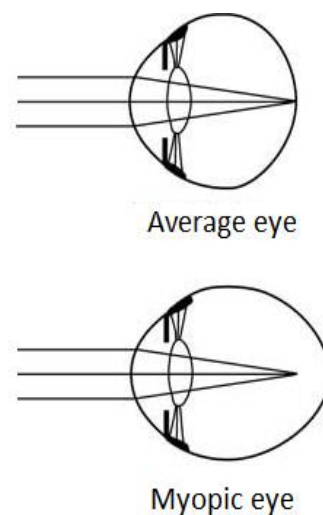


The Myopia Management Program at Achord Eye Clinic

Myopia: What Is It?

Myopia, also called nearsightedness, is the condition where near objects are clear but distance objects are blurred. Typical myopia can be diagnosed as young as 5-6 years old and is caused by the eye continuing to elongate after it should have stopped growing. Myopia gets worse as children get older - this is the reason why children need new glasses every year. Usually, this process stabilizes around 18 years old, though it can continue further into the 20s.¹ The higher the nearsighted prescription, the higher the risk for a variety of sight-threatening eye conditions, including glaucoma, retinal detachment, and macular degeneration. After reaching prescriptions higher than -3.00 diopters, the risk is so high that it becomes almost a certainty that one of these conditions will occur at some point in a myopic individuals' lifetime.^{2,3} Higher prescriptions also limit the possibilities and affect outcomes for refractive (LASIK) surgery later in life. High prescriptions affect a child's quality of life and significantly increases their dependence on glasses and contacts in adulthood.



How much does the risk for disease increase?			
Degree of Myopia	Retinal Detachment	Glaucoma	Macular Degeneration
< -3.00 D	3X	2X	2X
> -5.00 D	21.5X	14.4X	40X

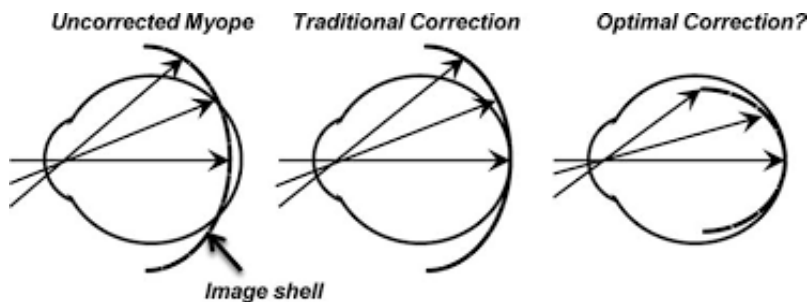
While we can fully correct the blur from myopia with standard contact lenses or glasses, slowing down this yearly increase, or progression, of myopia would lower a child's risk for these sight-threatening conditions and improve their future quality of life. Several different methods have been shown to slow or stop myopia progression in children.

- Multifocal Soft Contact lenses (MiSight lenses)
- Orthokeratology (also called Corneal Refractive Therapy or CRT)
- Low-Dose Atropine
- Bifocal glasses

There are no guarantees that these treatments will work for every individual, but the seriousness of these conditions warrants taking steps to prevent any possible future loss of vision.⁴

How Do Myopia Management Interventions Work?

Multifocal Soft Contact Lenses and Orthokeratology lenses appear to reduce myopia progression by about 50% per year. This means, if a patient's prescription was going to increase by 1.00 diopter in a year, wearing these lenses could slow this change to only 0.50 diopters over the course of that year. Multifocal Soft Contact lenses and Orthokeratology lenses appear to work the same way. Nearsighted patients wearing traditional glasses or contacts have clear focused vision centrally, but around the periphery these glasses and contacts push the focus of light behind the eye. This focus behind the eye has been hypothesized to create a signal for growth which triggers the eye to grow even longer. Multifocal soft contact lenses and orthokeratology both bring this peripheral focus from behind to inside the eye. Bifocal glasses work by a similar mechanism, but are only predicted to slow myopia progression by around 15-30% per year. This is likely due to the fact that bifocal lenses can only adjust the defocus in part of the eye, as opposed to 360 degrees around the eye.^{5,6}



Low-dose Atropine (0.05%) dosed once a day at night has also been shown to be effective in slowing myopia progression in children, at the rate of 50% to 60%. We don't fully understand the mechanism by which Atropine works to slow progression. Atropine may also cause re-bound growth if the drop is ever stopped.⁷ For this reason, parents who wish to start Atropine therapy on their child should commit to using the drop at least until their child is at least 17 years old.

Further reading:

- The Myopia Institute (myopiainstitute.org)
- My Kids Vision (mykidsvision.org/en-us)
- Bullimore, Mark & Brennan, Noel. (2019). *Myopia Control: Why Each Diopter Matters*. Optometry and Vision Science 96.1.10.1097
 - www.researchgate.net/publication/333266680_Myopia_Control_Why_Each_Diopter_Matters

The Myopia Management Program at Achord Eye Clinic

Pricing is due at the time of service. We do participate in CareCredit, which offers short-term loans to pay for medical services. These prices are for a year's worth of services. Currently, these services are not eligible for insurance coverage.

What is included when you participate in this program:

- A year supply of contact lenses for MiSight. One pair of contacts which should last a year with Orthokeratology
- All fitting and follow-up visits
 - These visits include fitting for the lenses, trial lenses, training on insertion and removal, and the specialized testing necessary to appropriately fit these lenses.
 - This also includes regular monitoring for changes in a child's prescription.
- As Atropine therapy only requires the use of drops, fewer follow-ups are required

Consult visits are available to discuss these options more in-depth. The visit consists of a thirty-minute conversation with Dr. Hair about the program and which option works best for your family. This visit will cost \$75. If you choose to go forward with the program this \$75 will be credited toward the cost for whichever intervention you choose.

Meet the Doctor

Dr. Lea Hair attended University of Houston College of Optometry. While in Optometry school she opted to start a dual-degree program and earned a Masters in Optometric Research and Vision Science. Dr. Hair's master's thesis research centered on the soft contact lenses used in Myopia Control. Her research was presented at national Optometry meetings and published in a peer reviewed journal in 2021. Now she works at Achord Eye Clinic, where her primary passion involves fighting the Myopia Epidemic. This is personal for Dr. Hair, as she is a -7.50 diopter myope herself and her father is blind in one eye due to complications from his myopia.



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6. Smith E. L., 3rd (2011). Prentice Award Lecture 2010: A case for peripheral optical treatment strategies for myopia. *Optometry and vision science: official publication of the American Academy of Optometry*, 88(9), 1029–1044. <https://doi.org/10.1097/OPX.0b013e3182279cfa> (Photo Source)
7. Wu, PC., Chuang, MN., Choi, J. *et al.* Update in myopia and treatment strategy of atropine use in myopia control. *Eye* **33**, 3–13 (2019). <https://doi.org/10.1038/s41433-018-0139-7>