

# Glaucoma in Children

## WHAT IS GLAUCOMA?

Glaucoma in children is a group of eye diseases. It harms the **optic nerve**. This nerve sends messages from your eye to your brain so you can see.

Glaucoma happens when pressure builds up inside the eye. This pressure can damage the nerve. If not treated, it can cause vision loss or blindness.

The pressure goes up when fluid in the eye can't drain out the right way. Glaucoma is rare in children, but it can happen at any age. It can even happen in newborn babies. When babies have it, it's called congenital glaucoma. The signs in children look different than in adults.

## WHAT ARE THE TYPES AND CAUSES OF GLAUCOMA IN CHILDREN?

Children can get glaucoma on its own or with other health problems.

Primary glaucoma has no clear cause. It is the most common type in children. Primary congenital glaucoma is passed down in families. It can happen at birth or in the first year of life. Doctors don't know all the genes that cause it yet.

Glaucoma can also happen with other eye problems. These include Axenfeld-Reiger syndrome or aniridia. It can also happen with body conditions like Sturge-Weber syndrome and neurofibromatosis. It may also happen after using steroids (in eye drops, pills, or inhalers). Eye injuries or eye surgeries like cataract surgery can also cause it.

Not every child with these conditions will get glaucoma. But they should see an eye doctor (ophthalmologist) often for checkups.

## HOW COMMON IS GLAUCOMA IN CHILDREN?

Glaucoma in children is rare. In Western countries, about **1 in 10,000 babies** are born with primary glaucoma. In the Middle East, about **1 in 2,500 babies** will have it.

The risk is higher for children who had cataract surgery or other eye problems. For example, about **1 in 5 babies** who have cataract surgery in the first 6 months of life may get glaucoma within 10 years.

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## IS GLAUCOMA IN CHILDREN HEREDITARY?

Some types of childhood glaucoma can be passed down in families. About **10–40%** of primary congenital glaucoma cases run in families. Other types linked to certain conditions may also run in families, but the chance of getting glaucoma is harder to predict.

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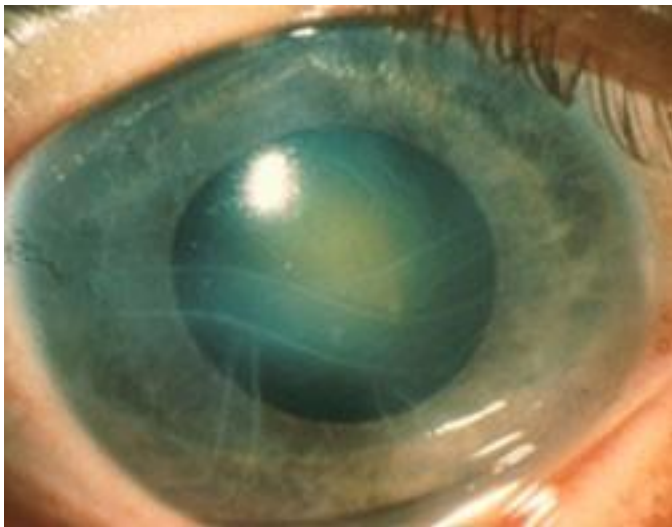
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## WHAT ARE THE SYMPTOMS OF PRIMARY CONGENITAL GLAUCOMA?

The most common signs are:

- Too much tearing
- Eye pain with bright light
- A large or cloudy cornea (the clear front part of the eye)

A blocked tear duct can also cause lots of tears, but it is not glaucoma. If your child has these symptoms, it is important to see an eye doctor (ophthalmologist).



**Figure 1:** Multiple lines and haziness in the cornea of a child with congenital glaucoma. Lines represent breaks in the cornea tissue (seen as curved lines)

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## WHAT ARE THE SYMPTOMS OF JUVENILE GLAUCOMA?

Juvenile glaucoma usually starts after age 3 years. It may have no clear signs, like in adults. Children may:

- Fail school vision tests
- Say their vision is blurry (if both eyes are affected)

Eye exams often show high eye pressure, optic nerve damage, and nearsightedness. These children often have family members with glaucoma.

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## HOW IS CHILDHOOD GLAUCOMA EVALUATED AND DIAGNOSED?

Diagnosing glaucoma in children requires a full eye exam. Babies and young children often need to be checked while asleep/under anesthesia. This helps the doctor get correct results.

Tests may include:

- Measuring eye pressure
- Checking cornea size, clarity, and thickness
- Looking at the fluid drainage system in the eye
- Measuring eye length and need for glasses
- Looking at the optic nerve
- Testing side vision/peripheral vision in older children
- Taking special pictures of the eye like Optical Coherence Tomography (OCT)

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## HOW IS CHILDHOOD GLAUCOMA TREATED?

The main goal of treatment is to **lower eye pressure**. This can be done with medicine or surgery.

**Surgery** is the most common treatment for primary congenital glaucoma. Surgeries like **trabeculotomy** and **goniotomy** help open the eye's drain system.

Other surgeries, such as **trabeculectomy** or **tube shunts**, create openings for the eye fluid to drain out. **Laser treatments** can sometimes be used.

Children often need more than one surgery. They sometimes need repeated exams while asleep/under anesthesia. Even after surgery, many still need eye drops or pills.

Juvenile and secondary glaucoma are often treated with medicine first.

Glaucoma can also cause other eye problems that need different treatments. These include: nearsightedness (myopia), lazy eye ([amblyopia](#)), or eye movement problems ([strabismus](#)). These may need glasses, patching, or other surgeries.

Even with treatment, some vision loss may still occur. **Early diagnosis, proper treatment, and regular follow-ups** are very important to protect vision.

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## SUMMARY FOR PATIENTS AND CAREGIVERS

Glaucoma in children is rare but serious. It happens when high pressure in the eye damages the optic nerve. This can cause severe vision loss. It can appear at birth, in toddlers, young children, or in teenagers. Signs may include eye watering, eye pain in bright light, and cloudy eyes in babies. Older children may have blurry vision or fail vision tests at school.

Glaucoma may run in families. It can be linked to other health conditions, eye injuries, or past eye surgery. Diagnosis usually needs a full eye exam. Babies often need to be asleep with medicine (anesthesia) for the exam.

Treatment focuses on lowering eye pressure with surgery or eye drops/pills. Many children need ongoing care. Even with treatment, vision loss can still happen. Seeing an eye doctor (ophthalmologist) early and keeping up with treatment and follow-up visits are the best ways to protect vision.

## WHERE CAN I FIND MORE INFORMATION ABOUT GLAUCOMA IN CHILDREN?

For more information about glaucoma in children, please check out these online resources:

[Pediatric Glaucoma and Cataract Family Association \(PGCFA\)](#)

**More technical information may be found on the [EyeWiki Site](#).**

- [https://eyewiki.org/Childhood\\_Glaucoma\\_Research\\_Network\\_Classification\\_and\\_Epidemiology\\_of\\_Childhood\\_Glaucoma](https://eyewiki.org/Childhood_Glaucoma_Research_Network_Classification_and_Epidemiology_of_Childhood_Glaucoma)
- [https://eyewiki.org/Primary\\_Congenital\\_Glaucoma](https://eyewiki.org/Primary_Congenital_Glaucoma)

- [https://eyewiki.org/Pediatric\\_Glaucoma\\_Following\\_Cataract\\_Surgery](https://eyewiki.org/Pediatric_Glaucoma_Following_Cataract_Surgery)

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