

Vielight News

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"Where there is purpose, there is hope."

George Washington Carver



Insights on Our Journey

Annual message from the CEO, Dr. Lew Lim

2018 was another wonderful year for us. Every year, we take another step forward to further our mission of improving human lives with innovation.

Some discoveries would not have been possible without the work of certain research collaborators. I would like to briefly acknowledge some of them here.

We obtained strong evidence through EEG (by measuring electrical signals) that the human brain responds significantly to the way Vielight delivers PBM. The Neuro Gamma was put

to test in a double-blind study on healthy brains headed by Dr. Reza Zomorodi from the Centre of Addiction and Mental Health, University of Toronto.

Significant elevation in the power spectrum and connectivity were observed in the alpha, beta and gamma bands, along with suppression in the delta and theta bands. The study is currently being reviewed for publication in a high impact journal.

Moving on, Dr. Linda Chao of the University of California San Francisco replicated the earlier cognitive assessment results in the Salt-

marche et al dementia/Alzheimer study in a controlled pilot study.

She also observed improved blood perfusion in the default mode network hubs through fMRI and ASL over 12 weeks. These provided further evidence of the brain's significant response to the Neuro Gamma.

In the world of meditation, Dr. Sanjay Manchanda, Dr. Jay Sanguinetti and Dr. Jeffery Martin, collaborated with us on the use of the prototype Neuro Pro for advanced meditators.

The device is capable of inducing any pulse frequency in the brain. We observed rapid entry



Dr Lew Lim, CEO and Founder of Vielight

into desired altered meditative states with induced oscillations specific to the person. We are planning a controlled meditation study

(which is inherently challenging) to understand this phenomenon better and allow for easy replication. *Continued*

Contact Us:

Editor: Dominic Jake King Lim; news@vielight.com; North America - +1-877-355-8012; International: +1-647-201-5499;

In a study on cognitive performance, Dr. Jay Sanguinetti at Dr. Vincent Clark's lab in the University of New Mexico conducted a controlled study and observed extraordinary cognitive performance with the asynchronous pulsing Neuro Gamma, a feature in all our commercial units.

The study presented a very large effect size in learning and cognitive performance when the device is in use. They discovered that the device has to pulse asynchronously (out-of-phase). We are in the process of finding out why the brain behaves

in this way. It has taught us that there is no standard way of delivering PBM to the brain, and expect it to work the same way for everyone. Pulse mode and phase synchrony matter a great deal.

In the field of neurofeedback (NFB), Penjean Gracefire, NFB clinician and innovator, presented QEEG images on how the dysfunctional brain responds to different pulse frequencies delivered by a Neuro headset.

She demonstrated that people have their own sweet spots for induced oscillation to help with significant re-

covery. It suggests that the Vielight PBM may be of profound help to NFB practitioners seeking quick and effective personalized treatments in the future. We plan on expanding research in this area.

In sports, professional athletes reported greater endurance and recovery during training. They also experienced better on-demand physical and mental performance with the various devices in competition. Much research has already been done in the application of PBM for sports, so this is not new.

What sets Vielight

apart is the portability and convenience. Clinicians have measured improved oxygenation with the Vielight 655 Prime. We plan to research this area further in 2019.

I would like to make a special mention of Dr. Margaret Naeser and Dr. Liisa Laakso, as they continue their clinical research in brain PBM with Vielight devices incorporated into their protocol.

What is in store for 2019? We continue to improve on our products and invent new ones to expand on achievable outcomes. I hope that we can have beta ver-

sions of the Neuro Pro by the end of 2019.

We should also have more data from the various clinical studies that are in place now, particularly for Alzheimer's, cognition, traumatic brain injury, autism, sports performance and meditation. There should be new data that helps to provide deeper explanations of the mechanisms of action.

Lastly, but most importantly, all of us at Vielight would like to thank everyone for your continued support. I expect that some of these discoveries could change in 2019.

Vielight X-Plus Coming Soon!

THE Vielight X-Plus will be available in 1-2 months. The X-Plus was designed to deliver photobiomodulation (PBM) to areas not already covered by other Vielight devices.

The Vielight X-Plus is versatile with a single 810nm LED held by a flexible steel band posterior headset and a 633nm intranasal diode. It can be used together at the same time with the Vielight Neuro.

When used on the brain, the X-Plus complements the Vielight Neuro by delivering light energy to a brain area not covered by the Neuro. Additionally, the 633nm intranasal diode emphasises blood and systemic photobiomodulation.

The Vielight X-Plus is designed to answer the following questions:



1) How do we conveniently direct near infrared (NIR) light to the cerebellum and brain stem?

2) How can we conveniently position one LED to any position on the brain?

3) How can we conveniently direct NIR to any location on the body such as the thymus gland, the gut and the vagus nerve?

It has LED modules designed to perform functions that the other Vielight devices do not (including the Neuros). The Neuros have LEDs that deliver NIR light to the hubs of the default mode network, and the NIR intranasal applicator delivers light energy mostly directly to the brain. The NIR LED module can deliver NIR

light to areas not covered by the Neuro, such as the occipital lobe and posterior areas. The X-Plus has its own intranasal LED which delivers visible red LED at 633 nm, which is too short to travel directly to the brain but would hypothetically, deliver to the capillary network for circulation throughout the body.

Therefore, the X-Plus can be used on its own or as an adjunct to the Neuro. Although the Neuros (whether the Alpha or Gamma) have been giving very good outcomes, the addition of the X-Plus makes treatments more holistic.

In clinical trials, the X-Plus has been added to the Neuro RX Gamma for Parkinson's Disease. It is also considered for studies in development trauma disorder and autism. Until the trials are complete, it should not be assumed that the X-Plus can be used to treat these mentioned diseases.

The X-Plus is priced at USD \$749, and is expected for initial roll-out in early January 2019, the first lot to be shipped to clients on the waitlist. It should widely be available by February 2019.

Interested to become a Vielight Reseller or Introducer? Write to us at info@vielight.com