

Photobiomodulation Virtual Summit and Why PBM Therapy Should Be Integrated Into Acupuncture Practice

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A joint global summit in photobiomodulation (PBM) science and applications was held last October. The international conference, PBM2021, was sponsored by the North American Association for Photobiomodulation Therapy (NAALT) and the World Association of Photobiomodulation Therapy (WALT). I consider this virtual conference to be the most significant review of PBM as a medical modality in the past 20 years, since I became a member of NAALT in 2001 and its president from 2008 to 2010.

The PBM2021 program built on years of educational success and featured over 100 outstanding speakers from 30 countries, covering a breadth of contemporaneous research and showcasing new therapeutic and clinical applications. Th featured leading authorities in the PBM field addressed a wealth of applications, such as musculoskeletal and soft-tissue applications; chronic and acute pain treatment; sports medicine, including enhanced athletic performance; wound healing; dermatology; dental; veterinary; cancer therapy; cancer therapy side effects; central nervous system photobiomodulation in the brain, eye and spinal cord; peripheral neuromodulation; antiviral, antimicrobial / Covid-19 therapies; and overall health and wellness. The mechanisms of action, safety, treatment guidelines and position papers on the use of PBM technology also were presented.

Praising the Vast Potential

Three government officials led off each day of the summit by offering their insightful perspectives on where the White House and their designated districts stand with PBM. Dr. Tara A. Schwetz, assistant director for biomedical science initiatives in the White House Office of Science and Technology Policy (OSTP), stated that President Joe Biden had introduced the "Advanced Research Projects Agency for Health" (ARPA-H) in February 2021 and proposed \$6.5 billion in May to be included in the fiscal year 2022 budget request. This funding would occur for the following three years for high-reward and high-risk biomedical breakthroughs to address diseases like Alzheimer's disease, diabetes and cancer.

Dr. Schwetz believes by harnessing and fostering the right collaboration and resources such as the PBM community, the ARPA-H can become successful with opportunities to shape the future of health and medicine.

In congruence with her thoughts, two U.S. representatives revealed their supportive insights for PBM inclusion and research development. Congressman Jim Hagedorn from Minnesota shared his experience receiving PBM medical care from the Mayo Clinic after being diagnosed with stage 4 kidney cancer. He encouraged the use of PBM since it has helped thousands of cancer patients like himself, especially with chemotherapy side effects. He believes PBM should remain a medical standard of care readily available for those suffering from cancer and other diseases, especially the underserved and those who live in rural areas.

Congressman Hagedorn praised PBM as an alternative to prescribing opioids for chronic pain relief. Furthermore, he announced there are currently clinical trials testing PBM in slowing and preventing dry macular degeneration, which is the leading cause of blindness in the U.S.

Congressman Alex Mooney from West Virginia also voiced his support for the future care and treatment of patients with PBM. He stated the conference was an excellent way to highlight the work and innovation PBM are doing, and that it provides many potentially life-changing therapies. West Virginia is currently a hot spot for PBM, as it is used as an alternative treatment to opioid use.

Congressman Mooney added that PBM has proven to be a resourceful treatment for both postsurgical and injury recovery in the Martinsburg VA hospital; he praised research facilities and universities studying the effects and development of PBM, such as Shepherd University and West Virginia University, where they are studying PBM's effectiveness in treating chemotherapy side effects.

From LLLT to PBM

A bit of history on how once commonly named low-level laser therapy (LLLT) is now universally recognized as photobiomodulation (PBM). Beginning in the 1960s, Dr. Endre Mester noted that laser light caused hair to grow at an accelerated rate, which led to the use of the term *laser biostimulation*. Since then, a few of the other names used for this therapy include low-level laser (or light) therapy, low-intensity laser therapy, low-power laser therapy, cold laser and soft laser. Of these, the most frequently used term has been *low-level laser therapy* (LLLT). Thus, there has been a lack of consistency and consensus on terminology. At the 2015 WALT-NAALT Nomenclature Consensus Meeting, *photobiomodulation* was adopted to replace all other names.

PBM in Clinical Care

At this summit, I co-chaired a laser acupuncture session with Dr. Volkmar Kreisel of Germany. Dr. Kreisel is chairman and founding member of the College of Photobiomodulation Therapy and the co-author of a textbook on laser acupuncture. I first met Dr. Kreisel when he presented a lecture on using laser acupuncture for the treatment of macular degeneration at a 2013 PBM conference in Germany, where he also showed me many clinical applications of laser acupuncture in the book he wrote. In that moment, I realized that laser acupuncture had the potential to play a major role in clinical integrative medicine in the future.

During the laser acupuncture session, I presented two papers. The first paper was on treating both chronic soft-tissue pain in the knee with a unique clinical technique I developed that utilizes acupuncture and photobiomodulation therapy; and severe arthritis pain in the knee using laser-needle acupuncture. My second paper was on the treatment of peripheral neuropathy in the feet with acupuncture and photobiomodulation therapy (detailed in my article, "Three-Part Integrative Approach for the Treatment of Peripheral Neuropathy," published in the October 2021 issue of *Acupuncture Today*).

PBM & TCM: A Perfect Marriage

It is crucial to develop an integrative model to treat modern-day complex medical issues, especially chronic musculoskeletal and neurological pain. PBM offers an array of benefits as an alternative therapy that can easily be combined with acupuncture to accelerate the healing process. Patients recover from musculoskeletal and peripheral nerve injuries with less scar tissue, cell regeneration and improved function.

Consistent research shared during the PBM2021 conference showed evidence that photobiomodulation increases the output of oxygenated blood to the injured tissue to promote healing and resolve inflammation by incrementing the quantity of inflammatory mediators such as macrophages, neutrophils and lymphocytes. Furthermore, based on studies on neuromodulation, applied PBM promotes neuronal sprouting and myelin formation for optimal nerve regeneration.

This therapeutic approach can undoubtedly provide successful results in combination with acupuncture and TCM. Acupuncture is known to balance the body's energy, and unblock chronic *qi* stagnation and blood stasis where patients experience pain. This action activates the inherent healing properties of the organism by unblocking the meridians and moving the blood, while PBM accelerates the healing process.

It is a perfect marriage of an ancient healing art with the healing technology to resolve many challenging medical conditions modern acupuncturists are facing every day. It is my dream that PBM will someday be taught nationally in all acupuncture schools in order to offer future acupuncturists an additional resource and therapeutic tool for their practices.

José Vargas Ton graduated from the University of Arizona with a BS in Psychology before acquiring his master's degree in acupuncture & Oriental medicine from the Arizona School of Acupuncture & Oriental Medicine. He is currently interning under Steve Liu in his integrative medical practice.

Steve Liu received his Bachelor of Science in Electrical Engineering degree from San Jose State University and graduated from the American College of Traditional Chinese Medicine. He is the founder and president of the American Society for Laser Acupuncture Therapy; president emeritis of the Arizona Society of Acupuncture and Oriental Medicine and the North American Association for photobiomodulation Therapy; and a board member of the International Society for Medical Laser Applications. Steve is also the founder of **HanLing Acupuncture Healing Center** and the **Integrative Brain Healing Institute**, and has a private practice in Tucson, Ariz.

