

# EPILEPSY AND SEIZURE TRAINING

**Information for RACC Employees**

**Presented by Disability Services  
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# YOUR PRESENTERS

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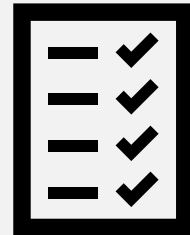
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# TODAY'S TOPICS

- SEIZURES
- EPILEPSY
- SEIZURE TYPES
- WHAT SEIZURES MAY LOOK LIKE
- EFFECTS OF SEIZURES ON STUDENTS
- TREATMENT
- GENERAL FIRST AID
- RACC PROTOCOL



BASED ON MATERIAL FROM

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

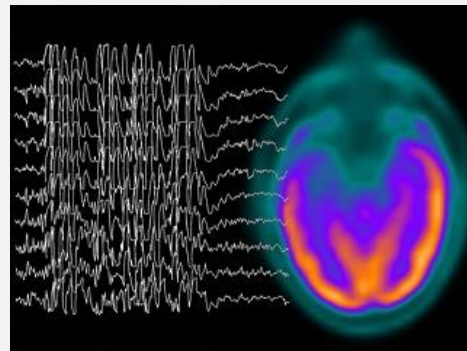


# WHAT CAUSES A SEIZURE?

- 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 (EG, TUBERS, TUMORS)
- INFECTIONS OF THE BRAIN (EG, MENINGITIS, ENCEPHALITIS, MEASLES)
- BRAIN INJURY AT BIRTH
- CONGENITAL MALFORMATIONS
- GENETIC CAUSES

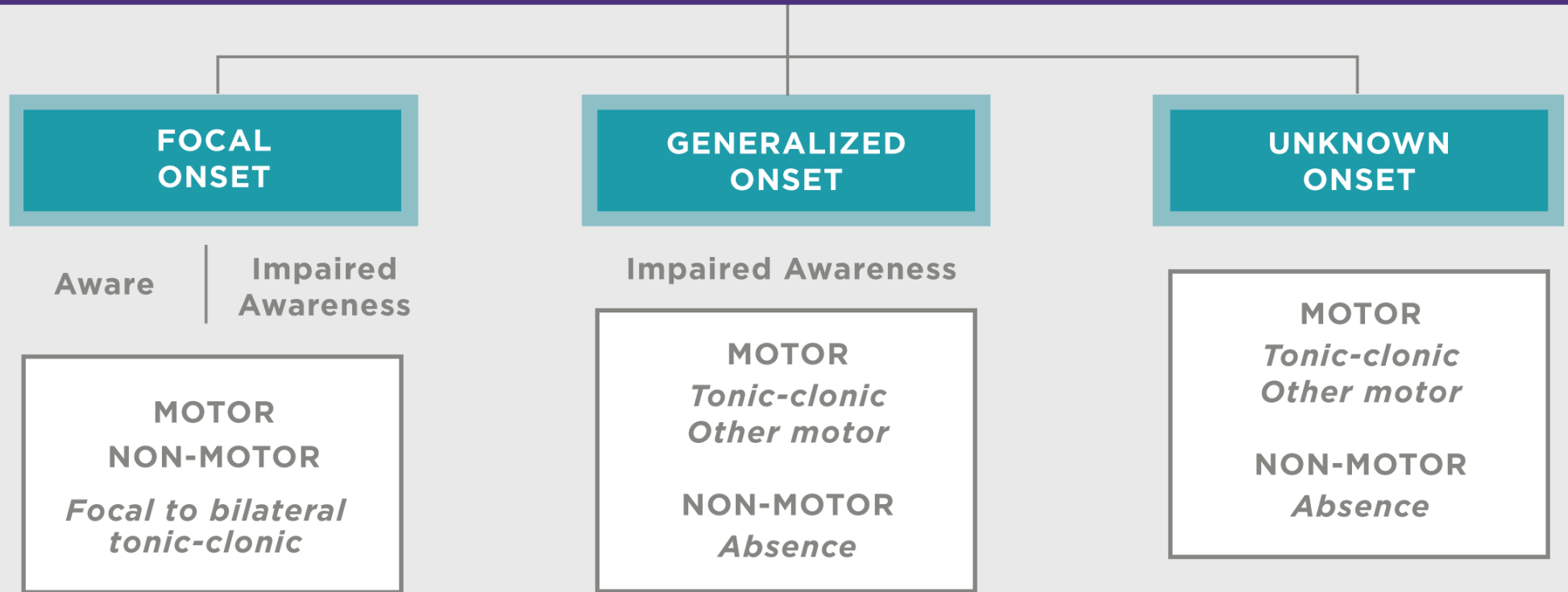


# EPILEPSY IS COMMON

- 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 <sup>1</sup>

*\* from International League Against Epilepsy, 2017*



<sup>1</sup> Definitions, other seizure types and descriptors are listed in the accompanying paper & glossary of terms

<sup>2</sup> Due to inadequate information or inability to place in other categories

# SEIZURE CLASSIFICATIONS

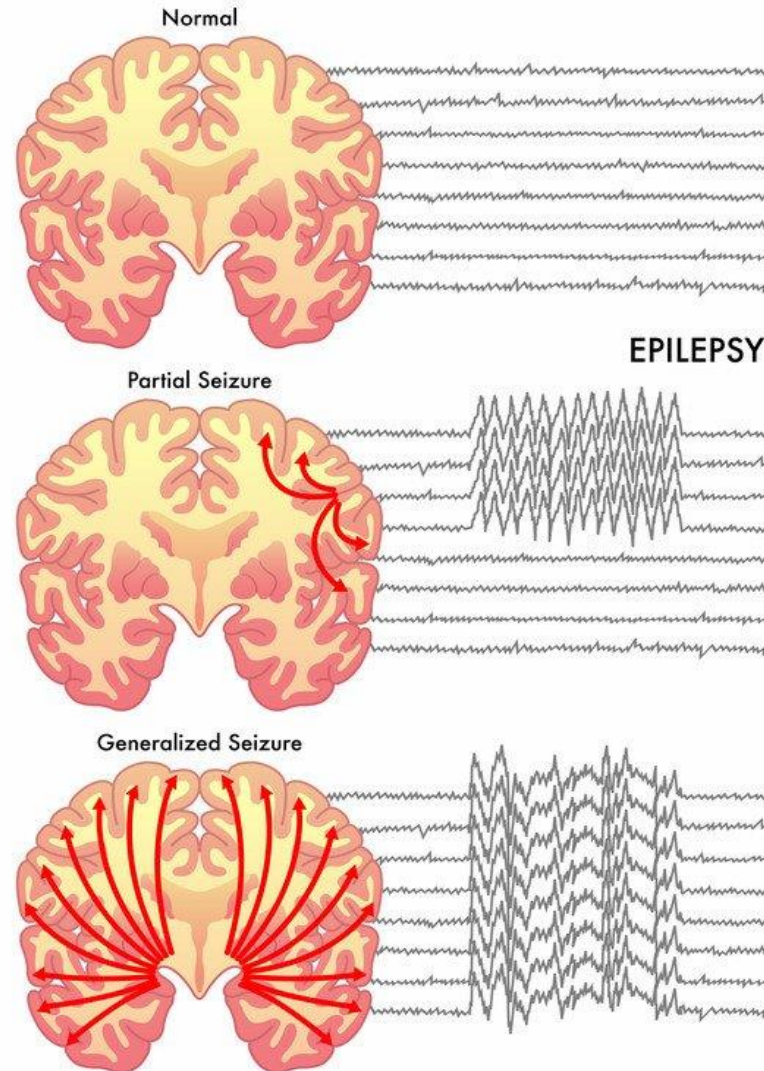
## GENERALIZED SEIZURES

- INVOLVES THE WHOLE BRAIN
- CAN INCLUDE CONVULSIONS, STARING, MUSCLE SPASMS, FALLS
- MOST COMMON ARE ABSENCE AND TONIC-CLONIC

## FOCAL SEIZURES

- INVOLVES ONLY PART OF THE BRAIN
- AWARE VS. IMPAIRED AWARENESS
- SYMPTOMS RELATE TO THE PART OF THE BRAIN THAT IS AFFECTED
  - CAN AFFECT SPEECH, VISION, HEARING, ETC.

# 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

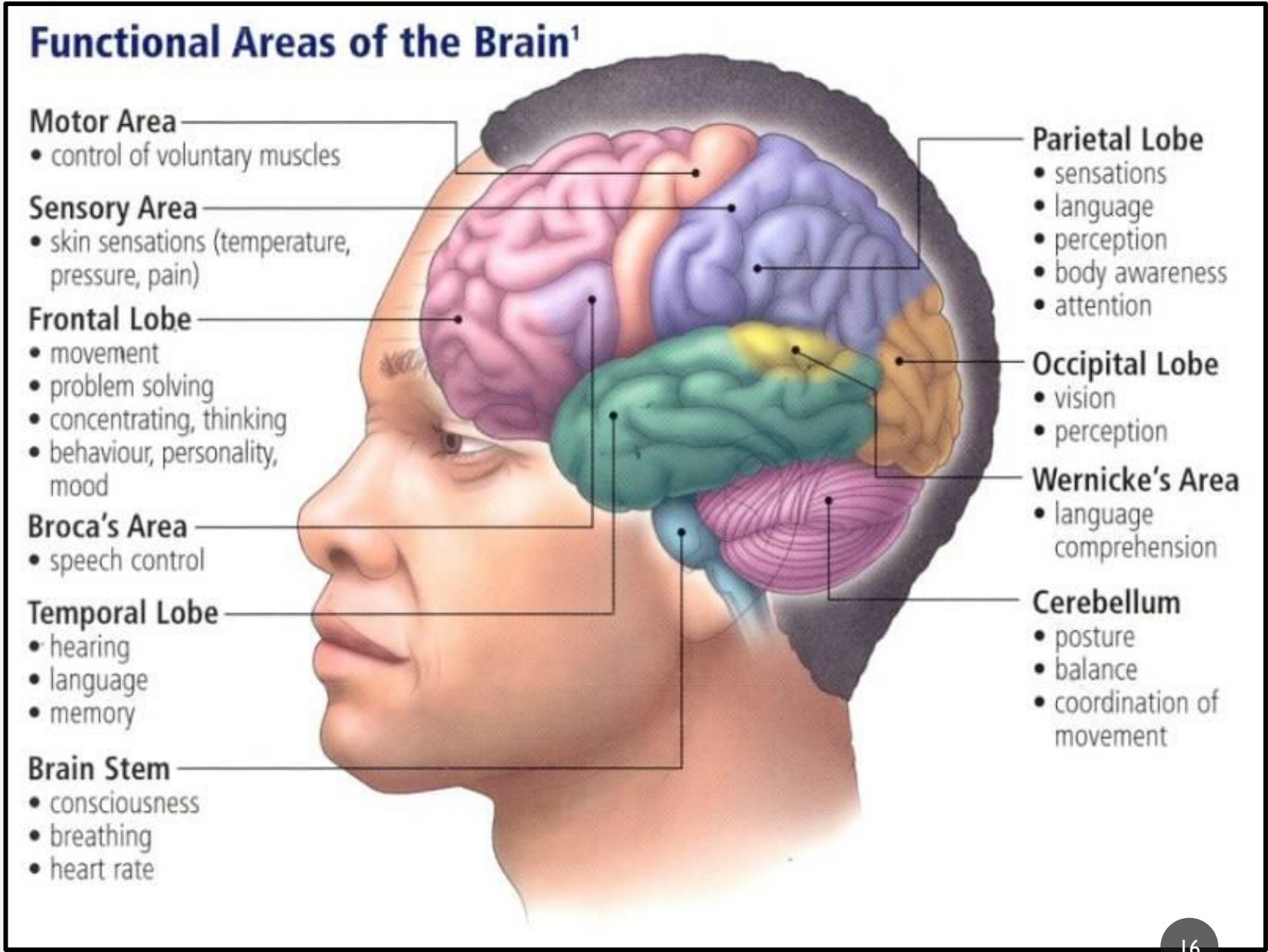
**GENERALIZED SEIZURES** AFFECT BOTH SIDES OF THE BRAIN.

- **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





# FOCAL SEIZURES

**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.

## IT COULD BE A SEIZURE IF...

- 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.

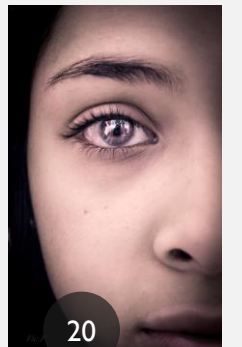


## IT COULD BE A SEIZURE IF...

- 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

# FACTORS THAT IMPACT STUDENTS WITH SEIZURES

## FACTORS

- SEIZURES
- MEDICATION SIDE EFFECTS
- UNDERLYING BRAIN ABNORMALITIES



## IMPACT

- LEARNING
- BEHAVIOR
- SELF-CONCEPT
- STIGMA
- PSYCHOSOCIAL DEVELOPMENT
- OVERALL QUALITY OF LIFE

# 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





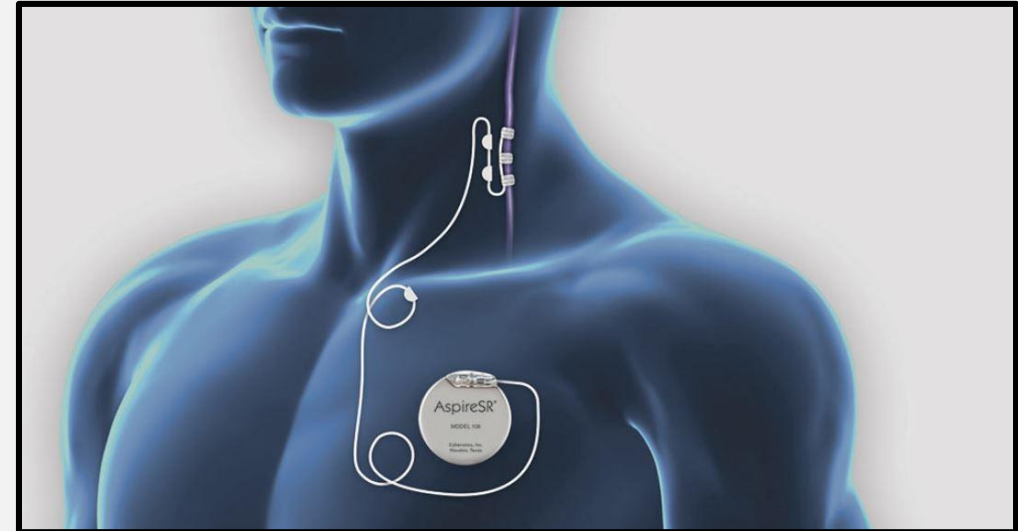
# TREATMENT OPTIONS

- ANTIEPILEPTIC DRUGS (AEDS)
- KETOGENIC DIET
- VAGUS NERVE STIMULATION (VNS) THERAPY OR OTHER BRAIN STIUMLATION 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 UNOBSTRUCTED
- CUSHION AND PROTECT HEAD
- TURN STUDENT ON ONE SIDE
- REMAIN WITH STUDENT UNTIL FULLY CONSCIOUS
- FOLLOW THE STUDENTS SEIZURE ACTION PLAN

## DO NOT

- RESTRAIN
- 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>