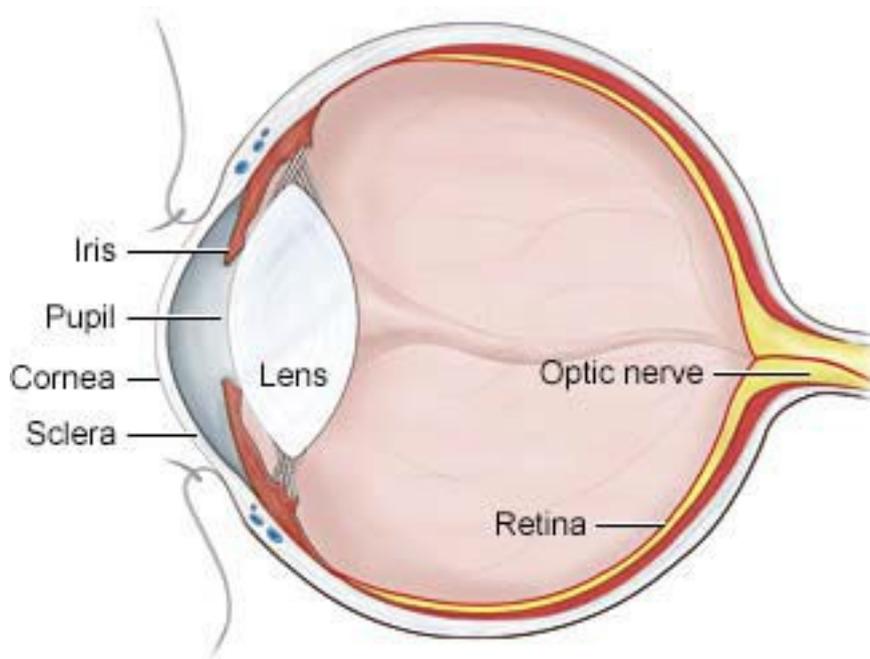


Corneal Endothelial Transplant Surgery

What is the cornea?

The cornea is the transparent window at the front of the eye. It can become cloudy due to disease, while the rest of the eye remains quite healthy. Just like the front lens of a camera becoming cloudy, the vision is then blurred. The cornea is made up of three layers – the innermost layer is called the ‘endothelium’. The endothelial cells line the inner surface of the cornea and pump fluid to keep the cornea clear. These cells do not get replaced and if they become diseased or damaged, or if there aren’t enough cells to do the job, the cornea becomes waterlogged and cloudy.



What is a corneal transplant?

A corneal transplant (also called a corneal graft or keratoplasty), is an operation to replace the cloudy cornea with a clear one. This clear ‘donor’ cornea is taken from a deceased person who has consented to helping someone regain sight.

What is an endothelial transplant?

Although it is sometimes necessary to replace the whole (full-thickness) of the cornea, it is now possible to replace only the inner layer of the cornea – this is called an endothelial corneal transplant (also known as “Descemet’s Stripping Endothelial Keratoplasty”, or “DSEK”). The donor cornea is split in two, and only the innermost layer is placed into the patient’s eye. This is held in place with an air bubble initially, while the transplant heals into place. There are no stitches attaching the transplant, which is held in place initially by the air bubble, and subsequently by the action of the endothelial cells themselves. A few stitches are used to seal the small wound.

What are the advantages of an endothelial transplant?

With an endothelial transplant, the majority of the patient's cornea is left intact, and there are far fewer stitches than with a full-thickness corneal transplant. This means there is a faster recovery, with vision restored more quickly, and the eye is stronger after endothelial transplant surgery than a full-thickness transplant.

How long does it take?

The operation can be performed under local or general anaesthetic. The procedure itself takes 1-2 hours, and you can often return home on the same day. You will need to return for review the following day.

What is it like afterwards?

Immediately after the operation, the eye will be covered with a pad. For the first two days you will need to spend as much time as possible lying on your back, and looking directly upwards towards the ceiling. This ensures that the air bubble inside your eye floats to the very front of your eye, supporting the new transplant tissue in place. It is very important not to rub your eye, particularly in the first four weeks, as this could dislodge the transplant. The eye should be reasonably comfortable, although for a few days you may feel some mild irritation.

You will need to use eyedrops several times a day for the first few weeks, and these will be gradually reduced over the next few months. **NEVER** stop your eyedrops without first consulting your ophthalmologist – this is very important.

You will normally be able to return to work after one month.

What is the sight like afterwards?

The vision will be quite blurred initially – this is normal. The quality of the vision usually improves within the first two weeks of the surgery, but it is important to understand that the vision will go on improving over a period of several weeks after the surgery, with full recovery by around six months.

It is important that you return to the eye clinic for regular out-patient check-ups as instructed.

Work and activity after endothelial transplant surgery

After surgery the eye is initially vulnerable, and must be protected from contact. This is particularly important in the first four weeks. It is important to **avoid rubbing the eye** as this could dislodge the transplant. For the first four weeks you should avoid strenuous activity and heavy lifting. If you have to bend down, you should do so from the knees, keeping the head up. You should wear an eye shield at night for the first two weeks, and try to avoid sleeping on the side of the operated eye. It's a good idea to wear glasses or sunglasses simply for protection during the day, even if they don't help the vision.

Desk jobs can usually be resumed after two weeks, but if your work is more strenuous you will need to be on sick leave for at least a month. Driving can usually

be resumed after your first check-up provided the vision in your other eye remains satisfactory. You should not resume sports until you are told it is safe to do so, and it is advisable to use eye protection.

Treatment and follow-up

Initially you will be seen frequently in the eye clinic. Most patients can expect to visit the eye clinic about eight times in the first year, with gradually increasing gaps between appointments. It is very important to keep these appointments.

All patients are given steroid eye drops after corneal transplant surgery. These are the most important protection against transplant rejection. It is essential that your drops are not stopped. You will be given instructions on how to use your drops, and it is important that you understand these clearly. Steroid eye drops can have side effects, for example a rise in pressure in the eye. This is one of the reasons why it is important to return to the eye clinic for regular check-ups.

If you experience any problems with your eye between your regular scheduled appointments, it is very important that you are seen promptly in the Eye Clinic. Please contact the Eye Department to arrange an urgent appointment on:
01603 288632 Mon-Fri 9.00am – 5.00pm, or
01603 286286 out-of-hours and ask for the on-call ophthalmologist.

Complications of the operation

Every operation carries risks, either from the surgery itself or the anaesthetic. Fortunately, complications are uncommon, but you need to be aware of the main ones:

- **Transplant dislocation.** In the first week after surgery the new transplant can fail to attach adequately, once the supporting air bubble absorbs (usually after two days). This can occur in up to 10% of cases, meaning the vision remains blurred. This will require a further operation to 're-float' the transplant into place with a further air bubble. Occasionally, a further endothelial transplant or even a full-thickness corneal transplant may be required.
- **Transplant rejection.** This is a reaction of your body against the transplanted cornea. It causes the eye to become red and sore, and the vision to become blurred. The risk is highest in the first year, but it can occur many years later. If it is treated early, vision can be restored, so it is very important to see an ophthalmologist urgently if you have any new symptoms in the eye at any time after surgery. Particular symptoms to watch out for are:
 - o Red eye
 - o Sudden sensitivity to light
 - o Blurred vision
 - o Irritation or pain

- **Astigmatism.** This is blurring of vision caused by an irregular shape of the front of the eye. Small amounts of astigmatism are common, and can be corrected with glasses or contact lenses. Occasionally, more severe irregularities in shape, require further surgery – this is unusual for endothelial transplants.
- **Transplant failure.** The endothelial cells on the transplant reduce in number over time. This can lead to clouding of the cornea recurring, and the need for a further operation. This usually occurs some years later, but can occur sooner in some patients.
- **Residual scarring.** In some patients, particularly when the cornea had been cloudy for a long period, there is residual scarring or haze in the patient's own cornea. This can limit the vision, even if the transplant functions well.
- **Glaucoma.** The pressure in your eye can rise, which sometimes needs to be treated with eyedrops. Rarely, surgery is needed to treat this.
- **Infection in the eye .** This is very rare (about 1 in 1000 cases), but can cause loss of vision.
- **Transmitted infection.** All donors of corneal tissue are screened for blood-borne diseases including Hepatitis, Syphilis and HIV, so that transmission of infection from the donor is extremely rare. Transmission of other diseases such as Creutzfeld-Jakob (CJD) are also extremely low risk.
- **Loss of vision.** This is very rare (about 1 in 1000). Causes include bleeding inside the eye, and retinal detachment.

After you have had a corneal transplant operation, it is important that you:

- Never stop your drops without first consulting your ophthalmologist.
- Always report back promptly to the eye clinic or your doctor if you have any concern about the eye at any time in the future.

Emergency contact numbers:

If you experience any problems with your eye between your regular scheduled appointments, it is very important that you are seen promptly in the Eye Clinic.

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