

Care Gram

Brainstem Stroke

A brainstem stroke occurs when blood flow to the base of the brain is stopped. This can affect many functions in body, such as heart rate, breathing, and blood pressure. **If a stroke is suspected, seek medical care right away.** Cells in the brain die without oxygen for more than a few minutes and can lead to death.

What Causes a Stroke?

There are two main types of strokes, ischemic and hemorrhagic.

Ischemic strokes are the most common and happen when blood flow is blocked. This may be caused by:

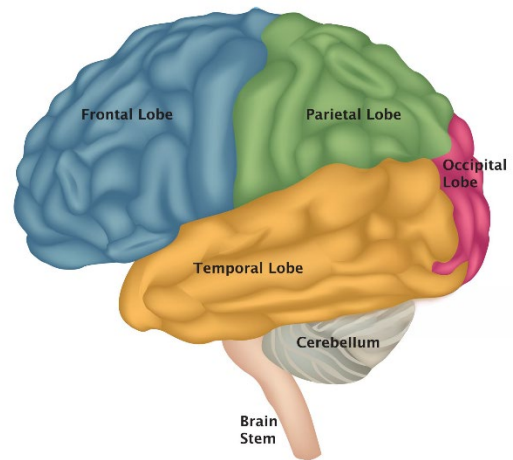
- A clot from another part of the body breaks off and becomes trapped in a vessel that supplies blood to the brain
- A clot forms in the artery that supplies blood to the brain
- A tear occurs in an artery that supplies blood to the brain

Hemorrhagic strokes are caused by a burst blood vessel. Blood pools in the brain, which slows or stops the flow of blood. This results in a buildup of pressure on the brain.

Risk Factors

Strokes are more common in older adults and those with a family history of stroke. Other conditions that affect blood vessel health and blood flow can also raise the risk of stroke, such as:

- History of transient ischemic attacks (TIA)
- Alcohol use disorder
- Obesity or metabolic syndrome
- Type 2 diabetes or prediabetes
- High blood pressure
- High cholesterol
- Heart diseases or injury, such as previous heart attack, atrial fibrillation, or enlarged heart
- Blood vessel diseases, such as carotid artery stenosis or atherosclerosis



**Licking Memorial
Health Systems**

1320 West Main Street • Newark, Ohio 43055
(220) 564-4000 • LMHealth.org

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Daily habits can also affect your risk, including:

- Lack of physical activity
- A diet high in saturated fat, trans fat, cholesterol, and sodium
- Smoking
- Drug abuse of cocaine, amphetamines, or heroin

Symptoms

Symptoms can occur suddenly, and include:

- Muscle weakness
- Vision and hearing problems
- Sensory changes
- Problems with balance or a feeling of spinning when standing or sitting still
- Difficulty breathing
- Problems chewing, swallowing, and speaking

Diagnosis

A stroke needs to be diagnosed quickly. The doctor will ask about symptoms and health history, perform a physical exam, and look for signs of nerve or brain issue. Blood tests may also be done to look for clotting problems, and images may be taken of the brain including:

- CT scan
- Angiogram – to look at the heart and its blood supply
- CT angiogram
- MRI scan
- Magnetic resonance angiography (MRA)
- Doppler ultrasound

The following tests will also be done to check heart function:

- Electrocardiogram (ECG) – checks the heart's electrical activity
- Echocardiogram – checks the heart's muscle movements

Treatment

Emergency care will be needed. The heart and lungs may also need support, and a tube may be placed to help with breathing. Other treatments include:

Medications

For an ischemic stroke, medicine may be given to:

- Dissolve clots and prevent new ones from forming
- Thin blood

For a hemorrhagic stroke, medicine may be given to:

- Counteract any blood-thinning drugs that the person is taking
- Reduce how the brain reacts to bleeding

Surgery

Options to treat an ischemic stroke are:

- Embolectomy – a tube passed through a blood vessel to remove a clot or deliver medicine that can break it up
- Vertebrobasilar angioplasty and stenting – a major artery to the brain is widened and a mesh tube is left in place to help keep it open

Rehabilitation

Therapy may be needed to regain lost skills. Options are:

- Physical therapy – to help with movement
- Occupational therapy – to help with daily tasks and self-care
- Speech therapy – to improve swallowing and speech
- Psychological therapy – to provide support after the stroke

Prevention

The risk of stroke can be reduced by:

- Managing health problems, such as high blood pressure and diabetes
- Maintaining a healthy weight through diet and exercise
- Eating a low-fat, low-cholesterol diet that is rich in whole grains, fruits, and vegetables
- Quit smoking
- Limit alcohol