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Vielight News

Accelerating photobiomodulation.



EFFECTS OF HOME PHOTOBIMODULATION IN PATIENTS WITH DEMENTIA.

Center for Imaging of Neurodegenerative Diseases, San Francisco VA Medical Center, California. Departments of Radiology, Biomedical Imaging and Psychiatry, University of California

In 2015, our [pilot trial](#) made history by being the first to show efficacy of brain photobiomodulation for dementia in humans. In 2019, Dr. Linda Chao, a professor in the Departments of Radiology, Biomedical Imaging and Psychiatry at the University of California, verified our 2015 dementia pilot trial with her [own independent study](#).

Eight participants diagnosed with dementia were randomized to 12 weeks of usual care or home photobiomodulation (PBM) treatments. The PBM treatments were administered by a study partner at home with the [Vielight Neuro Gamma device](#).

The participants were assessed with the Alzheimer's Disease Assessment Scale-cognitive subscale and the Neuropsychiatric Inventory at baseline and 6 and 12 weeks, and with arterial spin-labeled perfusion magnetic resonance imaging (MRI) and resting-state functional MRI at baseline and 12 weeks.

Results: At baseline, the UC and PBM groups did not differ demographically or clinically. However, after 12 weeks, there were **improvements in ADAS-cog** (group · time interaction: $F_{1,6} = 16.35$, $p = 0.007$) and **NPI** (group · time interaction: $F_{1,6} = 7.52$, $p = 0.03$), **increased cerebral perfusion** (group · time interaction: $F_{1,6} = 8.46$, $p < 0.03$), and **increased connectivity** between the posterior cingulate cortex and lateral parietal nodes within the Default-Mode Network in the PBM group.

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Tuszynski


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Dr. Norman Oberman

VIELIGHT SPOTLIGHT

Dr. Norman Oberman, PhD, is a retired clinical psychologist and co-founder of the Los Angeles Institute for Psychoanalytic Studies

"I could make no human sense of what was going on around me. It was like being down the bottom of a deep well. I've been taking supplements for improving cognition and they did nothing. And I was knowledgeable in the field, so I know what there was and the best was of no use whatsoever."

"When I bought the Neuro Gamma and used it diligently, I just woke up to the fact that it was working. What I'm talking about, I've not in anyway been paid for. To me, it's of the utmost importance for people to know what I've gone through and how I've come out of it."

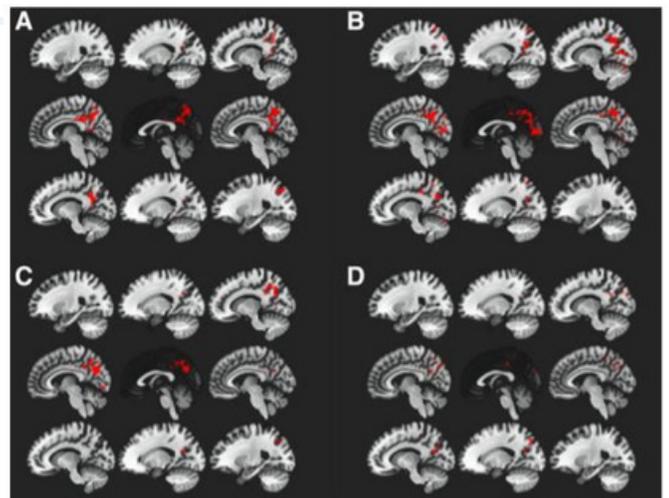
Watch his interview here: <https://www.youtube.com/watch?v=ZNMLDBqIDJK>

IMPROVING CEREBRAL BLOOD FLOW

AD is characterized by decreased regional cerebral blood flow and reductions in regional cerebral metabolic rate of glucose metabolism.

The third finding of the Chao's study is that cerebral perfusion increased after 12 weeks in the PBM group compared to the UC group.

This finding is consistent with previous reports of PBM-related increases in local oxygen consumption, total hemoglobin, a proxy for increased and increased oxygenated/decreased deoxygenated hemoglobin concentrations.



Default-mode network activity in the PBM group—(A) baseline and (B) week 12 and in the usual care group—(C) baseline and (D) week 12. The posterior cingulate cortex (1, -61, and 38) was used as seed in the analysis; Height threshold: Punc < 0.001; cluster threshold PFDR < 0.05.



A message from a researcher

Over the past three years our team has been collaborating productively with Vielight Inc. using several photobiomodulation (PBM) devices kindly provided for experimentation in my lab by Vielight. We found some remarkable effects produced by these devices. Our experiments showing these effects of PBM on microtubules and living cells validate the modulating effects of PBM on living systems. The experiments we have conducted provide a deeper level of understanding of the way living cells, cellular structures, and components such as microtubules respond to low-intensity NIR PBM.

Dr. Jack Tuszynski, PhD, computational biophysicist.
Department of Physics, University of Alberta