



Glaucoma is the second leading cause of blindness in North America, affecting more than 400,000 Canadians. There are different kinds of glaucoma, which is why it is described as a group of related diseases. Glaucoma affects the retinal cells, which send visual information to the brain through the optic nerve. In glaucoma, the optic nerve is damaged, which leads to vision loss. This damage is often associated with elevated pressure in the eye.

There is no cure for glaucoma, but early detection and treatments can help save your vision.

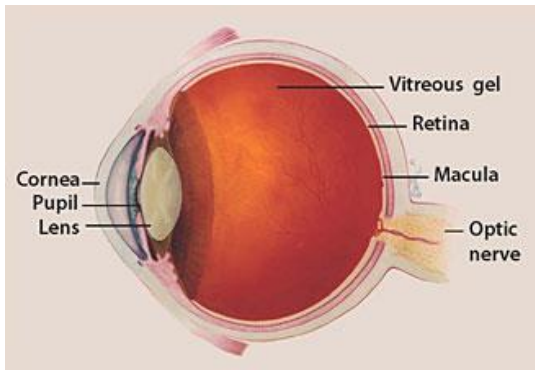


Diagram from the National Eye Institute
(https://nei.nih.gov/health/glaucoma/glaucoma_facts)

Glaucoma Symptoms

In most types of glaucoma there are no early symptoms that can be self-detected. Glaucoma can develop in one or both eyes. It is important to have regular eye exams because your eye doctor can conduct tests to detect glaucoma and save your vision.

If you experience any of these symptoms, please visit your ophthalmologist.

- Loss of peripheral (side) vision

- Halos around lights
- Eye pain and/or redness
- Blurred or decreased vision
- Eye pain

Detecting and Diagnosing Glaucoma

Open-angle glaucoma is the most common form of the disease. It often goes unnoticed because there are no symptoms until vision is lost. In contrast, angle-closure glaucoma can be painful with a sudden onset. Your eye doctor will conduct a variety of tests to offer a more specific diagnosis, including:

- **Visual acuity test** to assess your ability to see from different distances.
- **Visual field test** to measure your peripheral vision.
- **Dilated eye exam** to check the optic nerve and the retina.
- **Tonometry** to measure the pressure inside your eye. **This is important because glaucoma often results from changes in intraocular pressure (IOP).** An increase in IOP occurs when the eye's fluids cannot drain properly. Increased IOP can damage the optic nerve and cause vision loss.
- **Pachymetry** is used to measure the thickness of the cornea.
- **Optical Coherence Tomography (OCT)** is a special scan that is used to examine the retina and optic nerve.



There are many innovative new tools to help with early detection and treatment of glaucoma. Your eye doctor will help to determine the best tests for you.

Causes and Risk Factors

Anyone can develop glaucoma. There are many different factors that increase your risk of developing the disease, including:

- High intraocular pressure
- High blood pressure
- Family history of glaucoma
- Corneal thickness
- Over the age of 40
- Previous eye injury
- Long-term use of steroids
- African, Asian, or Hispanic
- Nearsighted
- Diabetic

Treatment

Glaucoma treatments aim to lower your eye pressure and prevent vision loss. Drugs are often delivered as eye drops. Laser treatment or surgery can also help to drain fluid from the eye.

The following five categories of drugs are commonly used to treatment glaucoma. They involve different side effects, which you should discuss with your doctor:

1. Beta-Blockers are used to lower intraocular pressure (IOP) by decreasing the amount of fluid in the eye (aqueous humour). Common beta-blockers include: levobunolol (Betagan, AKBeta); timolol (Timoptic); timolol gel (Timoptic XE). The only selective beta-blocker is betaxolol (Betoptic, Betoptic S).

2. Prostaglandin analogues and prostamides are used to lower IOP by increasing the outflow of fluid from the eye. Common drugs include: latanoprost (Xalatan); bimatoprost (Lumigan); and travoprost (Travatan)

3. Alpha-agonists are used to lower IOP by decreasing the production of fluid in the eye. Common drugs include: apraclonidine (Iopidine); brimonidine (Alphagan, Alphagan P); and dipivefrin (Propine). Brimonidine is a generic version of Alphagan.

4. Carbonic Anhydrase Inhibitors (CAIs) are used to lower IOP by decreasing the production of fluid in the eye. Topical drugs include: dorzolamide (Trusopt); and brinzolamide (Azopt). Oral medications include: acetazolamide (Diamox, AK-Zol); acetazolamide sustained-release (Diamox Sequels); and methazolamide (Neptazane, GlauTabs).

5. Combined Agents allow you to take multiple drugs in a single eye drop. Common drugs include: Combigan (Combines a beta-blocker and an alpha-agonist); Cosopt (Combines a beta-blocker and a CAI); DuoTrav (Combines a prostaglandin analog and a beta-blocker); Xalacom (Combines a prostaglandin analog and a beta-blocker).

There are many treatment options for glaucoma. Talk with your doctor to learn what is best for you.