NHS
Oxford University Hospitals
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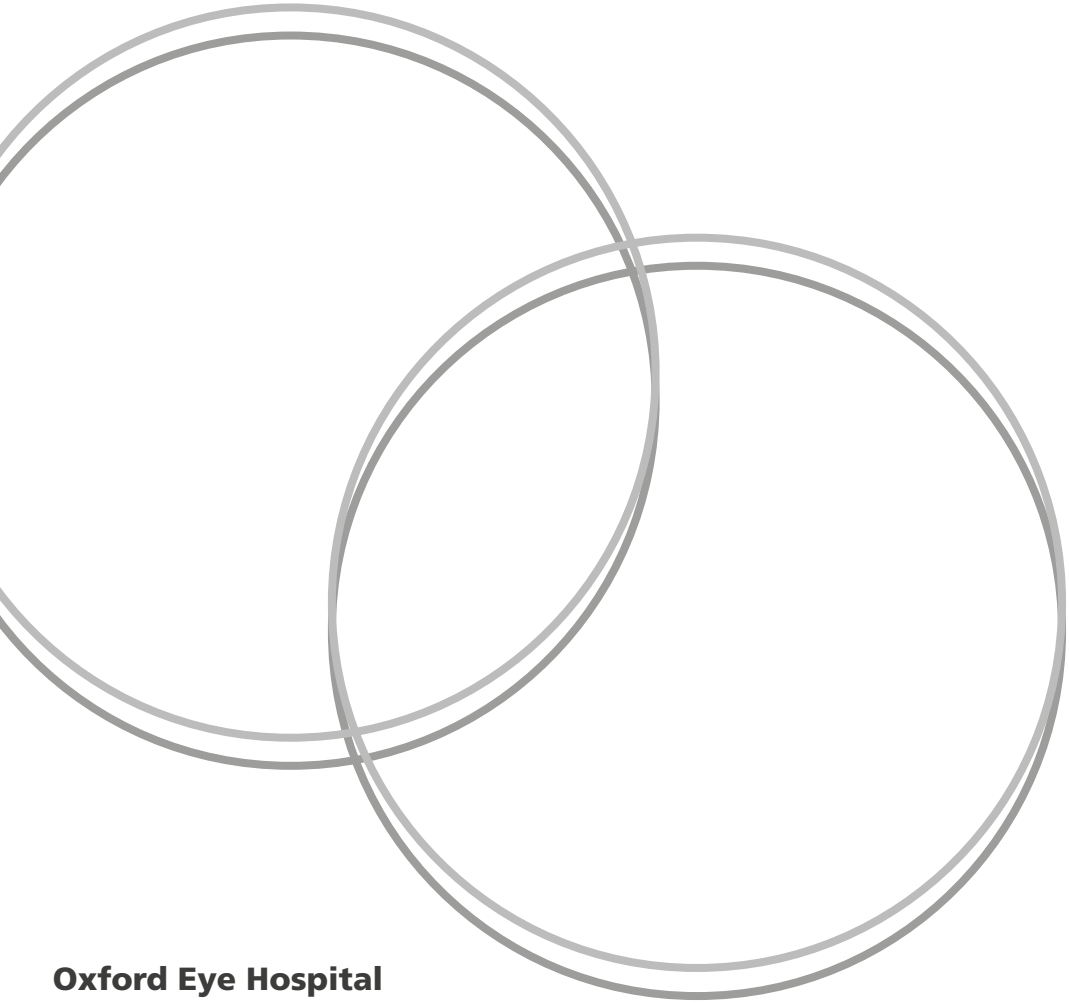
Glaucoma Filtration Surgery (Trabeculectomy)

Information for patients



Oxford Eye Hospital

This leaflet gives you information that will help you decide whether to have glaucoma surgery. You might want to discuss it with a relative or carer. Before you have the operation, you will be asked to sign a consent form and so it is important that you understand the information in this leaflet before you decide to have surgery. If you have any questions, you may wish to write them down so that you can ask one of the hospital staff.

Why have I been offered glaucoma surgery (trabeculectomy)?

Glaucoma is usually treated successfully with medication to lower the pressure in the eye. However, if medication is not effective, not tolerated (causing you side effects) and/or your glaucoma is getting worse, then trabeculectomy is usually required to lower/control the eye pressure (known as the intraocular pressure).

Therefore, the aim of the operation is to lower/control your eye pressure to reduce the risk of you losing vision due to glaucoma. It will NOT improve your vision or reverse the damage which already been caused by glaucoma.

What is a Trabeculectomy?

Trabeculectomy is a surgical operation which lowers the pressure within the eye (intraocular pressure (IOP)) to help preserve vision. Any vision lost to glaucoma cannot be restored.

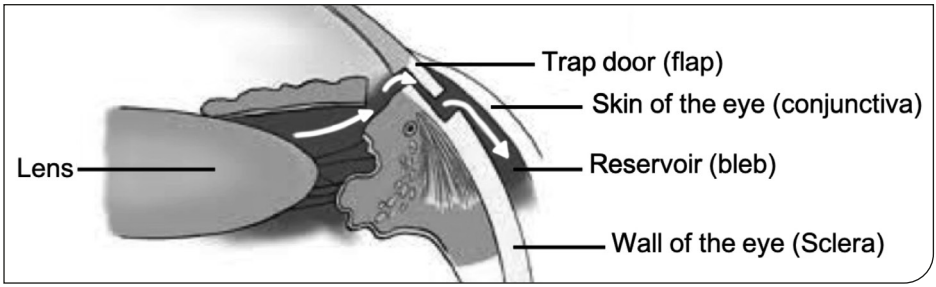
A senior specialist eye surgeon with expertise in glaucoma will carry out the operation or may supervise a doctor in training.

The operation involves opening the skin of the eye (conjunctiva) under the upper lid to expose the wall of the eye (sclera). A trap-door is made in the sclera and then a small hole is made in the remaining sclera beneath. The trap-door is sutured (stitched) with either fixed sutures or releasable sutures to prevent aqueous humour (fluid within the eye) from draining out of the eye too quickly. These sutures (if required) can then either be lasered (fixed sutures) or removed (releasable sutures) in clinic after the surgery if the IOP is too high.

The skin of the eye (conjunctiva) is then replaced over the trap door in its original position and secured with sutures which are often removed in clinic if they are not buried in the conjunctiva. The whole operation site is covered by the upper eyelid.

The surgery works by draining fluid from within the eye known as aqueous humour, through the trap-door under the conjunctiva into a reservoir or bleb (figure 1). It is important to remember that the aqueous humour is fluid within the eye and is not related to the tears which cause the eye to water.

Figure 1: Diagram showing a trabeculectomy (flow of acqueous is illustrated by the white arrows.)



By draining aqueous humour out of the eye in a controlled way, the trabeculectomy operation not only lowers the IOP but reduces fluctuation in the IOP.

What do I need to do before surgery?

Before the surgery you should **continue all your drops and tablets as normal** even on the morning of the operation. However, blood thinning medications (such as Aspirin, Clopidogrel, Wafarin) will **usually be discontinued prior to surgery** depending on the medical risk to you of stopping these treatments. This will be discussed with you at the time you are listed for surgery and again at a pre-operative assessment appointment.

You will be sent an appointment for a pre-operative assessment to document your medical history, medications and assess your fitness for the type of anaesthetic you will receive for the operation.

Please arrange for someone to take you home after surgery. If you live alone and are having sedation or general anaesthetic then also arrange for someone to be with you at home for the night of the surgery in case you feel unwell. **If it is not possible for someone to be with you at home then please let the pre-operative assessment team know at your appointment and we can arrange for you to stay overnight**.

What happens during the operation?

Trabeculectomy surgery usually takes 60 to 90 minutes. Before starting the surgery, the team will check your details such as your name, hospital number, date of birth, surgery and which eye is being operating on. The eye is then cleaned with sterilising solution and a sterile sheet will be placed over you to keep the site sterile during surgery. The surgery will be performed as described above and then a shield and pad will be placed over the eye.

Anaesthesia

Trabeculectomy is either performed under:

1. Local anaesthesia (LA): A numbing medication (anaesthetic) is injected around the eye. The injection may cause mild discomfort and/or a pressure sensation as it is delivered which will quickly disappear. The injection anaesthetises (numbs) the eye, preventing pain and excessive eye movements during the operation.
2. Local anaesthetic with sedation (LAS): You are given medication through the vein to make you 'sleepy' but you will still be conscious and aware of your surroundings. The LA will then be given around the eye to anaesthetise it.
3. General anaesthetic (GA) – where you are asleep throughout the surgery.

This choice of anaesthesia will depend on a number of things including your age, other medical conditions you may have and risk of complications and will be discussed with you at the time of listing you for surgery.

If the operation is performed under LA or LAS you may hear the surgeon talking to the scrub nurse or other members of the surgical team which is quite normal and nothing to be concerned about.

Mitomycin C

During the surgery, a drug called Mitomycin C (MMC) is applied to the surface of the eye for 3 minutes and then washed away. MMC is a drug that was originally used to treat cancer and is now used for glaucoma surgery to reduce scarring. Scarring is the main reason a trabeculectomy may lose function or stop functioning altogether and the use of MMC reduces this risk.

What happens after the operation?

Following the operation, patients are usually examined by a member of the glaucoma team on the same day and are then discharged home. Sometimes, patients are seen the following day instead at the discretion of the surgeon.

We can provide overnight accommodation for patients who:

- Have travelled from afar
- Have had sedation or a general anaesthesia AND live alone with no one able to be at home with them first the first night.

After surgery the eye will usually be padded and a plastic shield placed over the eye. The next day the eye pad and shield should be removed and the skin around the eye should be cleaned with cool boiled water. The pad can be disposed of, but the shield MUST be worn over the eye at night for 2 weeks. If you have poor or no sight in your other eye, then we may take the pad off before you go home.

How should my eye feel or look like after the surgery?

After the operation, the eyelid on the operated eye may be droopy for the first 1 to 2 months.

The eye will be 'red' and possibly 'bloodshot' for the first 4 weeks then this will settle. This is normal.

It is normal for the eye to feel either itchy, sticky or mildly sore for 3 to 4 weeks after trabeculectomy surgery due the surgery itself and partly due to the stitches. If you have soreness/discomfort, we suggest that you take pain relief such as paracetamol every 4 to 6 hours (but not aspirin or ibuprofen as this can cause bleeding). **Please do not rub your eye**.

The vision in the eye may be blurred after the surgery for the first few weeks and then start to improve. It can take up to 3 months for the vision to stabilise and sometimes a change of glasses prescription is required. However, a glasses test is not recommended until after 3 months following the surgery.

Eye drops after the surgery

After the surgery, all glaucoma drops to the **operated eye only** and acetazolamide should be stopped. If you are using glaucoma drops for your other eye, these **must** be continued as normal.

You will be given new eye drops to apply to the operated eye. You should start administering these on the morning of the day after the operation. It is likely you will be given 3 different drops. Each drop comes in individual vials – **please either use one vial per day (Chloramphenicol and atropine) or until it runs out (Dexamethasone). It is important to leave a minimum of 5 minutes gap between any drops**. You will be prescribed:

1. **Antibiotic drop** (Chloramphenicol preservative free): this is given four times a day and is to reduce your risk of infection. You will usually need to use this for 3 to 4 weeks.

2. **Steroid drop** (Dexamethasone preservative free): this is to reduce inflammation and therefore the risk of scarring which can lead failure of the surgery. The drops needs to be instilled for the majority of patients every 2 hours (during the day only) usually for the first month and then the drops are slowly reduced over 2 months at the surgeons discretion. You must **not** stop the steroid drops suddenly as your operation may fail. If you run out, you must obtain more drops from your GP.

3. **Pupil dilating drop** (usually Atropine): This drop is often prescribed for patients who **may** develop complications if the IOP goes too low. The drop makes the pupil big and can protect the eye against low pressure. The drop is prescribed to be used twice a day and is used for the first 2 to 3 weeks (sometimes longer). The drop will make your pupil look bigger compared to the other eye and will blur your vision. However, once it is stopped the pupil and vision will return to normal, usually within 10 to 12 days.

Post-operative clinic appointments

Patients are usually seen once a week for the first four weeks, then 2 weekly for the next month and then 1 month after. However, you may need to be seen more frequently if the eye pressure is too high or too low.

During your follow-up appointments, if the pressure is too high, you will either need a 'releasable' suture removed or a 'fixed' suture lasered. Removal/laser of a suture is performed after instillation of an anaesthetic drop. Your eye pressure will be checked again after the procedure.

If the eye appears inflamed at a post-operative check-up, we may give you an injection around the eye. This would be a combination of steroid and anaesthetic, sometimes combined with 5-Fluororacil (a drug to reduce scar tissue). The injection is administered in clinic after instillation of anaesthetic to numb the eye. Following the injection, you may experience a mild pressure sensation and or stinging for a few hours. Occasionally it can make your eye feel sore and gritty.

Activity after surgery

It is important to avoid strenuous activity during the first two weeks after surgery including swimming, tennis, jogging and contact sports. Watching TV, reading and using a computer will not harm the eye. Avoid activities involving bowing your head down and activities such as yoga that require head down posturing.

If the eye pressure is very low then you surgeon may ask you to avoid all activities that involve any exertion.

Avoid wearing make-up for the first four weeks.

When can I go back to work?

The duration of time needed off work will depend on a number of factors such as the nature of your employment, vision in your other eye and the IOP in the operated eye.

In general, if you work in an office environment you would need 2 weeks off work if the post-operative course is smooth. However, if your occupation involves heavy manual work or working in a dusty/outdoor environment you are likely to require one month or sometimes more off. This can be discussed with your consultant.

Contact lens use after surgery

If contact lens wear is essential, then this may not be the correct operation for your eye as not everyone can continue to wear contact lens after surgery due to the risk of the lens rubbing on the bleb and causing an infection.

If contact lens wear is essential, then other alternatives to trabeculectomy should be discussed with your consultant.

Flying after surgery

Although it is safe to fly after surgery, as you will need close follow-up for the first few months, it is recommended to avoid travel in the first 3 months after surgery.

When is the eye back to normal?

In most cases, it takes 2 to 3 months for the eye to feel completely normal and sometimes longer in more complicated cases. At this point a spectacles test (refraction) is usually required as your glasses prescription may have changed compared to before the operation.

How successful is the surgery?

Trabeculectomy has a long track record of clinical evidence. Long term studies (research) have shown that most people will achieve a low IOP without the need for additional medication. The success rate of trabeculectomy at controlling the IOP varies according to a number of risk factors including the type of glaucoma, previous surgery, ethnicity and age.

In one study of trabeculectomy success, after 20 years, 57% were successful without medication and this increased to almost 90 % with additional IOP lowering medication. Put another way, just under two thirds required no glaucoma drops to control the IOP, whereas one third still required drops.

What are the risks of trabeculectomy surgery?

Trabeculectomy, like any surgery, carries a risk of complications. In most cases the complications can be treated and in a small proportion of cases, further surgery may be needed. Very rarely some complications can result in loss of sight.

Blurred vision / loss of vision

Your vision is usually more blurred after the operation and may take several weeks to return to normal. Some patients will find that their vision is not quite as sharp after surgery. The vision generally stabilises at around 3 months when you should see you optician for a glasses test. **It is important to remember than any vision lost due to glaucoma cannot be restored by surgery**.

Rarely, patients develop blindness from the operation due to bleeding or infection of the eye (about 1 in 1000).

High or low eye pressure

Your IOP may be high or low following surgery. If your IOP is high and depending on how many weeks you are following the operation, we may either massage your eye pressure down (usually first week following surgery) or remove a suture (releasable suture) or laser a suture on your trabeculectomy. This is performed in the outpatient clinic following anaesthetic drop instillation. Your eye pressure will then be rechecked. After 3 months, if your IOP is too high then you either need drops again to lower your IOP and /or an operation called 'bleb needling'. Needling is performed in the operating room whereby following anaesthetic drops instilled in your eye or a local anaesthetic block, we break up the scarring around the trap-door with a needle in an attempt to get the trabeculectomy draining again.

Infrequently, your IOP may be too low and you will need to be watched more closely with more frequent visits to the clinic. If the low IOP is causing a reduction in your vision or swelling at the back of the eye then you may need either a small injection of jelly into the eye or another operation to reduce drainage out of the trabeculectomy (trap-door) by placing more sutures on the trap door.

Bleeding

There is a small chance (1 in 1000 patients) of bleeding inside the eye immediately after surgery (called 'suprachoroidal' haemorrhage). This may require further surgery and may ultimately result in loss of sight.

Infection

There is a small chance of infection (1 in 1000 patients) inside the eye after surgery. This will require further treatment and may ultimately result in loss of sight. This operation will make your eye more prone to infection, even in years to come. If your eye becomes painful or red or your vision becomes blurred, you should seek immediate medical help.

Cataract

There is about a 30% chance that a cataract (clouding of the natural lens) may develop some years after surgery. This may require an operation called cataract surgery.

Irritation

Irritation (grittiness) or discomfort in the eye that may persist.

Droopy eyelid

The eyelid on the side of the operation may become droopy after surgery. This usually settles down and the eyelid position returns to normal/near normal. Rarely, the eyelid may still be droopy after 3 months, in which case you may need a small operation to lift the eyelid to match the other eye.

What symptoms should I look out for to seek medical attention?

Certain symptoms could mean that you need prompt treatment, including:

- **Excessive pain**
- **Rapid Loss of vision**
- **Increasing redness of the eye**

If you experience any of these, please call our specialist telephone triage number:

Telephone: **01865 234 567** option 1 followed by option 1

Monday to Friday, 8:30am to 4:30pm

Saturday and Sunday, 8:30am to 3:30pm, (including Bank Holidays)

You will be able to speak to an ophthalmic health professional who will advise you.

If you need advice out of hours, please phone NHS111 or your out of hours GP practice.

We hope this information is sufficient to help you decide whether to go ahead with surgery.

Please use the space on the back to write down any further questions to ask the doctor or nurse when you come to the hospital for your appointment. Don’t worry about asking questions. Our staff will be happy to answer them.

Oxford Eye Hospital – Glaucoma Service

Surgery/laser/assessments are performed by the specialist glaucoma team in the department, which include:

- Lead Consultant: Mr Rajen Tailor
- Glaucoma Fellows
- Specialist Trainees
- Specialist Optometrists with an interest in Glaucoma.

Further information

If you would like an interpreter, please speak to the department where you are being seen.

Please also tell them if you would like this information in another format, such as:

- Easy Read
- large print
- braille
- audio
- electronic
- another language.

We have tried to make the information in this leaflet meet your needs. If it does not meet your individual needs or situation, please speak to your healthcare team. They are happy to help.

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