

JANUARY 2025

# Vielight News

Accelerating photobiomodulation.



## MCI Clinical Research | Data Presentation

A new [clinical study](#) by researchers at the University of Toronto explored the Vielight Neuro RX Gamma device (non-medical version: [Neuro Gamma](#)) to enhance brain function in MCI patients.

### **Study Methodology**

Fourteen participants with MCI were randomly assigned to active and sham groups, using the device daily for six weeks. Researchers assessed cognitive function, brain structure and connectivity, and blood biomarkers before and after treatment using cognitive tests, imaging (MRI, fMRI), and blood analysis.

### **Key Findings**

- **Cognition:** The active tPBM group showed improved executive function (TMT-B) and trends toward better general cognition (MMSE).
- **Brain Health:** Increased right thalamus volume, enhanced brain network connectivity, and improved neuronal metabolism (H-MRS).
- **Biomarkers:** Reduced Alzheimer's-related markers (isoleucine, methionine) and increased mitochondrial function indicators (butyrate, L-carnitine). A decrease in plasma tau suggests potential neuroprotective effects.

The findings suggest that high-irradiance 810nm NIR brain PBM may improve cognition and brain connectivity in MCI patients.

## Newsletter Highlights

MCI Research  
Poster Presentation

PBM Foundation  
Irradiance Tests  
Vielight, Suyzeko,  
Neuronic

The PBM Foundation

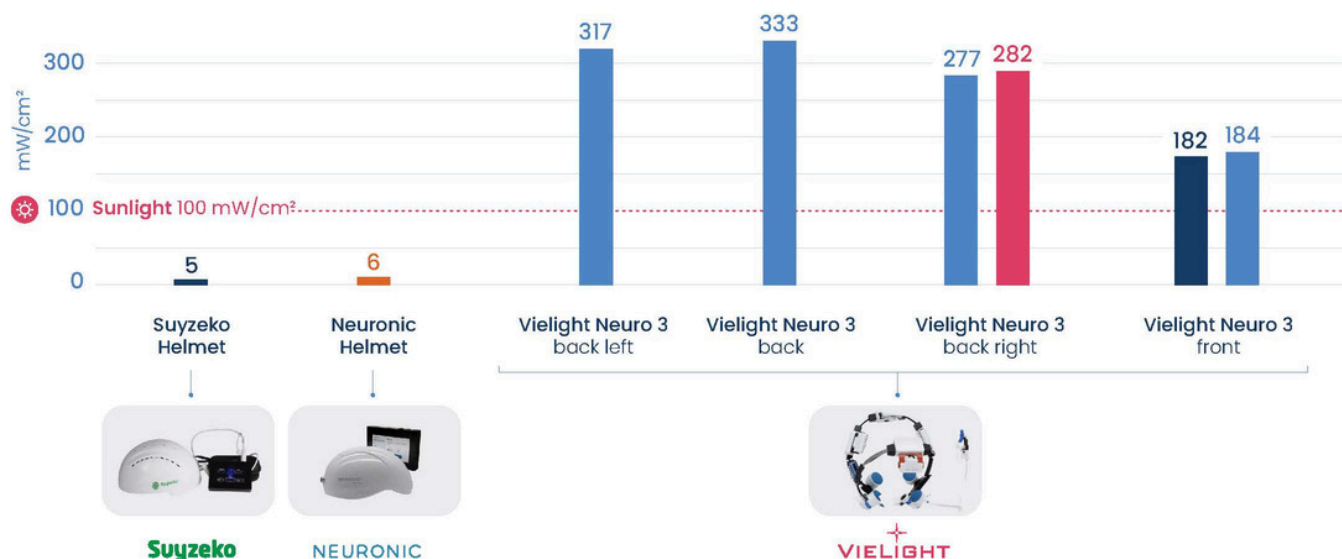
  
VIELIGHT

## Irradiance Measurement Case Study (mW/cm<sup>2</sup>)

Tested by Optronic Lab, Solar Light  
Commissioned by the PBM Foundation  
<https://pbmfoundation.org/pbm-device-testing-portal/>



■ 781–841 nm  
■ 1031–1091 nm  
■ 780–840 nm  
■ 778–838 nm



## PBM Foundation Testing Portal | Irradiance Case Studies

As part of their [new testing portal](#), the PBM Foundation benchmarked the Vielight Neuro 3 against two PBM helmets, the Suyzeko NIR helmet and Neuronic Neuradiant twice, as case studies for their testing program to standardize irradiance reporting.

[MegaLab](#) and [Optronic Lab](#), photonics firms, conducted two separate tests:

1. [Read the full independent test report from Optronic Lab here.](#)
2. [Read the full independent test report from MegaLab here.](#)

When compared against the irradiance of peak natural sunlight (which is free) our **Vielight Neuro** generated **200–300% the NIR irradiance of sunlight** without the negative side effects of UV rays. The **tested PBM helmets generated less than 10% of peak natural sunlight's irradiance** on average, significantly weaker.

Learn more about irradiance and its importance: [Link](#)



The PBM Foundation collaborates with senior science and government officials for improving acceptance and application of PBM. Foundation board members and advisors have formally presented to the White House, Executive Branch agencies, Congress, Medical Forums, and the United Nations.