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### **Electroencephalogram**

The Electroencephalogram (EEG) is a medical test used to measure the electrical activity of the brain, via electrodes applied to your scalp. The procedure is completely painless and can be performed without shaving any of your hair. EEG can help diagnose a number of conditions, including epilepsy, sleep disorders and brain tumors. Another name for EEG is brain wave test.

### **Conditions Diagnosed by EEG**

Normal brain waves occur at a rate of up to 30 per second, but in someone with epilepsy- for example- the EEG may show bursts of abnormal discharges in the form of spikes and sharp wave patterns. Suspected epilepsy is the most common reason for an EEG. Other conditions that may be diagnosed with the aid of an EEG include:

1. Sleep disorders (such as narcolepsy)
2. Head injuries
3. Brain infections (causing symptoms such as Headaches)
4. Brain hemorrhage (bleeding in the brain , e.g. from Aneurysm) (Causing symptoms such as headaches)
5. Alzheimer's Disease
6. Degeneration of the brain tissue
7. Metabolic conditions that affect brain tissue
8. Hormonal conditions that affect the brain tissue
9. Certain disorders of the central nervous system
10. Strokes
11. Brain tumors (Causing symptoms such as Headaches)
12. Brain Death

### **EEG Procedure**

Your hair must be thoroughly clean and recently shampooed. A number of electrodes are applied to your scalp (generally between 8 and 23, depending on the condition under investigation). A gel may be applied to help the electrodes to stick firmly in place. You will need to lie quietly to avoid any electrical interference from the muscle contractions. Sometimes, you may be asked to breathe heavily. Lights may be flashed before your eyes. An EEG usually takes from 30 to 60 minutes to complete. Sometimes, however it may take several hours and may require Video Recording. The technician will let you know if this will be required. You may be asked to stay up and delay sleep before the test so sleep can be recorded.

Sedatives (medication to help sleep) may be needed if sleep won't come naturally during the test.

## **Immediately after the EEG**

Once the test is complete, the electrodes are removed and you are allowed to get up. The results need to be analyzed at a later stage by a neurologist (a doctor who specializes in brain disorders). Generally, if there is an abnormality to the brain electrical activity, the pattern of 'peaks and valleys' charted by the EEG should be fairly regular. If excited, the pattern will show considerable variation, and departure from the regular pattern can indicate abnormalities.

## **Possible Complications**

EEG is a safe test with NO SIDE EFFECTS. However, a person with epilepsy may experience a seizure, triggered by the various stimuli used in the procedure, including the flashing lights. (This is not seen as a 'complication' by medical staff, because a seizure during an EEG can greatly help in diagnosis.)

## **Taking Care of Yourself at Home**

EEG is a safe procedure. Be advised by your doctor, but generally, there are no special instructions for after-care. However, you will need to wash your hair thoroughly to remove all traces of gel and other fluids.

## **Long Term Outlook**

The EEG technologist CAN'T interpret the test results on the spot. The EEG recording must be analyzed by a neurologist, who then sends the results to your doctor. It is important to make a follow-up appointment with your doctor. In some cases, the test results are sent to your doctor within 48 hours of the test. Treatment depends on the diagnosis.

## **Other Diagnostic Test**

Other diagnostic tests depend on the condition under investigation. For example, magnetic resonance imaging (MRI) scans and computerized tomography (CT) scans may be needed. In some cases, another EEG may be required; this will be determined by your physician.

## **Things to Remember**

1. The electroencephalogram (EEG) is a medical test used to measure the electrical activity of the brain.
2. A number of electrodes are applied to your scalp.
3. EEG can help diagnose a number of conditions including epilepsy, sleep disorders and brain tumors.

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Patient Name

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Date

Please Sign below that you have read the information above.

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Patient Signature

List All Medication Below

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