

GROWTH

MYOPIA MANAGEMENT AS A PRACTICE BUILDER



Optometrists can choose to be as involved as they want.

BY KATHERINE SCHUETZ, OD

Optometrists have a great opportunity these days to have a lasting effect on their patients' vision and eye health, specifically concerning myopia. Research in myopia management has given us the knowledge and tools with which to correct vision and, in many cases, effectively control myopia progression.

These methods can not only improve the quality of life for our patients in the short term, but they can also reduce their chances of developing eye diseases related to high myopia in the long term. That's no small feat, and every optometrist can, and in my opinion should, be participating in this line of thinking, be it through referring

patients to your colleagues who specialize in myopia control or through implementing myopia control strategies in your own office.

In the United States, the prevalence of myopia increased from 25% of adults in 1972 to 40% in 2004,¹ and increases in prevalence are projected to continue (Figure).¹ We have an opportunity and a responsibility to keep this trend in check by taking advantage of the resources at our disposal.

MECHANICS OF MYOPIA CONTROL

Experts believe that creating myopic peripheral defocus (by using lenses that focus light anterior to the retina, rather than behind it) reduces the stimulus for the peripheral retina

to grow. The converse theory is that, when we correct myopia using either glasses or contact lenses, although we provide the proper correction at the fovea so that the patient can see well, this creates a hyperopic defocus in the peripheral retina, which makes the eye want to grow back further to where those peripheral rays are focused posterior to the retina. For this reason, most vision-correcting myopia control options have peripheral optical designs that differ in power significantly from a single-vision correction option.

BASIC RECOMMENDATIONS

An easy way to get involved in myopia prevention is to discuss

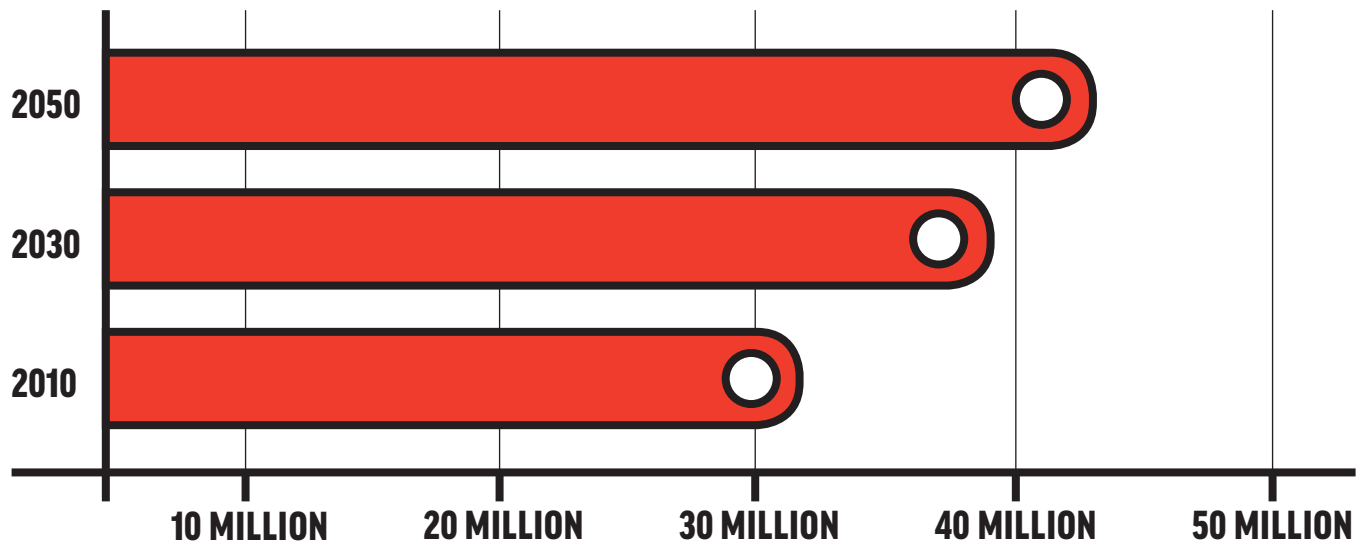


Figure. Myopia projections for 2010, 2030, and 2050.

Source: Nearsightedness (myopia) data and statistics. National Eye Institute. bit.ly/MyopiaProj. Accessed December 16, 2019.

with patients both the duration of their near work and their working distance, along with the amount of time they spend outdoors. The Sydney Myopia Study found that children who spent more time reading or using electronics and less time outdoors were more myopic than those who spent more time outside.²

Although we have not yet discovered whether there is a single factor related to outdoor exposure and myopia prevention, we do know that the key is more than simply less near focus. It may be the increased brightness outdoors, which is up to 500 times that of indoor brightness, or the fact that, when everything being viewed is beyond 3 meters away, the retina experiences full-field optical infinity.

We also know that playing indoor sports does not have the protective value in myopia prevention that being outdoors provides.³ In Australia, where 3 hours of daily outdoor time is normal, only 30% of 17-year-old kids are myopic.⁴ Thus, routine discussions with your pediatric patients should include recommending spending time outdoors, holding near work elbow distance away, and using the 20-20-20 rule

(for every 20 minutes spent looking at a screen, look at something 20 feet away for 20 seconds) for every emmetrope, mild hyperope, and early myope.

Further, however, when parents want a more aggressive way to slow their child's myopia progression, we move the discussion to the next level, toward approaches that require close in-office monitoring.

TREATMENT OPTIONS

There are several suitable choices for vision correction that can also be used for myopia control: soft multifocal contact lenses, orthokeratology (ortho-k), and, in the near future, spectacle lenses with altered peripheral powers and optics. All are intriguing options, especially for our myopic pediatric population. Low-dose atropine is another great tool, but it does not perform both the functions of vision correction and myopia control.

Soft Multifocal Contact Lenses

Soft multifocal disposable lenses are the easiest treatment modality to incorporate into a primary care office. These lenses, with multiple concentric ring designs, are available

in both frequent replacement and daily disposable lens modalities. Studies have shown a decrease in myopic progression rate with a distance-center soft multifocal contact lens design,^{5,6} making it the ideal starting point for doctors who want to give their patients a myopia control option but only deal with minimal extra diagnostic sets of lenses and a short learning curve.

The center-near design doesn't fit with the peripheral defocus theory discussed above, plus these are kids who don't have the need for an add, so they tend to be less tolerant of center-near optic designs.

A daily disposable, center-distance multifocal design will be the ideal fit for a pediatric myopia control patient. In November, the FDA approved MiSight 1 day (CooperVision) daily lenses with an indication for slowing the progression of nearsightedness in children.

Whichever design and brand of lens you choose, it's important to schedule proper follow-up visits in order to make sure that it's working and that the patient's myopia is stable. A timeline of every 3 months is wise. This is not a contact lens follow-up; it's a myopia control visit,

AT A GLANCE

- ▶ Research in myopia management has led to the development of several methods of correcting vision and effectively controlling myopia progression in many cases.
- ▶ Routine discussions with pediatric patients should include recommending outdoor time, holding near work elbow distance away, and using the 20-20-20 rule for every emmetrope, mild hyperope, and early myope.
- ▶ Low-dose atropine eye drops can be used to slow the progression of myopia, although the patient's genetics, eye color, and response to lowest dose will drive the decision-making process.

so the refraction is of highest importance, followed by contact lens design amendments if the refraction is still changing or there are fit or comfort issues. Ideally, cycloplegic refraction and axial length measurement would be performed at every visit.

Orthokeratology

Ortho-k is a myopia control option that has an amazing wow factor for pediatric patients and their parents. For kids, the primary goal of ortho-k is myopia control, not vision correction. Vision correction provides the immediate wow factor and impressive quality-of-life benefits, but the goal of preventing myopia progression is the key. If a lens is not significantly controlling the patient's progression, then you need to choose a new design or fit.

Multiple studies have shown the efficacy of ortho-k in slowing myopia progression and axial elongation.⁷⁻¹⁰ Ortho-k is incredibly rewarding for practitioners, but it takes a steep learning curve and a lot of chair time. If it's not something you have time for in your schedule, consider

referring patients to a colleague who is proficient with this medium. Patients and their parents will appreciate the selfless referral, and, although you may lose them for the short term, you'll keep their family's loyalty in the long run.

Atropinization

Another choice to slow the progression of a young patient's myopia is a regimen of low-dose atropine eye drops.¹¹ There is debate about which strength to use, and even which dosage is best in different ethnicities. The trend in the United States is to prescribe atropine sulfate ophthalmic solution once a day, either 0.01%, 0.02%, or 0.05%. Your patients' genetics, eye color, and response to the lowest dose will drive the decision-making process. Note that this drop must be compounded, so availability and expense can be challenging. Some practitioners use atropine as an adjunctive agent with soft multifocal lenses or ortho-k, but research on the efficacy of this approach is in early phases.^{12,13}

OPPORTUNITY IS KNOCKING

Myopia progression may be at an all-time high, but we have tools available to help us minimize its potential harmful effects. Don't be that practitioner who fails to discuss myopia control as an option with patients. They will learn about it sooner or later and likely resent you for not discussing it with them. Whether you decide to incorporate myopia control by prescribing soft multifocal contact lenses, atropine, ortho-k, or referring out, do *something*. Not only can myopia control be a huge practice-builder, but its potential to make a significant difference in a child's visual outcome makes it a complete win for optometry. ■

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- Financial disclosure: None