

Heart Surgery



A Guide to Your Care and Recovery



Welcome

Thank you for choosing Mount Carmel for your heart surgery. Learning you need heart surgery may raise many questions and concerns for you and your family. This guide contains information to help you better understand the different aspects of your care and will be a helpful resource throughout your surgery and recovery.

Our team of specialized healthcare professionals are dedicated to providing you with the highest quality care. Please share your questions and concerns with your healthcare team.

For your continued health education, this booklet and others are available on mountcarmelhealth.com.



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Man has made many machines, complex and cunning, but which of them indeed rivals the heart?

— Pablo Casals

Understanding Your Heart Surgery



Heart Surgery

Your heart is a muscle about the size of your fist. It delivers oxygen and nutrients to all parts of your body. In order to do this well, your heart needs to be strong with a regular heartbeat.

- Arteries – The arteries on the outside of the heart must have openings that are wide enough for blood to flow through them, providing oxygen and nutrients to the heart muscle.
- Valves – All four valves need to work correctly so the blood flows through them without backing up.
- Electrical system – The electrical system controls the heart rate and rhythm, making the four chambers beat as they should.

Open heart or cardiac surgery refers to different types of procedures to:

- Bypass narrow or blocked arteries.
- Repair or replace a valve or valves.
- Correct the electrical system.

Your surgeon will discuss which surgery you will be having and the benefits, risks, and other treatments. To begin heart surgery, the surgeon makes an incision through the breastbone (sternum). The surgeon may need to reroute your blood flow and stop your heart and lungs so he can repair or work on the heart. To do this, you are placed on a heart-lung machine. This machine provides oxygen to the blood and pumps the blood through the rest of your body.

In some cases, heart bypass surgery is performed “off-pump.” This means that the chest bone is opened to access the heart, but the heart isn’t stopped and a heart-lung bypass machine is not used.

Minimally invasive heart surgery is another option for some bypass cases. Instead of a large incision through the breastbone, one or more incisions are made on the left side of the chest between the ribs.

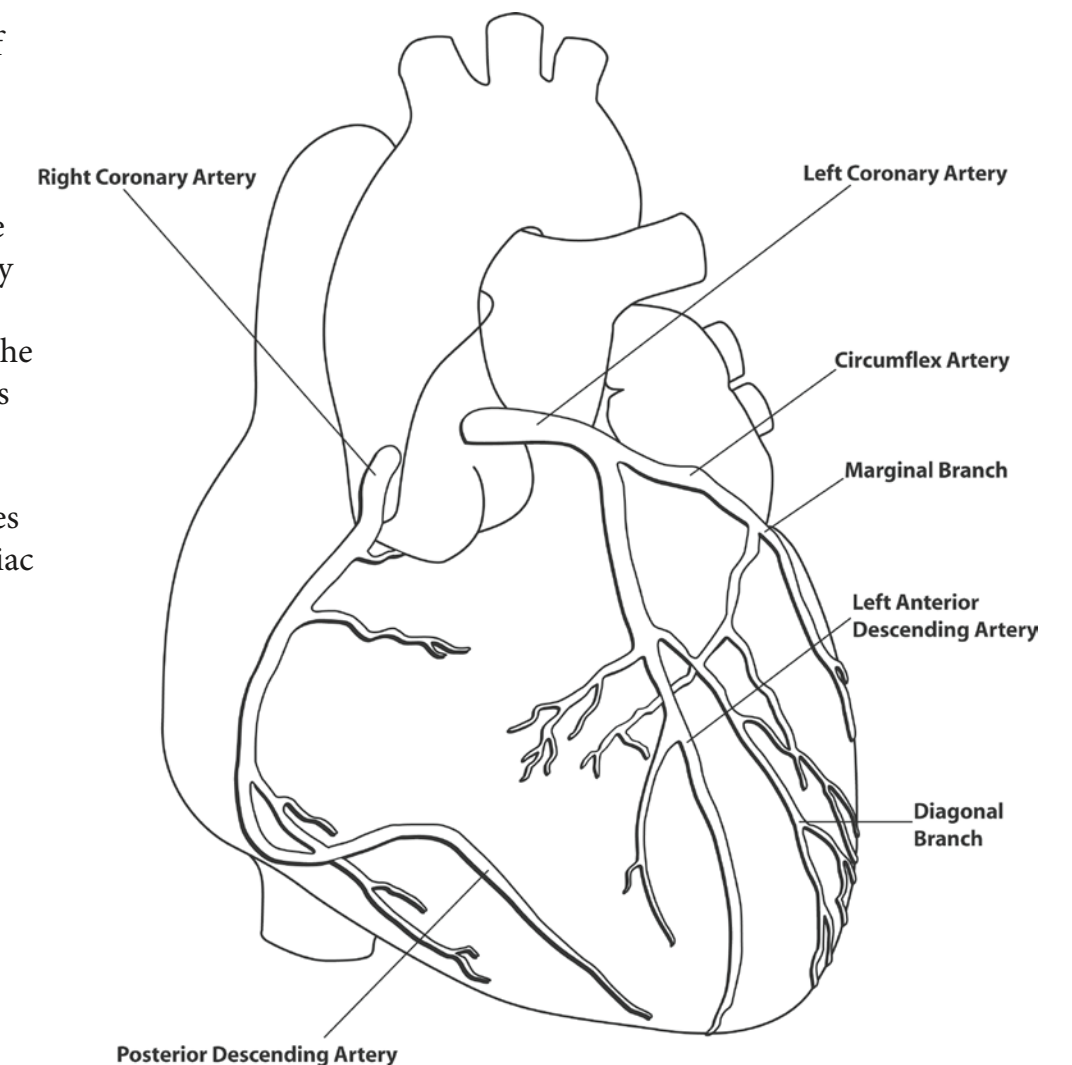
Coronary Artery Bypass Grafting

Just as the heart pumps blood through your body, it also pumps blood to your heart muscle through the coronary arteries. These arteries are located on the outer surface of the heart.

There are two main coronary arteries — the left and the right. The left coronary artery (LCA) splits into the left anterior descending coronary artery and the circumflex coronary artery. The left anterior descending artery (LAD) supplies blood to the front and left side of your heart. The circumflex coronary artery supplies blood to the left side and back of your heart. The right coronary artery (RCA) carries blood to the right side, bottom, and back of your heart.

If a coronary artery develops an area of blockage, it may interfere with blood flow. This may result in chest pain or other symptoms. When the pain and other symptoms cannot be managed with lifestyle changes, medication, or procedures performed during a cardiac catheterization, surgery may be the treatment option.

When bypass surgery is performed, the doctor takes a vein from the patient’s leg or an artery from the patient’s chest. One end is attached to the heart’s main blood vessel, the aorta. The other end is attached beyond the narrowed portion of the coronary artery. The blood flows through the vein, bypassing (going around) the blockage. More than one blockage can be bypassed during surgery.



Valve Surgery

The heart has four valves — the aortic valve, mitral valve, tricuspid valve, and pulmonary valve — that work together to maintain the proper forward flow of blood through the heart and lungs. Sometimes valves do not open (stenosis) or close (insufficiency or regurgitation) properly and need to be repaired or replaced. This may occur as a result of the normal aging process, an abnormality that was present at birth, or an illness such as rheumatic heart disease, lupus, a heart attack, or an infection. Based on your symptoms and the condition of your heart, your surgeon will decide if your heart valve(s) needs to be repaired or replaced.

Repairing a Valve

To repair valves, your surgeon may trim, shape, or rebuild one or more of the little flaps called leaflets, which open and close the valve. Another method is for your surgeon to sew a ring of metal, cloth, or tissue around the ring-like part around the valve to repair it.

Replacing a Valve

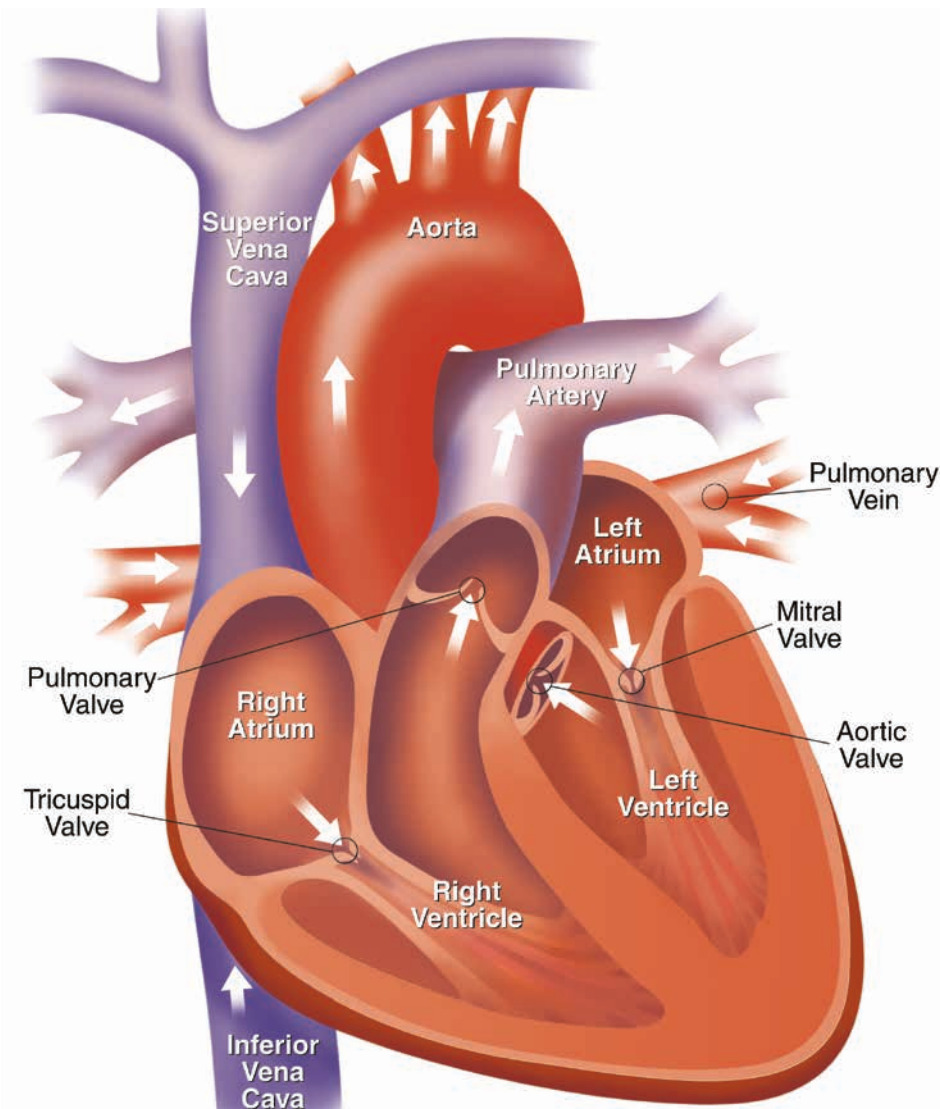
If a heart valve needs replaced, the new valve can be made of either biological (animal or human) or mechanical (metal or ceramic) materials.

Maze Procedure

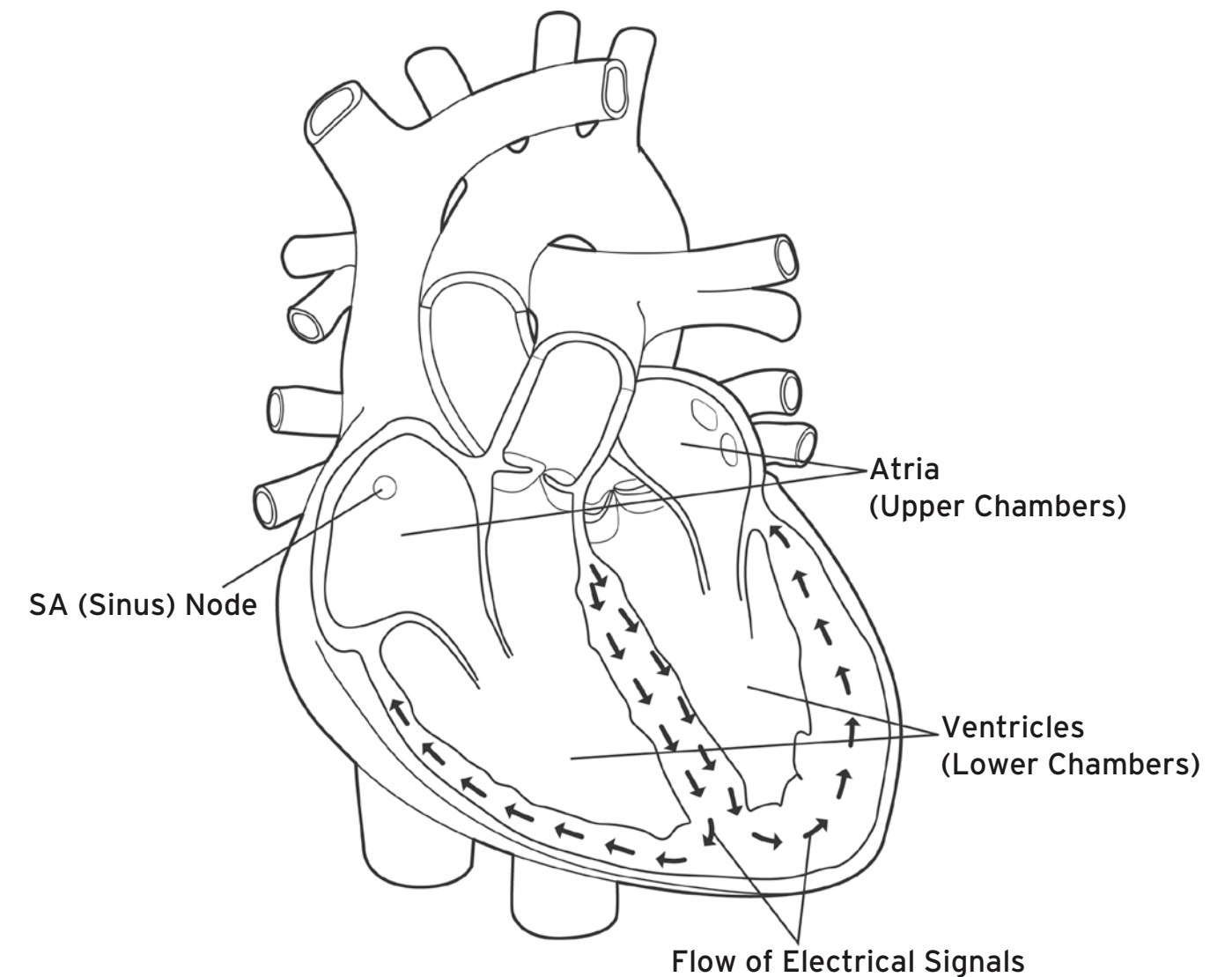
The Maze procedure is a surgical ablation used to treat atrial fibrillation that has not responded to medication and other treatments. It may be done during open heart surgery or as a minimally invasive procedure.

With atrial fibrillation, the sinus node does not start the electrical signal that controls the heart's beating. Instead, signals come from many areas in the upper chambers (atria) — sending extra electrical signals that cause the heart to beat too fast and irregularly. The atria quiver or “fibrillate.”

The surgeon uses an energy source to make scar tissue or ablations, which block the extra electrical signals. Because scar tissue doesn't carry electricity, it interferes with the electrical impulses that cause atrial fibrillation.



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Preparing For Surgery

Sometimes heart surgery is an emergency and there is no time to prepare. This section is helpful for patients whose heart surgery is scheduled in advance.

Planning Ahead

Recovering from heart surgery takes time. You will need someone to stay with you and provide extra help for the first 1 to 2 weeks at home. Depending on your overall health and whether you have people who can stay with you, you may want to consider going to a long-term care or rehabilitation facility.

If you feel this may be the case for you, it is a good idea to check into the facilities ahead of time if possible. The case manager at the hospital will want to have the names of the facilities you prefer and to work with you on your transfer.

Advance Directives

Mount Carmel supports and complies with our patients' advance directives for medical care. In order to comply with your wishes, we will ask you about a Living Will or Health Care Power of Attorney. If you have one or both of these documents, please bring a copy to the hospital. If you do not have an advance directive and would like information about writing one, talk with your nurse.

Tests and Exams

Before heart surgery, all patients need to have lab work (blood and urine), an EKG, and X-rays. Your doctor may also order other tests.

Tell your doctor or nurse about any over-the-counter medications or products you are taking. Fish oil, vitamin E, and garlic are just a few that can thin your blood and must be stopped days to weeks before surgery.

Surgical Consent

You will be asked to sign a surgical consent form before your surgery. This form gives consent to the surgeon to perform your surgery. Please make sure that you understand your surgery and its risks, benefits, and options before signing the form. It is important that you fully understand the information and are an active partner in your care.

Getting Your Lungs Ready for Surgery

Having your lungs working at their best before heart surgery is very important. When you have an incision on your chest, you may not breathe as deeply, and mucus can build up in your lungs. This, along with anesthesia and lying flat during surgery for a length of time, increases your chance for lung infections.

To protect and strengthen your lungs before surgery:

- Stay active. Exercise helps to strengthen your breathing.
- Avoid people with coughs, colds, and other infections.
- Use your incentive spirometer if you have been given one. See page 16.
- If you smoke, stop. Smoke is harmful to your lungs and needs to be avoided to reduce your risk for infection.

Quitting Smoking

It is very important that you quit smoking before your heart surgery and continue not to smoke afterward.

Smoking:

- effects your lungs, breathing, and oxygen levels
- increases your heart rate and blood pressure
- narrows the size of your arteries and vein grafts
- delays healing, increasing the risk of wound complications
- greatly increases the risk of blood clots, infections, pneumonia, strokes, and heart attacks

Before your surgery is a great time to quit. Talk with your doctor about quitting and medications that can help reduce the symptoms of nicotine withdrawal. Ask for the Mount Carmel Quitting Smoking packet, which includes ways to succeed in quitting smoking and staying smoke-free.

See page 33 for more resources. You can quit smoking with the right tools and support to help you on your path to a tobacco-free life.

Eating Healthfully

A well-balanced diet with a variety of foods and plenty of protein will help with healing and recovery. It is best not to try to lose weight before surgery. Your body should not be depleted of good nutrition at this time. If you need to lose weight, you can work on weight loss after you are fully recovered from your surgery.

Packing for Your Hospital Stay

What to Bring:

- Glasses, contacts, hearing aids, dentures, and cases
- CPAP or BiPAP
- A list of your medications or your current medications in their original containers — plan to have a family member take them home after the medication names and doses have been checked by your nurse or pharmacist.
- Driver's license
- Insurance card
- Copy of Living Will and/or Health Care Power of Attorney
- Credit card or money for insurance co-payment

What Not to Bring:

- Please leave all valuables, such as jewelry (including body piercings), keys, and electronic devices, at home.
- If you brought your wallet, credit cards, or checkbook, please give them to your family member or the person with you after registering.

The Night before Surgery

Do not smoke, eat, drink, chew gum, or eat mints or candy starting at midnight the night before surgery until you are allowed to have fluids after surgery.

To help decrease the risk of infection, you will need to shower with an antiseptic scrub. Follow the steps in Preparing Your Skin to Help Prevent Infection.

Do not shave the hair on your chest or legs. This can increase the risk of infection.

Put clean sheets on your bed.



The Morning of Surgery

Before you come to the hospital:

- Shower using the antiseptic scrub again. Follow the steps in the next section.
- Remove fingernail polish and all jewelry.
- You can wear deodorant, but do not use makeup, perfume, powder, lotion, or cream.
- Brush your teeth, but do not swallow the water.
- You may be told to take some of your medications the morning of surgery. Take these with small sips of water.

Preparing Your Skin to Help Prevent Infection

Infection is a risk with any surgery. Our care team takes every measure to protect you and to prevent infection while you are in our care. You play an important part in this.

Follow these steps before surgery:

- Shower the night before and the morning of surgery using the antiseptic scrub your surgeon's office has provided or directed you to purchase. This special soap contains an antiseptic called chlorhexidine gluconate (CHG). Cleaning your body with CHG soap before surgery helps prevent infection. Your doctor may instruct you to begin using CHG wash earlier. Follow your doctor's instructions.
- Do not shave the surgical area.
- Put clean sheets on the bed you will be sleeping in the night before surgery.



The Night Before and Morning of Surgery

Your surgeon has directed that you use a CHG product such as Hibiclens™, Dyna-Hex™, or others. Use half the bottle the night before and the other half the morning of your surgery.

Follow these steps as you shower:

1. Shower or bathe as usual with soap and water, then wash off the soap completely. If you plan to wash your hair, use regular shampoo on your hair and rinse well.
2. Thoroughly rinse your entire body with warm water from the neck down.
3. Turn off the water or step out from under the shower stream to avoid rinsing off the CHG soap too soon.
4. Apply the CHG product directly to your skin from the neck down and wash gently. Do not use above your neck, in your genital area, or on wounds that are deeper than a scratch. DO NOT touch your eyes, ears, or mouth while scrubbing.
 - Pay special attention to washing your chest and legs very well. Use a back and forth motion to gently scrub the area.

5. Allow the product to soak on your skin for 2 to 3 minutes.
6. Turn on the water or step back under the shower stream to rinse well. Do **not** use regular soap after applying and rinsing the product.
7. Pat your skin dry with a clean, soft towel. Do not use any makeup, perfume, deodorant, powder, lotion or cream after you have showered.
8. Put on clean nightwear or clothes.

Repeat steps 1 through 8 the morning of your surgery.

It is a good idea to read the label for full product information and precautions. Do not use this product if you are allergic to it. If your skin becomes red or irritated, stop using the solution and contact your surgeon for further instructions.

Your Surgery and Hospital Care

Surgery Day

Registration

When you arrive at the hospital, go to Patient Registration. You will need to have your driver's license or a photo ID and insurance cards. You will receive a "FIND code." This is a six-digit number that is unique to your admission. When family or friends call to get information about you, only those with this code will be given specific information. You decide who receives this code. Without the FIND code, only your status — such as critical, serious, or stable — will be shared. All patients in the Intensive Care Unit (ICU) area are listed as critical. This does not mean the patient is not progressing as planned.

Pre-operative Area

After registration is completed, you will be taken to the pre-operative area. You will change into a hospital gown, and your nurse will check your blood pressure and temperature. You will be asked to use a special mouth rinse that will help decrease the risk of developing pneumonia. A family member can be with you during this time.

Your surgeon, anesthesiologist, and operating room nurse will talk with you in pre-op. After speaking with the anesthesiologist, you will receive medicine to make you sleepy.

Surgery

Surgery usually lasts about 3 to 4 hours. Your family may wait in the surgery waiting room. The surgeon will talk with your family after your surgery is finished.

After Surgery

All patients go directly from the operating room to the ICU. Family members will be allowed a brief visit after the nurses have completed your admission. This takes about an hour. Your nurse will give your family information about visiting hours.

Your family needs to be aware that it is normal for you to look pale and puffy. Your skin will be cool to the touch, and you will be attached to tubes and pieces of equipment. Your incision will begin at the top of your chest and go down to the top of your stomach with a dressing in place. If you had bypass grafts with veins, you may also have incisions on one or both of your legs. Your entire leg will be wrapped in an Ace bandage. Your nurse will check you often to make sure that your pain is well managed.

Managing Your Pain

After surgery, you can expect to have some pain. We will be working with you to keep it well managed for your comfort and recovery. When pain is managed, you are able to move better and breathe more deeply, which helps to decrease the risk of pneumonia and blood clots.

Rating Your Pain

You will be asked to rate your pain on a scale of 0 to 10. This will help us know how your medication and other comfort measures are helping. You can use a number or choose a face on this scale that best rates your pain.

Pain Medication

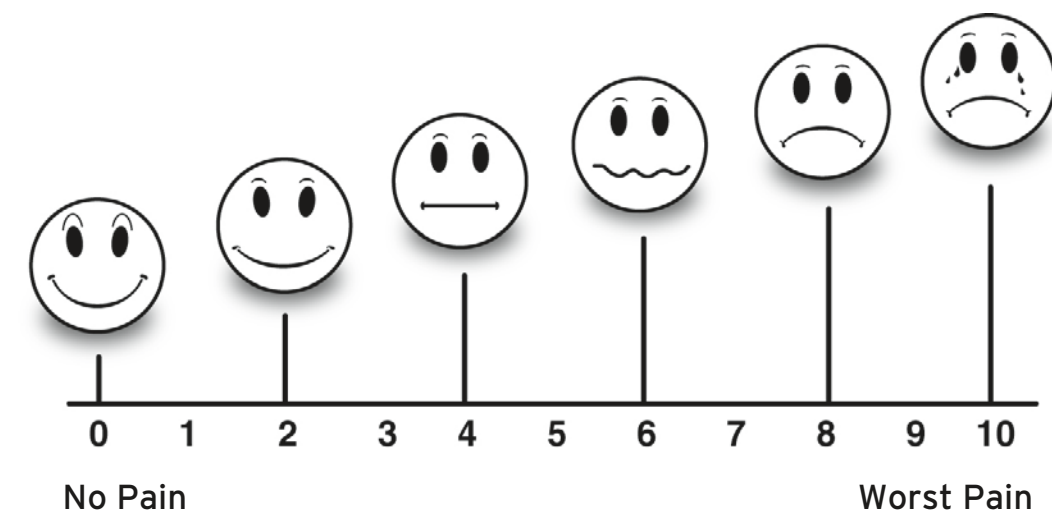
You will receive narcotic pain medicine such as morphine or fentanyl through your IV while you are on the breathing machine. After that, you will receive pain medication in pill form. Percocet[®] and Norco[®] are often given for moderate pain. As your pain lessens, you may take Tylenol[®].

Whatever kind of pain medicine you are getting, it is most helpful to take it before the pain gets severe. **Don't wait too long to ask for your pain medicine.** This makes it harder to get relief.

Common Side Effects of Pain Medication

Tell your nurse if you have any of these side effects or other symptoms of concern:

- Nausea or vomiting – You may have stomach upset with pain medication, especially after surgery or when taking other new medications.
- Sedation – Some pain medication may make you feel very drowsy or sedated. The nursing staff will check on you often to make sure you are safe.
- Dizziness – Sometimes after being in bed, having surgery, and taking pain medications, you may get dizzy when you attempt to get out of bed. A staff member will be present when you get up out of bed.
- Constipation – Pain medication affects your bowels by slowing them down. Getting up and walking as soon as you are able is most helpful. Unless your doctor has instructed you to limit your liquids, drink plenty of fluids — 8 to 10 glasses each day. Your doctor may order a stool softener or laxative if needed. Do not ignore the urge to have a bowel movement.



Other Ways to Manage Pain

Although we may not be able to keep you pain-free, we will make every effort to provide comfort and manage your pain. In addition to pain medication, there are other comfort measures that may be helpful. Talk with your nurse and care team about what you would like to try and what seems to work best for you. Try doing some or all of these comfort measures:

- Focus on your breathing. Practice taking slow, steady, deep breaths.
- Change your position.
- Ask to have the temperature or lighting in your room adjusted.
- Take your mind off the pain by listening to music, watching TV, reading, or visiting with family and friends.
- Think about being in a place that you find peaceful. Picture that place in your mind as you close your eyes.

You and your healthcare team can work together to manage your pain for a smoother recovery. As you recover, your need for pain medication should decrease. Talk with your doctor if you have any questions or concerns about your pain management at any time during your recovery.

Tubes and Equipment

Breathing Tube and Ventilator

The breathing tube or endotracheal tube (ET tube) is placed while you are asleep. It will be taped in place and connected to a machine called a ventilator. The ventilator will breathe for you until you are completely awake from the anesthesia.

The ET tube allows mucus that may be in your lungs to be removed until you can cough and clear it out by yourself. Because the tube goes through the vocal cords, you will not be able to speak. This tube remains in place until you are awake enough to breathe on your own.

To prevent the tube from accidentally coming out, your hands may need to be tied down. You may have a sore throat and be a little hoarse for a short time after the tube is removed.

Drainage Tube (NG - Nasogastric, or OG - Oral Gastric)

A tube is placed through your nose or mouth into your stomach to drain stomach acids. This helps prevent nausea and vomiting.

Once you are completely awake and able to follow instructions, the ET and drainage tubes can be removed. You will be placed on oxygen and will be able to have ice chips and sips of water.

Chest Tubes

During surgery, you will have two to three tubes placed into your chest cavity. The chest tubes drain excess fluid and blood that may pool there. Chest tubes are usually in place for a few days.

Pulse Oximeter

The pulse oximeter measures the amount of oxygen in your bloodstream. The probe is placed on one of your fingers. It is normal to see a red light on the probe.

Heart Monitor

Small adhesive pads called electrodes are placed onto your chest. These allow the nurses to monitor your heart rate, heart rhythm, and blood pressure.

Temporary Pacemaker

Temporary pacemaker wires may be attached to your heart during surgery. The wires can be connected to a temporary pacemaker generator if needed. This helps keep your heart rate normal while you are recovering and will be removed within a few days.

Arterial Line (A Line)

The arterial line is a small catheter placed into an artery to read your blood pressure and allow for easy access to blood needed for lab work. The artery most often used is the one in your wrist.

Central Venous Catheter

You will have a catheter placed in one of your large veins. It is most often placed in the jugular vein in the neck, but may also be in the subclavian vein just under your collarbone or in the femoral vein in the groin. This large catheter allows fluids and medications to be given and allows monitoring of one type of heart pressure.

You may also have a special line called a PA (pulmonary artery) line placed through the central venous catheter. This catheter allows the nurse to monitor other heart pressures. It will be removed before you leave the ICU.

Foley Catheter

The Foley catheter is placed in your bladder to drain urine. This allows the nurse to closely monitor your fluid status and how well your kidneys are working. The catheter is usually removed 1 to 2 days after surgery.

Blood Sugar

It is quite common for patients who do not have diabetes to have increased blood sugar levels after heart surgery. Increased blood sugars are also common for patients with diabetes. Your glucose level will be checked often, and insulin may be given for a few days to help manage it.

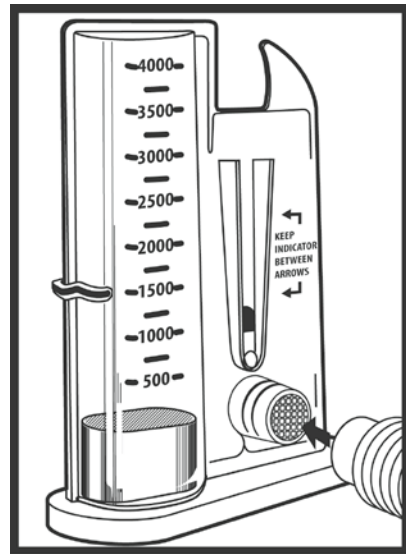
Splint

Using something to “splint” your chest incision when you move or cough is very important during your entire hospital stay and when you go home. Splinting is done by holding a pillow, folded towel, or thin blanket against your chest incision as though you are giving yourself a hug. It will help decrease your discomfort as you move or cough.

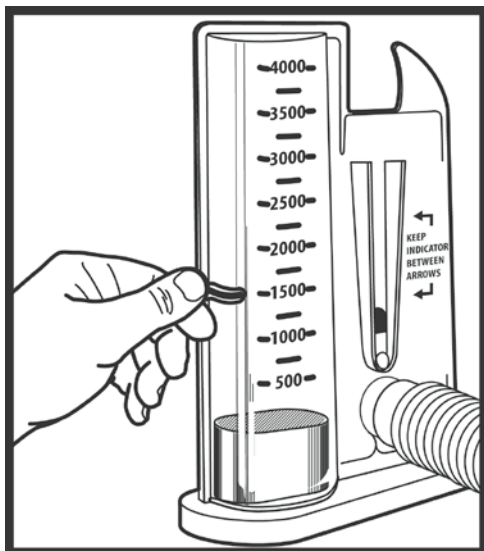
Using an Incentive Spirometer

The incentive spirometer (IS) is a device that helps to exercise and fully expand your lungs. Your nurse will show you how to use it. It is very important to do it as often as you are instructed, because it will help prevent pneumonia.

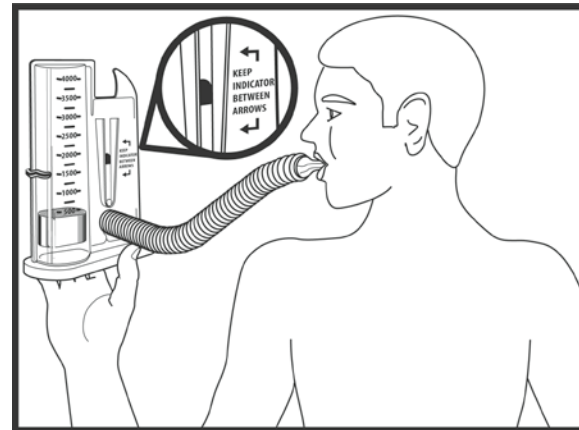
1. In order to use your spirometer, the tube needs to be attached to the open end of the port.



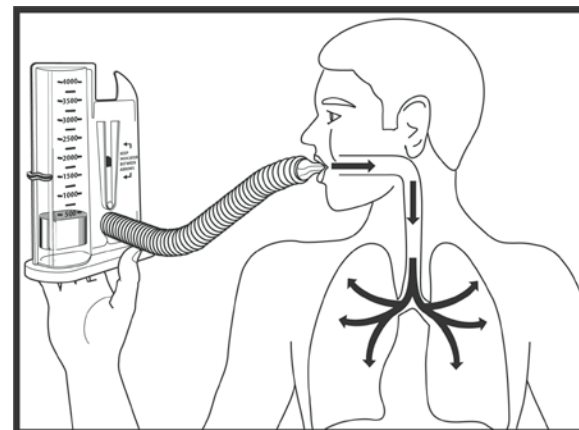
2. Hold the spirometer upright or set it on a table or other surface.



3. Slide the volume level marker on the left side to your volume goal. Your nurse will help you set your goal.
4. Blow the air in your lungs out, and then close your lips tightly around the mouthpiece. Breathe in slowly and deeply, keeping the blue indicator between the arrows. This will give your lungs the most exercise.



5. When you can't take in any more air, hold your breath for 6 seconds. Take the mouthpiece out and slowly breathe out.
6. Repeat _____ times every _____ hours, or as often as your nurse directs you. This is also a good exercise to continue at home until you are back to your usual activity level.



Deep Breathing and Coughing

This is another way to help prevent pneumonia after surgery. Your nurse will explain how and when to do deep breathing and coughing.

1. Take 2 slow, deep breaths in through your nose and breathe out slowly through your mouth.
2. Take in a third slow, deep breath through your nose.
3. Splint your chest and cough as you breathe out.

Recovery in Intensive Care

Most patients stay in Intensive Care for about 24 hours.

- Support stockings called TED hose are worn to decrease the chance of developing blood clots.
- You will be given clear liquids, and your diet will be increased as you are able to tolerate food.
- To decrease the chance of pneumonia, your nurse will help you to turn, remind you to use the incentive spirometer, and help you to cough and deep-breathe every 2 hours.
- You will be up in a chair at least once the day of surgery, and most of the tubes will be removed before you transfer out of intensive care.
- Your family will have limited visiting time, so it is best to check with the nurses ahead of time.

Recovery in Progressive Care

The average stay in Progressive Care is 3 to 5 days. It is important to know:

- Your heart rate and rhythm will still be monitored.
- At times, the staff will place a pulse oximeter on your finger to check the oxygen level in your blood.
- Your diet will be advanced as you are able to eat food.
- Your activity level will be increased and carefully checked by nursing staff and physical therapy.
- Incisions are cleaned daily and left open to the air unless drainage is noted.
- To help reduce the risk of complications, you must continue doing breathing exercises with the incentive spirometer and cough and deep-breathe every 2 hours.
- You must splint your chest as instructed.
- You will need to change positions while in bed and when you are up in the chair.
- You will continue to wear the TED hose as directed.
- Pain will be managed with pills. Tell your nurse when you need medication.
- You will still have some lab tests done, but not as often.
- It is common to gain weight after surgery, so you will be weighed daily.

Discharge Planning

Case managers are available to meet with you if you need home healthcare or a short-term rehabilitation stay. If you have planned ahead for a short stay in a rehabilitation facility, please share the names of the facilities you prefer with the case manager.

Activity Guidelines

You will be following these guidelines once you are moved to the Progressive Care Unit:

Day 1

- Deep-breathe and cough and use the incentive spirometer every 2 hours. Maintain or increase the volume on the incentive spirometer.
- Sit in a chair for meals.
- Get up to use the bathroom or the bedside commode.

Day 2

- Deep-breathe and cough and use the incentive spirometer every 2 hours. Maintain or increase the volume on the incentive spirometer.
- Sit in a chair for meals.
- Get up to use the bathroom.
- Walk 3 times today. Attempt to increase your distance each day.

Day 3

- Deep-breathe and cough and use the incentive spirometer every 2 hours. Maintain or increase the volume on the incentive spirometer.
- Sit in a chair for meals.
- Get up to use the bathroom.
- Walk at least 3 times today.

Day 4

- Deep-breathe and cough and use the incentive spirometer every 2 hours. Maintain or increase the volume on the incentive spirometer.
- Sit in a chair for meals.
- Get up to use the bathroom.
- Walk at least 4 times today.

Report to your nurse:

- Shortness of breath
- Dizziness
- Chest pain
- Sweating
- Heart beating very fast



Chest Care Rules

You need to follow these rules for 2 to 3 months after your heart surgery, unless your doctor tells you otherwise. This will help your chest incision heal and will put less stress on the surgery site. It will also allow you to recover with less chance of breaking the sternal bone wires.

- Do not let anyone pull on your arms or chest.
- Keep a pillow or folded towel or blanket with you to splint your chest incision when coughing, sneezing, getting up, sitting down, and lying down.
- Do not lift more than 5 pounds. Five pounds is not very heavy. A half gallon of milk weighs about 4 pounds.
- Do not lift things above your head.

- Avoid reaching over your head. Try not to lift your elbows above your shoulders when washing or combing your hair. Have items that you use often placed at shoulder level or lower to avoid overhead reaching.
- Do not use your arms to push or pull yourself out of a chair, bed, or car, or while you are going up or down stairs. Splint your chest and rock yourself forward as needed.
- Do not vacuum, sweep, shovel snow, rake leaves, remove wet clothing from a washing machine, or open sliding glass doors.
- Do not drive until you are cleared by your surgeon. Ride in the back seat of the car and place the splint under the shoulder seat belt to protect your incision.

If you have any questions, ask your doctor, nurse, or therapist.

Getting Active After Surgery



Walking Program

You will begin your walking program the day after your surgery. Walking is an aerobic exercise that involves exercising the heart and lungs. It is a great way to begin your recovery. A regular aerobic exercise program will give you a lifetime of benefits. It may decrease your risk factors and help prevent the progression of heart disease. It will also improve your overall health and emotional outlook.

After the first week, you may use a stationary bike or treadmill. The stationary bike should have little or no resistance so it will be easy to pedal. A treadmill should be level, without incline, or the “grade” should equal zero. Start at a very slow speed. Your doctor should approve any other form of exercise.

Here are some guidelines to follow with your walking program:

- Always let someone know when you are exercising, or exercise with a friend.

- Do your walking program when you feel your best.
- Walk on a flat surface at first. This is easier for your heart. Walking uphill takes more effort and energy.
- Take your pulse with each activity. Check your pulse before, at the halfway point, and 1 minute after you are done walking.
- Complete stretching exercises before and after each walking session. These exercises are on pages 21–22. The warm-up will slowly increase your heart rate. The cool-down will allow your heart rate and blood pressure to slowly return to their resting rates.
- Avoid extreme temperatures. Do not walk outside if it is less than 40°F or more than 80°F. Try walking in the mall if temperatures are too extreme outside. Pace yourself.

Stretching Exercises

Your heart rate needs to be increased slowly for safety. Repeat all exercises 10 times each. Do these slowly, taking 5 minutes to warm up and 5 minutes to cool down.



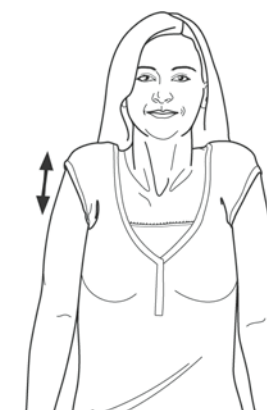
Lateral Neck Flexion
Tilt head toward shoulder, then tilt head toward the opposite shoulder.



Neck Rotation
Turn head slowly over each shoulder.



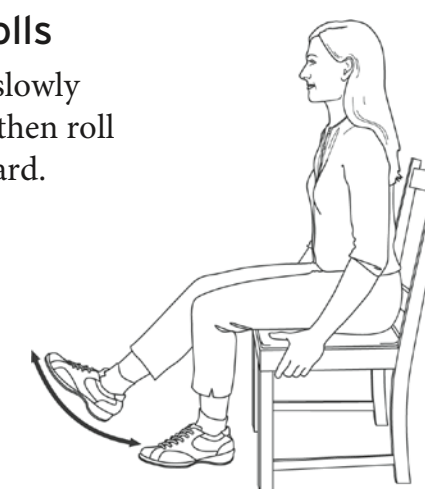
Neck Flexion
Slowly bend head forward, then return to starting position.



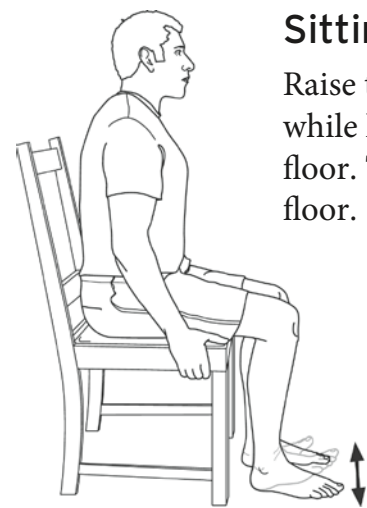
Shoulder Shrugs
With arms relaxed at sides, raise shoulders, then relax.



Shoulder Rolls
Roll shoulders slowly backward, and then roll shoulders forward.



Sitting Knee Flexion/Extension
Slowly straighten one knee and then return foot to the floor. Switch legs and repeat.



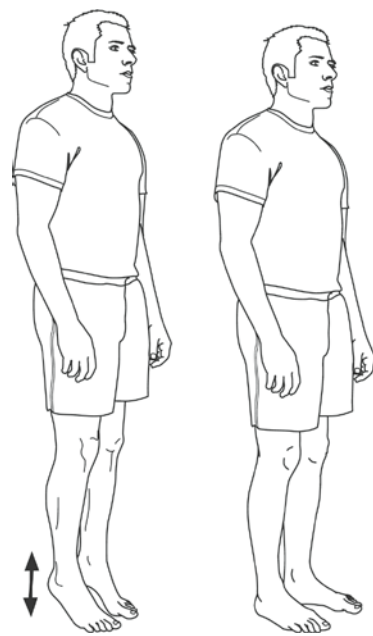
Sitting Toe Raises

Raise toes off the floor while keeping heels on the floor. Then lower toes to floor.



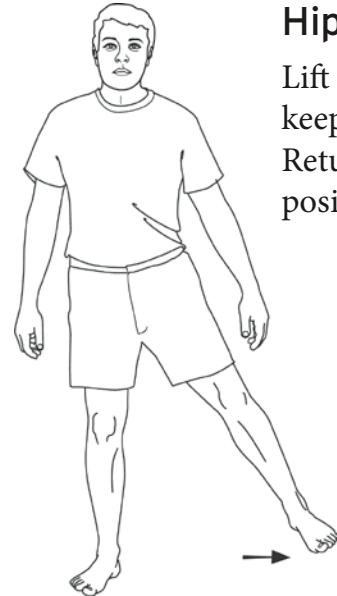
Sitting Marching

March in place while sitting. Try to march in place while standing.



Standing Heel Raises

Lift heels off the floor by standing on the balls of your feet. Then lower heels to floor.



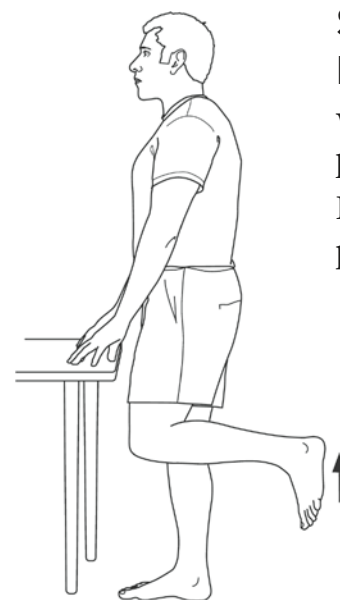
Hip Abduction

Lift leg out to the side, keeping toes forward. Return to starting position.



Hip Extension

Push one leg at a time straight back, keeping knee straight. Return to starting position.



Standing Knee Flexion

While standing, bend knee as far as possible. Return to starting position.



Outpatient Cardiac Rehab

After you leave the hospital, an outpatient program is available. The Outpatient Cardiac Rehabilitation program can help you recover from heart surgery.

Our outpatient program focuses on education and exercise to help reduce risk factors. Our multidisciplinary team of exercise physiologists, nurses, respiratory therapists, psychologists, and dietitians design a cardiac program to meet each patient's unique needs. You will be given personalized attention and the support you need to get you back to your normal daily routine.

The program combines medically supervised exercise and in-depth educational sessions designed to help you with lifestyle modifications. Using state-of-the-art monitoring and monitoring equipment, the exercise program introduces you to safe exercises, including weight training. The education sessions address diet, exercise, heart medications, and stress management.

See page 34 for more information about cardiac rehab, including the locations and phone numbers of the Mount Carmel sites.

Recovery at Home

When Should I Call the Doctor?

You will be given discharge instructions when you leave the hospital. Keep them in a place where you can easily refer to them as needed.

Call your doctor's office if you have questions or concerns about how you are feeling.

Call 911 immediately if you have chest pain different from incisional pain that is squeezing or radiating.

Call your doctor right away if you have:

- Pulse rate greater than 120 or less than 55
- Weight gain of 3 pounds or more in one day
- Temperature above 101°F (38.3°C)
- Increased redness, warmth, swelling, pain, bleeding, or drainage from your incisions
- Weakness or dizziness
- Swollen feet, ankles, legs, and/or abdomen
- Frequent dry, hacking cough
- Shortness of breath not relieved with rest

Incentive Spirometer

Remember to continue to use your incentive spirometer 6 times a day, taking 5 to 10 breaths each time.

Smoking

You should not smoke. This is true for many health reasons. Now that you have had heart surgery, it is especially important. Smoking increases your heart rate and narrows the size of your arteries and vein grafts. Since you were not able to smoke while you were in the hospital, you have the first few days without cigarettes behind you. As you get back home and begin to feel better, the urge to smoke may become stronger. Talk with your doctor about help with staying smoke-free before you leave the hospital. There are resources listed on page 33 to help you.



Two-Week Daily Record

Record your weight, temperature, and pulse daily. If you have diabetes, also record your morning and evening blood sugars. **Take this with you to your doctor's appointments.**

- **Weight** – Weigh yourself using the same scale at the same time each day — the first thing in the morning before dressing, after using the bathroom, often works best.
- **Temperature** – Take your temperature each morning before eating or drinking and at any time you think you may have a fever.
- **Heart rate (pulse)** – Take your pulse each day and with each activity. Check your pulse before, at the halfway point, and 1 minute after you are done walking. Count the number of beats for 1 full minute. Your heart rate should not increase more than 20 beats per minute with any activity. If your rate increases more than this, stop the activity and recheck your pulse in 15 minutes. If it remains high, continue to rest and recheck again in 15 minutes. Call your cardiologist if it is still high at this pulse check.

Medications

What about my medications?

It's important to take your medications as directed.

There may be changes to your medications or dosages within the first few weeks after your surgery. Please call your doctor's office with any questions. Do not stop taking any medication without talking with your doctor first.

Keeping Track of Your Medicines

- Always check the label of your prescription bottle before taking your medicine. Keep your medicine tightly capped in its original container when not in use. A daily or weekly pillbox can be very helpful.
- Know your medicine: learn the name of your medicine, what your medicine looks like, and why you are taking it. You should carry an up-to-date list of your medicines with you.
- Do not take any vitamins, food supplements, or herbal medications without first checking with your doctor. These may interfere with your medications. Also be sure to include these on your current list of medications and update it if your doctor makes changes.

Storing Your Medicine

- Keep your medicine out of children's reach.
- Store medicine in a cool, dry area away from heat and direct light. Heat or moisture can break down medicine, so the bathroom medicine cabinet is not a good place to keep your medicine.
- Keep liquid medicine from freezing or getting too hot.
- Throw away medicine that you no longer need to take. Most medicines can be thrown away in the household trash after mixing them with something like coffee grounds or kitty litter and sealing them in a container. A few medicines have special disposal directions and need to be flushed in the toilet or poured down the sink drain.

Taking Your Medicine

- Take your medicine as ordered. Some heart medications need to be taken on an empty stomach, or with food, or at specific times of the day. Check with your pharmacist when filling your prescriptions.
- If you miss a dose, take it as soon as possible unless it is time for your next dose. Do not double the next dose.
- If you miss two or more doses, call your doctor or pharmacist or refer to a product information sheet for advice on what to do.
- Check with your doctor before stopping any medicine.
- Make sure you have enough medicine to get you through holidays or when traveling.
- Make certain you have enough refills of your medicine so you don't run out.

- Some of your medicine may have the letters SR, CR, ER, CD, XL, or XR after the brand name. This means that the medicine is a time-released tablet or capsule. Do not crush or chew these medicines.
- You may need to break your tablet to ensure the correct dose. If that is the case, your doctor or pharmacist will instruct you. If you have any questions about whether you can safely break a tablet, call your pharmacist.

Types of Heart Medication

Your doctor has probably directed you to take one or more of the following medicines. Keep track of any side effects you feel as your body adjusts to each medicine, and describe them to your doctor.

Aspirin

Aspirin is given to reduce the "stickiness" of the blood to help prevent clots. Aspirin comes in plain or coated tablets. Coated tablets are less irritating to the stomach. There are many brands and strengths of aspirin, so be certain to buy the correct strength. To be sure, ask your pharmacist.

Aspirin can cause nausea, stomach burning, or indigestion. Call your doctor right away if you have:

- Severe stomach pain
- Bruising or bleeding
- Bloody or dark urine
- Bloody or dark stools
- Ringing in the ears



Beta-Blockers

Beta-blockers slow the heart rate, resulting in a decreased need for blood and oxygen to the heart. This reduces the workload on the heart. They also help the heart beat more regularly and help control high blood pressure.

Side effects may include dizziness, lightheadedness, unusual tiredness or weakness, and increased difficulty breathing.

Call your doctor if your heart rate is less than 55 beats per minute (unless this is normal for you).

Do not stop taking your beta-blocker unless your doctor has told you to do so. Stopping abruptly may be harmful.

Statins (HMG-CoA Reductase Inhibitors)

This group of medicines helps to prevent heart attacks by lowering cholesterol. It is usually best to take these in the evening.

While taking statins, you will have blood work to check for liver or kidney side effects. Call your doctor right away if you have:

- Pain in the muscles
- Dark urine

Diuretics

Diuretics, or water pills, help your kidneys produce more urine by eliminating excess salt and water. This results in less fluid for your heart to pump so the heart does not need to work so hard.

Along with an increase in urination, you may feel thirsty. Thirst and increased urination are normal effects of diuretics, but call your doctor if you are taking diuretics and have:

- Dizziness
- Severe weakness
- Severe leg cramps
- Fatigue

Other Medications

You may be on other medications such as for high blood pressure or other medical conditions. Be sure you know all of your medicines and why you are taking them.

Pain Medication

Take medication for pain as needed. As you recover, you will need less pain medication.

Nutrition for a Healing Heart

Eating a healthful diet after open heart surgery is important to promote healing, prevent infection, increase strength and endurance, and aid in a speedy recovery.

While all nutrients play a role in the healing process, eating enough calories and foods that are good sources of protein, zinc, and vitamin C are especially important.

Calories

You may not have your usual appetite right after surgery, but it is important to eat enough calories so that you have energy and your body is able to heal. In fact, your body is burning more calories than before your surgery because it is using energy to heal itself. If you find that you are having problems eating because your appetite is poor, try these tips:

- Eat 5 – 6 small meals or snacks each day. This is less stressful on your body than eating 3 large meals.
- Try eating foods that are easy to eat such as fruit, pudding, sherbet, custard, ice cream, cottage cheese, soup, and cheese and crackers.
- Eat when you feel hungry. Many people have their greatest appetite in the morning because they have not eaten all night.
- Drink most fluids between meals instead of with meals. It is fine to have a sip to help swallow food at meal time. Fluids, which often have fewer calories and nutrients than solid food, can take up valuable space in your stomach.

- If your appetite is poor and you are unable to eat much food, you may want to try over-the-counter nutrition supplements such as Ensure®, Boost®, and Carnation Breakfast Essentials® until your appetite returns.

Protein

Focus on good sources of protein to aid in healing and help keep your immune system strong. Try to include these foods at each meal and snack. Aim for 5-6 ounces of foods from the protein food group and 3 cups from the dairy food group each day.

- Foods included in the protein food group include meat, poultry, seafood, peanut butter, beans, nuts, seeds, soy-based foods, and nut butters. In general, 1 ounce of meat, poultry or fish, ¼ cup cooked beans, 1 egg, 1 tablespoon of peanut butter, or ½ ounce of nuts or seeds = 1 ounce of protein.
- In general, 1 cup of milk, yogurt, or soymilk (soy beverage), or 1 ½ ounces of natural cheese can be considered as 1 cup from the dairy group.
- If you are having trouble tolerating foods in the early days after surgery, try eating eggs, low-fat cottage cheese, yogurt, and baked chicken.

Zinc

Zinc is very important in healing and is found in animal foods such as meat, fish, poultry, and dairy foods. It's also found in whole-grain breads and cereals, beans, peas, nuts, and seeds.

Vitamin C

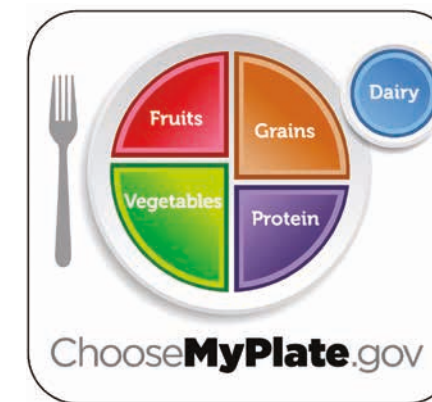
Vitamin C is needed to make proteins in the body and to heal your incisions. Good sources of vitamin C include citrus fruits, strawberries, kiwi fruit, baked potatoes, broccoli, and bell peppers.

Fluids

Fluids help transport nutrients that are important for healing. Unless your doctor has told you to limit your fluid intake, aim for 6 – 8 cups of fluid each day. Good choices include water, juice, and milk. You'll want to limit your caffeine intake, which is found in coffee, tea, and sodas.

Fiber

After surgery, you may experience constipation due to decreased activity, poor intake of solid foods and liquids, and some medications. To prevent or relieve constipation, consume 6 – 8 cups of fluid and fiber rich foods such as whole grains, fruits, vegetables, legumes, nuts and seeds. Prunes and prune juice have a natural laxative effect that can help relieve constipation while on pain medicine.



Sample Healing Heart Menu

Breakfast: Orange juice, bowl of bran flakes with raisins, 1 egg, whole wheat toast with margarine, milk

Mid-Morning: Bran muffin, Carnation Breakfast Essentials® drink or milk

Lunch: Small roast beef sandwich on a whole grain bun, sliced tomatoes, mixed fresh fruit cup, sherbet, milk

Afternoon: Cheese and crackers, juice

Supper: 3 ounces chicken breast, small baked potato with margarine, ½ cup cooked broccoli, ¼ cup cantaloupe, milkshake

Evening: Graham crackers or vanilla wafers, milk

Note: If you need to manage your blood sugar, talk with your dietitian about other choices. Avoid foods that tend to give you gas or indigestion and talk to your doctor before starting any new diets, vitamins, or herbal supplements.

Heart Healthy Choices

Once your appetite has returned and you are eating well, you should follow a heart healthy diet. Heart-healthy foods are low in sodium (salt), saturated fat, and added sugar. They include whole grains, lean protein, fruits, vegetables, and low-fat or fat-free dairy products. A heart-healthy diet will also help you manage your weight, if needed.

Managing Stress

As you recover, you will want to recognize and manage your stress.

Stress causes hormones to be released that speed up your heart rate and narrow your blood vessels.

Being in Control

People who feel in control of their lives are better able to handle stress, but there are times when you don't have control. Instead of getting upset and stressed, ask yourself:

- Is there anything I can do?
- Is there any benefit to getting upset over and over again?
- Would it be better for me to let go and move on?

There are other times when you have some control. For example, you cannot control traffic, but you can change your route, leave earlier, or listen to music while you drive. These things will lessen stress.



Reducing Stress

- Take time for yourself. Try to have a time each day when you do something that you enjoy.
- Think and behave positively. Make a point of expressing your appreciation to others.
- If possible, spread the changes in your life over time.

Dealing with Stress

- Perform deep-breathing exercises while lying down, sitting, or standing.
 1. Close your eyes.
 2. Relax your body.
 3. Slowly breathe in through your nose.
 4. Blow air out slowly through pursed lips.
- Use the stretching exercises on pages 21-22 for relaxing tense muscles.
- Take extra good care of yourself — get plenty of rest and exercise, and eat balanced meals.

Depression

If you ever feel like harming yourself or anyone else, call 911 for immediate help.

It is normal to have ups and downs after major illness or surgery, and you may feel sad or blue after your heart surgery. This is a common response.

Depression is different — it is a treatable medical illness that involves the body, mood, and thoughts. If you find yourself feeling blue or down or having any of these signs most of the time for at least 2 weeks, you should contact your doctor:

- Loss of interest in activities normally enjoyed
- A “slowed-down” or restless feeling
- Feeling hopeless, guilty, worthless, or helpless
- Difficulty concentrating or remembering
- Having thoughts of death or suicide
- Problems sleeping, feeling tired all of the time, or sleeping too much

Do not assume that your symptoms are due to your heart surgery. If you are depressed, you may not have the best possible recovery, because you don't feel up to taking care of yourself. Depression is not a sign of personal weakness or something that can be willed or wished away.

Your doctor can make an evaluation and help you find effective treatment. Treatment options include antidepressant medication, counseling, or both. Expect your mood to improve gradually, not right away. Feeling better takes time.

Intimacy

Wait at least 8 weeks before resuming sexual activity. Don't use positions that cause you to support your weight with your arms. Wait at least 1 hour after a full meal before sexual activity. If you have pain or feel short of breath, be sure to stop.

Frequently Asked Questions

How long should I wear my support stockings (TED hose)?

During the first month after surgery, wear support stockings during the day. Take them off at night, wash with a mild detergent, and hang to dry.

Is it okay to shower?

Yes — shower daily once you are home. Make certain the water is warm — not too hot or too cold. You may want to use a chair to sit in the shower. Gently wash your incision with soap and water in an up-and-down motion. Pat your incision dry with a clean towel. It is important to keep your incision(s) as clean and dry as possible. Do not use lotions, creams, powders, or perfume. Try not to lift your elbows above your shoulders when washing or combing your hair.

What should I take for constipation?

Being less active and taking pain medication can make you constipated after surgery. Drink liquids and eat plenty of high-fiber foods, such as fruits and vegetables. Over-the-counter stool softeners or laxatives should be taken as needed. Do not strain.

What should I do for problems with sleeping?

Sleeping problems are common in the weeks after surgery. You may be more comfortable sleeping in a reclining chair at first. It also helps to set a bedtime routine. Contact your primary care doctor if sleep problems persist.

- Go to bed at a regular time and get up at the same time each day.
- Limit naps to 30 minutes.
- Take your pain medication 30 minutes before bedtime.
- Avoid foods high in sugar at bedtime, and do not eat late, heavy meals.

When can I drive after surgery?

After surgery, do not drive for 6 to 8 weeks. Put a blanket or pillow under your seatbelt. If there are airbags in the car, disable them or ride in the back seat. When traveling longer distances, be sure to stop and allow time to walk each hour.

I have paperwork for insurance and/or disability. When do I return to work?

Be sure to send any paperwork that needs to be completed to your surgeon's office. There are many factors that affect your plans in returning to work. It will depend on your type of work, your physical condition before surgery, your type of surgery, and your recovery. When you are back at work, remember to start slowly and to pace yourself.

Reflecting and Looking Ahead

It's normal to reflect on your life when you have a major health event. The more you understand what happened to you and why, and what you can do to take care of yourself, the easier it will be for you to get your emotions in balance and to move forward with your recovery.

Pace yourself – don't try to do everything in one day or one week. Spread things out so you can enjoy your activities.

Slow down – you don't need to rush and hurry through your days. Slowing down will make things easier physically and allow you to appreciate your experiences.

Listen to your body – pay attention to how you are feeling and adjust your plans as needed. Throughout your recovery, your body will let you know when you are doing too much and when it's okay to do more.

Resources

You may want to refer to some of these helpful resources.

Community Support

Mount Carmel HealthCALL
(an information and referral service)
614-234-LIFE (5433)

**American Heart Association,
Central Ohio Chapter**
5455 N. High Street
Columbus, Ohio 43214
614-848-6676

Heart-Healthy Eating

American Dietetic Association
800-877-1600
eatright.org

American Heart Association
800-AHA-USA1 (800-242-8721)
heart.org

**National Heart, Lung,
and Blood Institute**
301-592-8573
nhlbi.nih.gov

USDA MyPlate
choosemyplate.gov

Quitting Smoking

Ohio Tobacco Quit Line
1-800-QUIT-NOW (1-800-784-8669)

Smokefree.gov

Smokefree.gov offers tools and support to help you become smokefree, including online resources, texting programs, and apps.

American Lung Association
614-279-1700 or 1-800-548-8252
lungusa.org

Cardiac Rehabilitation

Whether you're recovering from a recent heart attack, angioplasty or bypass surgery, a cardiac rehabilitation program can help speed your recovery and reduce your risk of having complications in the future. At Mount Carmel, we offer a cardiac rehabilitation program to increase strength and endurance and decrease risk factors. Because each condition is unique, our healthcare professionals design a program to meet your particular needs. Plus, you'll get the personalized attention and support necessary to get you back into your normal daily routine. Our goal is to enhance your quality of life so you can return to and maintain your best possible physical and emotional condition.

Benefits of Cardiac Rehab

Year after year, studies are unveiled that confirm the benefits of cardiac rehabilitation. Yet, one of the biggest benefits is the knowledge you'll gain to help you make better lifestyle choices so that you can live life to the fullest.



Other benefits include:

- Improved cardiovascular function
- Improved fitness level
- Weight loss
- Stress management
- Regular exercise
- Blood pressure control
- Lower cholesterol
- Increased knowledge of nutrition
- Reduced fear or anxiety related to heart condition
- Increased sense of well being

About Our Program

Inpatient Education – If you have been hospitalized due to heart disease, you'll learn about the disease process, exercise, stress management, nutrition and the risk factors that may have contributed to your heart condition.

Outpatient Program – After you leave the hospital you may begin the outpatient program. It combines a medically supervised exercise program and in-depth educational sessions to create a personalized program just for you. Using our state-of-the-art monitoring and exercise equipment, you'll be introduced to safe exercises, including weight training. During your educational sessions, you'll learn about diet, exercise and stress management so you'll have the tools to live a healthier life well after the program ends. These sessions are taught by a team of exercise physiologists, nurses, pharmacists, registered dietitians and a psychologist, so you'll be in excellent professional hands.

Healthy Exercise & Lifestyle Program (HELP) – HELP is available if you desire continued support and individualized attention after completing the outpatient program. Exercise takes place under medical supervision and the group setting provides motivation to help you keep your exercise program going. As part of your customized program, you will receive an exercise capacity evaluation and exercise prescription. You'll also receive an annual evaluation, as well as regular blood pressure checks.

Eligibility

A physician referral is required for enrollment in Mount Carmel's Cardiac Rehabilitation Program. For more information, call our office or talk to your physician.

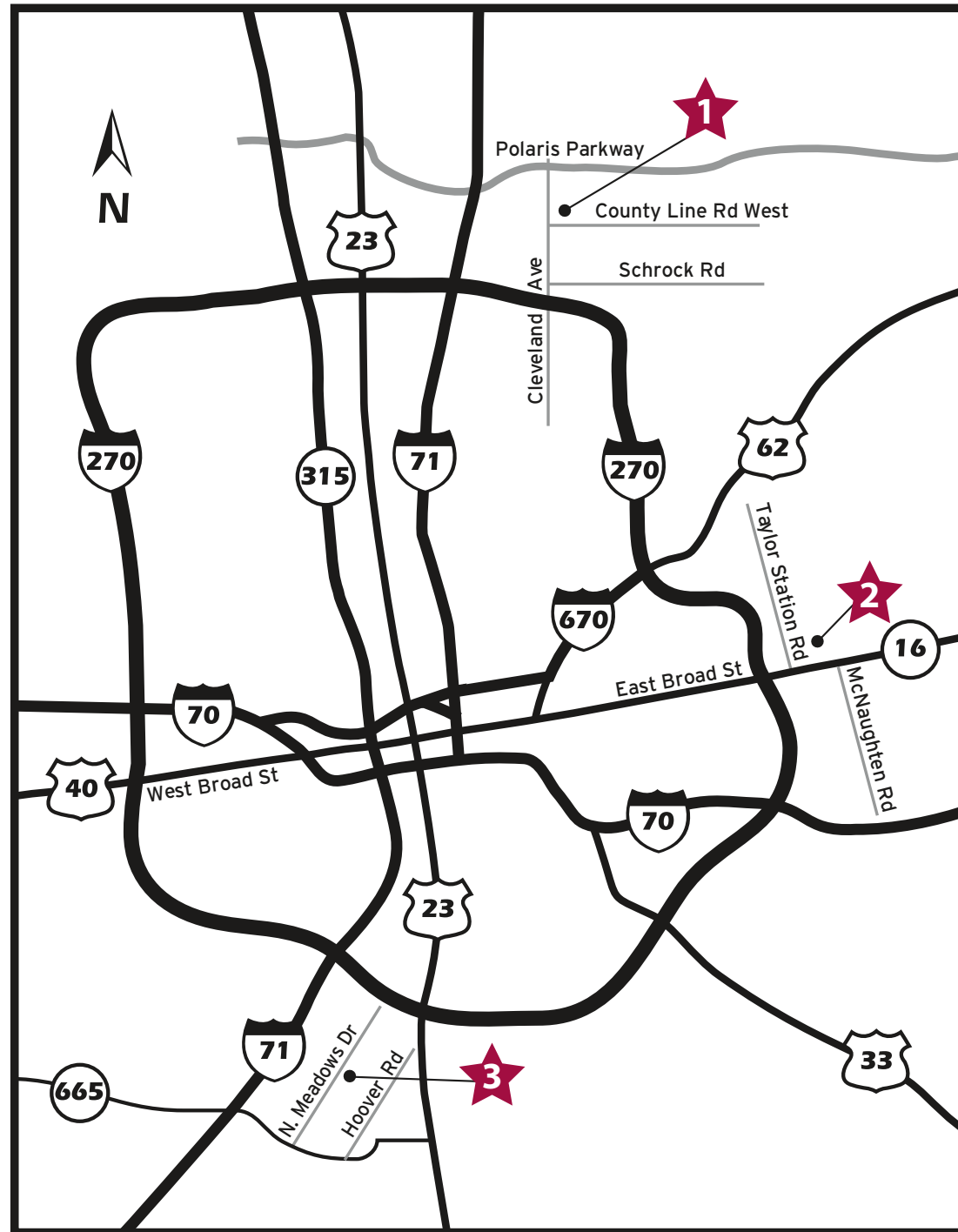
Insurance

In most cases, cardiac rehabilitation is covered by insurance. Please check with your insurance provider for specifics regarding coverage options.



Cardiac Rehabilitation Locations

- | | | |
|--|---|---|
| <p>1. Westar
 <i>Westar Health Center</i>
 444 North Cleveland Avenue
 Suite 320
 Westerville, Ohio 43082
 614-234-4001</p> | <p>2. Taylor Station
 <i>Mount Carmel Medical Park</i>
 150 Taylor Station Road
 Suite 350
 Columbus, Ohio 43213
 614-546-3686</p> | <p>3. North Meadows
 5300 North Meadows Drive
 Building 1, Suite 220
 Grove City, Ohio 43123
 614-663-4001</p> |
|--|---|---|



A department of:

Mount Carmel East | Mount Carmel Grove City | Mount Carmel St. Ann's



MOUNT CARMEL

January 2020