



COMMONWEALTH of VIRGINIA

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Office of Integrated Health Health & Safety Information

Care Considerations: Epilepsy and Seizure Disorder Health & Safety Alert

What is a Seizure Disorder?

A seizure disorder is one of many neurologic conditions characterized by abnormal electrical brain activity. Epilepsy is a chronic seizure disorder with recurrent and/or random seizure activity (Devinsky, et al., 2015).

Types of Seizures

Many people with epilepsy have more than one type of seizure. Seizures are generally classified into two categories: 1) generalized seizures; and 2) focal seizures (Centers for Disease Control & Prevention (CDC), 2018). Generalized seizures affect both sides of the brain. The most common types of generalized seizures are tonic-clonic and absence seizures.

Generalized Seizures

- *Tonic-clonic seizures* cause jerking or convulsive movements of the limbs or torso.
- *Absence seizures* can cause a person to briefly stare off into space and/or have a lapse of awareness.

Focal Seizures

- Affect only one area of the brain and are classified into three categories:
 - 1) simple focal;
 - 2) complex focal; or
 - 3) secondary generalized, which begin with a focal seizure & are then followed by a generalized seizure (CDC, 2018).

Prevalence

The prevalence of epilepsy in the general population is about 1% (Prasher, Petricean-Braicu & Sachdeva, 2016). The prevalence of epilepsy increases with the severity of the neurologic and/or developmental disability (DD) (Devinsky et al., 2015). McDermott, et al. (2005) compared the prevalence of epilepsy within a group of individuals that were deemed “learning disabled” and found that the rate of epilepsy was:

- 13% for individuals diagnosed with cerebral palsy;

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- 13.6% for individuals diagnosed with Down syndrome (DS),
 - 25.4% for individuals diagnosed with autism, and
 - 25.5% for those with generalized DD (undetermined cause); and
 - 40% for adults with both cerebral palsy and ID (Prasher-Braicu & Sachdeva, 2016).

Caregiving Challenges

There are many unique challenges for the ID/DD population in community settings. Although some individuals might reside in a setting where there is ongoing nurse oversight, many do not. It is therefore important to have a physician-ordered seizure emergency care plan in place with clear guidelines for medication administration, including instructions on when to call 911 for emergency assistance (Ramsay, Shield & Shinnar, 2007).

Seizure Management Plans in All Settings

It is also important to address seizure management in all of the various settings/environments an individual's schedule normally entails which might include: work, home, day program, school, college, overnight visits with family, community outings, etc. Seizure management plans of care will also need to be incorporated into the person's Individual Service Plan (ISP), as well as their Individualized Education Plan (IEP) and/or their Individualized Healthcare Plan, if the individual is still attending school. All caregivers in all settings should be trained in all aspects of the seizure management plan and be able to demonstrate their understanding and confidence in providing the designated physician-ordered care.

Identifying Hazards in the Environment

Individuals with DD can be especially susceptible to potential dangers in their environment. Personal safety is important to the overall health of the ID/DD population diagnosed with seizure disorders. Seizure-prone ID/DD individuals can be especially susceptible to household dangers. It is important to identify hazards that are present in their home environment and address solutions to minimize these hazards. (Hazards in other environments that the individual frequents regularly should also be identified (i.e. work, school, day program, vehicular transportation, etc.).

Assessing Risk Factors

Individuals who have a dual diagnosis of developmental disabilities and epilepsy have inpatient, outpatient and ER visits, 2-3 times those with DD alone (Morgan, Baxter & Kerr, 2003). Risk factors for falls in all settings may be exacerbated by age, impaired mobility, and behavioral issues (Willgross, Yohannes & Mitchell, 2010). The risk of concussion is elevated in individuals with epilepsy. While helmets are often recommended for individuals with recurring seizure-related falls, their efficacy has not been proven (Devinsky, et al., 2015). If the individual you are caring for has had falls or head injuries, consult an OT or PT to see if a helmet may be an appropriate intervention.

Recommendations for Caregivers

- It is important to have seizure management response plans on file for each individual who is diagnosed with a seizure disorder. Make sure they are kept up-to-date. Many individuals might have a history of a seizure disorder, but due to the success of some seizure medications, may not have had a seizure in some time. However, this does not mean that a seizure management plan should be abandoned. Refer to their physician for clarification and guidance.
- Maintain adherence to each individual's Medication Administration Record (MAR) to ensure an individual's seizure medications are administered correctly and per their physician's orders. If you are unsure what to do: ask questions and seek guidance.
- Certification on first-aid guidelines, CPR procedures, and airway obstruction clearance (i.e. Heimlich maneuver) is highly recommended for all caregivers.
- If an individual has a seizure, do not ever try to stop a seizure or restrain the individual in any way.
- If an individual is having a seizure, do try to protect their head, maintain their airway, and assist in lowering them to the floor in order to reduce the risk of bodily injury.
- Do not ever attempt to stick anything in an individual's mouth while they are having a seizure.
- Be aware that flashing/strobe lights can trigger seizures in some individuals. This includes flashing or strobing lights on television, at the movies, and on computer screens (Harding, Wilkins, Erba, Barkley & Fisher, 2005).
- Be aware that dehydration and hyponatremia (low sodium) can increase the risk of a seizure (Verrotti, Scaparrotta, Olivieri & Chiarelli, 2012). Keep the individual well-hydrated, especially in the summer months.
- Fever or illness, stress and lack of sleep can increase seizure activity (National Institute of Neurological Disorders & Stroke, 2018).
- If an individual you are caring for has a seizure, stay calm and reassure the individual after the seizure has ended.

General Home Safety Tips

Bathroom

- Consider using a shower curtain (in lieu of a shower door), in order to avoid injury due to broken glass.
- Consider covering all faucet handles, nozzles, or the sharp edges of countertops or furniture with padding.
- Consider using a shower chair with a hand nozzle attachment, (for individuals with frequent seizures) to prevent falls.

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- Consider using non-slip shower/tub surfaces to reduce risk of falls.
 - Encourage individuals to take showers (instead of baths) to avoid possible aspiration of water and/or drowning.
 - Consider installing tub rails/grab bars in bath and shower areas to reduce the risk of falls.
 - Encourage the use of an electric razor to avoid accidental cuts for those individuals who shave independently.
 - Be careful to ensure that electrical equipment such as hair dryers or electric razors are used away from any water source to lower the risk of accidental electrocution (if they happen to be dropped during a seizure) (Schacter, Shafer, & Sirven, 2013).

Common Areas

- Avoid using any type of glass table to lower the risk of an accidental injury during a fall.
- Avoid using space heaters that can be easily tipped over.
- Avoid scatter rugs. They can increase the risk for falls.
- Consider replacing or covering hard flooring (tile, concrete, etc.), with wall-to-wall carpeting, which may reduce the risk of injuries due to falls.
- Consider using shatterproof glass for mirrors to lower the risk of accidental injury during a fall.
- Reduce clutter in rooms and on floors to lower the risk of injury due to falls.

Bedroom

- Consider using a bed that is low to the ground.
- If the individual uses a hospital bed, place it in its lowest position at night to reduce the risk of falls and injuries.
- Consider using a mat or other form of padding near the bed to reduce the risk of injuries from accidental falls from bed. (This might be a tripping risk for some individuals. Ask an OT or PT for guidance if you are unsure.)
- Consider using a motion detecting device/monitor to alert caregivers of seizure activity while the individual is asleep. There are a variety of different devices that can be attached to the individual's bed, their wrist, etc. to monitor motion and/or velocity of movement (Jory, et al., 2016).
- Consider using a pulse oximeter (with an alarm) to monitor oxygen levels in those who have frequent seizures and are at risk for suffocation and/or sudden death (Goldenholz, et al., 2017; Van de Vel, et al., 2016).

Kitchen

- Consider using chairs with armrests to prevent falls.
- Consider using nonskid surfaces under plates and cups to avoid spills.
- Consider using a cup with a lid and spout (i.e. a commuter cup) for hot beverages.
- Encourage the use of a microwave instead of a stovetop to lessen the risk of an accidental burn, (especially for individuals who live independently).
- Consider replacing glass dishes and drinking glasses with plastic versions, for those who have frequent seizures, in order to reduce the risk of a laceration due to broken glass.

Safety Tips for Wheelchair Users

- If an individual who has a manual wheelchair is having a seizure, engage the brakes to prevent the wheelchair from moving/rolling.
- If an individual who has a motorized wheelchair is having a seizure: turn the power off to stop the chair from moving/rolling.
- For all wheelchair users: let them remain seated in the wheelchair during the seizure (unless they have a seizure care plan which says they should be moved). Moving them could possibly lead to injuries for both you and them.
- If they have a seatbelt or harness on, leave it fastened.
- If they don't have a seatbelt or harness, try to provide support so they don't fall out of their wheelchair (manual or motorized).
- Cushion the individual's head if possible. A head rest can be helpful. The wheelchair (especially if it is a manual or non-motorized type), might offer the individual some protection from head injuries (Freeman, & Nelson & the British Epilepsy Association, 2016).

Always Call 911 If:

- ✓ The individual is not conscious within 5 minutes of the seizure stopping.
- ✓ The individual's seizure activity lasts 5 or more minutes or a second seizure quickly follows.
- ✓ The individual appears to be injured.
- ✓ The individual is pregnant or has diabetes.
- ✓ You know (or believe it to be) the individual's first seizure.
- ✓ You are in doubt about any of the above and/or you are unsure what to do (NINDS, 2018).

Epilepsy Resources

For Students

- The Department of Education in Virginia has developed a guidance document entitled: *Guidelines for Seizure Management*, (Virginia Department of Education, 2010), which should be used to develop a student's Individualized Health Care Plan. The guidance document can be accessed here: http://www.doe.virginia.gov/support/health_medical/seizure_management.pdf

For Veterans

- The U.S. Department of Veteran's Affairs has developed a website entitled Epilepsy Centers of Excellence (ECoE), which contains multiple trainings, handouts, printables, etc. on epilepsy care and seizure management (United States Department of Veteran's Affairs, 2019). You can find it here: https://www.epilepsy.va.gov/Provider_Education.asp

For Everyone

- The Centers for Disease Control (CDC) has a plethora of information on epilepsy. The CDC has endorsed a training developed by the Epilepsy Foundation entitled, "Seniors and Seizures Training", which is designed for caregivers and staff of adult day care centers, senior centers, long-term care facilities and providers who need to learn strategies to better recognize and respond to seizures (Center for Disease Control, 2018). The free training is offered online or through in-person training conducted by local Epilepsy Foundation affiliates. Those successfully completing the course, will receive a downloadable and printable certificate. You can access the online course for caregivers here: <https://learn.epilepsy.com/class/85221/seniors-seizures-education-organizations-serving-older-adults> (Epilepsy Foundation, 2018).
- The CDC also offers trainings for teachers, school personnel and law-enforcement officers (Centers for Disease Control, 2018). You can access those trainings here: <https://www.cdc.gov/epilepsy/groups/professionals.htm#school>
- The American Red Cross offers free mobile apps for all types of emergencies (including seizures) (American Red Cross, 2019). You can access their mobile app site here: <https://www.redcross.org/get-help/how-to-prepare-for-emergencies/mobile-apps.html>
- You can download and print posters on epilepsy from the CDC here (Centers for Disease Control, 2019): <https://www.cdc.gov/epilepsy/communications/infographics/index.htm#mmwr>
- You can download a generic seizure first aid safety poster from the Epilepsy Foundation (2018) here: <https://www.epilepsy.com/sites/core/files/atoms/files/SeizureFirstAid%208.5x11-D.pdf>
- You can download a generic, fillable seizure response template here from the Epilepsy Foundation (2017) here: https://www.epilepsy.com/sites/core/files/atoms/files/130SRP_MySeizureResponsePlan-fillable.pdf

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