

Myopia¹ is a long-term, progressive eye disease characterized by excess eye elongation, associated sight-threatening risks and blurry distance vision.

INCREASING GLOBAL EPIDEMIC

- Prevalence of myopia has almost doubled over the last 20 years².
- By the year 2050, more than 50% of the world's population is anticipated to be myopic².

MYOPIA RISK FACTORS

The following are found to be risk factors for myopia and its progression:

- Early age onset of myopia³
- Refractive error⁴
- Minimal time outdoors (<2 hrs/day)⁵
- Significant near work or short working distance^{6,7}
- Myopic parents⁸

ASSOCIATED RISKS OF MYOPIA

Myopia is associated with a higher risk of developing:

- Myopic macular degeneration⁹
- Retinal detachment¹⁰
- Primary open-angle glaucoma¹¹
- Cataracts¹²
- Staphyloma¹³

There is no safe level of myopia because any amount of myopia elevates the risk of sight-threatening complications.^{14,15}

Eye Disease	-2.00 D	-4.00 D	-6.00 D	-8.00 D
Myopic Maculopathy²	2.2 X higher	9.7 X higher	40.6 X higher	126.8 X higher
Retinal Detachment³	3.1 X higher	9.0 X higher	21.5 X higher	44.2 X higher
PSC Cataract⁴	1.6 X higher	3.2 X higher	5.4 X higher	12.3 X higher
Glaucoma⁵	1.7 X higher	2.5 X higher	2.5 X higher	N/A

Odds Ratio of Ocular Disease as a Function of Myopia Relative to Emmetropia ^{Chart 1}

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Chart 1. Chart of Odds Ratio of Ocular Disease as a Function of Myopia Relative to Emmetropia. Adapted from "Review of Myopia Management" by D. Akerman, June 13 2019. Review of Myopia Management. Retrieved February 10, 2021, from http://reviewofm.com/wp-content/uploads/2019/06/RMM_Handout_8.5x11_0819-1.pdf. Copyright © 2020 Jobson Medical Information LLC.



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OUR GOAL

With various treatment options, we can now slow myopia progression (prescription increases) and reduce associated risks instead of just correcting the visual symptoms with glasses, contact lenses or laser vision correction. By creating mid-peripheral blur with light rays that focus in front of the retina, this down-regulates peripheral blur from light rays that focus behind the retina, the signal for eyeball elongation. Several myopia management treatment options have shown reduced eyeball elongation by more than 0.3 mm (~equivalent to 0.75 D) during 2-3 years of treatment¹⁶⁻¹⁹.

TREATMENT OPTIONS

Corneal Reshaping Therapy (CRT), or orthokeratology, involves gas permeable contact lenses worn overnight and specifically designed to temporarily alter the shape of the cornea, reducing the need for corrective lenses during the day. Great option for athletics and water activities. Allows parental oversight because they are used at night.

Atropine Eye Drop Therapy incorporates the use of low concentration eye drops that relax the ciliary muscle of the eye and cause the pupil to dilate. Limited side effects of near blur and light sensitivity²⁴. Must be used in conjunction with glasses or contact lenses. May be combined with other myopia management treatments²⁵. Allows complete parental control.

Early intervention is essential; best if treatment is started before 12 years of age.

Lifestyle modifications

- Reduce near activities⁷
- Increase outdoor activity time (2+ hours/day)^{20,21,22}

Soft Multifocal Contact Lenses (some designs) are useful in slowing myopic progression because they create peripheral myopic defocus in the retina. Great option for athletics and young patients²³.

Myopia Control Spectacles are a safe and easy option for various prescriptions, however, optical designs and treatment efficacy vary greatly.