

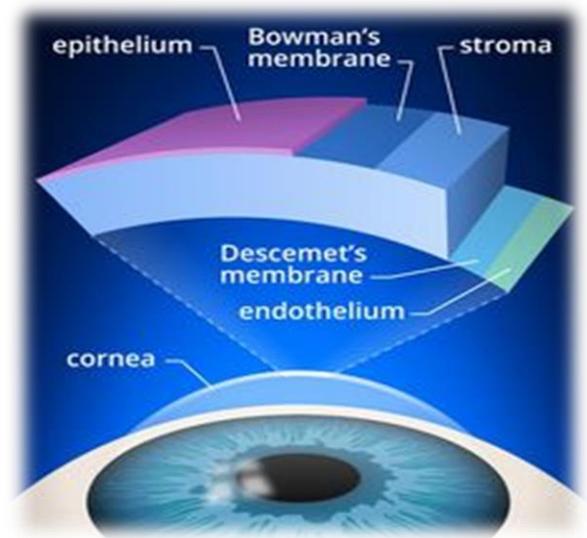
## Eye Care Centre

# Descemet's Stripping Automated Endothelial Keratoplasty (DSAEK) Surgery

### Important information for patients

#### The cornea

The cornea is the transparent window at the front of the eye which allows light to travel to the back of the eye. It is around half a millimetre thick and is formed of several layers. The back layer of the cornea, the endothelium, is very important in helping to keep the cornea transparent. If the endothelium stops working properly then the whole of the cornea becomes waterlogged and the vision becomes cloudy. Fuchs endothelial dystrophy is one disease which can cause the endothelium to stop functioning properly, or it can happen after previous eye surgery.



#### What is DSAEK surgery?

DSAEK is a form of corneal transplant operation in which the damaged endothelial cells are replaced with healthy endothelial cells from a donor eye. This helps to make the cornea transparent again so that the vision becomes clear. The healthy endothelial cells come from an eye which has been donated by someone who has died. A very thin layer, around a tenth of millimetre (100 micrometres) thick, containing the endothelial cells, is carefully prepared by the NHS Blood and Transfusion Eye Bank and transported to the hospital.

The unhealthy endothelium from your eye is removed and replaced with the donor endothelium. The donor endothelium is held in place with an air bubble.

#### Why do I need this operation?

This operation is to help you see better, your vision will not improve by itself.

## About the operation

The operation can be done with you awake, or asleep under a general anaesthetic, this will be discussed with you. If you are awake you will be given a local anaesthetic to the eye to make it numb so that the operation should not be painful, although you may be aware of some pressure sensation. During the operation your face is covered with a sterile drape. If you are claustrophobic or think this might be a problem you should let us know. The operation takes around an hour to perform. You will be left with a bubble of air in the eye afterwards which takes around two to three days to disappear. Normally, you will be able to go home on the same day after the operation, but sometimes people need to stay in the hospital overnight.

## Are there alternatives to DSAEK surgery?

The only way to improve the function of the endothelial cells and make the cornea clear again is to undergo an operation (although this may change in the future). Alternatives to DSAEK surgery are listed below.

- **Penetrating Keratoplasty (PK)** is a more traditional type of corneal transplant operation in which the full thickness of the cornea is replaced. There is a much longer recovery period with a PK, a higher risk of complications and the visual outcome is usually not as good as with a DSAEK.
- **Descemet's Membrane Endothelial Keratoplasty (DMEK)** is similar to DSAEK in that only the back of the layer of the cornea is replaced. This layer is even thinner in a DMEK operation and recovery can occur even quicker. However, the surgery is more challenging, and it is not clear whether the longer-term outcomes are better with DMEK. DMEK surgery is not offered at Leighton Hospital. If you are interested in having DMEK surgery you would need to be referred to another unit, please let us know if this is the case.

## What are the risks of DSAEK surgery?

Most cases of DSAEK surgery go well and the vision is improved afterwards. However, there are a number of possible complications with DSAEK surgery. It is possible that your vision may not improve. It is possible that you could lose vision in the operated eye as a result of the operation, either partially or (rarely) completely. As DSAEK surgery is relatively new, we are not completely certain of the long-term outcomes. However, we would hope for over 90% of transplants to be working well after five years, with a clear cornea.

Possible complications are explained below and on page 4. Your vision, either short or long-term, may be impaired as a result of these.

- **Bleeding** - while this is usually not a problem, and can be dealt with during surgery, a bleed can occur at the front or back of the eye, which may affect the vision.
- **Infection** - we use sterile instruments in the operating theatre and you will receive antibiotic drops after the operation to prevent infection.
- **Inflammation** - this can occur after any operation in the eye. You will be given steroid drops after the operation, which helps to reduce the inflammation. Some people need the frequency of these to be increased, or a longer course of drops. Occasionally, it can be difficult to control the inflammation.
- **Transplant dislocation** - the transplant may detach from the back of the cornea. This usually occurs within the first couple of days after the operation. We would then need to inject a bubble of air to attach the transplant back in place, and this may need to be repeated. This is usually successful, but not always.
- **Lens dislocation** - the lens in the eye may move out of the normal position.
- **Retinal detachment** - this can occur when the thin lining at the back of your eye called the retina begins to pull away from the blood vessels that supply it with oxygen and nutrients.
- **Macular oedema** - there may be some swelling/waterlogging at the back of the eye as a result of the operation.
- **Rejection or failure of the transplant** - you will receive steroid drops after the operation which helps to reduce the risk of rejection (see page 6). Rejection can still occur, in which case your vision will become cloudy again. Sometimes this can be treated successfully with drops, but not always. Even without rejection the transplant may, for some reason, stop working and the vision become cloudy.
- **Glaucoma or high pressure in the eye** - This may require drops or further treatment.
- **Disease transmission** - there is a theoretical risk of a disease being transmitted from the donor eye to you, although this would be very rare. Donors are carefully selected to minimise this risk. Blood tests are performed for known diseases, and the volume of tissue which is transplanted is small.
- **Further surgery, procedure or other treatment** - this may be needed for any of the complications that are listed. If scarring/clouding occurs on the front part of the cornea a more traditional style corneal transplant may be needed (a Penetrating Keratoplasty - see page 2).

- **Other complications** - the eye is a very complex and delicate structure. It is not possible to always predict or anticipate what might happen when an operation is performed. Very rarely, a complication with permanent implications can occur, such as a very serious bleed or infection, which means that you could lose the operated eye altogether and need an artificial eye.

## **What will happen after the operation?**

After the operation, it is important that there is someone to help look after you. There should be someone who can help transport you home, and who will be with you at home, at least for the first night. Please let us know if this is not the case.

You will need to lie flat on your back with face upwards for 24 hours after the operation. If you think this will be a problem, please let us know beforehand. Lying flat helps the air bubble keep the transplant in place. You will, of course, need to take some breaks from lying flat for eating/drinking/toilet breaks. The general rule is that 50 minutes of every hour are spent lying flat, and you can take a break for 10 minutes. However, the more you stay lying flat the better it is for the position of the transplant. Even when you travel home after the operation, you should try to put the seat back and lie as flat as possible.

If you go home on the same day as the operation you will need to return the next day for us to examine the eye. Please let us know if you will have difficulty returning the next day.

You will have several different drops after the operation. You may like to practise using eye drops before the operation, or ensure that there is someone who will be able to put the drops in for you. You will need to take drops frequently for the first month, and drops are continued for months after the operation, sometimes indefinitely.

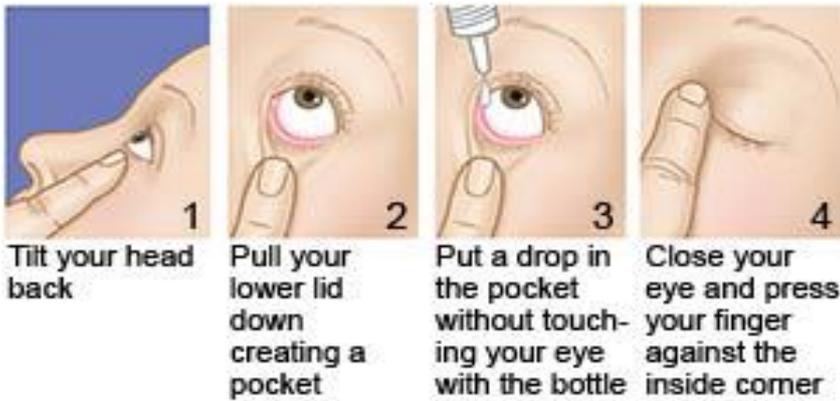
You can take simple painkillers such as paracetamol, to help with pain relief.

Your vision should gradually improve after the operation. It takes a couple of days for the transplant to start working properly, and it can take a couple of weeks for the waterlogging of the cornea to reduce and the vision to clear. For the first two to three days you will be aware of a line in the vision which is the air bubble gradually disappearing.

You will be seen in the Eye Care Clinic around one week after surgery, and will need to be regular visits after that. There will be a couple of tiny sutures (stitches) in the eye, which will usually be removed in the clinic around two to four weeks after surgery.

## Instructions on how to use the eye drops

Before instilling eye drops, hands should be washed with soap and water, and then dried.



Always check the expiry date on your medication and write down the date when the bottle was opened. If you have more than one eye drop to apply, you should wait about five minutes before applying the next one. Do not worry if some of it overflows, you can wipe off the excess with a clean tissue.

## Corneal transplant rejection

**This needs to be treated urgently to stop the transplant failing.** You should come immediately to the Emergency Department if you notice any of symptoms below. If you are in any doubt, call the contact numbers at the end of this leaflet.

**R** red eye

**S** sensitivity to light

**V** visual loss/blurring

**P** pain

## When can I go back to normal activities?

Be careful to avoid any trauma or knocks to the eye after the operation. This is especially important in the first few weeks after surgery.

We suggest that as a rough guide you plan to take two weeks off work, but this depends on your type of work (see below) and you should discuss this with us. Avoid getting water in the eye for two weeks after the operation. Your hair can be washed by someone else if you are able to lean your head back to avoid water going in the eye. After two weeks normal washing can resume, but be careful not to poke or put pressure on the eye.

Avoid lifting heavy objects or bending down for four weeks after the operation. It is also best to avoid any sports for four weeks after the operation. Non-contact sports can be resumed after four weeks. Contact sports at any time after the operation will carry some risk to the eye.

If you would like to drive after the operation, the length of time you will need to wait before starting is variable. You need to be able to read a car number plate from 20 metres and have no other reason not to drive (such as impairment of your peripheral vision) for you to fulfil the legal requirements for driving (also see DVLA guidance). You may be able to meet this requirement with your other eye. However, we also recommend that you wait until the operated eye feels comfortable, and that you have got used to what your vision is like after the operation before driving. How long this will take is very variable between individuals. You may well like to wait until you have got an updated prescription in your glasses, for which you should wait until six weeks after surgery.

If necessary, it would be possible to take flights around three days after surgery, once the air bubble has disappeared. However, if you are travelling you need to ensure you can access good services for eye care wherever you go, and that whoever sees you has the necessary information about your operation.

## Contact telephone numbers

In case of urgent problems telephone Leighton Hospital Switchboard on 01270 255141 and ask for the Emergency Ophthalmology Triage Nurse on call. Available Monday to Friday, 9.00am – 5.00pm (excluding Bank Holidays)

Out of these hours, telephone Leighton Hospital Switchboard and ask for the Ophthalmologist on call.

Secretary for Mr Hu (Consultant, Ophthalmologist):

Tel; 01270 612306

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This information is available in audio, Braille, large print and other languages. To request a copy, please ask a member of staff.

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