

# TECHNOLOGY PUTS EYE SURGERY IN 3-D

## Sacramento specialists were among the first to use it

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**O**n the screen, Michelle Rose's left eye appeared to rise out of its socket to meet the scalpel.

When Dr. Rich Lewis cut into the tissue, removed the clouded lens and slipped in a new one, techs in 3-D glasses anticipated every move.

Lewis' group is pioneering a high-tech approach to cataract and glaucoma surgery that frees the doctor from an eyepiece and gives everybody in the room a three-dimensional view of what's going on.

Lewis was in and out of the eye in nine minutes. He typically performs 17 or 18 procedures on a typical surgery day.

When there's an unusual case, Lewis uses the 3-D program, developed by TrueVision Systems Inc. in Santa Barbara, because it provides a valuable tool to teach other doctors how to do the procedure.

It also enhances communication in the operating room.

"In the ballet going on in the OR, they know what's happening," Lewis said. "We work in really small spaces and are so dependent on being able to visualize."

Cataracts and glaucoma were the first and second leading causes of blindness worldwide in 2010, according to the World Health Organization.

A normal eye lens is clear. When a cataract develops, the lens becomes cloudy and blocks light from entering the eye, making it hard to see.

Glaucoma is a condition with increased

fluid pressure inside the eye. There is no cure, but medication or surgery can slow or prevent further vision loss.

Both conditions are more common as people age. More than 20 million people in the U.S. over the age of 40 have cataracts, and more than 3 million people are believed to have glaucoma, though many are unaware of the condition.

Lewis, a partner in the Sacramento firm Grutzmacher Lewis & Sierra Eye Specialists, was the first glaucoma specialist in the nation to adopt the TrueVision technology for cataract and glaucoma surgery. He started using it in late 2009.

The system costs \$3,000 per month to lease. The group does not charge patients for its use. Big health systems that buy the product and software pay between \$75,000 and \$100,000.

The value is better visualization for both cataract and glaucoma surgery, Lewis said.

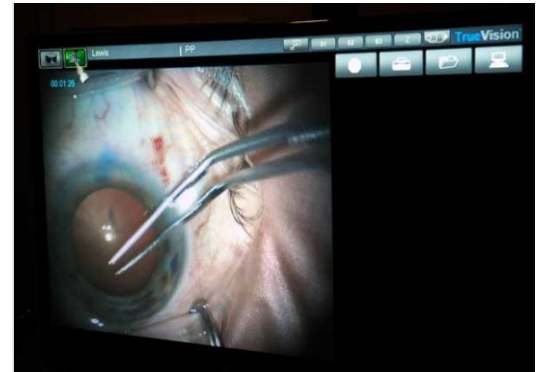
"This is true whether it is for teaching or direct use in patient care," he said. "And not being tethered to the microscope, which is tough on your neck and back."

TrueVision was founded in 2004; the company got its first investor funding in 2007 and began work to commercialize the product.

The system is being used in brain, spine, ophthalmic and ear, nose and throat procedures. In conventional surgery, only the surgeon has a stereoscopic view of the field via an eyepiece while others wait their turn or see the image on a flat screen in 2-D.



Dr. Richard Lewis, left, can perform 17 or 18 procedures a day using the 3-D program developed by TrueVision Systems Inc. The system improves the doctors' view for cataract and glaucoma surgery.



A total of 43 systems are in use nationwide; there's one at Stanford University and one at University of California San Francisco. About half of them are used for neurosurgery, half for ophthalmology, said Forest Fleming, chief executive officer at TrueVision.

"We are still in the early days of the technology," Fleming said. "All humans have two eyes and see 3-D. The question is: Would you go to a one-eyed ophthalmologist for surgery?"

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