

Home-use Photobiomodulation as a Potential Treatment for Long COVID



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Introduction:

Proposed mechanisms of long COVID pathogenesis

Long COVID that has unresolved pathophysiology and greatly in need of an intervention that is supported by clinical evidence.

- Immune Dysfunction
- Microbiota Dysbiosis
- Autoimmunity and immune priming
- Blood clotting and endothelial abnormalities
- Dysfunctional neurological signaling
- mitochondrial dysfunction

Photobiomodulation (PBM) has multiple pathways

To deliver specialized light to brain/scalp and nasal tissues

- Growth factors
- Blood circulation
- Anti-inflammation
- Reduced excitotoxicity
- Homeostasis

Aim: *To present information in support of a clinical trial to evaluate the efficacy of home-use photobiomodulation in alleviating symptoms associated with long COVID.*

Evidence in the literature: PBM to improve:

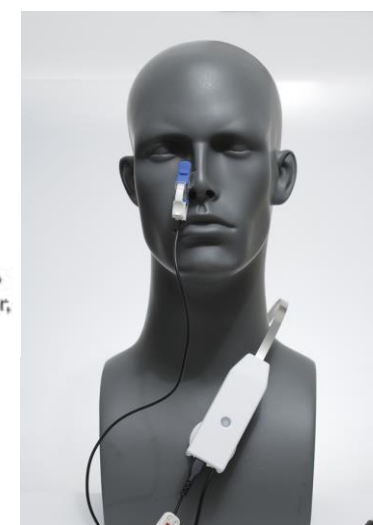
- Endothelial dysfunction
- COVID-19 Brain fog
- Autoimmune disease
- Microbiome modification

Method and Results: Vielight RX Plus to treat COVID-19 (294 randomized)



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Home-use Photobiomodulation Device Treatment Outcomes for COVID-19

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Primary:

The Vielight RX Plus significantly **accelerates recovery from severe COVID-19** infection with no significant safety issues

Secondary:

Helps with **brain fog** (thinking clearly being one of several secondary outcomes)

Days-to-Recovery with Kaplan-Meier Method

Treatment	Control	Difference	P-value
18	21	3	0.050

Think clearly

Treatment	29	22	7	10	(9, 15)
Control	30	17	13	21	(12, 30)
Total	59	39	20	11	

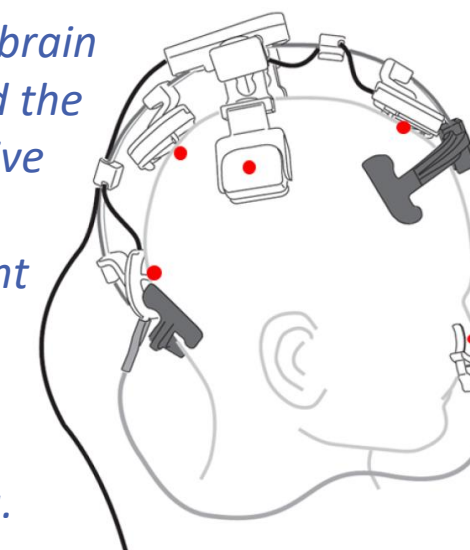
Upcoming pilot study on long COVID evaluating the effect on brain fog

Single Intervention with Vielight Neuro Gamma

Key Parameters:

- 810 nm Near Infrared Light
- Pulse rate of 40 Hz
- Targeting the Default Mode Network
- home-use photobiomodulation

Combining the high prevalence of brain fog as a long COVID symptom, and the success in cases of treating cognitive impairment with PBM, Brain Fog is chosen as a primary endpoint target. Primary efficacy objectives include tests of working memory, executive function, attention, and processing speed, Spatial planning.



- Double-blind, Sham-controlled, Prospective, randomized trial
- 36 subjects (18 active Vielight Neuro RX Gamma; 18 sham)
- Vielight Neuro RX Gamma administered for 20 minutes once a day, or 6 days skipping day 7 for 56 days.

Conclusion :

The reasons for the potential in Vielight PBM include evidence to date, safety, home-use, low cos. Information from this study sets up for a pivotal study. The next challenge is recruitment for more than 200 subjects across North America.

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