

# Seizures

## Objective

The primary objectives of the medical evaluation of the first seizure are to establish whether the event was a seizure, and if so, whether it resulted from a correctable systemic process or whether the patient is at risk for developing further unprovoked seizures

Seizures are further categorized as either focal or generalized according to whether the onset of electrical activity involves a focal region of the brain or the entire cortex simultaneously. The clinical manifestations of seizures vary based on the location of the seizure in the brain and the amount of cortex that is involved.

## Cause

- genetic
- structural
- metabolic
- immune
- infectious
- unknown.

## Differential Diagnosis

- syncope
- transient ischemic attack
- migraine
- psychogenic nonepileptic seizures.

## Work-Up

- laboratory studies (electrolytes, glucose, calcium, magnesium, complete blood count, renal function tests, liver function tests, urinalysis, and toxicology screens),
- ECG
- EEG
- neuroimaging study
- Depending on the clinical situation, a lumbar puncture may also be indicated

Antiseizure medications are not always indicated after a first seizure.

In critically ill patients, commonly used drugs in this setting include levetiracetam, fosphenytoin/phenytoin, and valproic acid

Hospitalization may be required for patients who have a first seizure associated with a prolonged postictal state or incomplete recovery. Other indications for hospitalization include status epilepticus, the presence of a systemic or neurologic illness or injury requiring additional evaluation and treatment, and questions regarding compliance

[Seizure Disorders - American Family Physician \(aafp.org\)](#)

[Evaluation of First Nonfebrile Seizures - American Family Physician \(aafp.org\)](#)

[Evaluation and management of the first seizure in adults - UpToDate](#)

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