

### What is an EEG?

An EEG (electroencephalogram) is a test that records the electrical activity of the brain using electrodes placed on the scalp. It is mainly used to detect seizures and find out which part of the brain they originate in. During medical procedures, EEG can monitor the depth of anesthesia and roughly measure brain function and blood flow. This test can also help diagnose psychiatric and sleep disorders.

### How is an EEG used in stroke diagnosis?

The EEG is not routinely used for stroke diagnosis; however, it may be ordered if your doctor thinks that you may have had a seizure. Seizures are abnormal electrical patterns in the brain cells that can produce symptoms ranging from full-body convulsions to small movement problems and confusion. These symptoms could be mistaken for a stroke or [transient ischemic attack](#) (TIA).

An EEG can also be used to detect seizures caused by a stroke. Brain damage as a result of a stroke is the most common cause of seizures in the elderly. Approximately 5% of survivors have early seizures after a stroke, usually within the first 24 hours.<sup>1</sup> Seizures can also occur months or years after a stroke.<sup>2</sup> Seizures are more common in patients who have suffered a bleeding (hemorrhagic) stroke and those who have had more serious strokes.

3

The common conception of a seizure affecting the whole body can happen, but seizures in stroke survivors are often more subtle and can only be detected by an EEG. Some stroke patients, especially those with a bleeding stroke in the space surrounding the brain (*subarachnoid hemorrhage*), will be monitored with an EEG as they recover in the hospital; if seizures are detected, they can be safely controlled with medication.

In the past, patients who had a seizure that accompanied their stroke could not receive [tPA](#),

the first-choice drug for treating blocked-vessel (ischemic) stroke. However, currently people who suffer seizures with a stroke may still be eligible for treatment, as long as their remaining symptoms are caused by the stroke and not seizures.

4

An EEG may also be used to monitor brain function during a procedure such as [carotid endarterectomy](#) in patients who have had or are at risk for a stroke.

### How is the test performed?

To perform the EEG test, small metal disks (electrodes) are placed on the scalp, usually with a special conducting paste. Each electrode is attached by a wire to a machine. A small electrical current is sent through the electrodes. You may be asked to perform certain tasks, such as breathing exercises or opening and closing your eyes, or be subjected to stimuli such as flashing lights or noise. The electrical activity of your brain is monitored, and technologists can tell if you are having seizures from the size, length, frequency, and location of these impulses, even if the seizures are too small to produce clear physical effects. If you are being monitored in the hospital, the EEG might be combined with video monitoring to see if EEG activity corresponds with movement problems.

### What are the risks?

The EEG test poses no significant risks, and is pain-free.

### References

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