A Weakened Blood Vessel

What does it mean to have an abdominal aortic aneurysm (AAA)? This is a balloon-like bulge in a major blood vessel, the aorta. The bulge forms at a weak place in the vessel wall. An AAA is dangerous because it can rupture. This is serious, and can be fatal. But now that you know you have an AAA, steps can be taken to treat the problem and prevent a rupture.

A Silent Problem

An AAA is called a “silent” problem because it usually causes no symptoms. It’s sometimes found by a healthcare provider during a routine exam. More often, it’s detected when tests are done for an unrelated problem. Once an AAA is found, tests can be done to measure its size and follow its growth.

Who Develops an AAA?

Anyone can have an AAA. But certain factors increase the risk that an AAA will form or rupture. These include:

• Having a close relative (parent, brother, or sister) who has had an AAA
• Smoking
• Having high blood pressure
• Having blood vessel disease in another part of the body
• Being over age 55 if you’re a man, or over age 65 if you’re a woman
The Next Step—Open Surgery

Learning that you have an AAA can be a shock. But treatment is available. Your doctor recommends open surgery. This surgery repairs the aneurysm through an incision. Your healthcare team can tell you more about this procedure. Your team may include your primary healthcare provider, nurses, and a vascular (blood vessel) specialist. You can also learn more about AAAs and how they are treated with open surgery by reading this product.

Table of Contents

Understanding AAA
How blood vessels work, and what can go wrong ........................................... 4

Your Medical Evaluation
Gathering information about your AAA ............................................................. 6

Preparing for Surgery
What to do before open surgery ......................................................................... 7

Open Surgery: Your Experience
What to expect with open surgery. ................................................................. 8

After Surgery
What to expect as you recover from open surgery ........................................... 10

Living a Healthier Life
Ways to reduce your risks, now and in the future ............................................. 11
Understanding AAA

Blood vessels are tubes that carry blood throughout the body. **Arteries** carry oxygen-rich blood from the heart to the rest of the body. (Blood vessels that carry the blood back to the heart are called veins.) AAA occurs when a part of the largest artery in the body, the aorta, weakens and expands.

What Is the Aorta?

The aorta is the artery that carries blood directly from the heart. Blood then flows from the aorta into smaller arteries that supply the rest of the body. A healthy artery is smooth inside, allowing blood to flow easily. The part of the aorta that travels through the abdomen (stomach area) is called the **abdominal aorta**. Smaller arteries branch off the abdominal aorta to carry blood to organs in the abdomen. These arteries include the renal arteries, which supply the kidneys. Lower down, the aorta divides into the two iliac arteries, which supply blood to the legs.
When an AAA Forms

The problem starts when the lining of the aorta is damaged. Or, the aorta may become weakened due to certain factors that run in families. The weakened artery stretches outward, expanding like a balloon. The resulting bulge is called an aneurysm. As it expands, the artery wall becomes thinner and weakens even more. High blood pressure further strains the artery wall. It may become so thin that it ruptures (leaks, bursts, or tears open). This is fatal if not treated right away.

An aneurysm forms when part of the wall of the aorta weakens and balloons outward. Aneurysms can form in the iliac arteries, too.

Plaque (a fatty substance composed of cholesterol and other particles) may be found in the weakened artery wall. Blood may thicken (clot) inside the artery. Blood can still flow through the clot, so this may not cause symptoms.

AAA and Arterial Disease

If you have an AAA, it’s possible that you also have disease in other arteries. If so, you’re at risk of a heart attack, stroke, and vascular problems in the legs and other areas of the body. Your healthcare provider may recommend that you be screened for these conditions.
Your Medical Evaluation

An exam and tests give your doctor more information about your AAA. Certain tests measure the size of the aneurysm. They can track changes in the AAA over time. Other tests assess blood flow.

History and Physical Exam

After an exam of your abdomen, you’ll be asked about your family medical history. Your doctor will also ask about your own health history. Contrast fluids used for tests may contain iodine, so you’ll be asked about allergies to iodine or seafood.

Imaging Tests

Imaging tests create pictures of the arteries. This helps determine the size and shape of the aneurysm. Tests include:

• Ultrasound. Sound waves are used to create an image of the blood vessels. For this test, your healthcare provider moves a sensor across your abdomen.

• CT (computed tomography). A series of x-rays are taken with a special x-ray machine. Computers use these x-rays to create a picture of the aneurysm. Before this test, you may be given contrast fluid through an IV (intravenous) line. This helps arteries show up clearly.

• MRI (magnetic resonance imaging) makes images by analyzing energy released by tissues in the body after exposure to a strong magnet. A different type of contrast is used for this test.

Other Tests

These tests may be done before repair of the artery:

• Arterial Doppler study. Blood flow in the legs is measured with a special probe and blood pressure cuffs placed on the leg.

• Arteriography. This test creates an x-ray image (arteriogram) showing the blood flow through the aorta and other arteries. Contrast fluid is used for this test.
Preparing for Surgery

With open surgery, a single large incision is made in the abdomen. A graft (a tube made of strong, flexible fabric) is then sewn into the artery above and below the aneurysm. Open surgery has been used for many years, and it has a good long-term track record. Your surgeon will tell you how to prepare for the procedure. He or she will also talk with you about its risks and possible complications.

Before Open Surgery

- Have tests as advised by your surgeon.
- Stop taking aspirin and ibuprofen as directed. Also, mention any medications, herbs, or supplements you take. Your surgeon may advise you to stop taking some of them before surgery.
- Arrange to take time off work. Plan for recovery to take 6 weeks or more.
- Pack for a hospital stay of 7 to 10 days.
- Don’t eat or drink after the midnight before the procedure.

Risks and Complications of Open Surgery

Risks include, but are not limited to:

- Heart attack or other heart problems
- Pneumonia or other respiratory problems
- Kidney failure
- Blood clots in the legs
- Bleeding
- Infection at the incision site
- Injury to the blood supply of the colon or spinal cord
- Impaired sexual function (in men)
- Infection or blood clot at the graft
- Injury to the ureters
- Stroke
- Death
Open Surgery: Your Experience

At the hospital, you'll be taken to a prep room to get ready. You'll then be moved into the operating room. The procedure takes about 3 to 5 hours. Afterward, you’ll be moved to the ICU. Then you'll begin recovery in your room.

Before Surgery

At the hospital you will be asked to fill out certain forms. You'll then be taken to a prep room, where you'll change into a hospital gown. At this time you'll discuss your anesthesia (medication used to keep you pain-free during surgery) with a doctor or nurse. An IV line will then be inserted into your arm to provide fluids and medications. The anesthesia will be given to you just before surgery begins. General anesthesia is used to make you sleep and keep your muscles relaxed during surgery. You may also be given pain medication through a thin, soft tube inserted into the spine (an epidural).

During Surgery

Surgery begins with an incision in your abdomen. Two possible positions for this incision are shown above. (The one shown here as a dotted line may continue around the side of the body.) The size and shape of your own incision may vary.

The surgeon gently moves aside the organs to reach the aorta. The aorta is clamped to stop blood flow. The surgeon then opens the aneurysm and clears any blood clot. The graft is sewn to the aorta above and below the aneurysm.

Some of the aorta wall may be removed. This helps make a snug fit when the aorta is wrapped around the graft. The aorta is then sewn together, helping to protect the graft. The incision site is closed.
Right After Surgery
After surgery, you’ll be taken to an intensive care unit (ICU). Your blood pressure, pulse, and breathing will be checked. You’ll also be given pain medication as needed. If you were given an epidural, it may stay in place to help control pain. At first, you’ll have several tubes in place to help your body function. They will be removed when they’re no longer needed. These may include:

- A catheter to drain urine.
- A tube that is passed through the nose into the stomach (nasogastric tube).
- A tube to help you breathe. If you have this, it may prevent you from talking.

Beginning Your Recovery
In your room, you’ll be checked often to be sure you’re healing well. Your IV line will remain in place to give you fluids. Your recovery will also involve:

- **Getting up and around.** You’ll be helped to walk as soon as possible. As you gain strength, you’ll walk farther and be up for longer periods.
- **Pain control.** Medication may be given through a pump that lets you control the dose within limits set by your surgeon. This is called a PCA pump.
- **Breathing exercises.** These help prevent lung infection. For these exercises you’ll use a device (spirometer) that helps you practice taking deep breaths.

Going Home
Before you go home, you’ll meet with your surgeon. He or she will go over the results of the surgery and give instructions for home recovery. You will most likely be cleared to go home when you are alert, your pain is controlled, and you can eat and digest food. Have an adult family member or friend drive you home.
After Surgery

Recovery from open surgery doesn’t happen overnight. You may be recovered as soon as 4 weeks after you go home. Or it can take a few months. As you recover, try to be active. But be sensible: If what you’re doing hurts, stop. If you’re tired, rest.

Your First Weeks at Home

Follow your surgeon’s instructions on caring for yourself at home. Ask a family member or friend to help with shopping, cooking, and other chores. Your appetite and digestion may not be normal at first. If so, try soup and other liquids. You may be prescribed a mild laxative. You should also:

• Shower instead of taking tub baths for the first week.
• Take medications exactly as prescribed.
• Avoid strenuous exercise. Don’t lift anything that weighs over 10 pounds.
• Don’t drive until your surgeon says you can.
• Keep any follow-up appointments with your surgeon.

Your Long-Term Recovery

Even after you’re back to your normal routine, you may have less energy than usual. This may last for 2 to 3 months, or even longer. As long as you don’t overdo it, exercise can help you get back to your full strength. So be as active as you feel able to be. And discuss any ongoing concerns with your healthcare provider.

When to Call Your Doctor

Call your doctor if you have these symptoms, or any others that concern you:

• A very red, very tender, or draining incision
• Fever over 100°F (37.8°C)
• Pain in your legs, abdomen, or back
Living a Healthier Life

Even though your AAA has been fixed, you’re still at risk of artery disease in other parts of the body. Below are some actions you can take to reduce your rupture risk and keep your arteries healthier. Ask your healthcare provider for help getting started.

Reducing Rupture Risk

High blood pressure can make your AAA grow more quickly. To reduce high blood pressure:

- **Quit smoking.** Smoking raises blood pressure and makes blood clots more likely. So get medical help and quit for good!
- **Change your diet.** An eating plan based on vegetables, fruits, whole grains, and low fat dairy products can help lower blood pressure. Cutting sodium (salt) helps, too.
- **Exercise.** Daily exercise can lower your risk of artery problems. If you’re new to exercise, start gradually and work up to 30 minutes most days of the week.
- **Maintain a healthy weight.** If you’re overweight, losing as little as 5 or 10 pounds can improve your health. Start by setting a goal you know you can reach.
- **Take medication as prescribed.** When used correctly, medications can help control blood pressure. If your doctor has prescribed medication, set up a routine so you won’t miss any doses.

If You Have Diabetes

Diabetes is a disease that raises the level of glucose (sugar) in the blood. This damages arteries and worsens artery disease. But controlling blood sugar levels can reduce the damage. Control involves exercise, watching what you eat, and monitoring blood sugar daily. Many people with diabetes must also take medication or insulin. Discuss your treatment options with your healthcare provider. You may be advised to work with a dietitian or a certified diabetes educator to help you improve your control.
Screening for AAA

You learned about your AAA in time to do something about it. But you’re not the only one who should take heed. AAA runs in families. This means that your brothers, sisters, and children could be at risk. Screening could save the life of someone you love. So urge your family members to ask their healthcare providers about screening for AAA.