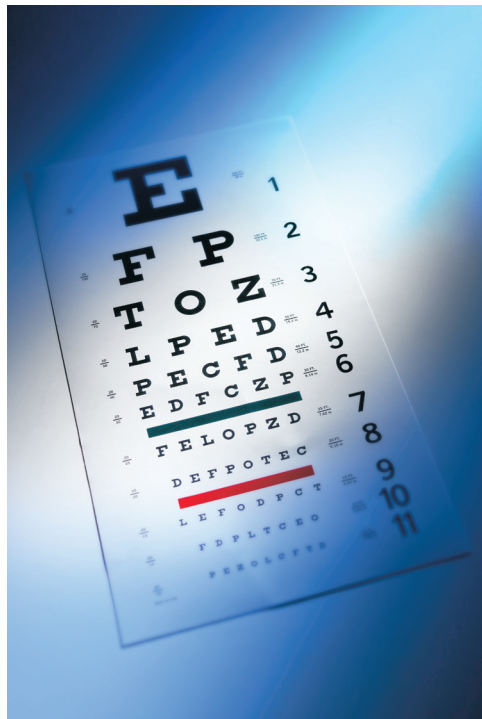


Guard Your Vision from Glaucoma, the “Silent Thief” of Sight

Your Best Defense: Eye Examinations, Awareness

By Jonna Jefferis



The kids in Jimmy Li's eighth-grade math class could be a rowdy bunch, but some had shown unusual maturity a few months ago, on the day that Jimmy thought he was going to die.

He had been explaining an equation at the blackboard when a stabbing eye pain came on so suddenly that he had to sit down. Seated behind the desk, his vision blurred and intense waves of nausea followed. He couldn't speak. At that point, the students, initially dumbstruck by their teacher's sudden vulnerability, took control. They summoned the principal and the school nurse, who called an ambulance.

At the hospital, Jimmy was admitted immediately for emergency eye surgery, and the next day learned that he had had an acute closed-angle glaucoma attack. The diagnosis surprised him, as he believed only older people developed this disease. Jimmy did not know that being Asian American put him in the high-risk category for this type of glaucoma, even though he was only 42.

Believe it or not, Jimmy was very lucky. His form of glaucoma produced symptoms warning him of the need for medical attention; and he was able to obtain treatment in time to save his sight.

March is World Glaucoma Month, a time to spotlight the potential danger of this devastating disease and the critical need for everyone to obtain regular, comprehensive eye examinations to protect their eyesight. Glaucoma is called the “silent thief of sight” because most victims, unlike Jimmy, experience no symptoms at all; they do not know they have the disease until irreversible damage has been done.

The chilling reality is that only half of the 3 million Americans who currently have glaucoma are aware of their affliction. Among U.S. Hispanics with glaucoma, an estimated 65% to 75% remain undiagnosed. Yet this stealthy eye disorder robs the vision of approximately 120,000 Americans every year, making it a leading cause of blindness.

There is no cure for glaucoma, and lost vision cannot be regained. But through early diagnosis, treatment can help prevent blindness. In fact, if it is detected and treated early, glaucoma need not cause even moderate vision loss. This is why it is so important to see your eye care professional for regular, comprehensive examinations.



How to Lower Your Risk

You cannot prevent glaucoma, but you can take steps to lower your risk of developing it. Here are a few things you can do:

- **Proper Diet.** Make sure your diet includes the right nutrients. Of all the nutrients that exist in the eye, lutein and zeaxanthin are most abundant. Found in green, leafy vegetables, they are now thought to protect the eyes against some of the negative effects of oxygen, and are considered more beneficial to eye health than carrots.

In 2007, Turkish researchers found that an antioxidant in vitamin E slows glaucoma-related damage to nerve cells. Vitamin E is present in wheat germ and nuts.

- **Slow Fluid Intake.** Drink fluids in small amounts. Drinking a quart or more of any liquid within a brief time span may increase intraocular pressure.

- **Moderate Computer Use.** Take regular breaks from your computer, even if they consist of merely averting your eyes from the screen for a few seconds. Studies have shown that focusing on a computer monitor over a period of time increases eye pressure. If you are experiencing eye strain, ask your eye care professional about VDT (video display terminal) eyeglasses.

- **Appropriate Exercise.** Consult with your doctor about an exercise program. Some exercises can moderately reduce eye pressure while others, such as some weight-lifting maneuvers, can increase it.

Subtle, Quiet Development

Glaucoma develops from subtle changes in the eye. Normally, a fluid flows continuously in and out of the eye's front chamber, nourishing nearby tissues and removing unwanted debris. The fluid exits through a drainage system of spongy tissue located at the open angle where the cornea and iris meet. Eventually, the fluid merges into the bloodstream.

A healthy eye produces and drains fluid at an equal rate in order to maintain an even internal eye (intraocular) pressure, which is needed for the eye to hold its shape and to function properly. But sometimes, when the fluid reaches the angle, its passage through the meshwork becomes slow, either due to a faulty drainage system or an especially narrow angle. As fluid builds up at the meshwork, eye pressure increases.

When intraocular pressure rises to a dangerous level—like a balloon that has been overfilled with air—something has to give. What “gives” is the eye's weakest point: optic nerve cells, which carry visual images to the brain. When optic nerve cells are damaged, blind spots develop. If the disease is allowed to advance, the entire nerve is destroyed, resulting in total blindness.

Many Roads to Sight Destruction

The most common form of glaucoma, primary (or chronic) open-angle glaucoma, is the second-leading cause of blindness in the U.S. It develops as a result of slowly rising intraocular pressure that gradually damages the optic nerve. The drainage angle remains open, but passage through it is slow. The cornea adapts to the changing pressure slowly, without swelling, so there are no symptoms.

As the optic nerve becomes more damaged, blank spots called scotomas begin to appear in the field of vision, usually beginning at the side. But the glaucoma sufferer typically won't notice these blank spots until the optic nerve has been damaged enough for them to become large. Blindness can result when all the optic nerve cells die.

In some glaucoma patients, the drainage angle formed by the cornea and iris becomes closed or blocked because it is very narrow. This form of glaucoma, called angle-closure (or closed-angle) glaucoma, may be an abnormality from birth (congenital glaucoma) or occur as a result of aging.

Angle-closure glaucoma can either progress gradually or appear acutely, as it did in Jimmy Li's case. When progression is gradual, there are no overt symptoms. Scars form slowly between the iris and the meshwork drain, and eye pressure will not rise until enough scar tissue forms to cover the drainage area. Unfortunately, two-thirds of those with angle-closure glaucoma develop it slowly without any symptoms to warn them that an acute attack might be coming.

The attack results from a sudden increase in eye pressure, which may cause severe pain and nausea, as well as redness of the eye and blurred vision. Acute angle-closure glaucoma is a medical emergency. If Jimmy Li had not gone to the hospital emergency room immediately and undergone surgery to improve the flow of fluid in his eye, blindness would have occurred in just one or two days. Rapid diagnosis and treatment saved his vision.

Up to one-third of all Americans with glaucoma have normal eye pressure, yet optic nerve damage has occurred and resulted in limited side vision. Called normal-tension or low-tension glaucoma, this form of the disease is not clearly understood. It is believed to be at least partially related to poor blood flow to the optic nerve. People at risk for this condition have a family history of either low-tension glaucoma or systemic heart disease.

About 10% of all glaucoma cases are secondary, arising as a complication of another medical condition. Examples are an eye injury, surgery, or tumor; some other eye disease, such as cataracts; a systemic medical condition, such as diabetes, sickle cell anemia or leukemia; use of certain drugs, such as steroids; and eye abnormalities or deformities.

Are You at Risk?

Everyone, from babies to senior citizens, may develop glaucoma.

Those with the highest risk either have elevated eye pressure, are of African or Spanish ancestry, are over age 60 or have a family history of glaucoma. In general, the disease is three times more common in African Americans than in Caucasians. Among people under 65, glaucoma appears to be more common in women, but by age 65, it is equally prevalent. Jimmy Li learned from his eye doctor that angle-closure glaucoma is most common in people of Asian descent.

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Approximately 10 patients per 1,000 with the above glaucoma risk factors develop the disease each year. The best way to protect your sight is to be tested. Don't wait for symptoms to occur. If you have one or more risk factors, schedule a comprehensive eye examination. For some African Americans and others with certain combinations of high-risk factors, pressure-lowering eye drops can reduce the risk of developing glaucoma by about half.

Halting the Damage

Glaucoma cannot be prevented, but if diagnosed and treated early, progression of the disease can be slowed or halted. With proper care and treatment, including regular follow-up eye examinations, it is almost always possible to preserve vision.

Having glaucoma means that Jimmy will need to continue treatment for the rest of his life. He considers this a small price to pay for his eyesight. Because the disease can change without the patient's awareness, people with glaucoma need regular checkups so the doctor can determine if treatment needs to be altered.

The most common treatment is medicine that either lowers eye pressure or causes the eye to decrease its fluid production. Pressure-lowering eye drops have proven effective even in cases of normal-tension glaucoma. Laser surgery may be performed to stretch drainage holes so that fluid will drain better from the eye. As a last resort, doctors may turn to conventional surgery to create a new opening for fluid to exit through. This is the surgery that doctors performed on Jimmy during his open-angle attack.

While these strategies may save remaining vision, they do not improve sight already lost from glaucoma. If you have glaucoma and have already lost some sight, ask your doctor about obtaining low-vision devices to help you make the most of your remaining vision.

The Bright Side: New Research

Researchers are laboring to unearth the causes of glaucoma development in order to improve its diagnosis and treatment. Gene-based differences in the optic nerve and anatomical variations in the cornea are two areas of study.

New treatments are also in development. Tests began in early 2005 on a new glaucoma therapy that combines laser surgery with insertion of a tiny device to relieve eye pressure. Advanced drugs are being evaluated continually, as well as drugs currently used for medical conditions other than glaucoma. Israeli researchers successfully tested a multiple sclerosis drug for optic nerve protection. In 2006, a different team began investigating how a drug for Parkinson's disease could help protect the optic nerve.

Researchers continue to explore new avenues of treatment and diagnosis. To take advantage of their efforts and arm yourself against the "silent thief of sight," it is critically important to visit your eye care professional for regular comprehensive examinations. The American Academy of Ophthalmology recommends that people over the age of 65 receive comprehensive evaluations at least once per year, or according to their eye care professional's recommendation. Younger adults should be evaluated for risk factors and follow the resulting examination guidelines set by their vision care provider.



159 Express Street • Plainview, N.Y. 11803
1-800-328-4728 • www.davisvision.com