

# Heart Surgery

Guidebook



Bring this guide with you to the hospital if you are admitted  
and for your appointments.

Name: \_\_\_\_\_

Type of procedure: \_\_\_\_\_

Date of procedure: \_\_\_\_\_

Name of cardiologist: \_\_\_\_\_

My appointment with my cardiologist is: \_\_\_\_\_

Name of surgeon: \_\_\_\_\_

My appointment with my surgeon is: \_\_\_\_\_

POCKET



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# Overview

## National Leaders in Cardiology and Heart Surgery

You can trust your heart care in our hands. As a national leader in cardiology and heart surgery, the AdventHealth Cardiovascular Institute team is here to provide you with the most advanced treatment and management options available — as well as offer the support and communication you and your family need to properly treat and manage your symptoms.

With strong numbers and positive outcomes, the Institute is fortunate to have some of the top physicians and surgeons in the world on our team. They are not only well-regarded by their peers, but they serve on numerous national and state advisory boards and committees, participate in cutting-edge research studies and dedicate their time to educating the community, residents and visiting physicians on issues related to cardiovascular health.






From preventative screenings and medication management to simple or complex operations and emergency care, the aim is to ensure your cardiovascular system is functioning at its optimal capacity.

# Chapter 1: Before, During and After Surgery

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Patient Guide Care Map

|  | Before Surgery   | Day of Surgery   | CV/ICU Phase I  | CV/PCU Phase II   | NEED TO KNOW   |
|--|--|--|---|---|--|
| <br>Education/<br>Discharge<br>Planning | <ul style="list-style-type: none"><li>• Pre-op teaching</li><li>• Plan of care reviewed</li><li>• Discharge needs assessed</li></ul>   | <ul style="list-style-type: none"><li>• Pre-op teaching</li><li>• Plan of care reviewed</li><li>• Discharge needs assessed</li></ul>   | <ul style="list-style-type: none"><li>• Plan of care reviewed</li><li>• Discharge plan</li></ul>  | <ul style="list-style-type: none"><li>• Cardiac Rehab Class or visit from Cardiac Rehab Educator</li><li>• Education materials</li><li>• Discharge plan finalized</li></ul>   | <ul style="list-style-type: none"><li>• Do you know when your appointments with the heart surgeon and your cardiologist are?</li><li>• Do you know when to call your doctor?</li><li>• Do you understand how to take care of your incision and how it should look?</li><li>• Do you know what medications to take, what they are for and when to take them?</li></ul>  |
| <br>Tests/<br>Assessments               | <ul style="list-style-type: none"><li>• Lab work</li><li>• Chest X-ray, EKG</li><li>• Height and weight</li><li>• Routine vital signs</li></ul>  | <ul style="list-style-type: none"><li>• Lab work</li><li>• Chest X-ray, EKG</li><li>• Frequent vital signs</li></ul>   | <ul style="list-style-type: none"><li>• Lab work</li><li>• Chest X-ray, EKG</li><li>• Weight daily</li><li>• Frequent vital signs</li></ul>   | <ul style="list-style-type: none"><li>• Lab work</li><li>• Chest X-ray</li><li>• Weight daily</li><li>• Routine vital signs</li></ul>   |  |
| <br>Nutrition                           | <ul style="list-style-type: none"><li>• You may have a regular dinner</li><li>• Nothing to eat or drink after midnight</li></ul>   | <ul style="list-style-type: none"><li>• You may have ice chips after the breathing tube is removed</li></ul>   | <ul style="list-style-type: none"><li>• After your stomach tube is removed you may progress from a liquid diet to a low-fat cardiac diet (solid food)</li></ul>   | <ul style="list-style-type: none"><li>• Cardiac diet (low fat)</li></ul>  |  |
| <br>Activity/<br>Therapy                | <ul style="list-style-type: none"><li>• Activity as tolerated</li></ul>  | <ul style="list-style-type: none"><li>• The nurse will assist you in turning in bed</li><li>• Sit on the side of the bed with assistance</li><li>• Leg exercises every hour, 10 times in a row, while awake</li><li>• Use incentive spirometer, cough and deep breaths 10 times per hour while awake</li></ul> | <ul style="list-style-type: none"><li>• Sit on side of bed with assistance</li><li>• Sit in chair for parts of the day</li><li>• Walk in halls up to four times a day</li><li>• Leg exercises 10 times every one to two hours, while awake</li><li>• Use incentive spirometer, cough and deep breaths 10 times every one to 2 hours while awake</li></ul> | <ul style="list-style-type: none"><li>• Sit in chair for meals</li><li>• Walk in halls at least four times a day</li><li>• Bowel movement</li><li>• Leg exercises every hour, 10 times in a row, while awake</li><li>• Use incentive spirometer, cough and deep breaths 10 times per hour while awake</li></ul> | <ul style="list-style-type: none"><li>• Do you understand the limitations and weaknesses you may have following your surgery?</li><li>• Do you know which activities are safe for you and which are not?</li><li>• Do you know the resources available to you after you are discharged?</li><li>• Can you take care of yourself with the help and equipment provided?</li><li>• Do you have concerns about grocery shopping and meal preparation after you are discharged?</li></ul> |
| <br>Medication/<br>Treatments         | <ul style="list-style-type: none"><li>• Take medications as directed</li><li>• Shower with special soap</li><li>• Surgical area will be clipped the day of surgery - do not shave yourself</li></ul> | <ul style="list-style-type: none"><li>• Pain medication given in IV form</li><li>• You will have these tubes : IV, bladder, chest, stomach, breathing tube</li><li>• Bandages will cover incisions</li></ul>   | <ul style="list-style-type: none"><li>• Pain medication will be given through your IV or by pills</li><li>• All tubes usually removed 1-2 days after surgery</li><li>• Oxygen given as needed</li></ul>   | <ul style="list-style-type: none"><li>• Pain medication given as pills</li><li>• IVs changed to "lock"-used when needed</li><li>• Shower daily</li><li>• Oxygen given if needed</li><li>• Assistance with incision care</li></ul>   |  |

Day of Surgery

Have a regular meal for dinner on the night before your surgery. DO NOT have anything to eat or drink after midnight (no water, candy or chewing gum) on the day of your surgery unless otherwise directed by your doctor.

Patients Admitted the Morning of Surgery

You will need to arrive at the hospital two to three hours before your scheduled surgery. If your doctor tells you to be here earlier, come according to your doctor's request.

- Before surgery, please remove your glasses, dentures, hearing aids and all jewelry (including your wedding ring) and give these items to your family for safekeeping.
- Once in the operating room, your surgery will take approximately three to six hours.
- Visitors are directed to please wash your hands before entering any patient's room and upon leaving the room. Cleansing foam is provided near every room door.

Phone Calls

Please encourage your family or legally authorized person to select one individual to act as the group representative who will call the nurses' station for a condition report.

THINGS TO REMEMBER

- Make sure you bring your CPAP and medication list to the hospital.

Date \_\_\_\_\_  
Your surgeon \_\_\_\_\_  
Procedure \_\_\_\_\_



# Participate in Your Care

## Leg Exercises

- At first, while you are in bed, the nurse will assist you in turning side to side every two hours and/or as needed. The head of the bed may be raised up.
- The following leg exercises will be encouraged every hour, 10 times in a row, while awake to improve blood flow:

### Ankle Flexion



Point your toes down then up, bending at the ankle

### Knee Bends



Bend the knee of one leg, placing the bottom of your foot on the bed. Move your foot back and forth (like you are walking). Then repeat with the other leg.

#### Benefits:

- Increases blood circulation
- Helps prevent blood clots in veins
- Helps maintain leg muscle strength

## Lung Exercises

Deep breathing and coughing exercises help to expand the lungs as well as to loosen mucus/secretions in the lungs.

- **Deep breathing** – Take deep, slow breaths in through the nose and out through the mouth. While exhaling, try to blow out of your mouth as if you were whistling or blowing out candles, and continue this until all air is expended from the lungs. Repeat this as directed by your care team.
- **Coughing** – Nursing and respiratory care staff will encourage a few deep coughs and deep breathing exercises to loosen mucus in your lungs. You will be shown how to hold a pillow firmly against your incision area while coughing.

In addition to deep breathing and coughing exercises, you will be shown how to use an incentive spirometer. This device also helps exercise your lungs and gives an indication of the volume you are able to bring into your lungs.

You will need to use this device every hour while awake. When using the incentive spirometry device, you will need to breathe in and out 10 times in a row. Pace yourself according to your energy level.

When you go home, you will need to continue using this device for the first two weeks, or as instructed by your medical team.



# Pain Management

- Let the nurse know if your pain medicine does not make you comfortable. If you are comfortable, you breathe better and move easier. Ask for pain medicine if it is not offered to you.
- Incision pain or discomfort may increase with daily activities and recovery exercises, such as coughing and deep breathing exercises, leg exercises, getting in and out of bed or a chair, and walking.
- Splinting: When moving around or coughing, hold a pillow firmly over the incision area. This will help lessen the pain.

## Benefits of Pain Control

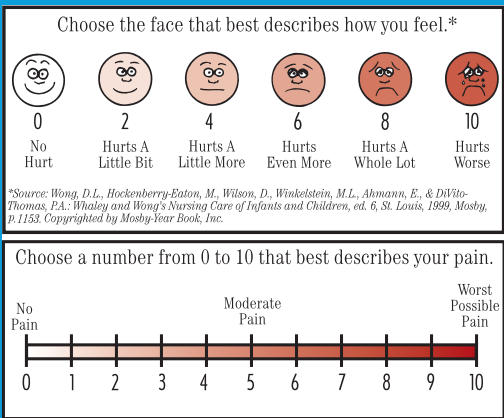
- You can eat better, thus promoting better healing.
- You can rest and sleep better, which can build up your energy level.
- You can perform recovery exercises at a more comfortable level and decrease risks like pneumonia (lung infection).
- You can reduce moody periods that are associated with pain.
- You can recover, feel better and possibly return home sooner.

Inform your doctors and nurses of any pain not controlled at an acceptable level for you.

## How to Communicate Your Pain Level

We ask that you help your doctors and nurses to measure your pain. They will ask you to rate your level of pain on a scale of zero to 10, or you may choose a face on the scale below which best describes your pain.

- This is an example of the pain scale you will use after surgery.
- **Zero** is no pain.
- **One to three** is considered mild pain or discomfort.
- **Ten** is the most severe pain.



# Cardiac Rehabilitation Program

The Cardiac Rehabilitation Program at AdventHealth is a vital part of your recovery. There are several phases of cardiac rehab. The first phase of cardiac rehabilitation is education while you are hospitalized. You can expect a visit from one of our cardiac rehab educators. The second phase of cardiac rehabilitation is an outpatient monitored exercise and educational program. You will be able to join this phase once cleared by your cardiologist.

# Chapter 2: Heart Function, Disease and Repair

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# Coronary Artery Disease (Atherosclerosis)

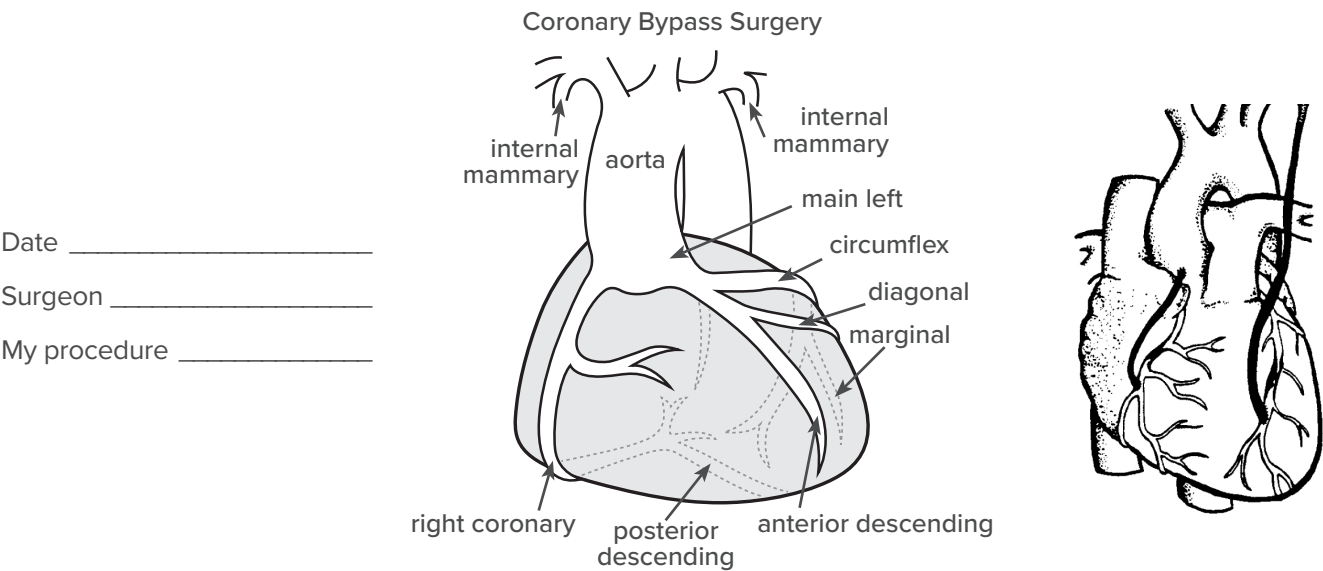
In order for the heart to pump blood properly, it needs an abundant supply of oxygen-rich blood. This blood is supplied to the heart muscle by the coronary arteries.



The coronary arteries can develop a disease known as atherosclerosis. When atherosclerosis occurs, the insides of the arteries become narrowed by the build-up of cholesterol or fat deposits (plaque). This can lead to angina or heart attack.

# Coronary Artery Bypass Surgery

When coronary artery blockage prevents adequate blood flow to the heart muscle, coronary artery bypass surgery can increase circulation by providing another pathway for blood flow to the heart muscle.



Date \_\_\_\_\_  
Surgeon \_\_\_\_\_  
My procedure \_\_\_\_\_

During surgery, a vein from the leg, an artery from the arm or an internal mammary artery from the chest is used to create a “bypass” around the narrowed artery. This allows blood to travel through the bypass graft and supply oxygen to the heart muscle. The area of heart muscle that was receiving an insufficient amount of blood now has improved blood flow.

### Points to Remember

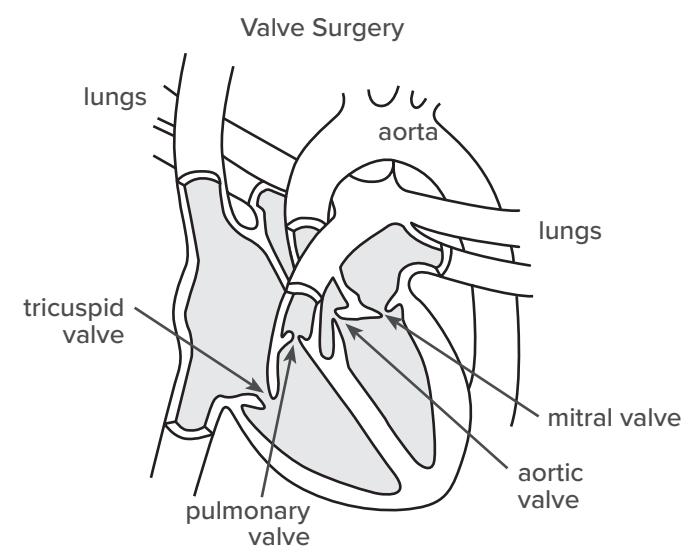
- The purpose of coronary artery bypass surgery is to try to prevent damage to the heart muscle.
- Bypass surgery will not make an old heart attack scar go away.
- Bypass surgery will not cure coronary artery disease.
- Coronary artery disease (atherosclerosis) is a progressive process. Risk factors such as inherited tendencies and some lifestyle habits contribute to the development of the atherosclerosis process.
- Physician monitoring and treatment (medications and lifestyle changes) can reduce the likelihood of progression of cardiovascular disease.

No one risk factor directly causes coronary artery disease, but the chances of disease become greater with each added risk. Therefore, modification of lifestyle habits is desirable.



# Valves

The heart has four chambers. The top chambers are the right and left atriums. The bottom chambers are the right and left ventricles. As the heart pumps, blood is squeezed forward when the muscle contracts. A valve located at the exit of each chamber functions as a one-way door. Each valve opens to allow blood into the chamber, then closes to prevent any back flow.



The tricuspid valve allows blood returning from the body to flow from the right atrium to the right ventricle. Blood leaves the right ventricle, then passes through the pulmonic valve on its way to the lungs. Oxygenated blood from the lungs collects in the left atrium, then passes through the mitral (bicuspid) valve and into the left ventricle. When the left ventricular muscle contracts, the blood is pushed out of the heart, exiting through the aortic valve. As the valves close with each heartbeat, a “lub-dub” sound can be heard using a stethoscope.

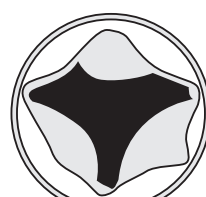
## Valve Disease

A valve may not open or close properly because of a birth defect, or if it has been thickened or damaged by rheumatic fever, infection, calcium deposits or other injuries to the valves. The abnormal valve may become narrowed or begin to leak. The narrowing of a valve opening is called stenosis. A valve that cannot close completely, allowing blood to back flow, is called insufficient or regurgitating.

An abnormal valve may cause the heart to work harder when pumping blood to the body, possibly leading to heart strain or failure.



normal valve



abnormal valve



abnormal valve

Medications may be used to relieve some of the stress on the heart. Surgery may be needed if your physician detects an increased strain on the heart.

Only your surgeon can determine whether you need valve repair versus valve replacement at the time of the surgery.

## Valve Repair

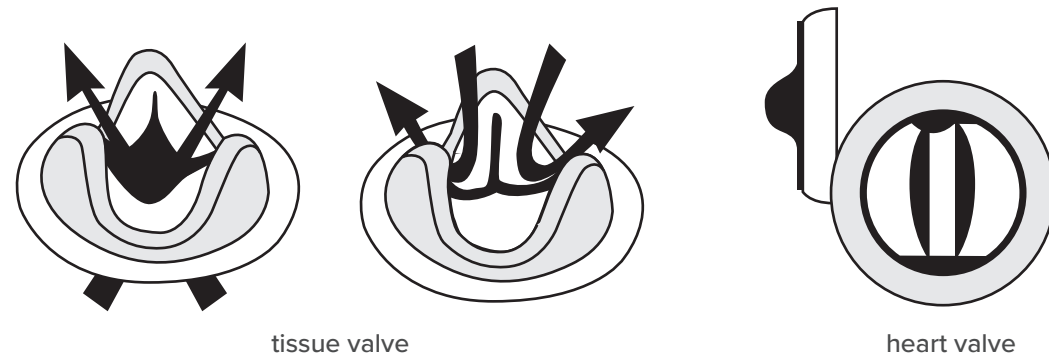
A leaking valve can sometimes be repaired through open heart surgery. The weakened valve is surgically supported using a ring that is sewn into place. The heart valve leaflets are brought closer together by the ring. This helps the valve improve blood flow through the heart chambers.





## Valve Replacement

When repair of a damaged valve is not possible, the valve is replaced with a prosthetic valve. There are two types of prosthetic valves: tissue (bioprosthetic) and mechanical. Tissue valves are made from specially treated animal or human tissue and are similar to the heart's natural valves.



Mechanical valves are made from special plastic and metal. Mechanical valves do not look like natural valves, but they perform the same function as a heart valve.

Mechanical valves almost always require anticoagulant medication to prevent blood clotting near the valve. Tissue valves may not always require long-term anticoagulant therapy.

Your surgeon will determine what type of prosthetic valve is appropriate for your condition. Factors considered include the extent of heart disease or any other diseases present, lifestyle and activity levels, and tolerance to anticoagulant therapy.

Anticoagulant therapy during pregnancy is difficult to manage; this is a factor in the type of valve selected for a female patient of childbearing age.

## Mitral Valve Prolapse

Mitral valve prolapse (MVP) is a very common, often harmless, abnormality of the mitral valve. “Prolapse” means that the mitral valve is floppy and tends to bulge backwards toward the left atrium when it closes. This flopping causes a “click” sound as the valve closes. If a tiny amount of blood leaks backward through the valve, it may also produce a “murmur” sound. Usually, the amount of blood leaked is very small and does not affect how the heart works.

Millions of people have MVP, although most do not know it. The abnormal bulging of the valve is usually present at birth but rarely affects the heart's function, or a person's overall health and activities.

Symptoms of MVP include palpitations (irregular or fast heartbeats), chest pain or shortness of breath.

Diagnostic tests, such as an echocardiogram (echo), are used to confirm MVP and to make sure that a rare case of serious MVP or some other form of heart disease is not present. An echo is a type of ultrasound test that uses high-pitched sound waves that are sent through a device called a transducer. The device picks up echoes of the sound waves as they bounce off the different parts of your heart.

Specific treatment is usually not needed for MVP. If symptoms as noted above are present, lifestyle changes such as stress reduction, not smoking, avoiding caffeine and alcohol, eating a healthy diet, maintaining ideal body weight, exercising regularly and getting proper rest often provide relief. In rare cases, medications may also be prescribed to reduce symptoms.

If the valve is damaged due to disease, such as rheumatic fever, medications or surgery may be required.



## Endocarditis

An infection of the heart's inner lining or valves is called endocarditis. This is usually caused by bacteria, although rarely a fungus can infect the heart. Bacteria can enter the bloodstream as a result of routine dental work, certain surgeries or infections in other areas of the body. Abnormal heart valves are more prone to endocarditis. An infection in the body can further damage abnormal heart valves.

Symptoms of infection, including fever, sweating, loss of appetite, weight loss, lack of energy or angina, should be reported to your physician. Routine infections and dental work are common sources of endocarditis. Clean and floss your teeth daily to reduce bacteria in your mouth.

Antibiotics are often given just before and sometimes after certain procedures as prophylactic (preventative) treatment for those with abnormal valves. Endocarditis prophylaxis is usually ordered whenever having dental work and certain types of surgery. Ask your dentist or physician about the need for prophylactic medications before any surgery, procedures (especially anything to do with the digestive tract), or dental work.

## What can I do to prevent bacterial endocarditis?

- Tell all physicians and dentists that I have heart valve abnormalities.
- Take medications as directed prior to any procedure or surgery.



# Atrial Fibrillation







Atrial fibrillation is a common disturbance in the rhythm of your heart after surgery. The heart's pumping is controlled by your heart's electrical system. The normal heart rate is 60 to 80 beats per minute and higher during activities. When atrial fibrillation occurs, the upper chamber of the heart quivers rapidly and irregularly; this can decrease the heart's pumping efficiency.

Untreated atrial fibrillation may lead to a greater risk of strokes and sometimes may lead to heart failure. Heart failure may occur due to a change in the heart's ability to pump efficiently. The goal is to try and regain the normal heart rhythm, control the heart rate and prevent a stroke. During atrial fibrillation, blood flow changes in the heart chambers increases the risk of blood clots and strokes.

In order to restore the normal heart rhythm, your doctor may prescribe some medication and a blood thinner may be used. Cardioversion, ablation or surgical maze procedures may be discussed if a normal rhythm and normal heart rate are not achieved. In some cases, a pacemaker may be required to control the heart rhythm.





# Warning Signs of Atrial Fibrillation

*When your heart is in atrial fibrillation, you may experience one or more of the following symptoms:*

-  Sudden pounding, fluttering or racing feeling in the chest
-  Tiredness
-  Dizziness or fainting
-  Chest discomfort
-  Shortness of breath
-  If the heart's pumping efficiency is decreased, fluid may build up in the ankles, abdomen or lungs, which may be referred to as heart failure

# Think F.A.S.T.

## WARNING SIGNS OF A STROKE

-  **F = Facial Droop**  
Have person smile. If smile droops down on one side, it may be a stroke.
-  **A = Arm Drift**  
Have person hold both arms out with eyes closed. If one arm drifts down, it may be a stroke.
-  **S = Speech**  
Have person repeat a phrase like "you can't teach an old dog new tricks". If speech is slurred, absent or abnormal, it may be a stroke.
-  **T = Time**  
If person fails one or more of these tests, the person may be having a stroke. Call 911 immediately and report what you have observed.

**Strokes are an emergency. It is vitally important to call 9-1-1 immediately if you or someone you know has sudden onset of any of the signs or symptoms, even if they go away.**

# Anti-Coagulation

Clotting is the normal process of the blood to prevent excessive bleeding. Certain medical problems or defective heart valves increase the chance of abnormal clots forming. Anticoagulants, also called "blood thinners," are used to lengthen the clotting time of the blood. Warfarin, also known by the brand names Coumadin and Jantoven, among others, is an anticoagulant (blood thinner) used for preventing the formation of blood clots in the blood vessels and their migration elsewhere in the body.

# Blood Thinners (Coumadin, Warfarin)

Do not stop or alter the dosage unless your physician tells you to do so. Coumadin is an example of a blood thinner that is commonly used. Many medications can alter Coumadin's effect and the risk of bleeding. For example, only a few days of taking an antibiotic can alter the effect of Coumadin.

Remind your physician that you are on Coumadin if you stop an established medication or begin a new one.

## Points to Remember if You Are On a Blood Thinner

- It's a good idea to carry a list of all your medications and dosages. Update the list as dosages change.
- Take only the medications prescribed by your physician.
- If you are going to be out of town on long trips, make arrangements with your physician for blood tests before you leave. Take along an adequate supply of Coumadin to cover the entire trip.
- Tell your dentist or surgeon you are on Coumadin or any other blood thinners before any procedures are done. Your physician may direct you to temporarily stop taking Coumadin or any other blood thinners to avoid excessive bleeding. Talk to your doctor about changing or stopping Coumadin; DO NOT stop or change your dosage without talking to your doctor first.
- Ask your physician before beginning any new sports activity. Avoid sports that have a high risk of injury.
- Tell your physician if you have any signs of bleeding such as black bowel movements, pink or red urine, vomit resembling coffee grounds, excessive bruising or swelling, severe headaches, abdominal pain or nosebleeds.
- Over-the-counter medications may affect the blood's clotting time. Aspirin (acetylsalicylic acid) thins the blood; do not use aspirin or medications containing aspirin. Usually, Tylenol (acetaminophen) can be used for aches and pains. Read all labels carefully, and check with your physician before using any medication.



Diet and Nutrition when on Coumadin or Warfarin

Blood clots are formed through a series of chemical reactions in your body. Vitamin K is essential for those reactions. Warfarin (Coumadin) works by decreasing the activity of vitamin K. If you are on Warfarin, it will take longer for a clot to form.

To help Warfarin (Coumadin) work effectively, it is important to keep your vitamin K intake as consistent as possible and take your medicine exactly as your doctor directed.

Alcohol affects the way the liver removes blood thinners from the body. Excess alcohol consumption can cause bleeding and should be avoided. Consult your physician regarding alcohol use.

Tell your physician before making changes in your diet.

Foods High in Vitamin K

|                    |           |                    |          |                 |          |
|--------------------|-----------|--------------------|----------|-----------------|----------|
| • Broccoli         | ½ cup     | • Green Scallions  | ⅔ cup    | • Spinach       | 1 ½ cups |
| • Brussels Sprouts | 5 sprouts | • Lettuce (raw)    | 1 ¾ cups | • Turnip Greens | 1 ½ cups |
| • Cabbage          | 1 ½ cups  | • Bibb lettuce     | 1 ¾ cups | • Watercress    | 3 cups   |
| • Collard Greens   | ½ cup     | • Red Leaf Lettuce | 1 ¾ cups | • Mayonnaise    | 7 tbsp   |
| • Endive           | 2 cups    | • Mustard Greens   | 1 ½ cups | • Canola Oil    | 7 tbsp   |
| • Kale             | ¾ cup     | • Parsley          | 1 ½ cups | • Soybeans      | 7 tbsp   |

Measurements are calculated for uncooked status.



Chapter 3: Post-operative Care

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My weight leaving the hospital was \_\_\_\_

My usual weight is \_\_\_\_\_



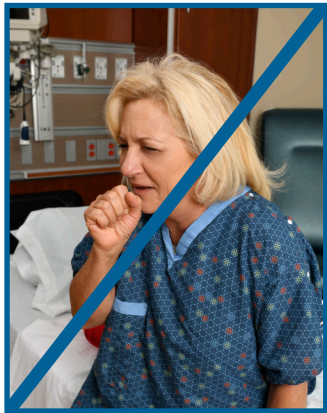
# Surgery Recovery

After surgery, you will spend the next day or two in the intensive care unit where you will be closely monitored. You will be asked to cough and take deep breaths; this is important to promote recovery. You will be instructed to use a deep breathing device called an incentive spirometer to help you do breathing and coughing exercises every hour.

DO



DO NOT



Remember to breathe deeply and slowly. It is important to hug a pillow or yourself to give the mending breast bone the needed support when coughing. Breathing exercises and coughing are important to promote a good recovery and should be continued at home. Use a pillow to support your chest when coughing. An average time to continue this practice at home is one to two weeks after hospital discharge. Ask your doctor at your first follow up visit if you need to continue any longer.

DO



DO NOT



In the beginning, moving may be difficult. For the first few weeks, keep the things you use frequently at waist level. Bending at the knees and keeping your back straight is the preferred method when you do need to bend over. When getting out of bed, roll onto one side and bring your legs off the side of the bed to the ground as you gently push yourself up to a sitting position using the elbow beneath you.

DO



DO NOT



When getting up from a chair, remember to scoot to the edge of the chair with your feet on the ground and one foot slightly forward, then rise from the chair using your leg muscles.

## CHECK LIST

- I have all of my personal belongings
- I have all of my education materials
- I understand when to call my doctor
- I understand what medications to take and my medication schedule

## Day of Discharge

Even though one physician has given orders for you to be discharged, all other physicians involved in your care, depending on their specialty, will also have to agree that you are ready to go home.

Your care team may need to make arrangements to provide for your continued safe recovery at home. This may take time, so please be patient as they ensure all your discharge needs are met. Have your family and/or significant other bring a comfortable outfit for you to wear home.

## Going Home

Recovery from surgery generally takes six to eight weeks, depending on the individual response.

When you are discharged from the hospital, you may request pain medication before leaving. Although you can ride home in a car, driving will be restricted for four to six weeks after surgery.

For the trip home from the hospital, take a pillow along for your comfort. If you are traveling a long distance, stop every one to two hours for a rest

period and to walk around. If you are traveling by air, the cabin should be pressurized. Arrange with the airline for assistance with your luggage.

## Medications

When you are discharged from the hospital, your nurse will explain what each medication is for, the name of the medication, how much to take, when to take it and if there are any side effects.

Do not stop, start or change dosages of medications without consulting your physician.

Do not assume you should continue medications that you were taking routinely before surgery. You may no longer need that dosage or that medication, or your physician may have ordered the same drug but by a different name. Work with your physician to determine the proper drug and dosage for you.

## Weight Gain and Fluid Retention

You should weigh yourself daily. Weigh yourself first thing in the morning after you have urinated. Wear the same amount of clothing each time. Keep a record of your weight. A weight gain of 5 pounds in 48 hours while maintaining a healthy diet can be due to fluid retention, not fat; this should be reported to your physician.

## Visits to Your Physician

Schedule an appointment to see your primary care physician shortly following discharge from the hospital. You may have an appointment to see your surgeon and cardiologist about two to four weeks after discharge. If you have questions or problems, be sure to call your physician, cardiologist or surgeon.



If you experience any of the following, call your doctor.

1. **Extreme tiredness**
2. **Shortness of breath**
3. **Weight gain as described on previous page**
4. **Worsening cough**
5. **Swelling of your hands, feet or stomach**

## Pericarditis

Sometimes the sac surrounding the heart becomes irritated following bypass surgery. This inflammation is called pericarditis and causes mild to severe soreness in the chest, shoulders or neck. The discomfort is usually associated with lying down, coughing or taking a deep breath. This does not mean that your heart is damaged or that you have an infection. Report your symptoms to your physician. Medications can control the pain, and the inflammation usually subsides in a few weeks.



## Emotions

Any surgery is a stress on your body — emotionally as well as physically. Heart surgery requires a lot of emotional energy to cope. A “let down” or depressed feeling is normal after surgery. You may go through periods of feeling irritable, tearful or sad.

You may have a recurring dream, or notice a loss of concentration or memory. As your recovery progresses, these feelings will go away. If you have prolonged or severe depression or other emotional concerns, discuss them with your physician.

## Rest and Sleep

The healing process for bypass surgery takes six to eight weeks. Your activities will gradually increase during this period. At first, even normal daily activities such as bathing and dressing will seem like work. Use common sense; do an activity only to the point of mild fatigue. Stop to rest when you are tired. “Overdoing” will increase your fatigue and slow your recovery.

You may experience difficulty sleeping; this will improve. Avoid taking naps in the daytime. Try to sleep eight to 10 hours each night and keep your bedtime as consistent as possible. Avoid staying up late and then “sleeping in” the next morning. Sleep on your back until cleared by your surgeon.

## Sexual Activity

Both you and your partner may be concerned about having sex following heart surgery. Research shows that more than 80 percent of people who have had a heart attack can return to most of their daily activities including sex. It is normal to wonder if sex will cause injury to your sternum (breastbone), be exhausting or even harm the heart.

Sexual relations can be resumed after the breastbone has healed, usually six to eight weeks. In most cases, if you can climb two flights of stairs, walk a mile or ride a bicycle without feeling tired, short of breath or having chest pains, you are probably ready to resume sex. If you feel good and well rested, then sex is possible, and it can be as enjoyable as before surgery. Your physician will guide you in determining the best time for you.

Many medications can affect sexual response; however, never stop taking any medications without talking with your doctor. A simple adjustment may be all that is needed. Viagra (or other equivalent drugs) is a medication on the market for erectile dysfunction, but can be life-threatening for men with heart problems or high blood pressure. None of these drugs can be taken when using nitroglycerine. Check with your physician prior to starting such medications.

## Bathing

**Shower daily using warm water.** Avoid hot water, as it may cause dizziness or weakness due to its vasodilating effect. Do not completely submerge incisions until seen by your physician in the office. Do not take baths or go swimming. Wash the incision line using gentle friction with a mild liquid antibacterial soap; avoid harsh scrubbing.

Refrain from using lotions, powders or ointments on the incisions for six weeks. It is not necessary to clean incisions with an antiseptic wash unless you have specific instructions to do so or there are staples or sutures still in place. Staples or stitches can be removed from six to 10 days after surgery.

If you go home with sutures or staples, these are removed by a health care professional. Keep any surgical tapes (SteriStrips) or skin glue (which will appear shiny) in place until they begin to fall off. You may wash your hair.



## Incisions and the Healing Process

Look at your incisions with the nurse in the hospital before discharge so you can discuss normal appearance and have a point of reference. A normal surgical incision will have sealed or closed-wound edges, may be tender to touch, and you may feel a raised ridge around the incision. You can expect some redness and swelling during the recovery phase, and in some cases, very small amounts of clear fluid or drainage from an incision (especially after a shower). This should gradually decrease with time.

Wash your hands before touching your incisions. Look at your incisions every day. Notify your surgeon if there is new redness, drainage, or skin separation.

It is normal to have a lump at the top of the chest incision and at the lower end of the leg incision. This will reduce in size over a one- to three-month period.

A sensation of tingling and or numbness along the incision area and left chest wall is normal. Patients often have a feeling of tightness in their chest as the breastbone heals. Discuss these symptoms with your physician when you have your first follow up visit.

It is normal to experience occasional numbness, soreness and itching across the chest, and even on your back and shoulders. You may have occasional sharp, brief shooting pains in your chest. You may hear an occasional “pop” or “crack” sound coming from the bone in the chest. These are normal experiences during the initial healing process. If there is excessive movement in the breast bone, call your physician.

If you have had a heart valve procedure in which the surgeon operated through small incisions rather than the sternal approach, remember to examine each of your incisions. These will be a) in the right and left femoral groin area or b) on the side of the chest wall, under the breast area and in the right or left groin area.



## General Recovery Concerns

It is normal to experience fatigue with little effort, and this gradually decreases over the next six weeks to three months. **You can expect to have some mild shortness of breath during recovery.**

Some patients experience tingling and numbness in their left hand; this also gradually returns to normal. Many people experience soreness in the chest and shoulder area and an occasional sharp pain that quickly goes away in seconds; this is all within the normal healing process.

Some patients experience constipation after surgery. This can be due to medication side effects, anesthesia, lack of activity and/or a change in diet. If your bowel habits have not returned to normal, make sure you are walking and staying as active as possible during your recovery, increase your water intake (if you are not on a fluid restriction), and include high fiber foods such as whole grains in your diet. Ask your doctor for a prescription for a stool softener if needed. Talk to your doctor during your follow up visit if you have any concerns regarding constipation.

Each patient responds to surgery differently. You are unique! The recovery for a specific surgical procedure, whether a coronary artery bypass for clogged arteries or a valve repair/replacement for a narrow or leaky valve, will be different as well.





# Physical Activity

## Walking

**Inactivity can cause a lot of aches and pains, constipation, and even add to depression.** Try walking daily; it decreases these problems by improving your circulation, muscle tone and strength, and the way you feel about yourself.

Walking is a safe, easy exercise requiring no special or expensive equipment. Use common sense, and wear comfortable clothes and shoes. Avoid walking in extreme temperatures or on rough terrain; this will increase your fatigue. Select a smooth, flat surface to walk on. Many people walk in malls or on neighborhood tracks later in their recovery. Start out with several short walks every day and gradually increase the length of your walk.

Although swimming is a great cardiac conditioning exercise, it should be avoided until the sternum heals (usually about six to eight weeks).

## Chores and Housework

Use common sense with all of your activities. Small household chores that do not involve lifting may be done as tolerated. Activities involving an increased workload on your arms and chest should be avoided until the sternum is healed. Your sternum is held together by stainless steel wires, and it needs about six to eight weeks to mend. You cannot feel these wires, and they do not need to be removed.

*Do not lift, push or pull more than 15 pounds until cleared by your surgeon.*

Avoid forceful swinging arm motions for the first two months. Your physician can advise you further on weight limits during your follow-up visits.

If you have stairs, you may use them. Climbing is more exercise than walking. Walk slowly and listen to your body. If you become tired, dizzy or short of breath, stop, sit down and rest a bit. When you feel rested, continue up the stairs.

Any activity that causes extreme fatigue or incisional discomfort should be avoided. Don't get discouraged during your initial recovery phase. Take one day at a time. Recovery is a gradual process with small improvements daily.

## Recreational Activities

Even enjoyable activities are work for your body, so gradually recondition yourself for these activities.

As with household chores, recreational activities are permitted or restricted, based on the amount of stress to your arms and chest.

■ I commit to gradually increasing my activity over time. Activity helps improve outlook.

Walking is good; ask family, friends and neighbors to join you.

Activities you may enjoy during the healing period include riding in a car, playing cards, going to the theater or your place of worship, getting your hair done, short shopping trips, practicing golf putts, needlework, oil painting, croquet or watching spectator sports.

*At the follow-up office visit, ask your physician the best time for you to resume your favorite activities.*

## Avoid activities

that cause strain on the sternum, such as

- Pushing a vacuum
- Lifting
- Moving furniture
- Raking
- Mowing or mopping
- Lifting children
- Unscrewing jar lids
- Opening a stuck window
- Carrying luggage or groceries
- Pushing open a heavy door

## Home Exercise Program

| Week | Activity              | Duration (at least) | Frequency (at least) |
|------|-----------------------|---------------------|----------------------|
| 1    | Walk                  | 5 minutes           | 3–4 times daily      |
| 2    | Walk                  | 10 minutes          | 3–4 times daily      |
| 3    | Walk or Exercise Bike | 15 minutes          | 2 times daily        |
| 4    | Walk or Exercise Bike | 20 minutes          | 2 times daily        |
| 5    | Walk or Exercise Bike | 25 minutes          | 2 times daily        |
| 6    | Walk or Exercise Bike | 30 minutes          | 2 times daily        |

## Returning to Work





Return-to-work issues will be discussed at the first post-operative check-up with your physician. Many factors are evaluated, such as the progress of your recovery, your physical condition and the type of work you do.









Passport to Health after Heart Surgery | Week 1

Perforation for tear out sheet

|   | DAY 1 | DAY 2 | DAY 3 | DAY 4 | DAY 5 | DAY 6 | DAY 7 |
|---|-------|-------|-------|-------|-------|-------|-------|
|  Morning Weight              |       |       |       |       |       |       |       |
|  Shower                      |       |       |       |       |       |       |       |
|  Walks                       |       |       |       |       |       |       |       |
|  Deep Breathing and Coughing |       |       |       |       |       |       |       |



Passport to Health after Heart Surgery | Week 2

| DAY 7 |  |  |   |   |  |  |  |  |
|-------|--|--|---|---|--|--|--|--|
| DAY 6 |  |  |   |   |  |  |  |  |
| DAY 5 |  |  |   |   |  |  |  |  |
| DAY 4 |  |  |   |   |  |  |  |  |
| DAY 3 |  |  |   |   |  |  |  |  |
| DAY 2 |  |  |   |   |  |  |  |  |
| DAY 1 |  |  |   |   |  |  |  |  |
|       |  Morning Weight |  Shower |  Walks |  Deep Breathing and Coughing |  |  |  |  |

Are you ready to go home?

Reaching all of the goals below is your key to going home:

- ☐ All questions about my care at home have been answered.
- ☐ I have received and reviewed printed education materials.
- ☐ I use my incentive spirometer 10 times every hour, or as ordered.
- ☐ I am doing leg exercises 10 times in a row every hour while sitting in the chair or lying in bed.
- ☐ I am walking at least three times a day (or doing my best).
- ☐ I am taking pain medication every four hours as needed.
- ☐ I am off my oxygen, or plans have been made for home oxygen.
- ☐ My incisions are healing well (or are okay with my surgeon).
- ☐ I have no fever > 100.5 F (or okay with my surgeon).
- ☐ I am showering daily with antibacterial soap.
- ☐ I am eating and drinking.
- ☐ I have moved my bowels after surgery.





Personal Care DOs and DON'Ts

DO



Always keep your heart pillow nearby to support your chest incision when coughing.



When getting out of bed, roll to your side, drop your feet over the side of the bed and then sit up.



When getting out of a chair, always scoot to the front of the chair, lean forward and stand using your legs. Let your legs do the work, not your arms.

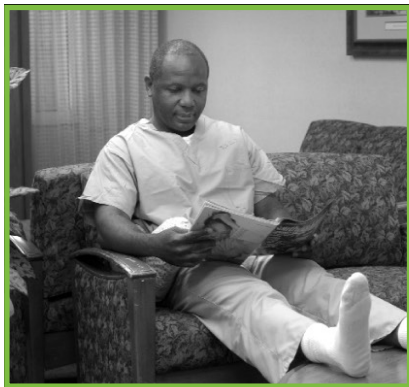


Restrict lifting, pushing or pulling with your arms during the recovery period for six to eight weeks after surgery.

DO NOT



DO



Keep legs uncrossed and supported when sitting, with your heart pillow nearby.



Protect chest incision by using only one arm at a time and keeping arms forward when dressing.



Showering and washing your hair can be done safely by just going at it easily.

DO NOT





# CREATION Health

## OUR PHILOSOPHY OF HEALTH AND WELLNESS

CREATION Health is a whole-person lifestyle created by AdventHealth designed to help individuals achieve maximum health and wellness. This framework seeks to positively influence all aspects of a person's recovery — mind, body and spirit. When practiced consistently, CREATION Health empowers participants to live a more fulfilling and productive life by embracing eight guiding principles — Choice, Rest, Environment, Activity, Trust, Interpersonal relationships, Outlook and Nutrition.

**Choice** — Choice inspires personal fulfillment and well-being. Establishing control over your life through conscious decision-making leads to improved health and longevity. Choose the most important thing for you each day and share it with friends and loved ones.

**Rest** — Rest rejuvenates the mind, body and spirit, empowering you to function at your best. Proper sleep and relaxation can lower blood pressure and reduce stress. Rest is important to your recovery. Take time to relax. Listen to soothing music, read and meditate.

**Environment** — Environment influences your overall health. Creating pleasant surroundings that energize the senses can lead to inner peace and happiness. Keep things around you that make you feel comfortable. Adjust lighting and temperature as needed.

**Activity** — Activity strengthens the body, sharpens the mind and invigorates the spirit. Regular physical and mental exercise can greatly improve your quality of life. Maintain the level of activity that your health care team recommends. Puzzles, word searches and other games are a fun way to stimulate your mind.

**Trust** — Trust promotes healing and security in your relationship with God, family, friends and coworkers. Nurturing trust in all your relationships creates inner stability and confidence, which leads to wellness. Talk to your pastor, friends and family about your spiritual and emotional needs. Pray, read scripture or journal about your experience.

**Interpersonal relationships** — Interpersonal relationships can spark health and healing. Social connection fortifies resolve and nourishes the mind, body and spirit. Stay connected through emails, blogs, letters and phone calls. Encourage friends and family to visit.

**Outlook** — Outlook creates your reality. A positive attitude can strengthen the health of your mind, body and spiritual life. Begin a gratitude journal and write down what you are thankful for each day. Keep a list of how you are integrating CREATION Health principles in your life.

**Nutrition** — Nutrition is the fuel that drives you. Small changes to your diet can produce profound improvements to your overall health. Follow your diet plan to feel better and more energized.



# Chapter 4: Managing Risk Factors

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# Risk Factors

Risk factors are inherited tendencies or daily lifestyle habits that contribute to the development of coronary artery disease (atherosclerosis). Most risk factors are related to how you live. Choices you make now about your health habits will affect how heart healthy you are in the future. Most risk factors are associated with habits that can be modified or changed.

However, risk factors that CANNOT be altered are

- **Advancing age:** Atherosclerosis, a form of arteriosclerosis (hardening of the arteries), commonly accompanies the aging process.
- **Heredity:** Heredity determines how your body metabolizes cholesterol and fats, which is a factor in the development of coronary artery disease.

Even though you cannot control these two risk factors, you can control and/or eliminate most other risk factors.

Risk factors that CAN be modified or changed include

- Smoking
- High-fat diet
- High blood pressure
- Diabetes
- Excessive stress
- Excessive body weight
- Lack of regular exercise

# Identify your cardiac risk factors

by checking those that apply to your lifestyle.

- Advancing age
- Family history of heart disease
- Smoking
- High-fat diet
- High blood pressure
- Diabetes
- Excessive stress
- Excessive body weight
- Lack of regular exercise

If you reduce your risk factors, the results can be good general health, physical fitness and an increased sense of wellbeing. In addition, lifestyle modifications may prevent acceleration of coronary artery disease.

As you read the following information about cardiac risk factors, give serious thought to how you might change your lifestyle to become heart healthy. Your cardiac rehabilitation nurse and dietitian, as well as your bedside nurse, can help you learn more about heart-healthy habits.

# Smoking

Tobacco smoking has long been linked with lung diseases such as chronic bronchitis and cancer. Smoking is one of the top three controllable risk factors contributing to coronary artery disease.

The nicotine in tobacco is a stimulant; it speeds up the heart rate, increases blood pressure and causes the heart to work harder. Individuals with heart disease who smoke are at greater risk of having extra or skipped heartbeats (arrhythmias).

Some arrhythmias are dangerous and can lead to heart attack or sudden death. Nicotine increases the fat levels in the blood, paving the way for atherosclerosis. Nicotine also causes platelet adhesiveness, which makes blood clots form more easily.

Carbon monoxide, a familiar air pollutant from automobile exhaust, is also found in cigarette smoke. Some heavy smokers have up to 20 percent carbon monoxide in their blood.

Every cell in the body depends on oxygen to survive. The heart must have an abundant supply of oxygen-rich blood to function properly. By smoking, you are starving some cells of oxygen and depriving your heart muscle of the full amount of oxygen it requires.

Other kinds of tobacco use, such as pipes, cigars, filters and chewing, may be lower risks for heart disease.

One reason for this may be that these habits do not require the inhalation of smoke. Still, the risk for pipe and cigar smokers is twice that of non-smokers. Cancer of the lips and gums is common in pipe and cigar smokers, as well as those who chew.

Cigarette filters may reduce tar and nicotine, but they usually increase carbon monoxide intake.

Many non-smokers think that second-hand smoke from others will not affect them, but noxious gasses, such as carbon monoxide and benzopyrene, are at very high levels when a smoker is present. It is almost impossible to accurately measure the negative side effects of second-hand smoke.

# Smoking Cessation

The decision to quit smoking is an important step toward the beginning of a healthier lifestyle. The encouraging news is that as soon as you stop smoking, your body begins to repair some of the damage. When you stop smoking, there is less strain on your heart, and your heart and lungs begin to function better. With improved breathing, you can increase physical activity that can minimize other risk factors. Remember, it's worth the effort for you to stop smoking, regardless of the number of years you have smoked.

Quitting smoking may be difficult. Sometimes it's helpful to talk with other people who are trying to stop.

My reward for not smoking is:



# Nutrition

Heart disease is the leading cause of death in the United States. This has been linked to nutrition habits that include excessive caloric intake, diets high in saturated fat and cholesterol, and frequent consumption of less-healthy convenience foods. On the other hand, diets rich in the following foods have been shown to decrease the risk of heart disease: whole grains, beans and peas, vegetables and fruits, and heart-healthy fats found in flax seed, fish, nuts and seeds.

## Survival Skills for Heart Health

- Whole grains, dried beans and peas, and fruits and vegetables should comprise the largest part of the diet. Low-fat dairy foods should also be included. Lean meats or low-fat meat substitutes are recommended in moderation. Saturated fats and oils, along with sweets, should be eaten only in small amounts.
- Eat three sensibly sized, balanced meals per day. A balanced meal is made up of carbohydrates, protein and fat. An example of a balanced meal is grilled tuna fish, corn, broccoli, strawberries and a cup of low-fat milk. Another option would be to divide the foods from three balanced meals into smaller, more frequent meals.
- Eat foods high in fiber at each meal. Fiber promotes digestive health and a feeling of fullness after a meal, which can help moderate caloric intake, assisting with weight control. Soluble fiber is found in oats, barley, dried beans and peas (legumes), and many fruits and vegetables, including apples, citrus and psyllium seed. Soluble fiber can help decrease heart disease risk by reducing cholesterol.
- Plan lunch and dinner in the following way. Divide the plate so that the meal is comprised of half vegetables, one quarter carbohydrates, (such as corn, brown rice, whole-grain bread or potato) and one quarter protein, such as fish. Choose fresh fruit for dessert.
- Choose whole grains, fresh fruits, vegetables, dried beans and peas. Examples of whole grains include oats, whole wheat, corn, rye, barley, brown rice, millet and quinoa. Whole grains contain fiber and are high in vitamins and minerals.
- Choose foods containing mono-unsaturated fat or Omega 3 fat most of the time. Polyunsaturated fat may be used in moderation. Saturated and hydrogenated fat should be limited or avoided.

- Monounsaturated fat — found in olive, peanut and canola oils; nuts; and seeds
- Omega 3 fat — found in fatty fish, flax seed, nuts, seeds
- Polyunsaturated fat — found in sunflower, safflower, soybean, corn and sesame oils
- Saturated fat — found in animal fat (meat, poultry, cheese, butter), palm and coconut oils
- Hydrogenated or partially hydrogenated oil (trans-fats) — found in desserts, baked goods, crackers, chips, fast foods, margarine and shortening
- Use low-fat dairy or dairy substitutes in place of regular dairy. Milk, sour cream, cottage cheese, ice cream, cheese and yogurt are all available in low-fat forms. Instead of butter or stick margarine, use light margarine in a tub or liquid form. Butter-flavored low-fat yogurt spreads like Brummeln-Brown®, butter-flavored cooking sprays, and fat-free butter substitutes are also available.
- Limit meat consumption to a three-ounce serving per meal and six ounces per day to reduce cholesterol and saturated fat intake. Skinless chicken or turkey breast, pork tenderloin and very lean cuts of red meat are wise choices.
- Sauces, gravies, salad dressings and pastries contain hidden saturated fat. Look for low-fat versions of these foods and use them in moderation.
- Limit cholesterol and especially saturated fat. Cholesterol is found only in animal foods. Foods that are high in cholesterol and saturated fat (cheese, meat, fatty poultry) should be avoided or limited. Avoid organ meats, such as liver. Foods that are high in cholesterol but low in saturated fat, such as fish and shellfish, may be eaten in moderation. Egg yolks should be limited to three or four per week.
- Another type of fat found in the blood and associated with heart disease is triglycerides. Limiting refined carbohydrates, eating high-fibnutrient-dense carbohydrates, eating heart-healthy fats, and reducing weight (body fat) is recommended. Avoid alcoholic beverages if your triglyceride level is high.

## Salt and Caffeine

The average American consumes about six to eight grams of salt daily (about three to four teaspoons). The body does not require this much sodium. A high-salt (sodium) diet may increase the risk of high blood pressure.

### Keep the following points in mind

- Most processed foods are high in sodium
- Salt is about half sodium
- Sodium is found naturally in most foods, in small amounts

### To reduce sodium intake, EAT MORE

- Fresh fruits and vegetables
- Foods prepared with herbs/lemon and small amounts of oil
- Unprocessed foods
- Low-salt and low-sodium foods

### To reduce sodium intake, EAT LESS

- Canned items and frozen dinners
- Condiments such as pickles, olives and salad dressings
- Processed meats and luncheon meats

Caffeine may be a contributing factor to health problems such as heart disease, cancer and diabetes. Excess caffeine use can cause irregular heart rhythms, increases output of stomach acid and acts as a diuretic. Ideally, choose decaffeinated beverages. If you are going to consume caffeinated beverages, limit the number to two eight-ounce cups or less per day.





# Blood Pressure

Blood pressure is the force exerted by the blood on the walls of the arteries (blood vessels that carry blood from the heart to all parts of the body). This force is created by the pumping actions of the heart. Each time the heart beats, it pushes blood out into the arteries. The arteries expand and contract to carry the blood from the heart to parts of the body. Blood pressure remains low or normal if the arteries expand as the heart beats, allowing blood to flow freely. If the arteries are constricted, resisting blood flow, blood pressure is higher.

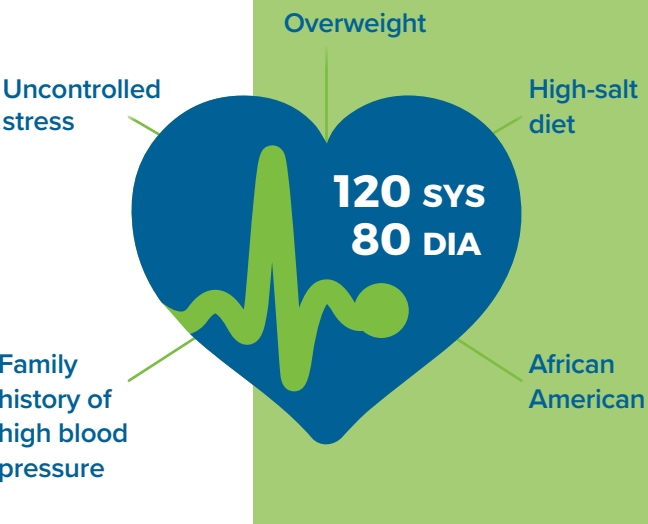


Think about blowing up a balloon. Have you ever tried to blow up a balloon and couldn't because it wouldn't stretch to let the air in? Did you find that if you blew with greater force, the air went into the balloon? This is similar to what happens when the heart pumps blood into constricted arteries. The greater the resistance, the harder the heart must push.

Your blood pressure changes many times during the day. Blood pressure goes up with stress, excitement, fear or exercise. It should go down during relaxation. When blood pressure remains high all the time, it is called high blood pressure or hypertension.

# Risk Factors for High Blood Pressure

*Certain characteristics identify a person at risk for having high blood pressure:*



Blood pressure is lowest when the heart rests between beats. This is called diastolic pressure and is the bottom number of a blood pressure reading.

Normal blood pressure is 120/80.

A blood pressure reading of 140/90 or higher is considered high blood pressure; it must be monitored closely and treated appropriately.

My blood pressure is:\_\_\_\_\_/\_\_\_\_\_

My medications to control my blood pressure are:

\_\_\_\_\_  
\_\_\_\_\_

# Blood Pressure Medications

Medications can control high blood pressure by making the arteries relax so the blood flows with least resistance. Diuretics (water pills) help the body eliminate extra fluid and salt; this helps lower blood pressure.

Medications must be taken on schedule. Never stop taking a drug because your blood pressure is normal or because you feel okay. Report side effects (dizziness, nausea, etc.) to your physician.

# Diabetes

Insulin is a hormone manufactured by the body; it turns sugar and starch into energy. Diabetes is a disorder in which insulin is either inadequately produced by the body or does not function properly in the body. When insulin is absent or not functioning normally, excess sugar builds up in the blood; this excess amount of sugar is associated with a rise in blood fat levels and thus, the development of atherosclerosis.

Diabetes can usually be detected early through regular medical checkups. Blood sugar levels can be controlled with proper treatment. Some treatments for diabetes include diet modification, weight control, regular exercise and stress management. Insulin injections or diabetic pills may also be required.

Contact your physician for additional resources to help you manage your diabetes.

# Stress Management

## What Is Stress?

Stress is our body's response to something in the environment that places a demand on our system.

Each person responds to stress in a predictable biological manner. Stress prepares the body for an emergency by quickly activating hormones that make us stronger and more alert, and cause the blood to clot faster. Our bodies can tolerate short-term stress, but long-term activation of these hormones may lead to serious health problems, such as coronary artery disease, high blood pressure, diabetes, depression and sleep disorders.

We need some stress to have enough motivation to get up in the morning, but too much makes us vulnerable to stress symptoms and distress.

## What things can I do to cope with stress?

**Exercise:** Exercise redirects the mind and body into positive action. As the body relaxes, our minds can think more clearly and cognitive restructuring is then possible.

**Supportive Relationships:** Every person needs a connection with someone outside of themselves. Friends, animals and plants can provide comfort in times of distress, as well as a belief in God. If you have someone who will sit and listen, then you have a valuable resource. Allow people to nurture you at this time of your recovery. Your turn will come when someone needs you to be strong for them, and then you can repay the favor.

**Journal Writing:** Many people benefit from keeping a journal of their thoughts and feelings. It is a great way to find out more about yourself. It may also help to keep you motivated as you make changes in your lifestyle.

**Humor:** Laughter is often called internal jogging. It causes a release of endorphins in your body, which acts as a mood elevator. Try to see some humor in your life. Smile more often.

**Relaxation:** Relaxation techniques can be useful to break the stress cycle. They allow our body to calm down, and the blood pressure and heart rate to decrease. Choose a quiet place, away from distractions, and focus on deep, relaxing breaths as you think about a peaceful favorite place. Some people listen to music or use a specific relaxation tape for this purpose.

**The sooner you start, the better. Cardiac rehabilitation programs are a good place to learn more about stress management. See all of our cardiac rehabilitation centers under the "Contact Info and Resources" section.**



*If stress is a factor in your heart disease, start today to reclaim your balance. Sometimes it takes a crisis such as this to bring balance back to your life. Learn now to pace yourself and take care of your own needs. Recognizing the symptoms of stress can provide an early warning signal so that you may intervene for your own benefit.*



## Obesity

An alarming number of adults and children in the United States are significantly overweight (obese). Statistics show that the death rate for obese individuals is much higher than that for people of normal weight. Health problems associated with obesity include gout, diabetes, high blood pressure, high blood cholesterol levels and coronary artery disease.

Be aware that the only method of permanent weight control is to continually balance caloric intake with calories used. This can be done with a reduced-calorie diet and a progressive exercise program. A loss of one to two pounds per week is a reasonable goal.

Develop a pattern of eating and exercising that will keep your weight normal and provide long-term weight control.

### Points to Remember

- Set realistic goals for weight loss and be patient.
- Avoid “magic” pills or “miracle” drugs.
- Avoid starvation diets, extremely low-calorie diets or fad diets.
- Eat a variety of foods. No one food supplies all your body’s daily nutritional needs.
- Avoid using food to alleviate tension, worry and boredom.
- Develop a regular exercise program.
- Labor-saving devices, escalators, elevators and automobiles have taken much of the physical work out of living.
- Be aware of stumbling blocks like weekends, vacations and dining out.
- Reward yourself for pounds lost, but not with food. Try new clothes, a movie, a relaxing massage, etc.





# Nutrition after Heart Surgery

Knowledge of the following nutrition principles will help you manage heart failure after heart surgery:

- Healthy foods
  - Low-salt (sodium) meals
  - Amount of fluid
- Amount and type of fat
  - Amount of alcohol or caffeine

## Healthful Foods

Eat a variety of nutritious foods to help yourself feel better, such as:

- Fresh fruits
  - Fresh vegetables
  - Whole grains
- Beans
  - Lean vegetarian protein
  - Lean meats

Balance your meals by including carbohydrates from fruits, whole grains and low-fat dairy plus a lean source of protein. In addition, it may be easier to eat smaller portions more often.

## Reduce Sodium Intake

Low-salt (sodium) meals: Fluid may collect in the lungs, or other parts of the body, due to congestive heart failure because the heart is not pumping as well as it should. Limiting the amount of salt/sodium in your meals will help reduce your body’s inclination to take in more fluid and retain it.

### What is sodium?

Sodium is an essential mineral that helps the body move water in and out of cells, maintains blood pressure, and helps muscles, including the heart, relax. In a healthy body, a balance is maintained between sodium and water by the body organs.

### Where is sodium found?

Small amounts of sodium are found naturally in all foods. Large amounts of sodium are often added to foods to enhance flavor and extend shelf life. The majority of this added sodium is added as salt. One teaspoon of table salt contains about 2,000 milligrams (two grams) of sodium.

### How much do I need?

With congestive heart failure, most doctors recommend limiting the amount of sodium to two grams each day (2,000 milligrams). Limit sodium to 700 milligrams or less per meal if three meals are eaten during the day.

## A Note on Medications

Although few prescription medications contain sodium, many over-the-counter medications do, such as:

- Antacids
  - Cough medicines
  - Analgesics
- Laxatives
  - Some toothpastes
  - Vitamin C (as sodium ascorbate)

If these products contain more than 115 milligrams per dose, there must be a warning on the label. If you are in doubt, ask your physician or pharmacist if the medication is appropriate for your use.

### How much sodium is in my food?

Most foods at the grocery store have labels on them with nutritional information. This label will give you the sodium content in “mg” (milligrams) contained in one serving of the food. Be sure to look at the serving size. You may actually eat more or less than one serving.

Foods without labels create challenges. Fresh foods like fruits and vegetables contain only small amounts of natural sodium. Processed foods that may not be labeled like pastries and ready-made foods (fast foods) are almost always very high in sodium.

### Limit high-sodium foods

Foods to limit or avoid on a two-gram (2,000 milligram) sodium diet:

#### Protein

- Bacon
- Processed cheese
- Corned beef
- Dried fish or fish canned with salt
- Frankfurters/hot dogs
- Ham
- Dried meat or canned meat
- Kosher meat
- Luncheon meat (cold cuts)
- Sausage
- Vegetarian meat analogs
- Commercial chili
- Salted nuts

#### Fruits and Vegetables

- Salted french fries
- Pickles, relish
- Potato salad
- Sauerkraut
- Tomato juice or vegetable juice

#### Grains

- Hot instant cereal, pancakes, waffles
- Salted crackers, pretzels and popcorn
- Commercially prepared pasta dishes
- Stuffing mix and instant rice mix

## Amount and Type of Fat

Eat low-fat meals that emphasize fruits, vegetables, whole grains and beans. Also include low-fat proteins prepared without additional fat such as fish, chicken breast and very lean meats. However, limit your portion to three ounces.

Vegetarian proteins such as tofu, beans and legumes are heart-healthy choices that may be substituted for meat.

Limit most types of cheese, as it is high in saturated fat as well as sodium. Eggs may be used three to four times weekly. A small amount of nuts, seeds, olive or canola oils are good choices to incorporate healthier fat.

Avoid or limit butter, most margarines, fried foods and fatty dessert items. The use of non-caloric fat-free sprays such as Pam is recommended.

### Nutrition Facts

Serving Size: ½ cup  
Servings Per Container: 6

| Amount Per Serving     |    |                      |    |
|------------------------|----|----------------------|----|
| Calories 110           |    | Calories from fat 20 |    |
|                        |    | % Daily Value        |    |
| Total Fat 2.5g         |    | 4%                   |    |
| Saturated Fat 0.5g     |    | 3%                   |    |
| Cholesterol 0mg        |    | 0%                   |    |
| Sodium 200mg           |    | 4%                   |    |
| Total Carbohydrate 21g |    | 7%                   |    |
| Dietary Fiber 9g       |    | 37%                  |    |
| Sugar 10g              |    |                      |    |
| Protein 3g             |    |                      |    |
| Vitamin A              | 6% | Vitamin C            | 0% |
| Calcium                | 2% | Iron                 | 2% |

#### Fats

- Bacon fat
- Cured ham hocks

#### Desserts

- Doughnuts
- Pastries
- Instant pudding
- Cookies
- Cake

#### Miscellaneous

- Sports drinks
- MSG
- Canned or dried soups
- Bouillon
- Broth
- TV dinners
- Fast foods

- Salted gravy

- Soy sauce

- Barbecue or steak sauce

- Cheese sauce

- Pizza or spaghetti sauce

- Tartar sauce

- Worcestershire sauce

- Garlic or celery salt

- All spice mixes

- Pickles, pickle relish

- Seasoned salts

- Olives

- Potato or corn chips

## Amount of Alcohol

Discuss any alcohol use with your doctor and health professionals.

## Amount of Caffeine

Limit your caffeine intake to two eight-ounce cups of caffeinated beverages or less. Talk to your doctor about avoiding caffeine use completely if you have an irregular heartbeat.

## Supplements and Herbs

Discuss any vitamin, mineral or herb use with your doctor and nutrition professional.



# Exercise

## Beginning Exercise

Each exercise session should have three phases: the warm-up, exercise activities and the cool-down. The warm-up helps you prepare for an effective exercise session in which you don't injure your muscles. It also helps increase your cardiac workload gradually. The warm-up should increase circulation as well as stretch and warm the muscles. Doing some range-of-motion exercises and walking slowly for five to 10 minutes is usually adequate for warming up.

The purpose of the cool-down phase is to gradually reduce circulation and cardiac work. To cool down, walk five to 10 minutes and/or repeat the range-of-motion exercises.

Do not stop exercising suddenly. Exercise activities should be carefully planned.

**Progression:** After your heart attack or surgery, exercise will be limited for awhile. You should continue the walking program you began while in the hospital. Take a walk three or four times each day for 5 to 10 minutes each time. Gradually increase the distance and time. These walks should make you feel refreshed, not exhausted or short of breath. Increase exercises gradually according to your tolerance for each level of exercise. Length of time or intensity can be increased. In most cases, increasing the length of time you exercise will promote cardiovascular fitness without risk or strain to the heart. Be consistent - don't exercise a lot one day and not at all the next.

Your exercising heart rate should be determined by your physician or cardiac rehabilitation nurse. It will serve as a guide for adjusting the duration and intensity of exercise. Adjusting the exercises will keep your pulse within your heart-rate range and you will be assured a proper workout session.

An awareness of "perceived exertion" is another method for adjusting exercise levels. Perceived exertion is how hard you feel you are working; it is ranked on a scale of one to 20. One equals a very minimal workload, and 20 equals an extremely hard workload. You may find that the amount of exercise needed to achieve your desired perceived exertion number will vary due to many factors, such as changing physical fitness, a poor night's sleep, weight gain, illness, stress or fatigue.

| Perceived Exertion Levels |                 |
|---------------------------|-----------------|
| 1–7                       | Very Light      |
| 8–11                      | Fairly Light    |
| 12–13                     | Somewhat Hard   |
| 14–15                     | Hard            |
| 16–17                     | Very Hard       |
| 18–20                     | Very, Very Hard |

A perceived exertion level of between 11 and 13 should be your goal at approximately six weeks, progressively increasing your perceived exertion level to 12 to 15 as a long term goal.

If for any reason walking must be limited, substitute with a stationary bicycle. Do not use tension or resistance on the stationary bicycle at first; the workload will be sufficient without tension while healing takes place.

If your stationary bicycle has an arm activity connected, do not use that part in the early phase of recovery. If you have had open-heart surgery, consult your doctor or cardiac rehabilitation staff about an appropriate time to begin using the arm action on your bike.

Although swimming is a good cardiovascular exercise, avoid swimming for two to four months following bypass surgery so that the sternum and incisions are completely healed.

## Exercise Guidelines and Precautions

These guidelines can promote a safe exercise program

- Obtain approval from your physician before beginning an exercise program.
- Choose activities you like.
- At first, choose activities that require familiar skills.
- Increase the variety and intensity that requires familiar skills.
- Wear appropriate clothing and shoes for the exercise chosen.
- Avoid moderate to heavy exercise within two hours of eating.
- Avoid smoking before exercising.

- Avoid consuming caffeinated beverages before exercising.
- Avoid exercising in extreme temperatures.
- Avoid exercising on uneven or unsafe ground.
- Avoid sudden or strenuous activities.
- If you have not exercised for awhile, begin with low workloads.
- Do not push yourself beyond your limits to keep up with someone else.
- Stop exercising if you experience pain in your chest, jaw, neck or arm, or unusual shortness of breath, dizziness or fatigue. Report abnormal symptoms to your physician. If these symptoms persist, go to the hospital immediately.
- If you are a diabetic, monitor your blood glucose level to avoid complications.

## Benefits of Exercise

Exercise is beneficial because it

- Decreases resting blood pressure
- Decreases resting and exercising heart rates
- Improves muscle tone
- Develops collateral circulation to the heart muscle
- Provides an outlet for built-up tension, and helps you relax for rest and sleep
- Improves your ability to cope with stressful situations
- Provides an increased "zest for living"
- Lowers cholesterol and fat levels in the blood
- Burns calories, making it easier to lose and maintain an ideal weight
- Increases stamina

Exercise improves the quality of life at every age. Even if you have yielded to sedentary habits, you can improve your physical fitness.

When you stop an exercise program, the benefits are rapidly lost. Remember, exercise should be a lifelong commitment. AdventHealth offers a comprehensive-cardiac rehabilitation and fitness program that provides medical supervision and progress reports to your physician.



I used to walk: \_\_\_\_\_

My goal is: \_\_\_\_\_

■ I will speak to my cardiologist about cardiac rehab at my follow up appt.



# About AdventHealth

The AdventHealth Cardiovascular Institute treats more cardiology patients than any other medical facility in the United States. From around the world, patients seek out our specialists for treatment for a wide range of cardiac conditions. Increasingly, other hospitals and physicians are referring their most challenging cardiac cases to us because they know our highly skilled specialists — using the latest technologies— will provide quality care.

Treating highly complex cases means patients are inherently at higher risk. Using evidence-based care practices and comprehensive treatment, we are committed to providing quality cardiac care to all patients at each stage of their disease. The Heart Success Center and Trina Hidalgo Heart Care Center help recovering patients adopt a heart-healthy lifestyle — promoting long-term health and lifestyle changes.

## More people choose AdventHealth.

- Number one in cardiology volume in the nation\*
- Number one in vascular surgery volume in the nation\*
- Number one in open-heart surgery in Florida\*
- Number one in heart-transplant surgery in the Southeast \*\*

Sources: \*2016 Medpar data; \*\*2019 Scientific Registry of Transplant Recipients;

## AdventHealth Then & Now

| Established 1866: | Today:                                    |
|-------------------|---|
| 30 DOCTORS        | MORE THAN 80,000 PHYSICIANS & STAFF       |
| 1 UNIQUE FACILITY | 47 AWARD-WINNING HOSPITALS IN NINE STATES |
| 106 PATIENTS      | 5 MILLION+ PATIENTS SERVED ANNUALLY       |

## Chapter 5: Contact Information and Patient Resources

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# Support Organizations

## Community Resources

**Mended Hearts, Inc. Orlando Chapter #296 and Osceola Chapter #364.**

This is a Central Florida-based cardiac support group that offers help, support and encouragement to heart patients and their families. The objectives of the group are achieved through the participation of its members in monthly meetings and with the help of a team of former patients who volunteer to visit patients in the hospital.

Patients currently going through a heart event are offered support and written information by the former patients.

You may receive an information folder from a member of Mended Hearts, Inc., at the hospital, or for more information, visit [MendedHearts.org](http://MendedHearts.org).

If you do not live in the area, visit [MendedHearts.org](http://MendedHearts.org) to locate a chapter near you.

## Online Resources

In addition to this guidebook, there are several helpful resources for patients and family members who are preparing for or recovering from heart surgery.

**American Heart Association**  
[Heart.org](http://Heart.org)

**Fight Against Heart Failure**  
[FightAgainstHeartFailure.com](http://FightAgainstHeartFailure.com)

**Heart Failure Matters**  
[HeartFailureMatters.org](http://HeartFailureMatters.org)

**Heart Failure Society of America**  
[HFSA.org](http://HFSA.org)

**Mended Hearts**  
[MendedHearts.org](http://MendedHearts.org)

## Smoking-cessation Resources

**American Cancer Society**  
[Cancer.org](http://Cancer.org)

**Centers for Disease Control**  
[CDC.gov/Tobacco](http://CDC.gov/Tobacco)

**Great Start**  
(Program for pregnant women)  
1 (800) Quit-Now

**Truth Initiative**  
(Formerly American Legacy Foundation)  
[TruthInitiative.org/Topics/Patterns-use/Cessation](http://TruthInitiative.org/Topics/Patterns-use/Cessation)





# Glossary

**Angina:** Discomfort or pain that develops because of decreased oxygen to the heart muscle.

**Anticoagulant:** A medication that alters blood clotting time; also known as a “blood thinner.”

**Aorta:** The large artery extending out of the left side of the heart that carries blood from the heart to the body.

**Aortic Insufficiency:** A valve that is unable to close properly, allowing blood to back flow.

**Aortic Stenosis:** A narrowing or stiffening of the aortic valve.

**Arrhythmias:** Irregular heartbeats.

**Arteries:** Blood vessels that carry oxygen away from the heart to all parts of the body.

**Atherosclerosis:** Narrowing of the arteries due to deposits of cholesterol, fats, blood-clotting materials or calcium that forms within the inner walls of the arteries.

**Bacterial Endocarditis:** An infection of the heart’s inner lining or valves.

**Congenital Heart Disease:** An abnormal formation of the heart at birth.

**Congestive Heart Failure:** Increased workload on the heart due to too much blood in the heart.

**Coronary Arteries:** Blood vessels that supply blood to the heart muscle.

**Coronary Artery Bypass Surgery:** A surgery that increases circulation by bypassing the blocked artery, providing another

pathway for blood flow to the heart muscle.

**Coronary Artery Disease:** Coronary artery blockages due to plaque build-up within the inner walls of the arteries (atherosclerosis).

**Coronary Artery Spasm:** A sudden, temporary constriction of a coronary artery, interfering with blood flow to the heart muscle.

**Coronary Occlusion:** Another name for a heart attack.

**Coronary Thrombosis:** A blood clot in a coronary artery; another name for a heart attack.

**Coumadin:** An anticoagulant drug (blood thinner).

**Echocardiogram (Echo):** A type of ultrasound test that uses high-pitched sound waves that are sent through a device called a transducer. The device picks up echoes of the sound waves as they bounce off the different parts of your heart.

**Endocarditis Prophylaxis:** Antibiotics that are given before and after a surgical or dental procedure to prevent a valve infection.

**Heart:** A hollow, four-chambered, muscular organ that pumps blood.

**Heart Attack:** Permanent damage to the heart muscle due to lack of blood and oxygen supply.

**Heart Block:** A problem conducting the electrical impulse from the atrium to the ventricles.

**Ischemia:** A decrease of blood and oxygen supply to the heart muscle.

**Lungs:** The organs that bring oxygen into the body and eliminate carbon dioxide from the body.

**Mitral Valve Prolapse (MVP):** A common, rarely serious, abnormal closing of the mitral valve.

**Myocardial Infarction (MI):** Another name for a heart attack.

**Nitroglycerin (NTG):** A medication that expands blood vessels, increasing blood flow.

**Normal Sinus Rhythm (NSR):** A heart rate between 60 and 100 beats per minute.

**Oxygen:** A chemical element that humans, animals and plants must have to live.

**Percutaneous transluminal coronary angioplasty (PTCA):** A procedure for improving blood flow to the heart muscle.

**Pericarditis:** An inflammation of the sac surrounding the heart.

**Plaque:** Fat deposits that build up within the inner walls of the arteries.

**Potassium:** A mineral needed by the body; low potassium can cause irregular heart rhythm.

**Premature Atrial Contraction:** A common rhythm disturbance originating in the upper portion of the heart.

**Premature Ventricular Contraction:** A common rhythm disturbance originating in the lower portion of the heart.



**Prolapsed:** A valve that bulges or flops.

**Prophylaxis:** See Endocarditis Prophylaxis.

**Regurgitating Valve:** A valve that is unable to close properly, allowing blood to back flow.

**Risk Factors:** Inherited tendencies and lifestyle habits that contribute to the development of coronary artery disease.

**Sinus Node:** The area of the heart that initiates electrical impulses, causing the heart to beat.

**Stenosis:** A narrowing or stiffening of the valves that decreases their effectiveness.

**Sternum:** The breast bone.

**Tachycardia:** A heart rate greater than 100 beats per minute.

**Valve:** Heart tissue that acts as a one-way door.

**Valvuloplasty:** A procedure that uses a special balloon to open a stenotic valve.

**Vasodilator:** A medication that lowers blood pressure by relaxing or widening blood vessels, making it easier for the heart to pump.

**Veins:** Blood vessels that carry blood from various parts of the body back to the heart.



# After Heart Surgery

Know Your Zone Every Day



## Daily Check

**DO ALL OF THESE THINGS DAILY UNTIL DIRECTED BY YOUR SURGEON TO STOP.**

- Follow your daily food and drink recommendations
- Weigh yourself before breakfast and record
- Inspect surgical incisions, clean as instructed by surgeon
- Walk at least three times a day, with rest periods in between
- Cough, deep breathing, and incentive spirometry as directed
- Take medications as prescribed
- Check blood sugar as directed (if you are diabetic)



## Green Zone

**YOUR SYMPTOMS ARE UNDER CONTROL IF YOU:**

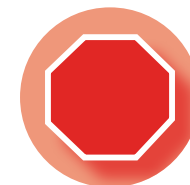
- Are able to do your daily activities without shortness of breath
- Do not experience an increase in swelling of feet, ankles, legs or stomach
- Do not gain more than 3 pounds in 24 hours, or 5 pounds in 48 hours
- Do not have redness, drainage or odor from incisions



## Yellow Zone

**CALL YOUR DOCTOR IF YOU EXPERIENCE ANY OF THE FOLLOWING :**

- Shortness of breath or sharp pain with deep breaths
- Heart rate less than 50 or greater than 120 beats per minute
- Temperature greater than 100.5 degrees F
- Weight gain of 5 pounds in 2 days
- Surgical incisions develop new redness, drainage or odor
- Increasing swelling of feet, ankles, legs or stomach
- Appetite is not improving



## Red Zone

**IF YOU EXPERIENCE ANY OF THE FOLLOWING, CALL 911. DO NOT DRIVE YOURSELF TO THE EMERGENCY DEPARTMENT.**

- New onset of chest discomfort that is different from your incisional pain
- Shortness of breath, difficulty or fast breathing, coughing up blood
- New rapid or irregular heart rate
- Sudden numbness or weakness in arms or legs, slurred or altered speech





POCKET



