Photobiomodulation Clinic at Mass General Offers a Promising New Treatment for Neuropsychiatric Disorders

Transcranial photobiomodulation (PBM) is emerging as an innovative approach to treat various neuropsychiatric conditions, including major depressive disorder, generalized anxiety disorder, traumatic brain injury, and Alzheimer's disease and other types of dementia. The Brain Photobiomodulation Clinic at Mass General Hospital, under the direction of Paolo Cassano, MD, PhD, offers this cutting-edge treatment for patients with treatment-resistant neuropsychiatric disorders.

Understanding Transcranial Photobiomodulation

PBM is a non-invasive technique that utilizes near-infrared light to stimulate neurons in specific brain regions. The treatment involves placing a device equipped with light-emitting diodes (LEDs) on the scalp, which delivers low-energy light to targeted areas of the brain. This stimulation can lead to both immediate and long-lasting changes in neuronal activity over the course of treatment.

Research has shown that near-infrared and red light are absorbed by neurons, primarily by mitochondria, triggering a cascade of beneficial effects. These include pro-metabolic, anti-inflammatory, and antioxidant effects, and PBM can also stimulate neurogenesis and neuroplasticity. These combined effects may significantly benefit brain function by improving cellular health, reducing inflammation-related damage, protecting the brain from oxidative stress, and promoting the brain's capacity for self-repair and adaptation. Consequently, this could potentially alleviate symptoms associated with various neuropsychiatric disorders.

The Treatment Process

A typical PBM session lasts 10 minutes or less, depending on the specific treatment protocol. Patients remain comfortably seated, awake, and alert throughout the procedure. The non-invasive nature of PBM means that no anesthesia or sedation is required, and no medications are administered. This allows patients to return to their regular activities immediately after treatment, without experiencing any cognitive or systemic after-effects.

The number of treatment sessions in a PBM course can vary according to each patient's individual needs and response to the therapy.

Ongoing Research at Mass General

Neuromodulation approaches like transcranial photobiomodulation are emerging as critical areas of study, potentially revolutionizing the care for patients with treatment-resistant psychiatric disorders. As a relatively new treatment modality, transcranial PBM is currently undergoing extensive research to better understand its precise mechanisms of action and optimize its clinical applications. What makes this approach particularly promising for the future of neuropsychiatric care is its potential as a low-cost, easily accessible, and user-friendly intervention. These attributes position transcranial PBM as an exciting prospect in the evolving landscape of neuropsychiatric treatments, offering hope for patients with limited options under current therapeutic regimens.

Learn More About the PBM Clinic at Mass General

You can learn more about he MGH Brain PBM Clinic HERE and on YouTube.

WATCH "Healing Light": The *MGB News YouTube Channel* features a success story from the *MGH Brain Photobiomodulation Clinic*.