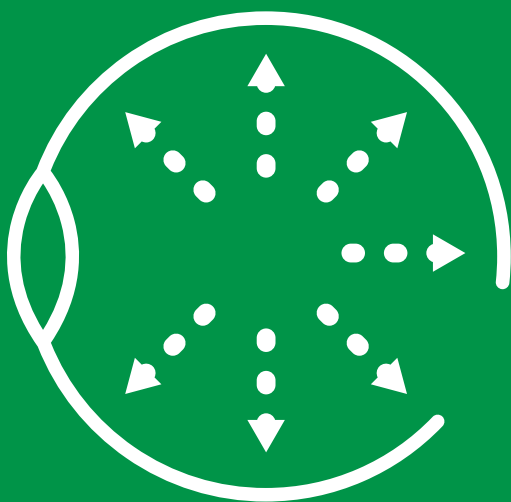


GENERAL INFORMATION

# GLAUCOMA



vision  
eye institute

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# WHAT IS GLAUCOMA?

**Glaucoma is commonly known as the ‘sneak thief of sight’ because it can cause irreversible vision loss without any obvious symptoms.**

The term glaucoma refers to a group of conditions that lead to eye (optic) nerve damage. This nerve transmits signals from the eye to the brain to produce the image that we see. When a significant part of the nerve is damaged, your side (peripheral) field of vision is lost – this vision loss gradually extends towards your central vision, until eventually all sight is lost. Vision loss caused by glaucoma is permanent.

Most cases of glaucoma are due to increased pressure inside the eye (intraocular pressure), either from the drainage angle that allows outflow of fluids from the eye being closed (angle-closure glaucoma) or the drainage angle being open but damaged (open-angle glaucoma).

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**UP TO 50% OF ALL PEOPLE WITH GLAUCOMA IN AUSTRALIA ARE NOT AWARE THEY HAVE THE CONDITION.<sup>1</sup> HOWEVER, IF IT IS DIAGNOSED EARLY, TREATMENT CAN BEGIN AND VISION LOSS CAN BE PREVENTED.**





## What are the symptoms of glaucoma?

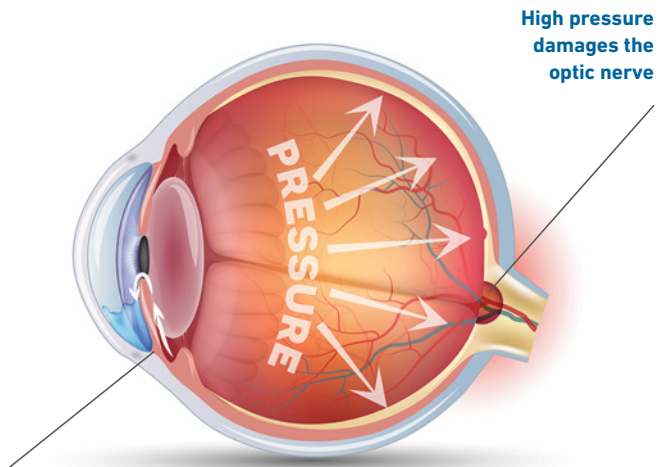
Most cases of glaucoma are asymptomatic – there is no pain and vision seems quite normal. When symptoms do occur, they include:

- Loss of side (peripheral) vision that gradually creeps towards central vision
- Blurred vision
- Difficulty adjusting to low-light conditions.

In acute angle-closure glaucoma, the drainage angle suddenly and completely closes up, causing the pressure inside the eye to rise very quickly. Symptoms for this type of glaucoma include:

- Sudden onset of eye pain
- Sudden vision loss
- Headache, nausea or vomiting.

This is a medical emergency and you should contact your ophthalmologist immediately or visit the nearest emergency department.



### Drainage canal blocked

too much fluid stays in the eye, which increases pressure

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# WHO IS LIKELY TO GET GLAUCOMA?

Anyone can get glaucoma, but some people may be at higher risk than others.

Risk factors include:

- A family history of glaucoma
- Age (40+)
- Migraines
- Increased eye pressure
- Being very short- or long-sighted
- Previous eye injury
- Current or previous use of steroids (e.g. for asthma, joint disease, eczema)
- Central thinning of the cornea.

Glaucoma treatment can stop or slow vision loss, but **vision that has already been lost cannot be recovered.**

Early detection of glaucoma is critical to preserve remaining vision. An optometrist will check your eye pressure during a routine eye exam and, if necessary, they will refer you to an ophthalmologist for further tests and diagnosis.

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**APPROXIMATELY  
300,000 AUSTRALIANS  
HAVE GLAUCOMA, BUT ONLY  
50% HAVE BEEN DIAGNOSED.<sup>2</sup>**



## How is glaucoma diagnosed?

A number of tests are carried out to diagnose glaucoma, including:

- Visual acuity (clarity) test using an eye chart
- Visual field test to determine peripheral vision
- An examination that involves using drops to dilate the pupils of the eye
- Tonometry to measure eye pressure
- Pachymetry to measure corneal thickness
- Gonioscopy to see if there is a blockage where the fluid normally drains out of the eye, and to distinguish between open-angle and closed-angle glaucoma
- Optical coherence tomography (OCT) to scan the optic nerve head to aid diagnosis and monitoring.

# HOW IS GLAUCOMA TREATED?

Unfortunately, there is no cure for glaucoma. But there are a number of treatment options available to help reduce eye pressure and minimise or prevent further vision loss. Sometimes, a combination of treatments may be used.

## MEDICATION

- **Eye drops** are very effective in controlling eye pressure for most people with glaucoma.



## LASER SURGERY

Laser treatment for glaucoma is performed in the clinic and does not require admission to a day surgery. Anaesthetic eye drops are used to numb the eye so there is little or no discomfort.

- **Selective laser trabeculoplasty (SLT)** uses laser pulses directed at the drainage outflow channels to stimulate the cells to clear away the debris and improve outflow, which in turn lowers the eye pressure. The laser is very safe, but its effect can wear off after a few years.
- **YAG laser peripheral iridotomy** is used in angle-closure glaucoma to create a channel in the iris (coloured part of your eye), which opens up the drainage angle and prevents progression of the disease.



## SURGERY

Surgery is used for patients whose glaucoma continues to progress despite medication and laser treatment.

- **Minimally invasive glaucoma surgery or MIGS** (e.g. iStent, Hydrus and iTrack devices) involves implanting a micro-stent into the drainage canal to bypass the outflow resistance. These are relatively new procedures to lower eye pressure and only require a small incision (like keyhole surgery) to insert the stent. They are characterised by their superior safety profile and short recovery period. In general, they work better in mild to moderate glaucoma.
- **Minimally invasive Bleb surgery or MEBS** (e.g. XEN or Preserflo) are implants that divert fluid into a 'bleb' or lake of fluid. They are less invasive and have a faster recovery time than traditional filtration surgery. Their long-term effectiveness is still under evaluation.
- **Glaucoma filtration surgery** (trabeculectomy) is the 'traditional' surgery for glaucoma, having been used for many decades. A tunnel is created to allow fluid to bypass the outflow obstruction and drain out of the eye into a 'bleb'. An anti-scarring agent (mytomycin C) is used to prevent closure of the new pathway. Trabeculectomy surgery is very effective but has a slow recovery period. It is reserved for patients with moderate to advanced glaucoma.
- **Glaucoma drainage devices** (Baerveldt, PAUL or Molteno) are relatively large drainage devices that are used to control eye pressure. The implant has a small tube that diverts fluid to a plate that sits on the surface of the eye, under the top eyelid. This procedure is usually reserved for advanced cases where a trabeculectomy is not suitable or has failed.

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# FAQs

## **Why is the eye (optic) nerve so important to sight?**

The optic nerve is an extension of the brain. It consists of a bundle of more than one million nerve fibres, carrying electrical signals from the eye to the brain. The brain then processes that electrical information into the image that we see.

## **Does increased eye pressure mean that I have or will develop glaucoma?**

Not necessarily. If eye pressure increases, you are at risk of developing glaucoma. However, it does not mean that you will definitely develop the disease. Some people can tolerate elevated eye pressure better than others. A particular level of eye pressure may be too high for someone and completely normal for another person. A diagnosis of glaucoma is only made if there is damage to the optic nerve.

## **Can I develop the disease without having an increase in my eye pressure?**

Yes, you can. This is called normal-tension glaucoma and is thought to be related to poor blood supply to the eye nerve.





## **What can I do to protect my sight from glaucoma?**

Vision lost from glaucoma cannot be recovered and treatment can only prevent worsening of the disease. Therefore, it's important that we detect glaucoma at an early stage, before it causes vision loss.

Everyone over the age of 40 who is in a high-risk group should have an eye examination every year.

If you have been prescribed medication to treat glaucoma, be sure to take them exactly as directed by your eye care professional. Do not stop taking the medication (even if your eyes feel ok) and make sure you attend regular checkups with your ophthalmologist.

## **What should I do if someone close to me is at risk of glaucoma?**

Encourage them to visit their eye care professional at least once every two years in order to have a comprehensive dilated eye exam. Remember that early treatment of glaucoma slows progression of the disease and will help to save vision.



## What can I do if I have already lost vision?

Patients with mild-to-moderate glaucoma will still have good central vision and can still see and read well. The side (peripheral) vision is first to be affected and, in most cases, is not noticeable.

In advanced glaucoma, vision can be severely restricted and you will need a formal assessment to see if you meet the minimum vision requirements to legally drive. Unfortunately, vision lost from glaucoma cannot be recovered but with treatment further vision loss can be prevented.

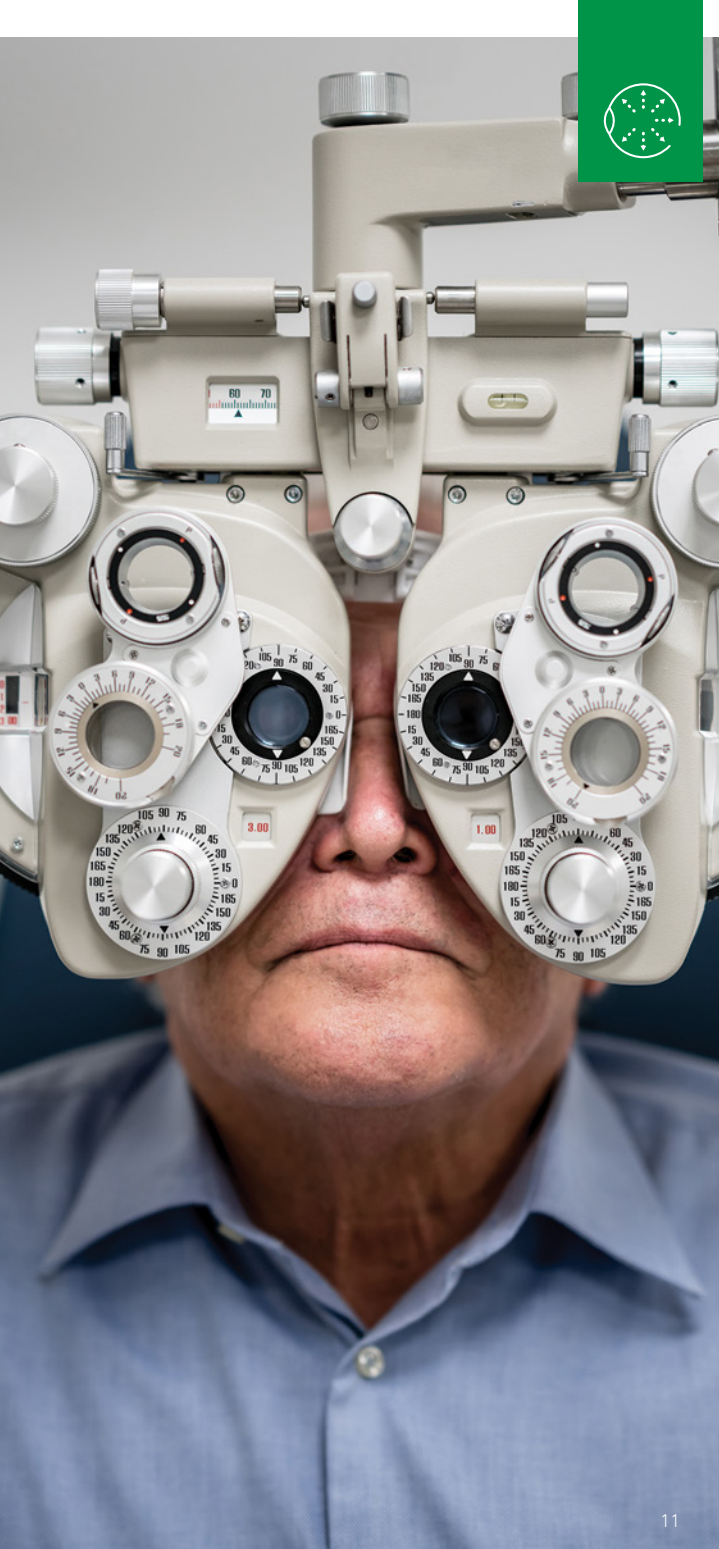
There are a number of low-vision services and devices that can help you make the most of your remaining vision. Anyone who has significant vision loss should be referred to a low-vision specialist in order to assist them with their ability to perform daily tasks.

There are a number of agencies and community organisations that offer counselling, training, and other special services for people with visual impairments.

### REFERENCES

1. Glaucoma Australia. What is glaucoma?. Available at: <https://glaucoma.org.au/what-is-glaucoma> (Accessed 16 September 2022)
2. Glaucoma Australia. Risk factors for glaucoma. Available at: <https://glaucoma.org.au/what-is-glaucoma/risk-factors-for-glaucoma> (Accessed 16 September 2022)





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## OUR GLAUCOMA CLINICS

For more information or to find a Vision Eye Institute clinic that treats glaucoma, visit:

[visioneyeinstitute.com.au/services/glaucoma](http://visioneyeinstitute.com.au/services/glaucoma)

This information is general in nature. All medical and surgical procedures have potential benefits and risks. Consult your ophthalmologist for specific medical advice.



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