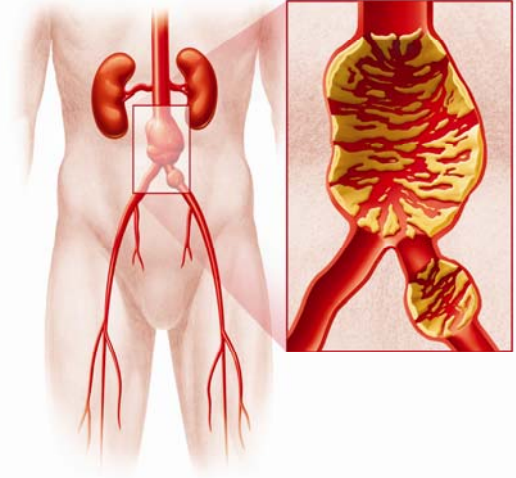




## Abdominal Aortic Aneurysm (AAA) (Updated 10.08)

The aorta is the largest artery in the body. The part of the aorta that carries blood from your heart through your abdomen, and splits into iliac arteries that supply your legs, is called the **abdominal aorta**. Smaller arteries also branch off the aorta at several points to carry blood to various organs and other parts of the body.

An aneurysm occurs when a weakened part of a blood vessel expands like a balloon. As it expands, the vessel wall becomes thinner and weakens, and there is a risk it will break open or rupture. A ruptured abdominal aortic aneurysm is a life-threatening condition, but with medical help it may be prevented.



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### What Causes Abdominal Aortic Aneurysm?

Certain risk factors increase the chance of developing an AAA. These include:

- Family history of AAA.
- Age over 60 years, especially for men.
- Atherosclerosis (the buildup of plaque on the walls of your blood vessels).
- Smoking.
- High blood pressure.
- High cholesterol.
- Inflammation or irritation of the artery wall (causes are unknown).

### Symptoms of an AAA

Although you may not notice any symptoms when an aneurysm develops, you may experience the following:

- A pulsing feeling in your abdomen, similar to a heartbeat.
- Severe, sudden pain in your abdomen or back. This may mean your aneurysm is about to burst.
- Rarely, you may develop pain, discoloration, or sores on the toes or feet because blood vessels supplying your feet become blocked by material shed from the aneurysm.

If your aneurysm bursts, you may suddenly feel intense weakness, dizziness, or pain. You will have internal bleeding and may lose consciousness. This is a life-threatening situation: seek medical attention immediately.

## **Diagnosis of AAA**

An AAA is often found when tests are done for an unrelated problem, or your doctor may find it on a physical exam of the abdomen. If the aneurysm is large enough it can be felt by the doctor when you are lying down. Your doctor may use the following process to determine the severity of your aneurysm.

**History and Physical:** Because AAA can run in families, when you are having a checkup your doctor may ask whether any relatives have had an AAA. Your doctor will perform a full physical exam, especially of the abdomen. Be sure to let your doctor know if you have felt low back pain or tenderness in your stomach area or below your ribs.

**Ultrasound** uses sound waves to make images of your aorta and arteries on a screen. This test can measure the size of the aneurysm. It is a quick and painless procedure that can be done at your doctor's office.

**CT Scan and MRI** are tests that show more detail than an ultrasound. A CT scan takes a series of x-rays that are put on a computer to form a picture of the aneurysm. An MRI uses radio waves made by a strong magnet to create images of your aorta without using x-rays.

**An Arterial Doppler Study** measures blood flow in your legs. The technician puts a blood pressure cuff on your leg and listens to the blood flow in your arteries through a special stethoscope. An arterial Doppler study can show whether a leg artery is blocked by plaque or a blood clot.

**Arteriography:** If you are diagnosed with an AAA, your doctor may send you for an arteriogram to show the amount of damage and its exact location. The test itself may take only a couple hours and is usually done on an outpatient basis, but with recovery time you should allow a full day.

Before the procedure, you'll be given medication to make you comfortable. After numbing the area, the doctor will insert a long, thin tube called a catheter into an artery, usually one of the femoral arteries, through a small puncture in one of your groins. The doctor will carefully thread the catheter through the affected artery, and once it is in place, will inject a contrast dye. The dye shows the aneurysm clearly on the x-ray. After the procedure, you will need to keep your leg straight for several hours, but generally you may resume your normal activities the following day.

Risks of arteriography include but are not limited to: bleeding, an allergic reaction to the contrast dye, small blood clots, damage to an artery, and kidney damage (from the dye).

## **Living with an Aneurysm**

Treatment of an abdominal aneurysm depends on the size of the aneurysm. The risk that a small aneurysm (less than 5 cm) will burst is low and therefore surgery may not be needed immediately. You and your surgeon may choose to monitor a small aneurysm for a while before proceeding. During this time you will want to make some changes to improve your health, including:

- Increased monitoring. You might have a check-up with your doctor every 6 to 12 months. The visit will include an ultrasound or other tests to show whether the aneurysm is growing and how fast.
- Stop smoking. Smoking damages the lining of all your blood vessels.
- Control blood pressure, cholesterol, and diabetes, all of which effect the health of your arteries.
- Eat healthy meals. Reduce your fat intake and increase fiber, fruits, and vegetables.
- Exercise regularly. You can start by walking for 10 minutes twice a day and build up from there. Check with your doctor before starting a more strenuous exercise program.
- Lose excess weight.

If you experience symptoms of a worsening AAA, such as intense pain in your back or stomach area, call your doctor immediately and go to the Emergency Department.

## **Surgery to Repair an Abdominal Aortic Aneurysm**

When the aneurysm is at a size that the risk of surgery is less than the risk of the aneurysm bursting, your doctor may feel you need surgery to repair it.

Some risks and possible complications of surgery for AAA repair are:

- Infection.
- Blood clots in legs.
- Bleeding.
- Kidney failure.
- Pneumonia.
- Injury to the colon's blood supply.
- Erectile dysfunction.
- Spinal cord injury.
- Heart attack, stroke, or death.
- A leak around or behind the graft.

## Patient Information - Preparing for Surgery

- Stop smoking right away, it will help speed your recovery from surgery.
- You may want to donate your own blood ahead of time, for use during or after surgery, if needed.
- Tell your doctor about any medications you are taking, including over-the-counter supplements. Ask if you should stop taking them.
- Unless you are told otherwise, do not eat or drink anything after midnight on the day before surgery.

During surgery, the weakened aortic wall is replaced with a graft, which is a synthetic tube made of strong fabric. This may be done by either open surgery or an endovascular procedure. The method depends on the size and location of the aneurysm and ultimately is decided by you and your doctor.

### Open Surgery for Aneurysm Repair

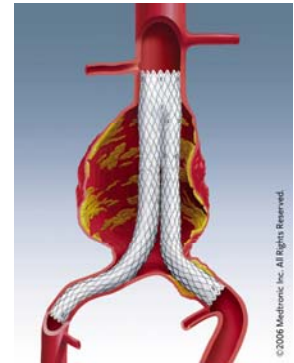
A large incision is made along the abdomen. Once inside, your surgeon gently moves aside your organs to reach the damaged section of the aorta.

- The aneurysm is then opened and cleaned to remove any clotted blood, if needed.
- The graft is sewn to the aorta at one end and to the iliac arteries at the other end.
- The wall of the aorta is wrapped around the graft to protect it. The wall is then sewn up.
- The incision site is closed with sutures and/or staples.

### Endovascular Procedure/Endoluminal Graft Repair

This is a new, minimally invasive approach to repairing an aneurysm. Rather than a large incision, you have several small incisions and your surgeon watches the procedure on a video monitor. This surgery provides a faster recovery with less pain.

- One or two small incisions are made near your groin. Then a catheter (a thin, flexible tube) is threaded through an artery at each incision. A graft, or a section of a graft, is placed inside each catheter. The graft is guided toward the damaged part of the aorta.



- The catheter is used to place the graft in the correct position and the graft is expanded so blood can flow through.
- The graft is attached inside the artery above and below the aneurysm using metal springs called stents, and/or hooks.
- The catheter is removed and the incisions are sewn or stapled together.

### **After the Surgery or Procedure**

After the operation, you will be taken to a recovery area where you will be watched closely. Once you are stable, you will be taken to the intensive care unit or to your room on the post-surgical floor.

Your nurse or a physical therapist will help you get up and walk soon after surgery. This will help your circulation and bowel function return to normal. It also helps to reduce swelling, promotes healing of your incision, and prevents lung problems, such as pneumonia. The sooner you are up and walking, the sooner you can go home.

You'll be doing breathing exercises to make sure you are expanding your lungs completely. This may be uncomfortable at first but the exercises clear any fluid that may be in your lungs from surgery.

### **After Open Surgery**

You can expect to be in the hospital for 5 to 10 days after an open AAA surgery. When you first wake up, you may feel groggy, thirsty, or cold. You will have a Foley catheter in your bladder, so you won't need to use the restroom. For a few days, intravenous (IV) lines provide fluids and medications.

You may have a nasogastric (NG) tube from your nose to your stomach for a few days to keep your stomach empty until your colon starts to function again. Although an NG tube may be somewhat uncomfortable, it prevents nausea, vomiting, and other complications.

When you start to pass gas, it is a sign that your colon is working again and you'll be started on a liquid diet. You will progress to a soft diet "as tolerated," that means as long as you don't experience nausea or vomiting. You will continue a soft diet for 2 to 8 weeks after surgery, depending on your healing, as ordered by your doctor.

### **After an Endovascular Procedure**

You can expect to be in the hospital for 1 to 3 days after the endovascular procedure. When you first wake up, you may feel groggy, thirsty, or cold. You may have a Foley catheter in your bladder, and in that case won't need to use the restroom. You may receive intravenous (IV) fluids and medications for a day or two. The doctor will instruct you about any dietary precautions.

## Caring for Yourself at Home

When you and the doctor feel you are ready, you will be discharged from the hospital.

- Make sure you have a responsible adult to drive you home.
- Your doctor will instruct you on when to restart your medications. Take all medications as directed.
- When you return home, take it easy. Avoid strenuous activities. Don't lift anything heavier than 5 to 10 pounds for at least 4 to 6 weeks after surgery. It is also common to have decreased energy for 2 to 3 months or longer, but try to keep as active as you can after that first 6 weeks, to re-build your strength.
- You can shower 24 to 48 hours after surgery unless your doctor specifies otherwise. It is O.K. to get the sterile tape on your incision wet, but do not soap it. Do not soak in a bath or hot tub until your incision is completely healed, which may be 6 to 8 weeks. If you have staples, you can shower without a bandage. Dry the area well afterwards.

**Pain** is common after surgery, especially around the incision site. The pain medication prescribed by your doctor will help with this pain, which should improve in the days following your surgery. Ask your doctor if you can take ibuprofen (Advil) between doses of your prescription pain medication, but do not take it if you are allergic to it, or if you have gastric ulcers or kidney problems.

**Fever:** A low-grade temperature is common after surgery. If your temperature exceeds 101.5 degrees or if it is accompanied by chills, vomiting, or flu-like symptoms, call the office.

**Incision:** When you leave the hospital, your incisions will be covered by a sterile bandage called a steri-strip. This will fall off or be removed when you have your post-op check. There may be some drainage from the incisions; this is normal. The drainage should be thin, watery, and slightly pink. It should not be bright red blood. Signs of an infection include thick green or yellow drainage, or skin around the incision that is red or warm to touch. Some swelling and bruising around the incisions is normal and should improve in the days following your surgery.

**Diet:** After open surgery your colon is adjusting due to a major operation. Constipation, diarrhea and poor appetite is to be expected for a few weeks. Try liquids and a soft diet for a few weeks. As you feel better, slowly move on to solid foods. Eat frequent, small meals to aid in digestion.

**Nausea:** Nausea is common after surgery. Be sure to take your pain medication on a full stomach. Stick to a soft bland diet for the first few weeks after surgery. If necessary, call your doctor and they can prescribe a medication to help with nausea.

**Constipation:** Constipation is very common following a surgery. The anesthetic used during the operation paralyzes the bowel, which can lead to constipation for up to a week. Pain medications such as Vicodin or Percocet also cause the bowel to move more slowly. You may try over-the-counter medications such as milk of magnesia, Colace, or Metamucil, as well as prune or apple juice to get your bowels moving.

### **When to Call the Doctor**

- Fever over 101.5 degrees.
- Increased redness or drainage from an incision.
- Nausea or vomiting.
- Persistent pain in the legs, abdomen, or back.
- Difficulty breathing.

### **When to Go the Emergency Room**

- Uncontrolled bleeding from the incisions.
- Persistent vomiting.
- Change in mental status.
- Inability to breathe.

You are always welcome to call the office with your questions or concerns. After hours, an answering service will direct your questions to the on-call providers. However, these individuals are unable to call in prescriptions for pain medication after 5 p.m.