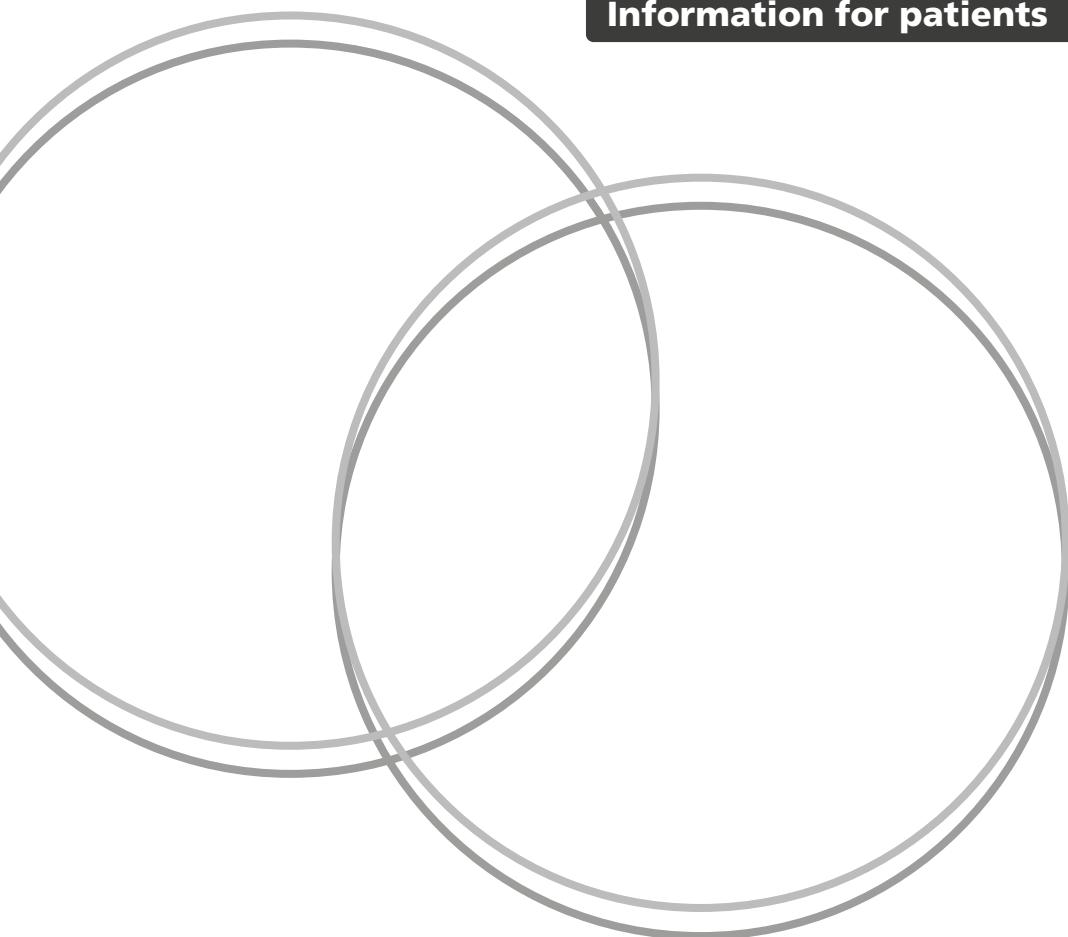


Gonioscopic Assisted Transluminal Trabeculoplasty (GATT) Surgery for Glaucoma

Information for patients



This leaflet gives you information that will help you decide whether or not to have a type of surgery called the GATT procedure. 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 GATT procedure may be a good option for you. The GATT procedure can be performed on its own or it can be performed in combination with cataract surgery. Having the GATT procedure surgery at the same time as cataract surgery is helpful if your cataract is causing symptoms such as blurring of vision.

What is the GATT procedure?

To understand how the GATT procedure 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 composed of the trabecular meshwork and Schlemm's canal (see *figure 1 – black arrow*). This drainage system helps to drain the fluid out of the eye and maintain a stable eye pressure (intraocular pressure). In patients with glaucoma or raised eye pressure without glaucoma (ocular hypertension) the trabecular meshwork's ability to allow movement of the fluid is impaired and/or the Schlemm's canal is collapsed. The later changes result in fluid not being able to drain out of the eye properly. This means the fluid pressure builds up (intraocular pressure) in the front chamber of the eye (see *figure 1 – red arrow*).

The GATT procedure is performed using either:

- OMNI surgical system made of a single disposable device (see figure 2) OR the
- I-Track advance system – illuminated catheter

Both of these systems allow your surgeon to:

- Bypass a segment of non-functioning trabecular meshwork (by removing the trabecular meshwork)
- Dilate the Schlemm's canal (by injecting a gel like substance to inflate the canal)

The treatment is suitable if you have mild to severe open angle glaucoma, are on drops and 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 surgery takes approximately 10-15 minutes. When combined with cataract surgery, the cataract surgery is performed first (refer to Cataract Surgery leaflet), then followed by the GATT procedure.

The operation is usually performed under local anaesthetic whereby an anaesthetic injection is administered around the eye to numb the eye and prevent you from moving your eye during the operation. The injection 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" (sedation) 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 safe to have both MRI and X ray imaging following a GATT procedure as no implant material has been left in place after the procedure.

Figure 1: The drainage system of the eye

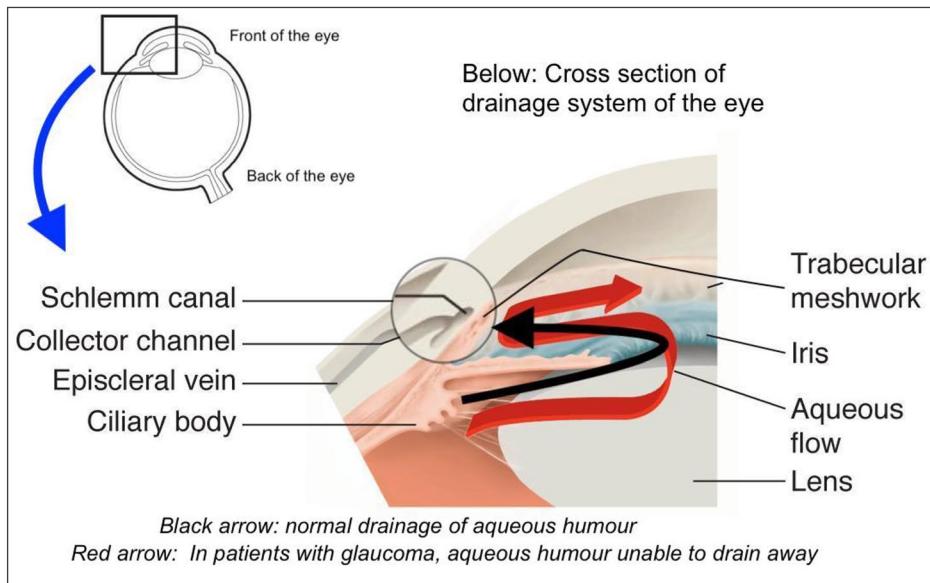


Figure 2: The OMNI surgical system – disposable system used to perform the surgery



What are the benefits of the GATT procedure?

The GATT procedure aims to reduce the eye pressure within the eye (intraocular pressure) and may reduce the need for or dependence on eye drops to lower your eye pressure.

The procedure is faster and safer, with quicker recovery, than conventional glaucoma surgery (trabeculectomy and tube surgery).

Based on published research, the GATT procedure (either combined with cataract surgery or on its own) has been shown to:

- Reduce the intraocular pressure by 34-40% compared to before surgery.
- Reduce the number of glaucoma medications a person needs to take by 64 to 78% at up to 24 months after surgery compared to before.
- 82% of patients did not have to take glaucoma medication at 12 months after surgery.
- Reduce fluctuations in intraocular pressure (which is an independent risk factor for glaucoma deterioration).

What are the risks of the GATT procedure?

If the GATT procedure 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 4-6% of eyes (4 to 6 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 4 weeks.
- **Increased eye pressure** – This has been reported to occur in about 6% of eyes (6 in every 100 eyes) and usually occurs within the first 6-8 weeks after surgery. Depending on the extent of raised eye pressure, you may be required to restart your glaucoma drops.
- **Inflammation in the eye (anterior uveitis)** – Anterior uveitis can occur following cataract surgery alone, GATT procedure alone or combined GATT procedure with cataract surgery in up to 12% of eyes. If inflammation is found to have occurred, you will be required to either restart anti-inflammatory eye drops or if already using them, you will be given a longer course of treatment (typically 6-8 weeks). For the majority of patients, the above treatment will resolve the inflammation.

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 3 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, however this will all settle down.

If you experience mild discomfort, you can take Paracetamol but avoid nonsteroidal medications such as Ibuprofen which increase the risk of bleeding.

After the operation, please follow the below instructions:

- **Stop all glaucoma eye drops** (unless instructed otherwise) in the **operated eye ONLY** but 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 eyedrops/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 eyedrop (usually Dexamethasone) – to reduce inflammation (swelling) after surgery. This is usually prescribed 4 times a day.

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 eyedrop reduction following surgery.

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

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.

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

November 2025

Review: November 2028

Oxford University Hospitals NHS Foundation Trust

www.ouh.nhs.uk/information



Making a difference across our hospitals

charity@ouh.nhs.uk | 01865 743 444 | hospitalcharity.co.uk

OXFORD HOSPITALS CHARITY (REGISTERED CHARITY NUMBER 1175809)

