Glossary

Aqueous humor an ocular fluid that bathes and nourishes the front parts of the eye

Glaucoma an ocular disease associated with damage to the optic nerve that may eventually lead to blindness

Hyperemia also known as redness of the eye

Intraocular pressure (IOP) the amount of pressure in the eye. It is measured in units called mm Hg (millimeters of mercury). High IOP is a risk factor for glaucoma and the main target of therapy

Iris the colored part of the eye

Open-angle glaucoma (OAG) the most common form of glaucoma

Optic nerve a large nerve located behind the eye that carries visual signals to the brain

Peripheral vision also known as side vision. This is the area of patients' vision that begins to disappear when they get glaucoma

Prostaglandin analogue a class of drugs that lowers IOP by increasing aqueous humor outflow

Tonometry a common method used to measure IOP

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The sneak thief of sight

Glaucoma, often called the “sneak thief of sight,” is a disease that strikes without any obvious symptoms. You usually don't even know it's there until serious vision loss has occurred. And unfortunately, there is no cure for glaucoma. Once you have lost your vision, it can't be restored.

The good new is that glaucoma can be detected early before there is any loss of vision. Plus, there are convenient treatments that can lower intraocular pressure (IOP), one of the major risk factors associated with glaucoma.

The keys to managing diseases that cause vision loss are early diagnosis, proper treatment, and regular eye exams. Your eye doctor has ways to assess your risk for developing glaucoma and can prescribe treatments to help prevent or delay vision loss if you have glaucoma.

This brochure will help you learn more about glaucoma, the various treatment options and steps you can take to help manage your disease.

NOTE: As you read this brochure, you'll notice some words are boldface. You can find these words and other technical terms in the glossary on Page 8

Why is glaucoma the main suspect?

Glaucoma is an eye disease that involves damage to the optic nerve, which sends visual signals to the brain. No one knows exactly what causes this damage, but pressure buildup in the eye is proven to be one of the major risk factors associated with glaucoma (see Page 6 for more about IOP). When the optic nerve gets damaged by high IOP, some signals from the eye aren't transmitted to the brain. This can result in visual field loss, and if not managed, could eventually lead to blindness.

There are several different types of glaucoma. The most common is called open-angle glaucoma (OAG), which accounts for about 80% of all cases. It develops slowly over time, usually after the age of 40. Patients with this type of glaucoma may experience a gradual narrowing of their peripheral vision, which many call “tunnel vision,” or areas of vision loss.

Why is IOP such an important clue?

The front of the eye is filled with a liquid called the aqueous humor. This is produced by the eye to bathe and nourish its different parts. The aqueous humor normally flows out of the eye through various paths and chambers. When these paths get clogged, aqueous humor gets trapped in the eye. This causes a pressure buildup and leads to high IOP.

Doctors can easily measure IOP, and use it as an important clue in the diagnosis and treatment of glaucoma. Normal IOP is about 12 to 22 mm Hg (millimeters of mercury, which is the unit used to measure IOP). One of the most common and important tests for measuring IOP is tonometry. Tonometry is a procedure in which your doctor uses a tonometer to measure IOP. This test is important because high IOP is a major risk factor for glaucoma. However, high IOP doesn't necessarily mean you will have glaucoma, nor does normal IOP mean you don't have glaucoma.
Controlling IOP is the major goal of glaucoma therapy. When IOP is controlled, the optic nerve is less at risk of being damaged, so vision may be preserved.

Could I become a victim?

Glaucoma is one of the most common causes of preventable blindness. Over 3 million Americans have glaucoma, yet only half of them are aware they have it. One out of every five sufferers has a close relative with it. In the United States, approximately 120,000 people are living with blindness because of glaucoma.

Could you be one of these people? Only your doctor can help you find out, but some people are at greater risk than others. Studies have proven that anyone who meets one or more of the following criteria is at increased risk:

- Over the age of 40
- Family history of glaucoma
- Abnormally high IOP
- African, Scandinavian, Celtic, or Russian ancestry
- Diabetic
- Near-sighted
- Regular, long-term use of steroids/cortisone
- Previous eye injury

How can glaucoma be stopped?

It's awfully hard to stop glaucoma completely, but we have years of research that shows that treating the disease early helps preserve vision.

The primary effect of any glaucoma treatment is lowering IOP. This has been proven over the years to be an effective way to help prevent or slow down vision loss in glaucoma patients. IOP can be lowered with medication and/or surgery. In most cases, medication is used before surgery, which is often reserved for patients who haven't responded adequately to or are intolerant of medications.

There are several different types of glaucoma medications. A few of them are highlighted here. Your eye doctor should prescribe the treatment that best fits you needs.

**Beta blockers**

These drugs have been around to treat glaucoma for over two decades. The most commonly used beta block is timolol. The dosing of beta blockers ranges from once daily to twice daily. Beta blockers work by decreasing production of the aqueous humor, which lowers IOP. Some of the side effects include low blood pressure, slow heart rate, and general fatigue. If you have asthma, let your eye doctor know.

**Prostaglandin analogues**

This is the newest class of glaucoma drugs. Prostaglandin analogues were first introduced in the United States in 1996. These drugs are usually prescribed when patients have trouble tolerating their current medication or when that medication is not working well enough. All work by increasing the flow of aqueous humor out of the eye, thus lowering IOP.

Prostaglandin analogues may gradually darken eye color by increasing the amount of brown coloring in the iris. Although these changes can occur slowly, they may be permanent. They may also cause redness in the eye.

**Alpha agonists**

Brimonidine is the most common alpha agonist. It should be dosed two times a day in the eye. Alpha agonists cause an increase in outflow, as well as a decrease in production, of aqueous humor to lower IOP. Brimonidine can cause ocular allergic reactions and drowsiness.

If you have any of these risk factors, it is important that you get regular eye checkups. Early detection and treatment of glaucoma can slow the disease's progression and help prevent blindness.
Carbonic anhydrase inhibitors

Carbonic anhydrase inhibitors are available in oral formulations or eye drops like brinzolamide or dorzolamide. Dosing for these eye drops is three times a day. Carbonic anhydrase inhibitors lower IOP by decreasing the production of aqueous humor. The severe side effects, such as nausea and diarrhea, common with the oral forms, are largely avoided with eye drops. The eye drops are fairly well tolerated, causing a minor ocular stinging or burning sensation.

Miotics

Pilocarpine is the most common miotic. It has been around for decades, and is usually dosed in the eye three to four times a day. Miotics decrease IOP by increasing outflow of aqueous humor. Side effects include blurred vision, browache, and small pupil size.

If you have any of the risk factors for glaucoma or are over age 40, you should schedule an exam with an eye care professional.

If your doctor determines that you have glaucoma, he or she may prescribe a treatment regimen. This will most likely included one or more medications to help lower IOP.

Using the glaucoma treatment your doctor prescribes to control your IOP should help preserve your eyesight.

How to use Ophthalmic Solutions

If you wear contacts, remove them before applying Ophthalmic Solution.

Gently squeeze the bottle, dispensing one drop into your eye(s), as prescribed.

To prevent potential contamination of the product that could lead to eye infections, do not let the dropper tip touch your eye or the area near your eye.

If you use more than one eye-drop medicine, wait 5 minutes before applying the next medicine.

Contact lens wearers should wait 15 minutes after treatment before re-inserting lenses.

Hyperemia Scale

None

Mild

Moderate

Severe

Make sure to use your medicine

No matter what medication your eye doctor prescribes for you, it is important to follow your doctor’s instructions. In fact, your doctor may put you on two or more of these medications if you need them. Failing to use medication as prescribed by your doctor may help speed the progression of glaucoma and possibly lead to blindness.