



## Neurofeedback + Photobiomodulation

### Adjunct to CNFB to Improve Outcomes in Patients with Alzheimer’s, Parkinson’s and TBI

Photobiomodulation (PBM) is associated with elevated quality of life for certain conditions. It delivers red and near infrared (NIR) light to the cells of our body and brain to improve or normalize their functions. This process is then widely translated into positive effects in the body and the brain of patients with previous concussions or those dealing with the effects of aging or dementia.

The Neuroconnection offers photobiomodulation in conjunction with Connectivity Neurofeedback with specific conditions, when indicated. This can optimize neuronal functioning and expedite the effects of CNFB. TNC is also a licensed distributor of Vielight products for at home use. Please contact us for more information.

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#### Special points of interest

- Introducing a new intervention for patients with Alzheimer’s, Parkinson’s, and TBI
- Special discount code for TNC clients

## What is Photobiomodulation?

Photobiomodulation (PBM) is the process of using light energy to stimulate cellular processes. Visible red and near infrared light energy are absorbed by mitochondria, the parts of the cell responsible for producing energy in the form of ATP. Using light to energize neuronal mitochondria triggers a cascade of beneficial cellular processes that improve neuronal function and increase self-repair and neuroprotection.



## Is Photobiomodulation for Everyone?

The Neuroconnection currently considers PBM an appropriate addition to Connectivity Neurofeedback for patients with **Alzheimer's, Parkinson's, and Traumatic Brain Injury**. For other conditions, CNFB is still the gold standard due to its ability to target specific areas and provide lasting change (see page 3 for more on the differences between PBM and CNFB). Please contact TNC if you'd like to learn more.

## How does Photobiomodulation Work?

Users wear a special headpiece designed to deliver 810 nm near infrared (NIR) light energy via four LED modules and an intranasal applicator. The four LEDs are directed to the hubs of the default mode network of the brain to support its healthy functioning. A well-functioning default mode network is associated with a well-functioning brain

The nasal applicator is designed to deliver 810 nm NIR through the nasal channel to the brain. The NIR LEDs pulse at specific frequencies which correlate with the patient's electrical activity. PBM can increase frequencies associated with the brain's resting state, healing, focus, memory, and cognition.

A number of cellular processes are involved in PBM. For a simplified video or a more in depth discussion, visit [www.vielight.com](http://www.vielight.com).

## Do You Ever Recommend PBM Instead of CNFB?

While PBM can be quite beneficial, it cannot replace CNFB for several reasons:

### **CNFB is individualized and targeted | PBM is generalized and diffuse**

Because CNFB begins with a QEEG, the frequency bands and training sites are specific to the individual. The training is targeted to specific regions in order to address the person's individual EEG abnormalities. In contrast, PBM uses the same frequency band and placement for every person. While this is beneficial to a point, PBM is simply not as targeted or individualized as CNFB

### **CNFB creates permanent pathways | PBM is temporary**

CNFB works via operant conditioning, and with enough "practice" can create new neural pathways. These pathways, which correlate with improved neural functioning, become the brain's default way of operating. For this reason, CNFB is a short-term intervention that creates lasting change. PBM, on the other hand, targets cellular processes. While these impact neuronal functioning, the changes are not permanent. PBM is a long-term intervention and must be used frequently in order to continue to experience benefits.

## How Do I Try PBM?



The Neuroconnection is now a licensed distributor of Vielight, a leader in the field of photobiomodulation. Vielight has collaborated with researchers at Harvard Medical School, Boston University School of Medicine, numerous hospitals, and the United States Department of Veterans Affairs to conduct clinical trials on using PBM to treat conditions such as Alzheimer's, Parkinson's, TBI, PTSD, and general cognition.

PBM with Vielight is easy to use at home or in the clinic. Existing clients can combine CNFB and Vielight sessions in the office, or units can be purchased for use at home. TNC offers discounts on all Vielight equipment if at-home use is preferred.

If you have questions about how you might benefit from PBM or if you'd like to give it a try, please contact our office.



## What is Connectivity Neurofeedback?

Connectivity Neurofeedback (CNFB) is an advanced form of Neurofeedback (NFB) that allows the brain to make changes in brain wave patterns across cortical regions in order to develop more functional neuropathways. CNFB is more accurate than traditional NFB because it measures the neuronal network activity in three dimensions across regions. This is in contrast to traditional NFB which only trains specific sites. CNFB allows for improved communication within the brain and in turn decreases neurologically rooted symptoms.

Learning disabilities, ADHD, Autism, and other problems impacting school success have specific connectivity patterns. These patterns are identified via a QEEG brain map, and they are found to improve with CNFB training. Typical functional improvements include: improved focus, attention, and cognitive abilities, improved mood and behavior, increased learning capacity and academic performance, and better sleep regulation. Because CNFB creates new neural pathways, changes in the brain are lasting and involve none of the adverse side effects that may be experienced with medications.

*“Because CNFB creates new neural pathways, changes in the brain are lasting and involve none of the adverse side effects that may be experienced with medication”*

### It’s a Collaborative Effort

The professionals at The Neuroconnection understand that neuropsychological conditions, if left untreated, can adversely affect an individual’s quality of life.

Our Mission at The Neuroconnection is to provide quality, personalized care using the most up-to-date and researched neurofeedback methods to empower adults and children to reach their optimum potential.

We understand the value and importance of coordinating care with other health, educational and mental health providers, and we are committed to integrating neurofeedback with other treatments and services to produce the best outcome for our clients.

## Who Can Benefit?

Training the brain with neurofeedback has resulted in dramatic and lasting improvements for the following conditions:

- \*Attention Deficit
- \*Chronic Fatigue
- \*Obsessive Compulsive Disorders
- \*Autism Spectrum Disorders
- \*Learning Disabilities
- \*Post Traumatic Stress
- \*Anxiety
- \*Memory
- \*Seizure Disorders
- \*Addictions
- \*Mood Disorders
- \*Traumatic Brain Injuries

### Notable Areas of Improvement

- Attention
- Anxiety
- Handwriting
- Shifting attention
- Behavior
- Spelling
- Processing speed
- Obsessive thinking
- Math ability
- Executive functioning
- Reading comprehension
- Test performance
- Following directions
- Word fluency
- Sleep
- Organization
- Speech and language ability
- Social skills
- Sensory sensitivity
- Grammar and writing ability
- Motor skills
- Mood
- Phonetics and semantic language



## More on The Neuroconnection

Upon seeing such excellent results in the past 11 years with Connectivity-Neurofeedback (CNFB), our professionals aimed to extend access to training for those outside of our geographic area or inflexible schedules. As a result, The Neuroconnection designed an @ Home Training program to offer CNFB sessions in the

convenience of your home. For eight years, we have been able to provide our expertise and therapeutic treatment to families across the world. The opportunity for daily neurofeedback training at home has brought successful results for clients living as far as Russia and India.

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*Request more information from The Neuroconnection Website!*  
[www.theneuroconnection.com](http://www.theneuroconnection.com)

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## Meet Our Director

Ann L. Rigby, MSW, LCSW, BCN has over 30 years of experience in the mental health field. Ms. Rigby has been providing Neurofeedback services since 2001. She founded “The Neuroconnection”, a Brain Mapping and Neurofeedback clinic that provides an advanced, research-based form of Neurofeedback known as Connectivity Neurofeedback.

Ms. Rigby is a past Board Chair for the Autism Society of Illinois. She is a fellow and Board Certified member of The Biofeedback Certification International Alliance. She is also a field placement instructor for graduate students at Benedictine University and holds memberships with the International Society of Neurofeedback and Research (ISNR), the Biofeedback Certification Institute of America (BCIA), and the National Association of Social Workers (NASW). Ms. Rigby is a frequent speaker and exhibitor at many national and regional conferences throughout the year on topics related to the benefits of Connectivity Neurofeedback.

For more info about upcoming speaking engagements, go to our website [www.theneuroconnection.com](http://www.theneuroconnection.com) and visit our News and Events tab.



**the Neuroconnection**  
Brain Mapping and Neurofeedback

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