

Optical Coherence Tomography – OCT “K9”

Traditionally doctors examine the eyes directly with one form of a magnifying glass – either an Ophthalmoscope or on a slit lamp with a Biomicroscopic Fundal lens.

While this allows the doctor to look at the surface of the eye and the surface of the retina at the back of the eye, it does not let us look into the fine structures of the eye.



Optical Coherence Tomography is like a MRI scan of the brain, it allows the doctor to look inside the structures of the eye just like a microscope slide.

The detail that modern Optical Coherence Tomography scanners can display is truly outstanding and has transformed my practice over the past year.

I was so impressed with the images and the detail that I bought my own Know locally as “K9” – due to the resemblance to the Doctors best friend in Dr Who.

The imaging takes only a few minutes to undertake using a scanning laser

Optical Coherence Tomography (OCT)

- **Very versatile Scanner akin to MRI scans**
- **Retina,**
- **Optic nerve for glaucoma**
- **Iris Angle for closed angle glaucoma**
- **Cornea for corneal lesion and Corneal thickness**

oOphthalmoscope.

It is complete painless and safe. As with most ophthalmic instruments it means staring into the eye of the Instrument while K9 takes the images.

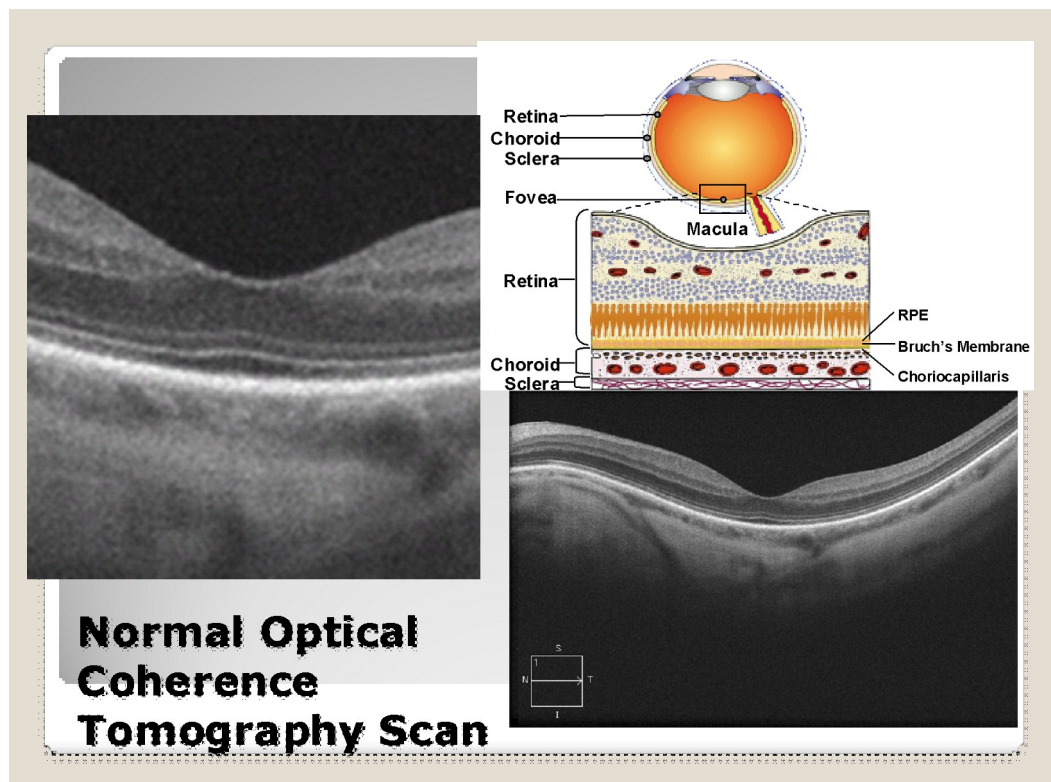
The instrument is incredibly versatile and is able to scan several parts of the eye:

1. Cornea – Scanning the surface of the eye to look at the fine detail of the cornea
2. Pachymetry – to measure the thickness of the cornea required for NICE Glaucoma assessment.
3. Iris & Iris angle – Important in glaucoma to detect Plateau iris or Narrow angle glaucoma
4. Vitreous – Able in 3D to image opacities in the middle of the eye. In diabetics can identify traction strands onto the retina which may have to be removed.

5. Retina – The main use. The retina is a very complex structure that is like the film of the camera. Its delicate layers, the photoreceptors, rods and cones as well as the dark retinal pigment epithelial layer can be seen.
 - a. This is enormously useful if identifying Age related macular degeneration, drusen, Vein occlusions and Diabetic macular oedema etc etc.
6. Optic Disc – The Nerve of the Eye. Incredibly important in Glaucoma. We can now count the number of nerve fibres that are present. This pattern is unique to each individual and allows one to diagnose glaucoma as well as very accurately follow Patients. Also able to look at swollen discs, anterior ischaemic optic neuropathy etc....
 - a. Glaucoma Module allows Heidelberg Retinal Tomography like statistics to be calculated eg Optic Disc to Cup ratio, Volume of the optic cup etc..

Below is some typical examples of images seen.

High definition
Optical Coherence
Tomography of the
Retina Showing
how the scan
resembles the
retinal structure.



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