



## HOUSTON BRAIN CENTER

*Neurofeedback & Brain Health Coaching*

### Frequently Asked Questions – A Patient’s Guide

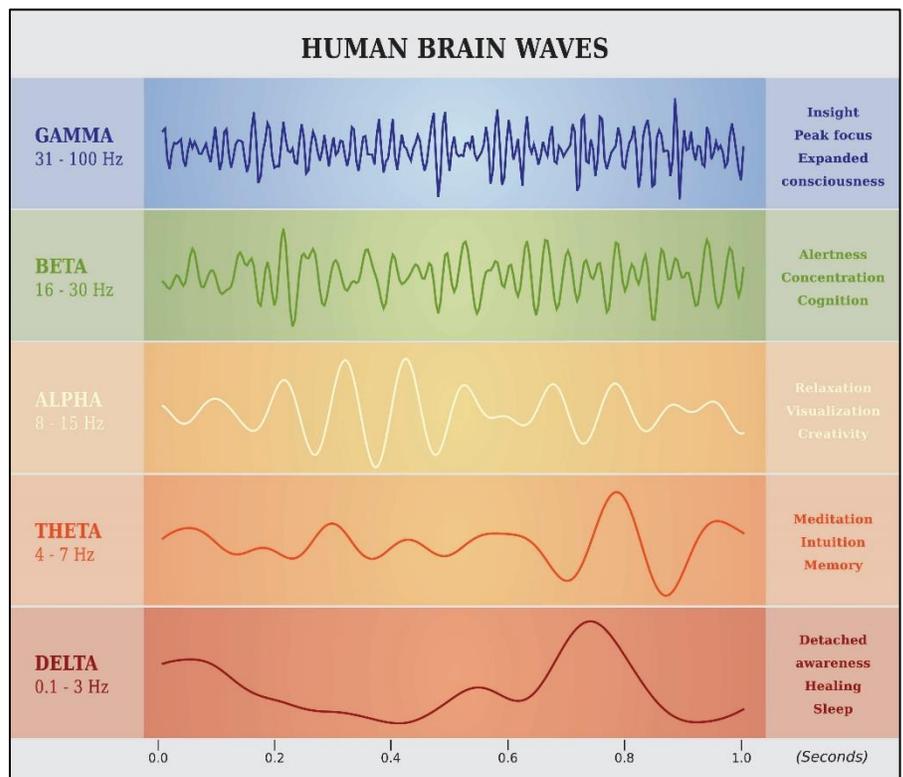
#### QEEG BRAIN MAPPING FOR NEUROTHERAPY

Every brain produces rhythmic electrical patterns, which are referred to as brain waves. The human brain produces five frequencies of brain waves, which are shown below. Each frequency is responsible for different human functions.

Brain waves can be measured through EEG and QEEG brain mapping to determine if the electrical patterns fall within a normal range or if they are abnormal and need adjustment. The first step in Neurofeedback is obtaining a QEEG brain map.

A QEEG brain map (or 'Q' for short) enables us to see your unique pattern of mental strengths and weaknesses - areas of the brain where there is too little or too much activity, and areas that are not coordinating their activity the best they could.

We use QEEGs for our initial assessment, to design your neurofeedback training program, and to track your progress over your sessions. It involves nothing more than wearing a sensor cap so we can listen to what your brain is doing. **It is completely non-invasive and painless.** The sensors solely measure the brain’s electrical output, and nothing is ever sent into the brain.



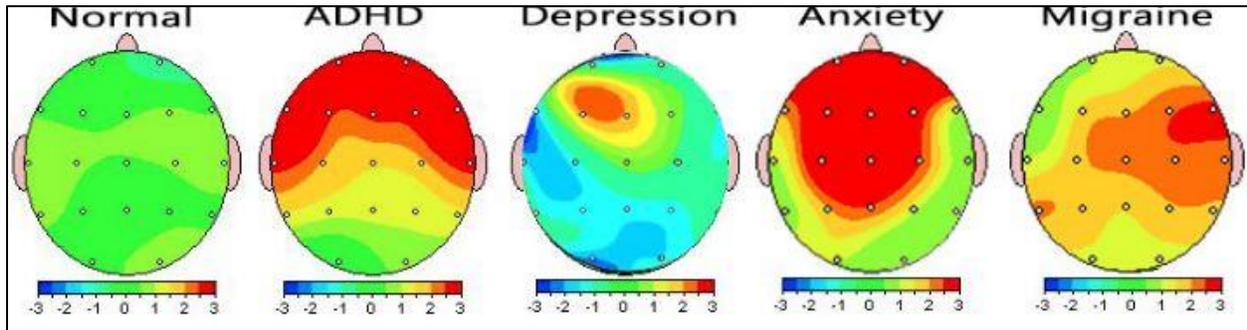
Once we can see the reason for your struggles on a brain level, we can create a neurofeedback training program to help resolve it.

During your QEEG assessment, we gather and edit the data, process your maps and review it with you on the spot; no need to wait a week for an outside lab to process the data and make training recommendations.

Throughout your neurofeedback training, we gather fresh QEEG’s to keep the therapist in the loop, allowing progress tracking and updates to your training as you progress. It’s how we make your sessions truly personalized and dynamic.

Being able to process our brain maps on the spot has advantages. We use software analysis tools, but software cannot make human judgments or put the map in context of you and your goals. As with most fields, there is an art to it that only comes with experience.

Most people find their QEEG fascinating. There are seldom any surprises in the brain map; it is a measure how you feel and function, and presumably you already know how you feel. Still, most find real comfort and validation in getting a measure on those feelings or challenges, and relief that they can be shifted.



## EEG (ELECTROENCEPHALOGRAPH)

An EEG uses surface sensors to detect the brain's electrical patterns (brain waves). Common brain imaging techniques such as MRIs, CAT scans and x-rays are built to measure brain structure. An EEG measures brain activity and function; how you are feeling, moment-to-moment.

We use the EEG to see any areas where your brain is 'stuck' in one state or another - those underlying, habitual feelings that get in your way. That 'background noise' that distracts or makes you uncomfortable periodically (or constantly). These are our targets for training.

## QEEG (QUANTITATIVE ELECTROENCEPHALOGRAPH)

The QEEG brain map neurometric readings give us vital information to help identify areas of over or under-activity to train, and to precisely chart your progress.

By seeing which areas have abnormal activity, we can predict what type of symptoms you may be experiencing as a result. For example, if specific brain areas involved in attention are functioning poorly and you have difficulty paying attention, we know exactly where to train to help you regulate more efficiently.

A QEEG can identify brainwaves, their amplitude, location and whether these patterns are typical or anomalous, as well as coherence (quality of communication between regions), phase (thinking speed), and network integration. These are all crucial patterns involved in optimal mental functioning.

## LoRETA (LOW RESOLUTION BRAIN ELECTROMAGNETIC TOMOGRAPHY)

Using a 19-sensor cap and source-correlation software, LoRETA allows us to image (and ultimately train) brainwave patterns in deep brain structures. Being able to train these deeper structures in the brain is a major leap forward in brain mapping, and enables 3D neurofeedback. The ability to train entire brain networks as a unit significantly reduces the number of sessions required to see results.

## Z-SCORE NEUROMETRICS

We compare these surface and deep brainwave readings to a research reference database, called a Z-score (we use Neuroguide, which is an FDA-approved research standard).

The Z-score is the measure of how near or far from a comfortable, stable, or efficient position different areas of your brain are.

## IS BRAIN MAPPING RELIABLE?

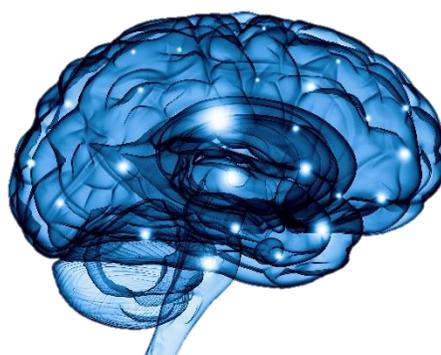
Brain mapping is a means to measure brain function. It has become a primary tool in neuroscience. QEEGs are used in research centers all over the world to study ADHD, autism spectrum disorder, depression and bipolar disorder, PTSD, anxiety disorders, learning disabilities, and emotional conditions of every sort.

## WHY DO A QEEG FOR NEUROTHERAPY?

There is an increasing body of evidence that there is a positive treatment impact from the use of a QEEG and the resultant customized Neurofeedback intervention. Utilizing QEEG allows clinicians and patients alike to obtain substantially more clinical utility from neurofeedback intervention.

Recent large bodies of research have compared three years of neurofeedback data using a commonly used standard treatment approach to two years using the QEEG based customized intervention. The findings have revealed a doubling of the conservatively estimated clinical success, from 30% to 60%. Further, the total treatment benefit increased from the commonly previously reported 80% increased to 90% now receiving perceived benefit.

The cost effectiveness is seen easily if there are a few sessions spent “getting it right” using the clinical guesses to select sites. It only takes a few wasted sessions, not to mention possible adverse reactions, to pay for the proper selection using the QEEG.



***THIS INFORMATION IS SOLELY INTENDED TO ASSIST CLIENTS WITH UNDERSTANDING THE IMPORTANCE AND RELEVANCE OF QEEG'S FOR NEUROTHERAPY. IF YOU HAVE ANY FURTHER QUESTIONS, PLEASE REACH OUT TO OUR OFFICE AT (281) 394-1379, OR EMAIL [INFO@HOUSTONBRAINCENTER.COM](mailto:INFO@HOUSTONBRAINCENTER.COM).***