

## Seizures and strokes: Teaching plan

*To use this lesson for self-study, the learner should read the material, do the activity, and take the test. For group study, the leader may give each learner a copy of the learning guide and follow this teaching plan to conduct the lesson.*

### **Learning objectives**

Participants in this lesson will be able to

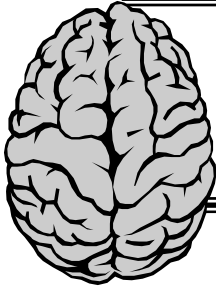
- Define seizure, seizure disorder, and epilepsy.
- Recognize when someone is having a seizure and respond appropriately.
- List care measures for people on anticonvulsant medications.
- List risk factors for strokes.
- State the most common symptoms of stroke.
- Recognize the symptoms of stroke and respond appropriately.

### **Introductory activity**

Distribute a copy of the learning activity to each participant. Ask them to read the stories and write or say how they would respond. This can be done as a group discussion or as an individual activity. It is likely that many of the learners will not know the answers. Reassure them that they will learn how to respond to these important situations in today's lesson. The answers are given on the separate learning activity answer key.

### **The lesson**

1. Give a copy of the learning guide to each participant. Instruct participants to listen to your lecture and follow along in the learning guide. Ask them to listen especially for the correct way to respond to the scenarios given to them in the learning activity and to write down answers they didn't know before.
2. Use lecture and discussion to cover the content in the learning guide. Participants can take turns reading and discussing different sections in the guide.
3. Encourage participants to memorize the five most common symptoms of stroke. Allow time for practice if possible.
4. At the conclusion of the lesson, look at the learning activity again and see whether the participants are able to write or say the correct way to respond in each case. Rapid response to both seizures and strokes is essential, so each participant should leave the session knowing exactly what to do in both situations.
5. Have participants complete the test and receive a certificate for at least nine correct answers. Test answers: 1c; 2T; 3T; 4b&d; 5d; 6: numbness/weakness, confusion/trouble speaking, trouble seeing, dizziness/trouble walking, severe headache; 7b; 8F; 9F



# Seizures and strokes

## Learning guide

### What is a seizure?

**What is epilepsy?**

**What causes seizures?**

**What are some types of seizures?**

**Responding to a seizure**

### What is stroke?

**What are the symptoms of stroke?**

**What is transient ischemic attack?**

**Who is at risk for stroke?**

**Responding to a TIA or stroke**

## Seizure disorder

About 2.3 million people in the United States have some form of epilepsy, also called seizure disorder. For the vast majority of cases, no single cause has been determined. People with epilepsy often struggle to overcome low self-esteem and the stigma that is attached to having seizures. Some people mistakenly believe that epilepsy is a form of mental illness or mental retardation. The truth is that many people with seizure disorders lead productive and outwardly normal lives.

### What is a seizure?

A seizure is rhythmic jerking of the body or an involuntary change in body movement, sensation, awareness, or behavior. It can last from a few seconds to a few minutes. Seizures are sometimes called convulsions.

### What is epilepsy?

The word epilepsy is used when more than one seizure in a row has occurred. If someone has a single seizure they are not usually said to have epilepsy. The terms epilepsy and seizure disorder are often used interchangeably. The onset of epilepsy is most common in children and the elderly.

### When is a seizure not epilepsy?

- First seizures
- Febrile (caused by high fever) seizures
- Eclampsia seizures (in pregnancy)

Symptoms experienced by a person during a seizure depend on where in the brain the disturbance in electrical activity occurs.

### Why are seizures harmful?

A person can be injured during a convulsion, because the body is moving uncontrollably. Also, the brain can be starved of oxygen during long seizures. This can lead to brain damage. Repeated seizures or seizures that last longer than 20–30 minutes can damage the brain's neurons (nerve cells).

### What causes seizures/epilepsy?

A seizure occurs when neurons generate uncoordinated electrical discharges that spread throughout the brain. Anything that disturbs the normal pattern of nerve cell activity can lead to seizures. Neurons are very sensitive to abnormal electrical impulses. Illness, injury, an imbalance of the chemicals in the brain that carry messages between nerve cells, and brain abnormalities can be responsible for seizure. Some examples:

- Heart attacks and strokes, or any condition that deprives the brain of oxygen. Proper treatment of heart disease and high blood pressure can prevent some cases of epilepsy.
- Metabolic disturbances: alcohol withdrawal, severe liver disease, kidney disease.
- Infections such as meningitis and AIDS. Good treatment may prevent seizures.
- Brain tumors or head injury. Wearing seat belts and cycle helmets and using child car seats can prevent brain injury and therefore prevent this type of seizure.
- Presence of certain drugs or stopping certain drugs suddenly (such as narcotics).
- Illicit drug use, like cocaine, heroine, or PCP.
- Alzheimer's disease.
- Neurodegenerative disorders, such as multiple sclerosis.
- Inherited disorders and genetic factors.

## What are some types of seizures?

There are many different kinds of seizures. Following are four types:

- A grand mal, or tonic-clonic seizure, involves the entire body in a convulsion. When a person has this type of seizure he or she may cry out, fall to the floor unconscious, twitch or move uncontrollably, drool, or even lose bladder control. It usually lasts for 5–20 minutes. When the seizure is over and the person regains consciousness, he or she feels exhausted and dazed. This is the image most people have when they hear the word epilepsy. Sometimes people experience warning signs beforehand, such as unusual smells, visual changes, or feelings. This warning is called an **aura**.
- A complex partial seizure causes a person to appear confused or dazed. He will not be able to respond to questions or direction.
- A petit mal (pet-ee mal), or absence seizure, causes a brief loss of consciousness without other symptoms. There is no warning. This type of seizure is not noticeable in some people. The person may briefly stop what he or she is doing, stare for 5–10 seconds or blink rapidly, then continue his or her activity. The person becomes unresponsive, appears to be daydreaming, and cannot be aroused during this time.
- Status epilepticus is prolonged, repetitive seizure activity that last more than 20–30 minutes while the person is unconscious. It is a medical emergency and can result in death if not treated aggressively. It is caused by certain medications, stroke, infection, trauma, cardiac arrest, drug overdose, and brain tumor.

## How is epilepsy treated?

There are several ways to treat epilepsy. Treatments can control seizures some of the time in about 80% of people with epilepsy. Once epilepsy is diagnosed, it is crucial that treatment begin as soon as possible.

There are many different medications and a variety of surgical procedures that may provide good control of seizures. Some people are helped with special diets.

People with seizure disorders should carry an ID card or wear a bracelet that tells about their condition, their medications, and their doctor's name and phone number.

Medications to control seizures are called anticonvulsants. These must be taken regularly as directed, without missing doses. Missed doses may cause a single seizure, several seizures, or death.

People with severe seizures who don't take their medications have a shorter life expectancy and more risk of cognitive impairment.

Common anticonvulsants are Dilantin (phenytoin), Tegretol (carbamazepine), Depakene (valproate), and phenobarbital. These medications should be taken with food or milk to prevent stomach problems.

Anticonvulsant medications can cause changes in a person's mental status, including mood and behavior. They can also affect speech, balance, the eyes, the stomach, and the gum tissue in the mouth. Changes in any of these areas must be reported. Good oral hygiene will help prevent gum problems.

### **What should you do if you see someone having a seizure?**

1. Roll the person on his or her side to prevent choking on any fluids or vomit.
2. Loosen any tight clothing around the neck.
3. Keep the person's airway open. If necessary, grip the person's jaw gently and tilt his or her head back.
4. DO NOT restrict the person from moving unless he or she is in danger.
5. DO NOT put anything into the person's mouth, not even medicine or liquid. These can cause choking or damage to the person's jaw, tongue, or teeth. Contrary to widespread belief, people cannot swallow their tongues during a seizure or at any other time.
6. Remove any sharp or solid objects that the person might hit during the seizure.
7. Note how long the seizure lasts and what symptoms occurred so you can report it as soon as possible to your supervisor, or to emergency personnel if needed.
8. Stay with the person until the seizure ends. After a seizure ends, the person may be sleepy and tired. He or she may have a headache and be confused or embarrassed. Be patient with the person. You may need to help him or her clean up.

### **When is a seizure an emergency situation? Call for help if**

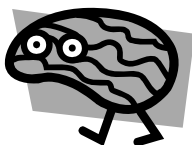
- the person does not begin breathing again and return to consciousness after the seizure stops.
- another seizure begins before the person regains consciousness.
- the person injures himself or herself during the seizure.

## Stroke

About 600,000 Americans will have a stroke this year. More than 160,000 will die from it. Two-thirds of all strokes happen to people over age 65. Stroke risk doubles every ten years past age 55. Many of the causes of stroke can be controlled, and rapid treatment when stroke occurs can save lives and prevent permanent damage. May is American Stroke Month.

### What is a stroke?

A stroke is a “brain attack,” meaning it occurs in the same way a heart attack does, only it affects the brain instead of the heart. A stroke occurs when the blood supply to part of the brain is suddenly cut off. This can happen when a blood clot blocks a blood vessel or when a blood vessel breaks and spills blood into the brain. As a result, brain cells in the affected area die. The cells usually die within minutes to a few hours after the attack starts. When brain cells die, they release chemicals that start a chain reaction, killing even more brain cells in a bigger area.



When brain cells die, the abilities that are controlled by that area of the brain are lost. This can include speech, movement, and memory, depending on where in the brain the stroke occurs and how many brain cells are killed. A small stroke might cause weakness of an arm or leg. A large stroke might cause paralysis on one side of the body or loss of the ability to speak and understand language. People can sometimes recover completely from minor strokes, but a severe stroke can be fatal. Rapid treatment is the key to preventing death and paralysis. Stroke is an emergency!

### What are the symptoms of stroke?

The five most common stroke symptoms include:

1. Sudden numbness or weakness of face, arm, or leg, especially on one side of the body.
2. Sudden confusion, trouble speaking, or trouble understanding.
3. Sudden trouble seeing in one or both eyes.
4. Sudden dizziness, trouble walking, or loss of balance or coordination.
5. Sudden severe headache with no known cause.

**Call 911 if you see any of these symptoms in someone.  
Treatment is much more effective if given soon after the attack.  
Every minute can make a difference in preventing serious damage or death.  
Get emergency help even if the symptoms are painless or go away quickly.**

Some other less common stroke symptoms include:

1. Sudden nausea, fever, and vomiting. This is different from a viral illness because it comes on very quickly, in minutes or hours instead of over several days.
2. Brief loss of consciousness or a period of decreased consciousness, such as fainting, confusion, convulsions, or coma.

These symptoms should be reported to medical personnel immediately.

## What is transient ischemic attack?

A transient ischemic attack (TIA) is a stroke that lasts only a few minutes and goes away quickly. A TIA occurs when the blood supply to part of the brain is briefly interrupted. The symptoms are similar to those of stroke, but they usually disappear within an hour.

Only a doctor can tell whether stroke symptoms are from a TIA or a serious stroke. You should assume that all stroke-like symptoms require emergency help. Don't wait to see if they go away. TIAs are often warning signs that a person is at risk for a more serious stroke.

## Who is at risk for stroke?

People over age 65, African-Americans, people with diabetes, men, and people with a family history of stroke are at greater risk of brain attack than the rest of the population. These things cannot be controlled. People with diabetes, however, can lower their risk of stroke with treatment.

Many things that increase the risk of stroke can be controlled or treated, such as:

- High blood pressure—untreated high blood pressure increases stroke risk four to six times. Blood pressure is too high if it is usually more than 140/90.
- Heart disease—some heart conditions increase stroke risk by up to six times.
- High cholesterol—this increases the risk of stroke by clogging blood vessels.
- Personal history of stroke or TIA—people who have had a stroke or TIA are at risk for having another stroke. 35% of those who experience TIAs have a stroke within 5 years.
- Sleep apnea—people who do not breathe for periods of time while they are sleeping develop low levels of oxygen in the blood, possibly leading to blood clots and stroke.
- Smoking—cigarette or cigar use doubles the risk of stroke by damaging blood vessels.
- Alcohol—excessive alcohol consumption is associated with stroke in some studies.
- Weight—excess weight puts a strain on the blood vessels and is often linked to high blood pressure, high cholesterol,



and diabetes.

## What should you do if you see someone having a stroke? Call 911!

**52% of the stroke patients in one study were not aware they were experiencing a stroke. Most strokes are recognized by someone other than the victim.**

The National Stroke Association urges everyone to know the 3 Rs of stroke:

**R** **educe risk.**  
Stop smoking, control weight and cholesterol, avoid excessive alcohol, and treat high blood pressure, heart disease, and sleep apnea.

**R** **ecognize symptoms.**  
Memorize the 5 most common symptoms of stroke and be alert for them in people around you.

**R** **espond by calling for emergency medical help.**

Seizures and strokes learning activity

Read the stories below, and then decide how you would respond in each situation.

1. You find a client on the floor. Her arms and legs are jerking and thrashing around, and it appears that she has wet herself. She does not respond when you call her name. What is the first thing you should do? List five or six things you should do to respond to this client's seizure.

- a. \_\_\_\_\_
- b. \_\_\_\_\_
- c. \_\_\_\_\_
- d. \_\_\_\_\_
- e. \_\_\_\_\_
- f. \_\_\_\_\_

2. After the client in the first scenario has stopped convulsing, she does not open her eyes or respond when you call her name. After a minute or two she begins convulsing again. How should you respond now?

\_\_\_\_\_

3. You are helping a client with a shower. Suddenly the client begins acting strangely. He doesn't seem to understand what you are saying to him, and he appears confused. This is not normal behavior for this client.

What is this a possible symptom of? \_\_\_\_\_

How should you respond to this problem? \_\_\_\_\_

4. You notice that your client is not using his right arm like he usually does. He is letting the arm hang at his side while he uses his left hand to do things. When you ask him about it, he says his arm is feeling weak today, but he's sure it will pass. What, if anything, should you do about this?

\_\_\_\_\_



# Seizures and strokes learning activity answer key

Read the stories below, and then decide how you would respond in each situation.

1. You find a client on the floor. Her arms and legs are jerking and thrashing around, and it appears that she has wet herself. She does not respond when you call her name. What is the first thing you should do? List five or six things you should do to respond to this client's seizure.

- a. Roll her on her side to prevent choking.
- b. Loosen any tight clothing around her neck.
- c. Keep her airway open.
- d. Remove anything sharp or solid that she might hit.
- e. Report what is happening to a supervisor or medical personnel as soon as possible.
- f. Stay with the client until she is fully conscious and calm.

2. After the client in the first scenario has stopped convulsing, she does not open her eyes or respond when you call her name. After a minute or two she begins convulsing again. How should you respond now?

Call for emergency medical help.

Status epilepticus, or repetitive seizure activity, is life-threatening.

3. You are helping a client with a shower. Suddenly the client begins acting strangely. He doesn't seem to understand what you are saying to him, and he appears confused. This is not normal behavior for this client.

What is this a possible symptom of? It could be a stroke.

How should you respond to this problem? Call for emergency medical help.

4. You notice that your client is not using his right arm like he usually does. He is letting the arm hang at his side while he uses his left hand to do things. When you ask him about it, he says his arm is feeling weak today, but he's sure it will pass. What, if anything, should you do about this?

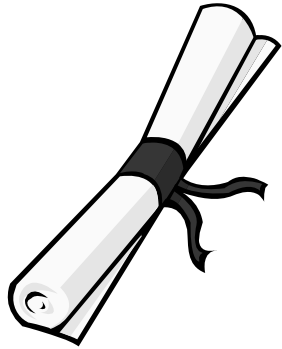
This is a symptom of possible stroke. Call for emergency medical help.

# Seizures and strokes test

Name \_\_\_\_\_ Date \_\_\_\_\_ Score \_\_\_\_\_  
Circle or write the correct answer(s). (Must have 9 correct answers)

1. A seizure is
  - a. a heart attack.
  - b. a voluntary change in body movement, sensation, awareness, or behavior.
  - c. an involuntary change in body movement, sensation, awareness, or behavior.
  - d. the same thing as epilepsy.
2. There are many different types of seizures. True or False
3. People who take anticonvulsant medications may be prone to gum problems and need good oral hygiene. True or False
4. How can you help someone who is having a seizure? (More than one answer.)
  - a. Put a tongue blade in their mouth to keep them from swallowing their tongue.
  - b. Remove any sharp or solid objects they might hit during the seizure.
  - c. Try to hold their body still.
  - d. Stay with them until the seizure ends.
5. When is a seizure a medical emergency?
  - a. Another seizure begins before the person regains consciousness.
  - b. The person injures himself/herself during the seizure.
  - c. The person does not return to consciousness after the seizure stops.
  - d. All of the above.
6. List the five most common symptoms of stroke (five points).
  - a. \_\_\_\_\_
  - b. \_\_\_\_\_
  - c. \_\_\_\_\_
  - d. \_\_\_\_\_
  - e. \_\_\_\_\_
7. Some risk factors for stroke that can be controlled include:
  - a. Age, gender, race, diabetes.
  - b. High blood pressure, heart disease, high cholesterol, smoking, weight.
  - c. Occupation, allergies, finances, education.
  - d. There is nothing anyone can do to lower their risk of having a stroke.
8. Stroke cannot be treated. True or False
9. There is no hurry in getting treatment for stroke, because the damage is already done. True or False

# Certificate of Achievement



Awarded to

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(Name of participant)

For Completing the One-Hour Course  
“Seizures and Strokes”

Date of course \_\_\_\_\_

Facility/Agency \_\_\_\_\_

Presented by: \_\_\_\_\_  
(Signature of presenter, or write “self study”)