

"Where there is purpose, there is hope." George Washington Carver

Effects of PBM on mitochondria, immune system, and its potential for COVID-19.

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How Relevant is Photobiomodulation for COVID-19?

Nitric oxide (NO) and coronavirus, what is the connection?

Dr. Lew Lim to speak at two virtual PBM-focused summits.

How Relevant is Photobiomodulation for COVID-19?

There is no doubt that we are in troubled times with the COVID-19 dominating every aspect of our lives. At Vielight, we are receiving many queries asking whether Vielight devices can be used to protect against this novel disease. We asked the Vielight CEO, Dr. Lew Lim, to share his views on this important subject.

Here is what Dr. Lim shared: "While waiting for a vaccine or medication to be available, many untested treatments are suggested for treating COVID-19. They range from excessively esoteric proposals, to repurposing existing drugs.

I can only speak about what I know well: photobiomodulation (PBM). At the outset, I want to say that there is no clinical trial to prove with certainty, that PBM is effective for treating COVID-19 infection. No one in the PBM community can claim that PBM is the answer, without evidence from a controlled trial.

Based on published literature and scientific reasoning, there are scientific bases to support the use of PBM as a potential treatment. There is a couple of key

considerations here. First, let us consider whether PBM can boost the immune system to mount an attack on SARS-CoV-2, the strain of virus behind COVID-19. Second, viruses are geniuses in mutation. Given these two factors, how do we deal with this moving target?

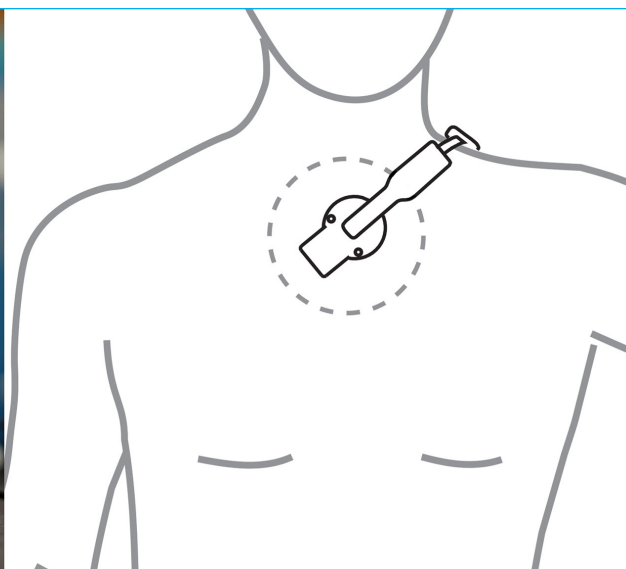
The literature on PBM's effect on improving the immune system is scant. However, there are fascinating studies showing that when you deliver light of specific wavelengths to a tube of human blood, white blood cells, which are our defenders, proliferate. Therefore, this suggests that light is capable of boosting white blood cell count, even when it is outside the body. At Vielight, our task is to find the optimal way to design a product to achieve this effect inside the body.

One of the tenets of PBM is that the process releases nitric oxide (NO). According to a study, the released NO inhibits the replication of coronaviruses, which reduces their numbers. Furthermore, when PBM is directed to the bone marrow, it stimulates the generation of stem cells. Stem cells mature in the thymus gland to become T-cells. These T-cells go

on to help the immune system to attack invading pathogens. Thus, there might be a potential to attack the SARS-CoV-2 virus. Therefore, PBM has the potential to boost one's immune system to deal with these invaders.



Perhaps the best relevant potential of PBM is that it helps our innate immune system to treat and recover from diseases. For this reason, we are not victims of each and every infection that attacks our bodies. And we may be able to get off the treadmill of looking for new vaccines to deal with the ever-changing viral strains, such as those of the flu.



In this pandemic, COVID-19 is so wide-spread, with demonstrated potency across different environments, that it has a chance of successful mutation. New strains can either be benign or more deadly – no one has the answer. Yet, the desired “machine-learning” capability to counter the ever-morphing enemy is inside the most intelligent, adapting complex – our body! This is where PBM steps in with its ability to improve body functions. PBM does it by helping the body to trigger this intelligence by resetting its “balance”, or homeostasis. It all comes down to helping our body at its most basic cellular level – the mitochondria. The mitochondria, components in most cells, produce energy and signal for changes in body functions.

Vielight has a history of being at the cutting edge of practical PBM applications. Thus, we are devising ways to target the thymus gland to stimulate the development of T- cells. With this aim in mind, the X-Plus was developed specifically for this purpose. We don’t know yet whether it merely improves one’s general health, or has the potential to fight COVID-19. In this respect, we are planning a clinical trial to see whether these hypotheses pan out.

In summary, a decent level of scientific support is there. However, we will NOT know, if PBM works as a treatment for COVID-19, until carefully controlled clinical investigations are completed. We are now working with regulatory authorities on getting this study off the ground. In the meantime, be safe, and listen to science!”

A white paper on the above subject has

been co-authored by Dr. Lew and Dr. Michael Hamblin, a world leader in PBM research. You can access this paper by following [this link](#).

IMPORTANT: Vielight X-Plus is not a medical device and is not intended for treatment or cure of any diseases or conditions, thus, it is not intended to treat or cure COVID-19. Vielight does not intend to make any representation of any devices towards COVID-19.

Due to the interruptions caused by the COVID-19 pandemic, the X-Plus is not presently available for commercial sale. We are working hard to restart the production, and will provide updates on this subject on our website and in our social media. Meanwhile, we are awaiting reopening of the borders and factories to commence the production and delivery of the X-Plus and all other Vielight PBM devices. Moreover, at this stage, we do not expect new stock of the X-Plus earlier than in July 2020.

Participations in Live Conferences is Suspended

Regrettably, we will not participate in any live conferences, as all of them are suspended for the time being. As always, we will continue to keep you updated on this and other important subjects.

Virtual Conferences

In the environment of pandemic and social isolation, virtual conferences are going to take on more prominence.

Thus, Dr. Lew Lim speaks at the virtual [Brain Degeneration Summit](#). This online event takes place between April 6 and April 12, 2020.

[Brain + Transcranial Photobiomodulation Therapy Virtual Summit](#) is scheduled to run between April 28 and May 1, 2020. This is another online conference where Dr. Lim will be presenting.

Moreover, both events are free for attendees. We are looking forward to having you there.

Stay well and safe.

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