

# Brainstem Stroke



THE OHIO STATE UNIVERSITY

WEXNER MEDICAL CENTER

Arteries carry blood that contains oxygen to the brain. The flow of blood through the arteries can stop if the artery is blocked or bleeds. This is called a stroke. It is also known as a cerebrovascular accident or CVA. This handout looks at what occurs when a stroke happens in the brainstem, which is in the lowest part of the brain.

## Effects

A brainstem stroke can be more serious than other types of strokes because it is the source for many life functions, such as breathing.

A stroke in this area can cause problems with:

- Heart rate
- Blood pressure
- Breathing
- Swallowing
- Speech
- Eye movement
- Body movement
- Hearing, but less common

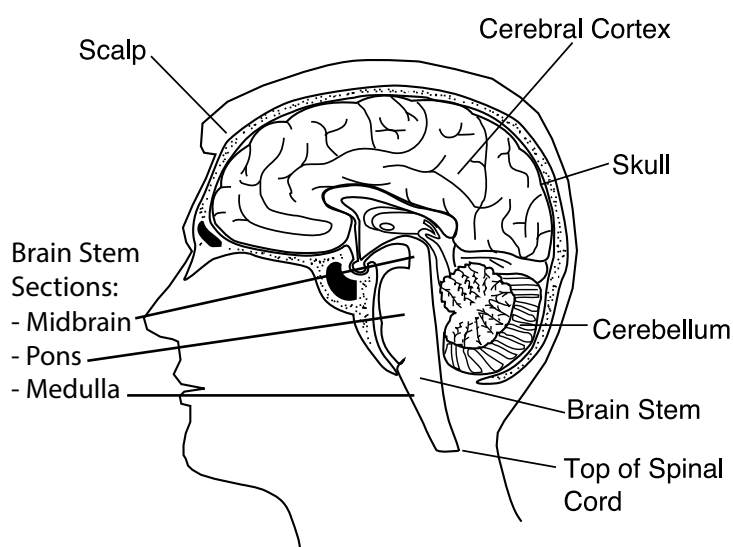
In some cases, a brainstem stroke may lead to paralysis. With paralysis, one or both sides of the body may be unable to move.

The brainstem is made up of three parts: midbrain, pons, and medulla. There are six arteries that carry blood to the brainstem. Some carry blood to the left side of the body. Others carry blood to the right side of the body. Damage to any of the arteries can result in injury.

## Changes in Breathing

One serious effect of a brainstem stroke is damage to the areas that control breathing and alertness. Changes in breathing can affect blood pressure and heart rate. The person may need their breathing controlled by a machine.

If the brainstem is compressed because of swelling, the person may have trouble waking from sleep. This is called a coma.



## Changes in Body Movement

Brainstem stroke can change a person's ability to move if the brainstem stops sending messages to the cerebellum. The cerebellum, located above the brainstem, tells the body muscles how to work together for coordination and balance.

The loss of movement or weakness can make it hard to walk or do daily activities. It will affect the opposite side of the body from where the stroke occurred.

- **Ataxia** - When the body is unable to coordinate how the muscles move together, this is called ataxia (a-tax-ee-a).
  - For example, you may fall because you are not able to put your foot where you want to walk.

Ataxia can affect arms, legs, and chest muscles. It can lead to uncontrolled body shakes, called tremors. Tremors often occur at the start or finish of moving their body.

Preventing falls or other accidents are safety concerns.

## Changes in Body Sensation

After a stroke, it can be hard for the person to feel touch or know where they are being touched. These changes may occur in the face on the same side of the stroke and in the body on the opposite side.

- For example, something touching your foot may feel like someone touching your leg.

The person may not feel pain and temperature in that area. They may find it hard to know where their body is and how it is moving.

## Changes in Mouth Sensation

Brainstem injury can change how the muscles of the mouth, tongue, and throat work. It can be hard to speak or swallow. Changes may be needed to what the person eats or drinks to prevent choking. It is also common to have voice changes, slurred speech, or to hiccup.

## Changes in Eye Movement

Brainstem stroke may change how the eyes move. Eyes may move left to right, up and down, or around without control. It can affect one or both eyes. This is called nystagmus (nis-tag-mus).

This condition may make the person feel dizzy, have nausea, or vertigo. Vertigo is the sensation that the body is moving through space or spinning, when the person is not moving.

Problems with the eye on the side of the cerebellum that is damaged is less common. The person may have:

- Smaller pupil (center of the eye)
- Droopy eyelid
- Problems looking from side to side

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**Talk to your doctor or health care team if you have any questions about your care.**

For more health information, contact the Library for Health Information at **614-293-3707** or e-mail **health-info@osu.edu**.