

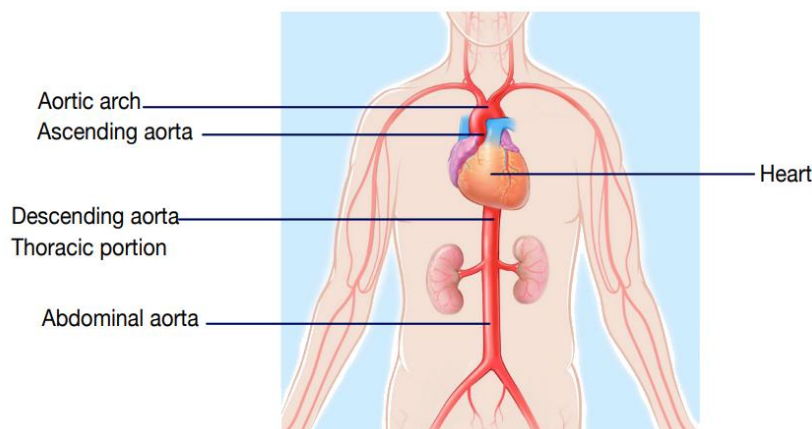
Thoracic Aortic Aneurysm (TAA)

What is a thoracic aortic aneurysm?

The **aorta** is the main blood vessel in your body. The aorta carries blood from your heart to all areas of your body. An **aortic aneurysm** is a ballooning or enlargement of the aorta. This condition can happen in any part of your aorta. The different sections of the aorta include:

- **Aortic root:** This is the first part of the aorta and serves as the connection between the heart and the aorta. The aortic root includes the aortic valve.
- **Ascending aorta:** This is the main trunk of the aorta. From the root, this section of the aorta travels up toward your head.
- **Aortic arch:** The aorta makes a half turn toward the back. This curve is called the aortic arch and contains arteries that branch out and carry blood to your head and arms.
- **Descending aorta:** This part of the aorta runs through your back next to the spine and abdomen (stomach area).

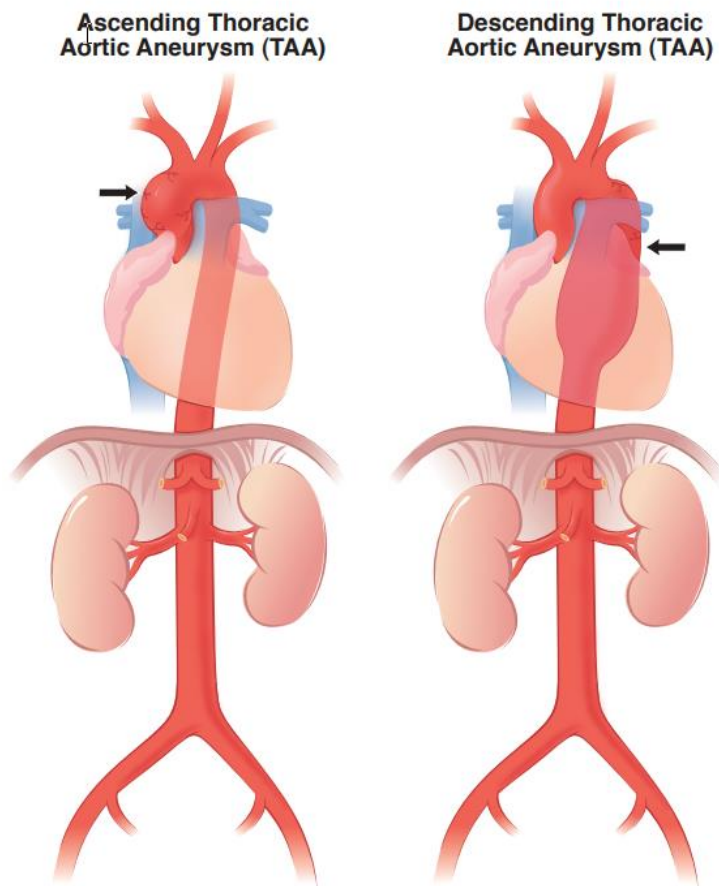
A **thoracic aortic aneurysm (TAA)** occurs in the chest (**thoracic**) part of your aorta (see the picture). If an aneurysm forms and grows too large, it can burst (**rupture**) or tear the wall of the artery (**dissection**). Both complications can be life-threatening.



Where do thoracic aortic aneurysms (TAAs) form?

A thoracic aortic aneurysm can form in the following locations along your aorta:

- Aortic root
- Ascending aorta
- Aortic arch
- Upper part of the descending aorta



What are the symptoms of a thoracic aortic aneurysm?

A thoracic aortic aneurysm often grows slowly and has no symptoms. As the size of a thoracic aortic aneurysm increases, some people may notice:

- Pain in the chest area

- Back pain
- Coughing or hoarseness (a change in your voice that sounds weak, scratchy, or strained)
- Shortness of breath or difficulty breathing

What causes a thoracic aortic aneurysm?

Factors that may cause a thoracic aortic aneurysm include:

- Genetic disorders
- Hardening of the arteries (**atherosclerosis**)
- High blood pressure
- Infection (this is rare)
- Inflammation of the arteries (**vasculitis**)
- Smoking (leading to injury of the wall of the aorta)
- Traumatic injury
- Weakness of the artery wall from smoking or high blood pressure
- Family history of aortic aneurysms

How is a thoracic aortic aneurysm diagnosed?

To see if you have a thoracic aortic aneurysm, there are many tests that your doctor can order. These may include:

- **Echocardiogram (heart ultrasound):** This test uses high frequency sound waves (ultrasound) to create pictures of your heart.
- **Computerized tomography scan (“CT” or “CAT” scan):** This test is an x-ray that can see parts of your body that cannot be seen on regular x-rays.
- **Cardiac magnetic resonance imaging (MRI):** This test uses a magnetic field and radiofrequency waves to create detailed pictures of your heart and blood vessels. It also shows how well your heart is functioning.
- **Left heart catheterization:** During this procedure, a **catheter** (thin hollow tube) is placed into a blood vessel and advanced into the left side of your heart. It is used to diagnose and treat different heart conditions.

How is a thoracic aortic aneurysm treated?

In general, if your aneurysm is smaller than 5 centimeters (cm), your doctor may recommend **medical monitoring** (also called “watchful waiting,” or when you and your doctor will closely watch your condition and manage your blood pressure unless your symptoms change). This will include regular appointments to make sure your aneurysm isn’t growing, as well as managing other medical conditions you may have that could make your aneurysm worse.

If you are in the medical monitoring (watchful waiting) period, you may feel a sense of helplessness. However, there are things you can and should do to stay healthy while your aneurysm is being monitored. Following these guidelines can help lower your risk of complications.

Do:

- Keep your blood pressure in a healthy range.
 - As a general rule, blood pressure numbers of 120/80 are considered normal and healthy. Your doctor can help you understand the blood pressure numbers that are right for you.
- Keep your body at a healthy weight for you.
- Get mild to moderate physical activity regularly, such as:
 - Walking
 - Biking
 - Swimming
 - Dancing
 - Light jogging
 - Stair climbing
- Eat a heart-healthy diet (like eating foods that are low in sodium, fat, and cholesterol).
- If you’ve had surgery before to repair (fix) your aortic aneurysm, take antibiotics before any dental procedure (any medical work on your teeth)

or before any invasive procedure (surgery that requires large cuts or many cuts into your body).

- Follow up with your doctor regularly to monitor your aneurysm and overall health.
- Have all first-degree relatives (parents, siblings, and adult children) screened (tested) by their doctors for a thoracic aortic aneurysm.
- Take care of your mental health. Tell your doctor if you have anxiety or depression and ask them about treatment and support options. If untreated, these conditions may raise your blood pressure to an unhealthy level.
- Take your blood pressure medications every day.
- Get the flu vaccine.
- Avoid constipation.

Do not:

- Do not use any tobacco products. This includes avoiding smoking or being around other who are smoking (secondhand smoke).
- Do not push, pull, or lift anything too heavy (anything that causes you to strain or “bear down” while trying to lift it). For most patients, this means not pushing, pulling, or lifting anything heavier than 30 pounds.
- Do not get a tattoo or body piercing.
- Do not shovel snow, chop wood, dig earth, or use a sledgehammer or snow blower.
- Do not take stimulants such as ephedra, cocaine, or amphetamines.
- Do not take fluoroquinolone antibiotics such as ciprofloxacin and levofloxacin. If you are prescribed one of these, please ask your provider for a different antibiotic medication.
- Do not ride amusement park rides.
- Do not participate in intense, competitive, or contact sports.
- Do not use firearms, a bow and arrow, or other hunting equipment until

your provider says it's okay.

What if my aneurysm grows larger and moves beyond the medical monitoring (watchful waiting) period?

Your doctor may talk with you about surgery options if:

- Your aneurysm grows larger than 5 cm
- Your aneurysm grows more than 0.5 cm in a year
- Your aneurysm grows more than 0.3 cm a year for 2 consecutive years

There are some situations where surgery may be offered to you earlier. Your doctor will talk with you about this at your appointment.

What are surgery options for a thoracic aortic aneurysm?

The type of surgery you have will depend on the location and type of aneurysm, as well as your overall health. Two of the most common methods for repairing a TAA are open surgical repair and thoracic endovascular aortic repair (TEVR).

Open surgical repair

- For an aneurysm that is located in the aortic root, ascending aorta, or aortic arch, you will need open heart surgery. If an ascending aneurysm involves damage to the aortic valve of your heart, the valve may be repaired or replaced during the surgery.
- For a descending aortic aneurysm, a large cut (**incision**) is made under your shoulder blade, around the side of your rib cage, to just under your breast. This lets your surgeon see the aorta directly to repair the aneurysm.

Thoracic endovascular aortic repair (TEVAR)

A descending aortic aneurysm can also be treated by an endovascular repair. A TEVAR is a less invasive procedure that requires only a small cut (incision) in

your groin. During the procedure, your surgeon moves a small hollow tube (**catheter**) through a blood vessel in your groin up to your aorta. They use the catheter to place a **stent** (a fabric-covered, small metal mesh tube) inside the damaged part of your aorta to provide support and restore proper blood flow.

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