



WHAT IS GLAUCOMA?

Glaucoma is a disease that damages the nerve of the eye (optic nerve), which relays information to the brain.

If left undetected and untreated, it can eventually lead to permanent vision loss.

HOW COMMON IS GLAUCOMA?

Glaucoma is the most common cause of permanent blindness.¹

It affects about 1.2 crore people in India.²

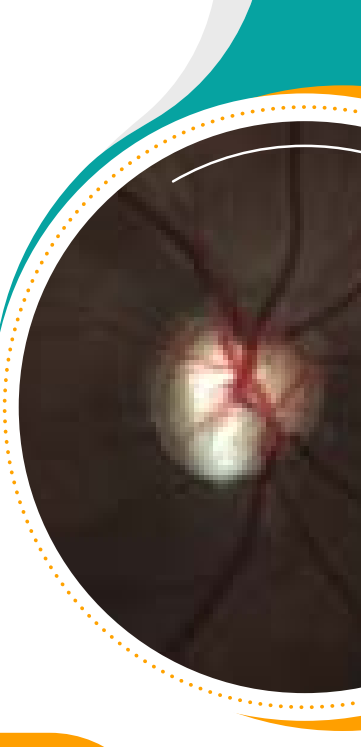


Studies have estimated that 11.1 crore individuals will be affected worldwide by glaucoma by 2040, a vast majority from Asia and Africa.³



References

1. GBD 2019 Blindness and Vision Impairment Collaborators; Vision Loss Expert Group of the Global Burden of Disease Study. Causes of blindness and vision impairment in 2020 and trends over 30 years, and prevalence of avoidable blindness in relation to VISION 2020: the Right to Sight: an analysis for the Global Burden of Disease Study. Lancet Glob Health. 2021 Feb;9(2):e144-e160. | 2. George R, Ve RS, Vijaya L. Glaucoma in India: estimated burden of disease. J Glaucoma. 2010 Aug;19(6):391-7. 3. Tham YC, Li X, Wong TY, Quigley HA, Aung T, Cheng CY. Global prevalence of glaucoma and projections of glaucoma burden through 2040: a systematic review and meta-analysis. Ophthalmology. 2014 Nov;121(11):2081-90.



90% of glaucoma is undetected.



Early detection and proper treatment can help preserve vision.

WHY IS IT IMPORTANT TO KNOW ABOUT GLAUCOMA?

40% of vision can be lost before one becomes aware of it.



Vision lost cannot be restored.



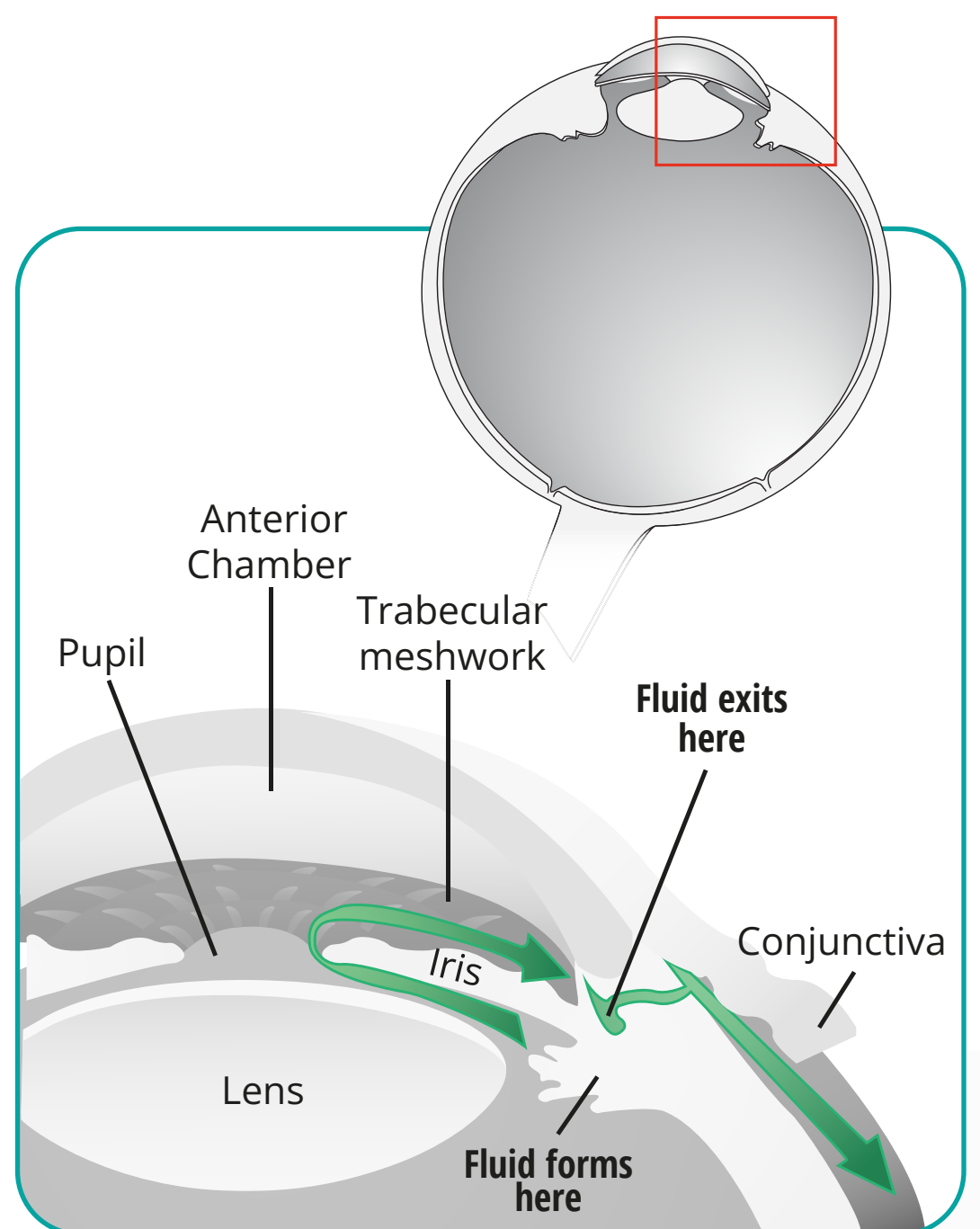
WHAT CAUSES GLAUCOMA?

The exact cause is unknown.

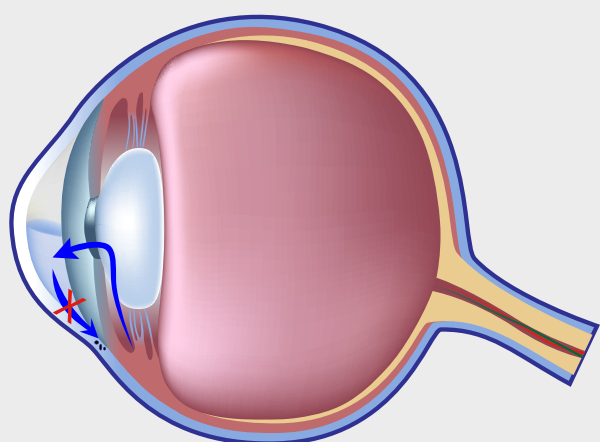
There is a fluid within the eye called aqueous humor which provides nourishment to the eye tissues.

In glaucoma, this fluid drains inefficiently or the passage through which it drains becomes blocked, causing eye pressure to build up.

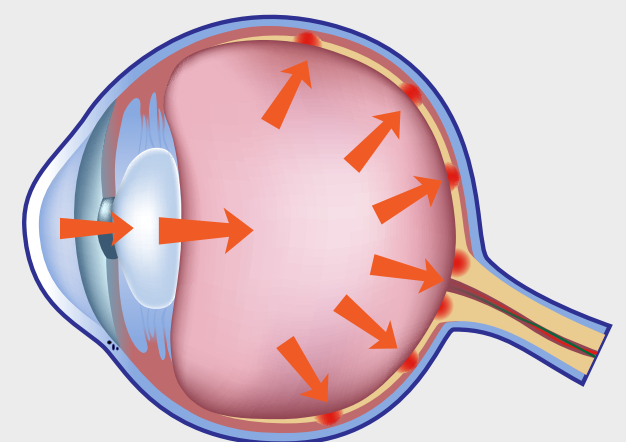
This causes damage to the blood vessels and nerves in the optic nerve resulting in permanent vision loss.

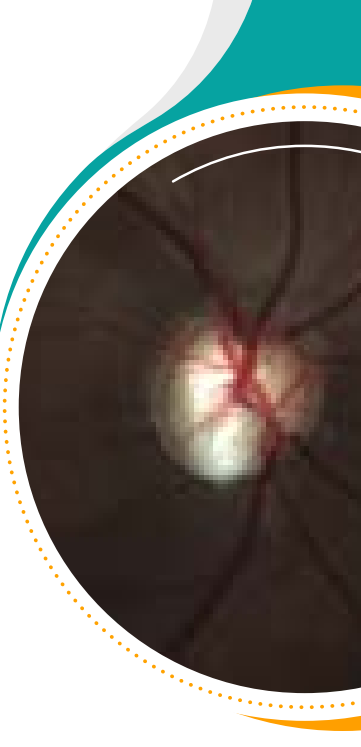


Drainage canal blocked: build-up of fluid.



Increased pressure damages optic nerve.





HOW DOES EYE PRESSURE AFFECT GLAUCOMA?

Elevated eye pressure increases the risk of having glaucoma.



However it is possible to have glaucoma with below average eye pressure.

Also not everyone with high pressure will develop glaucoma.



The 'ideal' or 'Normal' eye pressure for different individuals varies.

Treatment options for glaucoma aim at decreasing eye pressure.



WHAT ARE THE TYPES OF GLAUCOMA?

Primary

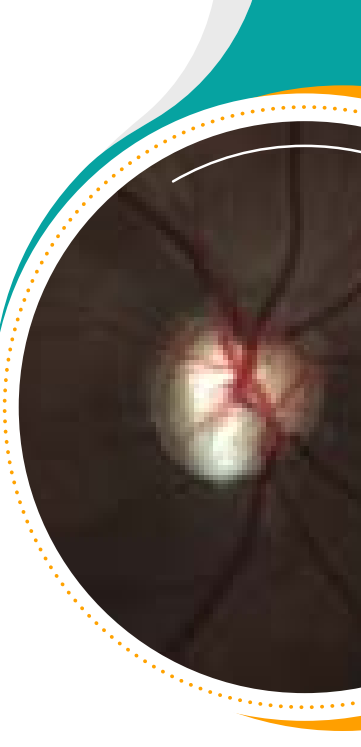
(No identifiable cause. Occurs in predisposed individuals)

- Open angle glaucoma.
- Angle closure/Narrow angle glaucoma.

Secondary

(Occurs secondary to other causes)

- Eye injury.
- Eye surgery.
- Certain eye diseases.
- Certain systemic diseases.
- Steroid use.

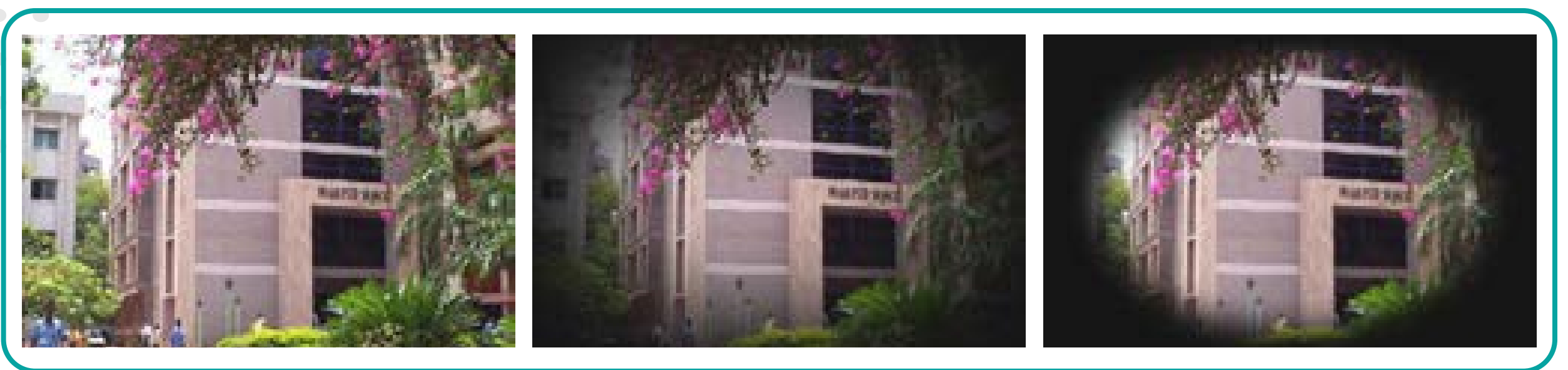


WHAT ARE THE SYMPTOMS OF GLAUCOMA?

Glaucoma is often referred to as the 'Silent thief of sight.'

Most people are unaware that they have a problem as there is no symptoms in the beginning.

In early stages side (peripheral) vision is affected and in end stage central vision is affected leading to blindness.

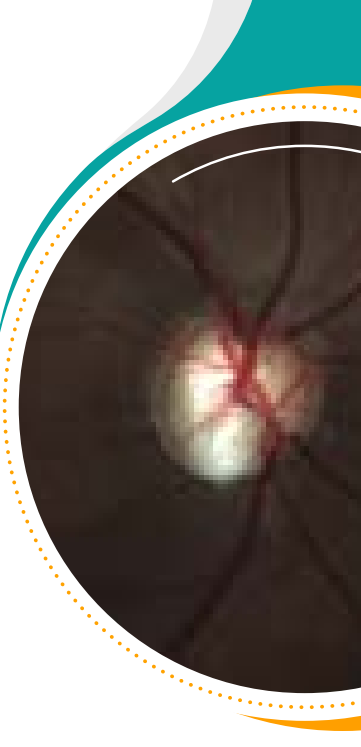


WHEN TO SEE A DOCTOR?

Get a baseline screening done at age of 40 or earlier if you are at increased risk.

The doctor will tell you how often to followup.





WHAT ARE THE RISK FACTORS FOR GLAUCOMA?



Steroid use.

Increasing age 40+.



Eye injury.

High refractive error (near sight/ far sight).



Eye surgery.

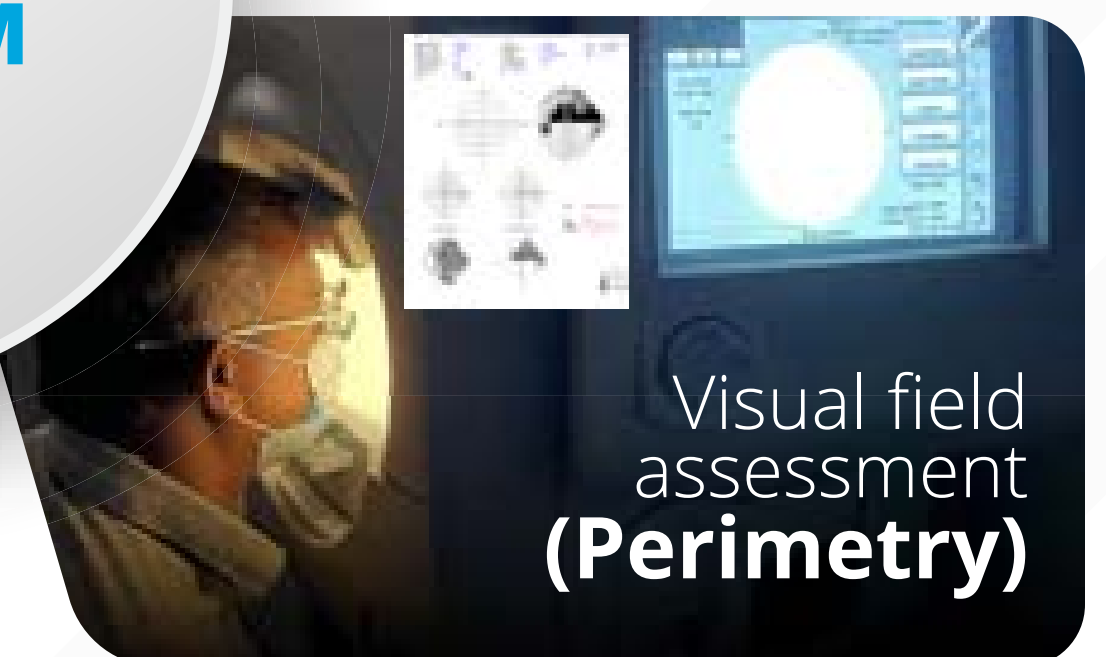
Parents/Sibling with glaucoma.

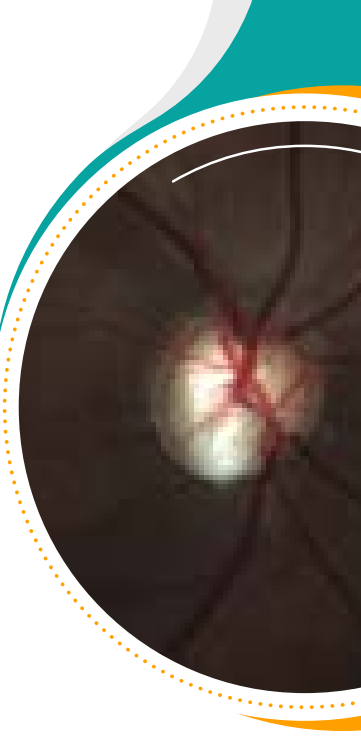


HOW IS GLAUCOMA DIAGNOSED?



**COMPREHENSIVE
EYE EXAM**





DOES EVERYONE WITH GLAUCOMA HAVE TO FEAR BLINDNESS ?



People with glaucoma can have a good quality of life without fear of going blind, if their glaucoma is detected early and treated properly.



Hence regular screening for glaucoma is important.



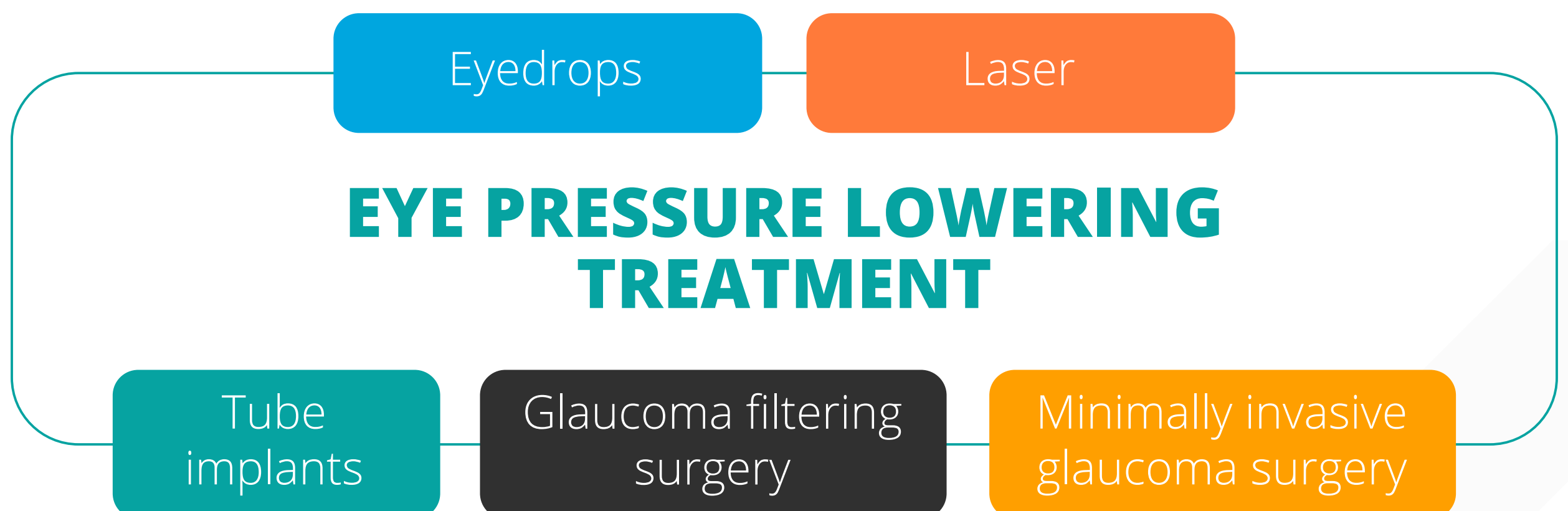
Once diagnosed, lifelong followup with an eye doctor is essential.



Surgical options will have to be considered in advanced or uncontrolled glaucoma to prevent blindness.

WHAT ARE THE TREATMENT OPTIONS AVAILABLE FOR GLAUCOMA?

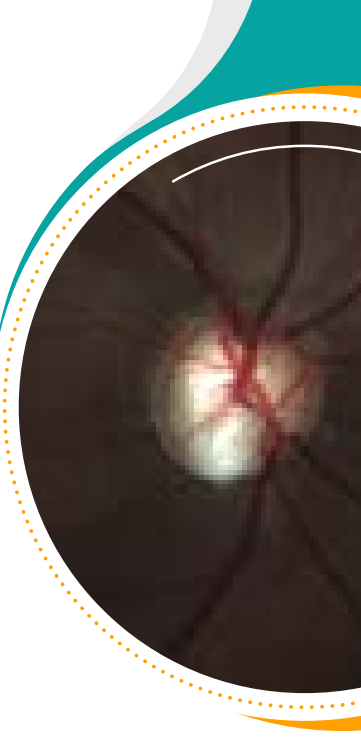
Glaucoma treatment is aimed at lowering eye pressure and prevent further vision loss due to glaucoma.



Surgery is performed when the eye pressure is not controlled by drops, laser or nerve damage is worsening. A patient may need more than one surgery in their lifetime.

Once diagnosed, periodic followup throughout lifetime is necessary.

Glaucoma can be treated, not cured.



WHAT IS MEANT BY 'NARROW ANGLES'? IS IT THE SAME AS HAVING GLAUCOMA?

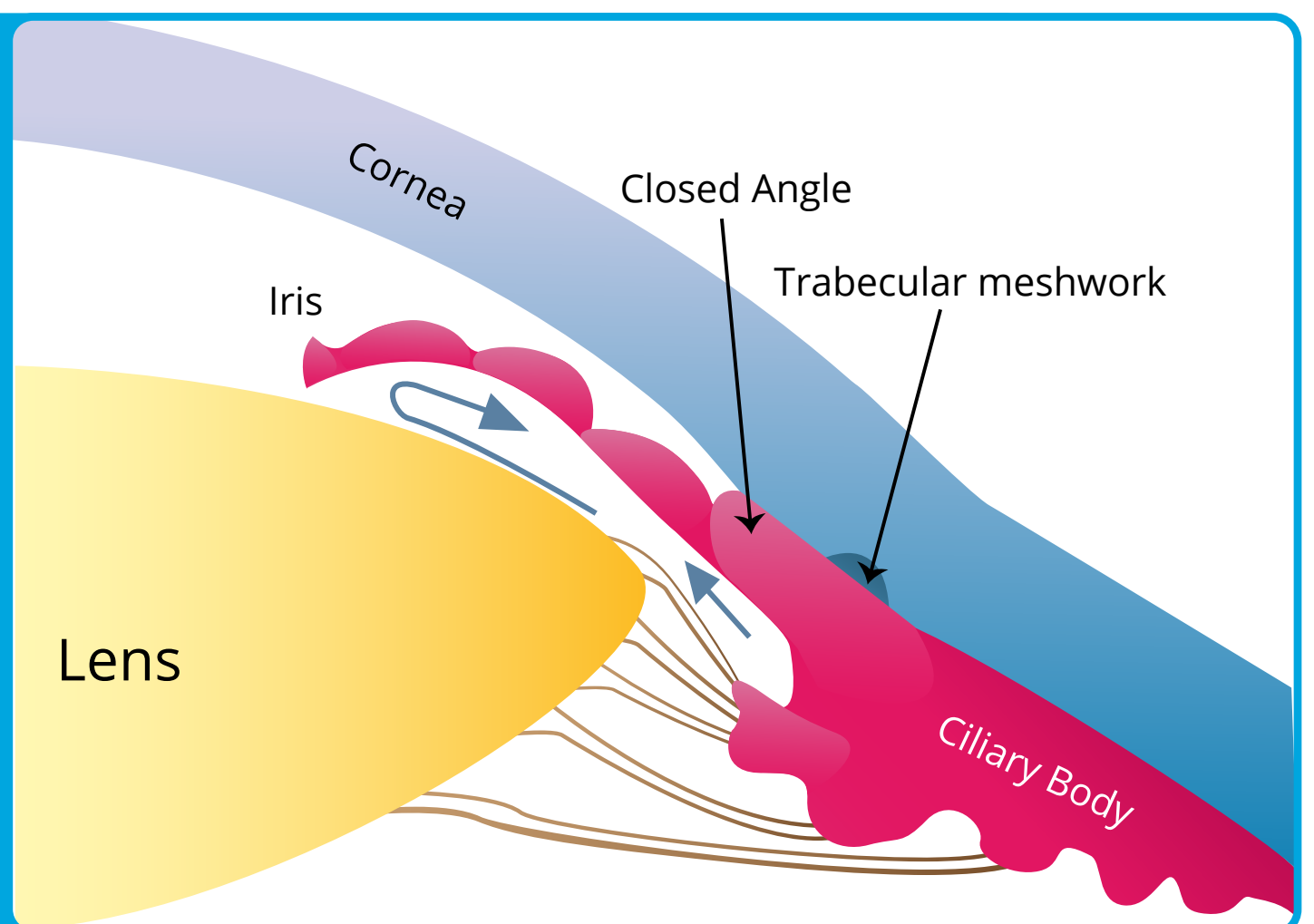
The natural drainage system of the eye is located in the anterior chamber 'angle' between the cornea (transparent layer) and the iris (colored part of the eye).

Some eyes can have only narrow angles without evidence of glaucoma.

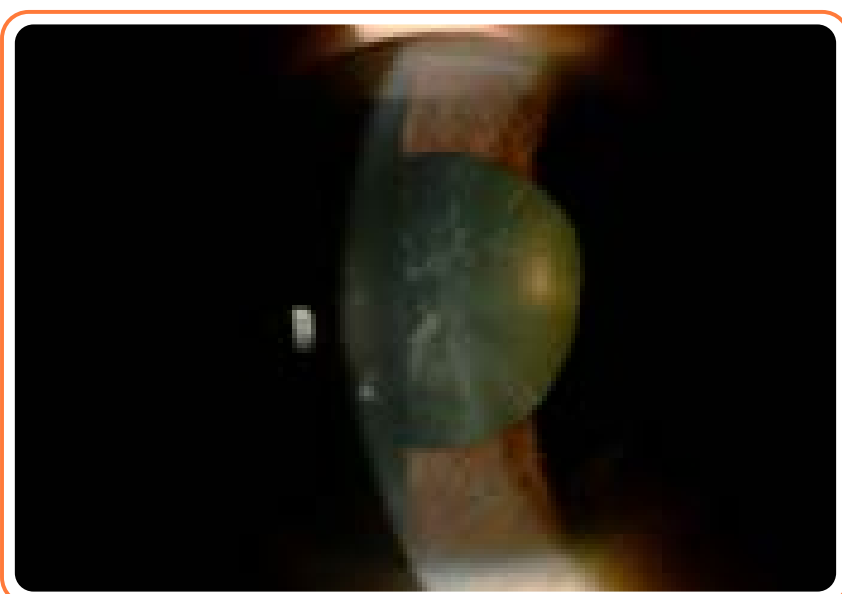
These eyes are at increased risk of developing glaucoma and need lifelong followup. Some of these eyes may need a preventive laser to reduce this risk.

'Primary angle closure glaucoma' refers to an eye with narrow angles that has evidence of damage due to glaucoma.

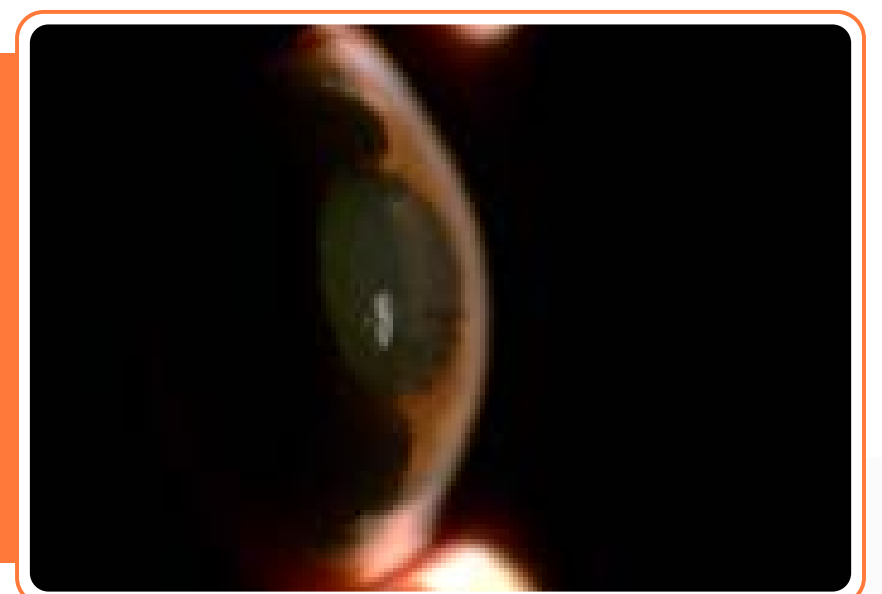
These patients require treatment and followup to prevent the worsening of glaucoma.



Primary angle closure glaucoma may be acute or chronic.



Acute Angle Closure

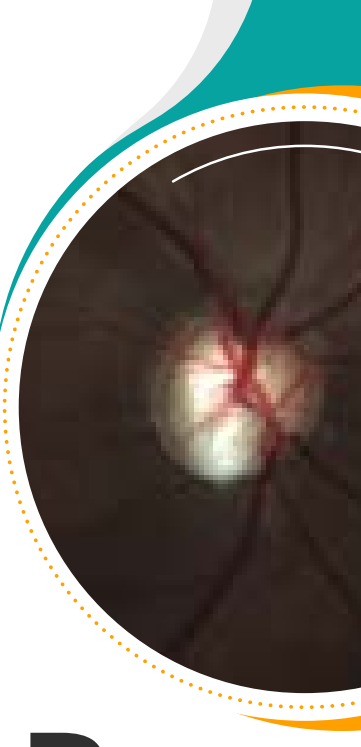


Acute angle closure is a rare condition where there is a sudden increase in eye pressure.

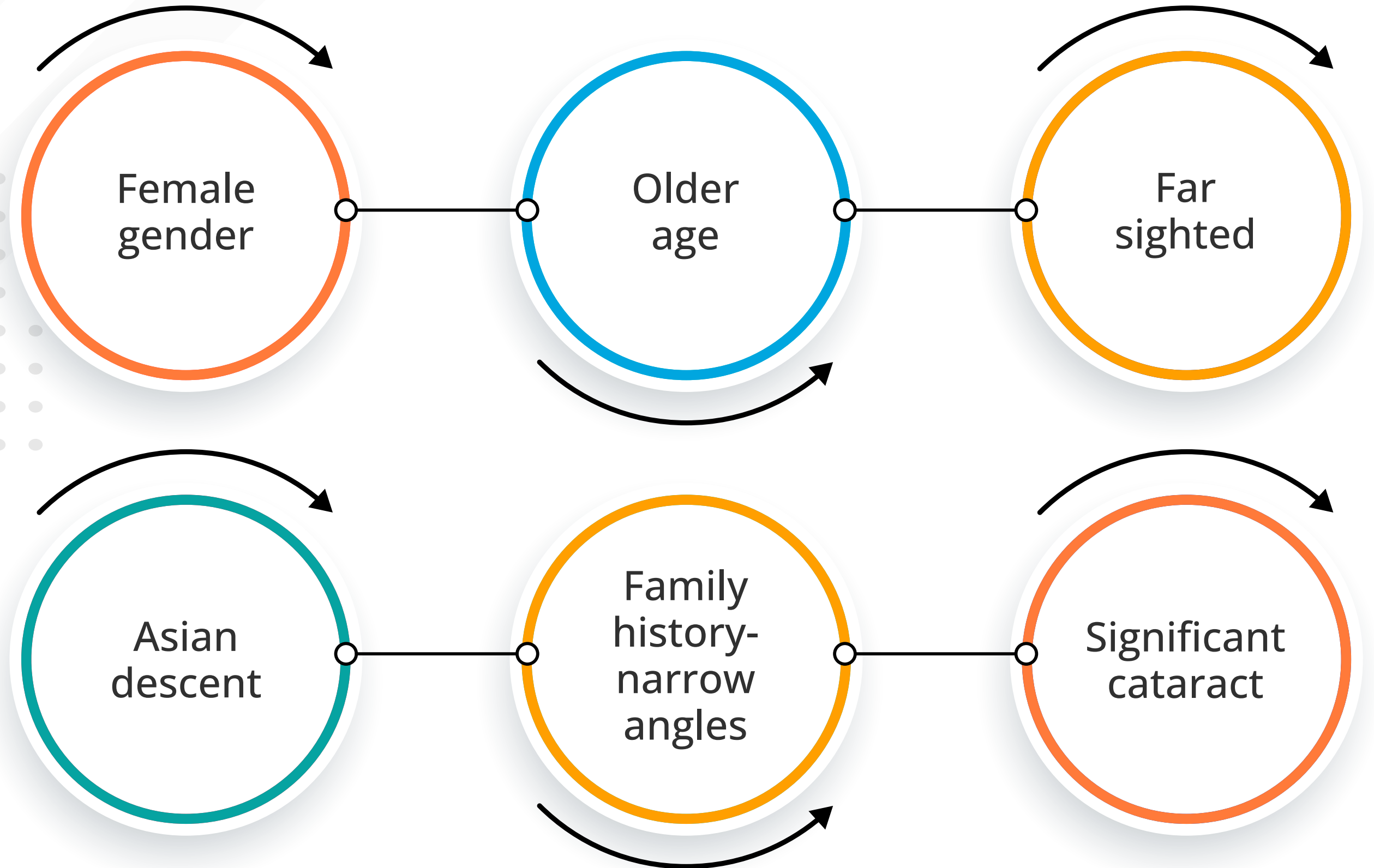
Patient may experience severe eye pain, headache, blurred vision, tearing, and redness.

It is an emergency and needs immediate treatment.

Most of the time the condition is chronic and without any symptoms.



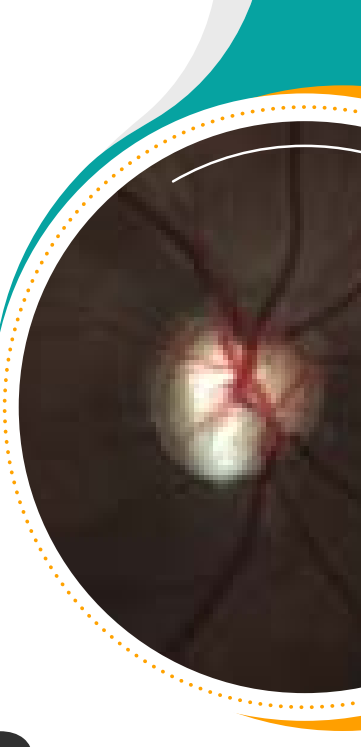
WHAT ARE THE RISK FACTORS FOR NARROW ANGLES?



WHAT TO AVOID IF ONE HAS NARROW ANGLES?

It is important to avoid dilating drops until you are cleared for dilation by your eye doctor.





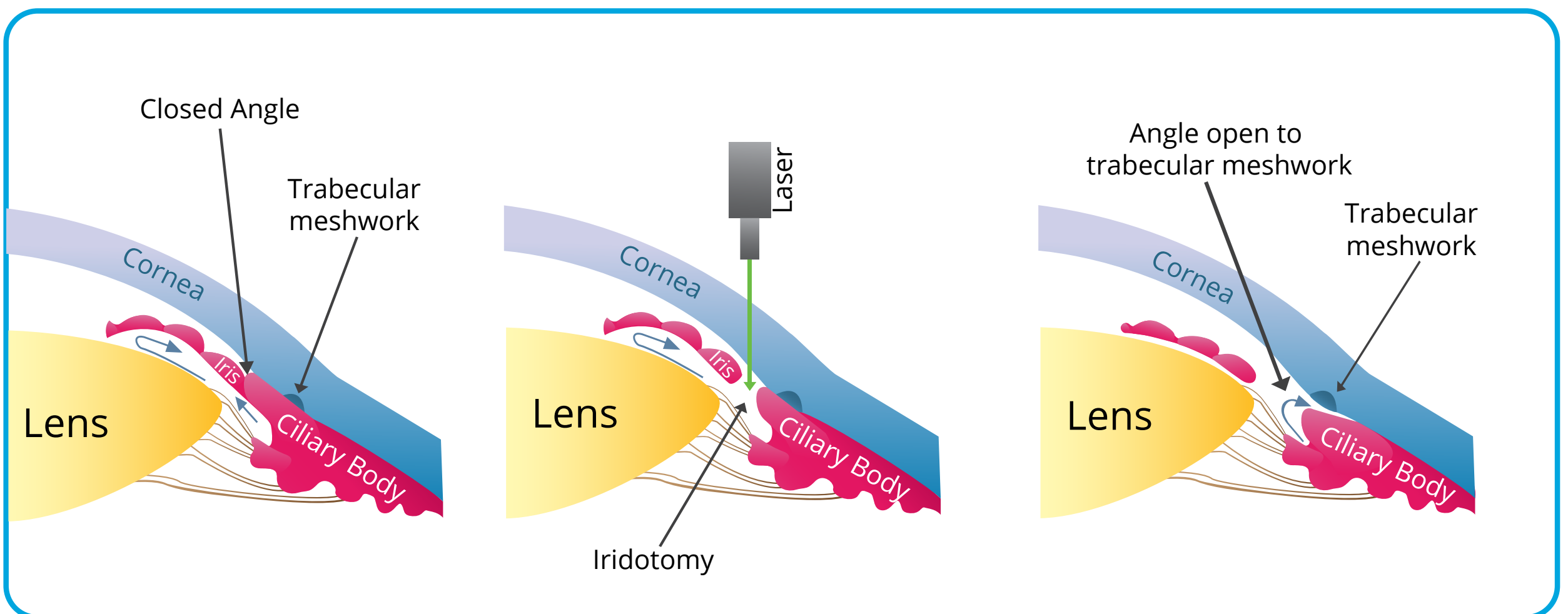
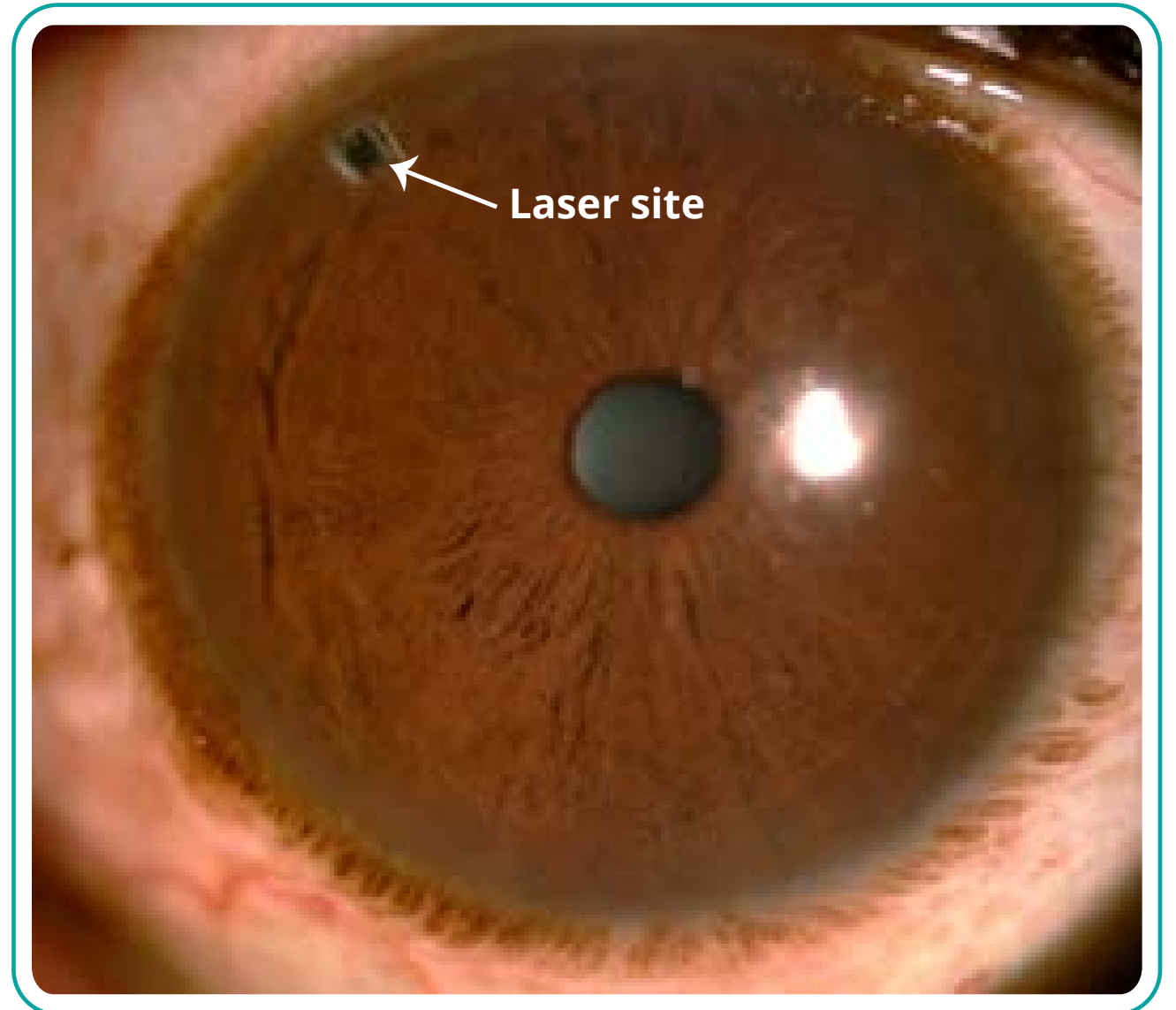
WHAT IS YAG LASER IRIDOTOMY?

YAG laser iridotomy is an outpatient procedure done for narrow/closed angles.

It involves using laser light to make a small opening in the iris (colored part of eye), to allow the fluid, which maintains eye pressure to drain through the eye.

It is not a cure for glaucoma and further treatment may be needed.

Lifelong followup in the glaucoma clinic is needed even following laser.





GLAUCOMA

Silent thief of sight

EYEDROP APPLICATION

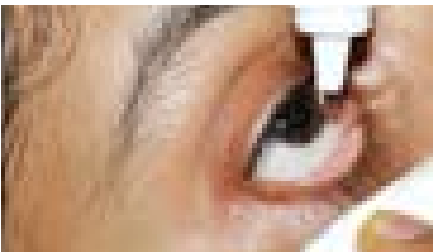
DO'S



Wash hands with soap and water, before instilling eye drops.



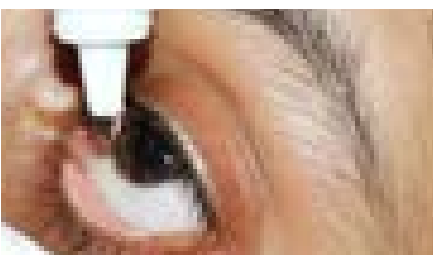
Sit comfortably in a chair, tilt the head backwards and look towards the ceiling. Eyedrop can also be applied while lying on the bed.



Gently pull the lower lid down forming a pouch into which the drop is to be placed. Apply 1 drop at a time.



Close the eyelids gently for 2-3 minutes after eyedrop application. Wipe excess drop running out of the eye with a clean tissue.



Give an interval of 10-15 minutes between different types of eyedrop.



GLAUCOMA

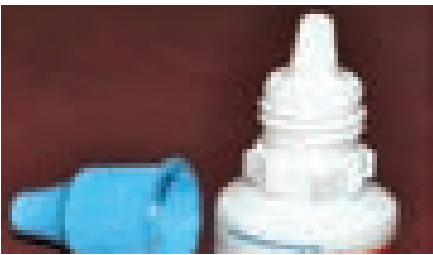
Silent thief of sight

EYEDROP APPLICATION

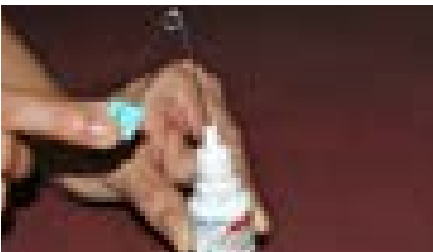
DONT'S



Avoid touching the bottle tip against the eye, eyelid or hands.

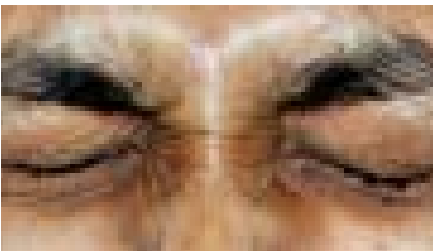


Do not keep the bottle open after use.



Do not use a safety pin to open the eye drop bottle.

Tighten the bottle cap to create an opening in the nozzle.



Do not close the eyelids forcefully or keep blinking after applying drops.



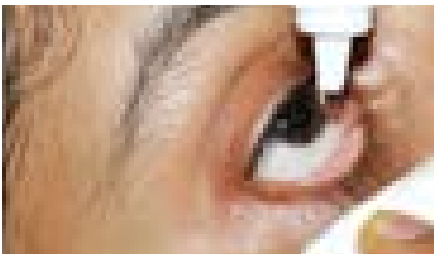
GLAUCOMA

Silent thief of sight

GLAUCOMA DROPS SPECIFIC INSTRUCTIONS



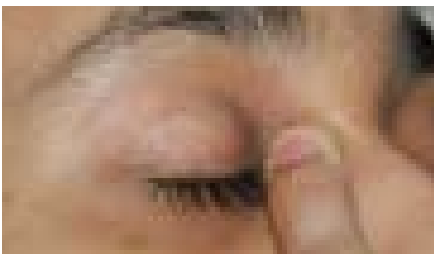
Follow the exact timing for application of glaucoma eyedrop as advised by your doctor.



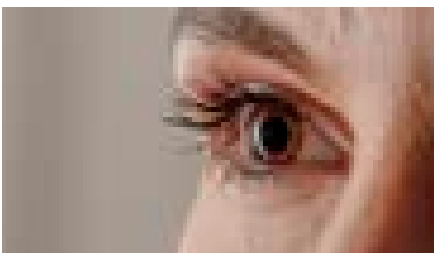
If you miss a drop, apply one drop once you remember.



Continue the eye drops until there is a change in doctor's advice.



Apply gentle pressure at the junction of inner corner of the eye and the nose with your index finger for 2 minutes.



The drops may not seem to provide any immediate noticeable effect on vision. The goal of glaucoma medication is to keep the eye pressure under control and prevent further vision loss.



GLAUCOMA

Silent thief of sight

EYE OINTMENT



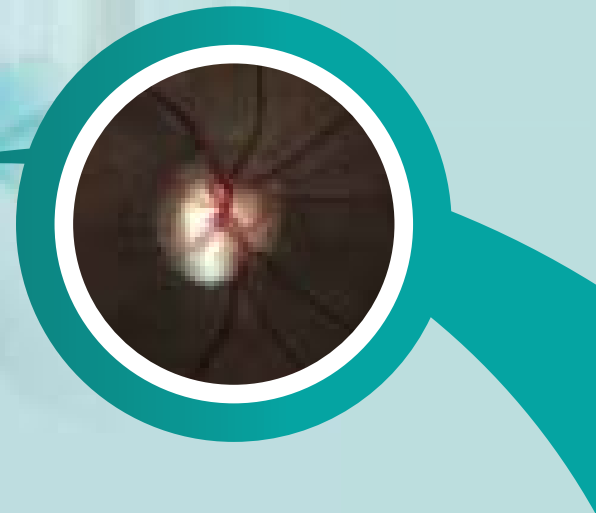
Hold the ointment tube close (within 1 inch) to the eye.

Gently pull the lower lid down forming a pouch into which rice grain size of ointment is placed.

Once adequate amount of ointment is placed, spin the tube a little. This helps the ointment fall off the tube into the eye.

Close the eyelids gently for a few minutes. There can be mild blurring of vision for a few minutes, post ointment application which is normal.

If an eye drop and an eye ointment is to be used at the same time, use the eye drops first, wait for 5 minutes, and then use the ointment.



LIVING WITH GLAUCOMA

People with glaucoma can have a good quality of life without fear of going blind, if their glaucoma is detected early and treated properly. Glaucoma can affect the day to day activities of an individual and small changes in lifestyle can be beneficial.

1

Glaucoma medication and doctor consult



- Be regular with your eyedrops and visits to the eye doctor.
- Set an alarm reminder every day to use your drops regularly.
- If you are using multiple medications, follow the timings prescribed by your doctor.
- If you use contact lenses, wear them at least 15-20 minutes after eyedrop application.

2

Lifestyle changes: a. Exercise



- Aerobic exercises in moderation, walking, maybe beneficial in reducing eye pressure.
- Certain yoga postures with head down, face down position may increase eye pressure and must be avoided.
- Avoid swimming, contact lenses if you have undergone a glaucoma surgery as it increases chances of infection. Talk to your doctor about it.
- Mindfulness meditation has been shown to lower stress and MAY BE beneficial in reducing eye pressure.

b. Sleep



- Poor sleep can cause eye pressure fluctuations. Sleeping in face down position may cause eye pressure rise. If you have disturbed sleep or excessive snoring or are diagnosed recently with sleep apnea, inform your eye specialist. Treating sleep apnea can positively impact glaucoma.

c. Diet



- Green leafy vegetables, colored fruits and vegetables can positively impact health as they are rich in antioxidants.
- Excessive caffeine intake, drinking about 3-4 cups coffee or tea per day, can increase eye pressure.
- Excessive water drinking in short span of time (1 L in 5-15 minutes), can cause sudden eye pressure spike.

d. Prolonged work on smartphones



- Prolonged work on smartphones in low light conditions may also cause temporary eye pressure increase.

e. Smoking



- Smoking-increases the chance of glaucoma along with other diseases like cataract and macular degeneration.

3

Blood pressure



- Lowered blood pressure in the night maybe associated with glaucoma worsening. Try avoiding night dose of antihypertensive in consult with your physician.

Is it okay to drive vehicles with glaucoma?

Glaucoma patients with visual field defects are at increased risk of road traffic accidents. Patients with moderate to advanced glaucoma must avoid, preferably stop driving, especially at night. Discuss this issue with your doctor.



How can family members help?

The diagnosis of glaucoma itself or progressive blindness due to worsening glaucoma can cause a lot of emotional stress to the patient. In such a situation moral support from family members is crucial. Family can also help out in instilling drops, reminding regarding medication and followup with the doctor. All family members must get screened for glaucoma.



How to cope with low vision?

Various low vision aids like magnifying glasses, CCTV, audio enhancement devices, use of large fonts on computer screens can help visually impaired. A qualified optometrist at the low vision aids clinic can gauge which one could be useful for you and provide training accordingly. Head scanning techniques, use of high contrast labels on objects of daily use and good illumination in rooms are important.



**SANKARA
NETHRALAYA**



Smt. Jadhavbai Nathmal Singhvee
Glaucoma Services, Sankara Nethralaya.