

SEIZURES

Background

Seizures are abnormal electrical discharges that occur in the brain, subsequently causing involuntary changes in the body including abnormal movement, behavior, awareness, and sensation. Seizures occur when brain cells abnormally misfire and cause a disruption of the brain's electrical activity. Seizures can be caused by infection, brain injury or trauma, congenital conditions, genetic factors, metabolic abnormalities, tumors, medication, and alcohol or drug withdrawal. Epilepsy is a brain disorder that causes recurring, unprovoked seizures. A child who experiences two or more unprovoked seizures may be diagnosed with epilepsy or seizure disorder.

Most seizures can be classified by where they begin in the brain, the individual's level of awareness during the seizure, and other features (e.g., movements, changes in sensation, emotions, aura). The two major types or groups of seizures are focal onset (seizure begins in one area and can spread) and generalized onset (affects both sides of the brain at the same time.) Seizures will present differently based on their classification and can cause changes to:

- Awareness
- Movement
- Muscle control
- Sensation
- Behavior

More specific signs and symptoms of seizures include confusion, loss of consciousness, changes in muscle tone, falls, twitching or jerking movements of the extremities, wandering, chewing, periods of rapid eye blinking or staring, extreme tiredness, breathing problems, loss of bowel and bladder function, and psychological symptoms such as fear, anxiety, or déjà vu. Some people can experience an aura or early warning signs before the seizure starts. Drowsiness and confusion can occur post seizure.

Triggers for seizure activity include missed medication, fever or illness, brain disorders, stress, lack of sleep, poor eating habits, increased caffeine, dehydration, change in hormones, flashing lights or patterns, and use of illegal drugs.



Treatment options will be based on the type of seizure and can include anti-seizure medications, seizure devices like vagus nerve stimulation (VNS), dietary therapy like the ketogenic diet, as well as alternative or complementary therapy. Brain surgery is another option for controlling seizures when other treatments are not effective.

Top Takeaways for School Considerations

Staff should be educated about signs and symptoms to recognize a seizure and procedures to notify trained staff.

Never leave the student. Protect the student from hazards and position to minimize harm. Do not restrain the student and do not put anything in their mouth.

Emotional and behavioral issues are also more prevalent in students with epilepsy including depression, anxiety, attention-deficit/hyperactivity disorder (ADHD), developmental delay, aggression, and irritability.

School performance is affected because learning is not occurring during or after a seizure when a child is fatigued and/or confused. Problems in areas of attention, concentration, memory, and organization have been identified.

Side effects of anti-seizure medication can cause fatigue, inattention, and restlessness and further interrupt school performance.

Kennedy Krieger Institute's Specialized Health Needs Interagency Collaboration

The Specialized Health Needs Interagency Collaboration (SHNIC) program is a collaborative partnership between Kennedy Krieger Institute and the Maryland State Department of Education.



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Considerations for the Individualized Healthcare Plan (IHP)

- Nursing diagnosis of risk for ineffective airway clearance, risk for injury and fatigue
- Current diagnosed health condition including date of diagnosis, progress of disease process and other chronic health conditions
- Current medication and treatment orders (consider schedule, equipment needs and side effects)
- Student-specific triggers, avoidance, or intervention strategies
- Assessment of implanted medical device (consider location, date of surgical placement, and device specific information)
- Use of specialized equipment, adaptive equipment, and orthotics
- Activity, positioning, transferring (consider precautions and/or restrictions)
- Equipment troubleshooting (consider equipment/device user manual, battery, charger)
- Consider emergency care plan(s) (ECP) and emergency evacuation plan(s) (EEP) as related to medical needs in the school setting, and staff education/training, as appropriate

Discussion Starters for Educational Team

1. Has the school staff been trained to implement the student-specific emergency plan?
2. Would the student benefit from evaluations or assessments in any of the following areas: physical therapy, occupational therapy, speech and language therapy, assistive technology, adapted physical education, functional behavior, psychology, hearing and vision?
3. Would the student benefit from additional academic support and/or modified education (e.g., copies of notes, extra time, reduced workload, simplified instructions, alternative formats for presentation of material, 504/IEP)?
4. Can strategies be implemented to assist the student with executive function (e.g., plan, prompts, organizers, agendas)?
5. Does the student require activity precautions to prevent injury?
6. Does the classroom environment support the student's needs and/or equipment (e.g., desk/seating options, maneuverability space, electrical outlets, flash pass for bathroom or nurse)?

Resources

Kennedy Krieger Institute: Neurology and Neurogenetics Clinics
kennedykrieger.org

Epilepsy Foundation
epilepsy.com/

Epilepsy Foundation: Training Portal
learn.epilepsy.com/



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