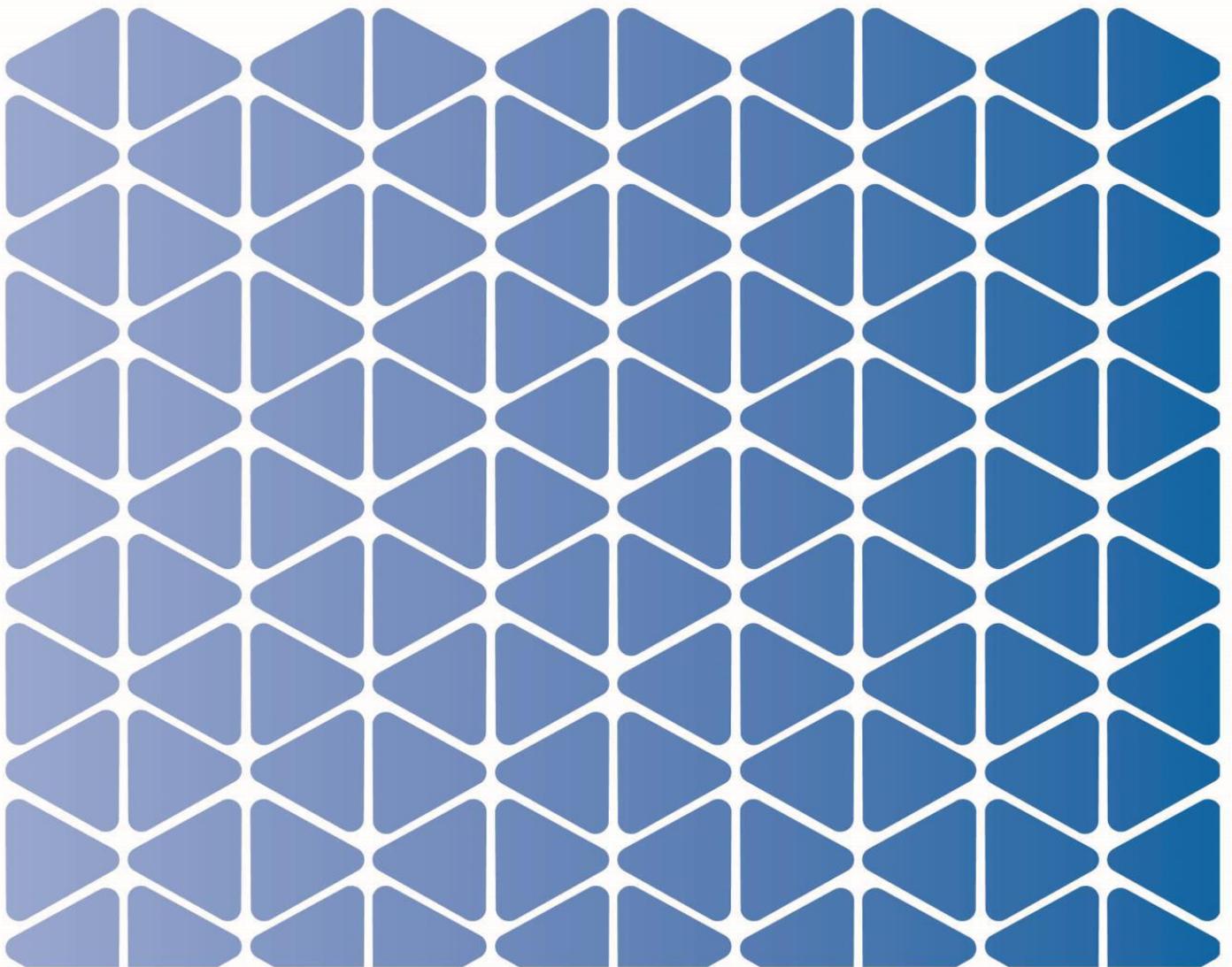


YAG Laser Peripheral Iridotomy



This Leaflet has three parts:

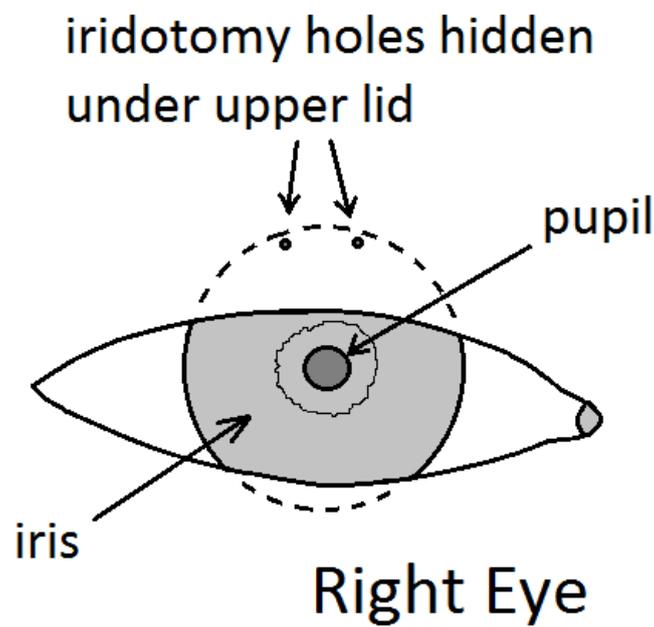
1. Key Facts
2. Background Information
3. Other Important Facts About the Treatment

We recommend you read all three parts. When you see the eye doctor, please tell him or her if there is anything that you do not understand. Please ask any questions that you have.

Part 1 - Key Facts

Summary

The eye is like a football; it needs to be pumped up to a suitable pressure to keep it round. Fluid is pumped into the eye and needs to drain out through a meshwork. If the meshwork is blocked off, the pressure in the eye will rise. This may cause permanent loss of vision due to damage to the nerve at the back of the eye (glaucoma). The eye doctor may recommend a laser treatment to try and prevent this happening. The laser makes one or more tiny holes in the iris (iridotomy). This treatment is common and is done in the outpatient clinic. If both eyes need laser, it may be done over two visits, one eye at a time.



Picture of front of eye showing laser holes in the iris hidden under the upper lid.

After the laser treatment, some people need to use anti-glaucoma eye drops, sometimes for a few weeks and sometimes long-term. If they are already using these drops, they may need extra anti-glaucoma treatment. You can read about other risks of the laser treatment in Part 3 of this leaflet.

Do I need to prepare for the laser?

If you have been given this leaflet before the day of the laser clinic, please read it and then write down on it anything that you do not understand and any questions you have. Bring the leaflet with you to the laser clinic.

If you take warfarin, please get the blood test (INR) between 6 and 10 days before the laser clinic. Please check the result. If it is more than 3.0, please telephone us. (Our phone numbers are near the end of the leaflet.)

On the day of the laser clinic, eat and drink normally and take any medications and eye drops as you usually do. Please bring any glasses that you normally wear for television or driving. Allow half a day for your clinic visit. After the laser, the vision may be blurred for up to 6 hours, so we recommend you plan your visit so that you do not have to drive or operate machinery during this period. You can go back to work the same day or the next day but if your work may be physically strenuous, please ask for advice.

What Will Happen When I Come for Laser?

You will be given an identity band on your wrist and your vision will be tested. The nurse will put some drops into the eye, which will make the pupil small and may cause the vision to be dim and a little blurred. The drops may also cause an ache near the eye, but this usually improves after an hour. A small mark will be put on your forehead, above the eye that is for laser. Just before the laser, anaesthetic drops will be put into the eye and the doctor will then put a contact lens into the eye to hold the eye steady. The doctor will then give a few shots of laser. Each shot feels like a strong tap on the eye and many people react by moving slightly. This does not matter because each shot is extremely quick and finished well before any reaction. If slight bleeding occurs inside the eye the doctor will press gently on the eye until it stops. After a few minutes, when the treatment is finished, the doctor will remove the contact lens.

What Happens After the Laser?

A nurse will check the pressure in the eye about an hour after the laser. You will be given a prescription for steroid eye drops, which are used to control inflammation. Carry on taking any other eye drops that you usually take, except that if you are taking pilocarpine drops you should stop putting them in the eye that has just had the laser. You will need further appointments in the clinic for your eyes to have glaucoma checks.

Part 2 - Background Information

What is Glaucoma?

Glaucoma is a common condition in which there is damage to the nerve that carries vision from the eye to the brain (the 'optic nerve'). Usually, people do not notice that they have glaucoma until the damage is severe. The damage cannot be repaired. Treatment is given to try and prevent further damage. Your optometrist checks for glaucoma when you have a sight test.

What Causes Glaucoma?

Usually, glaucoma is mainly due to high pressure in the eye. However, in some people the tissue that supports the optic nerve is weak so that glaucoma may occur with the pressure being only slightly raised or even normal. Sometimes, glaucoma is partly due to a poor blood supply to the optic nerve. Glaucoma is more likely to develop if other members of the family are affected.

What is 'The Angle'?

Fluid is constantly pumped into the eye from behind the iris (the coloured part of the eye). The fluid (known as 'aqueous humour') passes forwards through the pupil and drains out of the eye through a meshwork of tiny holes (the 'trabecular meshwork'). This drainage meshwork lies in the angle between the outer edge of the cornea (the window of the eye) and the outer edge of the iris (see the picture in Part 3 of this leaflet). The angle therefore lies in a circle near the front of the eye. We want this angle to remain open so that fluid can reach the meshwork. An optometrist (optician) may suspect a narrow angle and refer people to the hospital for a further examination.

What is Open Angle Glaucoma?

In the UK, most glaucoma occurs when the angle is open, but the meshwork is diseased, so that it is hard for the fluid to drain out of the eye and the pressure in the eye increases. If this leads to damage to the optic nerve, we call it 'open angle glaucoma'. Eyes with open angle glaucoma may develop narrow angles.

What Causes a Narrow Angle?

The lens of the eye lies behind the iris. Throughout life, the lens grows, gradually pushing the iris forwards and making the angle narrower. As the lens pushes against the iris it makes it more difficult for fluid to pass forwards through the pupil. The fluid pressure can make the iris bulge forwards, which makes the angle even narrower. Most affected people are over age 60. However, younger people can also be affected, especially if they have long-sight (hyperopia). (Long-sighted adults wear glasses for distance and near vision – glasses that have a magnifying effect.)

People of East Asian origins may also be at higher risk. Some medications can make the angle narrower; there is a warning about glaucoma in the information provided with these medications.

Why does a Narrow Angle Matter?

An angle that is significantly narrow is at risk of closing, which may lead to high pressure in the eye. This may be prevented by laser treatment. There are two main types of angle closure (see below) and they may both be present together.

What is Chronic Angle Closure?

If some parts of the angle are stuck closed, then there is less meshwork available for the fluid to pass through. This is 'chronic angle closure'. It often causes increased pressure in the eye, but most people get no discomfort to warn them about this. If the pressure leads to damage to the optic nerve, we call it 'chronic angle closure glaucoma'. There is a high risk that the amount of angle that is closed will get worse. This chronic angle closure cannot be opened with treatment.

What is Acute Angle Closure?

If the angle is completely closed, then no fluid can reach the meshwork. The pressure is usually very high. If this develops rapidly it is called 'acute angle closure'. It may be brief and intermittent but if it lasts more than a few minutes, the pain and loss of vision are usually severe, and it becomes an emergency (sometimes called 'acute glaucoma'). Acute angle closure can lead to permanent severe loss of vision. Acute angle closure can usually be opened if treated urgently.

What are the Symptoms of Acute Angle Closure?

The symptoms often start in dim light or at times of stress. There is usually an ache in the eye or in the forehead, the vision goes misty and there may be multi-coloured haloes around lights. Nausea is common and there is sometimes pain in the abdomen. The 'first aid' treatment for these symptoms is for you to lie on your back in a brightly lit room looking straight upwards until the symptoms resolve. If the symptoms are not getting better after half an hour you should seek medical advice. If the symptoms get better, arrange an urgent check with your optometrist. If this will be on the following day, stay in a brightly lit room until you go to sleep – preferably lying on your back. In general, the eyes are safe during sleep.

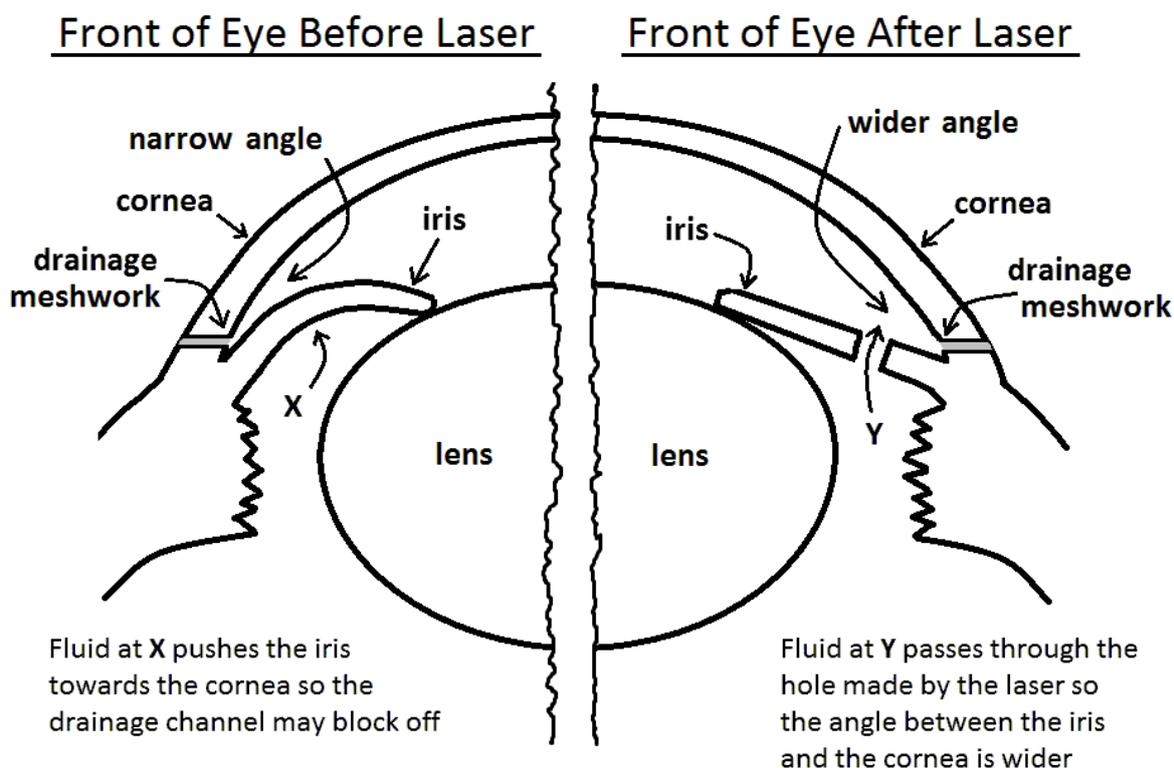
Part 3 - Other Important Facts About the Treatment

How is Narrow Angle Treated?

The most effective treatment is to remove the bulky natural lens of the eye and replace it with a thin plastic lens. This is what happens in a cataract operation. If a cataract (cloudy lens) is developing, then this operation will generally cure both the narrow angle and the cataract. However, if there is no significant cataract, then a simpler treatment may be recommended, which is called Laser Peripheral Iridotomy. In very frail patients, the eye may be treated with long term pilocarpine eye drops (usually every 8 hours) instead of laser.

How Does Laser Treatment Work?

The doctor uses a 'YAG' type of laser to make one or more tiny holes near the edge of the iris. These holes are known as 'peripheral iridotomies' and they relieve the pressure behind the iris. This means that the iris no longer bulges forwards, and the angle tends to be wider (see the picture below). In people with brown eyes, the doctor may sometimes use a different type of laser to prepare the iris for treatment with the YAG laser.



Pictures of 'cross section' of eye before and after laser showing how the iris is pushed forward by fluid before the laser and how the iris flops backwards after laser.

Does Laser Iridotomy Always Work?

The holes in the iris need to be large enough to work well. Sometimes holes gradually become narrow or close off so that further laser is needed. Even if there is a good hole, the angle may still close if the lens is very big or if the iris has an unusual 'plateau' shape. Even if the laser prevents any further angle closure, open angle glaucoma may still occur, especially if previous angle closure has damaged the drainage meshwork.

What are the Main Risks of Laser?

- The laser may hit a hidden blood vessel in the iris causing a tiny bleed inside the eye. In almost all cases, the amount of blood is too small for you to see it when looking at your eye in a mirror. A tiny bleed is common but usually stops after the doctor presses gently on the eye for a few minutes. Blood inside the eye may make the vision misty but the blood usually disappears within one or two days. Bleeding may be worse in patients who take medicines that 'thin the blood' (aspirin, clopidogrel, warfarin, apixaban, etc.) but it is rarely a problem. If there is a bleed, you should avoid straining and vigorous exercise for 10 days.
- Light may pass through a hole in the iris and occasionally, people notice glare or a 'ghosting' around objects. In certain lighting conditions, when the hole is close to the edge of the upper lid, a bright line may appear in the lower part of the vision. However, placing a hole in the iris further away from the eyelids may be more painful.
- The laser causes some scattering of pigment in the eye, and this can reduce the flow of fluid through the drainage meshwork. This may cause the pressure in the eye to be higher than it was before the laser. After the laser treatment, some people may need to use anti-glaucoma eye drops for a few weeks or long term. If they are already using these drops, they may need extra anti-glaucoma treatment.
- Rarely, the laser may make a cataract grow. This can be treated with surgery.
- Very rarely, after laser, the fluid in the eye may flow in the wrong direction. This changes the focus of the eye, making the eye less long-sighted (or more short-sighted). It may also make the pressure in the eye go very high. To check for this problem, watch television (while wearing distance glasses if you have them). Test each treated eye, one eye at a time, by covering the other eye. If the television appears blurred but is sharper when you move closer to it, then arrange to see an optometrist urgently, in case you need to be referred for treatment.

My Angle is Narrow, What Will Happen if I Do Not Have Treatment?

Mild narrowing may simply need rechecking every 1 to 4 years. However, you should beware of the symptoms of acute angle closure (you can read about them in the last section of Part 2 of this leaflet). If untreated, significant narrowing of the angle is a risk not only for acute angle closure but also for progressive chronic angle closure.

Contact telephone numbers for the Eye Departments

If you have any concerns that you feel have not been answered, please contact us: -

- Worcester (01905) 733569
- Kidderminster (01562) 512382

Other information

The following internet websites contain information that you may find useful.

- www.worcsacute.nhs.uk
Worcestershire Acute Hospitals NHS Trust
- www.patient.co.uk
Information fact sheets on health and disease
- www.nhsdirect.nhs.uk
On-line health encyclopaedia

If your symptoms or condition worsens, or if you are concerned about anything, please call your GP, 111, or 999.

Patient Experience

We know that being admitted to hospital can be a difficult and unsettling time for you and your loved ones. If you have any questions or concerns, please do speak with a member of staff on the ward or in the relevant department who will do their best to answer your questions and reassure you.

Feedback

Feedback is really important and useful to us – it can tell us where we are working well and where improvements can be made. There are lots of ways you can share your experience with us including completing our Friends and Family Test – cards are available and can be posted on all wards, departments and clinics at our hospitals. We value your comments and feedback and thank you for taking the time to share this with us.

Patient Advice and Liaison Service (PALS)

If you have any concerns or questions about your care, we advise you to talk with the nurse in charge or the department manager in the first instance as they are best placed to answer any questions or resolve concerns quickly. If the relevant member of staff is unable to help resolve your concern, you can contact the PALS Team. We offer informal help, advice or support about any aspect of hospital services & experiences.

Our PALS team will liaise with the various departments in our hospitals on your behalf, if you feel unable to do so, to resolve your problems and where appropriate refer to outside help.

If you are still unhappy you can contact the Complaints Department, who can investigate your concerns. You can make a complaint orally, electronically or in writing and we can advise and guide you through the complaints procedure.

How to contact PALS:

Telephone Patient Services: 0300 123 1732 or via email at: wah-tr.PALS@nhs.net

Opening times:

The PALS telephone lines are open Monday to Friday from 8.30am to 4.00pm. Please be aware that you may need to leave a voicemail message, but we aim to return your call within one working day.

If you are unable to understand this leaflet, please communicate with a member of staff.