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## News Release

### **New Windows on the World: Mid-Florida Eye Center's Dr. Keith Charles Performing Advanced Corneal Transplant Procedures**

Each year in the US, there are over 30,000 corneal transplants performed to restore vision and comfort to patients with diseases of the clear front tissue of the eye, the cornea.

Now, Fellowship-Trained and Board Certified Corneal Specialist Keith C. Charles, of Mid-Florida Eye Center is performing a revolutionary new form of corneal transplant called DSEK, (Decemet's stripping endothelial keratoplasty), which offers significant advantages over conventional corneal transplant surgery. Surgery is performed on an outpatient basis in Mid-Florida Eye Center's accredited ambulatory surgery centers dedicated solely to eyes. These centers are located adjacent to the practice's offices in The Villages/Stonecrest and Mount Dora.

"Corneal transplants are by far the most commonly performed transplants, due to their success, the availability of tissue, and the unique "immunologically privileged" location of the cornea which makes tissue matching unnecessary," said Charles. "The success rate of transplants ranges up to 90% over five years, depending on the specific circumstances requiring the transplant."

DSEK advantages include:

- Faster visual recovery
- Less astigmatism created since there are no sutures
- Eye is much stronger and more resistant to injury since only the diseased tissue rather than the entire cornea is replaced
- Surgery time is quicker
- Chance of rejection is reduced significantly
- Procedure can be combined with cataract surgery

"The procedure is used to perform corneal transplants in patients with corneal edema," said Charles. "To understand the procedure, it's necessary to understand the anatomy and pathology of this condition. The back cellular layer (or posterior layer) of the cornea is called the endothelium and is responsible for maintaining the clarity of the cornea by pumping excess fluid from the cornea.

The endothelium has a finite number of cells which can't be replaced once they are damaged or die. Certain conditions can cause loss of these cells (endothelial cell loss) leading to corneal edema and vision loss. Irreversible corneal edema occurs when the endothelial cell loss occurs to such an extent that fluid is no longer able to be pumped from the cornea and the cornea swells preventing light from being focused on the retina.

There are two main conditions which result in irreversible endothelial cell loss. In one, called Pseudophakic Bullous Keratopathy – the cornea becomes permanently swollen and no medications, spectacles, or contact lenses can improve the person's vision.

In Fuchs' Endothelial Dystrophy, the endothelium no longer pumps water out of the cornea. In both conditions, only the endothelium is diseased – the remaining layers of the cornea are usually normal and healthy. Until recently, the treatment of choice in patients with corneal edema from endothelial cell loss was a corneal transplant operation (penetrating keratoplasty). This involves replacing the entire cornea using a full thickness donor cornea.

In DSEK, only the damaged endothelium is stripped and removed from the patient's eye and replaced with a partial thickness piece of donor cornea containing a healthy endothelium (posterior graft).

The procedure is performed through a sutureless incision and therefore results in a faster visual recovery. Most patients recover useful vision (20/60 or better) within three months of surgery compared to a full thickness corneal transplant which may take up to a year or longer to achieve the same level of vision.

“It is important that a patient with corneal disease meet with a surgeon who understands and can communicate clearly the risks and benefits of corneal transplantation,” said Charles.

“The decision to operate is tempered by the patient's visual potential, the presence of other eye problems that determine the riskiness of the transplant, the success of non-surgical interventions, and the patient's willingness to follow through with long term use of eye drops and visits.

“To achieve optimal outcomes, complications must be promptly managed in order to avoid failure of the transplant. However, this surgery can be one of the most rewarding I perform,” added Charles.

For an appointment, contact Charles at Mid-Florida Eye Center at 735-2020 or toll free at 1-888-820-7878, or visit us at [www.midfloridaeye.com](http://www.midfloridaeye.com).

