

## Amblyopia

### What is amblyopia?

Amblyopia is poor vision in an eye that did not develop normally during early childhood. It is sometimes called “lazy eye”. The condition is relatively common and if detected early can be treated. The best time to correct amblyopia is during infancy or early childhood.

### How does normal vision develop?

Newborn infants are able to see fairly well, however, as they use their eyes during the first months of life their vision improves quickly. During early childhood years, the visual system continues to change rapidly as their brain and eyes develop. If a child cannot use his or her eyes normally, vision does not develop properly and as a result the brain doesn’t “learn” to process perfect vision. After the first nine years of life, the visual system is usually fully developed and typically cannot be changed. The development of equal vision in both eyes is necessary for normal vision and certain visual tasks like depth perception. There are many occupations where equal vision from both eyes is critical. In addition, an accident or illness involving the good eye later in life may leave the individual visually impaired.

### When should vision be tested?

*It is recommended that all children have their vision checked by their family eye doctor on or before their third birthday.* There are many techniques that your family eye doctor will utilize to gather necessary information to determine the status of your child’s visual development...even if the child can’t talk! It is especially important to have your child’s vision checked at an early age if there is a family history of amblyopia, misaligned eyes, childhood cataracts or any other eye diseases.

### What causes amblyopia?

Amblyopia is caused by any condition that affects normal use of the eyes and visual development. In many cases, the conditions associated with amblyopia may be inherited. Children in a family with a history of amblyopia or misaligned eyes should be checked by your family eye doctor early in life.

*Amblyopia has three major causes:*

- Strabismic Amblyopia (misaligned or crossed eyes). Amblyopia occurs most commonly with misaligned or crossed eyes. As the child develops, the brain “turns off” the crossed eye to avoid double vision and preferentially the child uses the better eye. When the brain consistently ignores the crossed eye, it does not learn to process good vision.
- Refractive Amblyopia (refractive error). Refractive errors are eye focusing problems that are corrected by wearing glasses. Amblyopia occurs when one eye is out of focus because it is more nearsighted, farsighted, or astigmatic than the other eye. The unfocused (blurred) eye is “turned off” and never learns to see perfect vision and becomes amblyopic. This is the most difficult type of amblyopia to detect because the eyes look normal. Amblyopia can occur in both eyes if both eyes if they are affected with large refractive errors like high astigmatism.
- Diseases of the eye. An eye disease such as a cataract (a clouding of the eye’s natural lens) and retinal disease may lead to amblyopia. Any factor that prevents a clear image from being focused inside the eye can lead to the development of amblyopia in a child. This can often be the most severe form of amblyopia. A comprehensive dilated eye exam by your family eye doctor can detect these vision threatening types of diseases.

## **How is amblyopia diagnosed?**

It is typically not easy to recognize amblyopia without a comprehensive eye exam. A child may not be aware of having one strong eye and one weak eye and oftentimes may not be able to verbalize what they are seeing. Unless the child has an obviously misaligned eye or other abnormality, there is often no way for parents to tell that something is wrong.

## **How is amblyopia treated?**

The overall goal in treating amblyopia is to encourage the child to use the weaker eye. To correct strabismic amblyopia surgery is often necessary to correct the misaligned muscles of the eye. In some cases patching will be utilized to encourage further development of the amblyopic eye.

In refractive amblyopia, sometimes simply prescribing glasses can correct the problem. However, if glasses alone do not improve vision, then patching may be necessary. Patching may be done for weeks and in most cases months. Even after vision has been restored in the weak eye, part-time patching may be required over a period of years to maintain the improvement. Another way to encourage the child to use the weak eye is to blur the vision of the good eye with the use of drops or lenses. Your family eye doctor will discuss which of these treatments is best for your child.

Depending upon the disease found in the eye, surgery may be performed to correct the problem. One of the most common diseases found in young children are cataracts. Once cataract surgery is performed, glasses or contact lenses can be used to further restore focusing.

*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
- If the good eye becomes diseased or injured, the patient may be permanently visually disabled.

Parents play a vital role in determining the success of amblyopia treatment. Children do not like to have their eyes patched, especially if they have been depending on their good eye for clear vision. As a parent, the ability to creatively get your child to cooperate is a challenge. However, it is the key to successful treatment.

## **Amblyopia is preventable!**

Early detection and treatment is critical in correcting amblyopia. Having your child's vision checked at an early age by your family eye doctor is the first step in assuring normal visual development.