

Envision better eyesight

Camarillo doctor tests new laser eye surgery that reduces glare, halos around lights

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Kevin Kavanagh had been living with glasses since he was in third grade.

The Simi Valley resident wanted a chance to go to the beach without glasses. He wanted to be able to see the alarm clock in the morning without squinting. He wanted to buy a normal pair of sunglasses.

All of these things made him consider laser vision surgery.

When Dr. Paul Dougherty told Kavanagh he was a candidate for a trial of a new technique, he signed up.

Laser eye surgery has introduced new technology in recent years. Initial LASIK surgery corrected vision, but did not adjust other irregularities in the eye.

Custom or wavefront-guided laser surgery procedures use about 200 points of light to map the eye to make more subtle adjustments for vision correction, often lessening the risk of seeing halos or glare around lights after the surgery.

The new topography-guided LASIK procedure Dougherty and other doctors are testing uses 6,880 points of light to create a topographic map that shows subtle distortions in how the cornea bends light. That map is used with software to create a target map of what the cornea should look like after treatment.

The target map is used to guide the laser to correct any astigmatism and nearsightedness and smooth out any topographic irregularities.



Dana R. Bowler / Star Staff

Bryan McIntyre of Ventura undergoes a new LASIK procedure at Dougherty Laser Vision in Camarillo on Thursday.

The technique already is used elsewhere in the world, including Europe, South America and Asia, but the U.S. Food and Drug Administration has not approved any topographic-guided techniques.

FDA trials to assess the safety and effectiveness of the procedure started this month in two eye centers in the U.S., including Dougherty Laser Vision in Camarillo.

The study is a pilot program to see how the procedure works on 30 eyes in an attempt to gain FDA approval for a larger trial, which would take place at five centers.

Dougherty has done his share of FDA trials and is currently involved in five. Participating in such tests provides new possibilities for his patients.

Dougherty is an investigator and consultant for NIDEK Co. Ltd., the company that developed the technology being used in the research trial.

NIDEK hasn't brought its latest technology to the U.S. for several years, said David Harmon, president of Market Scope, which provides ophthalmic surgical market information. He noted that many companies often get approval for new technology outside the U.S. before seeking FDA approval because it often takes years to meet the U.S. study requirements.

"From a commercial standpoint, they're far better off doing it in Europe, where they can do the procedures, earn revenue and get the kinks worked out of the system," Harmon said.

About 40 percent of procedures done in the U.S. are custom LASIK, Harmon said. In 2005, about 1.4 million eyes, or 780,000 people, will undergo refractive surgery in the U.S., he said. About 5 million people in the U.S. have had refractive surgery since 1996.

The surgery

Kavanagh, an aeronautical engineer, sat in the waiting room on a recent afternoon looking through a window into the operating room.

He could see Dougherty sitting behind Jill Warner's tilted head while a nearby television screen showed a machine cutting a flap in the front of her eye, which Dougherty pulled back before starting the laser treatment.

Warner's mother, Jan Bernards of Santa Clarita, also watched. She and her husband had their own laser eye surgery done by Dougherty.

Bernards said her daughter, who rides horses professionally with the help of contacts, had been waiting a long time for the surgery.

"She was very excited," Bernards said.

Kavanagh said his hopes for the procedure were probably the same as anyone who came in for laser eye surgery: He wanted to walk away without glasses.

"It's a dream just to see the big E on the wall," he said.

The laser performs three separate treatments during topography-guided LASIK. Making a snapping sound that sounds a bit like static electricity, it first treats the eye for astigmatism if

necessary and then nearsightedness. After a few seconds, it targets any topographic irregularities, giving the eye a more regular shape.

"The more regular the shape, the better the vision," Dougherty said.

The next phase of the study will involve treating patients who had problems from previous laser vision surgery, such as seeing halos, night vision problems and glare.

Those types of patients haven't had a lot of options, Dougherty said.

Custom LASIK costs about \$4,900 for both eyes, Dougherty said. Patients in the FDA trial aren't required to pay any more than that, even though more advanced technology is being used.

Clear results

While Kavanagh was undergoing surgery, Bryan McIntyre of Ventura was getting prepped.

He said the cost of the surgery would be money well spent.

"I'm hoping I have perfect vision, but realistically I'll be happy if my vision is good enough to do the things I want to do," he said.

The mechanical engineer wears contacts. He wore prescription sunglasses to Dougherty's office for the surgery because he didn't have any prescription glasses.

McIntyre is an avid surfer. Contacts sometimes fall out or burned his eyes, and they were no good after he had been surfing.

"I feel like glasses and contacts are holding me back," he said. His dream is to go surfing in Central America and work at a surf camp in Panama.

McIntyre saw somebody having the procedure done when he came in for his first visit, but he didn't want to know too many of the details because it would just give him more to worry about.

"I'm a little bit nervous about the fact they're cutting my eyes," he said before taking the sedative given to each patient prior to surgery.

McIntyre came out well afterward, seeing about 20/40 immediately. By his follow-up appointment the next day, he had almost 20/10 vision, which means he can see clearly at 20 feet what people typically see clearly at 10 feet.

He said his vision blurred when his eyes were dry, requiring him to put drops in frequently, but he was told there would be fluctuations in the first two weeks.

He's looking forward to being able to play sports again.

"I think this is as good as it's going to get," he said. "I'm very happy."

Dougherty said five of the eight eyes he did the procedure on had "super vision" that was better than 20/20 on the first day. He said he was pleased with the results.

Kavanagh's co-worker, Tiffany Van Nguyen, watched from the waiting room during his surgery.

"I saw the whole thing," she said. "It was amazing."

She went back to visit Kavanagh after the surgery. "Can you see anything?" she asked. "Can you see me?" Kavanagh responded that he could see better, though it wasn't as clear as with his glasses.

When Dougherty came in, he told Kavanagh the surgery went well.

"Now, it's going to be blurry like you're looking through smoked glass," Dougherty said.

He flashed up letters on the wall, scaling down to numbers much smaller than the big E. Kavanagh read the letters from the different lines.

Dougherty told him things would be clearer the next day, and that he would be driving himself back for the follow-up appointment.

By the following week, Kavanagh had vision between 20/20 and 20/16. He said he has been pleased so far.

"I went out and bought my first pair of normal sunglasses in my life," Kavanagh said.

