Pediatric Interventional Catheterization

What is pediatric interventional catheterization?

In pediatric interventional catheterization, doctors insert a narrow tube, called a catheter, into a child’s vein or artery that connects to the heart. Cardiac catheterization can be performed for the following reasons:

1. To obtain a detailed picture of the structure and function of the heart in action. This allows doctors to make a precise diagnosis of heart defects and their impact on the patients’ cardiovascular function.

2. To perform an intervention as an alternative to surgery. With the advances in catheterization techniques, many procedures that once required surgery can now be done via catheterization. It can also be used in conjunction with a surgical procedure.

3. To perform electrophysiology – a nonsurgical, catheter-based intervention used to correct abnormal heart rhythms.

What does interventional catheterization do?

• Enlarges narrow arteries using balloons and/or stents.
• Opens narrow valves using balloons.
• Stops abnormal blood vessels with devices.
• Closes holes in the heart with devices.
• Removes abnormal electrical circuits for arrhythmias.

Types of interventional catheterization at Kentucky Children’s Hospital

• Pulmonary valvuloplasty.
• Aortic valvuloplasty.

• Atrial septal defect closure.
• Muscular ventricular septal defect closure.
• Balloon atrial septostomy.
• Balloon angioplasty with or without stent placement for pulmonary artery stenosis.
• Balloon angioplasty with or without stent placement for aortic coarctation (native and post-operative).
• Testing of the heart’s electrical system and catheter-based treatment of arrhythmias
• Pacemaker system placement and management.

Who needs it?

Pediatric and adult congenital interventional catheterization is performed on children who are born with congenital heart defects or abnormal heart rhythms.

Before the procedure

Before cardiac catheterization is performed, the child’s parents will meet with the team performing the catheterization. Doctors will discuss the risks and benefits of the procedure so the parent can give consent.

Who performs cardiac catheterization?

Catheterization procedures are performed by cardiologists with special training and expertise in these procedures. An experienced team of doctors, nurses and technicians is involved so that the catheterization procedures are done skillfully and as safely as possible. A sedation specialist or anesthesiologist will give the patients something to help them relax or to put them to sleep during the procedure. The application of pain medicine to the area is most likely the only pain the patient will feel during the catheterization.

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How is the procedure performed?
A small catheter is inserted into blood vessels located near the groin area and is advanced to the heart. X-ray dye is also injected so areas can be better visualized.

How long does it take?
The time it takes for cardiac catheterization depends on the work that needs to be done. Each situation is unique.

What are the benefits?
This procedure presents a non-invasive solution, typically making surgery unnecessary. Cardiac catheterization is generally low-risk and offers a quicker recovery than surgery. Most catheterizations are performed on an outpatient basis and do not require the child to stay overnight in the hospital.

Other benefits include:
- In most cases, significantly less risk than surgery.
- Less pain.
- Less chance of infection.
- Less time in the hospital.

What are the risks?
As in any procedure, there are always some risks, such as infection. The interventional cardiologist will discuss the risks with patients and parents prior to the procedure.

Are there any other options?
It depends. In some cases, surgery is an option but in others there is no choice other than cardiac catheterization.

At Kentucky Children’s Hospital, the cardiologists and heart surgeons work closely as a team to offer patients and families the safest and most effective options for treatment of congenital heart problems.

The Interventional Catheterization Program at Kentucky Children’s Hospital
The Kentucky Children’s Hospital’s Interventional Catheterization Program is convenient and close to home. Two interventional cardiology specialists and one electrophysiologist are dedicated to interventional catheterization procedures for congenital heart diseases and arrhythmias. The program offers a host of multicenter clinical trials. These trials test new devices that have passed earlier trials for safety, allowing for the latest treatment options for pediatric patients.

The Kentucky Children’s Heart Center
The Kentucky Children’s Heart Center and adult congenital heart disease program offer a full range of diagnostic and treatment options to care for patients of all ages (from the unborn fetus to adults) with congenital heart disease.

The Kentucky Children’s Heart Center uses state-of-the-art technology and techniques to diagnose and evaluate a child’s heart condition and develop the most advanced treatment plan possible. The entire team of cardiac specialists is focused on one goal: healing a child’s heart.

For more information
To find out more visit ukhealthcare.uky.edu/KCH/kchc or call 859-257-1000 or 800-333-8874 (toll free).