

MYOPIA PATIENT CARE COMES INTO ITS OWN



Multifunctional Myopia Master provides the measurements you need to target therapy and track results.

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The practice of myopia management has advanced significantly in recent years. A decade ago, we were starting to build a strong body of evidence supporting the need to prevent myopia progression and exploring various strategies to do so effectively. In the last 5 years, the evidence became clear to everyone who looked at it objectively that we had the capability to impact the progression of myopia through optical strategies.¹

Everything changed in 2019 when the FDA approved the first soft contact lens proven to slow the progression of myopia in children,² thus officially recognizing that the course of myopia can be altered through intervention. In the United States today, our myopia management options include topical atropine, soft multifocal contact lenses, and orthokeratology.

IMPACT OF MYOPIA PROGRESSION ON OCULAR HEALTH

The term myopia management implies that we're trying to control

refractive error when, in reality, the individual's refractive error is not the main cause for concern. In nearly all cases, progressive, refractive myopia is a secondary complication of axial length growth. As the eye lengthens, ocular health is threatened, and the risk grows exponentially as myopia progresses or, more accurately, as axial length increases.

Increasing myopia is about more than just the inconvenience of needing stronger eyeglasses or having poorer vision when the eyeglasses or contact lenses are removed. This is about the health of the eye, as high myopia has been associated with myopic macular degeneration, retinal detachment, cataract, and open-angle glaucoma.³ Like glaucoma and macular degeneration, myopia is a chronic disease that must be managed.

UNIQUE CHALLENGES OF PEDIATRIC PATIENTS

We cannot overlook the fact that we're managing myopia in children. While we typically measure refraction

in quarter-diopter increments of prescription, these measurements are not as precise in children because of their strong accommodative ability. In addition, many variables increase the potential for inaccuracy, including blinking, tear film, and—if you're behind a phoropter—fogging. Thus, subjective or even cycloplegic objective refraction, in theory, is not the most precise way of monitoring for changes in myopic status or axial length growth.

As an example, performing a refraction on an orthokeratology patient without his or her lenses is unpredictable and unreliable. Again, we're talking about a young child with the ability to accommodate, looking through a multifocal cornea. The end point of that refraction will not be accurate enough to gauge changes to refractive status.

The only way we can do any type of reasonable refraction on a child who's undergoing orthokeratology is through his or her contact lenses, but even that creates another variable, as the child is looking through a contact lens on the eye, and tear dynamics and lens surface wetting impact visual stability.

A simple, objective test that takes just a few seconds through an eye that doesn't have to have a lens on it is a far more efficient and practical method for identifying changes in refractive error and axial length than trying to perform a refraction.

MYOPIA MANAGEMENT IN DAILY PRACTICE

Ultimately, axial length is the most important measurement we can use for proper management of myopia. It's proven to be more accurate, more precise, and more reliable as an indicator of change than refractive error.⁴ Having instrumentation that measures axial length is advantageous for any practitioner who is intent upon developing a myopia management specialty or striving to practice at the highest level.



Figure. The Myopia Master is an all-in-one device that performs axial length optical biometry, corneal keratometry, and objective autorefraction.

The Myopia Master* (Oculus; Figure) is an all-in-one device that performs axial length optical biometry, corneal keratometry, and objective autorefraction. It's the only single device that's FDA cleared to provide all of the measurements needed to monitor a patient's refractive error status.

Over the last 18 months, our clinic has evolved into a true myopia management practice, and we use the Myopia Master every day. Our optometrists perform baseline measurements on all patients who are at

risk of ametropia, including myopia, as part of their routine care.

The Myopia Master is a convenient, patient-friendly instrument. It's about as straightforward to use as an instrument can be. It would fit in as part of the prescreening process for all patients, and, in most cases, it takes only a few seconds longer to use than a basic autorefractor.

MEASUREMENT DATA UTILITY

We strive to explain the development of ametropia in a way that

helps patients understand its importance. When a patient and family member trust us and our expertise to make a proper recommendation for their care and we embark upon a treatment regimen for the patient, we trust the measurement data from the Myopia Master.

The instrument could reside in a pretest room, with the computer that operates the software located in the examination room where the doctor can import the data.

EFFICIENT MYOPIA PATIENT CARE

While we have individual instruments that can take similar measurements, only the Myopia Master combines axial length, keratometry, and autorefraction in one instrument.

For any practitioner who wants to focus on myopia management and make it a strength of the practice, the Myopia Master provides useful measurements to assist with patient care. ■

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2. U.S. Food and Drug Administration. FDA approves first contact lens indicated to slow the progression of nearsightedness in children. <https://www.fda.gov/news-events/press-announcements/fda-approves-first-contact-lens-indicated-slow-progression-nearsightedness-children>. Published November 15, 2019. Accessed September 23, 2021.

3. Haarman AEG, Enthoven CA, Tideman JW, Tedja MS, Verhoeven VJM, Klaver CCW. The complications of myopia: a review and meta-analysis. *Invest Ophthalmol Vis Sci*. 2020;61(4):49.

4. Rauscher FG, Lange H, Yahiaoui-Doktor M, et al. Agreement and repeatability of noncycloplegic and cycloplegic wavefront-based autorefraction in children. *Optom Vis Sci*. 2019;96(11):879-889.

*Disclaimer: The Myopia Master® is FDA cleared for refractive measurements of the eye including axial length, keratometry, and autorefraction.

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