Treatment for Progressive Myopia

See ‘Progressive (High) Myopia’ for the definition.

During childhood, myopia (nearsightedness) is typically treated with glasses or contact lenses. Refractive surgery, such as LASIK, is typically used in adults once the refractive error has stabilized. In progressive myopia, the near-sightedness often begins in early childhood, and worsens as the child grows. Many patients and families inquire about why progressive myopia occurs and want to know ways to slow down progression of high myopia.

There is a strong genetic component to myopia, so if either of the parents are near-sighted, the child is more likely to also become near-sighted. Some large studies have noted that children who spend more time outdoors are less likely to develop myopia. The exact reason is unclear, but it is thought that exposure to sunlight may be beneficial. Other studies have suggested that excessive near work at a young age may be harmful.

Treatment for progressive myopia is aimed at slowing the rate of progression or worsening. Multiple treatment options have been attempted and researched.

Recent studies using 0.01% atropine eye drops have been shown to most effectively slow myopic progression, with fewer side effects compared to higher doses of atropine (e.g., light sensitivity or blurred near vision). Additionally, a rebound effect (significant worsening) was not observed after stopping this low-dose atropine treatment. This treatment requires daily use of eye drops and does require a compounding pharmacy at this time to formulate the appropriate dosage. How exactly atropine works to slow the progression of myopia is not clearly understood. There are currently several clinical studies involving low-dose atropine.

Another method of slowing myopia progression has been orthokeratology, which involves using rigid gas permeable contact lenses every night to reshape the cornea (the clear, front part of the eye). Rebound effect has been noted after stopping orthokeratology treatment. Risks associated with contact lens wear include corneal abrasions, ulcers or infections, and scarring that can lead to vision loss.

Multifocal soft contact lenses and glasses (e.g., bifocals) have also been looked at to slow myopia progression. However, there is not enough evidence to support these approaches.

As always, discuss the risks and benefits of these treatment options with your pediatric ophthalmologist.

References:


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