





# Learning Objectives

- Explain the basic disease process associated with seizures.
- List the various causes of seizures.
- List the types of seizures.
- List the signs and symptoms of generalized tonic-clonic (grand mal seizures).

# Learning Objectives

- Define status epilepticus.
- Describe assessment priorities for a seizure victim.
- Describe and demonstrate first aid care for a seizure victim.
- Explain the types of dizziness.
- Describe and demonstrate first aid care for a fainting victim.

# Introduction

- Neurological emergencies such as seizures or fainting are often more graphic than fatal.
- The First Aider should rapidly identify and assess these victims for life threats.
- Often early activation of EMS and aggressive airway management can prevent additional medical complications.

# Seizure

- Involuntary, sudden change in sensation, behavior, muscle activity, or mental status
- Occurs due to electrical discharge occurring in the brain
- Is an emergency occurring in the brain, with manifestations evident in the victim's behavior, convulsions, or changes in mental status

# Causes of Seizures

- Can result from any type of electrical or chemical disturbance in the brain
  - Epilepsy
  - Head injury
  - Hypoxia or other chemical disturbances
  - Alcohol or other poisons
  - Inflammation from bacterial, viral, or parasitic infections
  - Fever
  - Degenerative diseases
  - Tumor
  - Allergic reactions to drugs or other chemicals
  - Scar tissue from prior injuries

# Types of Seizures

- Generalized tonic-clonic (grand mal)
- Absence (petit mal)
- Simple partial (Jacksonian)
- Complex partial (psychomotor)
- Myoclonic
- Atonic



# Status Epilepticus

- Condition where single seizure lasts more than 5 minutes, or series of seizures occur without intervening period of responsiveness
- Can cause irreversible brain damage, and/or cardiac, respiratory, and renal complications
- Indicates a dire medical emergency
- Often results when an epilepsy victim has not taken medication.

# Seizures Assessment

- Generalized tonic-clonic symptoms
  - Aura
  - Tonic phase
  - Hypertonic phase
  - Tonic-clonic phase
  - Autonomic discharge
  - Post-seizure phase
  - Postictal phase

# Assessment Considerations for Seizures

- Obtain medical history from reliable sources
  - History of seizures?
  - Medications for seizures?
  - How did the seizure progress?
  - Has there been any head injury?
  - Does the patient have other medical problems?
- Physical assessment
  - Signs of injury
  - Signs of drug or alcohol abuse
  - Presence of Medic Alert tag

# First Aid Care for Seizures

- Seek medical help if:
  - Multiple seizures or a long seizure (more than 5 minutes)
  - Uncertain of cause for seizure
  - Victim has significant medical illnesses
  - Victim has significant traumatic injuries
  - Victim is an infant, child, or pregnant female
  - Significant assessments indicate deterioration from seizure

# First Aid Care for Seizures

- Take standard precautions, activate EMS.
- Move objects away from victim.
- Establish and maintain an airway.
- Do not give anything by mouth.
- Remove or loosen any tight clothing.



# First Aid Care for Seizures

- Turn victim on left side.
- Do not restrain victim.
- Reassure and reorient the victim after the seizure ceases.



# First Aid Care for Status Epilepticus

- Take standard precautions, activate EMS.
- Place the victim safely on the floor.
- Open and maintain the airway.
- Position the victim to facilitate airway drainage.
- Provide artificial ventilation if needed, even if during seizure activity.
- Carefully monitor vital signs until EMS arrives.

# Dizziness

- Dizziness (or vertigo)
  - Commonly described as woozy, light-headed, or dream-like states
  - True vertigo involves a hallucination of motion (sensation of spinning or whirling)



# Dizziness

- Signs and symptoms
  - Central vertigo is less common but most serious
    - Caused by central nervous system dysfunction
    - Eye muscle changes, pupillary changes, facial droop
    - No evidence of nausea, vomiting, or hearing loss
  - Labyrinthine vertigo
    - More common, inner ear disturbance
    - Nausea, vomiting, eye twitching, pale and moist skin, rapid heart beat

# Dizziness

- First aid care
  - Take standard precautions.
  - Reassure the victim, help them to position of comfort.
  - Conduct an assessment to rule out immediate life threats or serious conditions.
  - Encourage the victim to seek medical care.

# Fainting

- Also known as *syncope*
- Brief loss of consciousness
- Triggered by inadequate brain oxygenation
- Victim collapses, and when in horizontal position perfusion to brain improves and they rapidly “wake up”
- Is not itself a disease but can be a symptom of a range of underlying conditions

# Fainting

- Signs and symptoms
  - Nausea, abdominal pain
  - Light-headedness, weakness
  - Possible shaking
  - Pounding pain in the head

# Fainting

- First aid care
  - If they have not fainted yet, have victim sit down or lie down with feet elevated.



# Fainting

- First aid care
  - If victim has already fainted, keep them supine.
  - Monitor for vomiting, loosen tight clothing.
  - Assess victim for any concurrent life threats.
  - Treat any injuries caused by fall.
  - Do not allow recovering victim to stand up suddenly.
  - Move victim to fresh air, place cool and damp cloth on the face.

# Summary

- A seizure is an emergency that occurs in the brain, with body-wide manifestations.
- Simple seizures, fainting, and dizziness are not fatal in most situations.
- Each victim with these type of emergencies should still be assessed thoroughly, and transported by EMS if any significant findings or irregularities are noted.