



# 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

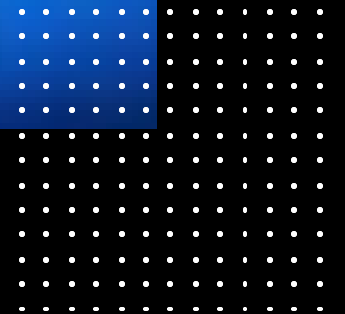
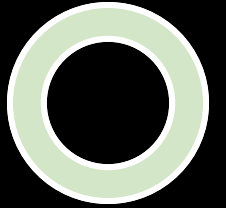
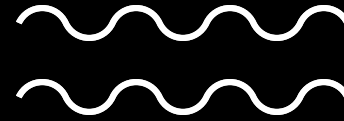
Generalized onset

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.

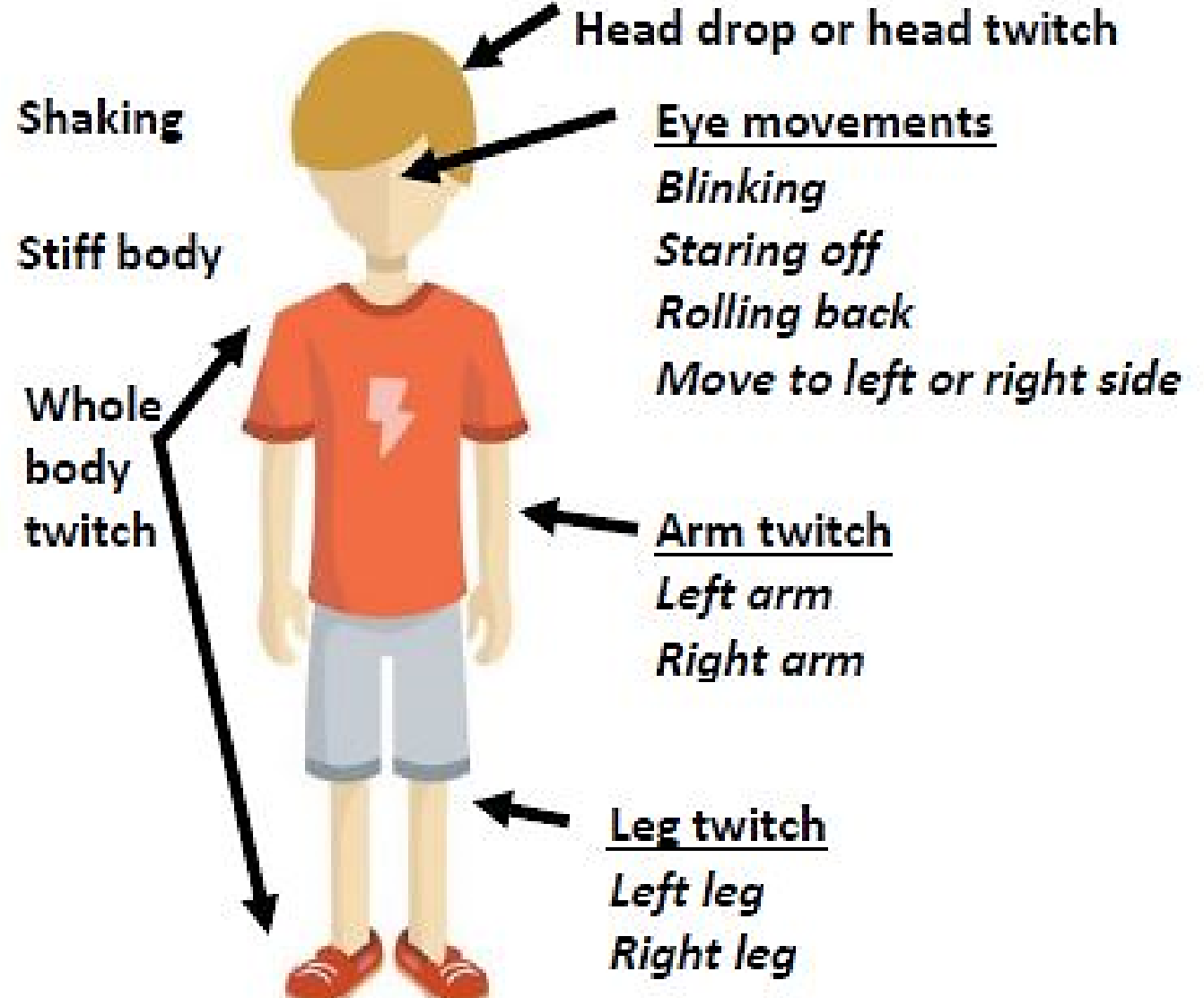


## Focal Seizures



# 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



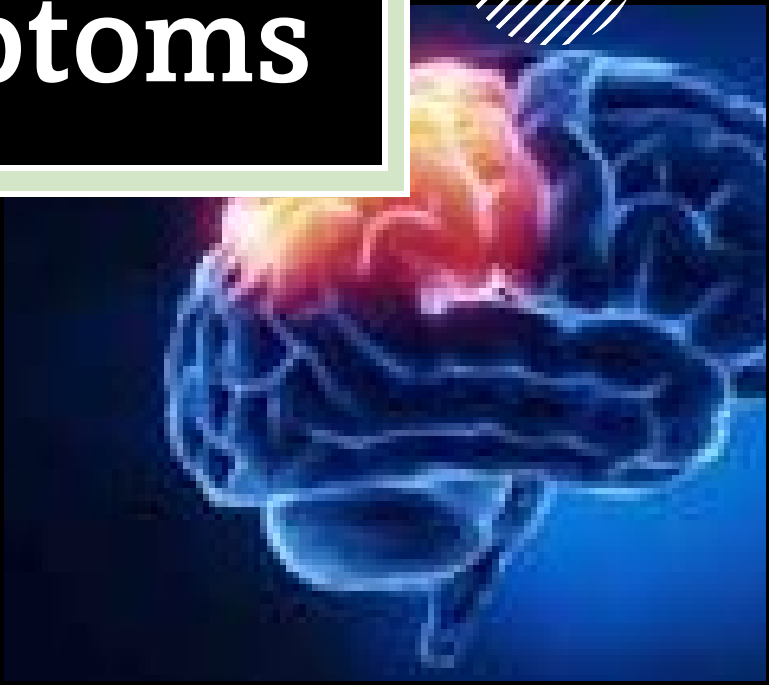
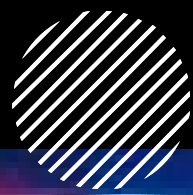
# Focal Seizures: Autonomic Symptoms

- 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



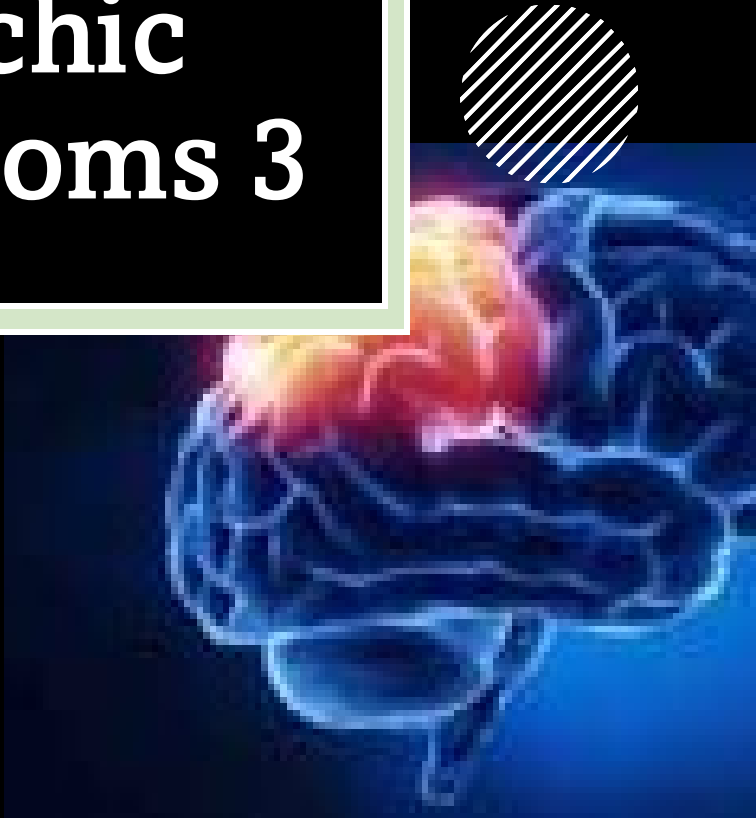
## Cognitive

- 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

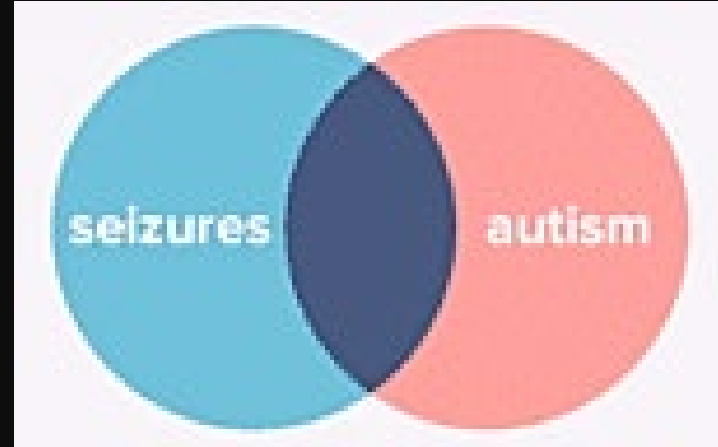


# Seizures in Autism

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

Diagnosing epilepsy in autistic people is complicated because:

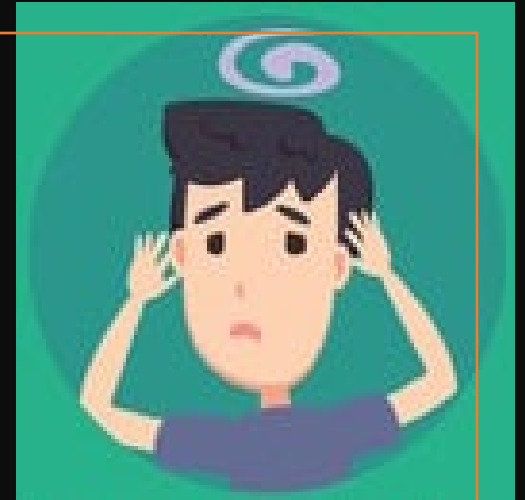
- Repetitive and stereotyped movements common to autism can be mistaken for seizures
- Autistic people might have difficulty tolerating tests for epilepsy




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



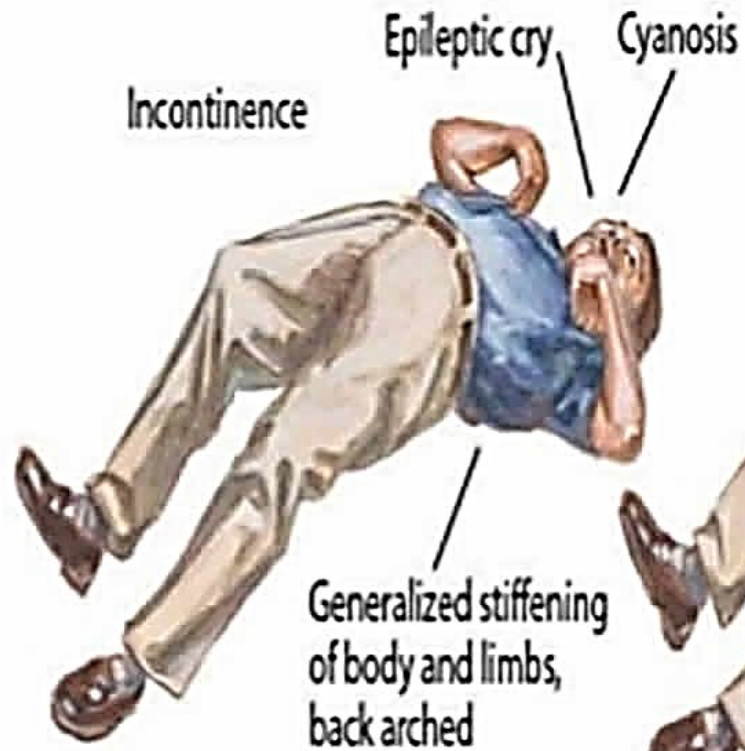
# Absence Seizures

- 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

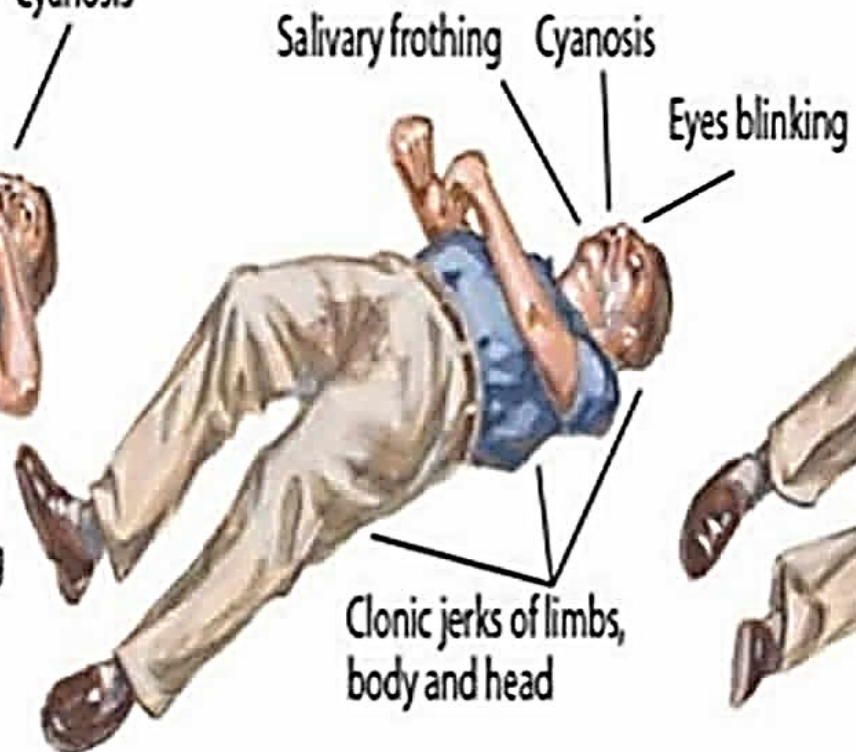


# GENERALIZED TONIC- CLONIC SEIZURE

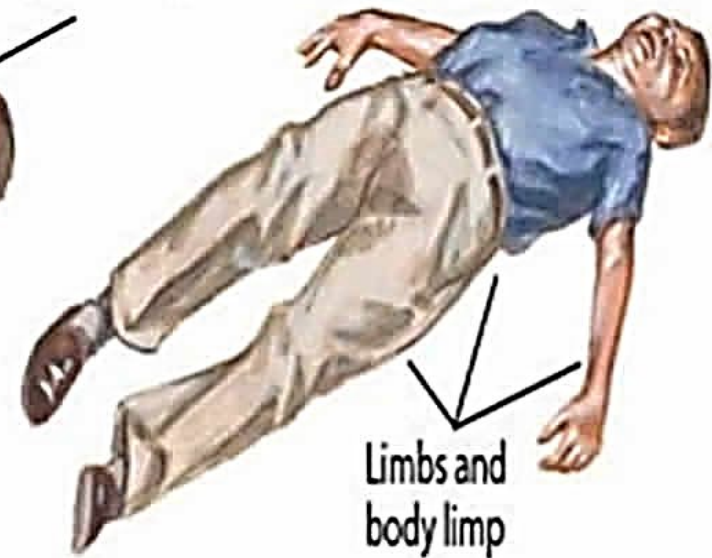
A. Tonic phase



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:**



Steps to take  
when  
someone  
has a  
generalized  
seizure:

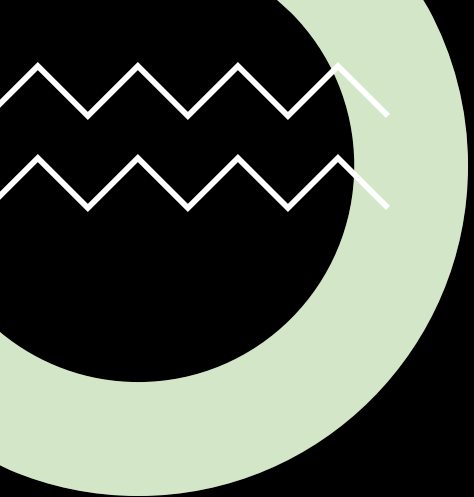
4. Be sure nothing is tight around the person's neck. Loosen scarves, collars, and tight clothing.

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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