

*Your Eyes – Your Windows to the World*

KEEP THEM SAFE

## How is glaucoma diagnosed?

Typically, there is no single test to diagnose glaucoma. Diagnosis and treatment of glaucoma is based on many different tests and findings. In most cases, it is a diagnosis made based on:

1. Intraocular pressure (IOP)
2. Detailed examination of the optic nerve
3. Visual fields
4. Gonioscopy (visualizing angle structures)
5. Imaging tools

## How is glaucoma treated?

Glaucoma cannot be cured but in most cases, can be controlled successfully to maintain the visual fields and thus a good quality of life. Treatment depends upon many factors such as disease severity, glaucoma type and the presence of co-existing medical conditions. Treatment modalities include:

- Eyedrops
- Oral Medications (when IOP cannot be adequately controlled with eyedrops)
- Laser procedures
- Glaucoma Surgery
  - Trabeculectomy
  - Glaucoma drainage devices / MIGS
- Cataract surgery

**Glaucoma is a chronic condition and requires life-long treatment and follow-up. The aim of treatment is to preserve the remaining vision for as long as possible and thus maintain a good quality of life. The damage to the optic nerve cannot be reversed and hence the importance of early diagnosis and treatment.**



A simulation of vision with glaucoma.

# Glaucoma


(GLAU - CO - MUH)

## Contact us

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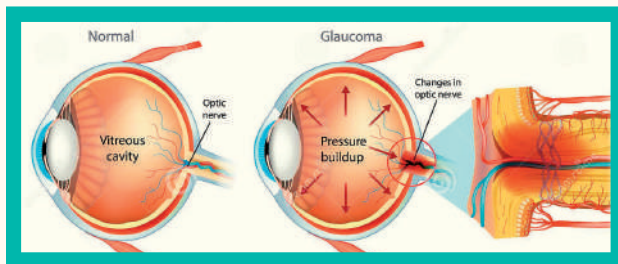




## What is glaucoma ?

Glaucoma is a disease of the optic nerve. The optic nerve connects the eye with the brain. Glaucoma is often asymptomatic and people may lose vision without being aware of it happening. Usually, the field of vision is lost from the periphery and ultimately reaches the central field - only then bringing upon the realisation of vision loss. Due to this insidious nature, glaucoma is commonly known as the “sneak thief of sight”.

Characteristic optic nerve and visual field changes are typical of glaucoma. Most, but not all of the types of glaucoma are characterized by an increase in intraocular pressure (IOP). Damage occurs to the individual eye once the degree of IOP cannot be tolerated by the optic nerve - this IOP level can vary from one eye to the next. Importantly, some eyes may develop damage at relatively low levels of IOP whereas other eyes may not develop any damage at relatively higher IOP levels.



An illustration of how glaucoma damages the optic nerve

## What are the risk factors ?



Age



Family history



Ethnicity - Asians



Diabetes



High Intraocular Pressure



Hypertension



Myopia for open angle glaucoma



Thin corneas



Hyperopia for closed angle glaucoma

Many risk factors are not preventable, so regular follow-ups are important for early diagnosis and treatment.



## What are the types of glaucoma ?

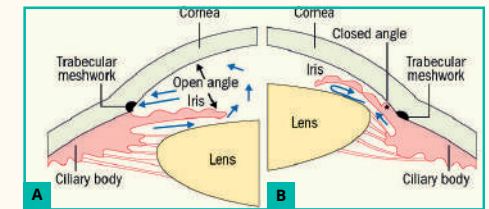
Glaucoma can be broadly divided into either open or closed angle glaucoma, based on the anatomy of the drainage system within the eye. This can be further divided to various subtypes of glaucoma. In order to visualize the angles, an examination with a special lens called a gonioscope is required. If the angles are found to be narrow or closed, laser treatment to create an alternative channel of flow may be required.

### Open Angles

This is the most common type worldwide. It has no symptoms and a slow progress due to the slow and painless increase in IOP.

### Closed angles

Acute angle closure is characterized by a sudden, painful red eye with blurring of vision, due to a dramatic rise in IOP. It may be associated with headaches and nausea / vomiting. This is an eye emergency that requires urgent attention. If not treated promptly, it can cause substantial vision loss. On the other hand, chronic angle closure behaves like an open angle with no symptoms.



The anatomical and physiological differences between an open (A) and narrow / closed (B) anterior chamber angle

### Congenital Glaucoma

It occurs at birth and if not appropriately diagnosed and managed, can cause irreversible loss of vision. If the infant's eye appears enlarged / bigger (buphthalmos), with a hazy cornea, tearing and photophobia (light sensitive), the parents have to get an ophthalmology consult urgently.

### Secondary Glaucoma

The condition can either cause open or closed angle glaucoma. The causes are many, commonly being steroid-induced glaucoma in the young and poor diabetic control in the elderly. Other causes are inflammation of the eye (uveitis), previous eye surgery, trauma to the eye and even cataracts in advanced stages.