

Imaging Technology in Eye Care

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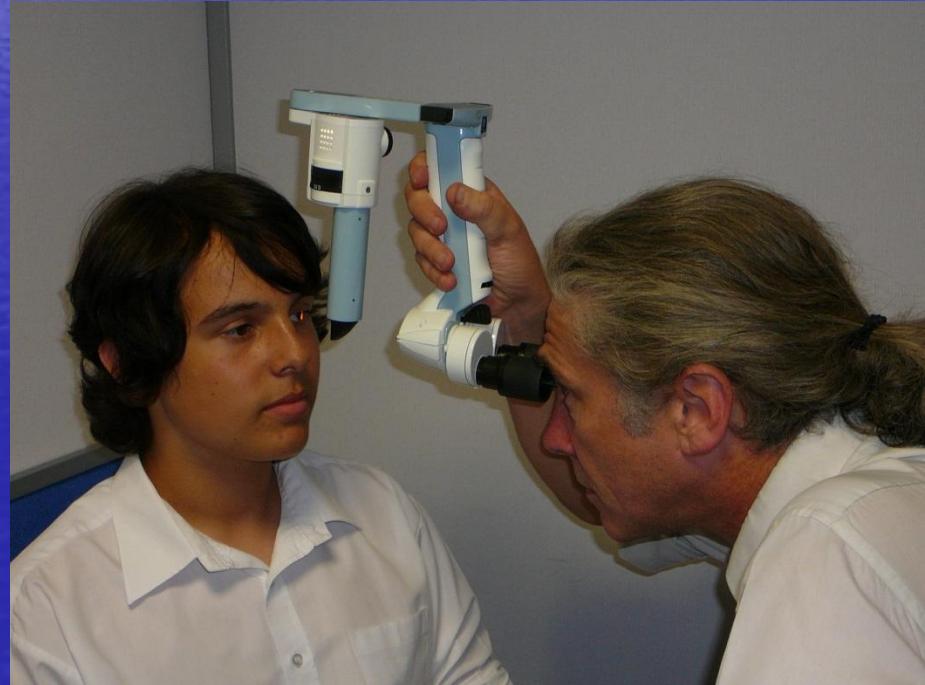
VISITING CLINICIAN RNIB/ACTION FOR THE BLIND

DOCET ADVISER. CLINICAL EDITOR OPTICIAN

BARS Conference 2017

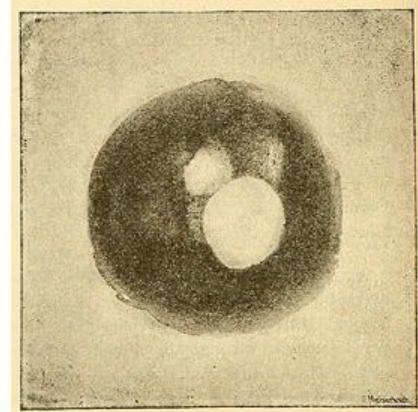
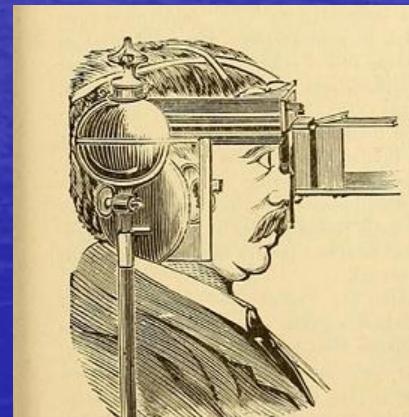
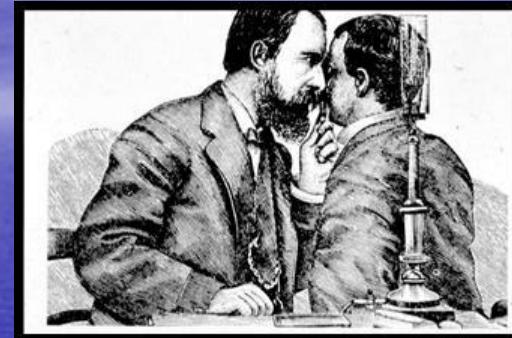
What am I talking about....?

- What does imaging allow us to do?
- External
- Anterior
 - Retinal camera
 - Slit-lamp
 - OCT
- Posterior
 - Camera
 - OCT
 - Optomap



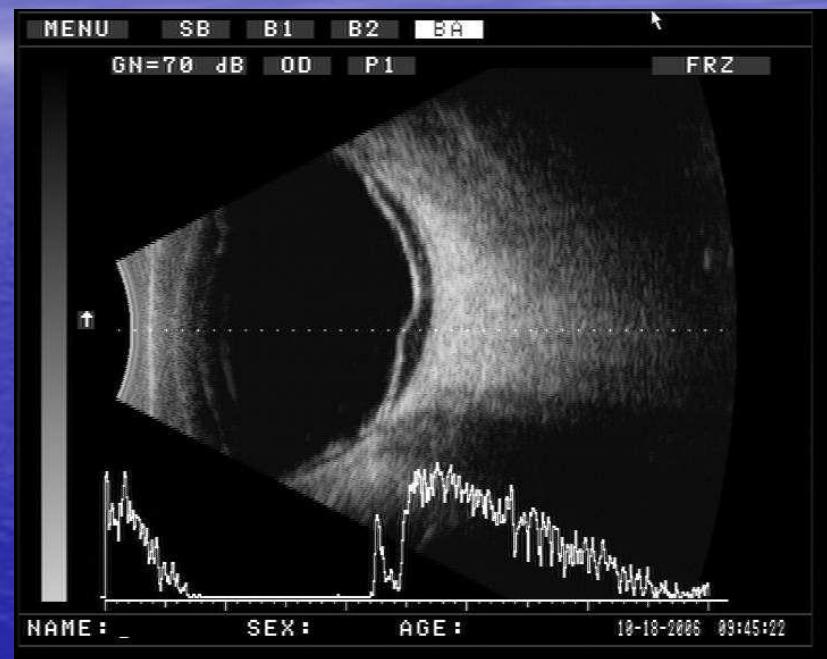
Imaging (non-intrinsic)

- Hermann von Helmholtz in 1850
- First retinal photograph 1886
- Cameras
 - Analogue
 - Digital



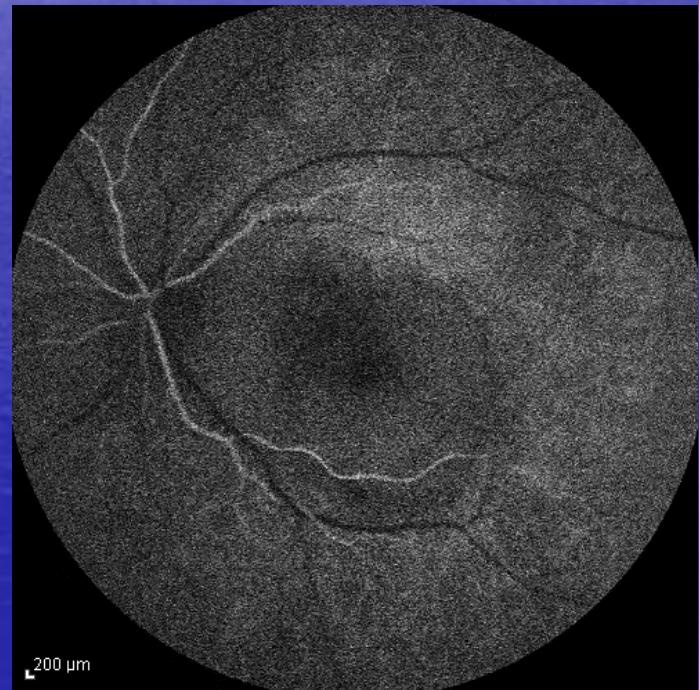
Imaging (intrinsic)

- X-ray
- Ultrasound
 - A
 - B
- Many computerised techniques



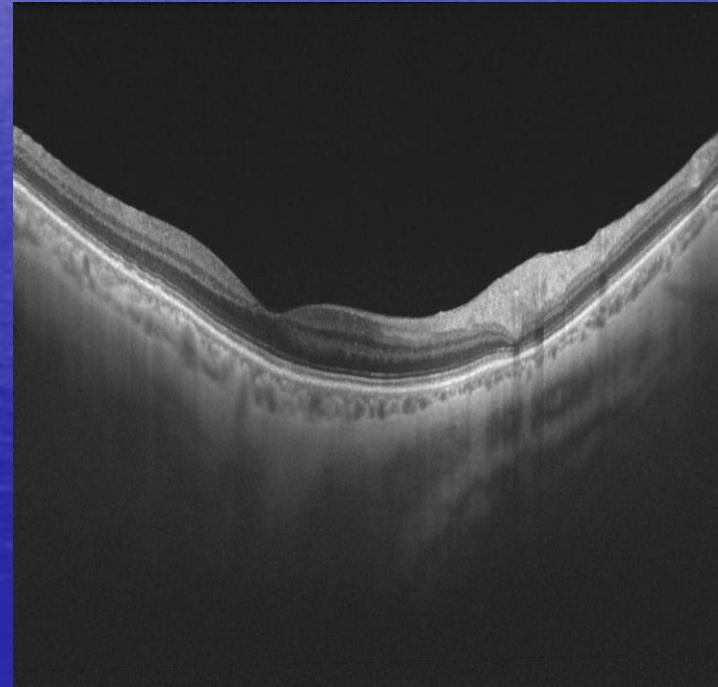
Imaging (invasive)

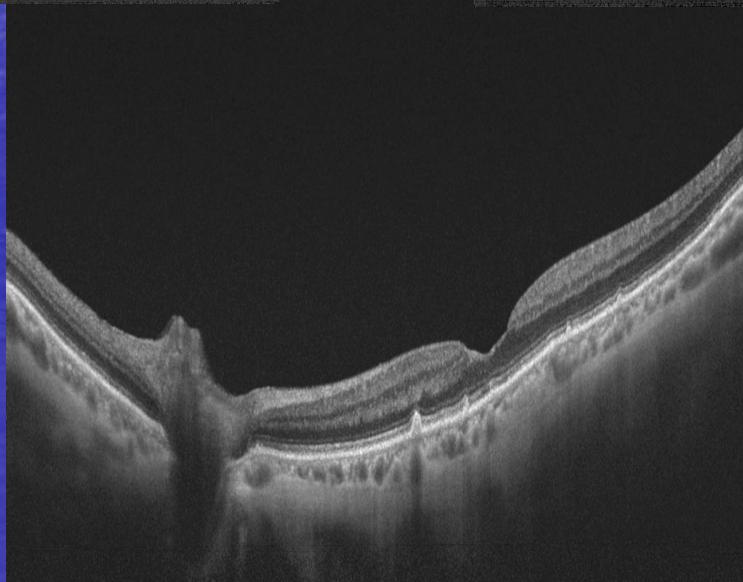
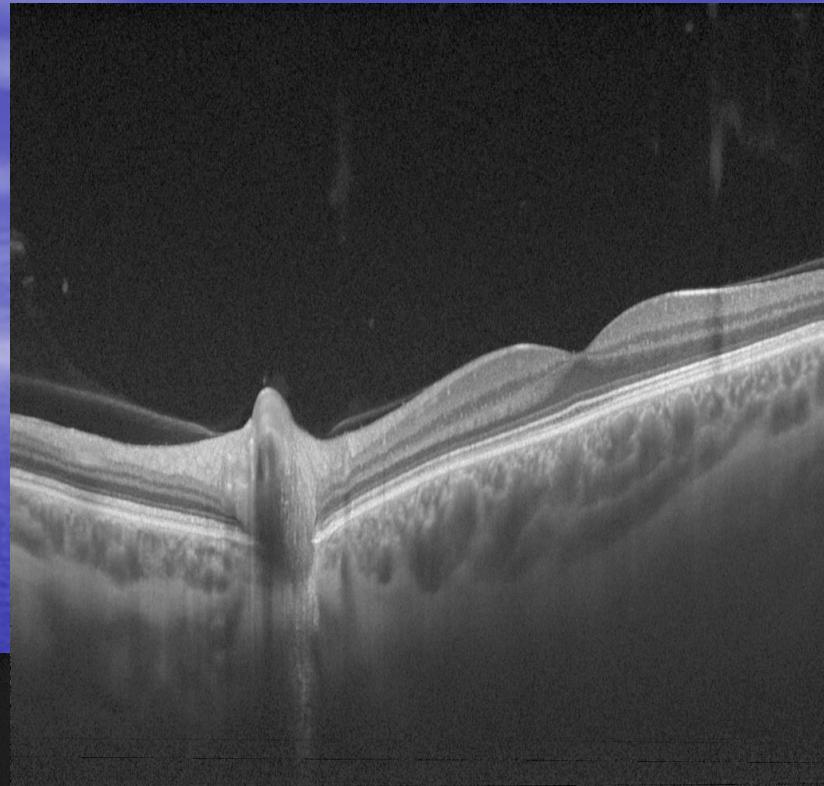
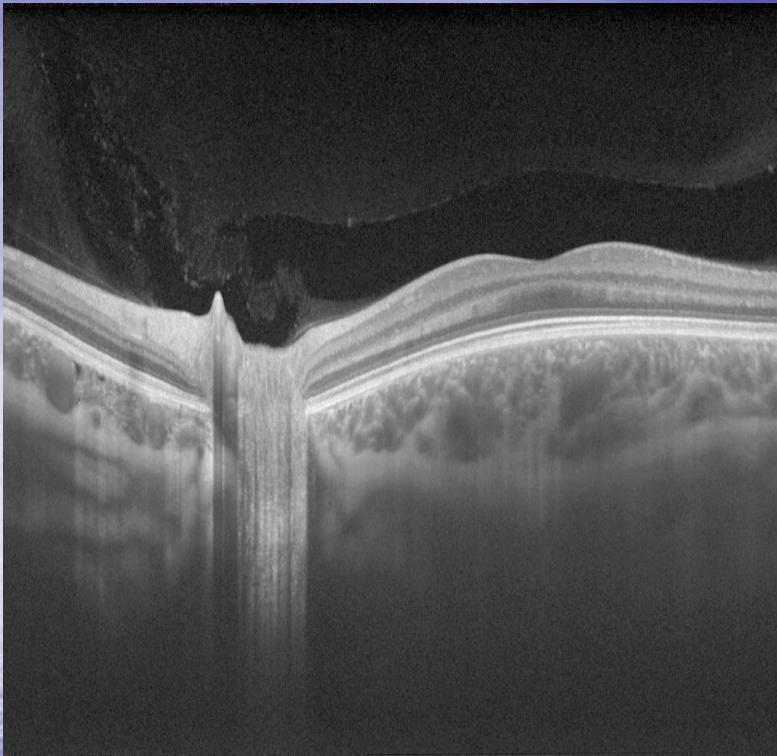
- Angiography
 - FFA
 - ICG



Optical Coherence Tomography (OCT)

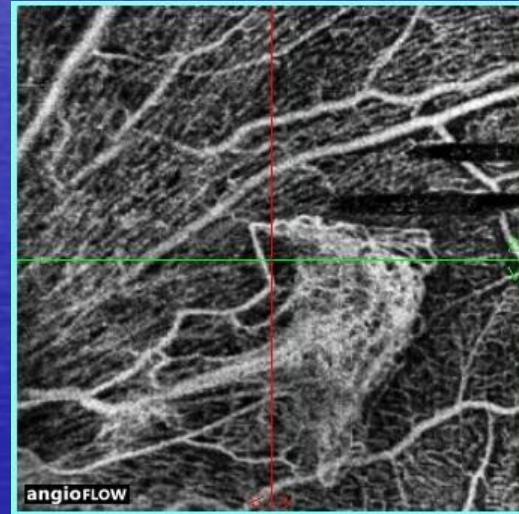
- Light-based and non-invasive
- Incident light penetrates tissues
- Produces 3 dimensional high resolution images of ocular structures
- Accurate assessment and monitoring over time
- Easy to use so can screen and compare with expected norms





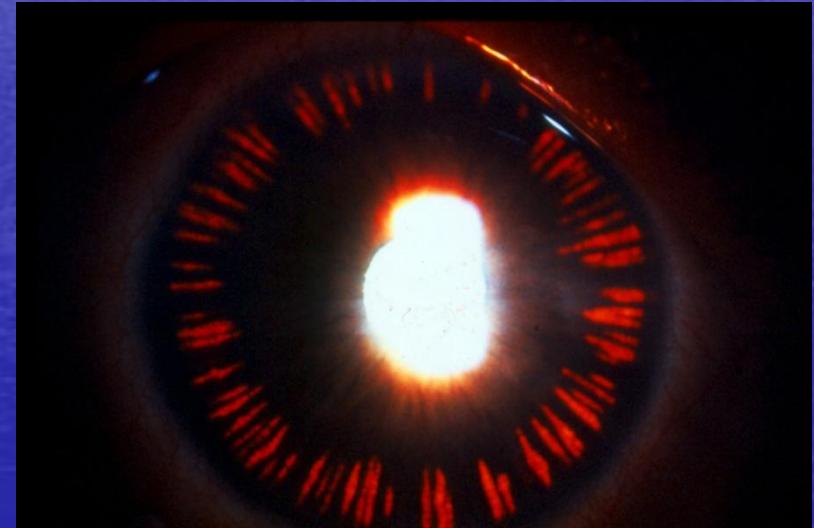
OCT Angiography

- Analysis of reflected interference from moving targets – blood flow
 - Cardiovascular disease
 - Malignancy
- Non-invasive and quick
- Watch this space.....



What does imaging allow us to do?

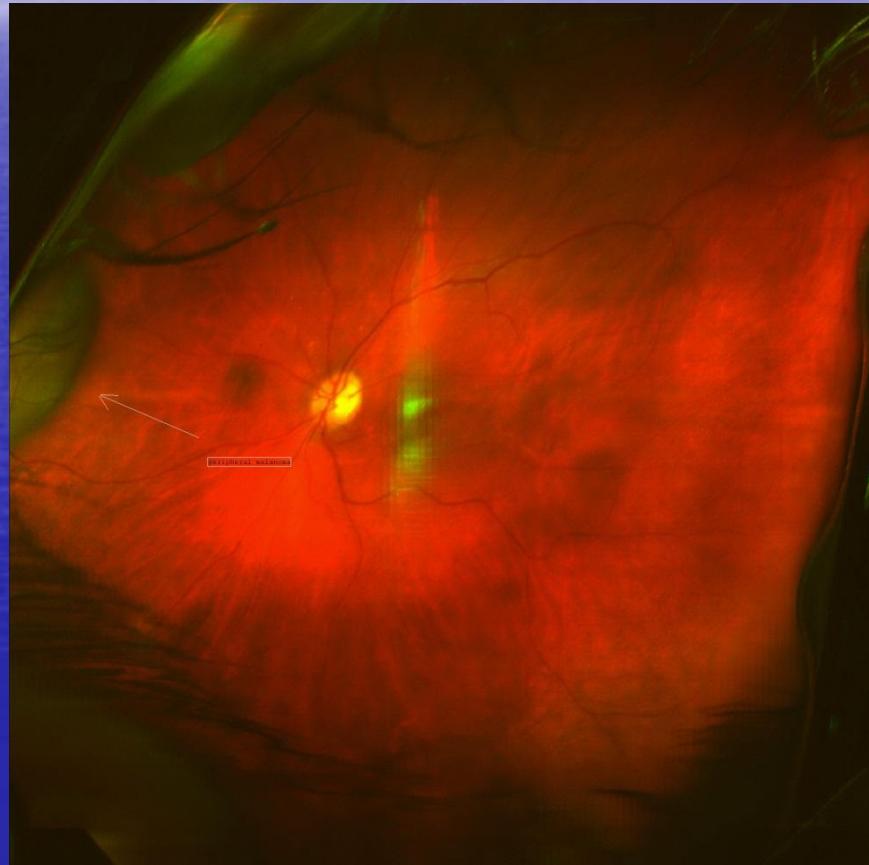
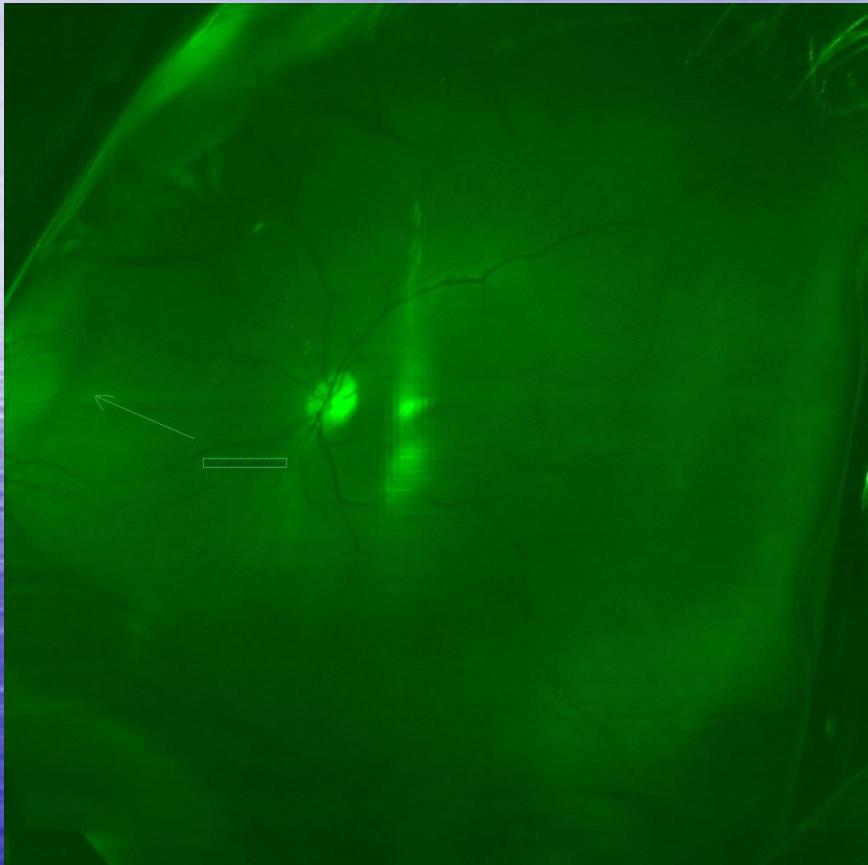
- Detection
- Diagnosis
- Monitoring
- Px Education
- Data transfer
- Image manipulation



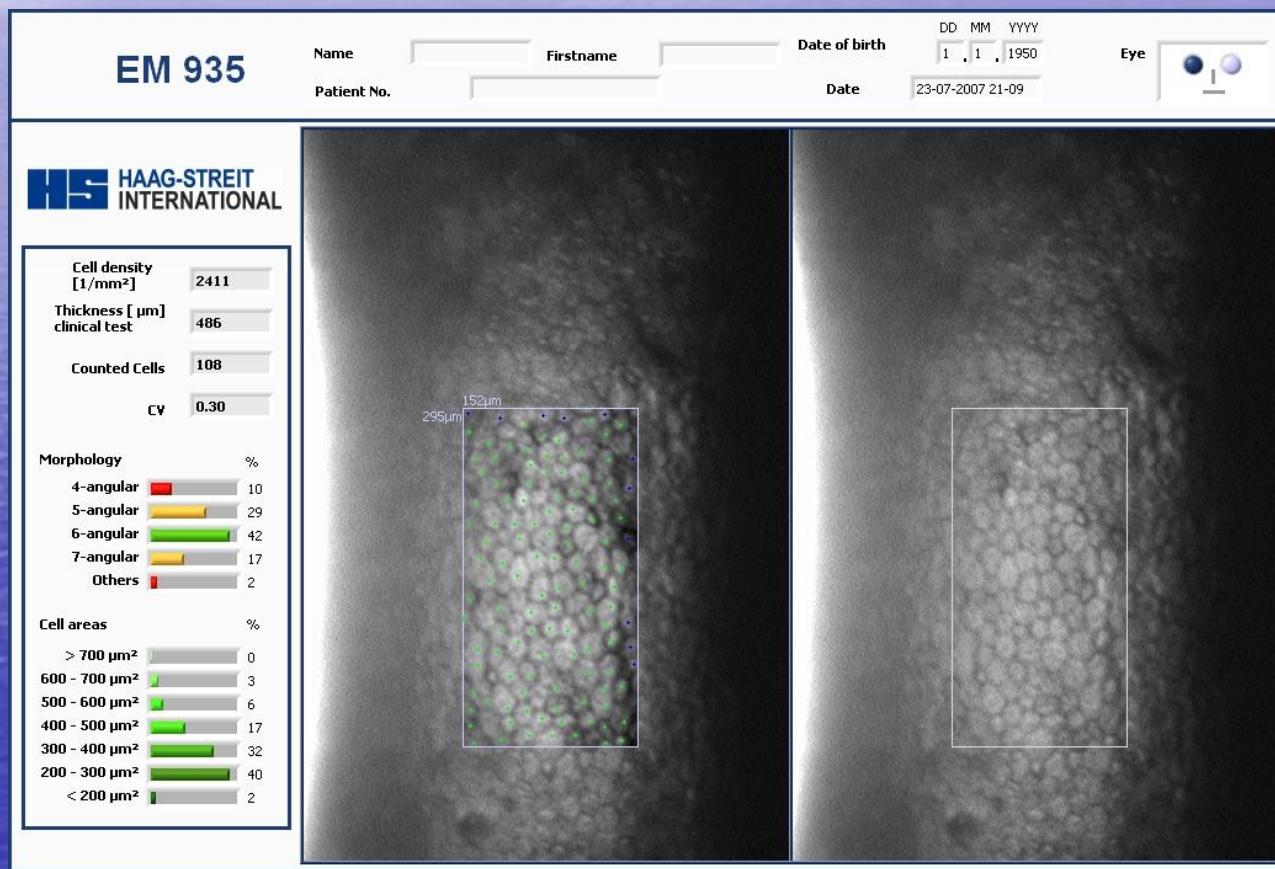
Detection



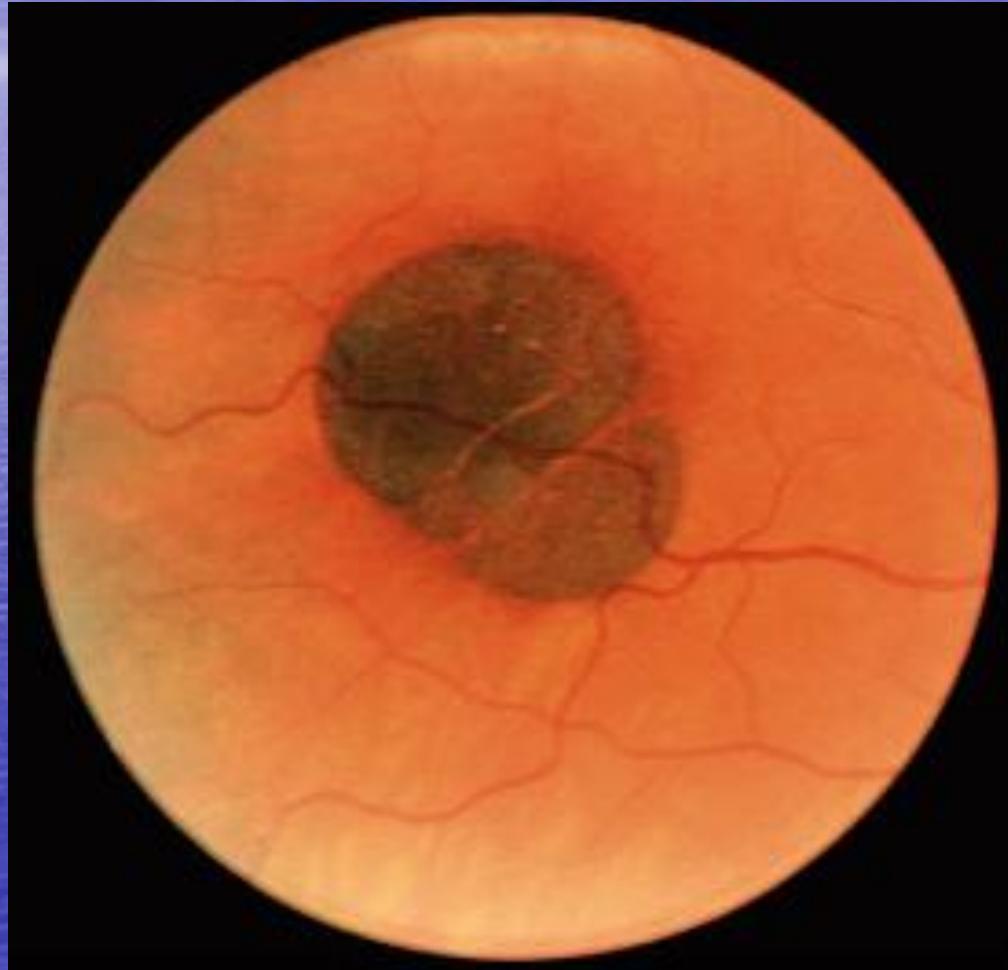
Diagnosis



Diagnosis



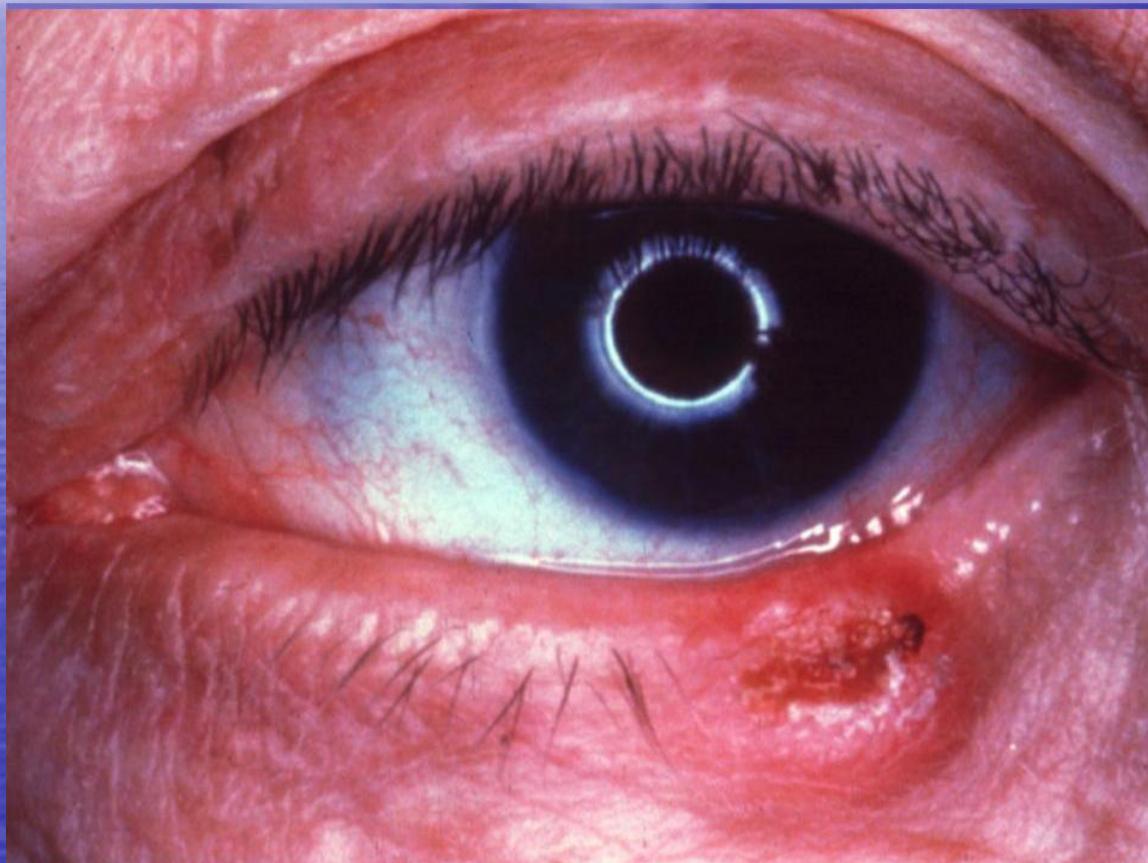
Diagnosis



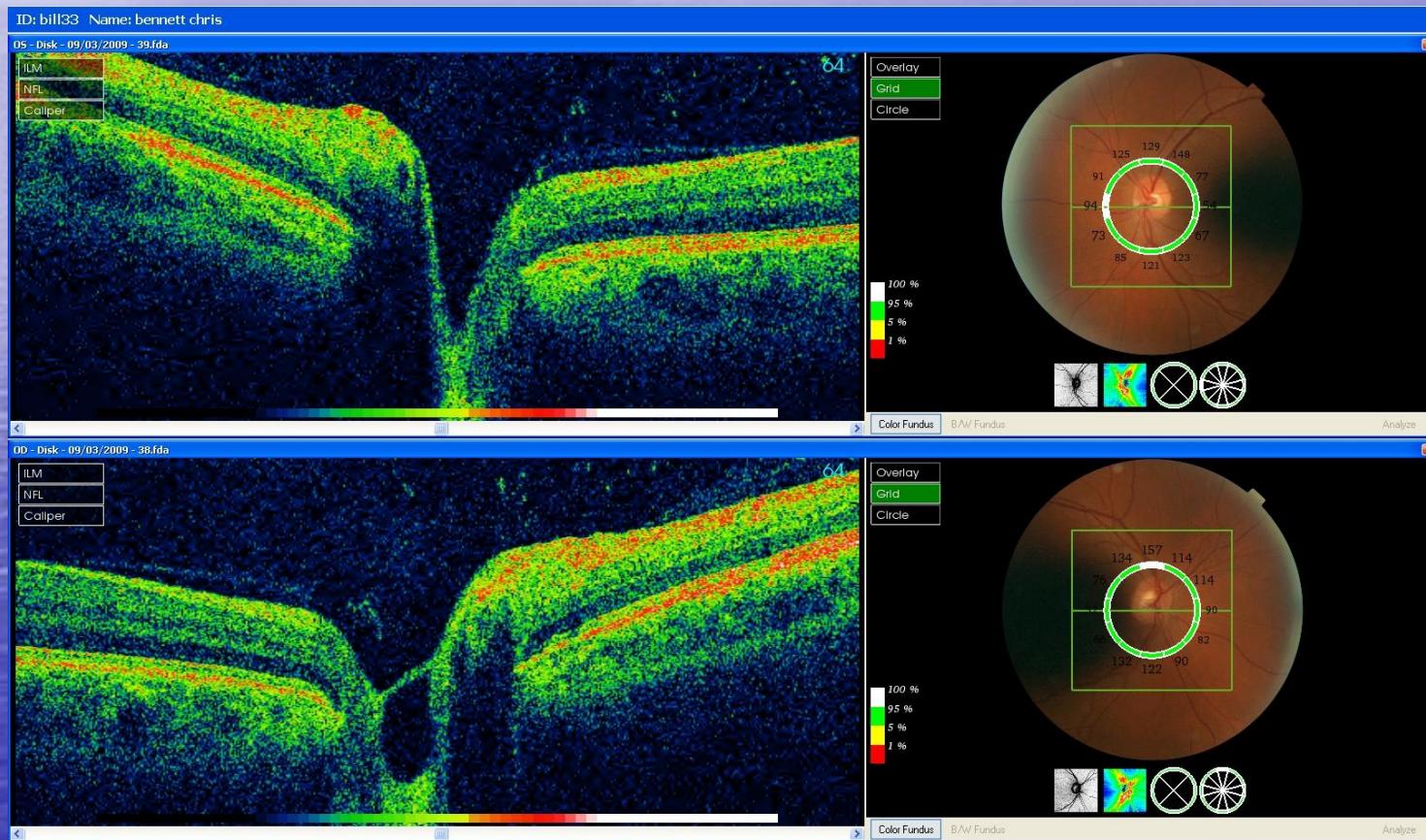
monitoring



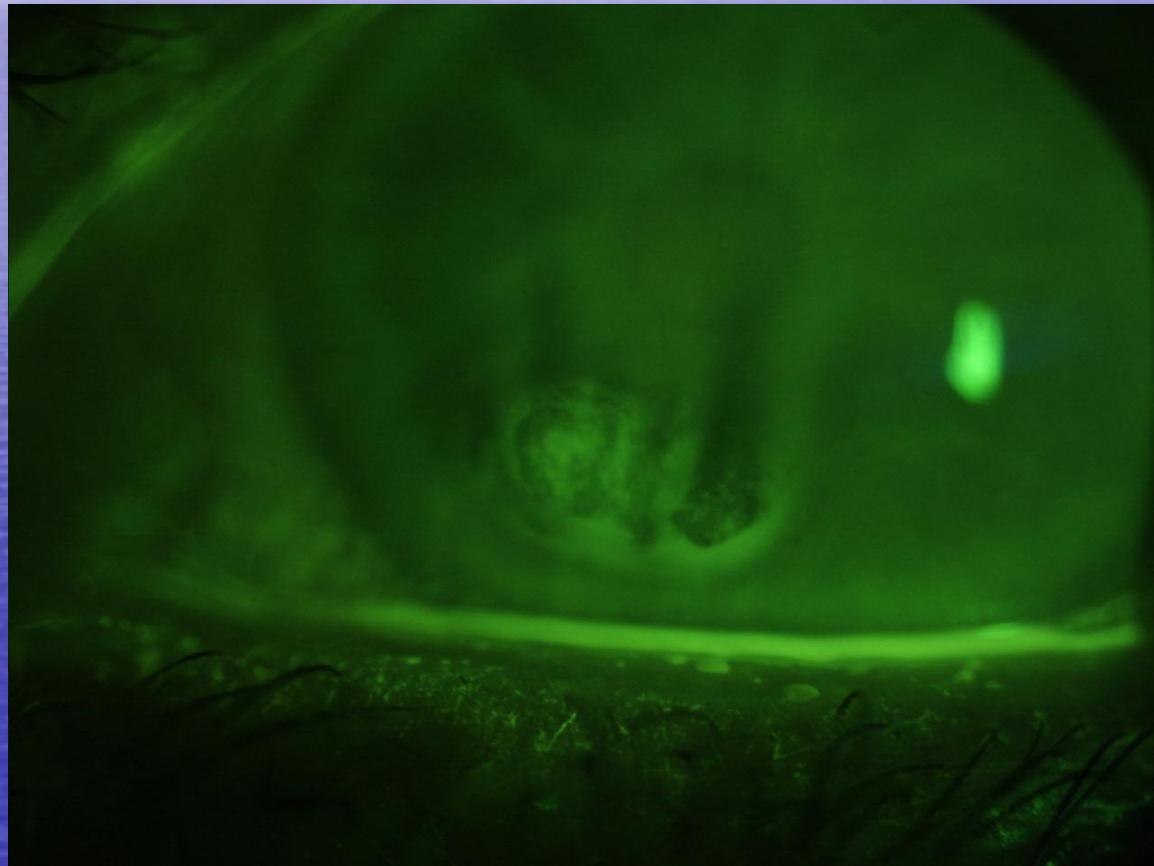
Monitoring



Monitoring



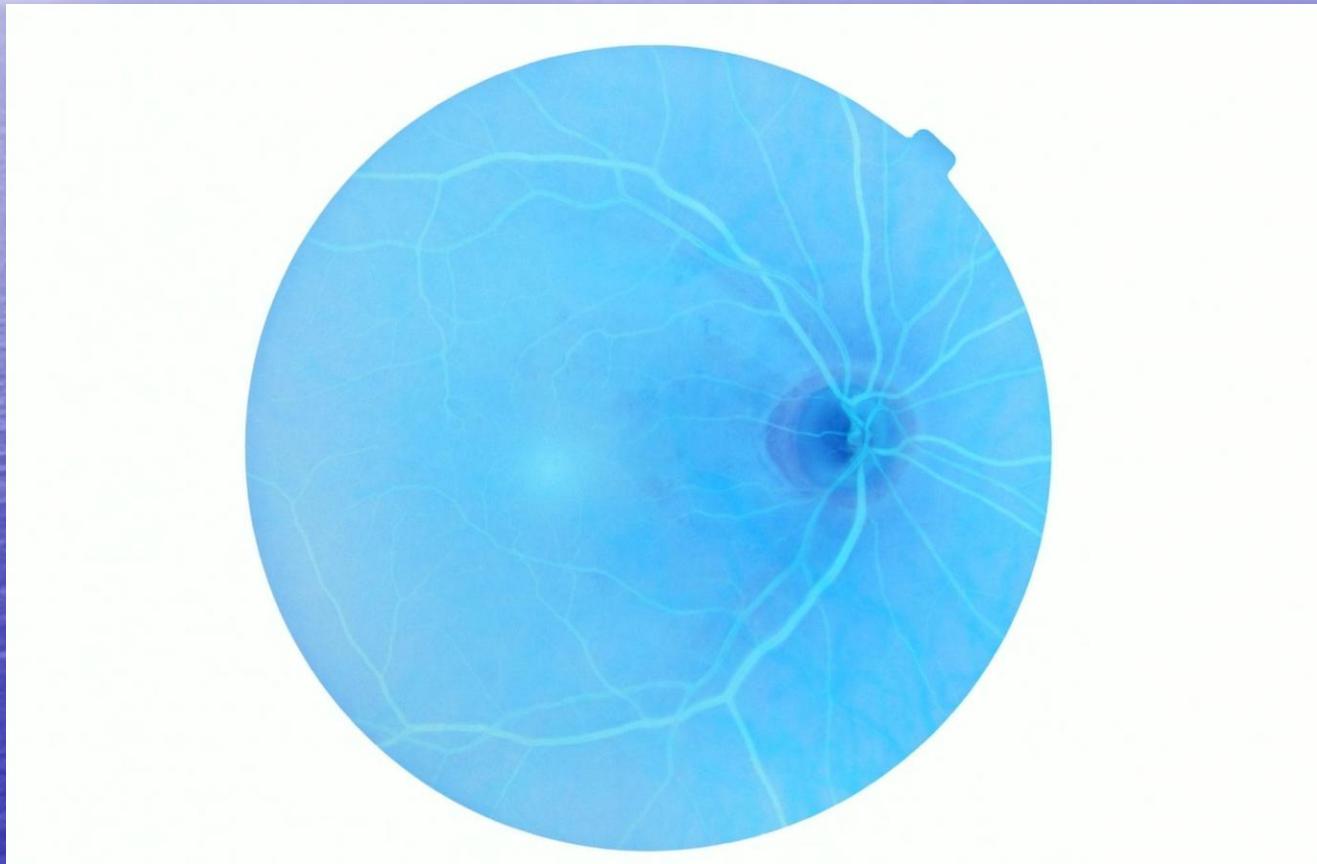
Px Education



Manipulation

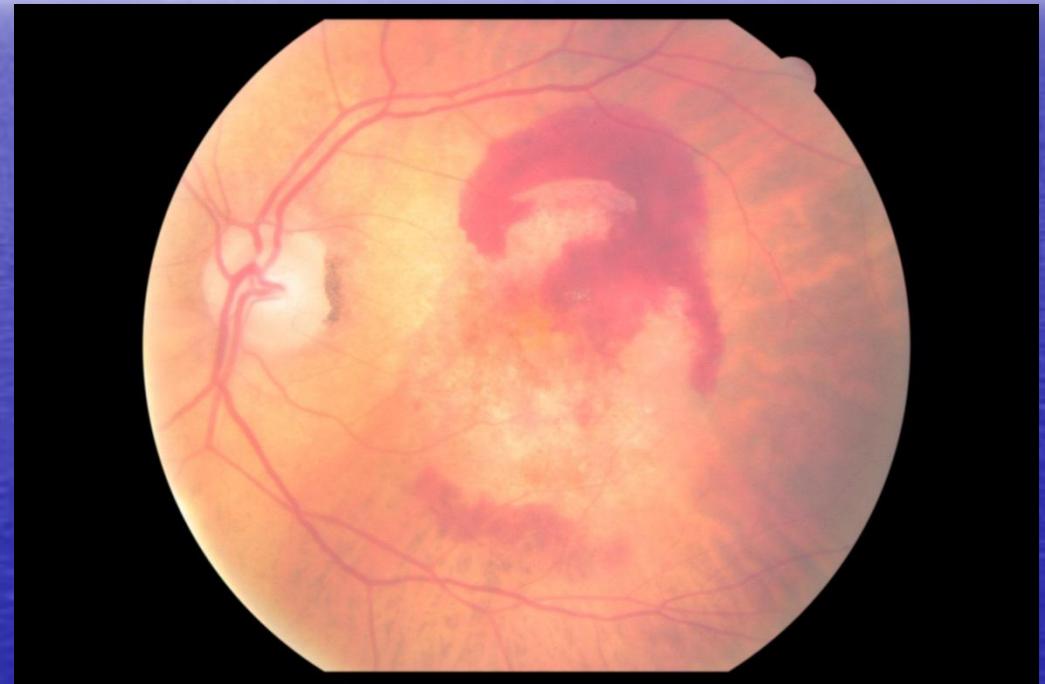


Manipulation



Technology front to back

- External
- Anterior
- Posterior



External Eye

- Digital camera
- Eye comparison
- Video

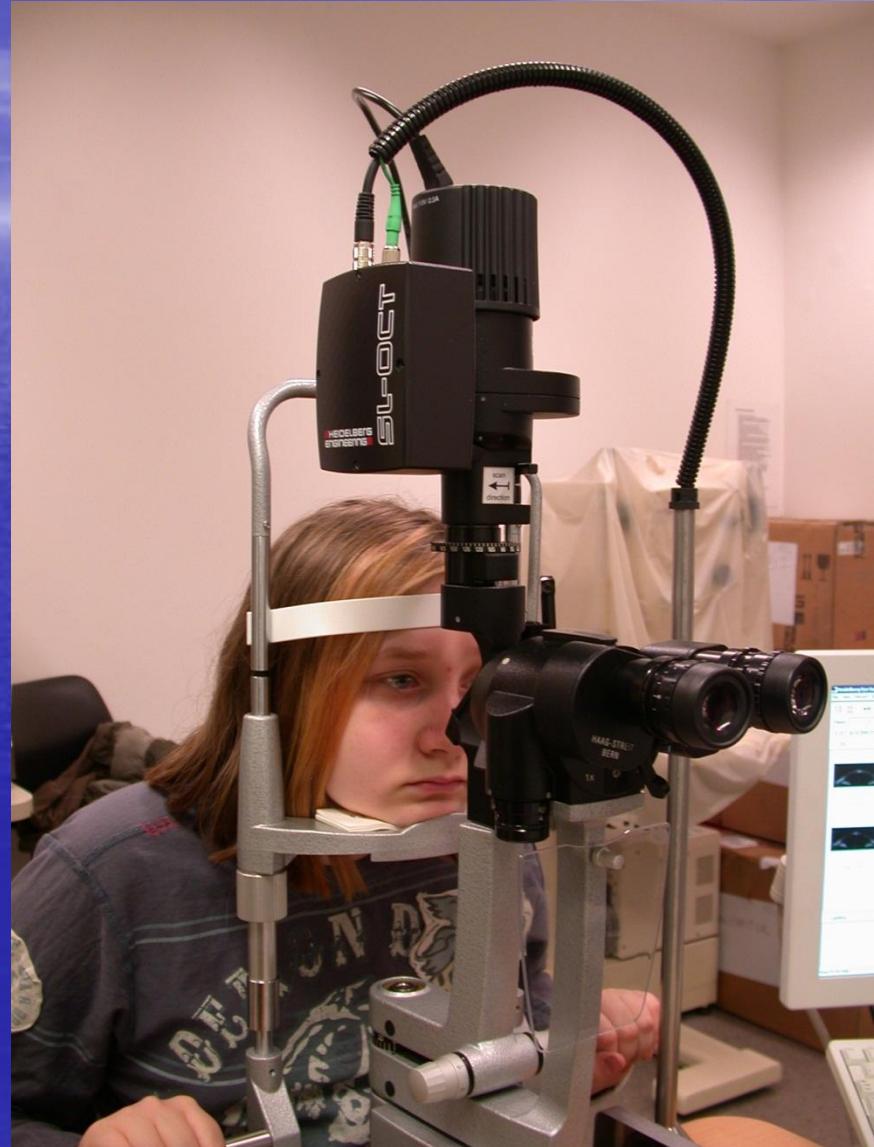






Anterior Eye

- Retinal Camera
- Slit-lamp
- Anterior OCT
 - Visante
 - Anterior programme
 - SL-OCT

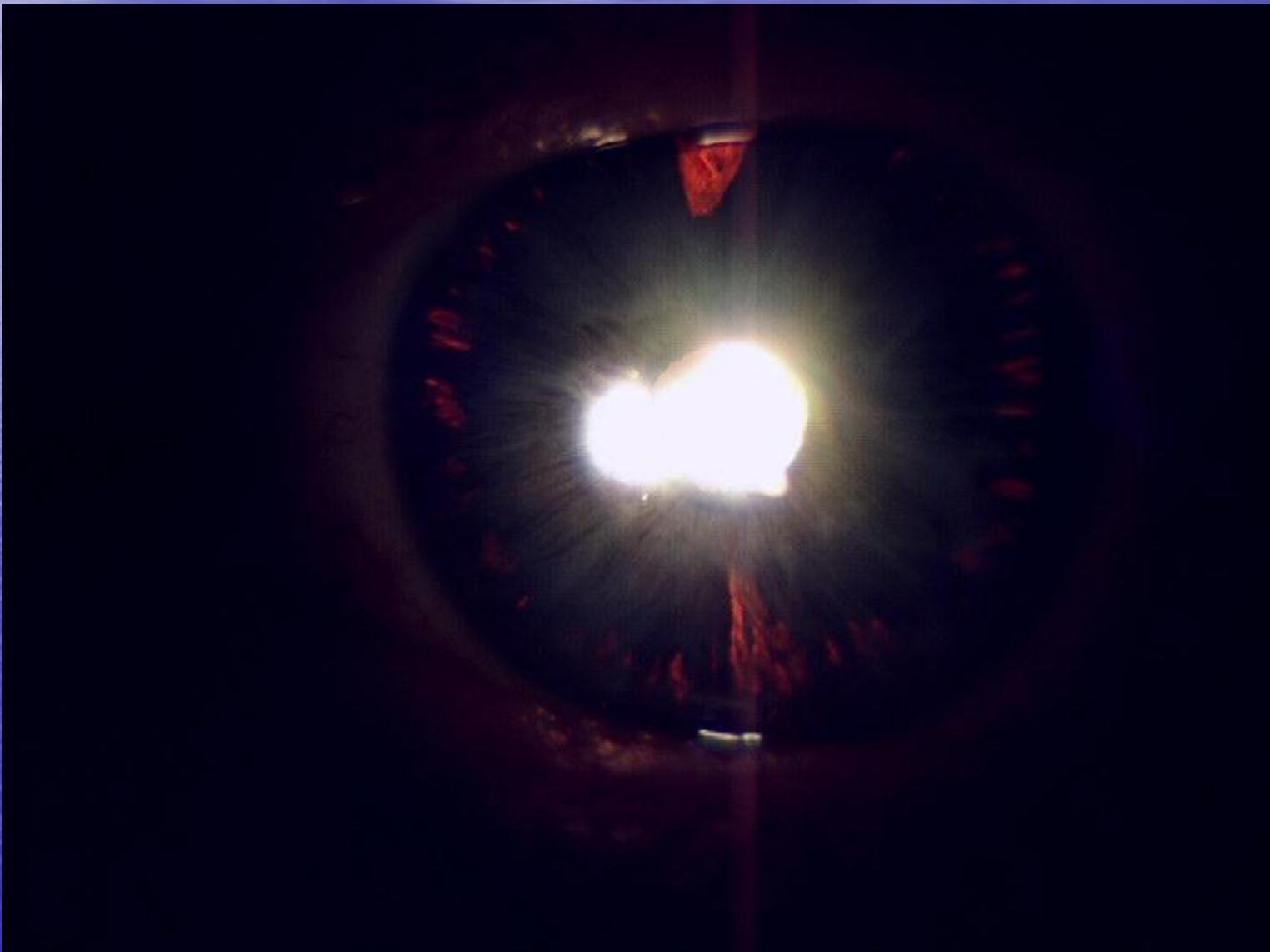


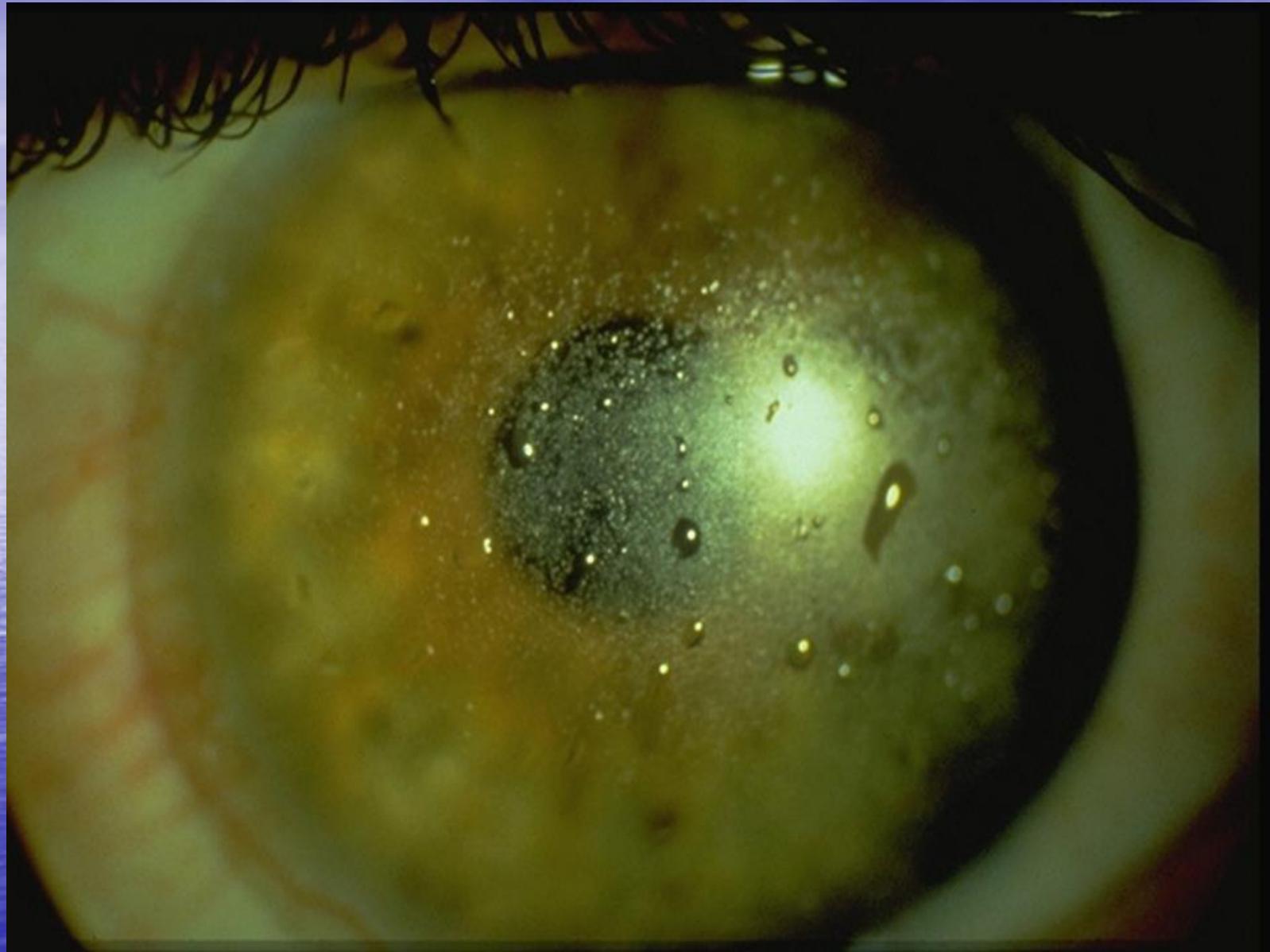
Slit-lamp Photography

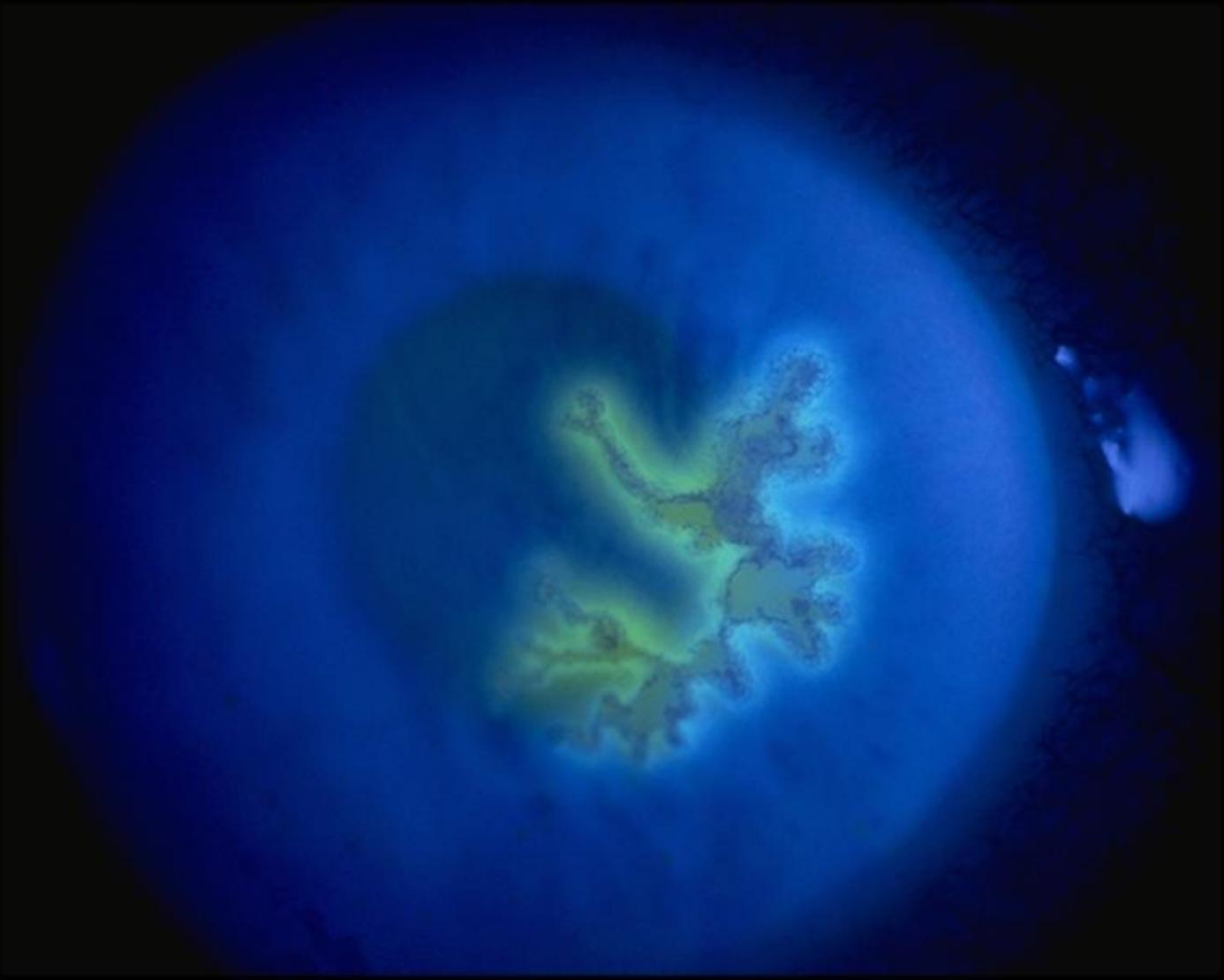
- Built-in
- Add-on
 - Beam splitter
- Back lighter
- Wratten
- Volk

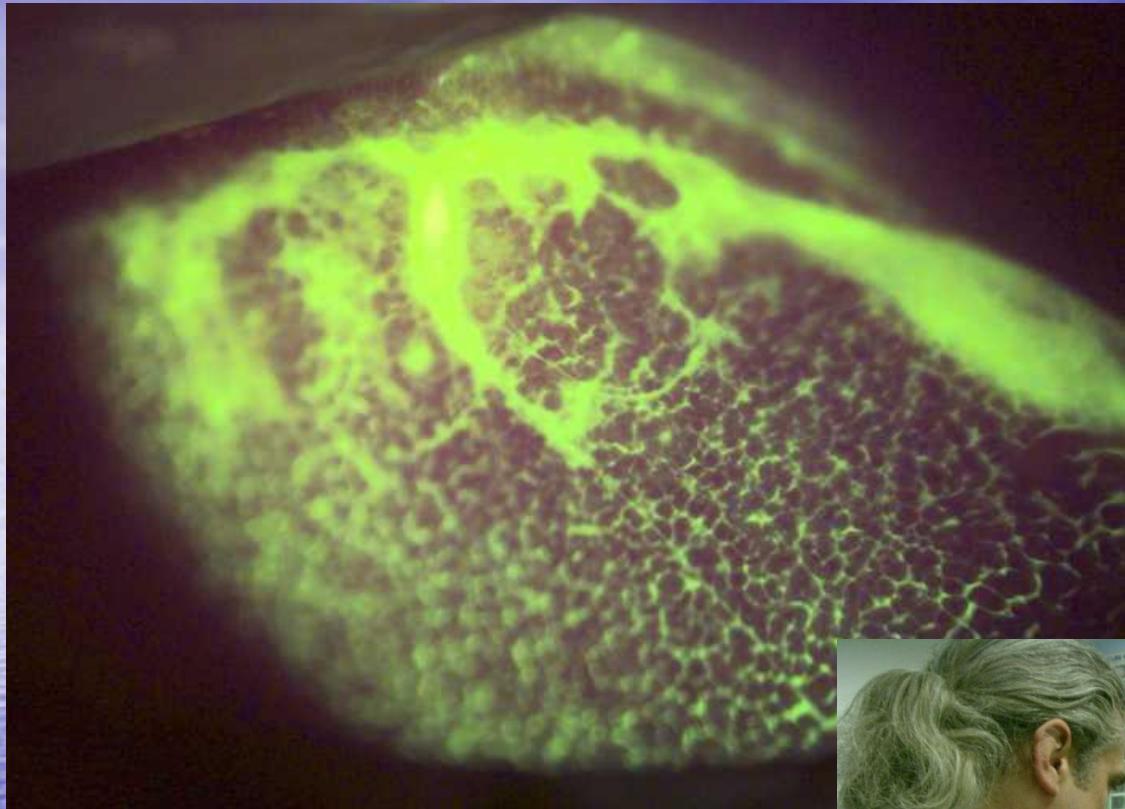


Anterior





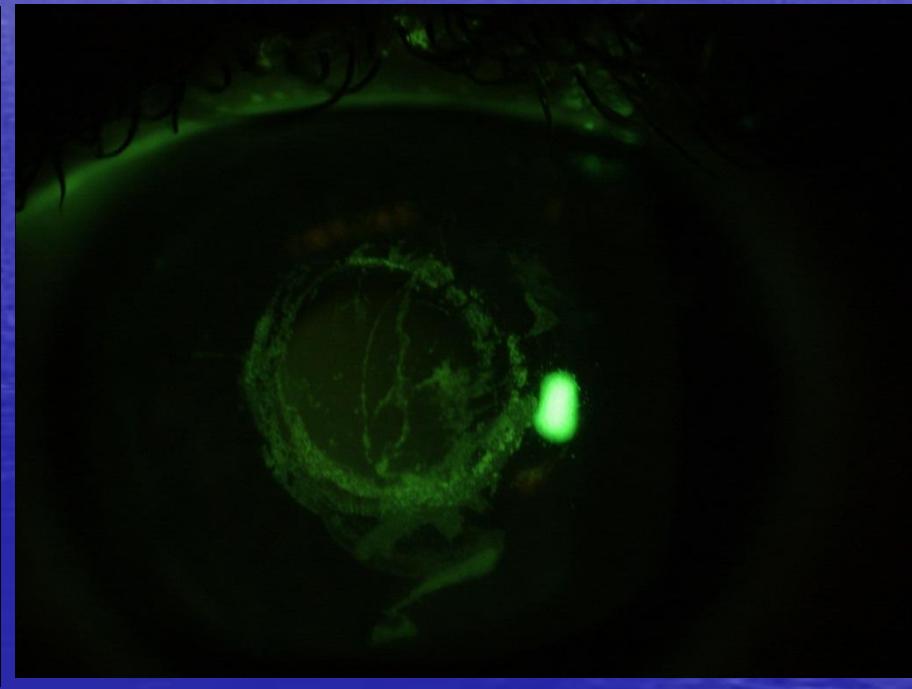
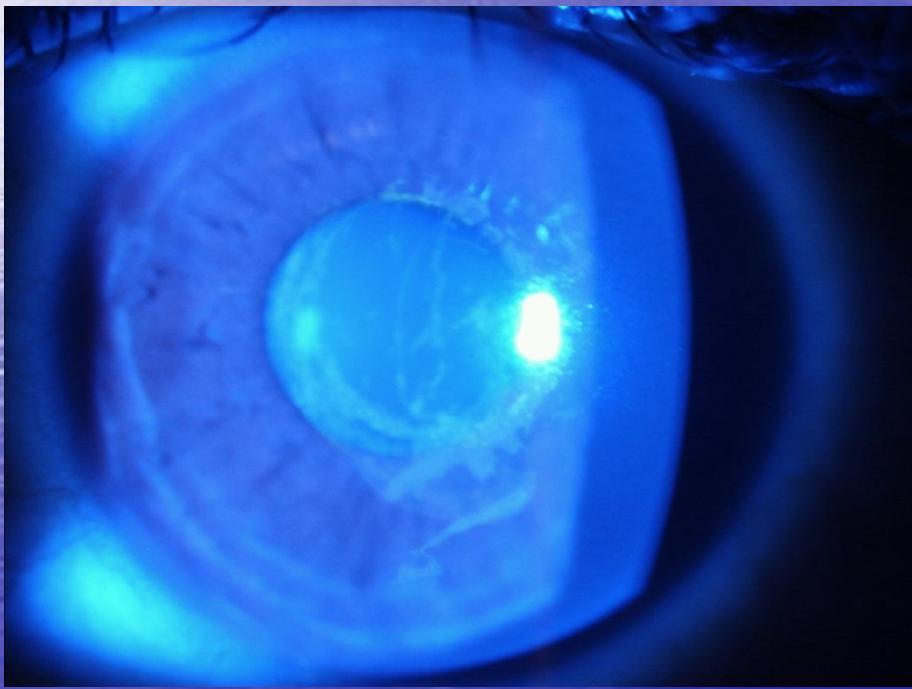




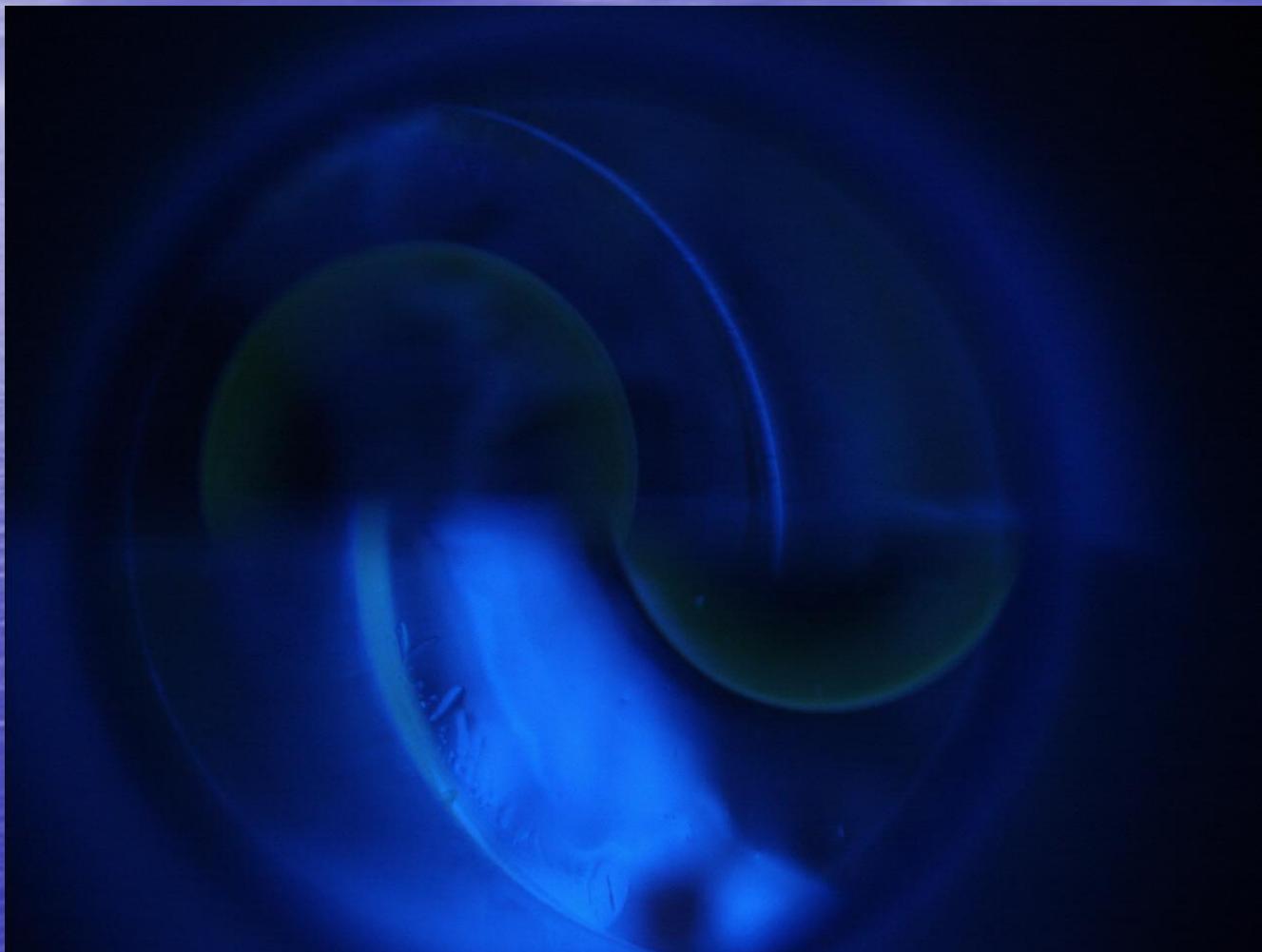
Backlighter



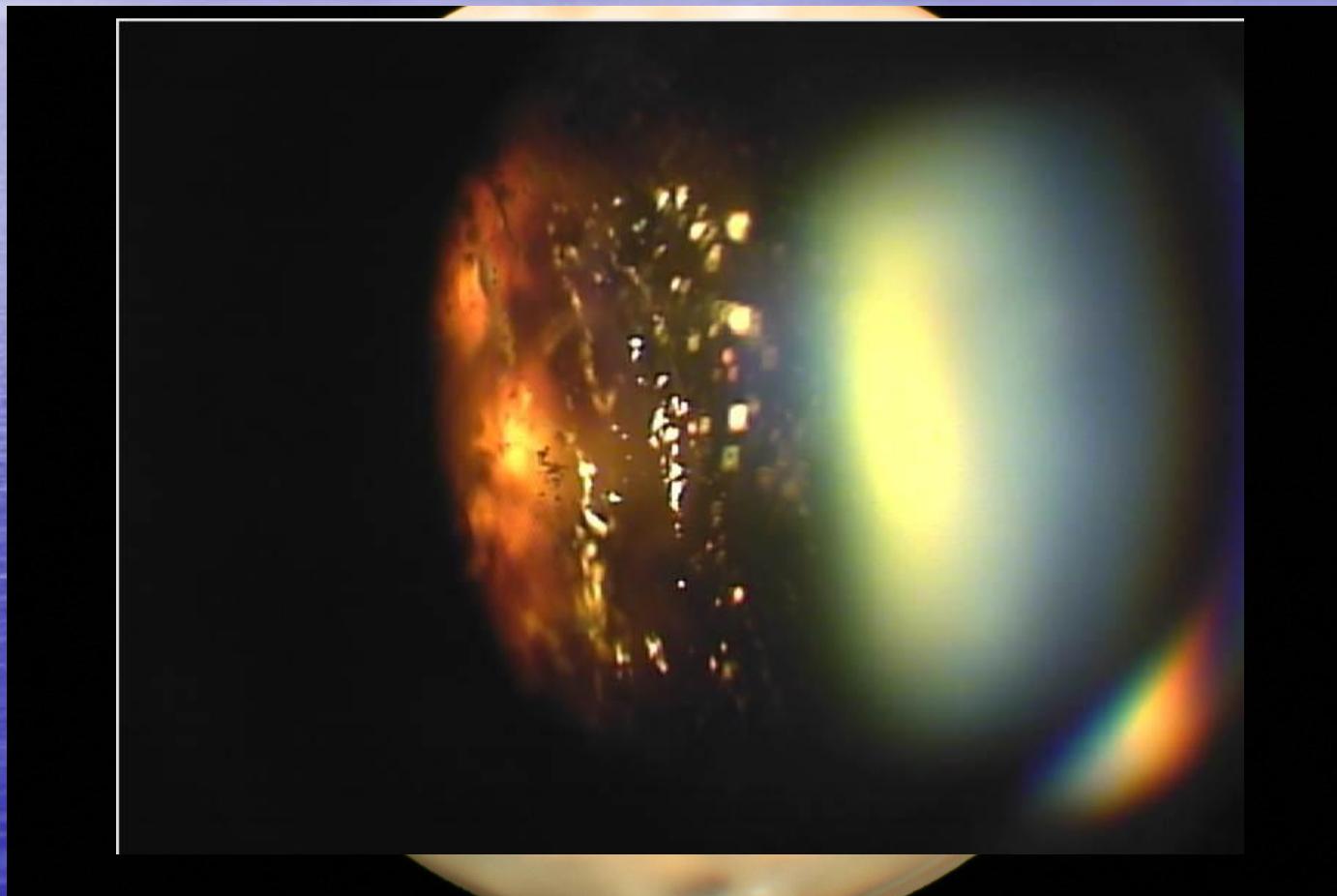
Wratten



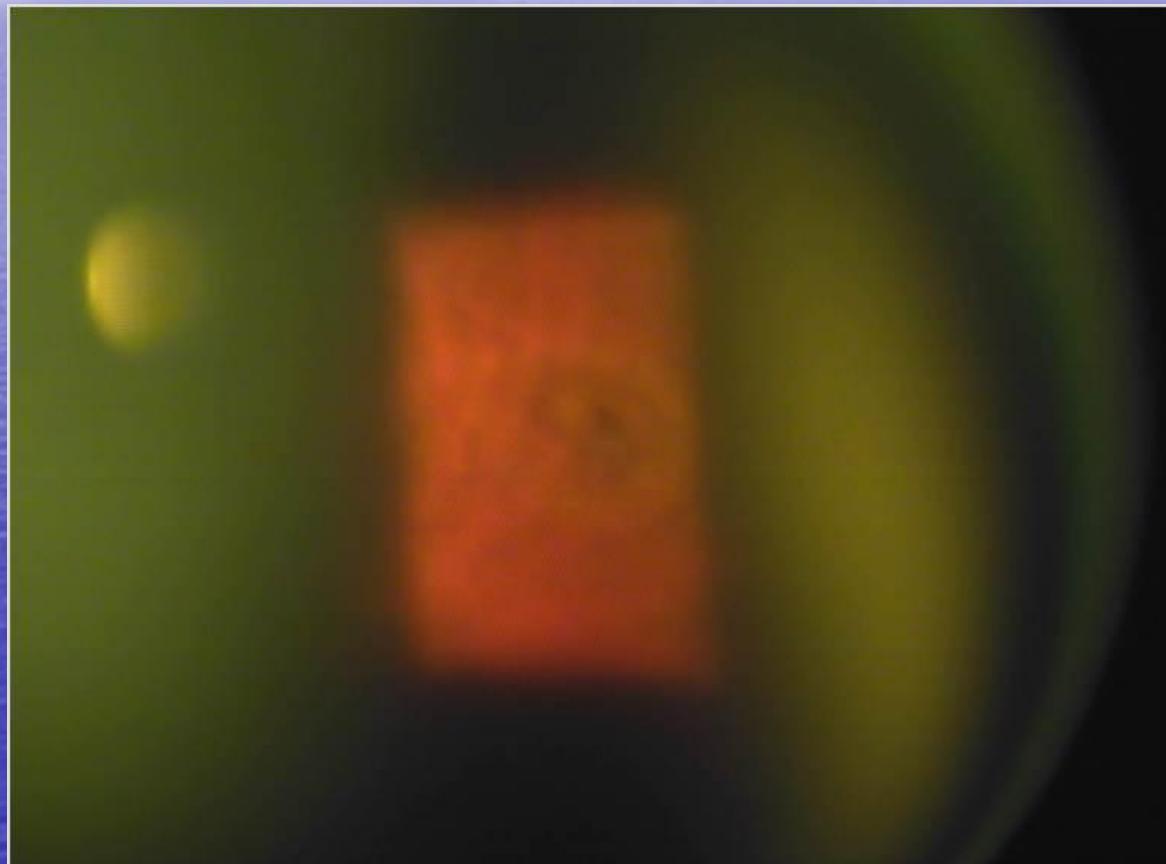
Wratten



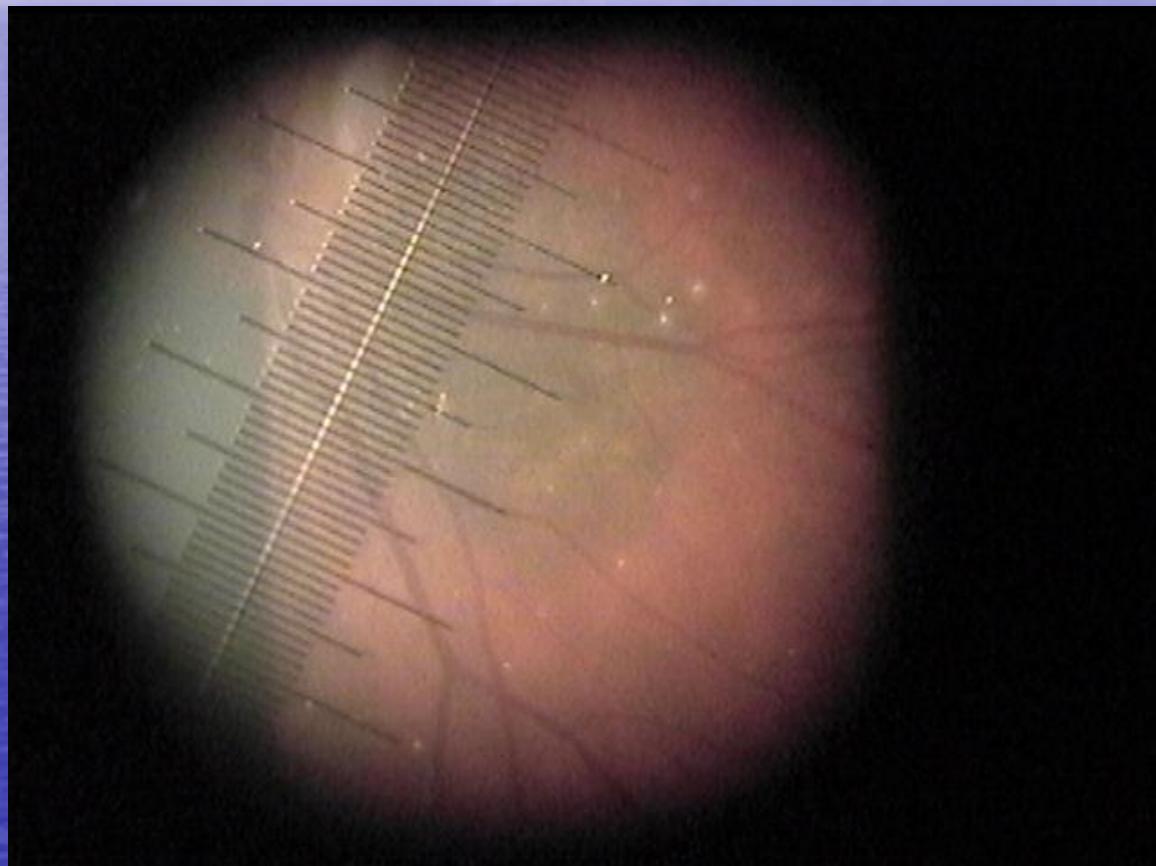
Posterior



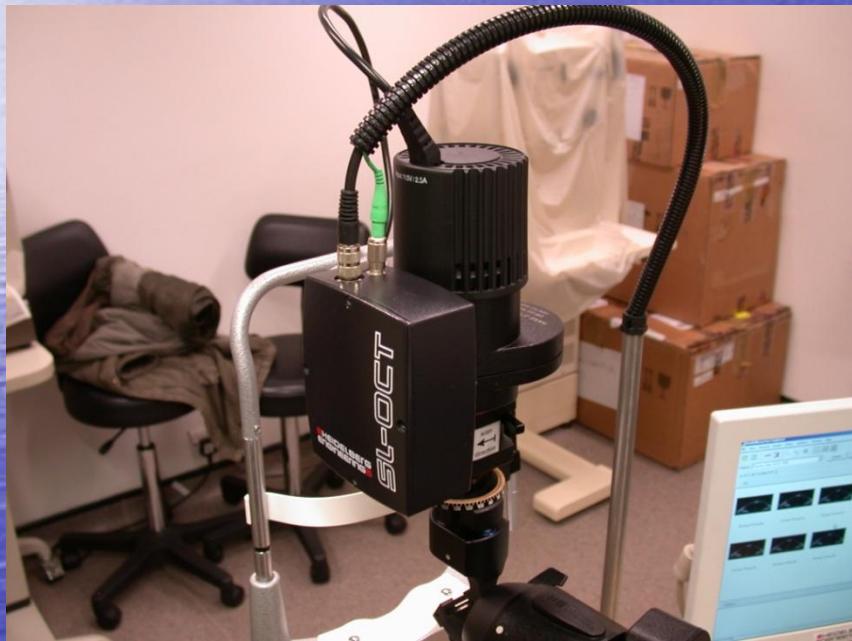
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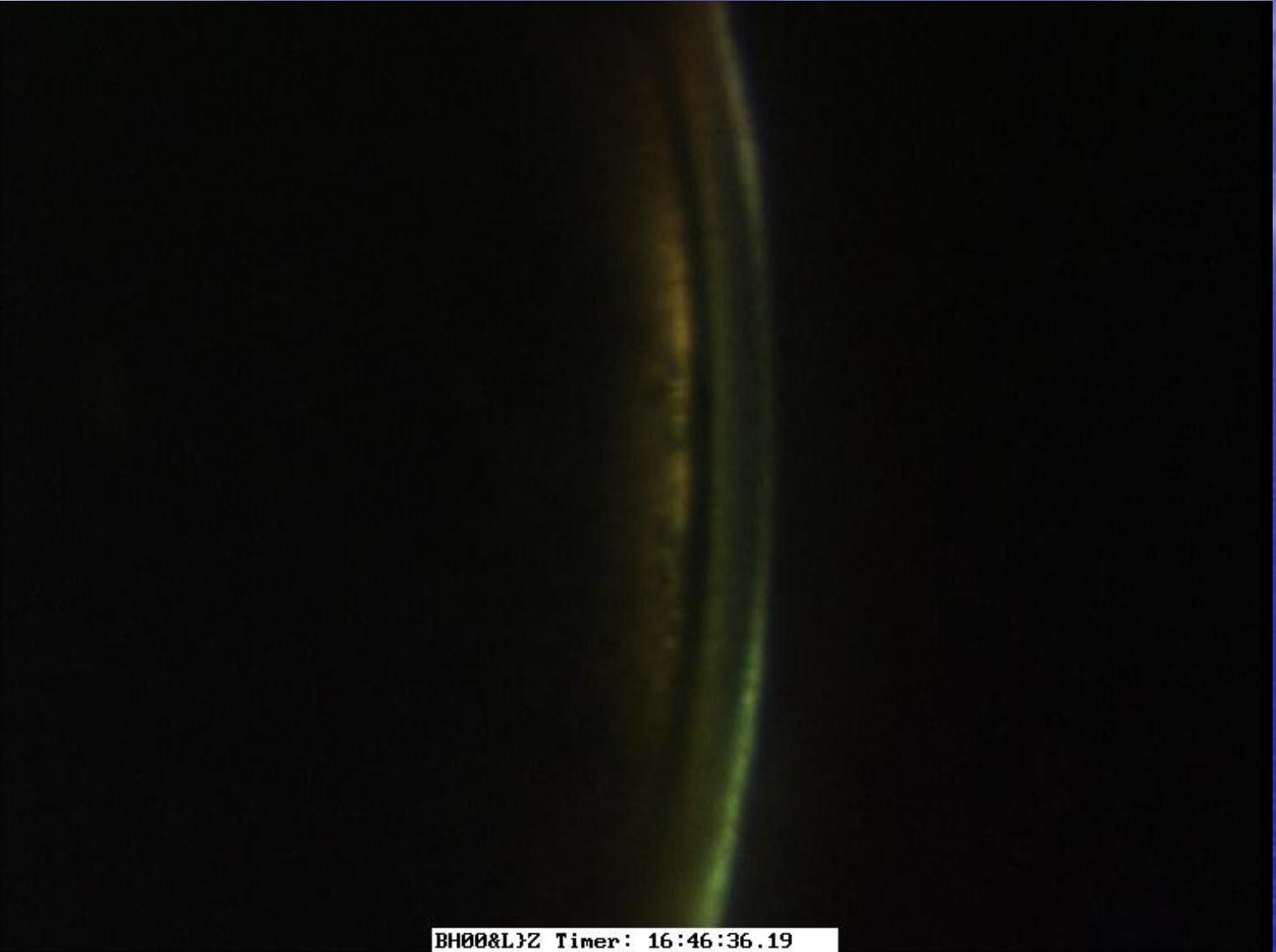


Posterior



SLOCT v VH

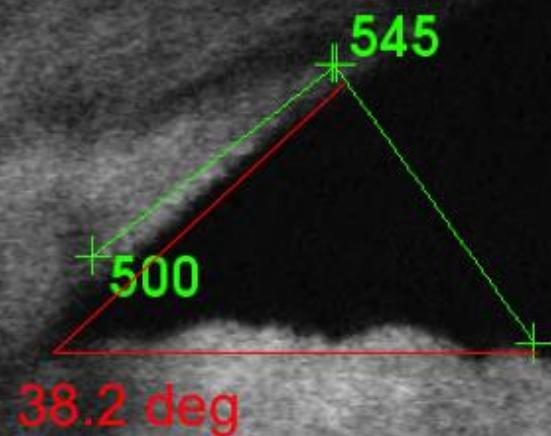




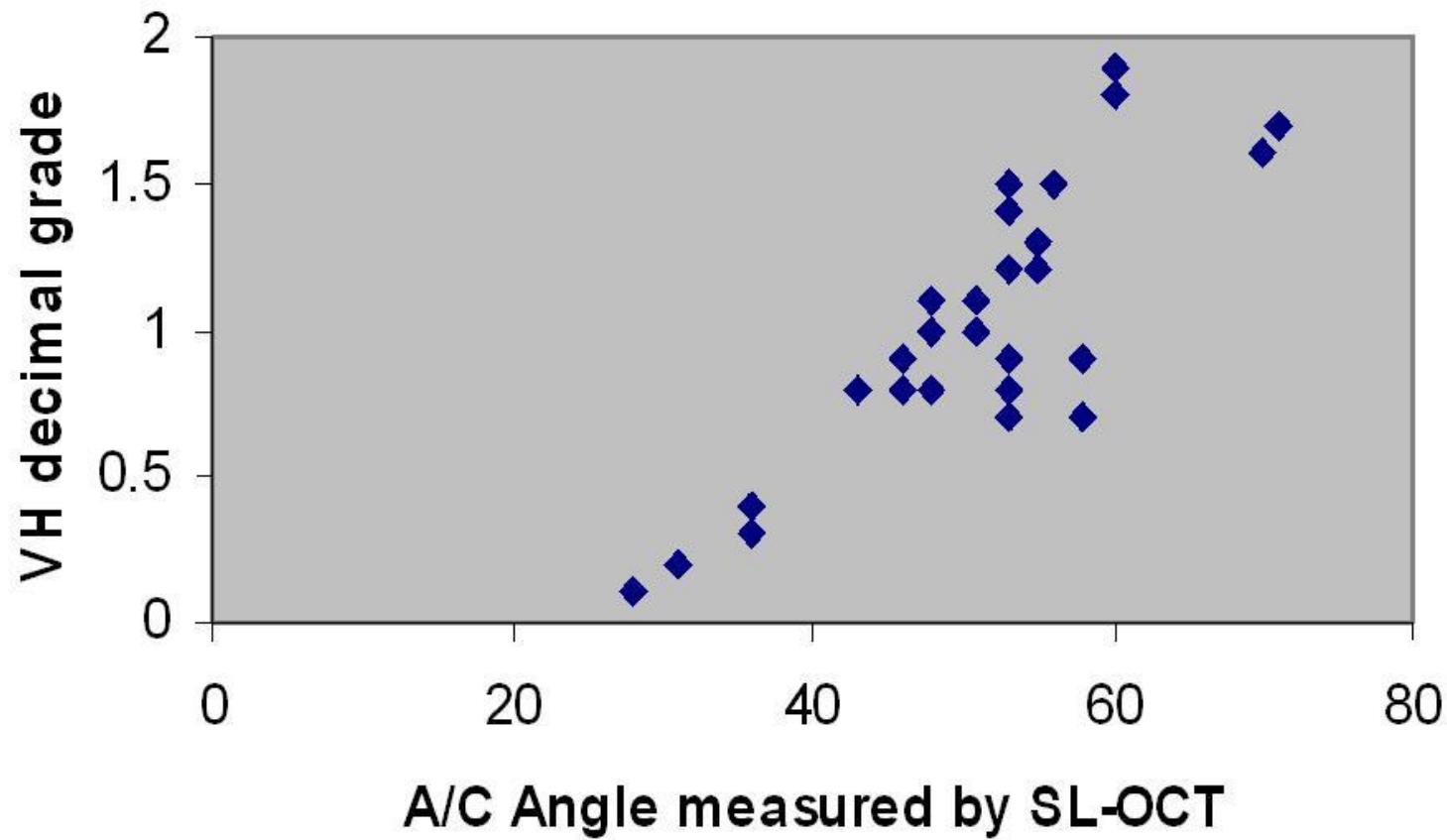
BH00&LJZ Timer: 16:46:36.19



Averaging success rate 8/8



Relationship of van Herick to OCT angle

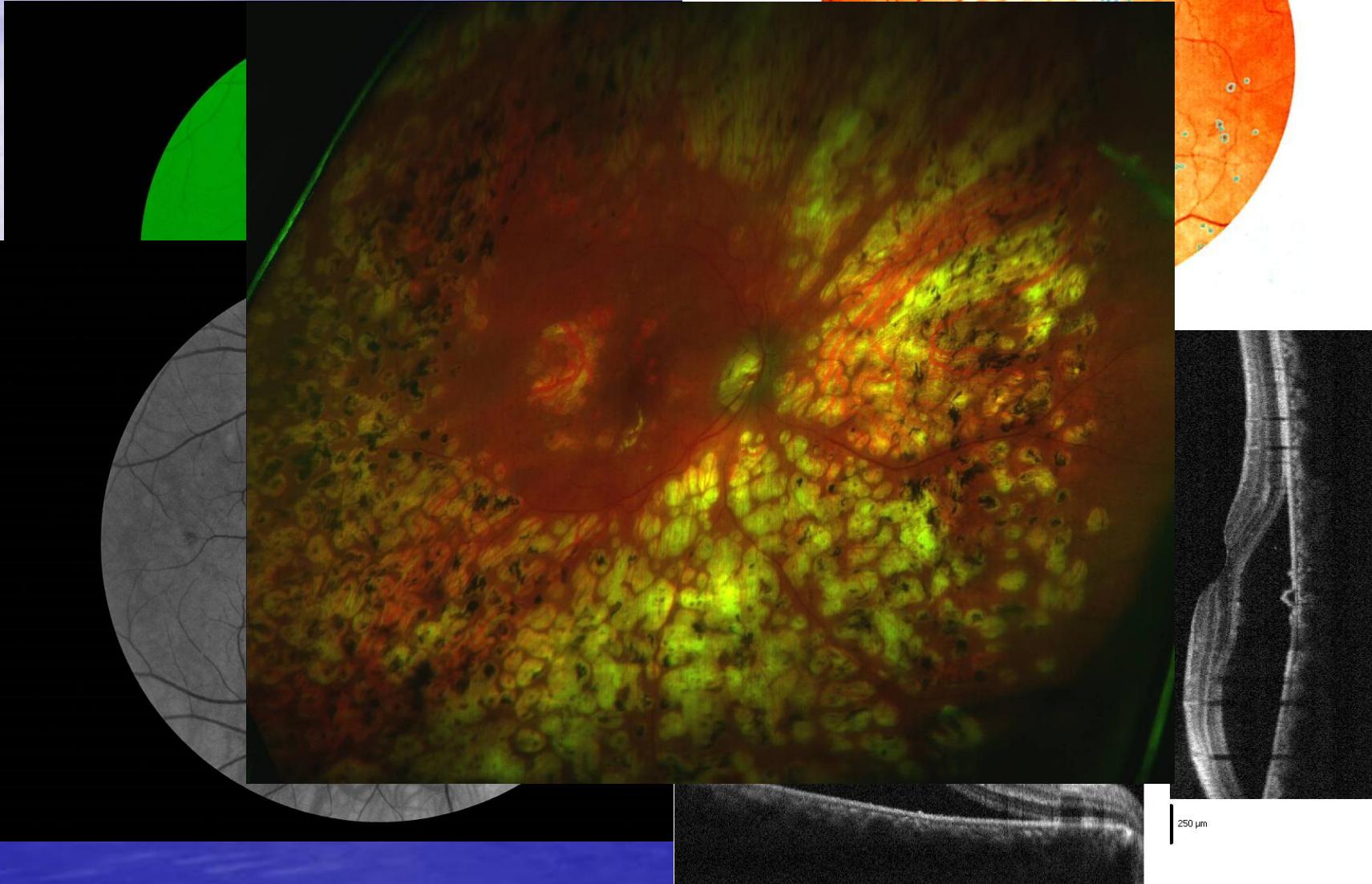


Retina

- Diabetes
- Pre-screening
 - Camera
 - SLO
 - OCT

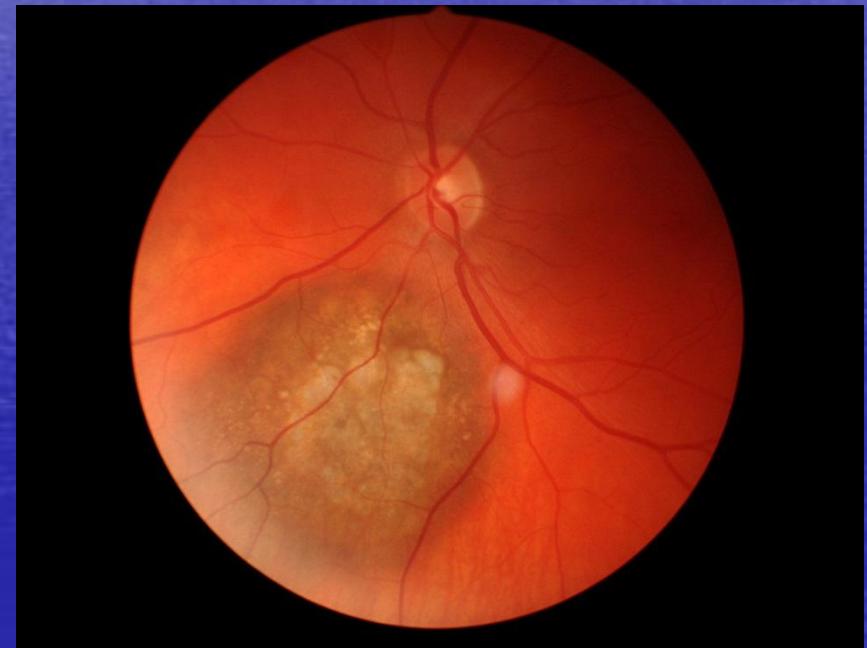


Retinopathy

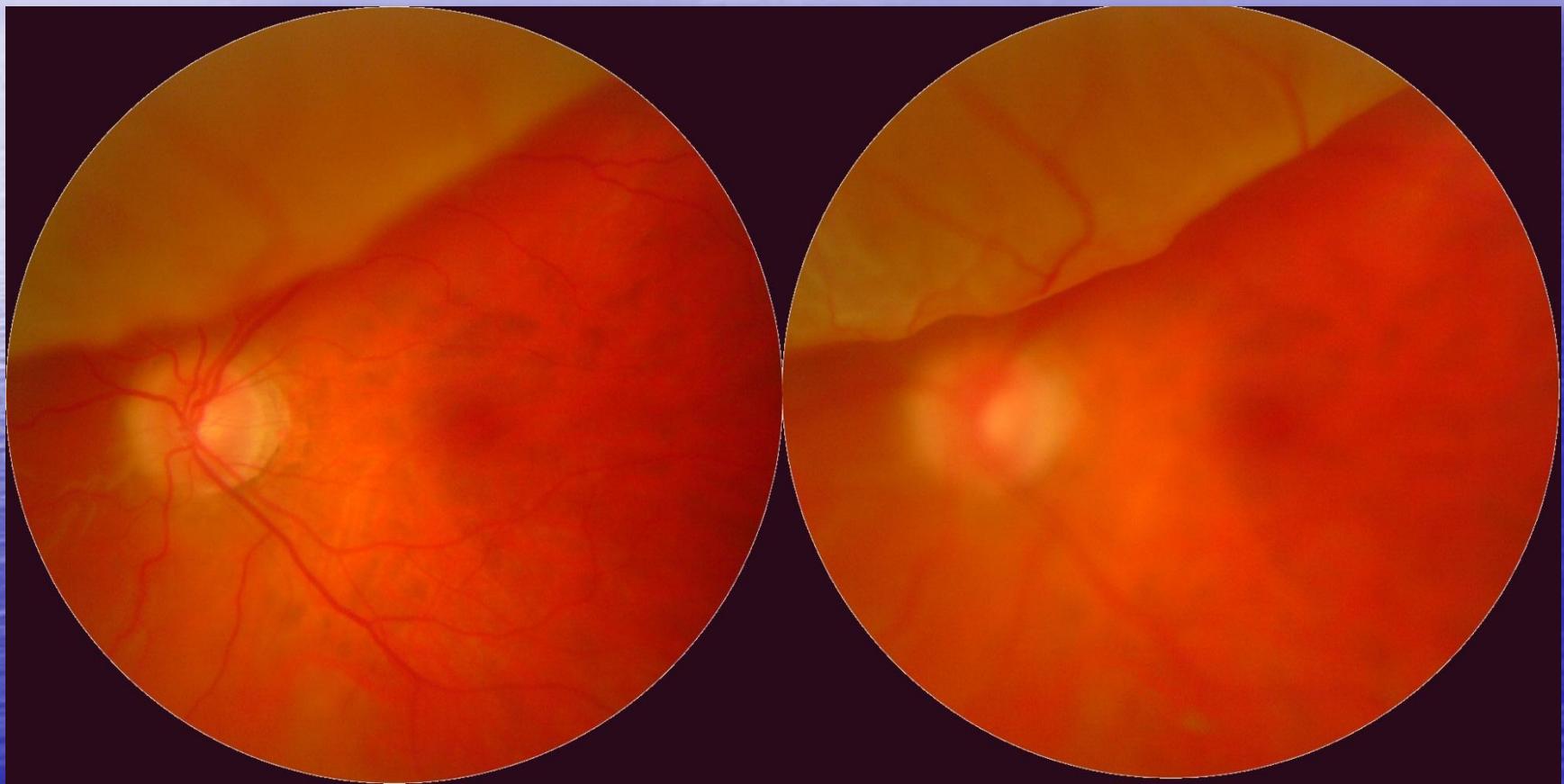


Retinal lesions

- Size changes
- Elevations
- Parameter measurements
- Stereoview
- Mosaic



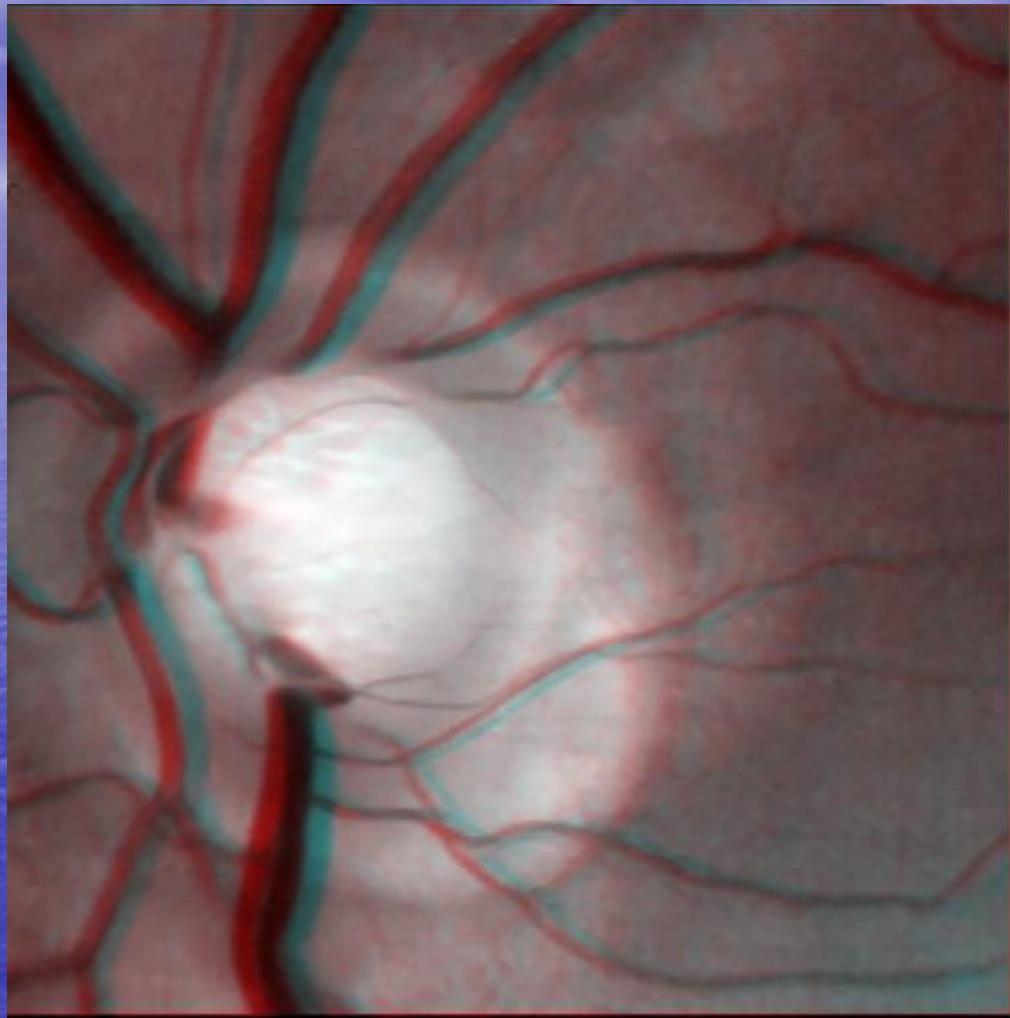
Elevation

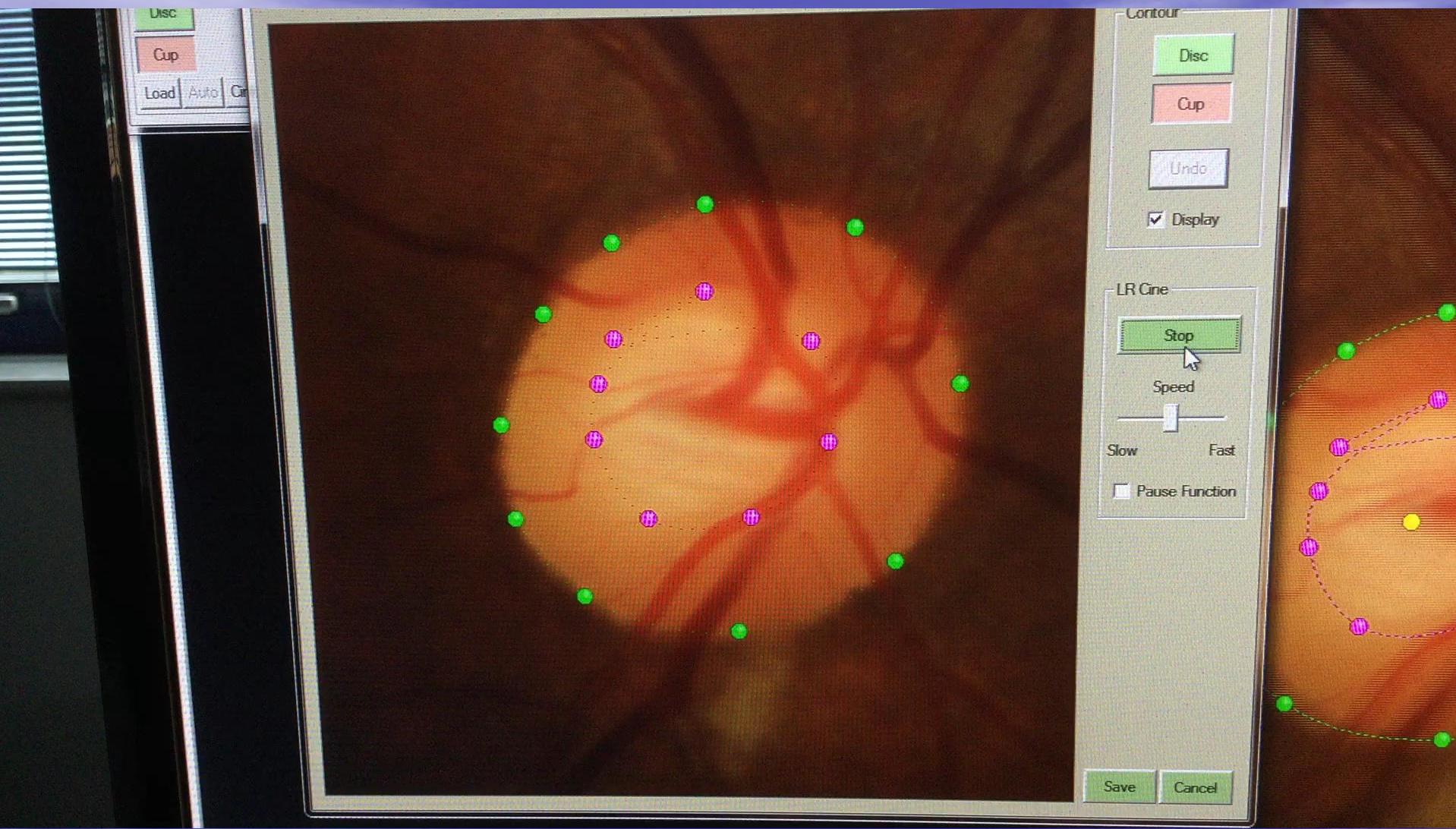


Mosaic



Disc







Report Viewer

 Preview Print Generate Analysis Report Generate RawData ReportCircle Radius:
0.8 1.70 2.5

RNFL Analysis Report (ILM - NFL)

**chris bennett****OD**

Patient ID: bill33 Scan Type: 3D Scan
Date of Birth: 31/12/1962 Fixation: Disk
Gender: male Scan Date: 09/03/2009 Image Size: 6.00mm x 6.00mm
512 x 128 pixels

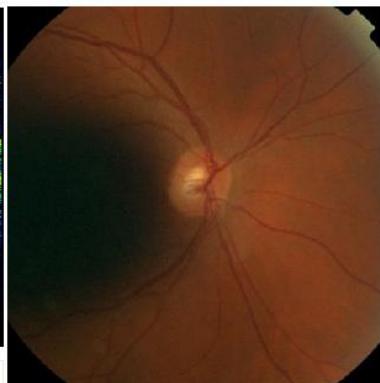
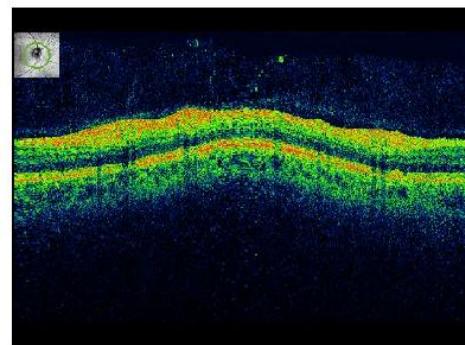
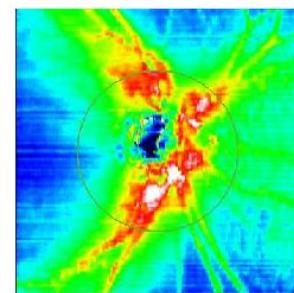
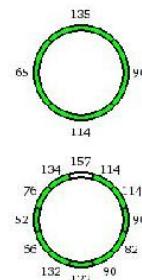
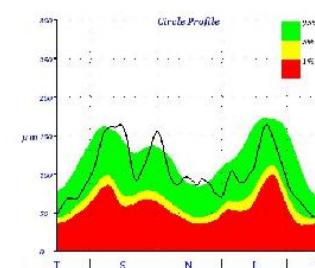
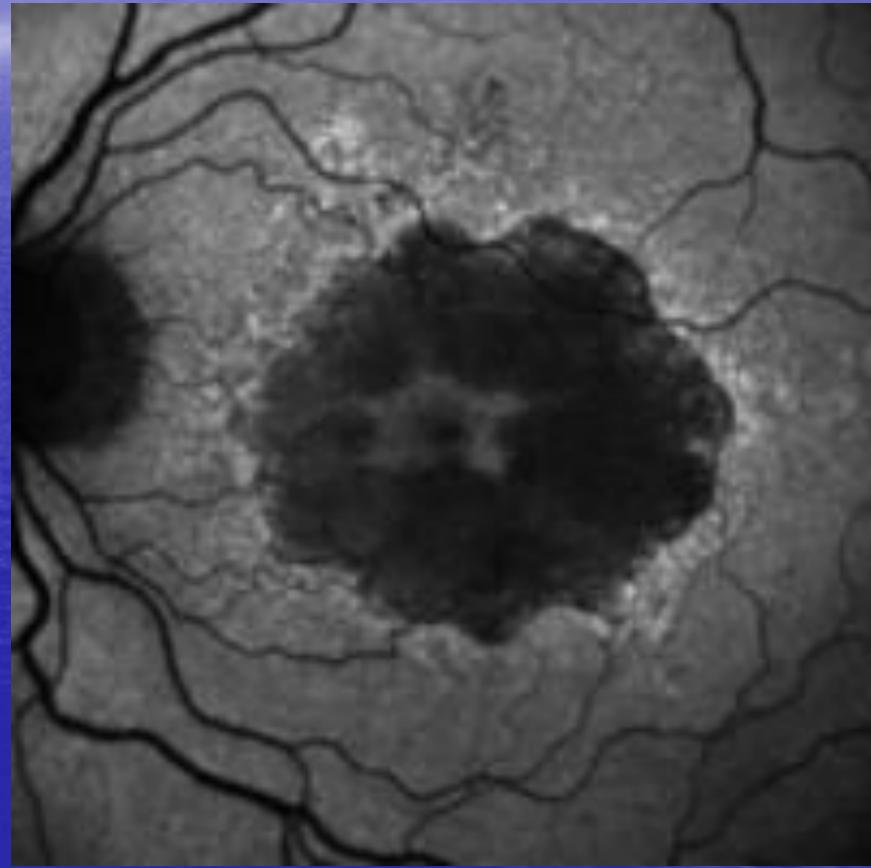
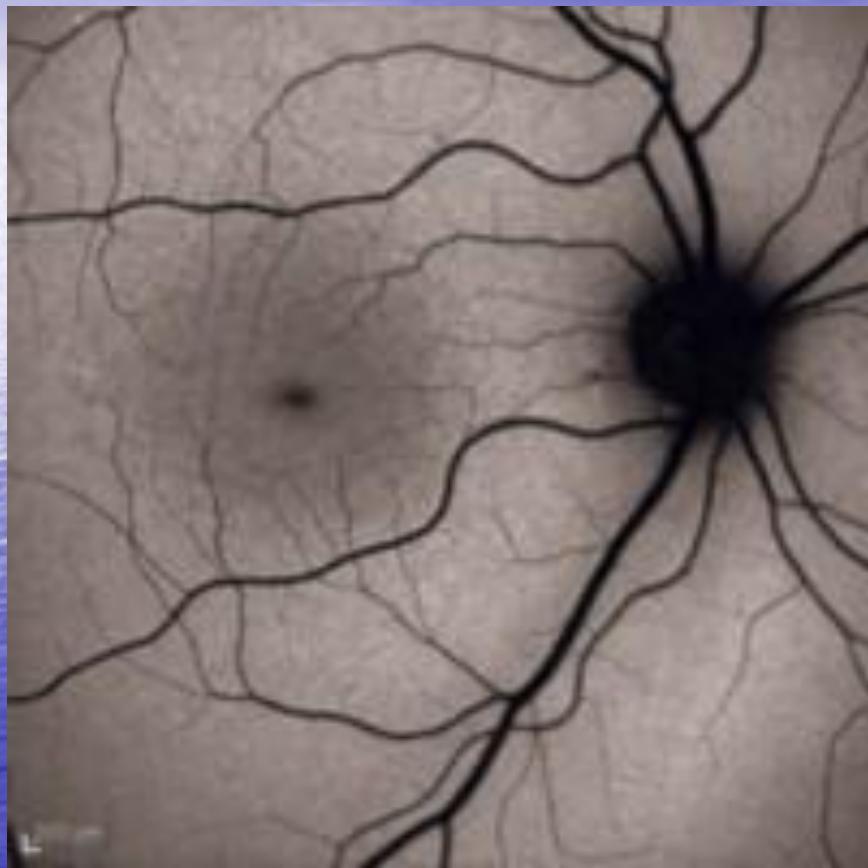


Image Quality: 76



Normative Database, Caucasian, Age group: 40-70 yrs
Courtesy of the Rotterdam Study

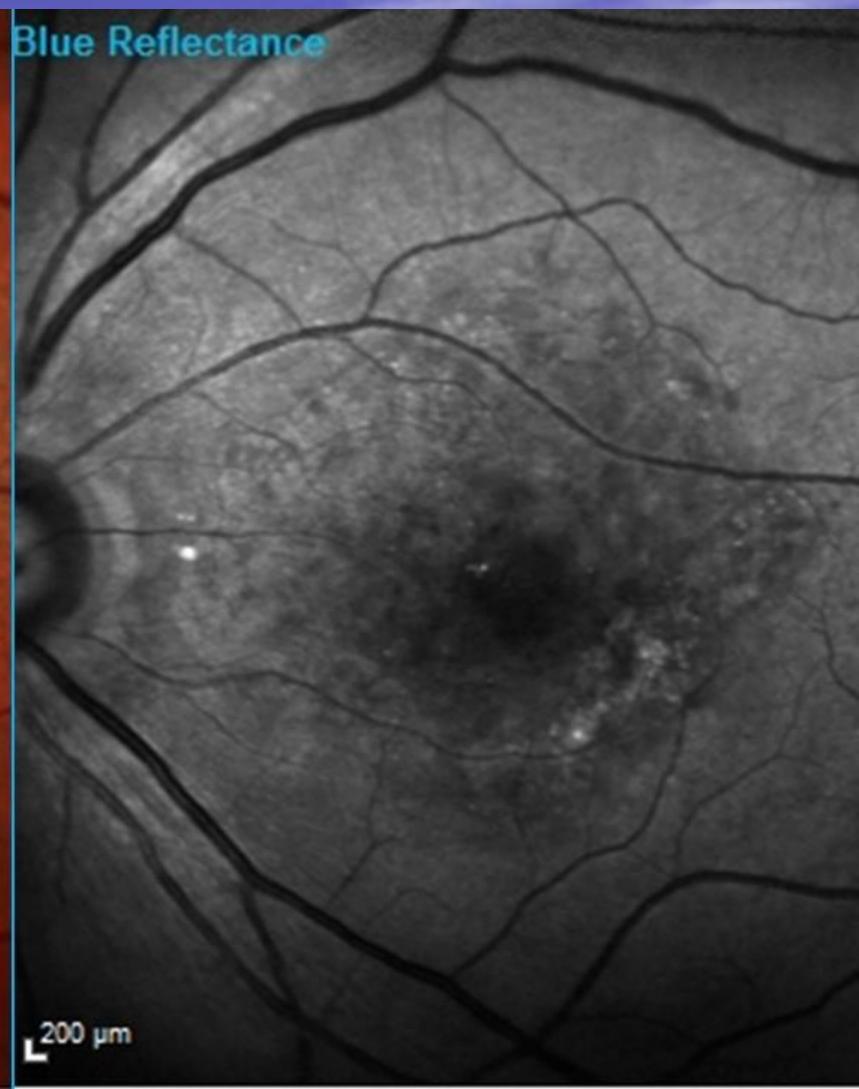
Comment:



MultiColor

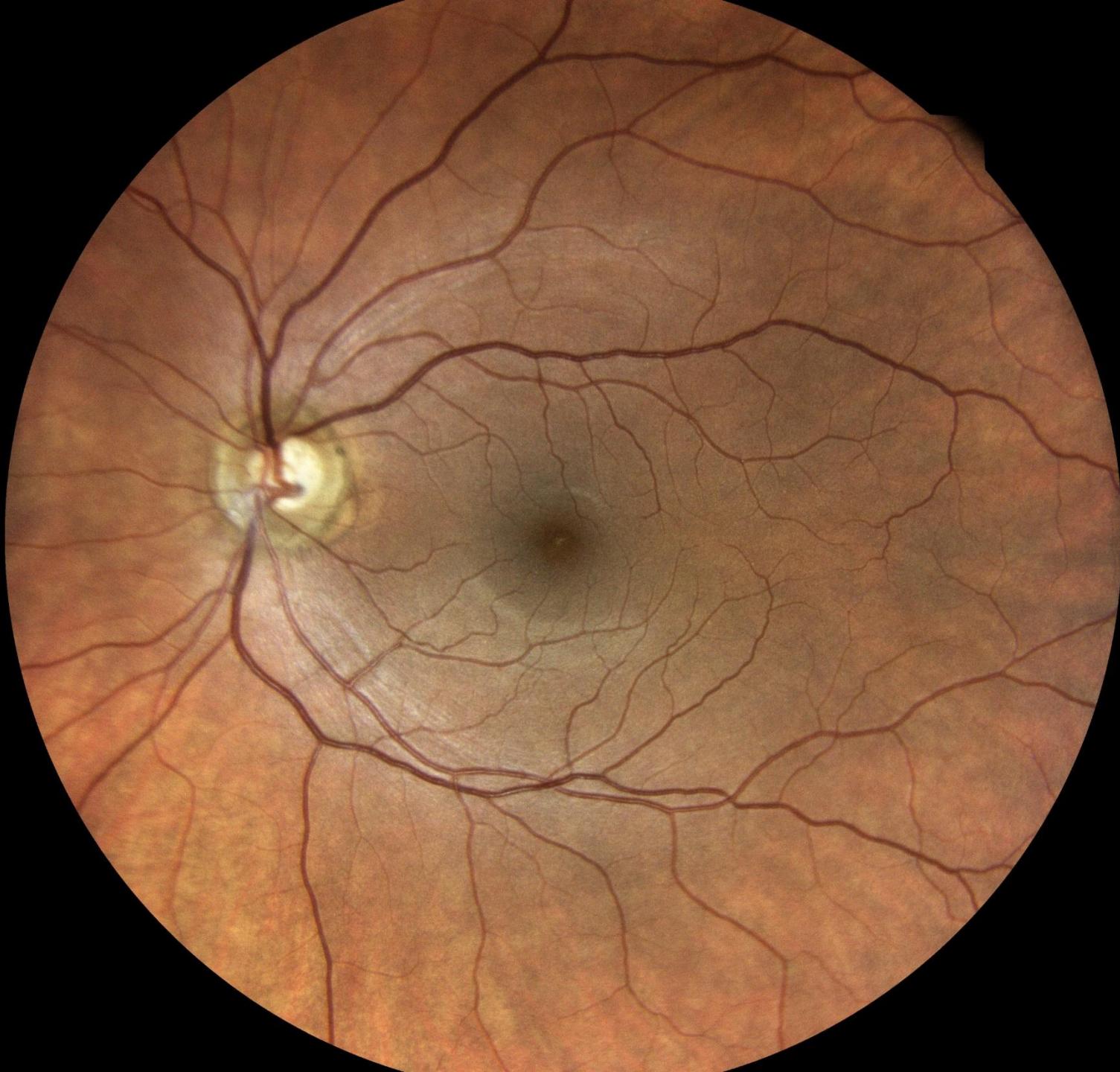


Blue Reflectance



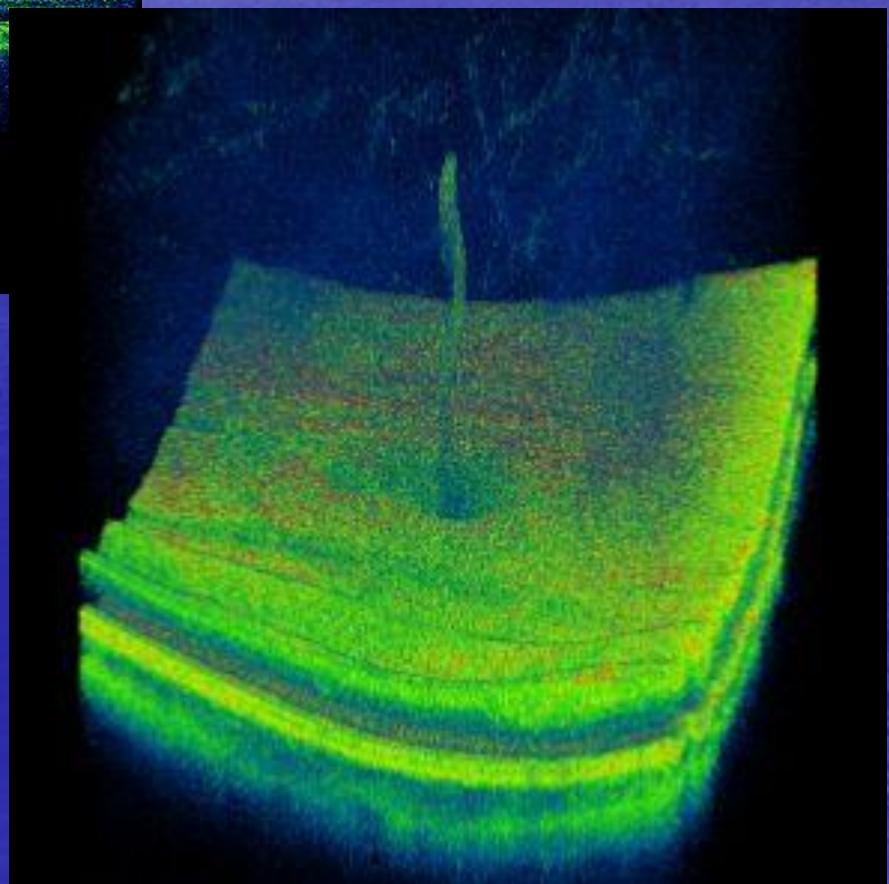
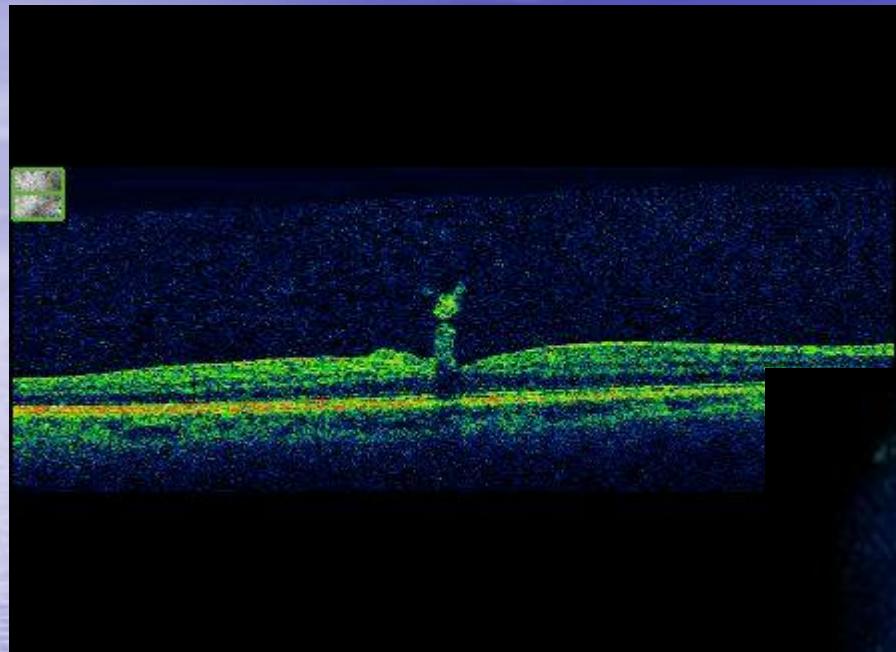
L 200 µm

L 200 µm

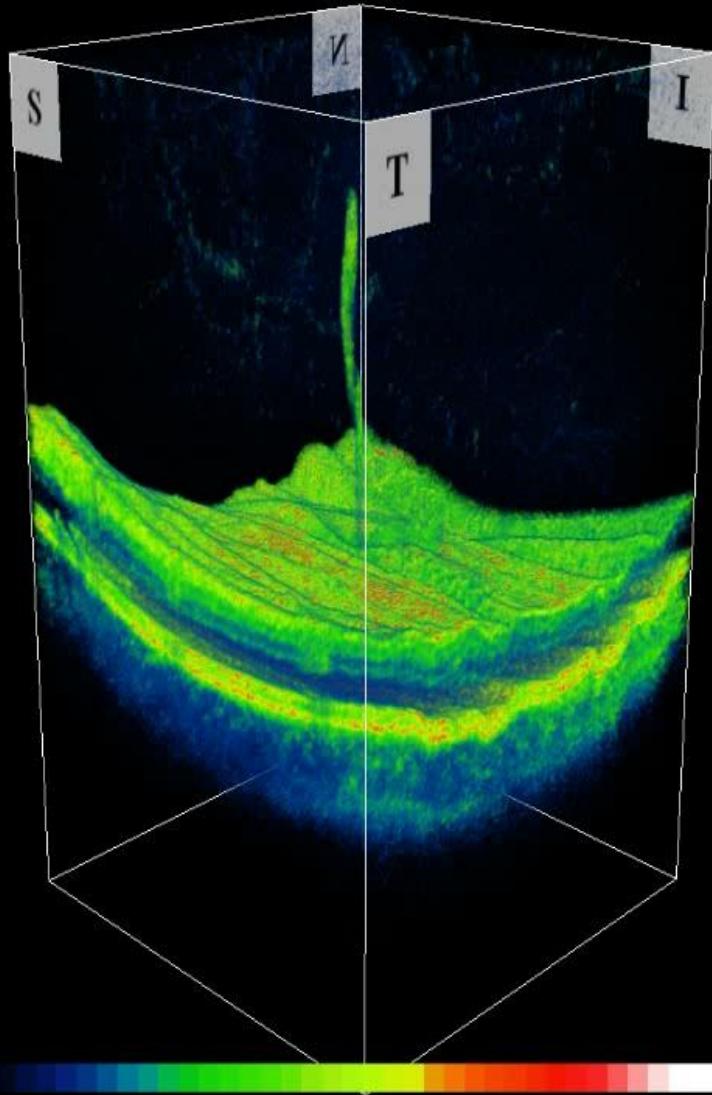


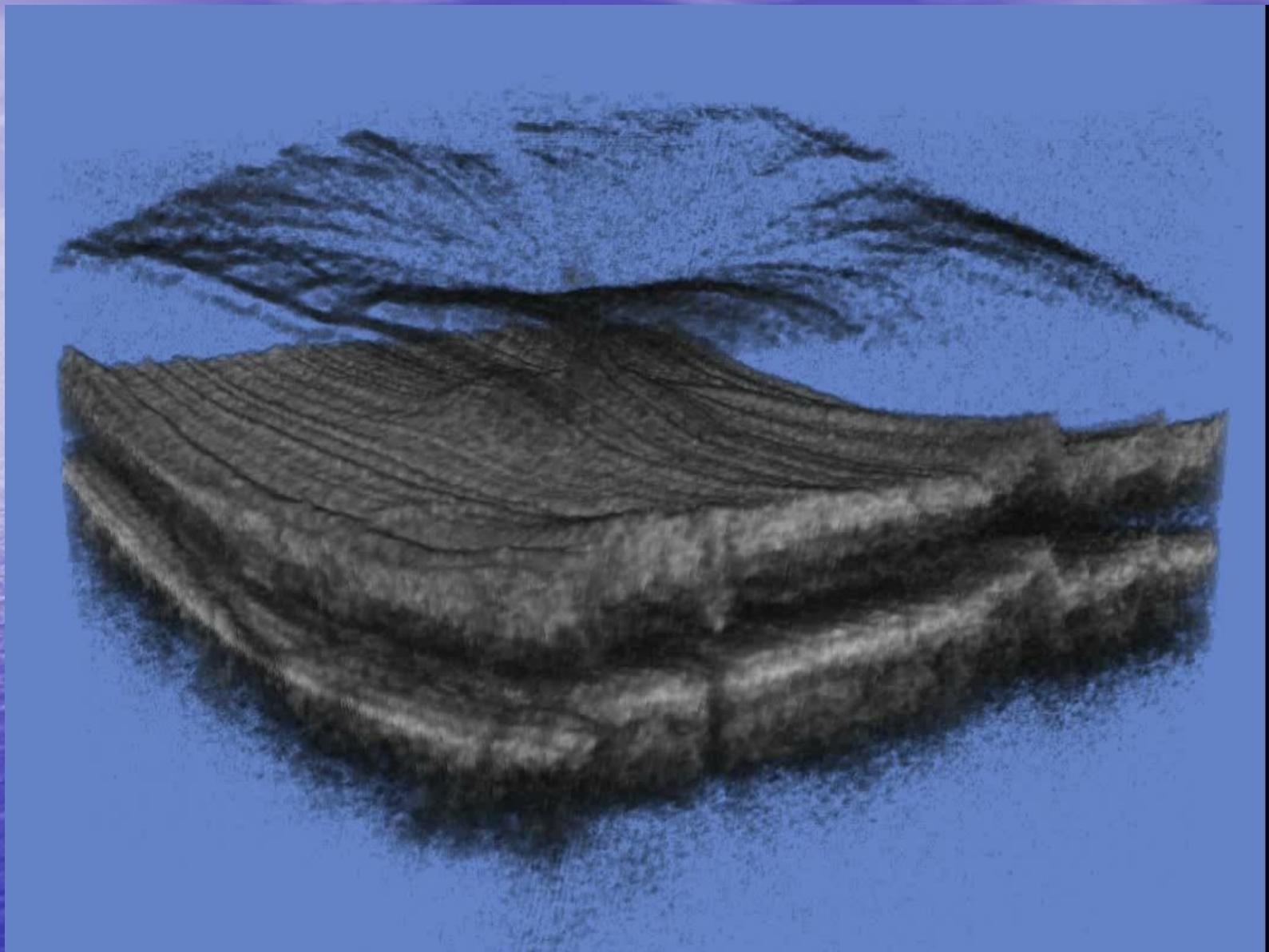
Case 7





Volume
Slicing





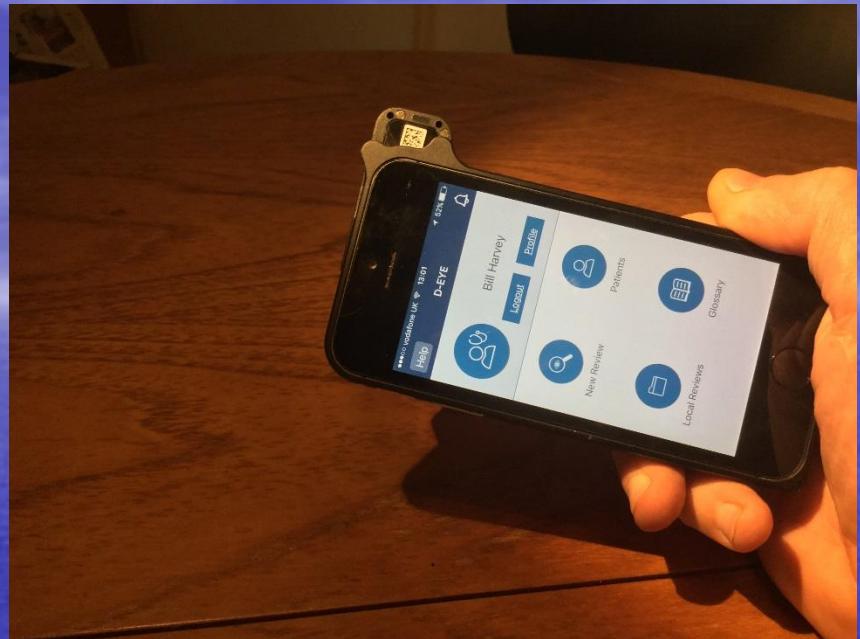
Legal Implications

- Time code
- Over-referrals
- GOC Standards of Practice – delegated function
- Honey Rose case
- Telemedicine



Telemedicine

- P Keane Google trial
- Portable devices





Thanks for your time

Questions?

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