

## PERIPHERAL ARTERIAL DISEASE IMPROVING BLOOD FLOW TO THE LEGS

Peripheral arterial disease, also called PAD, is when the arteries in the legs are narrowed or blocked. It can't be cured, but treatment and a healthy lifestyle can improve blood flow and keep the disease from getting worse.

The following steps may be taken to determine whether you have PAD:

- Health history and medications being taken
- Physical exam
- Tests to measure blood flow
  - Ankle-brachial index
  - Doppler ultrasound
- Image tests
- Arteriography
- Other image tests
  - CT arteriography
  - MR arteriography

## TREATMENT OPTIONS

Sometimes PAD can be controlled with lifestyle changes and/or certain medications. If PAD worsens, surgery or other procedures can help improve your quality of life. Treatments such as endovascular and bypass surgery are available.

Endovascular procedures such as angioplasty and stenting can be treatment options. Angioplasty is used to widen a narrowed artery or open a blockage. Then, a stent may be inserted to hold the artery open. More than one artery may be treated during these procedures.

For a long blockage, the best option may be bypass surgery. A graft is used to create a new pathway for blood around the blockage. Two types of bypass surgery are abdominal and leg bypass.

# Vascular Associates

The vascular fellowship trained and vascular board certified physicians at Vascular Associates provide Total Vascular Care, treating the full range of vascular disorders. Their training and experience ensures that you will receive unsurpassed care by utilizing the most advanced treatment options available.



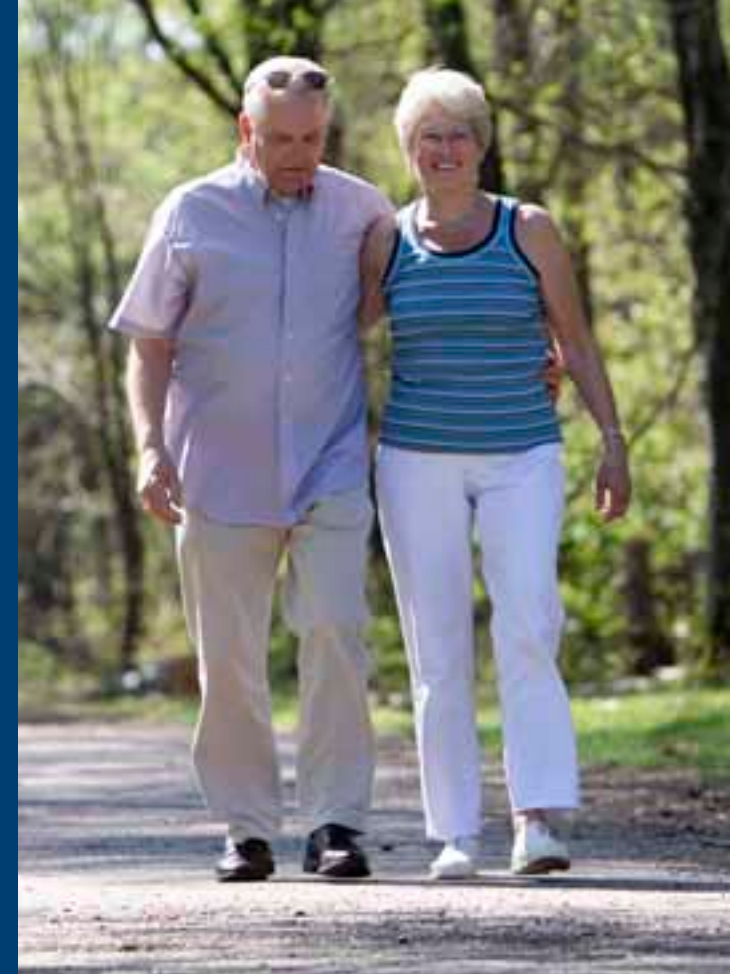
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Carotid Artery Disease &  
Peripheral Arterial Disease

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# Providing the best treatment for our patients

At Sanford Clinic Vascular Associates, the vast majority of vein-related problems are treated non-surgically. That's because our board certified doctors use the latest medical technology to ensure the safest, most minimally-invasive treatments possible. We provide you with the most comprehensive vascular care in South Dakota, North Dakota, Iowa and Minnesota. The treatment options we prescribe range from lifestyle changes to medications to surgery.

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## ABDOMINAL AORTIC ANEURYSM THE SILENT PROBLEM

An abdominal aortic aneurysm (AAA) is a balloon-like bulge in the aorta. Most doctors agree that, for someone in good health, an AAA larger than five centimeters in diameter (about the size of a lemon) needs treatment.

### TREATMENT OPTIONS

Choosing which treatment option depends on factors such as:

- Size of the aneurysm
- Growth speed
- Overall health

For larger aneurysms, or those growing quickly, the risk that it will rupture is greater. Suggesting surgical repair may be appropriate.

In a case where surgery is recommended, there are two basic options for repairing the artery: endovascular repair and open surgery. Both methods involve placing an artificial graft inside the damaged artery.

For the majority who receive endovascular repair, two small incisions are made in the groin. The surgeon uses x-ray guidance to move the graft through the arteries towards the damaged part of the aorta. Catheters are then used to place the graft in position.

Open surgery begins with an incision in the abdomen. The aorta is clamped to allow the surgeon to open the aneurysm. The graft is sewn to the aorta above and below the aneurysm.

## CAROTID ARTERY PROBLEMS IMPROVING BLOOD VESSEL HEALTH

When one or both of your carotid arteries are narrowed due to a build-up of plaque, you are at risk for a stroke. In addition to an endarterectomy, stenting is an alternative. This new minimally invasive procedure uses a small puncture instead of an incision.

A TIA (transient ischemic attack) is a temporary episode of stroke-like symptoms. It is sometimes called a “ministroke”. TIA symptoms go away within 24 hours, but otherwise they are exactly the same as stroke symptoms. These are often warning signs of an impending stroke.

An evaluation can give you the information needed to make decisions on which treatment is right for you. Medical history, a physical exam and/or duplex ultrasonography can help in the decision-making process. Duplex Ultrasonography is a noninvasive testing technique that checks for narrowing in the carotid arteries and estimates how severe it is. Other tests include CT, MRI and angiography.

### TREATMENT OPTIONS

*Endarterectomy* is a surgical procedure in which an incision is made in the skin over the artery. The artery is opened and plaque is removed. The incisions in the artery and the skin are then closed.

*Carotid Artery Stenting* is a minimally invasive procedure which involves the placement of a wire mesh tube (stent) in the artery to hold it open. During the procedure, a long thin tube called a catheter is used to place the stent in the artery. This procedure is performed using local anesthetic.