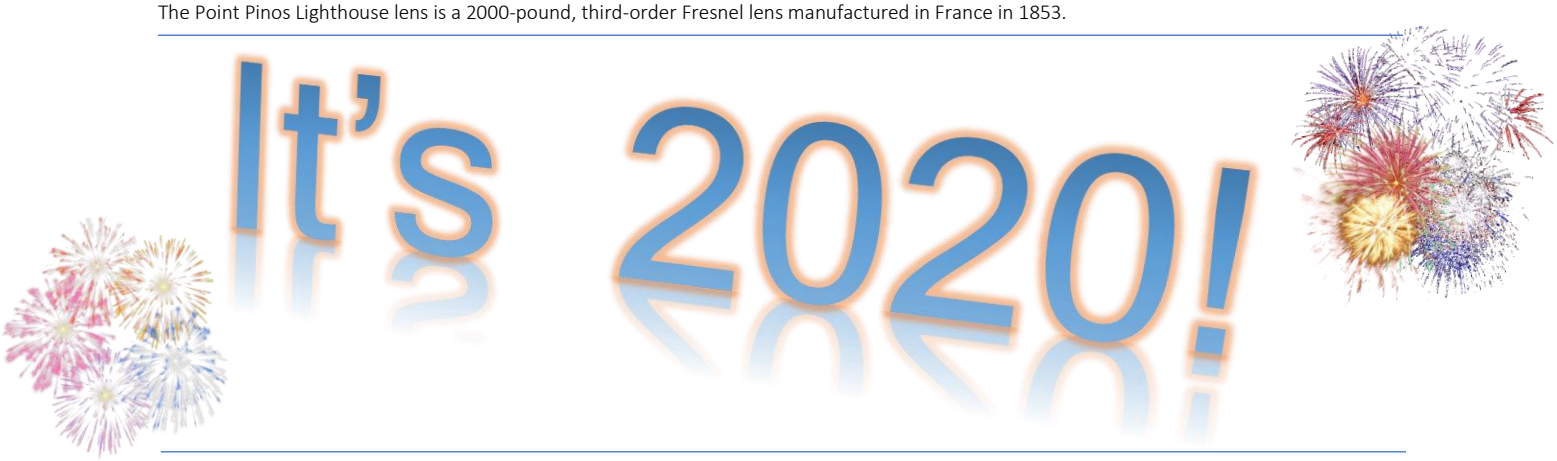
MBOS
MONTEREY BAY OPTOMETRIC SOCIETY

"As we work to create light for others, we naturally light our own way." - Mary Anne Radmacher

The Point Pinos Lighthouse lens is a 2000-pound, third-order Fresnel lens manufactured in France in 1853.



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03/07 – Jazz Bash by the Bay
03/14 – Relais & Châteaux Gourmet Fest
03/22 – Benjamin Grosvenor at Sunset Center
03/28 – Marjorie Prime at Circle Theater
04/04 – Pacific Grove Good Old Days
04/18 – Pebble Beach Food & Wine
04/25 – Ducky Derby by Santa Cruz Omega Nu

Calendar of Upcoming Optometry Events

02/08 – CEWire2020 (online CE)
03/17 – MBOS CE – TBA
04/22 – Leg Day in Sacramento
02/23 – OptoWest in Los Angeles
03/15 – OptoWest in Santa Clara
04/26 – OptoWest in Sacramento

FORWARD FOCUS: Celebrate 2020, the past decade

2020!!

This is it, my fellow optometrists. At times elusive, that number is what we celebrate. While there are many other components of our profession, nothing identifies us as much as that number. We own it, and we should be proud of it. Giving the gift of sight to children and adults alike is an awesome power.

We have had so many great advances in the past decade to help patients achieve that number, in addition to improving multiple other factors of vision.

In 2012, EnChroma lenses became available to compensate for some types of colorblindness.

Since 2012, the FDA has approved multiple MIGS devices to control glaucoma in a much safer manner than older surgical techniques, including iStent, GATT, Kahook Dual Blade, Trabectome, Xen, and Hydrus.

In the same time span, multiple devices to relieve various forms of dry eye have been introduced, including LipiFlow, TrueTear, iLux, IPL, Thermoflo, eyeXpress, NuLids, and BlephEx.

In 2016, the FDA approved the Tecnis Symfony IOL, which uses extended depth of focus, and in 2019, the FDA approved the AcrySof IQ PanOptix, the first trifocal lens. Both of these offer much better distance, intermediate, and near vision and greatly reduced side effects compared to previous generations of multifocal IOLs.

In 2017, the Light Adjustable Lens was FDA approved to allow the IOL to be customized after implantation, and similar options for even more IOLs are in trials.

In 2016, corneal cross linking was FDA approved to slow the progression of keratoconus and reduce the necessity of highly-invasive corneal transplants.

In 2017, the FDA approved Luxturna, the first in vivo gene therapy approved by the FDA, for the treatment of Leber's congenital amaurosis. Trials for gene and stem cell therapies for multiple other diseases, including AMD, are currently underway.

In 2018, the FDA approved Acuvue Oasys with Transitons, a great option for light sensitive patients.

In 2019, the FDA approved MiSight contact lenses, designed to slow myopia progression and thereby reduce retinal detachments, which adds to the treatment options of orthokeratology (FDA approved in 2002) and atropine (with trials currently underway for FDA approval of drops specifically for this purpose, as for now a compounding pharmacy must be used).

Sclerals have been available for decades, but in the past few years they have become even more widespread and provide a great option for patients who cannot comfortably wear corneal RGPs. In 2019, Tangible Hydra-PEG became FDA approved to improve wettability and reduce deposits on sclerals.

Over the past 10 years, both optometry and ophthalmology have discovered numerous methods to improve patients' vision and ocular comfort and to prevent vision loss and blindness from multiple common and rare diseases and disorders. This gives us a plethora of options to achieve and maintain that magical number from childhood to old age.

2020 is our year, doctors; take advantage of it!

"How far that little candle throws his beams! So shines a good deed in a weary world." - William Shakespeare, The Merchant of Venice

FORWARD FOCUS: Celebrate 2020, the past centuries

A History of Optometry

Adapted from *125 Years of Optometry* by Review of Optometry and *History of Optometry* by the AOA

1300 - approximate invention of spectacles in Italy
1604 - Johannes Kepler shows that concave lenses correct myopia while convex lenses correct hyperopia
1621 - Willebrord Snell discovers the law of refraction
1783 - John McAllister, Sr opens first US store for optometric services in Philadelphia
1784 - Benjamin Franklin invents bifocals
1731 - Scottish physician William Porterfield creates the optometer to measure refraction
1821 - cylindrical lenses developed after Thomas Young discovers astigmatism in 1801
1851 - Hermann von Helmholtz invents the ophthalmoscope to see the interior of the living eye
1862 - Hermann Snellen creates an eye chart to measure visual acuity
1865 - the word "optometry" is used by Vershoor in Holland in a dissertation on refraction
1872 - beginnings of the Illinois College of Optometry
1872 - Monoyer proposes the term "diopter" for lens power
1873 - retinoscopy demonstrated by Cuignet
1887 - A.E. Fick and F.A. Mueller experiment with blown-glass contact lenses
1891 - The Optician, now Review of Optometry, began
1895 - Charles Prentice charges a fee for an eye exam
1898 - American Association of Opticians (now the American Optometric Association) formed
1901 - first optometry licensing law in Minnesota
1910 - Columbia University School of Optometry has the first university courses for optometry
1911 - Andrew Cross publishes *Dynamic Skiametry in Theory and Practice* on theory for dynamic retinoscopy
1921 - Texas becomes the final state to approve optometry licensing laws
1923 - Pennsylvania College of Optometry awards the first Doctor of Optometry degree
1924 – the District of Columbia creates optometry law, completing US coverage
1928 - Charles Sheard develops the routine exam / case analysis idea for refractive problems
1937 - Readers Digest publishes "Optometry on Trial" which contains untrue statements about optometry
1938 - first plastic contact lenses, PMMA, created by Theo Obrig and John Mullen
1947 - first plastic glasses lenses, CR-39, developed by optometrist Robert Graham
1948 - Irvin Borish publishes *Clinical Refraction*
1952 - first soft contact lenses from HEMA discovered by Otto Wichterle
1955 - first vision plan, California Vision Services, created by Oakland optometrists
1965 - Medicare program created but leaves out optometry
1971 - first DPA law in Rhode Island
1971 - first hydrogel contact lens, SofLens, introduced by B&L
1971 - non-contact tonometer developed by Bernard Grolman at American Optical Corporation
1976 - first TPA law in West Virginia
1976 - optometry is established within the VA's Department of Medicine and Surgery
1976 - California Vision Services becomes Vision Service Plan after expanding to neighboring states
1986 - Medicare law is amended to define optometrists as physicians
1998 - Oklahoma passes the first law allowing optometrists use of lasers

EDUCATION EMANATION: Dr. Ryan Basham

Dr. Basham can be reached at Spectrum Eye via Samantha Espinoza at sespinoza@spectrumeye.com
For urgent requests, call (408) 354-4740.
Routine referrals can be faxed to (408) 354-8161.

Dr. Ryan Basham lectured at the August MBOS CE dinner meeting on oncology and pathology. He said age is the biggest risk factor for cancer, and any lesion that is pigmented, cracked, bleeding, ulcerated, or causes lash loss is more likely to be cancerous.

Inflammatory lesions will get smaller or go away over time, whereas malignant lesions will get larger. If you are not sure which a lesion is, you can take a picture and bring the patient back in a month to compare.

Melanoma and sebaceous carcinomas require urgent treatment, whereas basal and squamous cell can wait months. For uveal cancer, a b-scan is needed; many will otherwise be missed even with scleral depression.

Mohs surgery can take 4-5 hours, is expensive, and the patient often needs to see a different surgeon for reconstruction afterwards. Slow Mohs is much faster.

EDUCATION EMANATION: Dr. Anna Shi

Dr. Anna Shi lectured at the October MBOS CE dinner meeting about Micro-Invasive Glaucoma Surgery. Most MIGS techniques work by decreasing trabecular outflow, which is limited by episcleral venous flow, and are therefore much safer than more invasive surgeries because you cannot get hypotony.

One new option is the Ahmed Clearpath, which is a more effective and faster surgery. Another, the Kahook dual blade, is preferred by Dr. Shi to trabectome as it is safer. Gonioscopy-assisted transluminal trabeculotomy (GATT) can be performed 360 degrees and works especially well on secondary glaucoma, with an average IOP reduction of 20mmHg.

The iStent is safer but results in less IOP reduction. The Preserflo Microshunt is pending FDA approval and uses subconjunctival filtration (as does the Xen45 Gel) with approximately 10mmHg IOP reduction. This is slightly less effective than trabeculectomy but has less risk of hypotony.

Dr. Shi can be reached at Monterey Bay Eye Center, 831-372-1500.

LEGISLATION LAMP: Dr. Theaker goes to Washington

The Healthcare Alliance for Patient Safety (APS) convened a panel of experts on Capitol Hill October 30 to brief lawmakers and Congressional staff on the dangers posed by counterfeit contact lenses.

Following a similar APS presentation for U.S. Senate staff in 2018, this panel was a critical step to ensure that Congressional staff at-large are briefed on the dangers of counterfeit lenses—especially since counterfeiting is sometimes overlooked as a major health and safety issue.

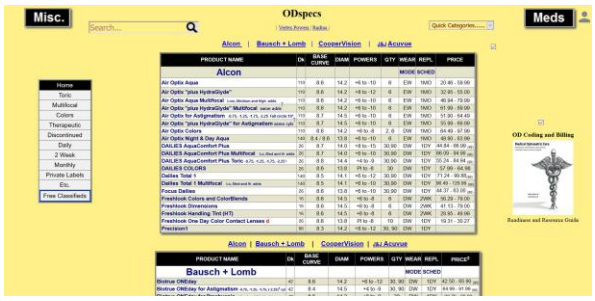
The briefing included remarks about the current statistics and dangers of counterfeit lenses in the U.S., Food and Drug Administration (FDA) efforts to track and mitigate counterfeit lenses, and policy solutions to prevent counterfeiting from impacting patients.

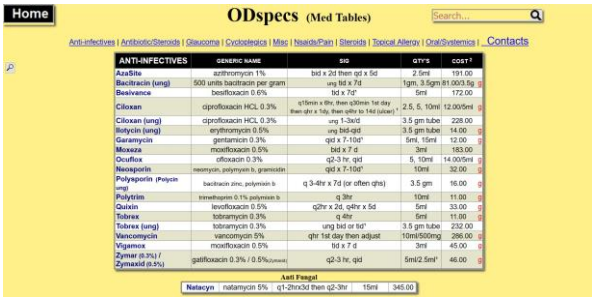
Panelists from the FDA and industry included: Dr. Deanna Alexander, O.D., Chairwoman, Health Care Alliance for Patient Safety; Malvina Eydelman, M.D., Center for Device and Radiological Health, Food & Drug Administration; Thomas Swinnen, President North America, Johnson & Johnson Vision Care, Inc; Gary Orsborn, O.D., Vice President Global Professional & Clinical Affairs, CooperVision; and **Bob Theaker, O.D.,** American Optometric Association.

Article and photo courtesy of AOA-PAC Insider.

INTERNET INCANDESCENCE: ODSpecs.com

ODSpecs.com is an amazing resource for a variety of contact lens parameters and is a wonderful way to see exactly what options different contact lenses are available in. It also great for looking up ophthalmic medication specifications, including prices. It has a massive amount of information in a concise format.





SCINTILLATING SOCIETIES: Fresno to the Philippines

Dr. Margie Recalde, past president of the Central California Optometric Society, participated in a mission trip to the Philippines last year with a group of 40 volunteers composed of high school students, teachers, nurses, dentists, a physician, and a construction leader. They brought over 1,000 reading glasses purchased from restoringvision.org in addition to glasses donated by the Lions Club. They saw around 150 patients per day at Lipa Adventist Academy by using three stations composed of glasses power determination, frame styling, and ocular health assessment. Read more at https://www.optometrytimes.com/blog/blog-mission-trips-make-impact

Dr. Recalde listens to a patient's vision complaints. Photo by Margie Recalde on Optometry Times.

ILLUMINATING INSTANCES: First-time clarity at 40 #1

A 39-year-old patient had a glasses prescription of -5.00 DS OU. While he was 20/30 in his left eye with glasses, he was only 20/400 in his right eye. Previous optometrists had declared his right eye as amblyopic and simply balanced that lens for years, but during my exam, I found a moderately but not severely high myopia which was equal between the two eyes, with no astigmatism, no tropia, no cataract, and no corneal nor macular scar to account for the poor vision OD.

I noticed his keratometry values were 46.50=50.25 in his right eye and 44.50=45.50 in his left, indicating mild keratoconus. I offered to trial a hard contact lens in his right eye to see if his vision improved.

The patient stated that he had tried an RGP lens in his right eye around 2010. However, it was very irritating and he only saw slightly better, not enough to justify using the contact, so he continued to use only glasses.

Rather than trying a corneal RGP as he had in the past, I instead placed a scleral lens on his right eye. The lens was extremely comfortable, and the patient was instantly 20/20 with no over-refraction.

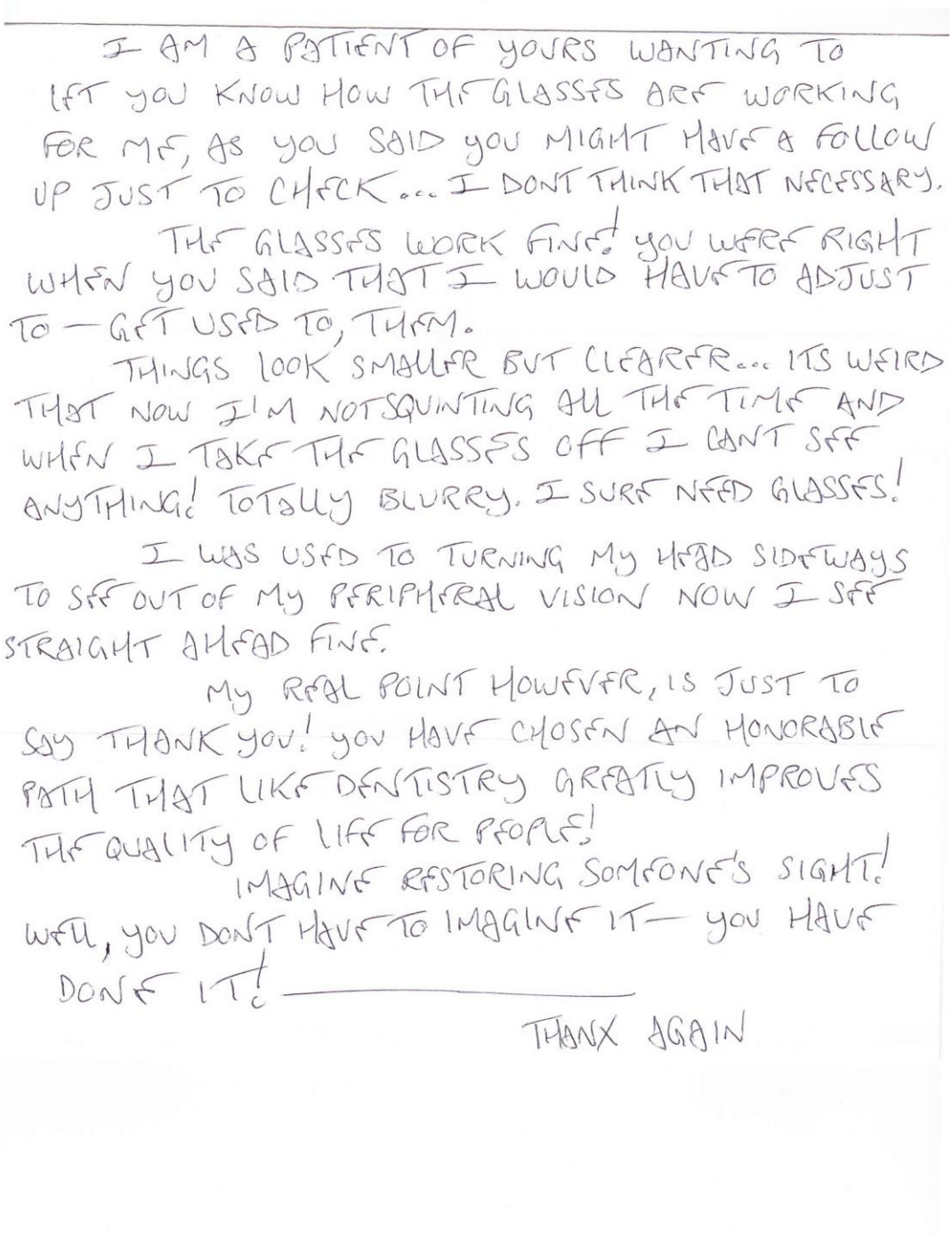
This served as a great reminder to not simply trust old records, especially if the story does not add up. I could find no amblyogenic factors during my exam, which caused me to dig a little deeper for an explanation and possible solution instead of simply following the lead of the patient's previous eye exams of balancing the right lens of his glasses.

The patient was barely able to keep from crying in the first few moments he wore the scleral lens. He stated he had never been able to see that well out of his right eye in his entire life and thanked me profusely. The patient is now happily wearing scleral contact lenses, is 20/20 in each eye, and only has his glasses as a backup in case he loses his contacts.

ILLUMINATING INSTANCES: First-time clarity at 40 #2

It's unbelievable how some people can go through most of their life with poor vision and not even know it. This gentleman was 40 years old and had never had an eye exam. His eyes were perfectly healthy, but his glasses prescription was -5.00-3.00x180 OU.

I prescribed the full correction after trial-framing. I was somewhat concerned about him adapting to the full prescription, especially the cylinder, so I ordered the glasses and told the patient to come in for a follow-up visit after he had worn them for a few weeks. He sent me this letter instead:



I AM A PATIENT OF YOURS WANTING TO LET YOU KNOW HOW THE GLASSES ARE WORKING FOR ME, AS YOU SAID YOU MIGHT HAVE A FOLLOW UP JUST TO CHECK... I DONT THINK THAT NECESSARY.

THE GLASSES WORK FINE! YOU WERE RIGHT WHEN YOU SAID THAT I WOULD HAVE TO ADJUST TO — GET USED TO, THEM.

THINGS LOOK SMALLER BUT CLEARER... ITS WEIRD THAT NOW I'M NOT SQUINTING ALL THE TIME AND WHEN I TAKE THE GLASSES OFF I CANT SEE ANYTHING! TOTALLY BLURRY. I SURE NEED GLASSES!

I WAS USED TO TURNING MY HEAD SIDEWAYS TO SEE OUT OF MY PERIPHERAL VISION NOW I SEE STRAIGHT AHEAD FINE.

MY REAL POINT HOWEVER, IS JUST TO SAY THANK YOU! YOU HAVE CHOSEN AN HONORABLE PATH THAT LIKE DENTISTRY GREATLY IMPROVES THE QUALITY OF LIFE FOR PEOPLE!

IMAGINE RESTORING SOMEONE'S SIGHT! WELL, YOU DONT HAVE TO IMAGINE IT — YOU HAVE DONE IT!

THANX AGAIN

REFLECTIVE RESEARCH: CCT, pachymeter vs OCT

Central corneal thickness (CCT) is one of the risk factors in glaucoma. Ultrasound pachymetry is one method to measure this, while OCT anterior segment B-scan is another. The purpose of this study was to compare the results of the two methods.

Approximately 50 subjects had their CCTs measured by both a Reichert iPac ultrasound pachymeter and a Topcon Maestro OCT. The iPac gave the CCT directly, whereas the Maestro required the user to manually click and drag from the anterior to posterior portions of the cornea scan on the computer screen.

The average difference of the absolute value between the two methods was 7.6 microns. The absolute value was used to account for the fact that sometimes ultrasound gave a thicker result and sometimes OCT B-scan did.

Ultrasound on average measured CCT as 2.1 microns thicker than OCT B-scan. The largest difference between the two measurement methods was 23 microns. 30% of subjects had a difference of 10 microns or greater between the two methods; 47% had a difference of 5 microns or less.

Inter-method variability was approximately 20 microns with both methods. Variability from B-scan was mostly due to exactly where the operator measured the anterior and posterior edges of the cornea after the scan was completed. The cause of variability from ultrasound was unknown, but was possibly due to the angle the pachymeter was held at during measurements.

OCT B-scan never had what would be considered extremely incorrect measurements, while ultrasound on occasion did (these results were repeated and incorrect numbers excluded from this analysis).

In conclusion, results between the two methods were similar enough that which is used should not affect clinical decision making, although ultrasound pachymetry did occasionally yield very inaccurate measurements. Therefore, when using a pachymeter, it is more important for the technician performing the test to ensure the result is likely to be correct.

US	OCT	differenc	avg dif
		2.1	7.6
481	481	0	0
602	602	0	0
563	563	0	0
563	563	0	0
584	584	0	0
448	447	1	1
454	453	1	1
564	563	1	1
484	486	-2	2
549	546	3	3
605	602	3	3
444	447	-3	3
506	503	3	3
560	563	-3	3
573	569	4	4
584	580	4	4
506	502	4	4
573	569	4	4
569	564	5	5
560	555	5	5
497	492	5	5
519	514	5	5
541	547	-6	6
562	555	7	7
572	564	8	8
484	492	-8	8
522	514	8	8
483	492	-9	9
562	553	9	9
501	492	9	9
455	464	-9	9
562	553	9	9
523	514	9	9
513	503	10	10
519	531	-12	12
509	497	12	12
519	532	-13	13
519	532	-13	13
532	519	13	13
599	586	13	13
489	504	-15	15
486	470	16	16
503	519	-16	16
497	480	17	17
514	497	17	17
523	541	-18	18
603	580	23	23

Data, sorted by average difference.
Green indicates thin CCT; red is thick.

VOLUNTEERING VIEW: 2020 Life Hope Centers clinics

Over 150 eye exams were completed and glasses given to patients at a recent health fair in Sonora on January 11-12.

Here are upcoming Life Hope Centers clinics for this year:
02/09 – Arroyo Grande: https://www.cervistech.com/acts/console.php?console_id=0252&console_type=event_list&res_code=qDSX2F&ht=1
03/29 – Cambrian Park: https://www.cervistech.com/acts/console.php?console_id=0252&console_type=event_list&res_code=q5ptRv&ht=1
04/19 – Visalia: https://www.cervistech.com/acts/console.php?console_id=0252&console_type=event_list&res_code=KWeiOP&ht=1
05/02 – Tulare: https://www.cervistech.com/acts/console.php?console_id=0252&console_type=event_list&res_code=8Z2Ori&ht=1
05/31 – East Palo Alto: https://www.cervistech.com/acts/console.php?console_id=0252&console_type=event_list&res_code=dkQR60&ht=1
06/13 – Santa Cruz: https://www.cervistech.com/acts/console.php?console_id=0252&console_type=event_list&res_code=JnyHq2&ht=1
08/08 – Bakersfield 09/13 – Sunnyvale 10/04 – Clovis 11/15 – San Jose 12/06 – Templeton

SPONSOR SPOTLIGHT: Vision Service Plan

Thanks to VSP for being our August 2019 CE meeting sponsor! They had a raffle for a Dragon branded knapsack filled with goodies such as a Yeti insulated tumbler, a Unity insulated sports bottle, and a Cole Haan drawstring bag. VSP has developed the Eyes of Hope mobile eye clinics to provide eye exams and glasses wherever they are needed most. You can contact Stephanie Kirschbaum, OD, the California VSP state rep at steph@sbbmail.com or Reginald Carter, Optometric Associations Relationship Manager, at reginald.carter@vsp.com with any questions.

SPONSOR SPOTLIGHT: Johnson & Johnson

Thanks to Johnson & Johnson for being our October 2019 CE meeting sponsor! Laurie Hartsfield, Senior Territory Account Manager for Vision Care, educated us about the new Acuvue Oasys with Transitions contact lenses. The contacts, which can block up to 70% of visible light at full activation, have been in development for over a decade and were named one of *Time* magazine's 50 best inventions of 2018. Laurie can be reached at Lhartsfi@its.jnj.com

REVEALING REVIEW: Acuvue Oasys with Transitions

I have very light-colored irises and am very light sensitive. I've also worn contact lenses since I was 10 years old and only have glasses for backup; I have never worn glasses regularly. I often have to wear sunglasses to be able to function outside, but I've always dreamed of having suncontacts instead.

In 2005, I thought my wish had been granted. The optometry office I was working at obtained Nike Maxsight contact lenses. I was living in Berkeley and playing multiple pick-up soccer games every week. That seemed like the perfect opportunity to test the contacts. While they did cut down the brightness, they also greatly distorted colors because they were tinted amber. Perhaps in a well-regulated soccer game with two distinct jersey colors that would not have been too much of a problem, but in pick-up games where people are supposed to wear white-ish and black-ish tops but inevitably different shades of blue and gray and even red slip in, it made it impossible to distinguish various shirt colors, and I accidentally passed the ball to people on the opposite teams multiple times because of it.

So, a nice idea, but not useful in practice, and the Nike Maxsights went into the trash can. That seemed to be the case for many other patients as well, because the Maxsights were discontinued in 2008.

For a decade, there seemed to be no progress on the technology, but finally, in 2018, Johnson & Johnson revealed the Acuvue Oasys with Transitions contact lens. Laurie showing up at our October 2019 CE meeting with some trials was perfect timing, as my wife and I were taking a cruise to the Caribbean the following week, which would be a great opportunity to test the contacts in a sunny environment.

As our ship reached port in Haiti, I put in my regular contacts, grabbed my new Acuvue Oasys with Transitions contact lenses, and headed ashore.

It was a very bright day, and in my regular contact lenses, I couldn't stand to take my sunglasses off. Then I tried the Transitions contacts. Looking towards the sun was still too bright, but in general I could comfortably not wear sunglasses out on the beach.

A video of the lenses getting darker once exposed to sunlight on the beach: https://youtu.be/qe6AakXhU2c

After getting home, I tried them out on during few other activities, such as playing tennis and reading outside. The results were similar: as long as I didn't have to look towards the sun for an extended period, they were great. That was a problem for tennis, as I often have to change sides, but great for reading.

In conclusion, while not dark enough for most sports, at least for someone with extremely light irises, Acuvue Oasys with Transitions contact lenses allowed me to be outside comfortably without requiring sunglasses for most general activities.

VESPERTINE VENERATION: Dr. Kenneth Anderson

In 1965, I graduated from LACO (now SCCO). At that time the conflict in Vietnam was escalating significantly. The rumor was that being drafted after graduation was a very strong possibility; until then, we had been under draft deferment. With that in mind, my wife and I decided it would be best to join the Army right after graduation. For one thing, more than half of my classmates were drafted.

In my 23 years in the Army, I was able to be involved with three Colleges of Optometry: SCCO while at Fort MacArthur and Fort Ord, Berkeley while at Letterman Hospital in San Francisco, and PCO while stationed at the military academy at West Point, New York. This was done by way of the extern program where the students would come to the military optometry clinics and see patients under our supervision.

The students benefited by being exposed to many different clinic activities, and we benefited by seeing the advancements in providing patient care that was being taught at the different colleges.

One of my experiences at West Point made an everlasting impression on me. On 4 November 1979, the American Embassy in Iran was overrun, and 55 individuals were held captive. They were finally released on 20 January 1981. They were taken to West Point for debriefing and medical care. I had the opportunity to provide eye care for a few of them. It was interesting to see how some who suffered a type of post-traumatic stress disorder reacted to everyday events while others tolerated their captivity very well.

After serving at West Point for about four years, the Surgeon General's office called and asked if I would accept an assignment to Fort Ord. As I was licensed to practice in California, I accepted in 1983.

Shortly after arriving at Fort Ord, I had the opportunity to have Dr. Don Presley as a patient. After retiring from the Air Force as an officer, he had attended Pacific University College of Optometry and had been president of the MBOS. He invited all of the optometrists in the clinic to attend society meetings. I did attend, and from that time on, I was very interested in MBOS activities.

I retired from the Army in April of 1988. Some time after that, Dr. Presley gave me a call and invited me to join his practice. I found him to be very honest and his hand shake was just as binding to him as if it were a written contract. He had two offices, one in Salinas and the other in Prunedale. In a few years, he retired, and I took over the practices.

Then the time came when I had the opportunity of having Dr. Willa Hisle work for me. She provided great insights for providing an even higher level of patient care. After some time, she bought the practice and our roles switched. Her training as a pediatric optometrist was very beneficial.

I finally retired in December 2015. That was a hard decision as I loved the profession of optometry. Afterwards, it was fun to run into previous patients while at Costco who would get after me for retiring; they did not want me to go.

In looking back over my 27 years of practice in the Monterey Bay area, I am grateful for MBOS for its community and opportunities to learn from one another. I always enjoyed the updated status of our profession from both the newsletter and the MBOS dinner meetings. Being part of MBOS was a stimulus in being a better optometrist by staying up to date on the latest patient care.

"The best vision is insight." - Malcolm Forbes

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