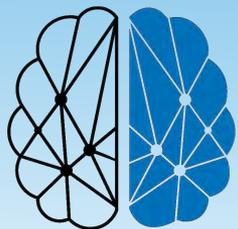


# What is Neurofeedback?

International Society  
for Neuroregulation & Research



**ISNR**

INTERNATIONAL SOCIETY FOR  
NEUROREGULATION & RESEARCH

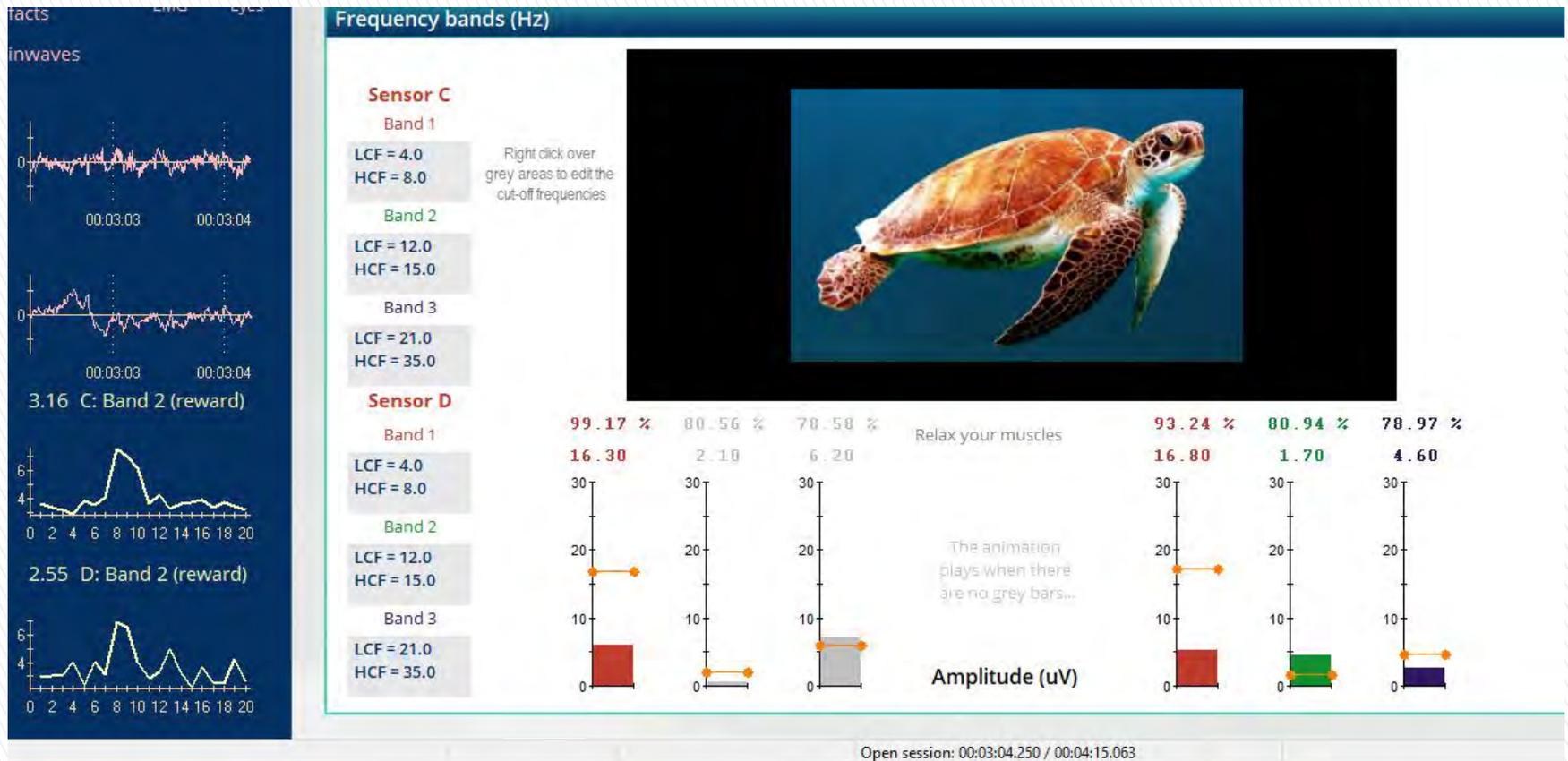
# What is Neurofeedback?

Neurofeedback, often referred to as EEG biofeedback or brain wave training, is a type of biofeedback in which individuals are trained to improve their brain function. Extensive research demonstrates its efficacy for specific conditions, such as ADHD and epilepsy, with scientific studies also showing it to be promising for autistic spectrum disorders, anxiety, depression, insomnia, chronic pain, addictions, and traumatic brain injury. Neurofeedback (NFB) has its foundation in basic and applied neuroscience, as well as evidence-based clinical practice.

# How Does Neurofeedback Work?

Like other forms of biofeedback, neurofeedback uses sensors to detect physical changes of the body. Neurofeedback therefore involves placing small sensors on the scalp to see changes in a person's brainwave activity. Precisely detecting brainwave activity allows it to be immediately analyzed by a computer that then presents sound and video information based on the brain's performance. Using this feedback, the individual learns to regulate or control his or her own brain states. This is helpful because the state of the brain has a large influence on how the person thinks, acts, and feels, emotionally and physically.

# Clients / Patients watch a training screen providing the brain with feedback.



# How Does Neurofeedback Work?

Neurofeedback integrates clinical expertise with the best available research to address behavioral, cognitive, and subjective functions related to brain activity and therefore meets the American Psychological Association's definition of an evidence-based intervention. NFB is non-invasive, does not involve surgery or medication, is neither painful nor embarrassing, and has long-lasting effects.

# Which conditions are effectively treated with neurofeedback?

Research demonstrates that neurofeedback is an effective intervention for ADHD and epilepsy. For example, an evaluation of 15 well-designed studies involving 1194 children with ADHD concluded that NFB is effective for reducing symptoms of inattention, impulsivity, and hyperactivity. Specifically, studies show that NFB:

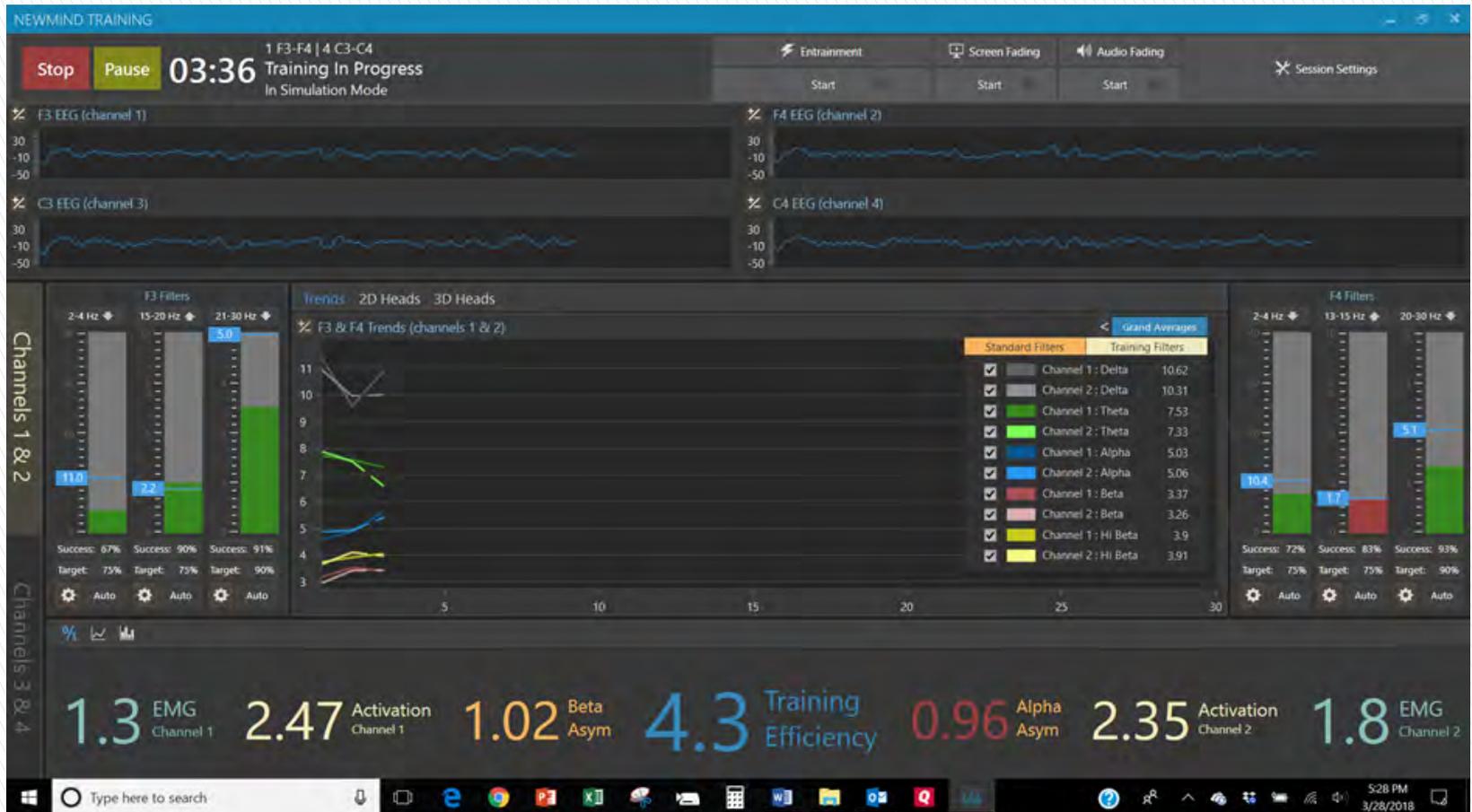
- Improves attentiveness and impulse control
- Decreases hyperactivity
- Raises intelligence scores
- Improves academic performance

# Neurofeedback Efficacy

Promising ongoing research shows the effectiveness of NFB for disorders such as autism, insomnia, anxiety, depression, substance abuse, traumatic brain injury (TBI), and chronic pain.

In addition, neurofeedback is showing promising outcomes with: cognitive and learning deficits, epilepsy and seizure disorders, fibromyalgia, tinnitus, Parkinson's, migraine headaches, Tourette's and Tic Disorders, Post Chemotherapy Symptoms, etc.

# Neurofeedback Training Screen



# Neurofeedback for Peak Performance

Neurofeedback training is also used to assist athletes and performing artists to remove obstacles to peak performance. Peak performance applications of NFB have demonstrated:

- Improved concentration and memory
- Enhanced creativity and problem-solving
- Reduction of performance anxiety
- Reduced extraneous movement
- Increased self-confidence
- Better performance

# Can Neurofeedback Help the Average Person?

NFB has also been used to enhance learning and cognitive function in normal clients. Results show improved attention in college students and adults, and increased thinking speed and executive self-control in the elderly.

# Self-Regulation Skills Improve



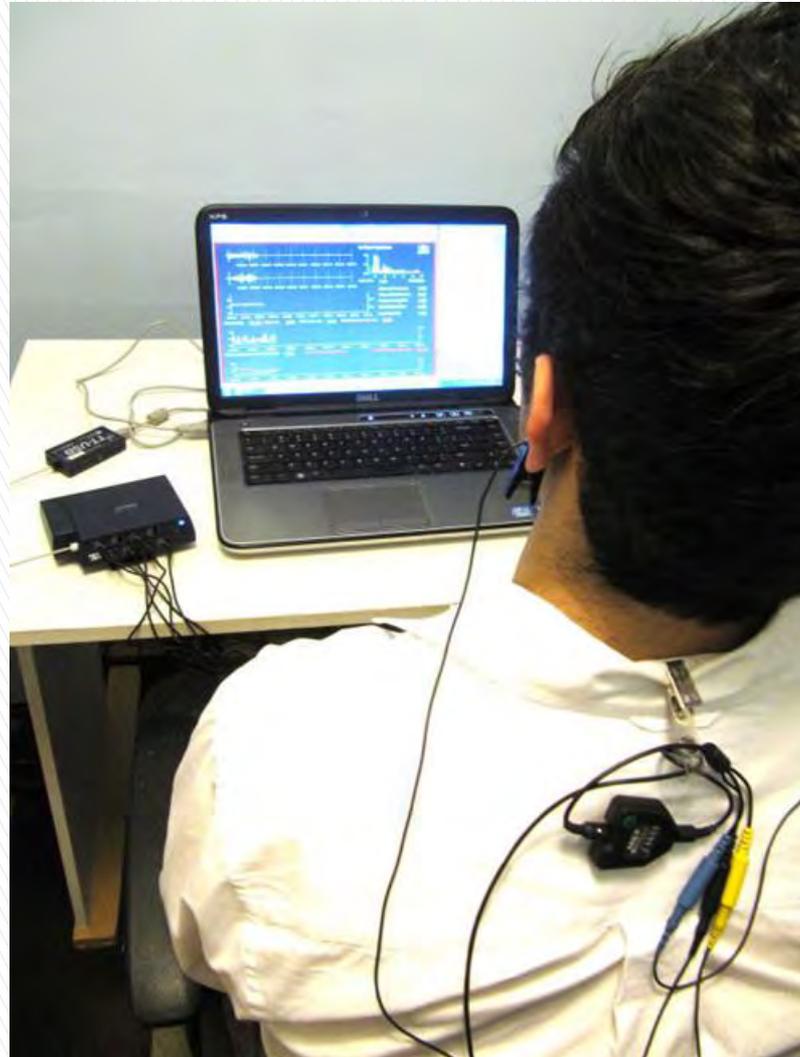
# How is neurofeedback training conducted?

NFB is based on an objective assessment of brain activity and psychological functioning. Assessment may include a quantitative EEG (qEEG), which records the brain's electrical activity at multiple sites on the surface of the scalp, and compares it to a database of healthy normal individuals the same age as the client. Once assessment has been completed, the practitioner develops a treatment protocol that specifies sites on the scalp and brain wave elements to be trained.

# How is neurofeedback training conducted?

During training, sensors are placed on the scalp and then connected to a computer and sensitive equipment that detects, amplifies, and monitors specific brain activity. Brain activity measured this way is then used to play sound and visual information through the computer's speakers and monitor so that the client almost immediately sees whether or not their brain is performing within a desired range. Based on this feedback of sound and visual information, and on practitioner guidance, the client gradually learns to produce changes in their brain patterns to improve their ability to think, feel, function physically, and act in ways they want.

# Neurofeedback Session



# How Many NFB Sessions do I need?

Typically, NFB involves:

- Two or more sessions per week.
- Twenty to forty–five minutes of feedback per session.
- Sound and visual feedback rewards for achieving training goals within sessions.

# What are The Benefits of Neurofeedback?

The FDA recognizes that all interventions pose risks and benefits. Typically, the benefits of neurofeedback far outweigh the risks and although on occasion, it can result in non-serious adverse events, as a form of biofeedback it falls under the category of other low risk activities such as progressive relaxation, hypnosis, breathing exercises meditation, yoga and massage. The benefits are usually experienced as improved focus, enhanced concentration. Increased energy, higher quality sleep, decreased moodiness, diminished agitation, and reduction in anxiety, as well as reductions in other physical symptoms typically related to stress such as headache.

# Hook up and feedback



# What are The Risks/Side Effects of Neurofeedback?

## Are there side effects?

When provided by a qualified professional, NFB training produces few, if any, negative side effects. There are a few published reports of negative side effects. Clients usually find NFB to be an interesting and engaging experience that feels good.

# What are The Risks/Side Effects of Neurofeedback?

## Risks of Neurofeedback

Training with neurofeedback can occasionally result in adverse response(s) that temporarily increases symptoms which are typically associated with relaxation and calming of the central nervous system such as fatigue, headaches, lightheadedness, dizziness, irritability, moodiness, weeping, insomnia, agitation, and difficulties with focus and anxiety. These reactions, if they occur, are temporary and typically only last 24–48 hours. Once clients/patients become more relaxed and aware, they tend to integrate past emotional issues and these symptoms subside

# How long will training take?

As with most forms of treatment, NFB results will vary with each individual. NFB training may require 20–40 sessions or more, depending upon the age of the client and the severity of his or her condition.

# Neurofeedback Session



# Where/how can I find a practitioner?

To find a qualified neurofeedback provider, view the professional profiles of practitioners located in your geographic area who are listed on the ISNR website ([www.isnr.org](http://www.isnr.org)). Since ISNR is the primary professional society for the specialty of neurotherapy, its membership includes health care professionals from a variety of specialties, university researchers and educators, and other individuals who work with neurofeedback (for example, to develop peak performance). ISNR is not a credentialing organization and cannot make claims for the nature or appropriateness of the services offered by its members, or whether they are professionally licensed as a health care provider.

# Where/how can I find a practitioner?



Other indications of a practitioner's level of qualification include their (1) listing as Board Certified in Neurofeedback (BCN) by the Biofeedback Certification International Alliance ([www.BCIA.org](http://www.BCIA.org)) and (2) licensure as a health care provider by your state or region.

# Additional information and research:

- <https://isnr.org/recommended-reading>
- <https://isnr.org/adhd-toolkit>
- <https://isnr.org/neurofeedback-media>
- [https://isnr.org/wp-content/uploads/2019/10/cba323\\_c11df410dd3e46ecbc00975d15306926.pdf](https://isnr.org/wp-content/uploads/2019/10/cba323_c11df410dd3e46ecbc00975d15306926.pdf)  
(Comprehensive Neurofeedback Research Bibliography)

# Disclaimer

The information provided in this presentation does not represent medical treatment or give medical advice. You should contact a licensed health care professional for medical treatment and medical advice. ISNR is not responsible for the medical treatment or medical advice provided by its members.

# What is the ISNR?

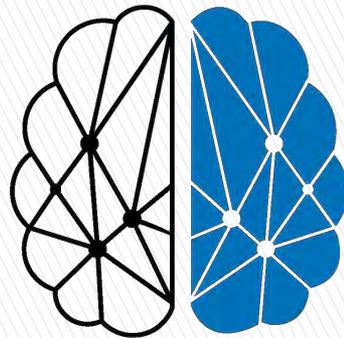
The International Society for Neuroregulation and Research is the world's largest group of professionals involved in the practice, teaching, and research of NFB. ISNR members are expected to adhere to the organization's code of ethics, which provides an added measure of accountability and standards for the profession.

ISNR is committed to supporting new developments in the field by publishing a professional journal and newsmagazine, by producing a well-attended annual educational conference, and by encouraging large studies of NFB through the Foundation for Neurofeedback & Neuromodulation Research (FNNR) (<http://thefnnr.org/>)

# Contact Info

International Society for Neuroregulation &  
Research

[www.isnr.org](http://www.isnr.org) | [office@isnr.org](mailto:office@isnr.org)



# ISNR

INTERNATIONAL SOCIETY FOR  
NEUROREGULATION & RESEARCH





For more information, please visit: [www.MichiganBrainHealth.com](http://www.MichiganBrainHealth.com)

Neurofeedback, An Introduction [Video]:

[www.neurofeedbackvideo.com](http://www.neurofeedbackvideo.com)

Brain Map (qEEG) Video:

[www.brainmapvideo.com](http://www.brainmapvideo.com)

To schedule your FREE Evaluation at Michigan Brain Health, please call 586-488-4818 or visit:

[www.michiganbrainhealth.com/schedule-a-free-neurofeedback-evaluation/](http://www.michiganbrainhealth.com/schedule-a-free-neurofeedback-evaluation/)