Dear Alice,

Does glaucoma cause blindness if not treated in its early stages?

Answer

Dear Reader,

Unfortunately, even when treated, there is potential for glaucoma to result in blindness. Early diagnosis and treatment, however, significantly lowers the risk of glaucoma resulting in blindness and helps stop any further permanent vision loss. Glaucoma affects the eye and characteristically involves an increase in intraocular (inside the eye) pressure. In a healthy eye, a clear, watery fluid (called aqueous humor) bathes and cushions the eye. This fluid is also allowed to drain unencumbered from an angle between the eye’s cornea and iris. When this fluid is not able to drain properly, pressure inside the eye builds. The increased pressure can lead to a pinching of the blood vessels that supply the optic nerve causing damage and may lead to varying degrees of vision impairment. No one is exempt from the risk of glaucoma, but some people are at a higher risk of developing the disease and losing vision as a result. Thus, having knowledge of specific risk factors and screening recommendations may help to reduce the likelihood of vision loss (more on that in a bit).
There are several types of glaucoma. The most common type is primary open angle glaucoma, which occurs when the fluid isn't able to drain from the eye adequately due to a blockage of the mesh-like drainage channels (called trabecular meshwork). Initially, there are no symptoms. However, if left untreated and the disease is allowed to progress, symptoms can include peripheral vision impairment and tunnel vision. Angle closure glaucoma occurs when intraocular pressure increases because the iris bulges to a degree that blocks the drainage angle in the eye. This pressure increase can occur rapidly (acute) or gradually (chronic). Some people are born with a narrower angle between the iris and cornea, which puts her/him at a higher risk of angle closure glaucoma. The symptoms of angle-closure glaucoma include eye pain that may be accompanied by nausea and vomiting, sudden visual disturbance, blurred vision and/or halos around lights. Other types of glaucoma include normal- or low-tension (where optic nerve damage occurs without an increase in intraocular pressure), developmental or congenital (occurring during childhood), and pigmentary glaucoma (caused by pigment granules that build up and block the eye’s mesh drainage system). In some cases, there is no known cause for a given type of glaucoma, in others, the cause is known and may be associated with injuries, medications, or other medical conditions.

In order to stop optic nerve damage, intraocular pressure must be reduced. For acute glaucoma, which is considered a medical emergency, a combination of medication and procedures may be necessary. The first round of treatment for other types of glaucoma typically involves medications such as eye drops or oral medicine. For those who do not tolerate other treatments well or experience improvement in her/his condition, surgery may be necessary. In the case of chronic glaucoma, symptoms may come on slowly enough that they are not initially detected. So it’s good to be aware of factors that increase the risk of glaucoma, which include:

- **Increased intraocular pressure**: Though this is characteristically associated with glaucoma, not everyone who has higher than average pressure inside her/his eye(s) will develop the disease.
- **Race/Ethnicity**: African Americans are much more likely to develop glaucoma than Caucasian Americans. They are also more likely to experience blindness as a result. Asians have a higher risk for the acute angle closure type of the disease. Those of Japanese descent are at an increased risk for normal-tension glaucoma.
- **Age**: Anyone over the age of 60 is at an increased risk—especially Hispanic Americans. People 40 years and older are at a higher risk for angle closure glaucoma specifically. Though older age is a particular risk, African Americans are at a higher risk of developing the condition at a younger age (even younger than 40).
- **Family history**: There may be a genetic link to the disease. If you have family members who have glaucoma, you're at a higher risk.
- **Certain health conditions**: Heart disease, diabetes, hypothyroidism, and high blood pressure can increase your risk. Various eye conditions, such as injuries, inflammation, tumors, and even nearsightedness or farsightedness may also raise the risk of developing the disease.
- **Steroid use**: Using corticosteroids over a long period of time has also been linked to glaucoma.

Early diagnosis and treatment do not guarantee that you will not lose some or all of your sight. However, being screened regularly and treated if necessary may help curb any further damage to your eye(s). It’s a good idea to be tested for glaucoma regularly, especially after turning 40. If you are under 40, it is recommended to get a comprehensive eye exam every 3
to 5 years. If you are 60 and older, a comprehensive eye exam is recommended every year. Due to higher disease risk, if you’re an African American, consult with your health care providers to determine whether regular screenings need to be scheduled earlier, before the age of 40. Only ophthalmologists and optometrists can test for glaucoma by measuring intraocular pressure, checking for optic nerve damage, complete field of vision, and the thickness of the cornea. A test often used to detect glaucoma is non-contact tonometry, in which intraocular pressure is measured by using air that’s puffed into the open eye. If you have more questions about glaucoma or general eye health, you can visit National Eye Institute website.

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