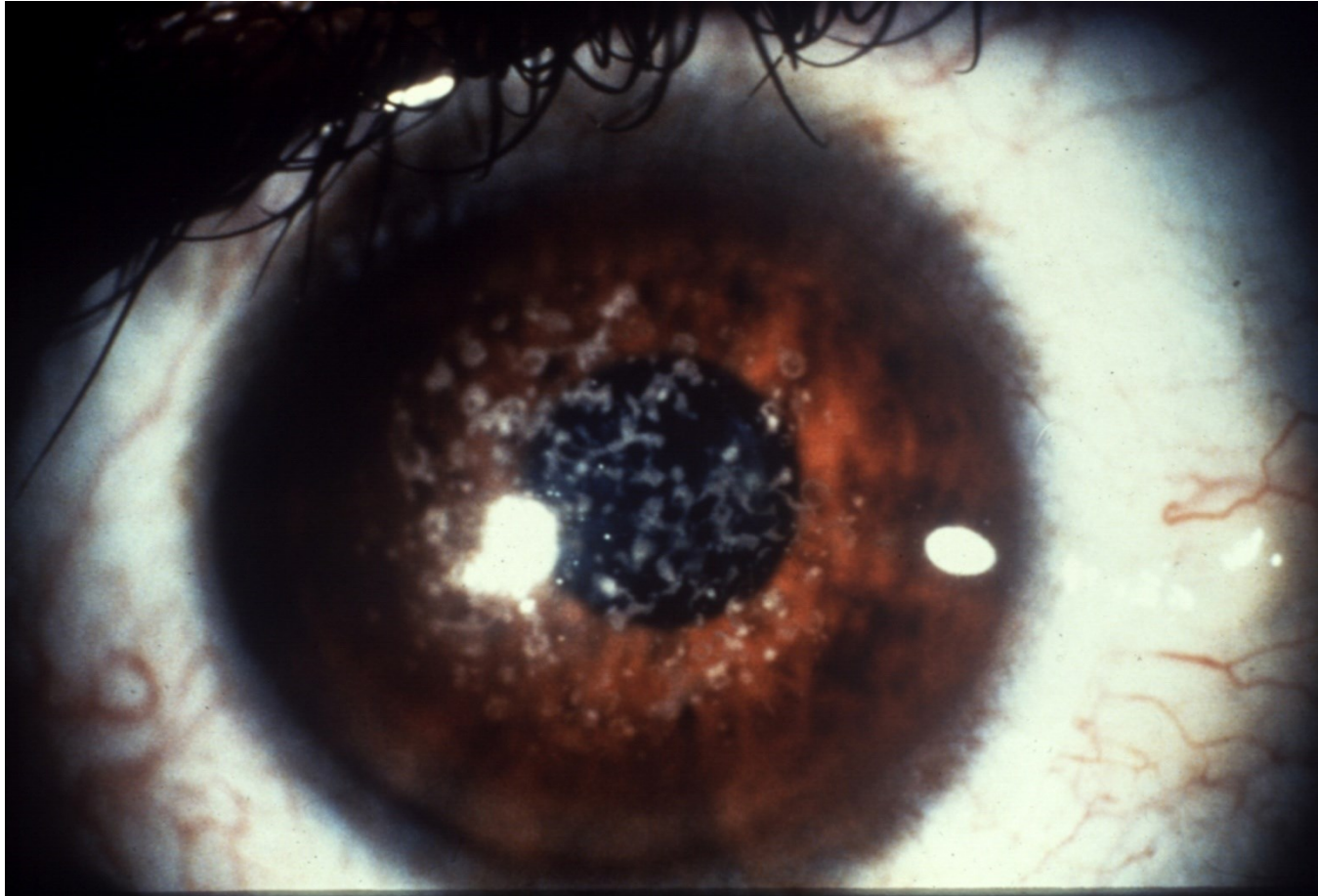
Herpes Zoster with Ophthalmic Manifestations



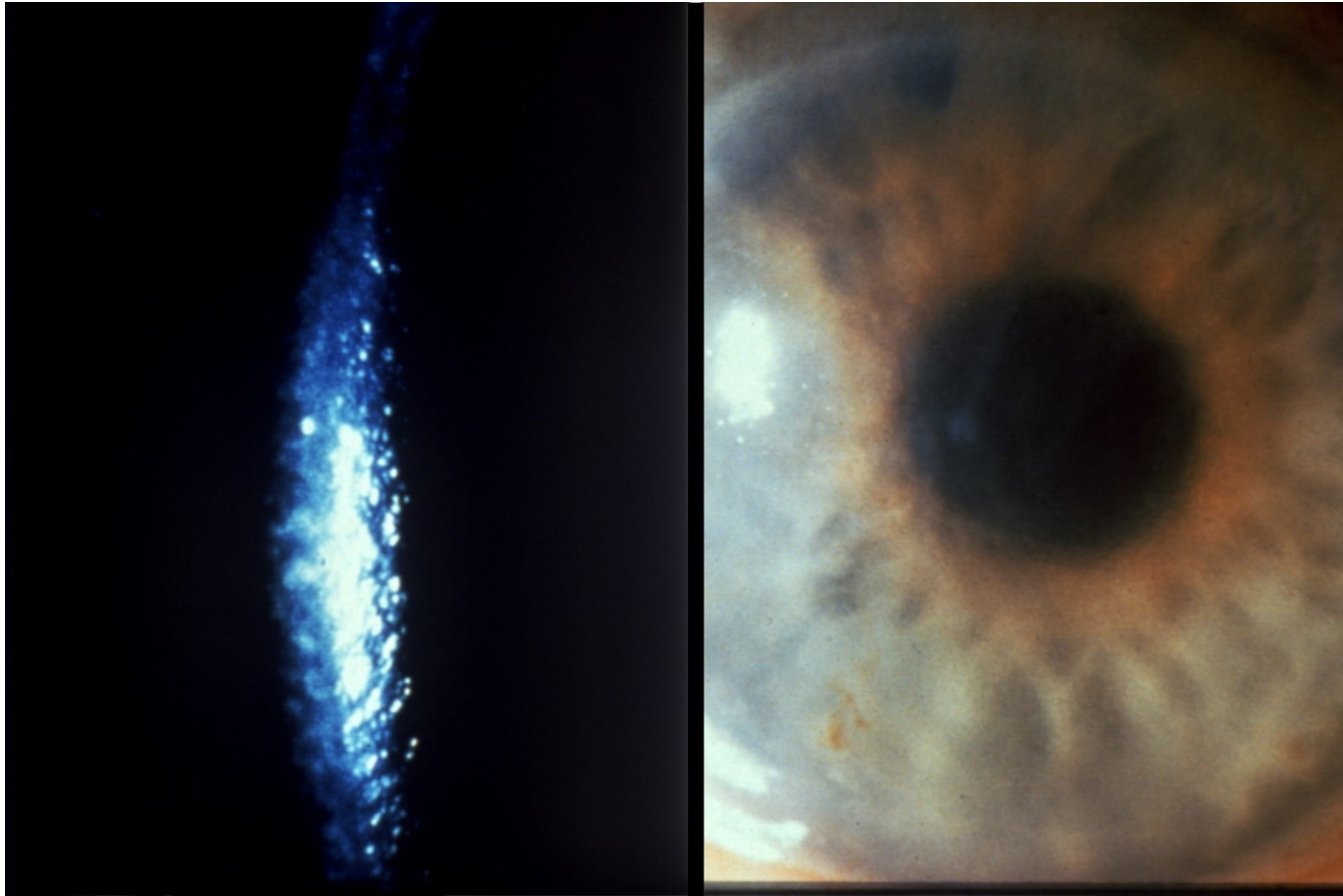
Herpes Simplex



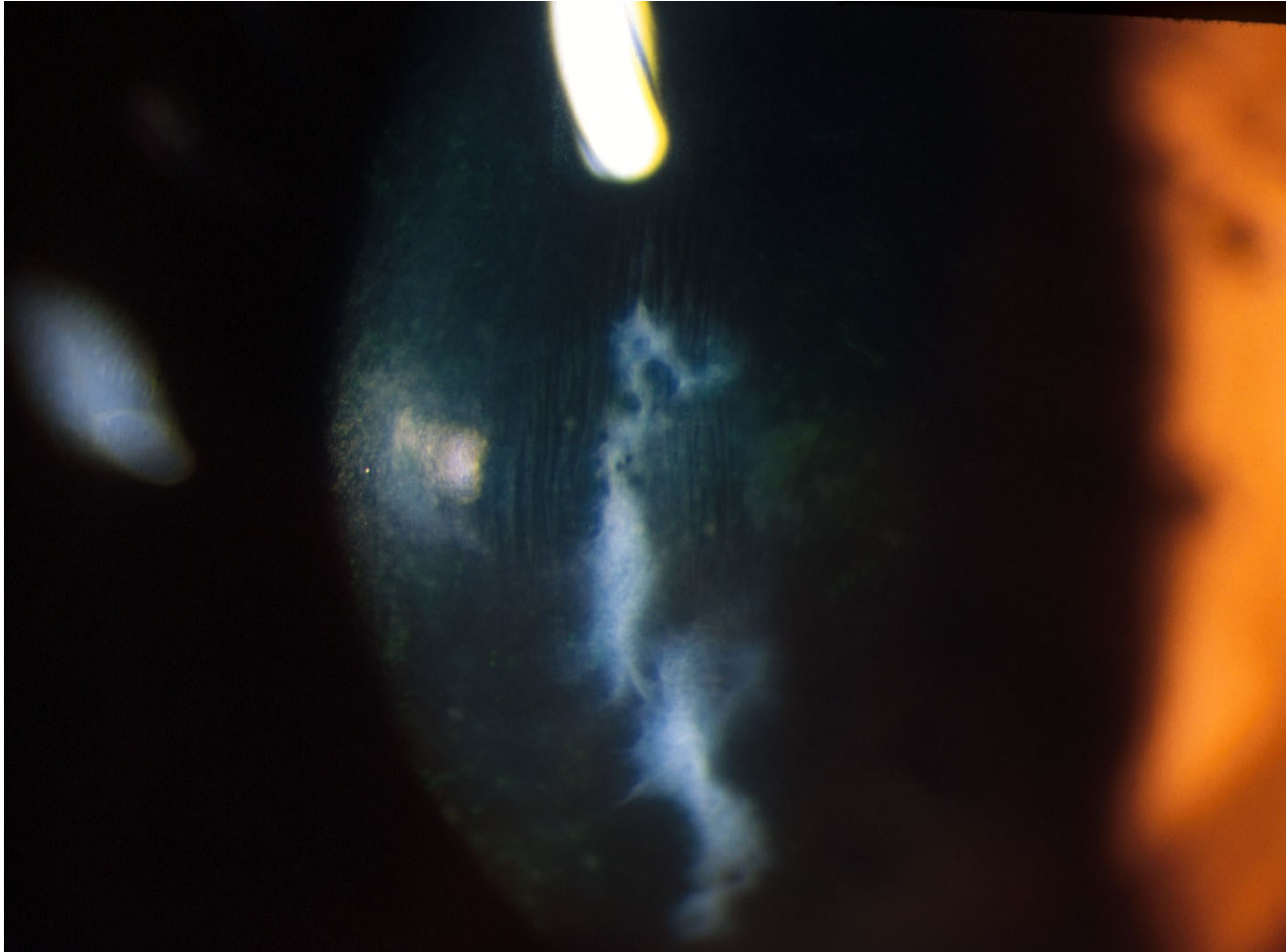
Corneal Dystrophy



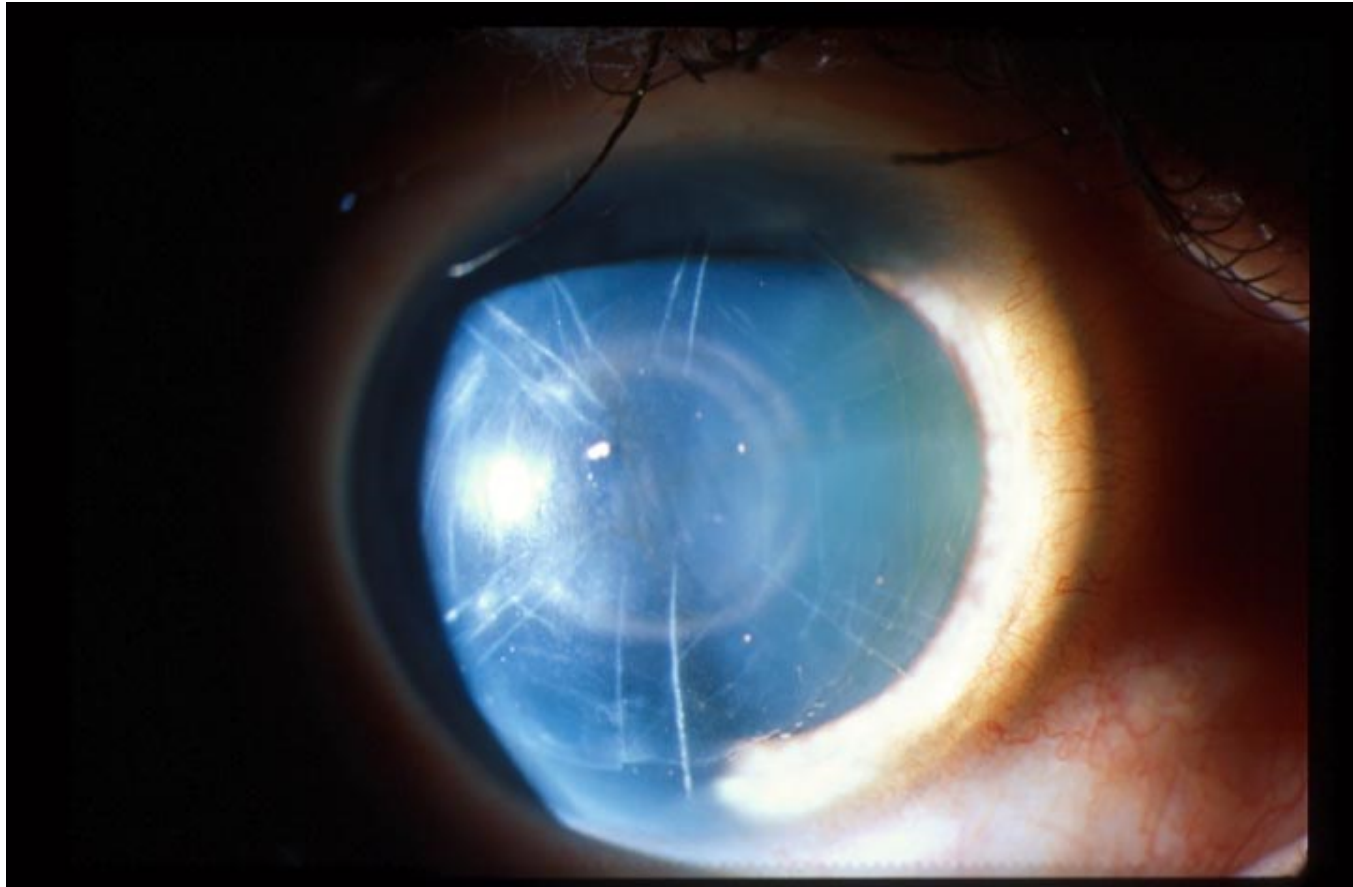
Fuchs' Dystrophy



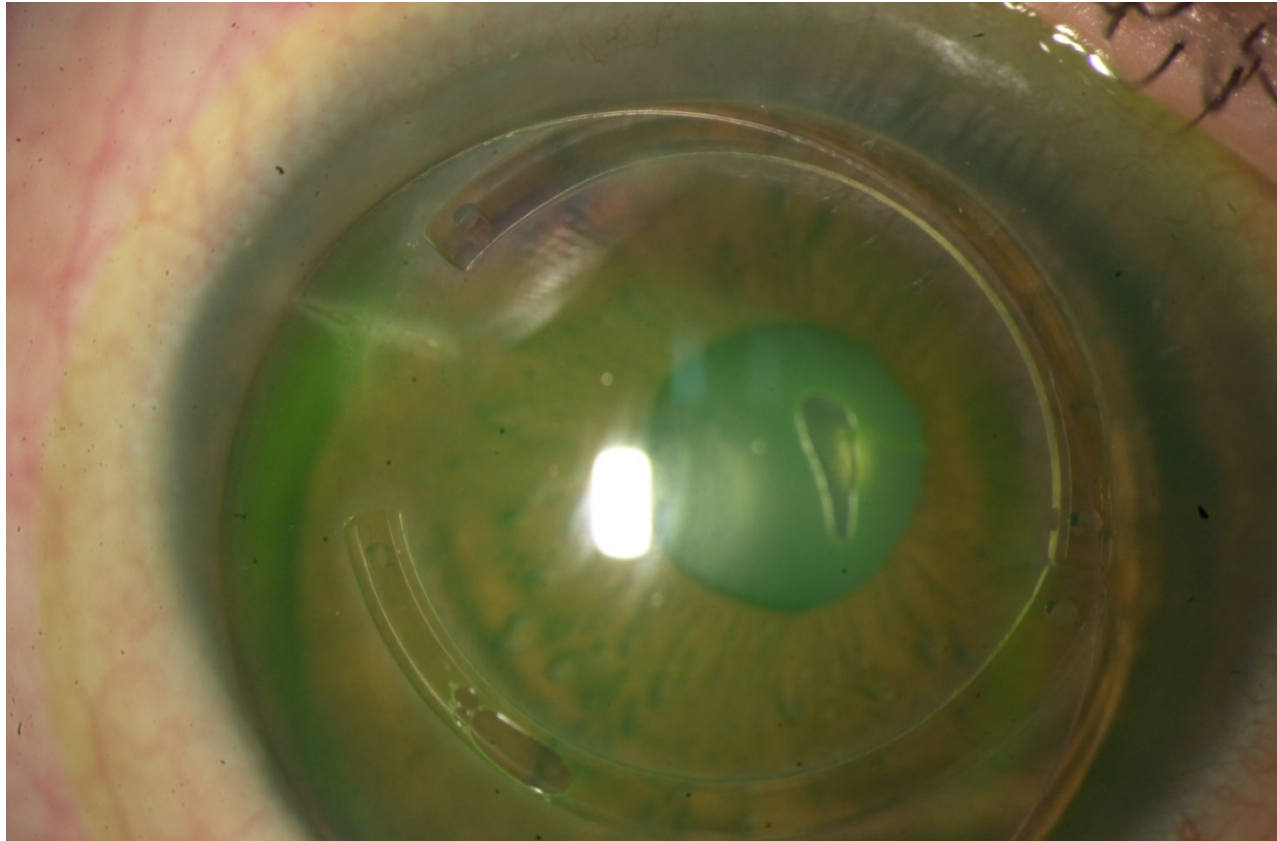
Corneal Ectasia (Keratoconus)



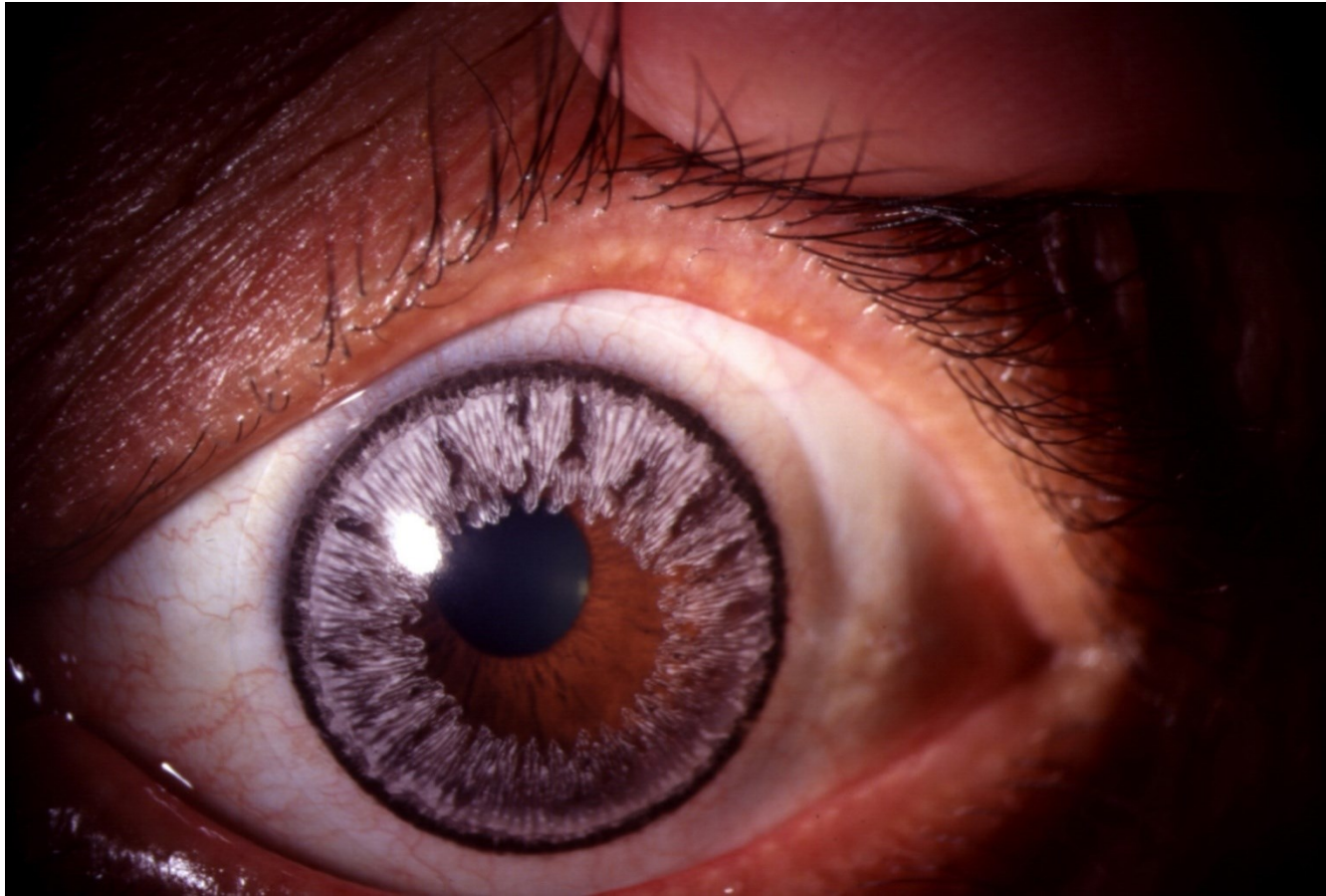
Complications from Refractive Surgery



CTL & INTACS



Cosmetic Contact Lens

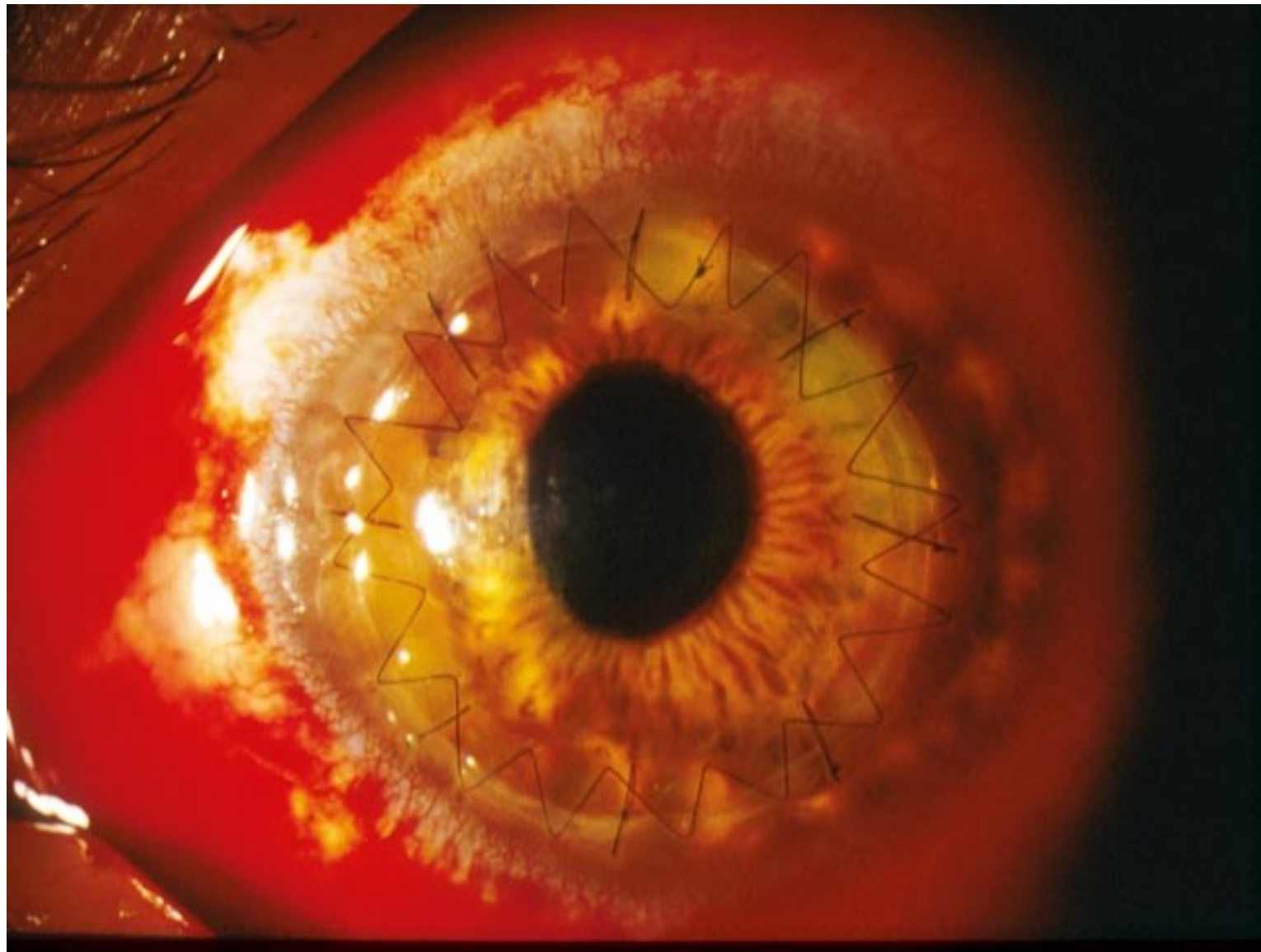


Contact Lens Case !!



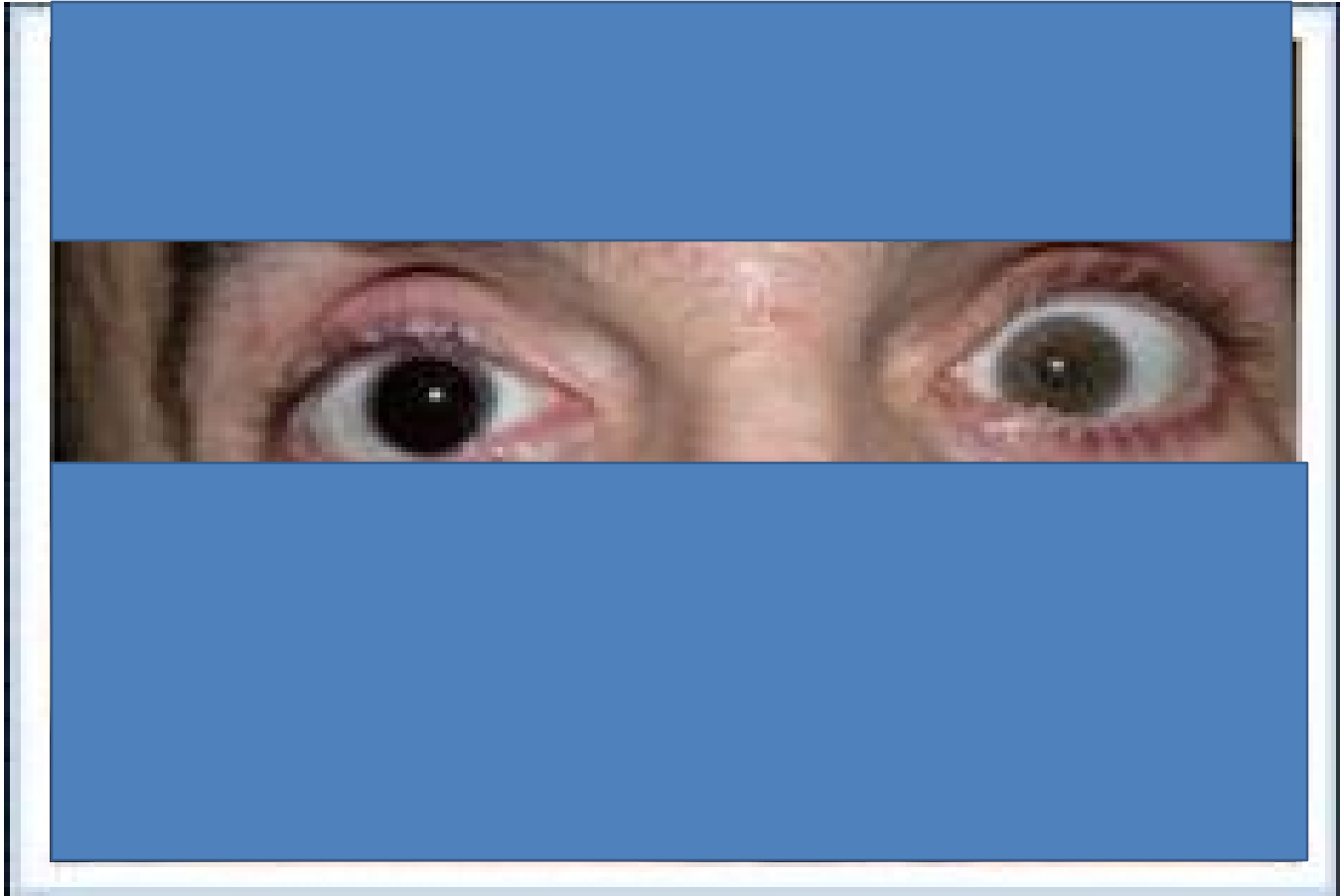
Pseudomonas Ulcer





Double Vision (Diplopia)

Pupil Blocking contact lens



“Irritation in Left Eye”

42 year old female
presented with a cc of
irritation OS for a
month.

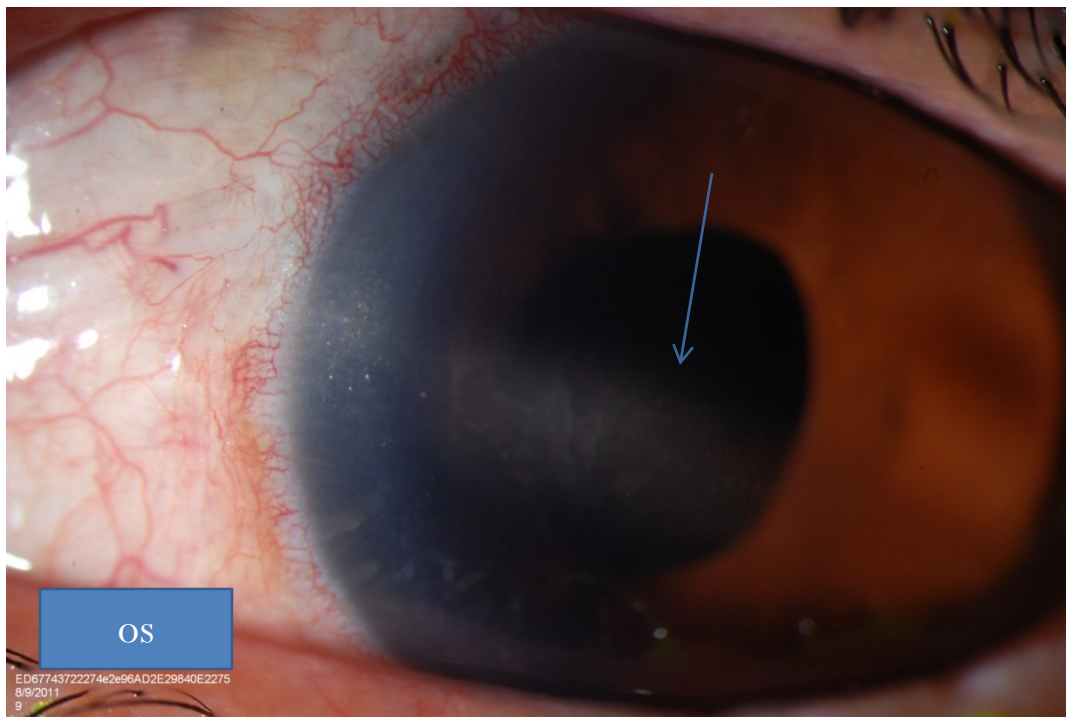
Ocular Hx is
significant for
recurrent retinal
detachments OS.

Visual Acuity:
OD 20/25

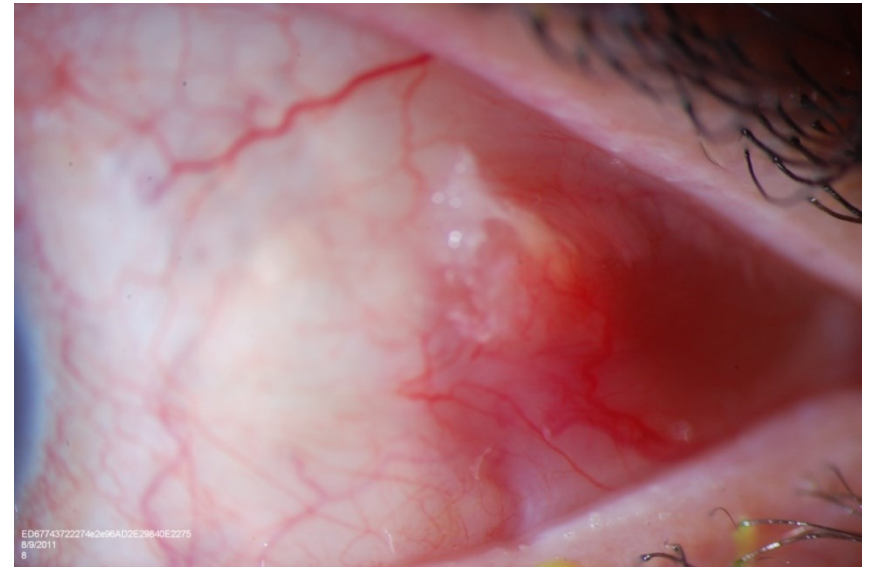
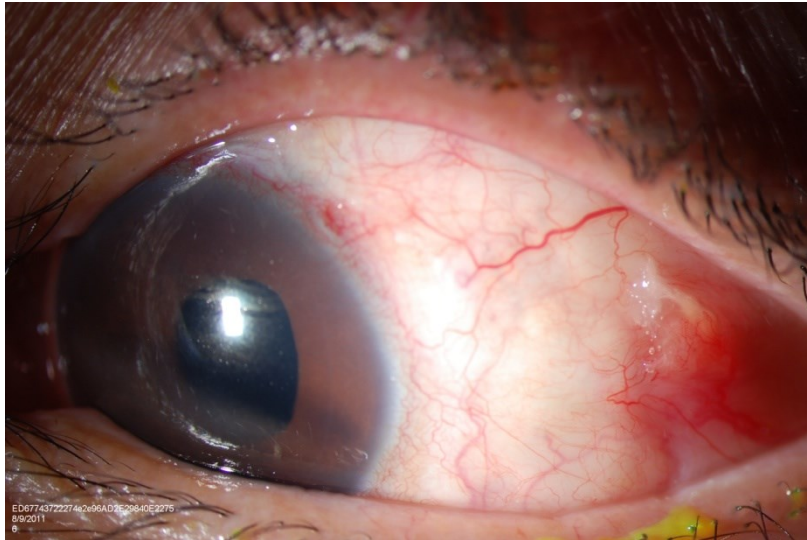
OS HM

IOP OD 15

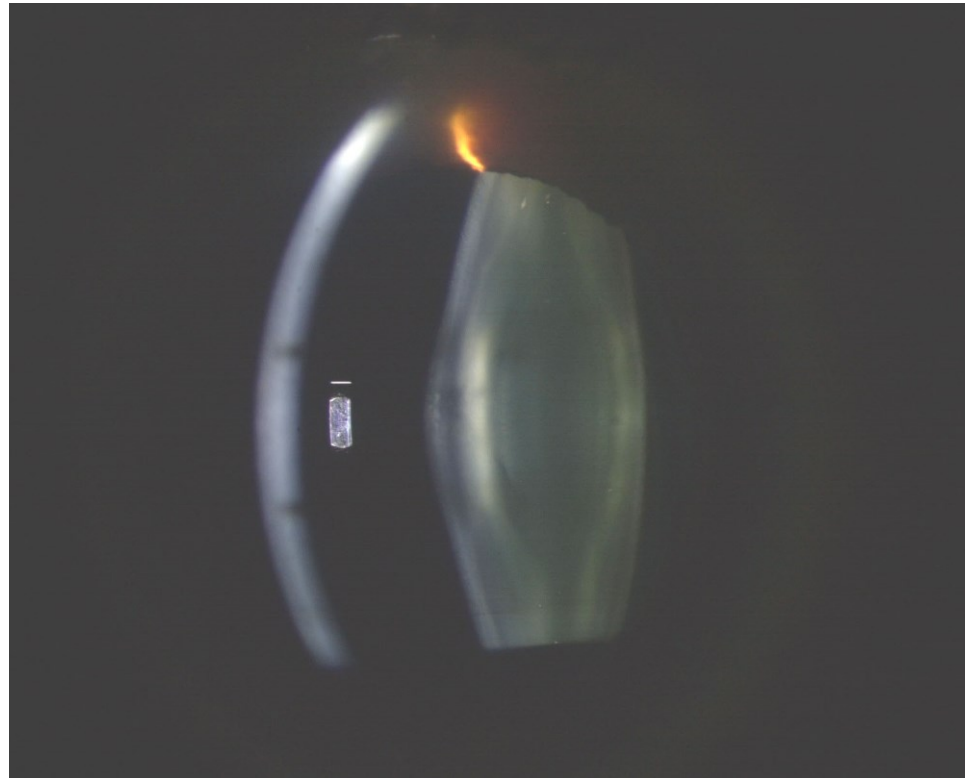
OS 38



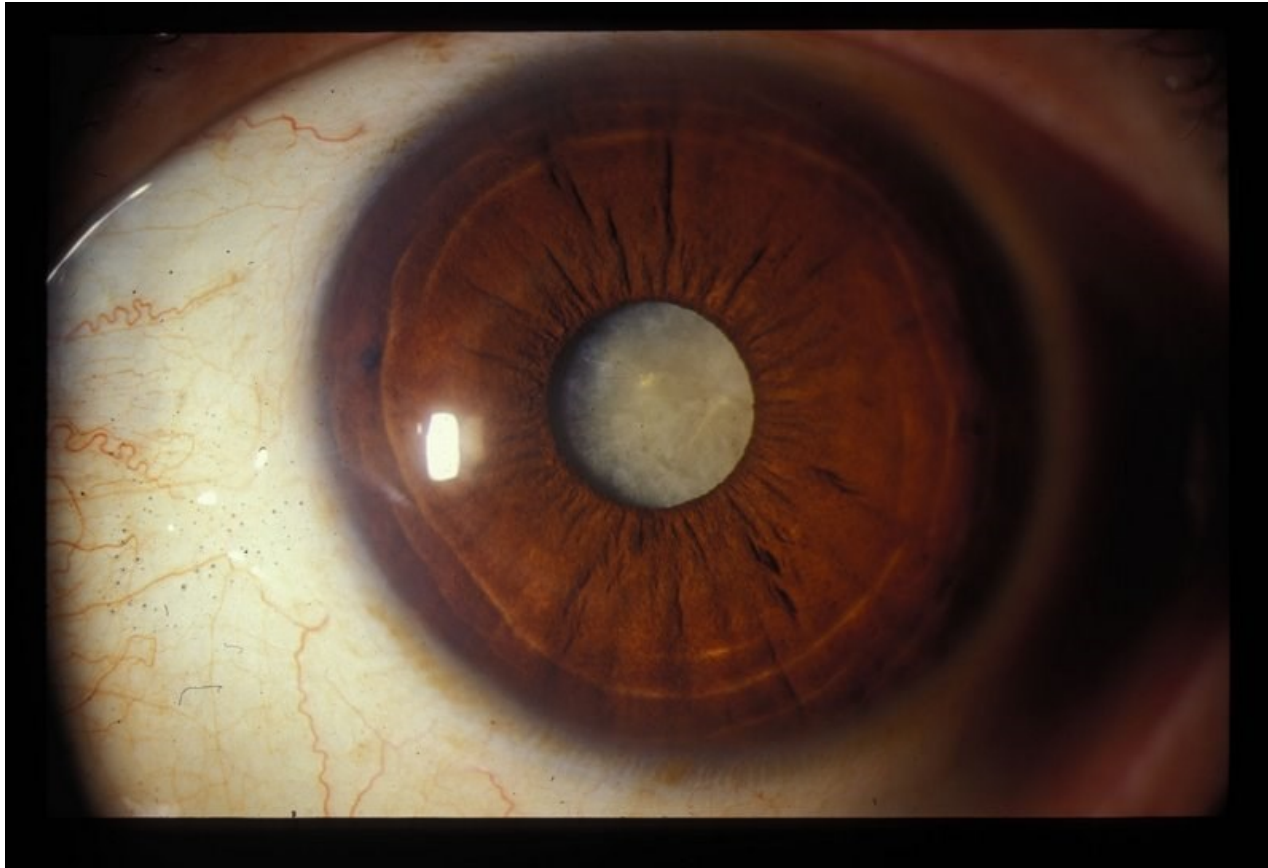
Exposed suture from retinal surgery



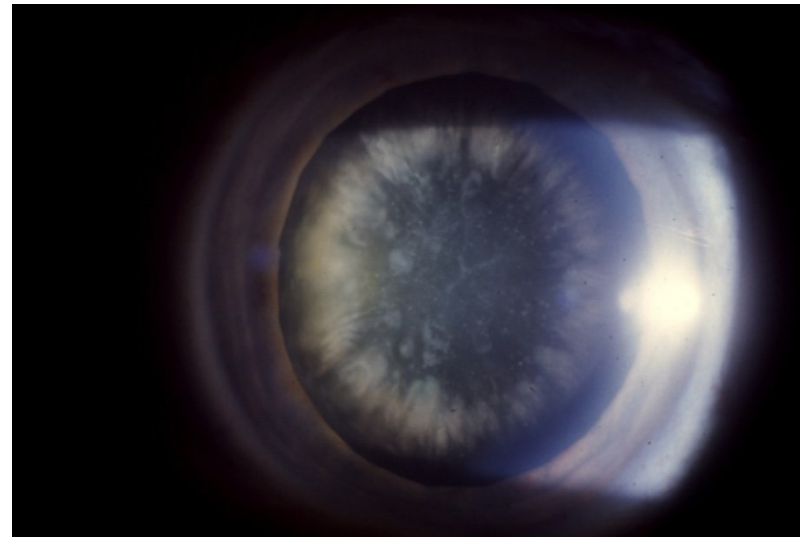
Crystalline Lens



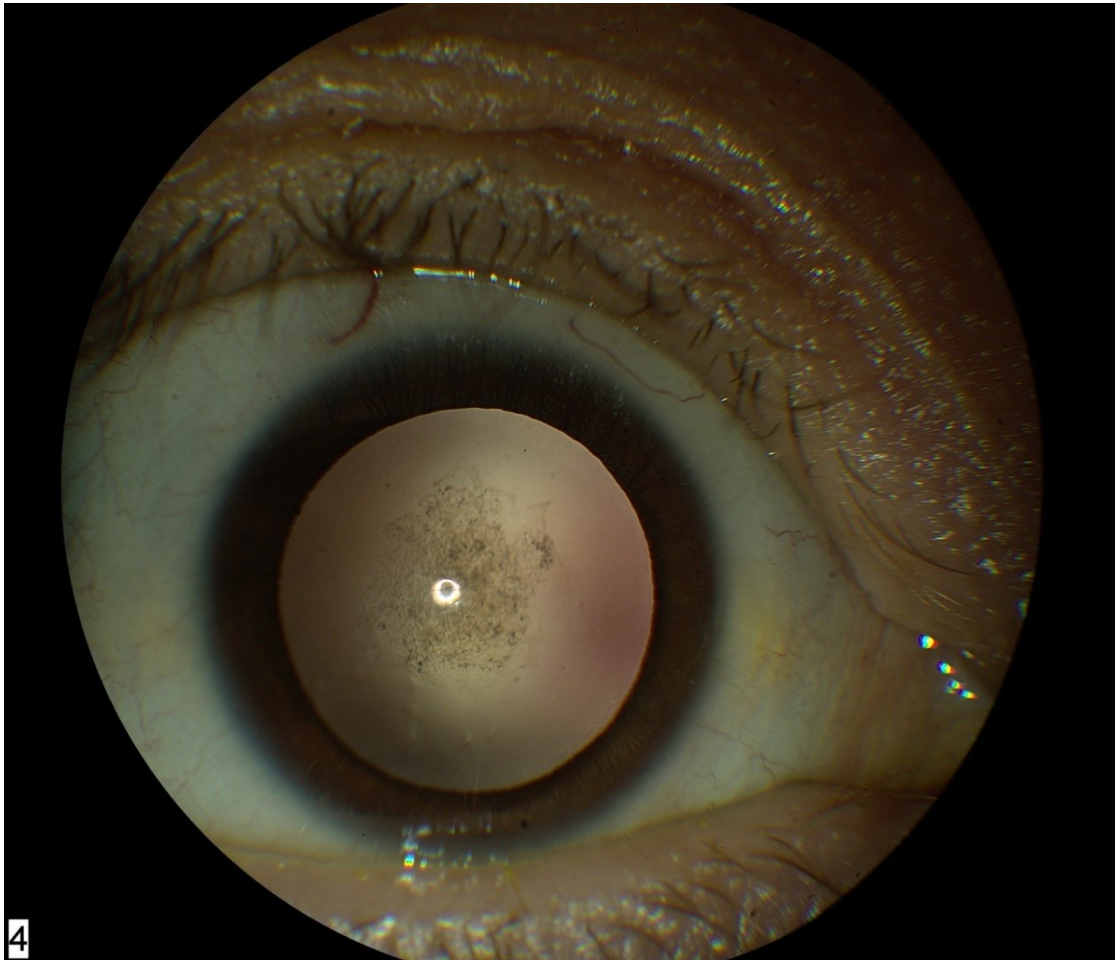
Cataract



Cataract



Posterior Subcapsular Cataract



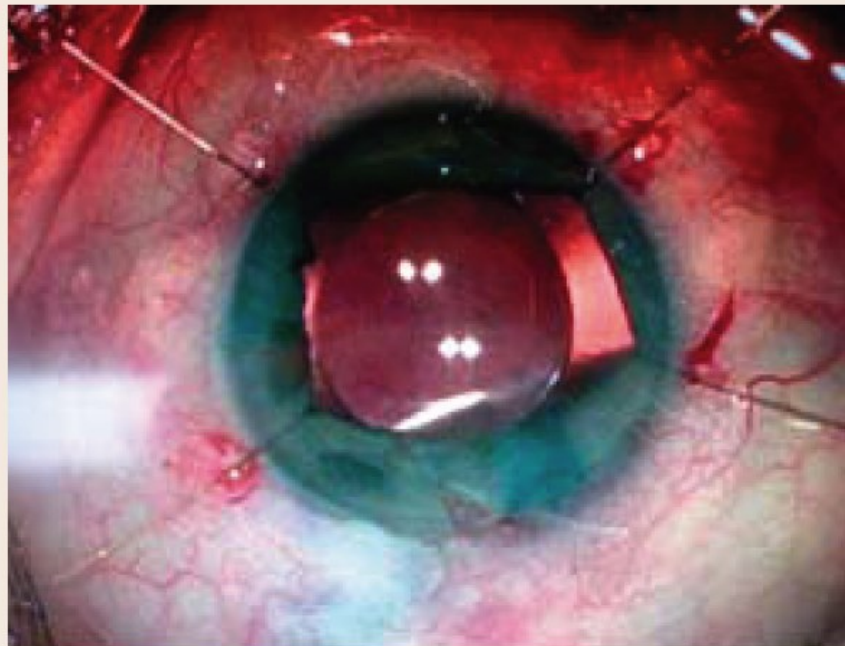
IOL



“Tell your eye surgeon if you take Flomax!”

intraoperative floppy iris syndrome (IFIS) is a complication that may occur during [cataract extraction](#) in certain patients. This syndrome is characterized by a flaccid [iris](#) which billows in response to ordinary [intraocular fluid](#) currents, a propensity for this floppy iris to prolapse towards the area of cataract extraction during surgery, and associated with Flomax ([tamsulosin](#)), a medication widely prescribed for urinary symptoms associated with [benign prostatic hyperplasia](#).

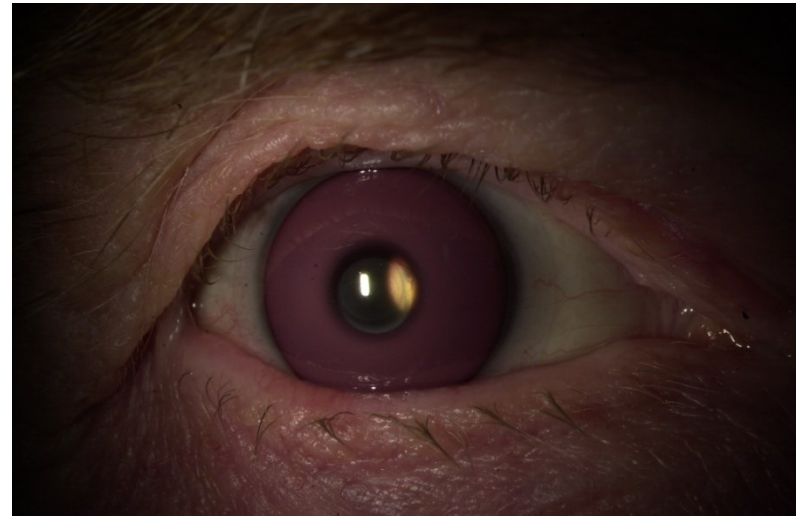
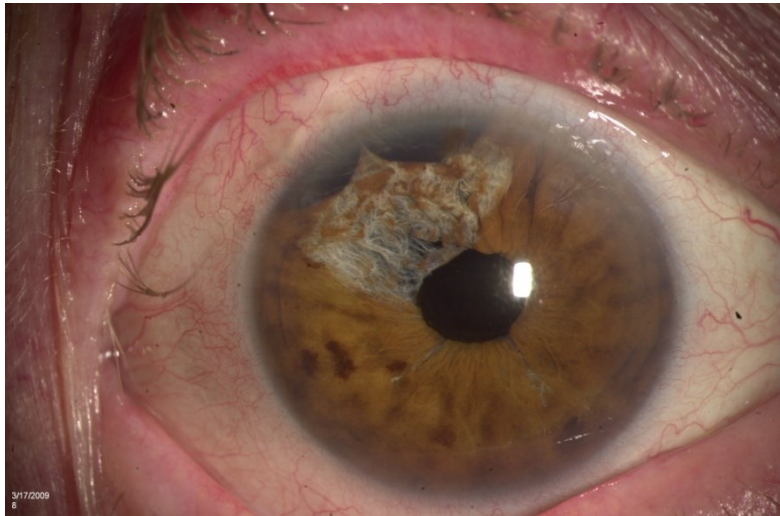
Figure 1. Iris hooks preventing iris prolapse



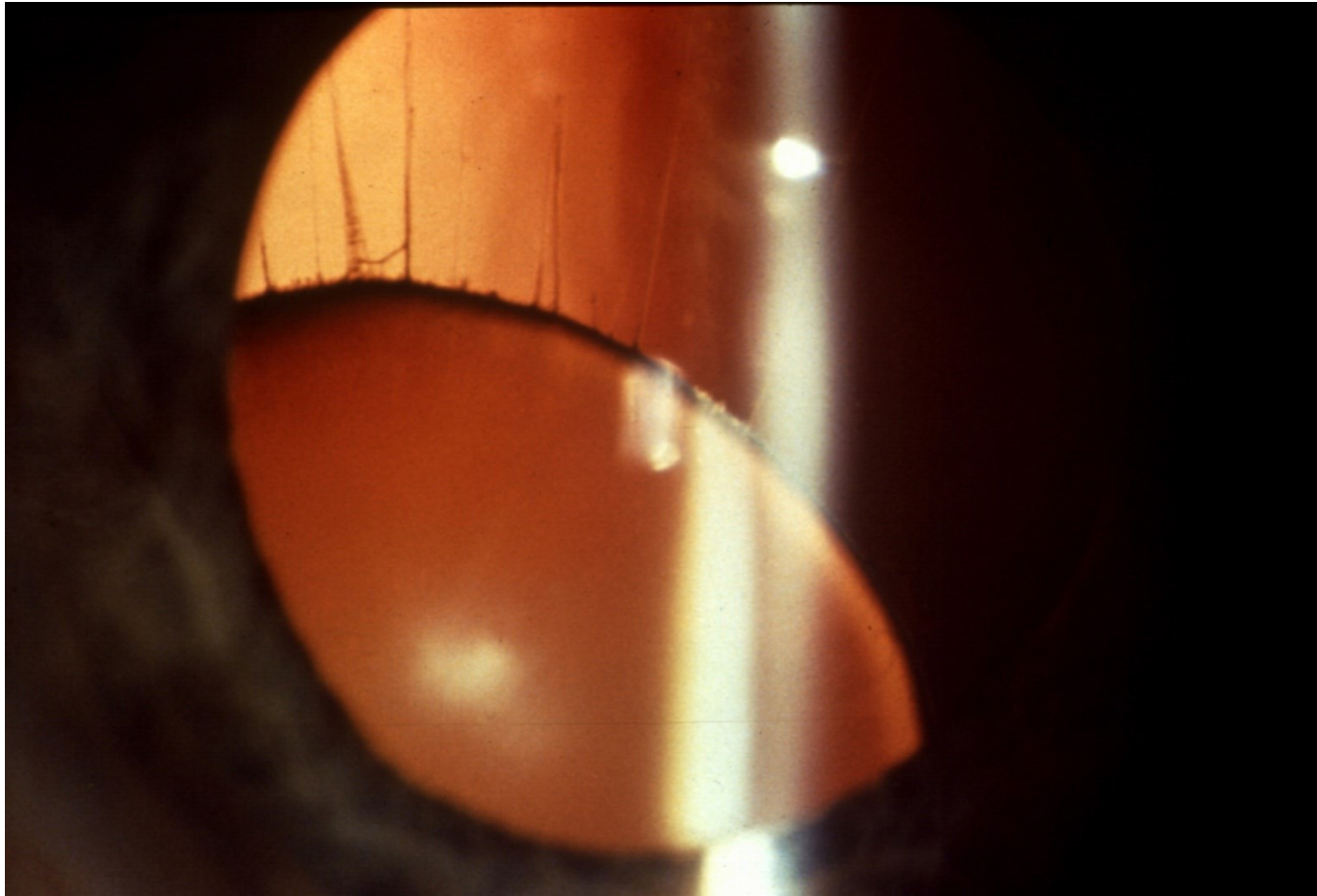
Intraoperative floppy iris syndrome

Iris Repair Floppy Iris Synd

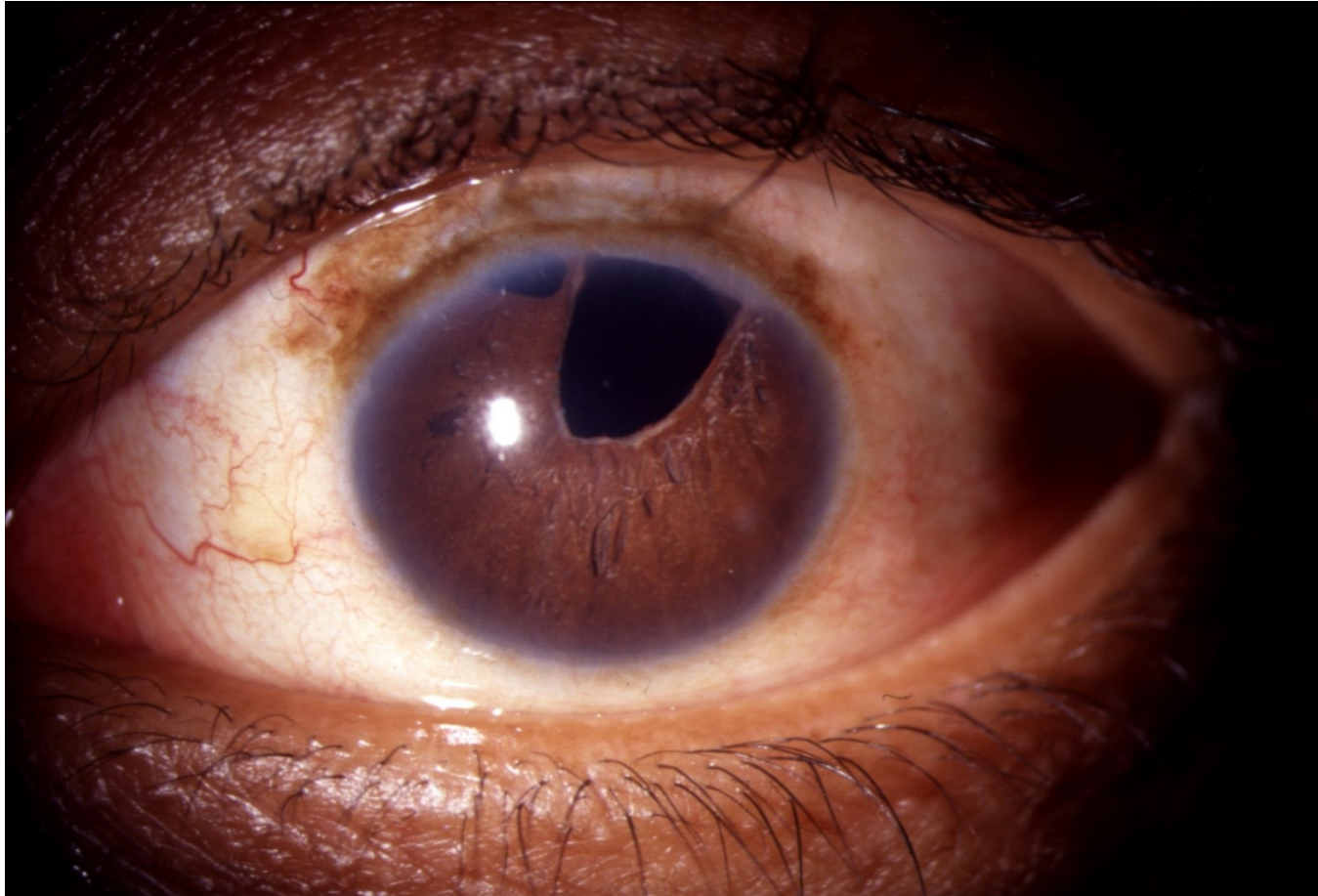
Prosthetic CTL to reduce
photophobia



Subluxated Lens



Aphakia



Vitreous

- The vitreous is a thick, transparent substance that fills the center of the eye. It is composed mainly of water and comprises about $2/3$ of the eye's volume, giving it form and shape. The viscous properties of the vitreous allow the eye to return to its normal shape if compressed.

Posterior Vitreous Detachment (PVD)

PVD is rare in people under the age of 40 years, and increases with age to 86% in the 90's. People with [myopia](#) greater than 6 [diopters](#) are at higher risk of PVD at all ages.

Symptoms

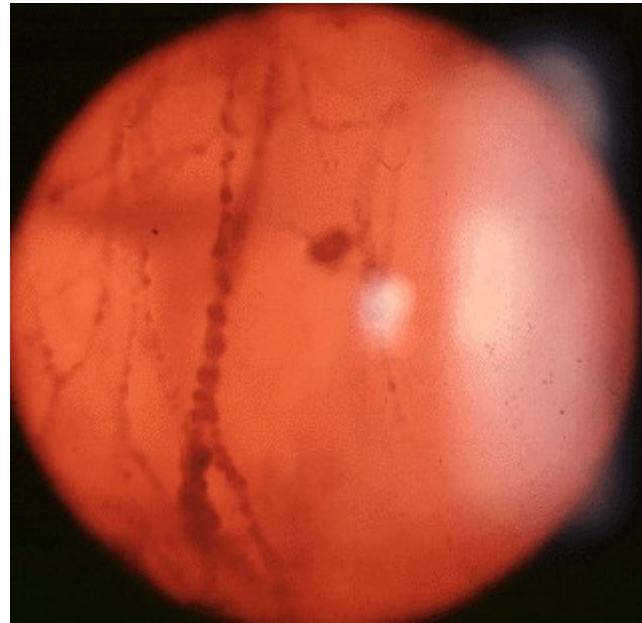
Flashes of light
([photopsia](#))

A sudden dramatic increase in the number of floaters

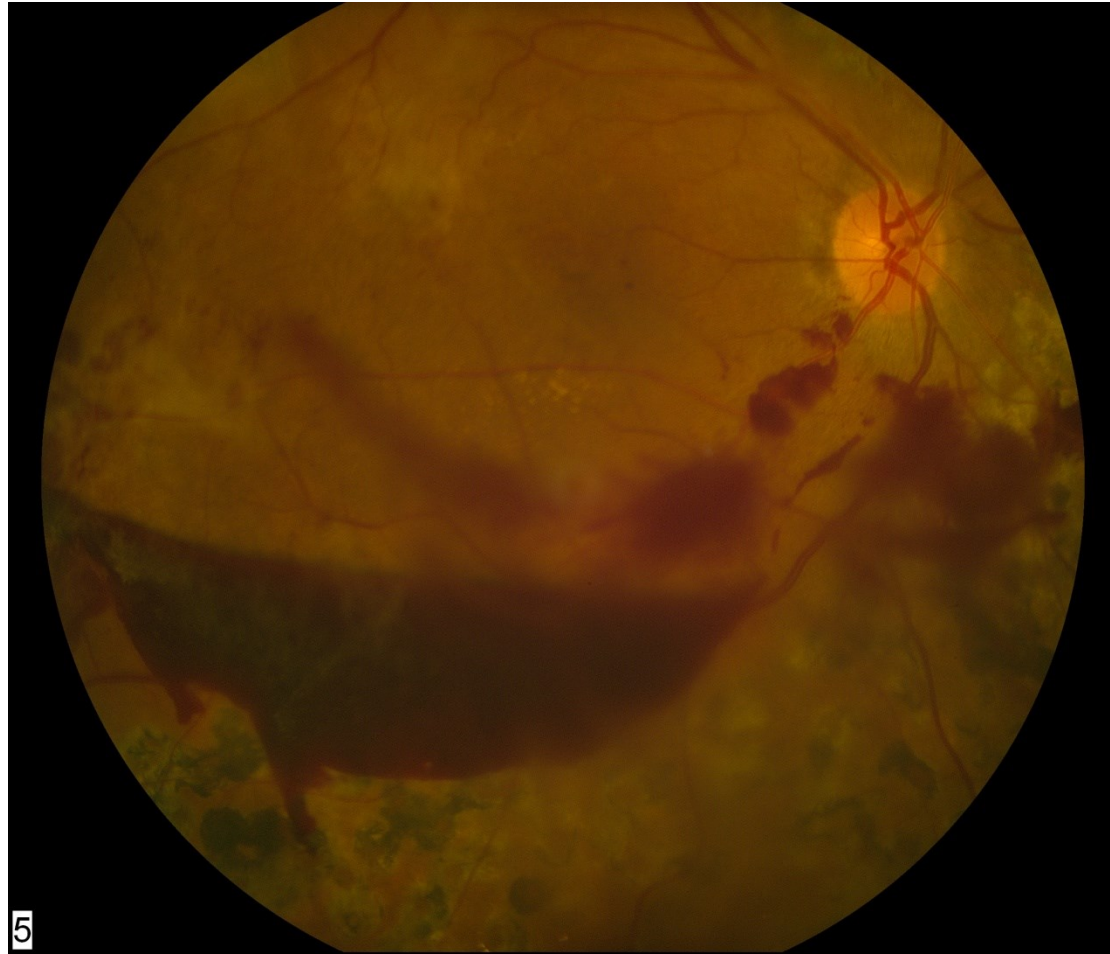
A ring of floaters or web just to the temporal side of the central vision

As a posterior vitreous detachment proceeds, adherent vitreous may pull on the retina.

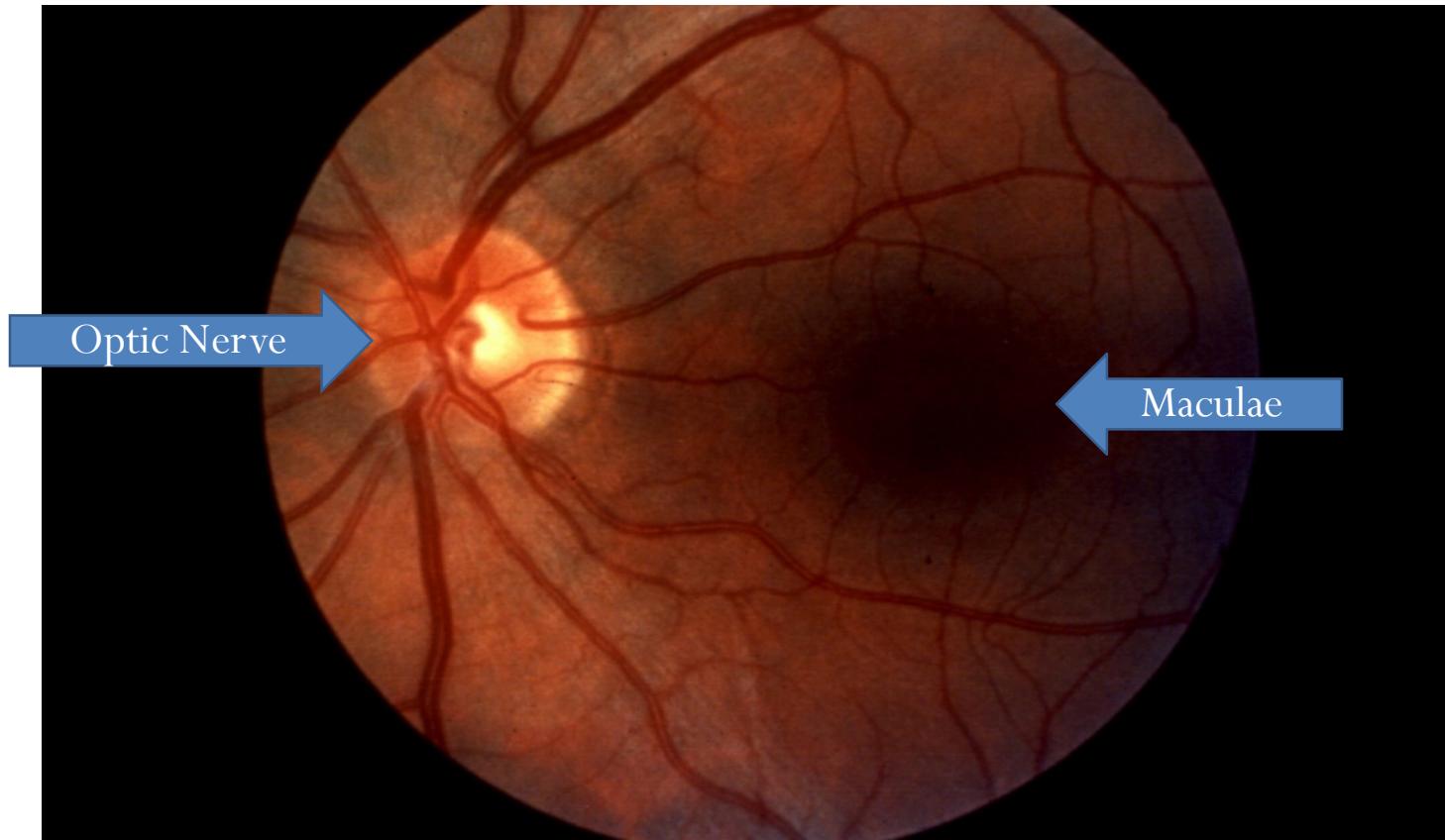
Vitreous traction may stimulate the retina, with resultant flashes.



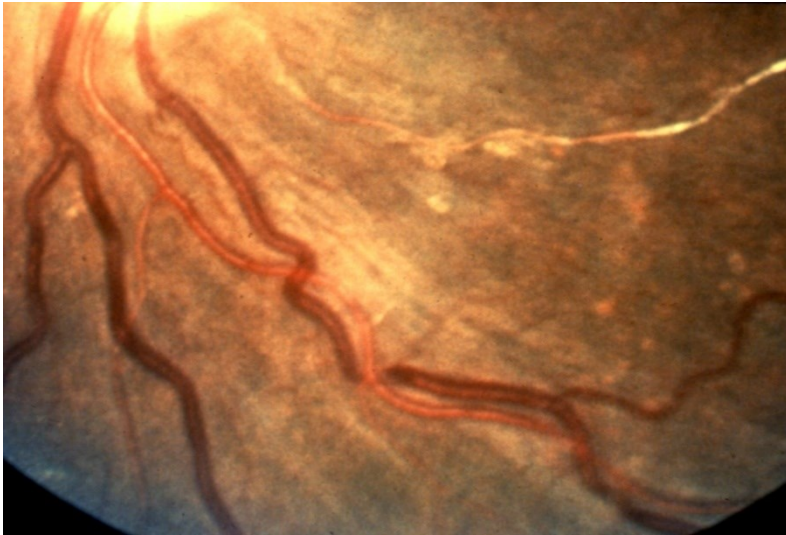
Vitreous Hemorrhage



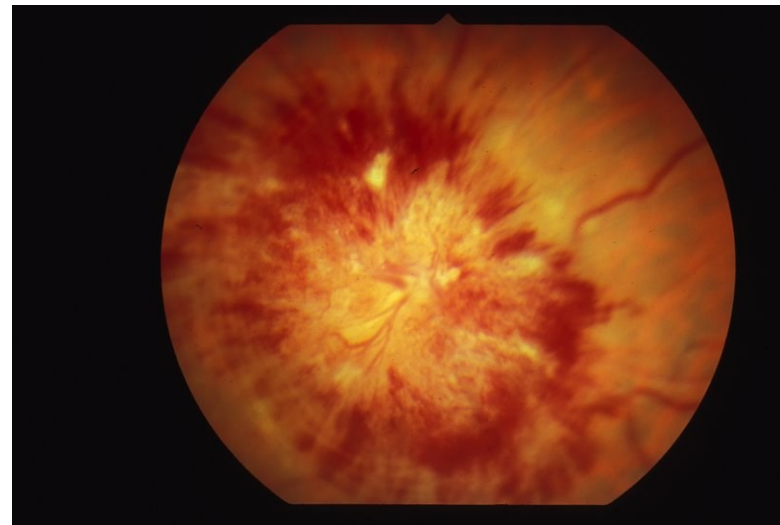
Normal Retina



HTN Retinopathy



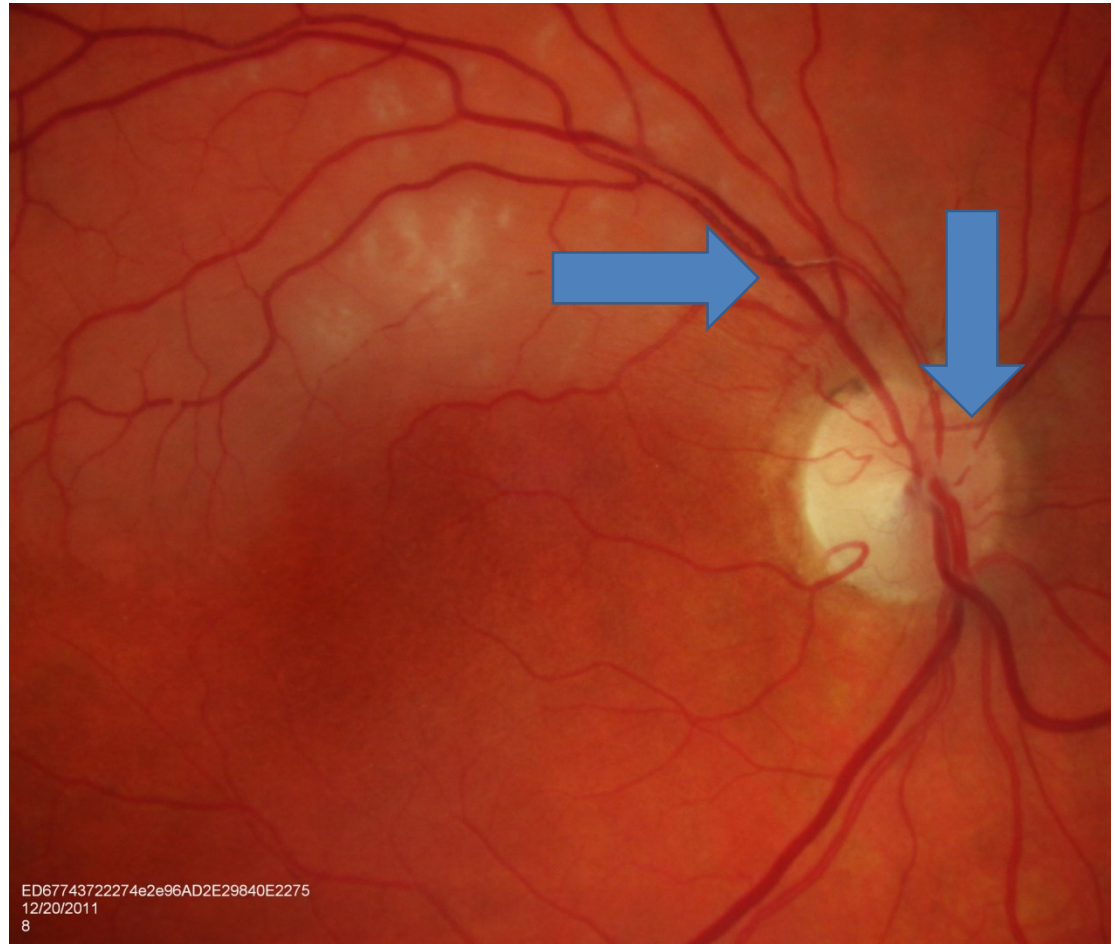
- High blood pressure can damage blood vessels in the retina. The higher the blood pressure and the longer it has been high, the more severe the damage is likely to be.



Branch Retinal Artery Occlusion

Sudden painless partial loss of vision in one eye resulting from a plaque, most likely from the carotid artery.

Indicates a medical emergency and should be evaluated immediately.



Central Retinal Artery Occlusion

- **Central Retinal Artery Occlusion**

Patients with central retinal artery occlusion lose vision suddenly. Unfortunately the visual loss in central retinal artery occlusion is usually irreversible although there may be some improvement over time.

- There is no good treatment of central retinal artery occlusion. Lowering the eye pressure or breathing into a bag have been advocated but without success.



4/25/2011
8

Optic Nerve Swelling (papilledema)

Right Eye



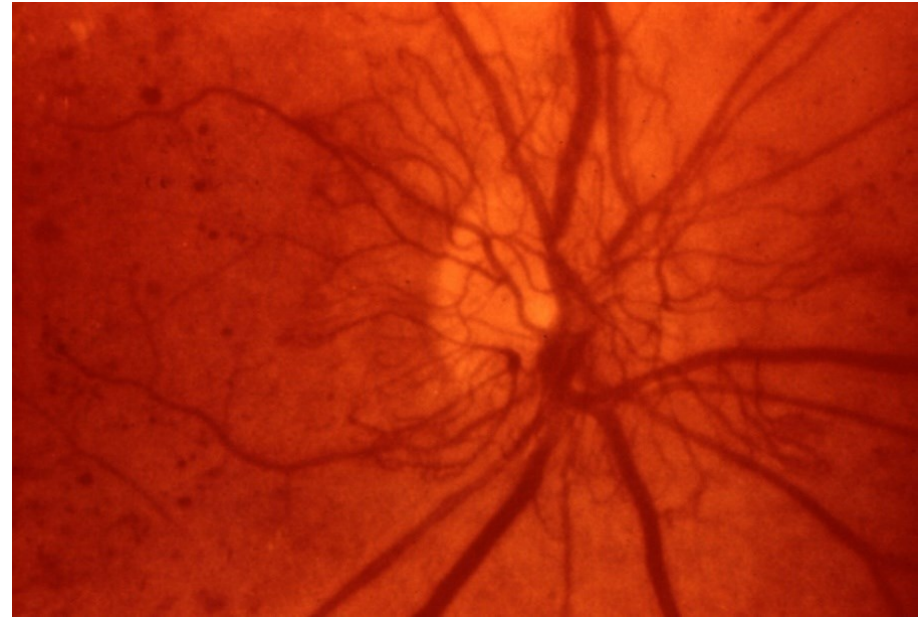
Left Eye



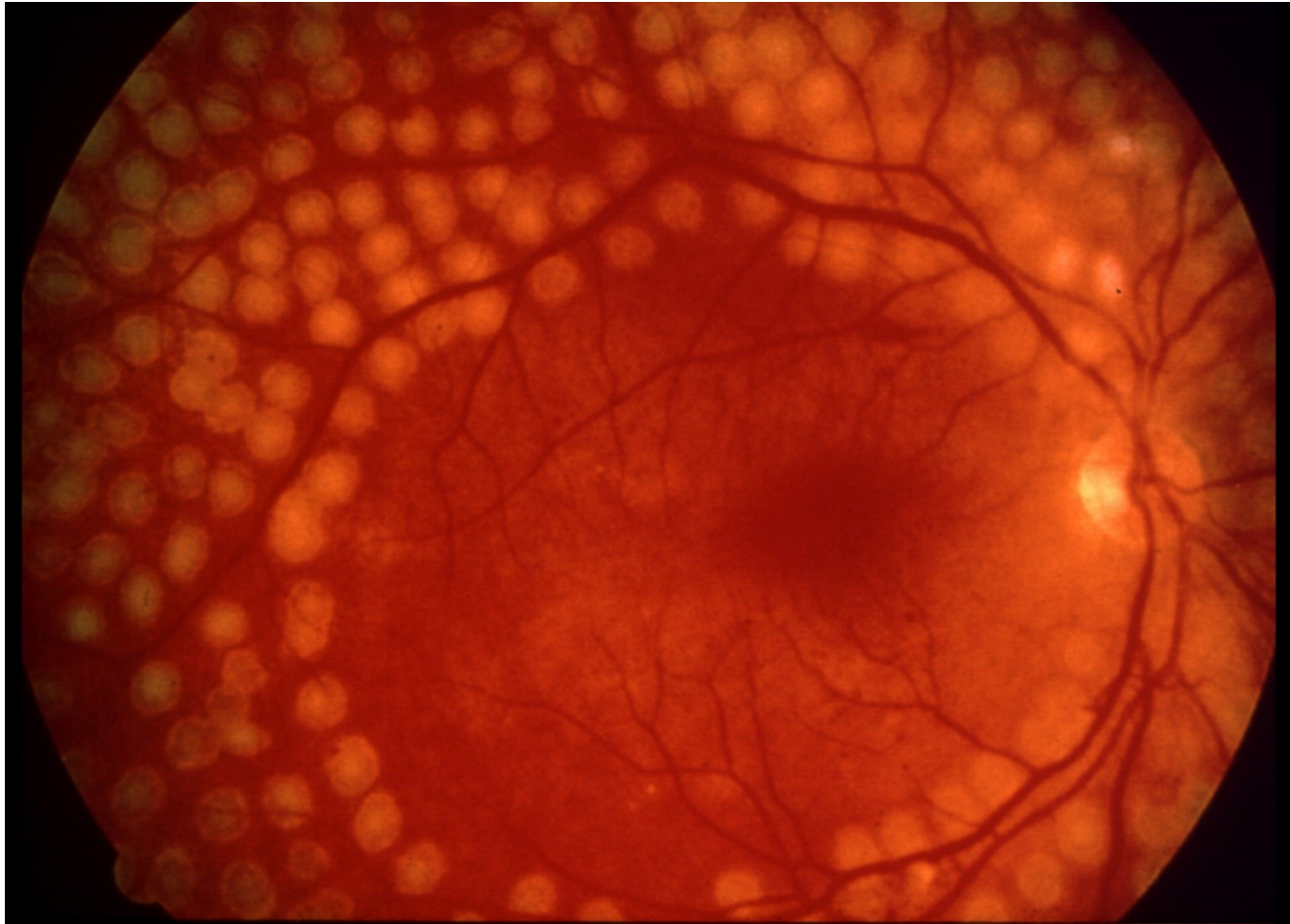
Non Proliferative Diabetic Retinopathy



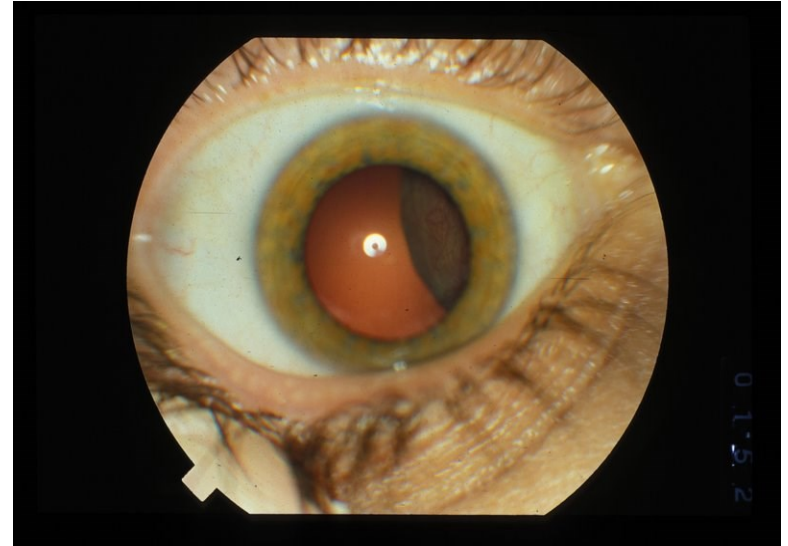
Proliferative Diabetic Retinopathy



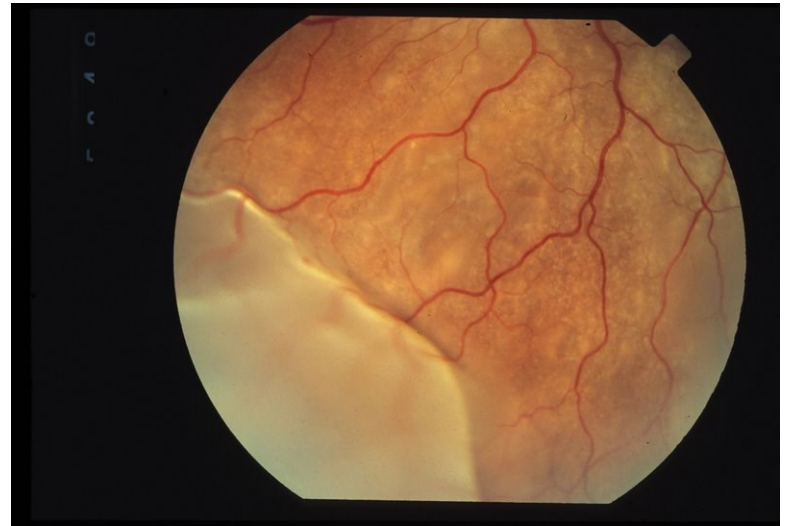
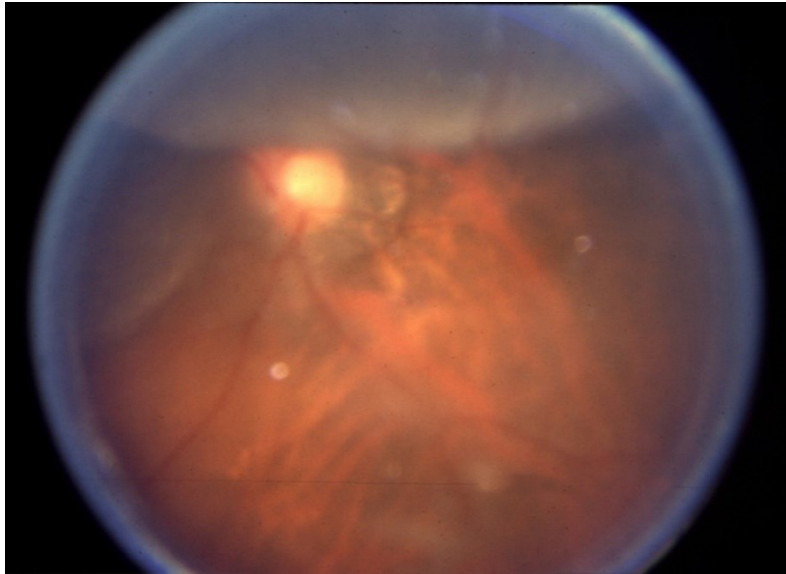
Treatment for Diabetic Retinopathy



Malignant Melanoma

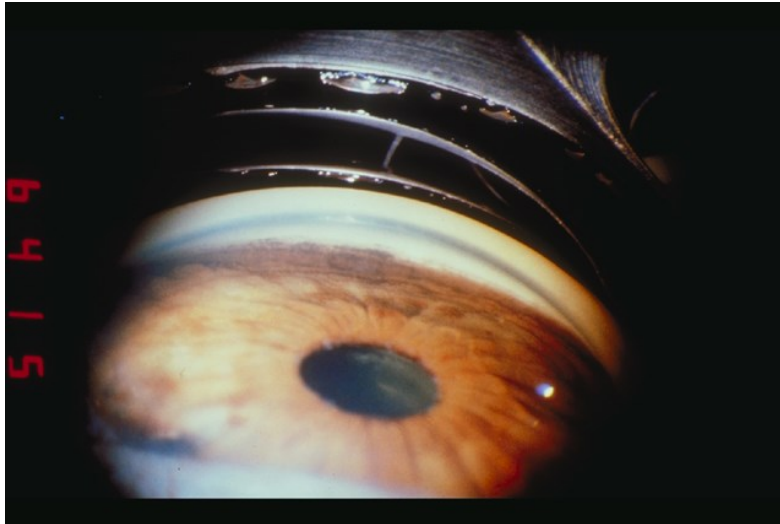


Retinal Detachment

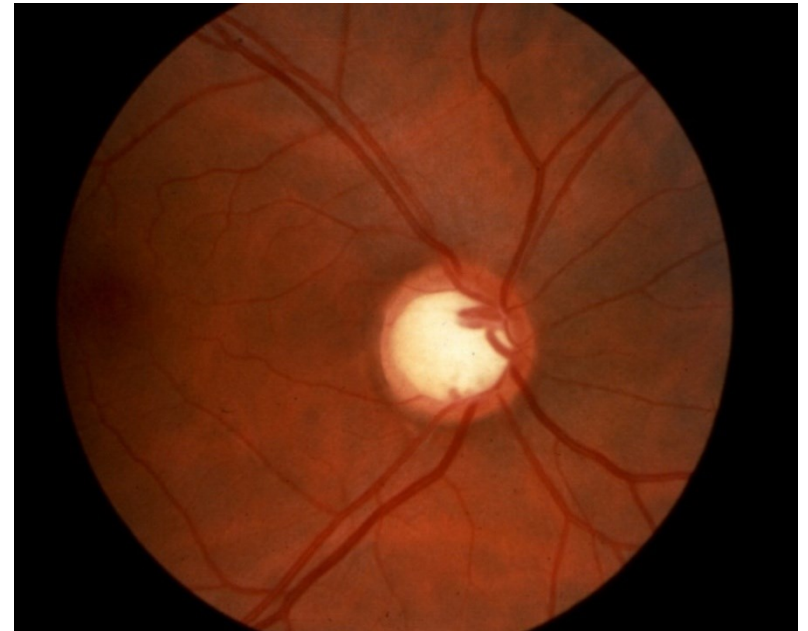


GLAUCOMA

Angle Closure Glaucoma



Chronic Open Angle
glaucoma



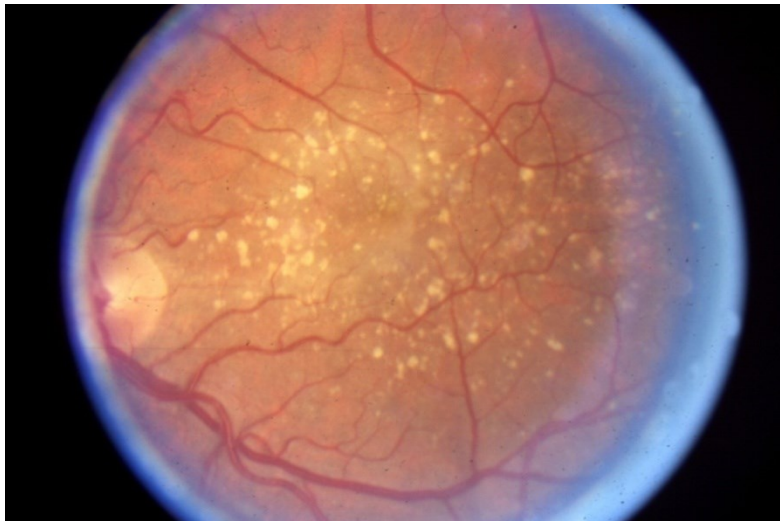
Optic Atrophy



- Nonarteritic Ischemic Optic Neuropathy
- Developing Soon After Use of Sildenafil
- Medication for ED

Maculae Degeneration

DRY ARMD



WET ARMD



Thanks for your Attention
Any Questions?

