

Patient information

DSAEK Surgery for Corneal Endothelial Failure (Fuchs Dystrophy)

St Paul's Eye Department - Royal Liverpool Hospital

What is DSAEK surgery?

DSAEK = Deep Stromal Automated Endothelial Keratoplasty. It involves transplantation of the endothelial (inner most) layer of the cornea from a donor eye into your (the recipient's) eye. The donor eye is prepared using an automated cutting device.

The procedure

The operation is performed under general or local anaesthetic, so that you stay awake, using drops and an injection.

- The donor eye is prepared using a special cutting device which slices a layer from the donor cornea ready for insertion into your eye.
- The faulty layer in your eye, called the endothelium, is removed and replaced by the donor layer of endothelium. The donor eye matches the layer removed.
- The donor eye is held in place by an air bubble which, with you lying flat, floats upwards, pushing the donor layer into position. The air is absorbed and goes away after a few hours, leaving the donor eye stuck in place. Stitches are not needed to hold it in position.

The cornea

The cornea comprises three layers; an outer skin, the inner endothelium and a middle filling, resembling a sandwich. In most cases of corneal disease, it is necessary to remove all three layers and replace all three layers, as in conventional corneal transplant surgery (penetrating keratoplasty).

Operations like DSAEK are an advance in eye surgery, in that they replace only the diseased layer of the corneal sandwich.

What are the benefits of this procedure?

Since DSAEK involves replacement of one layer only of the cornea, recovery is very much quicker. It is expected that sight can return within three months and further surgery is unlikely to be necessary.

What are the risks of having DSAEK?

Sometimes, the donor layer can detach (come away) from its position, in which case it is necessary to put more air into the eye to fix it back into position. This happens in about every third case. If it does happen, it is in the first few hours or days, and not after that.

The other main problem is knowing whether it will last for many years to come. If it doesn't, it can be repeated as easily as the first time. A normal penetrating operation can still be performed if necessary.

Other than these, there is risk of bleeding and infection, which happen rarely (less than 5%).

Are there any alternative treatments available?

Current treatment is penetrating corneal transplant surgery, in which all the layers of the cornea are removed and replaced. The donor eye is stitched into position.

The operation is successful but has a long recovery period. Therefore it can be one, two or even three years before the eye has made a full recovery and vision improved to its best potential.

Sometimes further surgery is even required, such as removal of stitches or even minor surgery for astigmatism.

What will happen if I don't have any treatment?

Your eye condition will not improve and is likely to get worse, though slowly. If you do not have treatment now, it does not mean you cannot have it in the future.

Who can have DSAEK?

People with corneal endothelial failure (Fuch's corneal dystrophy, bullous keratopathy, endothelial guttata are terms used for the same condition) can have DSAEK.

The surgical techniques employed are similar to those used in several other operations that they perform, for corneal transplantation and other problems.

Anything else?

It is usual to perform cataract surgery at the same time as DSAEK, even if you have only a little cataract.

If you have already had cataract surgery it can sometimes be necessary to remove and replace the artificial lens implant, but this is rare. You should ask your surgeon.

What sort of anaesthetic will be given to me?

You will be given a local or general anaesthetic.

Local anaesthetic is drug-induced numbness. It may be provided by an anaesthetist, surgeon or other healthcare professional, depending on the technique used.

Like all medicines, local anaesthetics may sometimes cause side effects, as well as the effects that are needed.

You may experience dizziness, blurred vision, drowsiness and occasionally loss of consciousness.

Serious side effects are rare, and include fits, low blood pressure, slowed breathing and changes in heartbeat, which may be life-threatening. If you have any concerns about any of these effects, you should discuss them with your doctor

General anaesthetic is drug-induced unconsciousness. It is always provided by an anaesthetist, who is a doctor with specialist training. Unfortunately, general anaesthesia can cause side effects and complications. Side effects are common, but are usually short-lived: they include nausea, confusion and pain. Complications are very rare, but can cause lasting injury: they include awareness, paralysis and death.

There is a risk of damage to teeth, particularly caps or crowns and veneers. Your anaesthetist will take every care, but occasionally damage can occur.

The risks of anaesthetic and surgery are lower for those who are undergoing minor surgery, and who are young, fit, active and well.

You will be given an opportunity to discuss anaesthetic options and risks before your surgery.

For more information, please ask for a copy of the Royal College of Anaesthetists Patient Information "You and Your Anaesthetic".

If you are worried about any of these risks, please speak to your Consultant or a member of their team.

Getting ready for your operation

- You may need to be seen in the pre-operative clinic before you are admitted to hospital. Here you will have blood tests, and sometimes a heart trace or a chest X-ray. You will be assessed to see if you are fit for the anaesthetic.
- The staff will ask routine questions about your health, the medicine you take at the moment and any allergies you may have.

- You will be given instructions on eating and drinking before your operation.
- You will be able to discuss the operation with a doctor. You will be asked to sign a consent form to say that you understand the procedure, and what the operation involves.
- Please leave all cash and valuables at home if possible. If you need to bring them in with you, there are some patient lockers available.

The day of your operation

You may be asked to have a repeat eye test or corneal topography examination.

What should I expect after my operation?

You will need to posture immediately after surgery for three days. You can get up for ten minutes each hour. This is usually lying flat on your back.

When you are discharged home, you will be asked to use some eye drops and should have a follow-up appointment for an outpatient clinic before you leave. This is usually for the following day.

Discharge Information

Pain relief and medication

The nursing staff will advise you about painkillers before you leave the hospital.

Please tell the nurses what painkilling tablets you have at home. Simple painkillers like paracetamol will usually be sufficient.

Getting back to normal

Remember that you have just had an operation. It is normal to feel more tired than usual for a few days afterwards.

Having had an eye operation you should not rub your eye. Ask the doctor about resuming exercise: you will not be able to swim for at least six weeks and will need to refrain from other forms of exercise for about two weeks.

Driving

You can drive as soon as your eye sight allows and you meet the DVLA standard.

Returning to work

You will probably need at least two weeks off work until the risk of infection has reduced. Ask the Ophthalmologist if you are in doubt about the type of work you do.

Further Appointments

You will need a course of antibiotic eye drops and will be on steroid drops for quite a few months. You will be seen in the outpatient clinic usually the next day and one week later.

You will need sight testing by the St. Paul's Optometrists. It is likely that you will still need some kind of spectacle lens to achieve your best sight, though it is also hoped that your unaided sight (without glasses or contact lenses) will be improved.

Feedback

Your feedback is important to us and helps us influence care in the future

Following your discharge from hospital or attendance at your Outpatient appointment you will receive a text asking if you would recommend our service to others. Please take the time to text back, you will not be charged for the text and can opt out at any point. Your co-operation is greatly appreciated.

Further Information

Contact Numbers:

Corneal Nurse Team (9am – 5pm)

Tel: 0151 706 3917

Text phone number:; 18001 0151 706 3917

Eye Emergency Department (out of hours)

Tel: 0151 706 3949

Text phone number: 0151 706 3949

Stephanie Moss, Admin Officer (appointments, waiting lists and general enquiries)

Tel: 0151 706 2034

Text Phone number: 18001 0151 706 2034

www.keratoconus-group.org.uk

www.nkcf.org

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