AMERICAN ACADEMY OF OPHTHALMOLOGY®

Editorial

As Far as the Eye Can See: Importance of Myopia as a Pressing Public Health Need

Mark A. Bullimore, MCOptom, PhD - *Houston, Texas*
Ian G. Morgan, PhD - *Canberra, Australian Capital Territory, Australia*
Kyoko Ohno-Matsui, MD, PhD - *Tokyo, Japan*
Seang-Mei Saw, MBBS, PhD - *Singapore*

Not long ago, myopia was generally regarded as a benign refractive error that was readily corrected with spectacles, contact lenses, and, more recently, refractive surgery. The past 2 decades have seen a seismic shift in how we as an ophthalmic community view myopia.[1] The reasons include:

- its rapidly increasing prevalence due to increasingly intensive education and increasingly common indoor lifestyles[2,3]
- its role in increased risk of ocular disease[4] and visual impairment[5–7]
- the emergence of evidence-based interventions to delay its onset[8] and slow its progression[9,10]

Although the sight-threatening consequences of myopia occur later in life, interventions to delay its onset need to be commenced early in childhood, and interventions to slow its progression need to be implemented as soon as possible after onset.[11] The aim is to reduce both the overall prevalence of myopia, as well as that of high myopia and its associated pathological changes.

Although progress in the field has been dramatic, there remain many unanswered questions.

In some parts of the world, notably in East and Southeast Asia, around 80% of children completing 12 years of schooling are myopic, with around 10% to 30% highly myopic and at high risk of uncorrectable loss of vision later in life, due to the increased risk of various ocular diseases.[5] Singapore,[12] Taiwan, and more recently, mainland China,[13] have developed myopia prevention and control programs. In other parts of the world, there is some evidence that the prevalence of myopia is also increasing, but there are limited data from the United States. The prevalence of myopia in young adults, aged 20 to 39 years, in the most recent National Health and Nutrition Examination Survey (NHANES) survey was close to 50%, with the prevalence of high myopia around 7%,[14] but these data are based on noncycloplegic refractions that will likely lead to significant overestimation of the prevalence.[15,16]

Because of its link to high myopia, myopic maculopathy, or myopic macular degeneration, has been extensively studied[17] and classified.[18] It is a leading cause of visual impairment,[19–21] with its impact predicted to increase dramatically.[22] Although the prevalence of myopic maculopathy increases with the level of myopia,[23] myopia less severe than −6 diopters can account for over half of cases where the prevalence of myopia and high myopia remains relatively low.[24] This has led to popularized phrases such as "there is no safe level of myopia"[25] and "every diopter matters"[23] and the statement by the American Academy of Ophthalmology that "the population-based burden of lower degrees of myopia remains considerable."[26] Myopic maculopathy is likely to be an increasing problem worldwide, because it is an age-related disease, and many populations are rapidly aging.

Ophthalmology Science is a journal of the American Academy of Ophthalmology, which has championed the importance of myopia as a pressing public health need. In 2019, the Academy created the Task Force on Myopia in recognition of the "substantial global increases in myopia prevalence and its associated complications." The Academy's Board of Trustees believes that "myopia is a high-priority cause of visual impairment, warranting a timely evaluation and synthesis of the scientific literature and formulation of an action plan to address the issue from different perspectives. This includes education of physicians and other health care providers, patients and their families, schools, and local and national public health agencies; defining health policies to ameliorate patients' access to appropriate therapy and to promote effective public health interventions; and fostering promising avenues of research."

More recently, the Academy sponsored a congressional briefing to raise awareness of the myopia crisis. Michael X. Repka, MD, a pediatric ophthalmologist at Johns Hopkins University and Medical Director for Governmental Affairs for the American Academy of Ophthalmology, and Jeffrey J. Walline, OD, PhD, Associate Dean for Research at The Ohio State University College of Optometry and President-Elect of the American Academy of Optometry, spoke to lawmakers and staff on rising rates of myopia and the importance of investing in research to identify potential solutions.

Interventions for slowing myopia progression fall under the purview of the United States Food and Drug Administration. Although there is only 1 approved clinical intervention approved to slow the progression of childhood myopia in the United States, many other products are under ongoing evaluation, and many are approved in other parts of the world.

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The Food and Drug Administration has sought the input of many learned societies, including the American Academy of Ophthalmology, and published a report on the design of clinical trials investigating the effectiveness and safety of myopia control devices.[27]

Although progress in the field has been dramatic, there remain many unanswered questions. *Ophthalmology Science* is therefore pleased to announce a Myopia Special Issue with the goal of spanning the basic and clinical aspects of myopia. *Ophthalmology Science* focuses on preclinical and basic science, early phase I and II trials, and bioinformatics. Thus, all the different aspects of myopia would be appropriate. We invite submissions describing original research, and well-published authors could summarize or present new data. Reviews are welcome, but any systematic review or meta-analysis should be unique and not duplicate previous efforts. Some examples include, but are not limited to, studies of established or emerging methods to slow myopia or delay its onset, visual and biochemical signals that can modulate ocular growth, including animal models, genetics, and the complications of myopia. Ultimately, submissions should be clinically relevant, comprehensible to clinicians, and have the potential to eventually impact clinical practice.

The journal will start accepting manuscripts in January 2024 and open submissions through the end of December. Submissions will be subjected to the journal's usual rigorous peer-review; the acceptance rate is 27%. We will reduce the article processing charge by 50%. *Ophthalmology Science* is entirely online, and manuscripts will be published when accepted. Nonetheless, there will be a special issue dedicated to these manuscripts, grouped according to their subject matter. The goal is to create 1 central place where the experts in the field will provide a variety of insights into myopia, a pressing public health problem.

As guest editors, we are grateful for this opportunity and look forward to engaging actively with the scientific community through this special issue.

Footnotes and Disclosures

Disclosures:

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Correspondence:
Mark A. Bullimore, MCOptom, PhD, 356 Ridgeview Lane, Boulder, CO 80302. E-mail: bullers2020@gmail.com.

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