



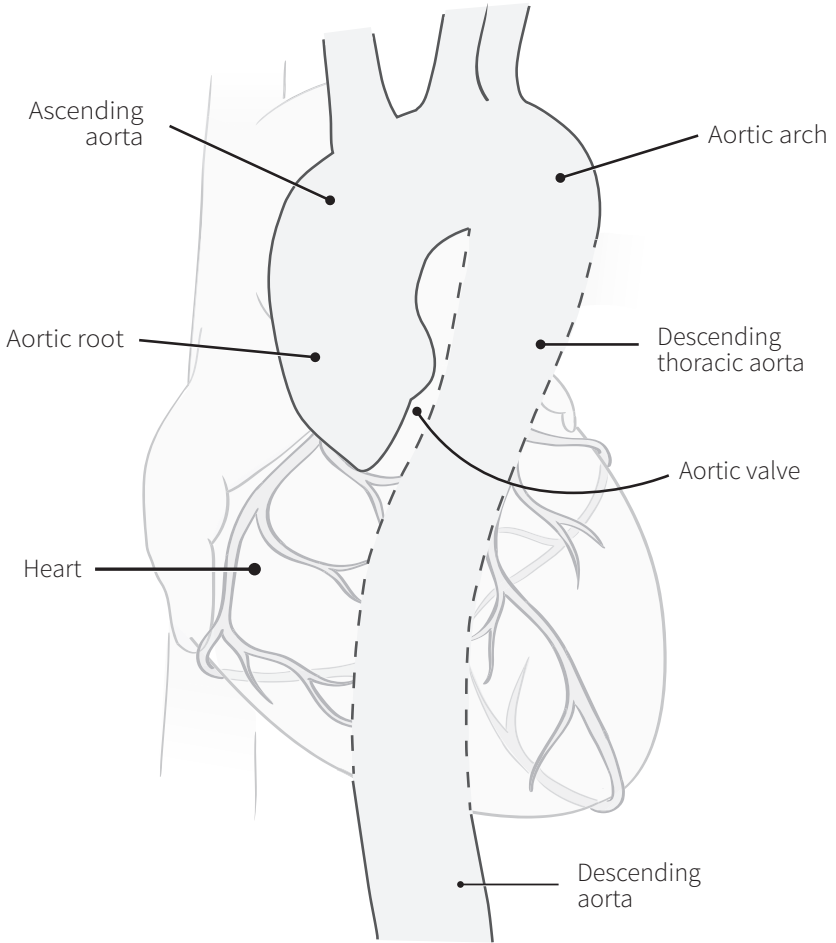
UNIVERSITY OF OTTAWA
HEART INSTITUTE
INSTITUT DE CARDIOLOGIE
DE L'UNIVERSITÉ D'OTTAWA

AORTIC DISEASE

INFORMATION FOR OUR VALUED PATIENTS AND VISITORS



AORTA



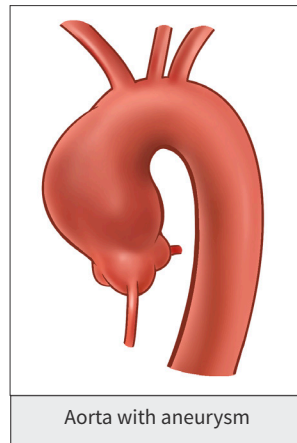
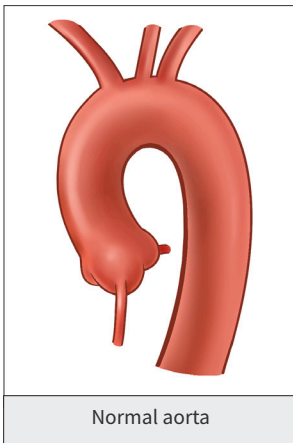
Your Aortic Clinic Doctor is:

Thoracic Aorta Diseases

The aorta is the largest artery in the human body and is connected to the left ventricle of the heart. It sends blood pumped by the heart through many branches to all the organs of the body. Aortic diseases can affect people at any age. They are complex diseases that must be regularly monitored.

Patients with aortic disease usually have no symptoms. Often, the diagnosis is made incidentally through imaging tests such as chest X-rays, CT scans, MRI scans, or echocardiograms performed for other reasons.

The wall of the aorta can become weakened for a variety of reasons, and the weakened section may become enlarged. This enlargement or dilatation is known as an aneurysm. It can develop slowly over many years. Enlarged aortas are at risk of rupture or tears (dissection). If an aneurysm ruptures or tears, immediate surgical repair is required.



Risk Factors and Causes

The risk factors and causes of aortic diseases include:

- High blood pressure
- Smoking
- Birth defect (e.g., bicuspid aortic valve)
- Connective tissue disorders (e.g., Marfan Syndrome, Loeys-Dietz or Ehlers-Danlos Syndromes)
- Inflammation of the aorta
- Genetic predisposition (family history)
- Atherosclerosis (hardening of the arteries)

Symptoms

Symptoms of an aortic aneurysm include:

- Chest pain
- Back pain
- Hoarseness of the voice
- Swallowing problems

Symptoms of a torn or ruptured aortic aneurysm include:

- Severe chest or back pain
- Loss of consciousness
- Low blood pressure
- Rapid heart rate
- Difficulty breathing

Diagnosis

Aortic aneurysms are diagnosed and monitored using imaging techniques including computed tomography (CT) scans, echocardiograms, or magnetic resonance imaging (MRI). Once it is confirmed that the aorta is enlarged or an aneurysm exists, routine imaging tests (i.e., CT scans, MRI, or echocardiograms) are used to monitor the progress of the disease. If the size of the aorta continues to grow, your physician will discuss the options to repair the aorta.

Treatment/Management

Patients are treated medically or surgically depending on their situation.

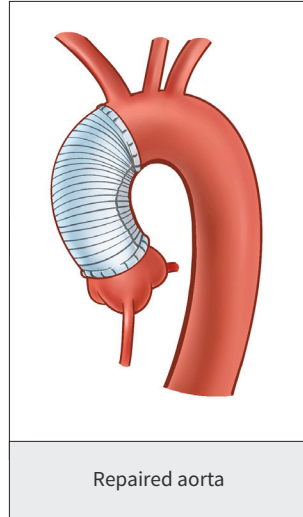
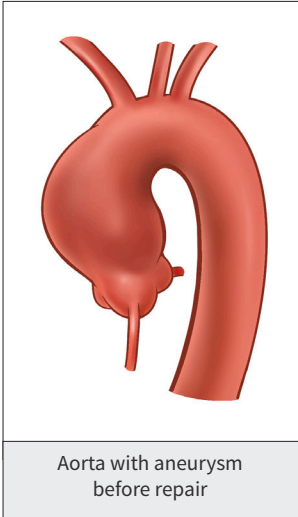
Medical treatment of aortic disease may include:

- Medications for blood pressure control
- Risk factor changes (e.g., smoking cessation, cholesterol levels)
- Regular imaging of the aorta with CT/MRI scans or echocardiograms
- Screening for aortic disease in family members
- Referral to genetic or rheumatology specialists and others as needed

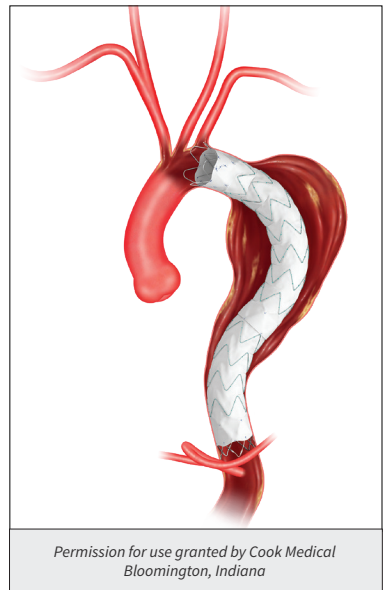
Surgical Treatment

Two methods to repair aortic aneurysms:

- Open-heart surgery whereby the dilated aorta is replaced with a tube graft. This surgery takes four to five hours to complete and the hospital stay ranges between five and seven days. Complete recovery can take approximately two to three months.



- Thoracic Endovascular Aortic Repair (TEVAR) is a procedure where a stent is placed inside the aortic aneurysm. This is performed through the artery in the groin. The function of the stent is to redirect the blood flow through the stent rather than through the aneurysm. This allows the aneurysm to shrink back to normal size.
- There are certain criteria to be considered a candidate for stenting (TEVAR).
- Your doctor will discuss which treatment option is best for you.





Medication

Patients are typically prescribed a blood pressure medication. It is important that blood pressure is kept less than 130/80. Patients may purchase a blood pressure cuff at most pharmacies.

Examples of medication include:

- Beta blocker (bisoprolol, metoprolol)
- ACE inhibitor (ramipril, enalapril)
- ARB (losartan, valsartan, irbesartan)
- Diuretics (lasix, hydrochlorothiazide)
- Calcium channel blocker (amlodipine)

Regular blood pressure checks are recommended to ensure the medication is effective.

The Hypertension Canada website is an excellent source of information for patients: hypertension.ca.

Smartphone apps are available to track your blood pressure. Two examples are:

- Blood Pressure Companion (available in the Apple App Store)
- BP Journal - Blood Pressure Diary (available on Google Play)

Lifestyle Changes

- **Blood pressure control** – The goal is to keep blood pressure less than 130/80. A physician may advise patients who have had an aortic dissection to keep their blood pressure much lower than 130/80. Medications, exercise, dietary changes, stress management, and smoking cessation help to control blood pressure. For more information, please visit the Hypertension Canada website at hypertension.ca.
- **Quit Smoking Program** – Patients must stop smoking. Cigarette smoking causes plaque to form in the aorta (atherosclerosis). This can lead to weakening of the aortic wall and development of an aneurysm. Referrals to the Quit Smoking Program at the Heart Institute are recommended.
- **Exercise Program** – Patients are encouraged to continue exercising. Aerobic exercises such as walking, jogging, cycling and swimming are recommended. Isometric exercises such as heavy lifting, pushing or pulling are not recommended. Light weights, where no straining is involved, are advisable. Extreme exercise is linked to an increase in blood pressure that may lead to a dissection or rupture of the aorta. Patients are also advised to avoid contact sports (e.g., contact hockey, rugby, and martial arts).
- **Occupation changes** – Patients who work in an environment that requires heavy lifting, pushing or pulling are advised to discuss with their employer the possibility of changing their role and/or their work demands.
- **Dietary changes** – Patients with high blood pressure are encouraged to reduce their salt (sodium) intake. Salt can contribute to high blood pressure. Food that is high in salt content should be avoided. Salt should not be added to food. A heart-healthy diet with less fat content is also recommended to prevent atherosclerosis (hardening of the arteries).
- **Stress management** – Many patients have stress in their lives. Stress can lead to high blood pressure. Methods to reduce stress are recommended. (e.g., exercise, yoga, mindfulness activities and counselling).

The Aortic Clinic Team

The clinic team includes cardiac surgeons, cardiologists, and a registered nurse. Other team members include radiologists, dietitians, vascular surgeons, rheumatologists, and geneticists.

Consultations to other medical services, such as social work, physiotherapy, psychology, and other specialists are also possible.

Clinic Nurse Coordinator

The clinic nurse coordinator is a registered nurse who will provide educational and supportive care for you, as well as the coordination of all the necessary testing.

First Visit

After a GP or cardiologists refers you to the clinic, a cardiac surgeon or cardiologist will complete an evaluation and discuss the test results with you. Your care provider will determine a plan of care to repair your aorta or continue monitoring it for further changes.

Follow-Up

You or your care provider may arrange a follow-up visit as needed following the initial consultation.

Aortic Diseases Support Group

Specific topics of interest are presented. Group sessions are scheduled on the third Tuesday of every second month. The sessions are open to all patients with aortic disease and are free of charge.

This is an opportunity for patients to discuss their concerns and ask any questions they may have. Patients can also network and interact with other patients who have aortic disease.

Aorta Clinic Contact Information

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