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Implanted Telescope Used to Help Improve Vision

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LAKELAND | A tiny telescope inside his right eye has given John Reinhold some of the sight he lost to age-related macular degeneration.

It lets him read books again and watch television after having been legally blind.

Macular degeneration wipes out the eye's central vision by damaging the macula, that small part of the eye that's needed for central vision. People retain some peripheral vision in the eye.

"I'd see people in church," the retired developer said by telephone in an interview from his home in Cincinnati, Ohio.

"They'd come up and I couldn't recognize them until they got on top of me."

That changed after surgery last October, done by Dr. Marc H. Levy of Sarasota Retina Institute. A neuro-ophthalmologist, Levy was the first in Florida who did surgery to implant the intraocular telescope.

He did five in the study that got the procedure approved and has done about one every other month since February 2013.

He puts the telescope into the better of the two eyes that are legally blind. It replaces the patient's lens in that eye.

"This disease robs you of a lot of different things," said Levy, a retinal specialist.

"It robs you not only of your sight but of your social interaction."

The procedure isn't being done in Polk County yet, according to VisionCare Ophthalmic Technologies, creator of the CentraSight procedure. In addition to Sarasota, teams have done it in Orlando, Fort Myers, Jacksonville, Miami, Panama City, Pensacola and West Palm Beach.

Another location — the University of South Florida in Tampa — has just begun, VisionCare said.

Reinhold's vision isn't perfect, but the difference has been profound.



PROVIDED BY CENTRASIGHT
AN IMPLANTABLE MINIATURE TELESCOPE is used to help improve vision in patients with end-stage age-related macular degeneration. The condition wipes out the eye's central vision.

"I enjoyed reading and that was taken away," said Reinhold, 78. "Now I sit down in front of Kindle."

As for watching television, he said, he can sit 5 or 6 feet from the screen because the telescope magnifies the picture 2.7 times.

He isn't able to read newspapers because of the size of the type.

There are other procedures available to treat wet or advanced neovascular macular degeneration. They include injections into the eye, laser treatment of parts of the eye and laser surgery, according to the National Eye Institute.

Reinhold's options were limited because he has end-stage dry macular degeneration rather than the wet type. The other procedures wouldn't have worked for him.

Nine in 10 of more than 10 million people with macular degeneration have the dry type, the Foundation Fighting Blindness estimates.

Reinhold remembers his excitement when a son, living in the Tampa Bay area, called and said, "Dad, I just saw something on the Internet. The (Food and Drug Administration) approved a procedure for dry macular degeneration."

Levy, too, was excited when FDA approval came after years of study. "This was the first time a telescopic device was being put in the eye," he said.

FDA gave approval in 2010 for a limited category of people with end-stage dry macular degeneration. It took awhile after that for Medicare to start paying for the treatment, which Levy said costs about \$19,000, most of it being the cost of the implanted device. The guidelines include:

Being 75 or older.

Not having had cataract surgery in the eye where the lens will be placed.

Not having narrow-angle glaucoma.

Having a healthy cornea.

People can have astigmatism, nearsightedness or farsightedness if it's not too extreme, Levy said.

It's also crucial to have someone able to transport the eye patient to and from rehabilitation needed after surgery.

"This is like getting a new knee or hip," Levy said. "You have to learn how to see again."

A full CentraSight team involves a retina specialist, a low-vision optometrist, a low-vision occupational therapist and a cornea specialist/surgeon. More information is at www.CentraSight.com.

The cornea specialist normally is the one who does the surgery. Levy is "grandfathered" in to do the surgery because he did it in the study. Levy's team has Dr. Lissa Rivero, optometrist with Sarasota Retina Institute, and Yolanda Cate, occupational therapist with Low Vision Rehab Solutions.

Dr. Edgar Espana, Dr. Bruce Madow and Dr. Peter Pavan are the USF ophthalmologists. Dr. Bruce Anderson is its optometrist, with occupational therapists from Tampa General Hospital Outpatient Rehabilitation Services.

In Orlando, the team is Dr. William Dunn of Florida Retina Institute, Dr. Miguel Lugo of Lugo Eye, optometrist Dr. Chris Choat, Lighthouse of Central Florida, and occupational therapist Bonnie Smith of Low Vision Rehabilitation of Central Florida.

Before being approved to get the device, eye patients need to go through a couple months of testing. The low-vision optometrist works with the patient, using different powers of lenses in external telescope simulators, to see whether magnification would help.

The brain would need to get used to merging differing visions from two eyes, one magnified by the telescope and another having peripheral vision, into workable images.

Reinhold went through several meetings with the low-vision optometrist as his eyes adjusted post surgery. He said he had two sets of glasses, one for reading and the other for distance, with prescriptions that changed three times in less than six months.

"It is not a panacea," Levy cautioned. "I don't want to make it sound like it solves everything."

Yet he's enthused about the potential of the device and expects it will be approved for younger patients.

"Science fiction has become reality," Levy said. "We are putting a mini-telescope in the eye where the human lens used to be."

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