

Partial Corneal Transplant Requires Fewer Stitches, Speeds Healing and Visual Recovery

Plagued by eye problems since childhood, Lorraine Holcombe said her corneas are football-shaped, not round, as they are supposed to be. As a result, these misshapen and swollen "windowpanes" at the front of the eye gave her an increasingly fuzzy view of the world, she said, even after successful cataract surgery five years ago.

So the 75-year-old Palm Bay resident recently opted for a new type of corneal transplant, in which doctors replace the diseased innermost layer of cells, rather than the entire cornea, to restore vision -- in her case, initially, only in the right eye.

Physicians say the procedure, called DSEK, short for Descemet's Stripping with Endothelial Keratoplasty, allows patients to regain vision much faster than a conventional transplant, while avoiding the complications of multiple sutures laced around the eyes to hold a full-thickness cornea in place.

At least two eye doctors in Brevard County offer this less invasive partial, or targeted, corneal transplant, to patients like Holcombe, who liked the idea of less cutting and having just three stitches in her eye. And at least one other hopes to offer it soon.

"So far, so good," Holcombe said, referring to her outpatient surgery at the Brevard Surgery Center in Melbourne, which took several hours. The donor graft is "still attached, and I feel a lot better today than I did two days ago." In a DSEK procedure, doctors strip off the diseased cell layer lining the inner surface of the cornea, and replace it with a thin slice of donor cells "folded in half like a taco," and slipped through a small incision in the white part of the patient's eye.

Because these new endothelial cells are initially held in place by an air bubble, which the body eventually absorbs, displacement can happen. "But, if it does, it's going to happen soon," said Dr. Rafael Trespalacios, an ophthalmologist with Brevard Eye Center, who did Holcombe's surgery. "That's why, for the first week after surgery, you have to lie as flat as possible."

Trespalacios, who goes by "Dr. Tres," is new to Brevard County. The corneal and refractive eye specialist has just completed a one-year fellowship in this specialty at the Price Vision Group/Cornea Research Foundation of America in Indianapolis.

But the surgery also is appropriate for patients with early infections or prior cataract surgery with older techniques that may have damaged this inner surface of the cornea, causing it to swell -- often painfully -- and to cloud vision, he said.

"DSEK is being done more frequently nationwide because it's easier on patients," Trespalacios said.

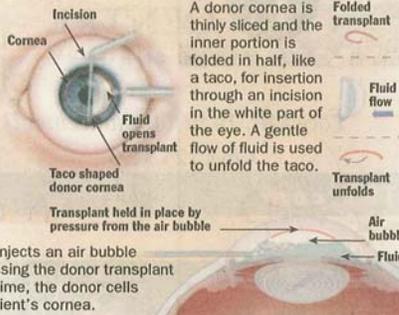


About DSEK

DSEK stands for Descemet's Stripping with Endothelial Keratoplasty – a modified and nearly sutureless cornea transplant.

The surgery:

It involves stripping off the diseased cell layer lining the inner surface of the cornea — the front or "window" of the eye.



The doctor then injects an air bubble into the eye, pressing the donor transplant into place. Over time, the donor cells bond to the recipient's cornea.

Source: Eye Institute for Medicine & Surgery

T. Standish, FLORIDA TODAY

"And the immediate advantages are wonderful."

Not only is the eye stronger because, instead of a 360-degree incision, there is a 3.5 to 5 mm incision, he said, but also patients' vision returns quickly, usually in 2-3 months, compared with a year or more after a conventional transplant.

New procedure

As the earliest form of successful transplant surgery, corneal transplantation dates more than 100 years, doctors say. DSEK, by comparison, is relatively new, evolving over the past few years at major academic centers, like the Indianapolis foundation, and moving out into communities, such as Brevard, more recently. Dr. Christopher Shumake, an ophthalmologist and cornea specialist with Melbourne's Eye Institute for Medicine and Surgery, said he has offered DSEK to some of his patients for a little more than a year, performing this less-invasive eye surgery on perhaps 20 to 30 patients so far. But he estimated that eventually, some 25 percent to 50 percent of all corneal transplant patients might be good candidates for this partial transplant technique.

"If you're a 95-year-old man or woman, you may not want to wait a year or more before your vision returns," Shumake said. "With this, your vision should come back much faster." Also, besides a quicker restoration of sight, he said, "there is less likelihood of popping open sutures with incidental trauma," such as an unexpected fall, because the cuts in the eye are so tiny." This is the most exciting thing I've seen in corneal transplants in years, and I've been doing transplants for 18 years," he said.

Shumake and Trespalacios said the partial transplant does carry a higher price tag than a traditional transplant, however, because of the technical expertise required, but Medicare and private insurers pay for either procedure. While a standard corneal transplant costs \$6,000 to \$8,000, DSEK costs \$7,000 to \$10,000 per eye, which includes the physician's fee, operating time and the cost of preparing donor cells. These cells are harvested and sliced at the National Eye Bank in Tennessee, to ensure consistency and uniform quality, before being sent out to regional eye banks for their use.

Complications

As yet, there are no long-term studies on DSEK, given the relative newness of the procedure. But Shumake and Trespalacios said a number of studies are under way, looking at issues, such as tissue rejection, which can be controlled through topical steroids, and improvements to visual acuity. Short-term, the two eye specialists agreed, the biggest complication, for now, remains donor-cell displacement, necessitating a repeat procedure, which can occur in as many as 10 percent to 15 percent of patients, according to Shumake.

As to visual acuity, Trespalacios said, results still are better with a full corneal transplant, although patients often have 20/40 or 20/60 vision after DSEK." And we are moving closer to 20/20 vision as we gain more experience," he said. From Holcombe's perspective, the hope of any improvement in her vision motivated her decision to try the new approach.

A patient of Brevard Eye Center for many years, she said when she heard about DSEK; she booked an appointment with Trespalacios immediately after he arrived in Brevard.

"I told him, 'I've been waiting for you for five years and a few months,' " she said, laughing. "You do have to lie flat -- oh God, yes -- and my husband makes sure I do. But it's worth it."



Article written by Susan Jenks of Florida Today