SEIZURES

THINGS YOU SHOULD KNOW

PREVALENCE

- It is estimated that just over 1% of people in the US have epilepsy.
- Approximately 25% of those with epilepsy have an intellectual disability.
- Approximately 20% of all people with an intellectual disability have epilepsy.
- There are many reports regarding epilepsy in individuals with autism. Studies show that about a third to a half of people with autism have a seizure disorder.
- Many people with autism first develop symptoms in their teenage years.

What is a seizure?

A seizure is a sudden, uncontrolled electrical disturbance in the brain.

Seizures can cause changes in awareness, behavior and/or abnormal movements.

Seizures usually last only a few seconds to minutes.

Epilepsy is the tendency to have recurrent nonprovoked seizures.

Nonepileptic Seizures

- Nonepileptic seizures look like seizures but are not caused by abnormal brain activity.
- Causes:
  - fainting
  - anxiety
  - sleep disorders
  - migraines
  - movement disorders
  - TIAs

Provoked Seizures

- Provoked seizures occur because of an abnormality or imbalance in the body
- Once the abnormality is corrected, the seizure will no longer occur.
- Causes include:
  - very high or low blood sugar
  - a quick fall in blood sodium
  - kidney failure
  - low oxygen levels
  - drug toxicity or drug withdrawal

Seizure Triggers

- Missing medications
- Lack of sleep
- Stress, illness or fever
- Some over-the-counter medications
- Diet
- Visual stimuli – flickering, flashing lights
- Loud noises
- Sudden movement, repetitive movements such as tapping

Three main types of seizures:

- Focal onset
- Generalized onset
- Unknown onset

Focal Seizures

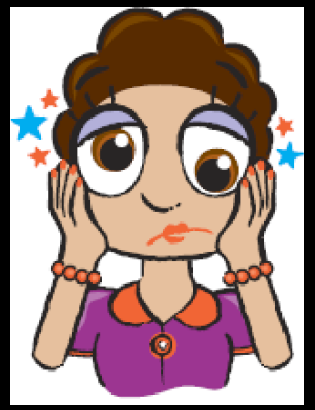
- The term “focal” has replaced “partial” to describe these types of seizures
- These are the most common type of seizure
- They originate or start in one area of the brain
- They can become generalized and spread to other areas

SIMPLE FOCAL SEIZURES (AURAS)

An aura is a subjective experience that is felt by the person having a seizure.

An aura:

- may be sensory, emotional, autonomic or cognitive
- reflects the initial seizure discharge in the brain
- can be an isolated phenomenon
- is often referred to as a warning that a seizure will occur



Examples of Seizure Auras

- Nausea
- Dizziness
- Headache
- Difficulty with speech
- Numbness of hands, lips, tongue
- Unpleasant taste or smell
- Visions, hearing things
- Palpitations

Focal seizures are typically broken down into four areas depending on the location in the brain and parts of the body affected.

1. Motor: affects muscle activity, causing jerking movements of the foot, face, arm or another part of the body
2. Sensory: can cause symptoms affecting the senses such as hearing, hallucinations, and olfactory or other distortions.

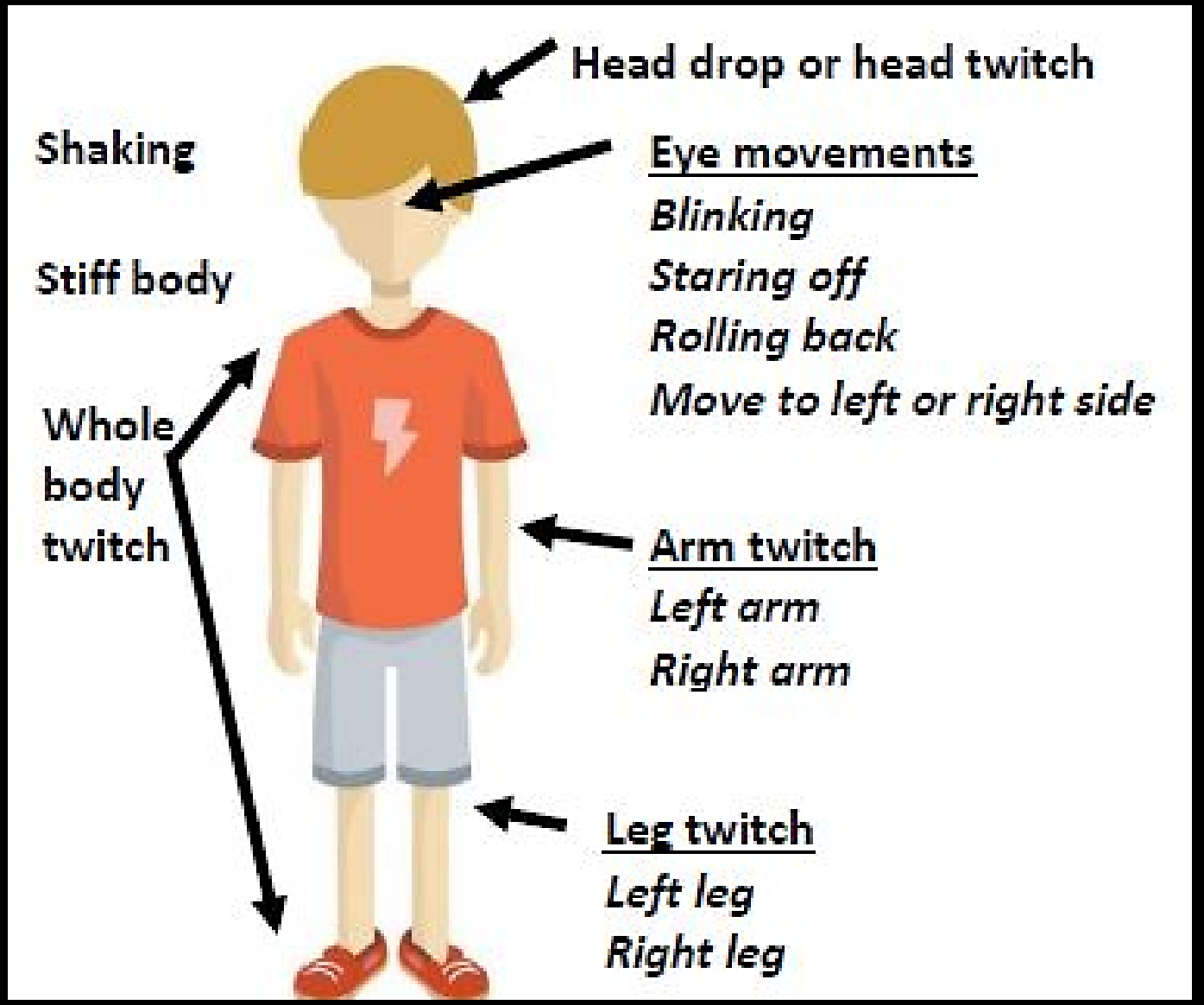
Focal Seizures

3. Autonomic: affects the part of the brain responsible for involuntary functions.
4. Psychic: seizures that strike parts of the brain that trigger emotions or memories of previous experiences, causing feelings of fear, anxiety, or déjà vu.

Focal Seizures

Focal Seizures: Motor Symptoms

- Some type of movement occurs such as:
  - Twitching
  - Stiffening
  - Automatisms



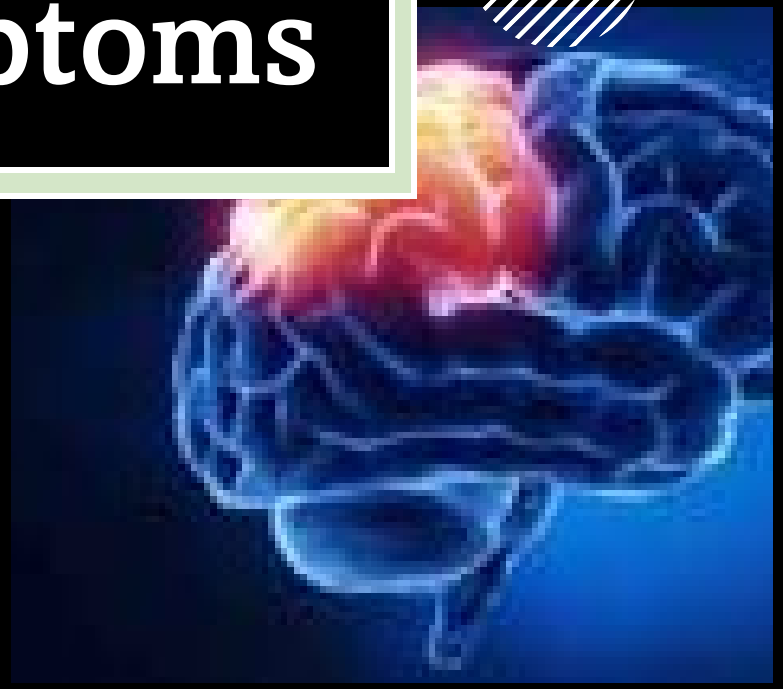
Focal Seizures: Sensory Symptoms

1. Auditory: hearing sounds such as buzzing, ringing, drumming, etc.
2. Gustatory: acidic, bitter, salty, sweet, or metallic tastes
3. Hot or cold sensations
4. Olfactory: smelling an unpleasant odor
5. Somatosensory: tingling, numbness, pain, sense of moving, desire to move
6. Vestibular: dizziness, spinning or sense of rotation
7. Visual: seeing flashing or flickering lights, colors, shapes, patterns

Focal Seizures: Autonomic Symptoms

- Cardiac arrest, slow or fast heart rate
- Palpitations: rapid, strong, or irregular heartbeat
- Hyperventilation, hypoventilation, or altered respiration
- Gastrointestinal: sensations of stomach discomfort, tightness, churning, hunger
- Nausea or vomiting
- Paleness or flushing
- Piloerection: hairs of the skin stand on end

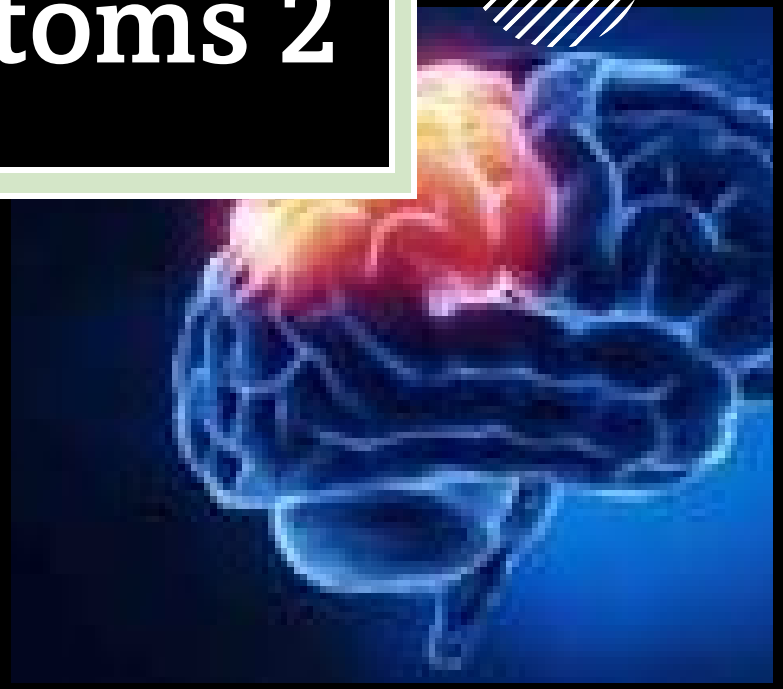
Focal Seizures: Psychic Symptoms



Cognitive

- Aphasia: loss of ability to understand or express speech
- Dysphasia: difficulty expressing speech
- Déjà vu: feeling of having lived through a situation before
- Dissociation: disconnected

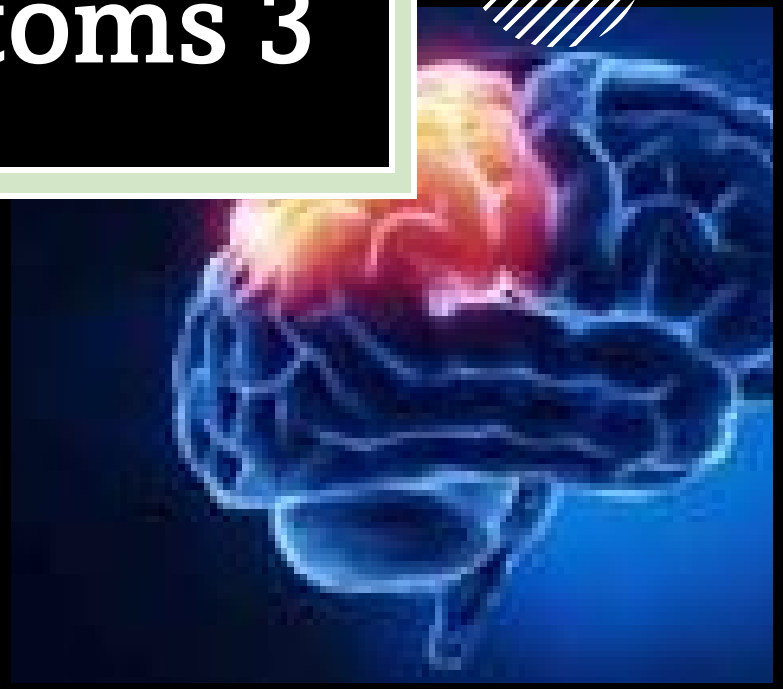
Focal Seizures: Psychic Symptoms 2



Cognitive

- Memory impairment: cannot remember events during the seizure
- Hallucination or illusions: alteration of senses (hearing or vision)
- Neglect: unable to respond to one side of the body

Focal Seizures: Psychic Symptoms 3



Emotional

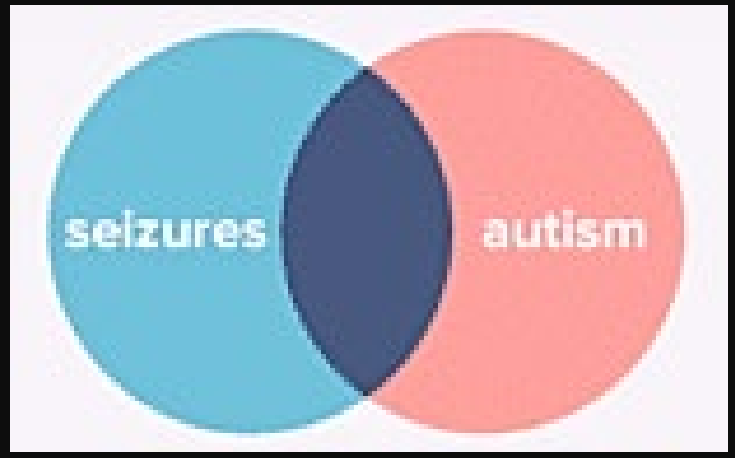
- Agitation, anger: may be accompanied by aggressive behavior, usually seen during the post-ictal period
- Fear, anxiety, paranoia; crying not related to feeling sad
- Laughing, giggling: not related to feeling happy
- Pleasure, joy, bliss

Seizures in Autism

Many symptoms of seizures overlap with autism symptoms, making it hard to differentiate between the two.

Diagnosing epilepsy in autistic people is complicated because:

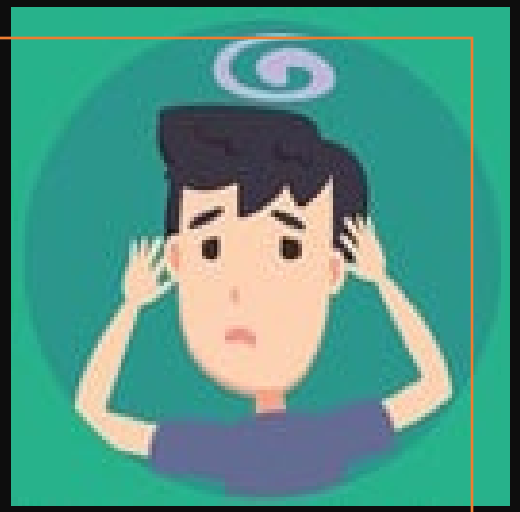
- Repetitive and stereotyped movements common to autism can be mistaken for seizures
- Autistic people might have difficulty tolerating tests for epilepsy



Seizures in Autism

The most common signs of a seizure in someone with autism include:

- Temporary confusion
- A staring spell
- Uncontrollable jerking movements of the arms and legs
- Loss of consciousness or awareness

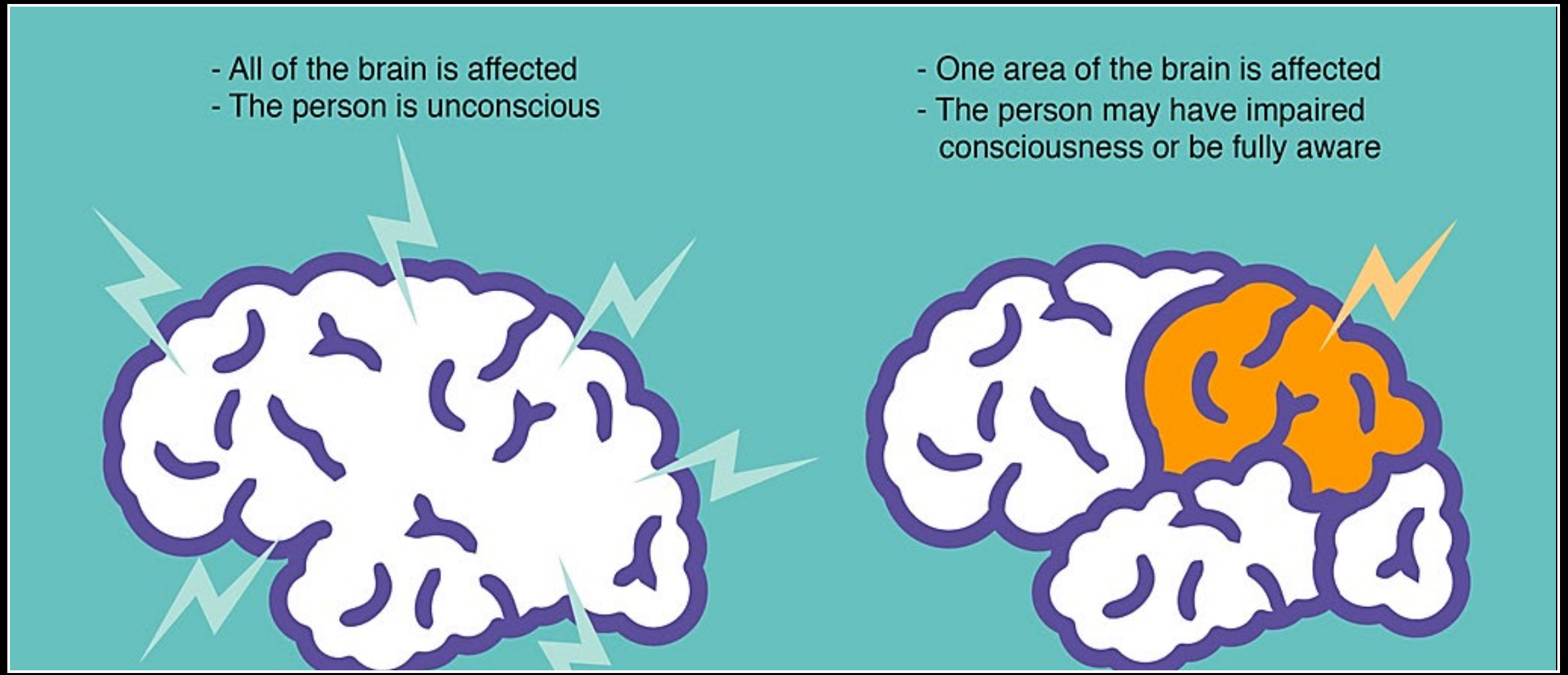


Seizures in Autism: diagnostic pearls

- Episodes that occur only in a specific context, such as when sitting at the dinner table or attending speech therapy, are less likely to be seizure activity and more likely to be a response to an environmental or sensory trigger.
- Variable duration of the episodes—sometimes 10 seconds, sometimes 10 minutes—are less likely to be seizure activity.

- Episodes that occur across environments and look the same every single time with a defined start and end to the episode are more worrisome for seizure.
- Unresponsiveness to vigorous touch elevates concern for seizure; caregivers can be coached to touch the person as soon as possible when an episode begins to see if that changes the behavior.
- The presence or absence of a postictal period may increase suspicion for seizure.

Seizures in Autism: diagnostic pearls



Generalized Seizures vs Focal Seizures

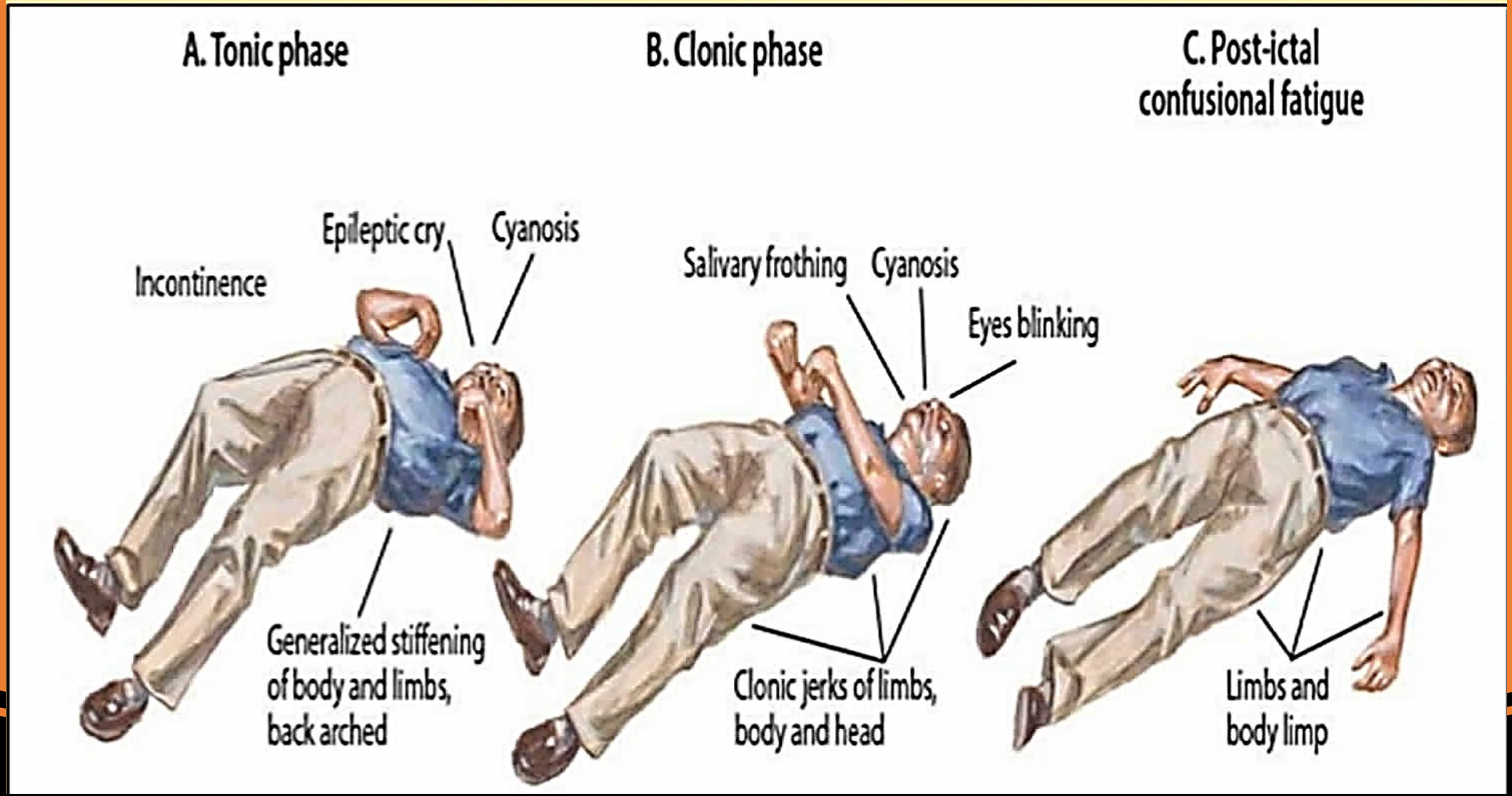
Generalized Onset Seizures

- Start on both sides of the brain
- Can be motor or non-motor (absence)
- Are no longer called “grand mal”
- The term “generalized tonic-clonic” seizure is still used
- Awareness is almost always impaired

Absence Seizures

- Corresponds to the old term “petit mal”
- Begins in both sides of the brain
- Are a non-motor generalized seizure
- Begin and end abruptly, lasting only a few seconds
- Cause lapses in awareness, sometimes with staring
- No aura occurs with an absence seizure

GENERALIZED TONIC- CLONIC SEIZURE



FIRST AID FOR SEIZURES

When someone has a generalized seizure, it is your job to keep them safe.

Steps to take if someone has a generalized seizure:

1. Note the time (provided you have a watch or other device handy), you need to know how long the seizure lasts. If nothing is immediately available to note the time, try to do so as soon as a watch, etc. is available.

2. If not already on the floor, help the person to the floor to prevent injury.
3. If secure in a bed or in a wheelchair, the person can remain there if there is no chance of falling out of the bed or wheelchair.

Steps to take when someone has a generalized seizure:

4. Be sure nothing is tight around the person's neck. Loosen scarves, collars, and tight clothing.

Steps to take when someone has a generalized seizure:

5. Turn the person on their side if lying flat. This helps to prevent choking or aspiration from saliva or vomit.

Steps to take when someone has a generalized seizure:

6. Cushion head with a small pillow or rolled up garment, remove eyewear.
7. Clear surrounding area of anything that is sharp, hard, or hot to prevent injury.

Steps to take when someone has a generalized seizure:

8. Follow protocols for use of a VNS magnet.
9. Stay with the person. Offer comfort, reassurance, and whatever assistance is needed when the seizure is over.

Steps to take when someone has a generalized seizure:

Things to AVOID when someone has a generalized seizure:

DO NOT:

1. Restrain the person
2. Force anything between their teeth
3. Move the person unless in danger, near something hazardous, or in water.

Reporting Seizures

- Report only what is observed
- You cannot diagnose seizures, but if something appears to be seizure activity, report and describe exactly what you observed to medical personnel.
- Attempt to time how long the incident/possible seizure lasts
- Report, when possible, what happened just before the seizure started
- After a seizure, note if the person complains of a headache, appears drowsy, confused or agitated.

SEIZURES

THINGS YOU SHOULD KNOW

For more information refer to the Medication Administration Manual

April 2023, JJustad, MD, Medical Director, DDP