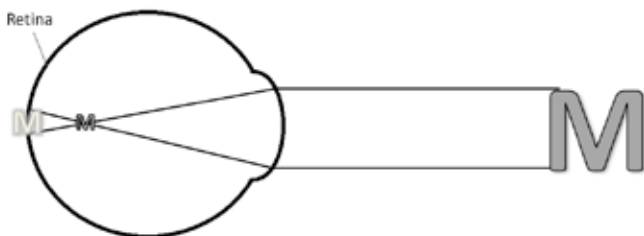


Myopia and Myopia Management

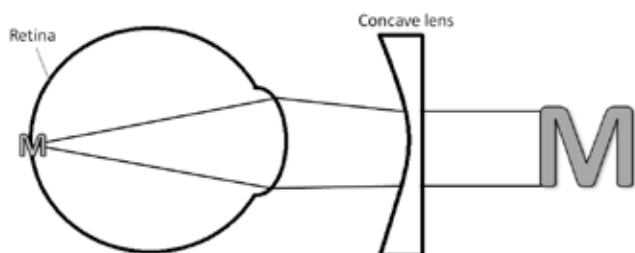
What is Myopia?

Myopia is the medical term for short-sightedness. A person with myopia will experience blurry vision when looking at objects far away and clearer vision when looking at objects closer to them.

For a clear image to be seen by the eye, light must come to focus on the light-detecting cells within the retina, at the back of the eye. Myopia occurs when the length of the eye grows longer than average, and therefore the light comes to focus in front of the retina, leaving a blurry image to fall on the retina at the back.



The blurring caused by myopia can usually be corrected with concave (negatively powered) spectacles and/or contact lenses which refocuses the light to fall onto the retina at the back of the eye.



Why is myopia a problem?

The blurry vision caused by myopia and the need for spectacles or contact lenses is often seen as an inconvenience rather than a medical problem. However as the level of myopia increases, the risk of developing sight-threatening eye conditions in later life such as glaucoma, retinal tears and detachments, cataract, and myopic maculopathy, increases significantly.

Across the world the number of people with myopia is increasing significantly. In the UK the number of children with myopia has doubled since the 1960s to 1 in 3, this is predicted to increase further to 1 in 2 by 2050.

Why is my child becoming myopic?

Myopia is often an inherited genetic trait, a child is more likely to become myopic if:

- One or more parent is myopic
- They are of South Asian descent

More recent research has shown that there are some environmental factors that increase the risk of a child becoming myopic including:

- Spending a lot of time doing close-work activities (such as reading, using tablets, or computers).
- Spending more time indoors

Can I do anything to stop my child becoming myopic, or reverse it?

Unfortunately there is currently no treatment or exercises that will completely stop myopia developing or reverse it once it has developed. However research has shown the progression of myopia can be slowed down so that a child does not become as highly myopic as they could have done, with some lifestyle changes and/or myopia management. These lifestyle changes include:

- Spending more time outdoors - aim for 90 minutes or more per day (with UV protection for skin and eyes).
- Limiting time spent reading, on a tablet or on a computer – this should be no more than 2 hours on top of normal school work per day. Also use the 20:20 rule, for every 20 minutes of close work spend 20 seconds looking at something far away.

What is myopia management?

Myopia management is the term given to a range of treatments which aims to slow down the growth of eye length and therefore reduce the rate at which a child is becoming myopic. Myopia management cannot completely stop or reverse myopia progression, but aims to ensure your child develops a lower level of myopia than they would have done without treatment. At lower levels of myopia your child has a lower risk of developing a sight threatening condition later on in life.

Treatment options available include:

Spectacles

- Specially designed myopia-control progressive spectacle lenses that are similar to varifocals
- Carefully prescribed bifocal spectacle lenses

Contact Lenses

- Specially designed daily disposable contact lenses – these are soft contact lenses that are worn in the day and provide clear central vision, whilst changing the focus of light in the peripheral parts of the vision.
- Orthokeratology (Ortho-K) contact lenses – these are smaller, hard contact lenses that are worn overnight to reshape the front layer of the eye. This enables the vision to be clear throughout the day and reduce the rate at which the eye length increases

Atropine Eye Drops

- Low doses of atropine eye drops have shown to be effective at slowing the rate of progression. Whilst these are being widely used in some other countries, atropine eye drops are not yet available in the UK for myopia management.

Optical practices offering Myopia Management should be able to discuss a range of options with you and consider your preferences. The most suitable option for your child will depend on their age, current spectacle prescription, and how well balanced their eye muscles are.

Who is eligible for myopia management and how successful can it be?

Studies so far have shown that the younger a child is started on myopia management, the more successful it will be. Its success is also dependant on the type of management used, spectacle options, on average reduce the amount of myopia developed by about $\frac{1}{3}$ and contact lens options on average reduce the amount of myopia developed by about $\frac{1}{2}$.

So that means a child whose prescription settles at -6.00DS without myopia management, may have developed a prescription of -3.00DS to -4.00DS with successful myopia management.

If your child is currently being treated for any eye condition by the hospital eye team we would recommend that you discuss your desire to explore myopia management before starting treatment. Although this may not be relevant to the hospital treatment, it may influence the way that the hospital team needs to manage and treat another eye condition.

Are there any risks involved?

Myopia management has become more prominent in the last twenty years, so in comparison to standard spectacles or contact lenses, some of the treatments are fairly new.

The risks of wearing myopia management spectacles or contact lenses are no greater than wearing normal spectacle lenses, or contact lenses. Recent studies have suggested that contact-lens related complications have arisen in 1 out of 1000 children wearing Ortho-K lens wearers and 1 in 5000 children wearing daily disposable contact lenses.

Studies are still being conducted into how effective and safe atropine eye drops are in myopia management. However, atropine eye drops have been used for many years to manage other eye conditions safely.

Any optometrist or contact lens optician who offers myopia management will be able to discuss the potential risks and benefits in more details with you.

Is Myopia Management available on the NHS?

Myopia management has been a relatively recent development in refractive eye care that shows great promise in reducing the risk of sight-threatening conditions posed by myopia. Many of the products used in myopia management have been approved for use in the UK by the relevant regulators, however they have not yet been approved for funding for treatment via the NHS. Local community optometrist may provide myopia management at a cost to the patient or the patient's parents/legal guardians, which will set by the individual practice.

The team at the West of England Eye Department are keen to let all of our patients know about any treatment options that may be beneficial to them.

Where can I find out more?

If you are interested in finding out more about myopia management some of the websites listed below will be a good place to start. If you would like to discuss whether myopia management would be a good treatment option for your child or would like to ask any further questions, please contact your local optometrist.

- www.myopiaprofile.com
- www.mykidsvision.org

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