



Myopia Management

What is myopia?

Myopia, also referred to as short-sightedness or near-sightedness, is when objects at a distance are blurred to the observer. This is usually a result of the eye being longer than average. As a result, incoming rays of light fall in front of the retina, rather than on it. Glasses or contact lenses are able to refocus that light onto the retina.

Why is myopia a concern?

The rate of myopia is growing across the world. In 2020, 33% of the world's population was myopic and it is projected to reach 50% by 2050. Myopia is caused by the eye growing over time to a larger than average length. As the eye grows, the tissues of the eye stretch and become thinner. Consider the example of blowing up a balloon; as the balloon increases in size, the rubber gets stretched and thin. Excessive eye growth raises concern because the stretching can lead to an increased likelihood of vision threatening eye diseases later in life, such as myopic macular degeneration, retinal detachment, glaucoma and cataract.

Why manage myopia in children?

The goal of optometry is to provide good vision and to help maintain healthy eyes. The best type of medicine is preventative care and early intervention is always key. Excessive growth to the eye raises the risk of developing unhealthy eyes and poor vision. As most of this growth tends to occur in children, early intervention at that stage in life can be the most impactful. Myopia management aims to apply specific treatments to slow down the growth of the eye.

The short-term benefit of slowing myopia progression is that a child's prescription will change less quickly, giving him/her clearer vision for longer between eye examinations.

The long-term benefit is reducing the lifetime risk of eye disease and vision impairment; as myopia increases, so do the risks of visual impairment. One dioptre reduction in myopia lowers the risk of myopic macular degeneration by 40% and the risk of vision impairment by 20%.

Treatments for slowing myopia progression

It is important to note that no treatment can promise the ability to stop myopia progression in children, only to slow it down.

Specific types of spectacles, contact lenses and eye drops have been proven to slow myopia progression in children. The best option for your child will depend on his/her current prescription and other vision and eye health factors determined in his/her eye examination. Your optometrist will discuss the options with you to determine the best course of action.

Glasses

Standard single-focus spectacles do not slow the worsening of childhood myopia, but specific advanced lens designs can. Myopia controlling spectacles can both correct the blurred vision of myopia and work to slow down myopia progression. They are safe to wear and adaptation is typically easy, with the only side effects being related to the limitations spectacles pose for sport and active lifestyles.

Soft Contact lenses

Specially designed contact lenses worn during the day can both correct the blurred vision of myopia and work to slow down myopia progression.

Risks and Safety

Contact lens wear increases the risk of eye infection compared to wearing spectacles, but the risks are very low. With proper hygiene and maintenance procedures, this risk can be well managed. Other side effects of contact lenses to control myopia can be temporary adaptation to the different experience of vision, which typically resolves in a few days.

Benefits

There are many benefits to children wearing contact lenses such as improving confidence in school and sport, and providing a more natural vision experience. Interestingly, children aged 8-12 years can only take 15 minutes more to learn how to handle contact lenses than teens, so this is often not a real hurdle to overcome.

Orthokeratology - (overnight contact lenses)

These more rigid contact lenses are worn overnight and removed upon waking. They work by reshaping the cornea in such a way that spectacles or contact lenses will not be required for clear vision during the day. They can require more appointments for fitting and follow-ups than other types of myopia control treatments. Their risks and safety are similar to soft contact lenses. Adaptation to the lens-on-eye feeling can take 1-2 weeks but shouldn't affect sleep. There are significant benefits for water sports and active lifestyles, and since the contact lenses are only worn at home there is low risk of them being lost or broken during wear.

Currently, this method is not being utilized at Russell West Optometry, but we are happy to refer you to a colleague if this is decided to be the preferred method of myopia management.

Atropine eye drops

Atropine in low concentrations (0.01% to 0.05%) has been found to slow myopia progression with few side effects (potential impact on near focusing and light sensitivity). These eye drops are typically used at night time, before sleep, so are only utilized in the home environment. Because spectacles or contact lenses are still needed to correct the blurred vision from myopia, atropine eye drops are often not the first choice for myopia management. However in some cases they are added into the overall myopia management plan.

Risks and Safety

The risks and side effects of atropine include potential increased sensitivity to light due to larger pupil size, and problems with close-up focusing. If present, these side effects can be managed with added tint and prescription adjustments to glasses. Mild allergy can occur in 2-7% of children.

Please note: Atropine can be toxic if ingested in high quantities by mouth in children. Medication safety in the home is extremely important.

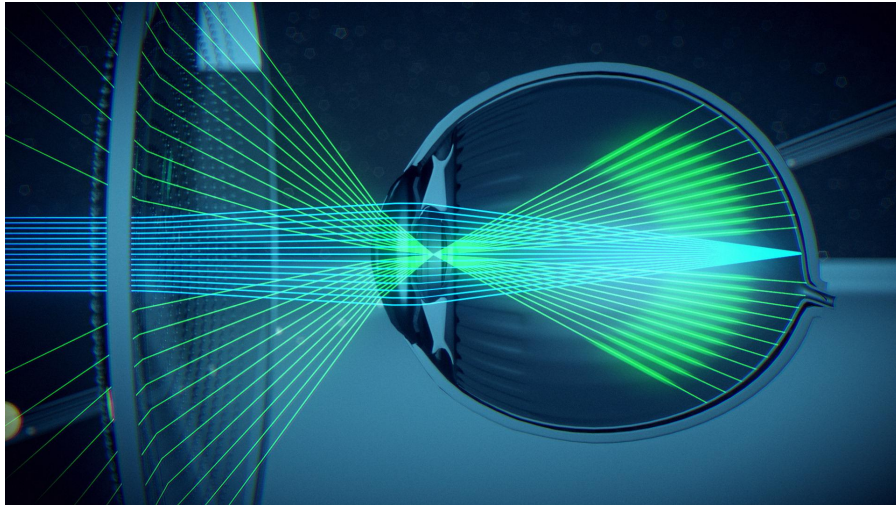
Appointments and associated fees

If at your child's regular eye examination it is determined that they would benefit from myopia management, the first step is to return for a **myopia management baseline examination**. This appointment will include detailed measurements of the focusing surface and actual length of the eyes. This is done with automated testing that uses nothing more than a few brief flashes of light. Eye drops that temporarily blur vision will be used to gain further information regarding the prescription.

A discussion of the myopia management treatment options will follow the measurements and it will be determined which treatment option will be optimal for your child.

Initial follow up visits will depend on the treatment option chosen; however, with all treatment options, a recurrent 6 month follow up will be booked to review how the treatment is going and to monitor progression.

Fees for these visits and treatments are not covered by OHIP.



<https://youtu.be/luw58ETlcco>