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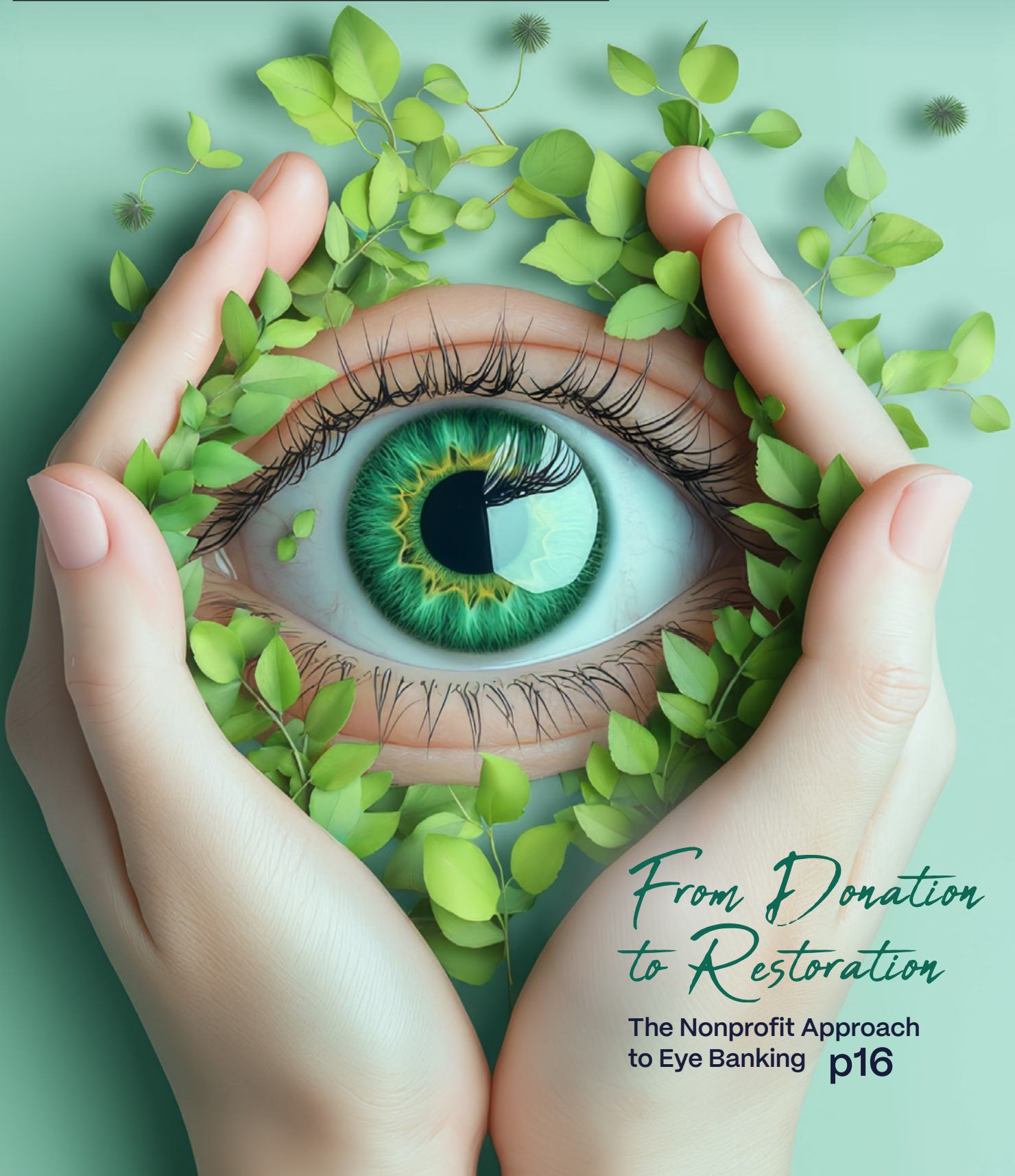

From Donation to Restoration

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BETTER CALL Sales

Here's an odd tip: If you want to know the real score, talk to someone in sales

Dear Readers,

Yes, they all want to sell their products and earn commissions. However, if you can look past that aspect, the best salespeople know everything—they each have their finger on the ocular pulse, so to speak.

It's worth recognizing what the best reps need to do to succeed. They have to comprehensively learn the therapy area they work in—enough to converse with doctors in their medical language and at their level. Not only that, they need to educate these doctors about the benefits of the products they sell in the most convincing manner possible. The German word begeistern captures this perfectly: It describes how they enthuse and inspire them about a product in an almost magical way.

Objectively, salespeople should be at a big disadvantage. Most haven't attended medical school, much less received the subspecialty training of their potential customers. However, some of the best salespeople are true subject matter experts—and I see this most often in fields like surgical instruments and medical devices.

I know a salesperson who, in the early days of a certain implantable cardiac device, would talk cardiologists through each procedure—repeatedly—until they felt comfortable.

A fundamental aspect of a salesperson's role is knowing what the competition is doing. Do they have a new product or results that could threaten their own product offerings? (Perhaps it's time to consider joining them!) Salespeople keep their ears to the ground, staying attuned to the latest news and developments as they spread across the show floor at conferences.

They'll know before you do. Salespeople often move from company to company—it's part and parcel of the job. Sometimes this happens because the company's product has reached the end of the good days, or sometimes it's simply because the grass is greener on the other side of the show floor. But each move brings new learning and fresh perspectives, improving their skills and expertise.

However, the most important part of the informal business intelligence that eye care salesforces gather is their conversations with doctors. In the past 10 years, I have met thousands of ophthalmologists, and I don't know a single one who's a shrinking violet. None of them would hold back when discussing a drug, device, procedure, company, or even politician (as long as it's off the record).

Therefore, salespeople receive unfiltered, accurate, real-time feedback at almost every interaction with a doctor. Knowledge is power, and if a company isn't regularly collecting this intel, then they're missing out on critical business information.

I'm not an MD; my title comes from a two-decade-old PhD in brain development—thanks to the Wellcome Trust for the four-year scholarship! I receive prescriptions; I don't write them. My bosses consider my opinions when purchasing equipment; I certainly don't make any big purchasing decisions.

In my medical writing and publishing career, I've worked with many salespeople on commercial projects. In fact, I've had the same rapid learning curve as they had. In my first job as an ophthalmology publication editor, the accuracy buck stopped with me, and I had to have similar conversations with doctors at their level—something I still enjoy to this day.

However, salespeople do have a natural baseline level of sales patter, which I mentally compare to the high biting point of the clutch of a first-gen BMW-era Mini Cooper S—one slip, and they're off into full-on sales mode. But I'm not their customer, and they're not really selling to me. So, often, our conversations can offer unfiltered insights—despite the jokes, gossip, and moaning (and more).

Indeed, if you're brave enough to spot what's a sales talk and what's not—if you need to know what's truly happening in the industry—talk to sales.

Cheers,

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Insights from Cataract *Senseis*

Cataract masters share kung fu-style techniques to enhance surgical artistry at APACRS 2024

by Diana Truong

In a dynamic session reminiscent of martial arts mastery, the 36th Annual Meeting of the Asia-Pacific Society of Cataract and Refractive Surgeons (APACRS 2024) brought the house down with Symposium 20, titled "Wisdom from the Kung Fu Masters – Top Cataract Surgery Tips."

Like seasoned warriors sharing their secrets, the world's leading cataract surgeons presented surgical maneuvers that could make even the trickiest operations seem effortless. With energy as vibrant as a kung fu movie, these experts left attendees armed with practical techniques to elevate their surgical prowess to new heights.

Dr. Robert Ang's MMA-inspired tips for toric intraocular lens (IOL) positioning and Dr. Sri Ganesh's dramatic "Enter the Dragon" case study showcased surgical techniques with a mix of excitement and precision. Whether tackling tricky lenses or navigating complex cases, these top surgeons proved that mastering cataract surgery requires both skill and a bit of showmanship.

Toric IOL positioning tactics

Dr. Robert Ang (Philippines) delivered an engaging and practical presentation, perfectly aligning with the symposium's theme. He shared his "MMA" (mixed martial art) tips for implanting toric IOLs, complete with an energetic mixed-martial arts theme and fight music to keep the audience pumped.

Dr. Ang's MMA tips are designed to tackle the common issues surgeons face when dealing with toric IOLs, like the IOL snapping back or getting stuck during positioning. Using fun acronyms and clear steps, he offered solutions for both C-loop haptics and plate haptics, or double C-loop haptic IOLs

Dr. Ang introduced the BIG APA technique with a smile, saying, "Let me help you with my MMA tips for toric IOL positioning." He then went on to explain each step in his BIG APA method: Irrigate-aspirate **beneath** the IOL to start, **inject gel** over the IOL, **align** the IOL to the axis, **patiently** wait for one minute, and **aspirate** the remaining gel.

Dr. Ang's AUTO technique applies to plate haptics and double C-loop haptic IOLs: **Align** IOL to target axis, irrigate-aspirate **under** the IOL, fine-**tune** axis alignment, and irrigate-aspirate **over** the IOL.

His presentation, complete with rolling credits and MMA-style energy, left the audience with memorable and practical strategies to handle toric IOLs with the precision of a kung fu master.

A difficult cataract challenge

Dr. Sri Ganesh (India) delivered a presentation titled "Enter the Dragon," where he proudly showcased his skills as a cataract surgery kung fu master. Dr. Ganesh shared a fascinating case involving a 31-year-old male with posterior polar cataracts in both eyes, cylinder astigmatism in his left eye, and a large dehiscence of the posterior capsule—which he poetically described as the "dragon mouth sign," depicting a dragon waiting to swallow the nucleus.

The patient did not want to wear glasses after surgery, and wanted to be able to drive at night. After visiting five other ophthalmologists who could not promise him those results he ended up seeing Dr. Ganesh, who took up the challenge.

After peeling off the anterior capsule flap, Dr. Ganesh performed a precise hydrodelineation to avoid disrupting the posterior capsule and filled the chamber with viscoelastic to prevent any fluctuations. The kung fu master then employed his secret weapon: A bimanual IA for the tricky sub-incisional cortex removal.

From there, Dr. Ganesh cleared the vitreous. Using a capsulotomy fixated lens, he demonstrated how to ensure stability and prevent lens movement. He meticulously rotated and aligned the lens, ensuring a perfect fit. "This is a non-diffractive lens, so the patient will not have any halos, and it's a toric lens aligned perfectly along the axis," he explained.

The results were outstanding. The patient's lens was perfectly centered, and he had an uncorrected vision of 6/5 and N5. "The patient was very happy and said he now has HD vision," Dr. Ganesh proudly shared.

His parting wisdom? "Think out of the box, use the correct tools and materials, and you can achieve premium results. This is how I, the kung fu master, solved this case."

More tips and tricks from APACRS' surgical senseis

Dr. Ishtiaque Anwar (Bangladesh) introduced the sleeve hydrodissection technique to prevent iris prolapse in IFIS cases, demonstrating how it stabilizes the iris and maintains pupil size throughout the procedure.

Dr. Surendra Basti (USA) emphasized the strategic use of multiple phaco incisions, advocating for their use in complex cases like rhexis run-out or IOL exchanges, to enhance surgical outcomes.

Dr. Sheetal Brar (India) presented a simplified 'one at a time' modification for the four-flanged technique of non-foldable IOL scleral fixation, emphasizing that, "multitasking is good, but sometimes it can cost us safety and quality." She advised surgeons to slow down to avoid complications like suture crossing and IOL tilting.

Dr. So-Hyang Chung (South Korea) shared methods for safely removing different types of phakic IOLs, using specific incisions and forceps to minimize trauma.

Dr. Sorcha Ni Dhubhghaill (Belgium) highlighted the importance of knowing the anatomy behind the lens for performing primary posterior capsulorhexis, a technique she has mastered through thousands of cases. She highlighted the significance of staying calm and using appropriate instruments like capsulorhexis micro forceps.

To get a nice round continuous curvilinear capsulorhexis (CCC), Dr. Lee Mun Wai (Malaysia) advised simply to, "stick it in." Elaborating further, she said, "Use two hands, start the case by using your side port, filling up the eye with your side port cannula and viscoelastic, then gently puncturing the anterior capsule with your keratome."

Dr. Boris Malyugin (Russia) noted that while the VISCOBLOCK procedure significantly reduces the chance of anterior vitreous detachment (AVD), it is at the expense of a higher chance of iris prolapse. He concluded that there is a need for more effective strategies in preventing AVD.

Dr. Mohan Rajan (India) discussed strategies for managing white cataracts, highlighting his punchorhexis technique as a cost-effective solution, requiring a simple learning curve and offering consistent results.

Meanwhile, Dr. Nic Reus (The Netherlands) detailed his approach to hydrodissection, focusing on creating both anterior and posterior fluid waves for a good rotating lens.

Dr. Timothy Roberts (Australia) shared a crucial insight into intracameral lidocaine application, revealing that directing the OVD away from the wound keeps the anesthetic in place, significantly enhancing patient comfort.

Dr. Naren Shetty (India) offered a simple yet effective tip for maintaining posterior capsule stability during occlusion breaks by orienting the phaco probe's irrigation ports vertically. For a hard cataract case, Dr. Bruno Trindade (Brazil) performed a large capsulorhexis, debulked the anterior nucleus, and flipped it to attack the leathery plaque from the top.

On the topic of dislocated IOLs, Dr. Yu Yibo (China) presented a streamlined technique for aspirating and repositioning dislocated IOLs without using perfluorocarbon liquid, reducing intraoperative risks and speeding up recovery.

Indeed, it was clear that these surgical senseis have truly transformed cataract surgery into an art form. With their innovative techniques and masterful insights, attendees left not just with new skills, but with a renewed sense of confidence and excitement for the future of eye care.

Editor's Note

Reporting for this event took place during the 36th Annual Meeting of the Asia-Pacific Association of Cataract and Refractive Surgeons (APACRS 2024), held from May 30 to June 1, 2024, in Chengdu, China. The 36th APACRS annual meeting was jointly organized with the 24th CSCRS (Chinese Society of Cataract & Refractive Surgery) Annual Meeting. A version of this article was first published on cakemagazine.org.

Overcoming Surgical Hurdles

Experts at APACRS 2024 present innovative solutions and strategies for tackling complications in cataract surgery

by Diana Truong

At the 36th Annual Meeting of the Asia-Pacific Association of Cataract and Refractive Surgeons (APACRS 2024), held recently in Chengdu, China, experts navigated the complexities of cataract surgery by sharing a range of innovative strategies.

During *Symposium 9: A Break in the Clouds—Cataract & Complications*, specialists provided insightful discussions on the intricacies of cataract surgery complications. From managing iris prolapse to fine-tuning intraocular lens (IOL) implantation techniques, leading specialists offered a comprehensive look at strategies to navigate and overcome common surgical hurdles, setting new standards for the future of cataract care.

Managing iris prolapse

Dr. Joon Young Hyon (South Korea) shared practical insights on managing iris prolapse during cataract surgery. Highlighting key factors such as incision, pressure, and flow, he explained how a well-constructed, incision placed more posteriorly can prevent prolapse. "A square, slightly unclear incision helps keep the iris in place," he noted.

Dr. Hyon also emphasized the importance of decompressing the anterior chamber to balance pressure, and recommended gentle tapping on the incision roof to reposition the iris, calling it "a simple yet effective technique." For severe cases, constricting the pupil or suturing the main incision might be necessary.

Dr. Abhay Vasavada (India) then took to the podium to shed light on the same pesky problem of iris prolapse during cataract surgery. In his easygoing manner, he highlighted the importance of paying attention to wound construction, the early detection of iris prolapse, and the role of pressure gradients.

Dr. Vasavada touched on corticocapsular adhesions (CCAs). He explained how adhesions can block hydrodissection, causing fluid to push behind the iris and exacerbate prolapse. "I'm not able to see the vein behind it, so I go to the other quadrant. Many times, these CCAs require multi-quadrant hydrodissection," Dr. Vasavada shared, narrating a video of the procedure.

He illustrated the common mistake of injecting more viscoelastics or ophthalmic viscosurgical devices (OVDs) into the middle of the eye. Instead, he recommended injecting into the OVD peripheral anterior of the iris to keep the iris concave or flat.

Navigating steep meridians and toric IOLs

Dr. Tsutomu Ohashi (Japan) presented a fascinating comparison between digital and manual methods for determining steep meridians for toric IOL implantation. He revealed that manual marking often diverges significantly from digital image-guided systems (IGS), leading to potential misalignment of the toric IOL axis.

A survey conducted at ESCRS 2021 revealed that while 37% of doctors rely on manual ink marking, 23% prefer digital imaging registration for accuracy.

Dr. Ohashi's study showed that the IGS method, which uses real-time tracking and overlay adjustment, provides more reliable results, allowing surgeons to place toric IOLs precisely on the intended meridian.*

This reduces the risk of misalignment and enhances surgical outcomes. Dr. Ohashi's findings highlight the benefits of investing in advanced digital systems for better precision in toric IOL implantation.

Relocating decentered IOLs

Dr. Arup Chakrabarti (India) shared his expertise on addressing decentered and dislocated IOLs by leveraging the residual capsular bag support using proper surgical techniques.

He presented a case where a patient had a significantly decentered IOL cutting the pupillary space, leading to poor vision quality. Through meticulous surgical techniques, including closed chamber micro-maneuvers and the use of dispersive OVD to form the anterior chamber and protect the corneal endothelium, he successfully repositioned the IOL back into place.

Dr. Chakrabarti emphasized that many such cases can be resolved by utilizing residual capsular support. "Employing proper surgical techniques often yields both anatomical and functional success," he noted.

Calculating post-LASIK IOLs

Dr. Yeo Tun Kuan (Singapore) presented a comprehensive multicenter study on post-LASIK IOL calculation outcomes. Analyzing 900 eyes, Dr. Yeo's research highlighted the standout accuracy of EVO PK, EVO, Barrett True-K PK, and PEARL-DGS TK formulas.

Notably, measured TK or PK improved results across the board. The study also revealed that errors increased with axial length, underscoring the importance of patient counseling based on these findings.

"This study shows us that we can actually counsel our patients when they come for cataract surgery," he explained. "Depending on their axial length, we can see how confident we are in achieving their refractive target."

"Using the latest formulas like EVO and Barrett True-K ensures we achieve the best outcomes, while legacy methods like Haigis-L and Shammas-PL have the lowest accuracy and probably shouldn't be used in practice today," Dr. Yeo concluded.

Tackling complications

Dr. Mahbubur Chowdhury (Bangladesh) gave an insightful presentation that addressed handling complications in phaco surgery. He emphasized that complications are an inevitable part of a surgeon's career. "Only those who don't operate never have complications," he firmly stated.

Drawing from personal experience, he stressed the importance of honesty with patients. He recounted a case involving a national singer where secrecy about complications led to long-term issues. "From that day onward, I decided it's not at all good to hide things from patients," he shared, highlighting the need for transparency.

The presentation covered managing personal complications and handling cases referred by other surgeons. He advocated for a multidisciplinary approach, involving retina specialists, glaucoma experts, and cornea doctors to ensure comprehensive care. "The confidence the patient gets is immense," he noted.

> "Using the latest formulas like EVO and Barrett True-K ensures we achieve the best outcomes, while legacy methods like Haigis-L and Shammas-PL have the lowest accuracy and probably shouldn't be used in practice today."
>
> **— Dr. Yeo Tun Kuan**

Dr. Chowdhury also discussed the financial and legal aspects, recommending policies that avoid additional costs to patients and preparing for potential legal challenges. "We have to be humble, sympathetic, and bold," he advised.

Ultimately, the presentation offered practical strategies and urged surgeons to remain humble, collaborative, and patient-centered. This approach builds trust with patients and strengthens the professional community, fostering mutual respect and continuous learning.

Addressing complicated presbyopia lens exchange

Dr. Lu Yi (China) presented on the complexities of presbyopic IOL exchanges. As the demand for presbyopic IOLs grows, particularly for replacing monofocal IOLs, surgeons face unique challenges due to the varying characteristics of these lenses.

Dr. Lu detailed several cases where high technical expertise was crucial, particularly emphasizing the importance of maintaining the integrity of the capsular bag.

For instance, one patient with severe astigmatism required a careful exchange to achieve better near vision, while another patient with presbyopia and hyperopia experienced significant improvement after switching to a trifocal IOL.

Dr. Lu also highlighted the intricate process of scleral fixation, noting that it is not routine but can be essential in certain cases.

Dealing with neuro-ophthalmic disorders

Lastly, Dr. Anuchit Poonyathalang (Thailand) discussed neuro-ophthalmic disorders after cataract and refractive surgery. He emphasized that although these disorders are rare, surgeons should be aware of them.

Factors such as small cup-to-disc ratio and systemic diseases may contribute to ischemic optic neuropathy after cataract surgery, and post-surgery diplopia can result from pre-existing strabismus or surgical trauma to extraocular muscles. Effective management strategies include careful patient evaluation and monitoring, he said.

* Ohashi T, Kojima T. Comparison of the orientation of the corneal steep meridian determined by image-guided system and manual method in the same eye. Clin Ophthalmol. 2020;14:4135-4144.

Editor's Note

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Clearing the Fog of IOL Options

Expert tips from APACRS 2024 on optimizing intraocular lens choices

by Tan Sher Lynn

Discover the latest in intraocular lens (IOL) technology and personalized cataract care as leading ophthalmologists shared their insights from the 36th Annual Meeting of the Asia-Pacific Society of Cataract and Refractive Surgeons (APACRS 2024) Meeting.

With innovations in extended depth-of-focus (EDoF) and toric lenses, specialists navigated the labyrinth of choices to enhance patient outcomes. Dr. Florian Kretz highlighted the benefits of mixing EDoF and multifocal lenses to balance overall vision, while Dr. Guo Haike emphasized tailoring lens choices based on axial length and refractive power.

From minimizing halos with advanced EDoF technologies to perfecting toric IOL placements for astigmatism correction, this year's insights offer a roadmap to optimizing cataract surgery. Discover how these cutting-edge strategies and personalized approaches could revolutionize your understanding of visual clarity and patient care.

Experts' views on choosing the right IOL

With the variety of intraocular lens (IOL) designs available today, how can we choose the right one for our patients?

According to Dr. Florian Kretz (Germany), selecting the appropriate IOL for a patient involves considering several factors, including their suitability for diffractive optics (considering their tolerance for halos) and the amount of corneal defocus already present.

"Not every patient needs complete spectacle independence. If you want overall vision, an EDoF and multifocal intraocular lens (MIOL) mix-and-match is a really good option. If you want to minimize dysphotopsia (visual disturbances such as halos and glare), it's best to stay away from diffractive lenses. For patients who are comfortable using reading glasses and primarily need good intermediate to distance vision, EDoF lenses providing emmetropic vision are likely the perfect option," explained Dr. Kretz.

Next, Dr. Lee Mun Wai (Malaysia) emphasized the importance of understanding a patient's needs when selecting the appropriate IOL. This involves considering factors such as occupation, reading requirements, driving needs, personality, and informing them about potential visual disturbances (dysphotopsias). "Utilizing a visual simulator to demonstrate dysphotopsia can effectively communicate postoperative visual experiences to the patient," he shared.

Furthermore, Dr. Lee highlighted the significance of evaluating surgical outcomes to ensure optimal patient care. To do so, one would require continuous self-improvement, a

thorough examination of refractive outcomes, assessment of IOL performance, and refinement of surgical techniques, he noted.

Meanwhile, Dr. Guo Haike (China) shared insights on the personalization of multifocal IOLs. He noted that eyes with a short axial length necessitate a high base refractive power, short posterior focal distance, and a large depth of focus. Suitable lens options include monofocal, EDoF, and trifocal lenses. Conversely, eyes with a normal axial length typically exhibit normal near vision of about 2.5 diopters (40 cm), making them suitable for bifocal, trifocal, and EDoF lenses with slight monovision adjustment.

For mild myopia ranging from 15 to 19 diopters, characterized by a slightly long posterior focal distance, an additional +3 to +3.5 diopters is recommended, with bifocal or trifocal lenses being suitable choices. In cases of high myopia with a long axial length and a small depth of field, near vision heavily relies on additional correction exceeding +3.5 diopters, warranting the use of multifocal lenses.

Patients who have undergone corneal refractive surgery require thorough evaluation, with EDoF and trifocal lenses being potential options for optimal visual outcomes, he emphasized.

Advanced EDoF technologies

Sharing insights into the latest EDoF technologies, Dr. Sheetal Brar (India) highlighted several notable options. Among them is the small aperture lens IC-8 Apthera (Bausch+Lomb; Ontario, Canada), featuring a 6-mm optic with a central donut filter ring that capitalizes on the pinhole effect to effectively reduce pupil size in various lighting conditions.

Dr. Brar also mentioned diffractive ring EDoF IOLs like the TECNIS Symfony (J&J Vision; California, USA), known for their track record in reducing reliance on reading glasses, especially for the intermediate range of 67 mm. “Successive diffractive rings split incoming light into a broader range, enhancing the depth of focus, but may induce glare/halos,” she explained.

Another EDoF technology is beam-shaping EDoF IOLs (Alcon Vivity; Geneva, Switzerland) with a central 2.2-mm beam-shaping element on the optic in order to elongate the depth of focus. “It is more dependent on the patient’s pupil size. While there is no typical night glare/halos, it may result in a loss of contrast, particularly at night,” explained Dr. Brar.

The question arises: Can we have better EDoF lenses that not only reduce halos but also minimize the loss of light and contrast?

Dr. Brar suggested that the solution may lie in enhanced monofocal IOLs, citing examples such as the TECNIS Eyhance (J&J Vision; California, USA), Isopure (BVI Medical; Massachusetts, USA), and Vivinex Impress (Hoya Surgical Optics; Singapore, Singapore). These lenses have shown statistically significant improvements in intermediate vision (60-66 mm) compared to aspheric monofocal IOLs. Distance vision is comparable to aspheric monofocal IOLs, and the photic phenomena profile is similar. Furthermore, she noted that there were no statistically significant differences in contrast sensitivity at six months compared to a monofocal IOL.

“EDoF IOLs, along with other newcomers like enhanced monofocal IOLs, offer exciting options for patients, enabling surgeons to customize lenses for individual needs. These advancements may likely replace standard monofocal IOLs in the future,” Dr. Brar concluded.

Meanwhile, focusing on small aperture IOLs, Dr. Robert Ang (Philippines) highlighted their efficacy in enhancing range of vision when placed in the cornea. This concept has been extended to intraocular lenses (IOLs) to develop a non-diffractive, EDoF IOL.

He noted that the IC-8 small aperture lens offers comparable distance vision and superior intermediate and near vision compared to monofocal IOLs. It demonstrates consistent performance in eyes with 1.5 D or less astigmatism (serving as a low toric alternative) and is forgiving of refractive surprises. Moreover, it effectively filters out unwanted aberrations, rendering it an ideal choice for post-refractive surgery eyes and complex corneas.

Optimizing cataract surgery with toric IOLs

Last but not least, Dr. Chitra Ramamurthy (India) emphasized the importance of performing biometry and checking for toricity when evaluating a patient for cataract surgery. This enables informed discussions regarding the suitability of a toric IOL implant for the patient. “Also, we need to understand whether the patient has against the rule astigmatism or with the rule astigmatism,” she said.

She highlighted that planning for the worst is achieved by doing the best before surgery. “It’s necessary to have good equipment, dedicated staff, accurate axial length and keratomy measurements, and a reliable formula,” she said.

Keratometry has the potential to be one of the least accurate parts of the measurement process, due to variations in the ocular surface. Hence, Dr. Ramamurthy recommended the comparison of data from more than one modality when doing keratometry (K).

Additionally, she noted that it is very important to be able to differentiate between accurate and inaccurate data. “For example, if there’s a difference in the axial length of more than 0.3 mm, a K value difference of more than 1 D, or an IOL power difference between the two eyes of more than 1 D, repeat the measurements,” she asserted.

Editor’s Note

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Eye-Tech Upgrades

From SILK to RLE and ICL, Dr. William Trattler lets us in on the latest in refractive surgery

by Tan Sher Lynn

Recent innovations in refractive surgery have introduced more precise and effective methods for vision correction. As these developments evolve, patients can expect increasingly personalized and effective treatments that offer improved visual outcomes and reduced risks.

Refractive surgery has long been at the forefront of vision correction, offering solutions for those seeking freedom from glasses and contact lenses. Recent advancements have further refined procedures such as laser-assisted in-situ keratomileusis (LASIK), small incision lenticule extraction (SMILE), and the emerging smooth incision lenticular keratomileusis (SILK). Refractive, corneal, and cataract eye surgeon Dr. William Trattler from the Center For Excellence In Eye Care in Miami, Florida, USA, explores these innovations and their implications for patients seeking improved visual outcomes.

Precision meets innovation

Recent technological advancements have made LASIK even more precise. The integration of wavefront-guided technology and ray-tracing technology allows for highly customized treatments tailored to each eye's unique optical imperfections. This approach helps reduce the risk of complications and improves the consistency of results.

"Whether using wavefront or ray tracing, we try to figure out the optics in each eye before the procedure. This detailed understanding allows us to design a customized ablation pattern for LASIK, tailored to the individual's unique eye structure to achieve optimal results," said Dr. Trattler.

Dr. Trattler noted that recent innovations in SMILE technology have focused on improving laser speed and precision. "For example, ZEISS (Jena, Germany) has developed a next-generation SMILE laser, the VISUMAX® 800, that is faster and more efficient," he said. This new laser not only reduces procedure time but also enhances the accuracy of lenticule extraction, leading to better visual outcomes and quicker recovery.

Building on the principles of SMILE, the SILK procedure developed by Johnson & Johnson (New Jersey, USA), represents an advancement in refractive surgery with improved precision and outcomes, thanks to enhanced laser technology. SILK is designed to address both myopia and astigmatism with minimal disruption to the cornea.

"J&J has introduced their new laser named Elita, which is currently available internationally, but not yet in the US," shared Dr. Trattler.

Game changers in refractive surgery

In addition to corneal refractive surgeries, refractive lens exchange (RLE) has become a popular option for patients with presbyopia and hyperopia, noted Dr. Trattler. The procedure involves replacing the eye's natural lens with an artificial intraocular lens (IOL).

"In RLE, we are seeing better visual outcomes with fewer side effects, leading to improved patient satisfaction. Among the most advanced technologies currently available are the Odyssey lens (J&J) and the Clareon PanOptix lens from Alcon (Geneva, Switzerland), both of which continue to improve patient outcomes. Additionally, we are utilizing laser technology to accurately center the capsulotomy opening. The new Ally laser from Lensar (Florida, USA), introduced last year, improves the procedure by creating a 3D image of the eye and centering the capsular opening on the visual axis. This advancement makes the surgery both easier and faster compared to previous versions," explained Dr. Trattler.

He highlighted the adjustable IOL as one of the exciting innovations in the field. "I've been using both the standard and RX-Sight Plus adjustable lenses in my refractive procedures. The RX-Sight Plus offers an even greater range of vision for patients, with outstanding results. With the adjustable lens, we can refine vision further, typically a month after the procedure. Patients achieve excellent distance vision and typically

Tailoring treatments to individual needs

When considering refractive surgery options, it is essential to evaluate each procedure's suitability based on the patient's eye condition, age, and lifestyle needs. Dr. Trattler provides a brief overview of the suitability of various refractive surgery options, including ICL, RLE, LASIK, PRK (photorefractive keratectomy), and SMILE.

ICL — The most reliable option for patients with higher levels of myopia (over -8.0 diopters). It is particularly suitable for patients with thin, irregular, or suspicious corneas, as it does not alter corneal structure. The ICL is also competitive with LASIK, SMILE, and PRK in patients with lower levels of myopia.

RLE — Ideal for patients in their mid-40s and older who are dealing with hyperopia and presbyopia. It is generally more effective than LASIK and PRK for this demographic.

PRK — A safe procedure with a low risk of complications, though it involves a longer healing process. It is ideal for athletes or individuals who play contact sports, such as rugby or martial arts, because it does not require creating a corneal flap, despite a longer recovery time.

SMILE — This procedure offers a less invasive alternative approach to LASIK by creating a small pocket rather than a flap.

LASIK — The most commonly performed refractive procedure in the US, LASIK is versatile and effective across various patient groups.

The choice of procedure depends on individual patient factors and surgeon preference.

– Dr. William B. Trattler

report a broad range of sight with a low risk for halos or glare. The high patient satisfaction is remarkable. As this technology becomes more widely available, more doctors will have access to it, further enhancing patient satisfaction with its innovative and precise capabilities," he continued.

As for the implantable Collamer lenses (ICLs), there has been a significant increase in their use in the US over the past two years—thanks to the EVO ICL's benefits of rapid visual recovery and excellent vision quality. Not to mention, advancements in technology have greatly improved the lens sizing process. As Dr. Trattler noted, accurately determining the correct lens size for each patient is crucial for achieving optimal visual outcomes.

"Dr. Roger Zaldivar is at the forefront of developing an AI platform to automate ICL size selection. I've been using the Lasso formula, which leverages preoperative measurements to optimize lens sizing. While we previously had limited tools for this purpose, new technologies have significantly improved our accuracy and consistency. Although the EVO ICL, the most advanced technology for a phakic IOL, already delivers excellent outcomes, ongoing developments in tools and measurement techniques are further refining the sizing process," he said.

On a bright path forward

According to Dr. Trattler, refractive surgery is on a promising trajectory, with several exciting developments on the horizon, including inter-corneal and scleral treatments with laser.

"Researchers are exploring new ways to reshape the cornea's refractive index without creating a flap, a method that could revolutionize vision correction. This inter-corneal treatment uses lasers to adjust the optics of the eye, offering a non-invasive alternative to traditional surgeries," said Dr. Trattler.

Another innovative approach, according to Dr. Trattler, involves treating the sclera with lasers to restore accommodation, which could potentially benefit patients with presbyopia. Laser scleral microporations are performed on the sclera to increase its flexibility and to improve vision naturally.

Adjustable lenses, like the RX-Sight light, offer another avenue for advancement. These lenses allow postoperative adjustments to refine visual outcomes, providing patients with a tailored solution that minimizes the risk of glare and halos.

As we stand on the cusp of a new era in refractive surgery, today's advancements promise to reshape the landscape of vision correction. As technology continues to evolve, patients can look forward to even more personalized and effective treatments. The future of refractive surgery certainly looks bright, with exciting developments on the horizon poised to further revolutionize the way we see the world.

Contributor

Dr. William B. Trattler, MD, is a refractive, corneal and cataract eye surgeon at the Center For Excellence In Eye Care in Miami, Florida, USA. He performs a wide variety of cataract and refractive surgeries, including PRK; all laser LASIK; no injection sutureless cataract surgery; as well as laser cataract surgery. He has been an investigator for next generation technologies (like the Tetraflex accommodating intraocular lens) and procedures like corneal collagen crosslinking (CXL). His involvement in the FDA-approval study for CXL led to its approval in 2016. In addition to his private practice, Dr. Trattler is on the volunteer faculty at the Florida International University Wertheim College of Medicine, as well as the University of Miami's Bascom Palmer Eye Institute. He is board certified by the American Board of Ophthalmology and has been an author of several articles and abstracts. In 2016, Dr. Trattler received the Catalyst Award in Advancing Diversity in Leadership from the Ophthalmic World Leaders (OWL), an association of interdisciplinary ophthalmic professionals dedicated to driving innovation and patient care by advancing diversity in leadership.

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Pentacam AXL Wave

A multifunctional powerhouse for the new generation of IOLs

by Matt Herman

Advances in intraocular lens technology demand a new level of precision and sophistication to unlock their optical prowess. Leading Thai surgeon Dr. Thuss Sanguansak, associate professor of the Faculty of Medicine at Khon Kaen University (Thailand) talked about what the OCULUS Pentacam® AXL Wave means to his clinic.

New optical frontiers are being explored at a breakneck pace in modern intraocular lens (IOL) design. From so-called monofocal-plus and extended-depth-of-focus lenses moving the goalposts on what can be accomplished without diffraction rings, to multifocal designs extending range of vision, cataract surgery patient outcomes are being pushed to new heights.

But these advancements mean nothing without the evolution of technology to support them. Pinpoint accuracy in optical biometry and corneal assessment has never been more necessary. The effects of decentration are even more pronounced. And an increasingly educated legion of patients are more demanding than ever in an era where cataract surgery enables better vision postoperatively than preoperatively.

OCULUS believes that their latest Pentacam AXL Wave rises to the challenges of modern cataract surgery with its cutting-edge, one-stop-shop suite of tools, including total wavefront aberrometry, retroillumination, Scheimpflug tomography, optical biometry and wavefront refraction.

We sat down with long-time Pentacam user Dr. Thuss Sanguansak (Thailand) to see what he makes of this latest iteration, and how it has become a critical, time-saving tool for optimizing cataract surgery outcomes in his busy practice.

Multifeatured and highly functional

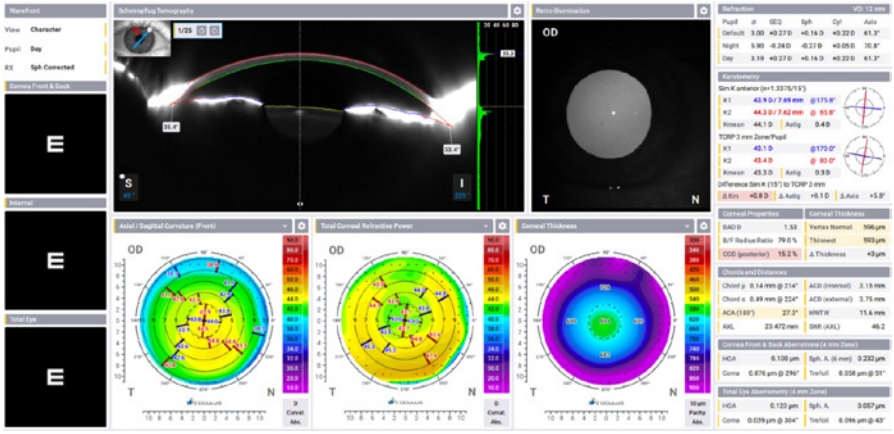
Like most clinicians, the most critical considerations for Dr. Sanguansak and his clinic in Thailand are space and time. Gone are the days where myriad bulky machines are the hallmark of a visit to the eye doctor. As offices shrink worldwide, the tools that ophthalmologists use must also—without sacrificing the increasing functional demands of modern cataract surgery.

For Dr. Sanguansak, this compact multifunctionality is where the power of Pentacam AXL Wave first separates itself from its competitors in cataract surgery. “There just isn’t another piece of technology like this that gives you such a complete view of the total anterior segment,” he said.

> With Pentacam’s Scheimpflug, you get that measurement for the total cornea. This is much more accurate than other machines that measure only the center.”

“With the combination of Scheimpflug tomography and total wavefront aberrometry, this gives much higher accuracy in detecting higher order aberrations and the many other factors in the eye that impact the implantation of modern and premium IOLs.”

Dr. Sanguansak related how having this information together has helped him with astigmatic patients. “With Pentacam’s Scheimpflug, you get that measurement for the total cornea. This is much more accurate



than other machines that measure only the center," he said.

"Normally we would use a Pentacam and another separate machine together, especially if the patient had astigmatism. We always want to know the power of the astigmatism, but with different machines, the power is sometimes different. This is why we use Pentacam AXL Wave now—everything is together."

Having this data from Scheimpflug tomography, total eye wavefront aberrometry, objective refraction, retroillumination and optical biometry aggregated in one place also opens up more perspectives for Dr. Sanguansak to evaluate each unique eye.

"You can get a measurement for the curvature of both the anterior vs total corneal refractive power (TCRP), angle kappa and alpha, corneal and total higher order aberrations, and so many other features that may or may not qualify for your patient using a premium lens. On top of that you can also use their axial length together with this to get what you need," he said, referring to the Pentacam AXL Wave's onboard optical biometer.

Combining this suite of tools into one device doesn't just mean accuracy and convenience for Dr. Sanguansak. It also directly translates into an all-important consideration for his busy clinic: speed.

Pentacam® AXL Wave

"It's so fast, and it's an easier measurement—just a couple of seconds. This makes it much more comfortable for the patient," he said. "At my fingertips I also have the ability to screen quickly for other things, like corneal opacity and seeing if the patient is at risk for glaucoma."

Going premium with Pentacam AXL Wave

Dr. Sanguansak also believes that the Pentacam AXL wave bears significant advantages for modern cataract surgeons, especially when it comes to premium IOL selection. For starters, he noted several ways the Pentacam AXL Wave leads to a more successful, data-driven approach to confidently determining eligibility for a premium IOL.

"In the past, we simply examined the patient with the tools we had available," Dr. Sanguansak said. "Selection for premium IOLs was much more subjective. But with Pentacam AXL Wave, we have much more data to make an objective measurement."

"All the data I need to determine if this is a good candidate for a premium IOL is in one place," he said. "On the right side, you can see angle kappa, the corneal coefficients, the power and astigmatism, you see the total aberration profile. With all of this information on the total cornea, it's easy to see if this person is not a good candidate."

For Dr. Sanguansak, the aggregation of this data into one report goes beyond the surgical decision to implant or not implant a premium IOL. It streamlines and clarifies patient communication, too.

"Many times, patients want to implant a premium IOL, but they aren't ideal candidates for them," he continued. "Five years ago, we would just tell them all, you can't. But the new Pentacam helps me give all of the information to the patient. We can then explain the possible outcomes of putting a premium IOL in the patient so that they can much more easily understand and accept the recommendation."

And in the world of Dr. Google, the ability to streamline and visually explain data can make all the difference to a patient with sky-high expectations.

What a surgeon needs

Ultimately, having speed and reliability in one single device are what makes the Pentacam AXL Wave an integral part of Dr. Sanguansak's practice. And in an IOL landscape that requires these variables in greater quantities than ever before, this is what sets Pentacam AXL Wave apart in his eyes.

"It's fast. It's accurate. And it can be used for putting in the most demanding IOLs with confidence," he said, when asked to summarize his thoughts on the device—a pointed assessment in step with the needs of an overwhelming majority of the world's cataract surgeons.

Contributor

Dr. Thuss Sanguansak, a leading Thai ophthalmic surgeon, is an associate professor in the Department of Ophthalmology, Faculty of Medicine, at Khon Kaen University (Thailand).

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From Donation to Restoration

The Nonprofit Approach to Eye Banking

by April Ingram

Editor's Note: This is part one of a two-part series looking at non-profit and for-profit models for eye banking.

Despite ongoing challenges, advancements in eye banking and transplantation are ushering in a new era of sight restoration. Nonprofit organizations like the Eye Bank Association of America (EBAA) have been at the traditional forefront of this transformation, employing both cutting-edge technologies and a commitment to ethical practices to enhance patient care and address global disparities.

The very first corneal transplant was performed almost 125 years ago, making it one of the earliest successful transplantation procedures. Today, corneal transplants continue to be among the most prevalent, with nearly 200,000 performed each year.

Let's take a step back for a brief history lesson, tracing the evolution from the first corneal transplant to the current systems and practices in eye banking, testing, and distribution.

"The first use of cadaver cornea tissue was by Filatov in 1937. Shortly after, in 1944, R. Townley Paton recognized the need for an eye bank to supply this tissue and established one that same year,"[1,2] shared Dr. Woodford S. Van Meter, an Emeritus professor of ophthalmology at the University of Kentucky in Lexington, Kentucky, USA.

Dr. Van Meter noted that a major shift occurred in 1961. "The EBAA was founded when proactive corneal transplant surgeons defined guidelines to make transplantation mutually beneficial for physicians and patients," he said. "An important feature of these guidelines was that donated ocular tissue should not be sold for profit out of fear that commercialization or inurement might sully the public acceptance of tissue donation," he continued.

This not-for-profit model that corneal tissue should not be bought or sold has been held for the past 60 years, "codified by the World Health Organization (WHO) Principles of Transplantation in 1998 and the Barcelona Principles of the Global Alliance of Eye Bank Associations in 2018," he added.

Navigating the corneal tissue shortage

Despite the impressive number of transplant procedures being performed each year, it is estimated that more than 10 million people would benefit from corneal transplants, and more than 5 million are bilaterally blind due to corneal diseases.

In 2016, Phillipe Gain and colleagues published the Global Survey of Corneal Transplantation and Eye Banking, which identified 184,576 corneal transplants performed across 116 countries.[3] These procedures utilized tissue from 283,530 corneas, stored in 742 eye banks. The majority of corneal transplants were to treat Fuchs dystrophy (39%), followed by keratoconus (27%), and consequences of infectious keratitis (20%). The US had the highest transplantation rate, followed by Lebanon and Canada. At the time of the survey, 82 countries procured donor tissue, while the United States and Sri Lanka also exported large numbers of donor corneas to other countries.

Even though these numbers seem impressive, more than half (53%) of the world's population does not have access to corneal transplantation, meaning that roughly only one cornea is available for 70 people in need.[3]

Mr. Kevin Corcoran, president and chief executive officer of the EBAA, knows this need all too well, having led the association for over 13 years. He is extremely grateful to be part of a profession that "transforms people's lives by giving them their sight back."

"Our association represents 56 eye banks in the United States, providing corneal tissue to over 80,000 recipients domestically and worldwide each year," Mr. Corcoran shared. "I've spoken with cornea

recipients and have felt the emotional impact of restoring someone's vision." He added that they wanted to better understand the factors that contribute to the unmet needs for corneal tissue for transplantation and the variability in different areas of the world.

"In the United States, we are able to recover and bank more tissue than is needed. We have no waiting lists or delays, so we can send approximately 25,000 corneas overseas each year," he explained. "Many developed countries have a self-sufficient system in place, and very few countries have a surplus to export."

Although donated corneas may be available, the lack of surgeons qualified to perform the procedure in some regions can be a barrier to transplantation. Economic hardship also often prevents patients from affording or traveling to access specialized care.

For-profit eye banks, a new paradigm?

As Dr. Van Meter noted earlier, for decades, eye banking programs have long operated under a mandate to provide a safe source of corneal tissue through a not-for-profit model. Eye banking members cover all costs associated with the recovery, processing, banking, and distribution of donor corneal tissue for transplantation.

In his recent publication in the journal Cornea, Dr. Van Meter provides a thorough review and commentary about the recent emergence of for-profit eye banks.[4]

"For-profit eye banks justify their existence by promoting research and development, innovation, and improvement in the quality and supply of tissue," he explained. He cited SightLife as an example.

Originally a not-for-profit eye bank, SightLife announced its goal to eliminate global corneal blindness by 2040, declaring that this would not be achievable without investment capital. This led to the establishment of CorneaGen, a spinoff company that emerged in 2016 to solicit venture capital.

Dr. Van Meter noted that at that time, forming a well-informed opinion about this model was difficult. "There is no peer-reviewed literature, randomized study, or published objective evaluation to compare for-profit and not-for-profit eye banks side by side. Consequently, information used to discuss for-profit eye banks was generated by CorneaGen itself. The most vocal about the advantages of for-profit eye banks are shareholders, stakeholders, or paid consultants. Investors ultimately have to be repaid," he continued.

Dr. Van Meter recognizes the crucial role of the guidelines established by the EBAA. "For decades, the EBAA has stood firmly by the original guidelines that donated ocular tissue should not be commercialized," he said. The EBAA's Medical Standards, first developed in 1980, govern all eye banking and remain the backbone of eye bank regulation, certification, and safety, he added.

Both of our experts agree that the foundation of corneal transplantation begins with the altruistic actions of the donating individual and their family. As Dr. Van Meter explained, "The supply of corneal tissue available for transplant depends on the selfless act of a family donating their loved one's

ocular tissue to be used for sight restoration, an act that provides no monetary benefit to the donor's family."

Dr. Van Meter warns of a potentially slippery slope with for-profit eye banking. "The profit motive has been shown to deter donation, as families feel less comfortable about donating tissue if a separate entity is profiting from their gift. If there is financial value in corneas for transplant, individuals may consider recovering that value now in exchange for a future donation. Once a financial value is placed on human tissue, there could likely be variations in value on younger tissue, better tissue, or fresher tissue," he explained.

Dr. Van Meter believes that commercialization and marketing of tissue was likely well beyond the imagination and fears of the EBAA founders and the authors of the Barcelona Principles. "They worked for the betterment of the community and did not have financial gain in mind," he said.

Balancing mission and fundraising

Despite this, in developing countries where many people who need corneal transplants cannot afford the costs associated with recovery, testing, and processing of tissue, the EBAA continues to send corneal tissue to facilitate treatment.

"We recognize that part of our mission is to restore sight. Therefore, eye banks must continue to fundraise to offset these costs," said Mr. Corcoran. He added that increased government investment, a greater understanding of the value of restoring sight, and higher levels of tissue reimbursement are a benefit to society overall.

While maintaining the not-for-profit model, the EBAA is looking to support research and innovation opportunities to provide an overall benefit to eye banking and transplantation.

"Previously, our bylaws specified that to be a member of the association, you had to be a nonprofit organization. This served the overriding belief that corneal tissue is an altruistic gift from donor to recipient," said Mr. Corcoran. "However, we recently amended our bylaws to allow other companies to become members because the research needed to create new therapies is beyond the capacity of any individual nonprofit organization. It is critical to have funding to support the extremely creative and intelligent researchers, physicians, and surgeons who take current practices and extrapolate them to new therapies," he added.

"There is tissue that will be processed to develop new therapies, but for-profit entities will not be performing traditional eye banking functions. We strongly believe that these functions should continue to be done by nonprofits," he said.

These types of initiatives can fast-track the development of new therapies that can change and improve the way entire categories of corneal disease are being treated.

The complex landscape of corneal donation

Although corneal disease impacts people of all ages across the globe, researchers have uncovered differences in how locations and cultural backgrounds affect the willingness of people to donate corneal tissue.

A recent study from China found a marked difference between the gender ratio of pre-registered cornea donors and actual donors. Although people may have wanted to donate their corneas, their family members can legally veto these wishes. The study revealed that many husbands vetoed the donation of their wives' corneas, resulting in a threefold difference in corneal donation rates between genders.[5]

Many religious entities promote corneal donation rather than discourage it. In fact, Pope John Paul II was quoted on several occasions, advocating for cornea donations as a 'service of life,' stating, "Donate a cornea and turn permanent darkness to light, and God will light your way."

Working with eye banking programs around the world, the EBAA recognizes that in regions with cultural obstacles to donation, governments may not allocate resources and infrastructure to establish eye banking programs.

"If these systems don't exist, then physicians either won't become transplant surgeons or will leave the area for other opportunities. Building that capacity from start to finish requires a lot of coordination, and it is challenging for any one part of that system to get started without alignment from the rest," expressed Mr. Corcoran.

Aside from cultural or religious factors, many people express discomfort with eye donation. According to a 2019/2020 Organ Donation and Transplantation Activity Report from the NHS in the UK, there were notable negative attitudes toward eye donation. While 85% of organ donor registrants indicated a willingness to donate all organs and tissues, 68% of those who specified a restriction declined to donate their eyes.

Restrictions on who is allowed to donate eye tissue remain in place. Although the US FDA lifted restrictions on gay men donating blood or organs in the 1980s, restrictions have not yet been lifted from corneal donation. That said, it is important to recognize the significance of regulatory agencies and respect the decisions they make.

Mr. Corcoran hopes that an FDA resolution is on the horizon. "There are probably a couple of thousand people each year who aren't able to be donors, which also means thousands of families miss out on the comfort of knowing that their loved one's corneas could have given the gift of sight," he said.

Recent innovations and transplantation alternatives

The reach of the EBAA extends far beyond US borders, as a founding member of The Global Alliance of Eye Banking Associations, which comprises six multinational eye bank associations working to promote best practices around the world. The Global Alliance is a not-for-profit, non-governmental organization that functions to bring together knowledge and experience in corneal

donation and eye banking, in line with local, national, and international recommended standards of practice.

A recent innovation is the implementation of Kerify Vision, an automated computer vision software system that provides accurate quantification of total processing damage in donor corneas. The platform can assess donor corneal health more accurately than current methods.

"Kerify Vision is the next step forward in eye banking. We're confident that this technology will result in greater certainty for surgeons, improved operations for eye banks, and better stewardship of the gift of sight provided by our generous cornea donors," shared Mr. Corcoran.

A significant shift in eye banking and transplantation has occurred for keratoconus patients. Not that many years ago, collagen cross-linking was considered a new therapy. "I remember hearing about it at a meeting, and over the past 10 years we have gone from providing transplants for 10,000 keratoconus cases annually to less than 2,400, simply because cross-linking has eliminated the need for transplants," recalled Mr. Corcoran.

Several therapies are either preparing for or are currently running trials for FDA registration. "I think that's going to transform what we're able to do for treating patients," he said. Although new therapies are typically priced at levels not necessarily attainable for people in developing countries, Mr. Corcoran is optimistic. "Over time, hopefully, those costs will go down and there will be opportunities to treat the millions of people with corneal disease," he added.

Corneal bioengineering is a hot topic as an alternative or complementary solution to transplantation. A recent publication by Rafat and colleagues described a minimally invasive procedure involving the implantation of cell-free, engineered corneal tissue, bioengineered porcine construct, double crosslinked (BPCDX), in 20 advanced keratoconus patients to reshape the native corneal stroma. They followed the patients for 24 months, observing no adverse events and noting improvements in corneal thickness and visual acuity to a mean contact lens-corrected acuity of 20/26 and spectacle-corrected acuity of 20/58. Notably, all 14 initially blind subjects achieved a final mean best-corrected vision (with either spectacles or contact lenses) of 20/36 and restored tolerance to contact lens wear.[6]

Contributors

Mr. Kevin Corcoran is president and chief executive officer of the Eye Bank Association of America. Since joining the EBAA in 2011, he has initiated a new strategic planning process, an outreach program to foster more member collaboration and engagement, and guided the association through a reorganization of its governance structures. Recently, the association has expanded its membership qualifications to serve new markets and has begun investing a portion of its reserves in emerging technologies that benefit its members. Mr. Corcoran has over 30 years of non-profit management experience and serves on the board of directors at multiple for-profit and non-profit organizations. He is a graduate of Georgetown University, where he earned a Bachelor's Degree in Marketing.

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Dr. Woodford S. Van Meter, MD, is an Emeritus Professor of Ophthalmology at the University of Kentucky, where he specialized in corneal transplants, cataract surgery, and external diseases of the eye. His research interests include corneal transplantation, eye banking, intraocular lens implantation, multifocal contact lenses, and infections of the cornea. He is currently the medical director of the Kentucky Lions Eye Bank in Louisville, Kentucky, and served as chairman of the board from 2016 to 2022. He also served as president of the Kentucky Academy of Eye Physicians and Surgeons from 2010 to 2012, chair of the Eye Bank Association of America (EBAA), Washington, DC, from 2018 to 2020, and president of the American Ophthalmological Society (AOS) from 2020 to 2021. Dr. Van Meter has participated as volunteer faculty in over 30 programs with ORBIS International, dating back to Baghdad, Iraq, in 1986. He has served on both the cataract and cornea panels of the American Academy of Ophthalmology (AAO) Basic and Clinical Science Course (BCSC) and chaired the AAO committee on eye banking. Dr. Van Meter has been married to Dorothy Clark Van Meter, a plastic surgeon in Lexington, Kentucky, for 30 years. He enjoys golf, tennis, cycling, white-water canoeing, and antiques.

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From leading Melbourne's top eye hospitals to pioneering research and patient education, Assoc. Prof. Elaine Chong is at the forefront of sight restoration

by Chow Ee-Tan

Assoc. Prof. Elaine Chong might make multitasking look effortless, but her expertise in cataract, corneal, and retinal surgery is nothing short of extraordinary. Leading both the Royal Melbourne Hospital and the Royal Victorian Eye & Ear Hospital, she is a driving force in advancing ophthalmic care. From innovative treatments such as Descemetorhexis to her game-changing patient education platform, One Right Eye, Dr. Chong's work is helping to reshape the future of eye care.

To say that Assoc. Prof. Elaine Chong wears many hats is an understatement. As the head of ophthalmology at the Royal Melbourne Hospital (RMH), she boasts a distinguished record of excellence, supported by multiple international and national awards. Besides being the department head at RMH, she also serves as a consultant ophthalmologist in the corneal and retinal units at the Royal Victorian Eye and Ear Hospital (RVEEH)

A highly experienced cataract and corneal surgeon with over 10,000 surgical procedures to her name, Assoc. Prof. Chong's expertise spans laser vision correction, corneal cross-linking for keratoconus, and the latest techniques in lamellar partial

thickness corneal transplants for various corneal diseases.

From Singapore to the world

Originally from Singapore, Assoc. Prof. Chong pursued medicine at the University of Melbourne and subsequently trained in ophthalmology. She also holds a Ph.D. and Master's in Epidemiology from the same university.

> "I moved to Melbourne from Singapore for university, so all my pre-university education was in Singapore. I started in architecture before switching to medicine. The University of Melbourne offered me a scholarship that was hard to refuse, but it was not an easy decision to leave my family in Singapore to study overseas."

She is a dual fellowship-trained ophthalmologist, having completed subspecialty fellowships in medical retina at the RVEEH, and in corneal, cataract, and refractive surgery at the Singapore National Eye Centre. In addition to her clinical roles, Assoc. Prof. Chong is also a senior research fellow at the Centre for Eye Research Australia, is on the editorial board of *Clinical and Experimental Ophthalmology*, and sits on the RANZCO Victorian Branch and Australia New Zealand Cornea Society Executive committees.

"I moved to Melbourne from Singapore for university, so all my pre-university education was in Singapore. I started in architecture before switching to medicine. The University of Melbourne offered me a scholarship that was hard to refuse, but it was not an easy decision to leave my family in Singapore to study overseas," Assoc. Prof. Chong shared.

In hindsight, it was a life-changing decision for her, and one she never regretted.

Double the specialties, double the expertise

Of all the medical disciplines, Assoc. Prof. Chong had an affinity towards ophthalmology. She recalls being impressed by an ophthalmologist who treated her mother, which may have influenced her career choice.

"You're looking at and examining the window to a person's soul, and I thought it was a really cool profession. Plus, you get to `play' with gadgets and lenses, which appeals to me because I have always liked photography," she continued. "However, it wasn't until I finished medical school that I seriously considered ophthalmology. It's a specialty that has a good mix of medicine, surgery with microsurgical skills, and artistry in pattern recognition," she said.

Assoc. Prof. Chong decided to pursue two subspecialties: Cornea and anterior segment, and medical retina. "I chose double subspecialties because both areas appealed to me. As a result, I spent an additional three-and-a-half years in fellowship training after completing my initial ophthalmology training. Although the journey was longer than usual, it was highly fulfilling," she added. "I find my skill set very relevant, despite skepticism from some consultants when I first embarked on this journey."

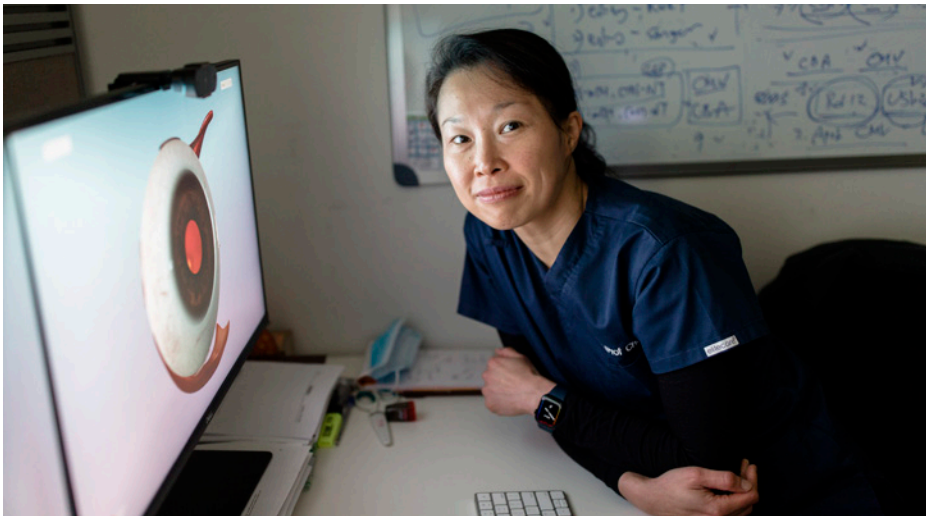
DWEK and ORE

In her daily job, Assoc. Prof. Chong manages and treats medical retinal diseases such as diabetic retinopathy, macular degeneration, and vein occlusions. She is also actively involved in the latest clinical trials in these areas, serving as principal investigator (PI) and sub-PI.

In her other corneal subspecialty, she is currently investigating a promising 'new' treatment for Fuchs' endothelial dystrophy, Descemetorhexis without endothelial keratoplasty (DWEK). This treatment could potentially remove the need for corneal transplantation, allowing the cornea to heal on its own.

DWEK, also known as Descemet Stripping Only (DSO) for Fuchs' endothelial dystrophy, is an exciting space. "We have just completed recruitment for our DWEK trial and are in the process of following up on the study," Assoc. Prof. Chong shared.

Besides her clinical practice, she is also very much involved in the patient education arena. Assoc. Prof. Chong is the co-founder of One Right Eye (ORE), which features an online virtual eyeball to facilitate quick and easy explanations in real time for 'right to the point' patient education. ORE is available at no cost to all optometrists and ophthalmologists. They can access it by signing up at www.onerighteye.com.



A balancing act

Tough as it may seem, Assoc. Prof. Chong balances diverse responsibilities with effortless grace.

"I am fortunate to be able to manage the balance between private and public clinical work, research, and administrative duties with significant autonomy as head of the department," she said, adding that research is an important aspect of ophthalmology and provides future direction.

> "I do own my own private clinical practice but I also work in two public hospitals (RMH and RVEEH) and hold a research position at the Centre for Eye Research Australia (CERA)."

"I believe that the next generation of patients will expect a good level of understanding of their eye conditions, which is why we've spent the last four years developing ORE. I think it will transform how eye care professionals engage with patients," she added.

It is easy to see that Assoc. Prof. Chong's passion lies in ophthalmology and in making meaningful—if sometimes small—contributions to ophthalmic care. She believes that both research and ORE are steps in this direction.

"I do own my own private clinical practice but I also work in two public hospitals (RMH and RVEEH) and hold a research position at the Centre for Eye Research Australia (CERA)," she said. CERA ranks among the world's top five institutions for ophthalmology research.

When asked about her preference for clinical or research work, Assoc. Prof. Chong expressed a passion for both, as she believes they work well in tandem, with each aspect enhancing and improving the other.

For her, the main challenges of her job include managing human resources, a skill not covered in clinical training but crucial in practice and acquired on the job. Research funding is another challenge, which requires constant attention, she added.

Despite her tight schedule, Assoc. Prof. Chong understands the importance of taking time off and enjoys long runs on weekends as a way to help focus. "Running provides grounding and clarity for my week ahead. Between work, family, and exercise, there is little time for my other interests for now," she lamented.

Focusing on what truly matters

Assoc. Prof. Chong was the proud awardee of the Gold Medal for Excellence at the RANZCO Advanced Clinical Exams in 2011 and has received various international awards and accolades for her work in corneal and retinal research.

However, while she has received recognition over the years for her contributions to ophthalmology, she considers the daily enjoyment of her work and the gratitude of her patients to be the true highlight of her career.

"My husband, who is in a different area of medicine, gets jealous of all the chocolates and food I bring home from my patients," she joked.

Assoc. Prof. Chong met her husband in medical school, and they have since settled in Melbourne with their two children who are in high school. "We travel quite a bit as a family nationally and internationally to facilitate my kids' competitive sporting calendar," she shared.

As for the future of the ophthalmology fraternity, Assoc. Prof. Chong hopes to see more groundbreaking work in intraocular lens (IOL) technology as she believes extended depth-of-focus (EDoF) lenses have the potential to provide glasses independence without the side effects of trifocal lenses.

When asked what inspires and motivates her to continue her calling in ophthalmology, she offered this candid reply: "As head of department, I can see the impact of the changes I make. As a clinician, I see the direct result of my intervention on patients. As a researcher, I contribute to the wealth of data and knowledge. And as co-founder of One Right Eye, I know I'm making a difference in patient education and follow-up compliance.

"Above all, it's the positive feedback loop that keeps me motivated to do more," she concluded.

Contributor

Assoc. Prof. Elaine Chong, MBBS MEpi PhD Melb, FAMS, FRANZCO, is a cataract, corneal and refractive surgeon, and medical retinal specialist. She is the head of ophthalmology at The Royal Melbourne Hospital, deputy head of the cornea unit at The Royal Victorian Eye and Ear Hospital, and a consultant ophthalmologist in the medical retinal unit.
Prior to these positions, Assoc. Prof. Chong underwent double subspecialty fellowship training, first in medical retina and later in corneal and refractive surgery. She was awarded the Gold Medal for Excellence (K. G. Howsam Medal) for her performance in the Royal Australia New Zealand College of Ophthalmologists (RANZCO) advanced clinical examination. She has been the scientific program chair for the RANZCO Victorian Branch Annual Scientific Meeting from 2019 to 2024. She also holds a Ph.D. in Ophthalmic Epidemiology and a Master's in Epidemiology from the University of Melbourne. She has received various international awards for her work in corneal and retinal research, with her peer-reviewed work featured and published internationally. She has also contributed to the development of Descemet's Membrane Endothelial Keratoplasty (DMEK) Endoglide injector with Network Medical Products, United Kingdom.

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From Hollywood to Healthcare

A Family's Legacy of Innovation

by Matt Young

Gene Ekonomi's foray into the business world began with a jolt—literally. While working as an engineer, a shock from an undischarged capacitor left him unconscious. This electrifying experience became a turning point. "It was a message from the universe that maybe you should get out of engineering and become a business person," Gene recalls with a smile.

> "It was a message from the universe that maybe you should get out of engineering and become a business person.
>
> **— Gene Ekonomi**

Armed with a degree in electronics from MIT, Gene relocated to Santa Barbara, California, in 1982. Here, he immersed himself in the local business community and launched Tecfen. His early innovation included a small handheld computer for car salesmen, a precursor to mobile devices. However, it was the medical device sector that truly captured his entrepreneurial spirit.

A chance encounter with an ENT device manufacturer led to Tecfen's first medical products. "'Do you sell overseas?' I asked. The president replied, 'No, we don't know how. We are scared of people that have heavy accents like you,'" Gene recounts with a chuckle. Seizing the opportunity, Gene became their exclusive export distributor, setting Tecfen on its path in the medical device industry.

The narrative took an exciting turn with the entrance of Gene's son, Kerim Ekonomi, in 2010. Transitioning from a successful career as a Hollywood talent agent, Kerim brought a new dynamism to Tecfen. "I was rough around the edges and had a loud personality," Kerim admits. "Dad comes from a quieter place. Everything he does is meticulous and wise. I'm more like the Kool-Aid man barging through the door."

Despite initial clashes, the father-son duo found synergy in their complementary styles. Kerim focused on refining company infrastructure and branding, recognizing the limitations of their initial distribution model. He also led the efforts for innovative branding and packaging strategies that set Tecfen apart.

Gene at the company's booth in the 80's.


From father to son [Gene Ekonomi (L) to Kerim Ekonomi (R)], the family's legacy of innovation continues to shine for years to come.

Gene and Kerim, showcasing the company's products in a more modern-looking booth.

Under their joint leadership, Tecfen evolved from a distributor to a manufacturer of ophthalmic products. Their offerings now include a full range of surgical products for cataract, refractive and retinal surgery, as well as their very popular post-surgical sunglasses, and eye shields, which are given to patients after surgery. "We redefined the Fit Over," Kerim explains. "We took a product from decades ago and modernized it with a current look and better sun protection."

Tecfen's commitment to quality and innovation extends to simple yet crucial products like PVA eye spears and ophthalmic drapes. "It's a simple product but an important product to get right," Kerim emphasizes. Their focus on single-use surgical disposables reflects a dedication to patient safety in a world increasingly conscious of infection risks.

A very proud moment: when the father-son tandem received their first container of products together!

Internationally, Tecfen thrives with distributors in nearly 80 countries. "Each country has its requirements," Kerim notes. "We listen and cater to the needs of each client in each country, making our international presence huge."

Reflecting on his dual careers, Kerim sees parallels between the entertainment and ophthalmic industries. "Picking up the phone and engaging people is no problem," he says. His aggressive, respectful approach complements Gene's reputation for kindness and honesty, fostering trusting relationships in the business.

By combining Kerim's assertive communication style with Gene's reputation for integrity, they have managed to create a balance that attracts and retains clients. Their ability to engage people and foster trust has been a key factor in their success, highlighting the importance of personal connections and ethical conduct in business.

Interestingly, their company has adopted Wile E. Coyote as its mascot. This choice symbolizes the relentless pursuit of excellence and the innovative spirit that Kerim and Gene embody. Just as Wile E. Coyote is known for his persistence and creative problem-solving, the company prides itself on its determination to overcome challenges and find unique solutions for their clients. The mascot serves as a reminder of the tenacity and ingenuity required to succeed in business, reinforcing the company's commitment to going the extra mile for their clients.

> "We took a product from decades ago and modernized it with a current look and better sun protection."
>
> **— Kerim Ekonomi**

Gene, now 82, continues to be the heart of Tecfen. "It becomes a part of your life," he says of the company he helped build. "I enjoy the work. It keeps me alive." His passion and dedication, mirrored by Kerim's vibrant energy, ensure that Tecfen will remain a cornerstone of the ophthalmic world for years to come.

Tecfen MEDICAL

Editor's Note

A version of this article was first published on cakemagazine.org.

The Evolution of a Single-Use Sustainable Solution

by Diana Truong

In an industry where sustainability is becoming increasingly important, the debate between reusable and single-use ophthalmic products is more relevant than ever. Medicel AG (Altenrhein, Switzerland), a global leader in IOL injectors and advanced injection systems, is challenging the common belief that reusable instruments are greener and cleaner. With their new sustainable product line – terralution – Medicel aims to prove that single-use instruments can indeed be more environmentally friendly.

It's a familiar scene in the world of medical supplies: rows of shiny, reusable instruments neatly sterilized and ready for their next use. The prevailing thought has always been that these items, designed to be used over and over again, must surely be the greener choice. After all, as the logic goes, fewer disposables mean less waste and a smaller environmental footprint. But what if that's not the whole story? What if the meticulous cleaning, the sterilization processes, and the materials used in manufacturing these reusables actually have a hidden environmental cost?

Enter terralution, Medicel's new climate-conscious product family. This line includes single-use surgical instruments such as IOL injectors and I/A handpieces designed to meet the highest medical requirements in terms of user performance and patient safety. Manufactured with environmentally friendly materials and resource-saving production technologies, terralution aims to reduce the carbon footprint of ophthalmic surgeries.

Procycons (Frankfurt, Germany), an independent, external institute carried out a life cycle analysis on terralution and comparable reusable systems. "The analysis showed that the concept of ecological reusables is often not correct," said Mauro Bühler, CEO of Medicel. "If you examine the entire life cycle of a product, including reprocessing, reusable products do not necessarily achieve better results than those that are only used once."

"Our DUALCEL™ injector and our BICEL™ I/A handpieces from our new sustainable terralution range, for example, have a carbon footprint that is up to 51% smaller than comparable reusable products," Mr. Bühler

explained. This reduction is achieved through a combination of eco-design principles, smaller product sizes and the use of bio-based, high-performance materials.

Reprocessing reusable instruments is an energy-intensive process that requires significant amounts of water and energy. "The complex and high-energy recycling process for reusable products has a considerable negative impact on the environment," Mr. Bühler pointed out. "It not only needs a lot of energy for production, reprocessing and disposal methods, but also a lot of water."

> "Our DUALCEL™ injector and our BICEL™ I/A handpieces from our new sustainable terralution range, for example, have a carbon footprint that is up to 51% smaller than comparable reusable product."
>
> **— Mauro Bühler**

Terralution products also come in environmentally friendly packaging. The blister pack has a lower CO2 footprint, and the recyclable box is made of grass paper, which requires no chemicals and whose grass fiber content has minimal water consumption. "Unlike wood, grass grows very quickly and can be harvested several times a year," Mr. Bühler highlighted. "The entire process consumes very little energy and saves up to 75% of CO2 emissions."

Another aspect that contributes to the sustainability of terralution is the local production in Switzerland. "Almost all of our manufacturing processes are located in Switzerland at our facility in Altenrhein. This regional value chain means shorter distances and fewer transport emissions," explained Mr. Bühler.

The terralution range is not just about being green; it's also about high performance. DUALCEL terralution, a sustainable injector alternative, features a smaller product design with the same performance features. It offers maximum flexibility and safety through various loading methods and a wide range of cartridges and incision sizes.

BICEL terralution, on the other hand, combines the best properties of the current Medicel product family into one eco-friendly I/A instrument. Its aeroplane-shaped cannulas and new handpiece design ensure intuitive handling and precise control.

Despite being smaller and lighter than conventional products, terralution instruments do not compromise on performance. "One of the basic requirements was, naturally, that handling and reliability should be at least as good as with conventional products. We achieved this goal very successfully," said Mr. Bühler. "Such performance with brilliant environmental values—this has really exceeded our expectations."

Building on the excellent environmental and performance outcomes of terralution, Medicel is committed to incorporating sustainability into all future product development. "Terralution makes us very proud as a company and is the starting point for all future product development. We want to think about sustainability in a holistic way for the future," Mr. Bühler concluded.

Medicel's terralution range challenges the common conception that reusable products are more sustainable. By combining eco-friendly materials, innovative design and local production, Medicel has created a single-use product line that is both green and clean. As the industry continues to prioritize sustainability, terralution sets a new standard for environmentally friendly ophthalmic instruments, helping companies, hospitals and surgeons achieve their climate and sustainability goals.

The RUCK Revival

by Diana Truong

After facing challenges in recent years, RUCK (Eschweiler, Germany), the maker of the QUBE® surgical system, regained its independence with renewed vigor in April 2023. In an exclusive interview with Media MICE CEO Matt Young, Andreas Kühnel, chief sales and marketing officer at RUCK, discusses the company's resurgence.

Few names in ophthalmic surgery devices are as storied as RUCK. Founded in 1981 by Fritz Ruck, the company emerged as a pioneering force in phacoemulsification technology. Their innovation began with the PentaSys®—a device that quickly earned a reputation for its high performance and reliability. Even today, the tried-and-true PentaSys is still highly regarded among vitreoretinal surgeons worldwide. According to Andreas, one dedicated doctor in southwest Germany cherished his 10-year-old PentaSys so much that he purchased a second unit, solely for spare parts. This loyalty speaks volumes about RUCK's early impact.

As the years progressed, Fritz's vision was carried forward by his son, Michael Ruck. Under Michael's leadership, RUCK continued its tradition of innovation, culminating in the launch of the QUBE. This next-generation phacoemulsifier, designed for both cataract and vitrectomy surgeries, marked a significant leap forward. With its new software and intuitive graphical interface, the QUBE packed all the capabilities of larger machines into a sleek, compact form. It's a testament to RUCK's engineering prowess—offering a cost-effective, reliable solution that balances performance and affordability.

Following the acquisition of RUCK by Hoya in 2019, Michael once again took over the company's reins in April 2023, steering RUCK's full attention back to its long tradition of developing and selling surgical systems.

> "We saw the potential to not only bring back the products but to expand our reach."
>
> **— Andreas Kühnel**

Determined to bring his company back to life, Michael reached out to Andreas, co-founder of Vitreq, and asked him to join the RUCK team. "Michael got in touch with me and said, 'Why don't we relaunch the company?'" Andreas recalls. "We saw the potential to not only bring back the products but to expand our reach."

A renewed vision

As RUCK steps back into the limelight, the company is not just reviving its past but also charting an ambitious path for the future. With the ophthalmic industry on the cusp of exciting advancements, RUCK is poised to lead with a renewed vision that embraces both innovation and global expansion.

Looking ahead, RUCK plans to grow its portfolio with cutting-edge products and technologies. One such advancement is the introduction of a day cassette for its QUBE system. This new feature allows surgeons to leave the cassette in the machine for up to 16 hours. Not only will it reduce the cost per case but also streamline operations, offering a significant advantage over competing systems that require entire cassette and tubing replacements for each procedure. "We're focusing on developing solutions that are both cost-effective and efficient," Andreas explains.

In the coming decade, the demand for cataract and vitrectomy systems is expected to grow globally, and RUCK is preparing to meet it head-on. "We want to develop state-of-the-art phaco systems for the future," Andreas notes. "We need to validate with our engineers what is feasible and realistic at what price," emphasizing RUCK's continued commitment to cost-effective innovation and quality.

The trend towards miniaturization is also a focal point. "Incision sizes in vitrectomy have evolved from 20 gauge to 23, 25 and now 27 gauge," notes Andreas. In addition to the movement towards smaller incisions, he is optimistic about emerging new methods in cataract surgery. "We will see more ways to achieve safer procedures with better control over IOP and chamber stability," Andreas predicts, perhaps hinting at RUCK's future endeavors.

> "I believe in this company. I believe in the people, the technology and the know how."
>
> **— Andreas Kühnel**

The company is also considering the acquisition of distribution companies to broaden their reach. "We are establishing a distributor system covering international markets," says Andreas, noting RUCK's focus on global expansion.

As RUCK ramps up its operations, with plans to significantly expand its small yet talented team by the end of the year, there is a palpable sense of momentum. "I believe in this company. I believe in the people, the technology and the know how," Andreas shares with conviction. "Everybody thought, 'RUCK is gone.' RUCK is not gone. I am confident we will be even more powerful five years from now."

With a history spanning over three decades and a bold new vision, RUCK is ready to not only sustain its legacy but also to set new benchmarks in the ophthalmic industry. As they move forward, the QUBE and future offerings promise to uphold the tradition of excellence that began with Fritz Ruck and continues, against the odds, to thrive today.

Editor's Note

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No Cataract Left Behind

Global initiatives by sight-saving organizations focus on removing barriers to cataract surgery access

by Diana Truong

Imagine a world where no one is blind from avoidable causes, where everyone can participate equally in society. This is the mission of global initiatives like Sightsavers, Orbis International, and The Fred Hollows Foundation—to change the way the world sees.

Photo Credit: The Fred Hollows Foundation

Now, picture a life where your vision is clouded, your ability to work and care for your family is compromised, and your quality of life steadily declines—all due to a treatable condition. This is the reality for millions in low-income countries, where cataracts remain the leading cause of blindness.[1]

The ripple effects of untreated cataracts are profound. Individuals not only face personal health challenges but also significant socioeconomic burdens. Their inability to work reduces household income and productivity, while the need for caregiving imposes additional strains on families. This creates a cycle of poverty that affects entire communities and economies.[2]

Cataract surgery offers a powerful solution to this pervasive problem. Yet, countless people in low-income countries remain in darkness, unable to access the surgery they need due to limited resources and inadequate healthcare systems.[3]

To break this cycle, there is an urgent need for stronger efforts to extend cataract surgery programs to the most vulnerable populations. By doing so, we can not only restore sight but also improve quality of life, unlock economic potential, and bring hope to millions around the world.

Teaching how to fish

It's a bird…It's a plane…It's the Orbis Flying Eye Hospital. This fully accredited, state-of-the-art teaching facility, equipped with an operating room, simulation training center, and 3D broadcast technology, soars across the globe with volunteer specialists to share their expertise and develop skills within communities that need it most.

"We train ophthalmologists how to fish, so they can perform surgeries in their local hospitals after we leave," said Dr. Maria Montero, associate director of clinical training at the Flying Eye Hospital. "And so they can later teach others."

Training eye care professionals is crucial for improving cataract surgery access. "In most African countries, there are one to four ophthalmologists per one million people," reported Dr. Tesfaye Adera, senior global technical lead at Sightsavers. "The service gap is huge, and it's also reflected in other human resources—nurses and mid-level providers."

Orbis's approach also extends beyond ophthalmologists. "We train not only ophthalmologists but also the entire eye care team—anesthesiologists, biomedical engineers, and nurses," said Dr. Montero. "We show them that you have to work together to get the best outcomes for patients."

Build and they will come

In regions like Karamoja, one of the poorest areas in Uganda, establishing eye care facilities has been essential. Sightsavers, in partnership with the Ugandan government, initiated these services from scratch. "We built a regional hospital in Moroto, the capital city of Karamoja, and eye care facilities in all nine districts," said Dr. Adera. "Our hospital in Moroto is now one of Uganda's best centers for cataract surgery."

Distance to medical facilities is a significant barrier. "In most African

countries, eye health institutions are scarce," Dr. Adera noted. The further patients have to travel, the less likely they are to access cataract surgery.

The Fred Hollows Foundation has also been instrumental in improving medical infrastructure. Recognizing the need for an eye health facility in the Solomon Islands, the foundation led the construction of the Regional Eye Centre in 2015. This center has become a hub for outreach programs. In 2023, it provided 9,784 consultations and 822 surgeries, extending essential services to those who would otherwise be out of reach.

Together we go far

The Fred Hollows Foundation is also making significant strides by supporting the Rwandan government to incorporate eye care into the performance based financing (PBF) system for health. This system provides monetary incentives to health workers and their respective health facilities based on performance indicators. "We believe that by working through a PBF model, the foundation has an opportunity to boost cataract surgical output, while also working to strengthen quality, equity, and the health system itself," said Mr. Jon Crail, the foundation's executive director of programs.

Collaboration is key to breaking barriers. By fostering long-standing relationships with ministries of health and local hospitals, these initiatives build strong systems and influence national policies to prioritize eye care.

Orbis's work in India also exemplifies the power of partnerships. For over 40 years, the non-profit has worked with the ministry of health to expand pediatric ophthalmology. The network has grown from one eye care center per 100 million children to 33 centers across 17 states, serving 20 million children.

"Training is a key part of what we do, but partnering with ministries of health, local partners, and other non-profits is also important," noted Dr. Montero. "We work to embed actions to enhance eye care in national health policies and practices, ensuring services are available to those most in need."

Hitting the pavement

In Pakistan, innovative outreach programs are making a significant impact. "Lady Health Workers go door-to-door, bringing eye checks directly to women who cannot leave their homes without a male escort," said Mr. Crail. These workers, trained by the foundation, diagnose conditions like cataracts and refer women and children to local hospitals for further screening and treatment.

Access to cataract surgery is still a major challenge for marginalized groups. "In most African countries, decisions are made by household leaders, often men, meaning women are less prioritized," explained Dr. Adera. Women, responsible for household duties, often cannot take time off for surgery.

Contributors

Mr. Jon Crail is the executive director of programs at The Fred Hollows Foundation. He has worked in public health and development for more than 20 years and has previously held senior positions in international organizations around the world, including global program director at CBM International, program director at Marie Stopes International South Sudan, and regional director for Mexico, Central America and the Caribbean at Amigos de las Américas. He holds a M.Sc. in Health, Community and Development from The London School of Economics and a B.A. in Political Science and Economics.

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Dr. Maria Montero is an ophthalmologist, surgeon, mother, role model, and mentor. She joined the Orbis Flying Eye Hospital team in 2017, serving first as a staff ophthalmologist, then as head of ophthalmology, before being promoted to associate director of clinical training. In her current role, she supports the development of Orbis's clinical training strategy for partners and clinical standards for the Flying Eye Hospital. During live surgical training on the plane, she is the hospital's senior clinician, with responsibility for all decisions regarding patient safety and management of patients' medical records. Prior to joining Orbis, she completed her residency in ophthalmology at the Asociación para Evitar la Ceguera (APEC) in México. Soon after, she started her subspecialty year on the anterior segment of the eye, focusing on the intricacies of cataract surgery, as well as glaucoma. Dr. Montero later served as head of the cataract department and teaching director at a hospital in Mexico City in 2016. Her passion for helping others led to her participation in several campaigns to perform free cataract surgeries for people in places where access to care is limited.

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Dr. Tesfaye Adera is the global technical lead for eye health (for the east, central and southern Africa region) at Sightsavers. He studied ophthalmology at Addis Ababa University and became the first African staff ophthalmologist on the Orbis Flying Eye Hospital. He has since engaged in trachoma mapping, impact assessments, and eye health surveys across Africa. He has been elected three times as president of the Ophthalmological Society of Ethiopia and also as a counsel member of the College of Ophthalmology for East Central and South Africa (COECSA). He is a member of OSE, COECSA, IAPB, and ICO.

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The issue extends beyond gender, as "people with disabilities are often left behind," Dr. Adera noted, highlighting the broader inclusivity barriers in accessing eye care.

To address these challenges, Sightsavers implements comprehensive strategies. "We work with identified groups—organizations of people with disabilities, women's groups, and so forth—to create social behavior change strategy plans," said Dr. Adera. These plans are put into action with like-minded entities, including training community workers in gender mainstreaming and accessibility.

Making an impact

The transformative power of cataract surgery is profound. "I've seen patients who have been blind for 10, 12 years, and on the first day they can see again, the reaction on their faces and the way they express their joy… that's huge," shared Dr. Adera.

The impact of restoring sight extends far beyond the individual. It brings back independence, allowing people to work, get an education, and participate in society, thereby improving their quality of life and lifting them out of poverty. "Cataract treatment on average returns US$20.50 for every dollar spent," Mr. Crail noted, emphasizing the significant economic benefits.

Ophthalmologists and medical professionals play critical roles in improving cataract surgery access. They can provide remote assistance, train local eye health workers, or engage in outreach programs. Orbis's volunteer faculty, for instance, consists of experts who offer training, develop curriculums, and conduct webinars.

To truly address the barriers to cataract surgery access, efforts must focus on empowering local workforces, strengthening local health systems, and delivering sustainable solutions. As Mr. Crail emphasized, "It's about addressing the problem, not just the symptom."

Through these comprehensive strategies and collaborative efforts, we have a fighting chance at ending avoidable blindness and vision impairment worldwide, ensuring no one with cataracts is left behind.

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Pro Tips for Glaucoma Care

At APGC 2024, glaucoma specialists showcase tailored treatments and innovative solutions to tackle the disease

by Diana Truong

One of the highlights at the 7th Congress of the Asia-Pacific Glaucoma Society (APGC 2024) held recently in Manila, Philippines, was a symposium on optimizing medical therapy for glaucoma treatment. Leading experts discussed the importance of personalized approaches, fixed-combination medicines, and innovative drug delivery systems.

During APGC 2024, Manila was abuzz with the latest strategies for refining glaucoma treatment. Specialists shared their expertise on selecting optimal first-line medications, integrating fixed-combination drugs, and addressing adherence challenges with new, preservative-free options. With a focus on reducing side effects and improving adherence, these advancements promise to transform how glaucoma is managed globally.

Choosing the best first-line medicine

Dr. Manchima Makornwattana

from Thammasat University, Thailand, emphasized that the 'best' medication isn't one-size-fits-all but depends on several factors unique to each patient.

So, what makes a drug the best choice? According to Dr. Makornwattana, it boils down to the four Cs: Convenience, comfort, compliance, and cost.

Convenience: The medication should fit seamlessly into a patient's daily routine. A drug that's easy to administer is more likely to be used consistently.

Comfort: Patients need a medication that doesn't cause discomfort or adverse side effects. Eye drops that irritate or cause allergies are a no-go.

Compliance: For treatment to be effective, patients must stick with it. This means choosing a medication that the patient can and will use regularly.

Cost: Finally, the drug must be affordable, ideally covered by insurance. If a patient can't afford their medication, they won't be able to keep up with the treatment.

Dr. Makornwattana shared anecdotes to illustrate her points. One patient, she noted, couldn't use a particular eye drop because it required refrigeration, and he had no fridge at home. Another struggled with small print on medication labels due to poor eyesight—a common issue among glaucoma patients.

She also discussed alternatives like selective laser trabeculoplasty (SLT), which can control eye pressure with fewer side effects and lower long-term costs. "The best medicine for everyone may not be the same," she concluded. "Consider convenience, comfort, compliance, and cost to find the most appropriate treatment for each patient."

When to switch and when to add medications

Dr. Catherine Liu, from the National Yang Ming Chiao Tung University in Taiwan, offered insights on managing primary open-angle glaucoma (POAG) and ocular hypertension.

For many patients, the first line of defense against glaucoma is monotherapy, but it is not always a perfect fit. "There are instances where we have to switch to another medication due to drug intolerance or lack of effectiveness," Dr. Liu explained.

An intriguing study she mentioned involved geriatric patients with glaucoma. After switching from beta-blockers to brimonidine, these patients not only experienced better intraocular pressure (IOP) control but also reported increased energy levels.[1]

Dr. Liu also discussed the advantages of combination therapies, such as combining a prostaglandin analogue with a beta blocker, which can enhance IOP reduction while maintaining ease of use for patients.

> "SLT is a great alternative for patients with POAG or ocular hypertension."
>
> **— Dr. Catherine Liu**

Beyond medications, Dr. Liu urged her colleagues to consider laser and surgical interventions. "SLT is a great alternative for patients with POAG or ocular hypertension," she said. "And don't wait too long to consider surgery. It's important to weigh the risks and benefits and act before it's too late."

The case for preservative-free eye drops

Dr. Anton Hommer from Austria discussed the impact of preservatives in glaucoma medications, particularly benzalkonium chloride (BAK). He explained that while preservatives prevent microbial contamination, they can also cause significant side effects like dry eye, redness, and discomfort.

Dr. Hommer briefly listed preservative-free medications that have been shown to be just as effective in lowering IOP without causing ocular surface disease. He also noted a shift in guidelines towards preservative-free formulations.

According to Dr. Hommer, there has been a notable rise in the prescription of preservative-free medications in Austria and Europe. "By 2023, more than 40% of patients were receiving preservative-free eye drops," he stated, marking a significant jump from previous years.

Dr. Hommer's concluding message was clear and unequivocal: "So, my answer is yes, we need preservative-free eye drops for most patients."

Tackling adherence issues

Dr. Mimiwati Zahari from the University of Malaya in Malaysia addressed medication adherence, a critical issue in glaucoma treatment. She pointed out that glaucoma's asymptomatic nature makes it challenging for patients to recognize the importance of adhering to their treatment.

Dr. Zahari categorized adherence barriers into four groups: Provider-related, patient-related, medication-related, and situational/environmental factors. She emphasized the need for continuous adherence rather than "white coat compliance," where patients only adhere to their regimen before doctor visits.

"Explain what the disease is, why treatment is needed, and how the drugs work," she advised. Simplifying regimens, involving family members, and using reminder systems can improve adherence.

Dr. Zahari also discussed promising developments in non-topical drug delivery systems, such as sustained-release implants like Durysta (Allergan; California, USA) and iDose (Glaukos; California, USA), which could significantly reduce the burden of daily eye drop regimens.

The power of fixed-combination medications

Dr. Widya Artini Ikke Sumantri, from JEC Eye Hospital in Indonesia, then highlighted the benefits of fixed-combination regimens in glaucoma therapy. She explained that many glaucoma patients, especially those with ocular hypertension, often require multiple medications to control IOP.

"It's not unusual for these patients to require multiple medications," she explained. "Fixed-combination treatments simplify this process, making it easier and more convenient"

Fixed combinations improve usability, enhance patient adherence, and reduce adverse events associated with preservatives in individual eye drops. Dr. Sumantri noted that about 80% of patients in one study struggled with complex regimens.[2]

She highlighted that combinations like latanoprost and timolol are more effective and have fewer adverse events compared to individual agents. Dr. Sumantri also discussed newer fixed-combination therapies, such as those involving ROCK inhibitors.

Exploring maximum tolerated medical therapy

Dr. Prin Rojanapongpun of the Eye Care Center at MedPark Hospital in Thailand provided an overview of the evolving maximum tolerated medical therapy (MTMT). He defined MTMT as the pursuit of the best possible therapeutic outcome with fixed combination medications while minimizing adverse effects and addressing patient compliance challenges.

> "Triple fixed combinations outperform their two-drug counterparts in both efficacy and tolerability. This can potentially transform MTMT and help prevent glaucoma progression more effectively."
>
> **— Dr. Prin Rojanapongpun**

"The goal," he said, "is to find the sweet spot where we achieve effective IOP reduction without overwhelming the patient with side effects or a cumbersome medication regimen."

Dr. Rojanapongpun shared results from clinical trials showing the superiority of three-drug combination regimens over two-drug regimens in lowering 24-hour IOP. He emphasized a patient-centered approach and shared a case study where switching to preservative-free formulations improved a patient's comfort and vision.[3,4,5]

"The data is clear," he said. "Triple fixed combinations outperform their two-drug counterparts in both efficacy and tolerability. This can potentially transform MTMT and help prevent glaucoma progression more effectively."

Looking ahead, he discussed emerging trends in MTMT, including quadruple fixed combinations and new drug classes such as ROCK inhibitors, which promise better control of IOP with fewer side effects.

Editor's Note

Reporting for this event took place during the 7th Congress of the Asia-Pacific Glaucoma Society (APGC 2024), held from May 24 to 26, 2024, in Manila, Philippines. A version of this article was first published on cakemagazine.org.

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Welcome to ESCRS 2024!

From exploring Barcelona's sights and flavors to engaging in exciting networking opportunities, this year's Congress promises a comprehensive experience

by Khor Hui-Min

The 42nd European Society of Cataract and Refractive Surgeons Congress (ESCRS 2024), set in the vibrant city of Barcelona, Spain, offers ophthalmology professionals and attendees not just opportunities to connect and collaborate with like-minded colleagues but also to explore and enjoy the city's diverse offerings—from its wonderful food scene to its captivating cultural experiences.

ESCRS is dedicated to advancing excellence in clinical practice, research, and education while also promoting sustainability and social responsibility. This year's congress will build on the environmental initiatives established at previous congresses, and attendees are invited to contribute to making ESCRS a green and inclusive event.

As the cosmopolitan capital of Catalonia, Spain, Barcelona is a city rich in energy, creativity, and cultural heritage. From its stunning architecture and bustling markets to its delicious cuisine and lively art scene, Barcelona offers something for every traveler.

Here are six suggested activities to make your time at ESCRS Barcelona truly exciting and help you maximize both your professional and personal experience in this dynamic city.

1 Participate in networking opportunities

Attendees will have the opportunity to engage with leading industry experts, exchange insights, and explore the latest advancements in cataract and refractive surgery. The conference creates a dynamic environment for dialogue through a variety of formats, including formal sessions, interactive workshops, and informal networking events.

These interactions often lead to valuable collaborations, mentorships, and lasting professional relationships. By promoting such exchanges, the congress not only contributes to individual professional growth but also advances collective progress within the ophthalmic community.

2 Marvel at the city's architectural wonders

No trip to Barcelona is complete without visiting the iconic Basílica i Temple Expiatori de la Sagrada Família, commonly referred to as the Sagrada Família. It is a church under construction located in Barcelona's Eixample district, holding the distinction of being the largest unfinished Catholic church in the world.

Designed by the legendary architect Antoni Gaudí (1852–1926), this basilica is a masterpiece of modernist architecture. In 2005, his work on Sagrada Família was added to an existing (1984) UNESCO World Heritage Site, "Works of Antoni Gaudí." The intricate facades, towering spires, and awe-inspiring interior make it a must-see. To avoid long lines, it's advisable to book your tickets online in advance.

Another Gaudí gem, Park Güell is a whimsical park that showcases

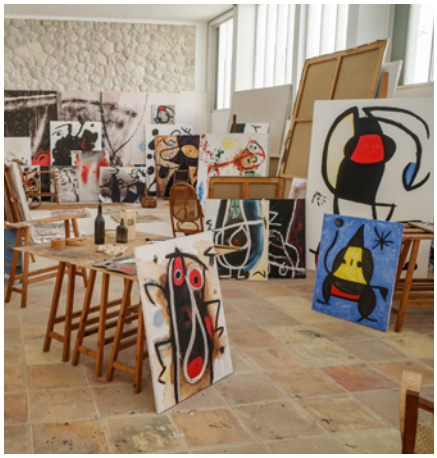
his unique style. With more than 17 hectares, the park is one of the largest green spaces in Barcelona. Güell wanted to recreate the British residential parks, which is why he named it Park Güell, in English.

Located on the bustling Passeig de Gràcia, Casa Batlló and Casa Milà are two more of Gaudí's architectural marvels. Casa Batlló's facade is adorned with vibrant colors and organic shapes, and is considered one of his masterpieces. Meanwhile, Casa Milà, widely known as La Pedrera (the quarry), due to its unique rough-hewn appearance, is a Modernista structure that boasts a rooftop terrace with surreal sculptures. It was the final private residence designed by Gaudí, constructed between 1906 and 1912. Both buildings offer guided tours that explore the famous architect's visionary designs.

3 Immerse yourself in local culture

La Rambla, stretching from Plaça de Catalunya to the waterfront, is perhaps the city's most famous street. This lively boulevard is lined with shops, cafes, street performers, and flower stalls. Take a leisurely stroll, soak in the atmosphere, and don't miss the Mercat de Sant Josep de la Boqueria, a bustling market offering a feast for the senses.

Step back in time as you wander through the narrow, winding streets of the Gothic Quarter. This historic neighborhood is home to medieval buildings, charming squares, and hidden courtyards. Visit the Barcelona Cathedral, a stunning example of Gothic architecture, and explore the Plaça Reial, a picturesque square lined with palm trees and vibrant nightlife.



El Raval is a neighborhood known for its eclectic vibe and diverse culture. It is home to the Museu d'Art Contemporani de Barcelona (MACBA), which showcases contemporary art, and the vibrant street art that adorns its walls. Explore the quirky shops, trendy cafes, and multicultural eateries that make this area so unique.

4 Savor the flavors of Catalan cuisine

Barcelona is a haven for food lovers, and trying tapas is a must. These small, flavorful dishes are perfect for sharing and allow you to sample a variety of flavors. Head to a local tapas bar and indulge in classics like patatas bravas, gambas al ajillo (garlic shrimp), and jamón ibérico. For a unique twist, try pintxos, bite-sized snacks typically served on skewers.

Catalonia's coastal location means that seafood is a highlight of its cuisine. Savor a traditional paella, a rice dish cooked with saffron, vegetables, and a medley of seafood such as prawns, mussels, and clams. For an authentic experience, visit a seaside restaurant in the Barceloneta neighborhood.

Indulge your sweet tooth with churros, a deep-fried dough pastry dusted with sugar, and served with a cup of rich hot chocolate for dipping. Head to one of Barcelona's historic churrerías, like Granja Dulcinea or Xurreria Banys Nous, for a delicious treat.

5 Discover the city's art scene

Art enthusiasts will appreciate the Museu Picasso, which houses one of the most extensive collections of 20th-century Spanish artist Pablo Picasso's work, with a total of 4,251 pieces. Located in the El Born neighborhood, the museum is set across several adjoining medieval palaces. It offers a fascinating insight into the artist's early years and his connection to Barcelona.

Dedicated to the work of the surrealist artist Joan Miró, the Fundació Joan Miró museum is situated on Montjuïc Hill and offers stunning views of the city. The collection includes paintings, sculptures, and drawings that reflect Miró's distinctive style and creative evolution.

For a taste of Barcelona's performing arts, catch a show at the Gran Teatre del Liceu, one of the city's most prestigious opera houses. As the oldest functioning theater in Barcelona, it hosts a variety of performances, from opera and ballet to classical concerts, in a grand and historic setting.

6 Enjoy nature and the outdoors

Barcelona boasts several beautiful beaches, perfect for relaxing and soaking up the Mediterranean sun. Barceloneta Beach is the most famous and offers a lively atmosphere with beach bars and restaurants. For a quieter experience, head to Bogatell Beach or Mar Bella Beach.

Montjuïc Hill is a green oasis that offers a mix of cultural attractions and outdoor activities. Take a cable car ride to the top for panoramic views of the city and explore Montjuïc Castle, a historic fortress. The hill is also home to the Magic Fountain, which hosts nightly light and music shows, and the Poble Espanyol, an open-air museum showcasing Spanish architecture and crafts.

Located near the city center, Parc de la Ciutadella is a sprawling park that features a lake, fountains, and beautiful gardens. Rent a rowboat, visit Barcelona Zoo, or simply relax and enjoy a picnic in this urban oasis.

Indeed, from its stunning architecture and bustling markets to its delicious cuisine, Barcelona offers something for everyone—with numerous opportunities for first-time visitors and returning attendees alike to enhance their experience.

Editor's Note

For more information on ESCRS 2024, visit https://congress.escrs.org/ A version of this article was first published on cakemagazine.org.

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