



In the Know's Inservice Club
presents
A Disease Process Module:
Understanding Epilepsy & Seizures

Instructions for the Learner

We hope you enjoy this Inservice, prepared especially for nursing assistants like you. You work very hard, and we appreciate the effort you make to complete these educational materials. It shows your desire to continue learning and growing in your profession!

After finishing this inservice, you will be able to:

- Describe at least two kinds of seizures.
- Explain what happens to the body during a typical seizure.
- Discuss how seizures are treated.
- Describe two seizure-related events that are life-threatening.
- Demonstrate safety precautions for clients with seizure disorders.

If you are studying the inservice on your own, please:

- Read through all the attached materials. You may find it useful to have a highlighting marker nearby as you read. Highlight any information that is new to you or that you feel is especially important.
- If you have questions about anything you read, please ask _____.
- Take the quiz. Think about each statement and fill in the best answer.
- Check with your supervisor for the right answers. You pass the quiz with at least eight correct answers! Print your name, write in the date, and then sign your name.
- Keep the inservice information for yourself, and turn in the quiz page to _____ no later than _____.
- Show your Inservice Club Membership Card to _____ so that it can be initialed.

THANK YOU!



Keep reading to learn more about:

- The history of epilepsy and seizures.
- Different types of epilepsy.
- The causes of seizures.
- Safety precautions for clients with seizure disorders.

What is a Seizure?

If you were asked to describe what happens when someone has a seizure, what would you say? Most people would describe a person who:

- Loses consciousness.
- Falls to the floor.
- Twitches uncontrollably.
- Drools or foams at the mouth.
- Becomes incontinent.

If this is your idea of a seizure, you're not wrong. But, this is just one kind of seizure. Other types of seizures may cause people to:

- Stare blankly into space.
- Seem unable to answer when spoken to.
- Appear dazed or confused.
- Blink their eyes over and over again.
- Nod their heads repeatedly.
- Make random movements, like chewing or picking at their clothing.
- Experience muscle stiffness that travels from one body part to another.



People with seizure disorders live with the knowledge that their next seizure could begin at any time, during any activity. For example, a seizure could hit in five *minutes* or in five *months*, during a *morning walk* or while they are *fast asleep*.

Epilepsy is the most common seizure disorder. Around the world, there are 39 million people with epilepsy. Most of them experience prejudice and discrimination because people around them misunderstand their condition.

Keep reading to learn more about seizures and epilepsy—and how you can help clients who have a seizure disorder.

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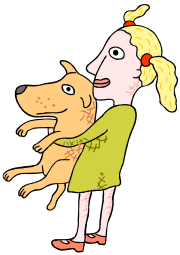
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The History of Epilepsy & Seizures



• People have been having seizures for as long as there have been people.



• It's possible for *any* living creature to have a seizure. (For example, you may have owned a dog or cat that suffered from epilepsy.)

• Doctors have written about seizures for at least 3000 years.

• In ancient times, it was believed that during a seizure, a person was being punished by gods or demons.

• Early treatments for seizures were meant to drive away any evil spirits. These treatments included:

• Drinking the warm blood of a gladiator.

• Wearing a necklace made from the penis of a seal.

• Drinking a mixture of mistletoe and dog urine.

• Having a priest perform an exorcism.

• Sometimes, people with seizures were punished—including being burned at the stake.



• In 400 B.C., the physician, Hippocrates, suggested that epilepsy was a brain disorder. He was right!



• In the 1800's, most doctors still believed that epilepsy was a form of insanity, often brought on by too much sexual activity. Many people with epilepsy were kept in mental institutions.

• The first medicine that helped fight seizures was developed by an English physician in 1857.

• By the early 1900's, two more medications—Phenobarbital and Dilantin—were discovered. These drugs are still being used to treat seizures today.

• During the last century, neurologists—*not psychiatrists*—began to treat people with seizures.

What Do All These People Have In Common?

Julius Caesar (*Roman leader*)

Florence Griffith Joyner (*athlete*)

Richard Burton (*actor*)

Napoleon (*French leader*)

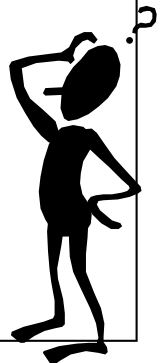
Edgar Allen Poe (*author*)

Danny Glover (*actor*)

Michelangelo (*artist*)

Neil Young (*musician*)

Answer: They were all diagnosed with epilepsy.



Terms You Should Know

“I was horrified when I learned that my son had epilepsy. When I was a little girl, my mother had told me that people with epilepsy eventually go insane.”



“It took years of people laughing at me before someone figured out exactly what my spells were.”

“I really hate having a seizure. Everyone looks at me like I’m faking it.”

Seizure. A sudden discharge of electrical activity in the brain. It causes changes in behavior, consciousness or perception.

Aura. A feeling or movement that serves as a “warning sign” that a seizure is beginning. It may include odd actions, visions, sounds or sensations.

Neurologist. A doctor who specializes in disorders of the brain and the nervous system.

Partial Seizure. A seizure that involves only *one* part of the brain.

Generalized Seizure. A seizure that involves the *entire* brain.

Absence Seizure. A brief seizure (lasting less than 20 seconds) that may include staring, blinking and automatic gestures. This is also known as a “petit mal” seizure.

Tonic Clonic Seizure. A seizure that involves stiffening of the body and muscle jerks. This is also known as a “grand mal” seizure.

Status Epilepticus.

A seizure or series of seizures that last longer than five minutes. This can be a life-threatening condition—and it requires immediate medical attention.



Interesting Facts!

- The word epilepsy comes from the Greek word for “attack”.
- Ten out of every thousand Americans will have *at least* one seizure during their lifetime.
- In the average person, brain cells send about 80 signals per second. During a seizure, brain cells can send as many as 500 signals per second!



- More than two million people in the U.S. have epilepsy.
- Most seizures last only a minute or two and are *not* life-threatening.
- Epilepsy can appear at any age, but it most often occurs before age sixteen.
- There have been many cases of people being arrested for drunk and disorderly conduct—when, actually, they were having a seizure.

Epilepsy Is...

- People are not less intelligent because they have epilepsy.



- Epilepsy is not *caused* by watching too much television or by playing video games. However, a seizure may be *triggered* by these activities.
- While brain damage can lead to epilepsy, seizures do not usually cause *additional* brain damage.

- A brain disorder that puts people at risk for having seizures.
- Usually controllable with medications and/or surgery.
- Sometimes fatal, causing thousands of deaths per year.
- A condition that occurs in both children and adults.

Types of Epilepsy

- **Absence Epilepsy.** People with absence epilepsy have seizures that cause them to be “out of it” for brief periods of time. They may also make automatic movements—such as wiggling an arm or blinking their eyes. When the seizure is over, the person is able to resume normal activity immediately. Absence seizures may occur as many as 500 times per day!
- **Psychomotor Epilepsy.** This is another name for partial seizures. People with this type of epilepsy may experience sudden feelings of joy, anger, sadness or nausea. They may also hear, smell, taste, see or feel things that are not real. People with psychomotor epilepsy may or may not lose consciousness.

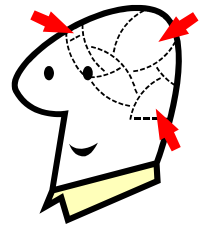


Epilepsy Is Not...

- A disease—it's a symptom of abnormal brain activity.
- Contagious.
- Caused by mental illness.
- Something to feel ashamed or frightened about.
- A reason to restrain clients.

- **Other Epilepsies.** Some types of epilepsy are named after the part of the brain involved in the seizures. For example, people may suffer from epilepsy of the:

- Temporal lobe.
- Frontal lobe.
- Occipital lobe.
- Parietal lobe.



There are over thirty different types of epilepsy, but they all cause two main types of seizures:

- **Partial seizures**, which involve only one part of the brain and may or may not cause unconsciousness.
- **Generalized seizures** which involve the entire brain and affect the whole body.

What Happens During a Seizure?

“My seizures start with a funny feeling at the top of my stomach. Then, my wife says I just stop and stare. I don’t shake or jerk, but sometimes I make chewing motions with my mouth.”

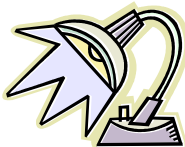


“My whole left hand or arm shakes for a few minutes and then it’s over. I have no control over it, but I’m awake and alert for the whole thing.”

While there are many variations, a typical seizure happens something like this:

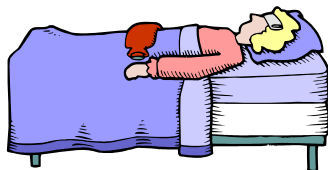
1. There’s a Trigger

Something *triggers* abnormal activity in the brain. This might be anything from a flashing light to a change in the body’s hormone levels. For some people, the trigger is the same every time.



2. Then Comes an Aura

Many people experience an *aura* shortly before a seizure begins. This warning sign could be something like a ringing sound, a specific smell or a vision problem. Some people learn to lie down or take other safety precautions when they experience an aura.



3. The Seizure Starts

At this point, the actual seizure activity begins. This may be barely noticeable—such as the twitching of a facial muscle. Or, it may include full body convulsions.

4. Followed By the Postictal Phase

After the seizure has ended, most people need some time for the body to return to normal. This is known as the *postictal* phase. It may be short—or it may last several hours.



5. Or By Reentry

Unfortunately, some people don’t return to normal after the initial seizure. Instead, the seizure activity starts all over again. (Doctors call this *reentering* the seizure phase. It can happen more than once and may become a medical emergency.)

More About Triggers...

Keep in mind that a number of things can trigger a seizure, including:

- Lack of sleep.
- Drinking alcohol.
- Stress.
- Hormone changes during the menstrual cycle.
- Smoking cigarettes.
- Skipping a medication dose.



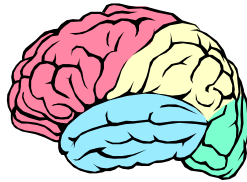
- Flashing lights, such as the flicker of a television screen or a computer monitor.
- Bathing in hot water.

If your client has a seizure disorder, try to watch for clues about what might trigger your client’s seizures. Then, help your client avoid those triggers!

What Causes Seizures?

- Having one seizure does not mean that a person has epilepsy. Doctors don't diagnose epilepsy until a person has had at least *two* seizures.
- Many cases of epilepsy can be prevented if people use seat belts, bicycle helmets, child car seats and other safety equipment that prevents head injury.
- Good prenatal care also helps prevent brain damage in a developing fetus.

Anything that disturbs the normal pattern of brain activity can lead to seizures—and, sometimes, epilepsy. This includes:



- Genetic defects.
- Developmental disorders such as cerebral palsy.
- Brain tumors.
- Head injuries.
- Strokes.
- Heart disease.
- Alcoholism.
- Alzheimer's Disease.

- High fevers.
- Infections such as meningitis, AIDS or encephalitis.
- Poisoning from substances like lead, carbon monoxide.
- Reactions to prescription drugs.
- Use of illegal drugs.



There are at least 150 different causes of seizure disorders. Yet, seven out of ten people never learn the cause of their seizures.

How Is Epilepsy Diagnosed?

Doctors use a number of different tests to help them diagnose epilepsy. These tests include:

EEG Monitoring.

Electroencephalograms—or EEG's for short—measure brain waves. Often, doctors want to test people's brain waves while they are awake and while they are sleeping. They look carefully for any changes in the brain wave patterns.

Brain Scans.

By using fancy machines, doctors can take pictures of the brain to see if there are any abnormalities.

Blood Tests.

While blood tests can't diagnose epilepsy, they can help doctors decide if there is a *genetic* cause for the seizures. Blood tests might also show if someone has an infection, lead poisoning or other illness that is causing the seizures.

Medical History.

Doctors pay close attention to a person's medical history, including any family history of epilepsy.



How Are Seizures Treated?

- Doctors don't usually treat people with anti-seizure drugs until they have had *at least* two seizures.
- For every 100 people with epilepsy, 80 will be able to control their seizures by taking anti-seizure drugs or by having surgery.
- Epilepsy can't be cured. However, for some people, the disorder does eventually go away.

Medications

- There are over two dozen different anti-seizure medications. Some people must take more than one kind at a time to control their seizures.
- For treatment to be successful, it's important to keep a steady level of medication in the blood. This means taking each dose of medication on time!



Surgery

- The most common type of surgery for seizure disorders involves removing a small part of the brain—the area where the seizures begin. This surgery works well for people who suffer from partial seizures which affect just one part of the brain.

- Other surgeries are more complex. For example, one procedure—performed only in children—involves removing half of the brain.

Devices

- In 1997, the U.S. government approved the use of a “vagus nerve stimulator”. This battery-operated device is inserted under the skin of a person's chest. It sends short bursts of electricity to the brain. This device can help reduce seizure activity by up to 40%.



Diet

- Some studies have shown that a strict diet may help reduce seizures—especially in children. This “ketogenic” diet involves eating high fat, low carbohydrate foods.

Are There Side Effects to Treatment?

There are many possible side effects to anti-seizure medications, including:

- Fatigue.
- Clumsiness.
- Nausea and/or vomiting.
- Increased bone loss which may lead to osteoporosis.
- Dizziness.
- Constipation.

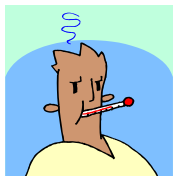


- Problems with concentration.
- Dry, flaky skin.
- Temporary hair loss.
- Weight loss or gain.

If someone gets *too much* anti-seizure medication, it can be toxic. Signs of toxicity include:

- Excessive drowsiness.
- An unsteady gait.
- Increased thirst, hunger and urination.

Children & Seizures



Febrile Seizures

- It's common for a child with a high fever to have a seizure. This can be very scary...but it does not mean that the child has epilepsy.
- Most children who experience just one fever-related seizure do not need anti-seizure drugs.
- A febrile seizure usually lasts for only three or four minutes.

- Half of all epilepsy cases begin before the age of twenty-five. Many cases start in early childhood—when the brain is still immature.
- Epilepsy can begin in infancy. The most common type of infant epilepsy is called infantile spasms. These are clusters of seizures that usually begin before age six months. During these seizures, an infant may bend and cry out.

- There are about 300,000 children in America who have some kind of seizure disorder.



- Seizures may interfere with a child's ability to learn—especially if the child has frequent *absence* seizures.
- Children may need help explaining their seizure disorder to their friends.

Adults & Seizures

- People with seizure disorders may suffer from depression due to the chronic nature of the condition. It can be tough for people to live active lives if they're afraid that a seizure could begin at any time. Watch your clients for signs of depression—and report any changes in their emotional status.
- Adults with seizure disorders marry and have children just like other people.
- Parents with epilepsy have a *slightly* higher risk of giving birth to a child with epilepsy.



- Men with seizure disorders *may* experience a lower sex drive. In rare cases, sexual activity can bring on a seizure, but this is *not* the case for most people.
- Women with epilepsy may experience reproductive problems, including:
 - Irregular menstrual cycles.
 - Difficulty getting pregnant.
 - An increased risk of having children with birth defects.
- People with seizure disorders may have difficulty concentrating. Their lack of attention may be a result of the seizures themselves or a side effect of their anti-seizure medicine. Be patient with your clients—even if you have to repeat yourself now and again!

The Elderly & Seizures

Get help *right away* if your client:

- Has a seizure and is pregnant or has diabetes.
- Begins seizure activity while in water.
- Has a seizure that lasts longer than five minutes.
- Does not begin breathing again after having a seizure.
- Begins to have a *second* seizure right after the first.
- Gets injured during a seizure.

- Would it surprise you to learn that many people have their first seizure after age 65?



- There are 60,000 new cases of epilepsy diagnosed every year among senior citizens.
- Some common causes of seizures in the elderly include:
 - Stroke.
 - Heart disease.
 - Head injury (often due to a fall).
 - Alcoholism.
 - Brain tumors.
 - Dementia.

- It can be difficult to diagnose epilepsy in an older person since some of the signs—confusion, “blackouts” and memory lapses—might be overlooked as a “normal” part of aging.
- Older people may be afraid of seizures because they remember a time when people with seizures were considered insane and could not be helped. Try to reassure them that times have changed and that seizures are not a sign of mental illness!
- Keep in mind that an older person may take longer than a younger person to recover from a seizure.

When Is a Seizure An Emergency?

There are two life-threatening conditions related to seizures:

1. Status Epilepticus

- This severe condition involves extended seizure activity—lasting longer than five minutes.
- *Status epilepticus* affects nearly 200,000 Americans every year—killing about 45,000 of them.
- Most of the people who experience *status epilepticus* have no history of epilepsy.
- *Status epilepticus* is especially dangerous for elderly people.

2. Sudden Unexplained Death



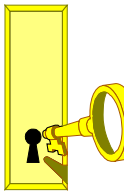
- *Sudden Unexplained Death* only happens to people who have a history of seizures.
- The death occurs while people are sleeping and has nothing to do with seizure activity or status epilepticus.
- *Sudden Unexplained Death* tends to happen to young men whose epilepsy is not well controlled.


Safety Precautions for Seizures

If your client is in the bath tub when a seizure starts, do the following:

- Support the person's head and face so they stay above water.
- Remove the person from the water as soon as possible. (But, make sure you have enough help.)
- Notify your supervisor right away. The client may have swallowed some water and may need immediate medical attention.

Seizures require a number of important safety measures. When you work with clients who may have a seizure disorder, be sure to:

- Remind your clients to keep the bathroom door unlocked—in case a seizure starts while they're in the bathroom. 
- Consider using a bath or shower chair with a safety strap. Put a non-slip mat in the tub.
- Keep water levels in the bath tub low—and make sure the bath water isn't too hot.
- Pad any sharp corners on tables and other furniture in the client's living area.
- Encourage your clients to only sit in chairs that have arms. (This may prevent them from falling during a seizure.)

- Move bedside tables away from the bed.
- Teach your clients not to smoke cigarettes when they are alone.
- Avoid using breakable glasses and plates when serving meals to a client who may have a seizure.
- Remember that some people wander during a seizure. Be sure to protect your clients from wandering into unsafe areas.
- Provide frequent breaks during exercise periods with your clients. Becoming overheated could trigger a seizure. 
- Keep in mind that people don't feel pain during a seizure. Do your best to protect them from injury.

If you witness a seizure, take these steps:

1. Help the person lie down and turn on one side. Loosen any clothing around the person's neck. Cushion the head.
2. DON'T PUT ANYTHING IN THE PERSON'S MOUTH! (*Remember...it's impossible to swallow your tongue!*)
3. Make sure the person has plenty of room—with no dangerous objects nearby that could cause injury. But, don't restrain the person.
4. Stay calm. People having seizures may lose control of their bowels or bladder. They may turn blue and blood may come from their mouths (if they bite their tongues). Seizures can *look* more serious than they are.
5. If the seizure lasts longer than four minutes or a second seizure starts right after the first one, call for immediate help. Otherwise, after the seizure, help the person to a comfortable resting position and report the incident.

Lifestyle Changes

- Encourage your clients to wear a medical ID necklace or bracelet so that lets people know they have a seizure disorder.
- Did you know that there are special “therapy dogs” helping to protect people from injuries during a seizure? The dogs are able to sense that a seizure is about to start. They warn their owners—and can even fetch a blanket or cell phone!

- People who have seizures may feel embarrassed, frustrated or depressed about their condition. Unfortunately, emotional stress can make a seizure disorder worse. Help your clients reduce and/or cope with the stress in their lives.

- Make sure that your client’s friends and family members understand how seizures affect their loved one. The more they understand, the more supportive they can be.

- If your clients cook for themselves, encourage them to:

- Use the back burners on the stove instead of the front ones.
- Turn saucepan handles inward.



- Cook foods in a microwave oven whenever possible.
- Use unbreakable containers for cooking, storing and serving foods.

- Some clients may benefit from carrying a small portable phone or beeper in case they have to call for help and can’t get to a regular phone.

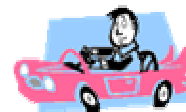


- If your clients have an aura before their seizures, teach them to lie down on their sides as soon as the warning occurs.

- Keep in mind that many people with seizure disorders are able to maintain a “normal” lifestyle—going to work or school, raising families and participating in sports. However, people who have *frequent* seizures need to take reasonable safety precautions every day. For example, they probably wouldn’t want a job working around dangerous machinery, use a computer all day at school or go swimming by themselves.



- People with epilepsy are *required* to report their disorder to the Department of Motor Vehicles when they apply for, or renew, a driver’s license.


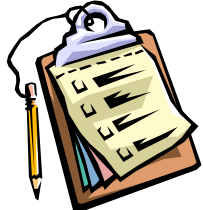



- Every state has its own rules, but in general, people must be seizure-free for some time before they are allowed to drive. To learn about the regulations for your state, check the following web site:

www.epilepsyfoundation.org/answerplace/drivelaw/searchform.cfm

Tips For Dealing with Epilepsy & Seizures

- If a client has frequent seizures, consider using protective gear like knee pads, elbow pads and a helmet.
- Remember that your clients should store their anti-seizure drugs in a dry area, away from sunlight and extreme heat or cold.
- Consider reviewing some basic first aid so you are prepared to help a client who gets injured during a seizure.

- People who suddenly quit taking their anti-seizure medication put themselves at risk for status epilepticus. Be sure to notify your supervisor if a client stops taking anti-seizure medication.
 
- Anti-seizure medications can make people feel sleepy. Be sure to let your supervisor know if a client seems especially drowsy. The doctor may be able to adjust the client's medication dose.
- If you witness a seizure, try to take note of the following information:
 - What time the seizure started.
 - What the client was doing at the time. *(For example, was the client eating, watching TV or arguing on the phone?)*
 - The type of seizure activity involved and how long it lasted.
 - Any safety measures you took for the client. *(For example, did you help the client lie down?)*
 - Any injuries the client suffered during the seizure. *(For example, did the client fall down and hit his or her head?)*


- If possible, encourage your clients to keep a "seizure journal" in which they write all the details of every seizure. This may help identify any patterns—and provide clues about how to break those patterns.
- A small percentage of people are sensitive to flickering light patterns such as the light from a television or a computer monitor. These types of light may trigger seizures. Wearing polarized sunglasses and taking frequent breaks from the TV and computer may help prevent seizures.
 
- Some women may experience increased seizure activity at certain times during their menstrual cycle. If you notice a pattern with your clients, report your observations to your supervisor.
- To help control seizures, encourage your clients to:
 - Take their medications as ordered.
 - Get enough sleep.
 - Eat a healthy balanced diet.
 - Avoid drinking too much alcohol.
 - Learn to manage the stress in their lives.



Are You “In the Know” About Epilepsy & Seizures?

Finish each statement with one of the words from the list below.

Then check your answers with your supervisor!

(Hint: You will not use every word on the list.)

**Trigger
Epilepticus
Absence
Electrical
Medication
Epilepsy**

**Elderly
Febrile
Psychomotor
Aura
Generalized
Surgery**

**Tonic Clonic
Neurologist
Active
Nerve
Postictal
Reentry**

1. A seizure is a sudden discharge of _____ activity in the brain.
2. Many cases of _____ can be prevented if people use seat belts, bicycle helmets and other safety equipment to prevent head injury.
3. _____ seizures involve more than one part of the brain.
4. _____ epilepsy causes short periods of confusion that may occur frequently throughout the day.
5. An _____ person who has had a stroke is at risk for developing epilepsy.
6. Activities like smoking a cigarette or taking a hot bath might _____ a seizure.
7. Status _____ is a life-threatening condition that requires immediate medical attention.
8. An _____ is a specific sound, smell, sight or feeling that “warns” a person that a seizure is about to start.
9. _____ seizures are common in young children whose body temperature gets too high.
10. Some people use a vagus _____ stimulator to control their seizures.

EMPLOYEE NAME _____

DATE _____

I understand the information presented in this inservice. I have completed this inservice and answered at least eight of the test questions correctly.

Employee Signature _____ Inservice Credit: 1 hour
 Supervisor Signature _____ Self Study _____
 File completed test in employee's personnel file. Group Study _____