

The Latest Eyes on Light!

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I recently attended the College of Syntonic Optometry's (CSO) 91st annual conference in St. Pete Beach, FL. As always, the conference was top-notch and the beach exquisite! The speakers were cutting-edge and raised the bar for future conferences. The attendees were enthusiastic, intelligent, and open-hearted. Many have been pioneers in the field of photobiomodulation and it was great to connect with them at the conference and during walks on the beach and a beautiful sunset cruise.

As always, the conference began with the 101 and 201 courses with a **History of Light Therapy** by Hans Lessmann, OD, FCOVD, FCSO, and an overview of **Optometric Syntonic Phototherapy** including the **Theory and Practice of Syntonic Phototherapy and Cases** by Mary Van Hoy, OD, FCOVD, FCSO, Rob Fox, OD, and John Pulaski, OD. Larry Wallace, OD, FCSO and John Pulaski, OD, FCSO led off the 201 courses with Larry's **Biotyping and Advanced Filters** and John's **Advances in Kinetic Field and Pupillometry** followed by **Grand Rounds** with Brenda Montecalvo, OD, FCOVD, FCSO, Alia Santoyo, OD, FCSO and myself. These 201 courses discussed more advanced cases such as those with endocrine difficulties, brain fog, visual snow, brain injuries, and Alice in Wonderland Syndrome. Cathy Stern, OD, FCOVD, FNORA, FCSO, and Ray Gottlieb, OD, PhD, FCSO ended the 201 course with a talk on **Photobiomodulation and Optometric Phototherapy**. They talked about how the ipRGC cells affect many areas in the brain related to circulation, immune response, attention and arousal, mood, and circadian rhythm and how syntonic phototherapy can be used to treat amblyopia, asthenopia, dry eye, glaucoma, macular degeneration, and strabismus, among other things.

The main conference began with our keynote speaker and author, Josh Rosenthal, MD, who spoke about the importance of natural sun exposure in his talk, **The Circadian Advantage**. He shared that epigenetics matters in terms of nutrition and metabolism and that there are sensors in the body that can change the way your fuel is used, changing proteins and DNA expression that can signal longevity and wellness, or disease and death. The mitochondria in the body are key and its output is not just ATP, but also light and electromagnetism. Our breath brings oxygen which creates a capacitor across the mitochondria and provides energy to our body. Unfortunately, when mitochondria deteriorate, disease occurs. Light, particularly sunlight, contains visible, UV light, X-rays, and gamma rays, along with water, provides the nutrients for the body, our living matrix. He referred to the importance of the work of Gerald Pollack, PhD, author of [The Four Phases of Water](#) and our speaker two years ago. Some of the positive effects of light include supporting the immune system, protecting against cancer, inducing autophagy, preventing cognitive decline, promoting bone health, improving anxiety and depression, and helping with weight loss. He spoke about Fritz Albert Popp who found that 380 nm light is the wavelength cells use to repair themselves. He also talked about melanin and the eye and about a prohormone polypeptide found throughout the entire nervous system and the endorphins produced by the sun. He discussed the deep implications of a lack of sunlight on sleep, hunger, depression, anti-inflammatory, cardiovascular, sexual function, and healing. Dr. Rosenthal shared that we are more likely to get a sunburn when we are wearing sunglasses as there is a mismatch between the skin and the eyes. He referred to John Ott's conversation with

Albert Schweitzer's daughter; she noted that there was a spike in cancer in Africa when they all began wearing sunglasses. He also talked about aromatic amino acids and photoadaptation and the book Light in Shaping Life: Biophotons in Biology and Medicine by Roland Van Wick which shared important Russian research on light. He also discussed circadian rhythms and the importance of melatonin as the hormone of sleep, and its powerful antioxidant effects on the brain, affecting cortisol levels, lowering estrogen, fighting cancer, and controlling regenerative processes. Lastly, he discussed the harmful effects of artificial Blue light particularly later in the day. Constant blue light stimulation makes a nasty aldehyde that damages your cells, destroying the vitamin A cycle and producing toxic chemicals, which is associated with depression, anxiety, cancers, suppression of melatonin, increased free radical stress on cells, and causes retinal damage and degeneration. In his estimation, blue light blockers are a must, touting Vivarays as the best option. Besides educating our patients about sun exposure and the need for a daily dose of sunlight beginning in the morning and throughout the day he suggested drinking good, living water, fish sources of DHA, maintaining optimal Vitamin D levels, and cold therapy.

Another scientist spoke about **Photo-biomodulation for Aging, Parkinson's**. Anita Saltmarche, BScN MHSc discussed her research with applications of photobiomodulation for sleep, brain injury, dementia, and Alzheimer's. For patients suffering a stroke, she suggested only treating the affected side. She spoke about technologies such as the Vielight which pulsed low wavelengths transcranially and intranasally. She suggested transcranial application twice weekly with the helmet and intranasally in the clinic and intranasally daily for 2 weeks then 10 weeks once weekly transdermal applications in clinic and intranasal application daily. She found changes in cognition, mood, and attention, and has been using PBM to treat autism spectrum disorder, Down's syndrome, Parkinson's, gut issues, absence of smell, balance and motor skill disorders, sleep disorders, cognitive decline, and depression.

Our own Hans Lessmann, OD, FCOVD, FCSO spoke about the connection we have with our patients and the importance of intention when working in the healing profession. His talk, a **New Science of Intention and Consciousness-Application and Outcomes** raised our awareness about how we may best serve our patients. Hans spoke about consciousness and the observer effect and how important our intentions for our patients are. He talked about the work of Dr. Hew Len and his use of the traditional Hawaiian practice of reconciliation and forgiveness of ho'oponopono in a mental ward with good results using the phases of I'm sorry, Please forgive me, Thank you, I love you on his patients.

The first day finished with a well received and fun **Rapid Fire Ask A Syntonist** hosted by CSO Board Fellows, before we concluded to head to a sunset cruise, escorted by playful dolphins enjoying the wake of the cruiser.

The final day of our conference began with our only ophthalmology fellow, Ed Kondrot, MD, FCSO, who shared a talk on **Homeopathy**. He shared about homeopathic provings to determine remedies by identifying the remedy that causes the symptom in normal people. The Arteria Medica contains lists of treatments based on the homeopathic principle of like curing like. He gave the example of fever. A patient would be given belladonna which causes fever in healthy individuals but treats fever in those with it. He shared that homeopathy respects the wisdom of the body and that many diseases are suppressed with medications but are really still there and remain hidden, causing disease deeper in the body and a greater number of diseases later in life. He shared that the history and the overall patient's temperament and condition

informs us as to the best remedy and that there is no one remedy for any one disease. He noted that there are 110 remedies for the eye listed in the provings. He said that asthenopia, for example, can have many types, muscular, retinal, accommodative, and ciliary. He talked about Ben Lane, OD who noted that focusing fatigue triggers episodic intra-ocular pressure elevation and that accommodative strain can contribute to elevation of IOP. Dr. Kondrot said that homeopathy is a nice supplement to help our patients and provides the highest level of healing. Some examples of homeopathic remedies include physostigma for asthenopia, glaucoma, and accommodative strain; nat muriaticum for light sensitivity and watery eyes; ruta graveolens for stiffness in the eyes associated with fatigue; agaricus for twitching, trembling, and spasms; coloc for neuralgic pain in the eye; sramonium for errors in size and distance judgement, letters running together, and dimming of vision; cannabis for confusion; belladonna for trouble focusing; sepia or silica for cataracts; and carbonium sulfuratum, secale, sensecula, vanadium or sarcode-retina for macular degeneration. He concluded by sharing that the best question to ask is "How is your vision problem limiting you?". He suggested asking about their symptoms and listening to every word they say. It is important to treat the whole person as the underlying pathology causes the vision problem. He has a group that meets on Sunday 7am EST to work on vision cases of homeopathy that includes our own Mary VanHoy, OD, FCSO and he can be reached at homeopathiceye@gmail.com.

Next, Alia Santoyo, OD, FSCO continued the conversation about how to best help our patients in her talk on **Collaborative Care with a Neurologist**. Alia Santoyo shared about her personal experiences of 3 brain injuries in 25 years and 2 cases of myelitis with dismissals by 8 neurologists before going to optometry school. She told how she puked all over the preceptor in optometry school during a binocular vision evaluation. She was diplopic, a nystagmat, and had a seizure disorder before finally finding a neurologist who specializes in movement disorders. He said "I believe you. When you graduate, I will open a lane and work with you." It took a bit but she works in his practice focusing on migraines, infectious disease, emergencies, concussion, retinal pathologies, sudden onset blindness and diplopia, and neurological diseases. Dr. Santoyo feels that collaboration is key and regularly refers to practitioners that specialize in a variety of offerings. She herself spends a lot of time doing in depth assessments using DNA, gene, blood testing, and CT scans. Her treatment modalities include supporting lifestyle changes, gut health, stress management, nutritional counseling, neuro optometric rehabilitation, syntonics, neurofeedback, the coMRA, Muse, PEMF units, grounding mats, Lumiceuticals, as well as life coaching. She discussed the different phases of treatment including the mind, body, and detoxification. Her coaching includes goal setting and heart centered intentions, affirmations, mindfulness and meditations, and a gratitude practice. Body centered approaches include breathwork including Heartmath breathing, colored light on acupressure points, castor oil packs, sole water, and use of cannabinoids. Some of her recommended lifestyle changes include: getting exercise, maintaining proper sleep hygiene, using blue light blockers, turning off EMF, using a grounding mat, planning and pacing so not overdoing, setting timers for meditations and taking breaks, specific diets such as the Mediterranean diet, the Ketogenic diet, a True plant based diet, and intermittent fasting, as well as cutting back on sugar and decreasing alcohol. She uses Fullscripts to give supplement and body care product recommendations. Dr. Santoyo concluded her talk with 3 cases that demonstrated her use of all of these modalities with very positive outcomes.

My former resident and research colleague, Aaron Nichols, OD, FAAO, FCOVD helped to shed some **Light on the Vagus Nerve** with his comprehensive review of this cranial nerve and research on photobiomodulation and its effects on the autonomic nervous system. He gave us an overview of the nerve's long traverse in the body and its physiology. He shared that the vagus nerve has an 80% sensory and 20% motor component and communicates with the amygdala, hypothalamus, and many other parts of the brain with innervations to the thoracic, esophagus, liver, lung, and heart, and is involved in taste, emotions, circulatory, and cognitive function. Dr. Nichols spoke about vagus nerve stimulation using advanced technologies, along with humming, singing, and breathwork, used for depression, epilepsy, obesity, and anxiety. He discussed the many studies of light application reporting autonomic nervous system effects on heart rate variability, skin conductance, blood pressure, sleep, alertness, pain, and mood. Some of the studies also looked at dynamic pupillary response as an objective biomarker of vagal response. He shared that pulsed, dynamic light such as Eyelux uses showed greater improvements compared to static light. He also suggested the use of bright light in the morning to change what is happening in the heart, hormonal system, and brain. He shared about Jacob Lieberman's book, Light Medicine of the Future and Anadi Martel's Light Therapies, and the importance of Dinshah Ghadiali's work found in his book Spectro-Chrome Metry Encyclopedia.

Finally, our long standing dean of CSO, Ray Gottlieb, OD, FCSO rounded out the meeting sharing about his early struggles with reading and learning and his experiences in optometry and the world of syntonics optometry. He discussed the latest breakthroughs in the fields of light and photobiomodulation in his talk **Advances in Photo-Medicine** and shared about the many networks in the brain including visual, auditory, and central executive networks. He spoke about space and time and a participatory universe as well as tidbits on a morning routine of blue light, pupil measurements in poor readers, and the positive effects of nitric oxide. As always, his stories of patient encounters and unique experiences inspired us all.

The conference culminated with the **Awards Banquet Dinner**, a message from our president, Brenda Montecalvo, OD, FCOVD, FCSO, and the **Presentation of Awards**. We honored Cade Kowallis, OD with his fellowship this year. John Pulaski, OD, FCSO conferred the fellowship and commented on how impressed the review board was with his efforts and presentation. I was beyond humbled to be honored with the **Charles C. Butts Award** presented to me by my dear friend, mentor, and colleague, Ray Gottlieb, OD, PhD, FCSO.

I greatly look forward to next year in Tucson, AZ and hope to see many of you there as well as many new colleagues!