

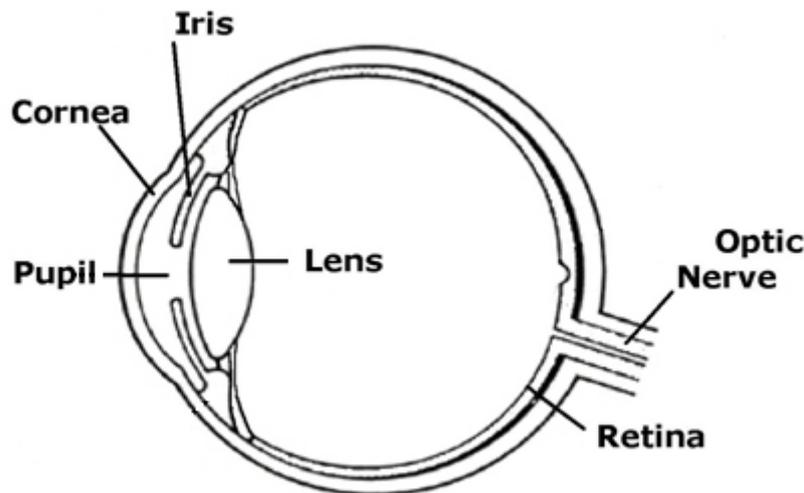


## Corneal Transplant Endothelial Keratoplasty (DSAEK/DMEK)

There are various indications and types of cornea transplant surgery. This leaflet has been designed to answer the questions most frequently asked by patients suitable for an endothelial corneal transplant. It will hopefully enable you, the patient, to be more informed about what the surgery and aftercare entails. It is not possible in an information leaflet like this to cover all aspects of corneal transplant surgery. Your consultant Mr Amit Patel or a member of his team will be pleased to answer any additional questions you may have.

### Where and what is the cornea?

The cornea is the curved window at the front of the eye. It is in front of the iris (the coloured part of the eye) and the pupil (the round black hole in the centre of the iris). In the normal eye, the cornea is clear. Light is able to enter the eye through the cornea, pass through the lens and focus on the retina at the back of the eye. If the cornea is hazy the path of light to the retina is interrupted, and sight may be distorted or patchy.



The cornea has three main layers. An outer layer (epithelium), middle layer (stroma) and inner layer (endothelium). The endothelium continuously pumps fluid out of the cornea. This helps to keep the cornea transparent. Certain cases (e.g. Fuch's endothelial dystrophy, previous eye surgery) may affect the endothelium and thus the cornea gets water-logged. This reduces its transparency and may cause little blisters which may be painful.

### Why do I need a corneal transplant?

An endothelial corneal transplant may be performed to:

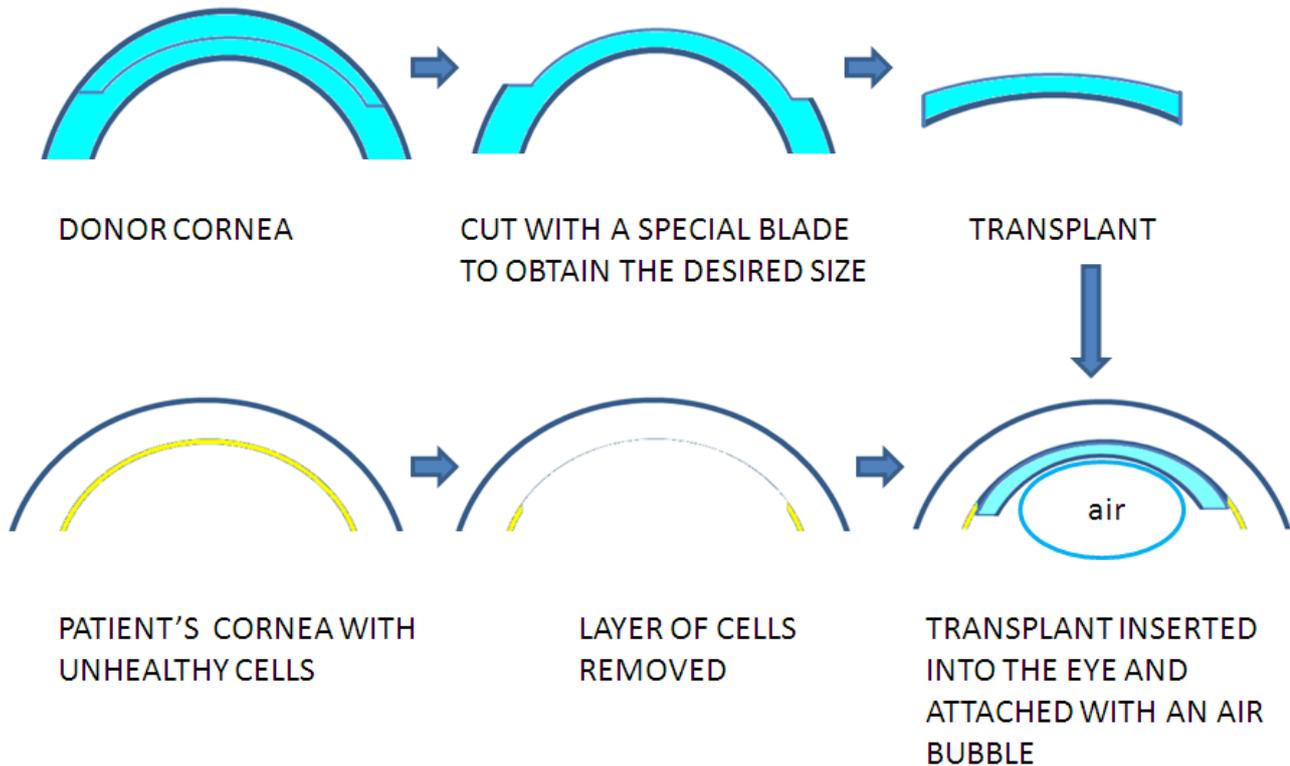
- improve your sight and/or
- alleviate your pain

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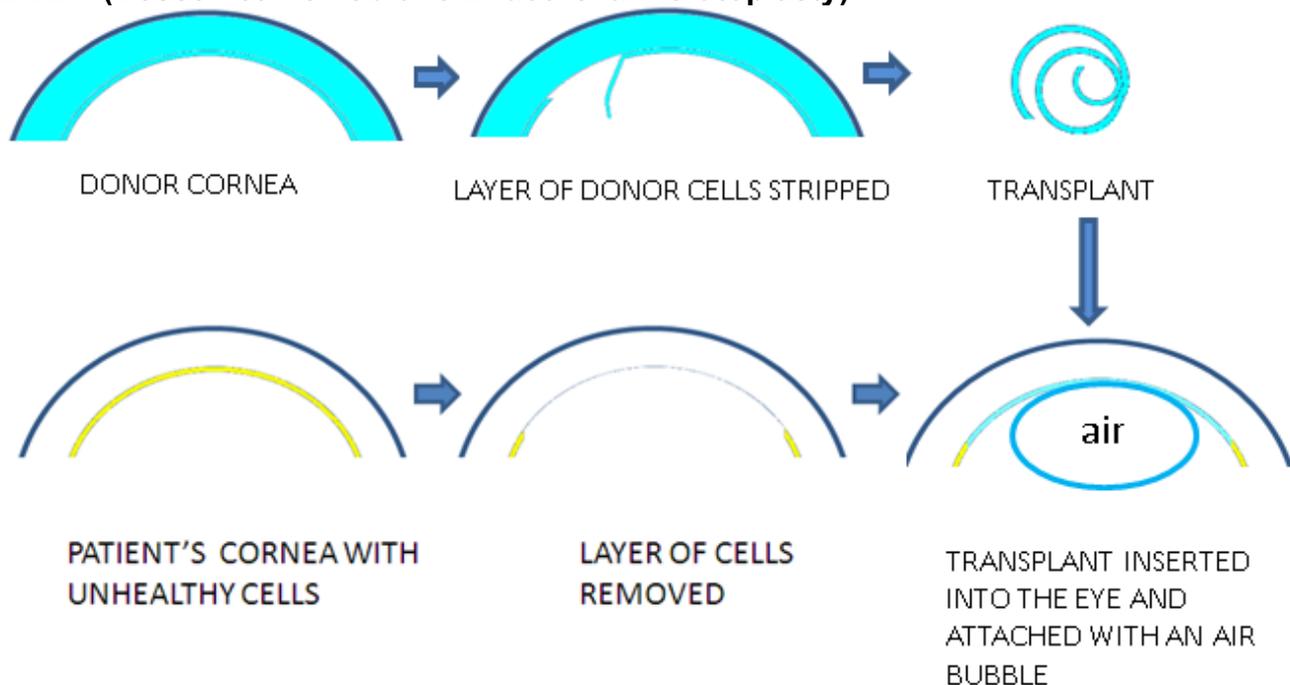
## What does a corneal endothelial transplant operation involve?

A portion of your unhealthy cornea is removed and replaced with a portion of healthy cornea from a donor eye. It is then secured in place with an air bubble which disappears on its own accord over a few days. There are essentially two variations in the technique and the following diagrams explain the differences.

### DSAEK (Descemet Stripping Automated Endothelial Keratoplasty)



### DMEK (Descemet Membrane Endothelial Keratoplasty)



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On occasion the transplant may fail to attach to your cornea. This may occur within a few days of surgery and would require a minor procedure to reinsert some more air. Approximately 5% of DSAEK transplants and 20% of DMEK transplants detach and require further air insertion.

Overall, endothelial keratoplasty offers numerous advantages over conventional corneal transplantation (penetrating keratoplasty - whereby the entire central cornea is cut away and replaced). It does not usually require a general anaesthetic and the risk of infection and rejection is lower. Also, as it does not involve numerous stitches and the recovery of vision is also much quicker (3-6 months versus 12-24 months with conventional transplantation).

### **Where does the transplant come from?**

The donor cornea is removed from the eye of a deceased person who has given consent before death to the medical use of his or her eyes. The medical history of the donor is checked to exclude diseases of the nervous system. A blood sample is taken from all donors to exclude blood borne infection. The donor cornea is thoroughly examined for bacteria and fungi. As a result of these tests the risk of infection is minimal, but can never be completely eliminated. Because of this tiny risk, you will not be able to be a blood or organ donor following a transplant.

### **On the day of the operation**

- You should have a responsible adult to come in with you, as an escort
- You may come in using public transport, but you must go home in a car or taxi
- If your operation is in the morning you may have a light breakfast. If it is in the afternoon you may have a light lunch. If you are having a general anaesthetic, please follow the specific instruction given to you at the pre-operative check.
- Take all your medication as normal unless instructed otherwise
- Wear loose comfortable and clean clothing. Leave all jewellery at home, do not wear makeup and take a shower to reduce the risk of infection. You will be able to wear your own clothes during the operation if performed under a local anaesthetic.

You will be admitted to the ward on the day of the operation and discharged home the same day. In most cases, the operation is performed under a local anaesthetic. The anaesthetic will not be administered until the surgeon is satisfied with the quality of the donor tissue and its preparation. There is therefore a small chance that your operation may not go ahead if there is any concern regarding the donor tissue. A routine corneal graft operation usually takes about 60 – 90 minutes.

### **Post-operative care**

After surgery, the operated eye will be covered with a protective plastic eye shield. You will be required to lie on your back for an hour after the operation and for as much as possible for the first 48 hours after surgery. This allows the air bubble to float up against the transplant and help it attach to your cornea.

As the anaesthetic wears off, some discomfort may be felt in and around the operated eye. If you feel any pain, please do not hesitate to ask a nurse for pain relief. Pain is seldom severe and tends to settle down quite quickly. The nurse will teach you how to instil the drops to enable you to start the treatment on the following day.

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The drops are important for the following reasons:

- To reduce inflammation and risk of rejection (steroid drops)
- To prevent infection (antibiotic drops)
- To prevent a sudden rise in pressure within the eye (dilating drops)

Drops may be prescribed between four to eight times a day for a period of one month after the operation.

The frequency will then be reduced over a period of 12 months. It is essential that eye drops are instilled exactly as instructed. **This is very important to help prevent infection and rejection.**

Please note that vision following a corneal graft may be blurred and the eye may be light-sensitive, particularly whilst using the drops.

### **When will I need to attend hospital?**

You will need to be seen within a few days of surgery and your surgeon will inform you of the time and location of your visit. In the absence of complications the frequency of visits will reduce with time and you may only need to be seen once or twice a year after the first year. You should be aware however that a rejection episode may occur at any time and would require urgent treatment.

### **Are there any complications following a corneal transplant?**

Serious complications following graft surgery are uncommon. However it is a major eye operation and like all operations may be accompanied by complications. These include but are not limited to:

- infection
- rejection
- glaucoma
- cataract formation (if you have not had cataract surgery previously)

There is a small risk of total sight loss in the operated eye if complicated by a serious infection or bleed.

**It is essential that you keep your follow-up appointments.**

### **Rejection**

The risk of rejection or infection of your transplant is low. Rejection results from your immune system recognising the transplant as being “foreign”.

**Remember RSVP. If you experience any:**

- Redness
- Sensitivity to light
- Vision disturbance
- Pain

**Contact us between 8.30am - 5.00pm**

**Eye clinic Solihull: 0121 424 5063**

**Eye clinic Heartlands: 0121 424 1536**

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**Eye clinic Good Hope: 0121 424 9608**

**After 5pm and at weekends, please Contact: 0121 507 6780**

**After 7pm Monday to Friday and after 6pm Saturday/Sunday: 0121 554 3801**

**Eye Emergency Department  
Birmingham & Midland Eye Centre  
City Hospital  
Western Road  
Birmingham  
B18 7QH**

**It is imperative that you are seen within 24 hours of symptoms developing. Failure to obtain the correct treatment early can result in permanent loss of sight and the need for a repeat transplant, which carries a higher risk of failure than the first.**

### **Post-Operative Information**

- Following your surgery, you will have a shield and on your operated eye
- You will be expected to lie flat on your back for an hour after the operation and for as much time as possible for the first 48 hours after surgery. This will allow the air bubble to promote adherence of the transplant
- On the following day, remove the shield and discard tape. Wash the shield and wear it at night for 7 days. You can secure this with Micropore, Transpore or Sellotape.
- The eyelids may be a little sticky. You may clean them gently with some gauze and cooled boiled water.
- Apply the drops as directed after cleaning the eyelids

### **What to Expect**

- It is normal for your eye to be red, sore and light sensitive for one-two weeks after surgery, and this should gradually improve. You may take your normal painkillers (e.g. paracetamol)
- Your vision will be blurry due to the small air bubble in the eye. The bubble will gradually disappear in a few days and the vision should gradually improve
- Your eyelids may be a little swollen for several weeks after surgery
- There may be clear, watery discharge for several days after surgery

### **Points to remember:**

#### **Do**

- Lie flat on your back as much as possible for the first 48 hours following surgery
- Instil the drops as directed
- Wear the eye shield at night for 7 days after surgery
- Keep your post-operative appointment

#### **Don't**

- Rub your eye
- Wear any eye makeup for 2 weeks
- Swim, use a Jacuzzi or sauna for 2 weeks
- Expose your eye to chemicals, dust or debri

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## Further Information

For further information, visit the:

1. NHS Choices Website at <https://www.nhs.uk/conditions/cornea-transplant/what-happens/>
2. RNIB Website at <http://www.rnib.org.uk/eye-health-eye-conditions-z-eye-conditions/corneal-transplantation>
3. Organ Donation Website at <https://www.organdonation.nhs.uk/about-donation/what-can-i-donate/cornea/>

To find out more about conditions relating to the eyes you can contact NHS Direct, Telephone 0845 4647 or visit them on the Internet at <http://www.nhsdirect.nhs.uk>

## Accessibility

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## How did we do? 😊 😐 😞

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