



## North Shore Eye Centre

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## AMBLYOPIA (Lazy Eye)

### What is amblyopia?

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Normal eyes move similarly to one another and the retina of both eyes sends equal visual images to the brain. A lazy eye's movements are slower than the movements of the normal eye and therefore two different visual pictures are sent to the brain. This causes confusion in the brain. Due to this confusion the brain ignores the visual images coming from the lazy eye and processes only the visual pictures of the normal eye.

### What causes amblyopia?

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Unequal refractive errors, misaligned eyes, crossed eyes, cataracts, retinopathy of prematurity or other abnormalities can cause amblyopia. Cyanide in tobacco smoke or drinking methylated spirits may also cause amblyopia in adults. Originally the word amblyopia meant blindness of an eye, but now it refers mainly to lazy eye caused by problems in childhood.

### How can amblyopia be treated?

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The most common technique to treat amblyopia is to cover the good eye (patching). By patching the good eye, the lazy eye is encouraged to develop good vision.



Figure 1: Patching of one eye



As amblyopia often occurs in children, patching should begin as early as possible. If the child is old enough to understand, it should be aware of the importance of patching. While making allowances for added difficulty, teachers can help to encourage the child to perform the usual tasks. The other really important thing about treating amblyopia is that the ophthalmologist will test your child's refraction to determine if the child needs to wear glasses.

## How long will the normal eye need to be covered?

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As every child is different, the duration of the covering may vary. Generally, the younger the child and the earlier the treatment is commenced, the earlier the child responds to the treatment.

Sporadically, the covered eye may temporarily decrease vision under treatment. After removing the patch normal vision will reoccur in general.

After vision has improved in the lazy eye, it might be necessary to patch the good eye for another few weeks or months to prevent relapse. However, worsening of vision can occur again, which makes it important that the vision is checked frequently throughout childhood. Unfortunately not all children respond to this treatment and your ophthalmologist may advise to stop the treatment.

## Can misaligned eyes be corrected by patching?

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Although patching does improve vision in a lazy eye it does not correct misaligned eyes. Realignment can be recommended when vision is good in each eye, or occasionally your ophthalmologist might operate to realign the eyes even before the vision has completely normalised. However if the vision is not good then the realignment has a more risky chance of success.

## Why are there different patches?

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Eye patches come in different sizes. A patch should fit firm and comfortably on the eye and shouldn't allow the child to be able to peek around the edges. A homemade patch made of a gauze pad and tape will also do. Patches, such as a black eye patch with an elastic band, are not recommended, as they can be easily removed or lifted. In some cases a plastic patch attached to the child's glasses may also serve as an adequate patch.



## Are there any side affects?

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Some children might get irritated skin. Try a different type of patch, like the homemade gauze pad and some antiallergenic tape. Changing the shape of the patch and placing to another position on the eye can also help. Leave the patch off at night.

## What if the child takes off the patch?

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Depending on the age of the child, extra tape over the patch is often enough to secure it. If that does not help you might need to cover the child's hands with mittens. Tube socks that extend over a long-sleeved T-shirt work well. As a last resort, your child may have to wear specially designed plastic elbow restraints. Wearing the patch only when in school or on weekends may achieve good results, but the full treatment of the lazy eye may take longer. Sometimes atropine eyedrops can be used to blur the good eye for a few days in a row, and allow the lazy eye to catch up, but atropine should be kept out of reach of tiny children lest they ingest it in large doses and cause toxicity. When used as an eyedrop, the dose is much smaller, but many children hate having eyedrops. Lie the child on his or her back and squirt the drops onto the eye - even if the child has screwed the eyelids shut, some will enter the eyes when the child eventually opens them. It's pretty well impossible to overdose using eyedrops unless you use them more frequently than recommended, or unless a child inadvertently swallows the liquid from the bottle. It's the frequency of administration, not the number of drops in the eye that count. So squirt them onto those lids, even if screwed tightly shut.

## Can exercise help a lazy eye?

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Wearing the patch is the best exercise! Also, keeping the child's interest in wearing the patch by detailed work will encourage use of the lazy eye and speed visual recovery.