

Let there be light!

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Cornea, Cataract & Refractive Surgery

Objectives

Make the slit lamp work for YOU

Because...our jobs are hard enough



Objectives

Length of beam | |

Width of beam | ■

Rotate slit

Magnification

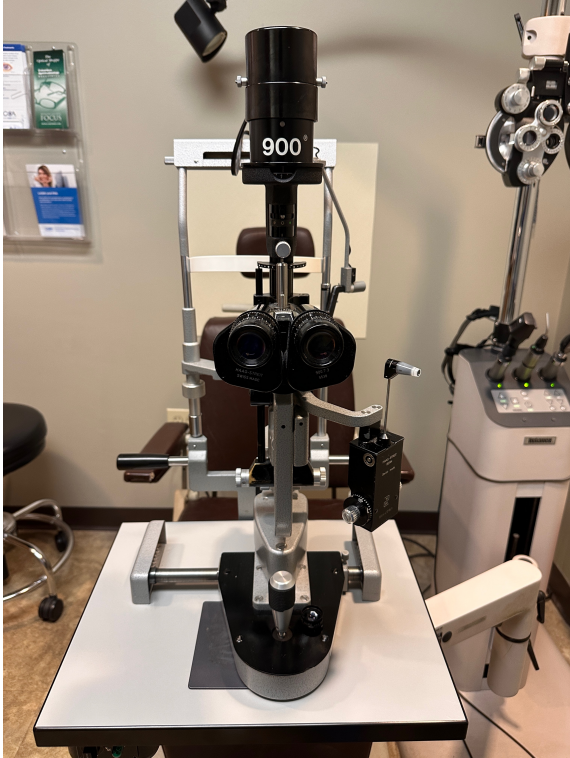
X10-15: general exam of lids, conjunctiva

Color filters

Blue

Red-free

Set up



Move light beam to
correct position



Inter-pupillary distance
& Refractive error



Adjust height of table
Adjust chinrest – use eye mark



Start on low intensity
light

Video

Adjusting slit lamp

Protect your neck & back!

Adjust height of table

Adjust chinrest – use eye mark

Move light beam to correct position

Inter-pupillary distance

Refractive error

Start on low mag



Diffuse illumination

Low mag

Open beam at 45 degree angle

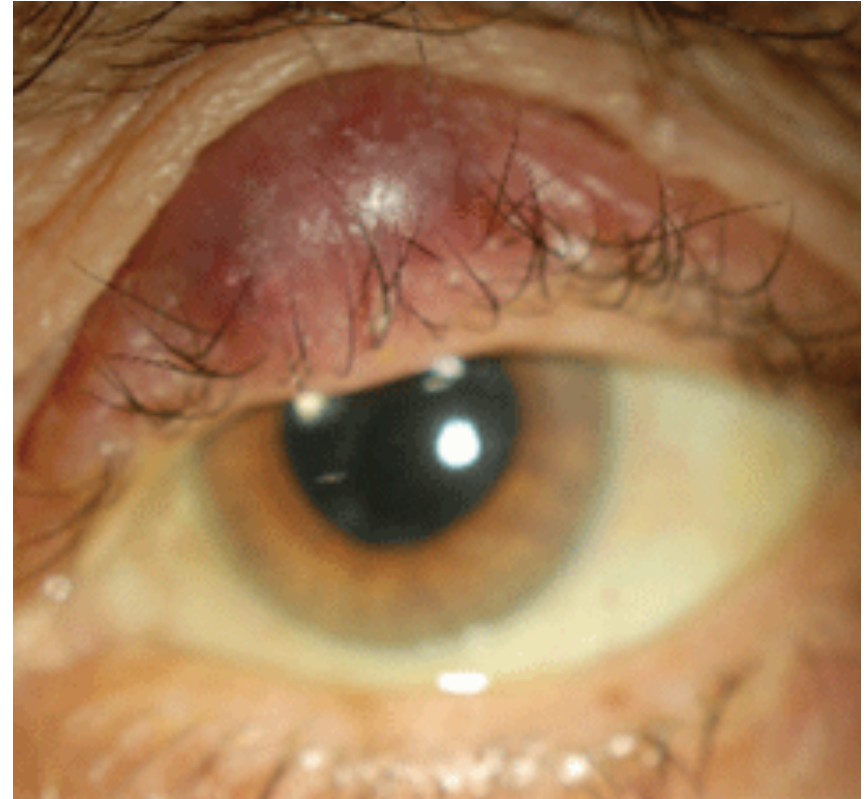
Can swing beam from left to right

General picture

Overall survey of the eye, lids, lashes, caruncle, sclera, surface vessels and media opacities

Diffuse illumination

Stye



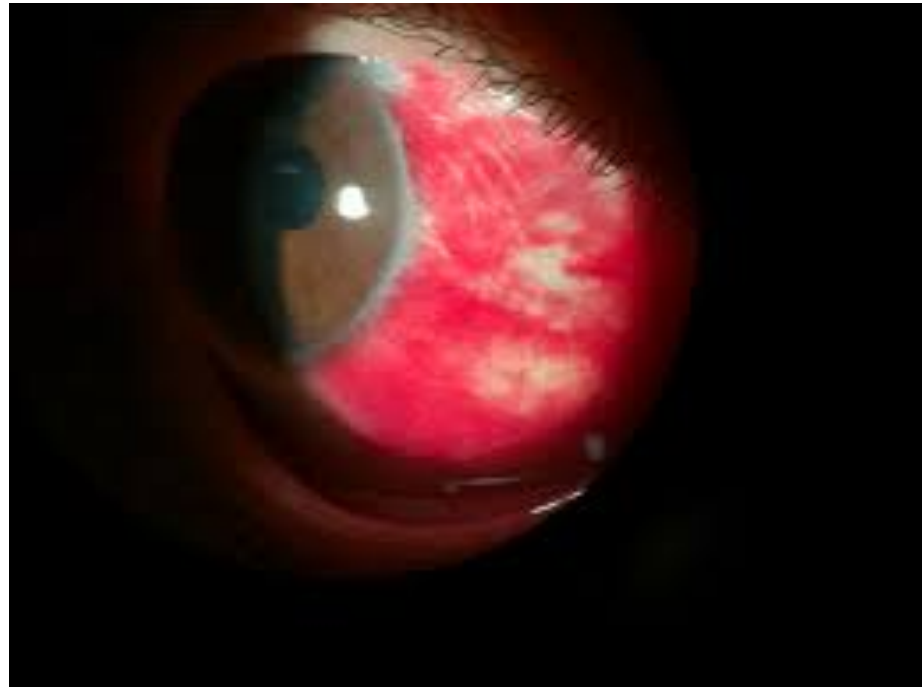
Diffuse illumination

Pinguecula/Pterygium



Diffuse illumination

Subconjunctival hemorrhage



Sclerotic scatter

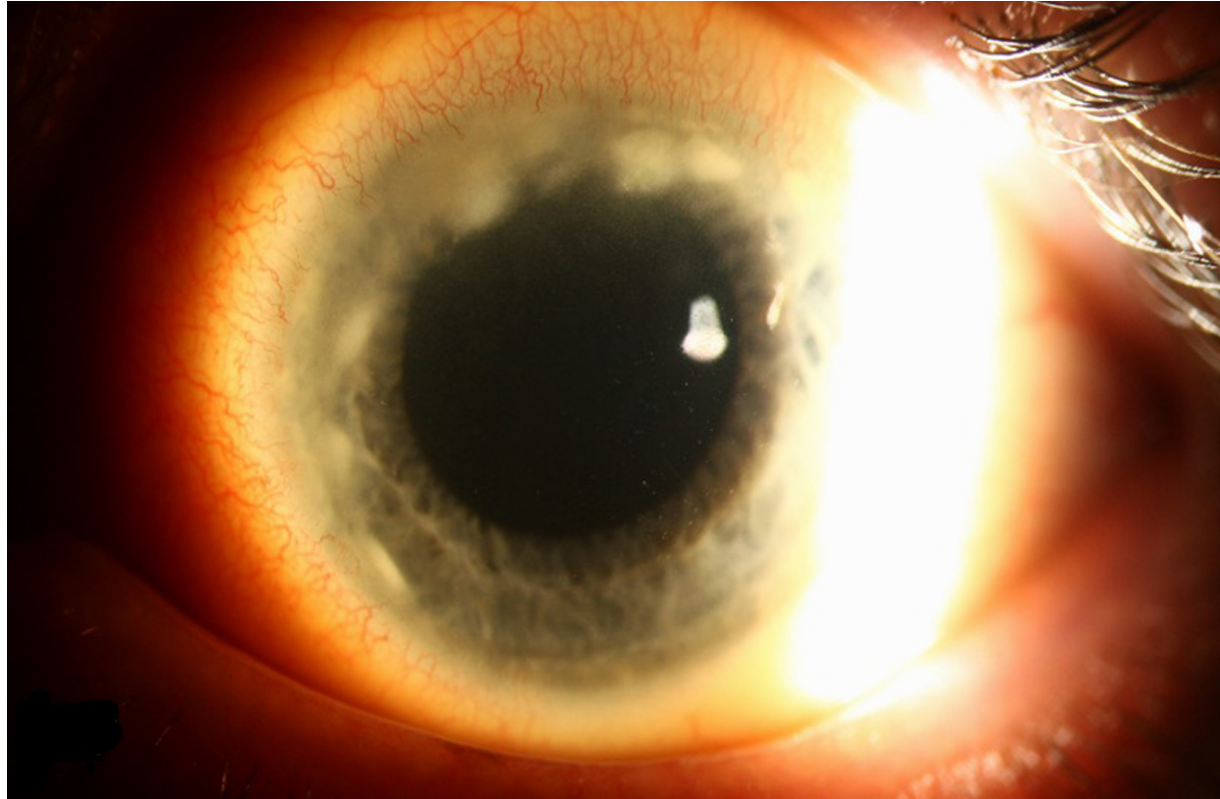
Tall, wide beam angled at limbus

Low mag

A ring of light will appear around the cornea. Light is absorbed and then scattered throughout the cornea to reveal corneal opacities

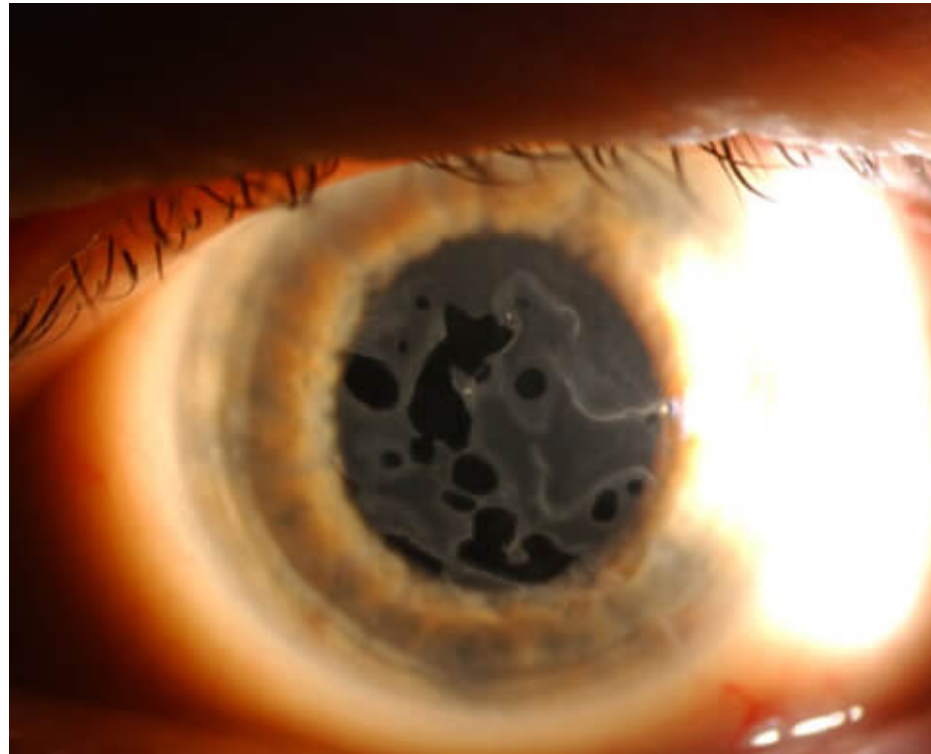
Sclerotic scatter

Salzmann's nodules/corneal scars



Sclerotic scatter

ABMD (Anterior basement membrane dystrophy)



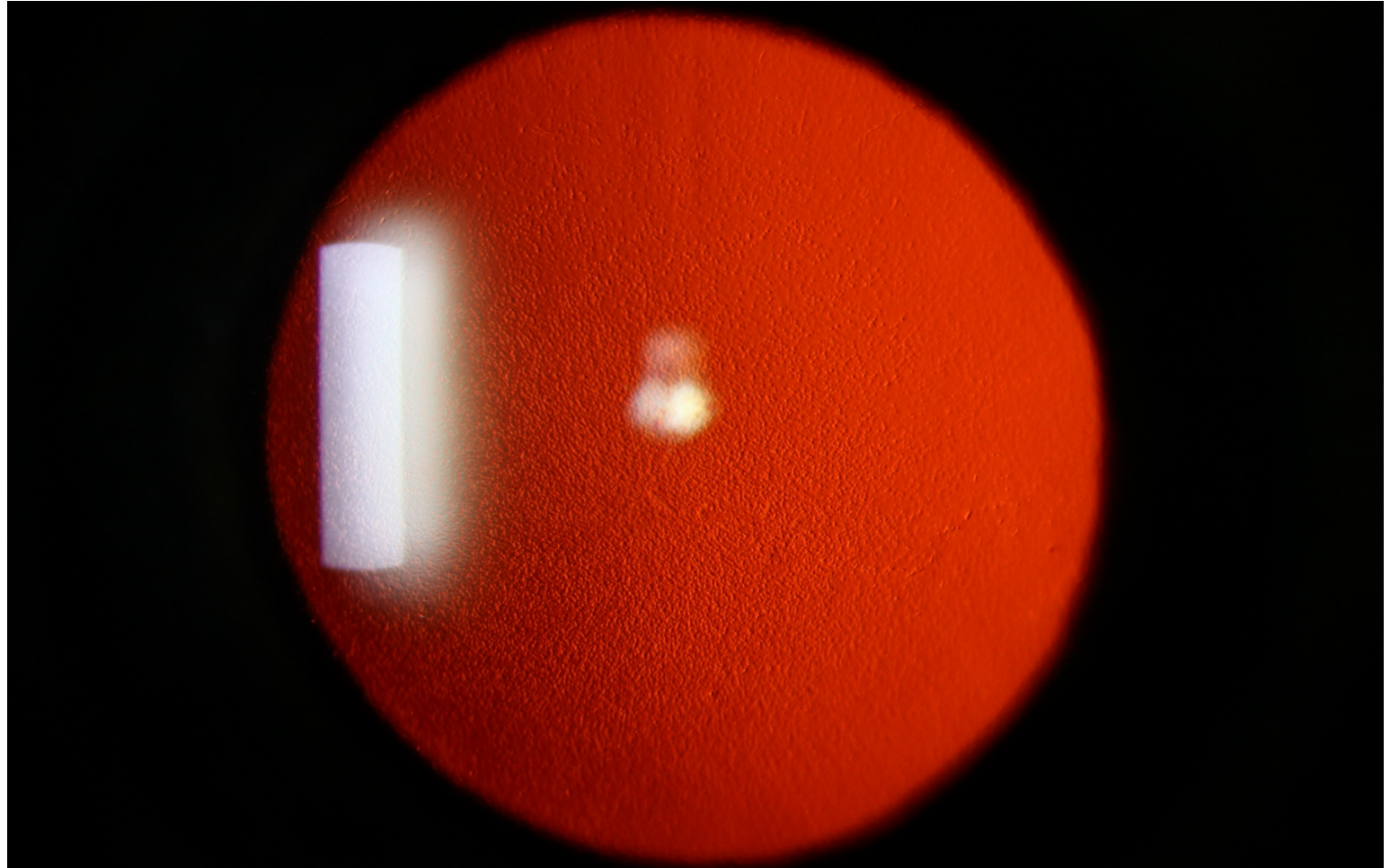
Retroillumination

Narrow beam of light through pupil

Red reflex – light is reflected off of the retina

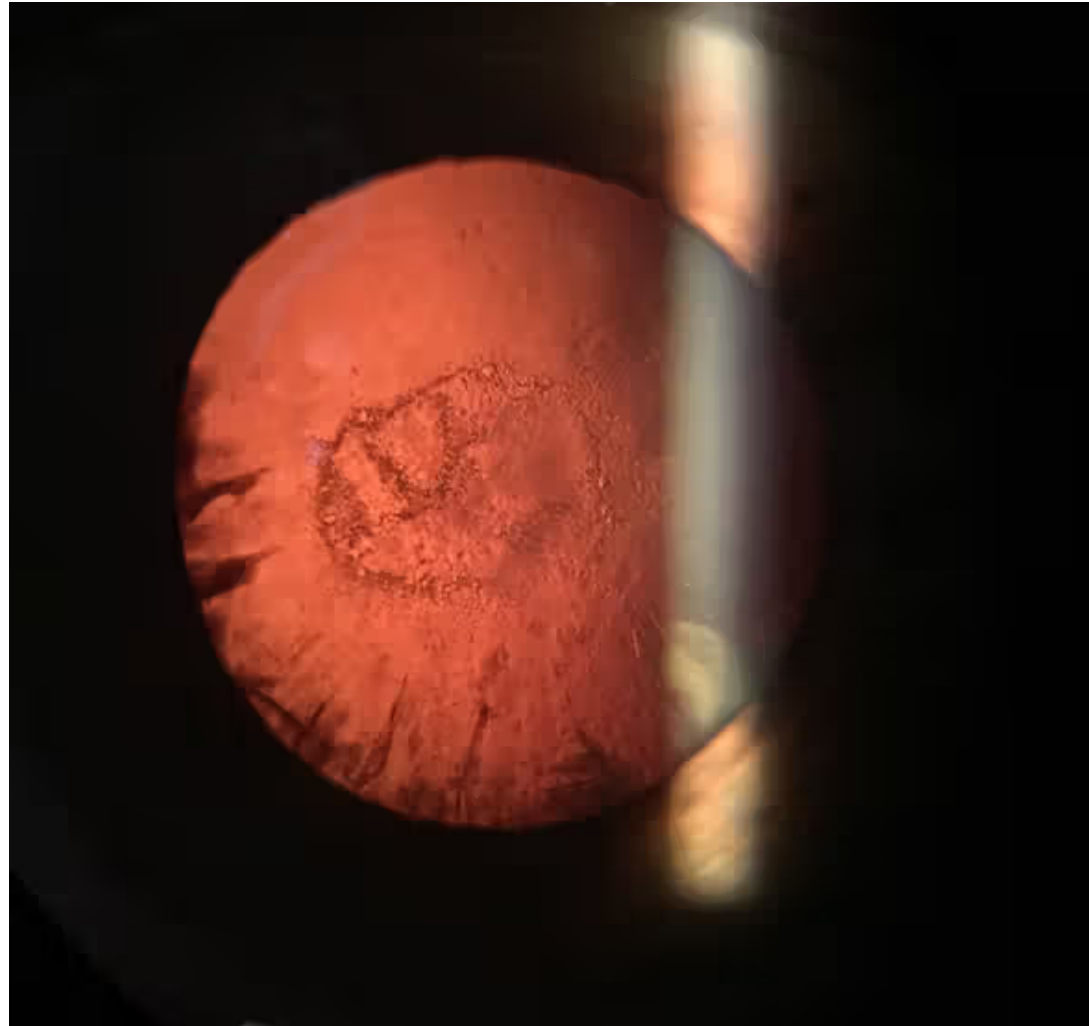
Retroillumination

Fuchs' corneal dystrophy



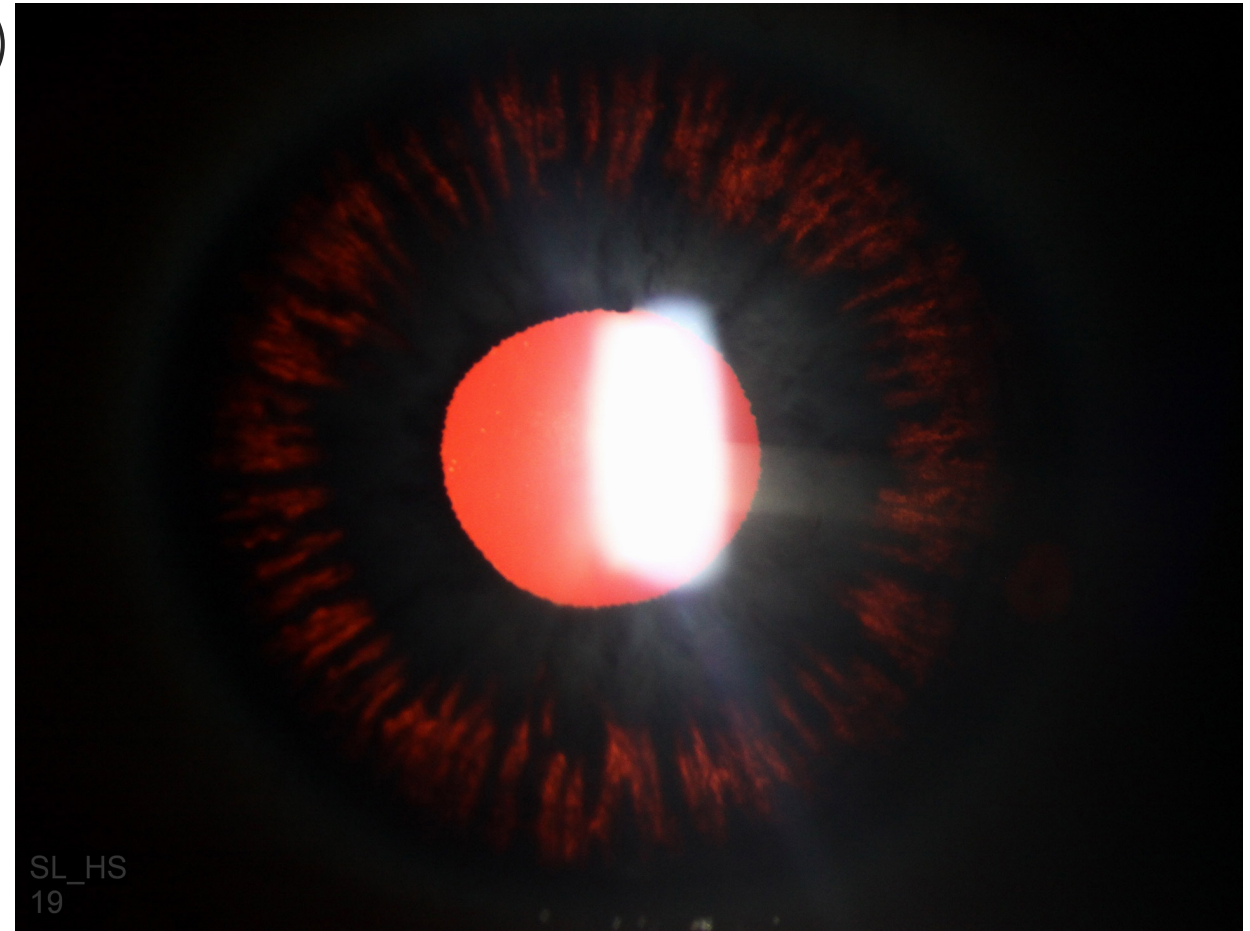
Retroillumination

PSC



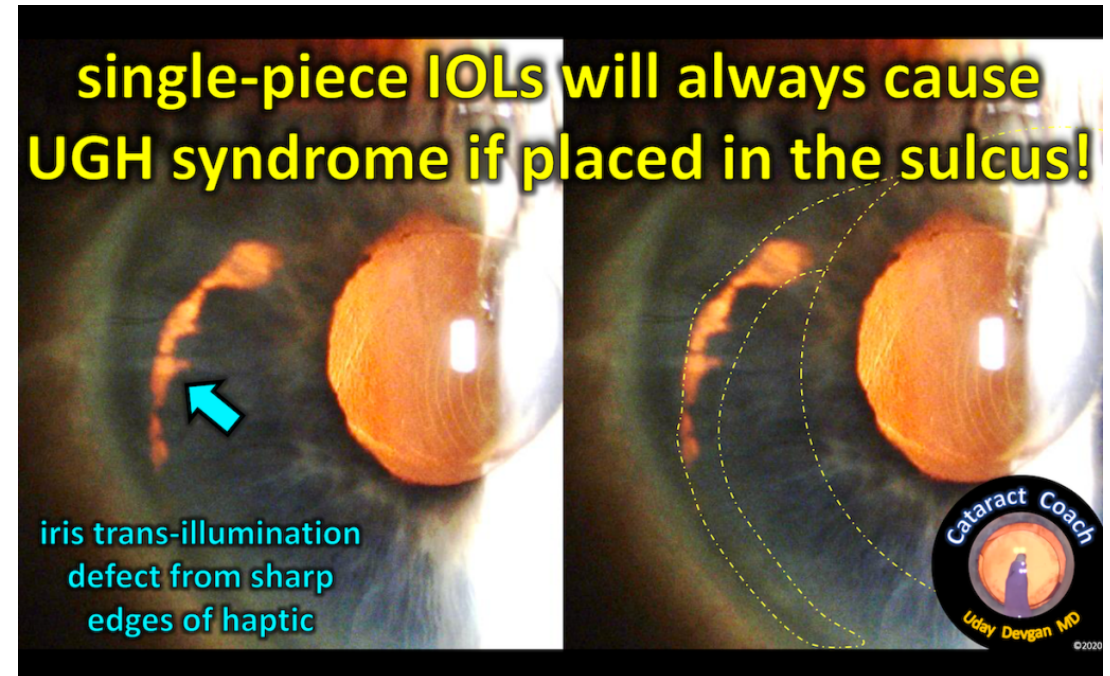
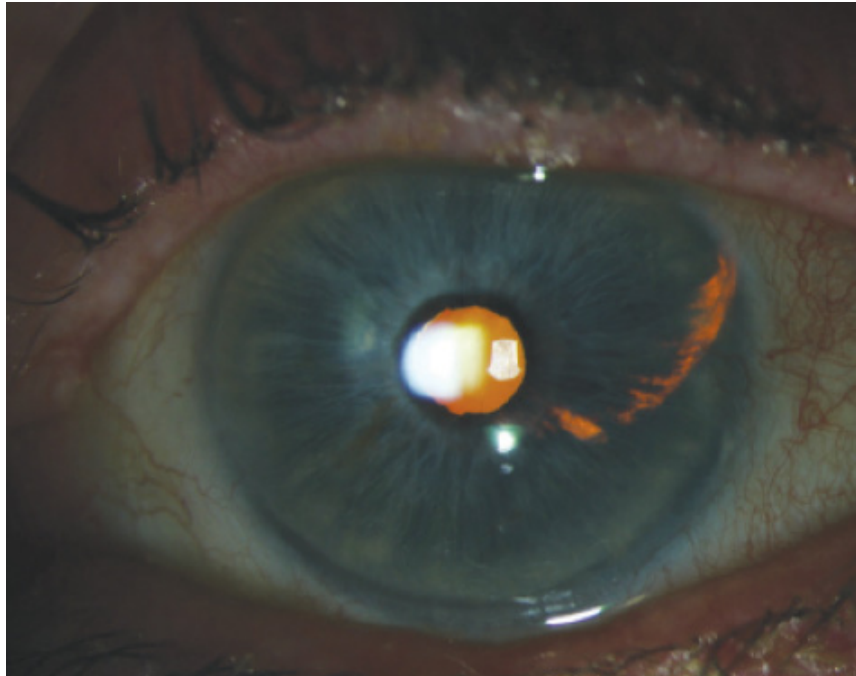
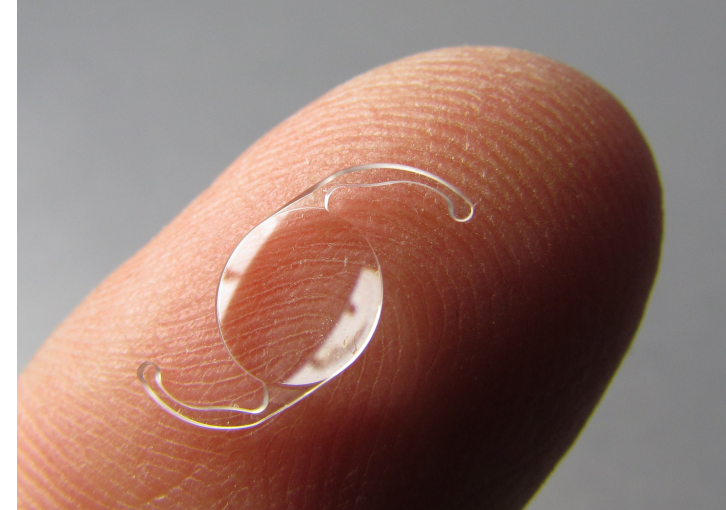
Retroillumination

Iris TID's (ie pigment dispersion syndrome)



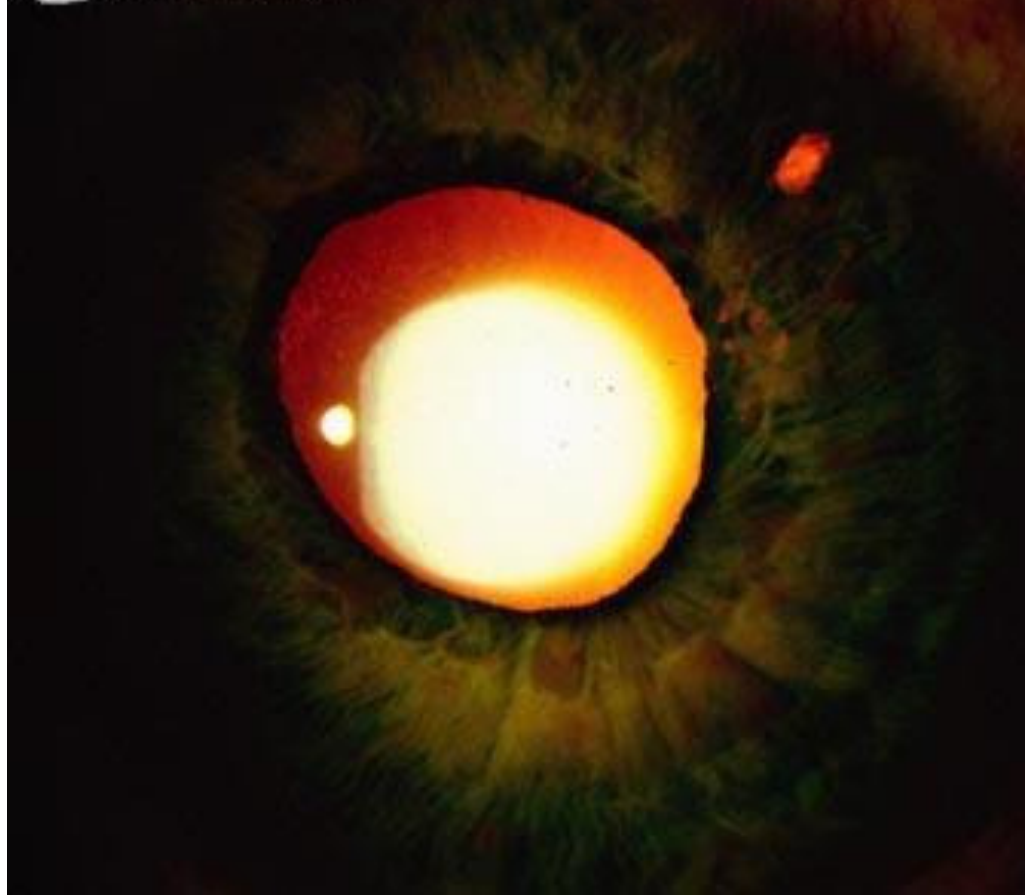
Retroillumination

UGH syndrome



Retroillumination

Patent LPI

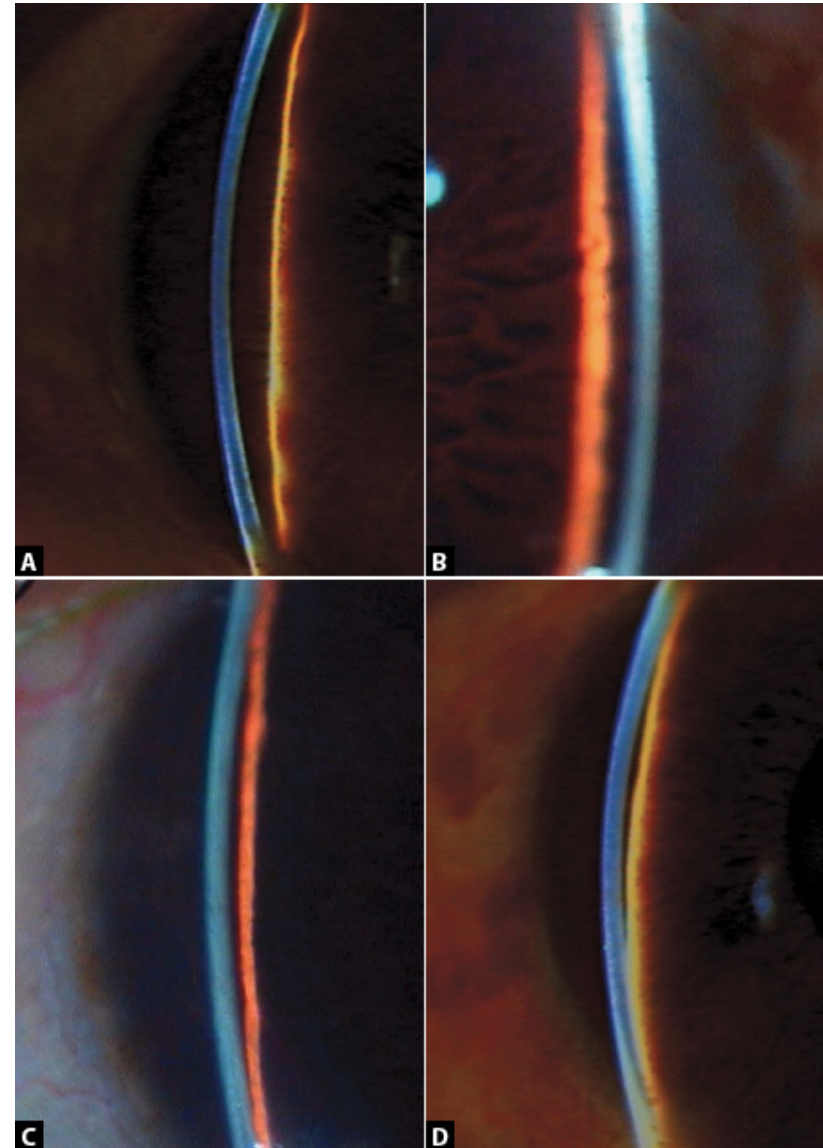


Van Herrick

To evaluate AC angle

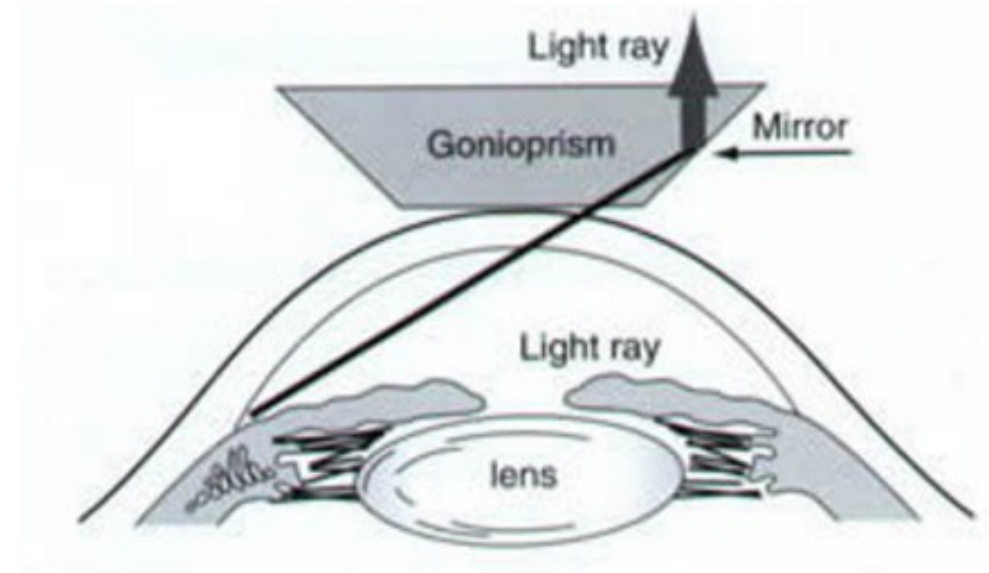
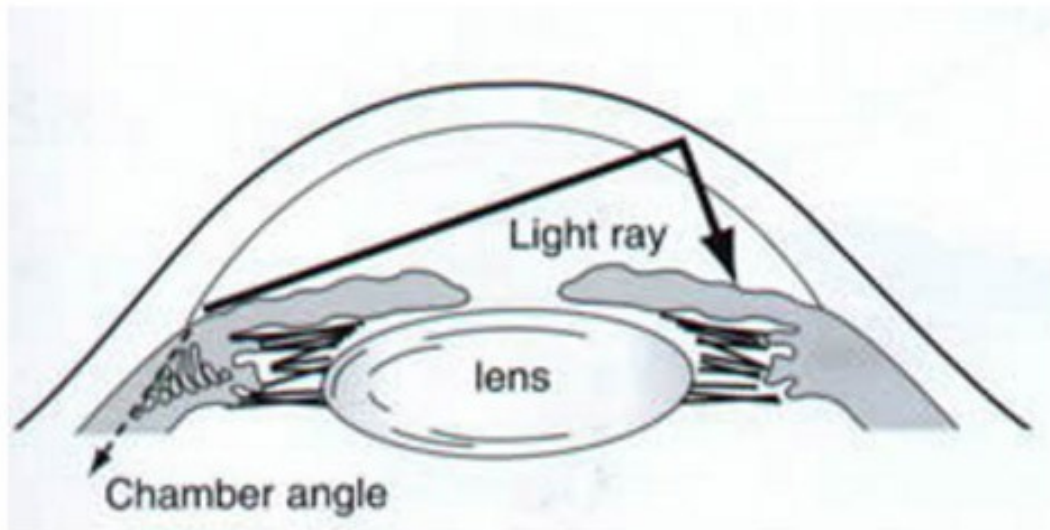
Narrow beam close to limbus

Van Herrick



Gonioscopy

What are they even looking at??



Gonioscopy

I Can't See This Stuff

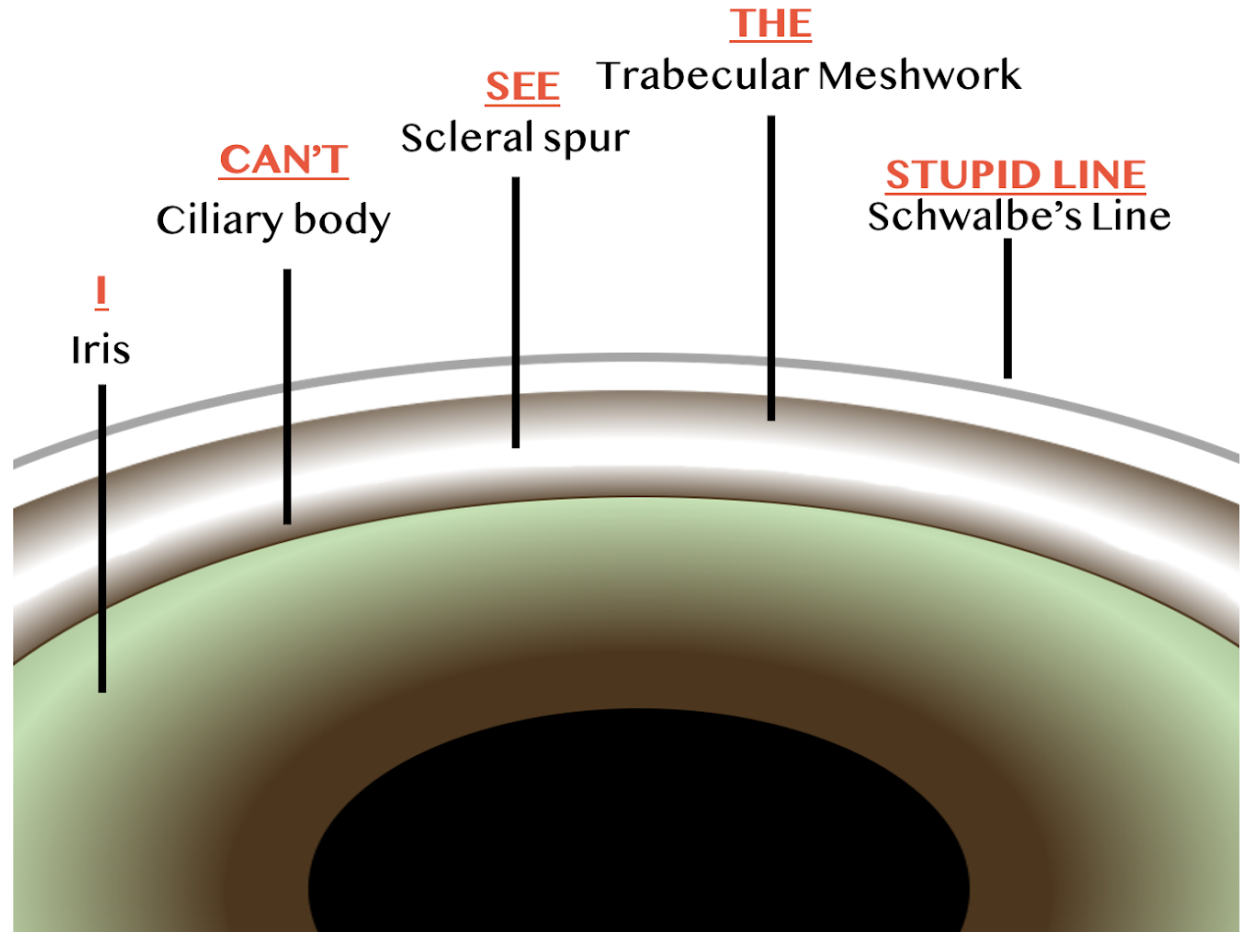
Iris

Ciliary Body

Scleral Spur

Trabecular Meshwork

Schwalbe's line



Gonioscopy

I Can't See This Stuff

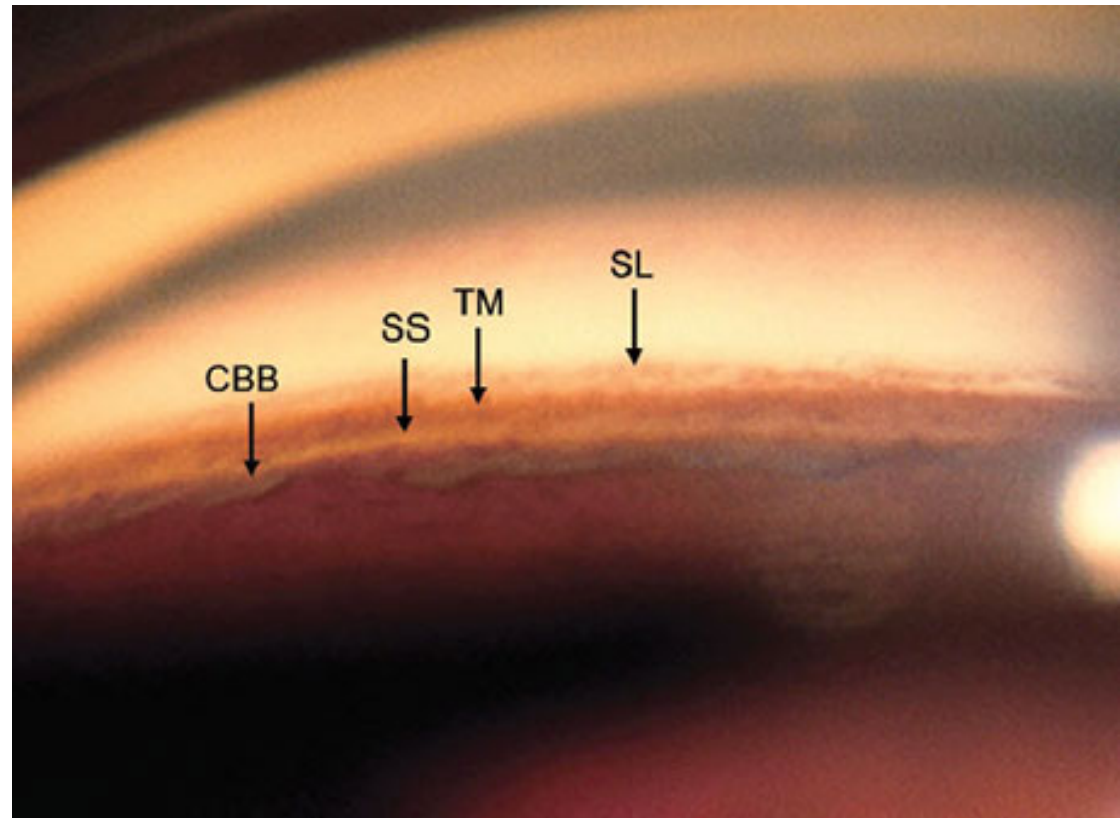
Iris

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Gonioscopy

I Can't See This Stuff

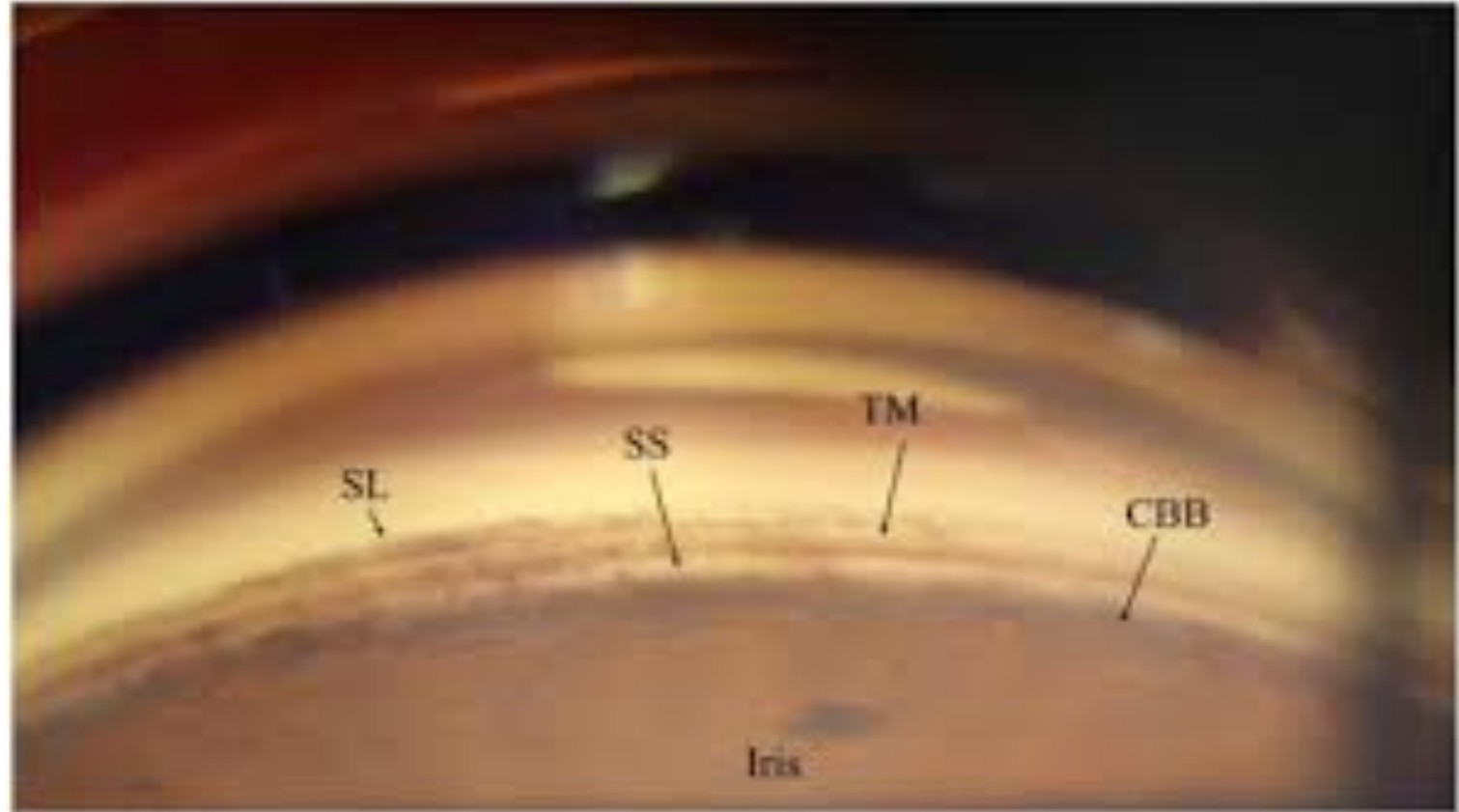
Iris

Ciliary Body

Scleral Spur

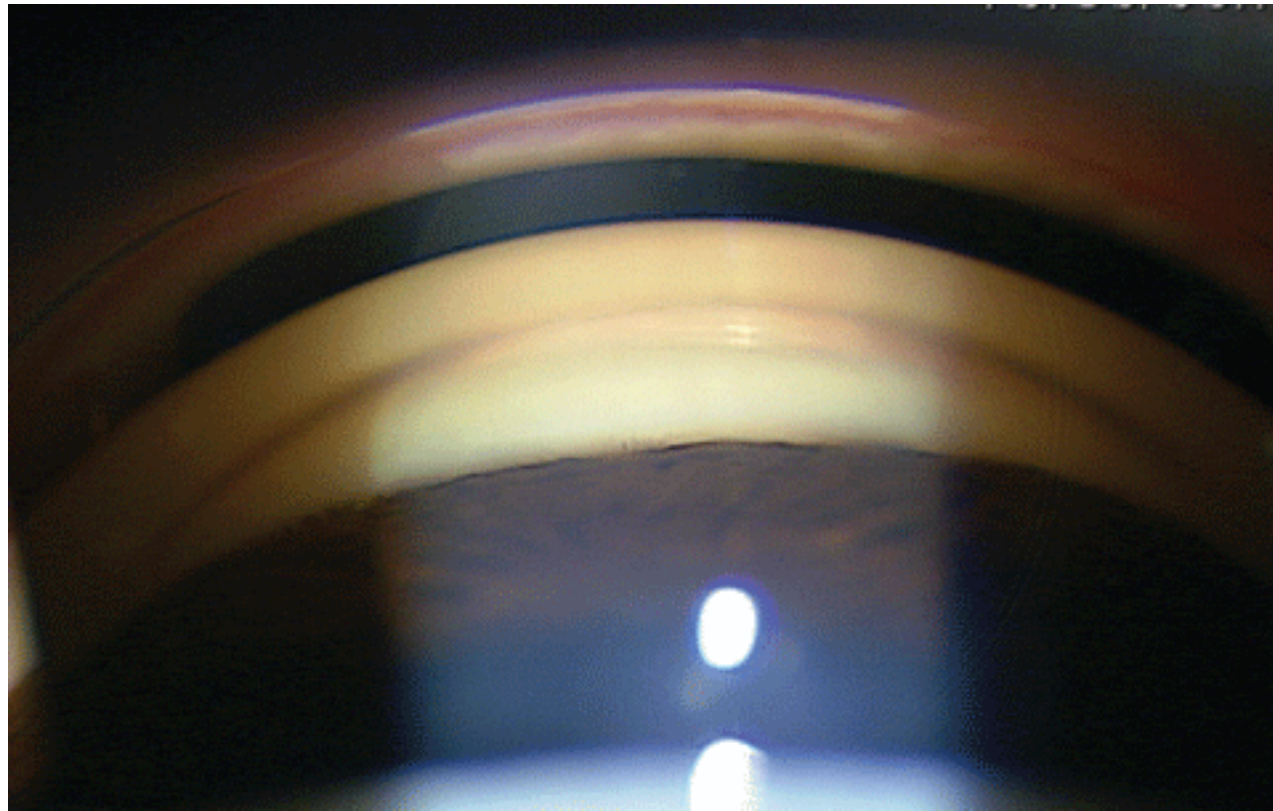
Trabecular Meshwork

Schwalbe's line



Goniopsocopy

Narrow angle
Need LPI



Gonioscopy

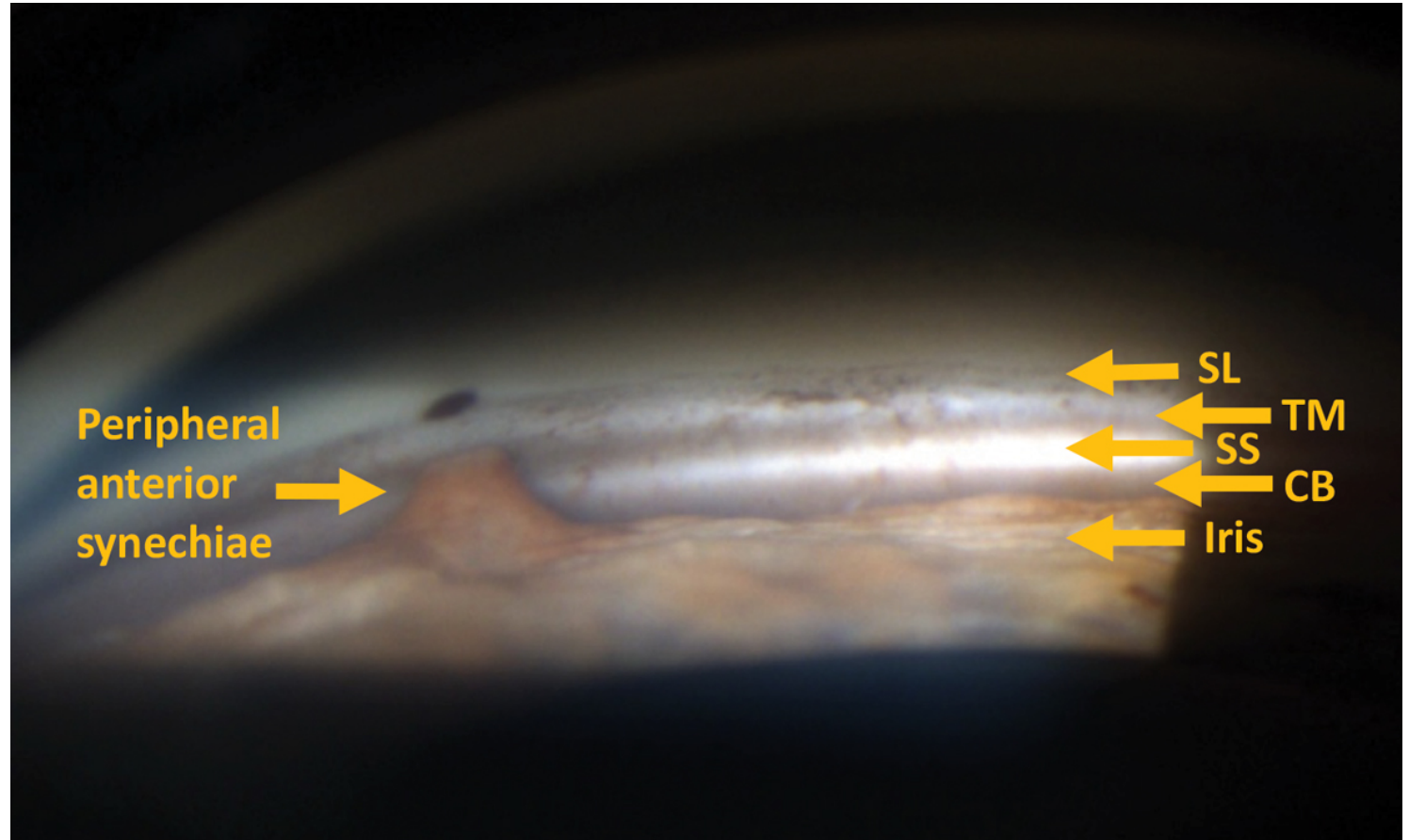
Peripheral anterior synechiae

Angle closure

Inflammation

Trauma

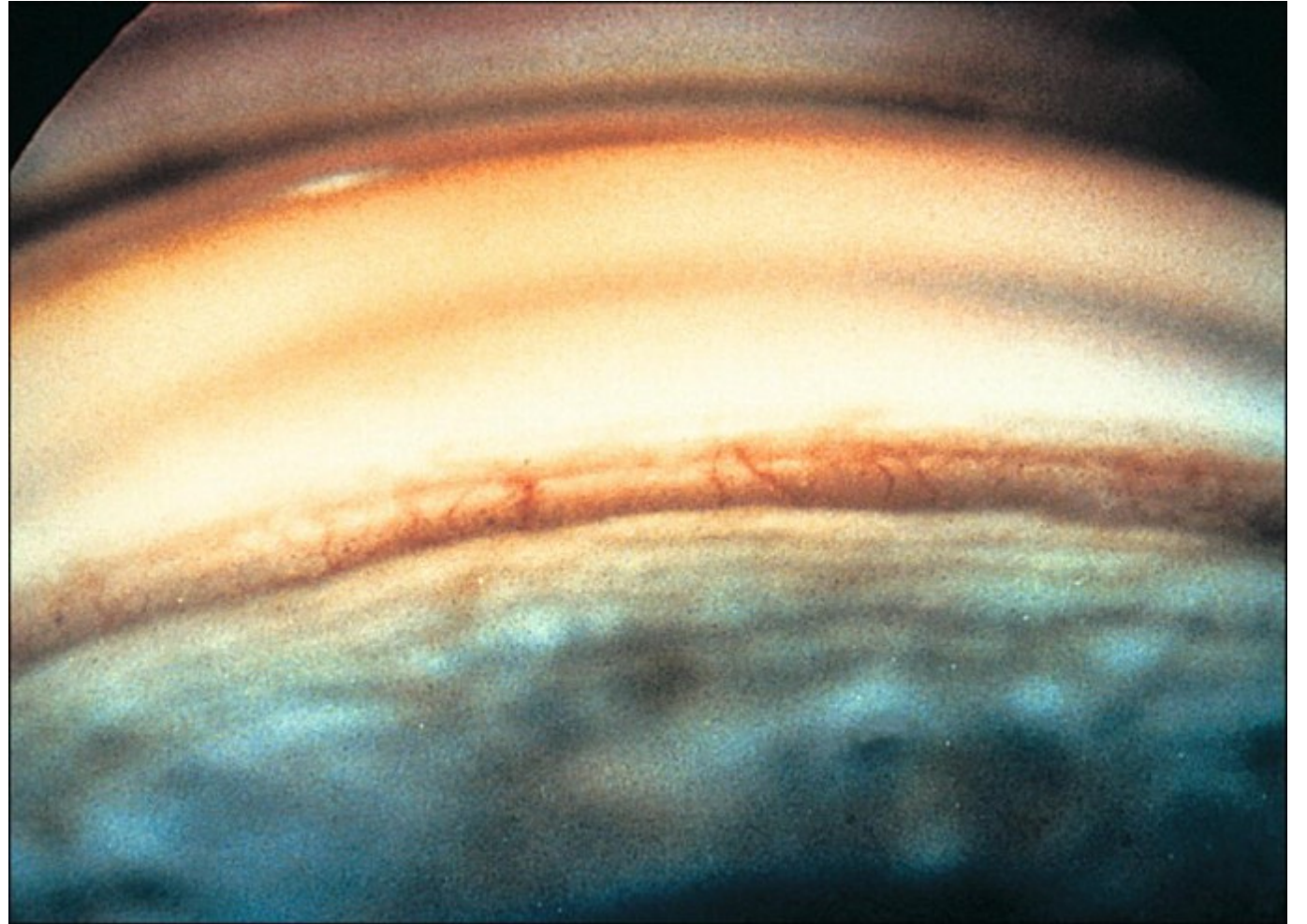
NV



Gonioscopy

Neovascular glaucoma

NVI

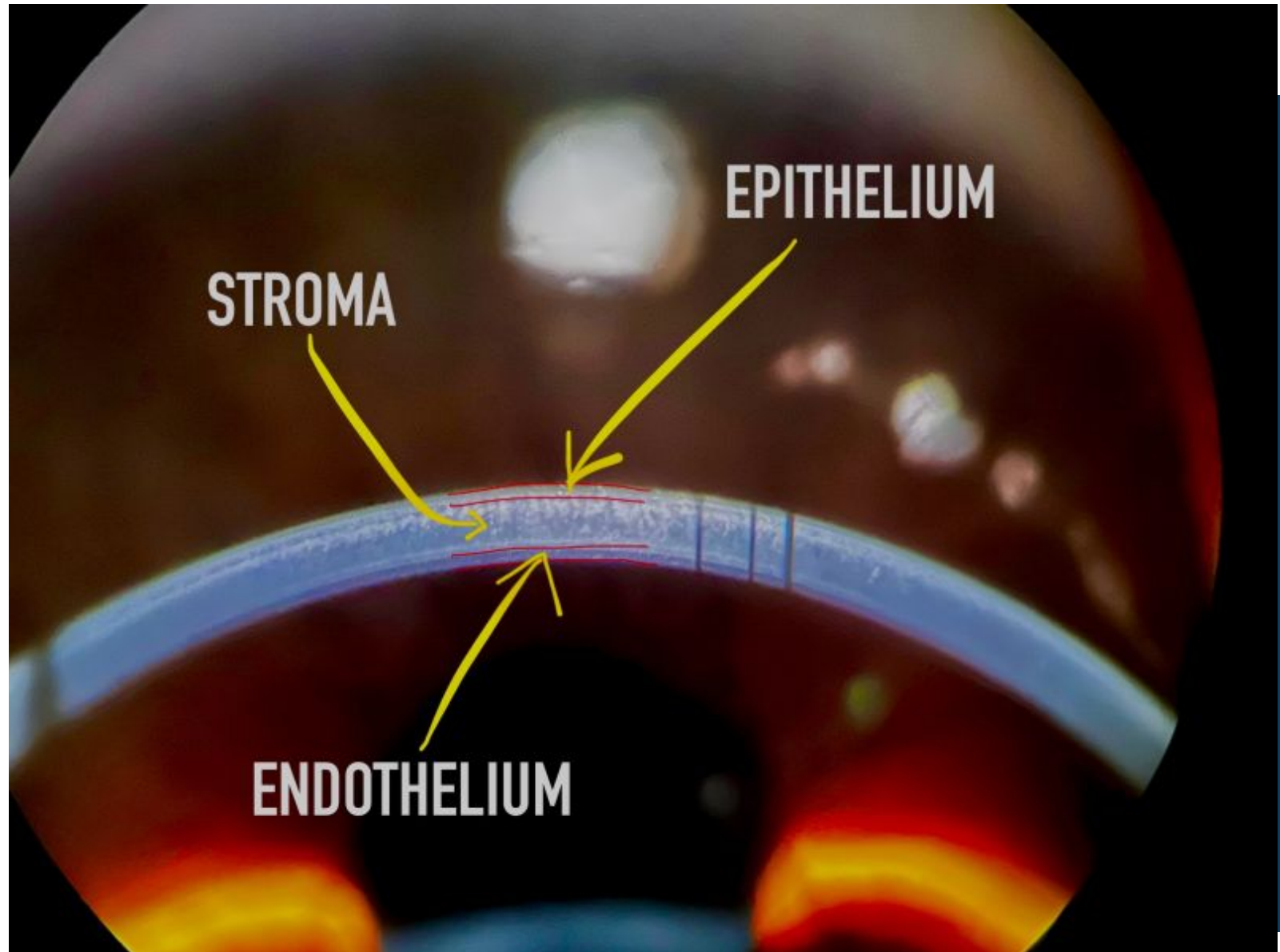


Cross-section

Thin beam

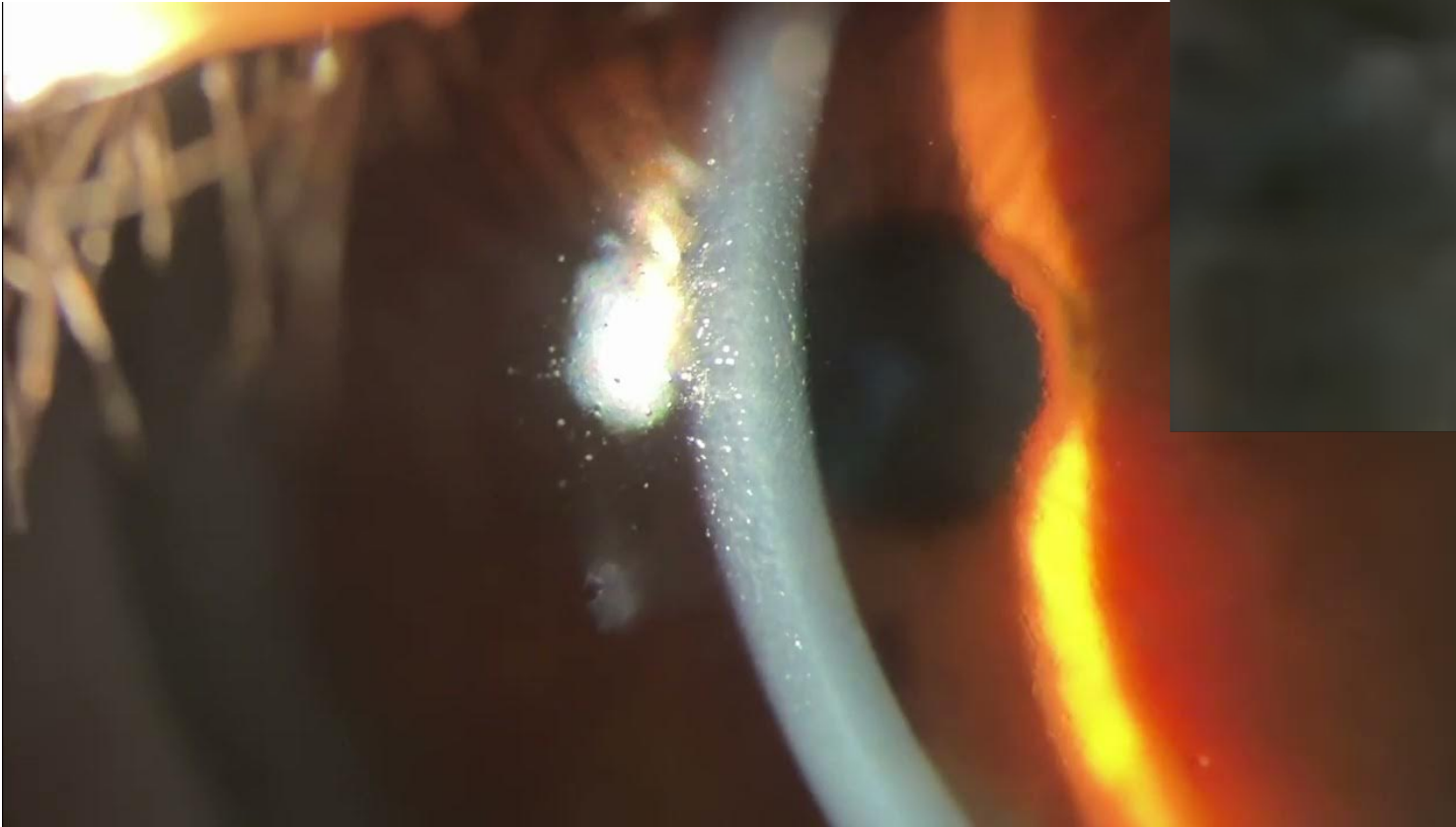
High mag

Layers of cornea



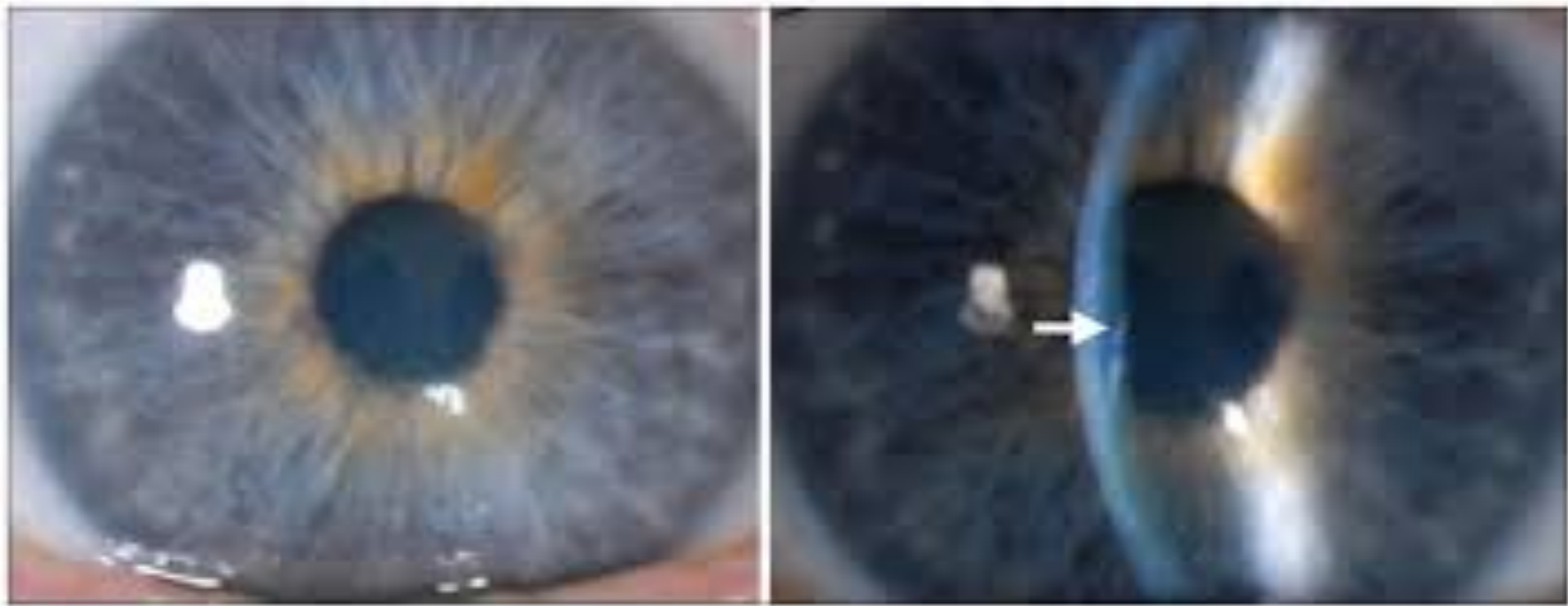
Cross-section

Fuchs' corneal dystrophy



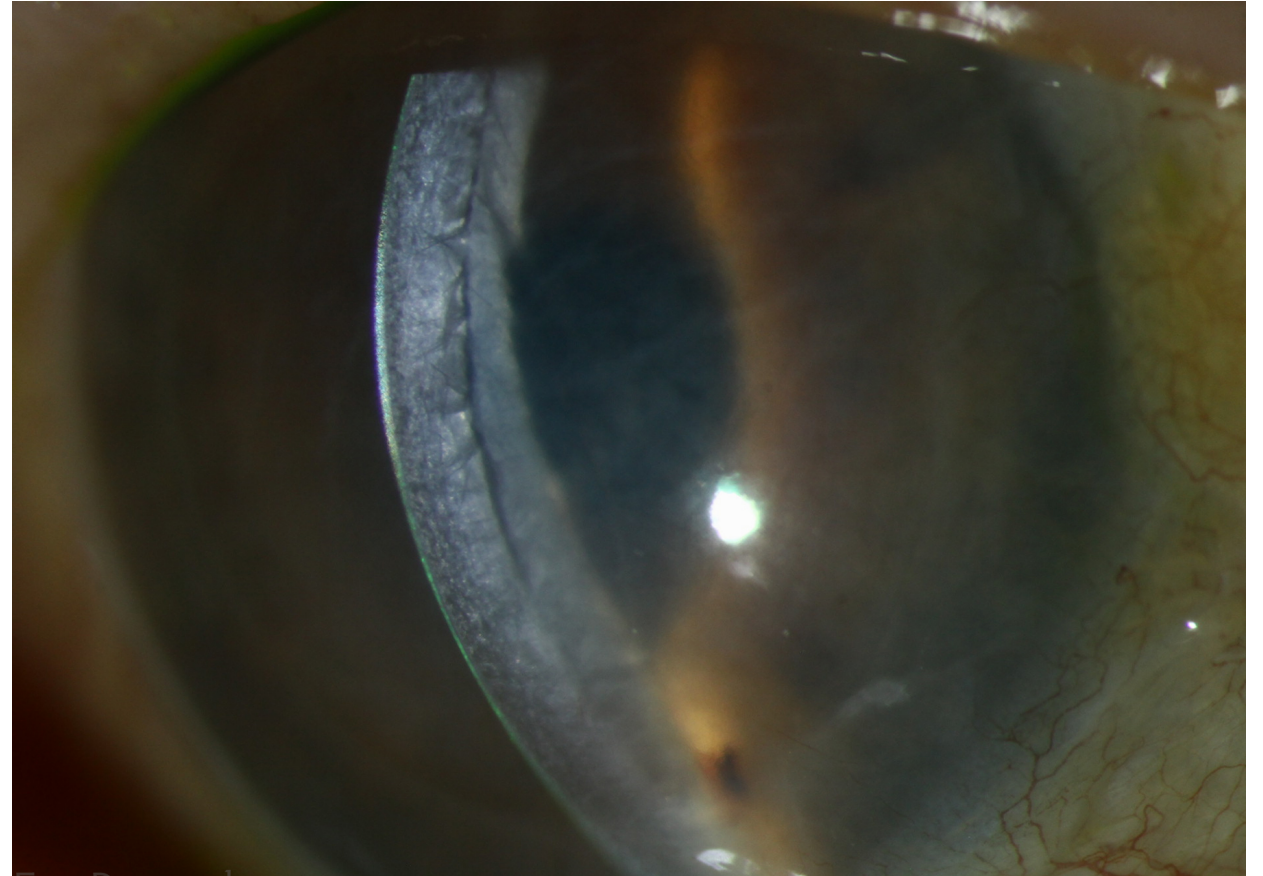
Cross-section

Corneal edema – Descemet's folds



Cross-section

Detachment of corneal transplant
Interface fluid



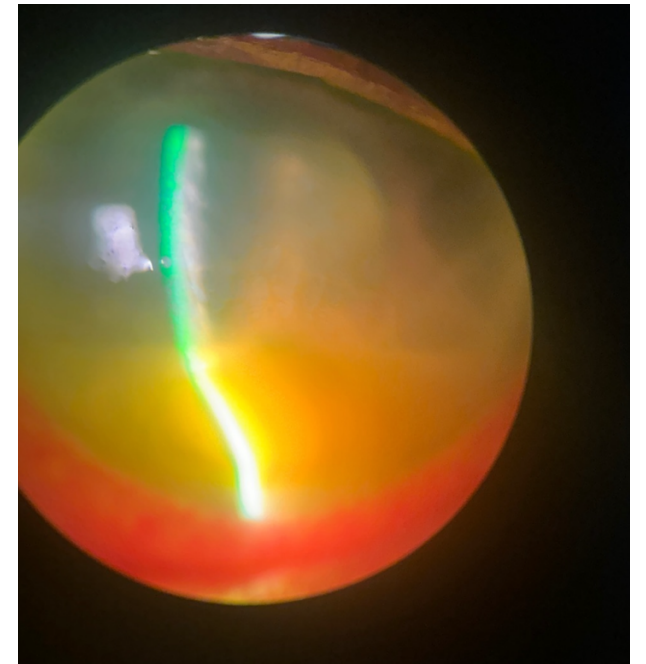
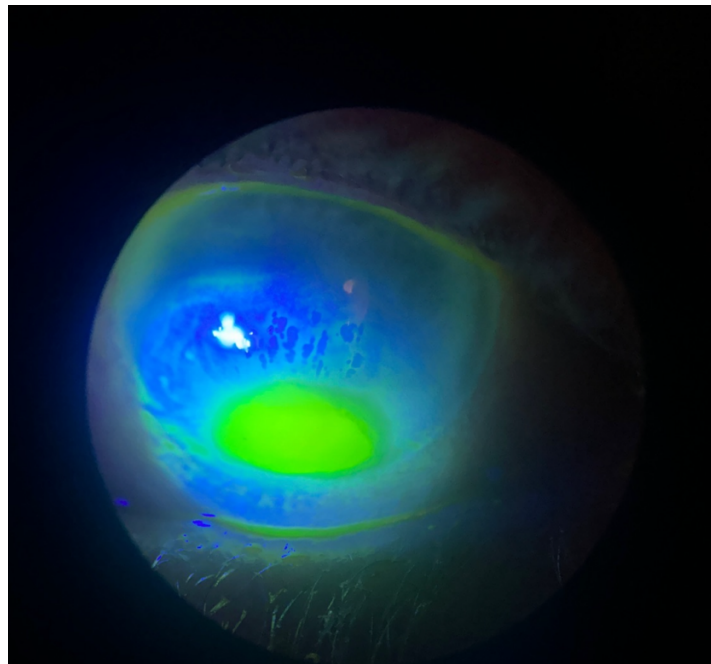
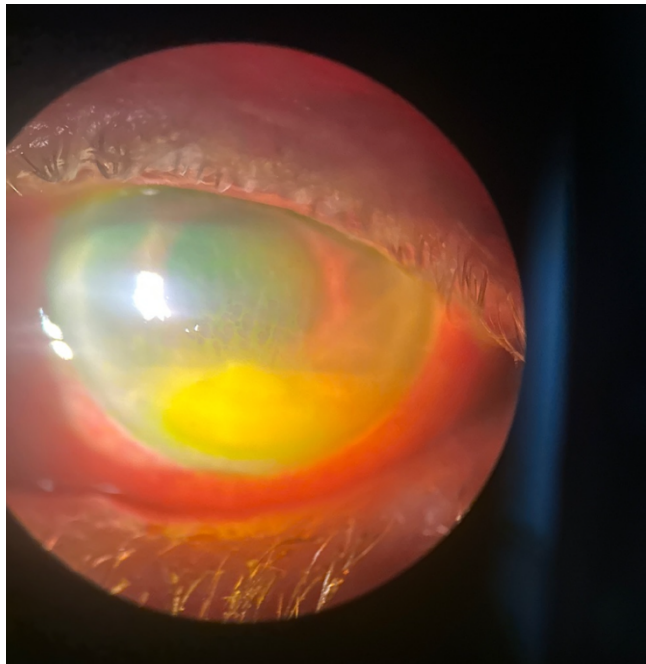
Cross-section

Attached DSAEK



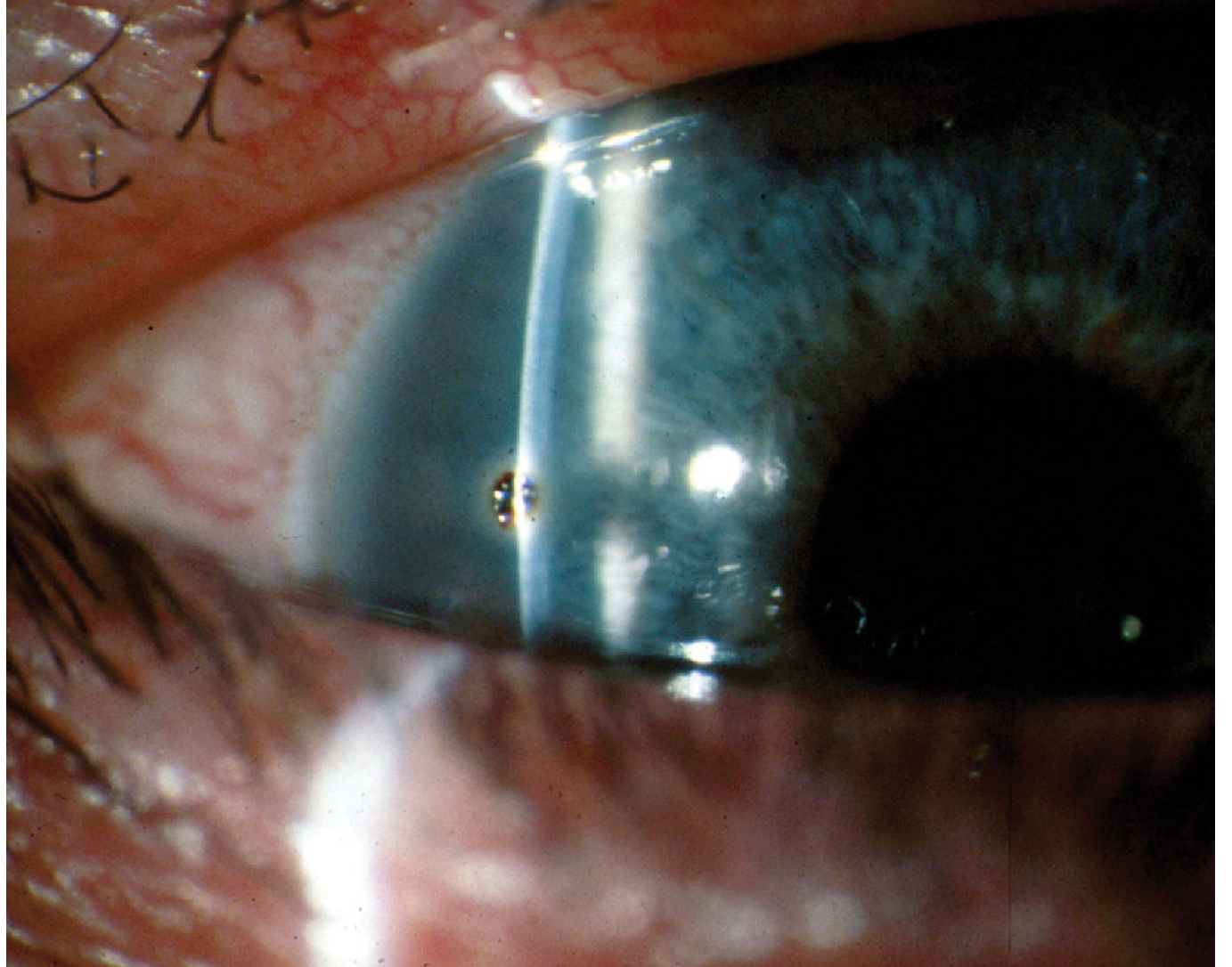
Cross-section

Corneal thinning



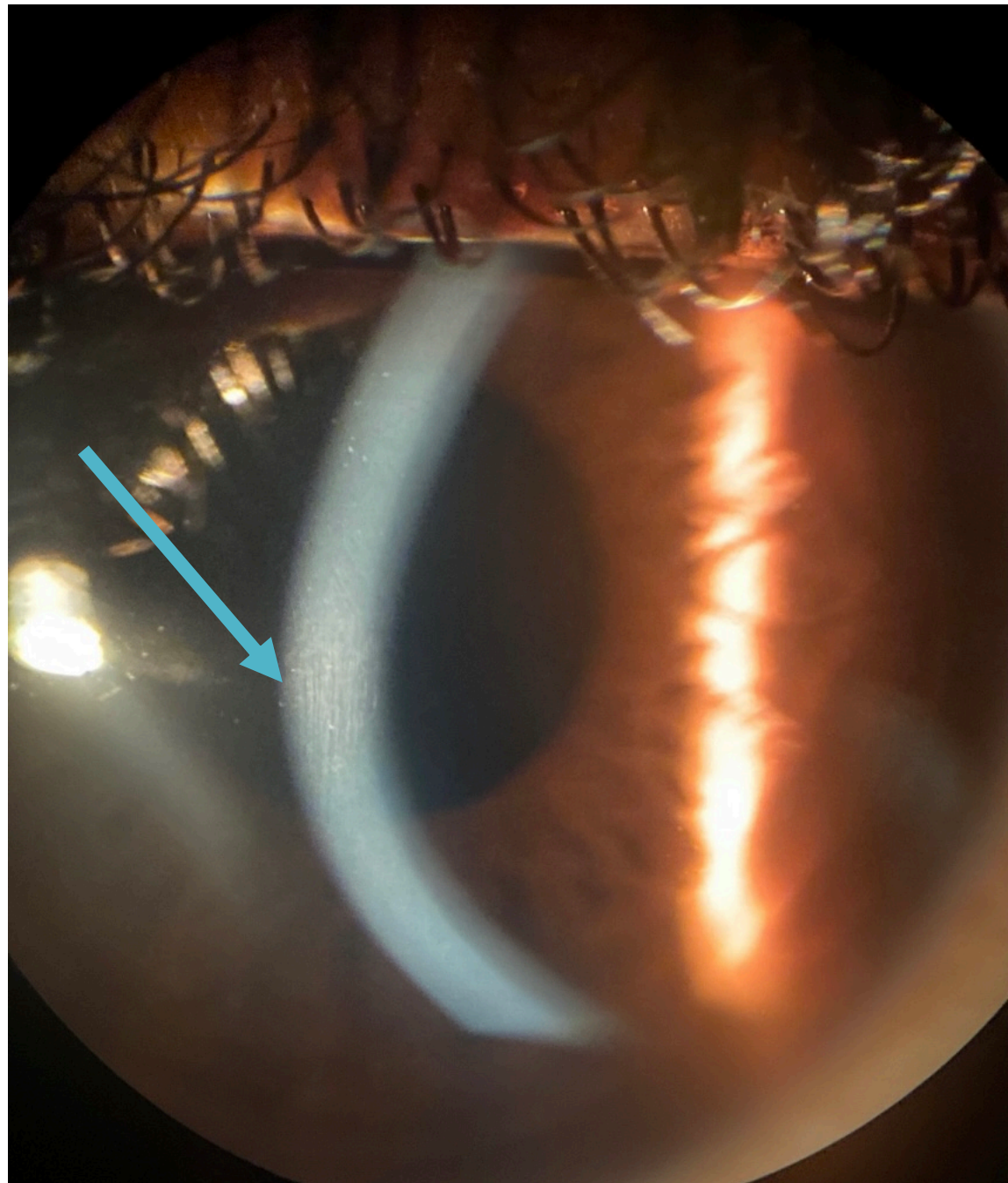
Cross-section

Depth of
Scars
Infiltrate
Foreign body



Cross-section

Keratoconus
Vogt striae



Light filters

Cobalt blue – enhances view of fluorescein dye; used for staining and applanation

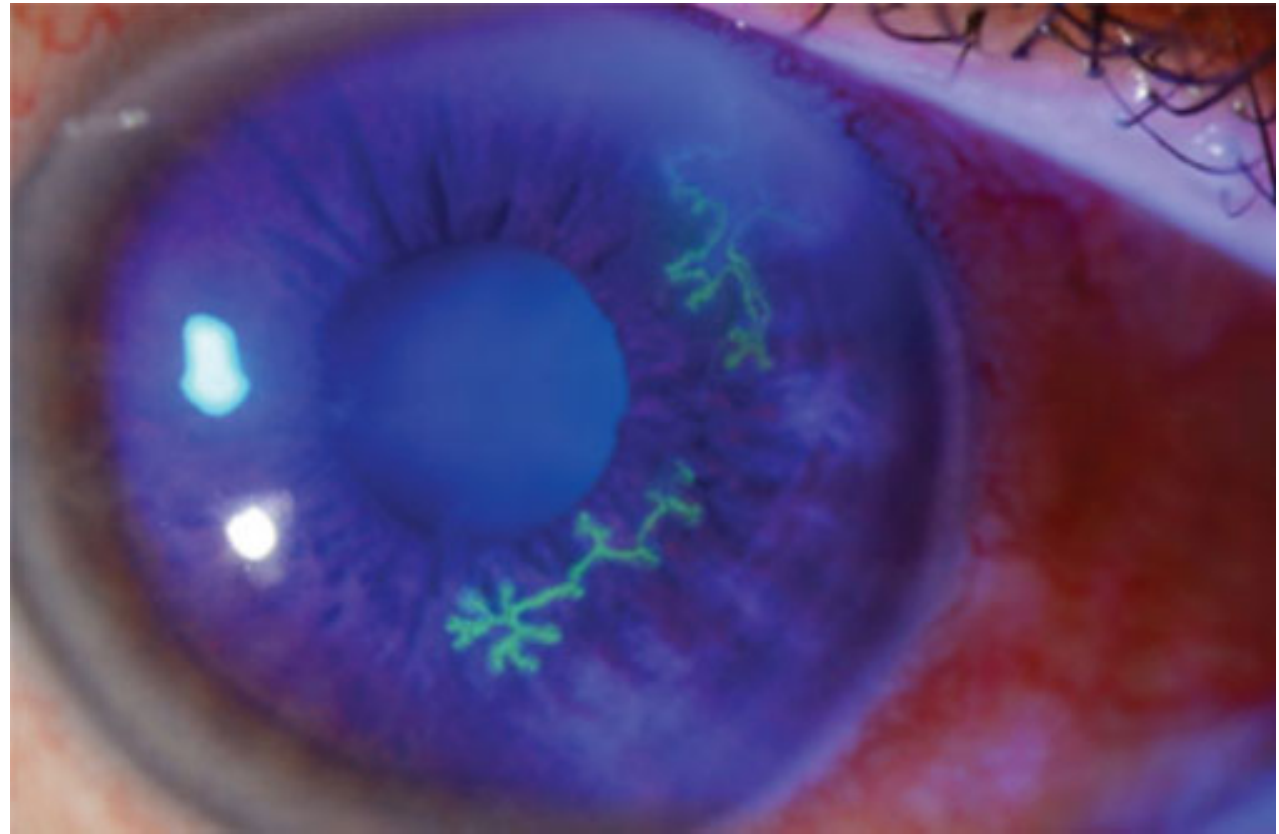
Red free – enhances view of blood vessels and hemorrhages

Cobalt blue

Herpes

Adults in US: 50-90% of adults have antibodies to HSV-1

Incidence of ocular HSV is ~0.15%

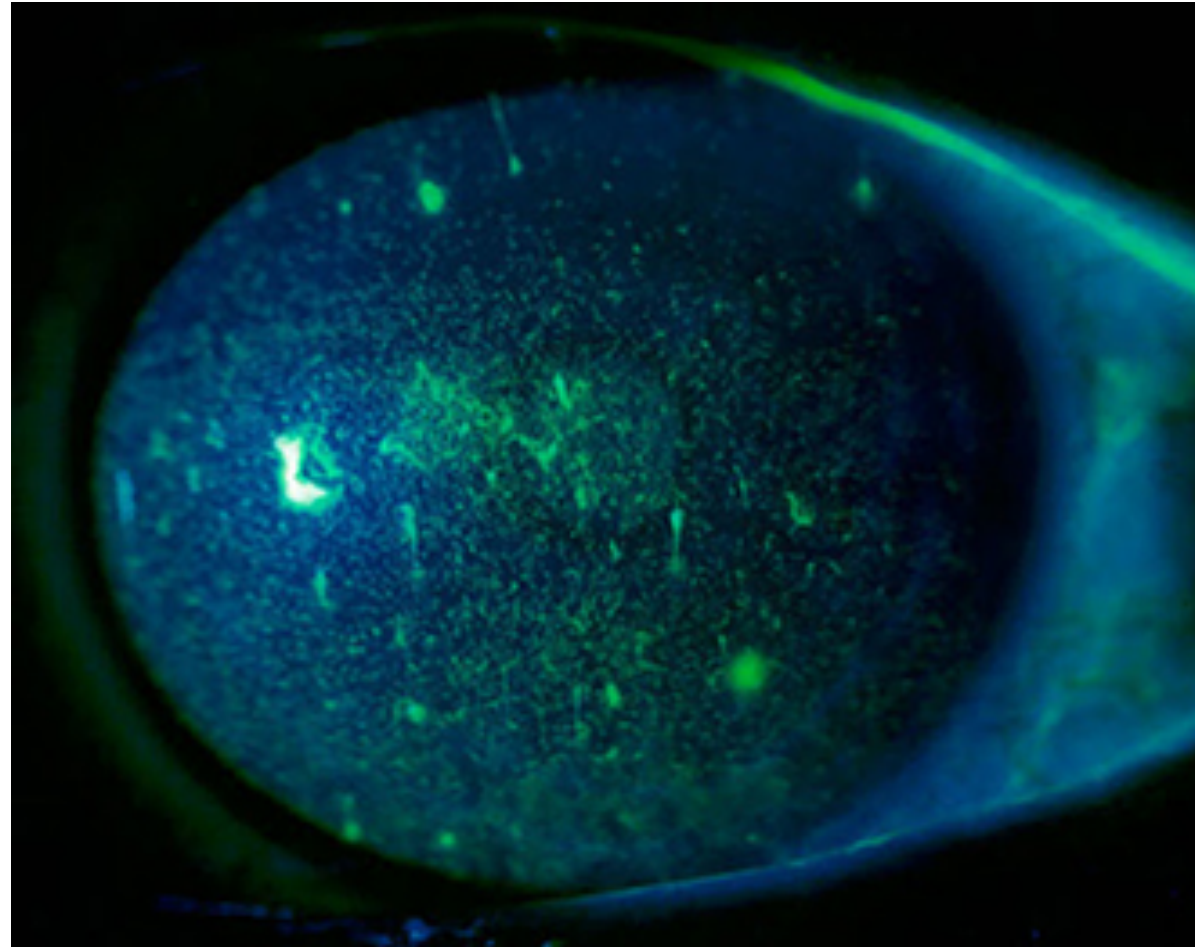


Cobalt blue

Dry eye

PEE

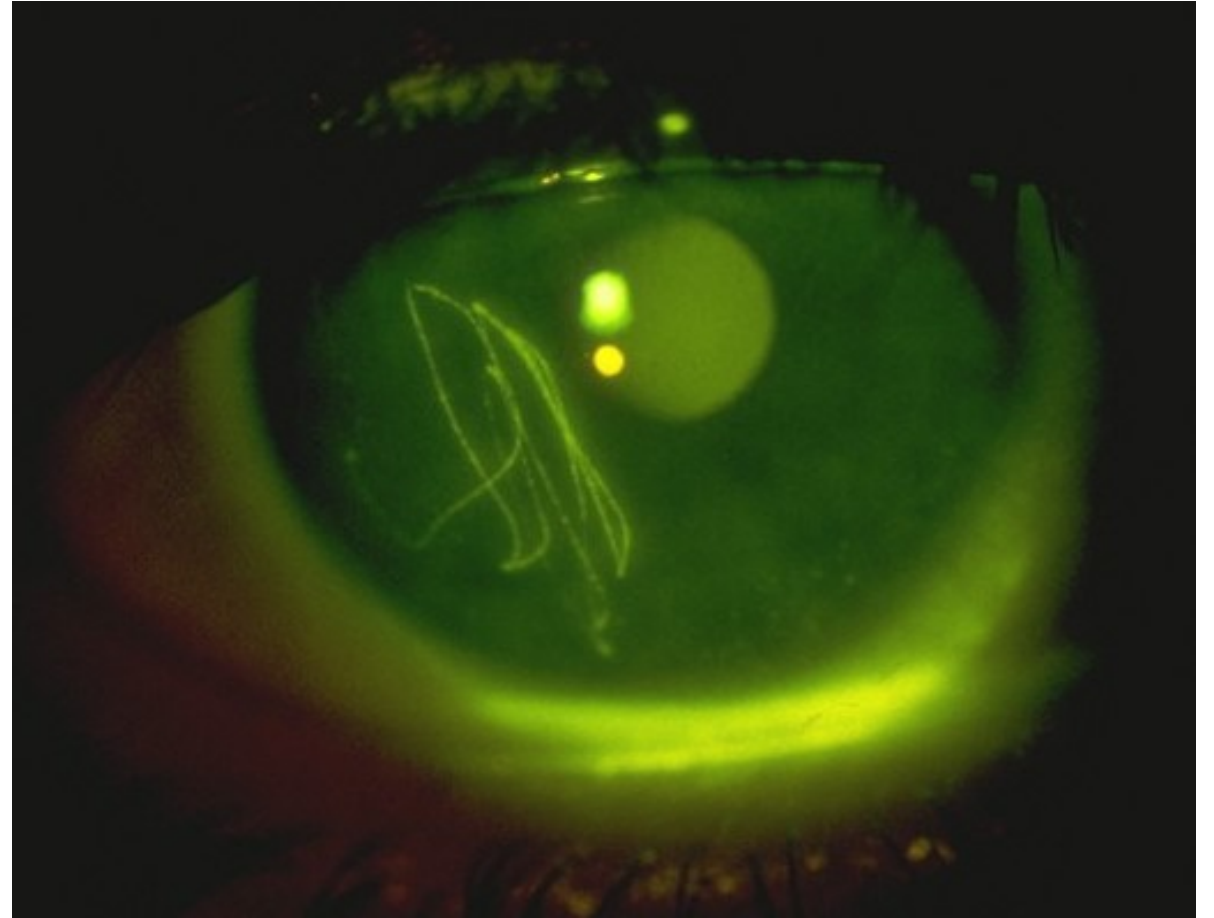
Filaments



Cobalt blue

Vertical scratches

due to FB under eyelid



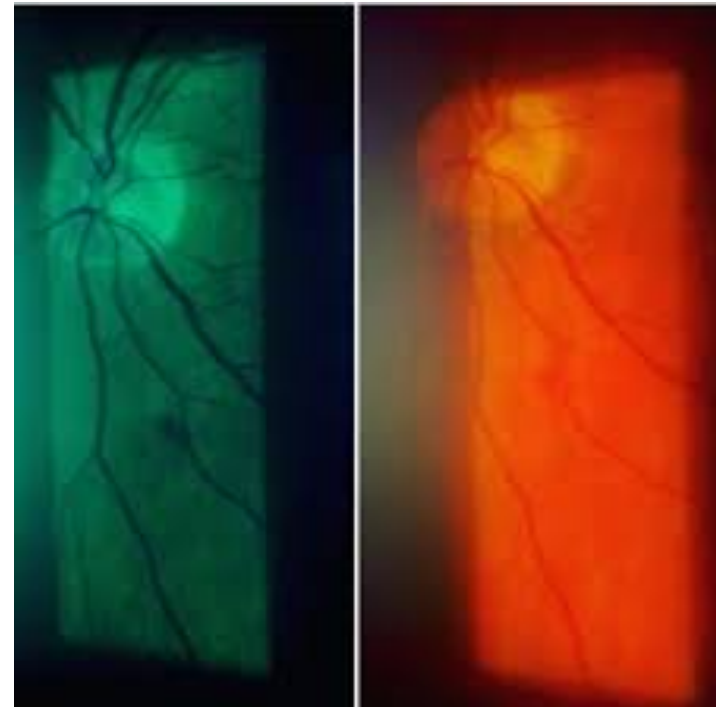
Red free

Green light

Obscures anything that is red (ie blood vessels/hemorrhages appear black)

Diabetic retinopathy

BRVO



Conical beam

Short, thin beam

Highest light intensity

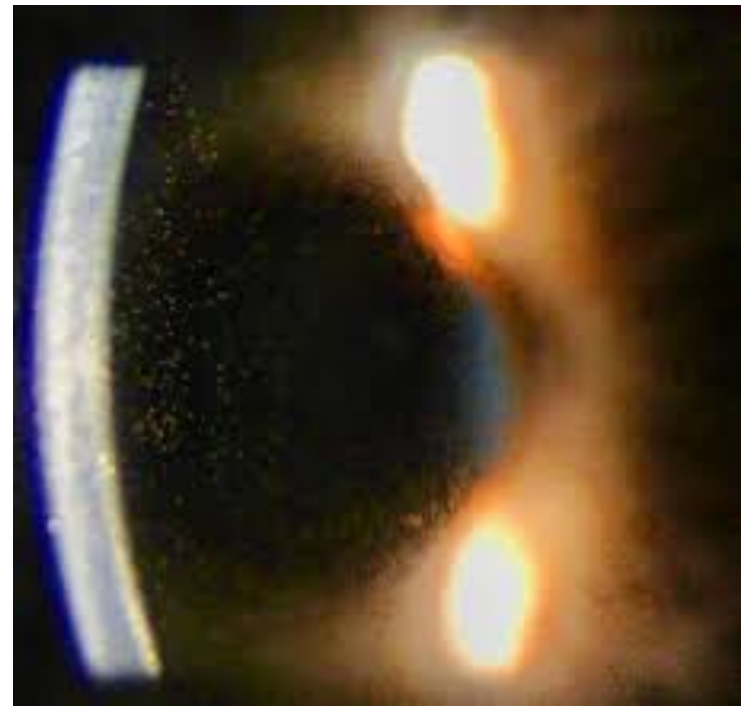
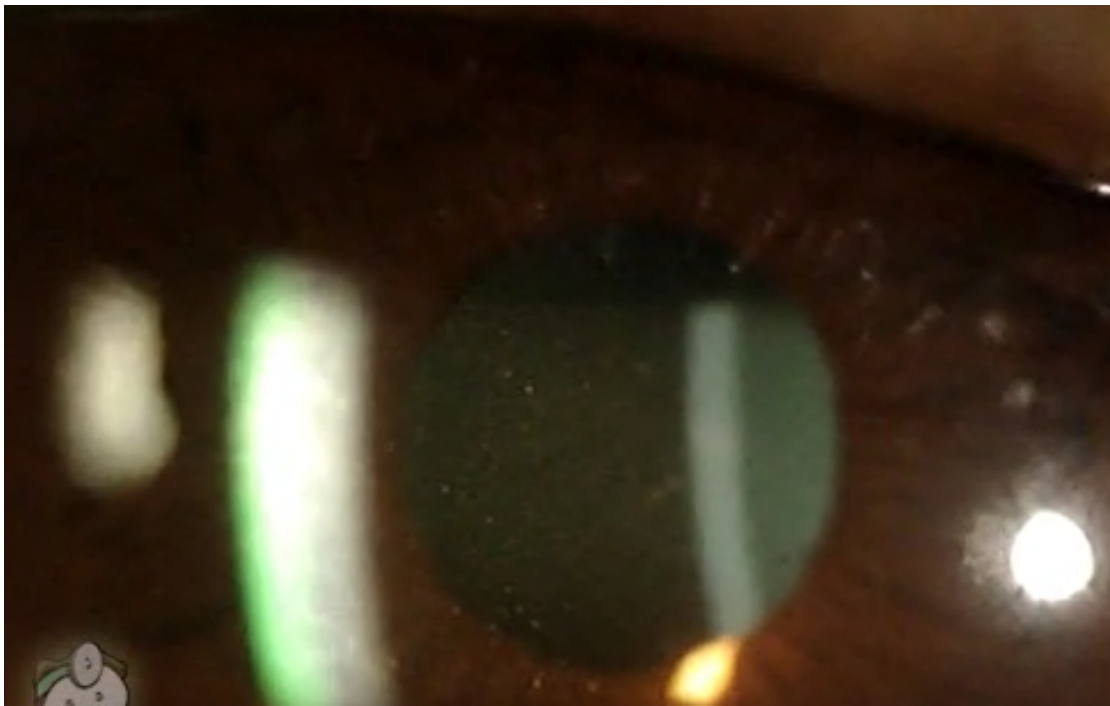
High mag

Focus beam between cornea and AC lens surface

Cell/flare

Conical beam

Cell/flare



Rule of Thumb

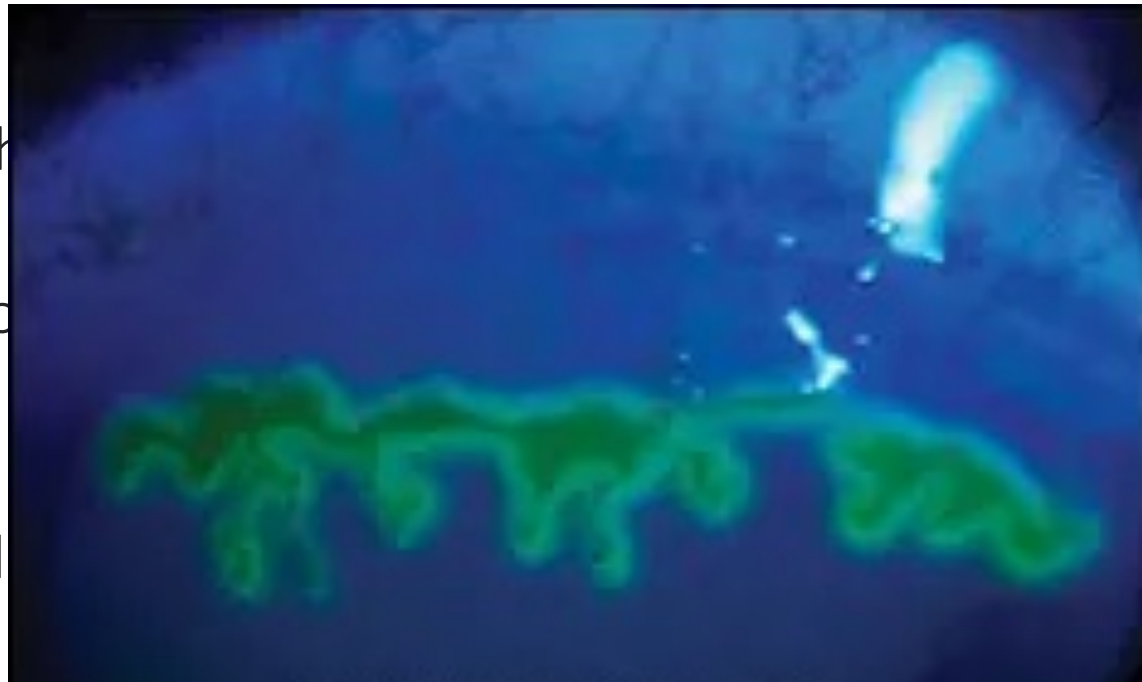
Decrease the beam width and/or height as you increase brightness

Highest intensity light

Always angled

Also narrow and/or

Always pull the eye



THANK YOU