

WHAT IS AMBLYOPIA?

Amblyopia, also called “[lazy eye](#),” is when one or both eyes don’t see well even with glasses. It happens when something affects how the vision develops in childhood. When you are very young, the brain learns how to see things clearly. In amblyopia, the brain gets a blurry picture from one or both eyes and so it does not learn to see well [See Figure 1]. This happens because the connections between the brain and the eye are not working right. Amblyopia can often be fixed in childhood, but if not treated, it can cause permanent vision loss. . It is the main reason that kids lose vision.

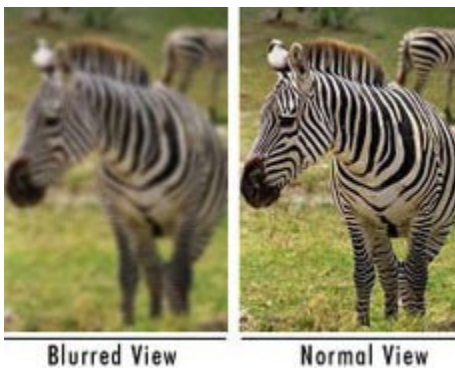


Fig. 1: Amblyopia occurs in childhood when the eye sends a blurry image to the brain that makes it hard for the brain to learn to see.

WHAT CAUSES AMBLYOPIA?

As mentioned above, amblyopia happens when a child’s eyes do not develop normal vision. This is usually in the first few years of life. If children are not able to use their eyes together, or if one or both eyes sees blurry, the part of the brain that controls vision does not develop well leading to reduced eyesight. Amblyopia can still happen even if the eyes look normal.

There are three main types of amblyopia:

1. **Refractive amblyopia** – This is the most common type. It happens when a child needs glasses but doesn’t wear them early in life. The eyes that need glasses do not develop good vision even though they look normal.
2. **Strabismic amblyopia**– This is caused by eye movement problems. One eye may turn in, out, up or down. When this happens, the brain begins to ignore, or “turns off” the wandering eye and does not learn to see well.



3. Deprivational amblyopia – Rarely, problems like ptosis (a droopy eyelid), [cataract](#) (cloudy spot in the lens/focusing part of the eye) or cornea scar (cloudy spot in the clear front part of the eye) can stop a child from seeing. If not treated very early, these children never learn to see very well and can have very poor vision.

HOW DO WE KNOW IF A CHILD HAS AMBLYOPIA?

Amblyopia can be tricky for parents or caregivers to spot because children don't usually complain about blurry vision. They will use the eye that sees better and won't notice that anything is wrong. Also, the weaker eye may look normal. Many times, a problem will only be found with a vision test. Vision Screening, recommended by the American Academy of Pediatrics (AAP), helps to catch amblyopia early when it can still be treated. Vision screening is done different ways for different ages.

Here's how:

1. Newborns: Pediatricians check for cataracts or other eye problems at birth.
2. Infants: Doctors check to see if babies can follow toys or objects with their eyes and make sure their eyes are straight.
3. Toddlers: Electronic tools may be used to find refractive error (need for glasses) or other signs of amblyopia.
4. Childhood and teenagers: Vision tests, similar to what is used for adults, can be done when children can identify shapes and letters.

HOW IS AMBLYOPIA TREATED?

The treatment depends on the type of amblyopia that the child has.

Glasses help some children with amblyopia, especially those with refractive amblyopia (see above) and strabismus (eye movement problem) that gets better with glasses (such as [accommodative esotropia](#)).

For many children, glasses may not be enough to help the amblyopia. Some children need treatment with eye patching or eye drops in the stronger eye to make it weak and to force the brain to use the weaker eye more. There are also newer treatments approved for amblyopia that use virtual reality with the child wearing a headset or special glasses while watching movies or videos. This treatment also blurs the stronger eye to help the weaker eye. Children with a droopy eyelid, cataract, scar or eye movement problem may need surgery to help the amblyopia.

WHEN SHOULD AMBLYOPIA BE TREATED?

Amblyopia should be treated as early as possible because treatment works better in younger children. Recent studies by the National Institutes of Health (NIH) found that starting treatment in younger teenagers (up to age 14 years) can still help vision, but not as much as starting treatment at younger ages. The key is to start treatment early for the best results.

WHEN SHOULD PATCHING BE USED FOR AMBLYOPIA TREATMENT?

Patching is a very good way to treat amblyopia. It works by covering the better seeing eye and forcing the brain to focus more on the weaker eye [See Figure 2].



Fig. 2: Patching the stronger eye allows the weaker eye to get stronger. There are tips available here to help parents and caregivers with patching: [Patching Tips for Caregivers](#).

WHEN ARE EYEDROPS USED FOR AMBLYOPIA TREATMENT?

Instead of patching, sometimes the stronger (good) eye can be made blurry with eyedrops. This treatment (like eye patching) forces the brain to use the weaker eye more to make the vision better. The most common eye drop used is called Atropine. It temporarily makes the pupil (dark spot in the colored part of the eye) bigger and the vision blurry. Your pediatric ophthalmologist will help you select what treatment regimen is best for your child.

ARE THERE ANY OTHER TREATMENTS FOR AMBLYOPIA?

YES! There are some newer treatments available in the US and approved to treat amblyopia. These treatments use virtual reality with the child wearing a headset or special glasses while watching movies or videos. During treatment, the headset or glasses blurs the stronger eye to help the weaker eye. Kids tend to like doing this treatment and seems to work just as well as patching. These newer treatments are still being studied to understand what types of amblyopia they work best for. Speak with your ophthalmologist if you have questions about amblyopia treatments.

ARE THERE DIFFERENT TYPES OF PATCHES?

Yes. There are different types of eye patches.

The classic eye patch is like a sticky "Band-Aid" which is placed directly to the skin around the eye [See Figure 3]. It comes in different sizes for different ages. There are also eye patches for children who wear glasses. There are patches made of cloth and foggy clear stickers (Bangerter foils) that can be placed on the glasses. "Pirate" patches with stretchy bands are not very helpful. Children often peek around the patch and then the treatment does not work. It is very important that any eye patch covers the eye really well so that the amblyopia treatment helps.



Fig. 3: The classic eye patch looks like an adhesive "Band-Aid" which is applied directly to the skin around the eye.

HOW MANY HOURS OF PATCHING ARE NEEDED EACH DAY FOR TREATING AMBLYOPIA?

The number of hours a child needs to wear an eye patch depends on how well the weak eye can see and if there have been any amblyopia treatments in the past. Your ophthalmologist will decide how long the patch should be worn. The amount of time can be different for each child, and can change as treatment is continued.

DO DROPS WORK FOR ALL CHILDREN WITH AMBLYOPIA?

Not all children get better vision with eye drop treatment for amblyopia. Eye drops may not work as well when the stronger eye is nearsighted or when the amblyopia is really bad.

HOW LONG DOES AMBLYOPIA TREATMENT TAKE TO WORK?

Amblyopia treatment might show some improvement within a few weeks, but it often takes months or longer to get the best results. Once vision gets better, wearing an eye patch less often or using eye drops every once in a while may be needed to keep that



better vision. This less intense treatment may be needed for several months to years to make sure the vision doesn't get blurry again.

The goal is to get the best possible vision in each eye. While not every child can reach perfect 20/20 vision, most can make their vision much better with treatment.

WHAT SHOULD CHILDREN BE DOING WHILE PATCHING OR USING EYE DROPS FOR AMBLYOPIA?

The key to making vision better with eye drops or patches, is to do the treatment as recommended by your ophthalmologist. Any activity will help build better vision as long as the child is awake and has their eyes open.

Doing amblyopia treatment with a child's favorite activities like watching TV, playing games, coloring or tablet time might make it easier to get the child to do the treatment. Some ophthalmologists doing close up activities like reading, coloring, hand-held computer games may help make the vision get better faster.

SHOULD PATCHING BE DONE IN SCHOOL?

School is often a good time for eye patching since teachers may be able to help. It also teaches classmates valuable lessons about accepting differences. While most children do not need to change their school activities while patching, some children may need to sit in the front row. If everyone understands, school patching should not be a problem.

Some children do not do as well patching at school so it is important that parents and caregivers pay close attention to amblyopia treatment. Parents should be flexible in choosing when to schedule patching.

WHAT IF MY CHILD WON'T WEAR THE PATCH?

Many children do not like to wear an eye patch at first. It may take persistence and encouragement from family. Giving rewards for keeping the patch can help. As mentioned above, children may wear an eye patch better if they are allowed to do something fun like watch TV or play video games with the patch on.

For more tips on using eye patches in children, click [HERE](#).

CAN SURGERY TREAT AMBLYOPIA?

Surgery is sometimes a part of the amblyopia treatment plan for children with strabismus or ptosis or cataracts. However, children often need patching or eye drops for amblyopia before or after surgery.



WHAT HAPPENS IF AMBLYOPIA IS NOT TREATED?

If amblyopia is not treated in childhood, the vision will stay permanently blurry, even with the best glasses. Unfortunately, treatments we have for amblyopia don't work for adults.

For most children, the ophthalmologist will give instructions and track progress, but the real work of amblyopia treatment – like wearing patches or glasses or using eye drops – this is done by the patient and their family.

WHAT HAPPENS IF AMBLYOPIA TREATMENT DOES NOT WORK?

In some cases, amblyopia treatment may make vision much better. It is hard to decide when to stop treatment, but sometimes it is best for both the child and the family if we think the treatment is not helping.

Children with amblyopia in one eye and good vision in the other eye should wear safety glasses to protect the good eye. As long as the good eye stays healthy and safe, these children can do most things in life without any problems.

Most of the time, if amblyopia is caught early and vision is not too bad, it can be treated successfully.

WHERE CAN I FIND MORE INFORMATION ON AMBLYOPIA?

More information about past and ongoing clinical studies regarding amblyopia can be found at the National Eye Institute web site. [VISIT SITE »](#)

[Read about Amblyopia in Hebrew](#)

More technical information may be found on the [EyeWiki Site »](#)

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