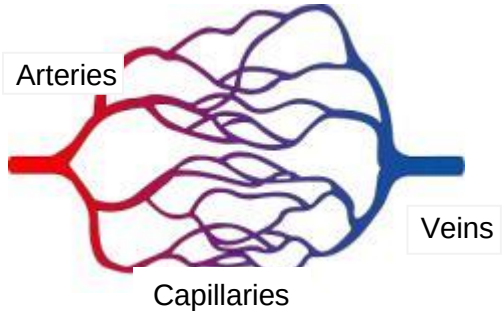
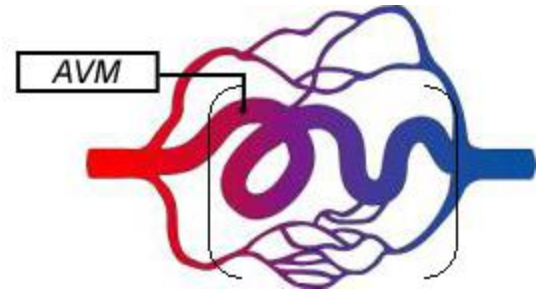
Arteriovenous Malformation (AVM)

What is an arteriovenous malformation?

- Normally, arteries carry blood with oxygen from the heart to the brain and body.
- Veins carry blood with less oxygen back to the heart.
- Capillaries connect arteries to veins.

When an arteriovenous malformation (AVM) happens, the capillaries are missing. The arteries connect directly to the veins. This causes the blood to flow very fast through these large vessels.





What does an AVM look like?

At birth, the skin on top of the AVM may be pink, red, or blue-ish. The skin may be swollen or warm to the touch. Over time the skin will look dark red or purple. It may be a small area such as a lip, or it may take up an entire arm or leg. The skin over the malformation usually feels warmer than other skin. A pulse from the heart beat may be felt.
AVMs are most common in the head but may appear anywhere on the body or internal organs.

What causes it?

The cause of an AVM is not known. They may have a genetic link. They are not hereditary and are rarely passed down among families. They are there at birth (congenital), but less than half are diagnosed at birth. It may take years to be diagnosed. They don't normally grow, but the vessels may widen and appear larger. They may shrink due to clots forming.

How is it diagnosed?

The diagnosis must be confirmed by an MRI or a CT scan. The imaging must be done to see how big the malformation is.

What are the complications?

- Crusting and bleeding on the skin.
- Pain.
- Severe bleeding (hemorrhage).
- If the AVM is in the head, your child may have headaches and other symptoms. Some symptoms might be seizures, sudden pain, numbness and tingling. You would talk with your child's doctor about any of these symptoms.
- Heart failure may develop due to the large amount of blood that flows through the AVM.

Are there other problems that are linked to AVMs?

Some AVMs may be linked to a group of problems called a syndrome. Your doctor will ask you questions about the family health history.

The syndromes linked to AVMs are Bannayan-Riley-Ruvalcaba, Cowden Syndromes and Parkes-Weber Syndrome.

How is it treated?

- **Embolization**. Tiny particles or coils are injected into the malformation. This slows the flow of blood in the AVM. Embolization is usually done before surgery to help decrease the blood loss during surgery.
- **Surgery**. Surgery will remove as much of the AVM as possible. More surgery may be needed if the entire AVM is not removed.
- **Sclerotherapy**. A solution is injected into a blood vessel. This will cause the inside of the vessel to swell so blood cannot flow through it. The vessel will then collapse and form scar tissue.

Are there other websites or references that may be helpful?

- National Organization of Vascular Anomalies (NOVA), http://www.novanews.org/.
- Vascular Birthmarks Foundation, http://www.birthmark.org/.

ALERT: Call your child's doctor, nurse, or clinic if you have any concerns or if your child has:

- Sudden swelling.
- An infection that will not heal.
- Bleeding that will not stop.
- Special health care needs not covered by this information.

This sheet was created to help you care for your child or family member. It does not take the place of medical care. Talk with your healthcare provider for diagnosis, treatment and follow-up.

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