

Electroencephalograph (EEG)

Information for patients.

To assist you in making an informed decision to undergo an EEG recording.



What is an EEG?

An EEG is a recording of the “brainwaves” – the electrical activity of the brain. We only record the signals produced naturally in the brain. This test is an investigation. It is not a treatment.

There is no danger to pregnant ladies or their unborn babies from this test.

Reason for the procedure

Patients are referred for an EEG for a variety of reasons and the outcome may assist the referring doctor in diagnosis and treatment.

Preparation

- Please ensure that your hair is clean. If you may have head lice, please ensure you treat it beforehand. The test will not be done if head lice are present.
- Please have your meals as normal.
- Take your medication as normal unless otherwise directed by your doctor.
- Bring a written list of any medication that you may be taking.

The Equipment

Small metal discs attached to long wires (electrodes) are used to monitor your brain activity. A video camera is also available to monitor your movements throughout the test although you will be asked for your consent if you wish to proceed with video recording. A circular light may be placed in front of you during the test. There is no sound generated from the equipment so hopefully you will find the test quite peaceful and relaxing.

The Procedure

The test will take approximately 1 hour or 1½ hours if it involves a sleep recording.

The Clinical Physiologist will make measurements of your head and pencil marks may be made. The electrodes are then attached using a sticky paste. There are approximately 21 electrodes used altogether. The scalp will be rubbed before the electrodes are attached. The test itself is painless.

The recording takes about 20-30 minutes. You will either be lying or sitting during this time.

During the recording you may also be asked to:-

- Open and close your eyes at various times
- Breathe deeply (hyperventilation) – we will ask for your consent
- Look at a flashing light (photic stimulation) – we will ask for your consent
- Fall into a natural sleep

Results

The recording has to be analysed, therefore results will be available at a later date. These will be forwarded to the Consultant who requested the test.

Benefits

Procedures such as hyperventilation, photic stimulation and sleep may reveal new information which could be diagnostic and therefore aid your Consultant in determining suitable treatment.

Side effects and Risks

Hyperventilation - This may produce changes in your brain wave activity that could help with diagnosis. You will be asked to take deep breaths for about 3 minutes. This often causes a light headed feeling or tingling of the lips or fingers; this is normal and will pass off when you return to breathing normally.

There is a very small risk that this may cause a seizure.

Photic Stimulation - This may cause a seizure in people who are very sensitive, but this is rare, and the Clinical Physiologist who monitors the EEG during the test will stop if you appear sensitive.

In a small number of patients there may be an allergic skin reaction to the paste/tape used during the set-up procedure. If you are sensitive to cosmetics, lotions or sticky tape, please inform the Clinical Physiologist before the test starts.

In the unlikely event that you have a seizure you must stop driving for a time and you have a responsibility to inform DVLA.

Increased risk factors

Hyperventilation – Elderly patients or those with certain medical conditions may not be asked to breathe deeply. The Clinical Physiologist will ask questions regarding your general health (heart, blood pressure, asthma etc.) to ascertain whether it is safe for you to hyperventilate.

Photic Stimulation – A small percentage of people are sensitive to flashing lights. When exposed to the flashing light the EEG can show a certain type of response. If your recording shows such changes then you will be at an increased risk of having a seizure.

In the rare event you experience a seizure during your EEG and you remain disorientated, then you will be transferred to the Emergency Department to recover.

Alternatives

To hyperventilation - There are no alternatives to hyperventilation although other procedures such as photic stimulation or sleep deprivation can also induce changes in the brain activity but these are not a substitute for hyperventilation.

To photic stimulation - Rarely your Consultant may think it would be more useful to obtain a recording of your brain activity while playing a computer game or watching television but any of these methods of finding out if you are sensitive to flashing lights will carry a small risk of having a seizure.

For more information

Epilepsy Society www.epilepsysociety.org.uk and their leaflet “Driving and Epilepsy

Association of Neurophysiological Scientists (ANS) website at www.ansuk.org

Video of an EEG recording at <https://www.youtube.com/watch?v=KXS268XsRic>

If you have further questions, call:

Neurophysiology Department 01225 824277

Neurology Outpatients 01225 821907

Royal United Hospitals Bath NHS Foundation Trust
Combe Park, Bath BA1 3NG
01225 428331 www.ruh.nhs.uk

Please contact the Patient Advice and Liaison Service (PALS) if you require this leaflet in a different format, or would like to feedback your experience of the hospital. Email ruh-tr.PatientAdviceandLiaisonService@nhs.net or telephone 01225 825656.