

Cardiac Care

On Your Way to a STRONG Heart  
**Heart Surgery Information**





# UR Medicine Strong Memorial Hospital

## **Welcome**

Welcome to UR Medicine Cardiac Care. We offer complete heart care from prevention to rehabilitation; in fact, our program is the most comprehensive in Western and Central New York. Our doctors helped write the national guidelines to keep your heart healthy. We set the national standard of care for treatment of heart failure. In addition, we have some of the best outcomes in New York State. We look forward to caring for you and your family.

Whether your cardiac care requires only one visit to the cardiologist to help with your blood pressure or cholesterol, or a hospital stay with surgery and rehabilitation, you will be treated at every step by expertly trained cardiac specialists. We all work together as one team with one common goal: to keep you as healthy as possible.

This booklet provides information related to having heart surgery at UR Medicine/ Strong Memorial Hospital. We know that everyone has different learning needs – we will work with you to make certain your questions are answered. We also recognize that this can be a stressful time for you and your family. The information contained in the following pages will be reviewed with you as you need. We encourage you to ask questions at any time during your stay. We thank you for the privilege of being your healthcare provider and look forward to assisting you.

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# In the Hospital

Our cardiac surgical patients are admitted to UR Medicine/Strong Memorial Hospital. UR Medicine Cardiac Care offers comprehensive cardiology services and specialized surgical units for patients with cardiac needs. If you need heart surgery, you will receive the highest level of care in one of UR Medicine's dedicated cardiac care units. During your hospital stay, a multidisciplinary team of health professionals will work with you and your family to meet your healthcare needs. Together, we will develop a safe discharge plan to allow you to leave the hospital setting. Our extensive array of services includes physical and occupational therapy, social work and nutritional services.

## **Transitional care:**

Sometimes people require a short-term stay in a rehabilitation facility following surgery, heart failure or other cardiac conditions. Your care team will work with you and your family to determine your needs and your insurance coverage.

## **Home care:**

UR Home Care is a full-service, not-for-profit Medicare-certified home health agency. We provide you and your loved ones with comprehensive care in the most comfortable place of all, your home. The Cardiopulmonary Program is designed for people who have had coronary artery disease, congestive heart failure, valve replacements, cardiac surgery or heart attack. A nurse practitioner – as well as cardiopulmonary community health nurses, physical and occupational therapists, medical social workers, and a dietician – coordinate services and are part of the team. We maintain ongoing communication with your physician.

## **Outpatient:**

Many people find cardiac rehabilitation to be the best way to resume a full and active lifestyle after a heart problem. And for others at risk for heart disease, cardiac rehabilitation is an important prevention tool. UR Medicine offers preventive and rehabilitative care for people recovering from or at risk for heart disease. Patients enter the program at their physician's request during or after hospitalization for angina, heart surgery, angioplasty or heart attack. The program continues on an outpatient basis. Here, you'll work with nurses who will tailor an exercise program for your specific needs. Nutrition counseling and stress management are important parts of the program.

# Important Facts to Know Before Your Surgery

**Plan early for going home.** Discuss with your family where the best place to recuperate would be. If you require a skilled nursing facility at discharge, you should ask to speak with a social worker as soon as possible.

## **Social Work phone number: (585) 275-2851**

- **Medications.** Check with your doctor or healthcare provider about which medications you should take, and what you should not take.
- **Skin prep.** Prior to surgery you will be given a special soap to shower with both the evening before and the morning of surgery.
- **Jewelry.** Remove all jewelry (including rings, watches, necklaces and earrings) before coming to the hospital.
- **Cough.** One of the two most important things you can do to improve your recovery time and lessen complications is coughing and deep breathing after surgery. See page 11 to learn how.
- **Exercise.** The second most important thing to do to lessen complications and speed recovery is exercise. You should expect to be out of bed and walking the first day after surgery. You may be out of bed the evening of surgery.
- **Activity restriction.** Activity restrictions are related to the chest incision and limits any lifting to 10 pounds for six weeks. For minimally invasive “mini” procedures the lifting limitation is only 2 weeks.
- **Intensive Care Unit.** After surgery you will be in the Intensive Care Unit for 12 to 24 hours before transferring to the Cardiovascular Progressive Care Unit.
- **Normal Stay.** Expect to be in the hospital for four days after surgery.
- **Shower.** We encourage you to shower daily after your surgery. Nursing staff will assist you until you are able to shower independently.

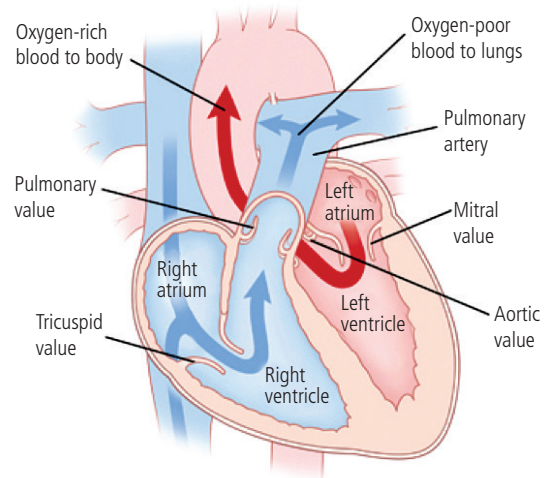
If you have questions, please call your surgeon’s office and you will be directed to the appropriate person to answer your questions. (585) 275-2525

Please visit our website for more information about our program at [www.urmc.rochester.edu/heart/doctors.shtml](http://www.urmc.rochester.edu/heart/doctors.shtml)

# I. Understanding the Heart

To help you understand your cardiac procedure, you first need to know something about the normal functioning of the heart. The heart is a muscle, located in the left central area of your chest behind the **sternum** (breastbone) and ribs. It is about the size of an adult's closed fist and weighs less than a pound. There are four chambers in the heart, two on the right and two on the left. The upper two chambers are called **atria** and the lower two chambers are called **ventricles**.

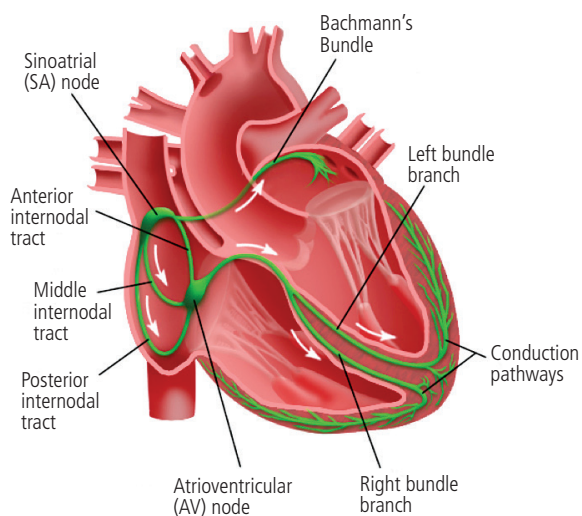
The main function of the heart is to pump blood to the body. More specifically it acts as two separate pumps. The right side of the heart pumps blood to the lungs, where the blood receives oxygen. The left side of the heart pumps oxygen-rich blood to the entire body through the **aorta**.



## Normal Conduction of the Heart

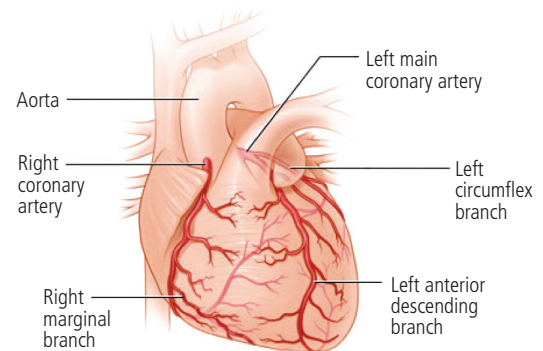
Each heartbeat begins when a special group of cells called the **sinus node** located in the right atrium of the heart, sends an electrical signal. This signal spreads throughout the atrium to the atrioventricular (**AV**) node. The AV node connects to a special

group of conducting fibers in the ventricles. As the electrical impulse travels through the heart, the heart contracts, and pumps blood to the lungs or to the body. This normally occurs 60 to 100 times each minute. Each contraction represents one heartbeat, or one pulse.



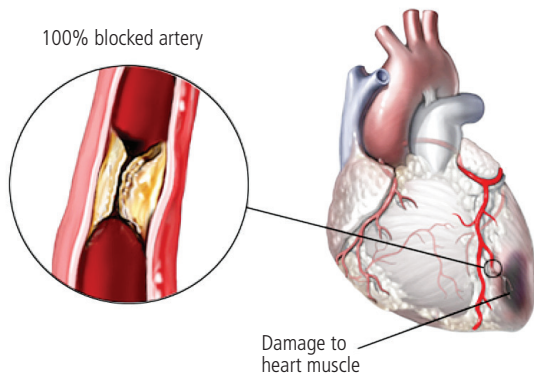
### Coronary Arteries, Coronary Disease and Coronary Surgery

The heart, along with the rest of the body, must have oxygen to do its job. The special blood vessels that supply the heart with oxygen-rich blood are called coronary arteries. They are located on the surface of the heart. There are two primary coronary arteries, the left and the right. Each of these arteries has smaller branches that also work to supply the heart with oxygen.



### Coronary Artery Disease

Coronary artery disease is the narrowing or a blockage in the coronary arteries. When narrowing occurs, the heart is not able to receive enough oxygenated blood. The lack of oxygenated blood may cause the individual to experience chest pain (**angina pectoris**). This pain usually occurs when the heart's oxygen demand is greater than the oxygen supply as in times of physical or emotional stress.



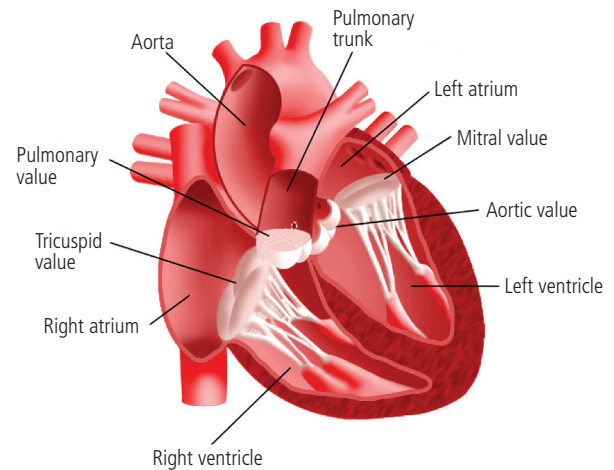
As an artery continues to narrow, blood supply to the heart muscle becomes less and less sufficient causing more chest pain. If the artery becomes completely closed – or too narrow to supply enough oxygenated blood to the heart muscle – a heart attack or **myocardial infarction** may occur.

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## Heart Valves and Their Function

A heart valve is a ring-like structure with smooth leaflets or cusps. These cusps serve to control the flow and direction of blood as it passes through the heart chambers and out into the body. The heart has four main valves:

- **Tricuspid** between right atrium and right ventricle
- **Mitral** between left atrium and left ventricle
- **Pulmonary** between right ventricle and lungs
- **Aortic** between left ventricle and the body



## Valvular Heart Disease

The valves in the heart are normally thin, smooth leaflets that allow blood to flow through the heart chambers in a single direction. Heart valves may become diseased for a variety of reasons, including infection, rheumatic fever, birth defects and old age.

Heart valves may become stiff or calcified, causing a narrowing that prevents blood from flowing freely, this is called **stenosis**. A damaged valve may be thickened and scarred so that it does not open all the way. A stenotic valve hinders the flow of blood from one chamber to another because of the narrow opening.

Another change that can occur in the valve is called **insufficiency**, which happens when the valve does not close all the way. This incomplete closure permits blood to flow backward from one chamber into another. You may hear your doctor call this backward flow of blood leaking or **regurgitation**.



### Coronary Artery Disease Risk Factors

The exact causes of heart disease are unknown; however, certain risk factors have been identified. A risk factor is a condition or habit that will increase a person's chance of having a heart attack. During your hospitalization, you will receive information about reducing and controlling your personal risk factors. Some risk factors can be modified, treated or controlled, and some cannot. The more risk factors a person has, the greater the chance of developing coronary heart disease. By identifying these factors and taking active steps to reduce the number and/or severity, you help lower the risk of developing or worsening coronary artery disease.

#### Known risk factors for heart disease:

- Age (males 45 or older, females 55 or older)
- Family history of coronary heart disease
- Smoking/nicotine use of any kind /alcohol use
- High blood pressure ( >120/80)
- High blood cholesterol
- Lack of regular exercise
- Overweight (10 to 20 pounds or more)
- Diabetes mellitus
- Stressful lifestyle
- Waist circumference > 40 inches for males > 35 inches for females

#### Risk factors that CANNOT be changed:

**Age:** About four out of five people who die of coronary heart disease are 65 years of age or older. Women who have heart attacks at a later age are more likely to die.

**Gender:** Men have a greater risk of having a heart attack at a younger age than women do. The risk of heart disease increases with women after menopause.

**Heredity and Race:** You are at greater risk for heart disease if your grandparents, parents or siblings have heart disease. Black and Hispanic individuals carry a higher risk of heart disease.

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Modifying risk factors is a challenge, and is most successful when you have a plan.

**Review the list below and place a check mark next to your personal risk factors.**

Consult with your primary healthcare provider to determine which risk factor you should modify first. Include family and friends for support and to help you stay on track.

**Major risk factors you CAN change:**

- Smoking:** Smokers have more than twice the risk of having a heart attack and developing coronary heart disease than non-smokers, and are more likely to die from a heart attack than non-smokers. Constant exposure to second-hand smoke increases the risk of coronary heart disease for non-smokers.
- High Blood Pressure:** High blood pressure puts more stress on the linings of the arteries and forces the heart to work harder. This causes the heart to enlarge and weaken over time.
- High Cholesterol:** As your blood cholesterol levels increase so does your risk for coronary heart disease. The risk increases even more when other risk factors like high blood pressure and/or use of tobacco are present. Your cholesterol level is affected by heredity, age, gender, diet and lack of regular exercise. Lowering your blood cholesterol level can decrease the risk of heart attack.
- Physical Inactivity:** Regular exercise is important in preventing coronary heart disease. Even moderate exercise, like walking, is beneficial if done regularly and long term. Exercise can help control other risk factors, such as high blood cholesterol, diabetes, obesity and stress. Exercise can also help lower blood pressure in some people.
- Obesity and Overweight:** Excess weight increases strain on the heart, raises blood pressure, increases blood cholesterol levels and increases the risk of developing diabetes. People who are overweight are more likely to suffer a stroke or develop coronary artery disease. By losing just 10 to 20 pounds, the risk of heart disease is lowered.
- Diabetes:** Diabetes greatly increases the risk of developing cardiovascular disease. Uncontrolled blood sugar (glucose) levels seriously increase the risk. Even when glucose levels are under control, diabetes still greatly increases the risk of developing coronary artery disease. About two-thirds of people with diabetes die from some form of cardiovascular disease. If you have diabetes, it is extremely important that you work with your healthcare provider to manage your diabetes and control any other risk factors you may have.
- Stress:** Some scientists have noted a relationship between coronary artery disease and excess, unmanaged stress. Stress may affect other established risk factors. For example, people under stress may overeat, start smoking or smoke more than usual.

## II. Surgical Treatment

Your doctors have determined what treatments are best for your condition. You may be anticipating coronary artery bypass (CABG) surgery, valvular heart surgery or a combination of the two.

### **Coronary Artery Bypass**

Coronary artery bypass, a surgical procedure designed to restore circulation to the heart, will relieve or lessen the symptoms of coronary artery disease and improve the function of your heart. In this operation, a segment of artery or vein is attached to the aorta and then attached below the blockage into the coronary artery. This allows the blood to be taken directly from the aorta through the bypass, around the blocked coronary artery, which allows blood to flow to the heart muscle. One or more bypass grafts may be used depending upon the number of diseased arteries. You may have two incisions from your surgery, one in the midline of your chest and another/ other small incision(s) on the leg from which the vein graft was removed. A special instrument called an endoscope is used to remove the vein from your leg.

In addition to the segment of vein removed from the leg, the internal thoracic artery (mammary artery) or the radial artery may be used as bypass grafts. The mammary artery lies beneath the breastbone, along the inside of the chest wall. One or two mammary arteries may be used as bypass grafts. If the mammary artery is used, you will not require an additional incision. The radial artery is located in your forearm. Your body can easily compensate when these blood vessels are removed.

### **Heart Valves**

Surgical repair or replacement of one or more heart valves may be necessary. Your doctor will discuss with you the types of valves that are best for your condition. Medication that prevents blood clots from forming (anti-coagulation) may be necessary after heart valve surgery.

### **Minimally Invasive Cardiac Surgery**

In minimally invasive cardiac surgery, the surgeon makes one or more small incisions between the patient's ribs. This allows the surgeon to clearly see and access the internal areas. At UR Medicine, our surgeons are experienced in this advanced technique. While open-heart surgery is still necessary for certain procedures, we can perform many cardiac surgeries using a minimally invasive approach

### **The Aorta**

The aorta is the main blood vessel that provides blood supply to the rest of the body from the heart. Surgical repair of the aorta may be necessary if there is an aneurysm, or dissection of the wall of the aorta.

## WHAT YOU NEED TO KNOW



### Exercises for Your Lungs

**One of the most important factors that will speed your recovery is your ability to breathe deeply and cough effectively.** Anesthesia, discomfort and prolonged bed rest often lead to poor lung expansion, causing secretions to collect and pool in your lungs. You will help improve lung expansion and clear your air passages by doing lung exercises like coughing and deep breathing every one to two hours. Coughing will help remove any secretions that collect in your lungs and air passages.

### How to Deep Breathe and Cough

Practice each step as you read the instructions.

1. Take a slow, deep breath in through your nose. Slowly blow the air out through your mouth. You can tell you are taking a deep breath when you place your hand on your chest and you can feel your chest rise and fall as you take the air in and blow it out.
2. Take ten deep breaths.
3. During the last deep breath, hold the air in and then, tightening the muscles in your chest and abdomen (stomach), cough to let the air out. To be effective, the cough must come from your chest, not your throat. If you cough as though you are clearing your throat, you are not coughing correctly. Ask your nurse if you are coughing correctly.

You should do these exercises at least every hour after your surgery. Your nurse will be there to remind you and help you.

### Splinting Your Incision

Practicing your coughing and deep breathing exercises before your surgery will not be painful. However, following your surgery you may find the exercises uncomfortable. In order to lessen the normal postoperative discomfort, you should splint your chest incision. Splinting will help support your chest incision and relieve the strain on your sternum that is caused by coughing.



To splint your incision, place your arms on a small pillow or pad across your chest incision, as though you were giving yourself a hug. Now perform your deep breathing and coughing exercises.

Splinting your incision and taking the pain reliever (analgesic) your doctor has ordered for you will help you be more effective in removing secretions from your lungs.



### WHAT YOU NEED TO KNOW

It is important for you to change positions frequently after your surgery. Staying in one position can cause secretions to pool in your lungs. You can help prevent this by changing your position often while in bed or in the chair. Changing your position at least every two hours is important for your circulation and will help keep your skin from becoming sore. Your nurses will assist you in changing positions.

#### Assisting Your Circulation

There are two important measures that can help prevent blood clots (DVT/deep vein thrombosis) from forming by promoting circulation from your legs to your heart:

- 1. Elastic Stockings:** Your doctor will order white elastic stockings for you to wear. These stockings help the blood flow back to your heart and prevent blood from pooling in the veins of your legs.
- 2. Simple Leg Exercises:** Move your feet up and down (as though you are pushing down on your car's gas pedal, then releasing the pedal) 10 to 15 times every hour, or as often as you think of it. The pumping action of the muscles in your legs helps keep the blood flowing through the veins of your legs to your heart and prevents blood from pooling in your legs. Practice this exercise now.

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**Activity** Early activity following heart surgery has been shown to improve the speed of recovery, lessen the complication rate and make patients feel better overall. You should expect that early activity will begin as soon as a few hours after surgery. This may simply be accomplished by sitting on the edge of the bed. You will be assisted to begin early activity by the specialized nurses in the Intensive Care Unit. If you have had coronary artery bypass surgery, you may be assisted out of bed in the evening of the day of surgery. For all other surgeries, you can expect to be out of bed and walking the first morning after surgery. The physical therapist will offer guidance to assist you in progressive activities.

#### The Evening Before Surgery

##### Exercises

Whether you are at home or in the hospital, the night before surgery you should practice the coughing, deep breathing and leg exercises you have learned.

##### Sleep

You should try to get a good night's sleep so you will feel rested on the day of surgery. If you are staying in the hospital the night before surgery, sleeping medication will be available for you. Please let your nurse know if you would like sleeping medication.

Disposable earplugs are also available upon request.

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## Preventing Infection and Skin Preparation

Infection is a potential risk with any surgery – and we have identified some ways that you can help us lessen your risk:

**Your skin.** Germs normally live on your skin and pose no risk to you. However, when you have surgery, an incision is made which interrupts the normal protection skin provides. To minimize bacteria, we ask you to take two showers with a special germ killing soap or wipe. If you cannot take a shower you should scrub your chest, arms and legs with the special soap or wipe we give you. One shower will be done the evening before surgery and the second (using new scrubs or wipes) will be done the morning of the surgery.

**DO NOT SHAVE** your chest, arms or legs! Shaving your skin with a razor blade can actually increase your risk of infection. We will prepare your skin by removing the hair using special clippers.

**Swab of your nose.** Germs also live in your nose, and some of these are resistant to some antibiotics. We may swab your nose in order to tell if you have these resistant germs so we can choose the appropriate antibiotics.

**Mouthwash.** Germs live in your mouth, too! We will give you a special mouthwash to swish and spit out the evening before surgery and morning of surgery. Do not put your dentures or partial in your mouth once you have used the mouthwash.

**Remove jewelry.** All jewelry must be removed, including wedding bands. This is due to the amount of swelling that is normal after cardiac surgery. Cutting the rings off may be necessary due to swelling if they are not removed.

## Visiting

If you are in the hospital the evening before surgery, your family may visit with you. You will want your family to take **all** of your valuables and clothing home at this time. If this is not possible, you may have your valuables placed in the hospital safe and your clothes placed in the hospital clothes room.

**Family members should be strongly encouraged to take  
ALL valuables and clothing home.**

## Nothing by Mouth

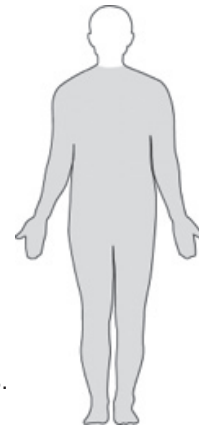
Do not eat or drink anything after midnight on the morning of your surgery unless otherwise instructed. You may be allowed to take some medications with a sip of water. Your doctor or nurse practitioner will tell you which medications you may take.

### The Morning of Surgery

Most elective cardiac surgery patients are asked to come to the Strong Surgical Center/ PreAnesthesia area the day of their scheduled surgery. The Strong Surgical staff will review your preoperative information. If any additional tests or lab tests are required, they will be performed at this time.

In preparing for your surgery, you should follow these steps before coming to the hospital:

1. Bathe/shower TWICE with the special soap.
2. Swish and spit with the special mouthwash.
3. Remove makeup and nail polish.
4. It is strongly recommended that beards be shaved or clipped close to the skin. YOU should NOT shave any other body area.
5. Remove all jewelry including wedding rings and store them in a safe place. If you have not given your valuables, such as your watch and wallet, to your family at this time, give them to the nurse.
6. Remove all prostheses such as contact lenses, wigs and dentures.



You will receive medication that will make you feel sleepy and will make your mouth dry. This medication is given to prepare you for anesthesia. Once you have received this medication, stay in bed. The nurse will put up the side rails on your bed to remind you that you must stay there.

If your surgery is scheduled for the afternoon, you may wait for approximately 60 to 90 minutes in the pre-anesthesia area until your operating room is ready. The anesthesiologist will insert an intravenous line (IV) so that you can receive medications and fluids during your surgery. An "IV" will also be placed in an artery in your wrist to monitor your blood pressure.

After you have been given anesthesia in the operating room, an IV will be placed in your neck to measure your heart pressure during surgery, a catheter will be inserted into your bladder. The purpose of the catheter is to drain urine from your bladder during surgery and for the first day following surgery.

After all the necessary IVs and tubes are inserted, your surgery will be performed.

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While you are in the operating room, your family members can wait in the family waiting room on the first floor (RM # 1-1200) next to the main lobby. Your family should check in with the receptionist. They will receive two phone calls; one when the surgery begins and one when it is finished.

Usually the surgery lasts from four to six hours, but this varies among patients. Your family should not be alarmed if your surgery takes more or less time. Your surgeon will call and notify your family when your surgery is over. For lengthy operations updates will be given periodically.

### **The Cardiac Intensive Care Unit (CICU)**

Immediately after surgery, you will be taken directly to the CICU.

Each patient's stay in the CICU varies; however, patients generally spend 12 to 24 hours in this unit. When your team feels that you are making sufficient progress in your recovery, you will be transferred from the CICU to one of the Cardiac Care Units. You will remain there until you are discharged.

Your immediate family will be allowed to visit approximately one hour after you have arrived in the CICU.

The CICU has \*open visiting hours. \*Pending other hospital visitor restrictions

Please remember it is important for the patient, as well as the family members, to get enough rest during this time. Although we welcome your immediate family at the bedside, they may be asked to step out at frequent intervals in order to give patient care with the utmost privacy.

You or your family member will also be asked to complete a **spokesperson agreement**, which will provide the healthcare team with contact numbers of the person to contact for information. The spokesperson will be given a "PIN" number that is used to identify the recipient of information over the phone. We ask that **only** the designated spokesperson call the unit for information. Federal law referred to as "HIPAA" necessitates these measures.

**Please also note that fresh flowers and non-patient food are not permitted in the Intensive Care Units.**

**Cardiac Intensive Care Unit  
Nursing Unit 4-2800  
(585) 275-3158**



### **The Immediate Postoperative Period**

#### **Endotracheal Tube/ Mechanical Ventilator**

The endotracheal tube passes through your mouth or nose into your trachea (windpipe) and is attached to a mechanical ventilator (respirator). The ventilator breathes for you until you are awake and able to breathe on your own. The tube is usually removed one to six hours after surgery or when the Intensive Care Unit team feels you are ready to have the tube removed.

Because the tube passes through your larynx (voice box) and into your trachea, you will be unable to talk or make any sounds while this tube is in place. Your nurse understands this and will provide a way to communicate with you during this time.

While you have the endotracheal tube in place, it will be necessary for your nurse or respiratory therapist to occasionally clean the tube. This is called suctioning, and it is important because it clears the tube of mucous secretions normally produced by your lungs. A suction catheter is passed down the endotracheal tube, which will remove the mucous secretions out of your airway. This procedure takes only a few seconds.

After the endotracheal tube is removed, you will be asked to cough and deep breathe every hour. You will be given a small pillow to splint your chest incision while performing your deep breathing and coughing exercises. After removal of this tube you will be able to talk, but your throat may be sore for a short time afterwards.

#### **Heart Monitors**

You will have several sticker leads on your chest, which will transmit a continuous tracing of your electrocardiogram (ECG) and heart rate onto a monitor screen. Each monitor has alarms that are very sensitive to movement. You should not be frightened if the alarm rings. Your ECG and heart rate will be monitored during your entire stay in the CICU and while you are a patient on a Cardiac Care Unit.

#### **Temporary Pacing Wires**

Small pacing wires are placed on the surface of the heart during your surgery. The purpose of these wires is to increase your heart rate if needed after surgery. These wires are not permanent and will be removed when they are no longer needed, with little or no discomfort to you.

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### **Mediastinal/"Blake" Tubes**

After surgery, you will have one or two tubes in your chest. These tubes are referred to as mediastinal or "blake" drains. The purpose of these tubes is to drain blood and fluid from your chest cavity following surgery. These drains will be emptied as needed by the nursing staff and will be removed when drainage is minimal.

### **Intravenous Lines (IV)**

You will have IVs through which you may receive blood, fluids and antibiotics. Once you are taking adequate fluids by mouth, an adapter/cap will be placed on the IV. Your IV will remain in place until you are discharged.

### **Bladder Catheter**

After surgery, you will have a catheter in place which will drain urine from your bladder. Typically, the catheter is removed the morning following surgery.

### **Heart Pressure Lines (Pulmonary Artery Catheter)**

After surgery, you will be attached to lines that read the pressures in your heart and measure the blood pressure in your body. Generally, these lines are removed the day following surgery.

### **Discomfort Following Surgery**

Following surgery, you may experience discomfort related to your incision, movement and coughing. It is very important that you tell your nurse whenever you are experiencing pain or discomfort that is preventing you to cough, or move. When you are experiencing pain, you will be asked to rate it on a scale of one to 10, with one being the least amount of pain and 10 being the worst pain you have ever experienced. Pain-relieving medicine will be ordered for you and can be given to you every few hours. Pain medications will only be given to you as needed, so it is important for you to ask your nurse for pain medication when you are experiencing pain. It is extremely important that you take your pain medication to manage your pain as it will help you move, cough and rest more effectively, which is a very important part of your recovery.

### **Chest X-Rays**

Chest X-rays are taken in the CICU, or in the imaging department following your surgery. You may require chest X-rays at different times during your hospital stay.

### **Bowel Function**

It is not uncommon for patients to have difficulty moving their bowels after surgery. You will be given a stool softener on a daily basis. You may require additional medication (a laxative) to help move your bowels the first time after surgery. Your nurse will provide a laxative if you have not had a bowel movement by the third day after surgery.

### **Appetite**

Your appetite may not return for a few days. It is important that you eat to help build up your strength following surgery. Be sure that you let the nurse and dietician know if there are any specific foods you would like to have.

### **Mood Changes**

During the postoperative recovery, you may experience mood swings, depression or even confusion at times. This is normal and results from the stress of surgery and your body's response to the stress. It is important to talk about your feelings with your nurse or physician.

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**Activity** After the breathing tube is removed, your nurse will help you sit on the edge of the bed and dangle your legs over the side. You may experience dizziness or lightheadedness when you initially sit up on the edge of the bed. This experience is fairly common and quite normal after surgery. If you have had coronary artery surgery, you will be assisted out of bed to the chair in the evening of surgery. The next morning, you may begin to walk (ambulate) with the assistance of your nurse. The physical therapist will also evaluate your ability to walk and move. The amount of time you spend walking will increase each day that you are in the hospital.

### **Walking is extremely important for your recovery!**

You will also be expected to sit up in a chair for all of your meals. Once you are transferred to the Cardiovascular Progressive Care Unit, you will be expected to shower daily and walk at least three times per day.

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### **Fatigue**

Fatigue is very common after heart surgery. Even simple activities such as showering or walking may make you tired. It is important that you organize your day to include rest periods and periods of activity.

### **Pulmonary Therapy**

Following removal of the breathing tube, you will be started on a pulmonary (lung) therapy regime, which consists of coughing and deep breathing exercises. The respiratory therapist will assist you in performing these exercises for your lungs. These exercises are vital to your recovery. Maintaining proper lung function and preventing the accumulation of secretions will help you return to health faster. Remember that splinting your incision and taking your pain reliever will help you cough and deep breathe more effectively. You will also receive a breathing exerciser called an **incentive spirometer** and another device called a flutter valve. These should be used **at least 10 times per hour while you are awake**. You will be instructed on how to use these tools by a respiratory therapist or your nurse.

**Doing coughing and deep breathing exercises at least every one to two hours is extremely important for your recovery.**



### Transfer to the Cardiovascular Progressive Care Unit

Most patients are transferred to a Cardiac Care Unit the first day after surgery. On this unit, you will be placed on telemetry. Telemetry is a form of heart monitoring in which a continuous tracing of your heart rhythm (ECG) is monitored at the nurses' station. Telemetry monitoring is similar to the cardiac monitor in the Intensive Care Unit, except that the leads on your chest are attached to a small, light portable transmitter box that you can carry with you while you walk. On the Cardiac Care Unit, you will continue to increase your activity. You may be visited by the Cardiac Rehabilitation Nurse and will continue to be followed by a physical therapist as needed.

- You will continue to increase your physical activity until you are walking **three times a day**. Physical therapists and the nursing staff will assist you and provide assistive devices (walker or cane) as needed.
- You will be eating your meals out of bed, in a cardiac chair every day.
- Your nurse will assist you and your family with choosing a community health nurse agency that will visit you at home after you are discharged from the hospital.
- You will be given your follow up appointments at discharge, which will include an appointment with your primary care physician and/or your cardiologist shortly after discharge.

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# III. Discharge Instructions After Heart Surgery

## Recovery at Home

### The First Three Weeks

As you return home, you are just beginning your job of taking care of your heart. It is important for you to understand what you have experienced while in the hospital and what you need to do to stay healthy. Now is the time to get yourself, your family and friends committed to supporting a healthy lifestyle by:

- Eating a heart-healthy diet
- Exercising and staying active
- Understanding your medications and taking them as your doctor prescribes
- Reducing stress
- Starting a smoking cessation program (if you smoke)

Now that you are ready to go home, the real work and recovery is about to begin. The following guidelines will get you through until you see the surgeon, which is in about three weeks.

### Normal Activities

It is normal to feel tired and weak after surgery. Increase your activity level gradually. Basic daily activities should start as soon as you return home. Walk daily. You may go up and down stairs as tolerated. Daily morning and afternoon rest periods are beneficial. Limit outings to about one hour in the beginning. Increase as tolerated. You may walk outside when the weather permits, otherwise walk around your home, at a mall, grocery store, etc. When you are comfortable walking 20 minutes at one time, you only need to walk once a day. Do not exceed the 20 minute walk at one time until you discuss it with your physician.

**(Walking guidelines are on page 30).**

If you experience any chest pain (angina type pain), severe incisional pain, shortness of breath or extreme fatigue:

**STOP IMMEDIATELY AND REST.**

If symptoms are not relieved after 15 minutes of rest, call 911 or use your local Emergency Department.

*No mopping, vacuuming, laundering, changing bed linens, no yard work (includes riding mower, tractor or self-propelled mower), no shoveling or snow blowers. Avoid tensing body (i.e., opening a tight jar). Do not lift, push or pull any heavy objects (no more than 10 lbs.) until your surgeon tells you that you can do more.*

*These temporary limitations are to allow the breastbone (which is being held together with surgical wire) to heal properly. The wires will not rust, dissolve or set off metal detectors. For non breast bone incisions normal activity may be started sooner usually when not limited by pain.*

The surgeon will advise you, during your follow-up visit, as to when you can start driving, return to work and participate in more strenuous activities.

### **Healthy Eating**

Most people have a poor appetite and feel full after a few bites of food. It is essential to eat for healing and strength. Many people say having smaller portions and eating more frequently is helpful. Follow a low-fat, low-cholesterol, low-sodium diet. Most important at this time is choosing foods low in sodium, along with a well-balanced diet.

### **Diet Guidelines**

- MEAL PREPARATION – You may prepare or clean up, as tolerated. If you tire, you should stop and rest.
- Follow a heart healthy diet – Low in fat, sodium and cholesterol, and limited concentrated sweets.
- Low sodium – Less than 2,400 milligrams per day (one teaspoon salt = 2,400 mg).
- Limit caffeine intake to two cups a day. No limit to decaf products.
- Foods for healing – Eat fruits, vegetables, dairy and protein each day.
- Please refer to the nutrition pages in section V of this booklet for more information.

### **Sex**

The thought of resuming sexual activity can be stressful to you and your partner. Fear of hurting one's heart, feeling unattractive, unable to relax and lack of interest is quite common. Talking openly with each other about your thoughts and emotions is important.

Do not resume sexual activity of any kind until discussed with the cardiac surgeon at your follow-up appointment. The best time is when you feel well rested and free from stress. Avoid positions that put pressure on your breastbone or are uncomfortable. When you are able to walk up two flights of stairs without stopping or walk about a half mile at a brisk pace, your heart will be able to tolerate the energy spent during intercourse. If you are unable to do these activities without getting short of breath or fatigued, discuss this with your doctor before resuming sexual activity. Avoid intercourse after meals, exercise or if you feel stressed.

Some medications, and emotions such as anxiety or depression, may interfere with sexual arousal or performance. If you have any concerns, discuss them with your doctor.

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## Incision Care

Your incision sites are easy to care for:

- Your sternal incision will be closed with a tissue adhesive called DERMABOND®.
- Wash incisions daily. You may take brief showers using an antibacterial soap.  
**Do not take tub baths** until your incision is fully healed. Do not rub your incision with a washcloth until the scabs are gone and skin is healed.
- No dressings are needed unless there is drainage.
- Do not apply ointments, oils, creams, salves, lotions or powder to your incisions.
- Itching, tightness and/or numbness along the incision are normal.
- You may have a lump at top of chest incision. This will go down in about three to four months.

### **Be aware of signs of infection that may include:**

- Temperature of 101.5° or greater
- Chills
- Increase in opening of the incision
- Increased redness, swelling, or warmth around the incision.
- Increased drainage (clear, pinkish, yellowish drainage is normal unless it greatly increases)
- Pus or foul odor

### **If you notice any of these signs of infection, call your doctor.**

## Lungs

Continue to use your incentive spirometer 10 times every two hours while you are awake.

Splint your incision with a pillow or blanket and cough at least two to three times after using the spirometer.

You may need to elevate yourself to breathe easier and sleep better. You can do this by using extra pillows, placing some pillows under the mattress at the head of the bed, or using a recliner.

## Common Medications

Medications is an important part of your treatment. You will be given a list of medications and prescriptions on the day you go home from the hospital. Know the names of your medications, their doses, their purpose, how often to take them and their side effects. Keep a schedule of your medications and take them at the same time every day. Do not stop or change your medications unless you talk to your doctor first. Check with your doctor and/or pharmacist before using any over-the-counter medications as they could change the effect of your prescription medications.



### Discharge Medications

Medication Type	What They May Be Prescribed For	What They Do	Possible Side Effects
<b>Nitrates</b>	Angina	Relax blood vessels; reduce heart's workload	Headache
<b>Beta Blockers</b>	Angina, high blood pressure, heart failure	Slow heart rate; reduce heart's workload	Tiredness, shortness of breath, trouble sleeping, impotence
<b>Calcium Channel Blocker</b>	Angina, high blood pressure, heart rhythm problems	Relax blood vessels; reduce heart's workload	Headache, dizziness, swelling of ankles, constipation
<b>Diuretics</b>	High blood pressure, heart failure	Reduce blood volume by removing excess sodium and water	Muscle cramps, impotence, raised blood sugar, low or high potassium levels
<b>ACE Inhibitors</b>	High blood pressure, heart failure, after a heart attack	Relax blood vessels; reduce heart's workload	Dry cough, rash, dizziness, swelling, high potassium levels
<b>Angiotensin II Receptor Blockers</b>	High blood pressure, heart failure	Help protect heart and blood vessels	Swelling, cough, high potassium levels
<b>Anticoagulants</b>	Blood Thinner	Reduce risk of blood clots and heart attack	Stomach irritation, unusual bleeding
<b>Lipid-Lowering</b>	High cholesterol levels	Lower your LDL and triglyceride levels	Headache
<b>Other</b>			

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**Call Your Physician If:**

- You have a fever of 101.5° or higher.
- You have chills.
- Your incisions have increased redness, swelling, warmth or a change in drainage (i.e. pus), you have any new or increased pain level or you feel a clicking or grating sensation in your chest.
- Your pulse rate greater than 30 beats in 15 seconds (120 beats per minute), if it becomes irregular or you feel your heart racing or skipping.
- You experience unexplained shortness of breath, worsening chest pain or discomfort.
- You are constantly lightheaded or dizzy.
- You are feeling worse instead of better.
- You experience a weight gain of five pounds or more within one week, or three pounds in one day.
- You have blood in stool or urine.
- You are experiencing any NEW pain.

**Important Phone Numbers**

Emergency ..... Call 911

Contact your surgeon ..... (585) 275-2525

Off Hours ..... (585) 275-6340

Strong Memorial Pharmacy Info Line ..... (585) 275-3718  
Monday through Friday, 8:30 a.m. to 5:00 p.m.

Social Work ..... (585) 275-2851

Please refer to your After Visit Summary or your MyChart for more info.

### Discharge Instructions

#### Valve Surgery

##### Prevention of Valve Infection

Bacterial endocarditis is an infection of the inner heart lining. It may cause destruction or scarring of the heart valves. People who have had a repair or replacement of any of their heart valves should be protected from this kind of infection.

Bacterial endocarditis may be caused by **any dental work, skin infections and any major or minor surgery**. Usually it can be prevented if antibiotic medication is given before and possibly after such procedures. Be absolutely sure that your doctor and your dentist know that you have had valve surgery so that you can be given the appropriate antibiotic if you should require dental work or surgery.

##### Anticoagulation

Some people who have had the heart valves replaced or have an irregular heart beat may need to be given a medication, **Coumadin** (generic name, Warfarin). Coumadin lengthens the time it normally takes for blood to clot and prevents small clots from forming on new valves.

While you are in the hospital, you will have a blood test (INR) every day to help determine how much medication you need. After you are home, you should have a blood test (INR) once a week to make sure you are taking the correct dosage of medication. When your family doctor feels that you are taking the correct dosage of medication, the blood test may be done less often, usually about once a month on a permanent basis.

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## Discharge Instructions

### Valve Surgery

### Warfarin

#### If you are taking Warfarin:

1. Take the medication at the same time each day.
2. If you forget a tablet one day, **do not** take two tablets the next day.
3. **Do not take aspirin or any medication containing Aspirin (Bufferin, Excedrin®, Alka-seltzer®, cold remedies) while you are taking Warfarin EXCEPT as ordered by your N.P. or M.D.**
4. You may take Tylenol® for mild discomforts and headaches.
5. If you need dental work or surgery done, be sure to let your doctor know you are taking Warfarin.
6. Carry an identification card that states the name and dosage of your medication. An ID card is on the back of your Warfarin book.
7. While you are on Warfarin, small cuts may bleed longer.
8. Notify your doctor if you notice any of the following:
  - Increased bruising
  - Blood in your urine (red or pink in color)
  - Blood in your stools (black or tarry looking)
  - Coughing up blood
  - Excessive nose bleeds
9. Wear a MedicAlert tag to let people know you are taking Warfarin. The MedicAlert tag may be obtained at your local pharmacy or by writing to:

MedicAlert Foundation  
P.O. Box 1009  
Turlock, California 95380  
OR visit [www.coumadin.com](http://www.coumadin.com)

## IV. Cardiac Rehabilitation

### **What Is Cardiac Rehabilitation?**

Cardiac Rehabilitation is a program that includes exercise, education and counseling which helps a person with heart disease to return to a full and productive life. Nearly everyone can benefit from cardiac rehab. No one is too old or too young.

### **Cardiac Rehabilitation helps you in several important ways:**

- It reduces your risk for future cardiac events
- It teaches you guidelines for exercising safely
- It provides an exercise program designed just for you
- It helps you resume regular activities with confidence
- It helps you maintain an active and independent lifestyle

### **How does Cardiac Rehabilitation work:**

Cardiac Rehabilitation happens in two phases:

**Phase I** begins in the hospital following a cardiac event, such as:

- Heart attack
- Angioplasty/stent
- Coronary bypass
- Valve surgery
- Stable angina
- Heart failure
- Heart transplant
- Phase I includes determining which activities you can do safely and providing information on lifestyle changes you may need to make.

**Phase II** begins after you leave the hospital. In this phase you will receive education and counseling on living healthier. You will also begin an exercise program that is individualized and closely monitored by health professionals.

### **How long will my program last?**

**Phase II** of your Cardiac Rehabilitation program may include up to 36 visits. Participants will attend two to three sessions per week depending on your goals, fitness level and the stage of your heart disease.

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## **A New Way of Life**

It is now up to you to take care of your heart and your health. You may be able to live a healthier life by changing your lifestyle.

- Healthy eating
- Losing/controlling your weight
- Regular exercise
- Controlling blood pressure
- Controlling cholesterol
- Controlling blood glucose levels (if diabetic)
- Finding better ways to deal with stress
- Dealing with depression
- Quitting smoking/nicotine
- Taking medications as prescribed by your doctor

## **Contact information**

If you live in the Rochester area, our Phase II coordinator will contact you. You may also contact us at **(585) 341-7100** for more information. If you live outside the Rochester area, the Phase I nurse will provide you with information on a program closer to your home.



### **Congratulations!**

**You have already started on a healthy habit!** It began with walking after your heart surgery. As part of your recovery process after heart surgery, your doctor has recommended that you participate in a walking exercise program.

This part of your rehabilitation is called Phase I. Phase I begins in the hospital and will continue at home until you see your doctor. Your doctor will let you know when you and your heart are ready to tolerate a more aggressive exercise program.

### **Goals of the Walking Program**

- To maintain and improve your heart's ability to tolerate activity
- To maintain and increase your muscle strength
- To prevent joint stiffness
- To improve your circulation and reduce your risk of developing blood clots
- To reduce your risk of developing pneumonia

### **General Guidelines for Exercise**

**WEEK #1:** Walk 3 to 5 minutes continuously at least 3 to 4 times daily

**WEEK #2:** Walk 6 to 10 minutes continuously at least 3 times daily

**WEEK #3:** Walk 11 to 15 minutes continuously at least 2 times daily

**Exercise will help you to get stronger and feel better faster.**

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### **Plan Exercise Time Into Your Day**

- Do not exceed a 20-minute walk without your doctor's okay.
- You may add a few extra walks if you can tolerate it. Avoid doing too much; avoid fatigue. On days that you feel tired, you may do less and should still do three walks but for fewer minutes.
- Rest 20 minutes before and after walking.
- Walk indoors in your home, malls or gyms. You may walk outside if it is above 32 degrees, but you should use a scarf over your mouth and nose.
- Walk at a pace that feels fairly easy. While you are walking, you should be able to talk to someone without feeling "winded" or short of breath.
- Wait at least one hour after a meal before you go walking.
- You may use up to 3-lb. hand weights to strengthen your upper body. Use both arms at the same time and stop at shoulder level.

### **Do not use treadmills or other exercise equipment at home unless your doctor says it is okay.**

Your heart beats faster when you exercise. After heart surgery, there are temporary limits as to how much exercise is okay. The following signs will tell you that you are either walking too fast, going too far or doing too much:

- Shortness of breath
- Feeling very tired or weak
- Sweatiness
- Nausea
- Dizziness
- Heart feels like it is beating fast

If you feel any of the above, sit down and rest until the symptoms pass. If your symptoms do not go away within 15 minutes, call your doctor.

### **Common, Normal Experiences After Heart Surgery**

To ease your fears or concerns and to promote healing, it is important for you to understand some of the immediate issues and what you may expect. The following is a list of common, normal experiences that you may encounter after heart surgery. Patients who have had heart surgery have shared this information with us.

#### **Thinking**

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Forgetfulness, inability to concentrate (while reading, watching TV, etc.).

*Reasons:* Effect of heart-lung machine, anesthesia, stress, lack of sleep, narcotic pain medication.

*What helps?* Writing things down, resting between activities, taking naps.

#### **Feelings**

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Feeling sad, stressed, or depressed is common for heart patients. You may easily become frustrated. This feeling can last for two to three months. If you continue to feel depressed after two months, call your doctor.

*Reasons:* Fatigue, stress, role changes, temporary activity restrictions, boredom.

*What helps?* Getting dressed every morning, get out and walk daily, rest between physical activities, take naps, participate in appropriate hobbies and social activities, prayer time, share your feelings with family/friends.

#### **Stress**

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Stress has been linked as a cause of coronary heart disease. It is important to minimize your stress.

*Reasons:* Lack of sleep, fear, anxiety, pain, noise, fatigue, loss of control, caffeine/nicotine.

*What helps?* Quiet time, relaxation/controlled breathing, hobbies, watching a movie, listening to music, talking with someone who is positive, spiritual/prayer time, set realistic goals that you can accomplish each day. Keep health problem such as high blood pressure and diabetes under control. Seek professional help if needed.

#### **Fatigue**

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People often complain about having no energy, tiring easily and 'feeling weak'.

*Reasons:* Lack of sleep, muscle weakness due to lack of use, the healing process itself and anemia (low blood count).

*What helps?* Rest between physical activities, naps, making healthy food choices, continued walks at home. Visitors are fine, but can be tiring. You may want to limit visits to about 15 minutes, depending on how you feel. Limit your time away from home to no longer than an hour in the first couple of weeks. Patients usually start to feel a little better in about three weeks, and then much better in two to three months.

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### **Can't Sleep Well**

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It is common to wake up often during the night, to have nightmares or lively dreams and to be unable to lie flat in bed.

*Reasons:* Commonly, the inability to sleep is due to stress of surgery as well as discomfort from incision.

*What helps?* Taking a short nap, but try to avoid naps in late afternoon. Using extra pillows or a recliner may help you to breathe better so that you may sleep more comfortably. Continue using your incentive spirometer, as well as doing your deep breathing and coughing exercises.

### **Vision Changes**

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It is not unusual to have some vision changes. You may experience moving or non-moving spots or lines, flashes of light, blurred vision or floaters. They usually come and go.

*Reasons:* The effects of the heart-lung machine.

*How long?* Vision changes should improve in about one week. If your vision does not improve, you should see an ophthalmologist. It is best not to make changes in prescription glasses until after your recovery.

### **Different Incision Sensations**

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Incisions may be sensitive, even to light touch. Some patients complain of shooting pain, numbness, tingling or burning to the right or left side of the chest and/or leg incisions. Some patients complain of numbness, tingling, weakness of the pinky and ring fingers that goes up the arm to the elbow. Muscular aches and pains in the neck, shoulders and back are also common.

*Reasons:* Positioning on the operating table during surgery may cause pressure on the nerves in the arms. Additionally, bed rest and decreased activity levels may also cause muscle aches.

*What helps?* Actively using the hand may be helpful for arm and hand pain. Gradually increase physical activities as suggested in discharge instructions. A heating pad placed on sore muscles for no longer than 20 minutes at a time for other muscle aches may help. **Do not place heating pad on incisions.** For women, placing a dressing over the chest incision where it comes in contact with a bra will reduce the friction on the incision.

## V. Resources

### **Nutrition for a Strong Heart**

#### **Eat a Variety of Food Daily**

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- Fruits and vegetables
- Breads, cereals and other whole grain products
- Dairy products such as milk, yogurt and cheeses
- Meats, poultry, fish, eggs and protein sources such as dried peas and beans

#### **Control Your Weight**

Weight control contributes to good overall health, lowers your chance of heart disease and some cancers and keeps your energy level up.

#### **Limit Fat, Saturated Fat and Cholesterol**

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- Choose lean meat, fish, poultry and vegetables for protein
- Keep egg yolks and organ meats to a minimum
- Reduce your intake of butter, cream, margarine, shortening, coconut oil, palm oil and foods made from such products
- Trim excess fat off meat
- Broil, bake, poach or boil rather than fry

#### **Eat Food Rich in Complex Carbohydrates and Fiber**

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Good sources include fruits, vegetables, whole-grain breads and pastas, rices, nuts, beans and peas.

#### **Use Sugar in Moderation**

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- Cut down on candy, ice cream, soda, cookies and cake
- Use caution with honey, brown sugar, raw sugar and maple syrup. Though they are more 'natural' than white cane sugar, they are still sugar
- Check food labels for sugar names such as sucrose, glucose, dextrose, lactose or fructose

#### **Avoid Too Much Salt (Sodium)**

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- Learn to appreciate the natural, unsalted flavors of foods
- Decrease or omit the amount of salt if called for in a recipe
- Remove salt shakers and salt containing seasonings from the dinner table

#### **Drink Alcohol Only in Moderation**

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Alcohol may trigger hot flashes in menopausal women, prevent proper absorption of calcium, cause liver damage and be a risk factor in several cancers. **DO NOT consume any alcohol while on narcotic medications** such as pain pills like Vicodin®.

## WHAT is a NORMAL Daily Serving?

Food Group	Daily Servings	What Counts As a Serving?
Fats, Oils and Sweets	Limit these foods and choose the low-fat and/or low-sodium alternatives	Includes croissants, crackers, chips, cookies, gravies, most salad dressings, margarine, butter, cream cheese, pies, cakes, donuts, ice cream, bacon, sausage, hot dogs, processed lunch meats.
Meat or Meat Alternatives	2 to 3 (5 to 7 ounces total lean meat or equivalent)	(About the size of a deck of cards.) These meat alternatives are the equivalent of 1 oz. of meat: - 1 egg (limit yolks to 4 per week) - 2 tablespoons peanut butter - 1/2 cup cooked dry beans
Milk	2 to 3 for men 3 to 4 for women 2 for children 4 for teens/pregnant women	- 1 cup (8 oz. glass) milk - 1 cup yogurt - 1 1/2 oz. cheese
Fruits	2 to 4	- 1 whole medium fruit - 1 cup canned fruit - 1/4 cup dried fruit - 1/2 to 3/4 cup fruit juice
Vegetables	3 to 5	- 1/2 cup cooked vegetables - 1 cup raw leafy vegetables - 1 small potato - 1/2 to 3/4 cup of vegetable juice
Grain Products	6 to 11 (include some whole grain products each day)	- 1 slice of bread - 1 tortilla - 1/2 of a hamburger bun - 1/2 of an English muffin - 1 small roll, biscuit or muffin - 3 to 4 crackers - 1/2 cup cooked cereal - 1/2 cup rice or pasta - 1 small bowl of cold cereal



# Glossary

**Angina Pectoris:** A condition that occurs when the heart muscle is not receiving enough oxygen (symptoms may include chest, arm, shoulder, neck, jaw, upper back pain, tightness, pressure or burning, shortness of breath, fatigue, nausea).

**Aneurysm:** An abnormal pouching, especially of the aorta.

**Angioplasty:** A procedure to open blocked blood vessels. A thin tube with a balloon is inflated inside the vessel to open the artery. Also known as percutaneous transluminal coronary angioplasty (PTCA).

**Aorta:** The largest blood vessel in the body. The aorta is a large artery that the heart pumps blood into. The aorta then branches off to provide the entire body with blood.

**Arrhythmia:** An irregular heartbeat.

**Atherosclerosis:** A disease in which the flow of blood to the heart is restricted by plaque deposits resulting in less oxygen reaching the heart muscle. This may lead to angina, a heart attack (myocardial infarction) or stroke.

**Atria or Atrium:** The two upper chambers of the heart, referred to as right and left atria, that collect blood returning from the body (on the right) and from the lungs (on the left).

**AV Node (Atrioventricular Node):** A specialized group of cells between the atria and the ventricles of the heart.

**Brachytherapy:** The use of a locally delivered dose of radiation to control the process of restenosis.

**Catheter:** A small, thin plastic tube used to provide access to parts of the body, such as the coronary artery.

**Cholesterol:** A wax-like substance in the blood.

**Congestive Heart Failure:** A weakened heart muscle. When a heart muscle becomes weakened, it cannot pump as well. Most common symptoms are: swelling of ankles, legs, abdomen; shortness of breath; feeling extremely tired, especially with activity.

**Coronary Angiogram:** A test in which contrast dye is injected into the coronary arteries, allowing the doctor to see the vessels on an X-ray machine.

**Coronary Arteries:** Vessels that supply the heart muscle with oxygen-rich blood.

**Coronary Artery Bypass Graft (CABG):** A surgical procedure that uses other blood vessels to make new pathways for blood around blocked arteries of the heart.

**Dissection:** Division of tissue in layers. An aortic dissection is the tearing of the layers within the aorta.

**HDL (High-Density Lipoprotein):** “Good cholesterol” that helps carry the “bad cholesterol” away from the walls of the arteries and returns it to the bloodstream, as a result prevents build-up of cholesterol in the artery walls.

**High Blood Pressure:** A condition that puts too much pressure or force on the walls of the arteries. In time, it can cause damage to the arteries and lead to increased risk of heart attack, stroke, heart failure and kidney failure.

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**Insufficiency:** This term is used in reference to heart valves, and refers to incomplete closure of the mitral or aortic valve, resulting in backward leakage of blood.

**Ischemia:** Reduced blood flow to the heart muscle that often causes angina.

**LDL (Low-Density Lipoprotein):** “Bad cholesterol” is responsible for depositing cholesterol in the artery walls. An elevated LDL cholesterol level is associated with risk of coronary artery disease.

**Monounsaturated Fat:** Slightly unsaturated fat that helps to reduce blood cholesterol; found in olive and canola oils.

**Myocardial Infarction (MI):** Permanent damage to the heart tissue and muscle due to interruption of the blood supply to the area. Commonly referred to as a heart attack.

**Percutaneous Transluminal Coronary Angioplasty (PTCA):** See angioplasty.

**Plaque:** Accumulation or build-up of cholesterol, fatty deposits, calcium and collagen in a coronary vessel that leads to blockages in the blood vessel.

**Polyunsaturated Fat:** Highly unsaturated fat that is a healthier alternative to saturated fat; found in sunflower, corn, safflower and soybean oils.

**Regurgitation:** Flow of blood in the opposite direction.

**Restenosis:** Recurrent blockage or narrowing of a previously treated vessel.

**Saturated Fat:** Usually solid at room temperature, commonly found in animal products. It is also found in a few vegetable products like coconut oil, palm seed oil and cocoa. Saturated fat raises blood cholesterol more than anything else in the diet.

**Sinus Node:** A group of specialized cells located in the right atrium that initiates an electrical impulse.

**Splint:** The use of an object to reinforce another object. In the context of heart surgery, it refers to using a pillow against the sternum to provide support during coughing and activity.

**Stenosis:** A narrowing. This can be in reference to a blood vessel or a heart valve.

**Stent:** An expandable metal tubular structure that supports the vessel wall and maintains blood flow through the opened vessel.

**Stress Test:** A test that records the heart’s electrical activity while the patient exercises. This may show whether parts of the heart muscle have been damaged due to insufficient oxygen flow to the heart.

**Thrombus:** A blood clot.

**Triglyceride:** Fat-like substance that is carried through the blood stream to the tissues. Much of the body’s fat is stored in the form of triglycerides for later use as energy.

**Unsaturated Fat:** Usually liquid at refrigerator temperature. There are two kinds of unsaturated fat: monounsaturated fat and polyunsaturated fat.

**Valves:** Specialized tissue between the heart chambers which prevent backflow of blood.

**Ventricles:** The two lower chambers of the heart referred to as right and left ventricles. The ventricles are the stronger of the four chambers of the heart. The right ventricle pumps blood to the lungs. The left ventricle pumps blood to the whole body.

### Patient Information Resources

UR Medicine ..... [www.urmedicine.org/heart](http://www.urmedicine.org/heart)

**The Miner Library** is located within the Medical Center on the first floor at 1-6300 and contains a reference collection of patient-related materials. You are welcome to stop in and ask a librarian for assistance.

**DISCLAIMER** – The following list of websites has been provided for you as an additional resource in obtaining information related to your health. The University of Rochester Medical Center does not specifically endorse any product or opinion presented in the websites. **All** information should be confirmed and verified with a competent healthcare provider.

### Websites:

Each website contains a search function; enter a particular topic, such as CABG, CAD, valve surgery, etc.

National Institutes of Health ..... [www.nih.gov/](http://www.nih.gov/)

American Heart Association ..... [www.heart.org/HEARTORG](http://www.heart.org/HEARTORG)

National Heart Lung and Blood Institute ..... [www.nhlbi.nih.gov](http://www.nhlbi.nih.gov)

WebMD ..... [www.webmd.com](http://www.webmd.com)

NYS Smokers Quit Line ..... [www.quitassist.com](http://www.quitassist.com)

American Diabetes Association ..... [www.diabetes.org](http://www.diabetes.org)

Academy of Nutrition and Dietetics ..... [www.eatright.org](http://www.eatright.org)

U.S. Food & Drug Administration ..... [www.fda.gov](http://www.fda.gov)

### Other:

MyFitnessPal ..... [www.myfitnesspal.com](http://www.myfitnesspal.com)

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## Phone Numbers

Emergency .....	CALL 911
Admitting Strong Memorial Hospital .....	(585) 275-7081
Same Day Admission .....	(585) 275-8256
Preadmission Testing.....	(585) 275-6011
Cardiac Catheterization Lab .....	(585) 273-3807
Social Work Office.....	(585) 275-2851
Contact your Surgeon .....	(585) 275-2525
Cardiac ICU .....	(585) 275-3158
Cardiac Transplant (4-3400 ) .....	(585) 275-2975
Cardiac Care Unit (4-1600).....	(585) 275-5276
Cardiac Care Unit (4-3600).....	(585) 275-9000
Patient Information .....	(585) 275-2181
Chaplain's Office .....	(585) 275-2187
Patient Relations.....	(585) 275-5418

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To learn more, visit [URMedicine.org/heart](http://URMedicine.org/heart).

