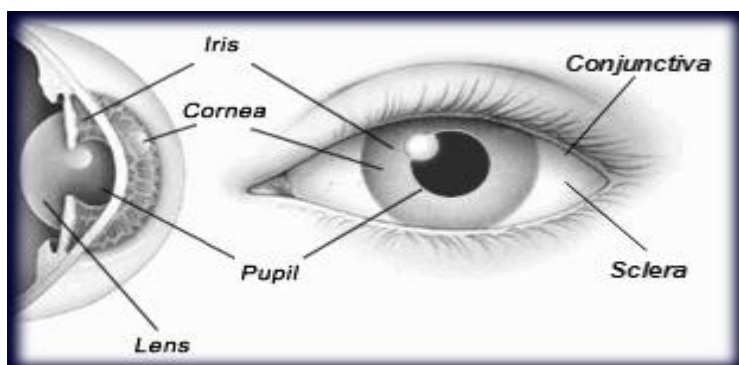


## Patient information

# Glaucoma - Laser Treatment

Medical Laser Therapy is widely used to treat a number of eye conditions. Laser treatment offers important advantages, as eye operations can be avoided. The use of the laser is without discomfort or pain for most procedures.

This leaflet is to help you understand more about your laser treatment, and what to expect. To have a better understanding it is helpful to see what the eye looks like from the inside.



The eye consists of two main parts separated by the lens. The front part is called the **anterior segment**, and is situated between the cornea and the lens. It is in this part that laser treatment which this leaflet describes takes place.

There are two main laser treatments used:

- **YAG Laser Iridotomy** (To prevent acute glaucoma attacks)
- **Trans-scleral Photocoagulation (Cyclodiode Laser)** (To help reduce high pressure due to chronic glaucoma)
- **Argon Laser Trabeculoplasty** (To help reduce pressure due to chronic open angle glaucoma)
- **Selective Laser Trabeculoplasty** (To help reduce pressure due to chronic open angle glaucoma)

The Ophthalmologist (Eye Doctor) will be able to explain which laser treatment relates to you.

### YAG Laser Iridotomy

The YAG (Yttrium-Aluminum-Garnet) laser is used to prevent the sudden rise in pressure inside the eye, which is called **acute glaucoma**. Attacks are very painful and can threaten vision.

The laser makes a series of tiny holes in the **Iris** (the coloured part of the eye). These holes create new passages for fluids inside the eye to pass through, helping to control the pressure. It is common for both eyes to be treated in this way.

Local anaesthetic eye drops may be instilled to numb the front of the eye before a special contact lens is placed on it. The contact lens provides a greater magnification for the surgeon. A beam of red light is used to aim the laser before it is operated. You may hear a 'click' each time the laser is fired. The treatment takes a few minutes, and may involve a little discomfort as the laser is fired into sensitive tissue of the iris.

Afterwards, it is sometimes necessary for more eye drops or tablets to be dispensed or prescribed. They help to protect against any inflammation or short-term increase of pressure in the eye.

## **Trans-scleral Photocoagulation (Cyclodiode) Laser**

This is a type of laser used in patients with **chronic open angle glaucoma**.

If you have healthy eyes the fluid in your eye (aqueous humour) flows through the pupil into the front of the eye. It then drains away through drainage channels. If you have glaucoma, the fluid in the eye cannot drain away properly.

This can result in a build up of pressure within the eye. This high pressure injures your optic nerve – the nerve that carries information from your eye to your brain – and damages your vision.

The cyclodiode laser is a highly concentrated beam of light, which can be used to target and treat a selected area. The aim of the laser therapy is to lower the pressure in the eye, by reducing the production of fluid within the eye. The reduced production of fluid causes the eye pressure to fall.

The operation is normally performed under local anaesthetic (where the eye is numbed using eye drops). The laser is then applied through the sclera (the white of your eye) using a pen-like instrument. At the end of the procedure, an injection of steroid is given to help reduce inflammation that may occur following the laser treatment. An eye pad will be applied over the eye. You will be given drops to take at home. The procedure normally lasts around 20 minutes.

Your eye may be red and sore when the anaesthetic wears off. If this happens, you should take normal painkillers. Your sight may be blurred for a few days or even a few weeks, but it should settle down to how it was before the laser treatment was performed.

**In 30% of cases, patients need repeat treatment with the laser to achieve low pressure in the eye.**

It is rare to have any serious complications after this procedure. In some cases reduced vision may last for up to six weeks. The pressure may be too high or low following treatment. In very rare cases persistently very low pressure can cause permanent loss of vision and alter the cosmetic appearance of the eye.

## **Argon Laser Trabeculoplasty (ALT)**

The **Argon laser** is used to help reduce high pressure inside the eye, called chronic open angle glaucoma. It makes tiny burns in sponge-like drainage channels within the eye. By making the channels open up more, and allowing faster drainage of eye fluid, this reduces pressure in the eye.

Local anaesthetic eye drops may be instilled to numb the front of the eye before a special contact lens is placed on it. The contact lens provides a greater magnification for the surgeon. A beam of red light is used to aim the laser before it is operated. You may hear a 'click' each time the laser is fired. The treatment takes a few minutes, and may involve a little discomfort as the laser is fired into sensitive tissue of the iris. A number of laser shots are given at one sitting, so the laser treatment may take a little time. The treatment is virtually painless.

Afterwards, it is sometimes necessary for more eye drops or tablets to be dispensed or prescribed. They help to protect against any short-term increase of pressure in the eye. Follow-up appointments are very important. These check-ups need to carry on for life, as there may be a tendency for the pressure to build-up again over time.

## Selective Laser Trabeculoplasty (SLT)

The Selective Laser Trabeculoplasty is used to help reduce high pressure inside the eye, called **chronic open angle glaucoma**. This treatment is similar to the Argon Laser Trabeculoplasty, but uses a much more gentle laser beam of larger size.

Results are best if all 360 degrees of the trabecular meshwork is treated at one sitting. The main advantages over Argon Laser Trabeculoplasty is that Selective Laser Trabeculoplasty can be repeated if the effect wears off, and the treatment is easier to perform than Argon Laser Trabeculoplasty.

Local anaesthetic eye drops may be instilled to numb the front of the eye before a special contact lens is placed on it. The contact lens provides a greater magnification for the surgeon. A beam of red light is used to aim the laser before it is operated. You may hear a 'click' each time the laser is fired. The treatment takes a few minutes, and may involve a little discomfort as the laser is fired into sensitive tissue of the iris. A number of laser shots are given at one sitting, so the laser treatment may take a little time. The treatment is virtually painless.

Afterwards, it is sometimes necessary for more eye drops or tablets to be dispensed or prescribed. They help to protect against any short-term increase of pressure in the eye.

Follow-up appointments are very important. These check-ups need to carry on for life, as there may be a tendency for the pressure to build-up again over time.

## Where will the Laser Treatment be carried out?

An eye doctor (ophthalmologist) carries out laser treatment, as an outpatient procedure, which means that you can go home afterwards. A session of treatment can vary in length from person to person. Ask your eye doctor how long your sessions will last and whether you will be expected to come back for more treatment.

## What should I do before I come into hospital?

It is important to use your normal eye drops and other medications on the day of your treatment unless your eye doctor (ophthalmologist) has told you not to.

Please **do not drive** yourself to this appointment as the dilating drops blur your vision and make your eyes sensitive to the daylight. The drops also invalidate your driving insurance for as long as the symptoms last which could be up to 6 hours.

## What do I need to do after I go home?

Your eye may feel a little sore and red after the procedure. If you have discomfort once you get home, we suggest that you take your usual pain relief following the instructions on the packet. It is normal to have the following symptoms for a few hours after the laser treatment:

- irritable eyes
- red eyes
- mild discomfort.

You may also find that your vision has altered a little after the treatment due to the drops used. This is normal, and vision usually returns to how it was before the laser treatment within about six hours.

## Consent (Giving your Permission)

The staff caring for you may need to ask your permission to perform a particular treatment or investigation. You will be asked to sign a consent form that says you have agreed to the treatment and that you understand the benefits, risks and alternatives. If there is anything you don't understand or if you need more time to think about it, please tell the staff caring for you.

Remember, it is your decision. You can change your mind at any time, even if you have signed the consent form. Let staff know immediately if you change your mind. Your wishes will be respected at all times.

## What are the potential risks and side effects?

The drops put in your eye to dilate your pupil can take up to 6 hours to wear off. Until then your **vision can be blurred and sensitive to light. You must not drive for the rest of the day.**

Generally, laser treatment is a very low-risk procedure. The most common adverse event is a temporary rise in intraocular pressure. This will be detected by measurements taken before and after the procedure. The likelihood of pressure rising is related to the severity of the disease. Approximately one in 10 people in the early stages of the disease experience some pressure rise. In advanced cases, one in three may be affected. The rise in pressure may last from hours to weeks. If it occurs, it is treated with medication.

Inflammation can also occur following the laser procedure. This can be treated with aftercare anti-inflammatory drops used for a week.

A small amount of bleeding from the laser hole (inside the eye) is fairly common, and can cause misty vision which usually settles within 24 hours. Patients taking warfarin to reduce blood clotting should have had a recent blood test (within one week) confirming an INR of less than 3.0. Please tell us if you are taking warfarin and bring your yellow book with you.

The risk of vision loss or the need for urgent surgery following the procedure is extremely rare (around 1 in 5,000).

## What should I do if I have a problem?

If you develop any of the symptoms featured in this leaflet, or need urgent advice about your eye(s), please telephone (in the information please provide your hospital 'X' number (if known), Name, Date of Birth and a contact telephone number) :

- Conquest Hospital - Telephone: 01424 755255
- Conquest Hospital Eye Clinic Ext. 8971 during 09.00am and 17.00pm.
  
- Eastbourne District General Hospital – Telephone: 01323 417400
- Eastbourne Eye Clinic Ext. 4118 during 9.00am to 17.00pm.

For Out of Hours contact you may leave an answerphone message on the telephone numbers above, and a member of staff will contact you the next working day. Otherwise if you feel you need to be seen urgently, please attend your local Accident and Emergency Department.

## Sources of information

Guys and St. Thomas NHS Foundation Trust. 2016. Having cyclodiode laser for glaucoma. [www.guysandstthomas.nhs.uk/resources/patient-information/eye/having-cyclodiode-laser-for-glaucoma.pdf](http://www.guysandstthomas.nhs.uk/resources/patient-information/eye/having-cyclodiode-laser-for-glaucoma.pdf) (accessed 02/08/2017)

International Glaucoma Association. 2014. *Laser Treatment for Glaucoma*. England: International Glaucoma Association.

Moorsfields Eye Hospital NHS Foundation Trust. 2015. Laser peripheral Iridotomy. [www.moorfields.nhs.uk/.../Laser%20peripheral%20iridotomy.pdf](http://www.moorfields.nhs.uk/.../Laser%20peripheral%20iridotomy.pdf)

## Important information

The information in this leaflet is for guidance purposes only and is not provided to replace professional clinical advice from a qualified practitioner.

## Your comments

We are always interested to hear your views about our leaflets. If you have any comments, please contact the Patient Experience Team – Tel: (01323) 417400 Ext: 5860 or by email at: [esh-tr.patientexperience@nhs.net](mailto:esh-tr.patientexperience@nhs.net)

## Hand hygiene

The Trust is committed to maintaining a clean, safe environment. Hand hygiene is very important in controlling infection. Alcohol gel is widely available at the patient bedside for staff use and at the entrance of each clinical area for visitors to clean their hands before and after entering.

## Other formats

**If you require any of the Trust leaflets in alternative formats, such as large print or alternative languages, please contact the Equality and Human Rights Department.**

**Tel: 01424 755255 Ext: 2620**

After reading this information are there any questions you would like to ask? Please list below and ask your nurse or doctor.

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## Reference

Updated by: Janine Robus (Associate Practitioner), and Paul Russell (Staff Nurse and Laser Link Nurse)

The following clinicians have been consulted and agreed this patient information:

Mr Gouws - Consultant Ophthalmologist, Manuel Saldana - Consultant Ophthalmologist and Clinical Governance Lead for Ophthalmology Department)

Next review date: September 2021

Responsible clinician/author: Paul Russell (Staff Nurse and Laser Link Nurse)  
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