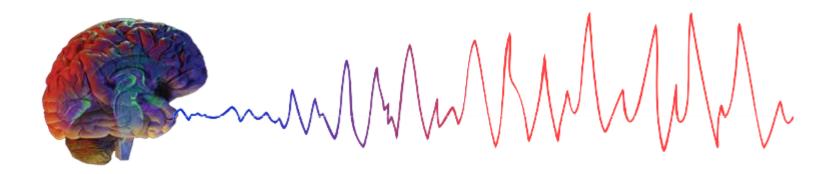


# **Epilepsy Care in the School Setting**

**Children's Epilepsy Educational Video Series** 







# **Epilepsy Care in the School Setting**

#### **Children's Epilepsy Educational Video Series**

Presented by Susan McCallum, MSN, RN Children's Comprehensive Epilepsy Center 404-785-3720 www.choa.org





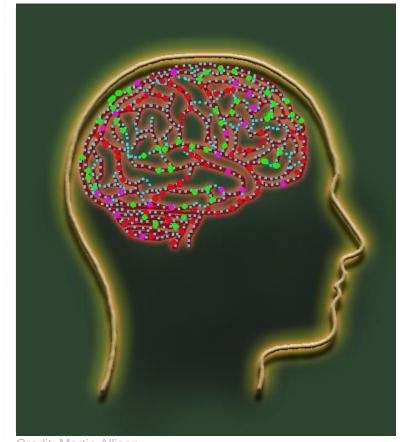
### **Course Disclaimer**

This is general information and not specific medical advice for you, your child, or loved one. Always consult your doctor or other healthcare provider if you have any questions or concerns. Call 911 or go to the nearest emergency department in case of an urgent concern or emergency.

# **Educational Activity Disclosure**

#### **Epilepsy Seizure Phases and Classifications - Part 2 of 4**

Disclosures	Action
Criteria for Successful Completion	View entire recording
	Completion of evaluation
Conflicts of Interest Statements for Planning	The planning committee members have no relevant financial relationship to declare.
Committee	
Conflicts of Interest Statements for	The content experts/faculty/presenters/authors have no relevant financial relationship to declare.
Faculty/Presenters/ Authors	
Commercial Support	No commercial support is being received for this event.
Sponsorship	No sponsorship is being received for this event
Non-endorsement of Products	No products are being displayed at this event
Continuing Education	This continuing nursing education activity was provided by Children's Healthcare of Atlanta. Children's Healthcare of Atlanta is an approved provider of continuing nursing education by the Alabama State Nurses Association, an accredited approver by the American Nurses Credentialing Center's Commission on Accreditation.
	Contact hours: 0.5
	Activity ID: 2017-0508-01
	Expiration Date: 05/08/2019



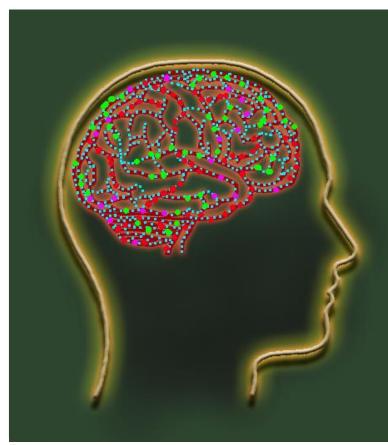
Credit: Martin Allison

# **Epilepsy Seizure Phases**& Classifications

#### **Children's Comprehensive Epilepsy Center**

Presented by Susan McCallum, MSN, RN Children's Comprehensive Epilepsy Center 404-785-3720 www.choa.org

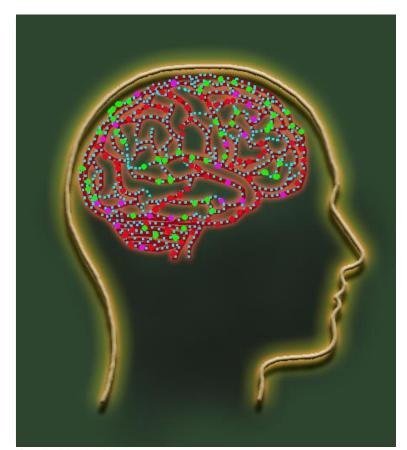




Credit: Martin Allison

This education video is intended for school nurses who:





Credit: Martin Allison

This education video is intended for school nurses who:

Care directly for students with epilepsy



Credit: Martin Allison

This education video is intended for school nurses who:

- Care directly for students with epilepsy
- Provide first aid for seizures, including seizure medication

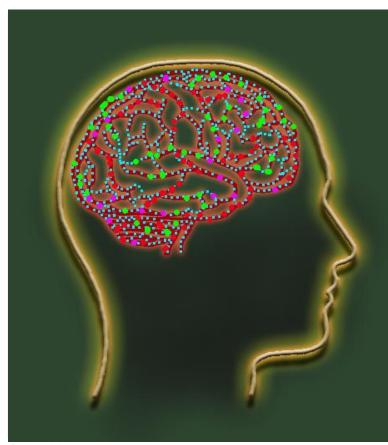


Credit: Martin Allison

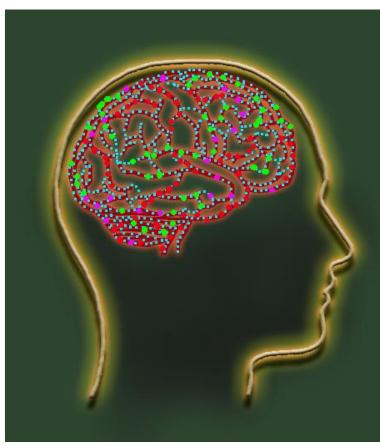
#### This education video is intended for school nurses who:

- Care directly for students with epilepsy
- Provide first aid for seizures, including seizure medication
- May teach non-licensed school personnel such as teachers, coaches, or after school staff how to respond to students experiencing a seizure





Credit: Martin Allison



Credit: Martin Allison

• List the phases of a seizure

- Credit: Martin Allison

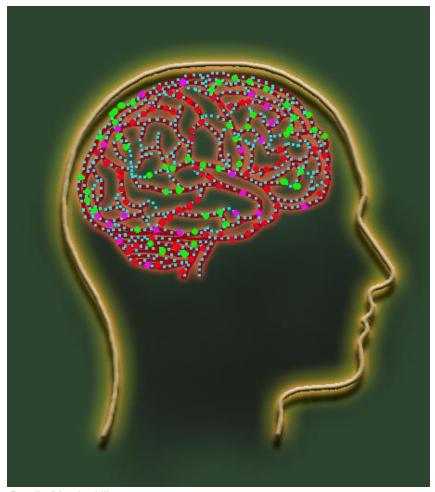
- List the phases of a seizure
- Explain the changes in seizure classification

- Credit: Martin Allison

- List the phases of a seizure
- Explain the changes in seizure classification
- Describe the different types of seizures as classified by the ILAE



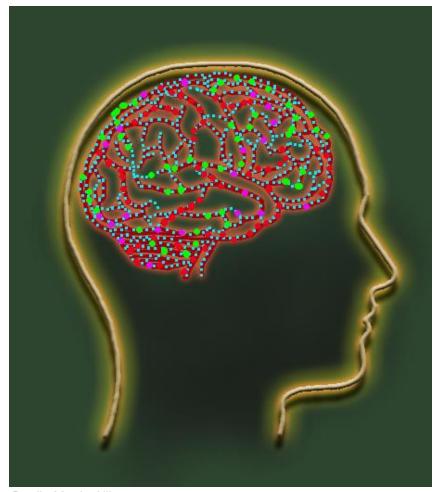
Aura





Aura

Ictal

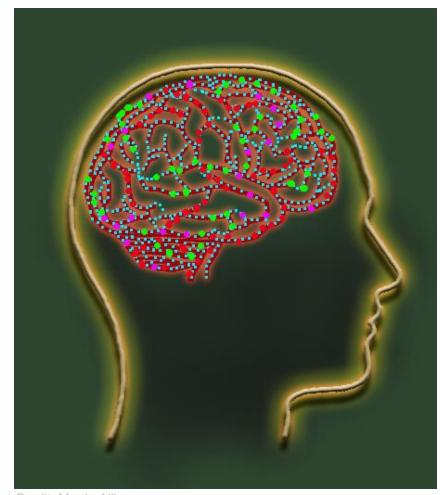




Aura

Ictal

**Postictal** 

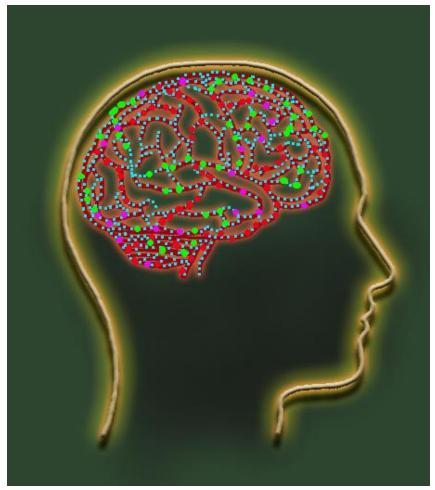


#### Aura

- Strange sensations that can be a warning of impending seizure
- Often followed by a larger seizure event

Ictal

**Postictal** 





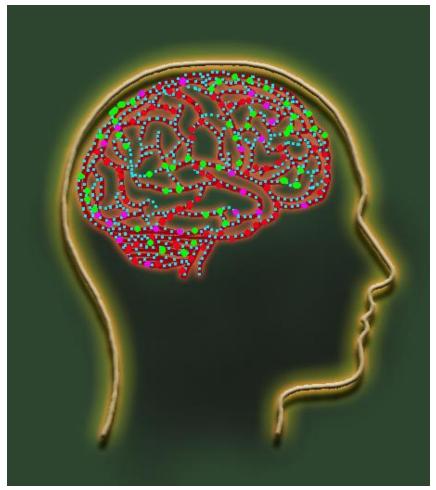
#### Aura

- Strange sensations that can be a warning of impending seizure
- Often followed by a larger seizure event

#### Ictal

Actual seizure activity

#### **Postictal**





#### Aura

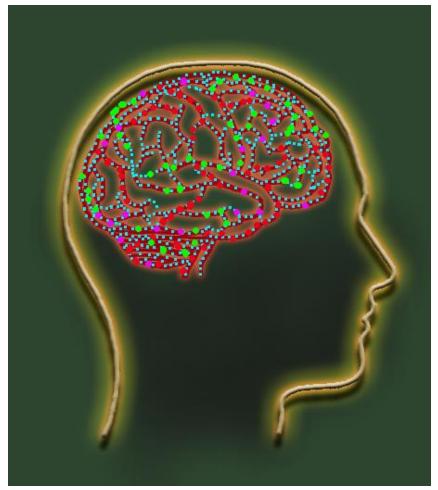
- Strange sensations that can be a warning of impending seizure
- Often followed by a larger seizure event

#### **Ictal**

Actual seizure activity

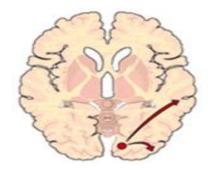
#### **Postictal**

- Brain recovery period
- Drowsiness and confusion are common



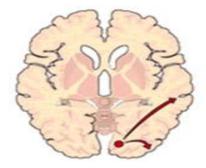
Seizures are generally described in two major groups:

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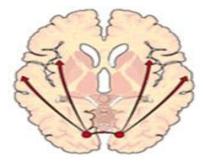


Focal (also referred to as Partial)

• Seizures are generally described in two major groups:

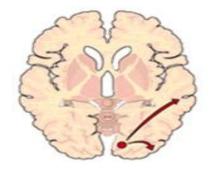


Focal (also referred to as Partial)

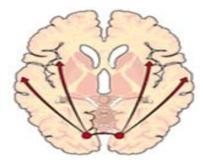


Generalized

Seizures are generally described in two major groups:



Focal (also referred to as Partial)

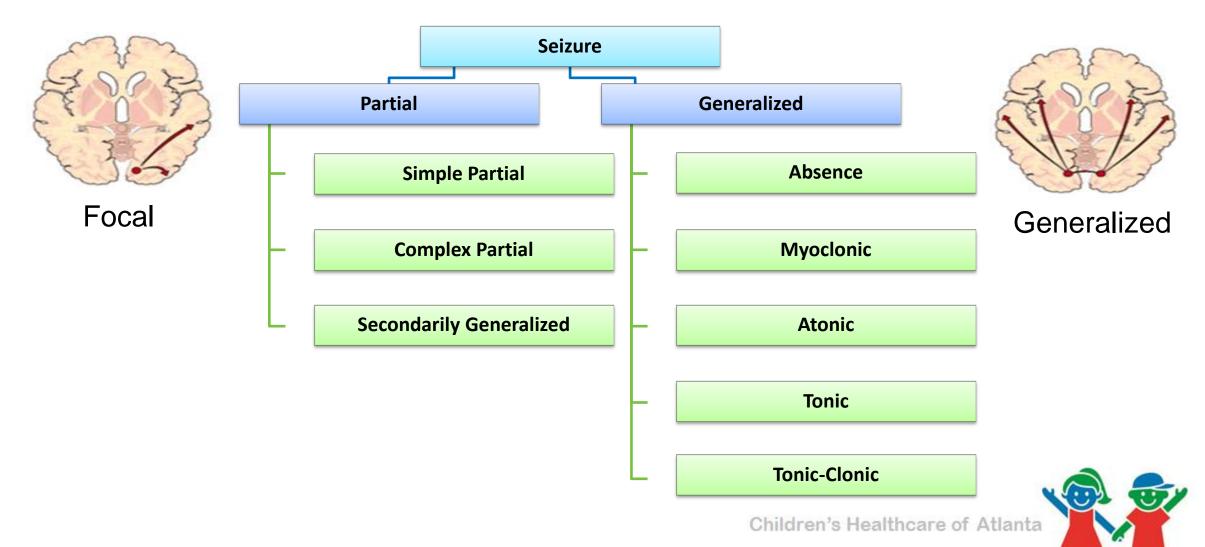


Generalized

 The difference in types of seizures is in how and where they begin in the brain



#### **ILAE Classification of Seizures Before 2017 Revision**



#### ILAE Classification of Seizure Types Expanded Version <sup>1</sup>

#### **Focal Onset**

#### Aware

Impaired Awareness

#### **Motor Onset**

automatisms atonic <sup>2</sup> clonic epileptic spasms <sup>2</sup> hyperkinetic myoclonic tonic

#### **Nonmotor Onset**

autonomic behavior arrest cognitive emotional sensory

#### **Generalized Onset**

#### Motor

tonic-clonic
clonic
tonic
myoclonic
myoclonic-tonic-clonic
myoclonic-atonic
atonic
epileptic spasms

#### Nonmotor (absence)

typical atypical myoclonic eyelid myoclonia

#### **Unknown Onset**

#### Motor

tonic-clonic epileptic spasms Nonmotor behavior arrest

Unclassified 3

focal to bilateral tonic-clonic

#### ILAE Classification of Seizure Types Expanded Version <sup>1</sup>

#### **Focal Onset**

#### **Aware**

Impaired Awareness

#### **Motor Onset**

automatisms atonic <sup>2</sup> clonic epileptic spasms <sup>2</sup> hyperkinetic myoclonic tonic

#### **Nonmotor Onset**

autonomic behavior arrest cognitive emotional sensory

focal to bilateral tonic-clonic

#### **Generalized Onset**

#### Motor

tonic-clonic
clonic
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epileptic spasms

#### Nonmotor (absence)

typical atypical myoclonic eyelid myoclonia

#### **Unknown Onset**

#### Motor

tonic-clonic epileptic spasms Nonmotor behavior arrest

Unclassified 3





#### ILAE Classification of Seizure Types Expanded Version <sup>1</sup>

#### **Focal Onset**

Aware

Impaired Awareness

#### **Motor Onset**

automatisms atonic <sup>2</sup> clonic epileptic spasms <sup>2</sup> hyperkinetic myoclonic tonic

#### **Nonmotor Onset**

autonomic behavior arrest cognitive emotional sensory

#### **Generalized Onset**

#### Motor

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#### Nonmotor (absence)

typical atypical myoclonic eyelid myoclonia

#### **Unknown Onset**

#### Motor

tonic-clonic epileptic spasms Nonmotor behavior arrest

Unclassified 3

focal to bilateral tonic-clonic

**Simple Partial** 



**Complex Partial** 



Secondarily Generalized Tonic-Clonic



**Simple Partial** 



#### **Focal Aware**

- Localized to one area of the brain without loss of consciousness
- Last < 1 minute</li>

**Complex Partial** 



Secondarily Generalized Tonic-Clonic





#### **Simple Partial**



#### **Focal Aware**

- Localized to one area of the brain without loss of consciousness
- Last < 1 minute</li>

#### **Complex Partial**



#### **Focal Impaired Awareness**

- Consciousness is altered; ability to pay attention or respond is impaired or lost
- Postictal confusion is common

# Secondarily Generalized Tonic-Clonic









#### **Focal Aware**

- Localized to one area of the brain without loss of consciousness
- Last < 1 minute</li>

#### **Complex Partial**



#### **Focal Impaired Awareness**

- Consciousness is altered; ability to pay attention or respond is impaired or lost
- Postictal confusion is common

# Secondarily Generalized Tonic-Clonic



#### **Focal to Bilateral Tonic-Clonic**

Begins as focal and becomes generalized



# **Generalized Onset Seizures**

## ILAE 2017 Classification of Seizures

### ILAE Classification of Seizure Types Expanded Version <sup>1</sup>

#### **Focal Onset**

#### Aware

**Impaired** Awareness

#### **Motor Onset**

automatisms atonic 2 clonic epileptic spasms 2 hyperkinetic myoclonic tonic

#### Nonmotor Onset

autonomic behavior arrest cognitive emotional sensory

#### **Generalized Onset**

#### Motor

tonic-clonic clonic tonic myoclonic myoclonic-tonic-clonic myoclonic-atonic atonic epileptic spasms Nonmotor (absence)

typical atypical myoclonic evelid myoclonia

#### **Unknown Onset**

#### Motor

tonic-clonic epileptic spasms Nonmotor behavior arrest

Unclassified 3

focal to bilateral tonic-clonic

Motor





Motor

Non-motor (Absence)



#### Motor

- Tonic-clonic
- Clonic
- Tonic
- Myoclonic

- Myoclonic-tonic-clonic
- Myoclonic-atonic
- Atonic
- Epileptic spasms

Non-motor (Absence)





#### Motor

- Tonic-clonic
- Clonic
- Tonic
- Myoclonic

- Myoclonic-tonic-clonic
- Myoclonic-atonic
- Atonic
- Epileptic spasms

### **Non-motor (Absence)**

- **Typical**
- **Atypical**

- Myoclonic
- Absence with eyelid Myoclonia



## ILAE 2017 Classification of Seizures

### ILAE Classification of Seizure Types Expanded Version <sup>1</sup>

#### **Focal Onset**

#### Aware

**Impaired** Awareness

#### **Motor Onset**

automatisms atonic 2 clonic epileptic spasms 2 hyperkinetic myoclonic tonic

#### **Nonmotor Onset**

autonomic behavior arrest cognitive emotional sensory

focal to bilateral tonic-clonic

#### **Generalized Onset**

#### Motor

tonic-clonic clonic tonic myoclonic myoclonic-tonic-clonic myoclonic-atonic atonic epileptic spasms

#### Nonmotor (absence)

typical atypical myoclonic evelid myoclonia

#### **Unknown Onset**

#### Motor

tonic-clonic epileptic spasms Nonmotor behavior arrest

Unclassified 3



- Atonic\*
  - Loss of tone

\* Can be Focal or Generalized





- Atonic\*
  - Loss of tone
- Tonic\*
  - Sustained muscle stiffening

\* Can be Focal or Generalized





- Atonic\*
  - Loss of tone
- Tonic\*
  - Sustained muscle stiffening
- Clonic\*
  - Focal rhythmic jerking

\* Can be Focal or Generalized





- Atonic\*
  - Loss of tone
- Tonic\*
  - Sustained muscle stiffening
- Clonic\*
  - Focal rhythmic jerking
- Myoclonic\*
  - Sudden, brief irregular focal muscle contractions
- \* Can be Focal or Generalized



- Epileptic spasms\*
  - Focal flexion or extension of arms and flexion of trunk

\* Can be Focal or Generalized





- Epileptic spasms\*
  - Focal flexion or extension of arms and flexion of trunk
- Hyperkinetic
  - Pedaling, thrashing activity

\* Can be Focal or Generalized



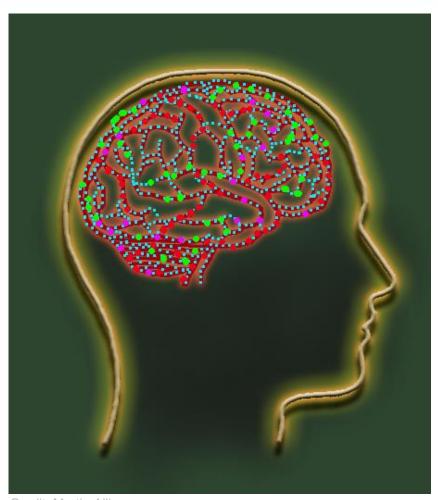


- Epileptic spasms\*
  - Focal flexion or extension of arms and flexion of trunk
- Hyperkinetic
  - Pedaling, thrashing activity
- Automatisms\*
  - Uncoordinated, purposeless, repetitive motor activity
  - Also seen in generalized absence seizures
- \* Can be Focal or Generalized

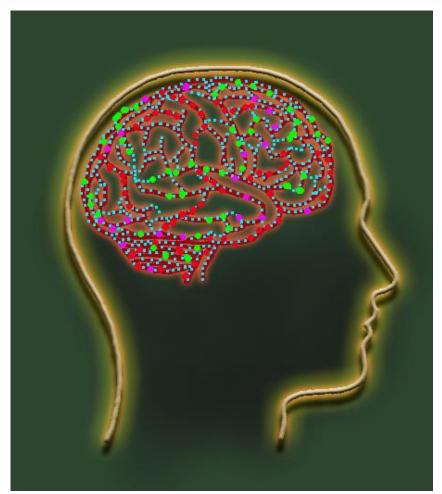




Cognitive

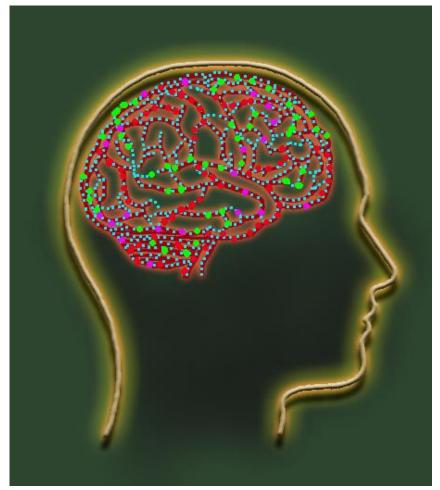


- Cognitive
  - Impaired language
  - Déjà vu, hallucinations, illusions, or other perceptual distortions





- Cognitive
  - Impaired language
  - Déjà vu, hallucinations, illusions, or other perceptual distortions
- Autonomic



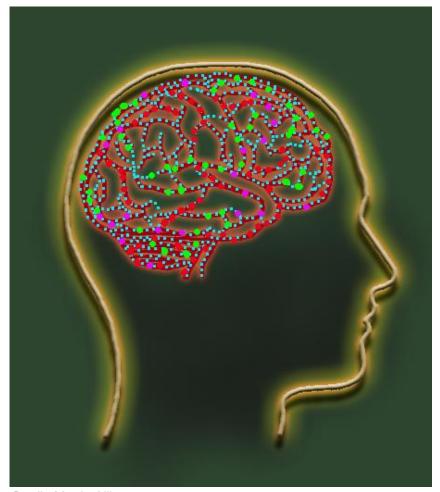


### Cognitive

- Impaired language
- Déjà vu, hallucinations, illusions, or other perceptual distortions

#### Autonomic

- Gastrointestinal sensations
- Sense of heat or cold, flushing, goosebumps
- Palpitations, respiratory changes



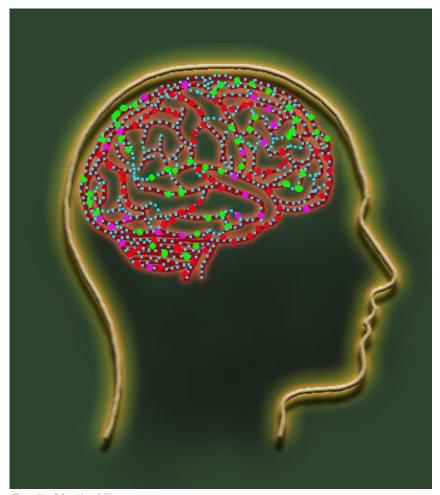


### Cognitive

- Impaired language
- Déjà vu, hallucinations, illusions, or other perceptual distortions

#### Autonomic

- Gastrointestinal sensations
- Sense of heat or cold, flushing, goosebumps
- Palpitations, respiratory changes
- Emotional



### Cognitive

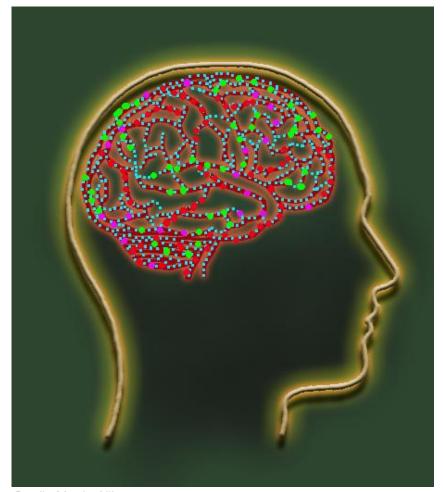
- Impaired language
- Déjà vu, hallucinations, illusions, or other perceptual distortions

#### Autonomic

- Gastrointestinal sensations
- Sense of heat or cold, flushing, goosebumps
- Palpitations, respiratory changes

#### **Emotional**

Anxiety, fear, joy, or other emotions





# **Generalized Motor Onset Seizures**

## ILAE 2017 Classification of Seizures

### ILAE Classification of Seizure Types Expanded Version <sup>1</sup>

#### **Focal Onset**

#### Aware

**Impaired** Awareness

#### **Motor Onset**

automatisms atonic 2 clonic epileptic spasms <sup>2</sup> hyperkinetic myoclonic tonic

#### Nonmotor Onset

autonomic behavior arrest cognitive emotional sensory

#### focal to bilateral tonic-clonic

#### **Generalized Onset**

#### Motor

tonic-clonic clonic tonic myoclonic myoclonic-tonic-clonic myoclonic-atonic atonic epileptic spasms

#### Nonmotor (absence)

typical atypical myoclonic evelid myoclonia

#### **Unknown Onset**

#### Motor

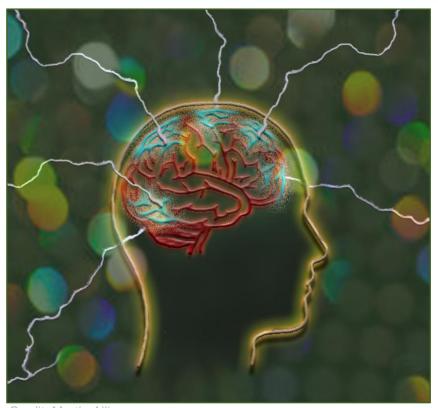
tonic-clonic epileptic spasms Nonmotor behavior arrest

Unclassified 3





Most common and best known of generalized seizures



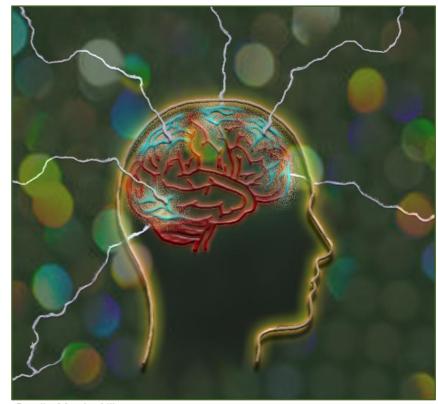
Credit: Martin Allison

- Most common and best known of generalized seizures
- Formerly called Grand Mal seizure



Credit: Martin Allison

- Most common and best known of generalized seizures
- Formerly called Grand Mal seizure
  - During tonic phase of seizure:



Credit: Martin Allison



- Most common and best known of generalized seizures
- Formerly called Grand Mal seizure
  - During tonic phase of seizure:
    - Sudden cry or groan
    - Loss of awareness
    - Muscle stiffening



Credit: Martin Allison



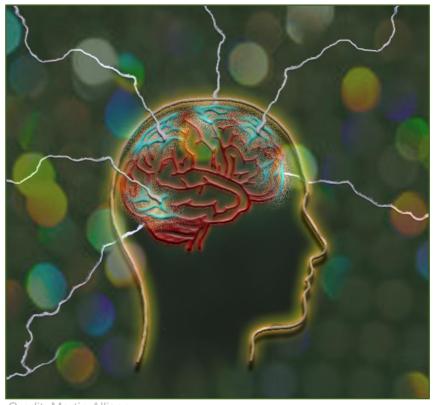
- Most common and best known of generalized seizures
- Formerly called Grand Mal seizure
  - During tonic phase of seizure:
    - Sudden cry or groan
    - Loss of awareness
    - Muscle stiffening
  - During clonic phase of seizure:



Credit: Martin Allison



- Most common and best known of generalized seizures
- Formerly called Grand Mal seizure
  - During tonic phase of seizure:
    - Sudden cry or groan
    - Loss of awareness
    - Muscle stiffening
  - During clonic phase of seizure:
    - Jerking and twitching of muscles in all four limbs
    - Shallow/irregular breathing, drooling or vomiting, skin color changes, and loss of bladder or bowel control



Credit: Martin Allison

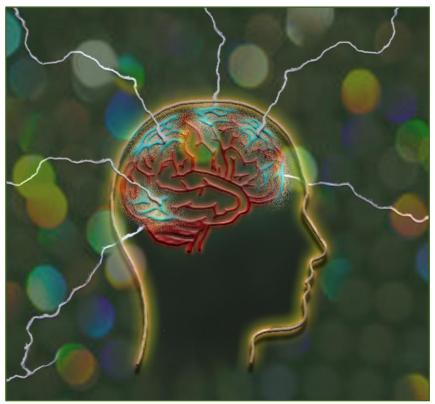
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  - During clonic phase of seizure:
    - Jerking and twitching of muscles in all four limbs
    - Shallow/irregular breathing, drooling or vomiting, skin color changes, and loss of bladder or bowel control
  - After seizure:



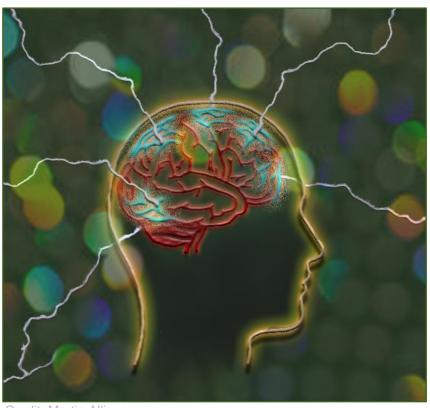
Credit: Martin Allison



- Most common and best known of generalized seizures
- Formerly called Grand Mal seizure
  - During tonic phase of seizure:
    - Sudden cry or groan
    - Loss of awareness
    - Muscle stiffening
  - During clonic phase of seizure:
    - Jerking and twitching of muscles in all four limbs
    - Shallow/irregular breathing, drooling or vomiting, skin color changes, and loss of bladder or bowel control
  - After seizure:
    - Confusion and fatigue

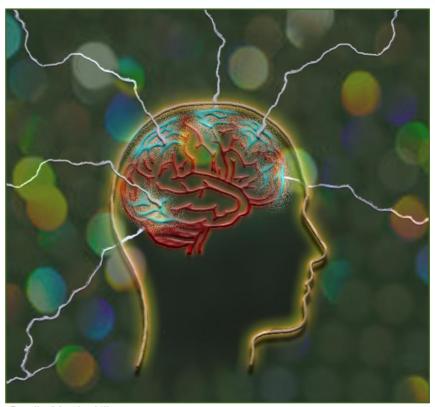


Credit: Martin Allison



Credit: Martin Allison

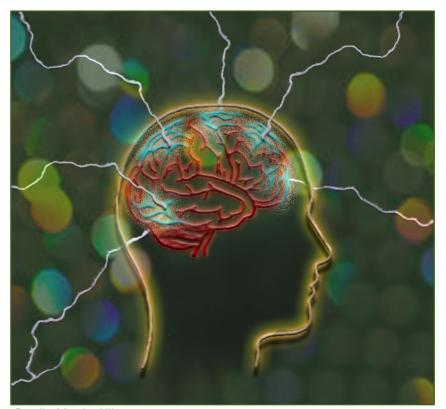
### **Tonic seizures**



Credit: Martin Allison

### **Tonic seizures**

Flexion at the waist and neck



Credit: Martin Allison



### **Tonic seizures**

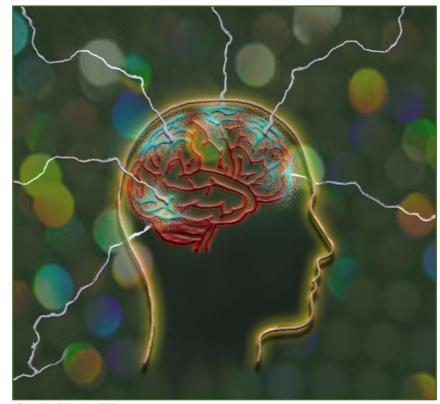
- Flexion at the waist and neck
- Abduction and flexion or extension of the upper extremities



Credit: Martin Allison

#### **Tonic seizures**

- Flexion at the waist and neck
- Abduction and flexion or extension of the upper extremities
- Flexion or extension of the lower extremities



Credit: Martin Allison

#### **Tonic seizures**

- Flexion at the waist and neck
- Abduction and flexion or extension of the upper extremities
- Flexion or extension of the lower extremities
- Typically occur during sleep and last 2-20 seconds.



Credit: Martin Allison

#### **Tonic seizures**

- Flexion at the waist and neck
- Abduction and flexion or extension of the upper extremities
- Flexion or extension of the lower extremities
- Typically occur during sleep and last 2-20 seconds.

#### **Atonic seizures**



Credit: Martin Allison

#### **Tonic seizures**

- Flexion at the waist and neck
- Abduction and flexion or extension of the upper extremities
- Flexion or extension of the lower extremities
- Typically occur during sleep and last 2-20 seconds.

#### **Atonic seizures**

Also known as drop seizures



Credit: Martin Allison

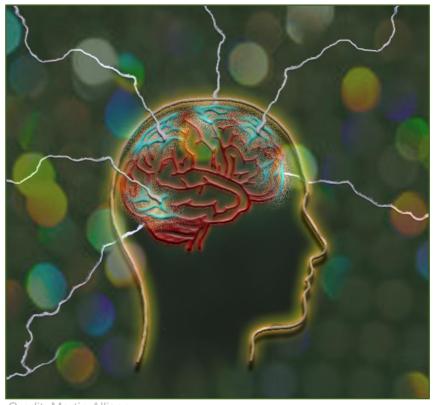


#### **Tonic seizures**

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- Abduction and flexion or extension of the upper extremities
- Flexion or extension of the lower extremities
- Typically occur during sleep and last 2-20 seconds.

#### **Atonic seizures**

- Also known as drop seizures
- Sudden loss of muscle tone, which can result in significant injuries due to sudden falls



Credit: Martin Allison

#### **Tonic seizures**

- Flexion at the waist and neck
- Abduction and flexion or extension of the upper extremities
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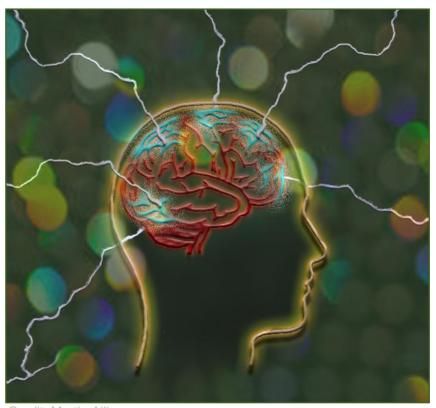
#### **Atonic seizures**

- Also known as drop seizures
- Sudden loss of muscle tone, which can result in significant injuries due to sudden falls
- May manifest as a head nod or jaw drop



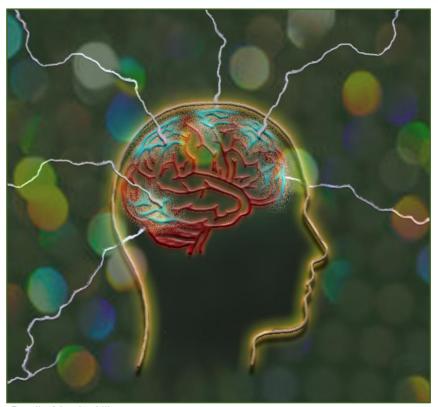
Credit: Martin Allison





Credit: Martin Allison

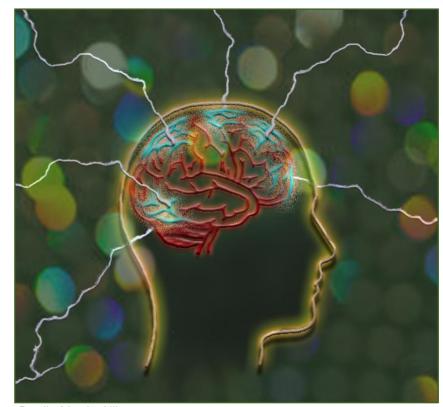
 Brief, shock-like jerk of a muscle or group of muscles



Credit: Martin Allison

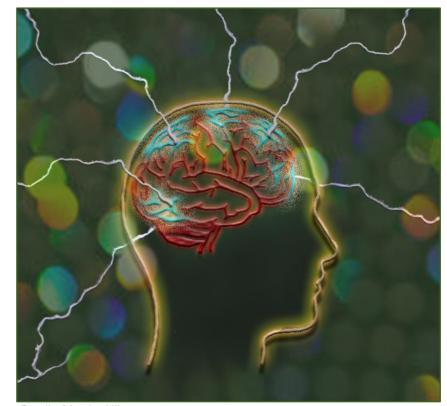


- Brief, shock-like jerk of a muscle or group of muscles
- Usually bilateral and affects the neck, shoulders, upper arms, body and upper legs



Credit: Martin Allison

- Brief, shock-like jerk of a muscle or group of muscles
- Usually bilateral and affects the neck, shoulders, upper arms, body and upper legs
- Usually last less than a second



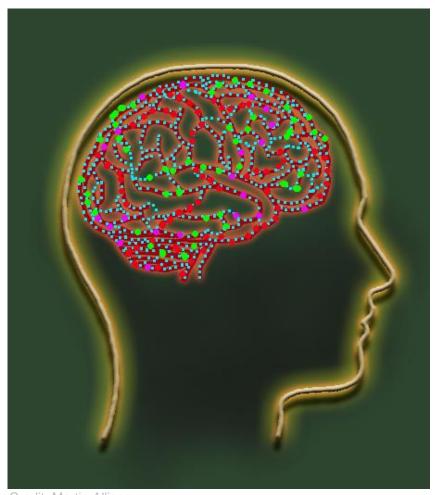
Credit: Martin Allison

- Brief, shock-like jerk of a muscle or group of muscles
- Usually bilateral and affects the neck, shoulders, upper arms, body and upper legs
- Usually last less than a second
- If several occur in succession, may be termed a clonic seizure



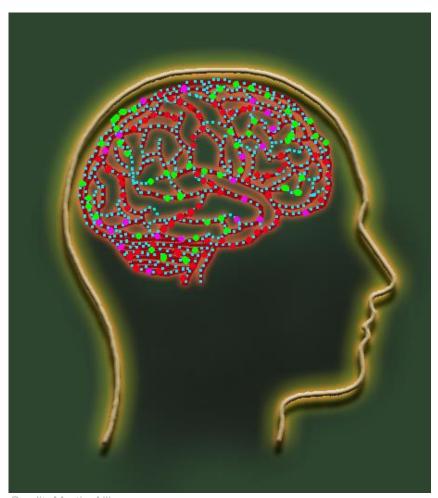
Credit: Martin Allison

# Generalized Nonmotor Onset Seizures



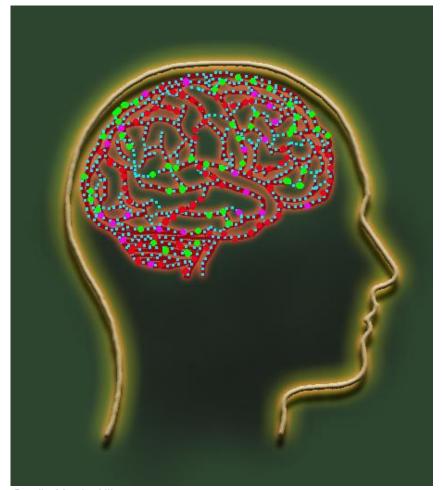


Formerly referred to as Petit Mal



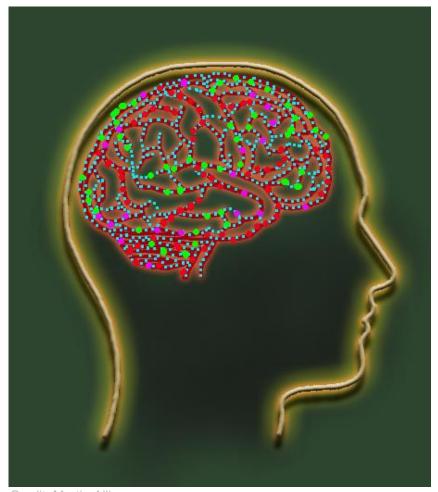


- Formerly referred to as Petit Mal
- Begin between ages 4-14 and resolve by age 18



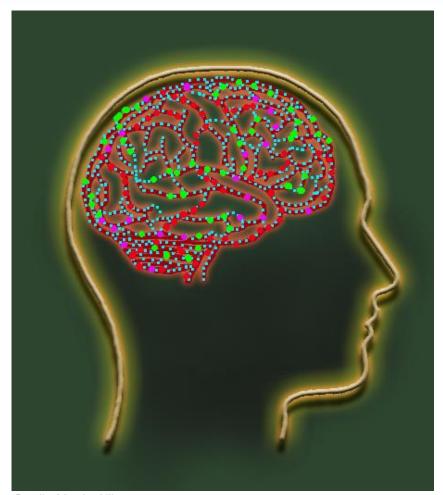


- Formerly referred to as Petit Mal
- Begin between ages 4-14 and resolve by age 18
- Provoked by hyperventilation



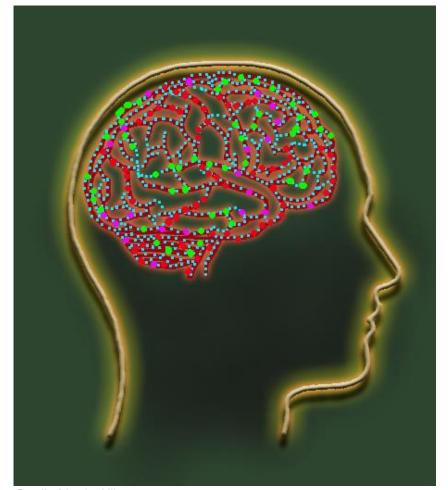


- Formerly referred to as Petit Mal
- Begin between ages 4-14 and resolve by age 18
- Provoked by hyperventilation
- Brief episodes of staring with impairment of awareness and responsiveness



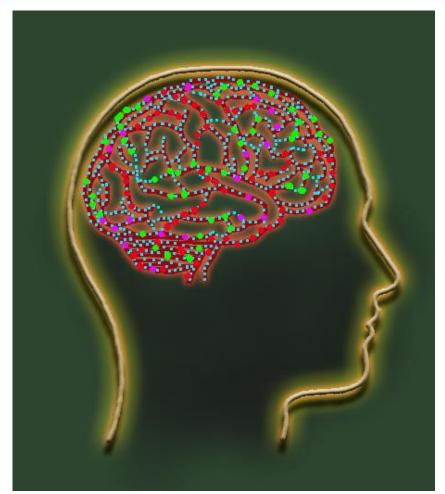


- Formerly referred to as Petit Mal
- Begin between ages 4-14 and resolve by age 18
- Provoked by hyperventilation
- Brief episodes of staring with impairment of awareness and responsiveness
- Usually last from 3-20 seconds



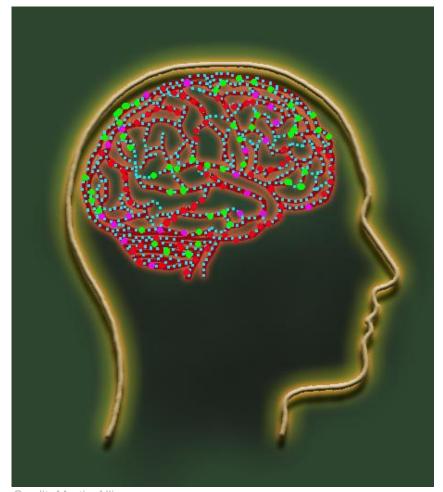


- Formerly referred to as Petit Mal
- Begin between ages 4-14 and resolve by age 18
- Provoked by hyperventilation
- Brief episodes of staring with impairment of awareness and responsiveness
- Usually last from 3-20 seconds
- No warning before seizure





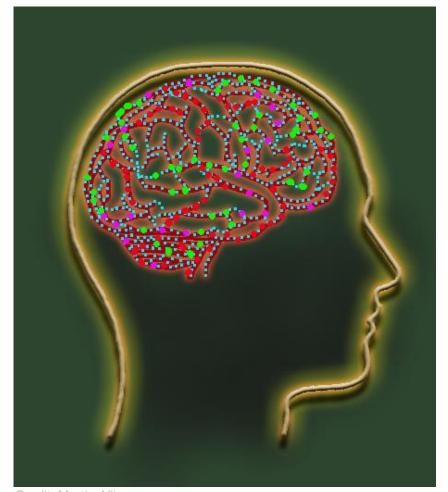
- Formerly referred to as Petit Mal
- Begin between ages 4-14 and resolve by age 18
- Provoked by hyperventilation
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- Usually last from 3-20 seconds
- No warning before seizure
- Individual is alert and attentive immediately after seizure



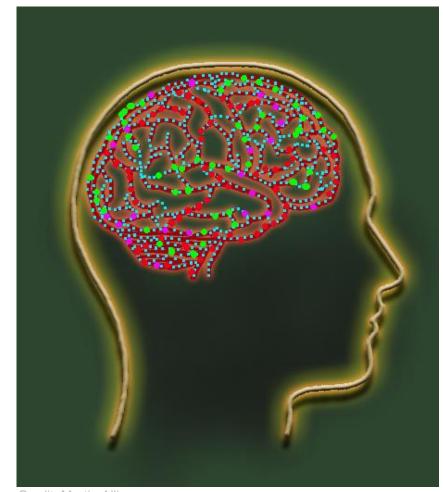




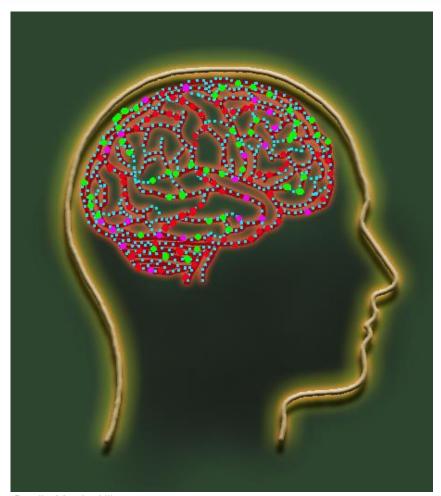
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- No warning before seizure
- Individual is alert and attentive immediately after seizure
- Normal development and intelligence
- The lack of a postictal period is a key feature that allows one to distinguish between Absence and Focal Impaired Awareness seizures

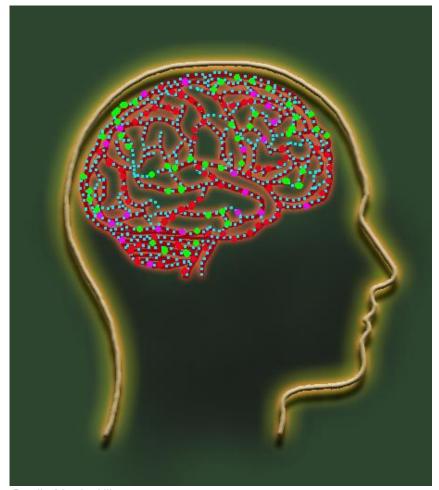


May go undetected for an extended period of time



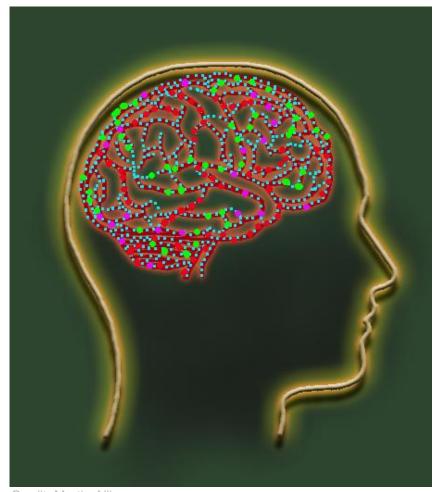


- May go undetected for an extended period of time
  - May occur multiple times a day





- May go undetected for an extended period of time
  - May occur multiple times a day
  - May be mistaken for ADD/ADHD in children



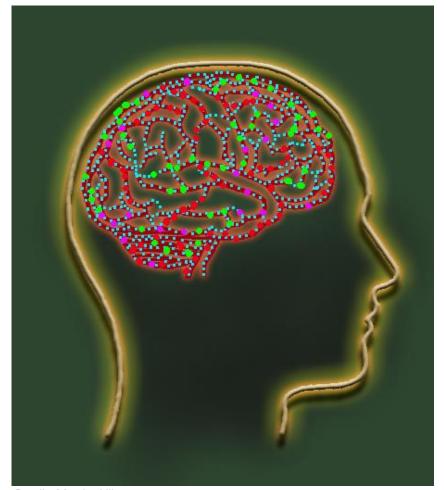


- May go undetected for an extended period of time
  - May occur multiple times a day
  - May be mistaken for ADD/ADHD in children
- Signs that a student may be experiencing nonconvulsive seizures:



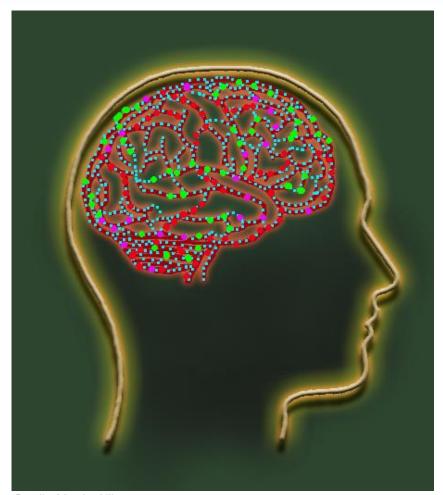


- May go undetected for an extended period of time
  - May occur multiple times a day
  - May be mistaken for ADD/ADHD in children
- Signs that a student may be experiencing nonconvulsive seizures:
  - Frequent periods of confusion, picking at clothes, lip smacking





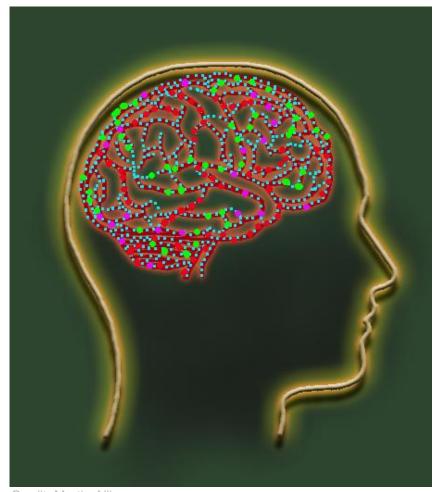
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  - Frequent periods of confusion, picking at clothes, lip smacking
  - Difficulty following along in class





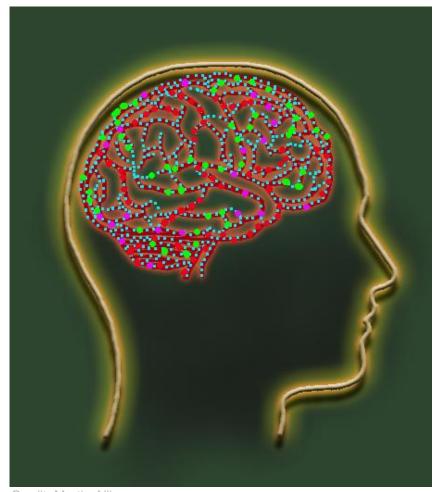


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  - Frequent periods of confusion, picking at clothes, lip smacking
  - Difficulty following along in class
  - Decline in academic work





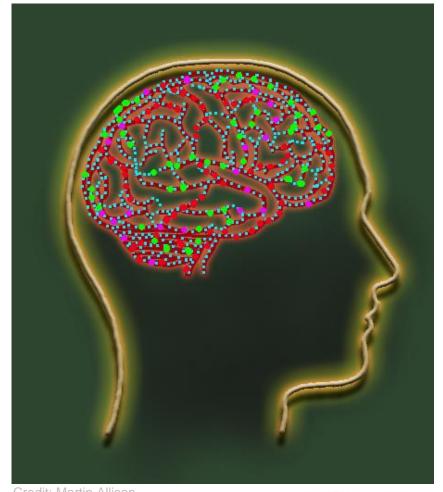
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  - May occur multiple times a day
  - May be mistaken for ADD/ADHD in children
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  - Frequent periods of confusion, picking at clothes, lip smacking
  - Difficulty following along in class
  - Decline in academic work
  - Perceived difficulty with remembering assignments/tasks







- May go undetected for an extended period of time
  - May occur multiple times a day
  - May be mistaken for ADD/ADHD in children
- Signs that a student may be experiencing nonconvulsive seizures:
  - Frequent periods of confusion, picking at clothes, lip smacking
  - Difficulty following along in class
  - Decline in academic work
  - Perceived difficulty with remembering assignments/tasks
  - Changes in emotion/behavior





# **Unknown Onset Seizures**

# **ILAE 2017 Classification of Seizures**

#### ILAE Classification of Seizure Types Expanded Version <sup>1</sup>

#### **Focal Onset**

#### Aware

Impaired Awareness

#### **Motor Onset**

automatisms atonic <sup>2</sup> clonic epileptic spasms <sup>2</sup> hyperkinetic myoclonic tonic

#### **Nonmotor Onset**

autonomic behavior arrest cognitive emotional sensory

#### **Generalized Onset**

#### Motor

tonic-clonic
clonic
tonic
myoclonic
myoclonic-tonic-clonic
myoclonic-atonic
atonic
epileptic spasms

#### Nonmotor (absence)

typical atypical myoclonic eyelid myoclonia

#### **Unknown Onset**

#### Motor

tonic-clonic epileptic spasms Nonmotor

behavior arrest

Unclassified <sup>3</sup>

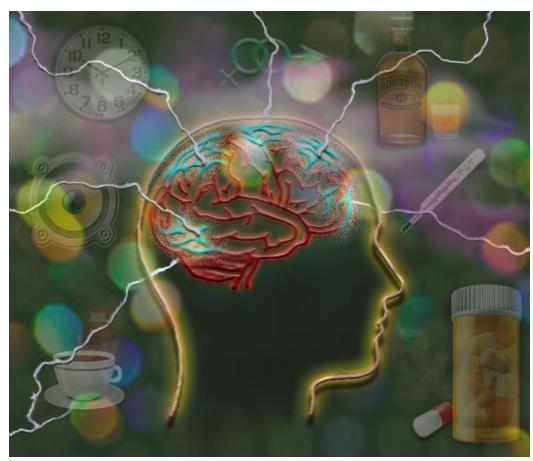
focal to bilateral tonic-clonic



Motor

Nonmotor

**Unclassified** 



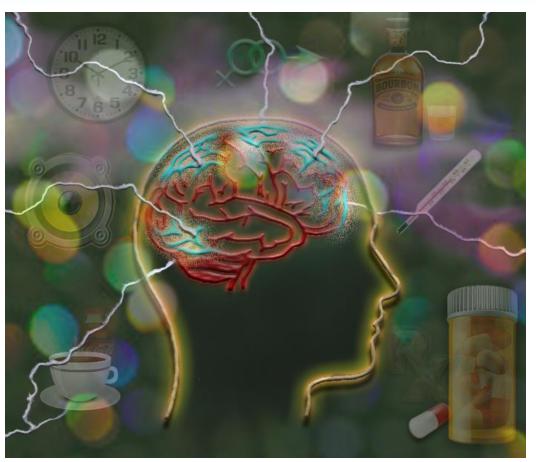
Credit: Martin Allison

#### Motor

- Tonic-clonic
- Epileptic spasms

**Nonmotor** 

**Unclassified** 



Credit: Martin Allison

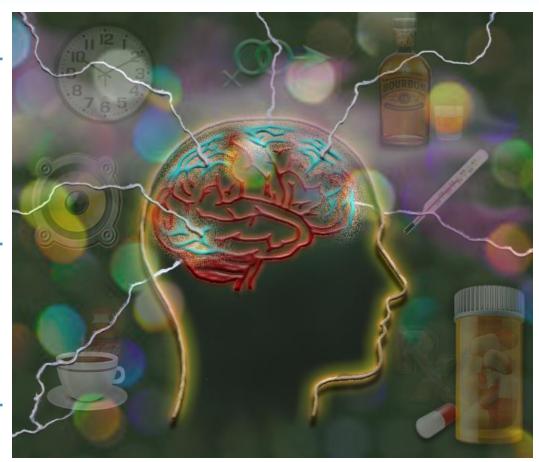
#### Motor

- Tonic-clonic
- Epileptic spasms

#### **Nonmotor**

Behavioral arrest

**Unclassified** 



Credit: Martin Allison

#### Motor

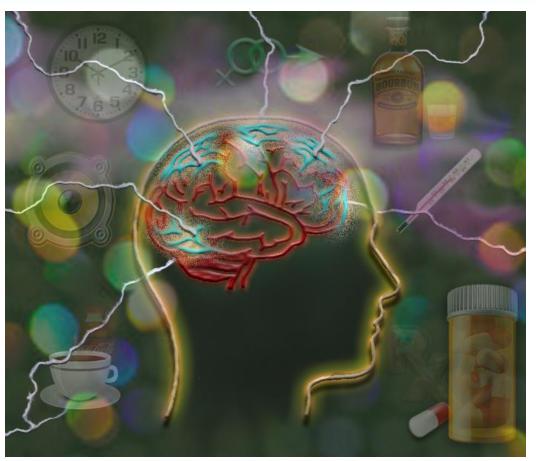
- Tonic-clonic
- Epileptic spasms

#### **Nonmotor**

Behavioral arrest

#### **Unclassified**

 A seizure may be unclassified due to inadequate information or inability to place the type in other categories



Credit: Martin Allison



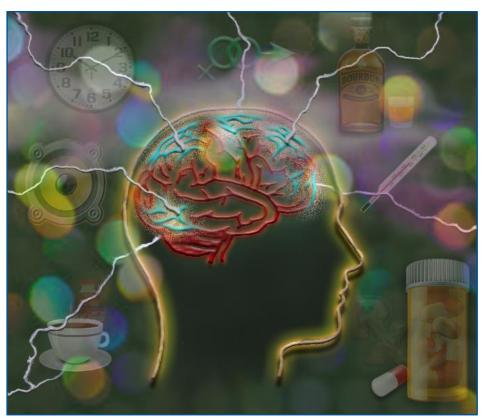
### **How Can I Use This Information?**

Pause and think about how you can use the information discussed in this section in your daily practice.



Credit: Deposit Photos

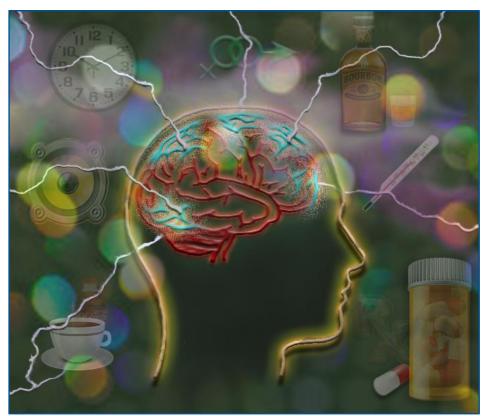
Now that we have:



Credit: Martin Allison

#### Now that we have:

List the phases of a seizure

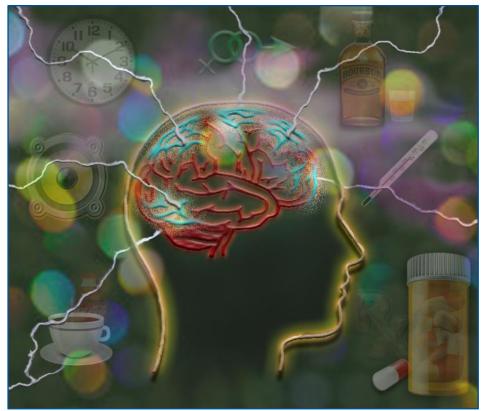


Credit: Martin Allison



#### Now that we have:

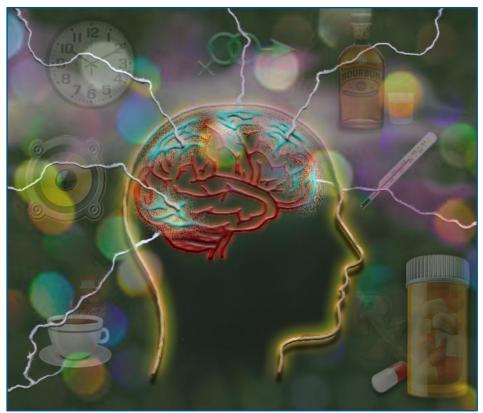
- List the phases of a seizure
- Explain the changes in seizure classification



Credit: Martin Allison

#### Now that we have:

- List the phases of a seizure
- Explain the changes in seizure classification
- Describe the different types of seizures as classified by the ILAE



Credit: Martin Allison

# Wrap-Up

Let's wrap up this video by looking at the Children's Healthcare of Atlanta Epilepsy program and additional resources for you to use.



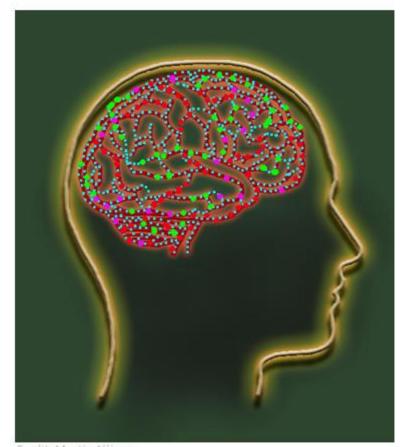
Credit: Martin Allison



### Resources

Web Address	Resource
epilepsy.com	Epilepsy Foundation
seizuretracker.com	Seizure Self Management App (Free)
cdc.gov/epilepsy	Center for Disease Control Epilepsy Program
aesnet.org	American Epilepsy Society
webease.org	Web Based Self Management Program (Free)
choa.org/medical-services/neurosciences/epilepsy	Children's Healthcare of Atlanta Comprehensive Epilepsy Center
	Susan McCallum 404-785-3720 Susan.McCallum@choa.org

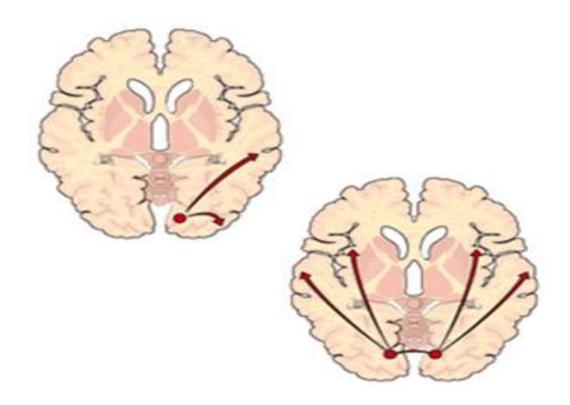
1. Overview of Epilepsy



Credit: Martin Allison



- 1. Overview of Epilepsy
- 2. Seizure Phases and Classifications



- 1. Overview of Epilepsy
- 2. Seizure Phases and Classifications
- 3. Seizure Diagnostics and Treatments



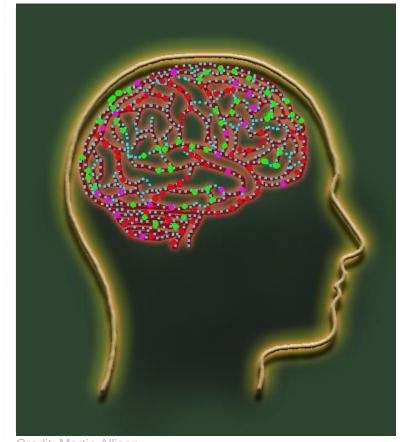
Credit: Children's Healthcare of Atlant



- 1. Overview of Epilepsy
- 2. Seizure Phases and Classifications
- 3. Seizure Diagnostics and Treatments
- 4. Seizure First Aid



Credit: Deposit Photos



Credit: Martin Allison

# **Epilepsy Seizure Phases**& Classifications

### **Children's Comprehensive Epilepsy Center**

Presented by Susan McCallum, MSN, RN Children's Comprehensive Epilepsy Center 404-785-3720 www.choa.org





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# Video & Graphic Credits

#### **Video Credits**





**Rectal Diazepam (Diastat)**...University of Wisconsin – Joint Project with Wisconsin Department of Public Instruction



How to Give your Child Midazolam...Children's Hospital Colorado

### **Photo & Graphics Credits**

Martin Allison

Susan McCallum

Mayo Foundation for Medical Education and Research

**Deposit Photos** 





