



# SEIZURES

THINGS YOU SHOULD KNOW



# PREVALENCE

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- It is estimated that just over 1% of people in the US have epilepsy.
- Approximately 25% of those with epilepsy have an intellectual disability.
- Approximately 20% of all people with an intellectual disability have epilepsy.
- There are many reports regarding epilepsy in individuals with autism. Studies show that about a third to a half of people with autism have a seizure disorder.
- Many people with autism first develop symptoms in their teenage years.

# What is a seizure?

A seizure is a sudden, uncontrolled electrical disturbance in the brain.


Seizures can cause changes in awareness, behavior and/or abnormal movements.

Seizures usually last only a few seconds to minutes.

Epilepsy is the tendency to have recurrent nonprovoked seizures.




# Nonepileptic Seizures

- Nonepileptic seizures look like seizures but are not caused by abnormal brain activity.
  - Causes:
    - fainting
    - anxiety
    - sleep disorders
    - migraines
    - movement disorders
    - TIA<sub>s</sub>
- 



# Provoked Seizures

- Provoked seizures occur because of an abnormality or imbalance in the body
  - Once the abnormality is corrected, the seizure will no longer occur.
  - Causes include:
    - very high or low blood sugar
    - a quick fall in blood sodium
    - kidney failure
    - low oxygen levels
    - drug toxicity or drug withdrawal
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# Seizure Triggers

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Missing medications

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Lack of sleep

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Stress, illness or fever

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Some over-the-counter medications

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Diet

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Visual stimuli – flickering, flashing lights

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Loud noises

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Sudden movement, repetitive movements such as tapping

# Three main types of seizures:

Focal onset

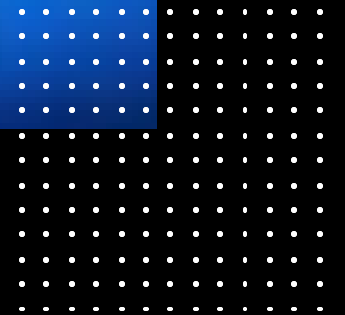
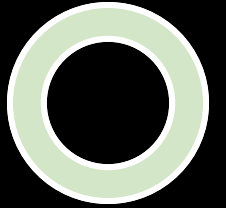
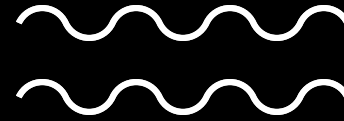
Generalized onset

Unknown onset



# Focal Seizures

- The term “focal” has replaced “partial” to describe these types of seizures
- These are the most common type of seizure
- They originate or start in one area of the brain
- They can become generalized and spread to other areas





# SIMPLE FOCAL SEIZURES (AURAS)

An aura is a subjective experience that is felt by the person having a seizure.

An aura:

- may be sensory, emotional, autonomic or cognitive
- reflects the initial seizure discharge in the brain
- can be an isolated phenomenon
- is often referred to as a warning that a seizure will occur

# Examples of Seizure Auras



- Nausea
- Dizziness
- Headache
- Difficulty with speech
- Numbness of hands, lips, tongue
- Unpleasant taste or smell
- Visions, hearing things
- Palpitations

Focal seizures are typically broken down into four areas depending on the location in the brain and parts of the body affected.

1. **Motor:** affects muscle activity, causing jerking movements of the foot, face, arm or another part of the body
2. **Sensory:** can cause symptoms affecting the senses such as hearing, hallucinations, and olfactory or other distortions.



## Focal Seizures

3. Autonomic: affects the part of the brain responsible for involuntary functions.
4. Psychic: seizures that strike parts of the brain that trigger emotions or memories of previous experiences, causing feelings of fear, anxiety, or déjà vu.

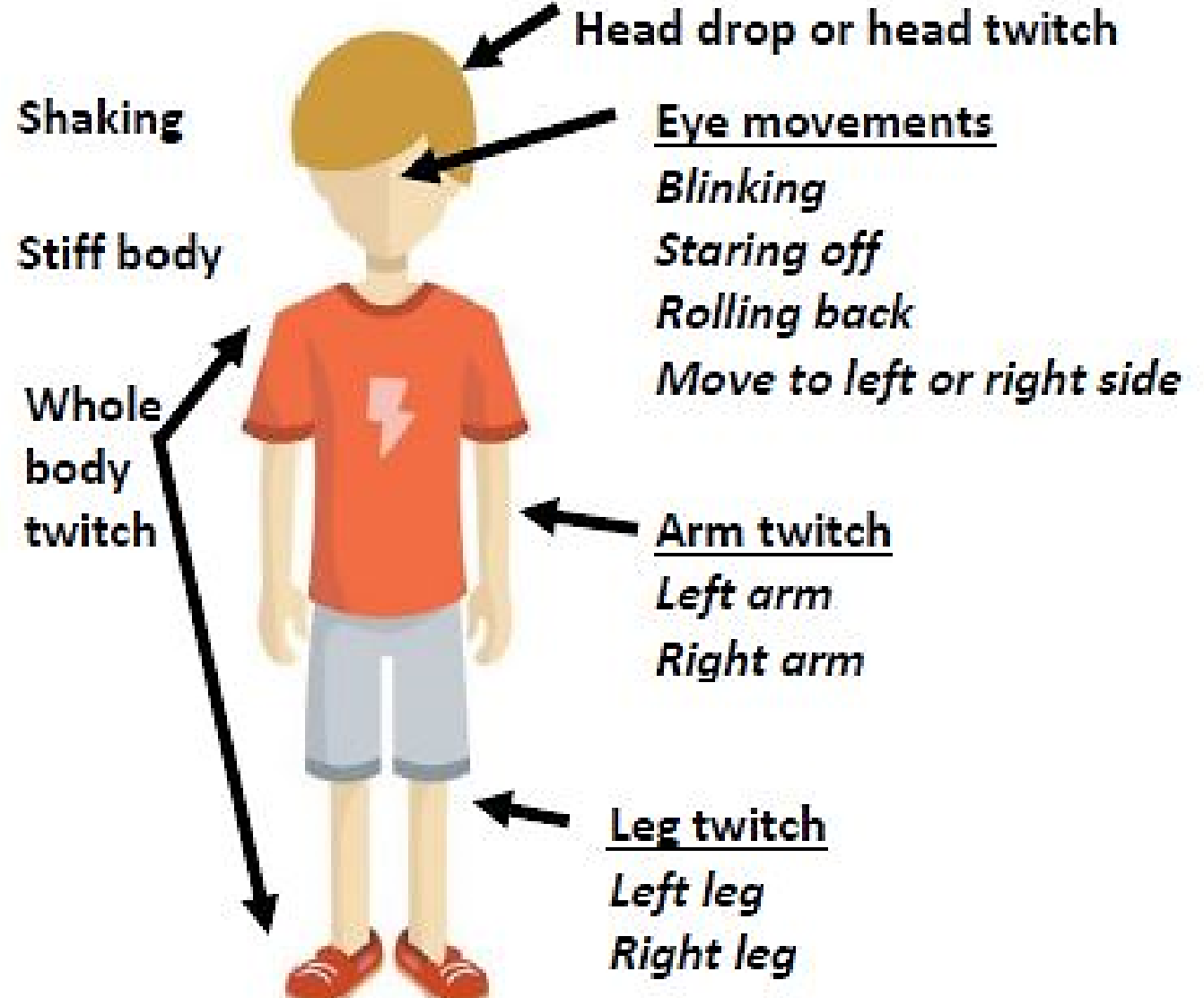


## Focal Seizures



# Focal Seizures: Motor Symptoms

- Some type of movement occurs such as:
  - Twitching
  - Stiffening
  - Automatism





# Focal Seizures: Sensory Symptoms


1. **Auditory:** hearing sounds such as buzzing, ringing, drumming, etc.
2. **Gustatory:** acidic, bitter, salty, sweet, or metallic tastes
3. **Hot or cold sensations**
4. **Olfactory:** smelling an unpleasant odor
5. **Somatosensory:** tingling, numbness, pain, sense of moving, desire to move
6. **Vestibular:** dizziness, spinning or sense of rotation
7. **Visual:** seeing flashing or flickering lights, colors, shapes, patterns



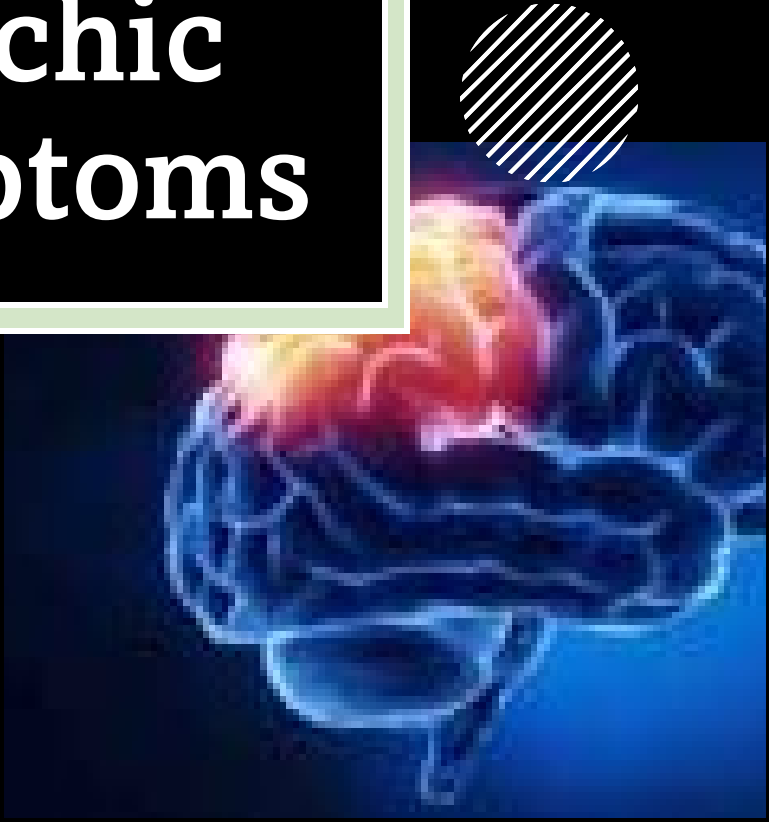
# Focal Seizures: Autonomic Symptoms

- Cardiac arrest, slow or fast heart rate
- Palpitations: rapid, strong, or irregular heartbeat
- Hyperventilation, hypoventilation, or altered respiration
- Gastrointestinal: sensations of stomach discomfort, tightness, churning, hunger
- Nausea or vomiting
- Paleness or flushing
- Piloerection: hairs of the skin stand on end






# Focal Seizures: Psychic Symptoms




## Cognitive

- Aphasia: loss of ability to understand or express speech
- Dysphasia: difficulty expressing speech
- Déjà vu: feeling of having lived through a situation before
- Dissociation: disconnected





# Focal Seizures: Psychic Symptoms 2



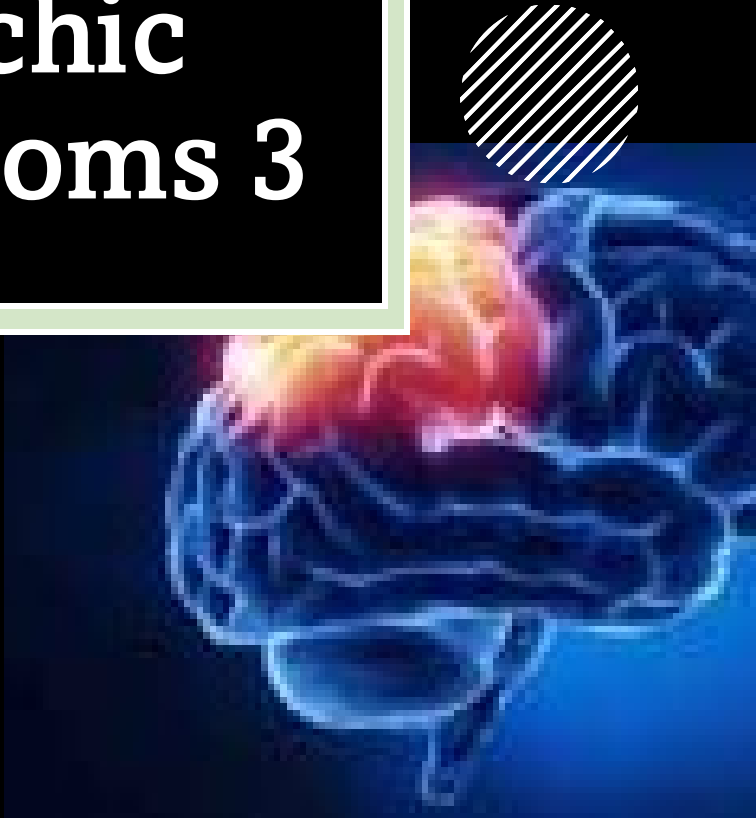
## Cognitive

- Memory impairment: cannot remember events during the seizure
- Hallucination or illusions: alteration of senses (hearing or vision)
- Neglect: unable to respond to one side of the body

# Focal Seizures: Psychic Symptoms 3

## Emotional

- Agitation, anger: may be accompanied by aggressive behavior, usually seen during the post-ictal period
- Fear, anxiety, paranoia; crying not related to feeling sad
- Laughing, giggling: not related to feeling happy
- Pleasure, joy, bliss

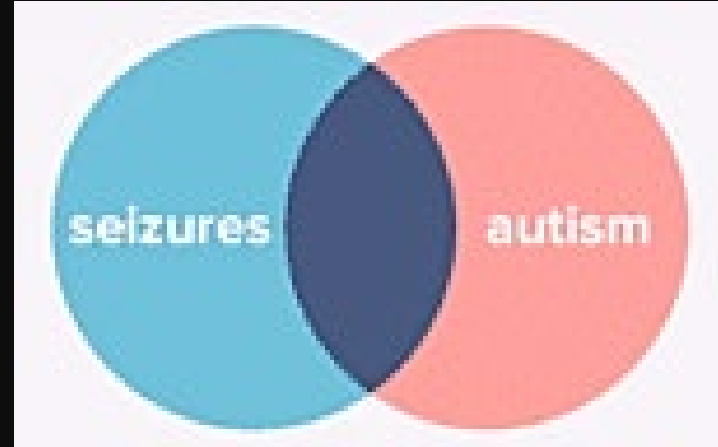


# Seizures in Autism

Many symptoms of seizures overlap with autism symptoms, making it hard to differentiate between the two.

Diagnosing epilepsy in autistic people is complicated because:

- Repetitive and stereotyped movements common to autism can be mistaken for seizures
- Autistic people might have difficulty tolerating tests for epilepsy




The most common signs of a seizure in someone with autism include:

- Temporary confusion
- A staring spell
- Uncontrollable jerking movements of the arms and legs
- Loss of consciousness or awareness

## Seizures in Autism





## Seizures in Autism: diagnostic pearls

- Episodes that occur only in a specific context, such as when sitting at the dinner table or attending speech therapy, are less likely to be seizure activity and more likely to be a response to an environmental or sensory trigger.
- Variable duration of the episodes—sometimes 10 seconds, sometimes 10 minutes—are less likely to be seizure activity.





- Episodes that occur across environments and look the same every single time with a defined start and end to the episode are more worrisome for seizure.
- Unresponsiveness to vigorous touch elevates concern for seizure; caregivers can be coached to touch the person as soon as possible when an episode begins to see if that changes the behavior.
- The presence or absence of a postictal period may increase suspicion for seizure.

Seizures in Autism:  
diagnostic pearls

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- All of the brain is affected
- The person is unconscious



- One area of the brain is affected
- The person may have impaired consciousness or be fully aware



**Generalized Seizures**

**vs**

**Focal Seizures**

# Generalized Onset Seizures



- Start on both sides of the brain
- Can be motor or non-motor (absence)
- Are no longer called “grand mal”
- The term “generalized tonic-clonic” seizure is still used
- Awareness is almost always impaired



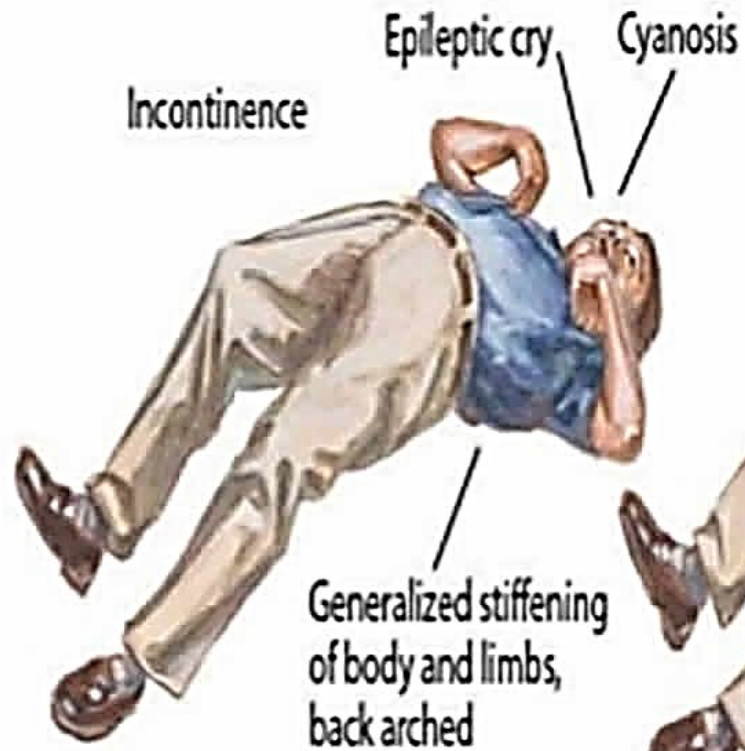
# Absence Seizures

- Corresponds to the old term “petit mal”
- Begins in both sides of the brain
- Are a non-motor generalized seizure
- Begin and end abruptly, lasting only a few seconds
- Cause lapses in awareness, sometimes with staring
- No aura occurs with an absence seizure

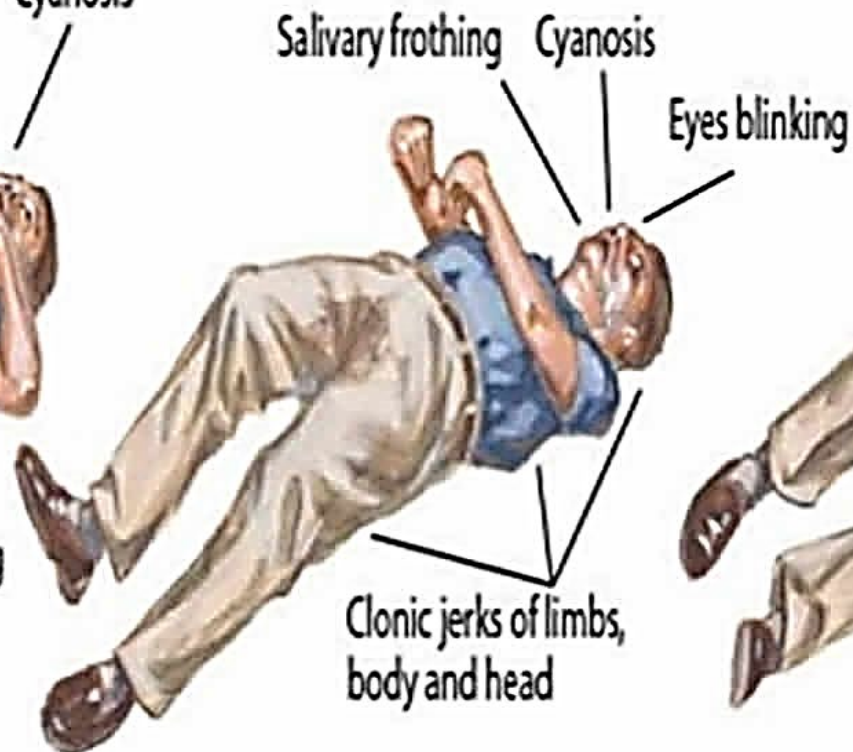


# GENERALIZED TONIC- CLONIC SEIZURE

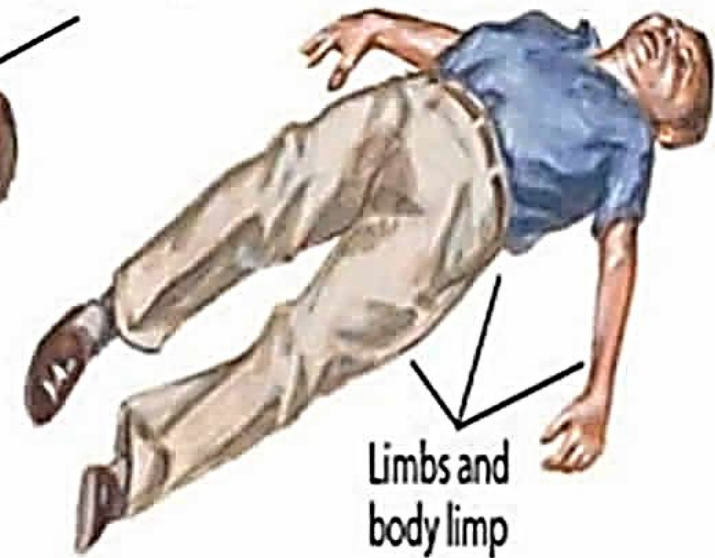
A. Tonic phase



B. Clonic phase



C. Post-ictal  
confusional fatigue



# FIRST AID FOR SEIZURES

When someone has a generalized seizure, it is your job to keep them safe.

# Steps to take if someone has a generalized seizure:



1. Note the time (provided you have a watch or other device handy), you need to know how long the seizure lasts. If nothing is immediately available to note the time, try to do so as soon as a watch, etc. is available.

2. If not already on the floor, help the person to the floor to prevent injury.
3. If secure in a bed or in a wheelchair, the person can remain there if there is no chance of falling out of the bed or wheelchair.



**Steps to take when someone has a generalized seizure:**



4. Be sure nothing is tight around the person's neck. Loosen scarves, collars, and tight clothing.

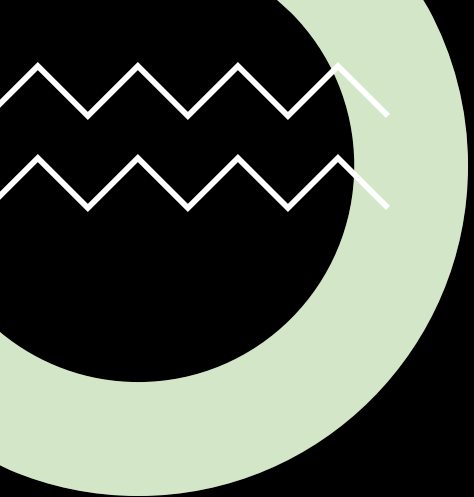
Steps to take  
when  
someone  
has a  
generalized  
seizure:

5. Turn the person on their side if lying flat. This helps to prevent choking or aspiration from saliva or vomit.

**Steps to take  
when someone  
has a generalized  
seizure:**





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6. Cushion head with a small pillow or rolled up garment, remove eyewear.
  7. Clear surrounding area of anything that is sharp, hard, or hot to prevent injury.



Steps to take when  
someone  
has a generalized  
seizure:







8. Follow protocols for use of a VNS magnet.
9. Stay with the person. Offer comfort, reassurance, and whatever assistance is needed when the seizure is over.

**Steps to take when someone has a generalized seizure:**

# Things to AVOID when someone has a generalized seizure:

## **DO NOT:**

1. Restrain the person
2. Force anything between their teeth
3. Move the person unless in danger, near something hazardous, or in water.



# Reporting Seizures

- Report only what is observed
- You cannot diagnose seizures, but if something appears to be seizure activity, report and describe exactly what you observed to medical personnel.
- Attempt to time how long the incident/possible seizure lasts
- Report, when possible, what happened just before the seizure started
- After a seizure, note if the person complains of a headache, appears drowsy, confused or agitated.

# SEIZURES

## THINGS YOU SHOULD KNOW

For more information refer to the  
Medication Administration Manual

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