

Working together to save lives.

The Aortic Treatment Program at John Muir Health was developed to provide rapid diagnosis and treatment of life-threatening thoracic aortic syndromes, as well as specialized treatment of conditions that may not be immediately life-threatening, such as asymptomatic thoracic aneurysms.

Our goal is to assist physicians and hospitals in our region to recognize and treat patients with aortic disease, returning them to their referring physicians or hospitals as soon as possible. When you refer your patients to our Aortic Treatment Program, you can feel confident they are receiving leading-edge care through specialized expertise, outstanding services and the most advanced technologies.



Our Aortic Treatment Program is state-of-the-heart.

The Aortic Treatment Program at John Muir Health offers a surgical team that includes board-certified cardiovascular surgeons with extensive endovascular procedure experience with aortic stent grafts, and cardiovascular anesthesiologists who are certified in transesophageal echocardiography (TEE). Dedicated cardiovascular operating rooms, a cardiovascular ICU and an endovascular suite where hybrid and minimally invasive aortic procedures are performed are always available. We also offer education to EMS providers, physicians and hospital emergency room staff on recognition of acute aortic syndromes and detection of thoracic aortic aneurysms.

Specialized treatment protocols are available for the following clinical presentations:

- Type A (ascending) aortic dissection
- Type B (descending) aortic dissection
- Symptomatic or leaking thoracic aneurysms
- Intramural hematoma
- Penetrating ulcers
- Traumatic aortic transection or injury
- Asymptomatic thoracic aortic aneurysms requiring monitoring for expansion or elective repair
- Bicuspid aortic valve disease with associated aortic pathology
- Thoracic aortic aneurysms due to connective tissue disorders (e.g., Marfan syndrome)

What are acute aortic syndromes?

Acute aortic syndromes are potentially life-threatening and require a highly-skilled team dedicated to prompt diagnosis and treatment.

The entire thoracic aorta, which ascends from the aortic valve and then arches and descends toward the abdomen, is susceptible to acute aortic pathology. Aortic dissection is due to a tear in the inner layer of the aortic wall that allows blood to flow into and separate the layers of the aorta. The dissection impairs circulation to vital organs and is at risk of rupture. Aortic dissections most often originate in the ascending (type A) or descending (type B) thoracic aorta. The type A aortic dissection is a surgical emergency due to its proximity to the heart. Mortality as a result of type A dissection increases at a rate of 1% per hour and, if not immediately treated, has a higher mortality rate than acute myocardial infarction.

Thoracic aortic aneurysms are enlarged areas of the aorta due to the weakening of the aortic wall. Aneurysmal expansion may occur in any segment of the thoracic aorta: aortic root (involving the aortic valve and origins of the coronary arteries), ascending, arch and descending aorta.



Aortic root and ascending aortic aneurysms

Aortic root and ascending aortic aneurysms may cause aortic valve insufficiency and require coronary reimplantation during repair. Conventional open repair remains the standard of care for these types of aneurysms. At John Muir Health, valve-sparing aortic root replacement is performed in select patients to preserve the patient's native aortic valve.

Aortic arch aneurysms

Arch aneurysms require complex circulatory support during conventional, high-risk open repair. Endovascular, minimally invasive techniques are often performed as a less invasive and lower-risk alternative. Endovascular procedures include hybrid procedures with "arch debranching" to provide circulation to the brain and upper extremities, combined with thoracic stent graft placement.

Descending thoracic aneurysms (DTA)

Conventional open surgery for DTA has a significant surgical risk. Thoracic endovascular aneurysm repair (TEVAR) with aortic stent grafts is now the standard of care at John Muir Health. TEVAR is performed for the majority of our DTA patients with a minimally invasive approach through the groin and includes percutaneous techniques.



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