

Congenital Ptosis

Ptosis is a condition in which the upper eyelid falls to a position that is lower than normal. The drooping eyelid can cover part or all of the pupil and interfere with vision, resulting in amblyopia. Ptosis can affect one eye or both eyes.

Ptosis may be present at birth or develop later in life. If a droopy eyelid is present at birth or within the first year of life, the condition is called **congenital ptosis**. In most cases of moderate or severe congenital ptosis, surgery is required to tighten the eyelid muscles or suspend the eyelid from the brow so that the eyelid is not covering the line of sight. If the ptosis is severe, surgery may be recommended in infancy. Often surgery is delayed until a child is 3 or 4 years old.

Amblyopia, or “lazy eye,” is decreased vision in one or both eyes caused by lack of use. This condition can occur with congenital ptosis. If amblyopia is present, treatment with patching, eyeglasses, or eyedrops may also be necessary. If left untreated, amblyopia may lead to permanent vision loss.

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Congenital Cataract

Your eye works a lot like a camera. Light rays focus through the lens on the retina, a layer of light-sensitive cells at the back of the eye. Similar to photographic film, the retina allows the image to be “seen” by the brain.

Over time, the lens of our eye can become cloudy, preventing light rays from passing clearly through the lens. The loss of transparency may be so mild that vision is barely affected, or it can be so severe that no shapes or movements are seen—only light and dark. When the lens becomes cloudy enough to obstruct vision to any significant degree, it is called a **cataract**. Eyeglasses or contact lenses can usually correct slight refractive errors caused by early cataracts, but they cannot sharpen your vision if a severe cataract is present.

The most common cause of cataract is aging. Occasionally, babies are born with cataracts or develop them very early in life. This condition is called **congenital cataract**. There are many causes of congenital cataract. Certain diseases can cause the condition, and sometimes it can be inherited. However, in most cases, there is no identifiable cause.

Treatment for cataract in infants varies depending on the nature of each patient’s condition. Surgery is usually recommended very early in life, but many factors affect this decision, including the infant’s health and whether there is a cataract in one or both eyes. If the child has a cataract in both eyes, it is possible that surgery may be delayed for years, or, depending on their severity, it may never become necessary. However, if only one eye is affected by cataract, the infant’s visual system can develop abnormally, and, if left untreated, serious vision problems and even vision loss can result.

If surgery is necessary, the ophthalmologist (Eye M.D.) will remove the eye’s cloudy lens and part of the surrounding lens capsule. Usually, strong eyeglasses or contact lenses are prescribed for infants after surgery. For babies over one year of age, an artificial intraocular lens (IOL) may be recommended instead to replace the eye’s natural lens. The ophthalmologist can recommend which procedure and optical correction is best for your child.

When only one eye has a cataract, amblyopia or “lazy eye” often is present or will develop even after the cloudy lens is removed. In this case, the eye is optically corrected with contact lenses, glasses, or an IOL. The amblyopia must be treated as well with patching or intentionally blurring the sound eye.

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Congenital Glaucoma

Glaucoma is a disease of the optic nerve, which transmits the images you see from the eye to the brain. The optic nerve is made up of many nerve fibers (like an electric cable with its numerous wires). Glaucoma damages these nerve fibers, which can cause blind spots and vision loss. When the condition is present at birth or develops at a very young age, it is called **congenital glaucoma**.

Glaucoma develops when the pressure inside the eye, or **intraocular pressure (IOP)**, is elevated. When the **aqueous humor** (the clear liquid that normally flows in and out of the eye) cannot drain properly, pressure builds up in the eye. The resulting increase in IOP can damage the optic nerve.

Congenital glaucoma can be inherited and is also associated with a number of conditions and diseases, including neurofibromatosis, congenital rubella, Lowe's syndrome, Sturge-Weber syndrome, homocystinuria, Marfan's syndrome, Weill-Marchesani syndrome, Axenfeld- Rieger syndrome, Peter's anomaly, aniridia, persistent hyperplastic primary vitreous (PHPV), nanophthalmos (small eye), and microcornea (small cornea).

Symptoms of congenital glaucoma include an enlarged eye, cloudy cornea, photophobia, tearing, and lid spasms. It may be necessary for the ophthalmologist (Eye M.D.) to perform an exam under anesthesia to accurately examine the eyes and measure the intraocular pressure. If glaucoma is diagnosed, there are a number of surgical procedures that the ophthalmologist may recommend to help reduce IOP and prevent damage to the child's vision.

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Childhood Reading Problems

When children have difficulty reading, parents often think poor vision is the problem. If a visit to an ophthalmologist (Eye M.D.) rules out any medical or vision problems, your child may have a learning disability.

A learning disability is a disparity between a person's ability and performance in a certain area. It has nothing to do with intelligence or IQ. A learning disability can make it difficult to succeed in school and, if untreated, can get worse, causing a child to lose self-confidence and interest in school.

Identifying the learning disability is the first step in treating it. Dyslexia, a reading disability that may involve reversing letters and words, is one of the many learning disorders that can affect reading.

Exercises have been used to improve the coordination or focusing of the eyes. Since poor reading is not usually an eye problem, these exercises rarely prove helpful. Colored lenses, special diets or vitamins, jumping on trampolines, or walking on balance beams have also been prescribed without much success. Over time, these methods have tended to fall out of favor.

Children with learning disabilities benefit from various educational programs, in or out of school. Parents also play a vital role. They can support their children by reading with them at home. Children with learning disabilities need to be encouraged to develop strengths and interests so they can fully develop their unique talents and abilities.

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Children and Vision

Many people are confused about the importance of eyeglasses for children. Some believe that if children wear glasses when they are young, they will not need them later. Others think that wearing glasses as a child makes one dependent on them later. Neither is true. Some children need glasses because they are genetically nearsighted, farsighted, or astigmatic. These conditions generally do not go away nor do they get worse because they are not corrected. For people with refractive errors, eyeglasses or contacts are necessary throughout life for good vision.

Nearsightedness (when distant objects appear blurry) typically begins between the ages of eight and fifteen but can start earlier. **Farsightedness** is actually normal in young children and not a problem as long as it is mild. If a child is too farsighted, vision is blurry or the eyes cross when looking closely at things. This is usually apparent around the age of two. Almost everyone has some amount of **astigmatism** (oval instead of round cornea). Eyeglasses are required only if the astigmatism is strong.

Unlike adults, children who need glasses may develop a second problem, called **amblyopia** or lazy eye. Amblyopia means even with the right prescription, one eye (or sometimes both eyes) does not see normally. Amblyopia is more likely to occur if the prescription needed to correct one eye is stronger than the other or if the prescription in both eyes is very strong. Wearing eyeglasses can prevent amblyopia from developing or may treat amblyopia if already present.

Children (and adults) who do not see well with one eye because of amblyopia, or because of any other medical problem that cannot be corrected, should wear safety glasses to protect the normal eye.

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Babies' Vision

Babies have poor vision at birth but can see faces at close range, even in the newborn nursery. At about 6 weeks of age, a baby should be able to fixate on an object (such as a face) and maintain eye contact. Over a child's first few years, vision develops rapidly; 20/20 vision can be recorded by 2 or 3 years of age with some techniques.

Parents should be aware of signals of poor vision. If one eye "turns" or "crosses," that eye may not see as well as the other eye. If the child is not interested in faces or age-appropriate toys, or if the eyes rove around or jiggle (called **nystagmus**), you should suspect poor vision. Other signs to watch for are tilting the head and squinting. Babies and toddlers compensate for poor vision rather than complain about it.

Should a baby need eyeglasses, the prescription can be determined fairly accurately by dilating the pupil and analyzing the light reflected through the pupil from the back of the eye.

A baby's vision can also be tested in a research laboratory, where the brainwaves are recorded as the child looks at patterns of stripes or checks on a television screen. This is called a **visually evoked potential (VEP)** test. Another test, called **preferential looking** or **Teller acuity cards**, uses simple, striped cards to attract the child's attention. In both tests, as the stripes grow smaller and closer together, they become more difficult to see, and the child's level of visual acuity can be assessed.

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Adult Strabismus

Strabismus is a condition in which the eyes are not aligned and point in different directions. This condition affects about 4% of adults.

Strabismus may begin in childhood and persist, reoccur, or become symptomatic in adulthood. Strabismus also can result from certain medical problems. Graves' disease (thyroid eye disease), diabetes, strokes, and trauma are some of the more common conditions that can lead to strabismus. Less common causes are diseases that affect the muscles such as myasthenia gravis, demyelinating diseases such as multiple sclerosis, or brain and orbit tumors. Occasionally strabismus can develop after eye surgery, such as cataract, retinal, or glaucoma surgery.

Adults with strabismus may have double vision, loss of depth perception, confusion between images, eye fatigue, and reading difficulty. They often experience psychological or social problems because of the condition, and they may have problems interacting with others or securing employment because of the appearance of their eyes.

Strabismus can be treated at any age. Occasionally, eye muscle exercises, prism eyeglasses, or botulinum toxin injections can improve certain types of strabismus if the misalignment is slight. Often surgery is required. Surgery is done on an outpatient basis and sometimes can be performed with a local anesthetic only. Strabismus surgery involves loosening, tightening, or repositioning the muscles to align the eyes. An adjustable suture may be used to fine-tune the end result. An ophthalmologist (Eye M.D.) can recommend treatment options.

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Children's Eye Safety

Accidents resulting in serious eye injury can happen to anyone, but are particularly common in children and young adults. More than 90% of all eye injuries can be prevented with appropriate supervision and protective eyewear.

Goggles and face protection can prevent injuries in sports like baseball, basketball, racket sports, and hockey. It is more difficult to protect against injuries in boxing, although thumbless gloves help.

Children with vision loss in one eye should wear polycarbonate safety glasses all the time and should wear safety goggles for sports and other dangerous activities. Choose frames and lenses that meet the American National Standards Institute (ANSI) standard for safety (Z87.1).

Appropriate adult supervision is an essential part of preventing eye injuries. Children should never be allowed to play with fireworks or BB guns. Sharp and fast-moving objects such as darts, arrows, scissors, knives, and even pencils or pens can be dangerous. Special care should be taken when working around lawn mowers, which can throw rocks and debris, and when banging two pieces of metal together, which can dislodge small shards of metal. Chemicals such as toilet cleaners and drain openers are especially hazardous.

A primary care physician or an emergency room physician can treat minor injuries, such as a foreign body or an abrasion (scratch) on the cornea. Any foreign material will be removed from the eye, an antibiotic eyedrop or ointment may be used, and an eye patch may be applied for comfort.

More serious injuries, such as blood inside the eye (hyphema), a laceration (cut) of the eye, or rupture of the eye, require examination by an ophthalmologist (Eye M.D.). Both surgery and hospitalization may be necessary.

Chemicals that burn should be rinsed from the eye immediately. Chemical burns can cause severe damage, so eyes should be flushed immediately. If sterile solutions or eyewashes are readily available, use them to flush the affected eye. If not, flush the eye with liberal amounts of water from the nearest sink, shower, or hose for ten minutes. Be sure water is getting under both the upper and lower eyelids. After they eyes have been flushed for ten minutes, bring the child to the emergency room immediately. The ultimate visual outcome after a chemical burn depends on the severity of the injury, which cannot always be identified in the initial examination.

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Amblyopia

Amblyopia is poor vision in an eye that did not develop normal sight during early childhood. This condition, sometimes referred to as “lazy eye,” can run in families. The main causes of amblyopia are strabismus, refractive errors, or cloudiness of the eye tissues.

Amblyopia affects about three out of every 100 people. The best time to correct it is during infancy or early childhood, because after the first nine years of life, the visual system is normally fully developed and usually cannot be changed. It is recommended that children have their eyes and vision monitored by their primary care physician at their well-child visits. If there is a family history of amblyopia, children should be screened by an ophthalmologist (Eye M.D.).

Strabismus, or misaligned eyes, is the most common cause of amblyopia. The eye that is misaligned is ignored by the brain and “turns off.” A refractive error (meaning an eye is nearsighted, farsighted, or has astigmatism) is another cause of amblyopia. If one eye has a very different refractive error from the other eye, or if both eyes have a very strong refractive error, amblyopia can develop in the eye or eyes that are out of focus. The most severe form of amblyopia occurs when cloudiness of the eye tissues prevents any clear image from being processed. This can happen in conditions such as infantile or developmental cataracts.

Amblyopia is detected by finding a difference in vision between the two eyes or poor vision in both eyes. The ophthalmologist will also carefully examine the eyes to see if other eye conditions are causing decreased vision.

Amblyopia is treated by forcing the brain to use the affected eye or eyes. If refractive errors are present, they are corrected with eyeglasses or, less commonly, with contact lenses or refractive surgery. If a cataract or other cloudiness is present, surgery may be necessary to clear the line of sight. Strabismus may require surgery before, during, or after the amblyopia treatment. Patching or blurring the sound eye is then used to improve the vision by forcing the brain to recognize and process information from the affected eye or eyes. Once maximum vision has been obtained, treatment often needs to be continued at least part time for months to years to maintain the recovered vision. The earlier the treatment is begun, the more successful it will be.

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