

GLAUCOMA

# UNDERSTAND MORE ABOUT GLAUCOMA



Tomorrow's Eye Care, Today<sup>®</sup>



Singapore National  
Eye Centre

SingHealth

# Glaucoma

Glaucoma accounts for 34 per cent of blindness in Singapore, and is the second major cause of blindness in Asia after cataracts. Most blindness from glaucoma is preventable if the disease is treated early or well controlled. However, all forms of glaucoma, if left untreated, will lead to irreversible blindness.

## What is glaucoma?

Glaucoma is a group of diseases with characteristic optic nerve damage, resulting in irreversible loss of vision. Most, but not all of these diseases are characterised by raised pressure in the eye (intraocular pressure). The level of this pressure that causes damage can vary in different individuals and the resistance level of the optic nerve.

Glaucoma is known as the 'Silent Thief of Sight' as the initial vision loss is mainly peripheral and not readily noticeable. Central vision and reading vision are usually spared until later.

The patient may thus remain asymptomatic until late in the disease when most of the vision has already been irreversibly lost.



Normal vision



Vision with glaucoma

## What causes glaucoma?

Glaucoma is usually caused by fluid pressure in the eyeball that is too high for the optic nerve to tolerate. The optic nerve carries visual impulses from your eye to the brain. This pressure build-up occurs because of an imbalance between the production and drainage of fluid within the eyeball.

## What are the different types of glaucoma and their symptoms?

### Open-angle Glaucoma

Open-angle glaucoma accounts for the majority of glaucoma in most countries. It is asymptomatic and progresses slowly. The rise in intraocular pressure is slow and painless.

## **Closed-angle Glaucoma**

Angle-closure glaucoma can either be acute or chronic. Acute angle-closure glaucoma is characterised by a sudden, dramatic increase in intraocular pressure. This can cause severe eye pain, redness, blurred vision and the appearance of haloes around lights.

Headaches, nausea and vomiting may follow. This emergency requires prompt treatment. The chronic form may be asymptomatic as in open-angle glaucoma.

## **Congenital Glaucoma**

Congenital glaucoma is rare and occurs at birth. Enlargement of the infant's eyes, corneal haze, tearing and unusual light sensitivity are symptoms that warrant an eye examination.

## **Secondary Glaucoma**

Secondary glaucoma may be caused by conditions such as poorly controlled diabetes, inflammation of the eye, tumours, previous eye surgery, injuries or cataracts in their advanced stages, or the use of steroid medications on the eye.

## Who is at risk of glaucoma?

Risk factors for glaucoma include:

- Age. Your risk increases when you are over 60 years old.
- Chronic diseases. You are at increased risk if you have diabetes or high blood pressure.
- Ethnicity. Asians are more susceptible to angle-closure glaucoma than Caucasians.
- Eye injuries
- Family history
- Use of corticosteroid
- Inherently high pressure inside the eye
- Refractive error (short-sightedness or myopia is a risk factor for open-angle glaucoma and long-sightedness or hyperopia is for closed-angle glaucoma).

## Is glaucoma inherited?

Glaucoma may affect several members in the same family. Therefore, it is important that family members and relatives of glaucoma patients be checked by an ophthalmologist.

## How is glaucoma detected and monitored?

The intraocular pressure of the eye is measured and the optic nerve at the back of the eye is assessed for any damage. A visual field test is usually performed and other tests can be added to further assess the optic nerve and the state of the drainage system for fluid in the eye.

The visual field test assesses the function of the optic nerve by checking if you can see spots of light of different intensities at different locations inside a visual field machine. It helps the ophthalmologist determine if your disease is worsening or stable.

### **Visual field test:**

- To perform well, stare at the central marker and do not look elsewhere.
- Press the button only if you see a spot of light.
- Hold the button in a depressed position if you need to rest or pause the test.
- If you are tired or unwell, please let the technician know.

# Glaucoma

## How is glaucoma treated?

Glaucoma cannot be cured, but in most cases, it can be successfully controlled.

Treatment depends on the type of glaucoma you are diagnosed with.

Treatment modalities include:

- Eye drops
- Oral medications
- Laser surgery
- Filtering surgery
- Drainage implants

All these treatments lower the intraocular pressure to a level that is safe for the eye. Your ophthalmologist will be able to advise on individualised treatment options. Even after successful control of the pressure, regular monitoring is still required.

Glaucoma is a chronic condition requiring lifelong review. The aim of treatment is to preserve the remaining vision. Damage from glaucoma cannot be reversed, hence the importance of early diagnosis.

## **Is laser or surgical treatment useful? Will I be cured after these treatments?**

There is no cure for glaucoma, but laser treatment may help to control the disease. Laser treatment is an outpatient procedure and no fasting is required. It is not painful.

In some cases, surgery is recommended. This could be due to the type of glaucoma, or when medications and/or laser treatment fail to control the condition. In general, surgery provides an alternative route for the fluid inside the eye to drain out, thereby lowering the intraocular pressure to a safe level.



After surgery, follow-up visits are required for long-term control. Your ophthalmologist will discuss with you in detail the risks and benefits of the particular surgery offered.









## **What research is being done?**

The Singapore National Eye Centre works closely with the Singapore Eye Research Institute to conduct clinical trials and research into the causes and treatment of major eye diseases such as glaucoma. You may be invited, if suitable, to take part in a clinical study. We are always appreciative of any help you could offer for research as you may be helping future generations of patients with glaucoma. You are under no obligation to participate in any study.

# LOCATION MAP



## Legend

-  MRT Station
-  Taxi Stand
-  East West Line
-  North East Line
-  Shuttle Bus Service  
Mon to Fri ( 8.00am - 7.00pm )  
Sat ( 8.00am - 2.00pm )
-  Opp Outram Park Stn  
Bus No. 33, 63, 75, 121,  
122, 174, 174e, 851, 970
-  Outram Park Stn/Outram Rd  
Bus No. 33, 63, 75, 121, 122, 174,  
174e, 534, 535, 549, 761, 851, 970
-  Outram Park Stn Exit F  
Bus No. 61, 124, 143, 147,  
147e, 166, 197, 961, 961C

This patient information leaflet is a general guide to help patients understand specific eye conditions, treatment or tests. The information does not replace the need for individual advice from an ophthalmologist. Please consult with your ophthalmologist about your specific eye condition and/or concerns.

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## Singapore National Eye Centre

11 Third Hospital Avenue, Singapore 168751

Appointments: (65) 6227 7266 Fax: (65) 6226 1884

Email: [appointments@sneec.com.sg](mailto:appointments@sneec.com.sg)

Website: [www.sneec.com.sg](http://www.sneec.com.sg)