What is a sleep deprived EEG?

Information for patients
Clinical Neurophysiology
We must obtain your consent for any procedure or treatment beforehand. Staff will explain all the risks, benefits and alternatives before they ask for your consent.

If you are unsure about any aspect of the procedure or treatment proposed, please do not hesitate to ask for more information.

**What is an EEG?**

An EEG is a routine test carried out in specialist hospitals. The test records the electrical impulses that your brain produces whilst sending and receiving messages to and from your body. EEGs are carried out on patients of all ages and abilities.

**What does EEG stand for?**

EEG stands for Electroencephalograph.

**Electro** - the electrical impulses that are being measured

**Encephalo** - the head

**Graph** - the way the results of the test are presented

**What is a sleep deprived EEG?**

You may have already had a standard waking EEG.

Sleep deprivation may help in two ways. Firstly the tiredness may result in brain waves on the EEG which are not usually seen. Secondly, you may fall asleep during the EEG and this may reveal new information that would otherwise have been unseen. If you are being investigated for seizures, there is a slightly increased risk of you having a seizure when you are sleep deprived (see later).
How long will I be at the hospital?
You should expect to be at the hospital for about 2 hours.

Where is the test done?
The test is performed in a recording room on N Floor (tower block) of the Royal Hallamshire Hospital. The room contains a couch and the EEG equipment. There will be a technician present and there is also room for you to bring someone with you if you wish.

Please note (parents and guardians):
We have no provision for accompanying children to be supervised whilst you are having your EEG. If you have any problems arranging childcare, please ring the department to discuss this.

Is there anything I need to do before having the test?
Yes, you should:

- Stay awake throughout the whole of the night before your test.
- Have a good breakfast.
- Have clean hair that is free from hair-spray or gel.
- Wear comfortable loose clothing that you are happy to sleep in.
- Continue with any medication you are currently taking. It is helpful to bring a list of your medications with you.
- If you would usually drive to your appointment, please make alternative arrangements. It is not safe for the patient or anyone who stayed up with them, to drive after sleep deprivation.
What happens before the test?

To prepare you for the test, your head will be measured and then rubbed with a cotton bud and some abrasive paste. A sticky paste is then used to make it easier for the 23 discs that will be placed on your head to pick up the small impulses we are going to record.

Getting you ready for the test takes about 20 minutes.

You may ask any questions that you have at this time.

What happens during the test?

This part of the test takes about 1 to 1½ hours.

You will not feel anything whilst the EEG is being recorded.

Please note, we routinely video the test in case you have any symptoms that we might need to re-examine. Video clips of any symptoms are kept as part of your records. All remaining video is deleted after the doctor has completed the report. We will ask for your consent to do this. We may also ask for your permission to use the video for teaching purposes, you will be asked to give consent separately for this purpose.

During the test we will want you to be as comfortable as possible. Most people find that they are comfortable lying down on a couch.

You may go to sleep naturally for a short period whilst you are in the department.
During the test, the technician will ask you to do various simple actions like:

- Opening and closing your eyes.
- Hyperventilation - this is taking deep breaths in and forcing them out as if you are blowing a candle out. You may feel dizzy or get pins and needles in your fingers, toes and face. These are normal side effects which will go a few minutes after you have stopped the deep breathing. We will ask about your general health (heart, asthma, etc) to make sure it is safe for you to do the deep breathing. The breathing causes a change in the blood flow which may change your brain waves and provide extra information to help with your diagnosis. If you are being investigated for seizures, there is a less than 3 in 100 risk that the deep breathing may cause a seizure. If that happens it could mean you are unable to drive for 1 year afterwards. You will be asked to give your consent to performing this; there are no alternatives to this part of the test.

- Photic stimulation - watching a flashing light. A lamp is placed in front of you which flashes on and off at different speeds. You will be asked to look at it. In a small percentage of patients, flashing lights trigger seizures (photosensitivity). If a patient has this response the light is turned off quickly and they do not usually go on to have a seizure. However there is a less than 1 in 10,000 risk that if you are having seizures, a seizure could be triggered by the flashing light. If that happens it could mean you are unable to drive for 1 year afterwards. The information we get from photic stimulation may lead to a definite diagnosis and help your consultant to decide on your treatment. You will be asked to give your consent to performing this; there is no alternative way to get this information.

- You will be left undisturbed for a while. Sleep deprivation is said to slightly increase the risk of a seizure. There are no definite figures available because of different methods in use but the risk
is small and falls between the risks quoted above for hyperventilation and photic stimulation.

What happens after the test?

Once the test is finished, we remove the discs from your head. You may find a small amount of paste left in your hair and this is easily washed out with shampoo. You may wish to bring a hat or cap to wear.

When will I get the results?

You will not get the results on the day of your test because it takes time to analyse them. The report will be posted to your referring consultant within 2-5 days.

Your consultant will then contact you to discuss the results.

Some frequently asked questions

Are any needles involved?

No

Can you read my mind?

No, we can only pick up the electrical activity in your brain not any thoughts you have.

What if I want more information?

If you have any questions after reading this leaflet please ring the Department of Clinical Neurophysiology, Royal Hallamshire Hospital on:

- 0114 271 3237
  Monday - Friday 8:30am-4:30pm