

# Coming to grips with glaucoma

Of the many eyesight deterioration conditions that the elderly have to grapple with, glaucoma is one that is of particular concern.

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With more than 67 million cases worldwide, glaucoma is the most common cause of irreversible blindness. It occurs in 3% of the general population, with the incidence increasing to 10% for those 70 years and above. In Singapore, it accounts for more than one-third of blindness.

Glaucoma describes a group of eye diseases with characteristic damage to the optic nerve. This means that of all the many types of diseases that cause damage to the optic nerve, glaucoma stands out because the appearance is very different and special.

Glaucoma is usually caused by elevated fluid pressure within the eye (intra-ocular pressure). Sufferers don't always experience any noticeable symptoms until the disease is very advanced and by then, most of their vision would have been irreversibly lost.

Fortunately, even though the disease cannot be prevented or cured, it can be controlled to prevent blindness.

## Common glaucoma types

### • Open angle glaucoma

This type of glaucoma progresses slowly and doesn't cause symptoms, even when the eye pressure is elevated. As a result, it is often detected late. This form occurs most frequently in the world.

### • Closed angle glaucoma

Common amongst Asians, this glaucoma can occur in acute or chronic form, and usually affects individuals over 60, with women being more at risk than men. In chronic form, the eye pressure rises gradually so the individual may not experience any symptoms until late in the disease.

With acute onset, however, eye pressure shoots up suddenly, causing severe eye pain, redness and blurred vision. The patient often sees haloes around lights, accompanied by severe headaches, nausea and vomiting. This is an emergency and requires urgent treatment to prevent permanent vision loss.

### • Secondary glaucoma

If the glaucoma is caused by identifiable conditions, it's called secondary glaucoma. These include poorly controlled diabetes, eye injuries and previous eye surgery. Inflammation in the eye, use of corticosteroid medications or other eye conditions that obstruct drainage of fluid in the eye are also likely causes, as with advanced stage cataracts.



## Risk factors

- Age – risk increases beyond 60 years, so those over 45 are encouraged to undergo regular eye examinations
- Ethnicity & gender
- Family history
- High fluid pressure of the eye
- Chronic diseases such as diabetes mellitus
- Eye injuries or previous eye surgery
- Use of corticosteroid medications
- Short-sightedness (myopia) – a risk factor for open angle glaucoma
- Long-sightedness (hyperopia) – a risk factor for angle closure glaucoma

## Managing the pressure

Glaucoma is diagnosed through examination of the eye and measurement of the fluid pressure. It includes checking a patient's visual fields to determine the severity of vision loss. To aid assessment of the severity and progression of disease, newer diagnostic tools such as the optical coherence tomography are used to take high resolution images of the optic nerve and surrounding layers of cells, helping doctors make better decisions for treatment.

Glaucoma can usually be controlled by lowering the eye pressure with eye drops and oral medications. But if the medications are not effective, or if the patient has adverse reactions to the drugs, then laser treatment or surgery will be offered. For example, laser can be used to help clear the microscopic debris and improve drainage of fluid. Patients experience minimal discomfort and the treatment can be repeated if necessary.

There are newer forms of surgery undergoing clinical trials in different countries, called minimally invasive glaucoma surgery (MIGS). These involve implants of very small devices in the eye, and if successful, could provide glaucoma sufferers an additional means of draining eye fluid and reducing eye pressure.



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