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GLAUCOMA

Glaucoma is a group of eye diseases that gradually steal sight without warning. In the early stages of the disease, there may be no symptoms. Adult glaucoma falls into two categories – open angle glaucoma and closed angle glaucoma.

OPEN-ANGLE GLAUCOMA

What is open-angle glaucoma?

Open-angle glaucoma is the more common of two main types of glaucoma in North America. Glaucoma is an eye disease in which the nerve that connects the eye to the brain (optic nerve) is damaged. Usually, high pressure inside the eye causes the damage. Sometimes, you can have glaucoma even though your eye pressure is normal.

Eye pressure builds up when fluid that normally flows out of the eye flows out too slowly. In open-angle glaucoma, the pressure increases slowly even though the drainage channel for the fluid is open. Without treatment, the eye pressure can damage the optic nerve and cause vision loss or blindness.

How does it occur?

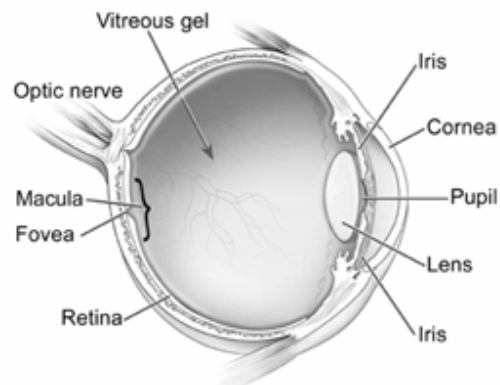
Normally, the fluid in the front of the eye (called the aqueous humor) flows from a back chamber to a front chamber and then drains out. This fluid nourishes your eye and helps to keep its shape. It is not known what causes the fluid to drain out too slowly.

Open-angle glaucoma:

- occurs most often after age 55 but sometimes occurs in children
- tends to run in families

One type of open-angle glaucoma is caused by injury to the eye. It may show up months or years after the injury. This type of glaucoma may not respond to some common glaucoma medicines, and surgery may be needed. Occasionally, nerve damage occurs without high pressure in the eye. Using your eyes for close work or in poor light does not increase your chances of having glaucoma.

Open-angle glaucoma gets worse gradually if not treated. Usually it affects both eyes but sometimes only one eye is affected. Blind spots occur first in side vision. Later, central



vision may be affected. Vision loss is permanent because the damaged nerve cells cannot return to normal. However, treatment can prevent more damage and loss of vision.

What are the symptoms?

Open-angle glaucoma often causes no symptoms in the early stages. In later stages, you will begin to notice a loss of vision. Side vision is usually affected first.

How is it diagnosed?

Diagnosis is usually made during a routine eye exam.

- Your eye doctor can measure the pressure inside your eye with a quick and painless test.
- Your doctor checks the inside of your eye to see if there are changes in the optic nerve.
- Your doctor checks your side vision.

How is it treated?

The goal of treatment is to prevent more damage to the optic nerve by reducing pressure in the eye. This may be done with eyedrops, pills, laser surgery, or other surgery. Some of these treatments reduce the amount of fluid your eyes make. Other treatments increase the amount of fluid that leaves your eye or change the way the fluid flows.

For open-angle glaucoma, eyedrops may be the only treatment you need. Your eye doctor may want to check your eyes often to see if the medicine is working. The medicine may cause eye irritation, a rash, heart problems, or other side effects. Call your doctor if you have any side effects.

Laser treatments are common and often can lower pressure in the eyes. However, the procedure may need to be repeated. You may need a surgical procedure called a trabeculectomy or another type of surgery called a tube shunt. In these procedures the eye surgeon creates a new pathway to drain fluid from the eye. These treatments are also called filtering surgery.

How can I help prevent open-angle glaucoma?

Open-angle glaucoma cannot be prevented. However, blindness can be prevented if you get treatment before pressure in the eye severely damages the optic nerve. You may be able to help prevent open-angle glaucoma from becoming severe if you:

- Have a thorough eye exam at regular intervals.
- Learn about your family history. Open-angle glaucoma often runs in families.
- See your eye doctor right away if you notice any changes in your vision.

CLOSED-ANGLE GLAUCOMA

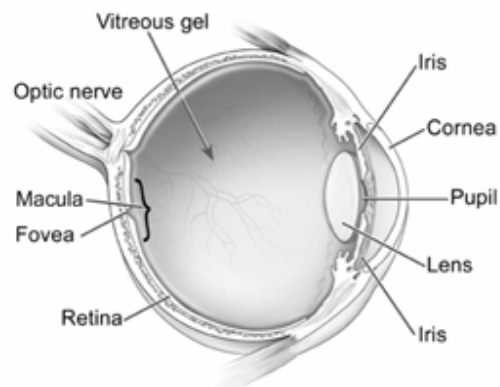
What is closed-angle glaucoma?

In angle-closure glaucoma, the iris comes forward towards the cornea and blocks the angle, not allowing fluid to go out of the eye. The "angle" refers to the corner between the iris (colored part of the eye) and the cornea (clear dome in front of the iris). It is in this angle where fluid drains from the eye. This can cause a pressure build up, which in turn can damage the optic nerve and vision loss. If this happens suddenly (acute angle closure), you will have severe pain, nausea, and vomiting.

How does it occur?

Normally, fluid in the eye is made by structures behind the iris called the ciliary processes. The fluid flows through the pupil and exits the eye through the angle. The lens sits behind the iris and the fluid must flow between the iris and the lens. When the angle is blocked or narrowed, fluid can't flow through very well. This can happen if the pupil is dilated too much causing the iris to "bunch up" or if the lens is too big and blocks the pupil. This is most common in people with:

- small, farsighted eyes
- a cataract that is expanding
- scarring inside the eye from inflammation.



In these susceptible eyes, dilation of the pupil can set off an attack. Your pupils can become dilated:

- in dim light
- after use of eyedrops given during an eye exam
- with use of some medicines.

What are the symptoms?

Symptoms of a sudden acute angle-closure attack may include:

- severe pain in and above your eye
- hazy or foggy vision
- halos around lights
- headache
- redness and watering of the eye
- nausea and vomiting.

When angle-closure glaucoma happens gradually there may not be any symptoms.

How is it diagnosed?

If the angle is suddenly and completely blocked, it is called an acute glaucoma attack and is a medical emergency. Your doctor may look for:

- high eye pressure
- an iris that is pushed closer to the cornea
- a narrow or closed angle.

Your eye doctor may use the following tests:

- tonometry, a painless procedure used to measure the pressure in your eyes
- gonioscopy, which is a method of examining the drainage network in the angle between the iris and the cornea.

How is it treated?

If you are having an attack, your doctor may give you any of several medicines right away, such as:

- a mixture of glycerin and water to drink
- eyedrops that reduce the pressure in your eye quickly
- eyedrops that reduce the size of your pupil if it is dilated
- in severe cases, intravenous (IV) medicines to reduce the pressure in your eye.

Usually you will need laser treatment or surgery later to prevent more attacks. These procedures allow fluids to drain out of the eye. They may cure the problem permanently. Your doctor may recommend that you have both eyes treated if they both have narrow or closed angles, even though you may have had an attack in only one eye. If you have never had an attack but appear to be at high risk, your doctor may recommend treatment to prevent an attack.

How can I take care of myself?

Make sure you have routine eye exams, especially after age 40. If a routine eye exam shows that you have narrow angles, watch for symptoms such as eye pain, halos around lights, and nausea and vomiting. If you have these symptoms, tell your health care provider right away. The nausea and vomiting may lead your provider to suspect a problem in your digestive system. Be sure to tell your provider that you also have severe eye or forehead pain.

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