

# Let's Talk About...

## Cardiac catheterization

### What is cardiac catheterization?

Cardiac catheterization is a procedure that helps healthcare providers evaluate your child's heart and blood vessels. A cardiologist (heart doctor) inserts a catheter (long, flexible tube) into a blood vessel in your child's groin or neck. They then thread the catheter to the heart and major blood vessels to measure blood pressure and take pictures.

### Why does my child need cardiac catheterization?

Your child may need a cardiac catheterization if their healthcare provider needs more information about their heart and blood vessels. A cardiac catheterization can:

- Evaluate children with heart or lung conditions, including heart defects, heart disease, heart failure, and lung disease
- Treat heart and blood vessel problems, such as holes in the heart, narrow heart valves, or abnormal blood vessels
- Look at the heart and blood vessels after your child has a heart transplant

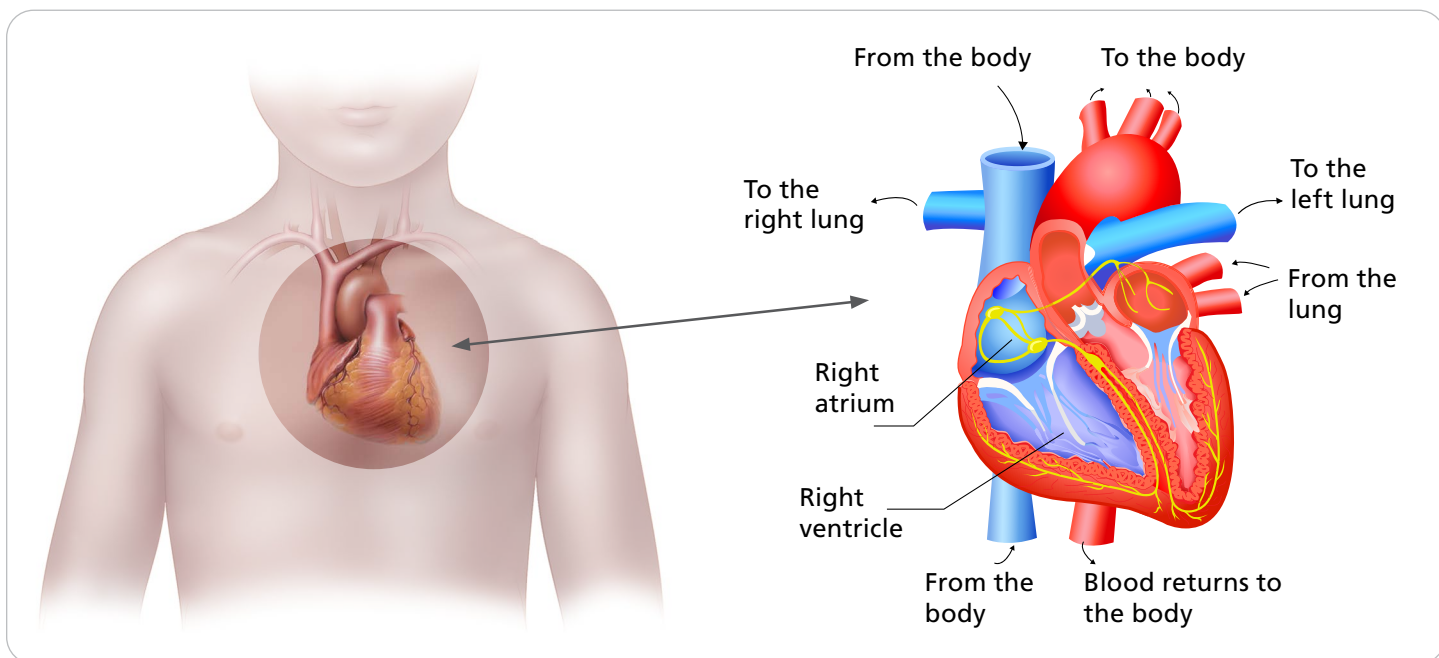
### How can I prepare my child for cardiac catheterization?

To prepare for your child's procedure:

- Get clear instructions about when your child must stop eating, drinking, and taking medicine before the procedure. These are different depending on your child's age. A nurse from same-day surgery will call with these instructions unless your child is already in the hospital.



- Tell your child's cardiologist if they have other medical problems, like diabetes or asthma. They may need more care before, during, or after the procedure.
- Bring a list of your child's current medicines, including over-the-counter drugs.
- Make sure the cardiologist knows about your child's allergies to medicine, dyes, and foods.
- Tell your child's nurse if your child is currently ill. It may be best to reschedule the procedure if your child has a runny nose, cough, fever, vomiting, diarrhea, or diaper rash.



## What happens before the procedure?

Before your child's cardiac catheterization begins:

- A healthcare provider will ask about your child's medical history and do a physical examination.
- The cardiologist will get consent to do the procedure. This is your chance to tell the doctor your concerns and ask questions.
- A healthcare provider may test your child's blood and urine. They may also give your child an IV (a small tube that goes into the vein) to receive medicine during the procedure.
- Your child might be given medicine to make them sleep.

## What happens during cardiac catheterization?

Cardiac catheterization usually lasts 2–3 hours. This includes preparing your child, one or more procedures, and closing the catheterization sites.

### Preparing for the procedure:

- Your child will lie down on a soft table. A healthcare provider will attach monitors to record your child's heart rate and blood oxygen during the procedure.

- A healthcare provider will give your child an IV if they didn't get one before the procedure.
- Your child will receive medicine to keep them comfortable and free of pain. The medicine might also make your child sleep through the procedure.
- An anesthesiologist may put a tube through your child's mouth to their lung to help them breathe safely while sleeping.
- The cardiologist will numb the skin where the catheters will be inserted.
- The cardiologist will insert catheters into a vein in the leg or neck and an artery of the leg or arm.

### Procedures:

After the catheters are threaded to the right areas, the cardiologist will perform one or more of these procedures:

- **Diagnostic catheterization:** Measuring the pressure and oxygen in the blood to see how well the heart and blood vessels are working.
- **Angiography** (an-jee-OG-ruh-fee): Taking pictures of the heart chambers or blood vessels using x-rays and x-ray dye (also called contrast).

- **Heart biopsy:** Removing small pieces of muscle from the inner surface of the heart to see what the cells look like. The cardiologist usually does this after your child has a heart transplant or if they suspect a heart muscle infection.
- **Balloon valvuloplasty** (VAL-vu-low-PLAS-tee) **or balloon angioplasty** (AN-jee-oh-PLAS-tee): Using a catheter with a balloon to enlarge a narrow heart valve or blood vessel. This helps the blood flow more freely through the heart and blood vessels.
- **Closing a septal defect:** Using a catheter to insert a device that closes a hole between two chambers of the heart.
- **Balloon atrial septostomy** (sep-TOSS-toh-me): Using a catheter with a balloon to enlarge a hole between the upper chambers of the heart. This allows babies with certain heart defects to have more oxygen in their blood before the defects are repaired.
- **Occlusion of blood vessels:** Closing abnormal blood vessels with a metal coil or a device delivered through a catheter. This prevents the blood vessels from causing problems.
- **Stent placement:** Using a catheter to insert and expand a stent (wire support) to keep a blood vessel open.
- **Pericardiocentesis** (per-ih-CAR-dee-oh-sen-TEE-sis): Inserting a catheter through the skin below the breastbone to remove an abnormal collection of fluid around the heart.

### **Closing the catheterization sites:**

At the end of the procedure:

- The cardiologist usually removes the catheters.
- A healthcare provider controls bleeding by applying direct pressure to the site for several minutes and covering it with a large bandage.

## **What are the risks of cardiac catheterization?**

Risks of cardiac catheterization may include:

- Pain, discomfort, or bruising where a catheter was inserted
- Enough blood loss to require a transfusion
- Injury to the leg below where a catheter was inserted
- Injury to the heart, lung, or major blood vessel by a needle or catheter
- Exposure to x-ray energy, which can slightly increase your child's lifetime cancer risk
- Bad reactions to the fluid or dye used to take x-ray pictures of the heart
- Changes in heartbeat when a catheter moves through the heart
- Loss of a piece of catheter or device into the heart or blood vessels
- Injury to the brain or other organ from an air bubble, blood clot, catheter, or device
- Death

Serious risks and problems from cardiac catheterization are rare.

## **What happens after cardiac catheterization?**

After your child's procedure, a nurse will watch your child carefully for several hours to make sure they wake up from sedation and have no problems. The nurse will give your child fluids and food if they can tolerate it. If your child is nauseated or vomiting, the nurse may give them fluids or medicine and watch them longer in the hospital.

You can take your child home when your child has recovered from the procedure and sedation. The nurse will give you instructions from the cardiologist.

## How do I care for my child after we go home?

Once your child goes home:

- Have them walk only short distances until 24 hours after the procedure. After a few days, your child should be able to walk normally.
- Encourage them to avoid exercise for 2 days after the procedure. The cardiologist may tell you more about limiting exercise.
- Remove the bandages from the catheter sites the day after the procedure. You can apply an antibiotic ointment and a bandage to the site for a couple of days if you want to.
- Don't let them get the catheter sites wet for at least 2 days. They should avoid the bathtub, hot tubs, and swimming pools. Your child may shower the day after the procedure.
- Make a follow-up appointment with their personal cardiologist.

## When should I call my child's doctor?

Call your child's cardiologist or the on-call cardiologist at the hospital if:

- A catheter site bleeds, the bruise gets larger, or the site remains painful for more than a few days
- You notice fluid draining from the catheter or red and warm skin around the catheter site
- Your child has a fever
- Your child's leg is cool, mottled, or discolored below the catheter site

### Call 911 if your child:

- Faints or has trouble breathing
- Has a large amount of bleeding
- Is abnormally sluggish or inactive

### Notes

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