

AMBLYOPIA: WHAT IS LAZY EYE?

Amblyopia is poor vision in an eye that did not develop normal sight during early childhood. It is sometimes called "lazy eye."

When one eye develops good vision while the other does not, the eye with the poorer vision is called amblyopic. Usually, only one eye is affected by amblyopia, but it is possible for both eyes to be "lazy." This condition is called bilateral amblyopia.

The condition is common; approximately two or three out of every 100 people has amblyopia. The best time to correct amblyopia is during infancy or early childhood.

AMBLYOPIA IN CHILDREN AND ADULTS

Newborn infants are able to see, but as they use their eyes during the first months of life, their vision improves. During early childhood years, their visual system changes quickly and their sight continues to develop.

In order to have normal vision, it is important that both eyes develop equal vision. If a child has amblyopia and cannot use his or her eyes normally, vision does not develop properly and may even decrease. After the first nine years of life, the visual system is normally fully developed and usually cannot be changed.

If amblyopia treatment is not begun as early as possible, several problems can develop that can seriously affect vision from childhood into adulthood: the amblyopic eye may develop a serious and permanent visual defect; depth perception (seeing in three dimensions) may be lost, because good vision in both eyes is needed;

if the stronger eye becomes diseased or injured, it can mean a lifetime of poor vision.

People with amblyopia in one eye are more than twice as likely to lose vision in the healthy eye from trauma. If the vision in one eye should be lost later in life from an accident or illness, it is essential that the other eye have normal vision.

Another important reason to make sure amblyopia is detected and treated as early as possible in childhood: people who have good vision in only one eye may find they are limited in the kinds of jobs they can perform.

Your ophthalmologist can teach you how amblyopia can be treated, and can help you and your child successfully carry out this treatment.

WHAT IS REFRACTIVE (OR ANISOMETROPIC) AMBLYOPIA?

Refraction is when the eye focuses light onto the retina to form a visual image. A refractive error occurs when the light is not properly focused in the eye and vision is blurry. When a child has refractive, or anisometropic, amblyopia, it means he or she has a different amount of refractive error in each eye. When this is the case, the brain will use the better-seeing eye and essentially "turn off" vision from the weaker eye. At first, eyeglasses

may help by correcting the refractive error in both eyes, allowing them to work equally together. Then the amblyopia may be further treated to help improve vision and depth perception.

AMBLYOPIA SYMPTOMS

It is not easy to recognize amblyopia (lazy eye) in children. A child may not be aware of having one stronger eye and one weaker eye. Unless the child has an eye that is misaligned or another condition that can be seen, there is often no way for parents to tell that something is wrong.

Some symptoms of amblyopia (lazy eye) to look for in a child include:

- Poor vision in one eye or overall poor vision
- Squinting, tilting the head or closing one eye to see
- Poor depth perception (difficulty judging relative distances between objects)
- An inward- or outward-wandering eye
- Headaches

If a parent notices these symptoms in their child, it is very important that the child be examined by an ophthalmologist. Lazy eye correction or treatment should begin as soon as possible so that the child's visual system can develop properly.

The following factors can raise a child's risk of having amblyopia (lazy eye):

- Having misaligned eyes (strabismus)
- Severe nearsightedness or farsightedness in both eyes
- Unequal vision in both eyes (one eye more nearsighted or farsighted than the other)
- Having a condition that prevents light from entering the eye correctly, such as cataract or possibly a droopy eyelid
- Family history of amblyopia or strabismus
- Premature birth or low birth weight

All children, whether or not they are at risk for amblyopia (lazy eye), should have their eyes examined regularly; detecting and treating amblyopia as early as possible will make a real difference later on in their lives. In addition to the well-baby exams that all babies should have as newborns and between ages 6 to 12 months, preschool-aged children should have their vision screened by their pediatrician or primary care doctor between 3 and 4 years old.

Most primary care or pediatric doctors test vision as part of a child's medical examination. They may refer a child to an ophthalmologist (Eye MD) if there is any sign of eye problems.

If there is a family history of misaligned eyes, childhood cataracts or a serious eye disease, an ophthalmologist should examine the eyes during infancy.

WHAT IS THE CAUSE OF AMBLYOPIA?

Amblyopia is caused by any condition that affects normal use of the eyes and visual development. In many cases, amblyopia may be hereditary, or passed down through the family. Amblyopia has three major causes.

- Strabismus (misaligned eyes)
 - Amblyopia occurs most commonly with strabismus, which is misaligned or crossed eyes. The crossed eye "turns off" to avoid double vision, and the child uses only the better eye. The misaligned eye then fails to develop good vision.
- Unequal focus and refractive errors
 - Refractive errors are eye conditions that are corrected by wearing eyeglasses or contact lenses. Amblyopia occurs when one eye is out of focus because it is more nearsighted, farsighted, or astigmatic than the other.
 - If one eye is out of focus, this unfocused (blurred) eye "turns off" and becomes amblyopic. The eyes can look normal, but one eye has poor vision. This is the most difficult type of amblyopia to detect since the child appears to have normal vision when both eyes are open. Amblyopia can also occur in both eyes if both eyes have very blurred vision. This can happen when there is a high degree of nearsightedness, farsightedness, or astigmatism.
- Cloudiness in the normally clear eye tissues
 - An eye disease such as a cataract (a clouding of the eye's naturally clear lens) may lead to amblyopia. Any factor that prevents a clear image from being focused on the retina at the back of the eye can lead to the development of amblyopia in a child. This is often the most severe form of amblyopia.
 - If your ophthalmologist finds a cataract in the eye, surgery may be required before amblyopia (lazy eye) treatment can begin.

AMBLYOPIA DIAGNOSIS

It is not easy to recognize amblyopia. A child may not be aware of having one strong eye and one weak eye. Unless the child has a misaligned eye or other obvious abnormality, there is often no way for parents to tell that something is wrong.

Amblyopia is detected by finding a difference in vision between the two eyes or poor vision in both eyes. Since it is difficult to measure vision in young children, your ophthalmologist often estimates visual acuity by watching how well a baby follows objects with one eye when the other eye is covered.

With amblyopia (lazy eye) treatment, a child's stronger eye is covered with a patch so that the weak eye is used instead. Through continued use, the weaker eye becomes stronger, allowing vision to develop normally.

Using a number of tests, an ophthalmologist can diagnose amblyopia by watching how a baby reacts when one eye is covered. If one eye is amblyopic and the strong eye is covered, the baby may attempt to look around the patch, try to pull it off, or cry.

Poor vision in one eye does not always mean that a child has amblyopia. Vision can often be improved by prescribing eyeglasses for a child.

Your ophthalmologist will also carefully examine the inside of the eye to see if other eye diseases may be affecting vision. These diseases include:

- Cataracts
- Inflammations (swelling)
- Tumors
- Other inner eye problems

AMBLYOPIA TREATMENT

Lazy eye correction or treatment should begin as soon as possible so that the child's visual system can develop properly

If refractive amblyopia is a problem, eyeglasses may be prescribed first to correct the focusing errors. If glasses alone do not improve a child's vision, then patching is needed usually for weeks to months. Covering the child's stronger eye with a patch forces the child to use their weak eye. Another way to accomplish this technique is to blur the vision in the strong eye with special eyedrops or a pair of glasses with a blurry lens over the stronger eye.

Even after vision has been restored in the weaker eye, it may be necessary to continue patching the lazy eye part-time for a few more years to maintain the improvement.

Amblyopia is usually treated before surgery to correct misaligned or crossed eyes, and patching or blurring with eyedrops is often continued after surgery as well.

If your ophthalmologist finds a cataract or other problem in the eye that is causing the visual problem, surgery may be required to correct the problem that is causing amblyopia.

Amblyopia usually cannot be cured by treating the cause alone. The weaker eye must be made stronger in order to see normally. Prescribing eyeglasses or performing surgery can correct the cause of amblyopia, but your ophthalmologist must also treat the amblyopia itself.

WHY TREAT AMBLYOPIA?

If amblyopia is not treated, several problems may occur:

The amblyopic eye may develop a serious and permanent visual defect.

Depth perception (seeing in three dimensions) may be lost, because good vision in both eyes is needed.

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