Moorfields Eye Hospital NHS
NHS Foundation Trust

Patient information – glaucoma service

Laser peripheral iridotomy

This leaflet is for patients with angle-closure glaucoma or at risk of angle-closure glaucoma, who have been recommended laser peripheral iridotomy as a treatment.

What is laser peripheral iridotomy?

Laser peripheral iridotomy is a procedure used in the treatment of patients with angle-closure glaucoma, or as a preventative measure in people who are at risk of angle-closure glaucoma. “Angle-closure” refers to a narrowing of the drainage channel within the eye, resulting in high pressure inside the eye (intraocular pressure). This high intraocular pressure can cause damage to the optic nerve, which can result in a type of vision loss known as glaucoma.

Laser peripheral iridotomy uses laser energy to create a small hole in the iris (the coloured part at the front of the eye) to help open the drainage angle and treat or prevent angle-closure glaucoma. This hole is not visible to the naked eye.

Benefits of treatment

The laser treatment aims to prevent raised intraocular pressure and reduce the risk of vision loss from glaucoma. If the procedure is performed at an early stage of the disease, there is a 66–75% chance of “curing” the condition. If used at a later stage, it may help slow or stop progression of the disease. In advanced cases, medication and/or surgery may be necessary in addition to laser treatment.

Side effects and complications

Generally, laser peripheral iridotomy 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.

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This can be treated with aftercare anti-inflammatory drops used for a week (see below).

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.

Around a quarter of all patients undergoing laser iridotomy notice a small change in their vision. In the majority of cases, the vision returns to normal within a month. Some patients notice a permanent change in their vision. Research has shown that “ghosting” around objects (11%), shadows (3%) and lines (1%) were the most frequently-noticed visual phenomena. Some patients also report experiencing glare. Around 500 patients per year undergo laser peripheral iridotomy at Moorfields, and our experience is that less than 1% of people find their vision deteriorates following the procedure.

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

If you develop persistent misty vision, or pain in the eye, please contact Moorfields or attend our A&E department.

Are there alternatives to laser treatment?

Surgical lens extraction (a procedure which is technically identical to cataract surgery) is another treatment for angle-closure. Lens extraction surgery has a higher risk of permanent vision loss compared to laser peripheral iridotomy, although the risk is still low (less than 1 in 1000). For this reason, lens extraction is usually only recommended for patients who are already developing visual problems from cataract, or for patients who are unlikely to benefit from laser treatment.

Patients who choose not to have laser peripheral iridotomy or lens extraction treatment risk developing angle-closure or deterioration of established angle-closure, which can result in high intraocular pressure and loss of vision from glaucoma. Observation only, is a reasonable option for patients who do not have high intraocular pressure or other signs of damage from angle-closure and we would recommend having regular reviews by a local optometrist.

What will happen on the day?

Allow half a day for your procedure to include your measurements before and afterwards. Your vision and intraocular

pressure will be measured and you will be asked to sign a consent form outlining the risk and benefits of the procedure (as detailed in this information leaflet). You will be given two rounds of drops (apraclonidine and pilocarpine) before the laser is carried out. Please note, you will not be given apraclonidine if you have had a heart attack or angina, so please tell us if you have heart problems. The pilocarpine drop often causes a transient headache, and may affect the vision, for example by altering the focus of the eye, and making things appear darker and more blurred than usual. These effects are normal and temporary.

The procedure takes place in a room separate from the clinic, and you can bring a friend or carer with you (they will have to wear protective glasses, which are provided). The laser treatment is given through a standard eye examination microscope (slit lamp) connected to the laser machine. You will have some anaesthetic drops put in the eyes just before the procedure. These often cause a slight tingling or stinging for a few seconds. A contact lens is used to improve the doctor's view and prevent the eye from closing. It is important not to move; the vast majority of patients manage to keep still without any problems.

A bright white light is shone into the eye to allow the doctor to see where the treatment is being applied. This can cause the vision to be dimmed for up to 30 minutes afterwards. In most cases, a pulsed ("YAG") laser is used, which makes a soft clicking noise and gives a very short flicking sensation when activated. For patients with a thick brown iris, a continuous wave ("argon") laser is used as an additional treatment prior to the YAG laser. While most people do not experience any sensation apart from the flicking, the treatment is occasionally uncomfortable for a small number of patients.

Intraocular pressure is measured approximately one hour after the laser treatment. If the pressure is high, you will be given tablets and/or drops to use for a few days.

Aftercare

Routinely, you will need to use prednisolone 1% (Pred Forte) eye drops hourly for 24 hours (taking a break through the night), and then four times a day until you are seen in clinic for a check-up one week later. You should continue to use your normal glaucoma medication for both eyes unless specifically told not to.

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Moorfields Direct advice line

Phone: 020 7566 2345

Monday to Friday, 9am–9pm, for information and advice on eye conditions and treatments from experienced ophthalmic-trained nurses.

Patient advice and liaison service (PALS)

Phone: 020 7566 2324 or 020 7566 2325

Email: pals@moorfields.nhs.uk

Moorfields' PALS team provides confidential advice and support to help you with any concerns you may have about the care we provide, guiding you through the different services available at Moorfields. The PALS team can also advise you on how to make a complaint.

Your right to treatment within 18 weeks

Under the NHS constitution, all patients have the right to start their consultant-led treatment within 18 weeks of being referred by their GP. Moorfields is committed to fulfilling this right, but if you feel that we have failed to do so, please contact our patient advice and liaison service (PALS) who will be able to advise you further – see above for contact details. For more information about your rights under the NHS constitution, please visit www.nhs.uk/choiceinthenhs.