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# GLAUCOMA

**G**laucoma is one of the leading causes of blindness in the world. It is the second major cause of blindness in India and causes permanent loss of vision in 1.5 million Indians every year. However visual loss is preventable or stabilized with early diagnosis and treatment.

Glaucoma results when the pressure within the eye is high enough to be detrimental to the normal functioning of optic nerve fibres, some of which stop functioning. The optic nerve carries images to the brain, which are then perceived as vision. Non-functional nerve fibres result in defects in the field of vision.

The disease is called the 'sneak thief of sight' because it is **painless, symptomless and irreversible**. Therefore, the person with glaucoma is usually unaware of it until much loss of vision has occurred. In fact, half of those suffering damage from glaucoma do not know it. Damage from glaucoma cannot be reversed and if the entire nerve is damaged, blindness results. Early detection and regular treatment are the keys to preventing optic nerve damage and blindness from glaucoma.

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**Q. What causes glaucoma?**

**A.** The aqueous humour is the clear fluid circulating within and nourishing some parts of the eye which have no blood supply. 'Normal' individuals have an equal production and drainage of this fluid resulting in a constant pressure within the eye. If the drainage is compromised due to any reason, there is a pressure build-up in the eye, which can damage the optic nerve.

**Q. What are the different types of glaucoma?**

- A.**
1. Chronic open-angle glaucoma  
Most common type of glaucoma; damages vision gradually and painlessly. The pressure is rarely high enough to be symptomatic.
  2. Angle-closure glaucoma  
An acute attack of glaucoma caused by sudden blockage of the drainage channels leading to a sharp rise in pressure within the eye.

Symptoms of angle-closure glaucoma include:

- Blurred vision
- Severe eye pain, nausea and vomiting
- Headache
- Rainbow haloes around lights
- Pain around your eyes after watching TV or after leaving a dark theatre
- Red eyes

An acute attack requires the immediate attention of an eye doctor.

**Q. Who is at risk for glaucoma?**

**A.** Everyone should be concerned about glaucoma and its effects. It is important for each of us, from infants



**Normal Vision**



**Glaucoma**

to senior citizens, to have our eyes checked regularly, because early detection and treatment of glaucoma are the only ways to prevent vision impairment and blindness. There are a few conditions related to this disease that tend to put some people at greater risk. This may apply to you if:

- Someone in your family has a history of glaucoma
- Age: If you are over 45 and have not had your eyes examined regularly
- Near-sightedness [Hypermetropia]
- Any injury to your eyes
- Secondary to other ocular conditions [cataract, inflammation, tumours etc.]
- Long-term medication [Steroids]

**Q. How is glaucoma detected?**

**A.** Regular eye examinations by the ophthalmologist leads to detection. The complete and painless examination includes among other tests:

- Tonometry – Measurement of the intraocular pressure [tension].
- Gonioscopy – Inspection of the drainage angle of the eye.

- Ophthalmoscopy – Evaluation of optic nerve damage
- Perimetry – Testing the visual field of each eye (VFA).
- Pachymetry – Measurement of corneal thickness.
- Swap (Short wavelength automated perimetry) – Very sensitive form of examination of the visual fields; can diagnose glaucoma well before the condition causes damage.

**Q. How is glaucoma treated?**

**A.** The main treatment for chronic glaucoma aims at reducing the pressure in your eye. Damage already caused by glaucoma cannot be reversed. Eye drops, tablets, laser and surgical operations are used to prevent or slow further damage from occurring. With any type of glaucoma periodic examinations are very important to prevent loss of vision. Your treatment may need to be changed from time to time during the periodic examination.

**Medical treatment**

**Eye drops**

When taken regularly and continuously as prescribed, they control the eye pressure either by slowing the formation of aqueous fluid within the eye or by increasing the outflow at the drainage area. The proper technique of using your medication is a key to successful treatment. Our glaucoma specialist /assistant will teach you the technique.

**Tablets**

These are sometimes combined with the eye drops to decrease higher levels of eye pressure. They are occasionally known to cause tingling of fingers and toes, bowel irregularities, and in the very long term, kidney stones.

Why a drug causes side effects in some persons and not others is not fully understood.

Visiting the doctor regularly will help keep a check on your suitable treatment and its result.

**Laser surgery**

Lasers are usually used in one of three ways:

In **open-angle glaucoma** the draining angle itself is enlarged to control eye pressure.

In **angle-closure glaucoma** the laser creates a hole in the iris to open up and improve the flow of aqueous fluid to the drain.

In **painful late-stage glaucoma** medication or surgery do not control the pressure. The laser closes some aqueous fluid-producing areas in the eye and lowers the eye pressure.

**Operative surgery**

A new drainage channel is created for the aqueous fluid to leave the eye. Sometimes a tube drains the fluid in very resistant cases.

Surgery is recommended when your doctor feels that it is safer to operate than to allow optic nerve damage to continue.

**The best treatment for you will be decided after a thorough examination and discussion with us.**

**Q. A glaucoma patient needs regular eye check ups. Why?**

- A.**
1. Glaucoma needs regular follow-up since the condition can cause asymptomatic and irreversible loss of vision if poorly treated or neglected
  2. The effect of your treatment on the eye pressure may not always be constant and needs to be regularly measured by our glaucoma specialist
  3. We record images and maintain records of your eye condition for comparison on following visits.

**Q. How do I minimize the risk of getting glaucoma?**

- A.** You need an eye examination -
- Every 18 – 24 months: if you are age 39 years or over.
  - Every 12 months: if a family member has glaucoma, if you have had a serious eye injury in the past, or if you are taking steroid medication [tablets or eye drops].

*This leaflet is intended to provide general information for patients.*

*"Treat Your Eyes... Greet the World!"*  
**Shroff Eye Opener™ # 17**  
*Without proper treatment Glaucoma can lead to irreversible blindness*

**Shroff Eye Hospital is India's first eye hospital to be accredited by JCI – Joint Commission International, USA for excellence in patient care and health care delivery**

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