The 22nd Hong Kong International Optometric Symposium on 7 November 2024 (Thursday) at HKCEC

Myopia – From Control to Prevention, Where Are We Now? (近視 - 從控制到預防，我們現在處於何處？)

Event Report

Overview:

- Six experts from Australia, Germany, Hong Kong and Mainland China shared the latest research on 6 different topics under the theme "Myopia – From Control to Prevention, Where Are We Now?"
- A total of 1,639 participants attended a Symposium in a hybrid event.
- 99% respondents rated the Symposium as good to excellent.

Event Report

1. Dr Simon TANG, Director of Cluster Services, Hospital Authority, was the Guest of Honour and delivered the opening remarks at the Opening Ceremony.

2. Under the theme "Myopia – From Control to Prevention, Where Are We Now? 近視 - 從控制到預防，我們現在處於何處？", the HKIOS was organised in a hybrid format allowing both onsite and online participation, which facilitated remote and face-to-face engagement.

3. Six experts shared insights on various sub-topics related to myopia control and prevention:
   i. Prof KEE Chea-su, Head & Professsor, School of Optometry; K.B. Woo Family Professor in Optometry; Associate Director, Research Centre for SHARP Vision, PolyU
   ii. Prof Ian MORGAN Visiting Fellow, Research School of Biology, Australian National University, Australia
   iii. Dr Regan ASHBY, Associate Professor, Molecular & Biochemical Therapeutics, University of Canberra, Australia
   iv. Prof Frank SCHAEFFEL, Senior Professor, Ophthalmic Research Institute, Tuebingen, Germany; Guest Professor, Institute of Molecular and Clinical Ophthalmology Basel (IOB), Switzerland
   v. Prof CHEN Zhi, Director, Specialty Contact Lens & Myopia Control Center, Fudan University Eye & ENT Hospital, Shanghai, China
   vi. Dr CHEN Jun, Senior Researcher, Shanghai Eye Disease Prevention and Treatment Centre, Shanghai, China

[Download Event Booklet for Speakers' details]

4. To encourage interaction, both onsite and online audiences were invited to submit questions during the Q&A sessions following each presentation. Total of 80 questions were received.

5. Considering that many optometrists work in clinics or retail stores during weekdays, the hybrid model provided convenience and flexibility. Feedback from the questionnaire was overwhelming positive, suggesting that the hybrid format should be continued in the future.

6. Physical speakers are preferred to attract onsite practitioners who seek networking opportunities at the Symposium.

7. Continuing Professional Development (CPD) points were offered to participants by the Optometrists Board Hong Kong. Attendees received a Certificate of Attendance for a maximum of 6 CPD hours. In addition, the event is accredited by The Council on Optometric Practitioner Education (COPE), providing optometrists the assured continuing education courses.

Recognition of Event Quality by Attendees

8. A post-event questionnaire gathered responses from 760 participants. An impressive 99% rated the HKIOS as good to excellent, finding it very helpful for their professional work.

9. The most popular topics suggested for future editions include AI in optometry, elderly eye care and ocular pathology screening

Key Takeaways

Prof KEE Chea-su	**How Might Astigmatic Blur Affect Myopia Control**
	Prof Kee discussed the significant public health issue posed by the myopia epidemic and the need to explore the role of astigmatism due to its frequent coexistence with myopia. The talk began with the origins of current myopia control strategies derived from animal studies, followed by a review of evidence showing how astigmatic blur consistently affects eye growth in a classic animal model. It then related the latest findings linking astigmatic properties with changes in ocular structure and refractive status. The talk concluded with potential mechanisms through which astigmatic blur could influence myopia control, enhancing our understanding and management of these interconnected vision conditions.

Prof Ian MORGAN	**Recent Advances in the Prevention and Control of Myopia**
	Prof Morgan highlighted the shift in understanding myopia, which way once thought to be primarily genetic. The rapid rise of myopia prevalence in East and SE Asia, where rates have reached around 80% after 12 years of schooling, indicates significant environmental risk factors. Two causal factors identified include educational pressures from an early age, and limited outdoor time. Increasing outdoor activities has been implemented in schools, particularly in Taiwan, to slow the development of myopia. The recent Double Reductions policy in mainland China may also facilitate more time outdoors in the early school years. There has also been rapid development of a range of clinical interventions to slow the progression of myopia, including low-dose atropine, red light therapy, and myopic defocus spectacles. Combining public health initiatives with systematic myopia control can help reserve the current epidemic.
Dr Regan ASHBY	**How Does Atropine Inhibit Myopia – Do We Understand Its Mechanism of Action?**
	Dr Ashby addressed the pharmacological interventions that slow myopia progression in patient populations. The most successful and widely used of these compounds is that of atropine. However, the site and mechanism of action by which atropine inhibits myopia is not well understood. This can limit our ability to comprehensively assess its safety profile or to develop novel variants to increase treatment efficacy and reduce off-target effects. This talk outlined in understanding how atropine inhibits myopias, including potential pathways and the eye layers it targets. Insights from animal models are valuable, but innovative methods are needed to translate findings to human applications.
Prof Frank SCHAEFFEL	**Mechanisms of Emmetropization and What Might Go Wrong in Myopia**
	Prof Schaeffel explored the mechanisms of emmetropization, a feedback system for eye growth control. He raised questions about why myopia does not limit itself and why undercorrection does not work as hoped. Experiment with young human subjects revealed that the myopia retina struggles to generate inhibitory signals for eye growth. The talk presented findings showing that myopia subjects do not respond as expected to optional defocus or chromatic aberration, suggesting a loss of growth inhibition in the myopia retina. Future research needs to investigate changes in the myopia retina and the timing of these changes. One possible explanation is that the myopic retina is no longer able to generate a signal for the choroid and the sclera to inhibit further eye growth Our experiments (with Barbara Swiatczak at IOB in

	Basel, Switzerland) in young human subjects have shown that (1) the myopic human retina can no longer distinguish positive optical defocus from calculated defocus, even if the spatial frequency spectra were carefully matched, (2) the myopic human retina can no longer respond to simulated longitudinal chromatic aberration (LCA). If the blue channel in the RGB image is spatially low pass filtered to simulate LCA of a myopic eye, emmetropic subjects responed with eye shortening and choroidal thickening while myopes do not, (3) different from emmetropic subjects, myopic subjects do not respond with axial eye shortening when they look at an array of red LED array at 50 cm distance, (4) myopic subjects do not respond with eye shortening when they watch movies with a positive lens and through a narrowband 620 nm filter, but emmetropic subjects do. These 4 independent experiments suggest that the myopic retina can no longer elicit a growth inhibiting signal for eye growth, at least in short term experiments (10-45 min). A key question for future research is (1) what has changed in the myopic retina and (2) when does it happen? – before myopia develops, or after.
Prof CHEN Zhi	**Predicting the Child Who Will Become Myopia - Can We Prevent Onset?**
	Prof Chen Zhi shared that myopia onset in the younger generation has advanced by three years, from an average of 10.6 years to 7.6 years, during the past 16 years. Similar to the western population, the hyperopia reserve is crucial in preventing myopia onset, but the required levels seem significantly higher for East Asians compared to caucasians. Increasing outdoor activity has limited effectiveness in delaying onset for those already in the pre-myopia zone. Preliminary results from using HALT spectacle lenses suggest potential in slowing axial elongation in low hyperopic children remains to be the key factor preventing myopia onset. However, the amount needed for the East Asians seems to be significantly higher than that for the Caucasians. For those already being in the pre-myopia zone, increasing outdoor activity doesn’t seem to work to delay myopia onset. Some concentrations of atropine eye drop seem to work yet inevitably with side effects. Our study explored the possibility of using HALT spectacle lenses as an optical method to slow axial elongation in low hyperopic children and received positive results in the first year of observation.

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Dr Jun Chen	**Use of Atropine for Prevention of Myopia Onset in Pre-Myopia Children**
	Dr. Jun Chen highlighted the global public health issue of myopia and the importance of preventing its onset. The rapidly progressive stage of pre-myopia shows that outdoor time after limited protection. Therefore, stronger interventions are necessary. Studies indicate that low-dose atropine effectively prevents myopia in pre-myopia children. The talk provided an overview of established and emerging evidence on atropine, its effectiveness, and future research directions in preventing myopia among at-risk children.

Event Replay

The replay of the Symposium is available on the event website : REPLAY

Acknowledgement

The Symposium has become one of the most important annual events for optometric and ophthalmological professionals to gather, interact and exchange knowledge. Its pivotal role in Asia and Hong Kong is underscored by the support from the Professional Services Advancement Support Scheme (PASS) and five commercial sponsors: Skyview Optical Company Limited, Bravo Vision Optical Limited, Hoya Lens HK Limited, CooperVision Hong Kong Limited and Johnson & Johnson (HK) Limited

Enquiry:

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