

EEG (electroencephalogram)

What is an EEG?

An EEG, or electroencephalogram [ee-LECK-tro-en-SEF-uh-low-gram], is a recording of the electrical activity of the brain (brainwaves). Many people with seizures or epilepsy have different brainwave patterns, especially when they are having a neurological **event** (such as a seizure or other abnormal activity).

A doctor can look at the EEG and get information about how the brain is working before and during the event. This can help diagnose your condition or help select the best treatment. Depending on the type of EEG you need, you may have the test at the clinic, at home, or in the hospital as part of a longer stay.

How does an EEG work?

The EEG technician will put small metal tabs (electrodes) on your head. These do not hurt and do not give a shock, but just sit on the skin. These electrodes sense the brain's electrical messages and the EEG machine records these messages. They are stored on the computer so the doctor can look at it later.

Is it risky?

The EEG measures small electrical signals from the brain. There are no electric shocks or other electricity sent to the body during an EEG. It doesn't hurt and there are no risks to your health from the EEG. There is a chance you will have a seizure (or another abnormal brainwave event) during the EEG. If so, it will show on the EEG recording. This will help the doctor diagnose and treat you. The EEG technicians and nurses are trained to help patients who have seizures or other neurological events. All of the equipment needed to help you if you have a seizure is kept very close by when you are in the hospital.



How do I prepare for an EEG?

- Shampoo your hair to remove any hair products, hairspray, or oils.
- Have a small meal before the test to avoid low blood sugar.
- Continue to take your medications before your test as directed by your doctor. Ask your doctor if any of your medications might affect your test results, especially if you take benzodiazepines [ben-zoh-dahy-AZ-uh-peenz], such as Ativan or Xanax.
- Bring a current list of your medications, dosage, and time taken.

Sometimes the doctor asks that the patient not sleep at all after waking up on the day before the test (**sleep deprivation**). This will help change your brain activity so that the test will be more helpful to your doctor. If you have been sleep-deprived, avoid naps and stimulants such as coffee, soda, sugar, and chocolate the day before the test. Also, **be sure to arrange for someone else to drive you to and from the test.**

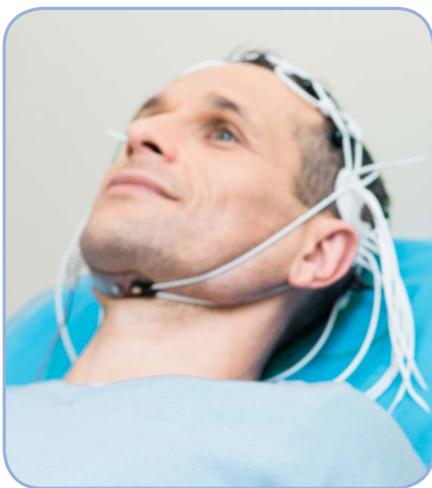
See **pages 2 to 3** for information about specific EEG tests. 

Outpatient EEG

An **outpatient (routine) EEG** is done at the hospital, and you will go home the same day. You do not have to stay overnight.

Here's what to expect:

- 1 First, the EEG technologist** will measure your head with a wax pencil so that the electrodes can be placed in the right position against your scalp.
- 2 The technologist will then place the electrodes** against your head and secure them evenly across your scalp using cotton or gauze.
- 3 The recording will begin.** You will be asked to stay as relaxed as possible and keep your eyes closed through most of the test.
- 4 You will be asked to hyperventilate** by taking deep breaths, one after the other, for several minutes. You may feel dizzy or tingling in your hands. This is normal and will disappear when you stop the deep breaths.
- 5 You will be asked to try to go to sleep.** Once a few minutes of sleep are recorded, you will be awakened.
- 6 The technologist will flash a light** in front of your eyes while they are closed. The number of flashes will slowly increase, and then the test is over.



At-home EEG (Ambulatory EEG)

An **at-home, or ambulatory** [AM-byoo-luh-tawr-ee] EEG allows you to take the EEG home with you. You will wear it throughout your daily routine for 1 to 3 days. You can continue with your normal activities during the time the EEG is connected, as this test is meant to capture one or more of your events as they happen during your daily routine.

Here's what to expect:

- 1 During the first appointment, the EEG technologist will place small discs (electrodes)** on a prepared area of your scalp with a small amount of cream under each one. They will then put a small amount of glue on a gauze square around each disc to keep the electrodes in place.
- 2 The recording system will display a flashing amber light** continuously while recording.
- 3 When you have an event, you or your family members will push a button to mark it.** For each pushbutton event, you will be asked to record the event on a form, including the time it happened and a brief description of what happened. The following day, the technician will ask you to describe each event.
- 4 You will return to the lab once each day** during your test so the medical team can download your recordings, check electrodes, and replace the batteries in the recording system. The electrodes will be reapplied if necessary.
- 5 At the last appointment, the electrodes will be gently removed** from your scalp. As much of the glue will be removed as possible at the hospital.

See [page 3](#) for information about what happens after the EEG test.

Inpatient (long-term) EEG

Inpatient, or long-term, EEG involves staying in the hospital until you have at least 3 events, which usually takes 3 to 7 days. During the time you are in the hospital, you are connected to an EEG and recorded by a video camera. This lets the doctor watch your brainwave activity at the same time that you have an event, giving them detailed information about your condition. Video recordings taken during or shortly after a seizure are useful because they can help your doctor determine the type of seizures you are having. This is important because different types of seizures respond to different types of therapy.

Please remember to bring:

- Clothing**, including button-down shirts and comfortable bottoms such as shorts, pajama bottoms, or sweatpants.
- Entertainment** to keep you occupied while lying in bed or sitting on a couch (books, games, video games, DVDs, or a laptop). Internet will be available in your room.
- Snacks**. The hospital will provide drinks.

Here's what to expect:

- 1 The EEG technologist will place small discs (electrodes)** on a prepared area of your scalp with a small amount of cream under each one. They will then put a small amount of glue on a gauze square around each one to keep them in place.
- 2 You will be monitored** on EEG and by a video camera while you are awake and asleep.
- 3 Your doctor will visit you daily** and will update you on recorded events and the treatment plan. When events are identified, you will be tested by technicians and nursing staff until you have returned to normal.
- 4 You will likely be discharged the day after** your events (usually 3) have been captured. The average length of stay in the hospital is 5 days (sometimes shorter or longer depending on when events occur).

What happens after an EEG test?

Before you leave the hospital, the electrodes attached to your scalp will be gently removed.

- **If you had a routine EEG**, the technologist will remove as much of the gel as possible before you leave. However, you may wish to wash your hair afterward.
- **If you had a long-term or at-home EEG**, as much glue as possible will be removed from your head at the hospital. After you get home, it is best to use a conditioner to enable the glue to loosen and more easily comb out. Coconut oil, baby oil, or olive oil can be applied to areas where it is difficult to slide the glue through the hair. Nail polish remover also works—just be careful not to splash any in your eyes.

How and when will my doctor follow up?

Your doctor will give you the results, typically within 1 to 2 weeks of completing the test. If your test was done in the hospital, the results are usually discussed in the hospital.



My follow-up appointment

Date/Time: _____

Place: _____

Doctor: _____

