

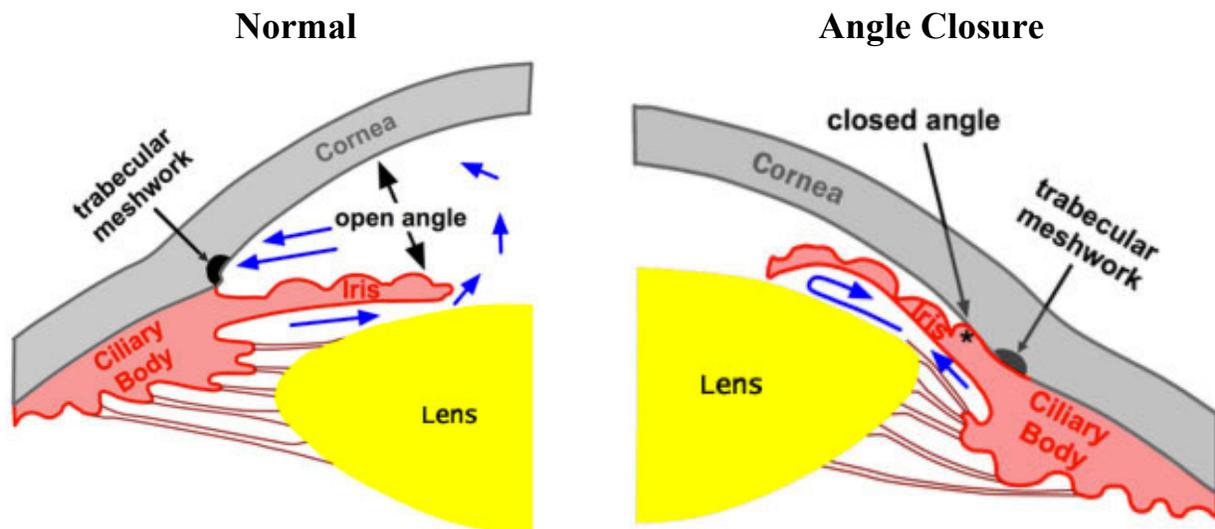


## Patient Information Leaflet – Glaucoma Procedures

### Laser Peripheral Iridotomy

What is laser peripheral iridotomy?

Laser Peripheral Iridotomy (or laser PI) is a treatment used for people who have, or who are at risk of developing, angle closure glaucoma. Glaucoma is a condition where damage occurs to the optic nerve, the nerve sending visual messages from the eye to the brain. Damage to the optic nerve, which can lead to gradual loss of vision, is usually due to high pressure in the eye.



High pressure is due to a build up of watery fluid (Aqueous Humour) within the eye. This fluid nourishes the eye and is important for eye health but too much fluid can cause a build of pressure and glaucoma. The fluid is produced by a part of the eye known as the ciliary body. In normal healthy eyes the fluid flows in front of the lens to the front of the eye and then drains away through a fine drainage system called the trabecular meshwork. The entrance to the drain is tucked away in

“the angle” of the eye.

Angle closure glaucoma is a type of glaucoma where the watery fluid in the eye is unable pass into the front chamber of the eye and then drain away. The fluid is the trapped behind the iris (the coloured part of the eye). This pushes the iris forward onto the delicate drainage meshwork and causes the angle to close. This means that fluid within the eye is unable to drain properly causing a build up of pressure. In other words the iris plugs the entrance to the drainage channel.

Angle closure can cause an “acute attack” of raised eye pressure, during which the eye pressure can become very high, reducing vision and making the eye red and very painful. If an acute attack is not treated promptly the high pressure can damage the optic nerve and lead to permanent loss of vision. More commonly angle closure glaucoma occurs gradually and causes raised pressure with a slow loss of vision without pain or other symptoms.

Laser peripheral iridotomy is a treatment used to reverse angle closure and prevent glaucoma, or for people who already have glaucoma it can reduce the risk of glaucoma getting worse. Laser peripheral iridotomy is not suitable for a large number of people with glaucoma as it is only effective for people with the angle closure variety.

## Why does angle closure occur?

Angle closure is usually due to two a combination of two things 1) The shape of the eye, 2) The size of the natural lens. Most people with angle closure are long-sighted (need glasses for reading from a young age) and have smaller eyes than average. This may not be a problem early in life but as we age the natural lens in the eye grows and becomes thicker. This can mean there is a lack of space in the eye and result in less room for the fluid in the eye to travel on its normal route. A large lens can push the iris forward and block off the entrance to the drainage meshwork. In other people angle closure is due to a large or thick iris, rather than a large lens. In others the iris is just naturally close to the drainage meshwork meaning it is prone to closing. As the underlying problem is often a large lens, surgery to remove the lens (or cataract surgery) is an effective treatment for some people. However, laser treatment is a fast, safe and often effective treatment with lower risks than more invasive cataract surgery. For these reasons laser treatment is usually tried first.

## How does laser work?

The laser delivers a highly concentrated beam of energy, which is used to

make a small hole in the iris (coloured part of your eye). This small hole allows the aqueous humour to flow freely in to the front chamber of the eye so that the pressure does not go up abruptly. It also helps to prevent the iris from being pushed forward on to the delicate drainage system and restricting the flow of aqueous in eyes with chronic glaucoma where the angle is narrowed. If the iris is darkly pigmented it may be necessary to pre-treat the iris with another type of laser to make it easier and safer for the laser to make the small hole in the iris. If this is the case it will be discussed with you.

## What happens on the day of treatment?

Expect your visit to take 2-3 hours overall. You will be asked to attend the clinic in advance of the treatment time to have some drops instilled in the eye to prevent a pressure rise in the eye from the treatment. One of the drops also makes the pupil smaller and making the iris taut so it is easier for the laser to penetrate.

The laser is delivered through a specially designed microscope, which you sit in front of. It is very similar to the slit-lamp microscope you sit at in clinic to have your eye examined. A special lens will be placed against the front surface of your eye for better viewing. During the laser treatment, you may see some flashes of light and hear clicking sounds as the laser pulses are delivered. The laser treatment is generally painless, although most patients experience mild discomfort and describe feeling a “ping” like sensation.

You will be asked to wait for approximately one hour after the laser so that your intra-ocular pressure can be checked. You will be given a prescription for anti-inflammatory eye drops to take home. You will then receive an appointment to come back to the clinic usually 2-3 weeks afterwards when the angle of the eye can be assessed. There are no activity or work restrictions after laser.

## Are there any risks or side effects of this treatment?

Your vision may be slightly blurred for a few hours following your laser treatment. This will settle. If you are concerned that your vision is not returning to normal please contact the hospital on the numbers below.

There may be a little bleeding from the iris inside the eye, which can initially blur your vision but will clear in a few days time. The eye may feel slightly bruised afterwards or be a little red. This may be due to the lens used for viewing at the time and should settle overnight. The eye may still be a little red or sore the following day as it may sometimes become inflamed but the drops you have been

given to use will control any inflammation and help to relieve discomfort.

You may wish to take a mild painkiller, for example Paracetamol, to relieve this discomfort. If you are already taking painkillers for a different condition continue with these, but do not take both.

It is possible for the pressure in the eye to increase immediately after the treatment. In order to prevent this we put in some special drops before and immediately after the treatment. A pressure rise would normally be detectable within an hour of the laser so we can give you any additional treatment at the time. There is a very tiny risk that your pressure may not respond and require further intervention or that it will cause a change or reduction in your vision.

The small hole in the iris is usually hidden under the upper eyelid and cannot be seen with the naked eye. However, very occasionally, it can cause glare (about 1 in 100 people, although this normally improves). Occasionally people notice some shadows caused by their eyelashes. If this happens it will usually resolve. Cataract formation has been described following the laser but is extremely rare (approximately 1 in 7000 people).

## How successful is it in lowering the eye pressure?

Laser iridotomy is very successful and it is very rare to have acute angle closure glaucoma following this treatment. About 8 out of 10 people have opening of the angle following treatment. Occasionally the small hole can partly or completely heal up in the first few days after the laser treatment. On a few occasions it is hard to penetrate the iris completely on one treatment or a little bleeding occurs so that treatment is suspended and completed on another day. Sometimes the hole appears adequate but without the drop that stretches the iris it appears too small. Further laser treatment may therefore be necessary after clinic review. This is usually very successful. Laser iridotomy is very good at protecting against acute angle closure glaucoma.

## Contact information

The information in this leaflet is intended as a guide only as each patient's experience will be different. If you require any further information or are concerned about your eye following laser treatment, please contact my secretary at Princess Alexandra Eye Pavilion, the telephone number is 0131 536 4160. If you are unable to speak with my secretary please contact the Acute Referral Clinic (ARC) at the Eye Pavilion on 0131 536 3751. The Acute Referral Clinic is open

weekdays from 9.00 am to 5.00 pm. At weekends or out of hours please contact your GP, optometrist, or Accident and Emergency at the Royal Infirmary who will be able to contact a member of our on call ophthalmology team for further advice.