

# DSEK (Descemet Stripping Endothelial Keratoplasty) / DMEK (Descemet Membrane Endothelial Keratoplasty)

## INFORMED CONSENT

This consent is designed to educate you about risks, benefits, and alternatives of corneal transplant surgery.

### INDICATIONS FOR CORNEAL TRANSPLANT SURGERY

The human cornea is composed of three layers, the outer or epithelial layer, the middle or stromal layer, and the inner or endothelial layer. The endothelial layer is composed of a single layer of thousands of small pump cells. These endothelial cells are responsible for pumping fluid out of the cornea so it can remain clear and thin and provide good vision for the eye. If the pump cells become dysfunctional, damaged, or destroyed, the cornea fills with fluid, becomes swollen and cloudy, and causes blurry vision.

Endothelial cells can be lost due to aging, from inherited diseases (such as Fuchs' Corneal Dystrophy), from trauma, or from previous intraocular surgery. If a critical number of endothelial cells are lost, and the cornea becomes swollen and cloudy, a corneal transplant operation is indicated.

### TRADITIONAL CORNEAL TRANSPLANT

Standard corneal transplant surgery consists of removing the entire cloudy cornea and replacing it with a full thickness donor cornea, replacing all three layers of the cornea. This surgery was first developed one hundred years ago. The advantage of the traditional corneal transplant operation is the long and successful track record that we have with it. There is a 90% success rate. The rate of rejection is only about 8%.

The disadvantages of the traditional corneal transplant operation are the time involved in performing the actual operation (45 to 60 minutes), the difficulty suturing the new cornea in place, and occasional problems with the sutures which can come loose, cause infections, or cause astigmatism (an irregular corneal shape). Astigmatism after traditional corneal transplant surgery can be so significant that eyeglasses alone won't give adequate vision and some patients ultimately require contact lenses or additional surgery to reduce or eliminate the astigmatism. Because the wound is a full 360 degrees, and the sutures used are finer than human hair, the corneal transplant wound is always very delicate and at risk to rupture or break open from mild or incidental trauma, even several years after the surgery. The visual recovery can take 6 to 12 months.

### TECHNIQUE

Ophthalmic researchers and surgeons have long recognized that for many patients needing a corneal transplant, only the diseased or missing endothelial cells need to be replaced, as the stroma and epithelial layers ARE otherwise normal. A technique called DSEK/DMEK has evolved in corneal transplant surgery which replaces only the endothelial cell layer. A thin button of donor tissue containing only the endothelial cell layer is inserted onto the back surface of the patient's cornea. The surgery itself takes less time with an experienced surgeon, involves a smaller surgical incision, requires far fewer sutures, heals faster and more reliably, and returns vision faster.

There are several advantages to the DSEK/DMEK operation compared to a standard corneal transplant. The operation is faster. The wound is smaller, more stable and less likely to break open from inadvertent trauma. The wound requires fewer sutures, minimizing postoperative astigmatism. The maximum return in vision takes only

3-4 months. Since only the thin inner layer of the cornea is replaced, over 90% of your own cornea remains contributing to greater structural integrity and reduced incidence of rejection.

DSEK/DEMK is not for everyone. Some patients with corneal scarring or other conditions are not suitable candidates. Since corneal specialists have only been performing DSEK/DMEK for the past decade, there is less long-term follow-up. There is a risk of the thin button of endothelium becoming displaced within the first few days or weeks after surgery, requiring a return trip to the operating room to reposition. If DSEK/DMEK fails, it can be repeated with another button of donor endothelium or a traditional corneal transplant operation can be performed.

### **RISKS & COMPLICATIONS**

DSEK/DMEK risks include the risk of hemorrhage in the eye, infection, swelling of the retina causing temporary or permanent blurring of vision, a retinal detachment, glaucoma or high pressure in the eye, rejection of the transplanted tissue, chronic inflammation, double vision, a droopy eyelid, loss of corneal clarity, poor vision, total loss of vision, or even loss of the eye. Rarely, the transmission of infectious diseases can occur such as Hepatitis, AIDS, and syphilis, although the corneal donor is routinely tested for these diseases before the tissue is approved and released for transplantation. There is also risk related to the air bubble leading to eye pressure problems and the consequences of high eye pressure.

There are also complications from the local anesthesia including perforation of the eyeball, damage to the optic nerve, a droopy eyelid, interference with the circulation of the blood vessels in the retina, respiratory depression, and hypotension. On rare occasions, useful vision can be permanently lost.

### **CONSENT**

I understand that there may be other unexpected risks or complications that can occur that were not listed in the consent form or discussed by my surgeon. I also understand that during the course of the proposed operation unforeseen conditions may be revealed that require the performance of additional procedures, and I authorize such procedures to be performed. I further acknowledge that no guarantees or promises have been made to me concerning the results of any procedure or treatment.

By signing below, you agree that:

- You read this informed consent, or someone read it to you.
- You understand the information, including the risks, benefits and alternatives to surgery.
- Dr. Harvey and/or his staff offered you a copy of this informed consent form.
- Dr. Harvey and/or his staff answered your questions about DSEK/DMEK surgery.
- You voluntarily give authorization and consent to the performance of the DSEK/DMEK procedure by Dr. Harvey, assisted by hospital or surgery center personnel and other trained persons.
- You understand that you will need to wear glasses after surgery.

I consent to have DSEK/DMEK surgery in my                      **RIGHT eye**                      **LEFT eye**                      **BOTH eyes.**

Signature \_\_\_\_\_ Date \_\_\_\_\_ Witness \_\_\_\_\_