

# Having a full-thickness cornea transplant (penetrating keratoplasty)

Ophthalmology Department

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## What is the cornea?

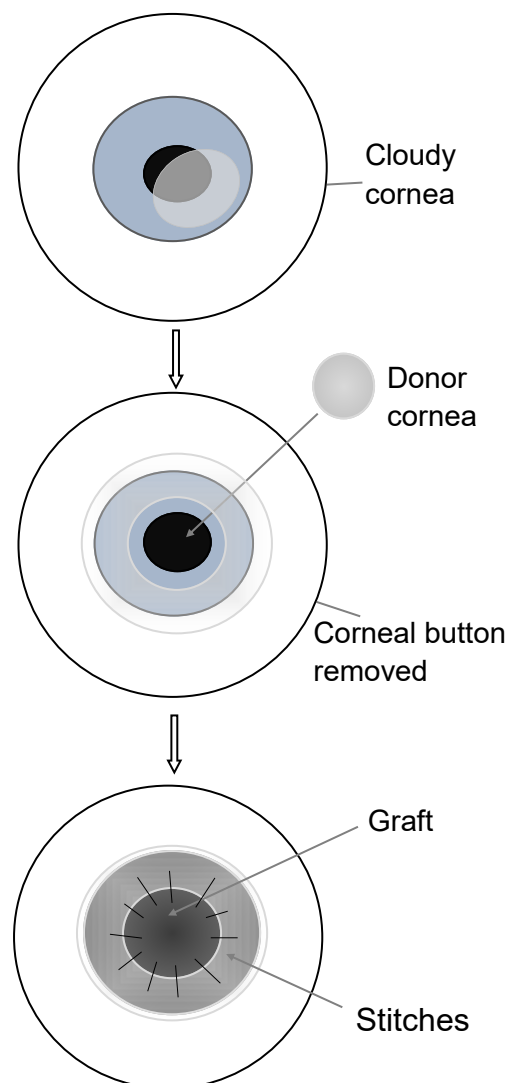
The cornea is the transparent curved front window of the eye. It helps the light to enter and transmits light as it passes through the eye to make an image on the retina at the back of your eye.

## Why do I need a cornea transplant?

Disease, trauma or certain corneal condition (like keratoconus) can cause the cornea to become misshapen or to cloud up. This causes loss of vision. An operation to replace a diseased or injured cornea with donated cornea is called a cornea transplant or corneal graft.

The main reason for having a corneal graft is to help improve your vision. The new cornea will have a more normal shape or be clear. It will let light enter the eye properly. The procedure can also improve the appearance of the affected eye.

Some people may need to have a corneal graft to help relieve the ongoing pain caused by a corneal infection. It may be recommended to save the eye, for example, when there is a hole in the cornea caused by a severe corneal ulcer.



Health information and support is available at [www.nhs.uk](http://www.nhs.uk)  
or call 111 for non-emergency medical advice

Visit [www.uhleicester.nhs.uk](http://www.uhleicester.nhs.uk) for maps and information about visiting Leicester's Hospitals  
To give feedback about this information sheet, contact [uhl-tr.informationforpatientsmailbox@nhs.net](mailto:uhl-tr.informationforpatientsmailbox@nhs.net)

## What is penetrating keratoplasty?

Penetrating keratoplasty is a cornea transplant operation. In the operation we replace the full thickness of the cornea with a donated human cornea. The donor cornea is stitched in place using stitches that cannot be felt. You will be asleep during the operation as you and your eye will need to be held perfectly still in order to accurately place the stitches (sometimes called sutures).

## What is DALK?

Patients with keratoconus may have a DALK procedure. This is a deep anterior lamellar keratoplasty. The surgeon replaces the front layers of the cornea with donor cornea whilst keeping the back layer in the eye (Descemet's membrane and endothelium) in place. The risk are similar to the penetrating keratoplasty.

## Where will my new cornea come from?

We get cornea's from people (donors) who before their death wished to give the gift of sight by donating their corneas. The donors must meet strict guidelines before their corneas are taken. If there is any deviation from these guidelines then the corneas will not be taken for surgeries. The corneal tissue is tested to check for any infections.

## What happens while you are waiting for the operation date?

A pre-operative assessment is required before your operation. In the pre-operative assessment we will need your full medical history and we will verify it. Please bring the list of all your medications and other relevant health documents. We will give you important information about your surgery and the type of anaesthesia you need. We will check your blood pressure and we may do some other tests on you, like heart tracing (ECG) or blood test. Please make sure you have someone to look after you for 24 hours after surgery.

## When should I contact my pre-operative assessment team?

After your assessment and before your planned surgery, it is important that you remain well in the weeks and days before your procedure. If you are unwell your operation may be cancelled on the day and donated tissue may be wasted.

If you are unwell or your health changes, it is important that you get advice before you come into hospital. Please contact the pre-operative assessment team using the contact details on the last page, if you:

- are unwell with a cold, cough, diarrhoea and vomiting, or your health changes.
- you test positive for COVID whether you have symptoms or not.
- have urgent medical attention such as attending the Emergency Department or are admitted to hospital.
- visit your GP between now and your admission date.

- are referred for urgent dental treatment such as a dental abscess.
- are referred for a test or surgery for another condition.
- develop cuts, sores, or open areas to your skin.
- have bruising over the place where you are due to have surgery.
- have a change to your medicines or a change to your dosage, or if you start any new medication.
- no longer wish to have surgery or your symptoms have resolved.

## What should I do if I am not well before surgery?

If you are not well it is important that you get medical attention. You can contact your GP or the NHS helpline on 111. You will then need to contact your pre-operative assessment team to tell them of the outcome.

## What will happen after the transplant?

This operation is often done as a day case under general anaesthesia (while you are asleep), but in some cases, patients may need to stay overnight depending on their circumstances, general health, the anaesthetic used, and the type of operation performed. We would have spoken with you about this during the pre-operative assessment appointment. If you are in any doubt please contact the specialist nurse or the waiting list team.

If your operation is planned as day case, please ensure that an adult person available at home to look after you for the first 24 hours after the operation or until you are fully recovered.

The operating team may examine you before you go home and will usually arrange to see you within 1 week after surgery. We will then see you several times over the first 3 months.

## Aftercare

You should use antibiotic eye drops for at least 2 weeks after the operation and steroid eye drops for a few years. The stitches cannot be removed until at least a year later. It can take up to 18 months until the vision makes a full improvement.

Please follow this advice to care for your transplant:

- Do not rub your eyes.
- No heavy lifting for 4 weeks.
- If your job involves manual labour you may need 3 to 4 months off work, check with your consultant.
- Do not get water in the eye for 1 month.
- Avoid dusty/ smoky areas.
- Avoid contact sports and swimming until advised.
- Do not drive unless you have been advised it is safe to do so.

- Take medication as prescribed.
- We will give you a night guard to wear during the night only. The eye does not need covering in the day, this will increase the risk of infection.

If you have any concerns with your vision, please get advice as soon as possible.

We will prescribe eye drops at first. Then your GP will give them to you on a repeat prescription. You will need to use some drops permanently to protect the graft from rejection.

## It is important that you do not run out of drops at any time

Do not run out of eye drops. Give your GP enough notice to order repeat drops. Please contact us on **0116 258 5913** if you have difficulty getting your drops from the GP.

## What are the benefits of the procedure?

- **Improved vision.** You may still need to wear glasses or contact lenses. Most patients will get driving vision in the future. If you already have problems with your vision a corneal graft may not return all your vision. Your doctor will talk about this with you.
- **Removing infected area.** Removing the infected cornea may prevent further issues with infection.
- **Reduced pain.** Your corneal disease may be causing pain because the surface of the cornea keeps breaking down. A cornea transplant should help reduce or resolve this pain.
- **Improved appearance.** A cloudy or white cornea will become clear again.

## What are the risks of the procedure?

- **Slow visual recovery.** Your long term vision will not be known for at least 18 to 24 months. Half of patients need contact lens for good vision. With time, usually after 1 year, small operations can be done to try to improve the shape of the transplant and reduce the need for glasses or contact lenses.
- **Reversible and irreversible loss of vision.** This can be because of many reasons related to complications of surgery inside the eye. Referral to another eye specialist may be needed to sort out the issue.
- **Graft rejection.** Your body may recognise the donor cornea as foreign and try to damage it. Rejection is the most common reason for a graft to fail. We try to minimise this by giving you anti-rejection eye drops (steroids).
- **Infection.** This can be from within the eye during surgery, or from stitches (sutures) after surgery.
- **Bleeding.** This can be a risk for any surgical procedure.
- **Wound leak.** This would need a surgical procedure.

- **Graft failure:** The donor cornea may become cloudy or misshapen again. This may be due to an old infection coming back, episodes of rejection or due to the fact that the transplanted tissue can have a shorter lifespan than your original cornea. Failure can happen at any time after transplant, but despite this some grafts never function well enough to restore vision. If this happen we may need to repeat surgery.
- **Existing infection can continue.** If you were having corneal graft due to infection, this may continue after the transplant.
- **Infection can return in the graft.** The infection may come back in the graft tissue.
- **Glaucoma.** The cornea transplant may lead to problems with regulating the pressure. This can often be controlled with eye drops. Sometimes you may need a glaucoma operation.
- **Swelling at the back of the eye (cystoid macular oedema).** This is related to inflammation (bruising) caused by the operation. It can often be treated with eye drops.
- **Cataract.** If you still have your natural lens in the eye, then it may become cloudy and blur the vision with time. This is called cataract. Cataract can be caused by the operation, use of steroid drops and episodes of inflammation or rejection. Standard cataract surgery can be performed after a cornea transplant.
- **Broken stitches and wound leak.** We may need to adjust, remove or replace stitches at any point after the original operation. Sometimes this can be done in clinic, but often needs a short operation. Broken stitches increase the risk of infection and rejection.
- **Reversible and irreversible loss of vision.** This can be caused by swelling in the back of the eye, bleeding, swelling and infection inside the eye are all possible after any eye operation. The doctor will do the surgery to reduce any damage to the other parts of the eye.

## What will my vision be like after the operation?

We expect your vision to be blurred. Sometimes, it may be worse than before the surgery. This is common and should improve over time. We will talk about your ability to drive and return to normal activities depending on how your eye heals. It is also normal for your eye to be red, light-sensitive, and feel gritty or as if you have something in it. These symptoms are expected and will improve over time.

## What to do if you think there is a problem?

If you have any increase in the following symptoms:

- redness
- changes to your vision
- pain
- sensitivity to light

You should contact the specialist nurse on **07970 940 125**, or go to the Eye Casualty or if this is closed go to the Emergency Department, please do not wait until your next appointment.



## Will I get problems later on?

It is very important to have your graft checked if you think there may be a problem.

New symptoms, even after a few years of a corneal graft, could be a sign of rejection which needs to be treated quickly if your graft is to survive. You will be treated with eye drops or tablets, but we need to treat it quickly and start this as soon as possible.

If you have any questions or concerns please contact:

Corneal Team Specialist Nurse: **07970 940 125** (Monday to Friday, 9am to 5pm)

Eye Casualty Department: **0116 258 6273** (Monday to Friday, 8.30am to 4.30pm,  
Saturday, Sunday and bank holidays, 8.30am to 12.30pm)

## What if a rejection cannot be managed?

If there is no response to treatment then the graft can fail. In most cases the transplant can be repeated if the original operation fails, this is often called a re-graft.

## Remember if you have any of the following:

- **redness**
- **changes to your vision**
- **pain**
- **sensitivity to light**

**You must attend eye casualty as soon as possible, as any delay can cause loss of vision.**

اگر آپ کو یہ معلومات کسی اور زبان میں درکار ہیں، تو براہ کرم مندرجہ ذیل نمبر پر ٹیلی فون کریں۔  
على هذه المعلومات بلغة أخرى، الرجاء الاتصال على رقم الهاتف الذي يظهر في الأسفل  
જો તમને અન્ય ભાષામાં આ માહિતી જોઈતી હોય, તો નીચે આપેલ નંબર પર કૃપા કરી ટેલિફોન કરો

ਜੇ ਤੁਸੀਂ ਇਹ ਜਾਣਕਾਰੀ ਕਿਸੇ ਹੋਰ ਭਾਸ਼ਾ ਵਿੱਚ ਚਾਹੁੰਦੇ ਹੋ, ਤਾਂ ਕਿਰਪਾ ਕਰਕੇ ਹੇਠਾਂ ਦਿੱਤੇ ਗਏ ਨੰਬਰ 'ਤੇ ਟੈਲੀਫੋਨ ਕਰੋ।

Aby uzyskać informacje w innym języku, proszę zadzwonić pod podany niżej numer telefonu

If you would like this information in another language or format such as EasyRead or Braille, please telephone 0116 250 2959 or email [uhl-tr.equalitymailbox@nhs.net](mailto:uhl-tr.equalitymailbox@nhs.net)

