

Glaucoma – The Sneak Thief of Sight

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Glaucoma has been dubbed the sneak thief of sight because of the insidious nature of the disease. It is the leading cause of blindness in African-Americans and Hispanics, and the second most common cause of blindness in the United States. There are over 2 million Americans with glaucoma, half of whom are unaware that they have the disease until they experience loss of part of their vision. Additionally, there are 5-10 million Americans with high eye pressure, which puts them at considerable risk for developing glaucoma.

In order to be diagnosed with glaucoma, the patient must have characteristic damage to their optic nerve or side vision. Glaucoma is broadly classified into two categories – open-angle or closed-angle. In most patients, glaucoma is caused by increased eye pressure, although there is also a low- or normal-pressure variant of open-angle glaucoma. The eye contains a tissue fluid known as aqueous humor. After circulating in the front chamber of the eye, the fluid is drained by the Canal of Schlemm. A blockage in this draining system causes the fluid pressure in the eye to increase and damage the optic nerve.

Open-angle glaucoma is characterized by a slow, gradual blockage of the draining site. This type of glaucoma is a lifelong condition and is the most common type of glaucoma, accounting for 90% of glaucoma in the United States. The symptoms for open-angle glaucoma may not be noticeable until part of the peripheral vision has already been damaged. In closed-angle glaucoma, the iris or colored part of the eye is pushed or pulled forward by several different mechanisms to block the canal of Schlemm, thus preventing the aqueous humor from draining. Patients with angle-closure glaucoma may experience blurred vision, severe eye pain, headache, nausea, and vomiting. Closed-angle glaucoma is a medical emergency that requires immediate treatment.

Glaucoma can be detected through a routine eye exam. It is recommended that patients with risk factors have a glaucoma-screening exam by age 40. The risk factors for open-angle glaucoma include a family history of glaucoma, age greater than 65, African-American or Hispanic race, use of steroid medications, nearsightedness, and any history

of high eye pressures. The risk factors for closed-angle glaucoma are Caucasian or Asian race, far-sightedness, age, woman gender, and a family history. The ophthalmologist checks the pressure, the drain, and the optic nerve for signs of the disease and may order a visual field exam and a new specialized test known as an optic nerve head analyzer. Your eye care provider can then assess your risk for developing glaucoma and recommend a timetable for follow up care to prevent any vision loss.

Although glaucoma can damage the optic nerve irreversibly, there are treatments that can stop the disease from progressing further. In open-angle glaucoma, all currently approved treatments are directed toward lowering eye pressure. This is accomplished by eye drops, laser treatment, or surgical treatment to create a new drain or external reservoir for the eye fluid. Most patients take eye drops one to two times a day to lower the eye pressure and reduce the risk of progression of glaucoma. Closed-angle glaucoma, on the other hand, is treated initially with laser treatment because it can cure the condition. If the closed-angle glaucoma is chronic however, your ophthalmologist may recommend additional eye drops or surgery to lower the eye pressure. Glaucoma surgery, known as trabeculectomy, is a highly successful surgery that creates a reservoir for the aqueous humor to drain. When combined with anti-scarring agents, trabeculectomy surgery can provide long-term control of eye pressure without eye drops for up to 15 years. The ophthalmologist can tailor a treatment that will be most effective for the patient's type of glaucoma and provide the best long-term solution to the disease.

The diagnosis and treatment of glaucoma has advanced considerably in the past decade. With new technology such as optic nerve fiber layer analysis, it is possible to detect glaucoma years before it affects the side vision. This knowledge empowers the ophthalmologist to intervene earlier in the course of glaucoma and preserve the quality of vision our patients deserve to lead full and meaningful lives.

Dr. Borisuth is a glaucoma and refractive surgery specialist at the Viridi Eye Clinic and Laser Vision Center. He is an active member of the American Glaucoma Society.