This procedure is the modern adaptation of the oldest known operation for glaucoma (in use since the 1850’s). The current technique uses laser energy to create a small hole (iridotomy) in the iris (the blue/brown/green coloured part at the front of the eye) to help treat or prevent angle-closure glaucoma by bypassing an obstruction of fluid circulation inside the eye. One adequately sized iridotomy is sufficient. The procedure is the essential first step in effectively managing angle-closure. Generally it is a very low risk procedure. If the procedure is performed at an early stage of the disease, it has a 66 to 75% chance of “curing” the condition. If used at a later stage, it may help slow or arrest progression of the disease, but in advanced cases, medication and/or surgery may be necessary in addition to laser treatment. It is widely believed by eye specialists that laser iridotomy almost completely (>99.5%) removes the risk of an acute attack of angle-closure, where the pressure goes very high, very quickly and can cause damage to tissues inside the eye. Laser iridotomy is only effective in reducing or removing the risk of angle-closure, and does not affect the risk of the common-all-garden variety of glaucoma (open angle glaucoma - OAG). OAG requires regular examinations (at 1-2 yearly intervals for people over the age of 40) to identify, so regardless of the outcome of the iridotomy, you should have your eyes examined by an optician or ophthalmologist (medical eye specialist) regularly.

Research carried out at Moorfields, funded by the International Glaucoma Association, has shown that if you need laser iridotomy, your first degree family members (i.e. brothers, sisters, mother, father, or children aged over 40) have a 1:5 chance of needing the same treatment to help prevent glaucoma.

Adverse events, side effects and complications
The commonest adverse event is a transient pressure rise. This will be detected by measurements before and after the procedure. The likelihood of pressure rises is related to the severity of the disease. About 10% of early cases experience some pressure rise. In advanced cases 1 in 3 may be affected. The rise in pressure may last anything from hours to weeks. If it occurs, it is treated with medication.

Around 25% of all patients undergoing laser iridotomy notice a change in their vision. Of these around half find it improves and half find it gets a little worse. In the majority of cases, the vision returns to normal within a month. Some patients notice a permanent change in their vision. A research publication from the United States reported that ghosting around objects (11%), shadows (3%) and lines (1%) were the most frequently-noticed visual phenomena. If the iridotomy hole is correctly positioned (underneath the upper lid wherever possible) the likelihood of experiencing these symptoms is much less than if the hole is not fully covered. Experience in Moorfields (from around 500 patients per year) is that less than 1% of people find their vision changes noticeably in the long run after laser iridotomy. Only 2 patients in the last 5 years have required additional treatment to deal with problems caused by laser iridotomy.

A small amount of bleeding from the iridotomy hole (inside the eye) & blurring of vision are fairly common, but typically transient side-effects, lasting less than 24 hours. Patients taking warfarin to reduce blood clotting should have had a recent blood test (within 1 week) confirming INR< 3.0. Please tell us if you are taking warfarin.
What will happen?

Vision and eye pressure are measured. A consent form outlining the risk and benefits after they have been discussed, is signed. Drops of apraclonidine (0.5% “Iopidine”) and pilocarpine (2% in blue eyes, 4% in brown eyes) are given as a premed about 30 minutes before, with a second dose just before starting treatment. Apraclonidine is omitted if there is history of ischaemic heart disease (heart attack or angina). **Please tell us if you have heart problems, especially severe angina that has required surgery or vascular stenting.** The pilocarpine drop will often cause a transient frontal headache, and may affect the vision by changing focussing, and making things appear darker and more blurred than usual. This is a normal effect and is transient.

The experience for the patient undergoing laser treatment resembles the diagnostic examinations performed in clinic. The laser treatment is given through a standard eye examination microscope (a “slitlamp”), connected to the laser machine. You will have some anaesthetic drops put in the eyes just before the procedure. These often cause a transient tingling or stinging for a few seconds. A contact lens is used to improve the doctor’s view and prevent the eye from closing. You will be asked to look down or to the side, and keep still while the treatment is performed. It is important not to move. Movement during the procedure can cause problems, although almost everyone manages to keep still without any difficulty.

A bright, white light is shone into the eye to allow the doctor to see where the treatment is being applied. This may cause the vision to be dimmed for up to 30 minutes afterward.

In most cases, a pulsed laser (Nd:YAG) is used. This makes a soft clicking noise and gives a very short “flicking” sensation when activated. In all patients with thick brown irises an additional type of laser treatment helps to make the procedure successful. This uses **continuous wave laser** (“argon” class of lasers) to pre-treat at the site of the iridotomy. Injury to to the retina (the tissue at the back of the eye that acts like film in a camera) has been reported once when this type of laser was first used in the 1970’s. However, with modern techniques that are specifically designed to avoid this, the risks of such problems are **extremely** small. While most people do not experience any sensation apart from the “flicking”, the procedure is occasionally uncomfortable for a small number.

**Aftercare**

The intraocular pressure is measured again about one hour after treatment. If the pressure is high, you will be given tablets and/or drops to use for a few days.

Routinely, you will need to use prednisolone 1% (Pred Forte) hourly for 24 hours (taking a break through the night), and then 4 times a day until seen for a further check-up 1 week later. If you routinely wear contact lenses, you will need to use preservative free drops, or stop wearing contact lenses for the week. **Please tell us if you want to wear you contact lenses soon after the laser treatment.** You should continue to use your normal glaucoma medication for both eyes unless specifically told not to.

Your next appointment will be in about one week’s time in clinic to assess the success of the laser treatment. In a small number of cases, the procedure needs to be repeated.

If you have any questions, please contact the clinic on 0203 7576 555 or out of hours numbers on: 07718 425859 / 07972 532598