

## **NEUROTHERAPY INFORMATION - QEEG AND NEUROFEEDBACK**

### **What is Neurofeedback?**

Neurofeedback, also known as EEG Biofeedback, is a type of neurotherapy that involves a brain-computer interface that maps brainwaves amplitudes for various frequency bands (delta, theta, alpha, beta, gamma) and provides audio-visual feedback for self-regulation.

### **What is the clinical use of Neurofeedback?**

Some diagnostic conditions such as attention and hyperactivity problems (ADD/ADHD), learning disabilities, post-traumatic stress disorder (PTSD), brain injuries (TBI), trauma, depression, anxiety, panic attacks, sleeping problems, autism, chronic pain, addiction, and others, are associated to excess or deficiency of certain brainwaves in specific parts of the brain. Training the brain to self-regulate brainwave activity is an alternative of treatment for these conditions.

### **How does the treatment with neurotherapy look like?**

Patients can change their brainwaves patterns by receiving repeated feedback through a computer screen. The treatment involves training the brain, much like exercising the muscles at the gym. The treatment consists of:

- Initial session
- QEEG (brain mapping)
- Neurofeedback training sessions

### **How is the initial session of neurotherapy?**

The initial session includes the intake and review of personal history and symptoms. Initial session may take more than one session if testing is necessary. The T.O.V.A (Test of Variables of Attention) and the CNS Vital Signs, a neurocognitive test, are computerized tests that may be recommended.

### **What is QEEG?**

QEEG (quantitative electroencephalogram), also known as brain mapping, is an assessment tool used to guide the neurofeedback treatment. QEEG consists of recording the electrical activity of the cortex captured by non-invasive sensors attached to my scalp and earlobes. No electricity is introduced into the person's body by the process. The brain mapping is done before the training sessions start.

### **How does the QEEG session look like?**

The person undergoing the QEEG assessment will be wearing a cap similar to a swim cap for approximately 1 hour. During this time small amounts of gel and exfoliating scrub will be applied to areas of the scalp. With eyes open and closed the person will be asked to be still while remaining alert. After the assessment, the person may prefer to wear a hat. Gel will be easily removed once the hair is washed.

### **Are there specific recommendations for the brain mapping?**

In order to obtain an accurate brain map, the person undergoing the QEEG must do some specific things:

- Have two good nights of sleep prior to the appointment.
- Double wash the hair and do not use conditioner and other hair care products.
- Consume a moderate meal that is low in sugar 30-90 minutes prior to appointment time.
- Refrain from: any caffeine substance (e.g. coffee, soda, diet pills) the day of the brain map; any nicotine substances 14 hours before the brain map; the use of alcohol for 72 hours before the map; drugs for several days before the assessment (except those prescribed by doctor).
- If necessary, you will be asked to remove contact lenses before recording of brain map. Please bring your contact lenses case and solution.

**How does the neurofeedback training session look like?**

During a neurofeedback session, one or two sensors are placed on the scalp (on specific areas of the brain), and earlobes. Then, the patient performs a task while watching a computer screen and listening to audio tones. Training sessions are twice a week for about 20-40 sessions. Depending on the symptoms it could be 60-80 sessions. Each session is about 45 minutes long.

**Does neurofeedback have side effects?**

Mild side effects may occur. They include: feeling fatigued, spacey, or anxious; headache; difficulty falling asleep; feeling agitated or irritable. Many of these side effects are temporary and pass shortly after the session. Keep your therapist informed about any side effects. Also, inform any changes in medication, life style, and symptoms. Your therapist may adjust your training protocol based on your information.

**What is the fee for the neurotherapy?**

The fee for a neurofeedback training session is \$130. There is a 10% discount for packets of 10 sessions paid in advance by check or cash.

**May I ask another question?**

Please, feel free to discuss with Dr. Cristina Lima all your questions related to neurotherapy, neurofeedback, and QEEG.

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