

Glaucoma begins at the optic disc in the back of the eye, leading to damage of the optic nerve.

Types of Glaucoma

Open Angle Glaucoma (OAG)

Most people with glaucoma have forms of chronic (long-running) Open Angle Glaucoma.

Primary Angle Closure Glaucoma

Primary Angle Closure Glaucoma can develop very slowly, like chronic open angle glaucoma, or can occur suddenly. In the case of Acute Angle Closure Glaucoma, the eye becomes very red and painful and vision is lost in a matter of days if appropriate treatment is not begun.

Glaucoma may also follow on from other eye diseases or an eye injury.

Glaucoma occurs in 2% of the population over 40 and as high as 10% of the population over 80.

Young adults, children and even babies can have glaucoma, but these types are rare.



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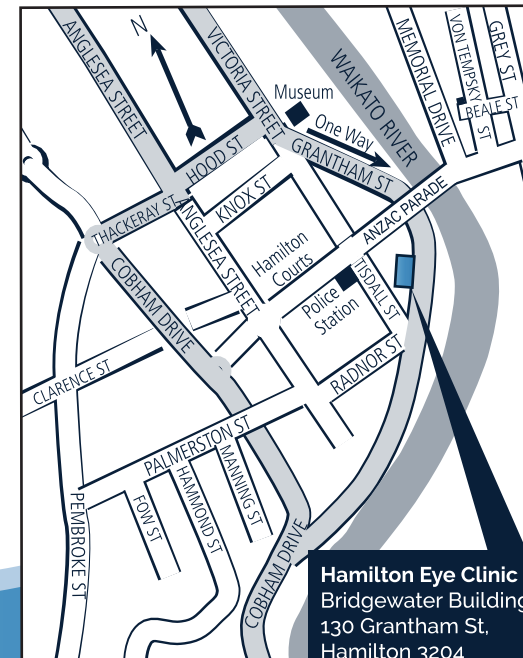
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HAMILTON EYE CLINIC

A guide to Glaucoma

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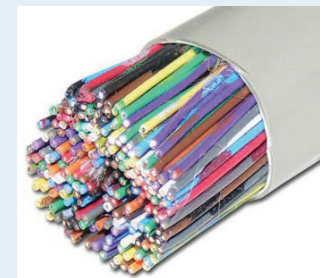
Glaucoma, a common group of eye conditions, can lead to blindness.

It is a leading cause of preventable blindness in developed countries, including New Zealand. Fortunately, if glaucoma is detected early and managed appropriately, blindness can almost always be prevented. Glaucoma is most often controlled using eye drops. Laser and surgery are also used.

Glaucoma is a disease of the optic nerve, the “telephone cable” that captures and carries visual information to the brain. Most cases of glaucoma proceed very slowly, as optic nerve fibres are gradually lost.

The brain does not recognize that patches of vision are missing until the damage from glaucoma is very advanced.

Regular eye examinations from the age of 45 are recommended and earlier if glaucoma is present in the family. **Normally there is no perceived visual disturbance nor eye discomfort to warn someone that they have glaucoma.**



Telephone cable

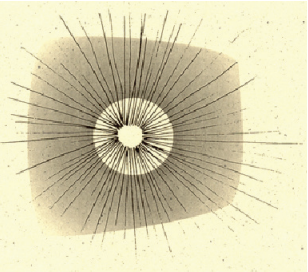
The visual system is like a digital camera (the eye) connected to a computer (the brain) that makes sense of what the camera detects. The optic nerve is the “cable” that connects the eye to the brain.

Waikato's Specialist Eye Centre
and Eye Surgery Facility

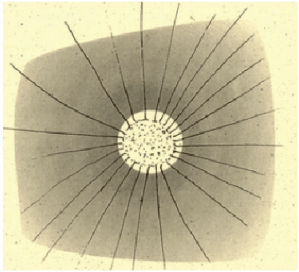


Detection

Glaucoma is detected through **routine eye examinations** by your optometrist. Glaucoma causes a characteristic type of erosion of the optic disc called **cupping**, which can be seen when the back of your eye is examined.



Normal disc with a normal sized cup



Enlarged disc with cupping suggesting glaucoma

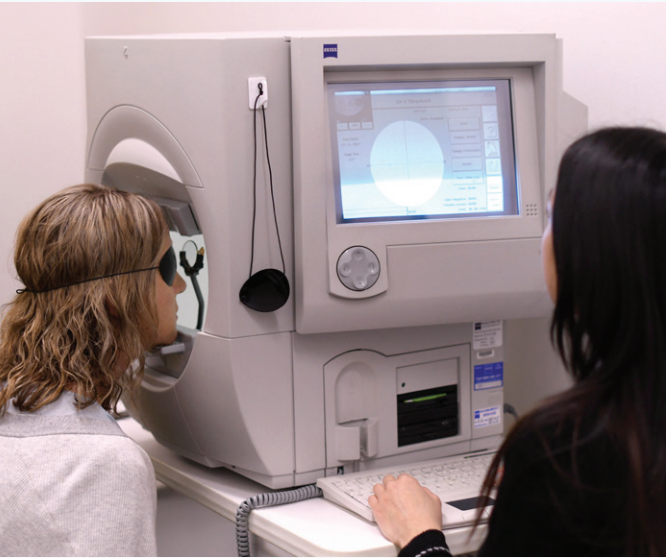
Elevated eye pressure is usually associated with glaucoma (but not always).

Patchy loss of side vision is detected and monitored by Visual Field testing.

Management of Glaucoma

If your optometrist sees signs of glaucoma, you will be referred to an ophthalmologist. The ophthalmologist will establish your glaucoma diagnosis and treatment plan using the following methods:

- Checking your eye pressure
- Testing visual fields
- Measuring corneal thickness
- Recording the optic disc appearance
- Measuring the nerve fibre and ganglion cell layer thickness with the OCT.



Visual Field testing



Patient on OCT machine

Management of glaucoma is all about detecting, then monitoring and controlling the disease to prevent blindness. This is done in several ways.

Optical Coherence Tomography is a non-invasive imaging test that can measure the thickness of various retinal layers at the back of the eye. This is a painless process that uses light waves to take cross-sectional pictures of your retina. We then compare the test results to normal references and the individual’s previous records to detect changes.

Further cupping or haemorrhages at the optic disc indicate progressive Glaucoma.

Visual Field testing is usually performed annually, once a reliable baseline is established.

Treatment of Glaucoma

While there is a lot more to glaucoma than eye pressure, at present the only way we can treat glaucoma is by lowering eye pressure.

If we can get the eye pressure down to a safe level, in almost all cases we will halt the disease, or at least slow it down so that significant vision impairment does not occur.

The “safe” level of pressure is different for each patient, so we set “target pressures” for every individual.

Most patients use **eye drops** to keep their eye pressures at a safe level.

Laser treatment (**laser trabeculoplasty**) is a very safe and generally painless way to treat glaucoma and should be considered for all newly diagnosed cases. Successful laser treatment may keep the eye pressure down for many years without requiring eye drops.

Surgery is also used to treat glaucoma in cases where eye pressure cannot be controlled by drops or laser, or when patients cannot tolerate eye drops or cannot use them regularly.

Having glaucoma means that you will have a life-long association with your ophthalmologist. **The disease can be controlled but not cured, and it is essential that patients are seen regularly, usually every 6 months.**

Typically, glaucoma can be well controlled, but treatment may need to be modified over the years.