



York Teaching Hospital  
NHS Foundation Trust

# Glaucoma Surgery - iStent<sup>®</sup>

Information for patients, relatives and carers

## Ophthalmology Department

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# What is glaucoma?

Glaucoma is a disease that damages the optic nerve. Glaucoma affects one in 50 people over the age of 40.

The optic nerve sends signals from your retina (the light sensitive layer at the back of your eye) to your brain, where they are processed into images that you see. Glaucoma is the name for a group of conditions that cause damage to the optic nerve where it leaves the eye. If left untreated, glaucoma will cause a slow but steady loss of vision. Glaucoma typically affects the peripheral visual field. This is why visual field testing is performed to identify and monitor the condition. By the time glaucoma affects your central vision it is often very advanced.

# How does glaucoma happen?

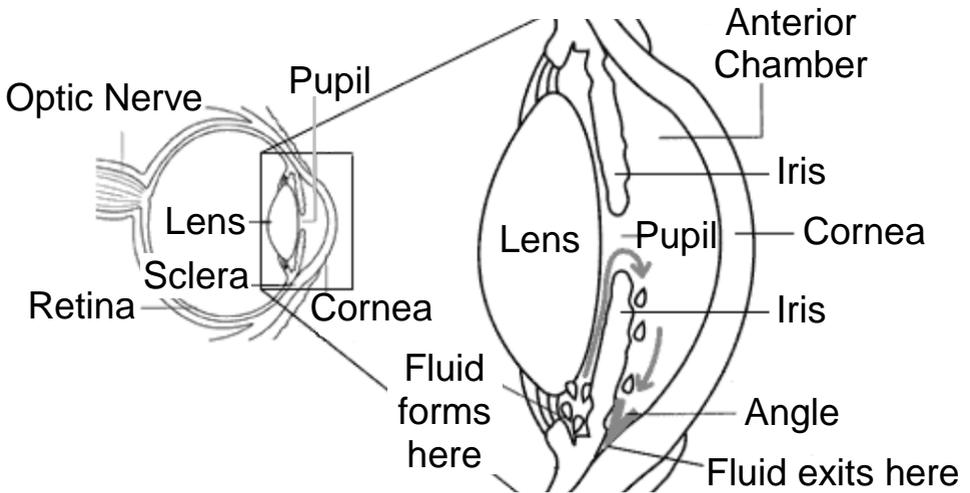


Fig 1: Production and drainage pathway of fluid in the eye

It helps to understand what happens in a healthy eye. Inside a healthy eye there is an appropriate amount of pressure, which helps the eye to maintain its shape. This pressure is a balance between the amount of fluid being produced in the eye and the amount of fluid that drains out.

In an eye with glaucoma, there is a build-up of fluid, usually because the normal outflow pathway doesn't work as well as it should. The result is a rise in pressure above the normal level, which damages the optic nerve. Open angle glaucoma is the most common type of glaucoma.

There is a subtype of glaucoma called normal tension glaucoma, where similar damage to the optic nerve happens despite the eye pressure being normal. Individuals who have this condition often have other risk factors including a particularly sensitive optic nerve though this condition is not understood entirely; it is still beneficial to lower the eye pressure further in this condition.

## **How is glaucoma treated?**

The majority of glaucoma is treated with eye drops that lower the pressure. There are four different classes of medication that are commonly used. In some cases, drops alone are not enough to reduce the eye pressure, for example:

- As optic nerve damage advances, we need to aim for an even lower eye pressure to reduce the risk of further damage.
- The pressure in some eyes does not lower sufficiently with eye drops alone.
- The outflow pathway may be damaged.
- Eye drops cannot be tolerated due to side effects, this is however rare.

In this situation, the next step is to consider glaucoma surgery.

# What is the iStent<sup>®</sup>?

The iStent<sup>®</sup> (see Fig 2a) is a tiny one millimetre long titanium tube. The iStent<sup>®</sup> is designed to be inserted into the drainage channel in the eye, providing additional drainage which reduces pressure in the eye.

Insertion of the iStent<sup>®</sup> is most commonly undertaken as an additional procedure alongside cataract surgery, but it can also be a stand-alone procedure.



Fig 2a. iStent<sup>®</sup> device



Fig 2b. The size of the iStent<sup>®</sup> device shown in comparison to a fingertip

The iStent<sup>®</sup> is suitable for patients who have open angle glaucoma. However, it may not be suitable for those who have very advanced glaucoma or where the natural drainage system has been severely damaged that inserting the device may not be possible.

The iStent® is made from non-magnetic titanium, the same material used for replacing heart valves. It will not be rejected by the body or cause an allergic reaction. It will not set off airport scanners and will not cause any problems if you need to have an MRI scan or iris scans for security

## **What are the benefits?**

By lowering your eye pressure the iStent® slows progression of your glaucoma. Each individual is different and the exact eye pressure result varies.

Some patients may be able to stop their glaucoma drops following iStent® insertion.

The iStent® will not cure your glaucoma, reverse any damage already caused by glaucoma or bring back any lost vision.

## **Are there alternatives?**

Alternatives include the standard glaucoma surgery (trabeculectomy). This is a more invasive surgery, carries more risk and more intensive follow up than the iStent® procedure. Your doctor will be able to discuss this further.

## **What are the risks of not having an iStent procedure?**

These may include:

If the eye pressure remains elevated despite medical therapy there is a risk your vision will deteriorate.

# What are the risks of having the procedure?

## 1. Risks of cataract surgery

The majority of patients have an iStent<sup>®</sup> procedure alongside cataract surgery. You will also have received a cataract surgery information leaflet. Please familiarise yourself with the risks outlined in this document as these apply to your surgery.

## 2. Risks of iStent<sup>®</sup> insertion

Additional risks of iStent<sup>®</sup> insertion are minimal. These include:

- a. **Bleeding:** A very small amount of bleeding inside the eye occurs during the operation but this resolves within a few days. Occasionally there can be a larger bleed, but this is unusual.
- b. **Failure to lower pressure:** In some cases the iStent<sup>®</sup> fails to lower your eye pressure. In this case it will not create any additional harm to your eye.

Although the iStent<sup>®</sup> has been approved for use, it is a new procedure so there is still a lot to learn about it and some of the safety issues may not be known yet. We are continually examining the outcomes for patients who have the implant, so that we can understand more about it.

## **What should I do before the operation?**

You should continue any eye drops and tablets for your glaucoma as prescribed until the time of your surgery, unless directed otherwise by your Ophthalmologist.

## **What happens during the operation?**

Implantation of an iStent<sup>®</sup> takes 5-10 minutes. It is usually performed at the end of cataract surgery when you will be asked to assist by turning your head gently to one side.

## **What happens after the operation?**

- You must continue your glaucoma drops after the operation.
- You must use new unopened bottles of all the drops you use in the operated eye after the surgery.
- Any eye drops that you use in your other eye must be continued as normal.
- You will be reviewed in the eye clinic one week after your operation and then again at 1 month.

Thanks to Harrogate and District NHS Foundation Trust for permission to use the content of their leaflet for this booklet.

## **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:

The Eye Clinic, York Hospital, Wigginton Road, York,  
YO31 8HE or telephone 01904 726758.

## **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 [pals@york.nhs.uk](mailto:pals@york.nhs.uk).

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  
或發電

Jeżeli niniejsze informacje potrzebne są w innym języku lub formacie, należy zadzwonić lub wysłać wiadomość e-mail

Bu bilgileri değişik bir lisanda ya da formatta istiyorsanız lütfen telefon ediniz ya da e-posta gönderiniz

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