

Arteriovenous Malformations

What Are Arteriovenous Malformations (AVMs)?

AVMs are tangles of blood vessels caused by abnormal connections between arteries and veins, usually in the brain. AVMs are rare, and occur in roughly 1 percent of the population.

AVMs are just one type of brain and blood vessel (cerebrovascular) condition. Together, the different types of cerebrovascular conditions are associated with malformed blood vessels that can cause bleeds (hemorrhages), strokes, clots and other complications.

What Causes Arteriovenous Malformations?

Experts don't know the cause of most AVMs. However, they might result from abnormal development of blood vessels during pregnancy. AVMs are not inherited, and they affect all races and both genders equally.

Arteriovenous Malformations Symptoms and Effects

AVMs are more likely to bleed than normal blood vessels. They vary in size and can appear in different areas of the brain. While AVMs can appear anywhere in the body, they do the most damage in the brain because of the risk of bleeding.

Most people are not aware they have an AVM. The most common symptoms of an AVM are seizures and persistent headaches. When an AVM bursts, the burst can cause a severe headache.

Typical symptoms of an AVM are:

- Seizures.
- Headache.
- A whooshing sound in the head.
- Weakness or numbness.
- Dizziness.
- Confusion.
- Problems walking.

Arteriovenous Malformations Diagnosis and Treatment

The three main tests used to diagnose AVMs are:

- **Angiogram (cerebral arteriography):** This test shows the AVM as a tangle of blood vessels. This test is usually the most accurate, because it shows specialists the exact location and size of the AVM.
- **CT scan:** This test shows bleeding in the brain and spaces of fluid around the brain.
- **MRI:** This test shows the AVM in detail, as well as its location within the brain.

Because AVMs differ from child to child, the best treatment plan depends on the size, type and location of your child's AVM. At Gillette Children's Specialty Healthcare, we simply monitor AVMs for changes in cases where treatment isn't necessary. In other cases, we might recommend one or a combination of the following treatments.

Embolization

Embolization treatment involves a neurosurgeon injecting a special glue into the AVM. When the glue hardens, it blocks blood from passing through the blood vessels, reducing the risk of bleeding.

Radiation

Radiation treatment uses a narrow X-ray beam to focus a very strong dose of radiation on the AVM. The radiation causes the AVM to close after two to three years.

Surgery

Sometimes a neurosurgeon can remove AVMs without risk of serious complications. In such cases, complete surgical removal of the AVM is an excellent long-term treatment option for your child.

Integrated Care

If your child has an AVM, our specialists will work closely with you and your family to create a treatment plan that fits your child's unique needs. Gillette offers care from pediatric neurosurgeons, pediatric rehabilitation medicine physicians, and rehabilitation therapists. These experts have experience diagnosing and managing AVMs and other cerebral vascular conditions.

Your child might receive care within the following specialties and services during their treatment for AVM:

- **Neurosurgery.**
- **Neurology.**
- **Rehabilitation medicine.**
- **Rehabilitation therapies.**
- **Radiology and imaging.**

Your child's comfort and well-being guide every decision we make at Gillette. Our team of multidisciplinary specialists will make sure you have the information and support you need, every step of the way.

[Make An Appointment](#) **651-290-8707** [Refer a Patient](#) **651-325-2200**

This information is for educational purposes only. It is not intended to replace the advice of your health care providers. If you have any questions, talk with your doctor or others on your health care team.

If you are a Gillette patient with urgent questions or concerns, please contact Telehealth Nursing at [651-229-3890](#).