

The Assessment Problem:

Trying to describe a dynamic, complex chaotic system like a brain with static numbers is like trying to describe a 30-minute sunset with a snapshot. Still, brain-based training is, in our experience, the best way to maximize effectiveness while minimizing negative responses. For that reason, brain-trainer’s **TQ7** provides a full QEEG (quantitative EEG) to determine what and where to train.

What is a QEEG?

QEEG’s record data from 20 or more standard EEG sites on the head. This is done during eyes-closed, eyes-open and task conditions. The result is a picture of how brain activation changes from resting to awareness to active processing states. The Q removes “artifacts” (electrical signals in the EEG which do not come from the brain) and presents the data in terms of the main measures of brain activity: frequency, amplitude, stability and connectivity.

Any QEEG system performs these basic functions. Most use some form of Electro-Cap to speed up hookup and recording. Most have some form of artifacting routine as well. Ideally the data are recorded, cleaned and loaded in less than 30 minutes.

Making Sense of the Data:

There are two major approaches to looking at all this data:

Population-based: Compares hundreds of measures from the client against a database of people recorded over the past 30 years to produce dozens of “z-scores”—specific measures in specific areas of the client’s brain which differ from “average”. Whether these differences are positive or negative, adaptive or mal-adaptive is not clear.

Pattern-based: Identifies Stable Activation Patterns that have been linked in QEEG research to problem areas in a person’s life. These were developed by comparing people with specific training issues (e.g. anxiety, ADHD) against the population to see where they reliably differ. If a pattern present in the client’s brain is consistent with the training goals, training to change the pattern can be expected to change the mood, behavior, performance or symptom.

TQ7—The Trainer’s Q:

At brain-trainer we believe “Less is More”. Population-based QEEG’s are great for research, but they cost more, take longer and don’t focus on your practical questions. They can’t distinguish between useful and problematic variances, so they risk training down the client’s strengths. By skipping the database, the TQ7 leaves out the mountains of data and the focus on “average” to identify those tendencies related to training goals. You can gather, artifact and load the data from 20 sites in 25 minutes and produce a Whole-Brain training plan and Client Pattern Summary within 3-5 more! There’s less unnecessary data, less chance of negative response, less processing delay and fees. That means more focus on critical training issues, more immediately, and more cost-effectively in a complete, integrated assessment and training system that leaves \$4,000-\$8,000 MORE in your pocket!

The Training Problem:

Regardless of how the assessment is done, most brains show multiple areas of potential training in a linked system of patterns. Z-score training attempts to train all identified sites/measures to the population average. Other systems identify one or a few protocols and sites to change the whole pattern.

What is a Whole-Brain Training Circuit?

TQ7’s training plan defines 4-6 training sessions, each focusing on a specific area or training issue. You train one block in each session, cycling through all of them before starting again.

This approach recognizes that brain habits are stabilized by interlocking relationships of activation patterns. It is possible to change them by working a single site or pattern, but our trainers report that working all the related findings in an organized way—like circuit training in a gym—shows fast, stable responses with minimal negative reactions.


What do we mean by Whole-Brain?

The whole-brain training plan covers multiple systems: the prefrontal executive center, symmetry and connectivity relationships among the brain’s 4 quadrants, the sensory-motor cortex, the anterior cingulate, the default-mode network and the salience network. Patterns of frequency/amplitude and efficiency of linkage help identify key issues to become part of the training plan. It also responds to amplitude spikes which may be related to head injuries and generalized levels of activation. In many plans each circuit of 4-6 sessions also includes deep-states peak performance training as well.

How does the plan work?

Each block includes 3-4 segments to be completed in a one-hour session. Each segment defines exactly where to place the electrodes. It identifies a brain-trainer training design to be used, including which frequencies to train if necessary. And it specifies eyes closed or eyes open training and training period.

F7/Fpz/F8	nIR HEG (LIFE)	EO 3m/2m
F3 F4 P3 P4 L(A1 A2)	CON4C Gamma Sync	EO 10m
F3 F4 L(A1 A2)	CON2C MBC Down	EO 2m/2m/2m/10m
F4 F8 C(A2)	FRE2C IN (19-28) REW (12-16)	EO 10m



Open the defined protocol and click to select the frequencies, and you’re ready to go. You have options for feedback in most protocols, and most help you determine the training targets automatically—letting you track them and change them with a click of your mouse as desired. It’s just that simple!