

7 Answers to Parent Questions About Myopia

What is myopia and why is it a problem?

Myopia (mahy-oh-pee-uh), or nearsightedness, is a vision condition in which distant objects appear blurry – such as road signs, the board at school, or the television set across the room. Myopia affects objects that are farther away. In more severe myopia, both distant and near objects are blurry. The good news is that myopia can usually be corrected with glasses or contact lenses.

Individuals with more severe myopia must bring objects close to their eyes to see those objects clearly if they do not wear glasses or contact lenses.

Uncorrected myopia can make it difficult for a child to learn, engage socially, or fully participate in activities such as sports.

When and how do children develop myopia?

No one knows for certain what causes children to develop myopia. Research shows that myopia is triggered by a combination of genetic (inherited) and environmental (outdoor and physical activity) factors for school-aged children.

Myopia generally begins as a vision problem in children between 2nd grade and 8th grade, or ages 7 through 13 years. The condition typically stops getting worse around 16 to 19 years of age.

How children work, play, and study can increase the chances they may develop myopia or the myopia may become worse. Studies have found:

- Children who spend many hours doing close visual work, such as reading or using laptops or other electronic devices, have a higher risk of developing myopia.ⁱⁱⁱ
- Children who spend only a little time in the sunlight may also have a higher risk for myopia.ⁱⁱⁱ

What are the signs of myopia?

- Complaints that objects seen off in the distance are blurry.
- Squinting when watching television or looking at distant objects.
- Having headaches at the end of the school day after looking at classroom whiteboards or watching the teacher most of the day.

Is my child at risk for developing myopia?

Genetic (inherited) reasons children develop myopia could include:

- Children with one or two parents who have myopia.^{ivvvi}
- Children who are of East Asian ethnicity (from countries including China, Hong Kong, Japan, Macau, Mongolia, North Korea, South Korea, and Taiwan.)

225 West Wacker Drive, Suite 400
Chicago, Illinois 60606
800.331.2020
PreventBlindness.org



AT PREVENT BLINDNESS

2009-2019

7 Answers to Parent Questions About Myopia (Continued)

How do I find out if my child has myopia?

Blurred vision when looking at an eye chart during a vision screening at school or at the pediatrician's office is a clue that your child may have myopia. Your child should have an eye examination if your child shows signs of myopia or does not pass a vision screening at school or at your pediatrician's office.

An ophthalmologist (an eye doctor with a medical degree: MD or DO) or an optometrist (an eye doctor with an OD degree) can then examine your child's eyes to find out if your child has myopia and prescribe eyeglasses (or contact lenses) to help your child see clearly. As your child's eyes continue to grow, a stronger prescription for eyeglasses or contact lenses may be needed to correct blurry vision. The glasses may have thicker lenses when your child receives a new prescription for stronger eyeglasses.

How can an eye doctor help my child if my child has myopia?

Here are some approaches to treatment for myopia. Be sure to talk to your eye doctor about benefits and risks for all treatments:

- Eyeglasses or contact lenses can be prescribed for children to see distant objects clearly.^{vii}
- Bifocal or progressive addition lens glasses or multifocal contact lenses may also be a possible treatment.^{viiiixxi}
- Daily atropine drops have been shown to reduce the development of myopia in children of East Asian descent.^{xixxiiiixv}
- Orthokeratology (Ortho-keerah-tol-ah-jee), or corneal reshaping, involves special types of contact lenses children wear at night while sleeping and then are removed in the morning.^{xvixvixviii}

RESOURCES

For more information on Myopia please visit:

Prevent Blindness:

<https://www.preventblindness.org/refractive-error-myopia-hyperopia-astigmatism>

<https://www.preventblindness.org/your-childs-glasses>

<https://www.preventblindness.org/your-childs-eye-care>

American Association for Pediatric Ophthalmology and Strabismus:

<https://www.aapos.org/terms/terms/115>

National Eye Institute:

<https://nei.nih.gov/health/errors/myopia>

YouTube Videos:

Please note that these links are for external sources and the content cannot be monitored by Prevent Blindness.

Myopia – What causes nearsightedness? (2017). Smart Learning for All. Retrieved from <https://www.youtube.com/watch?v=GLlcD9yzv48>

Understanding Myopia (Nearsightedness). (2013). Retrieved from <https://www.youtube.com/watch?v=Hwic8rKadd8>

Financial Assistance:

Visit <https://www.preventblindness.org/financial-assistance> to download fact sheets in English or Spanish from that page.

7 Answers to Parent Questions About Myopia (Continued)

End Notes

- ⁱ Li SM, Li SY, Kang M, Zhou Y, Liu L, Li H, Wang Y, Zhan S, Gopinath B, Mitchell P, Wang N, Anyang Childhood Eye Study Group. Near Work Related Parameters and Myopia in Chinese Children: the Anyang Childhood Eye Study. *PLoS One*. 2015;10(8):e0134514.
- ⁱⁱ Lin Z, Vasudevan B, Mao G, Ciuffreda K, Jhanji V, Li X, Zhou H, Wang N, Liang Y. The influence of near work on myopic refractive change in urban students in Beijing: a three-year follow-up report. *Graefes Arch Clin Exp Ophthalmol*. 2016;254(11):2247-2255.
- ⁱⁱⁱ Lin Z, Vasudevan B, Jhanji V, Mao GY, Gao TY, Wang FH, Rong SS, Ciuffreda KJ, Liang YB. Near work, outdoor activity, and their association with refractive error. *Optom Vis Sci*. 2014;91(4):376-382.
- ^{iv} Mutti DO, Zadnik K. The utility of three predictors of childhood myopia: a Bayesian analysis. *Vision Res*. 1995;35(9):1345-1352.
- ^v Pacella R, McLellan J, Grice K, Del Bono EA, Wiggs JL, Gwiazda JE. Role of genetic factors in the etiology of juvenile-onset myopia based on a longitudinal study of refractive error. *Optom Vis Sci*. 1999;76(6):381-386.
- ^{vi} Chua SYL, Ikram MK, Tan CS, Lee YS, Ni Y, Shirong C, Gluckman PD, Chong YS, Yap F, Wong TY, Ngo CS, Saw SM, GUSTO Study Group. Relative contribution of Risk Factors for Early-Onset Myopia in Young Asian Children. *Invest Ophthalm Vis Sci*. 2015;56(13):8101-8107.
- ^{vii} Goss, DA. Effect of bifocal lenses on the rate of childhood myopia progression. *Optometry Vision Sci*. 1986;63(2):135-141.
- ^{viii} Walline J, Greiner K, McVey M, Jones-Jordan L. Multifocal contact lens myopia control. *Optom Vis Sci*. 2013;90:1207-14
- ^{ix} Aller T, Liu M, Wildsoet C. Myopia control with bifocal contact lenses: a randomized clinical trial. *Optom Vis Sci*. 2016;93(4):344-352.
- ^x Gwiazda J, Hyman L, Hussein M, Everett D, Norton TT, Kurtz D, Leske MC, Manny R, Marsh-Tootle W, Scheiman M, the COMET group. A randomized clinical trial of progressive addition lenses versus single vision lenses on the progression of myopia in children. *Invest Ophthalm Vis Sci*. 2003;44(4):1492-1500.
- ^{xi} Cheng D, Woo G, Drobe B, Schmid K. Effect of bifocal and prismatic bifocal spectacles on myopia progression in children: three-year results of a randomized clinical trial. *JAMA Ophthalmol*. 2014;132(3):258-264.
- ^{xii} Chua W, Balakrishnan V, Chan Y, Tong L, Ling Y, Quah B, Tan D. Atropine for the treatment of childhood myopia. *Ophthalmology*. 2006;113(12):2285-2291.
- ^{xiii} Chia A, Lu QS, Tan D. Five-Year Clinical Trial on Atropine for the Treatment of Myopia 2: Myopia Control with Atropine 0.01% Eyedrops. *Ophthalmology*. 2016;123:391-9.
- ^{xiv} Chia A, Chua W, Cheung Y, Wong W, Lingham A, Fong A, Tan D. Atropine for the treatment of childhood myopia: safety and efficacy of 0.5%, 0.1%, and 0.01% doses (Atropine for the Treatment of Myopia 2). *Ophthalmology*. 2012;119(2):347-354.
- ^{xv} Chia A, Chua W, Wen L, Fong A, Goon Y, Tan D. Atropine for the treatment of childhood myopia: changes after stopping atropine 0.01%, 0.1% and 0.5%. *Am J Ophthalmol*. 2014;157(2):451-457.
- ^{xvi} Walline J, Jones L, Sinnott L. Corneal reshaping and myopia progression. *Br J Ophthalmol*. 2009 Sep;93(9):1181-5.
- ^{xvii} Zhu MJ, Feng HY, He XG, Zou HD, Zhu JF. The control effect of orthokeratology on axial length elongation in Chinese children with myopia. *BMC Ophthalmol*. 2014;14:141.