

What is a Laser Peripheral Iridotomy (LPI)?

The eye constantly produces **aqueous humor**, a clear fluid that fills the anterior chamber (the space between the cornea and the iris). The fluid drains out of the eye through a complex drainage system in the back of the cornea. As new aqueous flows into your eye, the same amount should drain out. This maintains a healthy, stable intraocular pressure (IOP).

Laser Peripheral Iridotomy (LPI) is a type of eye surgery used to treat patients with a class of glaucoma known as angle-closure glaucoma or with narrow angles. An LPI creates a small opening in the peripheral iris, allowing aqueous humor to flow through the opening, widening the angle and improving fluid drainage. This can result in a lower IOP.

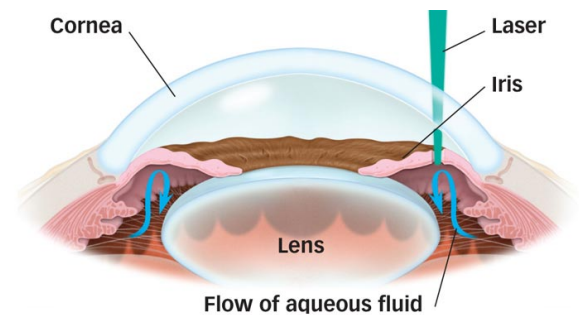


Photo credit: <https://www.hodgeseyecare.com/>

In **angle-closure glaucoma** the iris moves forward and blocks the drainage channels located in the back of the cornea, at the angle of the eye. The result is a buildup of the anterior ocular fluid (aqueous humor), causing elevation of the intraocular pressure (IOP). This high pressure can damage the optic nerve and cause vision loss if untreated. This glaucoma can be chronic or acute.

In **chronic angle closure glaucoma** the IOP rises gradually, causing few symptoms in its early stages. If untreated it can cause irreversible damage to the optic nerve with vision loss.

In **acute angle closure glaucoma** the IOP rises suddenly, causing several symptoms (pain in and around the eye, blurred vision, redness, tearing, nausea, headache).

In both cases the goal of the LPI is to widen the angle and allow the fluid of the eye (aqueous humor) to drain properly.

In the case of **narrow angles**, the angle is open and the IOP is normal, but the iris is too close to the cornea and there is a high risk of the iris blocking the drainage channels. This could result in angle-closure with elevation of the IOP. Therefore, the procedure is performed to lower the chances of angle-closure before it occurs. Again, the goal of the LPI is to widen the angle and prevent its closure.

How is a Laser Peripheral Iridotomy performed?

- The procedure can be performed with two types of laser units: The most commonly used is known as a YAG Laser, which penetrates the iris, creating an opening. Another laser unit is known as a Diode Laser, which causes thinning in the iris. Sometimes both types of lasers are used in the same patient.
- The LPI is performed as an outpatient procedure, and it usually takes a few minutes.
- Prior to the procedure you will be given some eye drops to make your pupil small. These drops take 30-45 minutes to work.
- You will then be taken to the Laser Room where additional drops will be given to numb your eye. You will be positioned at the Laser Unit, which looks similar to the microscope used in your routine office examinations.
- The surgeon will place a special contact lens on the surface of your eye to improve visualization and provide comfort and stability during the procedure.
- You will see a bright light and feel slight pressure on the eye. The surgeon will then use multiple laser applications to create the iridotomy. Although the laser is not painful, you may feel a stinging sensation as the laser is used.
- The vision will be blurry in the treated eye for a short time after the procedure. Since only one eye is treated, you may be able to drive safely back home. Please do not drive if you don't feel that is safe.
- Your surgeon will prescribe drops for a few days after the procedure to reduce inflammation in the eye or in some cases to lower the eye pressure.

Potential risks and complications of LPI:

Complications after LPI are uncommon, usually mild and temporary. Some risks exist, like in any other procedure. These may include:

- Blurring of vision.
- Postoperative inflammation.
- An increase in eye pressure.
- Eye redness, swelling or pain.
- Bleeding inside the eye
- Seeing streaks of light
- The need to revise or repeat the iridotomy
- In rare cases additional surgery may be needed to control the IOP.

The successful management of glaucoma is a joint effort between the patient and the doctor. Patients need to take the medications, keep their appointments for testing and visits with the doctor, and constantly communicate with the doctor if new symptoms or questions arise.