



York and Scarborough
Teaching Hospitals
NHS Foundation Trust

Preserflo MicroShunt™

Aqueous Shunt Implantation for the Treatment of Glaucoma

Information for patients, relatives and carers

① For more information, please contact:

Ophthalmology Department

Willow Ward, Scarborough Hospital
Woodlands Drive, Scarborough, YO12 6QL
Telephone: 01723 342215

Or

The Eye Clinic, York Hospital
Wigginton Road, York, YO31 8HE
Telephone: 01904 726758

Weekdays after 5pm, Weekends and Bank Holidays
Telephone: 01904 631313 and ask for 'operator' and
then ask for the ophthalmic nurse or doctor on call

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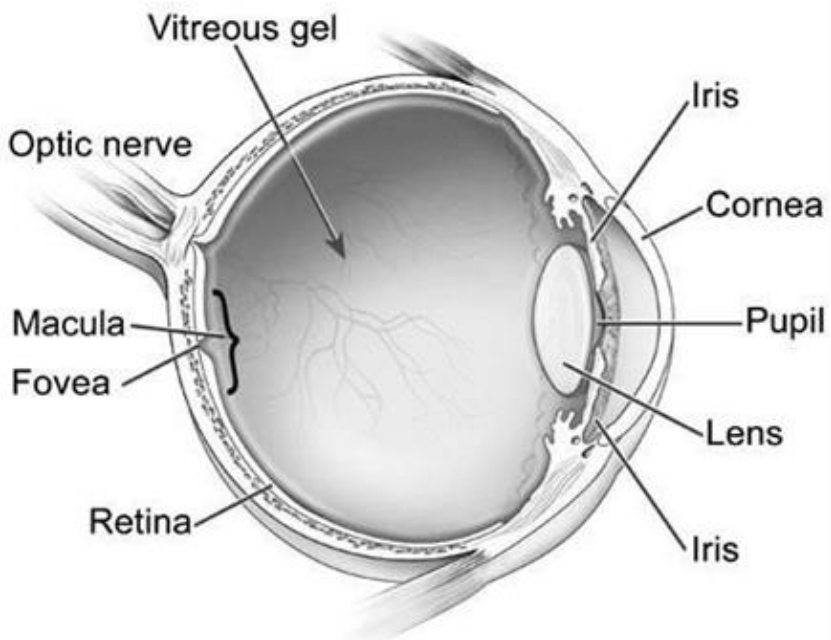
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What is glaucoma?

The optic nerve carries images from the retina (light-sensitive layer of the back of the eye) to the brain; allowing you to see (see figure 1). Glaucoma is the name given to a group of conditions that cause damage to the optic nerve where it leaves the eye (optic disc). It affects one in 50 people over the age of 40. Glaucoma can cause loss of vision.

Figure 1: Side view of the eye



Your ophthalmologist will assess you and let you know if glaucoma surgery is suitable for you. However, it is your decision to go ahead with the operation or not.

How does glaucoma happen?

Glaucoma can be caused by an increase in pressure in the eye. Fluid is constantly being made in the eye and drains out slowly into the bloodstream. The pressure in the eye can increase if the fluid does not drain properly.

Sometimes the optic nerve can be damaged, even though the pressure in your eye is within the normal range.

Most people do not realise there is a problem in the early stages. This is because it is usually painless, and side (peripheral) vision is usually affected first.

What is a Preserflo MicroShunt™ device?

It is a tiny device that is used to reduce the pressure inside the eye (it is like a small straw). It is less than 1mm thick and has a winged design (Figure 2.)

Figure 2. Preserflo Microshunt™ (courtesy of Santen)



How does it work?

The device is designed so that the correct amount of fluid flows out of the eye. The wings help to make sure the device stays in place and does not leak or slip. It is made of a soft, flexible biomaterial (SIBS) that conforms to the curvature of your eye and will not cause any allergic response.

The device is put into the eye in an operation that allows excess fluid to escape and drain into a small blister, or filtering bleb on the surface of the eye; It is usually covered underneath the upper eyelid. From there the fluid is slowly absorbed into the bloodstream. By draining away the excess fluid, the pressure within the eye is reduced.

Why do I need to have a Preserflo MicroShunt™?

Your eye surgeon has recommended the shunt operation because medical treatments (drops), or previous surgery have not controlled your condition adequately; and/or drops treatment is unsuitable.

In some cases, an operation may even be the first choice of treatment. Your doctor makes the decision to operate after assessing your condition.

What are the benefits of surgery?

The device will reduce the eye pressure, preserving the sight you still have. It will not restore any sight you may already have lost or improve your sight but aims to prevent further loss of vision. It is possible that after the operation you may be able to reduce the number of your eye drops.

Are there any alternatives to surgery?

If the eye drops are not effective enough, surgery is usually recommended. Laser treatment may be suitable for you but is less effective than surgery and the effect may not last as long.

There are different types of glaucoma surgeries. Preserflo MicroShunt™ surgery is considered to be minimally invasive as it is a short procedure with quick recovery time. Sometimes, your surgeon can recommend other surgeries depending on the stage of your glaucoma and the required eye pressure reduction.

What should I do about my existing medication?

- You should make sure your surgeon aware of the medication you take.
- You may need to stop taking Aspirin, Warfarin or Clopidogrel (or other blood thinning tablets) before your operation.
- If you are diabetic, it is important that your diabetes is controlled around the time of your operation. Follow your doctor's advice about diabetic medication.
- If you take blood pressure tablets, you should continue to take your medication as normal.

What does the operation involve?

The operation usually takes around 30 minutes under local anaesthetic. It can be implanted under general anaesthetic if necessary. Your surgeon will discuss with you which option is the right option for you.

Your surgeon will insert a small plastic tube into the front chamber of your eye. It is so small you would need a microscope to see it. The tube implant will be inserted through a tunnel in the sclera (the white part of the eye). To expose the sclera, your surgeon will have to make a cut in the conjunctiva (thin transparent tissue that covers the sclera). This incision will be closed usually by stitches.

The surgeon may apply anti-scarring drugs during the surgery to improve the long-term success of the operation.

What happens after the operation?

After the operation, you will have anti-inflammatory/steroid eye drops to reduce scarring. You may need to use them quite frequently. Your doctor or a nurse will give you specific instructions about this.

You may also have to take antibiotic drops. These drops are used to prevent infection following the operation. Your doctor or a nurse will give you specific instructions about this, as every patient is different.

You will also need to wear a plastic shield at night for two to four weeks after the operation. This is to prevent you accidentally rubbing your eye while asleep. You should wash and thoroughly dry the shield before covering your eye each night. You can also wear it during the day if you are concerned.

For many patients undergoing implantation, surgery means that they will no longer need to take glaucoma medicines; however, this is not the case for everyone.

Will I have a follow-up appointment?

You will have an appointment in the outpatient department the following day to make sure the operation is working well.

In the initial period following the operation we need to regularly see you in our clinic. Your doctor will decide exactly how often you need to be seen, as every patient is different.

You will be instructed about using your glaucoma eye drops after the operation by your doctor/a nurse.

If you are using glaucoma drops to the non-operated eye, please continue to use them as usual.

A nurse will remove this when you come in for your outpatient appointment. If you have poor vision in the eye not operated on, you will have a clear shield instead of a patch over your operated eye so that you can still see and move around after surgery.

As with any operation, the affected part of the eye will take a little time to settle down. It is normal that you may feel that your vision is blurred. This may fluctuate from day to day for some weeks to months. Once the eye has settled, a visit to your optometrist/optician for new glasses will usually improve your sight to very similar, if not the same, level as it was before the operation. Your doctor will inform you when the right time for a glasses check is – usually around three months after the operation.

What can I do to help make the operation a success?

1. Keeping in the same position

If your operation is being performed under a local anaesthetic, you will need to lie flat and remain still during the operation. If you cannot lie still and flat, you should let your surgeon know.

Your face will be covered with a sterile cloth to allow your surgeon to work on a clean surface. Air will be blown gently towards your nose. If you are claustrophobic you should let your surgeon know.

2. Lifestyle changes

If you smoke, stop smoking several weeks or more before an operation may reduce your chances of getting complications and will improve your long term health.

Try to maintain a healthy weight. You have a higher chance of developing surgical/anaesthetic complications if you are overweight.

Regular exercise should help prepare you for the operation, help with your recovery and improve your long-term health. Before you start exercising, ask a member of the healthcare team or your GP for advice.

How soon will I recover?

After the operation (if it was done under general anaesthesia) you will be transferred to the recovery area and then to the ward or day-case unit. You should be able to go home a few hours after the operation once you have come around and the anaesthetic has worn off. A responsible adult should take you home in a car or taxi and stay with you for at least 24 hours. You should be near a telephone in case of an emergency.

Your surgeon will need to check your eye the day after the operation. Your surgeon may inject anti-scarring drugs into the surface of the eye and scrape away any scar tissue. These procedures are well tolerated by patients and are performed after your eye has been numbed adequately.

If you are worried about anything, in hospital or at home, contact a member of the healthcare team. They should be able to reassure you and/or identify and treat any complications.

Activity following aqueous shunt/tube operation

You should avoid stooping, bending over and strenuous activity during the first four weeks after your operation. You should also avoid swimming and contact sports. However, it is safe to watch TV and read.

If you work, you should arrange to be away from work for approximately two weeks, but this can vary depending on the nature of your employment and the level of vision in your other eye.

You may need more time off if you do heavy manual, or dirty/dusty work.

In the long term, if you plan to travel abroad, you should let your doctor know, as you will need to take an adequate supply of drops with you. You should check with the eye doctor before travelling.

Returning to normal activities

- You should not drive, operate machinery (this includes cooking) or do any potentially dangerous activities for at least 24 hours.
- If you had a general anaesthetic or sedation, you should also not sign any legal documents or drink alcohol for 24 hours.

- Your surgeon will tell you when you can return to normal activities. Most people will need about two weeks off work.
- It is important to look after your eye very meticulously to reduce the risk of complications.
- Regular exercise should help you return to normal activities as soon as possible.
- Before you start exercising, you should ask a member of the healthcare team or your GP for advice.
- Do not drive until you can read a number plate from 20.5 metres (67 feet) and always check with your surgeon and insurance company first.

What complications can happen?

The healthcare team will try to make your operation as safe as possible. Most people make a good recovery from the operation, with their glaucoma under better control.

As with all surgeries, however, complications can happen. Some of these can be serious. You should ask your doctor if there is anything that you do not understand.

Any numbers which relate to risk are from studies of people who have had this operation. Your doctor may be able to tell you if the risk of a complication is higher or lower for you.

General complications

1. Anaesthesia, your anaesthetist will be able to discuss with you the possible complications of having an anaesthetic.
2. Pain after an implant insertion surgery should only be mild and is usually easily treated with simple painkillers such as paracetamol. You may feel pressure or mild discomfort. If you are in severe pain you should let your surgeon know as this is unusual.
3. Infection can result in blurred vision or even permanent loss of vision (risk one in 300). Most infections usually happen in the first week after the operation but can happen later. If your eye becomes red and painful, and your vision becomes blurred, you should let your surgeon know straight away. You may need other procedures to control the infection.

Specific complications

1. Low eye pressure
Very rarely, the eye pressure can drop too low (called hypotony) or fall too quickly. Low eye pressure is the most important risk after the operation. Low eye pressure can result in bleeding at the back of the eye, which is a very severe complication and can cause blindness. If your eye pressure is too low, a surgeon may need to inject special gel into the front of your eye. The doctor may also recommend increasing or decreasing certain eye drops.

2. A sharp rise in eye pressure causing sickness, pain and headaches (risk one in 600).
3. Bleeding during or after surgery. Any bleeding is usually mild, and your eye may be slightly red and bloodshot. If it is red and painful, you should let your surgeon know, as this is unusual.
4. Bleeding in the front chamber of the eye which makes vision worse (risk one in four). This usually settles after few weeks.
5. Severe bleeding inside the eye (suprachoroidal haemorrhage) during/after surgery which may cause permanent loss of vision (risk one in 2,000).
6. Loss of visual acuity. Occasionally after the operation, your vision may not be as sharp as before the operation. You may be concerned that your sight seems worse afterwards. However, if your doctor feels you need this operation, it is because he or she feels you are in danger of losing your sight altogether if the glaucoma is not controlled.
7. Your eyelid position might change after the operation, and you may require another operation to correct this later on.
8. Too much fluid draining (risk one in five) from the edge of the surgical site. This usually settles on its own. A tight eye pad or contact lens may be used. If it does not settle you may need a further operation.

9. Inflammation in the other eye (sympathetic ophthalmia) (risk: less than one in a million). This is a potentially serious complication which may be treatable. If you develop pain or blurred vision in your other eye, let your surgeon know.

Other adverse symptoms that can occur after the operation could mean that you need prompt treatment, these include:

- Sticky eye that continues to produce sticky discharge after gentle bathing with cooled boiled water.
- A sudden or very obvious worsening or darkening of your vision.
- Shadows, veil or 'spider web' shadow on your vision.
- Flashing lights.
- Increasing redness of your eye.

Late complications

- Developing cataracts (lens becomes cloudy).
- Reduced vision over time (risk one in 10). This is caused by deterioration of glaucoma.
- Implant exposure which may cause infection and therefore has to be treated surgically.
- Implant blockage/excessive scarring

- You may need eye drops or further treatment/surgery to control the pressure.
- The front surface of the eye (cornea) may become hazy (corneal decompensation) and may need further intervention.

Contact the hospital immediately using the numbers below if you have any of these symptoms.

Eye Clinic Triage: York 01904 726758

Scarborough 01723 342215

Monday to Friday 9am to 5pm.

Weekdays after 5pm and weekends and bank holidays, telephone anytime on 01904 631313. Ask for operator and then ask for the eye doctor or nurse on call.

What will happen if I decide not to have the operation?

The optic nerve at the back of your eye will be increasingly getting more damaged. If you leave your condition untreated you are likely to lose eyesight.

This document is intended for information purposes only and should not replace advice that your relevant health professional would give you.

Tell us what you think of this leaflet

We hope that you found this leaflet helpful. If you would like to tell us what you think, please contact:

Sister, Ophthalmology, The York Hospital,
Wigginton Road, York, YO31 8HE,
telephone 01904 726758, or email
yhs-tr.ophthalmologyyorkadminstaff@nhs.net

Teaching, training and research

Our Trust is committed to teaching, training and research to support the development of health and healthcare in our community. Healthcare students may observe consultations for this purpose. You can opt out if you do not want students to observe. We may also ask you if you would like to be involved in our research.

Patient Advice and Liaison Service (PALS)

PALS offers impartial advice and assistance to patients, their relatives, friends and carers. We can listen to feedback (positive or negative), answer questions and help resolve any concerns about Trust services.

PALS can be contacted on 01904 726262, or email yhs-tr.patientexperienceteam@nhs.net.

An answer phone is available out of hours.

Leaflets in alternative languages or formats

Please telephone or email if you require this information in a different language or format, for example Braille, large print or audio.

如果你要求本資 不同的 或 式提供 , 電
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Email: yhs-tr.FacilitiesmanagementHelpdesk@nhs.net

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