

Amblyopia(Lazy Eye)

What is amblyopia?

Amblyopia means reduced vision through an eye which has not received adequate stimulation during critical developmental stages in infancy and early childhood.

Brain and eye work together to produce vision. Our eyes focus light and convert it into nerve signals that travel to the brain along the optic nerve. Amblyopia is the medical term used when vision is reduced because the eye and the brain are not working together properly. The amblyopic eye is usually healthy, but seems not to be working normally.

What causes amblyopia?

Eyesight develops and improves in the first 4-6 months from birth. If the images aren't the similar, the vision pathways may not develop normally, and may actually get worse. The brain favours vision from one eye and this is from under stimulation of some vision centres of the other eye. This condition is also sometimes called a lazy eye.

Amblyopia may therefore be caused by any condition that affects normal visual development. It results most often from either a misalignment of a child's eyes (turned or crossed eyes) or a difference in image quality between the two eyes (one eye focusing better than the other.) Other causes include congenital cataracts, droopy eyelids and anything that results in the child not using both eyes.

In these cases vision through one eye is suppressed by the brain, which ignores the detailed information from that eye. If this persists, the vision centres in the brain never develop and learn to use this visual information properly.

How common is amblyopia?

Amblyopia is the most common cause of visual impairment in childhood. It affects approximately 2 or 3 out of every 100 children and unless it is successfully treated in early childhood it persists into adulthood. Amblyopia is the most common cause of monocular (one eye) visual impairment among children, young and middle-aged adults.

Can anything be done to treat amblyopia and prevent vision loss?

With early diagnosis and treatment, the sight in the blurred eye can be improved. The extend of this improvement depends upon the initial cause, the age of diagnosis and quality treatment.

When should treatment for amblyopia begin?

The earlier the treatment is started the better the opportunity to improve the decreased vision and the better the outcome is.

How is amblyopia treated in children?

It is essential to treat the underlying cause. This may involve one or more of the following:

1. Glasses are commonly prescribed to improve focusing or alignment of the eyes.
2. Surgery may be performed on the eye muscles to straighten the eyes, if non-surgical means are unsuccessful. The eyes need to be aligned for them to work together better.
3. Eye exercises and visual therapy may be recommended to teach comfortable use of the eyes together.

Treating amblyopia involves making the child use the eye **with** the reduced vision. Stimulating vision in the amblyopic eye helps the brain centres that interpret and process vision to develop more completely. Two common methods include:

1. **Patching/Occlusion** (covering the clearer eye) for a period of time ranging from a few weeks to as long as a year. This forces the child to use the less clear eye.
2. **Medication** (less common) in the form of eye drops or eye ointment. This may be used to temporarily blur the clearer eye forcing the child to use the amblyopic one. This is generally a less successful approach but may be considered if patching is impractical.

Once the vision has improved to a reasonable level, the child then needs to learn to use their eyes together. If binocularity is not successfully accomplished it is possible that the vision in the amblyopic eye may again deteriorate.

Eye exercises are used to encourage eye teaming reinforce them working together. Common exercises involve the use of red/green lenses or polarised filters.

What happens if amblyopia goes untreated?

If not treated early, an amblyopic eye may never develop normal vision and may even be functionally blind. This eye is however generally anatomically normal and healthy, while the amblyopic person remains monocular.