EPILEPSY AND SEIZURE TRAINING

Information for RACC Employees

Presented by Disability Services
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TODAY’S TOPICS

• SEIZURES
• EPILEPSY
• SEIZURE TYPES
• WHAT SEIZURES MAY LOOK LIKE
• EFFECTS OF SEIZURES ON STUDENTS
• TREATMENT
• GENERAL FIRST AID
• RACC PROTOCOL
The Epilepsy Foundation

The Epilepsy Foundation of Eastern PA

Centers for Disease Control and Prevention
WHAT IS A SEIZURE?

• A SEIZURE IS A BRIEF, TEMPORARY DISTURBANCE IN THE ELECTRICAL ACTIVITY OF THE BRAIN

• A SEIZURE CAN AFFECT A PERSON’S MOVEMENT, BEHAVIOR, ACTIONS, OR CONSCIOUSNESS
WHAT CAUSES A SEIZURE?

- HIGH FEVER
- DRUG USE
- ALCOHOL WITHDRAWAL
- NEAR-DROWNING OR LACK OF OXYGEN
- CARDIAC EVENT
- METABOLIC DISTURBANCES
- HEAD TRAUMA
- BRAIN TUMOR
- INFECTION
- STROKE
- COMPLICATIONS OF DIABETES OR PREGNANCY
- EPILEPSY DIAGNOSIS
WHAT IS EPILEPSY?

• A DISORDER CHARACTERIZED BY RECURRENT, UNPROVOKED SEIZURES

• EPILEPSY IS THE SAME AS A SEIZURE DISORDER!
WHAT CAUSES EPILEPSY?

In approximately 60% of people diagnosed with epilepsy, the cause is unknown. For the other 40%, causes include:

- Brain trauma
- Brain lesions (e.g., tubers, tumors)
- Infections of the brain (e.g., meningitis, encephalitis, measles)
- Brain injury at birth
- Congenital malformations
- Genetic causes
EPILEPSY IS COMMON

• EPILEPSY IS THE FOURTH MOST COMMON NEUROLOGICAL DISORDER AFTER STROKE, ALZHEIMER’S, AND MIGRAINE

• 1 IN 26 PEOPLE WILL DEVELOP EPILEPSY IN THEIR LIFETIME

• 1 IN 100 STUDENTS HAVE EPILEPSY

• EPILEPSY CURRENTLY AFFECTS MORE THAN 450,000 CHILDREN UNDER THE AGE OF 14 IN THE UNITED STATES

• MORE THAN 45,000 NEW CASES ARE DIAGNOSED ANNUALLY IN STUDENTS
“NEW” CLASSIFICATION OF SEIZURE TYPES BASIC VERSION

* from International League Against Epilepsy, 2017

FOCAL ONSET

Aware

Impaired Awareness

MOTOR
Non-MOTOR
Focal to bilateral tonic-clonic

GENERALIZED ONSET

Impaired Awareness

MOTOR
Tonic-clonic
Other motor

NON-MOTOR
Absence

UNKNOWN ONSET

MOTOR
Tonic-clonic
Other motor

NON-MOTOR
Absence

1 Definitions, other seizure types and descriptors are listed in the accompanying paper & glossary of terms
2 Due to inadequate information or inability to place in other categories
### Seizure Classifications

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<th>Generalized Seizures</th>
<th>Focal Seizures</th>
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<td>Involves the whole brain</td>
<td>Involves only part of the brain</td>
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<td>Can include convulsions, staring, muscle spasms, falls</td>
<td>Aware vs. impaired awareness</td>
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<td>Most common are absence and tonic-clonic</td>
<td>Symptoms relate to the part of the brain that is affected</td>
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<td>Can affect speech, vision, hearing, etc.</td>
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GENERALIZED VS FOCAL SEIZURES
SEIZURE VOCABULARY

WORDS THAT DESCRIBE SEIZURES

**TONIC:** MUSCLES IN THE BODY BECOME STIFF.

**ATONIC:** MUSCLES IN THE BODY RELAX.

**MYOCLONIC:** SHORT JERKING IN PARTS OF THE BODY.

**CLONIC:** PERIODS OF SHAKING OR JERKING PARTS ON THE BODY.
GENERALIZED SEIZURES affect both sides of the brain.

- **Absence seizures**, sometimes called petit mal seizures, can cause rapid blinking or a few seconds of staring into space.
- **Tonic-clonic seizures**, also called grand mal seizures, can make a person
  - cry out.
  - lose consciousness.
  - fall to the ground.
  - have muscle jerks or spasms.
  - the person may feel tired after a tonic-clonic seizure.
ABSENCE SEIZURE EXAMPLE
FOCAL SEIZURES are located in just one area of the brain. These seizures are also called partial seizures.

- **Simple Focal Seizures** affect a small part of the brain. These seizures can cause twitching or a change in sensation, such as a strange taste or smell.

- **Complex Focal Seizures** can make a person with epilepsy confused or dazed. The person will be unable to respond to questions or direction for up to a few minutes.

- **Secondary Generalized Seizures** begin in one part of the brain, but then spread to both sides of the brain. In other words, the person first has a focal seizure, followed by a generalized seizure.

- Seizures may last as long as a few minutes.
A student describes seizures as beginning with 30 seconds of an intense feeling that “familiar music is playing.” She can hear other people talking, but afterwards realizes that she could not determine what they were saying. After an episode, she is mildly confused and has to reorient herself.
A student has a seizure during which he remains fully aware, with the “hair on his arms standing on edge” and a feeling of being flushed.
IT COULD BE A SEIZURE IF...

• A STUDENT STOPS WHAT THEY ARE DOING AND STARES AT NOTHING FOR A MOMENT OR TWO
• A STUDENT FALLS DOWN SUDDENLY FOR NO REASON
IT COULD BE A SEIZURE IF...

• THEY PAY NO ATTENTION WHEN YOU SPEAK LOUDLY, CALL THEIR NAME, OR GIVE AN INSTRUCTION
• THEY ROLL THEIR EYES AND BLINK VERY FAST
• THEY ACT AS IF THEY ARE DRUNK OR ON DRUGS
• THEY PICK AT THEIR CLOTHES
• THEY DO THINGS THAT DON’T LOOK “RIGHT” OR NATURAL TO YOU
• THEY ARE SUDDENLY AFRAID FOR NO REASON
POSSIBLE SEIZURE TRIGGERS

- MISSED OR LATE MEDICATION
- EMOTIONAL STRESS
- SLEEP DEPRIVATION
- HORMONAL CHANGES
- ALCOHOL OR RECREATIONAL DRUGS
- DRUG INTERACTIONS
- MISSED MEALS
- SPECIFIC FOODS OR DRINKS
- NUTRITIONAL DEFICIENCIES
- SPECIFIC STIMULI LIKE:
  - FLASHING LIGHTS
  - FLASHING PATTERNS
  - HYPERVENTILATION
  - SUDDEN LOUD NOISES
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IMPACT ON LEARNING

- THE IQS OF MOST STUDENTS WITH EPILEPSY ARE WITHIN THE NORMAL RANGE
- THEIR RISK OF LEARNING PROBLEMS IS 3X GREATER THAN AVERAGE
- STUDENTS WITH EPILEPSY MAY HAVE DIFFICULTY WITH MEMORY, ATTENTION, AND CONCENTRATION
- THEY MAY BE ELIGIBLE FOR DISABILITY SERVICES; PLEASE REFER TO DS
- STUDENTS WHO ACHIEVE SEIZURE CONTROL QUICKLY AND WITH FEW MEDICATION SIDE EFFECTS HAVE THE BEST CHANCE FOR EDUCATIONAL ACHIEVEMENT
TREATMENT OPTIONS

• ANTIEPILEPTIC DRUGS (AEDS)
• KETOGENIC DIET
• VAGUS NERVE STIMULATION (VNS) THERAPY OR OTHER BRAIN STIMULATION DEVICES
• SURGERY
  • PROCEDURES INCLUDE FOCAL RESECTION, TEMPORAL LOBECTOMY, LESIONECTOMY, HEMISPHERECTOMY, AND CORPUS CALLOSOTOMY
  • PATIENTS USUALLY GO HOME AFTER A SHORT STAY IN THE HOSPITAL AND WILL LIKELY MISS SEVERAL WEEKS OR MONTHS OF SCHOOL
VAGUS NERVE STIMULATION (VNS THERAPY)

- A PROGRAMMABLE PULSE GENERATOR IMPLANTED SUBCUTANEOUSLY IN UPPER LEFT CHEST
- ELECTRODE WRAPPED AROUND THE LEFT VAGUS NERVE
- EXACT MECHANISM OF ACTION NOT KNOWN
- SIDE EFFECTS MAY INCLUDE
  - HOARSENESS, COUGHING, AND SHORTNESS OF BREATH DURING STIMULATION
VNS MAGNET USE

• IF A STUDENT FEELS A SEIZURE IS STARTING, THEY OR AN OBSERVER CAN SWIPE A MAGNET OVER THE VNS TO SEND AN EXTRA BURST OF STIMULATION. FOR SOME THIS MAY STOP THE SEIZURE OR DECREASE SEVERITY OR DURATION

• TYPICALLY WORN ON THE WRIST OR BELT

• MAGNET MAY BE USED AS OFTEN AS NEEDED WITH AT LEAST A MINUTE BETWEEN SWIPES
ROUTINE FIRST AID: CARE AND COMFORT

• MOST SEIZURES ARE NOT MEDICAL EMERGENCIES
• ALL SEIZURES SHOULD BE TIMED AND DOCUMENTED
• BASIC FIRST AID HAS MANY COMMON ELEMENTS, BUT CAN VARY DEPENDING ON THE FOLLOWING FACTORS:
  • AWARE/NO CHANGE IN CONSCIOUSNESS
  • IMPAIRED AWARENESS
  • LOSS OF CONSCIOUSNESS
FIRST AID: NO CHANGE IN CONSCIOUSNESS

- STAY CALM
- TIME SEIZURE
- REASSURE STUDENT THAT THEY ARE SAFE
- EXPLAIN TO OTHERS, IF NECESSARY
- PROTECT STUDENT’S PRIVACY
FIRST AID: IMPAIRED AWARENESS

**DO**

- Time the seizure
- Speak softly and calmly
- Guide the individual away from potentially harmful objects such as tables, chairs, and doors
- Allow for wandering in a contained area
- If the seizure lasts beyond five minutes of what is routine for the student, or another seizure begins before full awareness is regained, follow emergency protocol

**DO NOT**

- Restrain or grab—may result in combativeness
- Shout or expect verbal instructions to be obeyed
FIRST AID: LOSS OF CONSCIOUSNESS

**DO**

- STAY CALM
- PROTECT FROM POTENTIALLY HARMFUL OBJECTS
- OBSERVE TIME AND EVENTS
- ENSURE AIRWAY IS UNOBSURCTED
- CUSHION AND PROTECT HEAD
- TURN STUDENT ON ONE SIDE
- REMAIN WITH STUDENT UNTIL FULLY CONSCIOUS
- FOLLOW THE STUDENT’S SEIZURE ACTION PLAN

**DO NOT**

- RESTRRAIN
- PUT ANYTHING IN THE STUDENT’S MOUTH
WHEN IS A SEIZURE AN EMERGENCY?

• FIRST TIME SEIZURE
• LASTS MORE THAN FIVE MINUTES
• REPEATED SEIZURES WITHOUT REGAINING CONSCIOUSNESS
• MORE SEIZURES THAN USUAL OR A CHANGE IN TYPE
• STUDENT HAS DIABETES OR IS PREGNANT
• SEIZURE OCCURS IN WATER
• STUDENT IS INJURED
• PARENTS REQUEST EMERGENCY EVALUATION
FIRST AID EXAMPLE
RACC’S PROTOCOL

FOLLOW THE FIRST AID MENTIONED PREVIOUSLY, BUT…

• CALL 911; THIS IS A LIABILITY ISSUE
• CALL RACC SECURITY—X 6291 (IN YOUR CONTACTS: 610-607-6291)
• ROLL PERSON ON THEIR SIDE + REMOVE MASK
• EMS WILL ASSESS THE INDIVIDUAL
• PERSON MAY OR MAY NOT BE TAKEN TO THE HOSPITAL
• IF ABLE, THE PERSON CAN REFUSE TRANSPORT
• IF DISABILITY SERVICES IS AWARE OF THE STUDENT’S SEIZURES, FACULTY
  WILL BE NOTIFIED—VIA A MEDICAL MEMO
MEDICAL MEMO

TO: _____________________________
FROM: __________________________
DATE: __________________________

RE: Medical emergency **possibility** regarding ________________
ID # _____________, in (class) ________________

**Type of Issue**
With the student’s permission, this memo is to inform you that the student named above is currently enrolled and experiences ________________. Any questions about this issue may be addressed to the student in private.

**What to Look for**
Each ______________ looks different. Some common indicators are:

[Info here will describe the medical issue. It might be a type of seizure, a type of diabetic issue, a chronic health condition that may become serious, etc. All examples would be of medical issues that may rise to the level of needing an emergency response]

**How to respond**
The student is aware that if there is a medical emergency, RACC faculty or staff are required to respond in the following manner:

- **NOTE THE APPROXIMATE TIME THE MEDICAL ISSUE BEGINS AND ENDS** (SAYING THE TIME OUT LOUD MAY HELP YOU REMEMBER IT LATER)
- **FOR MOST MEDICAL ISSUES IT IS NOT NECESSARY TO MOVE OR TOUCH THE STUDENT**
- **OBSERVE THE STUDENT’S BEHAVIOR SO YOU CAN DESCRIBE IT LATER**
- **IF THE STUDENT IS HAVING A SEIZURE, IS ON THE GROUND/FLOOR, AND NOT MOVING MUCH, IF YOU ARE WILLING/ABLE, ROLL THE PERSON ON THEIR SIDE AND LOOSEN THE STUDENT’S MASK IF IT IS STILL ON THE FACE**
- **CALL 911 IMMEDIATELY**
- **CALL SECURITY IMMEDIATELY AFTER CALLING 911 AT X6291 ON A RED PHONE IN HALLWAYS OF MOST ACADEMIC BUILDINGS, OR A CELL PHONE: 610-607-6291**
- **IF IN A CLASSROOM, PLEASE DIRECT OTHER STUDENTS OUT OF THE ROOM, AT LEAST BRIEFLY, FOR PRIVACY**
- **EMAIL A DISABILITY SERVICES STAFF PERSON AFTER A MEDICAL INCIDENT**
EXAMS AND TESTS

• WHETHER A STUDENT’S EPILEPSY AFFECTS THEIR ABILITY TO DO EXAMS OR TESTS DEPENDS ON THEIR INDIVIDUAL EPILEPSY

• IF THEY ARE LIKELY TO HAVE SEIZURES IN STRESSFUL SITUATIONS OR AT CERTAIN TIMES OF THE DAY, THIS MAY AFFECT PERFORMANCE ON TESTS/EXAMS

• TIREDNESS, MEMORY, OR CONCENTRATION PROBLEMS MAY ALSO AFFECT EXAMS

• DISCUSS CONCERNS WITH DISABILITY SERVICES WHETHER THE STUDENT NEEDS ANY SPECIAL ARRANGEMENTS FOR EXAMS
SEIZURES AND BEHAVIORS

• Sometimes seizures are misinterpreted as behaviors:
  • Verbal and physical aggression
  • Panic
  • Anxiety
  • Screaming
  • Aimless walking
  • Non-responsiveness

• Students may display changes in behavior before or after a seizure, and can occur minutes or even days before or after.

• It is sometimes difficult to differentiate between inappropriate behaviors and seizures.
HOW MIGHT SOMEONE FEEL AFTER A SEIZURE

• DISAPPOINTED
• EMBARRASSED
• FRUSTRATED
• SCARED

• IT IS IMPORTANT TO CREATE AN ENVIRONMENT WHERE A STUDENT FEELS SAFE AND TEACHERS AND CLASSMATES ARE EDUCATED AND ACCEPTING

• EDUCATION IS KEY!
TRAINING IS IMPORTANT!

- HELPS TO ENLIST THE FULL COOPERATION OF SCHOOL PERSONNEL
- OPTIMIZED ABILITY TO MANAGE SEIZURES AND CONSEQUENCES
- HELPS ENSURE FULL INTEGRATION OF THE STUDENT IN SCHOOL ACTIVITIES
- MINIMIZES STIGMA
- TALKING TO CLASSMATES ABOUT EPILEPSY CAN HELP THE STUDENT FEEL LESS EMBARRASSED AND CORRECT SOME OF THE INACCURACIES CLASSMATES MAY BELIEVE
REVIEW OF TODAY’S TOPICS

• SEIZURES
• EPILEPSY
• SEIZURE TYPES
• WHAT SEIZURES MAY LOOK LIKE
• EFFECTS OF SEIZURES ON STUDENTS
• TREATMENT
• GENERAL FIRST AID
• RACC PROTOCOL
THANK YOU!
RESOURCES

EPILEPSY FOUNDATION
https://www.epilepsy.com/learn/about-epilepsy-basics

EPILEPSY FOUNDATION OF NORTHEAST PA
https://www.efepa.org/

CENTERS FOR DISEASE CONTROL AND PREVENTION
https://www.cdc.gov/healthyschools/npao/epilepsy.htm