



BrainWave Centre

Objective Measurement...
Confident Management

INFORMATION Sheet

Electrophysiological Assessments

What are Electrophysiological Assessments?

Electrophysiological assessments are objective measurements of brain activity or 'brain waves'. QEEGs and ERPs are two types of electrophysiological assessments.

These assessments help us to gain an understanding about the underlying physiological factors which contribute to a particular behaviour; for example ADHD, conduct disorder, depression, anxiety and stress.

Brain cells (neurons) use electrochemical signals to communicate with each other. We detect and measure these signals using qEEG technology. The equipment used in the tests does NOT transmit electrical current into the body. The procedure is totally non-invasive, safe and some children describe it as fun. The testing equipment is designed to pick up and register any electrochemical activity in the brain while the person responds to visual and auditory cues. This electrochemical activity produces brainwaves which we can detect, record and transpose onto a screen. These resultant brainwaves can be measured against stored 'normal' values. This objective measurement leads to an accurate and confident diagnosis of the condition being tested.

How are qEEGs and ERPs carried out?

QEEG stands for 'quantitative electroencephalograph'.

In order to carry out this assessment, a specialised cap is placed on the head of the individual who is being tested. This cap has a number of delicate sensors that enable us to detect electrochemical brain activity, in the form of brainwaves, at key locations on the scalp. These brainwaves are recorded and transposed onto a screen where they are measured using digital technology. Our technicians are able to convert the recorded data into numerical values using specialised computer systems. The data is then used to create graphs of brainwave activity, which shows the patient's brainwaves compared against 'normal' values.

ERP stands for 'evoked response potentials'. For this assessment the patient is presented with both sound and picture signals. These signals or cues evoke a response in the form of an ERP, which is a graphical interpretation of related brain activity. The brain activity resulting from each signal or event is recorded.

Both qEEGs and ERPs are safe, painless assessment procedures.

How long do they take?

The procedure which includes both the qEEG and ERP takes approximately one hour.

What happens after the procedure?

A report is sent to the patient's referring doctor so that the doctor can discuss the results with the patient. The patient's own doctor or specialist will recommend the appropriate course of treatment.

If the electrophysiological assessment is part of an ADHD assessment, the patient will undergo a clinical interview with a psychologist. This interview can last for thirty to forty-five minutes. The patient will also be required to complete appropriate Self-Report Rating Scales which are common to clinical psychological practice.