



## What is AAA?

Abdominal aortic aneurysms (AAA) are caused by progressive weakening of the aortic wall creating a “ballooning” of the vessel. The aneurysm will grow larger and eventually rupture if it is not diagnosed and treated. Aneurysms occur most often in the aorta, the main artery of the chest and abdomen. The aorta carries blood flow from the heart to all parts of the body including the vital organs and the legs and feet.

## Symptoms

In most cases, there are no major symptoms for AAA. Occasionally, patients may feel abdominal, back or side pain. Seventy-five percent of the aneurysms that are discovered are detected from diagnostic tests (such as x-rays) that were given for other health problems. Individuals may also feel a coldness, numbness or tingling in their feet and hands.

*A ruptured aneurysm is an emergency and procedures must take place immediately to save one's life and avoid serious complications.*

## Diagnosis

Although AAA can be detected by physical examination, most are diagnosed today using an ultrasound scan or CAT scan. These are simple, non-invasive exams conducted on an outpatient basis. These exams also measure the size of AAA, a key element in determining the best treatment.

### *Early Diagnosis*

When aortic aneurysms are diagnosed early, treatment is safe and effective and the aneurysm is curable. Aneurysms are often detected while performing tests for entirely different reasons. Most patients have no symptoms, so if you are at risk, it is important to discuss AAA with your doctor.

## Risk Factors

- Age over 60 years
- Family history of AAA
- Tobacco use
- History of heart disease or peripheral artery disease
- High blood pressure (hypertension)



## Fast Facts

- The risk of AAA increases with age
- Tobacco users are eight times more likely to be affected than non-users
- AAAs are between five to ten times more common in men than in women
- There are approximately 15,000 deaths per year related to the rupture of an aneurysm
- Ruptured aneurysms are the 10th leading cause of death in men over 50 in the country

## Causes

Proteins in the wall of the aorta, called elastin and collagen provide strength and flexibility to this large artery. This is similar to muscles and tendons providing strength to the arms and legs. Aneurysms are caused by a progressive breakdown of these proteins that lead to a weakness of the wall of the aorta that can steadily expand like a balloon. These proteins, collagen and elastin, may gradually deteriorate with age.

Inflammation that is associated with atherosclerosis (hardening of the arteries) helps to accelerate this degenerative process even in younger people. Some of the body's naturally occurring enzymes may also cause the breakdown of collagen and elastin in the wall of the aorta. An excess of these enzymes or conditions that activate the enzymes may cause the formation of an aneurysm, or lead to its sudden growth. In rare cases an aneurysm may be caused by infection. There is still much to be learned about the cause of aneurysms and their growth.

## Treatment

If the AAA is larger than 5-6 centimeters in diameter (about the size of a lemon), it will require treatment. Your physician's decision to repair will be based on the risk of the aneurysm rupturing, along with surgical or procedure risks, and risks associated with other pre-existing conditions. Smaller aneurysms that cause back or abdominal pain may also need treatment, especially for those that are enlarging rapidly.

Surgical treatment of AAA has been performed routinely in the U.S. for about 50 years. It is a very successful and durable procedure. During the surgery, the surgeon makes an abdominal incision, then replaces the diseased part of the aorta with a Dacron or Teflon graft that is carefully matched to the normal aorta. This graft is sewn in place by the surgeon. Most patients stay in the hospital for five to ten days if no complications occur. Complete recovery from the operation may take one to two months before returning to a full and normal life.

After 50 years of experience with these procedures, the facts show that more than 90 percent of patients make a full recovery from surgery. Once patients have recovered, their aneurysms are permanently cured!



### *Less Invasive Treatments of AAA*

Recent advances in catheter-based technologies have led to exciting new treatments for aortic aneurysms. Now, endovascular grafting technology allows the repair of the AAA by inserting a graft through a small incision in the groin. The endovascular method allows the graft to be delivered through a catheter or tube inserted in a groin artery. X-ray guidance is then used to accurately position the graft in the AAA. The graft is then expanded inside the aorta and held in place with metallic hooks rather than sutures. The hospital stay is usually only one or two days, and most patients can return to work or normal daily activities in about a week. Patients with other medical problems or those that could not withstand major surgery can be considered for repair by an endovascular graft. Endovascular grafting may not be possible in every case. Endovascular grafts are specially manufactured and don't "fit" everyone's anatomical situation. Standard surgery may still be the best option for many. As a fairly new procedure, endografts do not yet have a 50-year track record to compare to that of surgery for AAA. Speak with your physician about the best option for you.

The combination of early diagnosis with safer, simpler, and ever more successful treatments can prevent deaths due to ruptured abdominal aortic aneurysms.

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