Investigations

What investigations might be performed?



The complexity of retinal disorders means that sometimes extra investigations will be needed to allow diagnosis of your condition and to allow a plan of action to be made. Many of these investigations involve state of the art technology, most are entirely non invasive and provide wonderful insights into the working of your eye.

Here are some of the common investigations used:

Ophthalmoscopy

The surgeon will use a number of special optical tools which allow a magnified 3D image to be obtained of the various parts of the eye. Using high powered lenses the retina can be thoroughly examined. Skilled use of these instruments is part of the reason that retinal surgeons require extensive training before practising their craft.



Photography, Fluorescein Angiography and ICG Angiography



Using special cameras it is possible to photograph the retina to monitor disease. Using special dyes (fluorescein and indocyanine green, ICG) it is possible to look for damaged areas of the retina or choroid (the blood vessels behind the eye). This is especially important when looking for the membranes which destroy vision in macular degeneration as shown on the left.

Ultrasound

This uses sound waves to build up a picture of the eye and is especially useful when there is no view of the eye by ophthalmoscopy, e.g., in vitreous haemorrhage. The cause of the haemorrhage can be looked for:

- Diabetic retinopathy
- Retinal tear or detachment.
- Retinal vessel occlusion
- Macular degeneration



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Doppler signals can be obtained to allow identification of individual blood vessels in the eye.

Optical Coherence Tomography

This uses low dose laser light to scan the macula of the eye producing images of slices of the retina. It is particularly useful for identifying:

- Macular holes
- Macular pucker
- Macular oedema
- Macular degeneration



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