



# Health Facts for You



Caring for your heart after a  
heart attack

**UW**Health



The staff of the Heart, Vascular and Thoracic service line welcomes you to our inpatient units, clinics and testing areas. We are glad you have chosen UW Health as your health care provider. We are committed to providing you with outstanding patient and family centered care. You and your family are the most important members of the health care team.

During your visit with us, you will meet many health care professionals who will be partners in your care. These members of your health care team will work together to provide great care while meeting your specific needs.

Your health care team will talk with you and share complete information and invite your input about your plan of care. We hope that in doing so, we are clear and easy to understand. We urge you to ask questions if you have concerns or need more information.

This booklet includes information on these topics:

- The heart and how it works
- Heart disease and related tests and treatments
- What to expect in the hospital
- Risk factors for heart disease and how to modify them
- Heart healthy self-care skills such as diet and exercise
- Medicines used after a heart attack to keep you well
- A plan for your follow-up care
- How to seek emergency care, if you need it

This is **your** book. Write notes in it or highlight things that are important to you. Keep a running list of questions. Ask us these questions and tell us about your concerns and fears. We want you to be involved in making decisions about your health care. We invite family members to learn with you so they can better help you as you recover. We are committed to meeting all your health care needs. Please let us know if you have any concerns about your care.

## Your Health Care Team

There are many people who help care for you when you have a heart attack. Each member of your health care team has a special role in your care. You are the focus of each member of your team. Like the picture below, you are the center of attention.



Your **cardiologist** is the doctor in charge of your care in the hospital. Your cardiologist leads the team and trains the other doctors on the team.

Your **family members and friends** are important members of your team. Supporting you and your loved ones is the focus of each of your health care team members. When you think of ideas about how your health care team can help you or your loved ones, please share those ideas.

**Nurses and nursing assistants** are the members of your health care team who help you with your daily care while you are in the hospital. Nurses are the primary team members who provide care for you while you are here. They help you with your medicines, educate you and your family, and work closely with the other members of your team. Nurses also do assessments during the day and night for your safety. They share the information they gather with your other team members. Nursing assistants help you with care such as eating and bathing.

The **advanced practice provider team** is made up of nurse practitioners and physician's assistants. They work closely with you and your cardiologist.

A person from the **cardiac rehab** department works with you after your heart attack to help you start your cardiac rehab program. This person talks with you about safe activities and lifestyle changes you can make. He or she also can refer you to a cardiac rehab program near your home so you can keep doing your rehab after discharge.

A **case manager or social worker** is a team member who helps you with any special needs you may have as you prepare to go home. Some patients need lab draws, home health care, or rehab services.

**Respiratory therapist** is a member of the health care team who helps you keep your lungs healthy. They help people breathe by using many machines and devices if you need them. They provide inhaled medicines and assist you with treatments that clear mucous from the lungs. They educate you and your family and work closely with the other members of your health care team.

The **clinical nurse specialist (CNS)** is a nurse who is an expert in cardiac care. The CNS educates the staff so they can provide the best care for you. She is a resource to you and your family.

Your **residents and interns** are the doctors who work with the cardiologist as a part of their training.

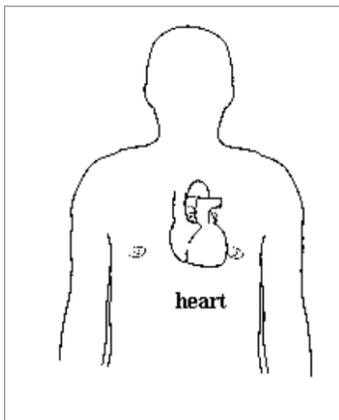
**Pharmacists** have special training in medicines. There are pharmacists on the cardiac unit who make sure your medicines are correct, safe and work as they should.

**Technicians or techs (lab, x-ray, EKG)** make sure your health care team members have the information they need to care for you. The lab techs draw your blood. The x-ray techs take x-rays if you need them. The EKG techs attach the EKG patches to check your heart rhythm.

**Consult services** may include diabetes management and kidney doctors (for some patients). Your cardiologist works with the consult services that meet your special needs.

**Support staff** includes team members such as the unit coordinator, nurse manager, clinical nurse specialist, administrative staff and volunteers. They keep the unit running smoothly and answer questions.

**Housekeeping and maintenance** work to keep the hospital and its equipment in good condition. Housekeeping staff keep your room and the rest of the hospital clean. Maintenance ensures that equipment at the hospital works as it should.



## The Heart and How It Works

### Your Heart

Your heart is a muscle in your chest. It is a little larger than your fist and weighs less than a pound. Your heart pumps blood to the lungs and to all parts of your body.

### The Chambers

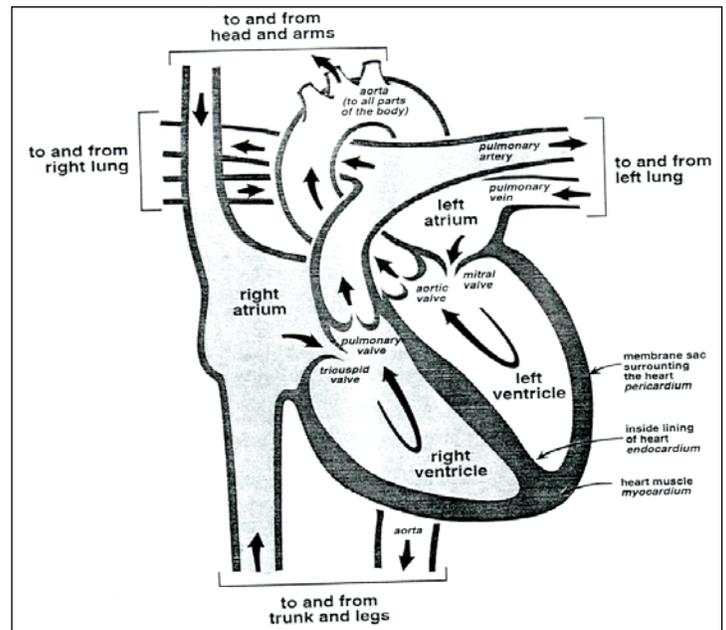
The heart has four chambers. A wall (septum) divides the heart into a right side and a left side. Each side of the heart is divided into two chambers. The upper chamber of each side is called the atrium. The lower chamber of each side is called the ventricle. Valves separate these chambers.

### The Valves

The valves allow the blood to flow in only one direction. Valves direct the flow of blood through the heart to the lungs and the

rest of the body. There are 4 valves in the heart.

- The tricuspid valve is between the right chambers of the heart.
- The pulmonary valve is between the right ventricle and the blood vessels.
- The mitral valve is between the left chambers of the heart.
- The aortic valve is between the left ventricle and the aorta, the large artery that carries the blood to the body.



### How the Heart Works

The heart pumps blood through the body. It carries oxygen and nutrients to the cells of the body so they can survive and do their jobs. The blood also carries waste products from the cells to the organs that get rid of the waste.

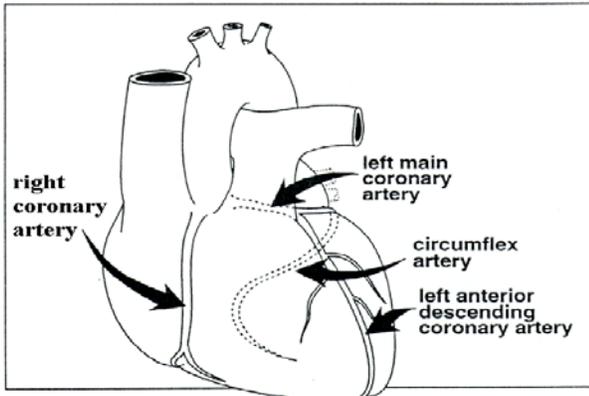
Your heart is a double pump. The right side pumps blood to your lungs where your blood cells pick up oxygen and then returns it to the left side of the heart. The left ventricle pumps blood to your body through the large artery called the aorta. As the blood circulates, oxygen is removed from your blood so your body can use it. Blood

that has lost some oxygen returns to the right side of the heart through your veins and is pumped to the lungs to get more oxygen. This process occurs with each heartbeat.

The work of the heart changes with your body's needs. When you exercise, your body needs more blood and oxygen. Your heart must pump harder and faster to send more blood to the body. When you sleep, less blood and oxygen are needed, and your heart slows down.

### Blood Supply to the Heart

The heart muscle itself must receive a constant supply of oxygen. The blood richest in oxygen is carried through arteries. These arteries are found on the surface of the heart. Two main heart (coronary) arteries, a right one and a left one, supply the heart muscle with blood. They divide into many smaller branches to go into the heart muscle.

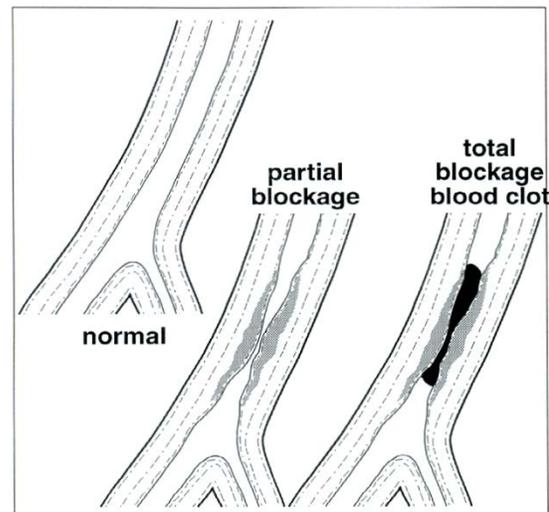


### Heart Disease and Related Tests & Treatments

#### Heart Disease

Heart disease is when the heart and blood vessels (arteries) no longer function as they should. A common type of heart disease is called coronary artery disease or CAD. This happens when the blood vessels in the heart are blocked. They cannot provide enough oxygen and nutrients to the heart and body.

Cells can die when they don't have enough oxygen. When the heart cells die, this is called a heart attack or myocardial infarction (MI). There is no cure for CAD but there are many tests, treatments and medicines that can help you live with CAD and prevent it from getting worse. Your long-term heart health depends on how well you change your risk factors for CAD and heart disease.



CAD in the heart arteries (also called atherosclerosis) is often due to a buildup of plaque (fatty deposits) along the inside wall of the blood vessel. As the plaque builds up, the artery narrows and blood flow to the muscle is decreased. When blood flow is decreased to the heart, you may have chest pain, shortness of breath or even a heart attack. If blood flow in the legs is decreased, leg pain can occur. Blockage of the arteries to the brain can also cause strokes or mini-strokes called TIAs (transient ischemic attacks). In all of these cases, the blood vessels narrow to the point that the tissues are at risk of not getting enough oxygen and nutrients.

We now know that these plaques can sometimes rupture. The body will then form a blood clot that will block blood flow. If the blood supply is not restored, the tissues will die quickly. Our bodies often warn us of this

decreased blood supply to the heart. The warning signs of a heart attack are:

- Chest pain or pressure
- Arm, back, shoulder, or jaw pain
- Pain that goes to your shoulder, arm, joint, back or jaw
- Shortness of breath
- Sweating
- Heart burn, nausea or vomiting

**Any person who has warning signs of a heart attack should call 9-1-1.** You should not drive a person who might be having a heart attack to the emergency room. If the person gets worse or passes out, the driver must pull over to help or get help. An ambulance crew can help a person having a heart attack as soon as they arrive and during the ride to the emergency room.

Learning about heart disease, how it can be treated, and how to prevent future problems will help you to live with heart disease.

**If you have diabetes or are a woman** you may not have chest pain during a heart attack. You will likely have some of the other warning signs or might have a vague feeling that something is not right. If you have any warning signs of a heart attack, call 9-1-1. Talk with your nurses and doctors about your warning signs.

### Diagnosis of a Heart Attack

A heart attack is diagnosed using 3 features:

1. Your description of your warning signs. People having a heart attack often have warning signs that something is wrong.
2. Presence of heart proteins in your blood. If any heart cells die, they release small proteins into your blood called troponin. Your blood will be drawn at the hospital. A troponin level above normal can show a heart attack. A troponin level

is drawn every 6 hours for a total of 3 blood draws.

3. Changes in your electrocardiogram (EKG). An EKG is done when you arrive at the hospital and when there are concerns for a heart attack. We look at the EKG for changes in your heart rhythm that might show signs of heart damage.

### Your Hospital Stay

Patients who have had heart attacks often stay in the hospital for a few days. This can vary and depends on your diagnosis and other issues that might be going on. During that time, you will learn about your treatments and what you can do to speed your recovery.

### Chest Pain in the Hospital

The goal is for you to be chest pain free. Pain is a sign the heart may not be getting enough oxygen.

**If you have chest pain, no matter how slight, tell your nurse.** Chest pain is a sign there could be a problem with your heart.

Your nurse will be asking you often if you are feeling any pain or discomfort. If you have any pain, you will be asked to describe it and also rate it based on a 0 to 10 pain scale.

0-10 Number Pain Scale

0	1	2	3	4	5	6	7	8	9	10
No Pain		Mild			Moderate			Severe		Worst Possible Pain

If you have chest pain, you may receive medicine to relieve your pain. The medicine may cause you to become dizzy or lightheaded. Nitroglycerin is a common medicine used for chest pain and it can cause headaches and low blood pressure. Let your nurse know if you notice these issues.

Your nurse will check your blood pressure often. We will also do an EKG.

### **Heart Monitor or Telemetry**

The monitor will alarm for changes in your heart rhythm in your room and at the nurses' station. The nurse will review the alarms and check on you if they happen.

Wearing a heart monitor does not always mean you must stay in bed. You can move around in your room and in the hallway once a nurse tells you it is safe.

- If your cord attaches to your monitor, your nurse will help you walk.
- If your monitor is wireless, place the pack in the front pocket of your gown. It runs on batteries that need to be changed from time to time. Talk with a nurse before leaving the unit about where you can walk so your heart rate can be seen.

### **Activity**

Your doctors and nurse will let you know when it is safe for you to get up and about. Talk to your nurse if you need help walking and discuss how much walking you should do in the hospital. Walking is important in your recovery but we want you to be safe. We will talk with you about how much help you need when you walk. Your safety is very important to us.

Most patients can shower. Your doctors will figure out when it is safe for you to shower. If you are unable or do not want to shower, bathing can be done at the bedside with the help of a nurse or nursing assistant as needed. We urge all patients to do as much as they are able. We will talk to you about how much help you need for bathing or showering.

### **Eating and Your Appetite**

A heart healthy diet is very important in your recovery. Studies have shown a heart healthy diet can prevent further heart disease. You will be on a low fat, low cholesterol diet with no added salt and no caffeine. Your nurse and a nutritionist will teach you about a heart healthy diet. Be sure to rest at least a half hour after eating to decrease the workload on your heart. While in the hospital, you will be able to order your own meals using Room Service. We can give you more information about a heart healthy diet.

### **What to Expect in the Hospital**

#### **The Inpatient Unit (F4/5 or F4M5)**

Some people need to come to the intensive care unit (ICU) when they have heart problems that need to be closely monitored by doctors and nurses. Some patients do not need the ICU and can go to the cardiology unit (F4/5). Some patients need the ICU who may have:

- Severe heart attacks
- Severe heart failure
- Irregular, fast or slow heart beats
- Low blood pressure

On either unit, we will watch your vital signs, urine output, and lab values closely. We will also be watching for signs that your heart is recovering. We will measure what you drink for fluids and how much you urinate. Therefore, we ask that family and friends **do not** bring in food or drink, or empty bedpans and urinals.

**For the safety of all our patients, we are not able to allow flowers at your bedside while in the ICU. We will label and keep them at the desk for you.**

## Tests and Treatments

There are many tests and treatments for heart disease. Which tests and treatments are used depend on the type of heart disease you have. No matter what type of treatment is done, it does not cure heart disease. Your long-term heart health depends on how well you change your risk factors for heart disease. You and your doctor will choose the test and treatments that are best for you.

### Common Tests for Heart Disease

An **electrocardiogram or EKG** records your heart's electrical impulses. The EKG is used to find out if your heart rate and rhythm are normal. It helps your doctor to find problems or changes with your heart's rhythm.

An **echocardiogram (echo)** is an ultrasound that sends sound waves into the chest to bounce off the heart's walls and valves. The waves show the shape and movement of the valves on an echocardiogram. They also show the size of the heart chambers, the pumping strength, and the shape of the valves. This test doesn't hurt or pose a risk to you.

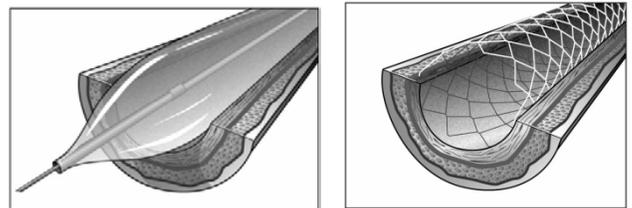
During **cardiac catheterization (angiogram)**, a doctor guides a thin plastic tube into a blood vessel in the arm or leg and then into the arteries of the heart. Dye is used to see if there are any blockages. Before this test, you will be asked to stop eating and drinking fluids. After the test, you will need to lie flat. Nurses will check on you often and watch for any signs of bleeding. For some patients, a stent (metal coil) is placed in the artery to keep it open.

### Common Treatments for Heart Disease

- **Diet and exercise** are vital to a healthy heart. They are discussed later in this booklet. Since we cannot really cure heart disease, diet and

exercise are the only ways to reduce the size of the current blockage and prevent further blockage.

- Stopping smoking is a way to improve your heart health.
- Medicines can increase blood flow to the heart muscle by relaxing the blood vessels in the heart. They can also decrease your heart rate and blood pressure. Your doctor, nurse, and pharmacist will discuss these medicines with you.
- **Angioplasty and stent placement** may be done for the blockage in the arteries to the heart. These are done during the cardiac catheterization. Each decreases blockage in a different way.
- **A balloon angioplasty (PTCA)** compresses the blockage against the walls of the artery.
- **A stent** is a small coil that is expanded in the artery to prevent it from reclosing.



### Coping with Changes

It is common to notice some changes in your mood and emotions after a heart attack. You may go from being energized and relieved that you feel better to feeling irritable and depressed. It is normal to feel anxious once you go home. Your energy level and appetite may also vary at times. As you feel better, these changes should occur less often. In the meantime, try to enjoy your hobbies and activities with your loved ones.

Some people feel depressed after a heart attack. If you feel depressed for several days, it is important to call your doctor.

Watch for these signs of depression:

- Poor appetite
- Trouble sleeping or sleeping but not really feeling rested
- Trouble focusing or concentrating
- Feelings of sadness that persist for several days
- Trouble regaining interest in others

### **Sexual Activity**

It is common to resume normal sexual activities after a heart attack. At first, you may not feel like being close because you do not have the energy or are worried about your heart. Many people have questions about this and many are afraid to ask. But, it is important to ask these questions so you can resume your normal life. Your doctor, nurse and cardiac rehab staff are ready to answer your questions about sexual activity. For most people, you can resume sexual activity when you can climb 2 flights of stairs. Check with your doctor to see if this is true for you.

### **Care after You Leave the Hospital**

Your doctor will decide when you are ready to be discharged. Please arrange to have someone drive you home and be there for you during your first few days of recovery. A clinic appointment will be made for you to see your cardiologist several weeks after you leave the hospital. Your local doctor will follow any routine health concerns. You may also be scheduled for follow-up tests to evaluate your heart.

### **When to Call**

**Call 9-1-1** if you feel:

- Chest pain or pressure
- Arm, back, shoulder, or jaw pain
- Pain that goes to your shoulder, arm, joints, back or jaw

- Shortness of breath
- Sweating
- Heart burn, nausea or vomiting

Call your primary doctor or your UW Health Heart and Vascular Care doctor at **608-263-1530** if you notice:

- Weight gain of more than 3 to 5 pounds in one week or 3 or more pounds in one day
- Swelling of your hands or ankles
- Dizziness
- A pulse more than 120 beats per minute or less than 60 beats per minute
- A temperature greater than 100.4°F (38°C) for 2 readings taken a few hours apart
- Night sweats
- Feelings of depression
- Pain, redness or swelling at a site of one of your tests (like your arm or groin)

### **Driving**

You will be able to resume driving in \_\_\_\_\_ weeks.

### **Return to Work**

The time it takes to heal after a heart attack varies. When you can return to work depends on what kind of work you do and the extent of your heart attack. Talk with your doctor about what is best for you. Plan to resume working in \_\_\_\_\_ weeks.

### **Medicines**

Always talk with your doctor and pharmacist about your medicines. The medicines listed here are common medicines for heart disease but your list of medicines may be a little different or change over time.

You may be taking several medicines after you go home. You will need to know:

- The names of each medicine
- What it does for you and your heart
- How much you take (dose)
- How often you take it (frequency)

A nurse or pharmacist will review your medicines with you before you go home. They will help you to learn about drug reactions and side effects. It is important to call your primary doctor if you notice side effects from your medicines that are difficult for you. Do not stop taking any of your medicines before you talk to your doctor. Some of these medicines are important for your heart and might cause harm if you stop taking them too soon.

**Do not take other drugs, even over-the-counter drugs without checking with your doctor.** It is helpful for you to keep a current list of your medicines. We will provide this for you before you go home. You should update your list as needed, please add all new medicines and remove them when they are stopped. Be sure to bring your list with you when you visit your doctor.

### **Common Medicines to Treat Heart Attack**

**Aspirin:** Bayer<sup>®</sup>, Halfprin<sup>®</sup>, Ecotrin<sup>®</sup> or other brands of aspirin. How aspirin works:

- Prevents platelets from sticking together to make a clot
- Keeps platelets slippery
- Blocks inflammation that is linked to heart disease and stroke
- Reduces the risk of death or non-fatal heart attack in patients with a history of chest pain or heart attack.

### **Common Side Effects**

- Nausea/vomiting
- Rashes
- Muscle aches
- Bleeding in the lining of the stomach

**Platelet Inhibitors:** Clopidogrel (Plavix<sup>®</sup>), Prasugrel (Effient<sup>®</sup>) or Ticagrelor (Brilinta<sup>®</sup>). How platelet inhibitors work:

- Prevent platelets from sticking together. The way they do this is different than aspirin so it is important to take both aspirin and one of these platelet medicines.
- Reduce the chance of a blood clot forming on your heart stent
- Do **not** stop taking this medicine unless you talk to your doctor first

### **Common Side Effects:**

- Headache or general pain
- Dizziness
- Rash
- Bleeding

**Beta-blockers:** Carvedilol (Coreg<sup>®</sup>), Metoprolol (Lopressor<sup>®</sup>). How beta-blockers work:

- Allow the heart to beat slower and pump blood more efficiently
- Reduce the amount of work and energy the heart uses
- Have been shown to help patients live longer and feel better

### **Common Side Effects**

- Slow heart rate and low blood pressure
- May cause lightheadedness or dizziness
- Fatigue or weakness
- Impotence or problems with sexual function

**Nitrates:** Nitroglycerin (NitroQuick<sup>®</sup>, Nitrostat<sup>®</sup>). How nitrates work:

- Relax blood vessels to improve blood flow and oxygen to your heart to relieve chest pain
- Go under your tongue to dissolve
- Works in 1 to 5 minutes

Common Side Effects

- Headache
- Flushed face or skin
- Low blood pressure (change your position slowly)
- Fast pulse

**Cholesterol-lowering Medicines (statins):**

Simvastatin (Zocor<sup>®</sup>), Atorvastatin (Lipitor<sup>®</sup>), Pravastatin (Pravachol<sup>®</sup>) and Rosuvastatin (Crestor<sup>®</sup>). How cholesterol lowering medicines work:

- Blocks an enzyme in your blood that makes cholesterol
- Lowers your level of cholesterol, lowers bad (LDL) cholesterol and triglycerides
- May increase good (HDL) cholesterol
- Helps stabilize existing plaque

Common Side Effects:

- Headache
- Belly pain, cramps, diarrhea, constipation, and gas (take it with food)
- Muscle aches

**ACE Inhibitors (Angiotensin Converting Enzyme Inhibitors):**

Benazepril (Lotensin<sup>®</sup>), Enalapril (Vasotec<sup>®</sup>), and Lisinopril (Zestril<sup>®</sup>, Prinivil<sup>®</sup>). How ACE Inhibitors work:

- Dilates blood vessels and decrease the workload of the heart
- Makes the heart work more efficiently

- Have been shown to slow the progression of heart failure, and in some cases, improve heart function.
- Have been shown to help patients live longer and have a better quality of life

Common Side Effects

- Lower blood pressure and dizziness
- Kidney problems
- High potassium in your blood
- Dry cough
- Swelling of tongue or throat

**Over-the-Counter Medicines and Supplements to Avoid**

- Medicines that contain ibuprofen (Advil<sup>®</sup>, Motrin<sup>®</sup>) and naproxen (Aleve<sup>®</sup>). They will make you hold onto extra water and salt.
- Medicines that contain pseudoephedrine (Sudafed<sup>®</sup>) or phenylephrine found in many cough and cold medicines. These will raise your blood pressure.
- Preparations that contain ephedra (Ma-huang), Chinese herbs or Hawthorne (crataegus) products. These items can raise your blood pressure.
- Garlic, ginseng, ginkgo or coenzyme Q-10 as these may interact with platelet medicines and blood thinners.
- Vitamin E is not effective in preventing heart disease in most people.

If you are taking any over-the-counter medicines or any supplements, please discuss them with your doctor and pharmacist. There may be other medicines you are taking that can interact with supplements and over-the-counter medicines. Please be cautious about the benefits of herbal supplements and do not

take them in place of your regular medicines.

### **Questions for my Health Care Team**

If you have questions about your heart condition or any related services, please call. Our staff is here to help.

### **Important Phone Numbers**

Patient Business Services (billing)	<b>(608) 262-2221</b>
UW Health Heart and Vascular Clinic	<b>(608) 263-1530</b>
Cardiac Medical Intensive Care Unit (F4M5)	<b>(608) 263-8715</b>
Cardiology Nursing Unit (F4/5)	<b>(608) 262-4011</b>
Hospital Paging Operator	<b>(608) 262-2122</b>
Housing Accommodations	<b>(608) 263-0315</b>
Spiritual Care Services	<b>(608) 263-8574</b>
Patient Relations Office	<b>(608) 263-8009</b>

### **Spanish Version HFFY#6093s**

Your health care team may have given you this information as part of your care. If so, please use it and call if you have any questions. If this information was not given to you as part of your care, please check with your doctor. This is not medical advice. This is not to be used for diagnosis or treatment of any medical condition. Because each person's health needs are different, you should talk with your doctor or others on your health care team when using this information. If you have an emergency, please call 911. Copyright © 5/2018 University of Wisconsin Hospitals and Clinics Authority. All rights reserved. Produced by the Department of Nursing. HF#6093