

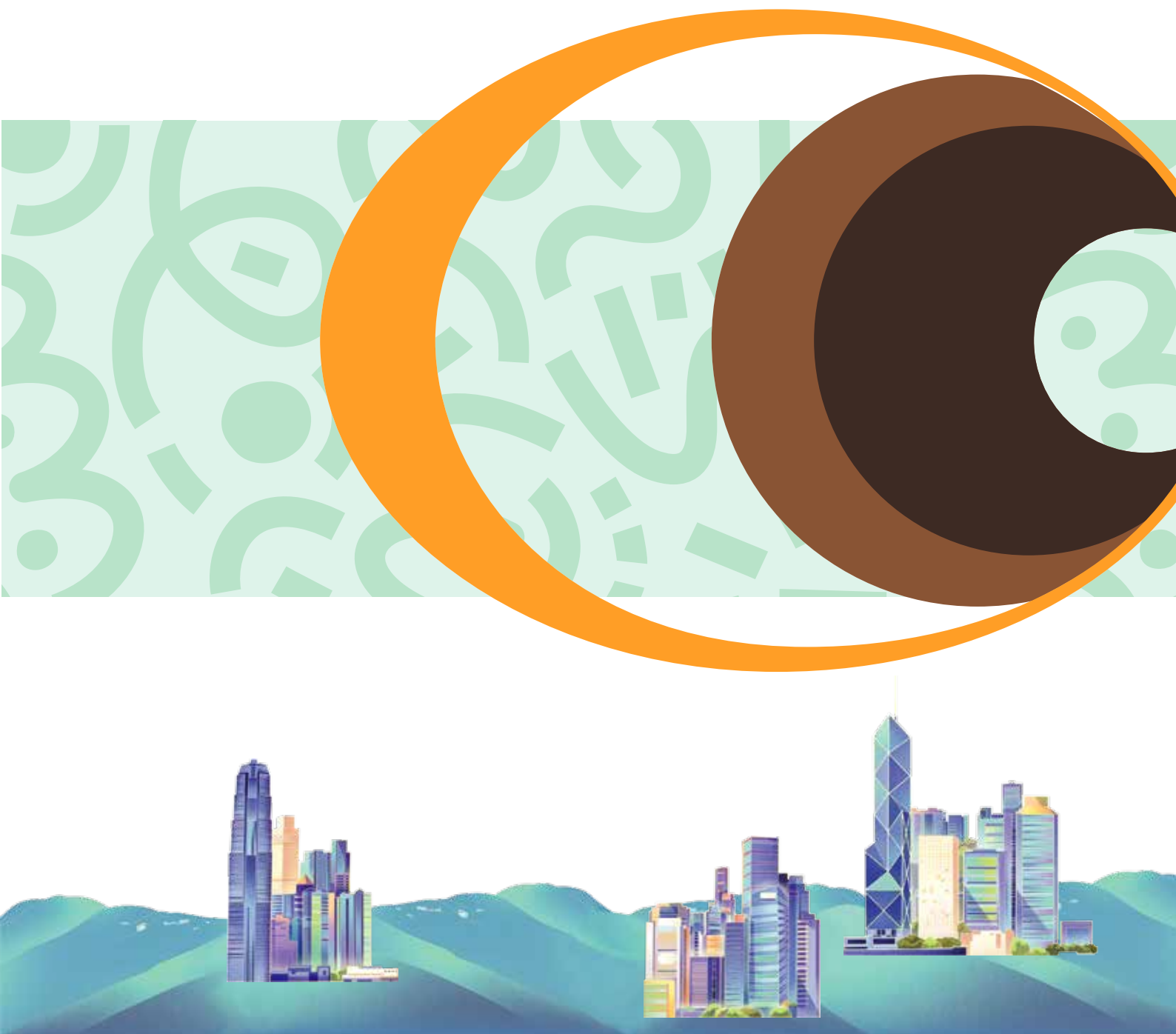
# ACCLC

ASIA Cornea &  
Contact Lens Conference

2024 Hong Kong

Programme & Abstracts Book

12-13 November 2024



Organizer:



Co-organizers:



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Increased rates of near work<sup>2</sup>; Myopia 80%-90% prevalence in children in some markets<sup>3</sup>



Widespread digital trends contributing to visual discomfort/ eyestrain



47% of current contact lens wearers are 40+<sup>4</sup>; 90% expect to continue in contact lens<sup>5</sup>

1. JJV Data on File, 2022. Growth Levers analysis based on Ipsos Global Incidence Tracker, retail outlet consumption data and national census population data covering United States, United Kingdom, Russia, Japan, South Korea and China in 2022. 2. Huang et al. The Association between Near Work Activities and Myopia in Children: A Systematic Review and Meta-Analysis. PLoS One 2015;10:e0140419. 3. Yusufu M, Bukhari J, Yu X, Lin TPH, Lam DSC, Wang N. Challenges in Eye Care in the Asia-Pacific Region. Asia Pac J Ophthalmol (Phila). 2021 Sep 8;10(5):423-429. doi: 10.1097/APO.0000000000000391. PMID: 34516436. PMID: 27898441. 4. JJV Data on File 2021. Growth Levers analysis based on Foresight Associates, IPSOS/Appinio Global Incidence Tracker, retail outlet consumption data and national census population data covering United States, United Kingdom, Russia, Japan, South Korea and China. 5. JJV Data on file 2022, a survey conducted with a total n=7356 and CL wearers n=1213 representative U.S. and U.K. consumers, ages 15-64. HKP20241009\_001

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# Welcome Message from Conference Chair



## Dr. Bruce Chin

Chairperson of Organizing Committee  
12th Asia Cornea and Contact Lens Conference  
President of the Hong Kong Society of  
Professional Optometrists

On behalf of the organizing committee of this Conference, I would like to extend my warmest welcome to all of you to the Hong Kong SAR for the 12th Asia Cornea & Contact Lens Conference (ACCLC).

The 1st ACCLC was held in Hong Kong in 2004 and it comes to the 12th ACCLC this year. Over the years, ACCLC has provided a platform to our delegates to reach a wider international exposure. In this Conference, international speakers including the US, the UK and Australia with local speakers will present a broad range of scientific aspects, including contact lens myopia control, new imaging and analysis of the anterior segment, role of Meibomian Gland related to dry eye, corneal transplant, as well as patient care in contact lens practice. In addition, there are sessions of academic papers and industrial seminars. Through these sessions, practicing optometrists, scientists, and various stakeholders in industries could share their knowledge and new findings and ultimately improve the management in anterior ocular health and contact lens care in different regions of Asia.

This year, the Hong Kong SAR shall serve as the host for the ACCLC. The Hong Kong SAR is a metropolis which is an ideal location for this landmark event and every delegate shall be inspired by this diverse and wonderful city with Chinese and Western cultures.

Finally, I would like to express my profound gratitude to all the speakers, presenters, organizing committee members, sponsor organizations, and delegates for taking part in and contributing to the Conference.

Enjoy the Conference!

## Conference Organizer

### The Hong Kong Society of Professional Optometrists (HKSPPO)

The HKSPPO was founded in 1982. Our members include optometrists qualified either by The Hong Kong Polytechnic University or overseas universities. Over years of development, we now have nearly 800 members.

Our primary objectives are to promote and improve the science and practice of optometry for the public benefit, and to maintain the highest possible standards of eye care services for the people of Hong Kong. We also encourage our members to maintain high standards of practice and to update their professional knowledge through continuing educational activities. The HKSPPO maintains frequent dialogue with the government of Hong Kong in an effort to enhance the standard of eye care. In addition, many of our members sit on the Optometrists Board and committees that regulate the Optometry profession in Hong Kong.



## Conference Co-organizers

### The Hong Kong Association of Private Practice Optometrists

The Hong Kong Association of Private Practice Optometrists (HKAPPO) was established on November 1, 1999 with the objectives:

- To promote primary care optometry
- To raise the standard of eye care in Hong Kong
- To maintain the highest standard of professional competence and conduct
- To protect the interests of private practice practitioners and to increase their competitiveness, public status and prestige

Our vision is to make "Optometry the number ONE choice in primary eye care and for optometrists to be the best primary eye care providers". Our mission is for HKAPPO to become the opinion leader and our members as the best providers of vision care. HKAPPO is committed to serving the profession, the industry and the community.

### School of Optometry, The Hong Kong Polytechnic University

The School of Optometry offers the only Honours Undergraduate Programme in Optometry leading to the professional qualification as an Optometrist in Hong Kong. The mission of the School is to undertake research-based teaching of the highest academic standard in optometry, and to contribute to the promotion and delivery of high quality vision care in Hong Kong. Contact lens research in the School can be traced back to the 1980s when some survey studies were conducted. Today, cornea and contact lens research in the School is vibrant. Several research groups are involved in studies encompassing orthokeratology, corneal optics, corneal biomechanics, safe contact lens wear and the dry eye.

### The Eye Foundation

The Eye Foundation is a charitable organization founded in 2003. Members include professional practicing optometrists and academics in Optometry. The mission of the Foundation is to improve and conserve human vision; to promote and improve the science and practice of Optometry for the public benefit; and to educate the public on eye and vision care.



# Conference Organizing Committee

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The Hong Kong Society of Professional Optometrists

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**Miss Manki Chan**

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<sup>†</sup>Compared to a single vision 1 day lens over a 3-year period. <sup>††</sup>As of March 2023, U.S. Indications for Use: MiSight® 1 day (omafilcon A) Soft (Hydrophilic) Contact Lenses for daily wear are indicated for the correction of myopic ametropia and for slowing the progression of myopia in children with non-diseased eyes, who at the initiation of treatment are 8–12 years of age and have a refraction of 0.75 to 4.00 dioptres (spherical equivalent) with ≤0.75 dioptres of astigmatism. The lens is to be discarded after each removal.

**References:** 1. Zadnik K et al. Factors associated with rapid myopia progression in school-aged children. *Invest Ophthalmol Vis Sci* 2004;45(13):2306. 2. Chamberlain P et al. A 3-year randomized clinical trial of MiSight lenses for myopia control. *Optom Vis Sci* 2019;96(8):556–7.

# Programme

12 November 2024 (Tuesday)

08:30 – 09:00	<b>Registration</b>
09:00 – 09:30	<b>Opening Ceremony</b>
09:30 – 10:30	<b>Invited Keynote Lecture I</b> <b>Exploring Tear Proteomics: insights into Dry Eye and Beyond</b> <b>(Dr Thomas Lam)</b> <b>Moderators: Dr Shanica Hon and Dr Rachel Chun</b>
10:30 – 11:00	<b>Speaker session for Patron sponsor</b> <b>(Johnson &amp; Johnson Vision Care Companies)</b> · Fact or Fiction - Addressing some of the myths in CL practice (Luke Cahill)
11:00 – 11:30	<b>Coffee Break &amp; Poster Session</b>
11:30 – 12:00	<b>Speaker session for Gold sponsor (Alcon)</b> · Impact of the digital environment on CL wear (Prof Lyndon Jones)
12:00 – 12:30	<b>Free Paper I &amp; Discussion – Tears and dry eye</b> Moderators: Dr Shanica Hon and Dr Rachel Chun · Observation on the clinical effect of transcutaneous electrical acupoint stimulation (TEAS) in the treatment of dry eye (YongQi Mao) · Advances in tear biomarkers in the study of diabetes and its complications (Wenyan Peng)
12:30 – 14:00	<b>Conference Lunch</b> (Sponsored by Johnson & Johnson Vision Care Companies)
14:00 – 15:00	<b>Invited Keynote Lecture II</b> <b>Efficacy in Myopia Control: an Omnibus Model</b> <b>(Dr Noel Brennan)</b> <b>Moderators: Dr Vincent Ng and Dr Rachel Chun</b>
15:00 – 15:30	<b>Free Paper II &amp; Discussion - Contact lens</b> Moderators: Dr Vincent Ng and Dr Rachel Chun · Corneal endothelium response to long-term wear of daily disposable hydrogel soft contact lenses through childhood (Tacy Song) · Material Dependence of Evaporative Water Loss from Hydrogel Contact Lenses (Ka Yin Chan)
15:30 – 16:00	<b>Coffee Break &amp; Poster Session</b>
16:00 – 17:00	<b>Invited Keynote Lecture III</b> <b>Advances in Myopia Management and Optimizing Intervention Strategies</b> <b>(Prof Yang Xiao)</b>



## 13 November 2024 (Wednesday)

08:30 – 09:00	<b>Registration</b>
09:00 – 10:00	<b>Invited Keynote Lecture IV</b> <b>Refractive Surgery in 2024 - What's Hot and What's Not</b> (Dr Alex Ng) <b>Moderators: Dr Jeremy Kang and Mr Anson Wan</b>
10:00 – 10:30	<b>Speaker session for Platinum sponsor (CooperVision)</b> An innovative multifocal contact lens solution for presbyopia (Anna Sulley)
10:30 – 11:00	Coffee Break & Poster Session
11:00 – 12:00	<b>Free Paper III &amp; Discussion - Cornea and Refractive corrections</b> Moderators: Dr Jeremy Kang and Mr Anson Wan <ul style="list-style-type: none"> <li>· New application of artificial intelligence to control myopia in orthokeratology lens (Yunhua Tang)</li> <li>· Two-year myopia control efficacy of a dual reverse curve orthokeratology lens design in highly myopic children (Yajing Yang)</li> <li>· Investigation of the mechanism of low-level red light therapy on hyperosmolar-induced human corneal epithelial cells (Yutong Jin)</li> <li>· Near-infrared and eye tear triggered biocidal corneal bandage as a potential approach for treatment of bacterial keratitis (Liangyu Zhou)</li> </ul>
12:00 – 13:30	Conference Lunch (Sponsored by CooperVision)
13:30 – 14:30	<b>Invited Keynote Lecture V</b> <b>State of the Contact Lens Industry</b> (Prof Jason Nichols) <b>Moderators: Dr Kai Yip Choi and Ms Manki Chan</b>
14:30 – 15:00	<b>Free Paper IV &amp; Discussion - Contact lens and myopia control</b> Moderators: Dr Kai Yip Choi and Ms Manki Chan <ul style="list-style-type: none"> <li>· Next-Gen CL Learning Platform: Advanced Search Engine, Interactive RGP Case Studies, and More (Jimmy Tse)</li> <li>· Real-world safety and performance of a novel soft contact lens for myopia management in Chinese children (Noel Brennan)</li> </ul>
15:00 – 15:40	Coffee Break & Poster Session
15:40 – 16:40	<b>Invited Keynote Lecture VI</b> <b>Contact lens</b> <b>What does the future for contact lenses look like?</b> <b>A gaze into the crystal ball</b> (Prof Lyndon Jones)
16:40 – 17:00	<b>Closing Ceremony</b>
17:30 – 19:00	<b>Workshops</b> Get started with Sclerals – hands-on workshop Dry Eye Disease: All-Level Diagnostic and Management Strategies

# Invited Keynote Lecture I

## Exploring Tear Proteomics: insights into Dry Eye and Beyond



### Dr. Thomas Lam

ADoCAF, ADoRCSV,

Associate Professor

School of Optometry, The Hong Kong Polytechnic University

### Biography

Dr Thomas Lam completed his undergraduate training with first-class honours in Optometry from PolyU. He was awarded a PhD scholarship to pursue his study on proteomics and animal myopia. He is among the first to pursue global retinal protein profiling and novel protein regulations in the chick myopia model using a mass spectrometry approach. Dr Lam started his academic career in 2008 as a Lecturer in the School of Optometry in PolyU and obtained his first competitive research grant from the RGC in the following year. In 2010, he relocated to Singapore and helped establish the first BSc Optometry degree programme offered by the University of Manchester (UK). He returned to Hong Kong in 2012 and he is currently an Associate Professor of the School of Optometry and serves as Director of PolyU Shenzhen centralized animal facility and Associate Director of PolyU centralized animal facility.

Dr Lam has a good mix of academic and clinical experience. He obtained his fellowship of the American Academy of Optometry (FAAO) in 2009. He has more than 15 years experience in clinical supervision in various optometry clinics locally and overseas. He also actively serves in the profession as an editorial board member of international journals, an organizing committee member of international conferences, a councilor of The Hong Kong Society of Professional Optometrists (HKSPPO), and a member of The Optometrists Board of Hong Kong, The Government of the Hong Kong Special Administrative Region. He is currently a PI of Centre for Eye and Vision Research (CEVR), HK Science Park, Research Centre for SHARP Vision, PolyU, Research Centre for Chinese Medicine Innovation (RCMI), PolyU and Shenzhen Research Institute, PolyU.

### Abstract

Dry eye disease (DED) presents substantial challenges in clinical diagnosis and management, impacting individuals of all age groups, with a notable prevalence among Asian patients. This presentation will provide an overview of our recent clinical findings regarding the prevalence of DED in the local population, highlighting the urgent need for effective diagnostic and therapeutic strategies. Additionally, we will elucidate our novel approach in developing a tear proteomics strategy utilizing label-free mass spectrometry to evaluate the human tear proteome. By employing tear samples from our DED clinical study, alongside corneal cell cultures, we were able to identify potential new biomarkers and gain new insights into the mechanism of DED. This non-invasive tear proteomics technique has proven instrumental in assessing treatment outcomes in DED eyedrop therapy, safety concerns associated with orthokeratology lens wear, and facilitating disease detection in retinopathy of prematurity (ROP). Our findings underscore the critical role of integrating advanced molecular techniques to tackle clinical challenges related to dry eye and other ocular conditions. In addition, challenges and future perspectives for translational research in developing molecular biomarkers for clinical application will be discussed.

# Johnson & Johnson Lecture

## Fact or Fiction - Addressing some of the myths in CL practice



### Luke Cahill

BOptom

Associate Director Strategic Medical Affairs,  
Johnson & Johnson Vision, Asia Pacific

#### Biography

Luke obtained his Bachelor of Optometry degree from the University of New South Wales, Australia and has over 35 years' experience in the profession. Luke leads the Medical Affairs function for Johnson & Johnson Vision Care Asia Pacific, responsible for the scientific evidence strategy in the Asia Pacific region.

Luke is Vice President of Optometry Australia, New South Wales/Australian Capital Territory division and has held a range of senior optometric leadership and management positions throughout his career, including 4 years as President of Optometry Australia, New South Wales/Australian Capital Territory, 8 years as a member of the Optometry Registration Board of Western Australia and 13 years as National Chairman of Optometry Aid Overseas..

Luke is a passionate proponent of the use of evidence-based data in optometric practice and presents extensively on contact lenses and contact lens practice.

#### Abstract

Optometry is a collegial profession. Eye care professionals (ECPs) are influenced by the professional judgement of their peers in ensuring they deliver the most advanced standards of patient care. An independent research agency conducted a series of surveys that investigated accepted professional beliefs of eye care professionals (ECPs) from around the world, in relation to contact lens practice.

More than 1000 ECPs were surveyed across 6 markets (US, UK, Japan, China, South Korea, Brazil) to gain insights on key perceptions.

Although many ECPs beliefs align with expectations based on current evidence, there are misconceptions in a number of areas of optometric practice. We will present the accepted professional beliefs in relation to; the role of oxygen transmissibility related to contact lens comfort and multifocal contact lens fitting. We will also provide an analysis of the evidence to provide guidance for best practice on these aspects of contact lens practice.

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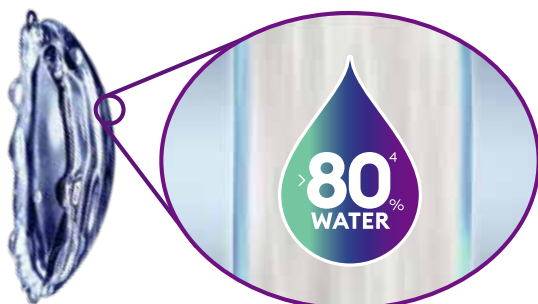


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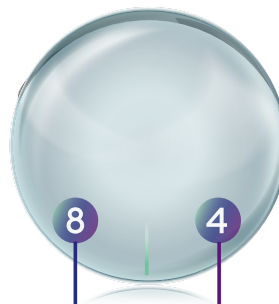
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References: 1. Hines B, et al. Clinical subjective performance of two daily disposable toric contact lenses. Poster presented at American Optometric Association, Chicago, June 15-18, 2022. 2. In a study where n=78 eyes; Alcon data on file, 2020. 3. Perez-Gomez I, Valente R, Vanbun H. Survey of patient and ECP satisfaction with a new daily disposable toric contact lens. Poster presented at 2021 American Academy of Optometry Annual Meeting; November 3-6; Boston, MA. 4. Surface Water Content of PRECISION1™ Lens; Alcon data on file, 2020. 5. Tucker B, Leveille E, Bauman E, Subbaraman L. Characterization of the Surface Properties of a Novel Daily Disposable Silicone Hydrogel Contact Lens. Poster presented at the American Academy of Optometry Annual Conference, October 23-26; Orlando FL. 6. iDrop Comparative Studies; Alcon data on file, 2019. 7. Alcon data on file, 2021.

\* Based on lens movement, centration and rotation at initial fitting.

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# Alcon Lecture

## Impact of the digital environment on CL wear



### Prof. Lyndon Jones

PhD FCOptom FRSC FCAHS FAAO

Professor, School of Optometry and Vision Science and University  
Professor and Director of the Centre, Ocular Research &  
Education (CORE) at the University of Waterloo

### Biography

Lyndon Jones is a Professor at the School of Optometry and Vision Science, University Professor and Director of the Centre for Ocular Research & Education (CORE) at the University of Waterloo. His research interests primarily focus on the interaction of novel and existing contact lens materials with the ocular environment, dry eye and the development of novel materials for ocular drug delivery. He has authored over 500 refereed and professional papers, one text-book and given over 1200 invited lectures at conferences worldwide, in over 40 countries.

### Abstract

The recent TFOS Lifestyle reports provide a comprehensive review of how the health of the ocular surface may be impacted by how our lives are lived. The lifestyle choices made by patients can impact the health of the ocular surface and the challenges posed by a wide variety of factors such as cosmetics, nutrition, medications, digital devices and the wearing of contact lenses are all described in detail.

This evidence-based review will concentrate on how two of these factors (contact lens wear and the digital environment) can stress the ocular surface and result in patients seeking advice from their eyecare practitioner. It will review the impact of digital devices on the ocular surface and how these changes can impact the performance of contact lenses. Methods to optimise comfort and visual performance in soft lens wearers who use digital devices will be discussed, with an emphasis on the use of appropriate lens materials, frequency of replacement and optimal correction of astigmatism.



# Free Paper Presentation I

## Observation on the clinical effect of transcutaneous electrical acupoint stimulation (TEAS) in the treatment of dry eye

YongQi Mao

Eye School of Chengdu University of Traditional Chinese Medicine

### Abstract

#### Objective

To investigate the clinical efficacy and safety of transcutaneous electrical acupoint stimulation (TEAS) in the treatment of dry eye.

#### Methods

60 patients meeting the diagnostic criteria of dry eye were randomly divided into test group (30 cases) and control group (30 cases). The experimental group was treated with transcutaneous electrical acupoint stimulation (TEAS), the current was applied to the acupoints around the eyes (temples and foot Shaoyang gallbladder meridian), and the experimental group was treated with traditional acupuncture therapy. The treatment period was 2 weeks, 2 times a week. Symptom improvement, ocular surface disease index (OSDI), tear secretion, BUT and other indicators were recorded during the period.

#### Results

After treatment, dry eye symptoms were significantly improved in most patients. Dry eyes, foreign body sensation, burning sensation and other discomfort symptoms reduced or disappeared; Ocular surface disease index (OSDI) changes; Increased tear secretion; BUT was increased ( $P < 0.05$ ).

#### Conclusion

Transcutaneous electrical acupoint stimulation (TEAS) is effective and safe in the treatment of dry eye. The treatment effectively improves the symptoms of dry eye patients by promoting blood circulation in the eye, increasing tear secretion, prolonging BUT, relieving ocular muscle tension, regulating nerve conduction function and other mechanisms.

## Advances in tear biomarkers in the study of diabetes and its complications

Wenyan Peng

Eye School of Chengdu University of Traditional Chinese Medicine

Co-author(s): Yinyu Ke, Fuwen Zhang

Tears play a crucial role in maintaining the health and function of the ocular surface as they cover the surface of the eye. Their composition is complex. Compared to other bodily fluids, tears are easier to collect, non-invasive, and painless. These characteristics make tears an ideal source of biomarkers for diagnosing and monitoring various diseases, especially systemic metabolic disorders such as diabetes and its complications.

Diabetes is a metabolic disease, and there is currently no fundamental cure. Early diagnosis and monitoring of diabetes is crucial for patient treatment and prognosis. In recent years, biomarkers in tear fluid have garnered significant attention from researchers due to their unique advantages. Studies have shown that various metabolites are upregulated in the tear fluid of diabetic patients, related to the pathogenesis of diabetes. For example, niacin levels are elevated in the tears of diabetic patients. Additionally, the levels of the pro-inflammatory cytokine TNF- $\alpha$  in the tear fluid of patients with diabetic retinopathy (DR) are increased, which not only aids in the early diagnosis of DR but also helps predict the severity of the disease. The correlation between tear fluid levels of Nerve Growth Factor (NGF) and diabetic nephropathy, Neuropeptide Y (NPY) and diabetic peripheral microangiopathy, and MMP-9 and diabetic peripheral neuropathy (DPN) suggests the potential value of tear fluid biomarkers for the prediction and diagnosis of diabetic complications.

Despite the potential of tear biomarkers in the diagnosis and monitoring of diabetes and its complications, their clinical application still faces challenges. For instance, tear samples are often small and technically demanding to collect and detect, limiting their widespread use. However, with the advancement of analytical techniques, in the future, tear analysis is expected to become a routine tool for detecting the diagnosis and monitoring of diabetes and its complications, and to play a more important role in the management of diabetes.

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\*SEED 1dayPure EDOF was approved as a contact lens based on the principle of extended depth-of-focus (EDOF). It is the first EDOF contact lens available in the Japanese market.



Founder of Brien Holden Vision Institute

BHVI is a non-profit translational research, education and public health organization affiliated with the University of New South Wales in Sydney, Australia, developing new solutions for vision care, especially for myopia and other refractive errors. It is leading global professional education and advocacy efforts to address the myopia epidemic. This time, BHVI has developed extended depth of focus (EDOF) technology for the treatment of presbyopia. This technology provides good vision at all distances, while minimizing ghosting and haloes.



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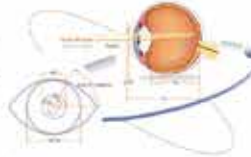


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# Invited Keynote Lecture II

## Efficacy in Myopia Control: an Omnibus Model



**Dr. Noel A. Brennan**

MScOptom, PhD, FAAO  
Fellow, Johnson & Johnson Vision

### Biography

Noel A. Brennan, MScOptom, PhD, FAAO, is an internationally recognized scientist, author, inventor, and educator. Currently, a research fellow at Johnson & Johnson, he formerly served on the academic staff at the University of Melbourne and was a visiting scholar at Stanford University's Division of Ophthalmology, Department of Surgery, courtesy of a Senior Fulbright scholarship, before directing an eponymous boutique research consulting firm for a number of years. A recognized expert in the field of contact lenses, he now devotes his time to unraveling the mysteries of myopia through optical design, experimentation, data collation, and modeling. He is the designer of the Abiliti 1-Day Soft Therapeutic Lenses for Myopia Management, a named inventor on over 25 US patents, and is coauthor of over 400 papers, including peer-reviewed scientific manuscripts, refereed conference abstracts, educational articles, and industry reports.

### Abstract

Myopia management can be confusing for clinicians. Which treatment is best? How does a practitioner compare the different treatments? Are quoted percentage values really meaningful? We have been on a quest for nearly decade to lay out an evidence-based approach to understanding these questions. The following elements have been built over this time to generate a comprehensive interpretation: axial length is the preferred metric for assessing progression; efficacy follows a pattern of absolute rather than percentage reduction in progression; there is an initial 'boost' of efficacy during the first year; 3-year efficacy is reliably double 1-year efficacy; there is a 15% reduction per annum in axial elongation in untreated myopes, and also in treated myopes after the first year of treatment. Combining these details leads us to predict that 6-year efficacy will be triple 1-year efficacy (expressed as mm reduction in axial elongation) and 12 years of a treatment would result in quadruple the 1-year efficacy. The maximum expected reduction in myopia progression over a decade would fall under 2D for the best treatments currently available. These predictions apply to group averages and individual variation is large. Better models are needed to predict progression during treatment of individual patients.

# Free Paper Presentation II

## Corneal endothelium response to long-term wear of daily disposable hydrogel soft contact lenses through childhood

Tacy Song, MSc., FIACLE

Asia-Pacific Head of Professional Affairs, Myopia, CooperVision

Co-author(s): Hiu Yan Lam, Susie Jones, Nicola S Logan

### Abstract

#### Purpose

Emerging evidence has indicated that specially designed daily disposable soft contact lenses (SCL) can slow down myopia progression. This study investigated the long-term impact of hydrogel SCL on corneal endothelium and corneal morphological characteristics in children.

#### Method

Twenty participants (mean age:  $20.6 \pm 1.5$  years) who wore daily disposable SCL (omafilcon A) for myopia correction or treatment from ages 8-12 years and twenty age-matched controls without contact lens experience were recruited. The central corneal endothelium was photographed from each eye with a non-contact specular biomicroscope. A minimum of 100 contiguous cells, marked manually on each image using the centre-dot method, was analysed with built-in computer algorithms. Average values of endothelial cell density (ECD), average cell area (ACA), coefficient of variation of cell area (CV), percentage of hexagonal cells (HEX), and central corneal thickness (CCT) were obtained from three images of each eye.

#### Results

Intra-class correlation indicated a strong correlation between the two eyes ( $ICC \geq 0.9$ ). Data from both eyes were averaged and analysed using an independent t-test. No significant difference was found between the two groups in average ECD (control vs SCL:  $3125 \pm 197$  vs  $3092 \pm 227$  cells/mm<sup>2</sup>,  $p > 0.05$ ), ACA ( $320 \pm 22$  vs  $325 \pm 25$   $\mu$ m<sup>2</sup>,  $p > 0.05$ ), HEX ( $68 \pm 5$  vs  $66 \pm 7$  %) and CCT ( $555 \pm 22$  vs  $552 \pm 28$   $\mu$ m,  $p > 0.05$ ). Although 7 out of 20 SCL participants had an average CV value higher than 30, no statistically significant difference was found between the two groups ( $p = 0.08$ ).

#### Conclusions

Our study showed wearing daily disposable hydrogel SCL full-time over 10 years caused no significant long-term impact on central corneal endothelium in children who wore SCLs from 8 years of age, who had good contact lens habits and regular contact lens aftercare.

## Material Dependence of Evaporative Water Loss from Hydrogel Contact Lenses

Ka Yin Chan, PhD

Professional Education & Development Lead, Johnson & Johnson

Co-author(s): D. Riederer, A. DiStefano, C. Scales, P. Martin

### Abstract

#### Purpose

Evaporative water loss from the front surface of a contact lens during periods of tear film break up may be a significant mode of ocular dehydration. Measurement of 22 types of CL shows that the rate of evaporation is material dependent. This work specifically addresses pervaporation which refers to water loss by the combined processes of permeation and evaporation. The experimentally measured rates are used in conjunction with a model to calculate the fraction of incoming tears lost to pervaporation.

#### Methods

Evaporation rates ( $\mu$ L/min/cm<sup>2</sup>,  $n=6$  per material) were experimentally determined using a custom per vaporation cell with a dynamic vapor sorption instrument. Rates were measured at 35°C and under conditions of 80%, 50%, 30% and 0% relative humidity (RH). The experimentally measured evaporation rates, along with values for the area of exposed lens polymer and exposure time between blinks, were used to create a model for evaporative loss from the lens polymer during periods of tear film break up.

#### Results

The lenses fall into two groups: materials with higher pervaporation rates that are strongly dependent on percent RH, and materials with lower rates that resist pervaporative loss at low humidity. Group with higher rates contains both traditional and silicone hydrogel lenses, while the group with lower rates is composed of exclusively SiHy that contain strong hydrophilic components. Modeling shows that for high pervaporation rate lenses, up to 30% or more of the incoming tears may be lost by evaporation directly from the lens surface. Water loss is significantly reduced with lower evaporation rate lenses.

#### Conclusion

Evaporation of water from the surface of CL is shown to be material dependent. Pervaporative loss that occurs during periods of tear film break up may be an important mode of ocular dehydration leading to CLIDE. CL materials with strong hydrophilic components reduce pervaporative loss.



## Invited Keynote Lecture III

### Advances in Myopia Management and Optimizing Intervention Strategies



#### Prof. Yang Xiao

MD, PhD

Professor, Chief Physician of Ophthalmology,  
Doctoral Supervisor and Director of Department of Refraction  
and Myopia Control, Zhongshan Ophthalmic Center (ZOC),  
Sun Yat-Sen University

#### Biography

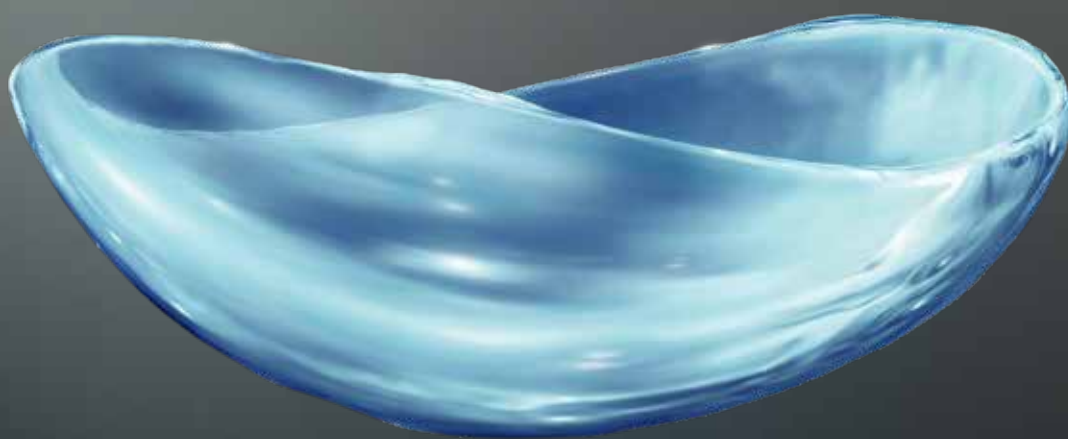
Prof. Yang is currently the deputy leader of Optometry and Vision Science Group, Ophthalmology Branch, and Chinese Medical Society. Her research interests include orthokeratology, myopia control, and pediatrics ophthalmology. Yang has obtained more than 20 research funds on projects and has been published in professional journals in these fields. Prof. Yang is a fellow of the International Association of Contact lens educators (FIACLE), a fellow of the International Academic Orthokeratology and Myopia Control (FIAOMC), and the Fellowship Chair, Asia Section of IAOMC.

#### Abstract

Myopia management is a rapidly moving field, with ongoing research providing more and more evidential strategies for comprehensive intervention. Efforts have been made, attempting to improve efficacy of treatments. The task of this presentation is to (1) give an overview of recent advances in this landscape, including optical interventions such as orthokeratology, low-concentration atropine, and emerging therapies such as Low-Level Red-Light Therapy (RLRL), as a background and (2) our work relevant to myopia management, which will be clarified in four main subjects: first, impacts of optics-induced visual signals on myopia control efficacy, and development and validation of the index, Areal Summed Corneal Power Shift (ASCPS), for early prediction and optimization; second, our explorations in optimizing optical interventions based on ASCPS, including orthokeratology, multifocal soft lenses, and defocus RGP lenses; third, our explorations in improving myopia control efficacy by using combined treatment strategies, including combined orthokeratology with low-concentration atropine and combined RLRL with orthokeratology as a promising potential for children who respond poor to orthokeratology; and fourth, future directions and our ongoing researches.

# 權威認證<sup>1</sup>

# 減少眼乾<sup>2</sup>



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嶄新技術<sup>3</sup>

**5倍**  
透氧量<sup>4</sup>

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水潤透氣<sup>5</sup>

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防眼乾成分之一<sup>1</sup>

<sup>1</sup>國際眼科權威為Tear Film & Ocular Surface Society, Jones et al. TFOS DEWS II Management and Therapy Report. The Ocul Surf. 3 May 2017. <sup>2</sup>Data on file. Study BL-893, A Study to Evaluate the Product Performance of a New Silicone Hydrogel Contact Lens. 2020. <sup>3</sup>2大嶄新技術為Advanced MoistureSeal™ Technology 及 ComfortFeel Technology. <sup>4</sup>與博士倫1DAY高透保濕 CON比較. <sup>5</sup>Data on file. Schafer, Jeffrey, "A Clinical Assessment of Dehydration Resistance for a Novel Silicone Hydrogel Lens and Six Silicone Hydrogel Daily Disposable Lenses." An assessment of the dehydration resistance of a novel kalafilcon A silicone hydrogel lens compared to six daily disposable silicone hydrogel lenses after 16 hours of wear. 6 October 2020. ©2024 Bausch & Lomb Incorporated. Bausch + Lomb ULTRA® is a trademark of Bausch & Lomb Incorporated or its affiliates. HK-VC-2024-02-025

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# Invited Keynote Lecture IV

## Refractive Surgery in 2024 - What's Hot and What's Not



### Dr. Alex Ng

MBBS, FRCOphth, FRCSEd (Ophth), FRCS (Glasg),  
FCOphth HK, FHKAM (Ophthalmology)  
Specialist in Ophthalmology,  
The Hong Kong Ophthalmic Associates

### Biography

Dr. Alex Ng is a specialist in Ophthalmology at the Hong Kong Ophthalmic Associates (private practice). His research interests involved cataract surgery, refractive surgery, dry eye disease management and children myopia control. He has over 80 publications in peer-reviewed journals and has delivered over 70 invited talks and instruction courses in both local and international ophthalmology conferences. He was awarded the Asia Cornea Society Santen Asia Educational Observership Grant Award in 2016, the Distinguished Young Fellow Award of the College of Ophthalmologists of Hong Kong in 2016, the Asia-Pacific Academy of Ophthalmology (APAO) & Singapore Society of Ophthalmology Young Ophthalmologist Award in 2017, the APAO Achievement Award in 2019, and the Japanese Ophthalmological Society (JOS) International Young Investigator Award in 2020. He is also an alumni of the APAO Leadership Development Program (class 2020-21).

Dr Ng currently serves as the honorary secretary at the Hong Kong Ophthalmological Society, editor of the Hong Kong Journal of Ophthalmology, visiting consultant of the Lifeline Express and Associate Ophthalmologist at Orbis.

### Abstract

The landscape of refractive surgery in this part of the world has undergone dramatic changes in the past decade. The speaker, a cataract and refractive surgeon, will cover all the popular modern refractive surgery modalities including excimer lasers, lenticule extractions, cross linking, phakic lenses (Implantable Collamer Lens) and intraocular lenses (monofocal, extended depth of focus, multifocal lenses, and more!).

# CooperVision Lecture

## An innovative multifocal contact lens solution for presbyopia



### Anna Sulley

BSc (Hons) MCOptom FAAO FBCLA  
Director, Global Medical Affairs,  
CooperVision International

### Biography

Anna graduated as an optometrist from Aston University, UK and worked in practice for several years before moving to Visioncare Research Ltd. She joined Hydron R&D in 1997 as International Clinical Manager, and then Johnson and Johnson Vision Care in 2000 where she was UK Professional Affairs Manager until 2004. After a few years dividing her time between private practice, medical writing, research and consultancy to the contact lens industry, Anna worked at Johnson and Johnson Vision from 2009 until 2018 in Global Medical Affairs. Anna joined CooperVision in 2019 as Director of Global Medical Affairs. She is Past President and Fellow of the British Contact Lens Association, and Fellow of the American Academy of Optometry. Anna has presented on contact lens and anterior eye related topics around the globe, and authored numerous publications, including being part of the teams that reviewed, synthesised and summarised evidence on contact lenses to develop the BCLA CLEAR™ (Continued Learning Evidence-based Academic Report) global consensus publications, including the paper on presbyopia and multifocal contact lenses in 2024. She serves as a reviewer for several key vision science, anterior eye and contact lens peer-reviewed journals.

### Abstract

It is estimated that around 2 billion people struggle with presbyopia globally, and while research shows that soft multifocal contact lenses (MFCLs) perform well, the number of presbyopes being prescribed them is relatively low. Concerns from eye care professionals include chair time and fit success rates, although it is known that in addition to improving patients' vision and quality of life, MFCLs can also help to build a practice.

This presentation will demonstrate how CooperVision's Binocular Progressive System™ found in MyDay® multifocal, and now clariti® 1 day multifocal, meets the needs commonly identified by eye care professionals and their presbyopic patients: excellent vision, comfort and health. Leveraging expertise in optical design and successful prescribing practices, the daily disposable, silicone hydrogel, MFCLs feature the innovative 3-add approach that caters to all levels of presbyopia with effective, simple fitting, optimal visual acuity at all distances, and comfortable wear.

Additionally, findings from recent publications will highlight that meeting presbyopes' vision needs is strongly correlated with wanting to wear MFCLs and is more important than comfort needs, and that overall vision satisfaction on dispensing is a good indicator of vision satisfaction and intention to purchase after 1 week of wear to help indicate the likeliness of success.

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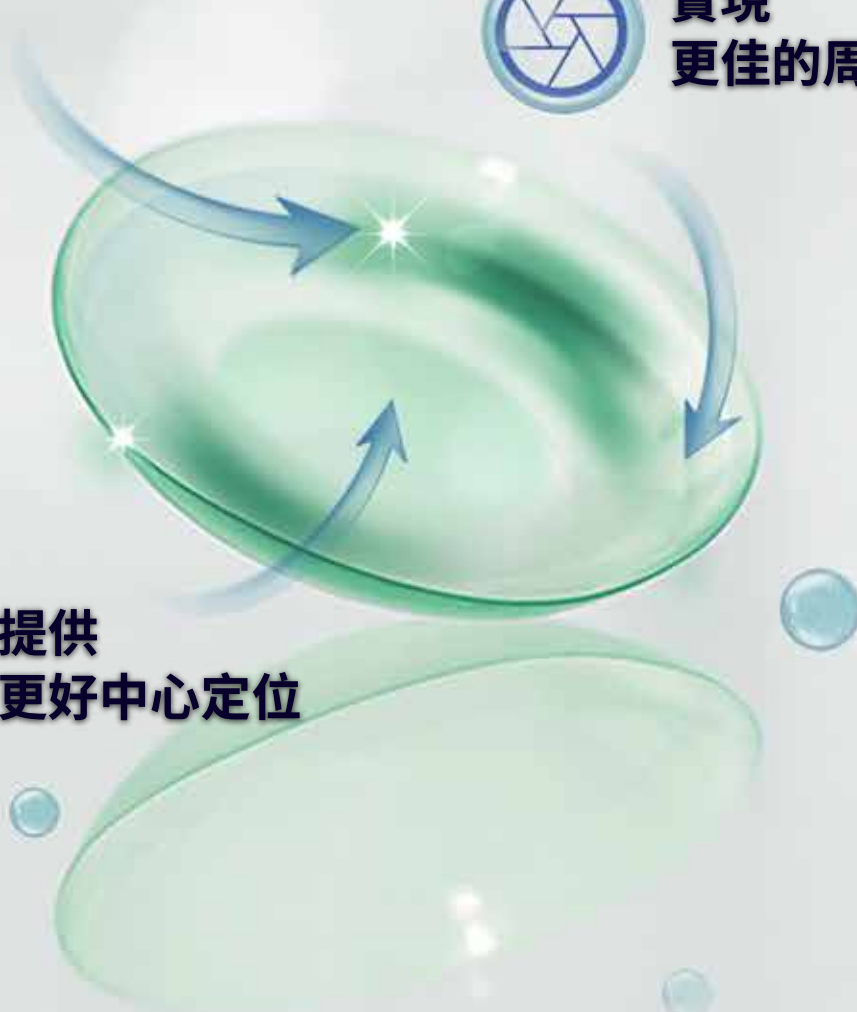
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## Free Paper Presentation III

### New application of artificial intelligence to control myopia in orthokeratology lens

Yunhua Tang

School of Ophthalmology, Chengdu University of Traditional Chinese Medicine

#### Abstract

##### Background

Myopia is an increasingly serious threat to the visual health of young people around the world, and the orthokeratology (OK) lens are widely accepted as one of the most effective means of controlling myopia, providing a safe and reversible solution to correct and slow the progression of myopia by wearing them at night. However, the fitting process is cumbersome and the effect varies between different doctors. The application of Artificial Intelligence (AI), especially Machine Learning (ML) and Deep Learning (DL), has brought innovative breakthroughs in this field. By analysing images and data information and recognising subtle patterns, they can make more accurate and faster judgments than optometrists.

##### Method

We performed a comprehensive search of PubMed, Web of Science, Embase and Scopus using the keywords 'AI, artificial intelligence, machine learning, deep learning, natural language processing, computer vision, generative AI' combined with 'orthokeratology'. A total of 147 articles were found and 21 articles were included after full-text analysis.

##### Results

ML and DL built prediction models based on corneal topographic map, axial length (AL), spherical equivalent refractive error (SER) and other biological characteristics to achieve the accuracy and personalization of OK lens matching, and provide a more effective myopia prevention and treatment scheme for the clinic.

##### Discussion

We retrospectively analyzed the current status and potential transformative impact of the application of ML and DL in AI in the control of myopia with OK lenses. The application of ML and DL in the clinical practice of controlling myopia with OK lenses has improved the accuracy and efficiency of fitting, and has shown great potential in assisting optometrists to determine trial lenses, predict correction effects, and achieve personalized treatment. We emphasized its potential to improve market shortages, and also explored in depth the challenges of integrating it into clinical practice and research.

### Two-year myopia control efficacy of a dual reverse curve orthokeratology lens design in highly myopic children

Yajing Yang

School of Optometry, The Hong Kong Polytechnic University, Hong Kong

Co-author(s): S. J. Vincent, S. W. Cheung, P. Cho, H. H. Chan

#### Objectives

To investigate the rate of axial elongation (AE) and associated factors in highly myopic children treated with dual reverse curve (RC) orthokeratology (ortho-k) lenses.

#### Methods

Chinese children aged 7 to 13 years, with myopia  $\leq -5.00$  D and astigmatism  $\geq -2.00$  D, were assigned to either a dual RC design targeted for full correction (study) or a conventional design with  $-4.00$  D target (control). Both groups wore single-vision spectacles to correct residual refraction during the daytime. Generalized estimated equation (GEE) model analyses were used to examine the changes in AL and ChT over time and between groups, accounting for inter-eye correlations. Some participants discontinued lens wear for over one month due to microcysts, which was considered discontinuation effect. Another GEE model analysis using the data from all the visits was used to examine the risk factors for AE, adjusting for age, sex, treatment group, inter-eye correction, baseline AL and ChT, ChT changes, and discontinuation effect.

#### Results

Thirty participants completed the two-year follow-up (control: 20 vs study: 10). After two years, AE was comparable between groups ( $0.12 \pm 0.05$  vs  $0.14 \pm 0.07$  mm). Thirteen participants who discontinued temporarily for over one month during the study period demonstrated greater AE than those who did not ( $0.19$  vs  $0.08$  mm). At the end of the study, there was no significant difference in the mean ChT change between groups ( $10.4 \pm 5.1$  vs  $15.8 \pm 5.4$   $\mu$ m). GEE analysis indicated that older age, greater increases in ChT, and continuous treatment were significantly associated with less AE.

#### Conclusion

The dual RC ortho-k design targeted for greater refractive corrections achieved good myopia control efficacy in highly myopic children, comparable to the conventional design. Younger age, less increase in ChT, and temporary lens wear discontinuation (interruption) over one month during treatment may accelerate myopia progression.

## Investigation of the mechanism of low-level red light therapy on hyperosmolar-induced human corneal epithelial cells

Yutong Jin

Postdoctoral fellow, Center for Eye and Vision Research Limited (CEVR)

Co-author(s): J. K. Cheung, R. K. M. Chun, D. Y. Tse, T. C. Lam

### Objective

Low-Level Red Light therapy has emerged as a potential non-invasive option for managing dry eye disease, yet its underlying mechanisms remain unclear. Thus, this study aims to investigate the impact of red light on the functionalities of human corneal epithelial cells (hCECs).

### Methods

An immortalized human corneal epithelial cell line was used in this study. Cells were cultured in either normal osmolar media (315 mOsm/L) or hyperosmolar media (465 mOsm/L) and exposed to LED red light (RL, 620 nm with 2500 lux or 0.88 mW, 5 times at 5-minute intervals over 24 hours). There were 4 groups, cells in normal osmolar media (C-N), cells in hyperosmolar media (C-HS), cells exposed to LED light in normal osmolar media (RL-N), and cells exposed to LED light in hyperosmolar media (RL-HS). Cell viability (annexin V and propidium iodide), intracellular ROS production (DCFH-DA), mitochondrial ROS generation (MitoSox), and their inflammatory state (anti-HLA-DR antibody) were assessed through flow cytometry.

### Results

The expressions of annexin V and propidium iodide on hCECs decreased significantly solely in the RL-N compared to the C-N group ( $p < 0.022$ ). Additionally, intracellular ROS levels increased significantly in the RL-N compared to the C-N group ( $p = 0.023$ ). Mitochondrial ROS generation was significantly increased in RL-C and RL-HS groups compared to their controls ( $p < 0.027$ ). HLA-DR expression decreased significantly in RL-HS compared to RL-N ( $p = 0.027$ ), suggesting an anti-inflammatory effect of red light.

### Conclusions

Low-Level Red Light may prevent cell death and enhance ROS production in hCECs under non-stressful conditions, potentially augmenting cellular functions. Exposure to RL may have a greater impact on mitochondrial activities given the significant increase in mitochondrial ROS generation in both RL-N and RL-HS groups. Further studies are needed to better understand intracellular pathways or underlying mechanisms of RL on hCECs.

## Near-infrared and eye tear triggered biocidal corneal bandage as a potential approach for treatment of bacterial keratitis

Liangyu Zhou

Department of Ophthalmology, The University of Hong Kong Li Ka Shing Faculty of Medicine

Co-author(s): Shuowen Zhou, Yau Kei Chan

### Purpose

Antibiotics have been the conventional treatment for bacterial keratitis and their use has led to significant issues including antimicrobial resistance and allergic reactions. These problems have prompted the search for alternative therapies. We developed a biocidal corneal bandage that is free of antibiotics, utilizing photo-sensitive nanocomposites embedded in an enzyme-modified hydrogel. The nanocomposites and enzymes generate reactive oxygen species (ROS) to effectively disinfect bacteria. The nanocomposites release ROS when exposed to near-infrared light (NIR), and the enzymes within the hydrogel catalyze glucose present in tear fluid to produce additional ROS.

### Methods

The treatment efficacy of this antibacterial bandage was evaluated through Multi-drug resistant *Pseudomonas aeruginosa* (MDR-PA) induced in vivo rabbit bacterial keratitis model. The colonies of bacteria were isolated from cornea of the rabbit (N=4) after treatment. The transparency of the cornea and defects of the corneal epithelial layer was also examined with slit lamp. Besides, studies on assessing the biosafety of the bandage the histology of cornea were conducted via H&E staining and Masson staining.

### Results

The living colonies of the bacteria amount in cornea from rabbit model exhibited a significant reduce to (6+/-1%) (MDR-PA) after treated with the bandage. Cornea treated with the bandage exhibited more transparency and less edema compared to the infected cornea. Bandage treated cornea indicated a faster re-epithelialization compared to infected cornea. Besides, the histological staining indicated that no damage to corneal tissue was caused by treatment with the bandage.

### Conclusions

The result of reduced bacterial colonies indicated that the treatment with the bandage has potential in eliminating drug-resistant bacteria on an infected cornea. Besides, the maintenance of the corneal transparency and promoted healing of corneal epithelial layer suggested that biosafety of the bandage. The in vivo results suggested that our bandage has the potential to be a treatment alternative for bacterial keratitis.

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## Invited Keynote Lecture V

### State of the Contact Lens Industry



## Prof. Jason Nichols

OD, MPH, PhD, FAAO

Senior Associate Vice President for Research and Professor,  
The University of Alabama in Birmingham

### Biography

Prof. Nichols is also an internationally recognized clinician-scientist with long-standing track record of research development, oversight, and scientific discovery. He has over 180 publications and an h-index of 50. He maintains an ocular surface research group with full scale capabilities for conducting clinical and basic research receiving funding from the National Eye Institute (NEI). His research unit employs state-of-the art facilities and equipment for the study of dry eye, meibomian gland disease, and pharmaceutical and medical device development and testing. He has served on numerous medical/advisory boards and boards of directors. His awards include three Ezell Fellowships, the Korb award, the Borish and Max Schapero Awards, the Fry Medal and Westheimer lecturer, and he is a Distinguished Scholar and Fellow of the National Academies of Practice. Lastly, he is editor-in-chief of Contact Lens Spectrum, the world's leading journal on contact lenses.

### Abstract

The contact lens industry continues to experience steady growth due to a variety of factors. This course will provide a comprehensive overview on the past and present of the contact lens industry and how we can use these evolving technologies to optimally improve patient care. The learning objectives are to understand the historical development and current state of the contact lens industry, including trends in fitting and usage patterns in various global markets. Current contact lens materials and design and attributes, including their impact on the patient and clinical practice will be discussed. This will include contact lens attributes impacting both ex-vivo and in-vivo performance which might be used to address clinically relevant issues such as contact lens discomfort, myopia, inflammation, infection, or distribution pattern with a nod toward futuristic approaches to solving these clinical problems.

# Free Paper Presentation IV

## Next-Gen CL Learning Platform: Advanced Search Engine, Interactive RGP Case Studies, and More

Jimmy Tse, BSc (Hons) Optom, MSc in Optometry, FAAO, FBCLA

School of Optometry, The Hong Kong Polytechnic University

Co-author(s): A. C. K. Wong, D. S. M. Chung, C. Y. K. So, K. K. Wan, T. C. Lam

### Objective

Optometry students and ECPs often face challenges in CL learning. Firstly, accessing updated contact lens information, particularly in the Hong Kong market, where data is scarce and scattered. Traditional methods like random searches or product handbooks are inefficient. Secondly, the conventional peer-dependent rigid lens learning model lacks flexibility and limits students' learning experiences. To address these issues, we developed an integrated contact lens learning platform to provide a comprehensive and interactive resource for contact lens education.

### Methods and Results

The developed platform features:

- Search Engine: Updated information on over 350 contact lenses and ophthalmic solutions, tailored for the Hong Kong market.
- Interactive Case Studies: Three healthy eyes with varying degrees of WTR corneal astigmatism (1.06D, 3.20D, and 6.33D) were fitted with RGP lenses of different designs and parameters. If spherical lenses failed to achieve an optimal fit, bi-toric lenses were used. These fittings were documented through videos and photographs, graded, and commented on by five experienced RGP practitioners. Data was integrated into the platform.
- Additional Learning Resources: Clinical procedure videos and self-study questions.

To evaluate the platform's efficacy in CL teaching, two quizzes on lens-fitting grading using recorded videos were administered to students following didactic teaching, with and without platform use. Student feedback was collected via questionnaires. Among the 26 students who participated, 65.4% improved their lens-fitting grading accuracy with platform use, showing a mean accuracy increase of  $19.8 \pm 26.5\%$  ( $P < 0.05$ ). Most students preferred the platform over conventional teaching alone, and all found it valuable to their learning.

### Conclusion

The platform enables students and ECPs to access updated contact lens product information and provides various learning tools, including rigid contact lens case series allowing for interactive learning. This enhances their educational experience and equips them with the latest product knowledge, ultimately benefiting their future practice as optometrists.

## Real-world safety and performance of a novel soft contact lens for myopia management in Chinese children

Dr Noel Brennan, PhD

Fellow, Johnson & Johnson

Co-author(s): X. Cheng, J. Xu, A. Nixon, V. Ochs, H. Guo, M. Qiu, L. Wang, W. Lan

### Purpose

The safety and performance of a soft contact lens with RingBoost™ technology (RB) in Chinese children completed 6 months lens wear are being evaluated in a real-world clinical setting (Aier Eye Hospital).

### Method

This is a single-site, prospective, single-arm, open-label, real-world evidence study with a minimum of 1-year study duration. Eligible participants were followed post lens fit at 1-week, 1-month, 3-month and 6-month prior to completing the 12-month follow-up for evaluation of potential adverse events, vision performance, lens fit, and lens wear compliance. Further, myopia progression is evaluated at every 6 months via measuring changes in cycloplegic autorefraction and axial length (AL).

### Results

A total of 70 subjects aged 7-12 years with a mean baseline myopia of -2.21 D (SD: 0.97) were fitted with the RB lens, and 67 participants completed the 6-month follow-up. No serious or significant adverse events were reported to date. After 6 months of wearing the RB lens, mean (SD) changes from baseline in AL and spherical equivalent cycloplegic autorefraction were 0.03 (0.12) mm and -0.09 (0.30) D, respectively. Monocular distance visual acuity with the RB lens was 0.00 (0.05) and -0.03 (0.05) logMAR at initial lens fitting and 6-month follow-up, respectively. Binocular distance visual acuity at 6-month follow-up was 0.00 logMAR or better in all subjects and all eyes achieved acceptable lens fit. The mean (SD) lens wear time reported at the 6-month follow-up was 12.8 (2.0) hours per day and 6.5 (0.7) days per week. Of the 67 subjects who completed the 6-month follow-up, 98.5% had cumulative lens wear time meeting or exceeding the criterion for compliance.

### Conclusion

The 6-month outcomes demonstrated excellent safety, vision and fit performance of the RB lens. Minimal AL and myopia progression were observed.





# SKYVIEW

## DIAGNOSIS

## TREATMENT



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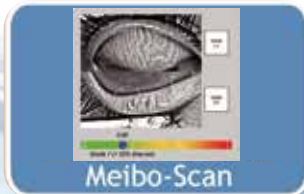
- ▶ Comprehensive Screening
- ▶ High-Resolution Images
- ▶ JENVIS PRO Dry Eye Report



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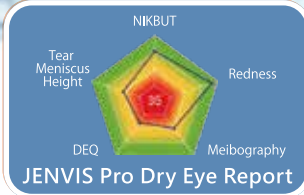
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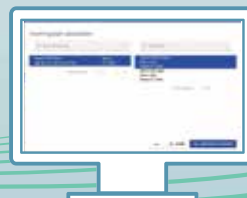
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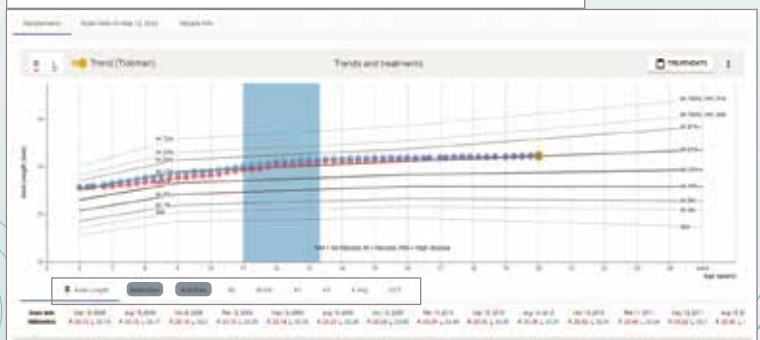


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含天然淚水礦物質成分硫酸鎂  
及氯化鈣，持續滋潤雙眼

添加  
植物性  
油層  
減少淚液  
蒸發

### 極潤配方 深度舒緩眼乾不適

#### 有效改善8大乾眼狀況

- 乾澀 • 疲勞 • 有異物感 • 刺痛 • 灼熱
- 痕癢 • 對外界刺激敏感(畏光、風等) • 視力不穩定

# Invited Keynote Lecture VI

## What does the future for contact lenses look like?

### A gaze into the crystal ball



## Prof. Lyndon Jones

PhD, DSc, FRSC, FCAHS, FCOptom,  
FAAO, FIACLE, FBCLA

Professor, School of Optometry and Vision Science and  
University Professor and Director of the Centre,  
Ocular Research & Education (CORE) at the University of Waterloo

### Biography

Lyndon Jones is a Professor at the School of Optometry and Vision Science, University Professor and Director of the Centre for Ocular Research & Education (CORE) at the University of Waterloo. His research interests primarily focus on the interaction of novel and existing contact lens materials with the ocular environment, dry eye and the development of novel materials for ocular drug delivery. He has authored over 500 refereed and professional papers, one text-book and given over 1200 invited lectures at conferences worldwide, in over 40 countries.

### Abstract

A major impediment to the growth of the contact lens market remains the fact that contact lenses induce end-of-day dryness symptoms in some 50% of wearers. This results in poor comfort for the last 2-3 hours of the day in a substantial number of people and is a major driving force behind contact lens dropout, which occurs in some 20-25% of all patients who commence lens wear. Over the last few years, contact lens manufacturers have developed a number of novel approaches to improve end-of-day comfort. In addition to these developments, the potential applications for contact lenses have attracted interest from companies considering their use for bio-sensing, drug delivery and even entertainment, achieve solutions to problems within their own areas.

This presentation will review the current knowledge of what drives the comfort of lens wear for an individual, review current and potential future methods to manage contact lens discomfort and review potential future uses of contact lenses aside from vision correction. The technologies covered will include such diverse areas as ocular drug delivery, disease diagnosis and management, and sophisticated imaging and augmented reality opportunities.





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12.00 - 13.50  
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14.50 - 16.00  
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\* Standard GP Lens size for reference



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the unique shape of  
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Providing excellent vision  
correction & comfort for  
the patients

## Workshop

### Get started with Sclerals – hands-on workshop

This is a hands-on workshop for practitioners who want to learn how to fit scleral lenses. After a general introduction to scleral lens basics and lens fitting procedures, live demonstration of lens handling and assessment will be taught step by step. Participants will pair up and get hands-on fitting experience with scleral lens trials under guidance.



**Workshop Tutor: Gigi Yee**

Senior Optometrist, MSc in Optometry, BSc(Hons) Optom, FBCLA  
School of Optometry, The Hong Kong Polytechnic University

Helper(Optometrists):

Ms Cherie So & Ms Claudia Wong

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### Dry Eye Disease: All-Level Diagnostic and Management Strategies

Join us for a workshop designed to enhance the diagnostic and management skills of optometrists at every stage of their career. This comprehensive workshop covers the full spectrum of dry eye disease (DED) care, from foundational concepts and basic diagnostic techniques to advanced treatment strategies and cutting-edge therapies.

Participants will begin with a general introduction to the basics of dry eye disease and its underlying mechanisms. From there, they will learn diagnostic techniques and management options step by step. The workshop includes live demonstrations of diagnostic tools and treatment procedures, followed by hands-on practice with these diagnostic and treatment equipment under expert guidance.

Whether you're new to DED or an experienced practitioner, this workshop offers valuable insights and practical skills to elevate your practice. By the end of the workshop, you will be equipped with the knowledge and tools to provide exceptional care for patients suffering from dry eye disease.



**Workshop Tutor: Jimmy Tse**

Assistant Professor of Practice, MSc in Optometry,  
BSc(Hons) Optom, FAAO, FBCLA

School of Optometry, The Hong Kong Polytechnic University

Helper(Optometrists):

Ms Angel Wong & Ms Dorothy Chung

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# Poster Presentations

Poster Session on 12 November 2024

- #1 **Evaluation of Wearers' and Parental Satisfaction with Orthokeratology Lens Wear in China**  
Chi Shing Fan, PhD  
CooperVision Hong Kong  
Other author(s): Lijing Liu, Jiwen Yang, Jiang Lin, Yongchuan He, Jianhua Li, Erbei Lu
- #2 **A multi-centre, prospective study on the effect of an overnight corneal refractive therapy lens on vision and corneal curvature among Chinese myopes**  
Chi Shing Fan, PhD  
CooperVision Hong Kong  
Other author(s): Jun Jiang, José A. Vega, Kelly Voltz, Xiaomei Qu, Lihua Li, Zhikuan Yang
- #3 **Myopia control efficacy with MiSight 1 day contact lenses in Chinese children**  
Anna Sulley, BSc (Hons) MCOptom FAAO FBCLA  
Global Medical Affairs, CooperVision International  
Other author(s): Baskar Arumugam, Arthur Bradley, David Hammond, Martin Rickert, Xiao Yang, Jun Jiang, Ruihua Wei, Paul Chamberlain
- #4 **Effect of daily disposable Defocus Incorporated Soft Contact (DISC) lens on myopia control: a 1-year randomized controlled trial in mainland China**  
Lin Liu  
Tianjin Key Laboratory of Retinal Functions and Diseases, Tianjin Branch of National Clinical Research Center for Ocular Disease, Eye Institute and School of Optometry, Tianjin  
Medical University Eye Hospital, Tianjin, China  
Other author(s): Jinghui Wang, Bing Zuo, Desheng Song, Bei Du, Zhi Chen, Chi Ho To, Rachel Ka-Man Chun, Jun Jiang and Ruihua Wei
- #5 **The basis of increased high myopia prevalence**  
Noel Brennan, PhD  
Research & Development, Johnson & Johnson
- #6 **A Large-Scale in Practice Evaluation of a Novel Daily Disposable Spherical Contact Lens**  
Quan Wei Ng, MCOptom  
Clinical Affairs, Johnson & Johnson  
Other author(s): Kurt Moody, Drew Hotte, David Ruston, Patricia Martin, John Buch
- #7 **An Integrated Analysis of Six Trials Evaluating the Clinical Performance of a New Soft Contact Lens**  
Rebecca Li, BOptom  
Professional Education, Johnson & Johnson  
Other author(s): Patricia Martin, John Buch, Jie Xu

- #8 [A Comparison of Patient and Eyecare Professional Satisfaction with a Spherical Silicone Hydrogel Daily Disposable Contact Lens in Hong Kong and 11 European Countries](#)  
Jeff Tang, MCLinOptom, BSc(Hons) Optom  
Berlin Optical, Hong Kong  
Other author(s): Chan Lap Kong Ben, Chan Siu Chung Cyrus, Cheung Man Hei Kelvin, Lam Man Hoi Zac, Lam Yuk On Lyon, Wong Kwan Hing Ben
- #9 [Patient and Eyecare Professional Satisfaction with a Spherical Silicone Hydrogel Daily Disposable Contact Lens](#)  
Man Hei Cheung, MSc in Optom, BSc(Hons) Optom  
Fundamental Visual Service, Hong Kong  
Other author(s): Ben Chan Lap Kong, Cyrus Chan Siu Chung, Zac Lam Man Hoi, Lyon Lam Yuk On, Jeff Tang Kwong Yau, Ben Wong Kwan Hing
- #10 [Impact of repeated Corvis ST measurements in intraocular pressure and corneal biomechanics](#)  
Dr Hanyu Zhang  
School of Optometry, The Hong Kong Polytechnic University  
Other author(s): Andrew KC Lam, Xiaoqin Chen
- #11 [Analyzing the Correlation between Differential Corneal Thickness Along Principal Meridians and Corneal Astigmatism: Implications for Whole Eye Astigmatism](#)  
Chun-Yang Zhou  
Eye School of Chengdu University of Traditional Chinese Medicine, Chengdu, China
- #12 [The Visual Benefits of Blue-Violet Light Filtering](#)  
Luke Cahill, BOptom  
Global Strategic Medical Affairs, Johnson & Johnson  
Other author(s): Meredith Bishop, David Ruston, Patricia Martin, John Buch
- #13 [A multi-centre, retrospective study on ocular health in Chinese myopes wearing a corneal refractive therapy lens](#)  
Xiaoqin Chen  
Optometric Centre, Tianjin Eye Hospital  
Other author(s): Lihua Li, Chi Shing Fan, José A. Vega, Jun Jiang, Jianhuga Li, Xiaomei Qu, Zhikuan Yang

# Poster Presentations

Poster Session on 13 November 2024

#14 Can we really distinguish 'non-responders' to myopia control interventions?

Noel Brennan, PhD

Research & Development, Johnson & Johnson

#15 Prediction of 3-year axial elongation and refractive progression among myopes from 1-year data: a meta-analysis

Benny Tam, BSc (Hons) Optom

Professional Education, Johnson & Johnson

Other author(s): Monica Jong, Paul Weiss, Xu Cheng, Mark Bullimore, Noel Brennan

#16 Quantifying the 6-year cumulative treatment effect of MiSight® 1 day, a daily disposable soft contact lens for myopia control

Tacy Song, MSc. , FIACLE

CooperVision

Other author(s): David Hammond, Baskar Arumugam, Arthur Bradley, Paul Chamberlain

#17 A multi-centre assessment of subjective feedback among long-term orthokeratology lens (Ortho-K) wearers and parents in China

Chi Shing Fan, PhD

CooperVision Hong Kong

Other author(s): Jiwen Yang, Jiang Lin, Yongchuan He, Jianhua Li, Rob Beerten, Erbei Lu

#18 Large-scale study in Chengdu, China: the prevalence of myopia full-correction decreased with increasing myopia in adolescents

Jing Wei

Eye School of Chengdu University of TCM

#19 Patient Acceptance Differences Influenced by Multifocal Contact Lens Design

Anna Sulley, BSc (Hons) MCOptom FAAO FBCLA

Global Medical Affairs, CooperVision International

Other author(s): Michel Guillon, Pasquale Pepe, Percy Lazon de la Jara

#20 Evaluating the Success of a Progressive Multifocal Lens System in Habitual Multifocal Soft Contact Lens Wearers

Anna Sulley, BSc (Hons) MCOptom FAAO FBCLA

Global Medical Affairs, CooperVision International

Other author(s): Jill Woods, Sarah Guthrie, Doerte Luensmann, Jose Vega, Gary Orsborn

#21 Patient and Eyecare Professional Satisfaction with a Samfilcon A Multifocal Toric Contact Lens

Humphrey Cheung, BSc(Hons) Optom

i-SEE Vision Care Limited

#22 A Comparative Study on Functional Vision and Digital Device Usage in Astigmatic Patients: Delefilcon A Toric Contact Lenses vs. Spherical Equivalent Contact Lenses in Asian Eyes

Manki Chan, BSc(Hons) Optom, FBCLA

Mopsy Research

Other author: Chin Man Pan

#23 Patient Evaluations on the Performance of a Daily Disposable Silicone Hydrogel Multifocal Contact Lens in Hong Kong

Ben Kwan Hing Wong, BSc(Hons) Optom

I Care Optometric Centre

Other author(s): Kelvin Man Hei Cheung, Lyon Yuk On Lam, Jeff Kwong Yau Tong

#24 Research Progress on Light Therapy for the Treatment of Dry Eye Disease

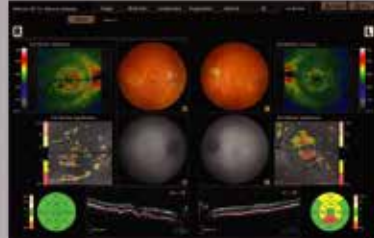
Yinyu Ke

Chengdu University of Traditional Chinese Medicine

#25 Dry Eye Disease (DED) Management: Practical and Achievable Steps for Every Optometrist

Sze Man Chung, BSc(Hons) Optom

School of Optometry, The Hong Kong Polytechnic University



Comprehensive Overview Report



High-quality OCT scan up to 14.7 x 13.4 mm



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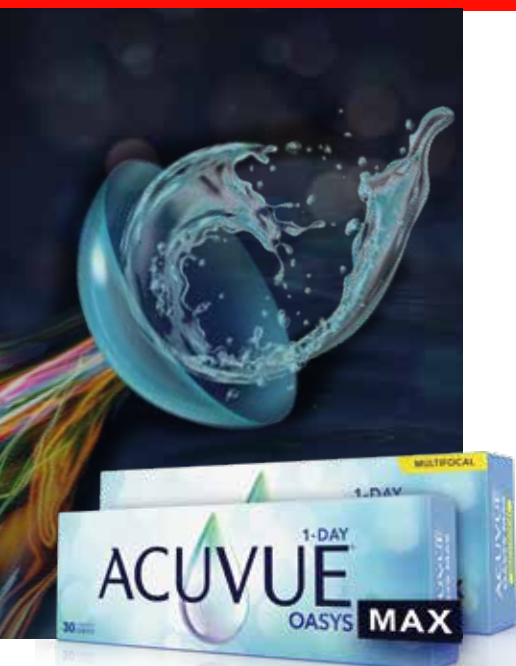
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Optimizes wetting agent distribution throughout the lens and on the surface to prolong tear film stability.<sup>1-3^A</sup>



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60% blue-violet light filter, the highest in the industry, reduces light scatter by nearly 20%, also starburst and halos.<sup>1,3,4\*\*</sup>



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Optimized for wear by children with unbeaten in comfort ACUVUE® OASYS 1 Day Silicone Hydrogel Materials.<sup>9†</sup>



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1. JUV Data on File 2022. TearStable™ Technology Definition. 2. JUV Data on File 2022. Material Properties: 1-DAY ACUVUE® MOIST, 1-DAY ACUVUE® TruEye, ACUVUE® OASYS 1-Day with HydraLuxe Technology and ACUVUE® OASYS MAX 1-Day with TearStable™ Technology Brand Contact Lenses and other daily disposable contact lens brands. 3. JUV Data on File 2022. Effect on Tear Film and Evaluation of Visual Artifacts of ACUVUE® OASYS MAX 1-Day Family with TearStable™ Technology. 4. Mostafa Y, Saif M, Saeed M, and ElSaadany S. The Effect of Age and Gender on Tear Film Breakup Time. Egyptian Journal of Medical Research. 2021;2:137-148. 5. JUV Data on file 2022. CSMACUVUE PUPIL OPTIMIZED DESIGN Technology: JUV contact lenses, design features, and associated benefits. 6. JUV Data on File 2022. Subjective Stand-Alone Claims for ACUVUE® OASYS MAX 1-Day MULTIFOCAL Contact Lenses - Exploratory Meta-analysis. 7. JUV Data on File 2022: Stand-Alone Fit Success Claims for ACUVUE® OASYS MAX 1-Day MULTIFOCAL Contact Lenses. 8. JUV Data on file, 2021. Development of Optical Design of ACUVUE® Abiliti™ 1-Day Soft Therapeutic Lenses for Myopia Management. 9. JUV Data on File 2021. Stand-Alone Performance Claims - ACUVUE Abiliti 1-Day Soft Therapeutic Lenses for Myopia Management. 10. JUV Data on File 2021. Mechanical Design of ACUVUE Abiliti 1-Day Soft Therapeutic Lenses for Myopia Management - Effect on Fit and Handling. \*More wearers achieved a visual tear break up time ≥ 10 seconds versus ACUVUE® OASYS 1-Day. †versus ACUVUE® OASYS 1-Day. \*In a clinical trial, the sphere product reduced halos by 30% and starbursts by 23% vs. ACUVUE® OASYS 1-Day. †n=172. ‡ACUVUE Abiliti 1-Day Soft Therapeutic Lenses for Myopia Management are manufactured using senofilcon A, the same material used to manufacture ACUVUE OASYS 1-Day contact lenses, utilizing a smaller lens diameter designed to fit the smaller anatomical features of a pediatric population. §Utilizing a smaller lens diameter designed to fit the smaller anatomical features of a pediatric population (aged 7-12). HKP2024I009.001

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