

Heart Surgery Guidebook

Your Guide to Heart Surgery at Fort Sanders Regional Medical Center, Methodist Medical Center and Parkwest Medical Center



Welcome

Thank you for choosing the Heart Hospitals of Covenant Health for your heart care. We want to welcome you to our hospital and provide important information regarding your upcoming heart surgery.

Introduction

This book is designed to prepare you and your family for your heart surgery. We will identify steps both pre- and postsurgery that will help ensure a successful surgery and recovery.

Emotions

You have just been told you need open heart surgery. It is normal to experience a wide range of emotions such as fear, anxiety, confusion, anger and depression. Share your feelings and concerns with friends, family and your healthcare team. Do not hesitate to ask questions about the surgery and recovery process.





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Pre-Admission Testing

You will need to have pre-admission testing completed before the day of surgery.

Please bring the following with you to your preadmission appointment:

- Insurance Card(s)
- Photo ID
- List of current medications (name, dose and how taken)
- Any orders or papers your doctor's office may have sent with you
- Parking ticket to be validated for free parking

How long will pre-admission take?

Pre-admission testing takes approximately two hours.

Do I need to be fasting?

You do not have to be fasting for your pre-admission testing appointment unless your doctor specifically requests that you do.

What does my insurance cover?

Any questions regarding insurance issues or co-pays should be referred to the financial counselors at your hospital:

Fort Sanders Regional Medical Center	. 865-331-1634
Methodist Medical Center	865-835-3600
Parkwest Medical Center	865-373-1244

Please call your hospital to arrange an appointment for pre-admission testing. Your appointment should be 7-14 days before surgery.

Hours and contact information are listed below:

Fort Sanders Regional Medical Center Pre-Admission Testing 865-331-1634 9 a.m. - 5 p.m.

Methodist Medical Center Registration Department 865-835-4902

8 a.m. - 4 p.m.

Parkwest Medical Center Pre-Admission Testing

865-373-1450 7:30 a.m. - 4:30 p.m.

APPOINTMENT:

Date

Time

Location

Your Heart and Your Heart Surgery

The heart is a muscular organ that sits in the center of your chest and is protected by the sternum or "breastbone." Its job is to pump blood rich with oxygen and other nutrients to all parts of the body.

The heart is divided into four chambers. The two upper chambers receive blood from the veins – called atria. The two lower chambers pump blood out of the heart – called ventricles.



QUICK HEART FACTS

4 Chambers:

- 2 Atrias receive blood from the veins
- 2 Ventricles pump blood from the heart

4 Valves

Valves direct blood through the heart and blood vessels

- Tricuspid
- Mitral
- Aortic
- Pulmonary



There are four valves in the heart that act as one-way doors to direct the blood flow through the heart and blood vessels. Healthy valve leaflets are perfectly formed thin tissue that open and close as your heart relaxes and contracts.

A wall called the septum divides the heart into the right and left sides.

Blood from the right side of the heart is pumped to the lungs to get fresh oxygen. The blood is then pumped to the left side of the heart where the main pumping chamber (the left ventricle) pumps the oxygenated blood to all parts of the body.

The heart muscle itself must have a blood supply of its own. The heart receives its blood supply with oxygen and nutrients from the coronary arteries.

Three main arteries lie on the surface of the heart and divide into smaller branches. Each branch nourishes a different part of the heart muscle.

Coronary Artery Disease

Coronary arteries can become narrowed by a build-up of fat and cholesterol in the walls of the arteries. As a result, less blood flows through the arteries, therefore decreasing the blood supply and oxygen going to the heart muscle. This results in "angina" or chest pain and possibly a heart attack.



Insufficient blood flow to the heart muscle from narrowing of coronary artery may cause chest pain (angina)



Coronary Artery Bypass Surgery

If surgery is indicated, your cardiologist and cardiovascular surgeon will work together to make a recommendation about what will work best for you.

The procedure begins by your surgeon making an incision or cut in the middle of your chest and separating the sternum or breastbone.

While the surgeon is working on your heart, your blood will be sent through a machine called the cardiopulmonary bypass machine (or heart-lung machine) to be supplied with oxygen and then circulated to the rest of your body.



Your surgeon and his assistant will choose and remove a vein or artery or both from your chest, arm or leg and use it to bypass the blocked arteries. One end of the graft is sewn to the coronary artery just below the blockage and the other end is sewn to the large artery in your chest called the "aorta".

Toward the end of the surgery, your heart will resume pumping and circulating your blood as you come off the cardiopulmonary bypass machine.

Wires will be used to close the sternum and stitches, staples, or surgical glue will close the skin.

Off-Pump Coronary Artery Bypass Surgery (OPCAB)

A select number of patients are candidates for this procedure. This surgery is done without the assistance of the cardiopulmonary bypass machine. The heart continues to beat and circulate blood during the surgery. This surgery is commonly performed for patients with one coronary artery blockage or for those who would not be considered candidates for the cardiopulmonary bypass machine due to other health problems.

Valvular Heart Disease

Heart valves can be abnormally formed, as with birth defects, or they can be damaged as a result of rheumatic fever, infection, inherited conditions, aging or heart attack.

There are four valves in your heart: Tricuspid, Pulmonic, Mitral, and Aortic

The aortic and mitral valves are the most commonly affected by disease. The valve(s) may become narrowed (stenotic) or unable to close completely, resulting in backflow of blood (insufficiency or regurgitation).

Both conditions require the heart to work harder to pump blood past the narrowed valve or to compensate for the insufficiency caused by the backflow of blood. This excess work weakens the heart muscle and causes it to enlarge and produce a variety of symptoms. These may include chest pain, shortness of breath, dizziness, fainting, tiredness and swelling.

Heart Valve Surgery

Valve repair or replacement is done at the recommendation of your cardiologist and surgeon. In some cases, it is possible to repair the damaged valve, but some are so seriously damaged or diseased that they must be removed and replaced with a new valve.

There are two types of replacement valves: biological or mechanical. Biological choices are bovine (cow), porcine (pig), and, rarely, human valves. Mechanical valves are made up of metal, carbon or synthetic materials.

Together, you and your surgeon will determine which type of valve is best for you, based on your age, lifestyle and the nature of your heart disease.

Your surgeon will make an incision or cut in the middle of your chest and separate the sternum or breastbone.

Your blood will be sent through a machine called the cardiopulmonary bypass machine (or heartlung machine) to be supplied with oxygen and then circulated to the rest of your body while the surgeon is working on your heart.

Your surgeon then replaces or repairs your heart valve.

Toward the end of the surgery, your heart will resume pumping and circulating your blood as you come off the cardiopulmonary bypass machine.

Wires will be used to close the sternum and sutures will close the skin. Then staples or surgical glue will be applied to secure the incision.

Anticoagulation

When you go home your surgeon will prescribe an anticoagulant (blood thinner) if you have an abnormal heart rhythm or a mechanical valve replacement. Routine blood tests will be needed to



monitor the effects of this drug. Your surgeon will give you very specific instructions about the dosage and when to have your blood tested. Your dietitian, pharmacist, and nurse will also educate you on a specific diet, side effects and monitoring.

Ablation or "Cox-Maze" Procedure for Atrial Fibrillation

Atrial fibrillation is the most common type of irregular heart rhythm, affecting more than two million Americans.

The condition may account for roughly 15 percent of all strokes in the United States. All patients must be on an anticoagulant and various other medicines to try to regulate the heart rate or rhythm.

In a person with a normal heart rhythm, electrical signals trigger the contraction of muscles in the heart's two upper chambers, the atria. During atrial fibrillation, a chaotic web of electric impulses spreads throughout the atria, causing the chambers to quiver rather than contract together.

For the Cox-Maze procedure, or ablation, your surgeon performs surgical ablation using one of several energy sources to scar the tissue in the atria. The scar tissue serves as a barrier and traps abnormal electric impulses in a "maze" of barricades. Only one path remains intact, guiding impulses to their correct destination.

The Cox-Maze procedure has a high success rate of converting the heart to a normal rhythm.

This procedure can be done during valve or coronary artery bypass surgery or as an isolated surgery to correct the rhythm. If performed during heart surgery, you will not have any different incisions or tubes after surgery.

If you are just having the ablation done you will have 3-4 small incisions on your sides and chest tubes on each side.

Getting Ready For Surgery

Surgeon:_

Procedure:_____

Surgery Date:____

Admitting Time: _____

Preparing for Surgery

We begin discharge planning for our patients on the day of admission. Some questions that you should consider to prepare for this process are as follows:

- Are you able to walk without difficulty? Do you require oxygen via a tank to breathe? Do you need assistance with your daily activities in order to complete them such as dressing, bathing, or preparing meals?
- 2. Do you presently live with anyone? If you live alone, is there someone who would be able to assist you with around-the-clock care? Have you required any home healthcare or rehabilitation services in the past? If so, what is the name of the agency or facility that provided care to you?
- 3. Do you use any assistive devices such as a rolling walker, cane, bedside commode, rollator or electric chair?
- 4. Notify your surgeon one week before your surgery date if you are taking any blood thinners, for example, Coumadin.

Please attempt to work daily with the physical therapist and/or the nurses for mobility and exercises. We know that often you will not feel up to participating, but it is important in order to help determine your discharge needs and to prevent any complications that can occur from inactivity.

Your Doctor, Nurse, Physical Therapist, Occupational Therapist, Respiratory Therapist, Dietitian, Case Manager and Social Worker all work as a team to assist you with identifying any discharge needs SPECIFIC to you as our patient.

Making a plan prior to surgery will help ease the worry of going home after your surgery.

Tips for Planning Your Surgery

Use this checklist to prepare before your surgery:

- Choose a family member or friend to help you through this process. This will need to be someone that can help take an active role in your recovery such as laundry, vacuuming, grocery shopping and driving, because you will be on lifting and driving restrictions.
- Arrange for someone to take care of your pets while you are in the hospital.
- Have a friend or family member be the "communicator" to help relay messages and update family and friends about your condition.
- Take care of personal errands before the day of surgery.
 - Clean house
 - Get a haircut
 - Pay bills in advance or ask someone to assist with finances while in the hospital
- Prepare your meals and freeze them ahead of time.
- ☐ Have your advance directive in place before having surgery. An advance directive is a legal document that specifies what actions should be taken for your health in the event that you are no longer able to make decisions due to illness. You can appoint a person to make such decisions on your behalf.

The Evening Before Surgery

- Do not drink any alcohol products or use tobacco 24 hours before surgery.
- Do not have anything to eat or drink after midnight (this includes gum, candy, mints or fluids). This helps prevent nausea associated with anesthesia.
- You can brush your teeth the morning of your surgery but do not swallow the toothpaste or water.
- You will be instructed by your surgeon if you have a specific medication that needs to be held before your surgery. Otherwise, take your morning medications with small sips of water.
- You are instructed to take a shower the day before surgery and the morning of surgery using a special antibacterial soap. You will also be provided wipes when you arrive on the day of surgery. Please follow these instructions:

- Use soap with washcloth.
- Wash all areas of the body, except face and groin area.
- Rinse well.
- Do not apply any lotions, powder, deodorant or cream.
- Do not wear make-up to surgery.
- Remove all nail polish.
- If you start having cold symptoms, chilling, running a fever, or an acute illness the day before surgery, CALL YOUR SURGEON (865-632-5900 - Knoxville office or 865-481-0183 - Oak Ridge office.)

The Day of Surgery

You will be instructed of the arrival date and time to check in at registration before surgery.

Upon arrival, you will go to the Patient Services area, also called Registration or Patient Registration.

Allow time for traffic and parking.

Be Sure to Bring:

Please be sure to bring the following items to the hospital on your surgery day:

- An updated list of medications that includes name, dosage, and how many times a day you are taking the medication.
- A list of all of your allergies and side effects.
- A list of close contacts and phone numbers in case of an emergency.
- Assistive devices (glasses, hearing aides, dentures, CPAP or BiPAP machine)
- Your insurance card (company, policy/group numbers)
- Your driver's license or photo ID
- Personal hygiene items (optional: toothbrush, toothpaste, deodorant)
- Comfortable clothes for the ride home

DO NOT Bring:

Leave all money, jewelry, valuables and medications at home. Any valuables left in the patient's room are the responsibility of the patient. Covenant Health cannot be held responsible for loss of those items.

Surgery Planning Checklist

I have chosen someone to help me after surgery.
I have someone to be in charge of communicating to family and friends.
I have someone to pick me up from the hospital when I am discharged home.
I have someone to run my errands (grocery store, pharmacy, post office, cardiac rehab).
I have someone to take me to my appointments.
I have taken care of my bills and mailed payments.
I have an advance directive.
I have quit smoking before surgery.

□ I know how to use my incentive spirometer



Family Information

Critical Care Lounge

Family and friends can wait in the Critical Care Lounge during surgery and while the patient is in Critical Care. It is here that you will receive surgical updates from a registered nurse in the intensive care unit.

Families should always check in at the front desk with the Critical Care Lounge receptionist. Please leave a phone number where you can be contacted. The receptionist will let you know about staying overnight in the waiting room.

Critical Care Lounge Guidelines

Children under the age of 12 are not allowed to visit in the critical care unit. This is for the child's protection as much as the patient's protection.

Because our space is limited, we ask that families limit longterm and overnight stays to two people per patient.

General visiting hours at Fort Sanders Regional are 8:30 a.m. – 8:30 p.m. Visiting hours for the Cardiovascular ICU are:

9:15 a.m. - 10:00 a.m. 4:30 p.m. - 5:00 p.m. 1:00 p.m. - 2:00 p.m. 9:00 p.m. - 10:00 p.m.

General visiting hours at Methodist Medical Center are 7:00 a.m.-9:00 p.m. Visiting hours for the Critical Care Units are:

10:00 a.m. - 10:30 a.m. 3:00 p.m. - 3:30 p.m. 1:00 p.m. - 1:30 p.m. 5:30 p.m. - 6:00 p.m.

8:30 p.m. - 9:00 p.m.

General visiting hours at Parkwest Medical Center are 8:30 a.m.- 8:30 p.m. Visiting hours for the Critical Care Units are:

8:30 a.m 9:00 a.m.	10:30 a.m 11:00 a.m.
12:30 p.m 1:00 p.m.	2:30 p.m 3:00 p.m.
5:30 p.m 6:00 p.m.	8:30 p.m 9:00 p.m.
10:30 p.m 11:00 p.m.	

The welfare and recovery of our patients is our top priority. We ask that guests provide special courtesy and sensitivity in scheduling visits.

For more information, contact your hospital's Critical Care Lounge or Waiting Room at:

Fort Sanders	865-331-1804
Methodist	865-835-4178
Parkwest	865-373-1557

Surgery Updates

Patient status updates will be given when surgery begins, when advancements are made, and again when the surgery is almost over. These updates are not based on a timed schedule.

Please note: family wait time may seem long. Operations take several hours and every surgery is different. Time is needed to prepare and complete the procedure in addition to transporting and settling the patient in the intensive care unit.

The surgeon will let you know how the procedure went and exactly what was done once the surgery is complete.



Visiting for the First Time

Open heart patients are recovered in the intensive care unit by a specialized team of nurses. The first visit with a loved one after surgery will be limited to about 10-15 minutes, as this is still a very critical time. Visits will then be coordinated on a specific schedule, depending on stability of vital signs or procedures.

The first visit can sometimes be a little scary for family and friends. You can touch and hold the patient's hand gently.

Expect your loved one immediately after surgery to:

- look pale and feel cool to the touch
- not be awake
- be swollen
- have a breathing tube in their mouth to help them breathe (note: the breathing tube will prohibit the patient from talking)
- have an IV in the neck with wires coming out
- have sticker electrodes on their chest with wires attached to a monitor
- have several IV bags hanging and possibly blood being given
- have several monitors in the room that make noises
- have drainage tubes with bloody drainage coming out beneath the incision
- have small temporary wires that may be connected to a box
- have a foley catheter to drain urine from bladder

Your Stay in the ICU Intensive Care Unit Stay

Immediately after surgery, you will be taken to the intensive care unit and cared for by a highly-trained group of nurses working under the direction of your heart surgeon and their physician assistants. Your team of nurses, nursing assistants and respiratory therapists will provide care for you while in the intensive care unit. Your surgeon will evaluate you daily and be available to speak with you and your family.

Ventilator (breathing machine)

You will be on the breathing machine (ventilator) until you are awake enough to have the breathing tube removed. The breathing machine is attached to a tube in your mouth that goes down your windpipe to help you breathe. This tube interferes with the vocal cord function, and you will not be able to talk while this tube is in place. Occasionally this tube also makes you feel like you are going to cough, which can be uncomfortable for a few minutes.

When you are stable and the nurse and respiratory therapist feels that you are ready, tests will be done on the breathing machine to determine if you are ready to come off of the ventilator. The tests make you take in a deep breath, and blow air out, all while still having the tube in place. This is to check if you are ready to breath on your own. The nurse and/or respiratory therapist will encourage you to cough and take deep breaths to ensure you are getting rid of any extra mucus.

How will I communicate my needs?

You may be fearful being on the breathing machine because you will be unable to speak. The nurse will be close by at all times. The nurse can read lips and ask you specific yes or no questions such as "Are you in pain?" The nurse can also monitor your heart rate, blood pressure, and facial expressions as measurement of pain and anxiety.

Will I hurt?

You will experience pain after surgery; however, every person is different. The doctor will order pain medication **as needed** to help manage pain. The pain medication will not completely take the pain away, but walking and breathing exercises will help work out the pain.

Tips About Pain Medication:

- Do not wait too long to ask for your pain medication. Let your nurse know that you are hurting, where you are hurting, and the severity of pain.
- Pain medication can cause an upset stomach when taken on an empty stomach. Take with food.
- Keep WALKING and MOVING.
- Use your incentive spirometer (breathing machine) every hour.
- Use a pillow to hold firmly against the incision.
- Use the following scale to help guide your pain.



Can I have anything to eat or drink?

After the breathing tube is taken out, the nurse will allow you to have small amounts of ice chips to evaluate your swallowing. Once it is safe to eat and drink, you will be started on clear liquids (which consist of Jell-O, popsicles, coffee, tea, juices, and some chicken or beef broth soup). The nurse will let you know the amount of fluid you can have because you may be on a fluid restriction.

Am I going to be connected to any monitors?

After surgery you will be connected to special equipment to monitor your blood pressure, heart rate, heart pressures, and other numbers that the physicians and nurses evaluate to care for you after surgery. The machines often make beeping sounds or noises, which is normal. You will also be connected to IV pumps and tubing. For your own safety and care do not pull at any tubes or wires.

What is a chest tube?

After surgery you will have one or more tubes inside of your chest cavity that were placed during surgery. These tubes drain excess air and blood from the chest. They are connected to a box-type container, called a Pleur-evac. At times the Pleur-evac may make a bubbling noise. The tubes remain in the chest until the surgeon feels comfortable that they can be removed.

Why do I have a pacemaker?

You may also have small wires in the lower portion of your chest attached to a pacemaker. These are called pacemaker wires and are inserted while you are in surgery. These wires are inserted because sometimes the heart beats slowly after surgery and needs a temporary pacemaker to ensure a healthy heart rate.

Will I have a catheter?

Yes, you will have a catheter in your bladder to measure your urine. You may still feel the sensation of having to urinate; however your nurse will remind you that this tube is still in place. The catheter will be removed at such time when your surgeon feels it is appropriate.

What is in my wrist?

You will have a small tube in the artery in your wrist called an "arterial line". This line monitors your blood pressure, and assists with drawing blood for labs, glucose checks, and oxygenation monitoring. When the arterial line is removed, the nurse will hold pressure on your wrist and then a bandage will be applied on your wrist.

Why am I on insulin? I'm not a diabetic.

You may require insulin after surgery. The stress of surgery and current medications may make your blood sugar level increase, even if you are not a diabetic or do not have a history of diabetes. Because of how often the nurses have to check your blood glucose level, you may find it hard to sleep for long periods of time.

When will I get out of bed?

After the breathing tube is removed and your breathing is stable you will be assisted to sit on the side of the bed. We will help you to move to the chair for all meals when you are ready. It is extremely important for you to move and increase your activity as soon as possible. The cardiac rehabilitation nurse or physical therapist will show you how to increase your activity starting the day after surgery.

How long am I going to be in the ICU?

Most patients remain in the Critical Care unit approximately 24-48 hours. The time in Critical Care will vary depending on your needs, progress, and medications that you require after surgery.

What happens before I leave ICU?

Although a few of the monitoring devices will be removed before you are ready to leave the Critical Care unit, you may still have a large IV access remaining in your neck area. It is very important not to touch this IV or attempt to remove the dressing. Your heart will still be monitored with a small box that is able to fit inside your gown pocket.

Transferring from the ICU

The Cardiac Services or Cardiac Stepdown unit is your bridge to going home. You will be spending time improving your coughing and deep breathing, increasing your activity level, managing pain, and preparing you to return home. You will remain in this unit until you are discharged from the hospital. You will be provided with an education booklet about caring for yourself after you are discharged.

What will be monitored in the Cardiac Services or Cardiac Stepdown unit?

- You will continue to have IV lines, drainage tubes and small wires when you are moved to the step-down unit.
- Your blood pressure, heart rate, oxygen level and temperature will be monitored every four hours or as needed.
- Your heart rate and rhythm are monitored at all times. It is not uncommon to have an irregular heart rhythm, called atrial fibrillation, after surgery. If your heart goes into atrial fibrillation, medications will be given to help try to regulate your heart rate.
- Blood sugar sticks will be monitored frequently even if you are not a diabetic. It is extremely important to keep your blood sugar in a normal range to help with healing and prevent infection. Insulin will be given as needed if your blood sugar is higher than normal.
- Nurses will monitor and clean your incisions daily.
- Lab work will be drawn and you will be weighed early in the mornings.

When will I get my chest tubes and pacing wires removed?

Your chest tubes may be removed the second day after surgery. You will receive something to ease the pain because this may be uncomfortable at first. But, after the chest tubes are removed, you will be able to move and breathe easier.

Pacing wires will be removed closer to the date of discharge. Expect to be on bed rest for a specific time period such as 1-2 hours.

What activities will I do in the Cardiac Services or Cardiac Stepdown Unit?

As mentioned, the more active you are, the better your recovery will be. You will be sitting in a chair for all of your meals with a specific diet ordered by your surgeon.

Your activity will progress from sitting in a chair, to assisting with your bath, to walking in the hallway three to four times a day. Nurses, physical therapists, cardiac rehab nurses, and occupational therapists will assist with your activity. Do not attempt to get out of bed or walk by yourself – ALWAYS CALL BEFORE YOU FALL!

You will be encouraged and expected to use your incentive spirometer (breathing machine) and perform deep breathing and coughing exercises every hour. This will help clear your lungs so that you will have a decreased risk of getting pneumonia, improve your breathing, and prevent you from going home with oxygen. You may require oxygen after surgery for a specific length of time at home; however, this requirement is usually temporary.

When can family and friends visit?

Your family may visit you at any time during normal visiting hours when you are in this unit. In most cases, someone can spend the night in your room if you or they wish to. We do suggest that no more than two people visit at one time because you need time to rest between the activities you will be involved in throughout the day.

What is an incentive spirometer?

Incentive spirometry is a method of deep breathing to help you inhale slowly and deeply to maximize lung capacity. Deep breathing and coughing exercises will help open your airway, expand your lungs, and clear mucus. These exercises may help prevent lung complications such as pneumonia or respiratory infection.

You will be using your incentive spirometer after surgery and when going home.

How do I use my incentive spirometer?

- 1. Sit in an upright position.
- Bed: Raise the head of the bed until you are in a sitting position.
- Chair: Sit with your back supported and feet on the floor.
- 2. Place the mouthpiece of the spirometer firmly between the lips and take a deep breath in. Hold your breath for 3 seconds.
- 3. Exhale slowly.
- 4. Cough during and after each session.
- 5. Use your heart pillow or hugger to protect your incision when coughing.
- 6. Use your incentive spirometer for 10 slow and deep breaths every hour (while you are awake) in the hospital. When discharged, continue breathing exercises 2-3 weeks at least five times a day.

Your nurses and respiratory therapists will set your individual, specific volume goal.

How do I deep breathe and cough?

- 1. "Hug" your heart pillow or heart hugger firmly against your incision.
- 2. Breathe in slowly through your nose counting to two.
- 3. Breath out slowly though your mouth.
- 4. Deep breathe several times. Open your mouth and cough three times as you breathe out.

Cardiac Rehabilitation

Cardiac rehabilitation is a post-surgery program designed to meet individual needs with exercise, education counseling, and a support network. This is an important part of recovery from open heart surgery. YOUR CARDIOLOGIST AND SURGEON RECOMMEND YOU PARTICIPATE IN CARDIAC REHAB TO ENHANCE YOUR RECOVERY PROCESS. While in rehabilitation, your physician will regularly review your progress.

There are three phases of cardiac rehabilitation:

Cardiac Rehab Phase 1

Phase 1 of cardiac rehabilitation actually begins while you are in the hospital. You will learn about activity guidelines, eating a heart healthy diet, and lifestyle modification. Phase 1 is designed to increase your activity and prepare you for discharge.

Before you are released to go home, you will be scheduled for outpatient cardiac rehab (Phase 2) between two and four weeks after surgery.

Cardiac Rehab Phase 2

A cardiac rehabilitation nurse and exercise physiologist will review your health history and insurance benefits at your initial appointment to outpatient cardiac rehabilitation.

You will be enrolled in cardiac rehabilitation three days a week lasting anywhere from 8-12 weeks.

You will participate in exercise classes with other heart patients in a **safe environment** that allows the healthcare team to monitor your heart rate and rhythm response to the exercise workload. Your progress will be assessed throughout the program. As you become stronger, the staff will adjust your program to fit your individual needs. Information will be provided to your doctor about your progress.

A variety of education classes on how to live a heart healthy lifestyle will be provided by cardiac nurses, dietitians, exercise physiologists and pharmacists.

Cardiac Rehab Phase 3

Phase 3 of cardiac rehabilitation is a "maintenance" phase that you can choose to enroll in after Phase 2 is completed. This is a way to keep exercising and to continue learning about your existing heart condition.

You will no longer be monitored on a heart monitor, but the healthcare team is there to continue to provide you with guidance and support



Covenant Health Outpatient Cardiac Rehabilitation Programs

Anderson County* Methodist Medical Center Cardiac Rehabilitation (865) 835-5235

Hamblen County* Morristown Hamblen (423) 492-5210

Knox County* Parkwest Cardiac Rehab (865) 531-5560

Fort Sanders Cardiac Rehab (865) 331-1250

Loudon County Fort Loudon Cardiac Rehabilitation (865) 271-6030

Roane County* Roane Medical Center Cardiac Rehabilitation (865) 316-2825

Sevier County* LeConte Medical Center Cardiac Rehabilitation (865) 446-8500

Area Outpatient Cardiac Rehabilitation Programs

Blount County Blount Hospital Cardiopulmonary and Medical Fitness (865) 977-4748

Bradley County Sky Ridge Medical Center (423) 559-6032

Claiborne County Claiborne County Hospital (423) 526-2191

Cumberland County Cumberland Medical Center (931) 459-7379

McMinn County* Columbia/Athens Regional Medical Center (423) 744-3321

Putnam County Cookeville Regional Medical Center (931) 783-2689

Rhea County Rhea Medical Center (423) 775-8673

* These clinics hold a national certification by the American Association of Cardiovascular and Pulmonary Rehabilitation for consistent clinical outcomes for heart patients.

Activity Log

When you are discharged from the hospital, use this log to record minutes walked during the day, blood pressure, weight, temperature and heart rate. Continue this until you see your doctor for your first follow-up. Take this log to your visit and show what you've accomplished.

DATE	Day	Minutes Walked	Temp. (°F)	Weight (lbs)	Blood Pressure (mmHg)	Heart Rate (bpm)
	1					
	2					
	3					
	4					
	5					
	6					
	7					
	8					
	9					
	10					
	11					
	12					
	13					
	14					
	15					
	16					
	17					
	18					
	19					
	20					

Glossary

The following are terms you may hear during pre- and post-operative discussions with your physician or nursing staff.

ABG/Arterial Blood Gas: a blood sample measuring oxygen and carbon dioxide levels in your blood. Blood is drawn from your arterial line and wrist area.

Anesthesiologist: a doctor who specializes in the science of anesthesia. This is the physician who "puts people to sleep" during surgery.

Angina Pectoris: the medical term for chest pain due to coronary artery disease. Angina Pectoris is a condition in which the heart muscle does not receive enough blood and oxygen, typically resulting in chest pain.

Angiogram: the x-ray images that are made of blood vessels or chambers of the heart by tracing the course of a special fluid (called contrast medium or dye) that has been injected into the bloodstream.

Anticoagulant: a drug that prevents new blood clots from forming or the existing blood clot from getting larger. The drug does not dissolve an existing clot.

Aorta: the main trunk artery that receives blood from the lower left chamber of the heart. The aorta begins at the base of the heart, arches up over the heart like the handle of a walking cane, and passes down through the chest and abdomen in front of the spine. It branches off into many lesser arteries that delivers blood to every part of the body (except the lungs).

Arteries: blood vessels that carry blood away from the heart to the various parts of the body. Arteries usually carry oxygenated blood, except for the pulmonary artery that conducts unoxygenated blood from the heart to lungs where it is oxygenated.

Arteriosclerosis: commonly called hardening of the arteries. This is a generic term for a variety of conditions that cause the arterial walls to become thick and hard and lose elasticity.

Arterial Line: a catheter in your wrist that closely monitors your blood pressure and allows nursing staff to draw blood for lab tests.

Atherosclerosis: a type of arteriosclerosis in which the inner walls of an artery become coated with thick, irregular deposits of a fatty substance. These deposits decrease the diameter of the blood vessels and restrict the amount of blood that can flow to the heart.

Atrial Fibrillation: an irregular heart rhythm that can sometimes occur after surgery.

CABG (Cabbage): refers to coronary artery bypass graft surgery. This involves using a vein from your leg and/ or artery from your arm, chest or abdomen to bypass a narrowed or blocked artery around your heart. This surgery is performed to improve the blood supply to the heart muscle.

Cardiac Catheterization: the process of examining the heart by introducing a thin tube (catheter) into a vein or artery and passing it through to the heart.

Cardiac Rehab: an exercise and educational program designed to help you live a heart healthy lifestyle.

Catheter: a thin tube inserted into a vein or artery.

Chest Tubes: drainage tubes in your chest near your incision to drain blood and other fluid.

Cholesterol: a fat-like substance in animal tissue. A higher-than-normal level of cholesterol increases the risk of coronary atherosclerosis.

Collateral Circulation: detoured circulation of the blood through smaller vessels when a main vessel has been blocked off. This usually develops from regular exercise.

Coronary Artery Disease: a build up of fatty materials on the inside of arteries that bring blood to the heart muscle. The diameter of the inner walls of the (coronary) arteries is narrowed and the blood supply to the heart itself is decreased.

Coronary Arteries: two arteries, arising from the aorta, which arch down over the top of the heart, branch, and conduct blood to the heart muscle.

Coronary Occlusion: an obstruction (usually a blood clot) in a branch of one of the coronary arteries that hinders the flow of blood to a part of the heart muscle.

Coronary Thrombosis: a form of coronary occlusion. This is the formation of a clot in a branch of one of the coronary arteries that moves blood to the heart muscles.

Electrocradiogram/ECG/EKG: a record of electrical impulses that are produced by the heart.

Endotracheal Tube/ ETT: a tube in your mouth that is connected to a breathing machine.

Extubation: removal of the breathing tube (endotracheal tube) from your mouth.

Foley Catheter: a tube inserted into the bladder to drain and measure urine.

Heart Pillow: heart shaped pillow given to support your chest and protect your incision when you cough and start increasing activity.

Heart Hugger: a support harness to protect your chest and incisions during activity and respiratory exercises.

Hematocrit: your blood count/level. It is important to check for anemia after surgery. Your surgeon may recommend you receive blood transfusions.

Intensive Care Unit: a unit where you are taken directly after heart surgery where patients are closely monitored by nursing staff.

Ischemia: a local – and usually temporary – deficiency of blood in a part of the body, often caused by a constriction or blockage in the blood vessels.

Myocardial Infarction, "MI" or "Heart Attack": caused when an area of the heart muscle is damaged from lack of blood and nutrients.

Myocardium: the thickest layer and muscular wall of the heart.

Nitroglycerin: a drug that relaxes the muscles in the blood vessels and allows them to expand (dilate). It is often used to relieve chest pain.

NPO: this means nothing by mouth. If a doctor has ordered NPO this means that you are not allowed to eat or drink. This is ordered before surgery and right after surgery.

Occupational Therapy: a healthcare profession designed to help patients perform everyday activities.

On & Off Bypass or "Pump" Bypass: also called the heart and lung machine, it circulates your blood while your doctor is working on your heart. You are placed on the machine during a portion of surgery and off near the conclusion of surgery.

Pacing Wires/Pacer/Pacemaker: wires placed in your chest during surgery to be used after surgery to regulate your heart rate or rhythm (if needed).

Percutaneous Transluminal Coronary Angioplasty/

PTCA: a procedure sometimes used to dilate (widen) narrowed arteries. A catheter with a deflated balloon on its tip is passed into the narrowed artery, the balloon is inflated and the narrowed segment is widened.

Physical Therapy: a healthcare profession designed to help treat, prevent and evaluate physical limitations.

Plaque: a deposit of fatty substances on the inner lining of the arterial walls.

Polyunsaturated fat: a fat that is usually a liquid oil of vegetable origin, such as corn oil or safflower oil. Polyunsaturated fats tend to lower the amount of blood cholesterol and lessen the hazard of fatty buildup within the vessels.

Pulse Oximetry / Pulse Ox: a machine with a light connected to your finger to measure how much oxygen is in your blood.

Saturated Fat: a fat (usually a solid fat of animal origin like that found in milk, butter, meat). A diet high in saturated fats increases the amount of blood cholesterol. These fats should be limited in your diet to reduce the hazard of fatty deposits building up inside the vessels.

Stent: a flexible wire mesh placed within the artery wall that pushes plaque against the wall and allows blood to flow more freely to the heart.

Swan Ganz/ PA Catheter: an IV in your neck or shoulder used to measure pressures in your heart and lungs and to give you medications and fluids.

Telemetry Monitor: a heart monitor connected to white patches on your chest. The monitor is used to watch your heart rate and rhythm. A small box, placed in a pouch, will be carried around your neck to accommodate your activities.

Ventilator "Vent": the breathing machine which is connected to the breathing tube in your mouth.

Ventricle: either of the two lower chambers of the heart. The left ventricle pumps oxygenated blood through the arteries to the body, while the right ventricle pumps unoxygenated blood through the pulmonary artery to the lungs.



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