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EPILEPSY & SEIZURE DISORDER

WHAT IS EPILEPSY?

- Epilepsy is a broad term.
- Sometimes people use the term “seizure disorder” to describe epilepsy.
- Epilepsy is a neurological disorder in which brain activity becomes abnormal, causing recurring, unprovoked seizures or periods of unusual behavior, sensations and sometimes loss of awareness.

EPILEPSY STATISTICS

- The 4th most common neurological disorder in the world
- 1 in 26 people will be diagnosed with epilepsy during their lifetime.
- Epilepsy can occur as a single condition or may be seen with other conditions that affect the brain.
- Epilepsy affects individuals of all races, ethnic backgrounds and ages.

SEIZURES

- Seizures involve temporary, uncontrolled bursts of electrical activity in the brain that change or disrupt the way messages are sent between brain cells.
- Seizures may be the primary disorder (ex: epilepsy) or they can occur with other medical problems.
- Severity can range from barely noticeable to severe with complete loss of control.
- Frequency can vary and cannot always be predicted.

SEIZURES

- Every brain has the potential to have a seizure. Approximately 1 out of 10 people may have a seizure during their lifetime.
- There are over 20 different types of seizure disorders.
- Not everyone who has a seizure has epilepsy.



Image from: <https://www.christopherreeve.org/blog/daily-dose/seizures>

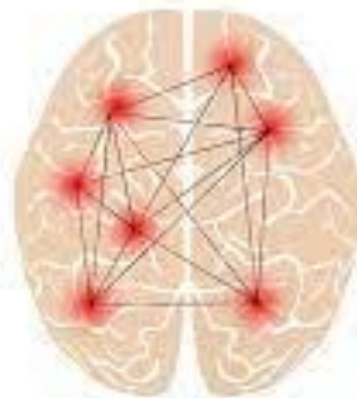
TWO MAJOR TYPES OF SEIZURES

Generalized Seizures

Affect all areas of the brain

30% of seizures

Six types of generalized seizures



Generalized Seizure

Focal Seizures

Occur in just 1 area of the brain.

60% of seizures

Four types of focal seizures



Focal Seizure

Image from:
<https://magazine.medlineplus.gov/article/understanding-different-kinds-of-seizures>

A person with epilepsy can have more than one type of seizure.

6 Types of Generalized Seizures

- **Absence seizures:** Sometimes called petit mal seizures. Typically occur in children. Characterized by staring into space and may have subtle body movements such as eye blinking or lip smacking and only last between 5-10 seconds.
 - Simple Absence Seizure-occurs for less than 10 seconds.
 - Complex Absence Seizure-can last up to 20 seconds.
- **Tonic seizures:** Cause stiff, tight muscles and may affect consciousness. Often occurs during sleep. Can last about 20 seconds.



6 Types of Generalized Seizures cont.

· **Atonic seizures:** Also known as drop seizures. Lasts approximately 15 seconds.

· **Clonic seizures.** Associated with repeated or rhythmic, jerky muscle movements.

· **Myoclonic seizures.** Appear as sudden brief jerks or twitches. Lasts 1-2 seconds,

· **Tonic-clonic seizures.** Sometimes called grand mal seizures, Can cause an abrupt loss of consciousness, body stiffening, twitching and shaking. Can last 1 to 5 minutes.

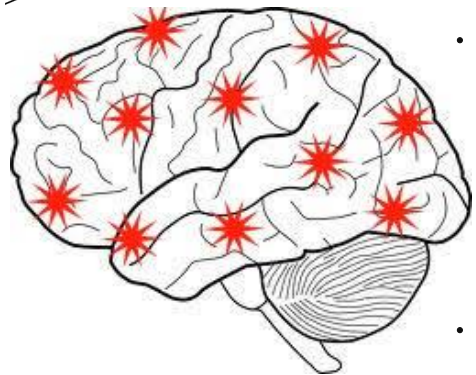


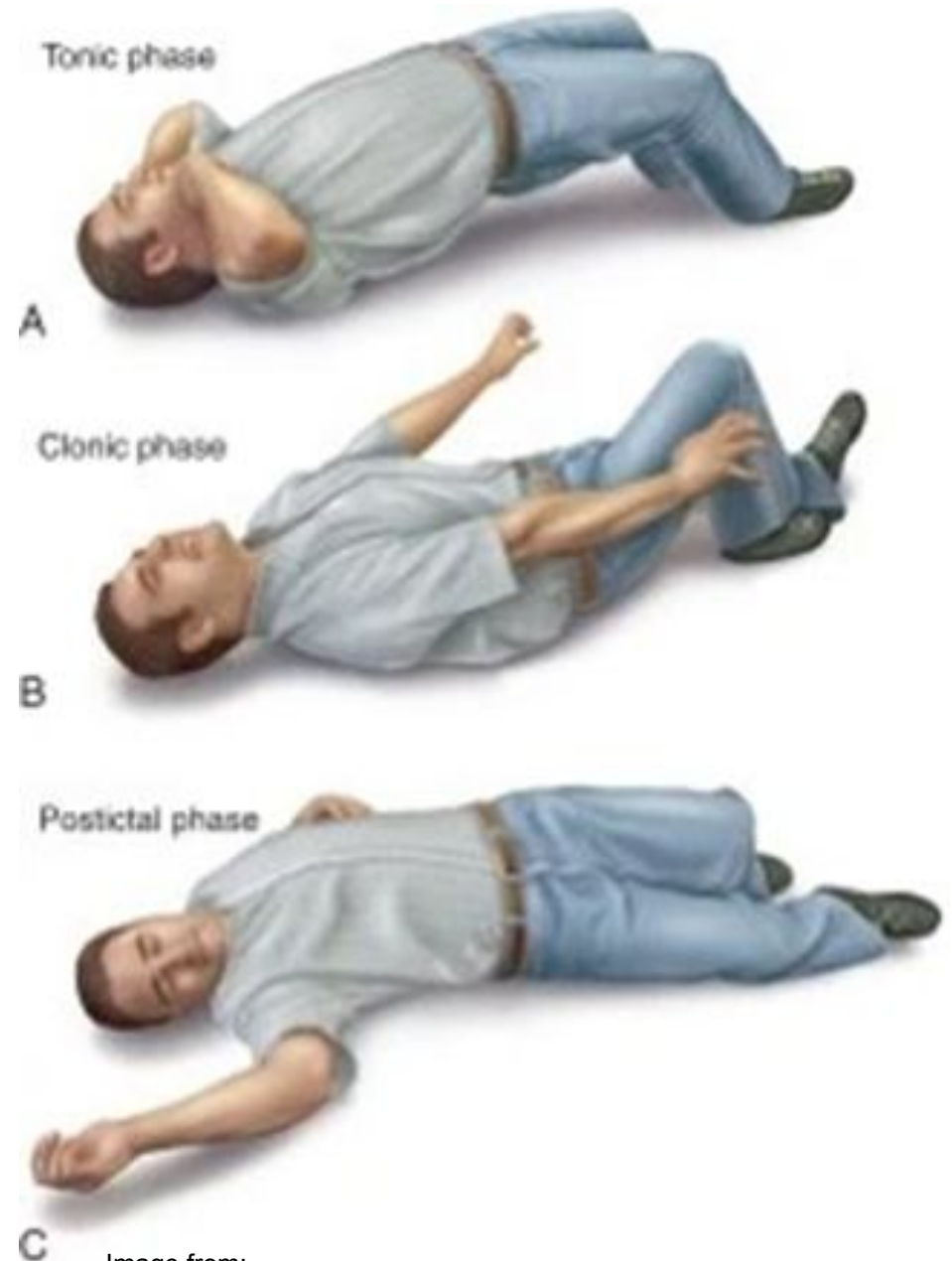
Image from:
<http://theepilepsyrollercoaster.com/epilepsy-explained/seizure-types/generalised-seizures/>

Tonic-clonic Seizures

Tonic phase: generalized stiffening of the body.

Clonic phase: jerking of the head, limbs and body.

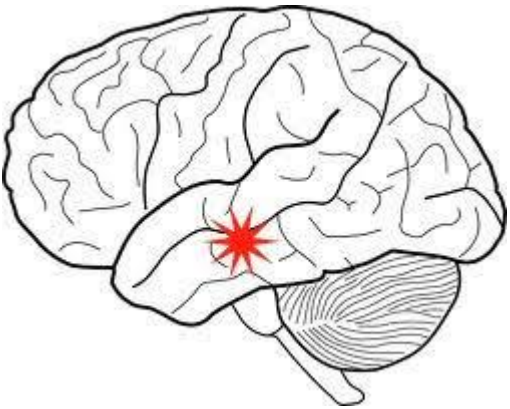
Postictal phase: limbs and body are limp. May have confusion, exhaustion and amnesia



2 Types of Focal Seizures

Focal seizures without loss of consciousness:

- No loss of consciousness.
- Emotions or the way things look, smell, feel, taste or sound may be altered.
- May also cause involuntary jerking of one body part and sensory symptoms such as tingling, dizziness and flashing lights.



Focal seizures with impaired awareness:

- Cause a change or loss of consciousness or awareness.
- The person may feel like they are in a dream.
- May cause staring into space, decreased typical response to the environment or repetitive movements.

Image from:
<http://theepilepsyrollercoaster.com/epilepsy-explained/seizure-types/generalised-seizures/>

SEIZURE TRIGGERS

Some people have seizures that occur in a pattern or are more likely to occur in certain situations. Some commonly reported triggers are:

- A specific time of day or night
- Sleep deprivation
- Stress
- Sickness with and without fever
- Menstrual cycle or hormone changes
- Poor nutrition or not eating for a long time
- Dehydration
- Low blood sugar
- Vitamin or mineral deficiencies
- Specific foods
- Flashing lights or patterns
- Alcohol--heavy use or withdrawal
- Drug use
- Use of certain medications or missed medications



Image by: <http://theepilepsynetwork.com/seizure-triggers/>

POSTICTAL STATE

Postictal State -the recovery period after the seizure.

- Varies-Some people recover immediately; others take minutes to hours to feel like their typical self.
- Depends on the type of seizure and involved area of the brain
 - Tonic seizure-may be followed by fatigue, exhaustion and confusion
 - Tonic-clonic seizure-may be followed by exhaustion, confusion and amnesia

CAUSES OF EPILEPSY

Some known causes include:

- Stroke
- Brain tumor
- Brain infection from parasites, viruses and bacteria
- Traumatic head injury
- Loss of oxygen to the brain
- Some genetic disorders
- Other neurologic diseases

For *2 out of 3* people, the cause of epilepsy is unknown.

DIAGNOSING EPILEPSY

- People are diagnosed with epilepsy when they have had 2 or more seizures at least 24 hours apart or one unprovoked seizure with a high risk of more.
- A medical professional or neurologist diagnoses epilepsy.
- There's no specific test to test for epilepsy.

TREATMENT OF EPILEPSY

Three goals of epilepsy treatment:

1. Achieve complete seizure control.
2. Preserve the quality of life.
3. Avoid any adverse effects.

TREATMENT OF EPILEPSY CONT.

Medication:

- Treatment usually starts with anti-seizure drugs which limit the spread of seizures in the brain.
- Medicines work for about 2 in 3 people with epilepsy.



TREATMENT OF EPILEPSY CONT.

Surgery-resects or takes out the part of the brain where the seizures occur.

A vagus nerve stimulation device

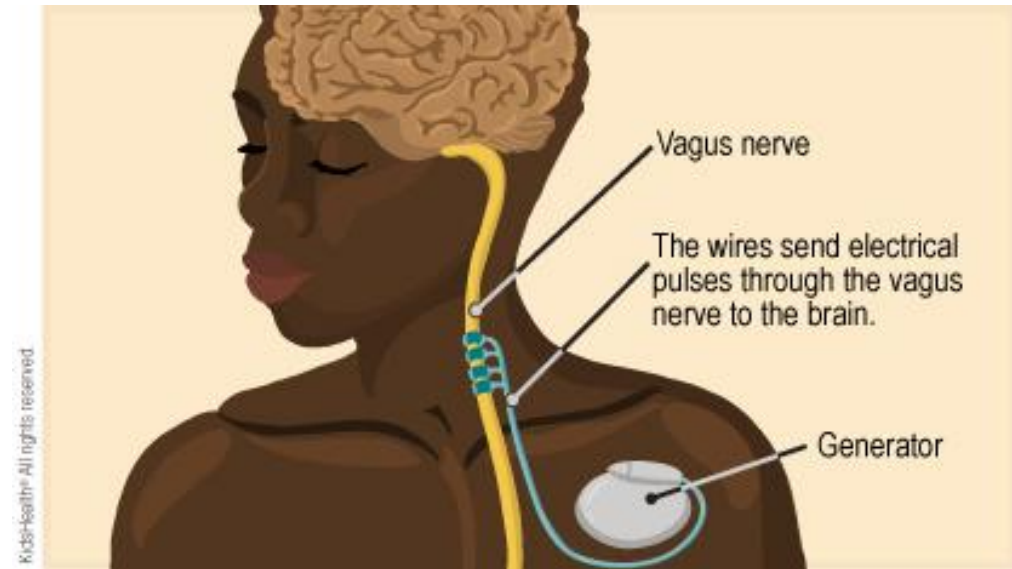


Image from: <https://kidshealth.org/en/parents/vagus-nerve-stimulator.html>

Diets

- Ketogenic Diet-Studies have shown that 10-15% of children become seizure-free and over 1/2 of children who go on the diet have at least a 50% reduction in the number of their seizures.
- Other diets include the modified Atkins diet and a low glycemic diet

CONT.

Complementary and Alternative Medicine include:

- Massage
- Aromatherapy
- Mindfulness meditation
- Herbal remedies and vitamins
- Cannabidiol (CBD)

Treatment does not work for everyone.

At least 1 million people in the US have uncontrolled epilepsy.

WHAT TO DO IF SOMEONE HAS A SEIZURE

STAY. SAFE. SIDE.

General steps to help:

- Stay with the person until the seizure ends and they are fully awake.
- Keep yourself and other people calm.
- After it ends, help them into a safe sitting position.
- Once they are alert and able to communicate, explain to them what happened.

For a tonic-clonic seizure:

- Gently lower them to the floor.
- Turn them onto one side.
- Clear the area of anything hard or sharp.
- Put something soft and flat under their head.
- Remove glasses.
- Loosen neck ties.
- Time the seizure and call 911 if the seizure lasts longer than 5 minutes.

STAY. SAFE. SIDE.



Image from
<https://www.sja.org.uk/get-advice/first-aid-advice/seizures/seizures-in-adults/>

WHAT TO DO IF SOMEONE HAS A SEIZURE **STAY. SAFE. SIDE.**

Seizures do not usually require emergency medical attention.

Time how long the seizure lasts.

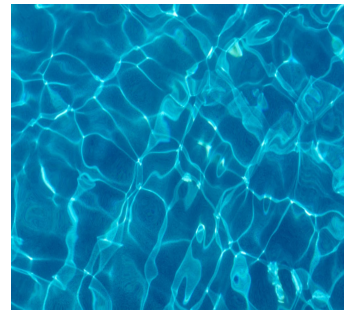
Call 911 if:

- . The seizure lasts longer than 5 minutes.
- . The person has never had a seizure before.
- . The person has difficulty breathing or waking after the seizure.
- . The person has another seizure soon after the first one.
- . The person is hurt during the seizure.
- . The seizure happens in water.
- . The person has a health condition like diabetes, heart disease, or is pregnant.



WHAT TO DO IF SOMEONE HAS A SEIZURE

STAY. SAFE. SIDE.



Having a seizure in a wheelchair:

- Keep the person in the wheelchair if possible.
- Make sure the wheelchair brakes are on, and fasten the seatbelt loosely prevent the person from falling out.
- Protect and support the head
- Make sure breathing is not blocked and saliva can flow from the mouth.

Having a seizure in water or when swimming:

- Support the head so that the mouth and nose are above water.
- Remove from the water
- Stay. Safe. Side.
- If the person isn't breathing, begin CPR rescue breathing.
- If a seizure occurs in water, call 911 even if they have fully recovered.

WHAT NOT TO DO

- Do **not** hold the person down or try to restrict their movements.
- Do **not** put anything in the person's mouth.
- Do **not** try to give CPR mouth-to-mouth breathing.
- Do **not** offer the person water or food until they are fully alert.



wikiHow

Image from wikiHow

SEIZURE RISKS

- Most seizures do not cause brain damage
- The stigma attached to epilepsy can lead to embarrassment, frustration or avoidance of school and social settings.
- The person may be bullied or teased.
- Seizure risks may restrict the person's independence.
- There is a risk of suicide in people with epilepsy.

SUDDEN UNEXPECTED DEATH IN EPILEPSY (SUDEP)

- Refers to deaths in people with epilepsy that are not caused by injury, drowning or other known causes
- Approximately 1 in 1000 people with epilepsy die from SUDEP each year.
- Most cases occur during or immediately after a seizure.

Possible factors:

- There is too long a pause in breathing or a person's airway is covered or obstructed.
- A seizure may cause a dangerous heart rhythm or cardiac arrest.
- May result from more than one cause or a combination involving both breathing difficulty and abnormal heart rhythm.

**MOST INDIVIDUALS WITH EPILEPSY CAN DO THE SAME
THINGS THAT PEOPLE WITHOUT EPILEPSY CAN DO.**

Elton John

Prince

Danny Glover

Lil Wayne

Rick Harrison

Adam Horovitz

Cameron Boyce

Florence

Griffith-Joyner

Theodore

Roosevelt

Vincent van Gogh

Harriet Tubman

Lewis Carroll

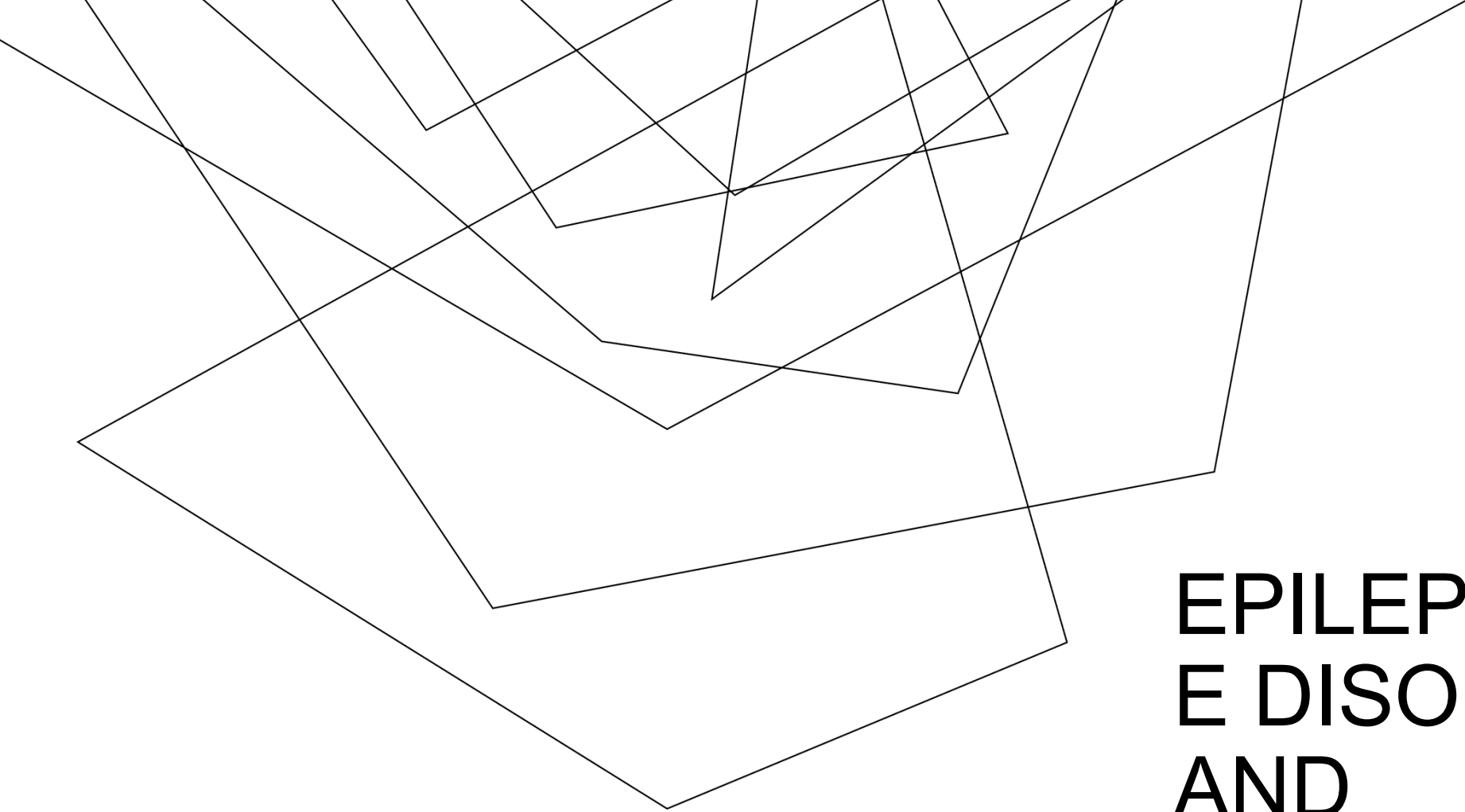
Edgar Allan Poe

Napoleon

Bonaparte

Julius Caesar

**Alexander the
Great**

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EPILEPSY/SEIZURE DISORDERS AND EQUINE ASSISTED SERVICES

PATH INTL. PRECAUTIONS AND CONTRAINDICATIONS

PRECAUTIONS:

- If the motor activity, change in postural tone, loss of motor control or alteration in consciousness is minor and is unlikely to frighten or injure the equine, participant or staff
- Seizure medications may cause drowsiness or photosensitivity (see Medication)
- Sensitivity of the equine to seizure activity
- Availability of appropriate equine

PATH INTL. PRECAUTIONS AND CONTRAINDICATIONS

CONTRAINDICATIONS

- Recent seizure activity accompanied by strong, uncontrollable motor activity or atonic or drop attack seizures due to their sudden and complete loss of postural muscle tone
- A change of frequency or type of seizure until the condition is evaluated
- Inability to manage a participant during an emergency dismount should a seizure occur

MEDICAL HISTORY FORM

If the participant has a history of seizures, the
PATH Intl. Center should obtain:

- The type of seizure
- The participant's typical seizure triggers
- Typical aura or sensations and behaviors that usually occur prior to a seizure
- The typical motor movements observed during a seizure
- The average length of the participant's seizures
- The current frequency of seizures
- The typical post-seizure behaviors and duration of these behaviors
- The date of the last seizure
- What to do should the participant have a seizure while at the center

If the participant has a history of seizures but hasn't had one for some time, consult with their medical professional to determine the likelihood of the participant having another seizure, especially if the participant experienced atonic seizures.

CONSIDERATIONS FOR MOUNTED ACTIVITIES

- Teach applicable skills
- Teach to the participant's learning style
- Be consistent
- Progress skills at a pace that is suitable to the participant
- Foster independence with the appropriate support needed for the participant's seizure activity
- Have an emergency plan in place in case the participant has a seizure and rehearse the emergency plan regularly

HORSE SELECTION



- Choose a horse that is suitable to the participant's age, size, and goals.
- Keep in mind the size of the horse and the type of support provided by sidewalkers.
- The equine should be trained to tolerate abnormal rider movement and to remain calm if a participant has a seizure.
- The equine should be trained to accept methods used when a participant has a seizure.

TACK SELECTION

- Tack should be suitable to the participant's age, size and goals.
- A handhold may be needed to aid the sidewalkers in their method of support of the participant if they have a seizure while on the horse.





REMINDERS

- Center staff, volunteers and the horse must be trained to support a participant during a seizure while mounted or unmounted.
- Ask the participant and their caregivers about the types of seizure symptoms the participant may have.
- Be sure seizure activity is documented on the participant's application.
- Know the tolerance of the equine, staff, volunteers and participant in case seizures do occur.
- Have an emergency plan in place and rehearse regularly.
- Staff should be trained in the correct first aid procedures for a seizure.

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