



Optical Coherence Tomography

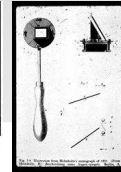
Nicholas Lee
Consultant The Hillingdon Hospital
& The Western Eye Hospital



- 1851 Hermann von Helmholtz
- 1871 Marc-Antoine Giraud-Teulon



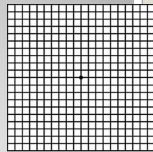
Early Ophthalmoscope
Edward Meyer 1873
(from NLM History of Medicine Collection)



How we Examine the eye

Diagnosis of AMD

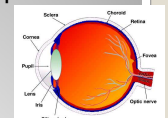
- Symptoms
- Examination
 - Visual Acuity
 - Dilated Fundal examination
 - Ophthalmoscope
 - Slit Lamp Bio-microscopy 78/60D
- Investigations
 - Optical Coherence Tomography
 - Fundus fluorescein angiography
 - Indocyanine Green Video Angiography (ICG)
 - Auto fluorescence



Fundal Examination

Pupil dilation – why Not?

- Conundrum in GP & Optometrist practice
 - Time
 - Driving
 - Fear of Closed angle Glaucoma
 - Equipment
 - Training
 - Expertise
- If symptoms present
 - Going to refer any way
 - Prefer expert to make diagnosis
- Dual Pathology
 - Do not assume its just a Cataract

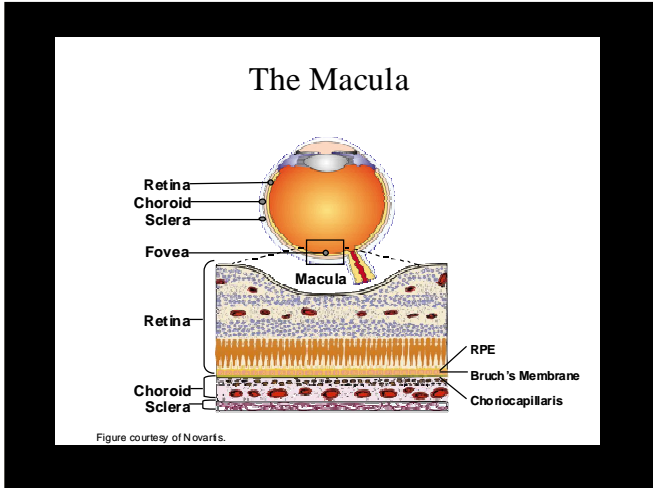


- Ophthalmoscope
- Slit lamp
- Biomicroscopic
- Non-Mydriatic Photography – 3mm pupil
- Fundus fluorescein angiography
- Optical Coherence Tomography
- ICG
- **Fundal examination**



Untreatable AMD (Late-onset for GPs)	Drusen (Late-onset & early diagnosis of AMD)	AMD (Late-onset & early diagnosis of AMD)
<p>Untreatable AMD shows a large, dark, irregular lesion in the macula. The area where the lesion is located is not suitable for treatment.</p>	<p>Multiple drusen are present (large).</p>	<p>Fundus of eye showing late-stage AMD. There are multiple drusen in the macula. There is a large, dark, irregular lesion in the macula. This area is not suitable for treatment.</p>
<p>Untreatable AMD shows a large, dark, irregular lesion in the macula. The area where the lesion is located is not suitable for treatment.</p>	<p>Multiple drusen are present.</p>	<p>Fundus of eye showing late-stage AMD. There are multiple drusen in the macula. There is a large, dark, irregular lesion in the macula. This area is not suitable for treatment.</p>
<p>Untreatable AMD shows a large, dark, irregular lesion in the macula. The area where the lesion is located is not suitable for treatment.</p>	<p>Multiple drusen are present.</p>	<p>Fundus of eye showing late-stage AMD. There are multiple drusen in the macula. There is a large, dark, irregular lesion in the macula. This area is not suitable for treatment.</p>





Optical Coherence Tomography (OCT)

- Very versatile Scanner akin to MRI scans – 3mm pupil
- Pachymetry, Corneal
- Iris Angles for Closed or Narrow Angles
- Retina
- Optic nerve for glaucoma GDx

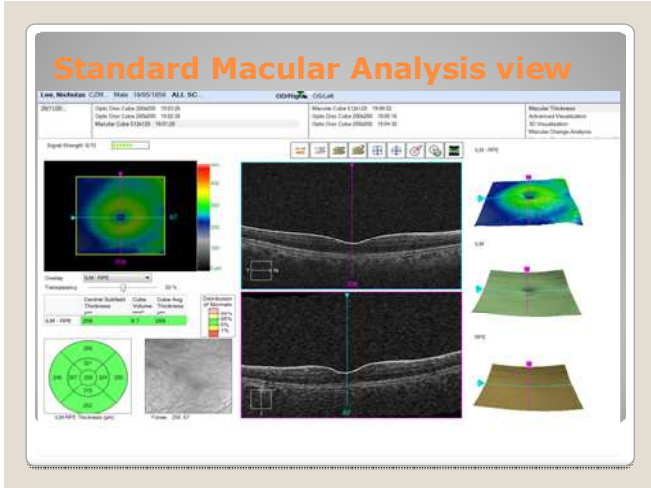
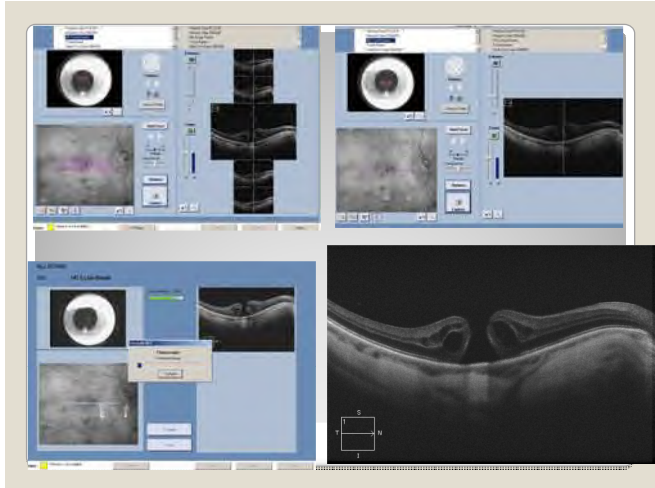
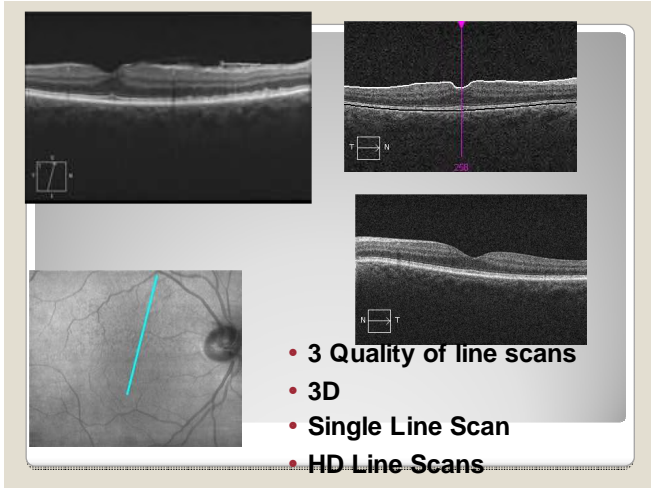
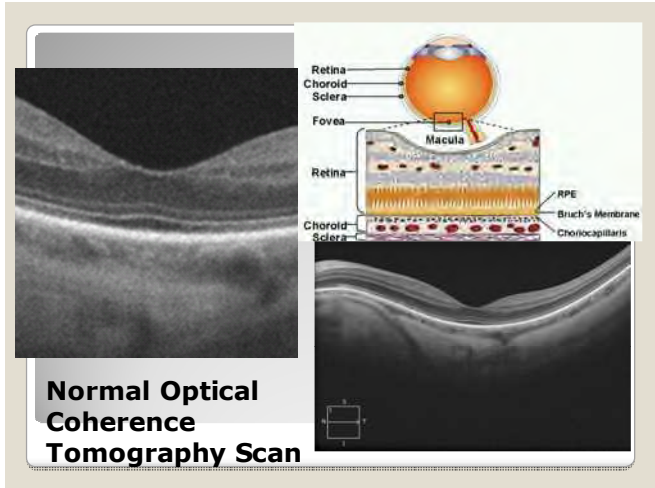
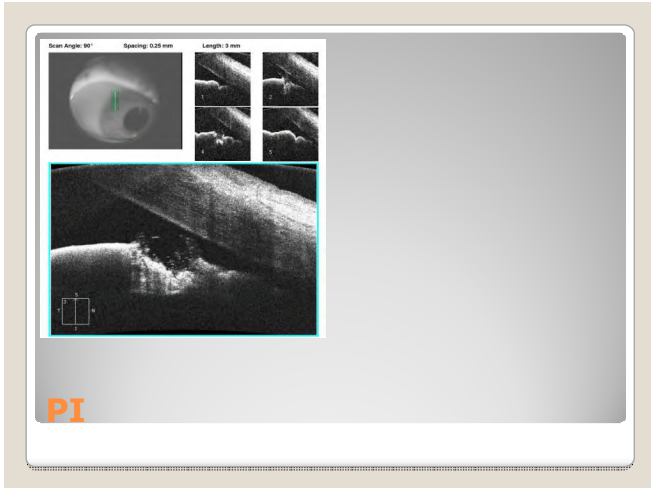
Zeiss Cirrus HR OCT

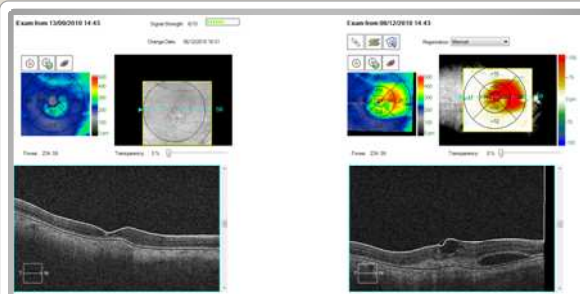
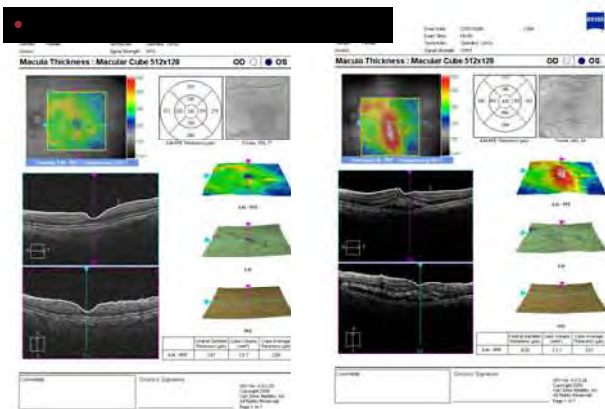
- Fast Acquisition
- Fast processing
- Networkable
- Portable

Pachymetry
Easy to measure corneal thickness
Corneal Pathology

Corneal edema from contact lens wear
660 Vs 567 um

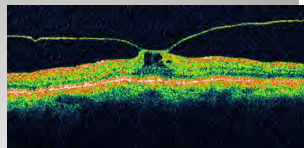
Iris Scans
Open, Narrow,
Plateau, Closed





**Macular Change analysis
Mainstay for AMD service.
Dry since July 2010 after 17
Injections of Lucentis.**

- Number with adhesion
- Exudative AMD 36%
- Dry ARMD 7%
- Controls 10%



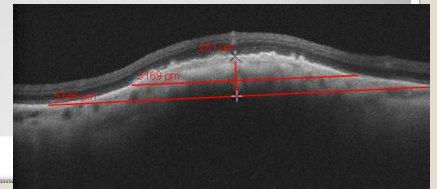
- Chronic VR traction may lead to increased chemical changes leading to wet AMD.
- ? Injection of Microplasmin to separate VR? Role

- ? Also pathogenesis of Macular holes
- Microplasmin Trials underway 12/08 -2010
- 125ug Microplasmin Intravitreal injection.

**Central Vitreo-Retinal Adhesion
Theory of Wet AMD Formation**

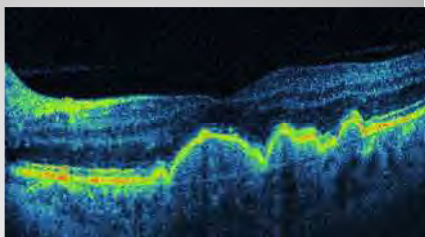


- Choroidal Naevi on HD Optical Coherence Tomography

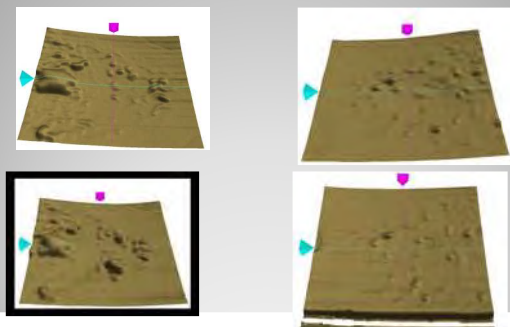


Drusen

- Beginning early in life..
- Remnants of the incomplete degradation of abnormal molecules which have been damaged within the RPE cells or derived from phagocytized rod and cone membranes.
- Further deterioration of the RPE.
- Dry AMD
- Wet AMD



Change in drusen over one year



This document was created with Win2PDF available at <http://www.win2pdf.com>.
The unregistered version of Win2PDF is for evaluation or non-commercial use only.
This page will not be added after purchasing Win2PDF.