



Vision for the Future: Highlights of the 18th Annual San Francisco Cornea, Cataract, and Refractive Surgery Symposium

Continuing education is one of the vital components that binds our eye care community together. Motivated by professional growth and desire to bring the latest therapeutics and diagnostics to our patients, the Bay Area eye care community embodies the spirit of excellence and innovation that defines the very place we chose to practice. At Pacific Vision Institute, we are committed to continued excellence in education and professional growth of our eye care partners in the Bay Area and beyond.

The Annual San Francisco Symposium remains the cornerstone of one of the most highly sought after CE in the country. After a two-year pandemic hiatus, the Symposium was once again held at the St. Regis Hotel in San Francisco. A highly popular event has once again brought together leaders in ophthalmic and optometric education and eye care industry for an exciting day of fast-paced learning and workshops. In keeping with the theme of the Symposium, **“Vision for the Future,”** presentations included topics that expanded horizons of traditional optometric practice. From Artificial Intelligence in planning LASIK treatments to the newly FDA-approved treatments and devices, from improving sustainability and reducing waste in eye care to the novel uses of OCT to diagnose neurodegenerative disorders, from sports medicine to integrative health, the Symposium has been described by attendees as “definitely something we need right now.”

In championing advances in collaborative eye care, each faculty was asked to prepare presentations based on patient cases relevant to modern optometric practice. Here are the 3 top clinical pearls from each presentation.

Clinical News & Views



New Insights into Sports Vision: Data-driven Interventions to Elevate Performance of Athletes and Non-Athletes

Daniel Laby, MD, Sports Vision NYC, Sports Vision Consultant, Major League Baseball USA

I. The core purpose of the visual system is to predict what's coming next. A golfer must predict where the ball will roll as it approaches the hole. A baseball player must predict where the ball will be when it crosses the plate. A football player must predict the position of a running back as he carries the ball or the position of a pass as it is thrown. Rather than "keeping the eye on the ball," elite athletes are trained to predict the contact with the ball based on earlier obtained visual information. Such training

is at the core of sports vision training. The strategies can be used to train non-professional athletes to be better at their sport.

II. The Vision Pyramid is at the core of sports vision training. Visual acuity and contrast sensitivity is at the base of the Vision Pyramid. 77% of elite baseball players have uncorrected visual acuity 20/15 or better. Uncorrected visual acuity better than 20/20 is essential in sports that require prediction of target location. Stereo vision and depth perception, visual decision making, visual integration, and "on field" decision making complete the Vision Pyramid. All areas need to be optimized to elevate athletic performance.

III. Quiet Eye is an essential skill for high achieving athletic performance. Quiet Eye is period of time just before and just after a visually based event. When lining up a putt, for example, elite golfers alternate quick fixations between the ball and the hole. Then before and during the stroke they hold a steady fixation on the back of the ball, for around 2-3 seconds. After contact with the ball the eyes remain steady for a further half a second. This technique can be taught not only to golfers, but also to basketball, baseball, football, and hockey players.

Practical Pearls for Implementing Myopia Management into Primary Eye Care Practice

Sarah Sing, OD, PhD, FAAO, UC Berkeley School of Optometry, Berkeley, CA

I. Myopia control should be initiated before the onset of myopia. CLEERE study found that future myopia (by the age of 13) is highly likely when children are less than +0.75D by the age of 6. This means that children as young as 6 should have regular eye exams and refraction assessment. Axial length starts to accelerate before myopia onset. Normal axial length growth in children who remain emmetropic from 6 to 14 years old is, on the average, 0.1 mm per year. Anything more rapid that is a predictor of myopia.

II. To achieve 50% reduction in myopia, children need to spend 8.9 additional hours per week outdoors.

III. According to COMET study, mean age of myopia stabilization is 15.5 years. Most patients had stable myopia by the age of 21.



Advances and Controversies in Non-surgical Treatment of Presbyopia

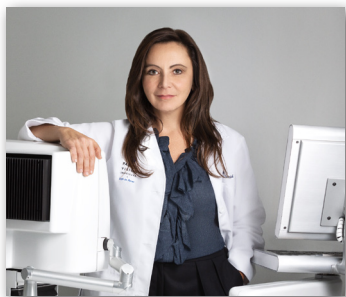
Mile Brujic, OD, FAAO, Premier Vision Group, Optometric Insights Podcast, Bowling Green, OH

I. Corneal topography can significantly help with assessing patient satisfaction with multifocal contact lenses. Patients with angle kappa or angle lambda are less likely to be satisfied with multifocal due to decentered line of sight. Custom multifocal lenses with OptiSync, Zenlens, and Ampleye, for example, may be needed in these patients to align their line of sight with the center of the lens optic.

II. Pilocarpine-based drops to treat presbyopia need to be used under doctor's supervision. Initial exam should include a thorough retinal exam, including retinal periphery. Any areas of retinal weakening need to be treated prior to initiation of eye drops or patient recommended not to use the drops.

III. Multiple presbyopia correcting eye drops are in clinical trials. Some do not contain pilocarpine and may be considered as a safer option for myopic patients and patients with retinal abnormalities.

Clinical News & Views



Artificial Intelligence in Refractive Surgery: Optimizing Patient Screening and Treatments through Machine Learning

Ella G. Faktorovich, MD, Pacific Vision Institute, San Francisco, CA

I. We already have AI capabilities in diagnostic devices and in planning refractive surgery treatments. AI in diagnostics is called “rule-based” or “static”. AI in refractive surgery planning is called “machine-learning,” as it is capable of constantly updating its formulas based on continuous outcomes data input. This is the reason why we need to see postop patients for their 3-month followup. We need to use their outcomes to “train” AI nomograms

so that they can continue to deliver accuracy in planning treatments.

II. Here are the 5 questions a practitioner needs to ask before purchasing a diagnostic devices that promises exciting AI capabilities: how much data was used to generate algorithms; how recently was the data updated; what method was used to generate algorithms - random forrest, linear regression, neural network, etc; what was Area Under the Curve (AUC) for that method; and how were the algorithms verified.

III. AI -generated surgical nomograms are a must for accurate outcomes following refractive surgery

EVO ICL Co-Management: a Practical Approach

Mark R. Mandel, MD, Optima Eye, San Jose, Hayward, Concord, CA

I. Patients who are candidates for the newly FDA-approved EVO ICL are patients with high myopia who are not candidates for LASIK or PRK, patients whose corneas are too thin, or too irregular for LASIK or PRK. Anterior chamber depth of at least 3.0 mm is required for FDA-approved protocol. Patients with anterior chamber depth between 2.8 and 2.99 mm can under EVO ICL off label, providing the eye is healthy.

II. Post-ICL ammetropia can be corrected with LASIK or PRK

III. Postoperative care includes monitoring and assessing the “vault.” The vault is the distance between posterior corneal surface and anterior lens capsule measured at the slit lamp as a percentage of central corneal thickness. For example, a vault of 120% means the distance is 20% greater than corneal thickness. The vault needs to be measured at every postop visit. Too shallow of a vault means the ICL may be too close to crystalline lens.



Compelling Lessons from the Greatest Team of Cataract Surgeons

David Chang, MD, Los Altos, CA

I. Cataract surgery costs and efficiency need to be reconsidered in developed nations as the backlog of many patients awaiting cataract surgery grows. Lessons learned from highly efficient surgical hospitals in less developed nations show that high volume, rapid, low cost surgery is possible without effecting the outcomes and resulting in curing cataract blindness.

II. Surgical waste and carbon footprint of cataract surgery needs to be reduced to reduce environmental impact of cataract surgery. This can be achieved by working to reduce

regulations that unnecessarily increase operating room costs and waster without benefit.

III. EyeSustain.org is an opportunity for eye doctors worldwide to get involved in changing industry’s regulations to bring about evidence-based policies that reduce environmental impact of eye surgery.

Clinical News & Views



Oculoplastic Surgery: 10 Frequently Asked Questions

John McCann, MD, PhD, Center for Facial Appearances, Salt Lake City, UT

I. Common conditions that result in ptosis are: dermatochalasis, levator dehiscence, and brow ptosis. These can be treated with surgery. Insurance may cover surgery when patients symptoms are documented and when visual field demonstrates visual field defect. Best visual field test is a tangent screen test. Do not a threshold test 30-2 or 24-2.

II. Negative dye disappearance test usually means dry eyes. Positive dye disappearance test can be caused by punctal stenosis, canalicular stenosis, canaliculitis, NLD obstruction

III. The following lid lesions should be referred for biopsy: rolled pearly edges, loss of eye lashes, loss of lid margin architecture, non-healing ulcer, unexplained cicatrix, loss of meibomian glands, lesions with keratin, variation in color, lesions not respelling anatomic boundaries, indistinct borders, variation in thickness.

Rumors About Tumors

Jesse Berry, MD, USC School of Medicine, Los Angeles, CA

I. Iris nevi should be monitored. Risk for malignant conversion is 8%. Risk factors are ABCDE (young Age, Blood/hyphema, inferior Clock hour, Diffuse, Ectropion uveae). Increasing thickness (concern for melanoma when thickness is >1mm).

II. Benign conjunctival melanosis is symmetric and limbal. Unilateral and/or thickened lesions need to be sent for biopsy.

III. Choroidal nevi have defined edges, may be grey or amelanotic, and may grow. They need to be followed closely. Anything thicker than 2 mm, with fluid, and/or orange pigment, and /or margin <= 3mm from disc may be melanoma or high risk nevus. When in doubt, refer.



Integrative Health: Transformational Paradigm Shift in Disease Prevention and Management

Kavita Mishra, MD, MPH, UCSF School of Medicine, CA

I. Plant-based nutrition reduces risks of certain cancers by providing anti-inflammatory support, optimizing microbiome, and reducing the risk of obesity. Even when taking supplements, proper nutrition is essential to health. The following produce is best consumed organic to reduce pesticide consumption - strawberries, spinach, kale, collard greens, and nectarines.

II. Combination of prolonged sitting (>6-8 hrs/day) with lack of physical activity (<150 min/wk) is associated with the highest risks of death from all causes and cancer. To reduce the risks, 150 min/

wk of moderate or 75 min/wk of vigorous activity is recommended. Exercise may include activities such as yoga, Tai chi, Qi gong, and dance. Strength training and flexibility/balance exercise can be performed 2x/week in addition to above.

III. Mind-body practices such as meditation, guided imagery, nature, art, etc need to be added to the above plan to increase well being and promote survivorship.

New Perspectives on Eye Pain

Jacqueline Theis, OD, FAAO, Virginia Neuro-Optometry, Richmond, VA

I. The following conditions can be manifest as “dry eyes”: migraine, fibromyalgia, sleep apnea, sleep deprivation, depression, anxiety, TBI. These conditions will not likely to respond to artificial tears. Although, artificial tears need to be tried in patients presenting with eye pain.

II. Photophobia may be a symptom of dry eyes, migraine, TBI, fibromyalgia, and psychiatric disorders.

III. Eye pain may be referred from neck pain. These muscles need to be examined to rule out cervicogenic referred eye pain: sternocleidomastoid, upper trapezius, temporals, suboccipitalis, and other head and neck muscles.



Clinical News & Views



Practical Applications of Posterior Segment OCT Workshop

1. Retina Cases - Reading Between the Lines; Mohammad Rafieetary, OD, FAAO, Charles Retina Institute, Memphis, TN
2. Neurodegenerative Cases - MS, Alzheimer's, Parkinson's; Jacqueline Theis, OD, FAAO, Virginia Neuro-Optometry, Richmond, VA

I. Think of OCT as an “optical biopsy.” Learn your machine and its capabilities well. Don’t delegate OCT to a tech. When you do OCT, let pathology guide the type of tests you need to do.

II. Presence of gap in OCT does not mean fluid. Absence of gap does not mean there is no fluid.

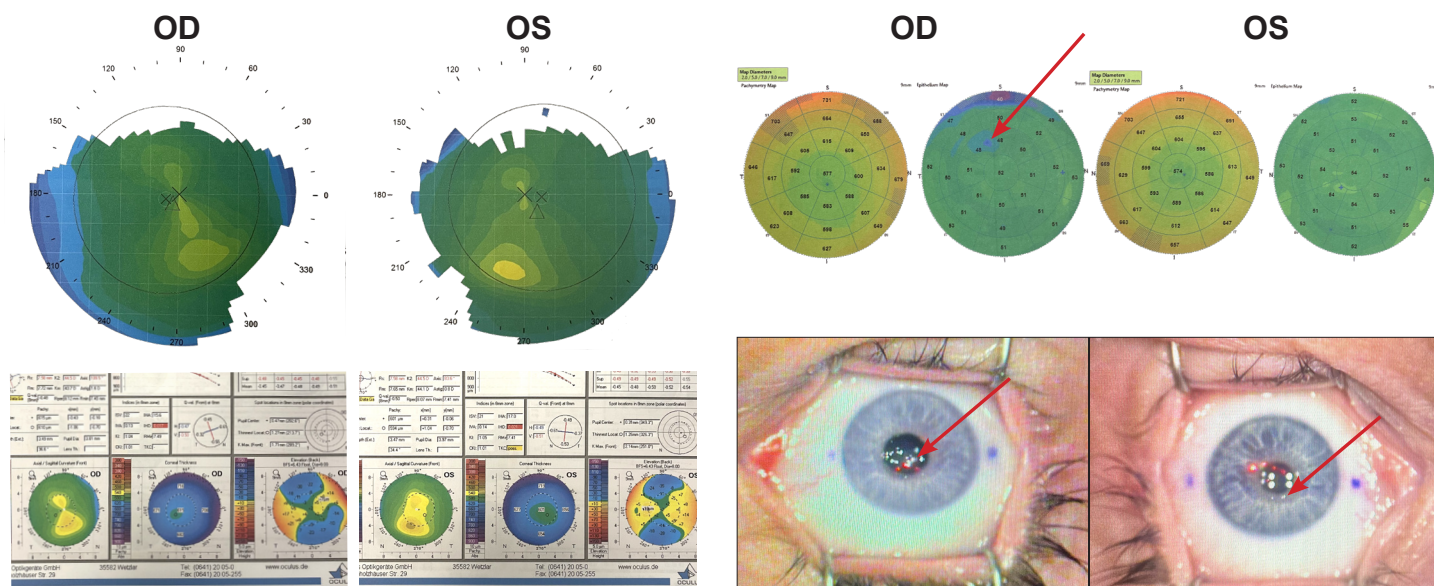
III. Decreased thickness of Retinal Nerve Fibre Layer can be seen in patients with Alzheimer’s Disease. Macular volume relates to the severity of cognitive impairment. Neurofibrillary tangle aggregation can be observed in retina. RNFL thinning can also be

seen Parkinson’s It can be asymmetric. Reduced contrast sensitivity in Parkinson’s is caused by reduced retinal dopamine.

Case of the Month

35 y.o. patient presents for vision correction surgery. OD +3.00 -1.25 x 013 & OS +3.25 DS.

Q: What procedure do you recommend?



A: Topography and Pentacam images show uneven corneas. ETM OD shows focal epithelial thinning. These findings can indicate EBMD. PRK was recommended for this patient. Before treatment was initiated, focal corneal epithelial loosening was observed in symmetric locations OU, confirming EBMD.



- **World College of Refractive Surgery and Visual Sciences (WCRS)** Board unanimously selected Pacific Vision Institute Director, Dr. Ella Faktorovich to be honored as a Fellow in recognition of her commitment and contributions to the Specialty of Refractive Surgery. As the only global organization to offer credentialing in Refractive Surgery, the WCRS is the most trusted resource for establishing a standard for qualifications and quality of care in Refractive Surgery. Dr. Faktorovich is the only surgeon in San Francisco to be honored with this selection.

- Dr. Faktorovich joins the Editorial Board of *Frontiers of Ophthalmology* peer-reviewed journal.



- Dr. Faktorovich has been invited to join the organizing committee of **International Forum on Lasers, Optics and Photonics**. The main objective of the Forum is to provide comprehensive global forum for experts and participants from academia to exchange ideas and present results of state-of-the-art research and latest advanced findings in laser, optics and photonics.

- Pacific Vision Institute research on Artificial Intelligences was featured in **San Francisco Police Officer's Association Journal**.



- **Haute Beauty** features Pacific Vision Institute article discussing lens implants and recent Whoopi Goldberg lens replacement surgery

- Dr. Faktorovich interviewed by *EyeWorld* and *Ocular Surgery News* about new anesthetic to preserve epithelial integrity during LASIK eye surgery



- Dr. Faktorovich is selected for the prestigious list of 2023 Top Doctors in *San Francisco Magazine* and Castle Connolly Top Doctors. The latter represents top 7% of 63,000 board-certified physicians in all specialties in the US

EYE DOCTORS, FAMILY, AND FRIENDS LASIK/PRK AT PVI

Here are some of the eye doctors, their family, and friends whom we treated recently. Such trust and the incredible responsibility that comes with it is the reason why we continue to innovate.



- Dr. Michelle Blas' daughter - Eyes in Disguise Optometry. Dr. Michelle Blas had LASIK at PVI as well. Her brother had a corneal transplant at PVI.
- Dr. Adam Carcamo - Valencia Optometry, Redwood City Optometry. Dr. Aris Carcamo (Dr. Adam's father) had LASIK at PVI as well.
- Dr. Trinh Doan (EyeDare Optometry)
- Dr. Erin Scattini's childhood friend
- Dr. Audrey Chu's husband (Eye Lite Optometry)



Counselor's Corner



Q: My patient is going for a consultation to multiple surgeons. How do I advise my patient where they should have their vision corrected?

A: The patient should be counseled to undergo surgery with the surgeon who achieves the best results for patients with similar prescriptions and similar age. The surgeon-specific results should be generated by an unbiased, independent

third party data analysis. Artificial Intelligence capabilities of nomogram generating formulas allow for extreme precision in outcomes. If patients receive such unbiased statistics they can be assured that AI was utilized to reduce observer bias and optimize results. The patient should ask for the surgeon's 20/20 and better than 20/20 results during their consultation. They then need to compare such results and select the surgeon who achieves the best results in the highest percentage of patients. The surgeon's techniques, technology, experience, and their team all contribute to their results. But, by themselves, they mean nothing unless they result in the documented highest percentage of patients achieving 20/20 and better than 20/20 vision. If a patient says they are going to have their vision corrected where their friend went and had a good result, the patient needs to be counseled that their friend's prescription may have been different and the friend may have different vision demands. The only way to make an educated decision in medicine is to statistically compare post-treatment results. Artificial Intelligence capabilities of nomogram generating formulas allow us exactly that. ■

Refractive Advisor

Q: What is the difference between wavefront-guided, wavefront-optimized, topography-guided, and CONTOURA LASIK and PRK?

A: In the Bay Area, we have been blessed with highly intelligent patients who often ask technical questions. We believe it is important to give patient a scientifically-based technical answer while balancing it with a sense of reassurance that they will have the safest, most accurate treatment for them. We typically counsel patients that there are three ways to customize laser vision correction - WG, WO, and TG (also known as CONTOURA). WG is the oldest way to customize based on higher order aberrations in the entire optical system, including the crystalline lens. Since crystalline lens changes with age, WG correction may not be accurate as patients get older. Since its inception, we have moved away from customization based on the entire optical system to customizing based on cornea only. This makes sense since we are doing procedure on the cornea. The choice between WO and TG depends on two things: (1) corneal thickness and (2) how close is the refractive cylinder is to the cylinder measured with VARIO (the device that measures corneal higher order aberrations). For patients with thinner corneas and with greater discrepancy between refractive and



measured cylinder, WO is the best way to customize their correction. For others, TG will work great. With WO, we can customize LASIK and PRK based on patients corneal curvature in multiple meridians (K's). Customization is currently possible only with LASIK and PRK laser vision correction. With SMILE, is not yet possible to customize treatments. ■

OPTOMETRIC CONTINUING EDUCATION

Ongoing: Live Surgery Observation for OD Staff (includes breakfast) - please contact us at comanagement@pacificvision.org to schedule the date and time for your staff to attend and learn

Ongoing: Lunch-and-Learn Education for OD Staff at your office (includes lunch provided by Pacific Vision Institute) - please contact us at comanagement@pacificvision.org to schedule the date and time for this fun and educational event for your office staff.

Fall CE Workshop 2023: - Four Seasons Hotel, San Francisco, 4 hours of TPA CE



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