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Myopia: A Disease Beyond a Refractive Error

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3rd edition of Asia Pacific Myopia Management Symposium (APMMS) at Marriott Taipei in Taiwan's ZhongShan District; 10 December 2023

CooperVision, a global leader in myopia management, unveiled the 3rd edition of Asia Pacific Myopia Management Symposium (APMMS) at Marriott Taipei in Taiwan's ZhongShan District on 10 December 2023. The premier hybrid event brought together internationally renowned eye care professionals under one roof to address and explore the growing prevalence of myopia in the Asia Pacific region and to explore new interventions for myopia management. APMMS was held in partnership with 'Universal Eye Center' and supported by 'Taiwan Ophthalmological Society'.

A collaborative initiative by CooperVision, APMMS was conceived to encourage progressive dialogues on myopia, to recommend best practices in Myopia Management (MM). CooperVision is actively addressing the multifaceted challenges posed by myopia through strategic collaborations with industry leaders along with Universal Eye Center. Preventative healthcare is becoming more prominent in pursuit of reducing patient burden.

Dr. Lin Pi Jung, President of Universal Eye Center reflected, "As a leader in myopia control and management in Taiwan region who is committed to the pursuit of innovation, cutting edging technology, and high-quality treatments, we hope to elevate the standard of vision care for children through our strategic partnership with CooperVision at APMMS 2023, working towards a future together where every pair of eyes can see clear, see comfort, and see the future."

During the Symposium, ophthalmologists from different geographies presented clinical insights from their respective countries' MM interventions in an effort to share a deeper understanding of this overlooked disease. The symposium featured presentations from international experts who discussed the state of vision care in the region, explored key technological trends driving clinical innovation, and demonstrated the vitality of clinicians to be engaged in iterative development.

The symposium featured presentations by renowned eye care professionals from the United States, the United Kingdom, Japan, China, South Korea, Taiwan, Australia, and Singapore as well as from CooperVision's leadership. By fostering a cohesive community, the one-day immersive symposium stimulated the exchange of perspectives, novel methodologies, research findings, trends and innovations to advance Myopia Management (MM) across the region as a standard of care.

The Emergence of Myopia as a Pandemic: What's the underlying cause and repercussions?

The World Health Organization (WHO) has classified Myopia as a global public health crisis due to its drastically increasing prevalence. In 2020, nearly 30% of the world's population suffered from myopia, and the number is expected to reach 50% by 2050 if unaddressed. The present generation’s sedentary lifestyle, poor diet habits, reduced exposure to sunlight, and lack of exercise are some of the reasons which have increased the prevalence of myopia.

Indeed, global Myopia experts have formed the International Myopia Institute (IMI) in 2015 to focus on MM. IMI provides up-to-date information on myopia, its prevalence, risk factors, and clinical trial findings to Eye care professionals (ECPs), scientists, policymakers, government officials, and the general public. Aside from leading ophthalmologists, such consortia have often collaborated with optometrists and other stakeholders to develop strategic global models of eye care.

According to IMI's global trends survey for 2022-25, there have been substantial advancements in MM management in the eye care industry, with more interventions currently available. Advocacy groups and member bodies should exert a strong influence across the world and influence clinical practice in a significant way.

Nevertheless, the adverse effects of myopia persist with increased myopia prevalence in children and adolescents, resulting in suboptimal intellectual and depleting academic performance. The economic impact of myopia resulting in reduced productivity and diminished quality of life (QOL) is estimated to be several billions dollars worldwide, adding further evidence of its far-reaching consequences. The health of one's eyes is often an accurate indication of one's overall health.

Furthermore, Myopia is associated with complications including open-angle glaucoma, retinal detachment, posterior subcapsular cataract and myopic maculopathy (MMD), which may lead to permanent visual loss if untreated. It is therefore imperative that myopia is curtailed on a global scale to prevent myopic vision loss. In order to prevent permanent vision impairment linked to refractive error, treating myopia and its progression in childhood is crucial for preventing visual impairment in adulthood. In light of its effectiveness and safety, new standards of eye care, MM is becoming increasingly popular among ECP stakeholders (ophthalmologists, optometrists, dispensing opticians, and others).

Factors Contributing to Slow Adoption of Myopia Management (MM):

While MM has a wealth of evidence to support its benefits, many ophthalmologists have not gained adequate acumen to regard it as a severe symptomatic health concern that requires immediate intervention beyond refractive correction. Patients with high levels of myopia and those who are at high risk of complications are perceived as the 'only' serious cases by practitioners in the current paradigm. As a result, the management of myopia, especially low myopia, has always been challenging, due to lack of awareness. This necessitates an immediate shift in mindset among both ECP’s and parents alike. Early intervention is crucial in reducing myopia in children.

Furthermore, MM's biggest barrier has always been the commitment requisite in educating patients, parents, the public, and other health care professionals. Hence, a focused effort on educating health care professionals is essential to decreasing the burden of MM on ophthalmologists. The lack of publicly available guidelines and logistical challenges associated with implementing MM also contribute to the slow adoption of MM. Besides working closely with stakeholders, such as ophthalmologists and optometrists, CooperVision is also focusing on patients and parents, in order to effectively address these issues.

“By uniting industry leaders globally, we strive to underscore the significance of myopia management in children. Our ultimate mission is to mobilize eyecare experts, engage parents and caregivers, emphasize the need for early intervention, and champion innovative treatments that will shape the future of eyecare" explains Kathy Park, President, CooperVision Asia Pacific.

Despite the importance of vision screenings for identifying children who need comprehensive eye exams, they are not adequately offered to children in many countries. A public health campaign on myopia could increase awareness of myopia

risks in countries that lack periodic vision screenings, thereby promoting MM at an affordable cost.

How Crucial is Collaboration among Stakeholders in Myopia Management (MM) for Ophthalmic Health care?

Global myopia prevalence continues to rise alarmingly, which underscores the role of eye care professionals in educating and advocating for myopia management. The safety and efficacy of today's evidence-based Myopia treatments in children has evoked confidence in practitioners and families alike on the potential interventions for slowing the progression of myopia.

As Asia continues to grapple with the rising prevalence of myopia, the need for collaborative efforts within the industry have become more pressing than ever through an international campaign. Emphasizing this, Dr. Lin Pi Jung, CEO, Universal Eye Center said, "APMMS 2023 has not only marked a significant milestone in our collective journey to combat myopia but also solidified Taiwan's role as a hub for knowledge exchange in myopia research. As the official partner for this symposium, Universal Eye Center is proud to contribute to the global dialogue on myopia management. We believe that collaboration, innovation, and shared insights are key to addressing the challenges posed by myopia. Through events like APMMS, we are committed to fostering an environment where industry leaders, experts, and researchers come together to shape the future of myopia care. Our partnership with CooperVision underscores our shared dedication to make a positive impact on eye health worldwide."

Foremost, CooperVision, a division of CooperCompanies, is aiding in enhancing the standard of care by monitoring myopia progression and preventing vision impairments. Being one of the world's leading contact lens manufacturers providing astigmatism correction, presbyopia correction, childhood myopia correction, and corneal irregularities correction, CooperVision offers a wide range of spherical, toric, and multifocal lenses to serve the cause.

Additionally, CooperVision works with optometrists and ophthalmologists to improve clinical practice and broaden understanding around the disease. Over the past several years, CooperVision has provided considerable support and advocacy for myopia control and management through spectacle lenses and contact lenses that are designed to slow myopia progression. If a patient is clinically unsuitable to use pharmacological treatments like Atropine (1%) or incompatible with contact lens options, then a new generation of spectacle lens designs that correct refractive error as well as impose myopic defocus, can be incorporated to slow axial extension simultaneously. Similarly, CooperVision's Corneal Refractive Therapy (CRT, CooperVision Specialty EyeCare) lenses temporarily reshape the cornea during nighttime wear, which diminishes myopia and eliminates the need for daytime vision correction. Adding to these innovations, in November 2019, CooperVision the MiSight® 1 day contact lens became the first and only FDA approved medical device indicated to slow the progression of myopia in children aged 8 to 12 years at the onset of treatment. It also gained approval by the Chinese National Medical Products Administration in August 2021. To date, the MiSight® 1 day lens remains the only medical device in the U.S. and China markets with a myopia control indication.

Further, CooperVision's 2023 Myopia Immersion Experience program trained a group of passionate optometrists from across the U.S., placing them in clinical practice programs for an eight-weeks to explore and better navigate myopia management in the real world. The initiative focused on educating children on the use of MiSight® 1 day lenses, educating families on myopia control, and supporting eye exams, resulting in its use in more than 30 countries today. In addition to daily disposable, two-week, and monthly soft contact lenses, the CooperVision produces rigid gas permeable lenses for orthokeratology and scleral designs. A unique blend of innovative products beneficial to medical professionals, patients/ end users.

In many cases, a combination therapy is recommended if one monotherapy treatment fails, or even a new MM treatment if the first fails to maximize the patient's likelihood of minimizing their final degree of myopia.

APMMS Explores Best Practices for Myopia Management (MM)

APMMS symposium emphasized the need to raise awareness concerning myopia, as well the need for effective treatment through evidence-based approaches. MM international experts advocated for global myopia awareness at the forum and shared visions and missions.

President, Kathy Park explains, "Myopia is the most common ocular disease worldwide and a leading cause of visual impairment. Left unchecked or uncorrected, myopia can progressively worsen with age. Fortunately, myopia can be managed and slowed down with a combination of lifestyle and treatment approaches. We are proud to spearhead APMMS as a cornerstone event for myopia management".

As part of CooperVision's commitment to prevention of myopia at a young age, CooperVision convened expertise at the APMMS symposium in order to advocate for the early adoption of the MM regimen. Leading International ophthalmologists presented MM perspectives, based on their countries' clinical research, with recommendations on advocating for new

approaches to myopia management.

Notably in one of the sessions**, Nicola Logan, Professor of Optometry & Physiological Optics at the UK's Aston University** reviewed the current global trends in myopia management as reported by the International Myopia Institute (IMI). She highlighted that, there is no "Safe" level of Myopia as it's prevalent in people of all age groups. Proff Logan said management is essential as it has significant pathological, economical, psychological consequences, and Myopia is a major public health concern.

As explained by Nicola Logan, the IMI global trends survey for the forecast year 2022 to 2025 shows that Asia has the greatest risk of pediatric myopia among the other continents. The survey also highlighted that among the multiple options available for MM, single vision specs (15.8%), myopia control specs (46.5%), single vision soft contact lenses (17.2%), myopia control soft contact lenses (47%), orthokeratology (56.2%) are the most effective treatment options, but only single vision specs are frequently prescribed among the various management options. With Asia being the third country to prescribe Single vision specs after South America and Africa. The Survey also indicated that different regional zones prescribe different minimum age for MM regimen ranging from the age 6.4 years to 9.2 years.

Additionally, during the sessions and three panel discussions, a number of speakers from leading eye care organizations and institutions addressed the participants. The highlights from 3 panel discussions are listed here.

- **Reframing Myopia: A Disease Demanding Urgent Treatment** examined global trends surrounding myopia management, the evolution of myopia treatment in children, and myopia development in childhood, including risks and protective factors. The panel emphasized the critical need to tackle myopia as a pressing health issue.

The session was moderated by A/Prof. Mark Bullimore, Adjunct Professor, University of Houston and an Independent Consultant; and Tacy Song, Head of Professional Affairs, Myopia Management, CooperVision Asia Pacific. Presenters included Prof. Nicola Logan, Professor of Optometry and Director of Research for Optometry and Vision Science Research Group, School of Optometry, Aston University, Birmingham, UK; Dr. Baek Seung-Hee, Director, Paediatric Ophthalmology and Strabismus Center at Kim's Eye Hospital; Dr. Sayuri Ninomiya, Director, Itami Central Eye Clinic; Dr. Tzu Hsun Tsai, Associate Professor of Ophthalmology and Chair of Department of Ophthalmology National Taiwan University Hospital, Hsin-Chu; and Dr. Wu Pei Chang.

- **Empowering Myopia Control: Leveraging Technology, Research, and Real-World Evidence** explored advancements in myopia management, real-world insights on managing the disease, and the importance of customized treatments to meet patient needs. It highlighted the role of technology and research in shaping the trajectory of myopia care and explored strategies to empower effective myopia management.

The session was moderated by Dr. Kate Gifford, Co-founder, Myopia Profile and Visiting Research Fellow, Queensland University of Technology. Presenters included A/Prof. Mark Bullimore; Prof. Nicola Logan; Ms. Elizabeth Lumb, Director, Global Professional Affairs, Myopia Management, CooperVision; Dr. Lin Hui Ju, Director, China Medical University Hospital; Dr. Leah Johnson, Senior Manager, Myopia Management, CooperVision; Dr. YuHsuan Huang, Director, Shilin Universal Eye Center; and A/Prof. Maria Liu, Associate Professor, UC Berkeley School of Optometry, Founder of the Myopia Control Clinic of UC Berkeley Eye Center.

- **Building a Future-Proof Practice with Myopia Management**" discussed preventive therapies and patient-centric approaches in myopia management, and the importance of setting the gold standard in myopia care. It provided strategies for creating a future-proof practice that adheres to the highest standards in the ever-evolving myopia management landscape.

The session was moderated by Dr. Lin Pi Jung and Dr. Kate Gifford. Presenters included Mr. Ian Dolling, General Manager, CooperVision China Cluster; Dr. Maria Liu; Dr. Ng Wei Yan, Consultant Ophthalmologist, Singapore National Eye Centre; and Dr. Foo Li Lian, Consultant Ophthalmologist, Clinical Assistant Professor, Singapore National Eye Centre.

Reflecting back on the overall success of the symposium, Shila Gupta, Myopia Management General Manager, CooperVision Asia-Pacific, highlighted the symposium's profound impact: "As myopia prevalence rises in Asia-Pacific, APMMS 2023 has emerged as a beacon for myopia management, advocating the need for intervention strategies. As the landscape of myopia care continues to evolve, we are confident that APMMS will serve as a nexus for the global community and lead vital conversations in the field of myopia management. At CooperVision, we are committed to supporting solutions that will shape the future of myopia management in the region and globally."

In Pursuit of Future-proofing Next-generation with a Lower Prevalence of Myopia:

The APMMS concluded with a renewed sense of urgency and commitment to address the growing prevalence of myopia throughout Asia, emphasizing fostering collaboration and innovation.

Importantly, patients and their caregivers need detailed and comprehensive education on MM to make an informed decision. The regime must set clear goals for the patient as MM is a protracted process, and the parent should be aware that MM may well slow but does not stop the progression if not treated with consistency. It is essential that they comprehend that MM is a treatment that prevents current eye problems from becoming future ones.

Nonetheless, behavioral interventions can delay myopia onset and slow progression by increasing outdoor time and moderating near-sight activities and limiting the use of digital devices. It appears, however, that outdoor time delays or prevents myopia development, which may result in a reduced amount of myopia in adulthood, though the hereditary traits indeed have major influence in myopia occurrence. Ultimately, Myopia awareness and early intervention is paramount and should not be overlooked since this is a serious issue that requires immediate medical attention.