



Neurotherapy

Train Your Brain, Change Your Life



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What is Neurotherapy?

Neurotherapy is a method of normalizing and balancing brain function. As you know, the brain is the most complex and most important organ of the body. The better balanced it is, the better your chance of a full healthy life.

Let's look at how we can measure brain function.

Your brain is made of billions of **nerve** cells. These cells have to communicate with each other to send messages within the brain and out to the rest of the body.

The way your nerve cells communicate is measured in electricity because the communication is an electrical process. This is familiar to us. The light switch on the wall communicates with the light bulb using electricity. In the brain we measure the electrical communication in frequencies.

Let's talk about frequencies. If you go to your next door neighbor's house once per hour you can move slowly. If you go twice you have to go a bit faster. If you go thirty times, you really have to move quickly. The more often you go in the hour the higher your frequency is and the faster you have to move. The higher the frequency the faster the movement.

When brain electrical frequencies are measured, they call these patterns "waves". This is where we get the idea of brain waves. There are four categories of brain waves grouped according to speed or frequency. These are delta (the slowest moving), theta, alpha, and beta (the fastest moving).

Different parts of the brain have different jobs. If we were to look inside your brain we should see different frequencies of brain waves firing in different locations.

As you might imagine, we don't want the brain overcome with fast activating beta waves while we are trying to sleep. At the same time, we prefer beta over slow moving delta when it is time to concentrate on making a decision.

If we were able to look inside your brain, we could understand the functioning of the different areas of the brain. The good news is that we now **can** look inside your brain to check the state of your brain waves! The process is called brain mapping.

Brain Mapping

The upper brain is divided into parts called "lobes". Each lobe has different responsibilities. The four lobes are called frontal, parietal, occipital and temporal. We know that the brain wave patterns should *not* be identical in each lobe since their jobs differ. To measure these patterns we do a brain map.

A brain map is done by placing a specialized cap on your head which is then able to record the different brain wave patterns going on in the brain in each lobe. The cap covers over the four lobes and has sensors which register the brain wave activity going on underneath. This method is called an electroencephalogram or an EEG. This process takes approximately twenty minutes and a clear computerized report is produced showing brain waves by location.

With this we will know the rate of firing of the different brain waves at each important area of the brain. This tells us what we need to know to begin addressing any potential neurological, emotional and cognitive issues.

The Correction

Once we know the brains which need to be stabilized, we can begin making corrections. Actually, that is not entirely accurate since we don't make the corrections, *you* do. Let's look at this amazing process!

The process of neurotherapy, also called neurofeedback, uses the information obtained from the brain mapping. Small sensors are attached to the specific problem areas of your head using a paste. These sensors read activity from your brain so you don't feel anything from them-they record your activity in real time. Meanwhile, you are watching a movie or listening to music. The software we use compares the incoming brainwaves from you to that of optimal brain waves. If

your brainwaves deviate from the normal range it triggers the movie or music to fade.

Now, remember, you were watching or listening to something you want to see and hear. Once it fades your brain wants to get the movie/music back on again.

So your brain *automatically* detects this and refocuses your brain waves back into the normal range! This process is repeated hundreds of times per session. Each session lasts an average of thirty minutes.

Reward and Lasting Change

Since your brain is rewarded over and over again for staying in the normal range of brain waves, eventually it learns to stay normalized. With these brain waves corrected, brain communication is enhanced and function improves.

There is no magic number for how many sessions are required. Results begin to be seen usually within the first ten sessions. Most problems require 20-40 sessions to become permanent. The goal is *lasting* results. We can also do brain maps between treatment sessions to help monitor your progress.

What Types of Problems Can Be Helped with this Non Drug Therapy for Emotional, Cognitive, and Stress Related Conditions?

Research has shown success with a variety of issues. One might wonder how one therapy can help so many different issues. Think about a blown fuse in your home. Flipping the circuit breaker back on will cause light bulbs to shine, your television to come on, your refrigerator to begin cooling again, and so forth. Your brain is similar to your body's fuse box—but obviously much more complicated and able to do so much more.

Here are some of the issues proven to show results with neurotherapy:

ADHD	Chronic Fatigue
ANXIETY	Migraines
AUTISM	Performance Enhancement
BIPOLAR DISORDER	Depression
FIBROMYALGIA	OCD
HEAD INJURIES PTSD	Memory Loss
SLEEP DISORDERS	
SUBSTANCE ABUSE	

This is a partial list of problems that have proven to be helped by this amazing new therapy we have in our office.

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Clin EEG Neurosci. 2013 Oct;44(4):265-72. doi: 10.1177/1550059413476031. Epub 2013 Mar 26.

Neurofeedback training induces changes in white and gray matter.

Ghaziri J, Tucholka A, Larue V, Blanchette-Sylvestre M, Reyburn G, Gilbert G, Levesque J, Beauregard M.

Author information

Abstract

The main objective of this structural magnetic resonance imaging (MRI) study was to investigate, using diffusion tensor imaging, whether a neurofeedback training (NFT) protocol designed to improve sustained attention might induce structural changes in white matter (WM) pathways, purportedly implicated in this cognitive ability. Another goal was to examine whether gray matter (GM) volume (GMV) might be altered following NFT in frontal and parietal cortical areas connected by these WM fiber pathways. Healthy university students were randomly assigned to an experimental group (EXP), a sham group, or a control group. Participants in the EXP group were trained to enhance the amplitude of their p1 waves at F4 and P4. Measures of attentional performance and MRI data were acquired one week before (Time 1) and one week after (Time 2) NFT. Higher scores on visual and auditory sustained attention were noted in the EXP group at Time 2 (relative to Time 1). As for structural MRI data, increased fractional anisotropy was measured in WM pathways implicated in sustained attention, and GMV increases were detected in cerebral structures involved in this type of attention. After 50 years of research in the field of neurofeedback, our study constitutes the first empirical demonstration that NFT can lead to microstructural changes in white and gray matter.

KEYWORDS: gray matter, neurofeedback, structural magnetic resonance imaging, sustained attention, white matter

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