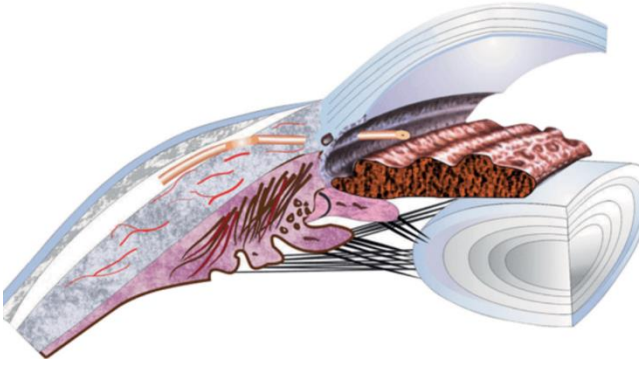
Preserflo® Minimally Invasive Glaucoma Surgery

What is minimally invasive glaucoma surgery?



Minimally invasive glaucoma surgery (MIGS) refers to a range of techniques and procedures that aim to reduce pressure within the eye. MIGS aims to improve the drainage of fluid within the eye to prevent further damage to the optic nerve. The term 'minimally invasive' refers to tiny microscopic equipment being used that has been designed to reduce risks compared to procedures that use larger equipment. Preserflo® MicroShunt is categorised as a MIGS procedure.

What is Preserflo MicroShunt and what makes it different to other procedures?

The Preserflo® MicroShunt is a 8-9mm long tube which is inserted into the eye to create a new bypass pathway for draining excess aqueous fluid, thus reducing pressure in the eye and potentially reducing the need for medication. Compared to other tubes that are available Preserflo® MicroShunt is made of a material more compatible with the body and is therefore less likely to be rejected.

Who is suitable for Preserflo® MicroShunt?

The MicroShunt is suitable for patients with moderate-to-advanced glaucoma, its pressure lowering effect is better than implants/shunts that target the normal drainage channels.

How will this procedure help me?

By creating a new bypass pathway for fluid to drain from the eye, the pressure in the eye will reduce and thereby reduce the risk of damage or further damage to the optic nerve. The Preserflo® MicroShunt works by draining fluid from inside the eye to under a thin skin-like membrane (the conjunctiva) covering the white outer part of the eye. The shunt can only be seen inside the eye with a microscope.

Preserflo® MicroShunt has been developed with the aim of providing long-term reduction in the pressure created within the eye as a result of fluid build-up and reduces the amount of glaucoma medication a patient is using. The aim is the same as that of trabeculectomy (another surgical glaucoma treatment), except that the risks associated with Preserflo® are significantly less. Trials using Preserflo® showed a reduction of the pressure within the eye by an average 55% at 12 months after the procedure, with the average number of glaucoma medications a patient was on reducing compared to before surgery; with 80% of patients coming off glaucoma medication altogether.

Will my eyesight recover?

If you have experienced sight problems as a result of glaucoma this procedure cannot recover any lost sight, however as with all glaucoma treatments, the procedure aims to reduce further damage to the optic nerve and prevent any further loss of vision.

What are the risks associated with the procedure?

There are few complications associated with this procedure, these include:

- Infection and/or swelling – after surgery, antibiotics and antiinflammatory medication may be given to reduce the risk of these happening
- Bleeding in the eye – if this happens your sight may be blurred for 1-2 weeks
- Very low pressure in the eye (hypotony) – though the likelihood of this happening is low compared to other glaucoma procedures, the pressure in your eye can become lower than required. If this happens it can sometimes resolve spontaneously. The pressure in your eyes will be monitored after your procedure and your ophthalmologist will advise you if this happens.
- Over time the eye lowering pressure effect of the MicroShunt may not be as effective; if that happens then you may need to revert back to using glaucoma medication

What are the alternatives to this procedure?

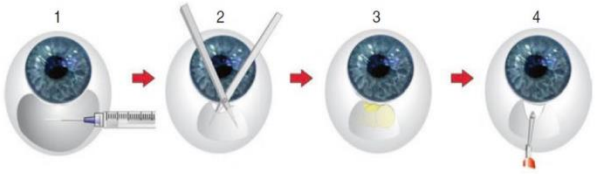
There are other surgical procedures that can be carried out to treat your glaucoma; this can be discussed with Dr Perumal. If surgery is not something you want to consider at this time, please do speak to Dr Perumal as other options can be discussed, such as using eye drops.

What will be involved in the procedure?

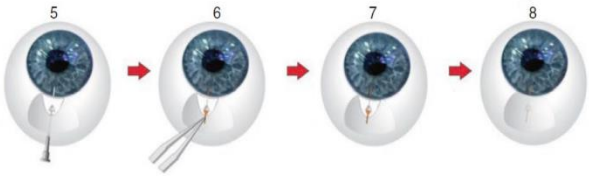
The procedure is carried out in theatre usually under local anaesthetic with sedation, which means numbing the eye using eye drops and a small injection. Although the injection will cause a pressure sensation, you should not feel the MicroShunt being inserted. The procedure is done as a day case procedure and takes about 60 minutes, but you will be in hospital for a few hours for the whole visit.

The conjunctiva will be opened and the MicroShunt inserted. One or two stitches will then be added to close this opening; these stitches will either be removed later at a clinic appointment or will dissolve. The MicroShunt will begin working to lower your eye pressure as soon as it is inserted.

The images below demonstrate insertion of the Preserflo® MicroShunt.



1 Local anaesthetic injected.
2 8-10mm incision
3 Small sponges with anti-inflammatory medication are added to the incision site for 2-3 minutes
4 Area of incision cleaned with sterile water (saline)



5 Needle inserted into incision site to create a thin tunnel connecting the chambers of the eye.
6 Forceps used to insert MicroShunt into tunnel.
7 MicroShunt positioned and secured into tunnel.
8 Shunt observed by surgeon to make sure fluid is flowing and then tucked into final position.

Preserflo® MicroShunt implantation. Image adapted from and owned by Santen Pharmaceutical Co. Ltd., Osaka, Japan.

What to expect after surgery?

When you come out of theatre you will have a patch over the operated eye.
You will be asked to stop all the anti-glaucoma eye drops to the operated eye only. New drops will be prescribed to reduce the risk of inflammation and infection. You must continue with your usual drops to the non-operated eye.

You will usually be able to go home the same day. It is better you are accompanied by someone and have someone stay with you for at least 24 hours until you are fully recovered, this is essential if you have a general anaesthetic or sedation.

We will see you in the eye clinic the day after the procedure, then in 1 week, 1 month, 2 months and 3 months.

When can I go back to normal routines?

Given the less invasive nature of this procedure, compared to more traditional invasive glaucoma procedures, the recovery time is typically 2-3 weeks after surgery.

Depending on individual circumstances, Dr Perumal will inform you if your recovery time will be longer. If you were driving prior to the procedure, you may resume about a week after the procedure as long as your eye feels comfortable and you don't feel that your vision is blurred. You should avoid strenuous activities for the first month after the procedure; examples include swimming, jogging, tennis, squash, and contact sports

Does insurance cover the cost of surgery?

This depends on the cover by your insurance company. Most major insurance companies cover part or the whole cost including Southern Cross. If you are in doubt, consult your policy documents.