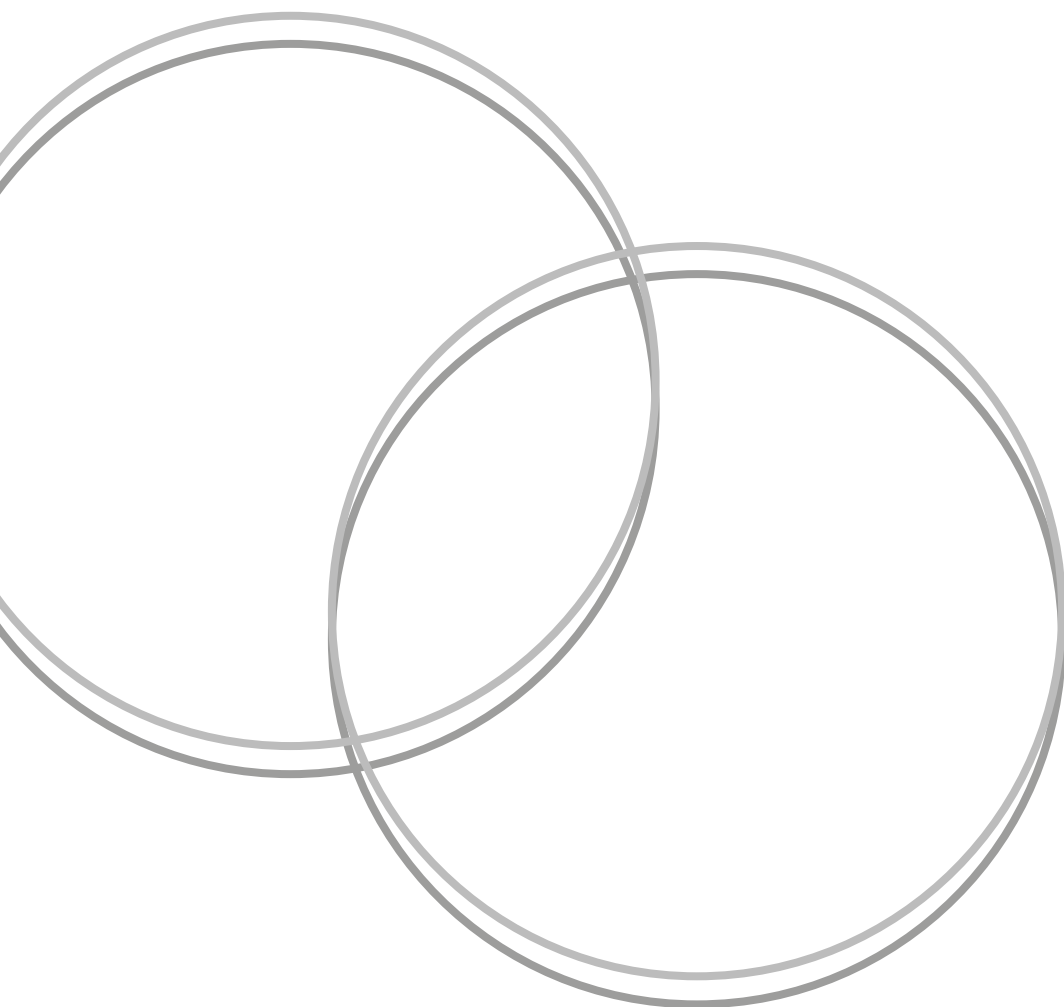


# Hydrus Microstent Surgery for Glaucoma

**Information for patients**



This leaflet gives you information that will help you decide whether or not to have a type of surgery to treat your glaucoma called Hydrus Microstent surgery. You might want to discuss it with a partner, relative or carer. Before you have the surgery, you will be asked to sign a form giving your permission to go ahead with surgery and so it is important that you understand the information in this leaflet before you decide to have surgery.

## Introduction

Glaucoma is usually treated with medication in the form of eye drops to lower the pressure in the eye. If medication is not effective at lowering the eye pressure or causes side effects, then the Hydrus Microstent may be a good option for you. The Hydrus Microstent surgery can be performed on its own or it can be performed in combination with cataract surgery. Having the Hydrus Microstent surgery at the same time as cataract surgery is helpful if your cataract is causing symptoms such as blurring of vision.

## What is the Hydrus Microstent?

The Hydrus is a microscopic implant (8mm long) made of an alloy of nickel and titanium known as Nitinol and has been used in over one million medical implants (see *figure 1*).

To understand how the Microstent works, it is important to understand how the eye produces and drains fluid. In a healthy eye, fluid (aqueous humor) is constantly produced and filtered through the eye's drainage system (see *figure 2 – black arrow*). This drainage system helps to drain the fluid out of the eye and maintain a stable eye pressure (intraocular pressure). When an eye is affected by glaucoma or raised eye pressure, this drainage system does not work properly resulting in fluid pressure build up (intraocular pressure) in the front chamber of the eye (see *figure 2 – red arrow*).

The Microstent is inserted into the internal drainage system canal called Schlemm's canal (*see figure 2*) to bypass the part of the canal which is not functioning and increase the natural drainage of fluid from the eye, thereby lowering the intraocular pressure.

The implant is suitable for patients with mild to moderate open angle glaucoma who use drops who are undergoing cataract surgery. However, it can also be used on its own without cataract surgery.

The operation is performed as day surgery in an operating theatre; you will come in and go home on the same day. The stent implantation takes approximately 10 -15 minutes. When combined with cataract surgery, the cataract surgery is performed first (refer to Cataract Surgery leaflet), followed by the Hydrus Microstent implant.

The operation is usually performed under local anaesthetic whereby anaesthetic injection is administered around the eye to numb the eye and prevent you from moving your eye during the operation. The anaesthetic may cause mild discomfort or a pressure sensation when it is delivered, however, this feeling will quickly disappear. If you feel nervous, our anaesthetist can also administer medication through the vein to make you "sleepy", but you will still be aware of your surroundings. Occasionally we perform the operation under general anaesthetic where you are asleep for the entire duration of the surgery. This only happens if your eye is complex or if you have difficulty lying flat and still.

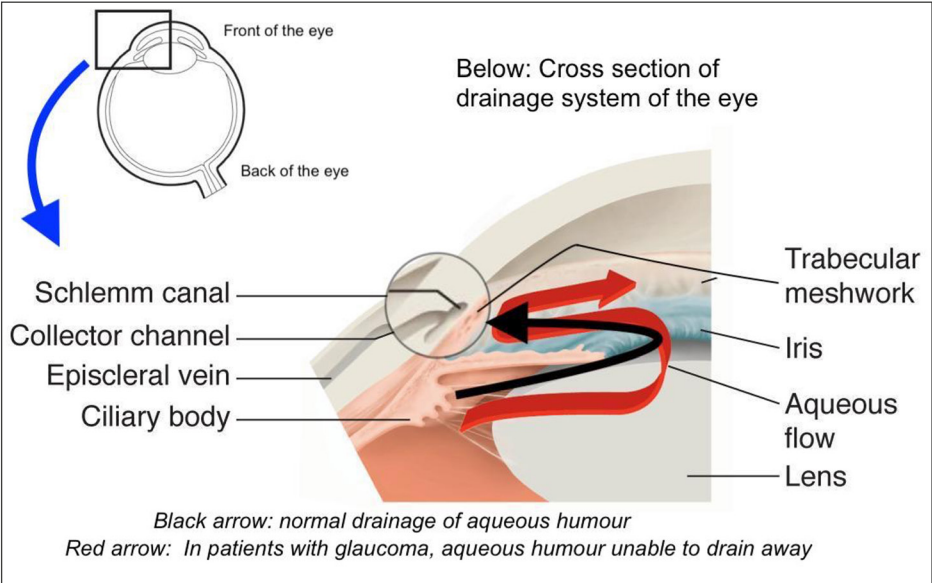
It is usually safe to have both MRI and X ray imaging with a Hydrus Microstent in place – however, if having an MRI scan, please inform the radiology team that you have had a Hydrus Microstent and provide them with the patient information card (which will be given to you before you are discharged).

If you are allergic to Nickel, please inform your consultant and alternative options will be discussed.

**Figure 1: The Hydrus Microstent – implant alone (Left) and next to a dollar coin (right)**



**Figure 2: The drainage system of the eye**



## **What are the benefits of the Hydrus Microstent operation?**

The Microstent helps to reduce the pressure within the eye (intraocular pressure) and may reduce the need or dependence on eye drops to lower your eye pressure.

The procedure to insert the Hydrus is faster and safer with quicker recovery than conventional glaucoma surgery (trabeculectomy and tube surgery).

In a five-year clinic trial of the Hydrus Microstent combined with cataract surgery versus cataract surgery alone in patients with mild to moderate glaucoma, 66% of patients in the Hydrus group did not have to take medication for their glaucoma at 5 years after surgery compared to 46% of patients who had cataract surgery alone. Furthermore, the Hydrus group had a greater average reduction in eye pressure compared to before the surgery (8.3mmHg versus 6.5mmHg) and a greater percentage of patients maintained their intraocular pressure below an important target of 18mmHg (50% versus 34%). In addition, the trial also showed that patients who received the Hydrus Microstent had slower rates of visual field deterioration (and therefore glaucoma worsening) and were less likely to need further conventional glaucoma surgery (such as a trabeculectomy).

## What are the risks of the Hydrus Microstent operation?

If the Hydrus Microstent is combined with cataract surgery, there are a few extra risks (in addition to those of cataract surgery):

- **Bleeding (into the front chamber of the eye)** – This occurs in less than 2% of eyes (2 in every 100 eyes) within the first week following surgery. This usually has no long-lasting effects on your vision but can cause temporary blurred vision or raised eye pressure. If bleeding does occur, it normally gets better within 1 week.
- **Increased eye pressure** – This has been reported to occur in about 4% (4 in every 100 eyes) and usually occurs within the first 2 weeks after surgery. However, if it is still high at 6-8 weeks after surgery, then you may need to restart your glaucoma drops.
- **Obstruction (complete or partial)** – This has been reported to occur in up to 8% (8 in 100 eyes) at 5 years following surgery. If this is found to have occurred with no change in your medical condition, then it will be may not need treatment and we will monitor you.
- **Inability of surgeon to insert the stent (rare)**. If this occurs, then you will be informed by your surgeon.
- **Malposition of the stent requiring removal (rare)**. Rarely after insertion of the stent, when you are seen in the clinic, it may be felt that the stent is not in the correct place. If this occurs and is causing symptoms such as blurred vision or recurrent inflammation, then the stent will need to be removed through another operation.

## After the operation

It is normal that your eye might feel itchy, gritty and sticky with mild discomfort after the surgery and these symptoms will settle over 1-2 weeks. Your vision may be blurry for up to 1-2 weeks following the surgery and this is quite normal particularly when combined with cataract surgery.

For most patients, the eye will appear red/bloodshot for up to 3-4 weeks following surgery, this is quite common but will settle down.

After the operation, please follow the below instructions:

- **Stop all glaucoma eye drops** (unless instructed otherwise) in the **operated eye ONLY** (continue your drops in the non-operated eye as normal).
- Wear the plastic shield provided at night for 7 nights.
- Do not rub or apply pressure to the eye
- Avoid strenuous activity – sports, heavy lifting etc. for 2 weeks.

# Post operation eye-drops/medication

**Stop administering all of your existing glaucoma drops** to the **operated eye ONLY** (unless informed otherwise) and you will be given the following medication:

**1. Steroid eye-drop (usually Dexamethasone)** – to reduce inflammation (swelling) after surgery. This is usually prescribed 4 times a day, initially

In addition, depending on your type and severity of glaucoma you may also be prescribed the following medication:

**1. Pilocarpine 2% eye drops** – to keep the Schlemm's canal open and lower the eye pressure. This is to be used 4 times a day. The main side effect of these drops is that they can cause brow ache/headache and reduce your night vision. If you experience headaches, you can take paracetamol as per the packet instructions until it settles.

**2. Tablets to lower your eye pressure (Acetazolamide)** – these may be prescribed as 1 tablet (250mg) 3 times a day or 1 capsule twice a day for 3 days after the surgery to prevent sudden rise of eye pressure. Side effects include tiredness, drowsiness, pins and needles around the mouth, hands and feet and altered appetite/taste. This tablet will also make you produce more urine.

Please note:

- **Only one drop should be instilled at a time and a minimum of 5 minutes gap should be left between drops.**
- **If your drops are issued as individual vials, please use ONE VIAL per day.**

Below is the typical schedule of eye-drop reduction following surgery.

Drop	Times a day to be used	Duration in weeks after surgery
<b>Pilocarpine (if issued)</b>	4	First 2 weeks
	3	3 <sup>rd</sup> week
	2	4 <sup>th</sup> week
	1	5 <sup>th</sup> week
<b>Dexamethasone</b>	4 to 6	First 2 weeks
	3	3 <sup>rd</sup> week
	2	4 <sup>th</sup> week
	1	5 <sup>th</sup> week

## Follow-up after the operation

Most patients are seen at 1 to 2 weeks and then 6 to 8 weeks following surgery.

If you have had combined cataract surgery and the Hydrus Microstent procedure, you should see your optician at 5-6 weeks after your operation, for a glasses prescription test and ***bring the paper copy of your prescription that they give you to your next clinic appointment.***

It is very important that if you do not receive your appointment to see us in clinic as above, please contact your consultant's secretary without delay.

# How to contact the Eye Hospital

**Please contact us if you have any questions or concern either before or after your operation:**

Tel: **01865234567** select option 1 for patients and then option 2 for Eye Surgery.

Please note this line directs you to an answer phone service which is checked and responded to by a Nurse Practitioner three times a day, Monday to Friday at 8am, 12pm and 4pm. If you call after 4pm your call will be responded to the following working day.

Email for appointment enquiries: [eye.hospital@ouh.nhs.uk](mailto:eye.hospital@ouh.nhs.uk)

**You should call us IMMEDIATELY** if you need help or advice or if you notice:

- Redness and/or swelling of your eye lids and/or eye ball
- Rapid loss of sight – with or without pain
- Intense pain

**Call our specialist telephone triage number:**

Tel: **01865 234567 option 1**

Monday to Friday 8.30am - 4.30pm

Saturday and Sunday 8.30am - 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 **NHS 111** or your out of hours GP practice.

## **Surgical Glaucoma Team**

The surgery is performed by the specialist glaucoma team which include:

Glaucoma Consultants: Mr Rajen Tailor & Mr Guy Mole

Glaucoma Fellows

Specialist Trainees

## 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.

Author: Mr Rajen Tailor and Mr Mole – Consultant Ophthalmologists with a specialist interest in Glaucoma

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Oxford University Hospitals NHS Foundation Trust

[www.ouh.nhs.uk/information](http://www.ouh.nhs.uk/information)



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