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#76

the Ophthalmologist®

Eye on the Horizon

Looking to the near future of ophthalmological advances

08

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NORTH AMERICA

the Ophthalmologist
POWER List

NOMINATIONS FOR 2025
Are Now Open!

Back for its 12th year, the Power List celebrates global ophthalmology's most impactful visionaries and leaders. Is there a mentor that the next generation couldn't do without? A surgeon who leads from the front line? Or a researcher who has achieved incredible things, overcoming all obstacles? Now is your chance to put them on a pedestal. Just head to our website, add your nominee's details to the form, and let us know why you feel they should have their place on the Power List 2025.

Nominations Close
JANUARY 31, 2025

the Ophthalmologist
POWER List

Congratulations on making the 2024 Power List

CHELVIN SNG

Healing Power

Nominations for the 2025 Ophthalmologist Power List are now open

Our celebrated Power List will be returning next year for its 12th iteration, once again celebrating the top minds and personalities in ophthalmology. And once again we are asking you – the eye care community – to nominate those candidates you think are the most inspirational and influential leaders in the field.

2025 will see us changing things a little with the introduction of five distinct Power List categories. It's a chance to showcase the leading lights in a particular subspecialty or discipline, and open up the roll-call to names both new and well-known – researchers and practitioners, veterans and innovators.

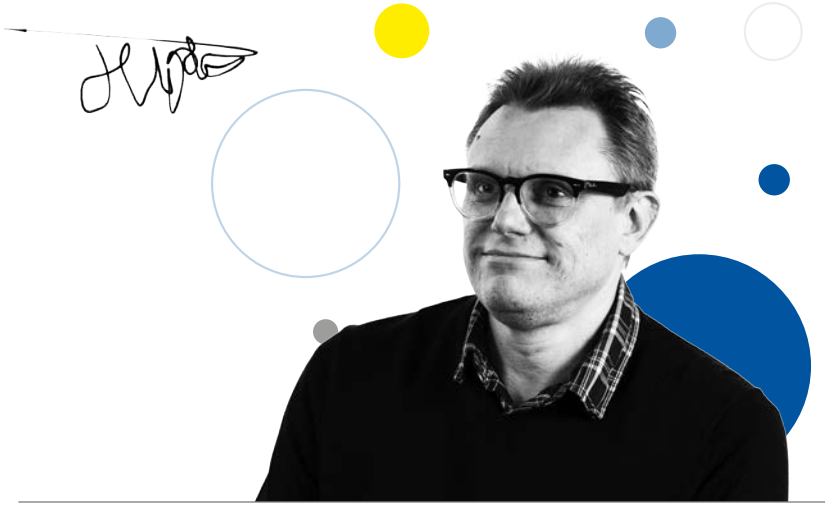
The categories are:

1. **Cataract and Refractive** – Who is the most influential in the field of intraocular lens implantation and refractive surgery?
2. **Retina** – Who is setting and maintaining the highest standards of excellence in retina?
3. **Glaucoma** – Who is leading the global glaucoma treatment space?
4. **Innovation** – Who are the inventors and architects of technological change?
5. **Research** – Who is playing a critical role in advancing our understanding of eye diseases?

Do you have a strong feeling about who is driving us forward in one or more of these areas? Now is your chance to put them on a pedestal…

Nominations will close on January 31, 2025 See further information at: top.txp.to/power/list/25/nominate

Julian Upton,
Group Editor



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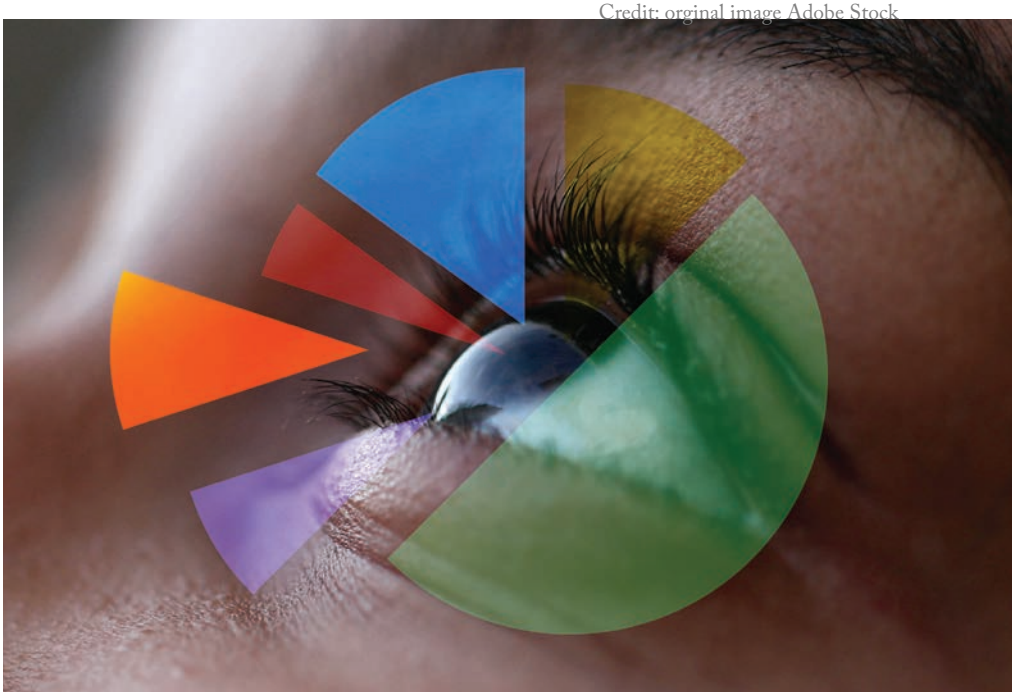
Redressing Representation

New JAMA Ophthalmology study highlights under-representation of racial and ethnic minorities in pediatric clinical trials

Credit: orginal image Adobe Stock



The under-representation of racial and ethnic minorities in clinical studies has been well-documented in existing literature; as recently as 2022, a report funded by the National Institutes of Health highlighted the continued lack of representation of these groups, existing "across numerous fields of medical research," including cardiovascular, oncology, surgical trials, and ophthalmology (1).

The same issue affects pediatric ophthalmology, with a new JAMA Ophthalmology paper, "Race, Ethnicity, and Sex in Pediatric Eye Disease Investigator Group Clinical Studies," revealing "a long-standing under-representation of Black, Asian, and Hispanic patients in PEDIG [Pediatric Eye Disease Investigator Group] studies," says author Muhammad Z. Chauhan.

Chauhan and his team conducted a cross-section study of 41 completed PEDIG clinical trials involving 11,658 participants between 1997 to 2022. The researchers were primarily concerned with looking at how these trials reflected racial, ethnic, and gender representation in pediatric ophthalmology, and whether the trial participants accurately reflected the US pediatric population as reported in the 2010 US Census.

Using a 1-sample Wilcoxon rank test to compare results, the authors revealed that white participants were significantly over-represented in these clinical studies, whereas their Black, Hispanic, and Asian counterparts were underrepresented.

Specifically, the enrollment-census difference (ECD) – "defined as the difference between groups' median enrollment percentage and percentage representation in the 2010 US Census" (2) – showed a 19 percentage over-representation of white participants, with Hispanic, Black, and Asian participants being underrepresented by 9 percent, 7 percent, and 3 percent respectively.

Given these results, the study recommends implementing changes in trial recruitment practices (e.g., "identifying and improving existing biases in recruiting" and incorporating enrollment limits based on disease prevalence).

Meanwhile, several interventions in PEDIG have already been implemented to better engage under-represented pediatric populations, notes co-author Abdelrahman M. Elhusseiny. "These include expanding access to enrollment materials in languages other than English, partnering with trusted healthcare providers who are well-established within communities and can advocate for PEDIG, and the creation of a dedicated committee to actively promote equity, diversity, and inclusion in study enrollment." These initiatives have already begun to yield measurable improvements, notes Chauhan. "Notably, within just a short span of two years, we saw a marked increase in Hispanic patient enrollment, highlighting the positive impact of these efforts."

The researchers believe there is still much work to be done within the space, however. "Advocating for expanded ophthalmology services in rural and socioeconomically underserved regions is essential," adds co-author Qais A. Dihan. In addition, Dihan says that the socioeconomic barriers preventing families from participating in these clinical trials – such as transportation and flexibility of scheduling – also need to be addressed if we are to "resolve underlying issues that contribute to, and perpetuate, a cycle of inequitable care in underserved regions."

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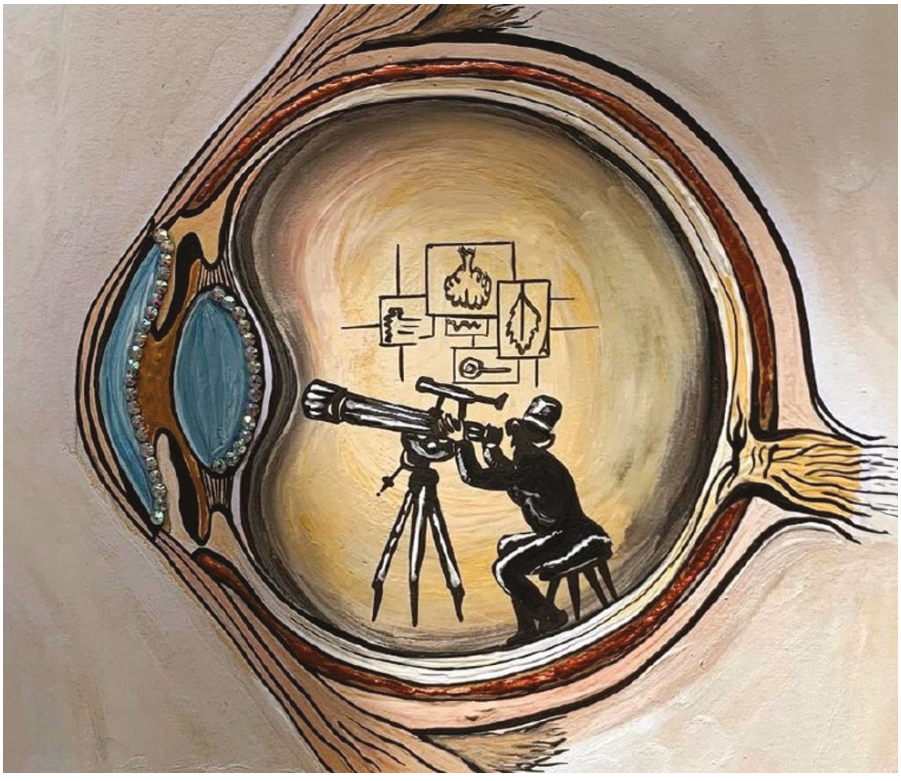


Through the Lens

Acrylic on canvas painting by Donjeta Decani, an ophthalmology resident at the University Clinical Center, Pristina, Kosovo.

Credit: Donjeta Decani https://www.instagram.com/donjetadecaniartist/

QUOTE *of the month*

"On the track, my blurred vision made it difficult to accurately judge the distance between hurdles. To compensate for this impairment, I developed a rhythmic approach, counting my steps to maintain pace and calculate when to leave the ground before each hurdle."

Gail Devers, nine-time World Champion and three-time Olympic gold medalist in track and field, discussing the impact thyroid eye disease (TED) had on her athletics career (See page 6).

A New Vision for Alzheimer's Detection

Examining the future role of retinal imaging in diagnosing and monitoring Alzheimer's disease

A recent study has looked into the emerging role of the retina as a diagnostic tool for Alzheimer's disease (AD) (1), exploring how the retina mirrors some pathological hallmarks of the disease, including amyloid β-protein (Aβ) deposits, tau protein abnormalities, and neurodegeneration. Additionally, the study underscores the presence of inflammation and glial activation, emphasizing the retina's vulnerability to AD's neurodegenerative processes.

Advanced imaging techniques – such as OCT-angiography and hyperspectral imaging – are capable of detecting AD-specific retinal changes in vivo. In the future these technologies may become vital in clinical assessments, offering a non-invasive and cost-effective approach to early screening for AD. With more research, the authors are hopeful that standardized retinal imaging could revolutionize how the disease is diagnosed, making it possible to intervene earlier in the disease.

See references online at: top.txp.to/vision/for/alzheimers/detection

Living with TED: My Race from Patient to Advocate

How thyroid eye disease (TED) put my life and olympic career on hold

By Gail Devers

As the reigning American record holder in the 100-meter hurdles, going into the 1988 Olympics I should have been poised for success on the world stage. But instead of winning gold, I ran slower than I ever had before, and I could never expect what more was to come.

In the lead up to the Olympics and the months afterward, my health began deteriorating, which eventually forced me to abandon training and put my dreams on hold. I was experiencing weight loss, hair loss, fatigue, and various other symptoms, yet my doctors had no answers for me. At home, I started covering up all my mirrors in the house, because the reflection looking back at me was not me.

I stopped doing the things I loved, felt less independent, and withdrew from social life. I stopped going out of my house. All of this took a serious toll on my mental health.

During this time, I also began experiencing issues with my eyes – pain, redness and eye bulging – but again, it seemed no one could give me an answer.

As an athlete, I know my body, and I knew that something was seriously wrong. These issues began a more than two-year quest to find some answers. After a continuous battle to find out exactly what was wrong with me, I was eventually diagnosed with Graves' disease, an autoimmune condition that causes overactive thyroid, also known as hyperthyroidism.

Receiving this diagnosis came as an utter relief, because at least now I understood what I was up against and could start taking steps to manage the disease.

But my story doesn't end there – despite managing my Graves' disease, I was still experiencing significant eye problems.

My eyes were constantly irritated, painful, and bulging outward, making it difficult to close them completely, even when I was sleeping. The glare from oncoming headlights made nighttime driving a challenge for years. On the track, my blurred vision made it difficult to accurately judge the distance between hurdles. To compensate for this impairment, I developed a rhythmic approach to the hurdles, counting my steps to maintain pace and calculate when to leave the ground before each hurdle.

It took 30 years for me and my doctors to understand that my eye problems were a separate – but related – condition called thyroid eye disease (TED).

TED is a debilitating and progressive autoimmune disorder where the immune system mistakenly attacks the muscle and fat tissue behind the eyes. Around 40 percent of Graves' disease patients go on to develop TED, but the condition requires a different treatment regime.

While I wish I had all these answers 30 years ago, I'm glad I finally have them now. My best advice to those living with thyroid conditions like Graves' disease is to speak up and advocate for yourself. You should feel confident discussing any changes in your eyes or vision with your doctor, and be sure to stress the impact those symptoms may be having on your daily life.

As for my advice to doctors: you need to ensure that you are proactively discussing the risk of TED with your Graves' patients, and referring those patients to a specialist if it's needed. TED is progressive, meaning that it often gets worse with time, so early intervention is key when it comes to managing the disease.

Through my journey with TED, I've become passionate about raising awareness and advocating for improved care. By sharing my story, I hope to empower others to seek help and find their voice so they can self-advocate for better health outcomes and continue reaching for the stars and pursuing their dreams, whether that be olympic gold or, simply, a better quality of life when living with a visual impairment.

Gail Devers is a five-time Olympian, nine-time World Champion and three-time Olympic gold medalist in track and field who was one of the fastest women alive for almost two decades. Amid this unprecedented feat, Gail has also been living with Graves' disease and Thyroid Eye Disease (TED) for more than 30 years. Today, Gail enjoys volunteering and giving back to the community through organizations that include The Boys and Girls Clubs of America and the Atlanta Track Club.

The 10 Commandments of Advertising for Vision Correction Clinics

Rules to help you create campaigns that drive results and grow your practice

By Rod Solar is Director of Practice Development at LiveseySolar, London, UK and a Scalable Business Advisor

In 20 years, I've learned what works in advertising for vision correction clinics. My team and I have spent over $10,000,000 across my clients' accounts, testing countless tactics. We've seen the good, the bad, and the ugly, and now I want to share the key lessons we've learned. If you're starting or scaling, these 10 advertising rules will help guide you in creating campaigns that drive results and grow your practice.

1. Thou shalt say what only you can say

Your practice's story is unique. For example, "We've helped 10,000 people reach 20/20 vision without glasses and contact lenses." Mine: "Our average client's practice grew by 213 percent within three years." This is your proof of expertise. No one can copy it.

2. Thou shalt evoke emotions

Stock photos and formal, technical writing kills emotion. Show actual patients, real results, and the human side of your clinic. Highlight their journey from fear to freedom. Your advertising needs to make people feel, not just see.

3. Thou shalt collect testimonials

Every time a patient says something positive, make it a testimonial – video if possible. User-generated content (UGC) builds trust. Patients are more likely to connect with a real person's story than a polished advertisement.

4. Thou shalt focus on one message per ad

Clarity beats cleverness. Choose one messaging bucket per ad: proof, dream transformation, results, or a direct pitch. Each ad should focus on a single idea. Trying to do too much confuses your audience.

5. Thou shalt always have a reason why

Every offer should explain its reason. "We're offering free consultations to make vision correction more accessible." The "why" humanizes your business and adds credibility to the offer.

6. Thou shalt own your flaws

Admit a minor flaw, then pivot to something better. For example, say, "We're not the cheapest, but we deliver results that last a lifetime." This builds trust by showing honesty.

7. Thou shalt spend 80 percent of your time on your headline and hook

The headline and first line of your ad need to hook your audience. Use the Value Equation: create irresistible value in the first few seconds. For example,"Get clear vision in under 20 minutes – with zero downtime."

8. Thou shalt have an irresistible offer

Your offer should make it impossible to say no. Guarantee results or a risk-free trial: "Book a consultation. If we can't help, we'll refund you."

9. Thou shalt write at a third-grade reading level

Simplicity wins. Your prospects don't want to think; they want answers. Write as you speak. Use short sentences and simple words. Tools like Hemingway can help you keep it simple.

10. Thou shalt have congruence through the entire funnel

From the ad to the landing page, to the consultation, everything should match. If your messaging shifts halfway, you lose trust. Keep the tone, offer, and experience consistent from start to finish.

The free LiveseySolar practice marketing assessment is available at: top.txp.to/vision/correction/clinics

Looking Ahead: Ophthalmology of the Near Future

Our annual exploration of some of the cutting-edge technologies and therapies destined to shapethe future of the ophthalmic space

By Alun Evans

Artificial intelligence, machine learning, personalized healthcare, targeted therapeutics – these are among the advances we've been hearing about for many years, if not decades. But there comes a point where what started out as a vision, a concept, or a prediction, starts to "come true." That is, it evolves into an affordable and manageable practicality. And when this occurs, we finally see this idea being adopted not just by pioneers, but emerging as a tool or procedure for everyday use.

Similarly, robotic-assisted surgery, smart contact lenses, and gene therapy are all terms we've long been aware of. But as we outline here, these technologies and advances could soon be crossing the Rubicon, and moving from an eye care professional's "wish list" to part of their daily reality.

"The types of robot-assisted surgery systems currently available can offer precision beyond the capabilities of human hands, no matter how experienced the surgeon."

ROBOTIC-ASSISTED SURGERY

Robotic-assisted surgery can present an array of benefits for a number of procedures in the operating room. The types of systems currently available can offer greater precision beyond the capabilities of human hands, no matter how experienced the surgeon. In turn, this greater precision for complex maneuvers results in less invasive operations, causing less trauma for the patient and, generally speaking, better outcomes all round.

Recognized as one of the mainstays of robot-assisted surgery, the da Vinci System (1) – developed by American biotech firm, Intuitive Surgery, for use in general surgery and other medical fields, such as cardiology, gynecology, and prostate removals, uses three or four robotic arms controlled from a central console by the surgeon. The system can perform a variety of tasks, such as holding objects and controlling 3D cameras, as well as imitating surgical instruments like Bovies and scalpels. However, while the current iteration of the system, the da Vinci Xi, has become the most commonly used robotic surgery system in the world, the system itself has never been marketed as a device to be used specifically for ophthalmology. Criticisms of the da Vinci also include its difficulty to learn how to operate, its use of proprietary software which can't be modified by physicians, and its hefty $2 million price tag, which puts it out of reach of many public institutions.

Considering these factors, a team at the Laboratory for Computational Sensing and Robotics (LCSR) at John Hopkins University have developed an ophthalmic-centric robotic device, the Steady-Hand Eye Robot.

Now in its third iteration (2), the SHER 3.0's main function is assisting ophthalmologists in vitreoretinal surgery, more specifically in delivering subretinal injections.

The SHER 3.0 "eliminates the physiological hand tremor (around 180 um)" of physicians, says Iulian Iordachita, director of the Advanced Medical Instrumentation and Robotics (AMIRo) Research Lab at John Hopkins, so as to "provide the necessary positioning accuracy at the tooltip, and keep the needle tip steady inside the tissue during the cargo delivery." Compared to previous iterations, explains Iordachita, the "3.0 has better ergonomics, is more responsive to control commands, and, more generally, is closer to a clinical grade device."

Similar to other robotic systems aimed specifically at retinal surgery, the SHER 3.0 can also assist with retinal vein cannulation. And in terms of the training required for surgeons to use such a device in clinical practice, Iordachita says that, "as a cooperative controlled robot, SHER 3.0 is a very intuitive device to work with. In our preliminary tests, a beginner could reach the learning curve plateau after 25-30 trials."

However, Iordachita and his team believe that the current generation is not quite ready for FDA preapprovals. "It may take at least another iteration to fulfill the requirements," he says. "Generally, we know what must be done to move forward, but as an academic research lab we can't support this effort. We need to work with a company to go through the whole process. With the proper budget (and expertise) it should be possible to get it approved for the market in 2-3 years."

In order for robotic-assisted surgery to become an established cornerstone of ophthalmology, as with any other medical technology practitioners need to first embrace these devices in order to render them more widely available. If it is adopted by ophthalmologists, then this technology – further supported by artificial intelligence and the potential for surgeons to perform operations remotely – could help to provide urgent medical services to those patients most in need, as well as mitigating the risks associated with manual surgery.

SMART CONTACT LENSES

The evolution of smart contact lenses (SCLs) and their potential uses are being accelerated by a number of major players in the industry, including quite a few names not usually linked to ophthalmology: Google, Samsung, Sony, etc. These household names are currently experimenting with everything from augmented reality (AR) and virtual reality (VR) add-ons, to how the next generation of SCLs might be able to record visual data.

There are also a number of more immediately recognizable companies in the ophthalmic space – Alcon, RaayonNova, Sensimed, Medella Health, and Innovega – who are investing in research and development in the SCL arena. Unsurprisingly, these companies are less interested in the media and entertainment prospects of SCLs, and focused more specifically on the healthcare potentials of the technology. Monitoring of intraocular (IOL) pressure and glucose levels, automated drug elution, diabetic retinopathy (DR) treatments, and eye tracking using electrooculography (in order to aid vision therapy) have all been proposed as research candidates for future SCL inclusion.

While Alcon's initial foray into the SCL world – a collaboration with Google and its Verily Life Sciences division on a glucose-monitoring lens project – was put on indefinite hold in 2018, the Swiss-American medical device company remains involved in projects investigating how smart intraocular lenses might be used in cataract surgery and vision correction. RaayonNova successfully submitted a patent for their SCL featuring an AR/VR smart lens with peripheral and focused vision in May 2022.

Meanwhile, another Swiss medical technology company, Sensimed, has concentrated its focus on glaucoma management. Its flagship product, the Sensimed Triggerfish, a silicone-based soft contact lens, can be used to monitor IOL fluctuations in glaucoma patients over a 24-hour period. Approved by the FDA back in March 2016, the device provides insights into ocular

volume changes throughout the day and night, helping guide glaucoma treatments for the physician.

Providing an alternative to the finger-prick tests associated with glucose monitoring, Medella Health is continuing work on SCLs that include embedded biosensors that can monitor glucose levels in tear fluid. According to Medella Health, the lenses will be able to transmit near-real-time data to an external mobile device.

In terms of drug delivery potential for SLCs, in 2022 the FDA passed phase III trials for Johnson & Johnson Vision Care's Acuvue Theravision, a daily disposable etafilcon contact lens infused with ketotifen. The product was made available in Canada, but Johnson & Johnson have ultimately decided to discontinue the lens from December 28, 2024. Meanwhile, Innovega's iOptik system combines SLCs with a pair of specialized glasses to create a wide field of view for AR/VR experiences. The soft disposable lenses – when paired with the specialized glasses – allow wearers to experience digital content projected "directly on the retina."

There are a number of barriers routinely cited in bringing SLCs to market: biocompatibility, regulatory approval, and cost-effectiveness. Notably, Mojo Vision's research into an immersive AR prototype contact lens (the Mojo Lens) was canceled at the beginning of 2023 due to lack of funding, with CEO Drew Parkins citing "extremely tight capital markets" and a "slumping global economy" as reasons for the discontinuation (3).

The research into SLCs continues to evolve, bringing more capabilities and potential to this form of wearable technology. And while several SLCs are already commercially available, such as the Sensimed Triggerfish (currently in use in some UK hospitals as part of their research studies), it remains to be seen how widespread the adoption will be of such technology. It's also not yet evident whether any of the additions to existing SLC technology – as novel and exciting as they may sound in print – will endure through the initial novelty phase, presenting them as long-term, viable alternatives to smart glasses in the healthcare and entertainment sectors.

GENE THERAPY

Gene therapy represents a unique method for how ophthalmologists might treat – as well as prevent – inherited retinal diseases (IRDs) and other vision disorders such as glaucoma and corneal neovascularization. But as the literature attests, currently the retina is where gene therapies might prove most beneficial. Indeed, as Selina Drag et al. note in their 2023 IOVS study, the light-sensitive layer of tissue "holds the distinction as the first tissue targeted by an approved gene therapy for inherited disorders in the United States" (4).

"The first ophthalmic gene therapy was approved by the FDA in 2017," Vice President of Emerging Therapies at Cardinal Health, Fran Gregory, told The Ophthalmologist. Gregory was referring to the approval of Luxturna (voretigene neparvovec-rzyl), a therapy used to treat retinal dystrophy.

Since the 2017 FDA approval of Luxturna, various companies have sought to make further headway into the ophthalmic gene therapy space. These include innovative candidates such as GenSight Biologics' light-stimulating goggles (GS030-MD), which, when combined with its AAV2-based gene therapy (GS030-DP), aim at enhancing visual restoration in end-stage retinitis pigmentosa (RP) patients. Then there is Adverum's clinical-stage gene therapy, Ixoberogene soroparvovec (Ixo-vec, formerly referred to as ADVM-022), which is currently in phase II trials for wet age-related macular degeneration (AMD).

SparingVision – a biotechnology company based in Paris – is working on SPVN06, a gene therapy treatment with mid-stage RP as its primary disease target. The FDA cleared SPVN06's Investigational New Drug application (IND) in December 2022.

SparingVision has stated its gene therapy candidate could potentially address over 80 genetic mutations of RP; the company also announced its intentions to extend trials of SPVN06 to geographic atrophy (GA) (5). "PRODYGY is the phase I/II clinical trial of SPVN06 in patients with moderate-to-severe RP," says

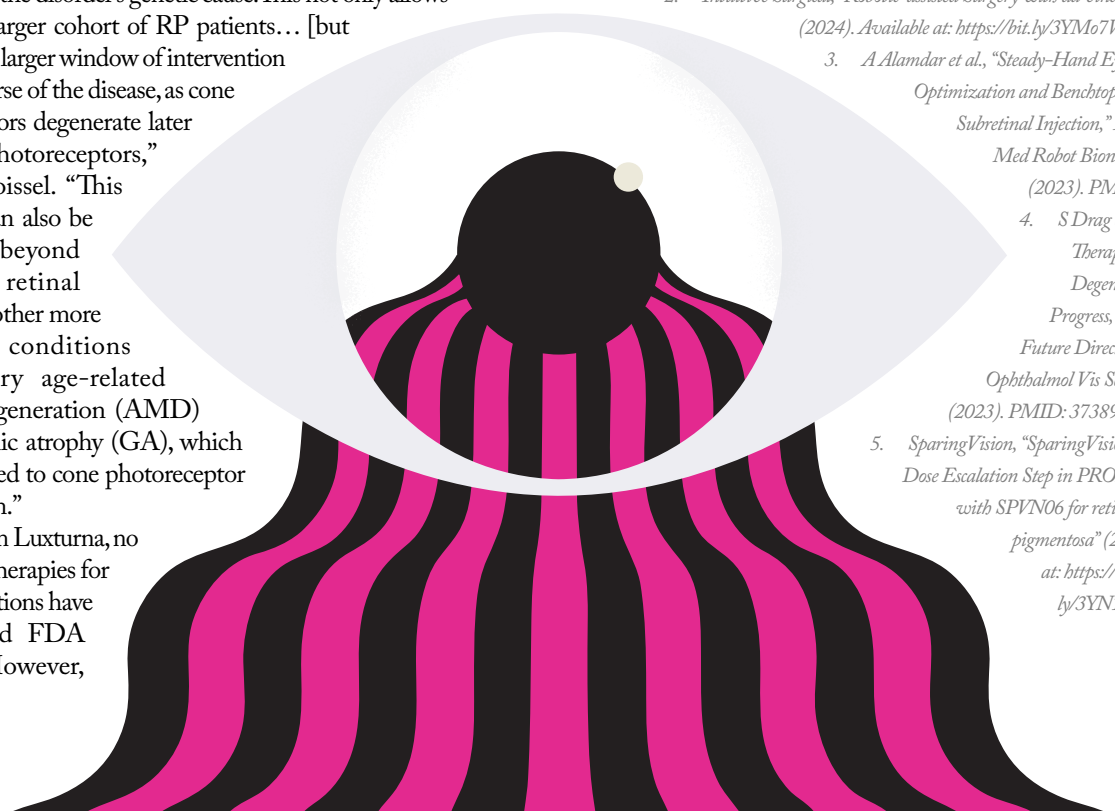
"The approval of the RPE65 gene mutation treatment has led to an increase in clinical trials exploring gene therapy treatments for both inherited and non-hereditary retinal diseases..."

Stéphane Boissel, President and CEO of SparingVision. "The trial has since completed step one of patient recruitment. We are now preparing transition to the controlled, randomized extension phase of the trial aimed to take place in Q4 2024."

"SPVN06 aims to slow or stop cone photoreceptor degeneration, regardless of the disorder's genetic cause. This not only allows reaching a larger cohort of RP patients… [but also] offers a larger window of intervention over the course of the disease, as cone photoreceptors degenerate later than rod photoreceptors," explains Boissel. "This approach can also be expanded beyond inherited retinal diseases, to other more prevalent conditions such as dry age-related macular degeneration (AMD) or geographic atrophy (GA), which are also linked to cone photoreceptor degeneration."

Aside from Luxturna, no other gene therapies for ocular conditions have yet received FDA backing. However, the 2017 approval of the RPE65 gene mutation treatment has motivated other companies, leading to an increase over the last few years in clinical trials exploring gene therapy treatments for both inherited retinal diseases and non-hereditary ocular conditions. As Fran Gregory noted at the beginning of 2024, "With at least 25 treatments in phase I-III clinical trials, the advanced medicine pipeline is full of potential treatments for ocular conditions. The excitement for gene therapy is palpable, and for patients with genetic or inherited ocular conditions who have never before had treatment options, the future is promising."

"The ocular field has seen incredible progress with genomic medicines in recent years, notably with the approval of Luxturna, but single-gene correction or single technology approaches are not enough," Boissel adds. "We firmly believe that to transform the treatment of retinal disease, you need a multi-technology approach. At SparingVision, we are pioneering the treatment of blinding retinal diseases through a suite of gene-agnostic gene therapies, as well CRISPR-based products, with a view to providing treatment to large patient populations."



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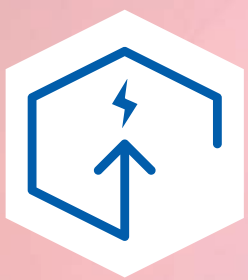


the Ophthalmologist

The INNOVATORS

Powering a New Era of Practice

Ophthalmology is in constant evolution; here, we present some of the newest innovations, pioneering therapeutics, and cutting-edge technology shaping the future of the field

Cosmetics That Care for Eyes

Introducing Èyes Are The Story – the world's first line of optocosmetics

In the realm of eye health, true innovation lies in preventive care.

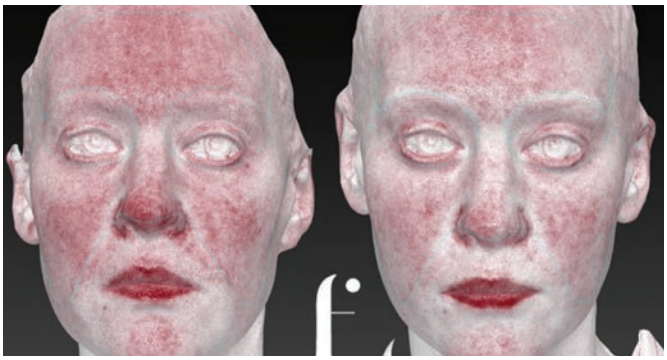
Topical skincare products can contribute to ocular surface disease, and with the majority of individuals using facial skincare and cosmetics regularly, understanding this link is essential. Over 90 percent of women under 55 use cosmetics, and more than 50 percent of girls as young as 12 use mascara that can damage the ocular surface. In addition, the male grooming market is expanding rapidly. Many patients apply cosmetics and skincare products around their eyes on a daily basis, not just makeup! But such products remain largely unregulated, containing ingredients that can disrupt the delicate periocular and skin microbiome.

A recent TFOS Lifestyle report, "Impact of cosmetics on the ocular surface," highlights a critical link between lifestyle choices – including cosmetics use and clinical treatments – and ocular health, showing that certain ingredients and procedures can be harmful to the eyes (1). Such ingredients are toxic to meibomian gland epithelial, corneal, and conjunctival cells, even at concentrations thousands of times lower than cosmetic regulations permit, exacerbating dry eye symptoms and ocular surface disease. Moreover, infections and disruptions to the skin, nasal, and gut microbiomes can trigger inflammation, contributing to autoimmune dry eye disease.

Eye-safe skin care

Èyes Are The Story from ÈSSIRI Labs is a range of cosmetics and skincare products that is clinically proven to be safe for sensitive eyes and skin and could help prevent lifestyle related dry eye. The first optocosmetics brand to leverage ocular surface science, ÈYES is developed with eye-safe ingredients, removing harmful chemicals commonly found in conventional cosmetics and skincare products. ÈYES products are formulated without ingredients such as formaldehyde, parabens, and retinols, which can disrupt the periocular microbiome and damage eye cells.

When integrated into eye care protocols and mainstream cosmetic routines, ÈYES products have the potential to reduce the burden of dry eye disease through preventive care, allowing patients to actively support and maintain their eye health between visits to their eye care practitioner (ECP). The range caters to informed consumers seeking safe beauty options that



Patient VISIA skin analysis (courtesy of Dr. R Murthy). Images show cutaneous and subcutaneous redness indicating rosacea. Left: Before ÈYES topical skin and eye care. Right: One month after ÈYES topical skin and eye care.
NB. The patient has consented for publication of her photographs on VISIA. (VISIA, Canfield Scientific, Inc., New Jersey USA.)

avoid eye-related issues while enhancing aesthetics. It also offers ECPs a tool to extend clinical care at-home, promoting a healthier periocular microbiome and reducing eye sensitivity. Just as daily teeth-brushing maintains oral hygiene, ÈYES supports daily periocular hygiene to protect, preserve, and optimize the ocular surface.

ÈYES can enhance the effectiveness of in-clinic treatments and even surgical outcomes. Dr. Rachna Murthy,* a consultant ophthalmic, aesthetic, oculoplastic, and reconstructive surgeon at FaceRestoration London, previously Cambridge University Hospital & East Suffolk NHS Trust, notes that her patients "expect optimal surgical outcomes, minimal downtime, and a quick return to their routines, even attending black-tie events shortly after blepharoplasty." Dr. Murthy's practice however was an early adopter of Èyes Are The Story – and with these products, she says, she is able to "have patients ready for public appearances within days, and I've seen dramatic improvements in rosacea and sensitive eye conditions even before beginning other treatments."

Setting a new standard

Securing EU approval is a significant challenge for US-made brands, given the stark contrast in regulations – only 11 chemicals are banned in the US, while over 1,300 are restricted in the EU. Èyes Are The Story, however, is currently approved in more than 30 countries, and selling in the US, Canada, France, Ireland, Spain, Portugal, United Kingdom, Australia, and New Zealand. The range's formulations are grounded in peer-reviewed, science-based research, with clinical trials underscoring ÈSSIRI Labs' commitment to advancing beauty products that prioritize eye health and set a new standard for responsible, science-driven cosmetics.

In an age that values longevity and wellness, Èyes Are The Story establishes a new benchmark for safety in beauty, leading a movement that aligns with the priorities of a health-conscious, globally minded, and aesthetically discerning audience.

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For more details, please contact info@essirilabs.com or visit eyesarethestory.com

Superior Stability: The MORCHER® Zdral Type 20 CTR

New CTR ensures optimal outcomes for cataract patients receiving toric IOLs

Capsular tension rings (CTRs) are indicated to stabilize weakened, broken, or missing zonules, preventing IOL decentration after capsular shrinkage. Composed of clear polymethylmethacrylate (PMMA), a material known for its durability and biocompatibility, CTRs are open-ring devices with blunt tipped eyelets at either end.

CTRs are designed to be implanted into the capsular bag and left permanently in place. They work by imparting a radial expansile force to the equator of the capsular bag. This force is equalized throughout the entire zonula-capsule apparatus, thereby transferring the tension from intact and normal zonules to those areas of zonular weakness or absence.

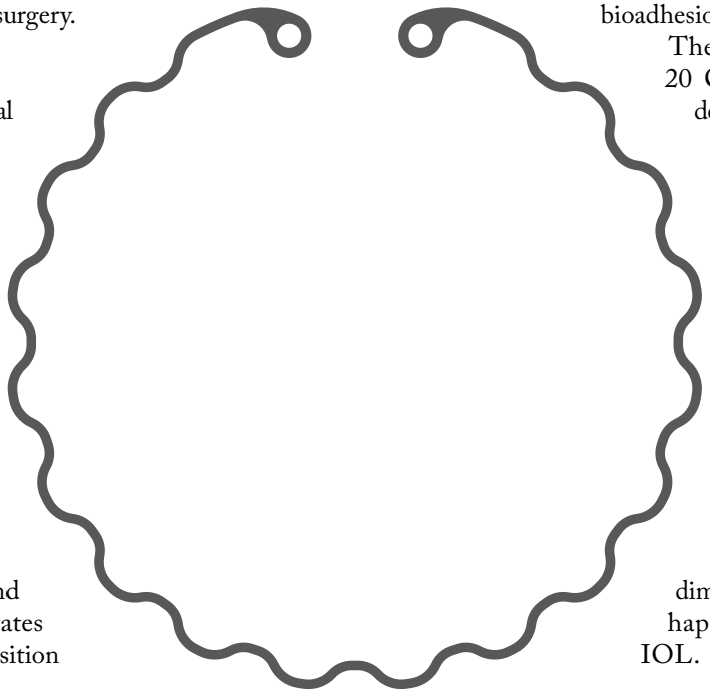
By increasing overall bag stability, the risk of intraoperative complications is reduced. In addition, the tension imparted to the entire bag with a CTR decreases postoperative capsular contraction (phimosis) and improves IOL centration. CTRs have no effect on the refractive results of cataract surgery.

"The MORCHER® Zdral Type 20 CTR is an innovative solution designed to enhance the rotational stability of TIOLs during and after cataract surgery to ensure optimal outcomes for cataract patients. The TYPE 20 CTR offers a unique sinusoidal design, which sets it apart from traditional capsular tension rings."

Rotational stability

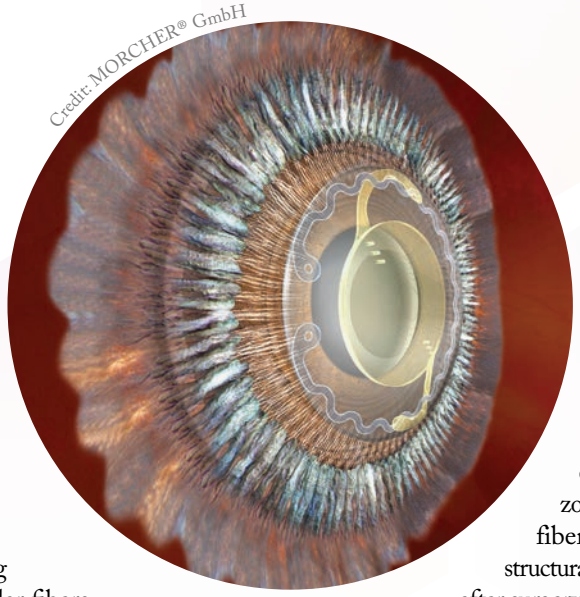
Rotational stability is critical for the precise alignment of toric IOLs (TIOLs), which are used to correct astigmatism by aligning along a precise axis. Even small deviations from this axis can result in significant reductions in visual acuity.

Studies have shown that rotational misalignment of as little as 10 degrees can reduce astigmatic correction by approximately 33 percent, and in many cases this necessitates surgical intervention to reposition the lens. Rotation usually occurs within the first 24 hours postoperatively and is uncommon after the first week, at which point capsular shrinkage and bioadhesion have likely occurred (1).



The MORCHER® Zdral Type 20 CTR is an innovative solution designed to enhance the rotational stability of TIOLs during and after cataract surgery to ensure optimal outcomes for cataract patients.

The TYPE 20 CTR offers a unique sinusoidal design, which sets it apart from traditional capsular tension rings. The device, which is supplied preloaded on a single-use injector, features 17 indentations along its 12mm diameter, strategically placed to match the dimensions of the terminal haptic bulbs of a toric IOL. These indentations


Credit: MORCHER® GmbH

serve as locking grooves, anchoring the IOL in place within the capsular bag and preventing unwanted rotation.

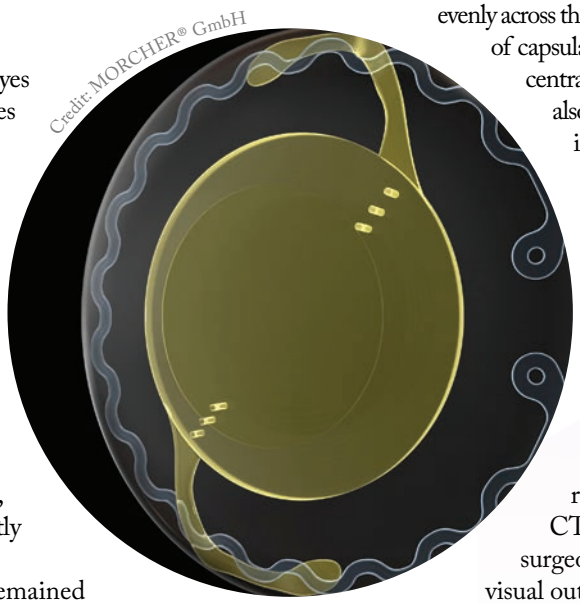
The design ensures the toric lens remains in its intended position, reducing the risk of postoperative misalignment and the need for corrective surgeries.

With the EyeJet® TYPE 20 CTR, the surgeon is able to:

- expand and stabilize the capsular bag
- distribute the pressure to all zonular fibers and prevents one-sided pressure to single zonular fibers
- reduce post-operative capsular bag shrinkage
- facilitate centration of the IOL
- facilitate safe cataract surgery in eyes with weak or partially absent zonules
- facilitate cortical removal.

Clinical evidence

A laboratory study conducted at the John A. Moran Eye Center in Utah compared the performance of the MORCHER® Zdral Type 20 CTR with standard capsular tension rings and no CTR at all (1). The findings revealed that while a standard CTR did improve rotational stability compared with using no ring, the TYPE 20 CTR provided significantly better results.


Credit: MORCHER® GmbH

The toric IOLs remained securely positioned in the capsular bag, with minimal rotation observed under all conditions. Both AcrySof and TECNIS toric IOLs were tested, and the results were consistent across both brands. The TYPE 20 CTR demonstrated superior performance, significantly restricting the movement of the IOLs and maintaining their alignment during testing. The improved stability of the IOLs was statistically significant, confirming the efficacy of the TYPE 20 CTR in preventing lens misalignment.

Other benefits

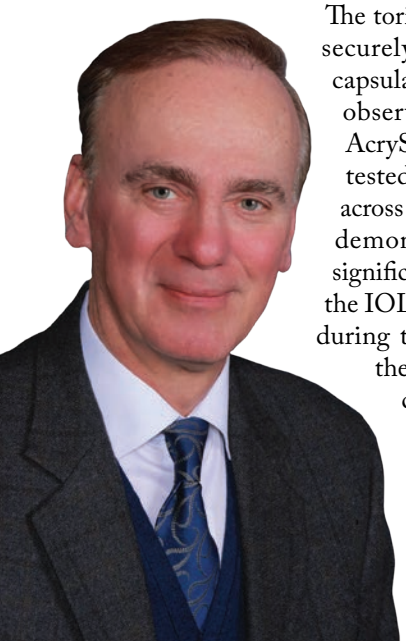
In addition to rotational stability, the sinusoidal indentations of the TYPE 20 CTR facilitate easier removal of cortical material during cataract surgery, simplifying the procedure for surgeons and reducing the risk of complications.

The wavelike pattern of the ring also evenly distributes pressure across the zonular fibers, reducing strain on individual fibers and contributing to the overall structural integrity of the capsular bag during and after surgery.

Surgeons can use the TYPE 20 CTR in cases where patients present with weak or partially absent zonules, as the ring helps stabilize and expand the capsular bag. By distributing pressure evenly across the zonular fibers, the ring mitigates the risk of capsular shrinkage and facilitates the accurate centration of the IOL. The TYPE 20 CTR also includes eyelets at both ends, making insertion smoother and more controlled.

Because there are both risks and costs to performing lens repositioning surgery, by reducing the tendency for rotation, the TYPE 20 CTR can potentially lower reoperation rates in patients receiving TIOLs.

With its ability to secure the accuracy and stability of TIOL alignment, resulting in improved refractive success, the the TYPE 20 CTR is an indispensable tool for cataract surgeons in their quest to achieve optimal visual outcomes for patients post-surgery.



(Left): John L. Zdral, MD Fullerton Eye Institute, Fullerton, CA

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** FCI Ophthalmics is the exclusive distributor of MORCHER® Capsular Tension Rings (CTRs) in the United States.*

To find out more about FCI Ophthalmics capsular tension rings, scan the QR code

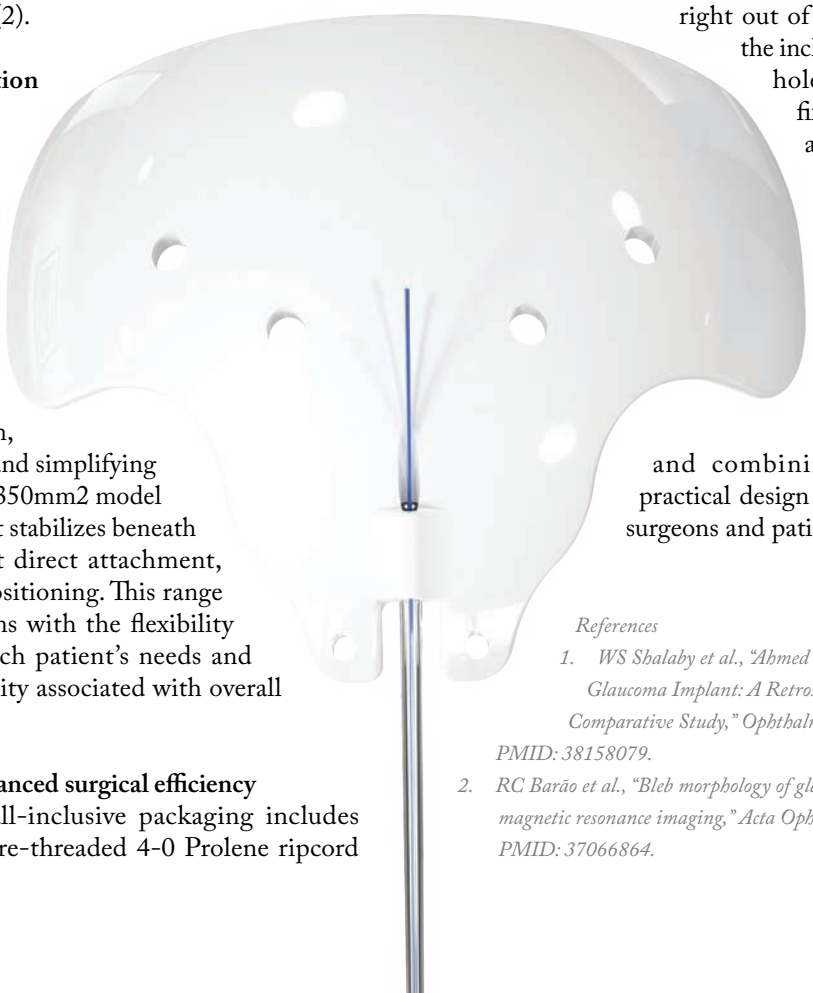
Ahmed ClearPath®

The clear choice for non-valved glaucoma drainage devices

As a leading innovation in glaucoma treatment, developed by New World Medical, the Ahmed ClearPath is a clear choice for ophthalmologists seeking effective, non-valved implant solutions for intraocular pressure (IOP) management. With its thoughtful design and convenient features, the device supports both efficient surgical implantation and long-term patient outcomes (1).

Innovative design for reliable IOP control
The Ahmed Clear Path introduces an innovative solution for non-valved glaucoma drainage devices, providing surgeons with precise control over IOP management. Its flexible plate material and low-lying profile are designed to promote the formation of a low diffuse bleb, enhancing IOP stability over the long term (2).

Single-quadrant implantation for surgical convenience
Designed with convenience in mind, the Ahmed ClearPath is available in two sizes: 250 mm2 and 350 mm2. The 250mm2 model facilitates a true single-quadrant implantation between the rectus muscles, eliminating the need for muscle isolation, streamlining the procedure and simplifying positioning. Meanwhile the 350mm2 model features a winged design that stabilizes beneath the rectus muscles without direct attachment, further supporting stable positioning. This range of options provides surgeons with the flexibility to select the best fit for each patient's needs and reduce the surgical complexity associated with overall implant placement.



Thoughtful features for enhanced surgical efficiency
The Ahmed ClearPath's all-inclusive packaging includes a 23-gauge needle and a pre-threaded 4-0 Prolene ripcord suture, making it convenient and ready for use right out of the box. Additionally, the inclusion of anterior suture holes allows for precise fixation and improved access, giving surgeons added control and positioning accuracy during implantation.

The Ahmed ClearPath represents a clear choice for non-valved glaucoma drainage devices, setting new standards and combining innovation with practical design for a device that both surgeons and patients can rely on.

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STREAMLINE® Surgical System: A Novel, Implant-Free Solution

New World Medical's simple and versatile system now offers a host of enhanced features

The STREAMLINE® Surgical System by New World Medical provides ophthalmologists with a first-line, implant-free solution designed to deliver pressurized viscoelastic where patients need it most. This device combines innovation with simplicity, making it adaptable for both standalone use and in combination with cataract surgery, with the upmost flexibility and confidence to deliver tissue-sparing outcomes without leaving an implant behind.

Two primary functions in one STREAMLINE device
STREAMLINE's unique design offers two distinct functions, allowing surgeons to deliver controlled amounts of viscoelastic fluid directly to specific areas and, when needed, create incisions in trabecular meshwork tissue. These incisions can be titrated and extended over several contiguous clock hours of the trabecular meshwork. This versatility helps streamline procedures and provides surgeons with a greater degree of control.

Treatment that suits the delicate environment of the eye
At the heart of STREAMLINE's design is the proprietary ClickPulse® Technology, which ensures a controlled and consistent application of viscoelastic fluid with each click of a button. Each actuation performs three steps:

- Retraction of the outer sleeve to guide proper positioning
- Facilitation of inner cannula alignment
- Dual port injection of viscoelastic to the targeted site

The device enables up to eight ClickPulse applications per procedure, allowing surgeons the ultimate control to titrate treatment based on the patient's needs.

Commitment to innovation: User-centered enhancements for an optimized surgical experience
New World Medical has recently introduced thoughtful enhancements to the STREAMLINE Surgical System, based on user feedback, including an extended cannula and a clear sleeve to improve visualization and ease of use. Additionally, the actuator button was redesigned to enhance ergonomics and visualization with a lower button profile and improved internal spring mechanism, minimizing button depression resistance. These features reflect a commitment to providing efficient, practical solutions that integrate smoothly into surgical workflows.

With its implant-free, innovative design, the STREAMLINE® Surgical System exemplifies New World Medical's dedication to innovation in ophthalmology, offering a valuable tool for safe and effective tissue-sparing procedures.

To learn more about the unique mission of New World Medical or its innovative product line, please visit https://www.newworldmedical.com.

A Standalone MIGS Landmark

The iStent infinite® represents an interventional glaucoma revolution for both surgeons and patients

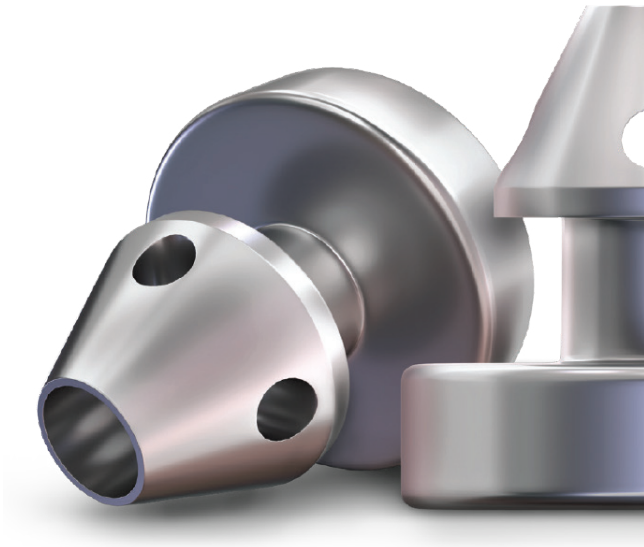
The first trabecular micro-bypass glaucoma stent was developed by Glaukos over two decades ago in 1999, signaling a significant advancement in glaucoma treatment and surgery. Since that time, minimally invasive glaucoma surgery (MIGS) and the iStent devices have gone from strength to strength, and the iStent platform remains the first choice for surgeons operating on mild-to moderate glaucoma patients.* This platform now has the longest-term body of evidence of any MIGS procedure, with various documented trials throughout the years demonstrating immediate and expansive flow post-implantation (1, 2, 3).

The latest iteration of the device, the iStent infinite®, is a perfect choice for those primary open-angle glaucoma (POAG) patients who have failed prior medical and surgical therapy.

The device comes equipped with three anatomically designed stents preloaded into an injector system. Once implanted, the three stents occupy only 3 percent of Schlemm's canal, leaving 97 percent untouched and minimizing disruption to the natural anatomy of a patient, which in turn offers them a less traumatic surgical experience when compared to other more traditional, invasive glaucoma surgeries. The innovative injector system also allows for unlimited stent delivery attempts, giving confidence and peace of mind, no matter the surgeon's level of experience.

To answer the previously unmet need for standalone MIGS implant surgery, the iStent infinite® is the first FDA-cleared implantable device that can be utilized in a standalone procedure, in both phakic and pseudophakic patients. It is a feature of the device that addresses the gap in the interventional glaucoma treatment algorithm and the limited number of micro-invasive options currently available to these patients.

Unlike other implantable devices and previous generation iStent technologies, the iStent infinite® can be used in patients who have failed prior medical and surgical treatment (where invasive surgeries often carry significant post-op risks and complication management, often resulting in more chair time for the patient and more follow-up time for the surgeon). As such, the iStent infinite® is meeting head-on the urgent call of "interventional glaucoma", providing surgeons who recognize the need to intervene earlier in glaucoma with the means to do so.



The iStent infinite® System contains three intraocular stents that are manufactured from implant-grade titanium

In this current iteration, the iStent infinite® represents more than the sum of its parts and heralds the interventional glaucoma revolution. It is a first-of-a-kind standalone implantable stent, offering an intermediate alternative to more invasive procedures without being restricted to the stage of glaucoma. The device delivers efficacy in tough-to-treat patients with an unparalleled safety profile, allowing surgeons to safely offer a truly microinvasive alternative, helping to address the rampant rates of patient non-compliance and disease progression associated with the disease.

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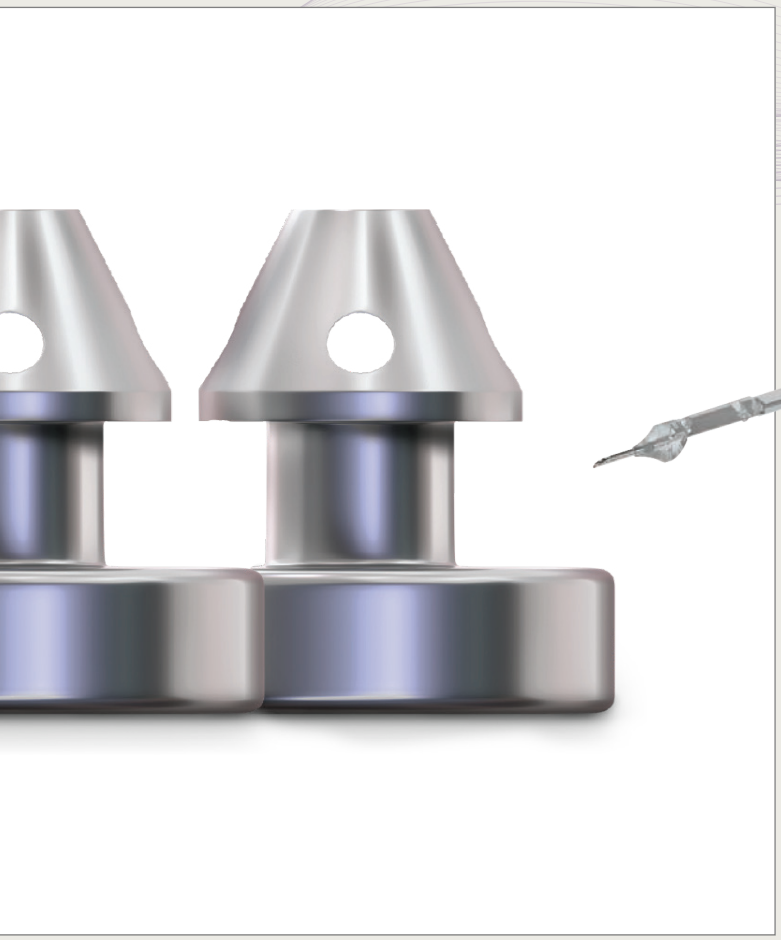

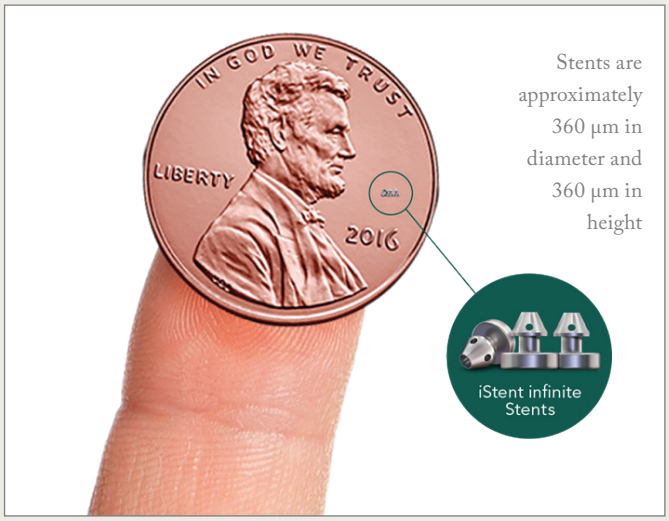

Stents are approximately 360 µm in diameter and 360 µm in height

PM-US-2406

INDICATION FOR USE. The iStent infinite® Trabecular Micro-Bypass System Model iS3 is an implantable device intended to reduce the intraocular pressure (IOP) of the eye. It is indicated for use in adult patients with primary open-angle glaucoma in whom previous medical and surgical treatment has failed. iStent infinite® is currently only commercially available in the USA and Canada. CONTRAINDICATIONS. The iStent infinite is contraindicated in eyes with angle-closure glaucoma where the angle has not been surgically opened, acute traumatic, malignant, active uveitic, or active neovascular glaucoma, discernible congenital anomalies of the anterior chamber (AC) angle, retrobulbar tumor, thyroid eye disease, or Sturge-Weber Syndrome or any other type of condition that may cause elevated episcleral venous pressure. WARNINGS. Gonioscopy should be performed prior to surgery to exclude congenital anomalies of the angle, PAS, rubeosis, or conditions that would prohibit adequate visualization that could lead to improper placement of the stent and pose a hazard. MRI INFORMATION. The iStent infinite is MR-Conditional, i.e., the device is safe for use in a specified MR environment under specified conditions; please see Directions for Use (DFU) label for details. PRECAUTIONS. The surgeon should monitor the patient postoperatively for proper maintenance of IOP. Three out of 61 participants (4.9%) in the pivotal clinical trial were phakic. Therefore, there is insufficient evidence to determine whether the clinical performance of the device may be different in those who are phakic versus in those who are pseudophakic. ADVERSE EVENTS. The most common postoperative adverse events reported in the iStent infinite pivotal trial included IOP increase ≥ 10 mmHg vs. baseline IOP (8.2%), loss of BSCVA ≥ 2 lines (11.5%), ocular surface disease (11.5%), perioperative inflammation (6.6%) and visual field loss ≥ 2.5 dB (6.6%). CAUTION: Federal law restricts this device to sale by, or on the order of, a physician. Please see DFU for a complete list of contraindications, warnings, precautions, and adverse events.

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ANTERIOR SEGMENT

How Dry Eye Disease Impacts Younger Patients

Primary and pre-op care can help the millions of young patients with DED

Melissa Barnett

Although the prevalence of dry eye disease (DED) increases with age, its relationship isn't exactly linear as the condition affects a significant portion of the population (1). This includes children and teens, 5.5 percent to 23.1 percent of whom have DED (2). Thus, regardless of age, it is essential to screen every patient for dry eye disease. Timely diagnosis, evaluation, and intervention are essential for primary care, as well as to prepare the ocular surface for surgery, the outcomes of which may be altered by refractive changes and other symptoms related to an unstable tear film.

Omnipresent screens, contact lenses, and other factors

I have diagnosed DED in patients as young as seven years old, as well as many teens and young adult college students. Extensive screen use (digital eye strain) is a major contributor (3). Most children under age eight exceed the established screen time recommendations for their ages ('=""'>), and teens average 4.8 hours per day on social media, in addition to school laptops and TV (5). It is not surprising, then, that a study of school children (mean age 12) showed 97 percent had at least one symptom of digital eye strain or dryness, most commonly eyelid heaviness (80 percent) and eye redness (69 percent) (6).

DED is also common in young contact lens wearers (3). Many other health, behavioral, and lifestyle factors contribute to the unexpectedly high rate of DED in this population, including poor sleep quality, allergies, smoking, medications (isotretinoin, oral contraceptives, antidepressants, oral antihistamines), poor diet or hydration, and environmental challenges (wind, very low humidity, air conditioning).

Treatments and modifications

Most young people are not accustomed to hearing they have a chronic condition. I keep the explanation simple and share images of their eyes so they can visualize the problem. To ensure that patients and parents follow my specific recommendations for therapy, I offer easy access to the products they need in the practice, as well as written instructions with QR codes for acquiring them online.

Healthy young people have a high capacity to respond to DED therapies and can often benefit from basic treatments and simple lifestyle changes.

- Contact lenses. Daily lenses ensure that teens start each day with a clean lens. In my experience, if patients wearing dailies are uncomfortable, contact lens-compatible DED therapies are often successful. These patients can also benefit from the addition of a preservative-free artificial tear that is compatible with contact lenses.
- Therapies for mild to moderate DED. I always recommend patients start with a high-quality, preservative-free artificial tear to lubricate the surface in the morning, at night, and as needed. iVIZIA (Thea) artificial tears, for example, give my patients immediate and long-lasting relief, and patients like the easy-to-use multi-dose bottle. For contact lens wearers, iVIZIA has been demonstrated to keep eyes more comfortable for a longer time without blurriness (7). Preservative-free Refresh Optive (Allergan) and Systane PF (Alcon) are good options as well. Another drop called Retaine MGD (OCuSOFT) stabilizes the tear film with electrostatic attraction, providing

long-lasting treatment for DED associated with meibomian gland dysfunction (MGD) (8).

I also want young people to do eyelid hygiene every night; makeup removers, for example, can have ingredients that exacerbate DED. I recommend specific DED-friendly eyelid cleansers, such as iVIZIA micellar eyelid cleansing wipes, OCuSOFT Lid Scrub Plus foaming eyelid cleanser, or a variety of hypochlorous acid sprays.

We also discuss the importance of drinking water and getting plenty of sleep. Nutritional supplements such as Omega fatty acids are quite beneficial. In younger patients, I'm inclined to see if lifestyle modification factors such as eyelid hygiene, artificial tears, breaks on digital devices, adequate hydration, and sleep would work before adding another product to their regimen.

- Screen use modifications. Young people are often surprised to learn that they blink more than 60 percent less while reading or using digital devices (9), so it's crucial to remember to blink regularly. I explain the 20-20-20 rule (every 20 minutes, take a 20-second break to blink and focus on something at least 20 feet away). Daily reminders such as setting a 20-minute reminder on their phone or laptop or having a sticky note on their laptop are beneficial for patients. We review best practices for optimal screen distance and viewing angle, along with tips on managing lighting, glare, and airflow from fans and air vents during screen use.
- Skin care and cosmetics. Many cosmetics and skin care products contain chemicals that can exacerbate or even cause DED. Facial cleansers, sunscreens, moisturizers, shave creams, makeup, and makeup removers are all potentially irritating. I offer patients a list of the most common eye irritants in these products: alcohol, acetyl hexapeptinde-3, benzalkonium chloride (BAK), butylene glycol, ethylenediaminetetraacetic acid (EDTA), formaldehyde and formaldehyde donors, isopropyl cloprostenate, parabens, phenoxyethanol, and retinol. The handout also lists ingredient-conscious eye makeup brands, such as Blinc, Eyes are the Story, Eye Ecco, Twenty Twenty Beauty, and We Love Eyes.
- Therapies for more severe cases. In moderate to severe cases, a systemic evaluation to rule out autoimmune and thyroid disease is essential, particularly after adolescence. I advise a combination of therapies in severe cases. In addition to preservative-free artificial tears and lifestyle modifications, therapies can potentially include punctual plugs; prescription medications such as perfluorohexyloctane (Miebo, Bausch & Lomb), lifitegrast (Xiidra, Bausch & Lomb), cyclosporine (Restasis, Allergan) or varenicline (Tyrvaya, Viatris); lotilaner (Xdemvy, Tarsus), a medication for demodex blepharitis; and in-office procedures such as thermal meibomian gland expression (TearCare, Sight Sciences) or IPL (OptiLight, Lumenis). Other options include scleral lenses, autologous serum, amniotic membranes, and night goggles.

Many of my young patients who experience headaches and digital eye strain find relief after receiving an updated prescription and addressing their DED symptoms. It is critical to ensure that young patients continue to have regular dilated eye exams for evaluating ocular health, maintaining optimal vision, and managing DED.

Melissa Barnett, OD, FAAO, FSLS, FBCLA is Director of Optometry at University of California, Davis, a founder and board member of the Intrepid Eye Society and is "energized by her passion for helping people improve their lives by optimizing their vision, health and wellness with a customized approach."

Disclosures: ABB, Acculens, Abbvie, Azura, Bausch + Lomb, BCLA, Bruder, Bruno Vision Care, CooperVision, Dompé, Epion, JJVC Vistakon, Lentechs, Ocusoft, Orasis, Percept, RVL Pharmaceuticals, Science Based Health, STAPLE program, Sun Pharma, Tarsus, Thea Pharma, Visus Therapeutics

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My MIGS of Choice, with Sally Ameen

A minimally invasive option that cuts recovery time and reduces reliance on eye drops

In the rapidly advancing field of ophthalmology, innovations in surgical techniques are paramount for improving patient outcomes. One of the most reliable procedures that glaucoma surgeons use is the iStent, which continues to offer significant utility in clinical practice because of how well it can manage intraocular pressure (IOP) in patients. The iStent is a microscopic, FDA-approved device implanted into the eye either during cataract surgery or as a standalone procedure. The smallest implant currently used in the human body, the main function of the iStent is to create a permanent opening in the trabecular meshwork, the eye's natural drainage system. This allows for better outflow of aqueous humor, which in turn helps to reduce intraocular pressure. By doing so, it helps to control the progression of glaucoma.

Benefits to iStent surgery

First and foremost, it is minimally invasive, which means shorter recovery times and fewer complications compared to traditional glaucoma surgeries. It effectively lowers intraocular pressure by improving aqueous outflow, which is crucial in slowing the progression of glaucoma and preserving vision. Additionally, for patients who need both cataract and glaucoma surgery, the iStent can be implanted at the same time as cataract surgery. This dual approach provides comprehensive care in a single procedure. Many patients also find that they can reduce their reliance on glaucoma medications after having the iStent implanted, which simplifies their treatment regimen and improves their overall quality of life.

Comparison with other MIGS options

My preference for the iStent stems from its long-standing presence in the market. It has been available for the longest time compared to other MIGS (minimally invasive glaucoma surgery) options, which means we have a wealth of data and extensive clinical testing to back up its efficacy and safety. This extensive track record translates into a high level of confidence in its performance. Studies consistently show that the iStent is effective in lowering intraocular pressure and reducing the progression of glaucoma. Furthermore, the safety profile of the iStent is outstanding, which is paramount when considering surgical options for my patients.

In one study, a significantly higher proportion of iStent inject with cataract surgery (INJ) eyes (75.8 percent) than cataract surgery-alone (CS) eyes (61.9 percent) achieved a ≥ 20 percent reduction in medication-free diurnal intraocular pressure (DIOP) from baseline at 24 months ($p=0.005$), and the mean reduction in medication-free DIOP from baseline to 24 months was significantly greater in treatment versus control eyes ($p<0.001$), respectively (1).

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Furthermore, iStent-injected eyes reduced their mean medication burden by 75 percent (versus 47 percent in CS eyes), with 84 percent of stent eyes becoming medication-free at two years (vs. 67 percent of control eyes), and a 50 percent lower final mean medication burden in stent eyes than in control eyes.

Safety was excellent in the iStent inject treatment group, comparable to phacoemulsification alone. This included results for best spectacle-corrected visual acuity (BSCVA), visual field MD, C:D ratio, and endothelial cell stability. There were no unanticipated adverse events and no cases of significant inflammatory responses, myopic shift, choroidal hemorrhage or effusion, hypotony, stent dislocation or migration, significant hyphema, corneal decompensation, shallow anterior chamber, cyclodialysis, or endophthalmitis (1).

Patient feedback

The outcomes have been very encouraging. Patients often report significant improvements in their quality-of-life post-surgery, with many experiencing enhanced vision and a reduced need for glaucoma medications. Additionally, the peace of mind that comes from knowing their glaucoma is being effectively managed cannot be overstated.

At eight years postoperative, IOP reduced by 26 percent from 19.2 ± 3.9 mmHg preoperatively to 14.2 ± 2.4 mmHg ($P < 0.001$), 91.1 percent of eyes achieved IOP ≤ 18 mmHg (vs. 51.6 percent preoperatively), 69.6 percent of eyes achieved IOP ≤ 15 mmHg (vs. 14.5 percent preoperatively), and 25 percent of eyes achieved IOP ≤ 12 mmHg (vs. 1.6 percent preoperatively). Medication use decreased by 17.9 percent from 2.8 ± 1.1 preoperatively to 2.3 ± 1.2 ($P = 0.018$). Surgical success was 90 percent, as six eyes underwent subsequent glaucoma surgeries. Safety measures of BCVA, cup-to-disc ratio (CDR), retinal nerve fiber layer (RNFL) thickness, and GC-IPL thickness remained stable through eight years postoperative. Visual field mean deviation (VF-MD) remained stable until postoperative year five and subsequently progressed according to the natural history of glaucomatous disease (2).

For me, these positive outcomes are a testament to the efficacy and safety of the iStent.

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See references online at: top.txp.to/migs/of/choice


"My long-term goal is to set up a network of ophthalmic medical centers in Central Asia..."

Scanning the Eye Care Horizon

Sitting Down With… Nikki Kristoffersen-Hafezi, Co-Founder & CEO, EMAGine, ELZA Institute AG, GroupAdvance Consulting GmbH, National Eye Institute LLC (Uzbekistan)

What major projects are you currently involved with?

Ophthalmology and vision research have been central to my career for over 20 years. Currently, I am building and training teams to support the growth of the companies and organizations that my husband, Farhad Hafezi, and I have founded. In Europe, we now rely on a trusted team to oversee the daily operations of our two ELZA clinics in Zurich – the original clinic located in an industrial area called Dietikon and our new site at the main train station (Zurich HB) in Zurich – as well as our medical device company, EMAGine, and the various activities linked to our research laboratory and non-profit organization.

Since 2021, Uzbekistan has been a major focus for my consulting firm, GroupAdvance Consulting. Our largest project at the moment is establishing the National Eye Institute, Uzbekistan (NEI-UZ), which has four primary objectives: medical education, clinical training, outreach/access, and research. Importantly, NEI will not only introduce modern technology to Uzbekistan, but also train professionals in its use. To ensure that the training is at the highest level, I have established a local medical device distribution company in Uzbekistan that prioritizes education and service training as core elements of the business.

My long-term goal is to set up a network of ophthalmic medical centers in Central Asia. Currently, I am in the daily operations in Uzbekistan, but I hope that my role will evolve into an advisory board member. Regardless of the role, I plan to support the development of future leaders, ensuring that they have the skills to manage daily operations. I will know if I reach the goal if the future network of medical centers will be locally managed as well as guiding many of the future leaders onto international career paths. Already, we see there are so many bright, multilingual, and eager young people in Uzbekistan, so I hope that this goal will be achieved soon.

You've been involved in developing new corneal cross-linking (CXL) technology into real-world applications. Can you talk about your vision for this technology?

Since 2012, Farhad and I have been joined at the hip in the development and commercialization of a CXL technology through a SMART approach: Small, Mobile, Affordable, Reliable Technology. Initially, our goal was to develop the technology, secure CE marking, and then expand internationally. However, when you create a start-up, your business plan changes on a daily basis. No one expected COVID-19 to have such a dramatic and substantial impact on the world. Despite these challenges, EMAGine launched its product into the international market in October 2020.

Now, four years later, EMAGine has established a distribution network in over 70 countries. While we made significant efforts to increase accessibility, diagnostic tools in some low-to-middle-income countries (LMIC) were still lacking. This void led us to develop another medical device for corneal screening and diagnosis, once again using the SMART approach. We created a handheld Placido-based topographer that used the camera and processing power of a smartphone to capture and process images to detect corneal irregularities. This prototype was tested in two Swiss clinics, and its imaging was comparable to modern devices such as the Oculus Pentacam and CSO Italia MS-39.

My vision for this technology is to facilitate early detection of the leading cause of preventable blindness – keratoconus – which is especially prevalent among children and adolescents, and to generate data for AI-driven diagnostics to reduce the risk of human error in interpreting diagnostic measurements.

What steps should ophthalmologists take before introducing new technologies or treatments into clinical practice?

Patient satisfaction is probably the most important aspect of building a successful clinical practice, yet it can be interpreted in many different ways. When considering the introduction of a new medical technology or clinical application in their clinical practice, ophthalmologists should consider the following – Has the proposed device been clinically proven through peer-reviewed publications? What alternatives are available? Do you have a sufficient patient base to achieve a relatively rapid return on investment? Do you fully understand how the new technology works? Is the manufacturer or distributor reliable for service and support? Have you sought feedback from trusted colleagues about their experiences with this technology or application?

I also recommend incorporating "reverse thinking" – considering potential acquisition – when developing the business plan. This way, you will identify what brings value to the company, enabling you to focus on those areas as priorities. Sometimes, it has less to do with the technology itself and more with securing your IP.

What do you still hope to accomplish within the field of ophthalmology?

Besides the commercial success of my business ventures, I aim to accomplish three key milestones. 1) Establish public policy for standardized eye and vision care as part of a future national healthcare program in Central Asian countries. 2) Enhance medical education and clinical training for ophthalmology students in Central Asia and beyond by connecting them with an international network of key opinion leaders. 3) Introduce optometry as a discipline in the Central Asian region to improve access to quality basic vision care at affordable prices.

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