

# Technology Offers Spectacular 3-D Views of Inner Eye

Coastal Eye Specialists is making good use of a sophisticated advanced imaging device which provides spectacular 3-D images of the eye's inside layers. Called Spectral Domain Optical Coherence Tomography (SD-OCT), the instrument is enabling doctors to diagnose, monitor and treat eye disease more precisely.

SD-OCT is, in effect, "optical ultrasound," but unlike ultrasound, SD-OCT delivers high-resolution, near-microscopic images based on light rather than sound. The device uses a low energy laser beam to scan the eye. The latest and most sophisticated models, such as the one at Coastal Eye, uses incredibly precise and sophisticated eye tracking to provide a clearer image, as well as to allow visit-to-visit comparison so any changes can be seen.

The technology is widely used by retina specialists to image that inner layer of the eye for macular degeneration, diabetes, and many other diseases. At Coastal Eye, the SD-OCT is also used for a number of other diagnostic tasks, such as the monitoring and treatment of glaucoma.

## A 'Simple' Box

The outer appearance of the SD-OCT is not dramatic. It's a machine, a box-like device with a little lens. The patient sits in front of it and looks in at the light. It takes just a few seconds to run a scan, quickly and painlessly. But out of that brief moment — and processing by a highly sophisticated computer — comes a rich trove of diagnostic information.

SD-OCT scans enable doctors to view the layers of the eye, such as the retina and the optic nerve, beneath the surface.

"Now we can actually look into the living eye and see things underneath the retina, such as blood, cysts, leakage, swelling, degenerative spots, all kinds of things like that," observed Dr. Lee Wan, Coastal Eye Medical Director. "We can use it to measure the thickness of the nerve layers so that we can track damage from glaucoma, and pick up sections where the nerve is thinner or weakened from glaucoma or other conditions. So SD-OCT is really an amazing technology. It's like being able to do a biopsy in a live eye."

Dr. Wan said SD-OCT is not a routine screening tool or a substitute for a thorough eye exam. "But there are patients who come in with things that we can't always identify or diagnose right away. And SD-OCT gives us a whole new look at these patients in ways that we never had before."