



Special Examinations

Optical Coherence Tomography (OCT)

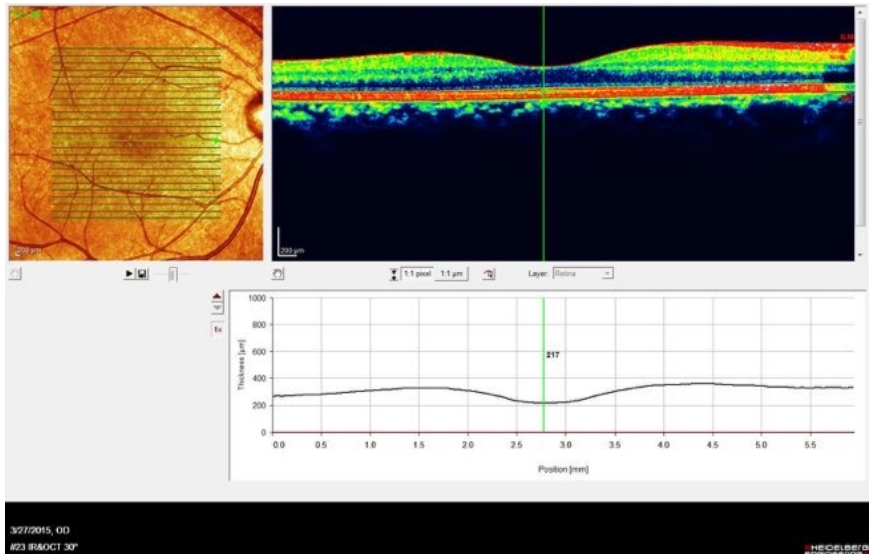
The OCT is an imaging device used in Ophthalmology to see the finest details of the eye. It uses a light beam projected on to the structures of the eye to probe the microscopic anatomy and detect abnormalities that were only seen previously in fixed specimen using a laboratory microscope. The reflected portion of the light beam is analyzed and converted by a computer into the OCT image.

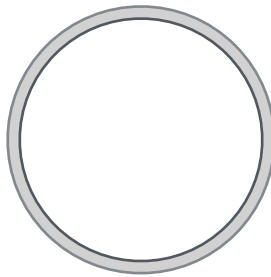


Our OCT is the Heidelberg Spectralis (www.hiedelbergengineering.com/international/products/spectralis/), a state of the art machine that renders a 3-D image of the structure being examined. The different layers of the ocular tissues can be “peeled away” from the digital image so the doctor can see deeper and deeper in high resolution. An ophthalmologist uses the analytical information generated by the machine, like measurements of thickness with a resolution in microns (1/1000 of a millimeter), and the visualized structures to make a diagnosis and to show the patient what is wrong with the affected eye.

Macular OCT

Despite the ease by which an ophthalmologist can view the centre of the retina, called the macula, it may be difficult to specifically diagnose macular disease without the OCT. The Macular OCT can reveal the presence of fluid within the retina (macular edema), show small breaks in the macula (macular hole), demonstrate the disappearance of some layers of the retina (atrophy) or the wrinkling of surface of the retina (epiretinal membrane), and exhibit depth and extent of deposits and haemorrhages within the macula (macular degeneration and other retinal diseases).

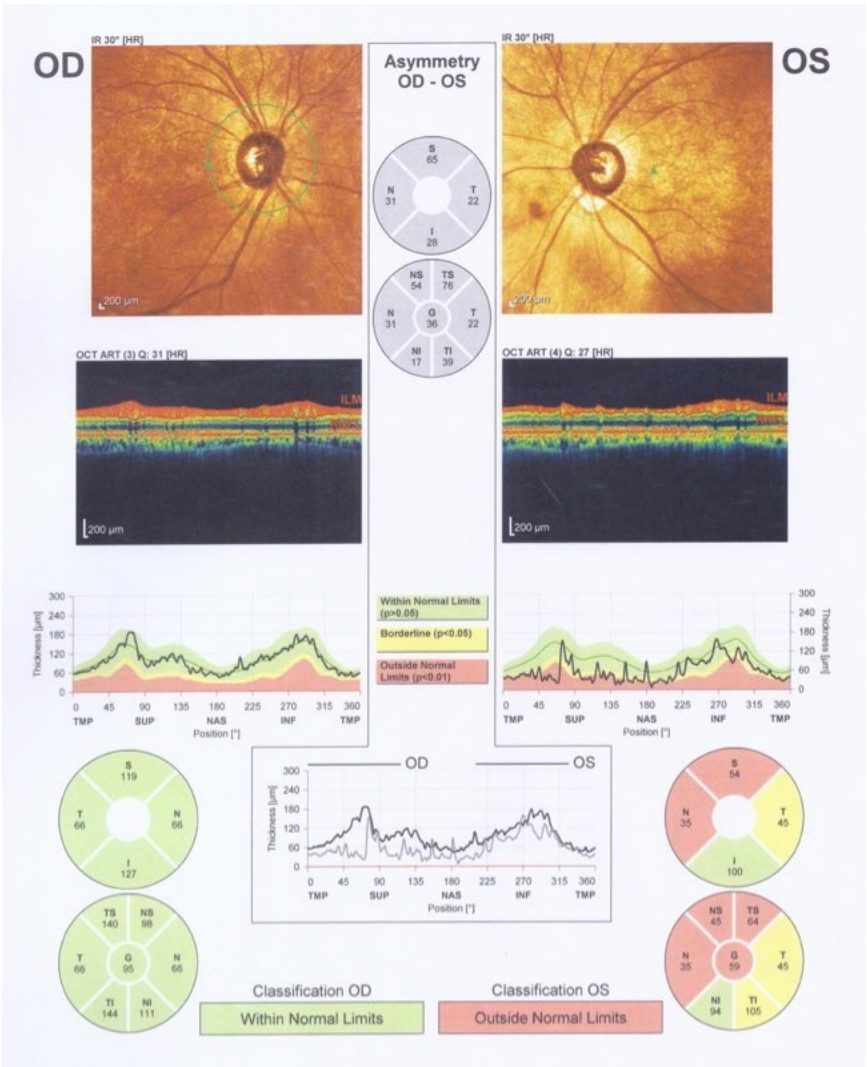




Optic Nerve OCT

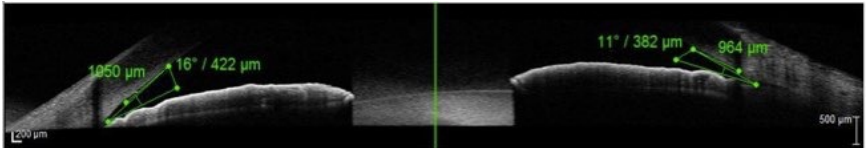
The measurements of the optic disc and retinal nerve fibres around the optic nerve reveal the precise thickness of these tissues, important in the diagnosis and monitoring of glaucoma, where the optic nerve fibers progressively disappear.

The measurements are compared to a database of age-matched "normals." The color-coded schematic diagrams of the optic disc and retinal nerve fibres are indicators of how far a measurement is from the expected normal measurements.



Anterior Chamber OCT

The OCT can measure the front of the eye. The clear cornea, the white sclera, and the iris can be visualised in microscopic detail. Especially useful is the measurement of the angle formed by the junction of the peripheral iris and the internal surface of the cornea, which clues the doctor as to the risk of angle-closure glaucoma. The depth of corneal lesions can also be visualized and influence a doctor's management.



Note

With OCT, as with all examinations, the value of the test is enhanced by comparing the results of several tests done at periodic intervals, giving us a timeline of the condition.

Different OCT machines have similar tests but the comparability of the results from different machines is limited. The best comparisons are obtained if the tests are stored in a single machine since the computer software itself can do the comparative analysis and can automatically mark areas where a significant change is detected.

The examination results should be correlated with the clinical findings of the patient. While the OCT is a very sensitive machine, it cannot be used by itself to provide a definitive diagnosis. The final diagnosis and ensuing treatment plan will be based on the ophthalmologist's interpretation of all the findings, not just the OCT.