Patient Information

All Eyes on Glaucoma

In a healthy eye, fluid flows constantly in and out, delivering nutrients to the eye tissue and keeping it lubricated. Sometimes, for reasons still mostly unknown, that fluid can't drain properly from the eye, and the pressure inside the eye—called *intraocular* (in-truh-**ock**-yuh-ler) pressure—rises. This can lead to *glaucoma* (glaw-**coe**-muh), a condition in which gradual damage to the nerve that carries information about what you see to your brain slowly causes vision loss.

As one of the leading causes of blindness in the United States, glaucoma is estimated to affect over three million Americans. Unfortunately, only half of all people with the disease know they have it. Since there's no cure, and because vision damage caused by glaucoma can't be reversed, the best way to protect your sight is through regular eye exams. That way, glaucoma can be caught early and treated—so that its effects can be stopped or slowed.

How do I know if I'm at risk?

Anyone can get glaucoma, from newborn babies to elders. But your risk of developing the condition is greater if you:

- are black or Asian;
- are over age 60;
- have a family history of glaucoma;
- have diabetes;
- use certain medications regularly, such as steroids for asthma;
- have injured your eye; or
- are nearsighted.

What are the warning signs?

Most forms of glaucoma—including open angle glaucoma, the most common—have no symptoms at first. In the early stages, vision remains normal, and the rise in eye pressure rarely causes pain. Eventually, though, you begin to lose sight on the edges of your field of vision. If the disease goes untreated, the visual field continues to shrink over time, as if you're looking through a narrowing tunnel, until even objects directly in front of you are hard to make out.

One type of glaucoma, called angle closure glaucoma, does have warning signs. They include headache, eye pain, nausea, "rainbows" around lights (especially at night), and blurred vision. These symptoms, which may improve when you enter a well lit room or go to sleep, tend to occur suddenly as "attacks" and may be intense or mild.

When do I need medical attention?

Since glaucoma usually develops without warning, the most important thing you can do is keep up with your regular eye care appointments. Of course, if you notice any changes in your sight, schedule an eye exam as soon as possible. And if you have any severe symptoms, get medical attention immediately.

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During an eye exam, your doctor will use eyedrops to dilate your pupils. By looking through the dilated pupil with a device called an *ophthalmoscope* (off-**thal**-muh-skope), the doctor can check the inside of your eye for signs of damage.

Intraocular pressure is measured using a *tonometry* (toe-**nahm**-uh-tree) test. This test involves either a puff of air or an instrument that pushes lightly against the eye. When an instrument is used on the eye itself, the doctor will give you numbing eyedrops first.

Another test measures your field of vision. In this test, you look straight ahead and indicate, sometimes by pressing a button, when a moving light comes into view. If any of these tests are abnormal, further examination may be needed.

How can I avoid the problem?

Although little is known about how to avoid glaucoma entirely, early detection and treatment can prevent or delay vision loss. Talk to your doctor about whether you have any special risk factors for glaucoma and how often you should have your eyes examined.

If you have glaucoma, be sure to take your medications exactly as your doctor and pharmacist advise. Even if your glaucoma produces no symptoms, your chances of vision loss are much higher without proper treatment.

Some vitamins and minerals—such as zinc, copper, vitamin C, vitamin E, vitamin A, and selenium—are important to eyesight and may improve the effects of glaucoma medications. Additionally, regular exercise may reduce intraocular pressure and can help with other glaucoma risk factors, such as diabetes. Your doctor can help you design the best plan for improving your dietary intake and fitness level.

How is it treated?

Whether in the form of eyedrops or pills, glaucoma medication works to lower intraocular pressure in one of two ways. Some drugs, such as beta-blockers and *carbonic* (car-**bon**-ick) *anhydrase* (ann-**hi**-drays) inhibitors, slow the flow of fluid into the eye. Others, such as *miotics* (my-**ot**-icks), speed fluid drainage. These drugs often can control glaucoma's progress, but their usefulness can weaken over time, and some can have unwanted effects.

Another option is laser surgery, which uses a strong beam of light to stretch the meshlike openings that drain fluid from the eye. This procedure usually takes between 10 and 30 minutes, and since your eye is numbed beforehand, it's virtually painless. As with drug therapy, however, laser surgery's effects can wear off over time.

Traditional surgery is yet another way to improve your eye's drainage system and reduce intraocular pressure. This procedure, in which the doctor removes a small section of tissue from the meshlike drain, usually is performed only after drug therapy and laser surgery have failed.

Scientists are working on other methods of treating glaucoma—and looking for a cure. In the meantime, resources are available to help you adjust to life with glaucoma. For example, your doctor can put you in touch with glaucoma support groups, which allow you to share your thoughts and feelings with others who have had similar experiences. ●