

Myopia and myopia management



Professional Excellence in Eye Health



THE COLLEGE OF
OPTOMETRISTS

Overview

What is myopia?

Myopia means short-sightedness. If your child is myopic (short-sighted), this is usually because their eye is slightly longer than usual (from the front to the back). This means that light focuses in front of their retina at the back of their eye, rather than focusing directly on it.



If you have any concerns about the health of your eyes, please visit your local optometrist. Optometrists are the eye health specialists in the community.

Who is affected by myopia?

Around a third of people in the UK are myopic. The condition usually starts in childhood (between six and 13 years of age) and tends to get worse until the eye has stopped growing. Myopia can also develop in younger children and adults. People are more likely to become myopic if their parents are also myopic.

What are the symptoms of myopia?

If your child is myopic, they will have problems seeing things in the distance clearly without glasses or contact lenses, but will be able to see things that are close to them. There are varying degrees of myopia.

How is myopia treated?

Myopia is usually easy to correct with glasses or contact lenses (or both). Some adults with myopia have laser surgery to correct it. There are some treatments that may slow down myopia during childhood. This is called myopia management.

How myopic may my child become?

The exact causes of myopia are not fully understood, so it is difficult to predict accurately how myopic any child may become in the future. Researchers know that the following things may make it more likely that a child will eventually become myopic:

- having one or both parents with myopia;
- being of east-Asian ethnic origin;
- spending limited time outdoors.

Becoming myopic before nine years old may increase the risk of developing a high level of myopia. If a person has a high level of myopia, they will be at a slightly greater risk of losing their sight later in life due to conditions such as retinal detachments, glaucoma and myopic retinal degeneration.

Can I reduce how myopic my child will become?

Trying to slow down how quickly myopia gets worse is called myopia management. A number of treatments have been developed for this, including specially designed contact lenses or glasses, and atropine eye drops, but not all are commonly available in the UK. Current evidence suggests that using special contact lenses or atropine eye drops may reduce the progression of myopia by 40% to 60% after one to two years (some manufacturers' studies suggest a reduction in its progression over three years). Using specially designed glasses can also help to slow down the progression of myopia.

If myopia management is successful, this may mean your child grows up with a lower level of myopia than they would have had without treatment. This means that they may not depend on their glasses as much as they would otherwise have had to, and the prescription for their glasses will be lower, so their glasses will be thinner and lighter. Being less myopic may mean your child is slightly less likely to be affected by conditions such as retinal detachment and myopic retinal degeneration.

Although a lot of research has already taken place, it will take many more years before we fully understand how successful myopia management can be. Much of the current research is based on children from east-Asian ethnic backgrounds, and we need more research to understand how myopia management will affect children with European ethnic backgrounds.

Also, there is almost no evidence about the long-term results of myopia management, including whether myopia will start to get worse again after the treatment has stopped.

Myopia management may reduce the risk of your child developing myopia-related sight loss in adulthood, but it will not take away this risk altogether. The evidence does not currently tell us whether the benefits of myopia management outweigh the disadvantages of treatment. Despite this, children with myopia who are being considered for traditional contact lenses should also be considered for myopia-management contact lenses.

What are the options for myopia management?

Evidence for myopia management

The evidence does not currently tell us whether the long-term benefits of myopia management outweigh the costs and risks. If you want to find out more about the risks of a specific myopia treatment, ask your child's optometrist for more information.

There are two main treatments to try to reduce the progression of myopia:

- wearing glasses or special contact lenses; or
- using eye drops.

Glasses

These are specially designed glasses. They look the same as traditional glasses but change the focus in the peripheral vision. They are likely to become available in the UK by 2021.

Contact lenses

There are two types of contact lenses which may be used to manage myopia:

- soft daily disposable contact lenses which have been designed to change the focus of light in the peripheral vision. Your child would wear these in a similar way to standard daily disposable contact lenses. Their vision may be slightly less clear with these than with traditional contact lenses.
- orthokeratology (Ortho-K) or corneal-reshaping lenses. Your child would be fitted with specially designed rigid gas-permeable (RGP) lenses, which they would wear overnight. These lenses help to alter the shape of the cornea while your child sleeps, in order to temporarily reduce or correct mild myopia and reduce the progression of myopia.

Eye drops

A very low dose of a drug called atropine has been shown to slow down the progression of myopia. The drops are put into the eyes every day. Currently this medicine is not licensed in the UK for treating myopia. More research is being done in the UK to find out whether it is safe and how well it works.

Choosing no myopia management treatment

Your child will be prescribed traditional glasses or contact lenses if they are diagnosed with myopia. The glasses or contact lenses will improve how well your child can see, but will not slow myopia progression. As the evidence does not currently tell us whether the long-term benefits of myopia management outweigh the costs, side effects and risks, you might choose to continue to use traditional glasses or contact lenses until there is more evidence about how well myopia management may work.

Is myopia management safe?

The risks of wearing contact lenses to manage myopia are similar to the risks of wearing traditional contact lenses. Some people experience mild discomfort and occasional blurred vision. With all types of contact lenses there is also a low risk of serious complications, such as corneal infections, that may result in sight loss. There is a higher risk of complications associated with wearing contact lenses overnight. If your child wears any contact lenses, it is important that they follow the optometrist's advice about hygiene and caring for the lenses, and that they have regular contact lens check-ups. There is some evidence that children can be as good as adults at using contact lenses.

Common questions

What are the advantages and disadvantages of myopia management?

Advantages	Disadvantages
<ul style="list-style-type: none">• On average, myopia management may result in a 40% to 60% slowing of myopia progression.• There may be a lower risk of myopia-related sight loss in adulthood.	<ul style="list-style-type: none">• Some people's vision may be marginally less clear during treatment.• There is a risk of complications from wearing contact lenses.• You have to pay for myopia management and it is more expensive than traditional glasses or contact lenses• We don't know if the long term benefits outweigh the costs and risks

Will my child still need to wear glasses or contact lenses after myopia management?

It is very likely that your child will still need to wear glasses or contact lenses even if the treatment to manage their myopia has been successful. However, they should have a lower level of myopia than they may have had without myopia management.

How will I know whether myopia management is working?

Your child's optometrist may use a calculator to help predict an expected level of myopia and so assess the reduction in the progression of myopia. However, it is not possible to know for certain how much the progression of your child's myopia has been reduced and how successful their treatment has been.

When will my child be able to stop using myopia-management contact lenses?

There is not enough evidence from research to provide clear guidance on when and how to end the treatment. Health professionals currently believe that children should stop using myopia management in their late teens. Your child may need to continue to have treatment, or they may need to restart their treatment if their myopia starts to get worse again after their treatment has stopped.

Will myopia management prevent my child from losing their sight in adulthood?

There is almost no evidence about the long-term results of myopia management. Myopia management may slightly reduce the risk of your child losing their sight as a result of high myopia in later life (when they are an adult), but it is very likely that there will still be some risk of myopia-related sight loss.

Will playing outdoors affect myopia in children?

An active lifestyle, particularly involving spending time outdoors, does appear to be helpful in preventing myopia.

Will using a screen affect myopia in children?

The length of time your child spends looking at a screen (like a tablet or phone), watching TV or reading doesn't appear to affect how likely it is that your child will develop myopia or will have worse myopia. However, spending time on these activities might mean your child will spend less time outdoors, which we know can help prevent myopia.

What happens if I choose not to have myopia management treatment?

Your child will still be prescribed traditional glasses or contact lenses if they are diagnosed with myopia. These will improve how well your child can see, but will not slow myopia progression. Your child may be at a slightly higher risk of being affected by conditions that can lead to sight loss, but the risk of sight loss remains relatively low.

For more information, please talk to your local optometrist.

If you have any concerns about the health of your eyes, please visit your local optometrist. Optometrists are the eye health specialists in the community.

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Letters after your optometrist's name may mean they have received further training. Prof Cert Paed Eye Care means they have a Professional Certificate in Paediatric Eye Care. Higher Cert CL means they have a Professional Higher Certificate in Contact Lens Practice.

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for more information.

This information should not replace advice that your optometrist
or other relevant health professional gives you.

Your local optometrist

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