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Pediatric Neurology:

Considerations for the School Nurse

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Slide 2



NEUROLOGY: Your Command Center

NEUROLOGICAL DIAGNOSES

- Headaches / Migraines
- Seizures
- ADD / ADHD
- Sleep Disorders
- Autism
- Tic Disorders / Tourette’s Syndrome





Headaches / Migraines



Headaches / Migraines

- Function is truly the chief complaint once all the scary stuff has been ruled out.
- 98% of the time, there's no reason for the headache other than that the head is really good at making headaches
- Remember—the brain feels no pain. It's the autonomic nervous system that is on the fritz
- A lot more is typically going on in the mechanism of cephalgia:
 - GI symptoms
 - Cognitive changes
 - Postural lightheadedness
 - Altered mood





Headaches / Migraines

- Medications are part of the treatment plan
- Treatment plan is not a cure
- The child will still have a body that is really good at making headaches

LIFESTYLE: 21st century stress

- Learn your triggers
- Exercise to stress the body out and THEN meditate/rest to relax your body to generate new levels of stress hormones
- Empower students to have ownership of their diagnosis and learn to advocate for their health and give themselves permission to have boundaries (having an earlier bedtime for themselves, avoiding dietary triggers, etc..)



Headaches / Migraines



Medication: preventative (daily) and abortive (PRN)

Preventative:

- B-blockers
- Clonidine
- Antidepressants
- Anticonvulsants
- Others: riboflavin, magnesium, cyproheptadine

Abortive:

- Ibuprofen
- Tylenol
- Naproxen
- Triptans
- Antiemetics



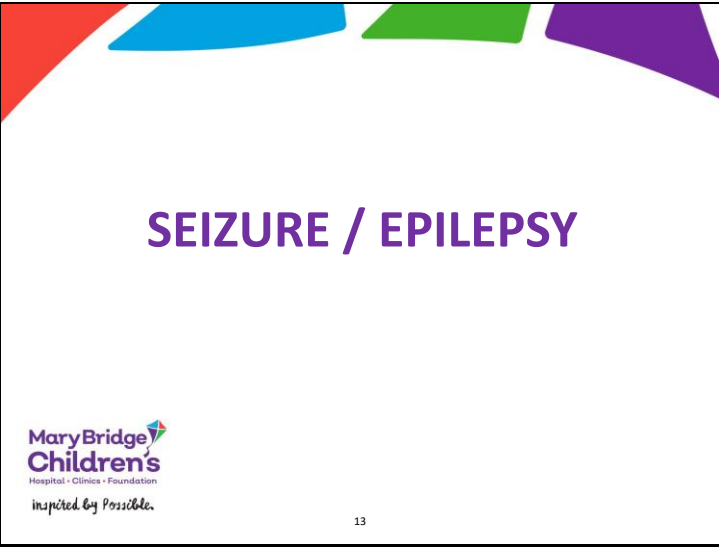
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Headaches / Migraines

Priorities in the school setting:

- Follow the student's emergency action plan
- Follow the student's 504-accomodations for school
- Documentation!
- Help students determine their triggers
- REST—as important as taking the medication



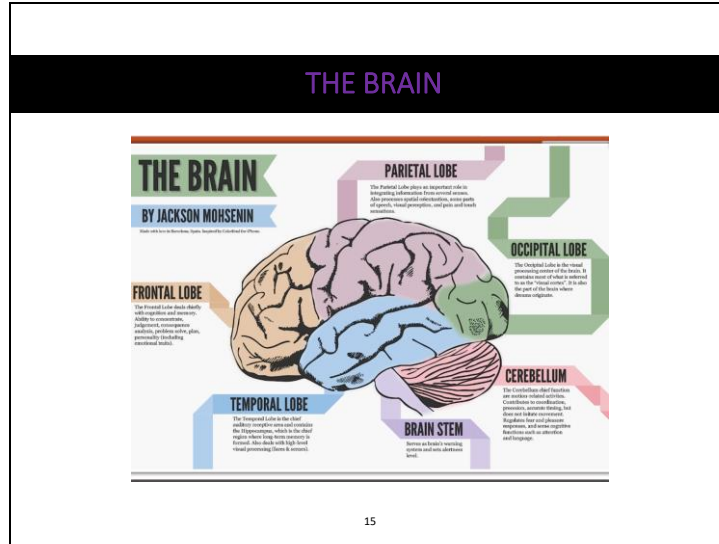




WHAT IS A SEIZURE?

- A seizure is an abnormal electrical discharge of a group of brain cells.
- About 10% of all people will experience a single seizure during his/her lifetime.
- A seizure can produce a variety of symptoms, depending on the location of the seizure focus and the spread of the electrical activity through the brain.






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What is Epilepsy?

- A person has epilepsy when he/she has had more than 1 one epileptic seizure

Who has Epilepsy?

- About 3% of Americans will have epilepsy in their lifetime.
- About 1% of children have epilepsy.



SEIZURES vs. EPILEPSY

A seizure is a symptom of a disturbance in the electrical activity of the brain

Epilepsy is recurring seizures (2 or more) without any provoking factors



Epilepsy = Seizure Disorder



SEIZURE/EPILPESY REVIEW


Epilepsy is a common problem—4th most common neurological diagnosis (migraine, stroke, Alzheimers)

- 2.2 million Americans have epilepsy
- >65 million people worldwide
- Effects more than 315,000 students in U.S. alone
- 1 % incidence of epilepsy per school
- 150,000 new diagnoses each year

Causes of Epilepsy

- 70%: unknown or presumed to be genetic
- 30%: caused by lesions or trauma (birth or TBI)






SEIZURE/EPILEPSY REVIEW

Seizure management—effective management begins with recognizing, observing, documenting and communicating information about the student’s seizures. Seizure(s) can be difficult to recognize because symptoms are often:

- Subtle
- Difficult to detect
- Lack warning signs
- Confused with other behavioral or psychological issues



IS EPILEPSY CONTAGIOUS?

NO!



Generalized Seizures



- **Generalized Tonic-Clonic** generalized stiffening and jerking convulsive activity
- **Tonic seizures** include a sudden stiffening of the body.
- **Clonic seizures** include repetitive jerking movements.
- **Myoclonic seizures** include a sudden jerk of the body.
- **Atonic seizures** include a sudden loss of body tone and may result in falling
- **Absence seizures** (Petit Mal) includes staring spells.

PHASES OF A SEIZURE



- **Prodromal**—seen hours or days before a seizure (emotional or behavioral patterns)
- **Aura**—first symptom of a seizure often called a “warning” and most commonly associated with focal seizures (smell, hear, see, felt—fear or clingy)
- **Ictus**—what is seen/felt during a seizure
- **Post-ictal**—what is seen/felt **after** the seizure until child returns to baseline



TRIGGERS OF SEIZURES

The following conditions can trigger a seizure:

- Sleep deprivation
- Missed or late medication
- New meds / med interactions
- Emotional stress
- Overheating /dehydration
- Hormonal changes /menstruation
- ETOH, Drugs
- Specific stimuli: reading, hot water, increased screen time, flashing lights



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ANTI-EPILEPTIC MEDICATIONS

Some patients with epilepsy may not require daily medications.

If treatment is warranted then medications are typically use for initial therapy.

There are many types of anti-seizure medications available.

The neurologist will discuss with patient and family the type of medication that is best for the type of epilepsy.



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SURGICAL TREATMENT

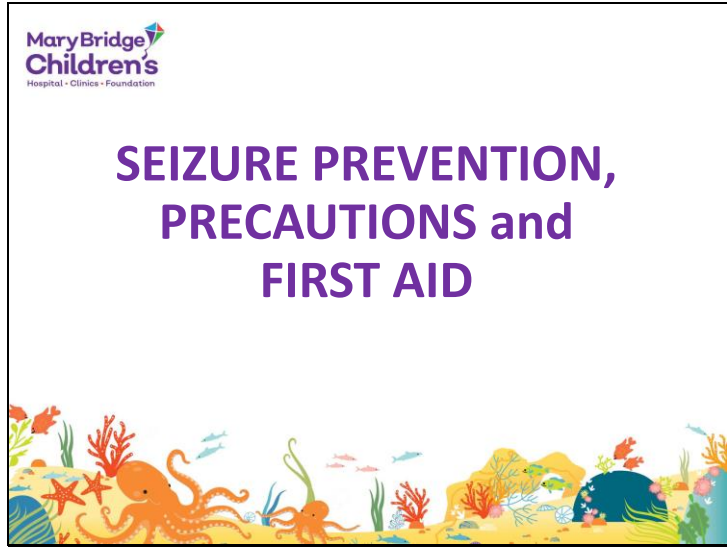
Patients with focal seizures not responding to multiple anti-epileptic medications might be suitable candidates for surgery depending on where their seizures originate.

DIET THERAPY

Special diets can help some patients with epilepsy.

- The Ketogenic Diet (a diet very high in fat and low on carbohydrates)
- Modified Atkins diet (high in protein and low on carbohydrates)
- Low Glycemic Diet has shown to be effective (Boston Children’s Hospital)





PREVENTION OF SEIZURES

- Promoting a lifestyle of wellness
- Remembering to take anti-epileptic medications
- Having sufficient sleep
- Avoiding excessive heat / keep fevers down
- Managing stress
- Avoiding alcohol / high-risk behaviors
- Avoiding flashing lights for those patients with Photosensitive Epilepsy (confirmed by EEG)



SEIZURE PRECAUTIONS

SAFETY CONCERNS:

- Water
- Speed
- Heights / Falling
- Fire

Ask: *What if this child were to have a seizure while doing this activity?*

Ask: *Given this child's situation (type of epilepsy and effective management), what would be reasonable accommodations to promote safety?*



Medic alert bracelets/necklaces are recommended


WATER SAFETY IS #1



Caution with swimming: patients in swimming pools need continuous observation by someone that can help if they have a seizure.

A proper life jacket should be worn at ALL times when around bodies of water (pool, river, lake, ocean, etc.).

If bathing in a bathtub an adult needs to be present at all times to help if a seizure occurs. Water temp <120.




RESPONSE TO SEIZURE(S)

FOCAL AWARE (no change in consciousness)

- Stay Calm
- Time seizure
- Reassure student that he or she is safe
- Explain to others if necessary
- Protect student's privacy

FOCAL IMPAIRED AWARENESS (change in consciousness)

- Speak softly and calmly
- Guide away from potentially harmful objects such as tables, chairs, and doors
 - Allow for wandering in a contained area
 - DO NOT restrain or grab (may result in combativeness)
 - DO NOT shout or expect verbal instructions to be obeyed



inspired by possible.

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WHEELCHAIR FIRST AID

If someone starts having a seizure while:

- Confined in a wheelchair
- Seated on a bus, train or tram
- Strapped in a pram or stroller

STAY CALM, STOP and OBSERVE

DO NOT:

- Restrain the person / try to stop the seizure
- Put anything in the person's mouth
- Attempt to remove them from their position
-In most cases the seat provides some support


Wheelchair First Aid handout, epilepsy ACT



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WHEN DOES A SEIZURE BECOME AN EMERGENCY?

When the seizure activity itself lasts more than 5 minutes.
When the person has lost consciousness more than 5 minutes.
If another seizure starts shortly after the first one ended (clusters).
If the person has obtained an injury or airway is compromised.
If you know or believe it to be the person's first seizure.
If you know the person a diabetes or is pregnant.
If in doubt...





WHAT IS STATUS EPILEPTICUS?

Status Epilepticus is a condition when a person has:

- Continuous seizures for more than 30 minutes.
- OR**
- Seizures on and off for over 30 minutes, but without regaining consciousness in between seizures.

Status Epilepticus is a medical emergency, call 911.



PLEASE REMEMBER

- Refer to your student’s Emergency Action Plan for their individualized history and plan / medication(s).



EMERGENCY (ABORTIVE) MEDICATIONS

The Neurologist may prescribe an abortive medication to give, if a child is having a seizure that lasts > 3 minutes or is having clusters of seizures.

- Diastat Rectal Gel
- Intranasal Midazolam (Versed)



DIASTAT (diazepam) Rectal Gel



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INTRANASAL (midazolam) VERSED

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Draw back plunger to fill syringe with proper medicine volume

Connect Atomizer

Inject half of drug into one nostril

Vagus Nerve Stimulator (VNS)

- The magnet should be where the child is; not in the nurse room and the child is in the classroom.
- To stop or shorten a seizure: the student or an observer may swipe the magnet over the VNS generator when seizure symptoms are seen or felt to trigger a burst of stimulation
- Magnet may be used multiple times as needed, typically with at least a minute between swipes
- The magnet will trigger a burst of stimulation. The child will not feel anything. The swipe is for about 3 seconds
- To turn off stimulation (i.e. to prevent side effects): tape or secure the magnet over the generator
- Typically worn on wrist or belt

For a free video and more information visit vsntherapy.com



Suggested Accommodations for Student with Seizures

- The ability to work and/or take tests in a quiet environment with limited distractions.
- A syllabus or homework packets to keep apprised of missed assignments.
- A process for getting lecture notes from missed classes.
- Shorter or modified homework assignments.
- Provide alternative ways of receiving and demonstrating knowledge.
- Extra time to make up assignments that are late or missed due to seizure/injury or side-effects of medications.
- Extra time to make up missed exams without penalty.
- Excuse all absences due to missing school because of a seizure, doctor or procedure appointments or debilitating medication side-effects.



RESOURCES

Epilepsy Foundation – Resources, Education, Support, Training
<http://www.epilepsy.com>

- Epilepsy Foundation has a **training module for School Nurses**
<http://learn.epilepsy.com/class/85211/MSWS2017>

HOPE Mentors - through Epilepsy Foundation

JUMO Health –Educational Resources
<https://www.jumohealth.com/conditions/epilepsy>

Charlie Foundation - for Ketogenic Diet information

PAVE has resources for parents and offers support groups



Mary Bridge Children's Neuro Nurses and RN Care Manager
We are here to serve, educate and empower you!

Communicating with Mary Bridge Children's Neurology

Mary Bridge Children's Neurology

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*Thank you for caring for
students with epilepsy!
They need your advocacy, compassion,
patience, understanding and teamwork!!*