

## Glaucoma — Blindness? <sup>[1]</sup>

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. Glaucoma affects the eye and characteristically involves an increase in intraocular (inside the eye) pressure. Early diagnosis and treatment, however, significantly lowers the risk of glaucoma resulting in blindness and helps stop any further permanent vision loss. 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 (more on this in a bit). Thus, having knowledge of specific risk factors and screening recommendations may help to reduce the likelihood of vision loss.

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 isn't 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, which causes damage and may lead to varying degrees of vision impairment.

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 (what is seen from the side of the visual field) 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 may occur rapidly (acute) or gradually (chronic). Some people are born with a narrower angle between the iris and cornea, which puts them 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 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 don't tolerate other treatments well or experience improvement in their condition, surgery may be necessary. In the case of chronic glaucoma, symptoms may come on slowly enough that they're 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 their eye(s) will develop the disease.
- **Race/Ethnicity:** Being black, Asian, or Hispanic is associated with an increased risk of developing glaucoma.
- **Age:** Anyone over the age of 60 is at an increased risk. People 40 years and older are at a higher risk for angle-closure glaucoma specifically. Though older age is a particular risk, people of color 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 could increase your risk. Various eye conditions, such as injuries, inflammation, tumors, and extreme 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 don't guarantee that all sight will be preserved. However, being screened regularly and treated if necessary may help curb any further damage to the eye(s). It's a good idea to be tested for glaucoma regularly, especially after turning 40. For those under 40, it's recommended to get a comprehensive eye exam every three to five years. For those 60 and older, a comprehensive eye exam is recommended every year. If you believe you're in a high-risk group, you could 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 are able to test for glaucoma by measuring intraocular pressure, and checking for optic nerve damage, complete field of vision, and the thickness of the cornea. If you have more questions about glaucoma or general eye health, you could visit the [National Eye Institute](#) [2] website.

Alice!

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Published date:

Oct 10, 1996

Last reviewed on:

Jul 10, 2020

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