

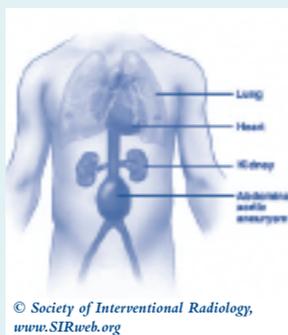
# Abdominal Aortic Aneurysm

## What Is Abdominal Aortic Aneurysm (AAA)?

An aortic aneurysm is a weak area in the main blood vessel that supplies blood from the heart to the rest of the body. As blood flows through the aorta, the weak area bulges like a balloon. If the balloon grows large enough, there is a danger that it will burst.

The most common site for an aortic aneurysm to occur is below the area where the aorta divides to supply blood to the kidneys and above where it divides to supply blood to the pelvis and legs. An aneurysm in this location is called an abdominal aortic aneurysm (AAA).

A small aneurysm may require no treatment other than checking the aneurysm regularly to be certain it does not grow. If an aneurysm reaches a certain size, however, there is a danger that it will burst and bleed uncontrollably (hemorrhage). In these cases treatment is necessary.



## How Common Is AAA?

Abdominal aortic aneurysm occurs in from five to seven percent of people over the age of 60 in the United States. Males are four times more likely to have AAA than females. The condition is the 17th leading cause of death in the United States, accounting for approximately 15,000 deaths each year.

## Who Is at Risk?

Those at highest risk for AAA:

- smoke
- have high blood pressure
- have a family history of AAA
- are male
- are over 60 years of age
- have a history of heart disease or atherosclerosis (hardening of the arteries)

## What Are the Symptoms of AAA?

AAA is sometimes called a “silent killer” because there are usually no obvious symptoms. When symptoms are present, they may include:

- severe abdominal pain (that may be constant or come and go)
- pain in the lower back that may radiate to the buttocks, groin or legs
- the feeling of a “heart beat” or pulse in the abdomen

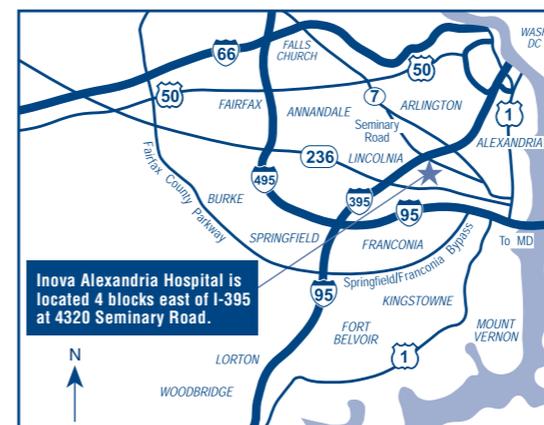
In some, but not all cases, AAA can be diagnosed by a physical examination in which the doctor feels the aneurysm as a soft mass in the abdomen.

If an aneurysm expands rapidly, tears open or bursts, or if blood leaks along the wall of the blood vessel (aortic dissection), severe symptoms may develop suddenly. **A ruptured aneurysm is life-threatening and requires immediate emergency care.**

Symptoms of a ruptured aneurysm may include:

- severe pain that begins suddenly
- paleness
- rapid pulse
- dry mouth/skin and excessive thirst
- anxiety
- nausea and vomiting
- lightheadedness or fainting
- excessive sweating or clammy skin
- shock

If you experience these symptoms, seek immediate emergency care.



Inova Health System is a not-for-profit health care system based in Northern Virginia that consists of hospitals and other health services including emergency and urgent care centers, home care, nursing homes, mental health and blood donor services, and wellness classes. Governed by a voluntary board of community members, Inova's mission is to provide quality care and improve the health of the diverse communities we serve.

[www.inova.org](http://www.inova.org)  
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# Aortic Stent-Graft Repair

*A Less Invasive Technique  
for Treating Abdominal  
Aortic Aneurysm (AAA)*



## Diagnosis

### How Do I Know if I Have AAA?

If you are in a high risk category for AAA, you should discuss with your doctor whether you should be tested for this condition.

A careful physical examination can detect many, but not all, abdominal aortic aneurysms. By placing a stethoscope on the abdomen, the doctor may hear the sounds of abnormal blood flow through a weakened area of the aorta. The physician also may be able to feel the aneurysm by pressing gently on the abdomen. Physical examination is most likely to detect aneurysms that are large, and is more reliable in detecting AAA in people who are thin.

If your physician suspects that you have AAA, or are at high risk, there are a number of imaging exams that can be used to “see” the aorta and confirm whether an aneurysm is present, such as an ultrasound, a computed tomography (CT) scan, magnetic resonance imaging (MRI) or an arteriogram.

## Treatment Options

### How Is AAA Treated?

If an aneurysm is small, it may require no treatment other than “watchful waiting.” The aneurysm should be monitored by a vascular specialist who will order periodic ultrasound exams or other tests to determine if the aneurysm is growing. Many aneurysms remain small and pose no significant risk.

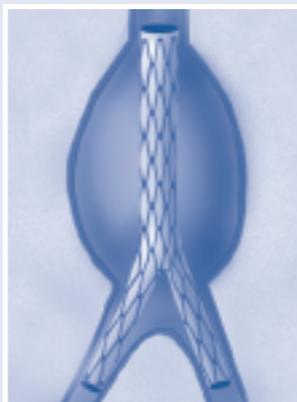
Aneurysms greater than five centimeters in size are at greater risk for rupture and typically require treatment. Once an aneurysm has ruptured, the chances of survival are low, with from 80 to 90 percent of all ruptured aneurysms resulting in death. These deaths can be avoided if an aneurysm is detected and treated before it ruptures.

### How Is AAA Repaired?

There are two methods to repair AAA:

- **Open Surgical Repair.** The most common treatment for a large, unruptured aneurysm is open surgical repair. An incision is made in the abdomen and the surgeon opens the aneurysm and sews in place a vascular graft – a tube made of cloth that lines the weakened area of the aorta, blocking the supply of blood to the aneurysm.

- **Endovascular Stent-Graft Repair.** In some cases, a less invasive technique called endovascular repair may be used. In this technique, a device called a stent-graft is threaded through a blood vessel in the groin and into the aorta to divert the flow of blood from the aneurysm. With this technique, there is no need to make a large incision in the abdomen or to cut away the damaged section of blood vessel.



*A stent-graft is threaded into the blood vessel where the aneurysm is located. The stent-graft is expanded like a spring to hold tightly against the wall of the blood vessel and cut off the blood supply to the aneurysm.*

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According to a national study conducted at medical centers throughout the United States, stent-graft repair of abdominal aortic aneurysms has fewer complications than traditional surgery, and allows people to be back on their feet in less time.

### Which Treatment Is Right for Me?

The best treatment for AAA depends on a number of factors, including the size and location of the aneurysm, whether or not it is causing symptoms, and the age and general health of the patient. You should discuss all of these factors and any other questions you have with your primary care physician. You also may want to consult with an interventional radiologist at Inova Alexandria Hospital to determine if you are a candidate for the stent-graft repair procedure.

## Endovascular Stent-Graft Repair

### What Is an Endovascular Stent-Graft?

A stent-graft is a combination of a metal stent and surgical graft material. At Inova Alexandria Hospital, a team of interventional radiologists and cardiovascular surgeons works together to implant the device. The stent-graft is inserted through a catheter in the femoral artery and the progress of the device is followed on an X-ray monitor. When the stent-graft is in place, the interventional radiologist expands the stent, which is like a tiny spring, and it holds tightly against the wall of the blood vessel. The blood then flows through the stent-graft, avoiding the weakened part of the vessel. Typically, the aneurysm shrinks over time.

### How Long Does the Stent-Graft Procedure Take?

The procedure is appropriate only for non-emergency situations. The length of time a procedure takes depends on the patient and the procedure being performed. Typically, the patient remains in the hospital for two to four days following the procedure. Keep in mind that a ruptured aneurysm is life threatening and requires immediate emergency care.

### Is Stent-Graft Repair Painful? What About Recovery?

The procedure is not painful. General or regional anesthesia is used. After the procedure, most patients experience much less pain than they would with open abdominal surgery. Many patients spend no more than a day in intensive care.

### What Are the Risks?

The stent-graft repair procedure is quite safe, with few associated risks. Complications are rare. However, each patient should discuss the risks and benefits of the procedure with the physician because the possibility of complications differs from patient to patient.

## Cardiovascular and Interventional Radiology at Inova Alexandria Hospital

Inova Alexandria Hospital's Cardiovascular and Interventional Radiology program treats a variety of medical conditions without traditional surgery.

Our nationally recognized, board-certified interventional radiologists perform minimally invasive procedures using small incisions, tiny instruments and imaging techniques. These procedures are generally less traumatic to patients than surgery, and result in less pain and shorter hospital stays.

Our interventional radiologists performed the first peripheral and renal angioplasty and stent placement in Northern Virginia. Our team also performed the first abdominal aortic stent-graft in Northern Virginia. They were some of the first doctors in the Mid-Atlantic Region to perform uterine fibroid embolization (UFE), and have one of the largest and most successful UFE programs in the country.

Our interventional radiologists are experts at treating varicose veins, peripheral vascular disease (PVD), spinal bone fractures, abdominal aortic aneurysms and stroke. Each year they perform thousands of procedures. For more information, call **703-504-7950** or visit [www.inova.org](http://www.inova.org).

*For more information or to make an appointment, call*  
**703-504-7950.**