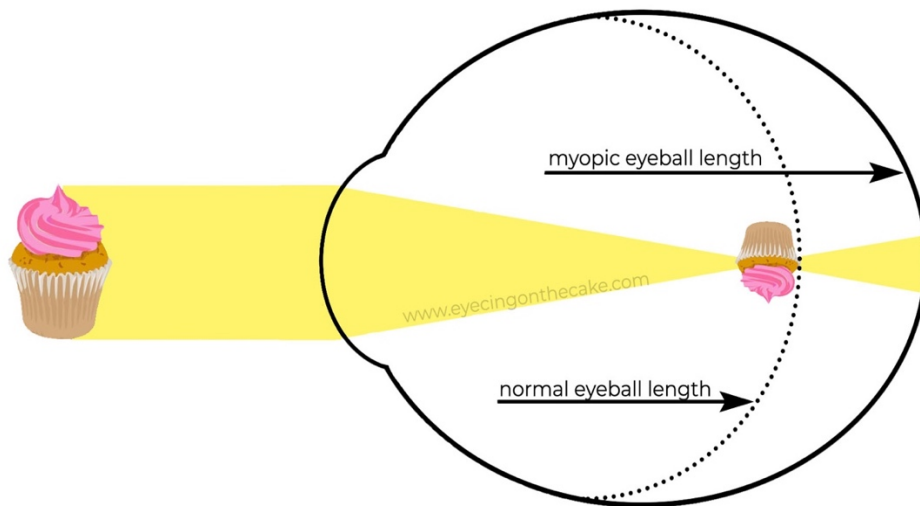


# MYOPIA MANAGEMENT

## What is myopia?

Myopia, or near-sightedness, is when the eye focuses images *in front of* the retina (the tissue that lines the back of the eye) instead of *on* the retina. This most often happens because the eyeball is too long. Myopia is a refractive error that results in blurred distance vision in low amounts, but in higher amounts it leads to an increased risk of eye diseases. More and more people are developing myopia; experts estimate that by the year 2050, half the world's population will be myopic!



## Are there ways to prevent the *development* of myopia?

There is a lot we do not yet know about how myopia develops. The current research suggests that decreased time spent outdoors (1) and prolonged time spent doing nearwork (2) may increase the risk of developing myopia.

## Are there factors that increase my child's risk for becoming highly myopic?

Studies have shown that the following factors increase the risk of progression to high myopia:

- One or both parents myopic
- Onset of myopia at or before age 9
- Increase in myopia of more than -1.00 per year
- East Asian ethnicity

## Why do we care about slowing myopia progression?

Besides an increased dependence on glasses and/or contact lenses, higher amounts of myopia have been associated with increased risks of some eye diseases. This increased risk does not go away after refractive surgery (LASIK, PRK, etc), because the eye is still myopic in structure.

	Relative risk (compared to a person with no refractive error) at:		
	-2.00D	-5.00D	-8.00D
<b>Myopic macular degeneration</b>	2 x higher	41 x higher	126 x higher
<b>Retinal detachment</b>	3 x higher	9 x higher	21 x higher
<b>Cataract</b>	2 x higher	3 x higher	5 x higher

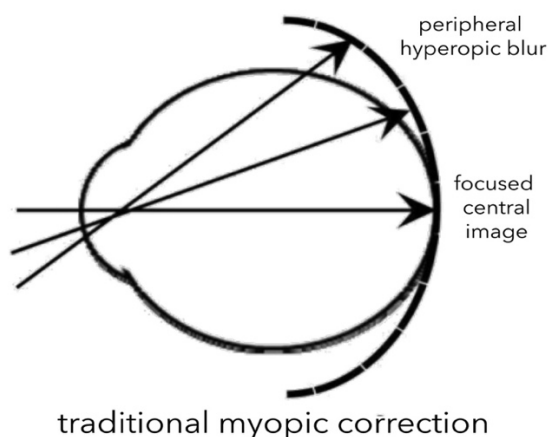
Adapted from Flitcroft, 2012, © 2018 Brien Holden Vision Institute

### How can we slow myopia progression?

There are 3 main methods that have been studied and proven effective:

1. Orthokeratology: specially-designed retainer lenses worn nightly (3)
2. Soft Multifocal Contact Lenses: center-distance soft contact lenses worn daily (4)
3. Atropine Therapy: a low-dose of atropine (an eye drop) used on the weekends (5)

Multifocal glasses (bifocals or progressives) are a potential option, though the research is not overwhelming and they are certainly not as effective as the above options (6). The only three methods that have consistently shown myopia control a greater than 30% reduction in myopia are the three indicated above.



All of these methods work to slow myopia progression by slowing the elongation of the eye. The way this is done differs slightly between the methods. Orthokeratology and multifocal contact lenses, and multifocal glasses to a lesser extent, work by reversing the *hyperopic* defocus that occurs in the peripheral retina of myopic individuals. This peripheral hyperopic defocus is what is thought to stimulate the elongation of the eye, which increases myopia. The *myopic* defocus induced in the peripheral retina by these methods is believed to slow the elongation of the eye, thus slowing the progression of myopia (7). While several studies have indicated that low-dose atropine slows the axial length of the eye and thus the progression of

myopia, the mechanism by which it does so is less well-understood. Researchers theorize that atropine acts on the retina or sclera, inhibiting thinning or stretching of the sclera, and thereby eye growth (8).

**Interested in learning more?**

Call us to schedule a Myopia Management Consultation, where our team will collect more data about your child's eyes, and our doctors will give you personalized recommendations based on your child's age, current prescription, family history, and daily habits. If you choose to pursue myopia management, the cost of this consultation will be deducted from your overall program cost.



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