What to expect when you have a corneal transplant

Days or weeks before your transplant. Your ophthalmologist will talk with you about corneal transplant surgery. You will discuss why you need this surgery, how it can help you see better, and what you can expect during and after surgery.

Once you decide to have a corneal transplant, a date will be chosen for surgery. That date may change if a donor cornea is not ready for you at that time.

Tell your ophthalmologist about all the medications you take. He or she will tell you if you can keep taking them before surgery. You may need to stop using blood thinners before surgery.

You may need to visit your primary care doctor for a physical exam and perhaps other tests. This is to make sure you are healthy enough to have the transplant surgery.

You will not be able to drive after the transplant surgery. You should make arrangements for someone to drive you home after surgery.

The day of your transplant. A cornea transplant is done as an outpatient procedure.

Here is what will happen just before and during corneal transplant surgery.

- **Eye drops will be put in your eyes. You may be given another medicine to help you relax.**
- Your eye surgeon will use either local or general anesthesia so you do not feel pain. He or she will then put a device on your eye to keep it open. Even though your eye is open, you will see very little or nothing at all because of the anesthesia.
- Your eye surgeon will have chosen how to transplant the healthy donor cornea based on your specific needs.
  - In some cases, he or she may remove a circular part of your cornea and replace it with a matching portion of the donor cornea, stitching it into place.
  - Sometimes he or she will remove only a very tiny circle of tissue from the front of the cornea, replacing that whole tissue and creating a tiny hole.
- In other cases, only the thinnest inner layer of the cornea is removed and a thin disc of healthy donor tissue is placed on the back surface of the cornea. An bubble is then put in the eye to push this new cell layer into place so the cornea can heal properly.
- Sometimes your ophthalmologist may repair other eye problems during the same surgery, such as cataracts.
- After surgery, your ophthalmologist usually takes a shield over your eye to keep it safely covered. You will be monitored after surgery to make sure you recover from the anesthesia and can go home safely.
- Your ophthalmologist will explain what you need to do to care for yourself at home after the surgery.
- Depending on the type of transplant you had and how your eye heals, it may take a year or more to fully recover from the surgery.

Possible problems with corneal transplant surgery

Rejection is when the body’s immune system (also called the immune system) recognizes something as foreign and reacts as if it should be removed. This depends on how quickly you heal, the health of your eye, and the type of surgery.

As you recover from surgery, these are things you need to do to take care of your eye:

- **Use the eye drops exactly as the ophthalmologist prescribes.**
- **Talk with your ophthalmologist about when you can get back to doing your normal daily routine.**
- During corneal transplant surgery, he or she will tell you if you can have something by mouth. Sometimes you may need to take a blood thinner or medicine. Ask your doctor which ones.
- **Call your ophthalmologist if you have symptoms or questions about how to care for your eyes.**

During the first year after your surgery, these are signs that your eye is healing:

- Eye pain
- Being extra sensitive to light
- Redness of the eye
- Difficulty or haziness

As you recover from surgery, these are things you should do:

- **Wear eyeglasses or an eye shield to protect your eye.**
- **Wear the shield at night and while you are doing physical activities.**
- **Use a shield to keep it safely covered. You will be taped a shield over your eye to protect your eye.**
- **Keep your eyes checked.**
- **Back to your ophthalmologist’s office to have your eyes checked.**
- **Your ophthalmologist will tell you what to do to care for yourself at home after surgery.**
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An opportunity for clear vision

If you have a damaged cornea, you and your ophthalmologist will discuss your options for improving your vision. For people with a deeply scarred or swollen cornea, transplant surgery can restore clear vision.

Summary

Corneal transplant is surgery that replaces a damaged or diseased cornea with a healthy donor cornea.

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Corneal Transplants

There are different types of corneal transplants. In some cases, only one layer of the cornea are replaced with new tissue. Sometimes, the entire cornea must be replaced. Recovering clear vision may take up to a year or more after surgery.

There is a chance that the transplanted cornea may be rejected by the body. Sometimes another corneal transplant may be needed. If you have any questions about your eye or vision, speak with your ophthalmologist or he is committed to protecting your sight.

Possible problems with corneal transplant surgery

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Corneal transplants

The cornea is the clear, front window of the eye. It helps focus light into the eye so that you can see. The cornea is made of layers of cells. These layers work together to protect your eye and provide clear vision.

A human donor is someone who chooses to donate (give) his or her corneas after their death to people who need them. All donated corneas are carefully tested to make sure they are healthy and safe to use.

There are different types of corneal transplants. In some cases, only the front and middle layers of the cornea are replaced. In others, only the inner layer is removed. Sometimes, the entire cornea needs to be replaced.

Full thickness corneal transplant

Your entire cornea may need to be replaced if both the front and inner layers are damaged. This is called penetrating keratoplasty (PK), or full thickness corneal transplant. Your ophthalmologist may recommend a corneal transplant. This is repaired when the diseased cornea is replaced with healthy donor tissue. It is known as a partial transplant since only the outer layer of tissue is replaced. There are a few types of endothelial keratoplasty.

- **DMEK (or DSEK)**—Descemet’s Membrane Endothelial Keratoplasty
- **DMEK—Descemet’s Membrane Endothelial Keratoplasty**

With PK, there is a slightly higher risk than other types of corneal transplant. Getting complete vision back after PK may take up to 1 year or longer.

Your eye surgeon will choose the type of surgery. Some things to know:

- With DMEK/DSEK surgery, the donor tissue may be easier to transplant and position because it is thicker than the donor tissue in DSEK surgery.
- In DPEK surgery, the donor tissue is thinner. This means the new cornea cells being injected after surgery.
- Your eye surgeon will choose the type of surgery based on your condition.

What causes cornea problems?

Eye disease and injuries can damage the cornea. There are some common eye problems that can lead to a damaged cornea:

- Keratoconus—where the cornea is cone-shaped rather than dome-shaped
- Punctal dystrophy—where cells in the inner layer of the cornea are not working effectively
- Eye infections or injuries that injure the eye
- Previous corneal surgery or an eye injury that damaged the cornea

Endothelial keratoplasty

In some eye conditions, the innermost layer of the cornea called the "endothelium" is damaged. This causes the cornea to swell, affecting your vision. Endothelial keratoplasty is a surgery to replace this layer of the cornea with healthy donor tissue. It is known as a partial transplant since only the inner layer of tissue is replaced. There are a few types of endothelial keratoplasty:

- **DMEK (or DSEK)**—Descemet’s Membrane Endothelial Keratoplasty
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Each type removes damaged cells from an inner layer of the cornea called Descemet’s membrane. The damaged corneal layer is removed through a small incision. Then the new tissue is put in place, just a few stitches—if any—are needed to close the incision. Much of the cornea is left untouched. This lowers the risk of having the new cornea cells being rejected after surgery.

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Get more information about corneal transplants from EyeSmart—provided by the American Academy of Ophthalmology—at aao.org/eyesmart-transplant-604.