



VIELIGHT RESEARCH ECOSYSTEM



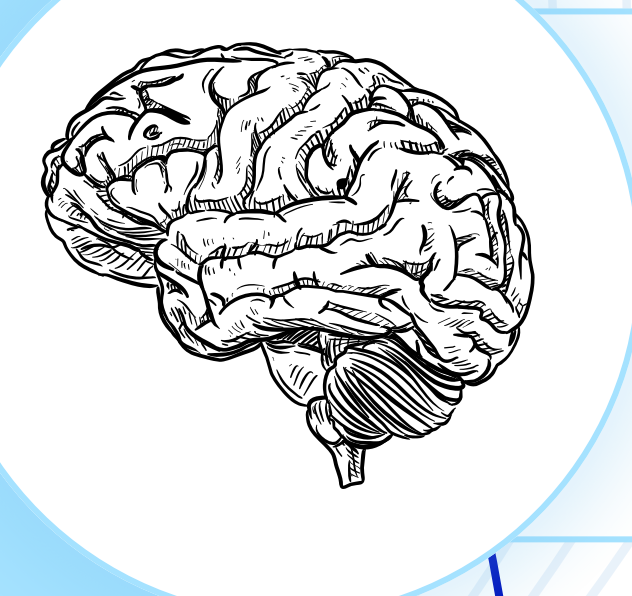
MEDICAL INDICATIONS

Neurology

- Traumatic Brain Injury (TBI) ¹⁻⁶
- Neurodegenerative Disorders (Alzheimer's / MCI) ⁷⁻¹¹
- Parkinson's Disease ^{12,13}
- Stroke ¹⁴
- Gulf War Illness ^{15,16}
- Post-viral Cognitive Impairment (incl. Long COVID) ^{17,18}
- Cancer-related Cognitive Impairment (Chemobrain) ¹⁹

Psychiatry

- Major Depressive Disorder ²⁰
- Bipolar Disorder ²¹
- Autism Spectrum Disorder ²²
- Trauma-Related Disorders (PTSD) ^{5,23}
- Menopausal Transition ³⁹



NON-MEDICAL INDICATIONS

Sports & Mindfulness

- Physical Performance Optimization ^{1,5,40}
- Mindfulness & Meditation ²⁴
- Altered & Meditative States ²⁴

Cognition

- Executive Function & Attention ^{23,25,26}
- Creativity & Divergent Thinking ²⁷
- Affective Regulation ^{1,5,9,16}
- Well-Being & Subjective Experience ²⁷

Biomarkers

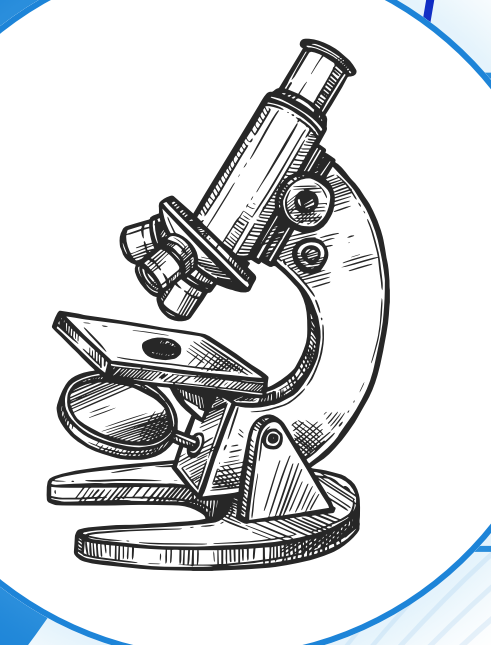
- Serum Biomarkers ^{7,8}
- Neuroimaging Biomarkers ^{2,4,8,10,26,29,30}
- Electrophysiological Biomarkers ^{31,32}
- Transcranial Magnetic Stim-Based Biomarkers ²⁷

Cellular Structures

- Microtubules & Tubulin ^{35,36}
- Synapses & Neuronal Networks ^{1,4,7,8}

Brain Responses

- EEG ^{25,31-34}
- Functional MRI (fMRI) ^{2,8,10,26,35}
- Structural MRI ^{2,7,10}
- Computational Modeling & Dosimetry ³⁰
- Diffusion Tensor Imaging ³⁵
- In-Vitro ³⁷



BASIC SCIENCE



PHYSIOLOGY

Immune System

- Respiratory & Pulmonary Function ¹⁸
- Viral & Post-Viral Inflammation (incl. COVID-19) ^{17,18}
- Sleep & Circadian Regulation ^{1,5,9}
- Pain & Nociception ^{1,23}
- Systemic Inflammatory Response ^{8,38}
- Menopausal Transition ³⁹

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- ⁴⁰ Brain Photobiomodulation for Neurological Resilience in Hockey Players. [Ongoing – Protocol Development]

VIELIGHT RESEARCH COLLABORATION NETWORK

Academic, clinical, and industry partners contributing to peer-reviewed and ongoing studies.

