

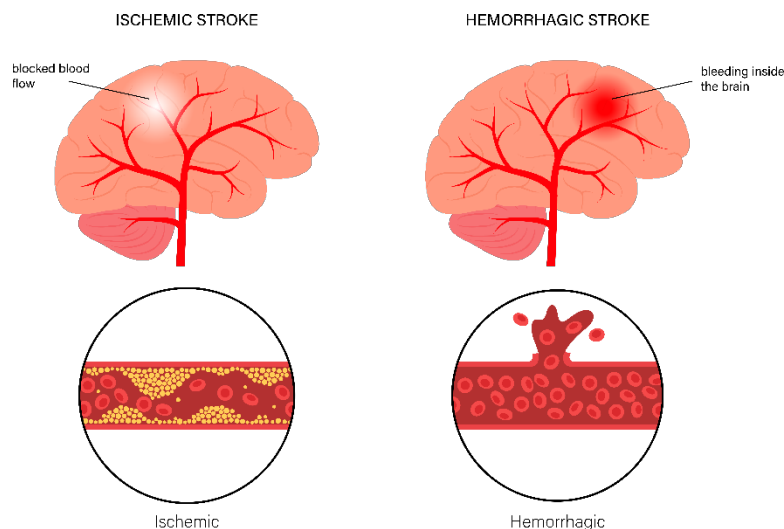
Care Gram

Hemorrhagic Stroke

A stroke occurs when the blood flow to an area of the brain stops, depriving the brain of oxygen and nutrients. Cells in the brain die without oxygen for more than a few minutes and can lead to brain injury or death. The damage to the brain can cause a sudden loss of bodily functions. **If a stroke is suspected, seek medical care right away.**

There are two main types of strokes:

- Hemorrhagic: a ruptured blood vessel that causes:
 - Intracerebral hemorrhage – bleeding in the brain
 - Subarachnoid hemorrhage – bleeding in the tissue around the brain
- Ischemic: a blocked blood vessel



What Causes a Hemorrhagic Stroke?

Hemorrhagic strokes are caused by a weakened blood vessel in the brain. Blood vessels may become weak because of:

- Problems with the structure of the vessel
- Arterio-venous (AV) malformation – an abnormal knot of blood vessels
- Aneurysm – a weakened spot in a blood vessel wall
- Other illness or medical problems such as high blood pressure
- Damage from trauma such as a blow to the head or car accident



**Licking Memorial
Health Systems**

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

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Risk Factors

Hemorrhagic strokes are more common in men, those 55 years of age or more, or have a family history of stroke. Other factors that can increase the risk of stroke are:

- High blood pressure
- Smoking
- Sleep apnea
- Cocaine use
- Alcohol use disorder
- Blood disorders or medicine that can make it harder for the blood to clot

Symptoms

Symptoms will depend on the part of the brain where the stroke occurred. Getting medical help right away is vital to reducing the amount of brain damage.

Call 911 immediately if someone suddenly has:

- Weakness or numbness of the face, arm, or leg, especially on one side of the body
- Confusion
- Trouble speaking or understanding
- Trouble seeing in one or both eyes
- Lightheadedness, trouble walking, loss of balance, or clumsiness
- Severe headache with no known cause
- Loss of consciousness

Other symptoms may include:

- Neck stiffness
- Nausea or vomiting
- Sensitivity to light

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 issues such as muscle weakness or vision and speech issues. A CT scan may also be performed to confirm the diagnosis.

Other imaging tests that may be performed to find the cause of the bleeding include:

- Magnetic resonance angiography (MRA)
- CT angiogram
- Doppler ultrasound

Blood tests will also be done to determine how well the blood can clot. The doctor may also check the fluid that surrounds the brain and spine.

Treatment

Brain tissue without blood flow dies quickly. Fast treatment is needed to stop the bleeding and restore blood flow to the brain again. The blood that is pooled in the brain from the ruptured

blood vessel is also trapped in the skull, and can cause pressure on the brain. The pressure may need to be eased.

Medications

Medicine, including vitamin K, may be given to help the blood clot. These medications can also help:

- Relieve pressure in the brain
- Prevent seizures
- Lower blood pressure

Surgery

Surgery may be done to help stop the bleeding. Some procedures may be done using a catheter (tube) that is placed into blood vessels in the groin and passed to the vessels in the brain. Depending on the cause and site of the bleeding, the following may be performed:

- For a burst aneurysm, a clip may be placed just before the damaged vessel to stop the bleeding.
- For a leaking aneurysm that has not burst, a special coil or clip may be placed in the weak area. The coil will help a clot form over the area and prevent bleeding.
- For an abnormal tangle of blood vessels, surgery may be done to repair the blood vessels and possibly remove the tangles or reroute blood flow around the area.

The stroke and damaged tissue can cause swelling in the brain. Surgery may be needed to ease the pressure. One common way is to remove part of the skull. This is called craniotomy.

Recovery

Recovery will depend on the amount of damage to the brain. Options include:

- 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 aneurysms and high blood pressure
- Regular exercise
- 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 – no more than 2 drinks per day for men and 1 drink per day for women
- Not using recreational drugs, such as cocaine