

# What is Heart Catheterization

A heart catheterization is a procedure that is used to diagnose and to treat heart conditions. During a heart catheterization, the cardiologist passes a thin flexible tube (catheter) into the heart, via one or more of the large blood vessels.

## A heart catheterization can help your child's cardiologist learn more about your child's heart condition.

- ▶ The most common test is called an **angiogram**. A contrast solution is injected through the catheter, allowing the cardiologist to see parts of your child's heart on the x-ray and to understand:
  - the pressure in the chambers of the heart and its large blood vessels
  - the amount of oxygen the blood carries to the heart
  - the amount of blood pumped into the body with each beat
- ▶ The contrast solution passes out of your child's body in the urine within 24 hours.



You can learn more about angiograms at:  
<http://www.cw.bc.ca/library/pdf/pamphlets/BCCH1110Angiography.pdf>

- ▶ Less often, the cardiologist will use the catheter to take a small sample of tissue from the heart. This sample is called a **biopsy**. The tissue is then examined under a microscope to see if there is damage to the heart muscle cells or small blood vessels in the heart.

## A heart catheterization can also help your child's cardiologist treat your child's heart condition.

Your child's cardiologist will discuss any special procedures with you first.

- ▶ If any part of your child's heart valves or blood vessels need to be enlarged, your child's cardiologist may recommend using a catheter with an inflatable balloon at the end that passes to the part of your child's heart that needs to be enlarged. The balloon is inflated to stretch the tissue. This procedure is referred to as **balloon dilatation**, angioplasty or valvuloplasty.
- ▶ If your child has blood vessels that are too narrow, your child's cardiologist may use the catheter to place a small wire mesh tube, called a **stent**, to hold these blood vessels open so that blood can flow more freely.
- ▶ If your child has a blood vessel that carries blood to the wrong place, your child's cardiologist can use a catheter to place a **coil** in the vessel to block the blood flow.

- ▶ If your child has an **atrial septal defect** (sometimes described as a 'hole in the heart'), your child's cardiologist may be able to close this hole with a catheter rather than surgery.

## What will happen during the heart catheterization?

On the morning of the procedure, an anaesthesiologist (sometimes called a sleep doctor) will discuss with you how your child will receive a sleeping medicine (general anesthetic) through an intravenous line (IV). The IV is a small tube put into a vein in the hand or foot. After your child is asleep, your child's cardiologist inserts a short plastic tube that will guide the catheter into an artery or vein in your child's groin or another area.

Your child's cardiologist then passes a catheter through the tube and, using an X-ray to see, carefully guides the catheter through your child's artery or vein into his or her heart. The heart continues to work normally during the test. Your child will not feel the catheter as it moves through the blood vessels and heart. Once the catheter is in place, your child's cardiologist does specific tests and measurements to learn how the heart and blood vessels are working.

After the test or treatment, the catheter and short plastic tube are removed. The small wound is covered with a bandage. Stitches are usually not required.

## What are the risks and complications of heart catheterization?

Discuss your concerns with your child's cardiologist. As with most procedures, heart catheterization has possible risks:

- 1) Irregularities in heart rhythm during the test.  
Blood clots forming during or after the test. Your child will be given a medication during the catheterization to prevent this. Following the procedure, if the leg swells, looks pale or feels cooler than the other, this may mean that a clot has formed within the vessel through which the catheter entered. For this, your child will stay overnight in hospital for medication to treat this clot. Most patients go home the next day.
- 2) Bleeding or infection where the catheter was inserted. (See signs to watch for at the end of this pamphlet).
- 3) Allergic reaction to the contrast solution or sedation (extremely rare).

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## How long will my child be at the hospital?

Most children having a heart catheterization are admitted to the Surgical Daycare Unit. The child comes into the hospital the morning of the test and leaves that evening. Some children will stay overnight in the hospital so their condition can be monitored. We recommend bringing an overnight bag just in case.

## How can we prepare for the heart catheterization?

Even though your child is not having surgery, your child will be prepared for the procedure in the same way as children are prepared for surgery. You will receive a call from a Surgical Day Care nurse the day before the procedure. The nurse will tell you:

- What time to arrive at the Surgical Day Care Unit.
- Fasting instructions.

If your child is taking medications, check with your child's doctor about whether to give the medication on the morning of the test. If the medication is to be given, it should be taken at least 3 hours before the test with clear fluids. If your child has any allergies to medications, be sure to tell the hospital staff.

If your child is taking medication to prevent blood clots (anticoagulants) such as Warfarin™ or Coumadin™, Enoxaparin™ or Low Molecular Weight Heparin, Plavix™ or Clopidogrel™, call the Cardiology Clinic Nurse at 875-2345, local 7877 as soon as you are given a date for the procedure. She will tell you if you need to stop these medications and when.



To prepare you and your child for the procedure: Read "Your Child's Surgery or Procedure" booklet at: [www.bcchildrens.ca/readysurgery](http://www.bcchildrens.ca/readysurgery)

Take the BC Children's Virtual Surgery Tour at: [www.bcchildrens.ca/surgerytour](http://www.bcchildrens.ca/surgerytour)

## What happens after the procedure?

Your child will go to the recovery room for about an hour before returning to the Surgical Daycare Unit. Your child will probably feel sleepy after the procedure and will need to lay flat quietly in bed. Once awake, your child can drink, and later, eat a light meal. After at least 1 to 6 hours in Daycare Surgery, most children go home. Bring loose clothing for your child to wear home. If your child needs to stay overnight, you will go up to 3M.

Before leaving the hospital, check with your child's cardiologist about when your child can return to his or her medications.

## How can I care for my child at home?

### Wound care

You may remove the bandages after 24 hours. Your child's groin may have a bruise and be sore for the next 12 to 24 hours. If the groin site bleeds a little, place a piece of gauze or cotton over it and press down firmly for 10 minutes. When the bleeding stops, cover with a bandage. If the bleeding continues, press firmly for another 10 minutes or until the bleeding stops. You can remove the bandage 24 hours after the bleeding has stopped.

### Activities for the first 24 hours after the procedure:

- Encourage quiet activity (e.g. watching TV, cuddling with parents, story-time).
- Do not allow your child to bend forward to pick up objects off the floor, tie shoelaces, or put on their own pants for at least 24 hours.
- If your child sneezes or coughs, apply firm pressure at the site where the catheter is inserted.
- Most children can follow their normal routines the next day.

### Bath/shower care

Wait 48 hours before giving your child a tub bath or allowing them to submerge in a pool, unless your child's doctor has told you otherwise. You can sponge bath your child as soon as you wish. Older children can shower the next day.



**Call the Cardiologist On-Call at 604-875-2161 if:**

- Your child has a fever higher than 38 degrees Celsius.
- Your child has redness, swelling, bleeding that won't stop, or fluid coming out of the place where the catheter was inserted.
- Poor circulation to the leg on the side where the catheter was inserted (cool, mottled, swelling, cyanosis).