

Controlling Post-Stroke Seizures

by Mike Mills

When a person has a stroke, the injury to the brain can manifest itself in various ways. Stroke can affect movement, speech, behavior, memory and emotions.

What might be less obvious about stroke's effects is the increased chance of developing seizures. Seizures are brain malfunctions that alter a person's awareness.

During a seizure, the brain cells fire large bursts of energy, a departure from the normal on-and-off firing pattern. The seizure may last only a few seconds or minutes and trigger involuntary body movements, strange sensations or blackouts. The Epilepsy Foundation estimates that seizures strike 22 percent of stroke survivors.

A Scar in the Brain

"Seizures occur whenever there is a scar in the brain," said Ralph L. Sacco, M.D., professor of neurology and epidemiology at Columbia University Medical Center. "When stroke injures part of the brain, it leaves a scar, and this scar can then trigger abnormal electrical activity that can start a seizure."

Dr. Sacco said that bleeding (hemorrhagic) strokes are more likely to produce seizures than ischemic strokes. That accounts for many of the seizures that hit 2–6 percent of stroke survivors in the first 30 days, making seizure risk the greatest during that period.

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Focusing on Treatment

Although research has led to a greater understanding of how to treat seizures, no cure has been found. Physicians focus on controlling seizures with medicine while keeping side effects to a minimum.

Once a seizure occurs, getting help quickly is essential. Promptly treating seizures seems to lower the risk of having more seizures, Dr. Sacco said, and increases the chance of becoming seizure-free. Medications may be less

successful once seizures and their consequences become established.

"The longer you go seizure-free on medicine, the lower your risk and the more reasonable it may be to take you off medicine.

"If you have seizures early in the period of a stroke, yes, you are still at risk for long-term seizures. However, suppose that you have them early, get treated and remain seizure-free. You may be over the acute period and be able to come off the drugs."

A Form of Epilepsy

Doctors treat a post-stroke seizure in much the same way they treat epilepsy. Although it takes more than one seizure to classify someone as epileptic, Dr. Sacco said, almost all post-stroke seizures are treated with the same anti-convulsant drugs given for recurrent epilepsy, including phenytoin (Dilantin), carbamazepine (Tegretol), phenobarbital (Solfoton), valproic acid (Depakote) and lamotrigine (Lamictal).

Epilepsy, a general term covering all types of recurrent seizures, affects about 2.3 million Americans. Although people of all ages are affected, particularly the young and elderly, nearly half of all cases develop before the age of 10. Epilepsy in young people comes

from a variety of causes, including head injuries, poisoning, stroke, brain tumors, genetic factors, serious illness and problems in brain development before birth.

In older people, the cause is more likely related to physical changes from aging, including cardiovascular disease, stroke, brain tumors and Alzheimer's disease. Of these, stroke is the most frequent cause.

"If you are a stroke survivor and haven't had seizures yet, having another stroke is going to increase your risk of seizures," Dr. Sacco said.

Effective lifestyle changes to reduce the risk of seizures are the same as those to reduce the risk of recurrent stroke. Controlling weight and blood pressure, increasing physical activity and eating nutritious food will help.

Out of Control

With most seizures, the effects last only a few seconds or minutes, and normal physical and mental functions are restored. But a condition called *status epilepticus*, in which a person has an abnormally long seizure or does not regain consciousness between seizures, is life-threatening.

A seizure lasting longer than five minutes, for practical purposes, should be treated as a status epilepticus condition. Immediate medical help is necessary.

"Status epilepticus has been known to cause further injury (to the brain), especially if it's occurring around the time of the stroke," Dr. Sacco said. "Status epilepticus in anybody will increase the risk of mortality."

Drug Interaction

Stroke survivors who take blood thinners such as warfarin must be carefully watched by their doctors. Warfarin, an anticoagulant, fights the formation of blood clots, which could cause another stroke. Because it affects the liver, warfarin magnifies the detrimental effect that anti-seizure medicines have on the liver.

For the same reason, Dr. Sacco recommends that alcohol, whose harmful effects on the liver are well

known, be avoided while taking anti-seizure medicine.

Common drugs used to prevent recurrent stroke — aspirin, clopidogrel and aspirin-dipyridamole — are not as dangerous when taken with anti-seizure medicines, he said.

When to Medicate

Should anti-seizure medicine be given before a seizure occurs? Opinions and practices vary. Some doctors start medicine soon after a stroke as a preventive measure, and others prefer to wait until after the first seizure.

"For most strokes you wait until you have the seizure," Dr. Sacco said. "For some bleeding strokes, some people have advocated prophylactic (preventive) anti-seizure medications only in the early period after a stroke. But for the general stroke patient, you would not medicate until you have the seizure.

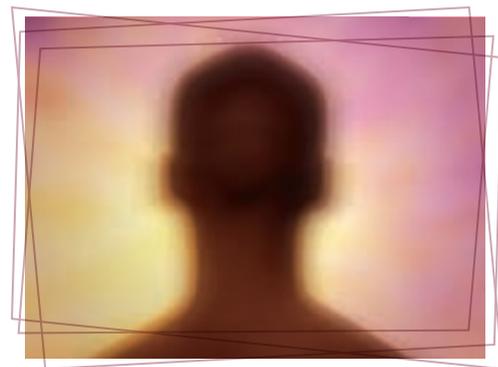
"All drugs have risks, and you don't want to use a drug if you don't need it. Not every stroke patient has a seizure."

Let Others Know

Fortunately, seizures in themselves are usually painless, and they don't get worse over time. The brain malfunction in epilepsy is temporary, and the condition is not to be confused with mental illness. People with epilepsy are just as intelligent and capable as anyone else.

Dr. Sacco said it's a good idea for people who have seizures to wear a medical alert bracelet so that when a seizure occurs, people around them won't be unduly alarmed. People who live and work around those with epilepsy should know what to expect and what to do. (See "If You See Someone Having a Seizure" on this page)

"People always get very concerned when they see someone have a seizure," Dr. Sacco said. "Most of the time, a seizure is survivable. Usually, it will pass and the person wakes up. The problem occurs when a seizure occurs and they are driving a car, or they fall down a flight of stairs, or they get injured during the seizure." **SC**



If You See Someone Having a Seizure

If you see someone having a seizure with convulsions or loss of consciousness, here's how you can help:

- 1.** Roll the person on one side to prevent choking on any fluids or vomit.
- 2.** Cushion the person's head.
- 3.** Loosen any tight clothing around the neck.
- 4.** Keep the person's airway open. If necessary, grip the person's jaw gently and tilt the head back.
- 5.** Do not restrict the person from moving unless in danger.
- 6.** Do not put anything into the person's mouth, not even medicine or liquid. Contrary to widespread belief, people cannot swallow their tongues during a seizure or any other time.
- 7.** Remove any sharp or solid objects that the person might hit during the seizure.
- 8.** Note how long the seizure lasts and what symptoms occurred so you can tell a doctor or emergency personnel if necessary.
- 9.** Stay with the person until the seizure ends.

Source: National Institute of Neurological Disorders and Stroke ("What to Do If You See Someone Having a Seizure," www.ninds.nih.gov/disorders/epilepsy/detail_epilepsy.htm)