

After Your Child's Cardiac Surgery

HOMeward
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Contents

Lesson 1:

Watching for Complications after Heart Surgery1-2

- Congestive heart failure
- Wound infection
- When to call the cardiology clinic

Lesson 2:

Safety3-5

- Keeping your child from getting sick
- Incision care
- Activity
- Pain management
- Medicines
- Bacterial endocarditis

Glossary6-7

Lesson 1

Watching for Complications after Heart Surgery

Goals for this lesson

In the classroom, you will describe:

- signs and symptoms of congestive heart failure
- signs of wound infection
- when you should go to the emergency room
- when you should call the Pediatric Cardiology Clinic.

At the bedside, you will participate in your child's:

- daily rounds
- daily care.

Congestive heart failure

Congestive heart failure (CHF) happens when your child's heart is not beating well enough for blood to move through the body as well as it should. This causes fluid to build up in your child's body.

Signs and symptoms of CHF:

- swelling in the hands, feet, and face
- changes in breathing and skin color caused by fluid build up in the lungs
- pale or splotchy (mottled) skin
- lips and fingernails look blue or gray
- sleepiness
- irritable
- less active than normal.

If you notice signs of CHF in your child, it is important to get medical attention quickly. Call your child's cardiologist or take your child to the nearest emergency room for treatment, even if your local emergency room does not care for infants with heart defects. The local emergency room can call Vanderbilt for guidance in treatment and arrange transportation to Monroe Carell Jr. Children's Hospital at Vanderbilt.

Wound Infection

As your child's incision heals, it should look pink and healthy. If you notice any of these signs of infection, call your child's cardiologist right away:

- redness or swelling around the incision
- warmth around the incision
- yellow or green drainage from the incision
- fever
- achiness
- changes in breathing.

If your child begins having any trouble breathing or changes in skin color, go to the nearest emergency room.

Call Pediatric Cardiology at (615) 322-7447 if:

- your child has a temperature of 100.4°F (38°C) or higher
- your child is vomiting or has diarrhea
- your child has trouble taking his or her medicine
- your child's activity level or eating pattern changes
- you feel something is not right with your child's incision or recovery.

Lesson Two

Safety

Goals for this lesson:

In the classroom, you will:

- list ways to keep your child from getting sick
 - handwashing
 - school and day care limits
 - restrictions on places to visit
 - screening home visitors
 - visitor precautions
- describe how to care for your child's surgery incision
- list activity guidelines.

At the bedside, you will:

- show how to care for your child's surgery incision
- show how to lift your child by scooping.



Keeping your child from getting sick

It is very important to protect your child from getting sick because your child's body is using a lot of energy to heal and regain strength after heart surgery. Getting the common cold or the flu might mean another hospital stay for your child.

To avoid this, we ask that you:

- Encourage everyone in your household to wash their hands often, especially after using the bathroom, after coming in from outside, and before preparing food.
- Your child should not attend school or day care until after the follow-up visit with the cardiac surgeon.
- Keep your child away from crowded places, if possible. Going to shopping malls, church, family gatherings, or places where there are many people can expose your child and your family members to germs that can make your child sick.
- Screen people who come to visit your home by asking them if anyone at their house has had a fever, cough, runny nose, vomiting, diarrhea, rash, or any other signs of illness within the last 48 hours. If the answer is yes, they should not visit your home right now.
- Anyone who does come to visit should wash their hands before touching your child. They can clean with hand sanitizer or wash with antibacterial soap and warm water. If the visitor plans to hold your baby, place a baby blanket over the visitor's clothes so your baby does not come in contact with germs that might be on the clothes.

Incision care

Once you get home, continue to take good care of your child's surgery incision to prevent infections.

Wash the incision 1 or 2 times each day, or more if it gets dirty, following these 3 simple steps:

1. use an antibacterial soap (such as Dial or Safeguard)
2. rinse with clear water
3. pat dry with a clean towel.

If the little pieces of cloth tape (steri-strips) are still on the incision, wash over them. They will fall off on their own over time, or you can gently pull them off when they are barely hanging on.

Do not:

- let your child soak in the tub for a long time
- put any kind of over-the-counter cream or lotion on your child's incisions.

Activity guidelines

To keep from putting stress on your child's chest and incision:

- If your child is young or still a baby, use the "scooping" technique to pick him or her up. **Do not lift your child under the arms.** Your child's nurse will show you how to "scoop" safely.
- Avoid anything that would cause a blow to the chest. When you put your baby down to sleep, he or she should be in a crib with the rails up. **Do not let your child sleep on a sofa or open bed where he or she could fall.**
- For older children, avoid activities that could cause them to run or play hard, such as contact sports, heavy lifting, swimming, trampolines, etc.

Pain management

As your child recovers from surgery, he or she will become more active. Being more active can make your child's incision and chest sore. We will give you a prescription for pain medicine for your child. Give your child the medicine if he or she complains of feeling sore. It will help your child's recovery if he or she can move around without pain.

Medicines

Many of the medicines that we use for babies with heart problems are adult medicines that have been crushed and put into a liquid form. When your child is discharged from the hospital, we will send you home with your first month of medicines.

Before it is time to order refills for your child's prescriptions, ask your pharmacy if they are able to make your child's medicines. Not all pharmacies are able to do this.

When you pick up your child's prescriptions from your pharmacy, compare the label to the bottle you have from Vanderbilt. If anything is different—such as the name of the medicine, the dose, or the concentration—talk to your pharmacist.



Bacterial endocarditis

Bacterial endocarditis is an infection of the lining of the heart that causes the heart to swell and not beat as effectively. One of the things that can cause bacterial endocarditis, is a germ all people naturally have in our mouths. If people take good care of their teeth and gums, the germs typically don't cause problems. If we don't take good care of teeth and gums, the gums swell. Swollen gums bleed easily and any place blood comes out of the body is a place for germs to get in and start an infection. Therefore, it is important for cardiac patients to take very good care of their teeth and gums.

How do I prevent bacterial endocarditis?

- **Infants:** after feeding, wipe teeth off with a wet washcloth or soft bristle toothbrush using water only
- **Older children:** brush teeth after meals and visit the dentist regularly. When your child is scheduled for a dental procedure including a cleaning, he or she will need to take antibiotics before the procedure. Then, if your child's gums are injured during the procedure and germs get in, the antibiotic is already there to kill it.

How long do we have to be careful about bacterial endocarditis?

Depending on your child's cardiac condition, precautions may only need to be followed for 1 to 2 years after surgery, but it may be for the rest of your child's life. It is important to talk to your child's cardiologist about this.

Glossary

Anticoagulant: A drug that delays clotting (coagulation) of the blood. When given in cases where a blood vessel has been plugged by a clot, an anticoagulant tends to prevent new clots from forming or the existing clots from getting bigger, but does not dissolve an existing clot. Anticoagulants are also used to keep clots from forming on artificial material, such as artificial valves.

Aorta: The main artery in the body, originating from the base of the heart, arching up over the heart like a cane handle, and passing down through the chest and abdomen near the spine. The aorta normally gets blood from the left ventricle of the heart and moves it to the many lesser arteries that take blood to all parts of the body, except the lungs.

Arrhythmia: Any change from the normal rhythm of the heartbeat.

Atrium: Sometimes referred to as the auricle, the atrium is 1 of the 2 upper chambers of the heart.

The **right atrium** gets blood from the body. This blood **is not** carrying oxygen.

The **left atrium** gets blood from the lungs. This blood **is** carrying oxygen.

Bradycardia: An abnormally slow heart rate. Generally, anything below 60 beats per minute is considered bradycardia.

Cardiologist: A specialist in the diagnosis and treatment of heart disease.

Diuretic: A medicine, commonly known as “water pills,” that helps your body get rid of unneeded water and salt through the urine. These drugs often are used to treat conditions involving excess body fluid, hypertension, and congestive heart failure.

Echocardiogram: also called an “echo,” it is a test that uses sound waves to produce images of the heart.

Edema: Abnormally large amounts of fluid in the tissues of the body.

Hypertension: Commonly called high blood pressure. It is blood pressure above the normal range.

Hypotension: Commonly called low blood pressure. It is blood pressure below the normal range and is commonly used to describe a fast fall in blood pressure, such as what happens when a person faints.

Hypoxia: Less than normal amount of oxygen in the organs and tissues in the body.

Murmur: Noise made by blood flow, which may or may not be abnormal.

Open-heart surgery: Any surgery in which the chest is opened and surgery is done on the heart muscle, valves, arteries, or other parts of the heart.

Regurgitation: The abnormal backward flow of blood through a valve of the heart.

Stenosis: A narrowing (stricture) of an opening. For example, mitral stenosis, is when the mitral valve is so narrow that it does not work like it should. Stenosis also refers to narrowing of a blood vessel.

Stress test: A test done to check the body’s response to physical stress. This is usually done while the patient is exercising, such as jogging on a treadmill, walking up and down a short set of stairs, or pedaling on a stationary bike. The test checks how well the valves work, heart rate, breathing rate, and blood pressure. If the patient cannot exercise to increase heart rate, medicine is given to imitate the results of exercise.

Tachycardia: Abnormally fast heart rate. The heart rate which is considered “tachycardia” depends on the patient’s age.

Ultrasound: A test that uses sound waves to produce images of the inside of the body.

Ventricle: One of the 2 main pumping chambers of the heart.

The **left ventricle** pumps blood through the arteries to the body. This blood is carrying oxygen.

The **right ventricle** pumps blood through the pulmonary artery to the lungs. This blood is not carrying oxygen.

X-ray: A type of electromagnetic radiation. An x-ray machine sends a very small amount of x-rays through the body to produce images to help with a diagnosis.

- Parts of the body that are dense (such as bone) will block most of the x-rays, and will appear white on an x-ray.
- Metal and contrast (a special dye used to highlight areas of the body) will also appear white.
- Parts of the body containing air will appear black.
- Muscle, fat, and fluids will appear as shades of gray.



Monroe Carell Jr. Children's Hospital at Vanderbilt

2200 Children's Way

Nashville, TN 37232

(615) 936-1000

Pediatric Cardiology Clinic — (615) 322-7447

