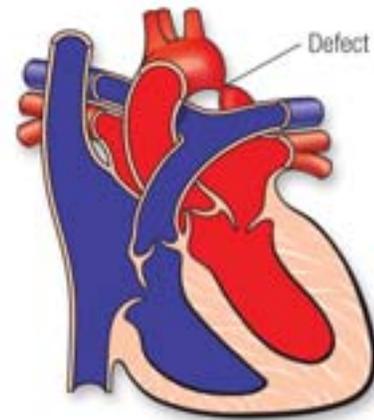


## Coarctation of the Aorta

### What is it?

The aorta is the main arterial pipeline delivering oxygen-rich blood throughout the body. It's shaped somewhat like an umbrella handle. It curves up away from the heart (beginning at the aortic valve), then arches down along the spine toward the belly. The first branches of the aorta go to the head and arms. Later branches go to the spine, abdomen, pelvis and legs.

Coarctation of the aorta is a narrowing of the aorta between the upper body branches and the lower body branches. It's typically in an isolated location just after the "arch" of the aorta. The blockage can increase blood pressure in your arms and head, yet reduce pressure in your legs. Abnormalities of the aortic valve (usually bicuspid) may also be present. At times, the narrowing of the aorta is so severe that there's essentially no connection between the upper and lower portions of the aorta ("Interrupted aortic arch").



### What causes it?

The area where coarctation of the aorta occurs is usually in the same spot where the ductus arteriosus closes. Sometimes, during normal closure of the ductus in the first week of life, tissue can build up and cause a narrowing.

### How does coarctation affect the heart?

Coarctation of the aorta can cause high blood pressure in the heart. This can cause the muscle of the heart's main pumping chamber (left ventricle) to become thick. Eventually, the function of the heart muscle could deteriorate if the condition isn't treated.

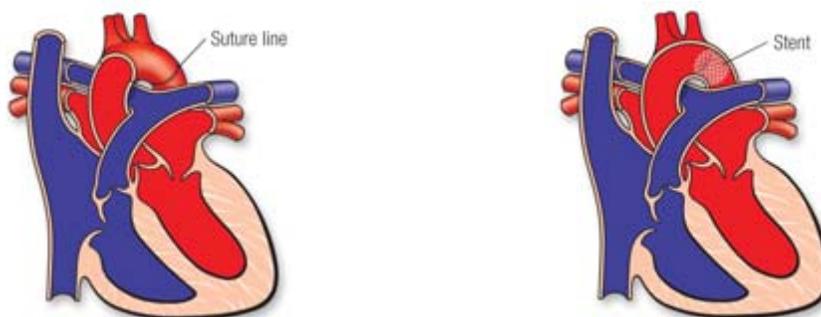
### How does coarctation affect me?

Many people don't know there's a problem. High blood pressure in the arms is typical. When present in a young person, it should prompt investigation for coarctation. Sometimes adults may have headaches, renal problems frequent miscarriages, or lack of energy when using their legs. However, such symptoms are common in the general population and are usually due to other causes.

## Coarctation of the Aorta

### If my coarctation was repaired in childhood, what can I expect?

Most patients repaired before 1985 underwent surgery. The surgeon had several options depending on the circumstances such as the length and location of the coarctation. Younger adults may have had a repair in the catheterization laboratory (referred to as interventional or therapeutic catheterization) where the narrowing was expanded by a balloon inserted through a small hole in your leg. Often a metal stent was left in place to hold the area open. This may also be an option if further narrowing occurs in an adult.



### What if coarctation is still present? Should it be repaired in adulthood?

Yes, coarctation can be repaired at any age and should be addressed as soon as it's diagnosed depending on the severity of the coarct. Adolescents and adults with coarctation can often be treated by cardiac catheterization.

### Problems you may have

High blood pressure is the most common problem adults have. It can be present even if your coarctation was successfully fixed. High blood pressure is more common if the coarctation was repaired after five years old. Patients treated in childhood are at risk for redeveloping the coarctation (recoarctation) and may require catheterization. Most patients with recoarctation of the aorta after initial repair usually don't have symptoms, which makes regular assessment by a physician all the more important. Many times the area will renarrow to a degree, or other portions of the aorta may enlarge (aneurysms) with potential to rupture. These may need to be addressed with further intervention. Patients may develop coronary artery disease, leaving them vulnerable to heart attacks. There may even be an increased risk of having an aneurysmal blood vessel in the head.

### Ongoing Care:

#### What will I need in the future?

Everyone with a known coarctation of the aorta should be seen annually by a cardiologist with expertise in caring for adults with congenital heart disease even if the coarctation has been successfully repaired. Blood pressure should be measured in the arms and legs. Medicines are often advised, typically beta blockers (atenolol or metoprolol) to control the blood pressure. Regular imaging of the aorta should be done by echocardiography or MRI. CT scanning can also show the area well, but isn't advised for repeated routine checks because it involves radiation. You should

## Coarctation of the Aorta

also consult a cardiologist with expertise in caring for adults with congenital heart disease if you're undergoing any type of non-heart surgery or invasive procedure.

### Activity

Most activities are likely safe, and encouraged. Heavy isometric exercise, such as power weightlifting, may be a particular concern especially in patients who have enlargement of the aorta since it raises the blood pressure quickly.

### Endocarditis Prevention

Although infection of a coarctation can occur, it isn't likely. More commonly, patients may develop infection of a coexisting abnormal aortic valve. All patients are advised to practice good oral care.

### Pregnancy

Women with repaired coarctation can carry a pregnancy with low risk. The exception is if there's a residual (leftover) narrowing of the aorta or if there's high blood pressure or enlarged areas of the aorta. It's best to plan ahead and have a thorough check-up including an imaging study of the aorta to detect these problems before becoming pregnant, and control the problems before conception.

### Will I need more surgery?

The need for surgery or catheterization depends mostly on the level of pressure in your arms and legs when you're resting and, under some circumstances, during exercise. If your arm and leg blood pressures are normal and equal, you probably won't need more intervention. If your blood pressure is elevated in your arms and more than 20 mmHg higher than in your legs, it is likely further intervention will be needed. When problems occur, more and more institutions use catheters rather than surgery, which is much easier for the patient.