CooperVision®

When Children Can't See Far:
A Discussion About Pediatric Myopia*

DEFINING MYOPIA:

Myopia – often referred to as nearsightedness – is a common eye health condition in which the eyeball elongates, causing light rays to focus incorrectly in the eye, thus making distance vision blurry.

THE INCREASING PREVALENCE AND SEVERITY OF PEDIATRIC MYOPIA*:

More than 40 percent of Americans are myopic and that number is increasing at an alarming rate, especially among school-aged children[1].

One in four parents have a child with myopia and about three quarters of children with myopia were diagnosed between the ages of 3 and 12[2].

Two-thirds of eye care professionals (ECPs) say the presence of myopia among children in their practice has increased over the past 5-10 years[3], and 81% of ECPs recognize it as one of the biggest problems impacting children's eyesight today[3].

CAUSES OF MYOPIA:

Myopia typically occurs during childhood when the eyeball develops a larger or longer shape, meaning the distance between the front of the eye and the retina at the back of the eye is longer than normal. Blurry vision due to myopia is the result of light rays focusing at a point in front of the retina rather than directly on the surface[6].

However, the upward incidence of myopia can be attributed to different factors, and is occasionally the result of a combination of these factors:

- **Genetics** – Family history plays a role in a child's risk of myopia. If neither parent is myopic, the chance the child will develop myopia is low. But, if one parent is myopic, it increases the child's chance of developing myopia by 3x – doubling to 6x if both parents are myopic[7].
- **Environment** – Exposure to sunlight, vitamin D intake, dopamine levels and the amount of time someone spends outdoors have an impact on an individual's likelihood of being myopic. Research shows spending more time outdoors lowers the risk of childhood myopia[7].

MYOPIA LEVELS:

Though it may begin mildly, myopia may be progressive and may increase in severity from moderate to high myopia if treatment is delayed[4]. Each level of myopia is defined by a specific diopter (D) range. A diopter is the unit used to measure the correction, or focusing power, of the lens the eye requires.

Mild Myopia: -0.50 up to -3.00 D[5]

Moderate Myopia: -3.00 up to -6.00 D[5]

High Myopia: -6.00 or higher[5]

1 Cooper, Y. (2019, May 1). With Childhood Myopia Rates on the Rise, the American Optometric Association Highlights the Importance of Early Intervention through Annual Eye Exams. Retrieved from https://www.aoa.org/newsroom/myopia-rates-on-the-rise-syvm
2 Myopia: 2018 American Eye-Q Research. (2018, December 20). Retrieved October 2, 2019, from https://www.aoa.org/patients-and-public/eye-and-vision-problems/glossary-of-eye-and-vision-conditions/myopia/myopia-research.
3 CVI data on file 2019. Myopia Awareness, The Harris Poll online survey of n= 1,005 parents (with child age 8-15) and n=313 ECPs (who see at least 1 child age 8-15 with myopia each month) in U.S.
4 Ocular Surgery News: Concern for Myopia Progression Increases with Alarming Rise in Global Prevalence. Retrieved October 29, 2019 from https://www.healio.com/ophthalmology/refractive-surgery/news/print/ocular-surgery-news/%7B29f338a6-0029-4b91-95cd-b7918481de79%7D/concern-for-myopia-progression-increases-with-alarming-rise-in-global-prevalence
5 Cline, D; Hofstetter HW; Griffin JR (1997). Dictionary of Visual Science (4th ed.). Boston: Butterworth-Heinemann.
6 Mayo Clinic. Nearsightedness. Retrieved October 30, 2019 from: https://www.mayoclinic.org/diseases-conditions/nearsightedness/symptoms-causes/syc-20375556
7 Gifford, P., & Gifford, K. L. (2016). The Future of Myopia Control Contact Lenses. *OptomVis Sci.* 93(4): 336-343.

LONG-TERM OCULAR HEALTH IMPACTS:

As the eye continues to grow and the amount of myopia increases, ocular tissues change in response to the eye growth, resulting in eye health risks that are not as evident in a non-myopic eye. The more nearsighted a child is, the greater these risks become[8] and these risks increase exponentially as myopia progresses.

Leaving myopia untreated may contribute to more severe eye health complications later in life[9], including:

- **Cataracts** – a clouding of the lens of the eye that can cause changes in vision. Though cataracts can affect everyone as they age, they often develop sooner in those who are myopic[10].
- **Glaucoma** – a condition, usually linked to high pressure inside the eye, that causes damage to the eye's optic nerve, potentially causing irreversible vision loss and blindness. Studies show myopic people have a 2-3x greater risk of developing glaucoma[10].
- **Retinal detachment** – occurs when the retina, a thin layer of tissue that surrounds the entire inside the eye, pulls away from supportive layers of blood vessels that provide its necessary oxygen and nourishment[10].
- **Macular Degeneration** – caused by the deterioration of the central portion of the retina, and is a leading cause of severe, irreversible vision loss[11].

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MANAGING MYOPIA:

The earlier myopia management starts, the better the outcomes regarding the child's near- and long-term eye health. In the U.S., 71% of ECPs say it is absolutely essential to slow the progression of myopia among children ages 8 – 15 years old[3].

Managing myopia progression by even 1 diopter[12]:

- Reduces risk of myopic maculopathy by 40%
- Reduces risk of open-angle glaucoma by 20%
- Reduces risk of visual impairment by 20%
- Saves between 0.5 and 0.9 years of visual impairment

Managing myopia starts with regular comprehensive eye exams so ECPs can determine progression and treatment.

CooperVision's MiSight™ 1 day[13] is the first and only contact lens approved by the FDA* to slow the progression of myopia in children (8-12 years of age at the initiation of treatment). The FDA-approved* lens is available as part of a comprehensive myopia management approach offered by CooperVision and participating eye care practitioners.

To learn more about the MiSight™ 1 day myopia management approach please visit **www.coopervision.com.**

8 Bourne RR, Stevens GA, White RA, Smith JL, Flaxman SR, Price H et al. Causes of vision loss worldwide, 1990–2010: a systematic analysis. Lancet Global Health. 2013;1:e339–e349.
9 Xu L, Wang Y, Wang S, Wang Y & Jonas JB, 'High Myopia and Glaucoma Susceptibility: The Beijing Eye Study' *Ophthalmology*, Volume 114, Issue 2, February 2007; Praveen MR,Shah GD, Vasavada AR, Mehta PG, Gilbert
10 What You Should Know if Your Child is Nearsighted (Infographic). Retrieved October 29, 2019 from: https://www.allaboutvision.com/parents/myopia-facts-infographic.htm
11 Macular Society. Myopia, Pathological Myopia and Myopic Macular Degeneration. Retrieved October 29, 2019 from: https://www.macularsociety.org/sites/default/files/resource/Macular%20Society%20Factsheet%20-%20Myopic%20Macular%20Degeneration%202017%20-%20ACCESS.pdf
12 Bullimore MA. The Safety of Soft Contact Lenses in Children. Optom Vis Sci 2017;94:638-46.
13 Compared to a single vision 1 day lens over a 3 year period. MiSight™1 day contact lenses are currently available for sale in the United States, Canada, the United Kingdom, France, Spain, Portugal, Netherlands, Belgium, Germany, Austria, Switzerland, the Nordic Region, Singapore, Malaysia, Hong Kong, Australia and New Zealand. MiSight™1 day is not approved in Japan.

***Indications for Use:** MiSight® (omafilcon A) daily wear single use Soft Contact Lenses are indicated for the correction of myopic ametropia and for slowing the progression of myopia in children with non-diseased eyes, who at the initiation of treatment are 8-12 years of age and have a refraction of -0.75 to -4.00 diopters (spherical equivalent) with ≤ 0.75 diopters of astigmatism. The lens is to be discarded after each removal.