Clinical Neurophysiology

Patient Information

Sleep Deprived EEG

We are a smoke-free site: smoking will not be allowed anywhere on the hospital site.

For advice and support in quitting, contact your GP or the free NHS stop smoking helpline on 0800 169 0 169.

Other formats:
If you would like this information in another language or audio, please contact Interpreting services on telephone: 01223 348043, or email: interpreting@addenbrookes.nhs.uk

For Large Print information please contact the patient

Bengali: আপনি অন্যান্য ভাষার মধ্যে এই তথ্য পেতে চাইতে পারেন, বড় মুদ্রণ বা audiotape মধ্যে

Italian: Potete chiedere di ottenere queste informazioni in altre lingue, in stampato grande o in audiocassette.

Lithuanian: Galite paprašyti gauti šią informaciją kitomis kalbomis, dideliu spaudiniu ar garso įrašu

Pashto: ناسو کولی شئ چې دا معلومات په نورو زبانو کې، په لوې چاپ يا دیویتاپ کې ترلاسه کری.

Polish: Możesz poprosić o uzyskanie tych informacji w innych językach, w dużym druku lub na taśmie audio.

Portuguese: Você pode pedir para obter essas informações em outros idiomas, em letras grandes ou em fita de áudio.

Russian: Вы можете захотеть получить эту информацию на других языках, в большой печати или аудиозаписи

Urdu: آپ اس معلومات کو دیگر زبانوں میں، بڑے پرنٹ یا آڈیوٹپ پر حاصل کریں کے لے کہ سکتے بھی.

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Clinical Neurophysiology

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What is this leaflet for?
This leaflet is designed to give you or your child some information about the investigation for which you, or they, have been referred. We hope it reassures you – we have an experienced team who are expert at these investigations. If you or your child have further questions or concerns, you will have the opportunity to discuss these on the day of the appointment prior to the start of the investigation.

Consent
The doctor that referred you will have explained why they have requested a sleep-deprived EEG. If this is not clear to you please contact the doctor that referred you for the test. We must obtain your consent for any procedure or treatment beforehand. Staff will explain the risks and benefits before they ask for your consent. If you, or your child, are unsure about any aspect of the procedure, please do not hesitate to ask for more information.

What is the electroencephalogram (EEG)?
The brain works by electrical signals that can be recorded as waveforms (brainwaves) via electrodes (small metal discs) positioned on the scalp. These brainwaves can be picked up by a computer and the resulting electroencephalogram (EEG) is read by a physiologist and doctor.

We routinely record digital video simultaneously with the EEG because this allows the physiologist/doctor to compare any movement with the brainwaves. Video clips during any symptoms are kept as part of your records. All remaining video is deleted after the test has been reported.

You will have the opportunity to discuss the test on the day of the recording, and before it starts you will be asked to sign a consent form for the video recording and for the deep breathing and flashing lights that form part of the test (described below).

We may also ask your permission to use the video for teaching

Are there any risks?
Sleep deprivation is generally associated with a low added risk of having an epileptic seizure compared to an awake EEG.

Rarely the flashing lights or hyperventilation may cause a patient to have one of their characteristic episodes, but this may help with getting the right diagnosis.

- **Hyperventilation** is associated with a risk of
  - A seizure - about two in 100 patients (2.2%)
  - A generalised tonic clonic seizure - three in 10,000 patients

You will be asked to give your consent to performing this unless there is a medical reason why you should not do it. There are no alternative ways to get this information during this part of the test.

- **Photic stimulation** carries a risk of
  - A seizure - less than one in 100 patients (0.7%)
  - A generalised tonic clonic seizure (with the whole body shaking) - one in 2,500 patients (less than 0.1%)

The information we get from photic stimulation may lead to a definite diagnosis and help your consultant decide on your treatment. You will be asked to give your consent to performing this; there are no alternative ways to get this information.

If a seizure happens during the EEG recording it could mean you are unable to drive for one year afterwards.

What happens after the test?
The physiologist will remove the electrodes. This is not painful as the special paste stays soft. Your or your child’s hair will be cleaned, but it will feel a little sticky until you wash it. You may wish to bring a hat or cap to wear afterwards. Once the electrodes are removed you/your child will be free to return home—if travelling by car you will need somebody else to drive whilst you are sleep deprived.
your child will not feel anything while the EEG is being recorded. We have a bed in the recording room, and can turn the lights off to make you as comfortable as possible.

The physiologist will sit in an adjoining part of the room. Many parents worry that their child will not sit still to have the electrodes applied, or lie down for this length of time, but children can play or have stories read during the recording. A lot of our recordings are performed on children, and we have an expert team who are experienced at distracting or occupying children to enable a good recording. If your child has a favourite toy, it would be worthwhile bringing this.

During the test you would routinely be asked to perform some special procedures to help make it a more informative and sensitive test.

These include;

- **Hyperventilation** - this involves taking deep breaths as if you are blowing up a balloon or blowing out a candle. You may feel light headed or experience tingling in your fingers, toes or face. These are normal side effects which will pass within a few minutes of stopping the deep breathing. We will ask you about your general health (heart problems, asthma etc.) to make sure it is safe for you to do the deep breathing. The breathing causes a change in blood flow which may change your brain waves and provide extra information to help with your diagnosis.

- **Photic stimulation** - this involves watching a flashing light. A lamp is placed in front of you which flashes on and off at different rates. You will be asked to look at it. In a very small percentage of patients, flashing lights may trigger seizures (photosensitivity). We will monitor the brainwaves carefully during this part of the procedure and if we are concerned that a seizure may be caused the light is turned off quickly. Most people do not go on to have a seizure in this part of the test even if the brainwaves look abnormal.

purposes, you will be asked to give consent separately for this purpose. It will not affect your treatment if you choose not to consent for your video to be used for teaching.

**Why am I having a sleep deprived EEG?**

There are many reasons for having a sleep deprived EEG. One common reason is to help determine if an attack was a seizure, or to help classify the type of seizure. However, your doctor may have requested the test for a number of other reasons, such as for developmental assessment in children, overall function of the brain or as part of a series of investigations.

You, or your child, may have already had a standard EEG whilst awake. Having a Sleep EEG may help in two ways:

- Tiredness may cause brain waves to be seen on the EEG which are not usually seen.
- We hope you will fall asleep during the EEG, which may reveal brain waves not seen when you are awake.

**What do I need to do before the test?**

Make sure you read this leaflet and have understood all the information before attending the appointment and undertaking sleep deprivation. If you have a history of seizures being caused by sleep deprivation and you are concerned, please contact the doctor that referred you for the sleep deprived EEG test (do not contact the department of clinical neurophysiology as we will not have the full background information). Please keep taking all your usual prescribed medications.

**Adults**—To give the best chance to capture a good period of drowsiness and sleep, we ask that you do not sleep the night before the test. If this is not possible please aim to go to bed at least two hours later than normal the night before the test, and get up at least two hours earlier than you normally would on the morning of the test. If you normally drive you will need someone to drive you to and from the appointment.

**Children who don't nap during the day**—To give the best
chance to capture a period of drowsiness and sleep during the test, we ask that the child stays up about 2 hours later than normal the night before the test, and is woken 2 hours earlier than normal on the morning of the test.

Young children who nap during the day—To give the best chance of capturing a period of drowsiness and sleep during the test, we ask that the child is woken up earlier than normal on the morning of the test, and that their nap time is delayed to coincide with the test.

For all children, please try and keep your child awake on the way to the hospital – tired children often fall asleep in the car and you may find it helpful to have an extra person travelling with you if possible. It can also be helpful to bring any familiar things which your child usually likes to have when they go to sleep (cuddly toy, special blanket, milk etc).

- Please make sure you, or your child, have something to eat before your test.
- It is important that your, or your child's, hair is clean; please do not use mousse, gel, oil or other hair products as this can affect the recording.

Who will be present?
The sleep EEG recording will take between 60 to 90 minutes. You or

We have no provision for accompanying children to be supervised whilst you are having your EEG.

What happens before the test?
A physiologist will measure your, or your child’s, head then use a cotton bud and abrasive paste to clean small areas of the scalp. A special sticky paste is then used to apply small silver discs to the surface of the scalp. This is not painful, but does involve some rubbing. Two stickers will also be placed on your shoulders/arms to record your heart rate and further stickers may be applied to the surface of the skin to record muscle movements. Getting ready for the test can take around 15 minutes.

You may ask any questions you have during this time. Please inform us if you, or your child, are allergic to any creams.

Melatonin
Some children are prescribed melatonin to help them become drowsy and sleep during the test. This improves the information we get from the sleep EEG test. Your doctor will have provided melatonin for your child if it is needed. We ask you to bring this with you to the appointment, and we will let you know when your child should take it. This is a very safe medication, which is the same as the chemical which is naturally produced by the brain when it is dark to help us sleep. It is commonly taken by adults and children—occasionally it makes your child’s temperature fall a little; this is a normal reaction to the medication and is not dangerous.

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