

Quantitative EEG (QEEG) Consent Form



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Quantitative EEG, sometimes referred to as brain mapping, is the measurement through digital technology of electrical patterns at the surface of the scalp which primarily reflect cortical electrical activity or “brainwaves.” Brainwaves occur at various frequencies. Some are fast and some are quite slow. The classic names of these EEG bands are delta, theta, alpha, and beta.

Beta brainwaves are small, faster brainwaves (above 13 Hz.) associated with a state of mental, intellectual activity and outwardly focused concentration. This is basically a “bright-eyed, bushy-tailed” state of alertness. **Alpha** brainwaves (8-13 Hz.) are slower and larger. They are associated with a state of relaxation and basically represent the brain shifting into idling gear, relaxed and disengaged, waiting to respond when needed. If we merely close our eyes and begin picturing something peaceful, in less than half a minute there begins to be an increase in alpha brainwaves. These brainwaves are especially large in the back third of the head. There are two levels of **Theta** (4-8 Hz.) brainwaves. The range of 4-6 hz basically represents the twilight zone between waking and sleep. It is a profoundly calm, serene, floaty, drifty state that occurs just before we fall asleep. It is a range where conscious intellectual activity is not occurring. The higher range of theta (6-8 hz.) is associated with mental inefficiency generally, but in the central front part of the brain is associated with a state of very inwardly focused attention such as occurs when we are engaging in complex, inwardly focused problem solving (such as mental arithmetic). This is also the level that people enter when they go into in a deep hypnotic or meditative state (extremely relaxed but inwardly focused). **Delta** brainwaves are the slowest, highest amplitude brainwaves, and are what we experience when we are asleep. In general, different levels of awareness are associated with dominant brainwave states.

Each of us, however, always has some degree of each of these brainwave bands present in different parts of our brain. Delta brainwaves will also occur, for instance, when areas of the brain go “off line” to take up nourishment. If we are becoming drowsy, there are more delta and slow theta brainwaves creeping in, and if we are inattentive to external things and daydreamy, there is more theta present. If we are exceptionally anxious and tense, an excessively high frequency of beta brainwaves is often present. Persons with ADD, ADHD, learning disabilities, head injuries, stroke, Tourette’s syndrome, epilepsy, and often post-polio syndrome, chronic fatigue syndrome and fibromyalgia tend to have excessive slow waves (usually theta and sometimes excess alpha) present. When an excessive amount of slow waves is present in the executive (frontal) parts of the brain, it becomes difficult to control attention, behavior, and/or emotions. Such persons generally have problems with concentration,

memory, controlling their impulses and moods, or with hyperactivity. They can't focus very well and exhibit diminished intellectual efficiency.

During the 1970's and 1980's there was a great deal of experimentation with QEEG. The American Medical EEG Association Ad Hoc Committee on QEEG has stated that QEEG "is of clinical value now and developments suggest it will be of even greater use in the future." QEEG has scientifically documented ability to aid in the evaluation of conditions such as mild traumatic brain injury (Thatcher et al., 1991, 1998a,b, 1999), ADD/ADHD (Bresnahan & Barry, 2002; Chabot & Serfontein, 1969; Clarke et al, 1998, 2001a,b; Mann et al., 1992; Monastra et al., 1999; 2001), learning disabilities (Ahn et al., 1980; Chabot et al., 1996; Flynn & Deering, 1989; Harmony et al., 1990; Harmony et al., 1995), depression (Davidson,1998a,b), obsessive-compulsive disorder (Perros et al., 1992; Prichep et al., 1993), anxiety and panic disorder (Heller et al., 1995, 1997; Weidemann et al., 1999), and a variety of other conditions (Hughes & John, 1999) including autism, schizophrenia stroke, epilepsy, and dementia. QEEG has even been able to predict outcomes from treating conditions such as ADD/ADHD (Suffin & Emory, 1995), alcoholism (Bauer, 1993, 2001; Winterer, 1998), and drug abuse (Prichep et al, 1996a,b).

A quantitative EEG is an assessment tool to evaluate a person's brainwaves. **The entire test of the QEEG and ERP's will take approximately 2 hours and 15 minutes.** It consists of placing a snug cap which contains small electrodes on the head to measure the electrical patterns coming from the brain- much like the way that a physician listens to your heart from the surface of your skin. It takes about an hour of the 2 hours to put the cap on. **(If your child is very sensitive to touch especially on the head please let us know and we can arrange for you to collect a spare cap to get the child used to it. The cap is like a scrum cap. Please prepare small kids from age 6-8 years old that they really need to sit still especially for the eyes open and eyes closed recordings. If the child is unable to sit still we will have to stop the testing and reschedule. You will then be charged only for the time spent.)**

We gather information on the brainwave patterns, interactions between different parts of the brain, and the efficiency of communication between different parts of the brain as well as measures of reaction time, breathing, heart rate, muscular activity and sweating. Together with this we also gather information from Event Related Potentials (ERP), a Continuous Performance Test (CPT), Executive Functioning and Startle Response. This is done while the patient is resting quietly with his or her eyes closed, and usually also with the eyes open or during a task. Afterwards, we then go through a tedious and lengthy procedure to remove any artifacts that occurred when the eyes moved or blinked, patients moved slightly in the chair, or tightened their jaw or forehead a little bit. The brainwave data we gathered is then put into a sophisticated normative database and compared to norms for how the brain should be functioning at their age.

This assessment procedure allows us to then determine in a highly scientific, objective manner whether and how your brainwave patterns are significantly different from normal. The QEEG assists us in knowing if there are abnormalities in brain function that EEG neurofeedback might be helpful in treating,

and lets us know how we can individualize neurofeedback to the unique problems of each patient. For example, there have been many subtypes of ADD/ADHD which have been identified in scientific research--none of which can be diagnosed from observing the person's behavior. Some clinicians use a one-size-fits-all approach that uses a standardized intervention based only on the fact, for example, that someone has received the unrefined, overall diagnosis of ADD/ADHD based on their behavioral symptoms. However, a sophisticated QEEG brain map allows us to look much deeper and to tailor treatment to each individual patient's brain pattern. When treatment is focused on altering brain function, we strongly recommend that you allow us to follow a careful approach to treatment planning that is founded on a scientific psychophysiological (QEEG) evaluation, rather than prematurely beginning neurofeedback based on limited information, educated guesses or theories about what the underlying problems and processes may be.

Delimitations & Potential Risks:

It is important for you to understand that a QEEG is not the same as a "clinical EEG" which is used in medical diagnosis to evaluate epilepsy or to determine if there is serious brain pathology, such as a tumor or dementia. The quantitative EEG that we do evaluates the manner in which a particular person's brain functions. It is not designed and we do not try to diagnose tumors, epilepsy, or other medical conditions in a manner like an MRI or CAT scan. The QEEG neurometric statistical analysis allows us to know, in many cases with a 90% degree of accuracy, that someone has functional brain abnormalities, but it cannot perfectly predict. The QEEG also provides valuable input that assists in the diagnosis of various psychiatric-psychological conditions, but it is a fundamental principle that one method alone should not be used to make a diagnosis or for decision making. You should recognize that the QEEG evaluation is non-invasive and no electrical current is put into the brain, but the electrode cap is tight fitting and can become uncomfortable before the evaluation is over. In order to obtain good electrode connections, it is also not unusual for the skin to be slightly abraded in tiny areas under a few of the electrodes.

Fee Policies:

A cost of R4900.00 will be charged and this will include the acquisition of the QEEG and ERP's, an overlay report from Peet Vermaak a Clinical Technologist (in neurophysiology), a report from BRC and a 1 hour verbal feedback from Mitzi Hollander to summarise the results.

If you want only a qEEG with eyes open and eyes closed it will cost R3000. This includes an overlay report from Peet Vermaak, a BRC report and a 1 hour verbal feedback with Mitzi Hollander to summarise the results.

It is important that both parents be at this feedback as there is a lot of information to absorb. Should only one parent attend and the other parent also requires a feedback session this will be charged at R500 per hour.

Most medical aids will reimburse you for only R2245.00

Cash, Cheque, credit card (VISA or MasterCard) or electronic transfer will be accepted and must be paid on the **morning** of the assessment.

Banking details: Neuro-Logics cc
RMB (FNB)
Branch: Sandton
Code: 261251
Acc No: 62063072046

Please cancel at least 24 hours in advance to allow us time to schedule someone else. We will charge a cancellation fee of R500.00 for late cancelations as well as if you don't arrive on the day without cancelling.

If for whatever reason after set-up of the cap the qEEG cannot be done a fee of R500.00 and not the full amount of R4100.00 will be charged.

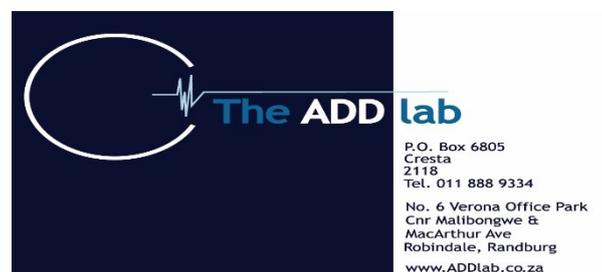
Feedback Procedure:

The report takes between 7-10 working days to get back from Australia. The feedback will then be scheduled. Please take note that public holiday may delay the process slightly.

Please note: No written report on the summary will be given. The only written report will be from Peet Vermaak. You are very welcome to take notes. No recording devices are allowed.

If you have been referred by a therapist outside Gauteng who has not been appointed and trained by BRC to do report interpretation and feedback, it is suggested that your therapist be available with you for the feedback which is done via skype. Please ensure that both parents are present at this skype feedback as it is a lot of information.

Consent for a QEEG



Consent form QEEG

DETAILS OF CLIENT

FULL NAMES		SURNAME	
FIRST NAMES		DATE OF BIRTH (YYYY/MM/DD)	

PARENT/ GUARDIAN/CLIENTS DETAILS

INITIALS	
FIRST NAME	
SURNAME	
DATE OF BIRTH	
ID NUMBER	
LANGUAGE	
OCCUPATION	
HOME NUMBER:	
WORK CONTACT NUMBER	
CELL NUMBER	
E-MAIL ADDRESS	

By signing this document in the spaces provided below, I _____ the **client/parent/guardian** of _____ attests to having read and understood this document, having had the assessment process fully explained to their satisfaction, and authorizes Brain Resource and EEG technicians of The ADD Lab to collect the following data:

- Collect electrical brain measures, Event Related Potential, Executive Functioning Startle Response, Continuous Performance Test and body measures

By signing this document I hereby agree that the above information I have provided may be used for the purposes of my personal assessment.

By signing this form, I _____ hereby acknowledge I read the section on fee policies and agree to the above mentioned terms and conditions and accept responsibility for the payment.

Name.....

Signature..... Date.....

Signature of witness..... Date.....

Printed name of witness.....

I hereby agree that all information provided by me will belong to Brain Resource Limited and will form part of an international database. I understand and agree that scientists internationally may have access to this information at any time in the future and that the information may be used for scientific, clinical or commercial purposes. I understand that no personal identification information (ie name, address, contact details) will be transmitted to the central international database.

Signature..... Date.....

Signature of witness..... Date.....

Printed name of witness.....