

Explanation of Diagnosis/Condition

EEG (electroencephalogram or “EEG” testing) is the gold standard in diagnosing seizures. It may also be used to evaluate headaches and dementia. The test is similar to an EKG of the heart, but for the brain. EEG refers to the recording of the brain's spontaneous electrical activity over a short period of time, usually 20–40 minutes, as recorded from multiple electrodes placed on the scalp.

There are two activation procedures done during EEG recordings; these are **hyperventilation** (rapid shallow breathing) and **photic stimulation** (flashing lights). They are used to provoke epileptiform waves. Evidence of seizures recorded on an EEG can be determined by demonstrating interictal (between seizures), epileptiform activity, or recording an actual seizure. It is also important in the classification of seizures and epilepsy syndromes.

What to Expect with EEG Testing

The test is performed at one of the offices (Glendale, Avondale, and Sun City). Ambulatory EEGs are only set up at the Sun City office.

What do I need to do to prepare for the test?

- Wash your hair the night before using shampoo only. Other hair products (conditioner, gel, styling products) may prevent the electrodes from sticking to your scalp.
- Avoid caffeine the day of the test because it can interfere with test results.
- Continue your normal medications unless the doctor instructs you otherwise.
- Sometimes, the doctor may want you to be sleep-deprived. You may be asked to refrain from sleeping the night before. This will be discussed with you in specific cases.
- No fasting is needed and is not recommended as low blood sugar may also interfere with test results.
- Any hair extensions need to be removed

Possible Side Effects of Procedure, and Instructions

EEG's are safe and painless. They are even safe in pregnancy. At times, seizures may be evoked, but can easily be treated by the doctor. Most seizures stop by themselves.

What happens next?

The EEG is performed by a trained and certified EEG technician. The results are then interpreted by a physician specialist in neurology.

Results will be explained to you on your next follow up appointment. Changes in medications may be made based on test results. Typically there are no sedatives used, so you may immediately resume normal activities when the test is completed.

****Of importance, a normal EEG does not support or refute the diagnosis of epilepsy. An outpatient EEG is normal in 50% of patients with seizures. ****

What to Expect with Ambulatory EEG Testing

As mentioned above, a routine EEG may be inconclusive when trying to diagnose or rule out seizure disorders. In this case, you may be asked to do an ambulatory EEG in which you will wear the device home. The continuous monitoring allows for a better chance of catching any epileptiform (seizure activity) discharges. It can help diagnose silent seizures, nocturnal or sleep events, syncope (passing out), and pseudoseizures.

The tests are performed at the Sun City office (104th Ave and Thunderbird across from Boswell Hospital).

Follow the same pre-procedure preparations as with the routine EEG, above. These additional instructions apply:

- Wear a comfortable unaltered t-shirt that you can sleep in. Shirts must have intact short or long sleeves- no tank tops!
- You may wear a hat, bandana, or scarf made of 100% cotton (optional). This will help hide the electrodes on your head.
- A loose button-up shirt or jacket (optional). This will help hide the equipment.

Before the test, a partial instruction list for test day will be given to you. This detailed list will help you prepare. You or your caregiver (or Power Of Attorney, if applicable) will need to sign a release form stating that you will not take the machine off (disconnect and/or remove the electrodes or device). If you do, you will be responsible for damage.

EEG wires are placed on your scalp, like in a routine EEG, and then attached to a special recorder that is slightly larger than a portable cassette player. You can wear the recorder on your waist, with the wires running either under your shirt or outside of it. The electrodes on your head are covered with a cap or gauze dressing.

During the test, you can go about your normal routine for up to 24- 72 hours. During the test, keep a diary of what you do during the day and if you've had any seizures or other symptoms. This will help the doctor identify the cause of activity on the recording. For instance, the electrodes may make your head itchy, and if you scratch it, that may appear as abnormal activity on the EEG.

Because the electrodes must stay on your head longer than for a regular EEG, the technologist will probably use a special glue called "collodion" to keep them in place. After the test, acetone (like nail polish remover) or a similar solution is used to remove the glue.

- Do not sleep on or in anything electrical (anything that plugs in the wall such as an electric blanket).
- No washing, showering or bathing once the equipment is placed on your body.
- Sweating will affect your test. Please do your best to stay cool.
- Obtaining accurate readings is critical for the procedure. So sit back and relax until your disconnect appointment.

What happens if I have a seizure or event during the recording?

There will be an "event" button to record any seizure activity or become symptomatic. If you are unable to press the button, have a witness push the button. This will allow the neurologist to correlate the event with the EEG reading.



Patient Education Neurologic Diagnostic Testing Electroencephalogram (EEG)

What do I expect after test is done?

The machine will be removed at the Sun City office. After the glue is removed, it is important that you DO NOT WEAR anything plastic that will touch your head i.e., eyeglasses, cell phones, hearing aids, earrings, etc. They could be damaged from the solution used to dissolve the glue. When you return home, wash your hair.

You may continue normal activities after the test.

The recorded information will be interpreted by the neurologist and discussed with you at your next follow up appointment. Your care plan will be based off the findings.

The CORE Institute is dedicated to your outcome. If any questions or concerns arise, please call The CORE Institute at 1.866.974.2673.