

# Brainstem Stroke

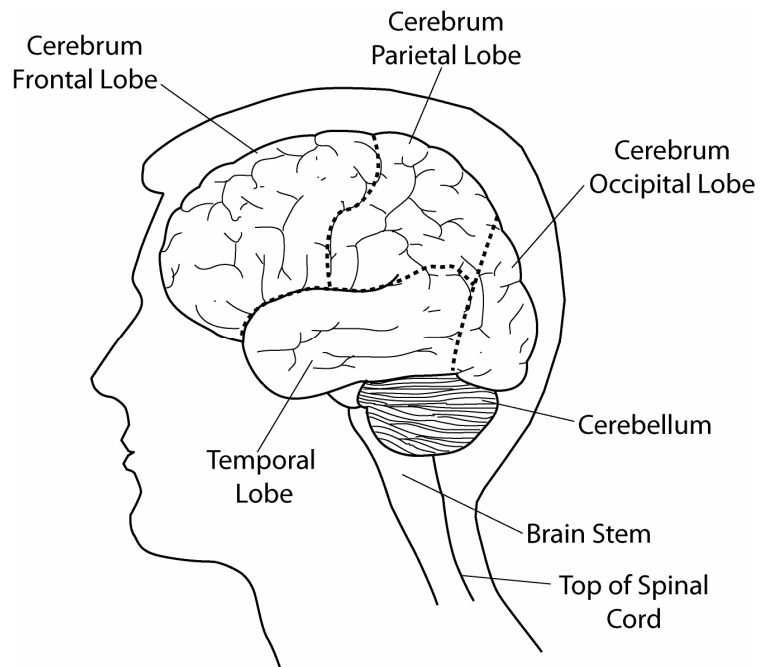
Arteries carry blood that contains oxygen to the brain. The flow of blood through the arteries can stop if the artery is blocked or bleeds. This is called a stroke. It is also known as a cerebrovascular accident or CVA. This handout looks at what occurs when a stroke happens in the brainstem which is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

A brainstem stroke can be more serious than other types of strokes. The brainstem is the source for many life functions. It controls:

- Heart rate
- Blood pressure
- Breathing
- Swallowing
- Eye movement
- Speech
- Body movement
- Hearing, but this is 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: the midbrain, the pons, and the 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.



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## **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 patient may need his or her breathing controlled for by machine. If the brainstem is compressed from swelling it may be difficult to wake from sleep. This is called a coma.

## **Changes in body movement**

Brainstem injury from stroke can change movement. The stroke stops the brainstem from 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 complete daily activities. It will affect the opposite side of the body from where the stroke occurred.

When the body is unable to coordinate how the muscles move together, this is known as 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 when the body starts or stops. Preventing falls or other accidents are safety concerns.

## **Changes in body sensation**

After a stroke, it can be hard for the patient to feel touch or know where he or she is 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 patient may not feel pain and temperature in that area. He or she may find it hard to know where his or her 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 difficult to speak or swallow. The patient's diet might need to be changed to avoid 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). The condition may make the patient feel dizzy, or have nausea, or vertigo. Vertigo is the sensation that the body is moving through space or spinning, when the person is not moving.

Less common are problems with the eye on the side of the cerebellum that is damaged. The patient may have a smaller pupil (center of the eye), a droopy eyelid, or problems looking from side to side.

✦ **Talk to your doctor or others on your health care team if you have questions. You may request more written information from the Library for Health Information at (614) 293-3707 or email: [health-info@osu.edu](mailto:health-info@osu.edu).**