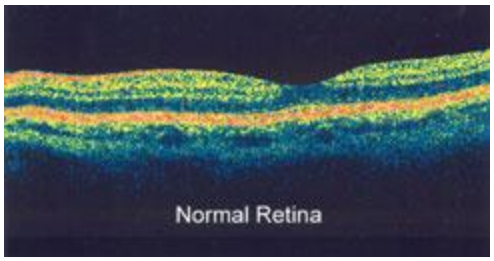
What Is Optical Coherence Tomography?



Optical coherence tomography (OCT) is a non-invasive imaging test that uses light waves to take cross-section pictures of your retina, the light-sensitive tissue lining the back of the eye.

With OCT, each of the retina's distinctive layers can be seen, allowing your ophthalmologist (Eye M.D.) to map and measure their thickness. These measurements help with early detection, diagnosis and treatment guidance for retinal diseases and conditions, including age-related macular degeneration and, diabetic eye disease, among others.

What happens during OCT?

To prepare you for an optical coherence tomography (OCT) exam, your Eye M.D. will put dilating eye drops in your eyes in order to widen your pupil and make it easier to examine the retina.

Once your eyes are dilated, you will be seated in front of the OCT machine and will rest your head on a support to keep it motionless. The equipment will then scan your eye without touching it. Scanning takes about 10 to 15 minutes. Afterwards, your eyes may be sensitive to light for several hours from being dilated.

What conditions can OCT help to diagnose?

Optical coherence tomography (OCT) is useful in diagnosing many eye conditions, including:

- Macular hole;
- Macular pucker;
- Macular edema;
- Age-related macular degeneration;
- Central serous retinopathy;
- Diabetic retinopathy;
- Preretinal membranes.

In addition, OCT is often used to evaluate disorders of the optic nerve. The optic nerve is made up of many nerve fibers and sends signals from your retina to your brain, where these signals are interpreted as the images you see. The OCT exam is helpful in determining changes to the fibers of the optic nerve, such as those caused by glaucoma.

Since OCT relies on light waves, it cannot be used successfully with any condition that interferes with light passing through the eye, such as dense cataracts or significant bleeding in the vitreous (the gel in the center of the eye).