Amblyopia: Treatment with Patching

What is amblyopia?

Amblyopia (pronounced “am-blee-O-pee-uh”) is a decrease in vision. It is caused by one or both eyes sending a blurry image to the brain. When this happens, the brain does not learn to see clearly.

Amblyopia may occur even when the eye looks normal. When a child’s vision is developing in early childhood (up to age 10) it is important that they use both their eyes equally. When the blurry eye isn’t used, it gets weak. If amblyopia isn’t treated early, your child could become blind in that eye.

To help you understand amblyopia, imagine you are looking at an object a short distance away. When vision is normal, both eyes are pointed in the same direction. The image of the object is clear in each eye. Your brain receives an image of the object from each eye. These two images are combined into one three-dimensional (3-D) image.

If your child has amblyopia, their brain receives an image from one eye that is very different than the image from the other eye. The brain is not able to combine the two different images into one 3-D image. Since seeing “double” is confusing and uncomfortable, the brain “turns off” the image from the blurry eye. The brain only pays attention to the image from the good eye.

What are the common causes of amblyopia?

Anything that blurs the vision or causes the eyes to be misaligned during childhood may cause amblyopia. The common causes of amblyopia include:

Misaligned eyes (strabismus)

This is when one or both eyes cross inward (esotropia) or wander out (exotropia). The brain will ignore one of the images to avoid seeing double. Strabismus can sometimes be treated with glasses, but some children may need surgery.

Difference in refractive error (anisometropia)

This is when slight differences in the shape of the eyes cause light to come into the eye differently. This can make images appear blurred. The brain ignores the blurred image from the eye with the greatest refractive error. Refractive errors include nearsightedness (myopia), farsightedness (hyperopia) and astigmatism. Usually, glasses are used to correct the refractive error.
Cloudiness of the eye (cataract, corneal opacity)

Cloudiness in the cornea or lens can cause an out-of-focus image or block the entire image. The brain will ignore this eye and pay attention to the eye that sees clearly. Because the eye doesn’t have clear input or isn’t being used, it will develop amblyopia. Your child may need surgery to correct this.

Other visual problems or diseases

Other visual problems or diseases can disrupt the images sent to the brain from one or both eyes. These include tumors, droopy eyelid, malformation, trauma, or underlying systemic disease (a disease that involves many organs or the whole body, such as diabetes).

What are the signs or symptoms of amblyopia?

It is not always easy to know if your child has amblyopia unless they have a very noticeable problem such as misalignment of the eye or cloudiness of the cornea. Most children don’t realize that anything is wrong with their vision if they are still able to see clearly with one eye or they are too young to tell you what is going on.

How is amblyopia treated?

The first step in amblyopia treatment is to find out what is causing it. Once the cause is addressed then the amblyopia can be treated.

The preferred treatment is to place an eye patch over the good eye. This will promote the use of the weaker eye.

Another choice of treatment is to place a dilating eye drop in the good eye. This blurs the vision in that eye and promotes the use of the weaker eye. The use of drops may not be the best treatment if your child has severe amblyopia because the brain may still prefer to use the stronger eye. Check with your child’s healthcare provider before giving any eye drops.

When should treatment begin?

Patching should begin as early as possible. If your child is older, explain why the patch is being used. It may be helpful to show your child the patching on a doll.

If your child goes to school, explain to your child’s teacher the patching treatment and schedule. Ask the teacher to encourage your child to complete their usual tasks. The teacher can also help explain the child’s situation to classmates.

What patch should my child use?

The best patch to use is one that will cover the whole eye. We recommend an adhesive patch, such as NexCare Orthoptic Eye Patch, which can be found in most drug stores. You can also use Orto Pad Eye which is similar to a band-aid and totally covers the good eye. You can order Orto Pad Eye from www.ortopadusa.com.
Cloth patches that can be attached to a pair of eyeglasses are also available. This type of patch can be helpful but it is easier for your child to peek around it. The patch must cover the eye completely for the best chance of improving your child’s eyesight.

How often should my child be wearing the patch?
The difference in vision between the two eyes will determine how many hours your child will have to wear the patch.

Your child should be patching:
The _________ eye, for _______ hours a day, _______ days a week.

What should be done if the skin becomes irritated or sore?
• Leave the patch off at night so the skin can heal.
• Try a different type of patch.
• Change the shape of the patch by reversing its position on the eye.

What if my child removes the patch?
Patching the eye will be difficult at first because your child has to use their weaker eye. This will become easier as that eye becomes stronger.

For infants and toddlers, using extra tape over the patch is usually enough to keep it in place. If your child is still able to remove the patch, you may need to cover their hands with mittens or tube socks.

As a last resort, try splints to prevent the elbow from bending. This will keep the hands away from the face.

Remember, you are doing this to improve your child’s eyesight. If amblyopia is not treated your child will have permanently decreased vision. Glasses, contact lenses or surgery will not be able to fix this later in life.

Are there any exercises that can help?
The best exercise is wearing the patch. Fine, detailed work, such as workbooks, coloring and playing board games will also promote the use of the weaker eye.