



Penn Medicine
Heart and Vascular Center

CARE OF YOUR HEART





Penn Medicine

Welcome to Chester County Hospital

While we realize that no one likes to be hospitalized, we assure you that we will do everything we can to make your stay with us as pleasant as possible. Our health care team is committed to providing comprehensive care to you. We hope you will partner with us to help you attain and maintain a healthy and independent state of mind and body. This booklet will guide you through the basic anatomy of the heart and explain heart and vascular disease in simple terms. Information about diet and exercise are also reviewed. This booklet will help you to identify your own cardiac risk factors and help you to make health care goals that encourage a heart healthy lifestyle.

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HEART TRACKS
Cardiac Risk Assessment
can be found at
ChesterCountyHospital.org

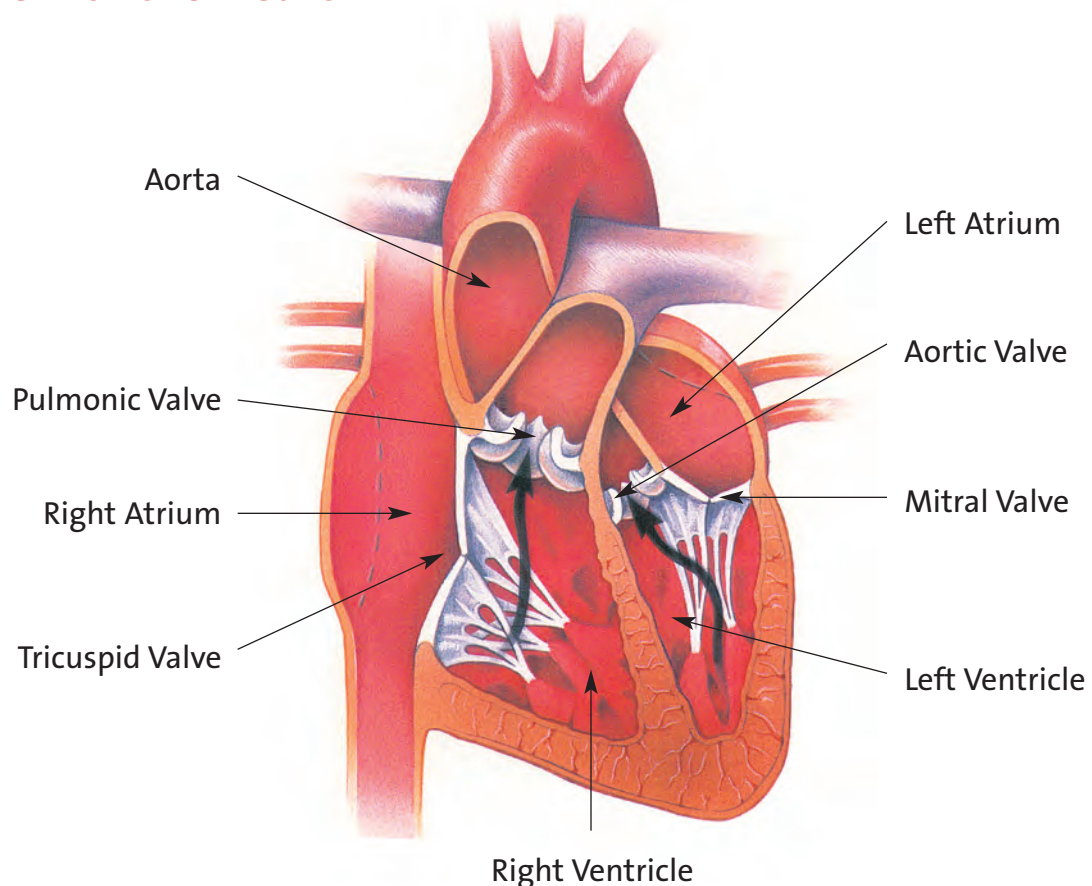
We are here to help you control, reduce and even eliminate the risk factors that can be changed. For assistance and further information please call our Cardiovascular Nurse Navigator at 610.220.0432.

If you are wondering about your heart attack risk, we have created an easy to use, online tool called the **HEART TRACKS CARDIAC RISK ASSESSMENT**.

This free heart risk assessment has been provided to help identify risk factors in your health profile that could lead to cardiovascular disease and will take roughly eight minutes to complete. It is confidential and will result in a printed report that you may consider sharing with your physician. It will help you learn:

- Your cardiovascular risk factors.
- Where to go for help to reduce your risk.
- If you qualify for a free in-person screening.

Inside View of the Heart



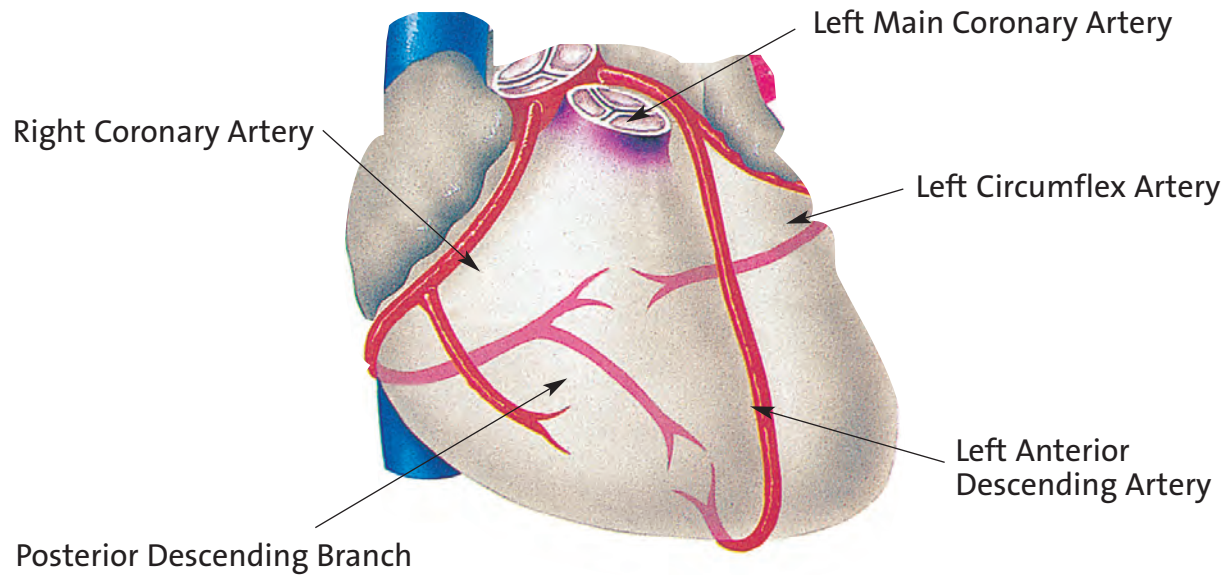
Your Heart

The heart is a pear-shaped organ about the size of a fist. It is located just to the left of the middle of the chest. The heart is made of a special kind of muscle called myocardium and is enclosed in a double-layered sac called a pericardium.

The heart muscle pumps blood nonstop to all parts of the body. Your heart pumps nearly five quarts of blood through your body every 60 seconds.

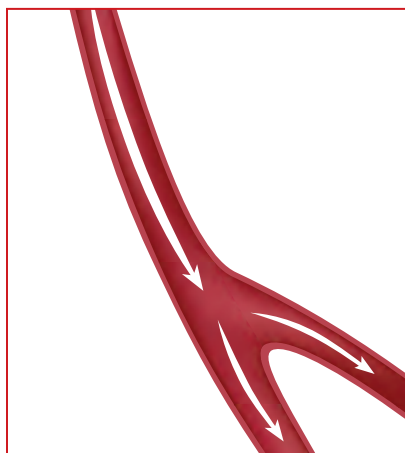
The heart is composed of four chambers and many large arteries and veins. The movement of blood through the heart is controlled by the opening and closing of the valves. A wall of muscle, called the septum, divides the heart into two sides: the left side pumps blood throughout the body, while the right side pumps blood through the lungs.

Outside View of the Heart

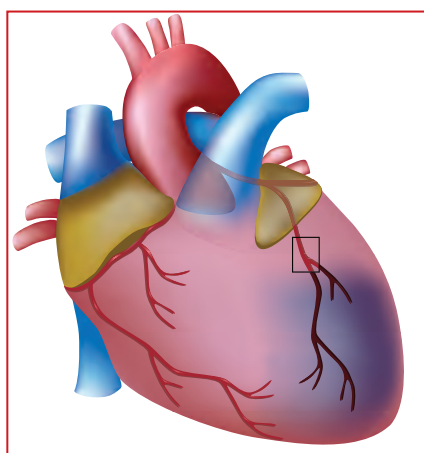


The heart muscle must also provide oxygen rich blood to itself. The coronary arteries, which lie on the outside of the heart, supply the heart muscle with oxygenated blood. There are several main arteries:

- The left coronary artery branches into the left anterior descending and the left circumflex. These branches supply the front, back and left side of the heart muscle.
- The right coronary artery supplies blood to the right side, the bottom, and also the back of the heart.



Healthy Artery



This is the outside view of the heart showing a heart attack in progress. The damage to the heart muscle occurs just past the blocked blood flow.



This is a close up view of what occurs inside a coronary artery during a heart attack.

Heart Attack or Acute Myocardial Infarction (AMI)

A heart attack or myocardial infarction occurs when oxygenated blood does not get to part of the heart due to a blockage or occlusion in one or more of the coronary arteries. Without blood and oxygen, part of the heart muscle dies.

A heart attack does not feel the same for every person. The most common sign of a heart attack is a feeling of pressure or heaviness on your chest, or chest tightness. Pain may extend to the neck, jaw, shoulders, or down the arm. Dizziness, fainting, sweating, nausea or feeling short of breath can also occur.

Other signs of a heart attack may include a feeling of pressure, fullness, tightness or burning under the breastbone. Women often have less common signs of a heart attack but may have stomach pain or nausea, dizziness or have trouble breathing. Some people may feel anxious, weak, tired or like their heart is racing.

If you do not have heart disease and you get any of these signs, you should:

- Stop what you are doing and sit or lie down.
- Call 9-1-1 if these signs continue for more than five minutes.

If you have heart disease and you get any of these signs, you should:

- Stop what you are doing and sit or lie down.
- Take nitroglycerin, as directed by your doctor, every five minutes as needed up to three doses.
- If symptoms are not relieved or get worse, call 9-1-1.

Do not drive yourself or allow anyone else to drive you to the Hospital!

Your treatment begins as soon as the emergency personnel arrive. Early treatment of a heart problem improves survival.

Risk Factors

Risk factors are habits or characteristics that make a person more likely to develop heart disease or have a heart attack. They are divided into two types: those that **CANNOT** be changed and those that **CAN** be changed.

Risk Factors that CANNOT be changed:

Family History : Heart disease runs in certain families

Age : The risk of heart disease increases as we get older

Gender : Heart disease is the leading cause of death for men and for women after menopause

Risk factors that **CAN** be changed or controlled:

Smoking

Smoking or tobacco use can double your risk of a heart attack. Tobacco has many negative effects on your heart and blood vessels. The nicotine in cigarettes and other tobacco products raises your blood pressure and heart rate. Other chemicals in tobacco products can also increase the tendency for the blood to clot, damage the lining in your arteries and tighten your blood vessels which can decrease the blood and oxygen being delivered to the heart.

Continuing to smoke or use tobacco products after a heart procedure increases the chance that your newly stented or bypassed blood vessels will start closing off again. If you smoke it is important that you quit! This is not easy for some people and you may need additional help. Discuss how to quit smoking with your doctor and/or health care professional. Call our Wellness Department at 610.738.2300 to discuss a stop smoking program.

♥ MY PLAN IS TO:

High Blood Pressure

My blood pressure is _____ / _____

Blood pressure is the amount of pressure placed on the arteries as the heart pumps blood out to all parts of the body. High blood pressure (hypertension) is often referred to as the “silent killer” because it may not produce any symptoms for years before any serious damage has occurred. High blood pressure increases the workload of your heart and arteries. This can lead to heart failure, heart attack, stroke, and kidney failure.

Blood pressure is recorded as a set of two numbers. The top number is the systolic pressure and represents the pressure when the heart beats while pumping blood to the body. The bottom number is the diastolic pressure and represents the pressure in the arteries when the heart is at rest, between beats.

Everyone’s blood pressure is different and your blood pressure may vary throughout the day. If your numbers stay above 120 systolic or 80 diastolic, this increases your risk. Your doctor may want to treat you. High blood pressure cannot be cured but it can be controlled. Healthy habits such as following a healthy diet, limiting salty foods, exercising for 150 minutes a week (30

minutes a day, 5 days a week), maintaining a healthy weight, quitting smoking, and managing stress will help prevent and control high blood pressure. Your doctor may also prescribe medication to control your blood pressure.

♥ MY PLAN IS TO:

Elevated Cholesterol/Triglyceride (Lipid Profile) Levels

My lipid profile is: Cholesterol: _____

HDL/LDL: _____ / _____

Triglycerides: _____

Cholesterol is a fat-like substance produced in the liver and found in normal body cells. The “good” type of cholesterol or HDL (think H for “healthy”) is important to the production and regulation of hormones. The “bad” cholesterol or LDL (think L for “lousy”) accumulates in the blood and blood vessels where problems begin.

As cholesterol builds up in the coronary arteries it forms a stubborn plaque that narrows the artery and restricts blood flow. The loss of blood flow results in a decreased oxygen supply to the heart muscle. If the blood flow is completely blocked it may result in a heart attack. High cholesterol is one of the major modifiable risk factors for heart disease. Lowering your cholesterol can significantly reduce your risk. You and your doctor can develop a diet and exercise plan to reduce your cholesterol. Your doctor may also prescribe medication for you.

Triglycerides are a fat made in the body. An elevated triglyceride level can be due to physical inactivity, being overweight, smoking, excess alcohol consumption or a diet high in carbohydrates. Your lipid profile is a report of the levels of cholesterol and triglycerides present in your blood stream. This is done as a fasting blood test. Treatment may include increased activity such as exercising for 150 minutes a week (30 minutes a day, 5 days a week), dietary changes and/or medication. Discuss with your physician how to best manage your cholesterol and triglycerides.

♥ MY PLAN IS TO:



Diabetes

My fasting blood sugar is: _____ mg/dL

and/or my HgA1C is: _____

Diabetes, or a family tendency toward diabetes, is associated with an increased risk of heart disease. Diabetes is the inability of the body to use glucose (sugar) properly. Untreated it can cause premature aging and damage to the blood vessel walls, including the coronary arteries. The coronary arteries of patients with diabetes are more susceptible to plaque formation and blockage which can cause a heart attack. Diabetes may also cause peripheral vascular disease, kidney disease and problems with eyesight. Exercising for 150 minutes a week (30 minutes a day, 5 days a week), improving nutrition, managing weight and stress can all help to control blood sugar levels, which helps in preventing heart disease. If you have diabetes, it is important to check your blood sugar at least once a day.

In general, a normal fasting blood sugar is less than 100 mg/dL. A blood sugar between 100-125 mg/dL is considered to be an impaired fasting blood sugar or prediabetes. Diabetes is diagnosed when the fasting blood sugar is 126 mg/dL or greater or a random blood sugar test result of >200mg/dl with symptoms present such as thirst and increased urination.

Another important indicator of your blood sugar control is a blood test called a Hemoglobin A1C (usually just called "A1C"). This gives an estimate of your average blood sugar over the past three months. The A1C goal for patients in general is <7%, or as close to normal as possible without causing low blood sugars.

♥ MY PLAN IS TO:

Obesity

My current weight is: _____

My current BMI is: _____

The heart has to pump harder to supply blood to an overweight body. As the heart works harder, it requires more oxygen. People who are overweight are at a greater risk for high blood pressure, diabetes, joint problems, and many other diseases. If you need to lose weight, losing as little as five to ten percent of your current weight can reduce your risk. Your BMI (Body Mass Index) is another important number. This is a measure of body fat based on height and weight. A normal BMI is between 20–25, overweight is 25–30 and obesity is a BMI of greater than 30. You can manage your

weight with heart healthy eating and exercise. Your doctor and other healthcare professionals such as a dietitian, a cardiac rehabilitation clinician or nurse will help you with your exercise and heart healthy eating plan. For help with your weight management please call our Wellness Department at 610-738-2300 or Outpatient Diabetes and Nutrition Services at 610.738.2835.

♥ MY PLAN IS TO:

Physical Inactivity

My current activity level is: _____

A sedentary life style, or lack of physical activity, doubles your risk of having a heart attack. If you have not been active before, starting slowly is one way to enjoy physical activity without making it seem overwhelming. Regular physical activity promotes cardiovascular fitness and can help lower blood pressure, and LDL (“bad”) cholesterol, raise HDL (“good”) cholesterol, decrease weight, help control diabetes and reduce stress.

There are many types of physical activities to choose from, but walking is the easiest, least expensive and has the lowest dropout rate of them all! To maintain and promote health, the American College of Sports Medicine and the American Heart Association recommend a minimum of 30 minutes of moderate-intensity aerobic activity (such as a brisk walk) 5 days a week.

Before starting any exercise program, you should talk to your physician.

♥ MY PLAN IS TO:



Additional Heart Related Topics

Cardiac Rehabilitation

Cardiac rehabilitation is a comprehensive, individualized program that includes supervised exercise training, nutritional counseling, stress management, and risk factor reduction. Outcomes such as returning to an active lifestyle, adjusting to new eating habits, reducing the number and/or amount of medications you need to take or simply having more energy for daily activities are some of the individual goals that are emphasized.

The rehabilitation staff includes nurses, exercise physiologists, and respiratory therapists. Cardiac rehabilitation is covered by most types of health insurance for a wide variety of heart conditions and procedures. For more information speak with your doctor or call the Cardiovascular Nurse Navigator at 610.220.0432.

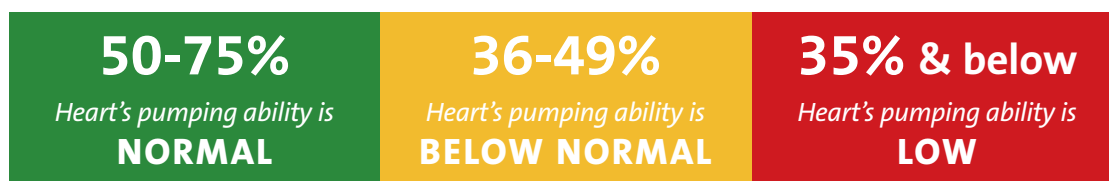
Heart Failure

Heart failure is a medical problem that means your heart is not pumping enough blood to the body. It does not mean your heart stopped. Heart failure can affect the left or right side of the heart or both sides. You may feel tired, weak and/or short of breath. You can also have swelling, or fluid build-up in your legs, feet, stomach, and lungs.

There are two types of heart failure:

- Systolic heart failure is when the heart does not squeeze strongly enough.
- Diastolic heart failure is when the heart does not relax properly so less blood enters the heart in between beats.

Ejection Fraction (“EF”) is an important measurement of how healthy the pumping action of the heart is. It is the amount of blood your heart pumps out of the left lower chamber (ventricle) with each heartbeat. A normal EF is 50-75%.



Ask your doctor what is my ejection fraction? What does it mean? What do I need to do about it?

If you have been told you have Heart Failure:

- Do not skip any of your medications.
- Weigh yourself at the same time each morning after going to the bathroom and before you eat breakfast.

- Call your doctor if you gain more than 2-3 pounds overnight or 5 pounds in one week.
- Eat a low salt diet. This means less than 2000 mg (milligrams) each day. Avoid canned and highly processed foods. For more information on a heart healthy diet see page 12.
- Unless your doctor tells you something different, limit how much you drink each day to two quarts (64 ounces).
- Work to control your risk factors for heart disease (see pages 3-7). Ask your doctor if you could benefit from attending Cardiac Rehabilitation (see page 8).

Remember, call your doctor for swelling that is worse than usual, if you gain more than 2-3 pounds overnight or 5 pounds in a week, have shortness of breath at rest or more than usual, or have increased or new difficulty breathing during regular activities or exercise.

If you would like additional information on heart failure or your ejection fraction, speak to your healthcare provider. You may also call to speak with our Cardiovascular Nurse Educator at 610-738-2583.

Stroke

A stroke is a brain attack that occurs when the blood supply to part of the brain is suddenly shut off by a blood clot or piece of plaque (ischemic stroke) or when a blood vessel in the brain bursts, spilling blood into the spaces around the brain or within the brain tissue (hemorrhagic stroke). Like a heart attack causes heart cells to die, a brain attack, or stroke causes brain cells to die. The results can be very mild to very serious, and can be temporary or permanent.

A transient ischemic attack or TIA, sometimes called “mini- stroke”, is a warning sign for stroke. The symptoms are like those of a stroke but usually last only a few minutes to a few hours. Signs and symptoms of stroke or TIA are the same:

- Sudden numbness or weakness of the face, arm or leg, especially on one side of the body
- Sudden confusion, trouble speaking or understanding
- Sudden trouble seeing in one or both eyes
- Sudden trouble walking, dizziness, loss of balance or coordination
- Sudden severe headache with no known cause

If you experience any of these symptoms, call 9-1-1. Do not drive yourself or have anyone drive you to the hospital. The best treatment for a stroke is prevention. Risk factors for stroke are similar to risk factors for heart disease. You should know your personal risk factors and work with your health care provider to control those risk factors that can be controlled. For more information about stroke and TIA, speak with your physician or call our Stroke Coordinator at 610.431.5059.

Peripheral Vascular Disease (PVD)

Peripheral Vascular Disease (PVD) otherwise known as Peripheral Artery Disease (PAD) is a condition characterized by the narrowing of the arteries that carry blood from the heart to the rest of the body. When the arteries become narrower, blood flow to the extremities and organs may be reduced. PVD is caused by atherosclerosis, the same condition that cause narrowing of the arteries that supply blood to the heart muscle.

Patients who have heart disease are at a greater risk to develop PVD and the risk factors are the same. Many people experience no detectable symptoms. When there are symptoms, they may vary depending on which arteries are affected by the disease. Some commonly affected arteries are those in the kidneys, legs, arms and neck. Some frequently reported symptoms include claudication (dull, cramping pain in hips, thighs or calf muscle), burning or tingling in the feet, non-healing sores or ulcerations of the legs and/or feet, and changes in skin color or an extremity (reddish, bluish or pale). Treatment for PVD may require medication, lifestyle changes, interventional procedures or surgery. For more information please call the Nurse Navigator at 610.220.0432.

Arrhythmias

An arrhythmia is an abnormal rate and/or rhythm of the heart. Because of this abnormal heart rhythm, you may experience a heart rate that is faster than normal (called a tachycardia), slower than normal (called a bradycardia) or an irregular pattern of heart beats.

Many people will experience an arrhythmia, and most are harmless. However, some arrhythmias can be harmful and even life-threatening. During an arrhythmia, the heart may not be able to pump enough blood to the brain and body. This can cause dizziness, loss of consciousness and possibly death. This condition is called Sudden Cardiac Arrest (SCA). If not treated with cardiopulmonary resuscitation (CPR) and an electric shock, death occurs within minutes.

Many people think a heart attack and cardiac arrest are the same, but they are not. In some cases, a heart attack may cause an arrhythmia that results in cardiac arrest, but other heart problems such as heart failure can cause arrhythmias too. The most common arrhythmia is atrial fibrillation. This is a fast, irregular heart rhythm that, if untreated, increases your risk for a stroke. There are many ways to treat, and in some cases, cure arrhythmias. These treatments include medications, pacemakers, implantable defibrillators and ablation procedures.

For more information on arrhythmias and their treatments please speak with your doctor or call to speak with the Cardiovascular Nurse Educator at 610.738.2583.

Medications

Medications are an important part of your recovery and your continued health and well being. Every medication your doctor orders for you is important.

- Know the name and dose of each medication you take, this includes vitamins, herbals and non-prescription medications.
- Take all medications exactly as prescribed.
- Keep a current list of all your medications, the dosages, and how often you take them. Carry this list with you and update it as often as needed.
- Know the common side effects of all your medications. If you do not know what they are, ask your nurse, physician and/or pharmacist for a list.
- Know the reason for taking all your medications. If you do not know the reason, ask you nurse, physician and/or pharmacist for a list. Take all medications exactly as prescribed.
- If you miss a medication dose:
 - Take it as soon as you remember.
 - If it is almost time for the next dose, skip it and return to the regular schedule.
 - Do not take a double dose of medication.
- Report any side effects to your doctor.
- Do not stop taking a medication unless specifically directed to do so by your doctor.

Prescription Drug Label Example

The diagram shows a prescription label with the following fields and callouts:

- Pharmacy name and address:** Local Pharmacy, 123 MAIN STREET, ANYTOWN, USA 11111
- Drugstore phone number:** 800-555-5555
- Doctor's name:** DR C. JONES
- Prescription fill date:** DATE 06/23/09
- Number used by the drugstore to identify this drug for your refills:** NO 0060023-08291
- Person who gets this drug:** JANE SMITH
- Instructions about how often and when to take this drug:** TAKE ONE CAPSULE BY MOUTH THREE TIMES DAILY FOR 10 DAYS UNTIL ALL TAKEN
- Name of drug and strength of drug:** AMOXICILLIN 500MG CAPSULES
- Number of refills before certain date:** NO REFILLS - DR. AUTHORIZATION REQUIRED
- Expiration date:** USE BEFORE 06/23/12

Other text on the label includes: MRG, SLF/SLF, and Rx ONLY.

Don't use this drug past this date

Heart Healthy Diet

Does diet matter?

A healthy diet and lifestyle are your best weapons to fight heart disease. An important thing to remember is that a consistent effort to improve your overall diet with better choices is what matters the most. Recent studies have shown that 90% of us fail to consistently eat a heart healthy diet. The result is increased risk factors for not only heart disease, but also stroke, obesity and diabetes. Consuming too much food with not enough physical activity can result in weight gain. Food choices high in saturated and trans fatty acids, cholesterol and added sugar can raise your LDL-cholesterol (sometimes referred to as our “lousy” cholesterol because it carries fat to cells), triglyceride levels (fat in the blood stream) and promote heart disease.

How will a change in my food choices affect my health?

Every small change you make to avoid excess calories and foods that are high in saturated and trans fat, cholesterol, sodium and added sugar helps to reduce your risk. The overall effect of a weight management and improved food choices is lower blood cholesterol levels, better blood pressure and the opportunity to feel good and stay healthy—for life!

What is a heart healthy diet?

The building blocks for good health are found by eating nutrient-rich foods that have vitamins, minerals, fiber and other nutrients important to health. This includes whole grains, lean meat, poultry and fish, fat-free and low-fat dairy products and a wide variety of colorful fruits and vegetables. For additional information on a heart healthy diet, visit www.choosemyplate.gov.

Examples of nutrient-rich foods include:

- Vegetables and fruits are high in vitamins, minerals and fiber—and they are low in calories. Eating a variety of fruits and vegetables may help you control your weight and blood pressure.
- Whole-grain foods contain fiber that can help lower your blood cholesterol and help you feel full, which may help you manage your weight.
- Eating fish at least twice a week may also help lower your risk of death from coronary artery disease. These foods contain omega-3 fatty acids. Good sources include salmon, trout and herring. Omega-3 fatty acids are in other foods such as nuts and seeds.

BALANCING CALORIES

- ♥ Enjoy your food, but eat less
- ♥ Avoid oversized portions

FOODS TO INCREASE

- ♥ Make half your plate fruits and vegetables
- ♥ Make at least half your grains whole grains
- ♥ Switch to fat-free or low-fat (1%) milk.

FOODS TO REDUCE

- Compare sodium in foods like soup, bread, and frozen meals—and choose the foods with lower numbers
- Drink water instead of sugary drinks

What are steps I can take to improve my diet?

Below is a list of many small steps you can take to improve your diet. Consider picking one or two things you are not yet doing as a goal to help you improve your diet. Your dietitian will review the food label with you. This is a very helpful tool to use when making selections at the grocery store.

- ♥ Choose sources of lean cuts of red meats, skinless poultry, fish, and game meats. Cuts of meat with the words “round” or “loin” in the name are usually lean.
- ♥ Choose fish as a source of protein at least twice a week.
- ♥ Limit intake of saturated fats such as butter or shortening. Substitute with monounsaturated fats such as olive or canola oil, or with polyunsaturated fats such as corn or safflower oil.
- ♥ Avoid trans fats entirely. This means eliminating fried foods, hard margarine, commercial baked goods, and most packaged and processed snack foods. Choose foods that have little to no partially hydrogenated vegetable oils to reduce trans fat in your diet.
- ♥ Select fat-free, 1 percent and low-fat dairy products
- ♥ Consume more fruits, berries, vegetables, nuts and seeds.
- ♥ Choose and prepare foods with little or no salt. Aim to eat no more than 1,500 to 2000 mg. of sodium per day. Avoid salty processed meats such as bacon, sausage and deli meats.
- ♥ Alcohol affects your health. Please ask your doctor about drinking alcohol.
- ♥ Keep an eye on portion sizes. When in doubt, eat a little less!

Steps I can take to further improve my diet:

1) _____ 2) _____

Summary

Our goal is to help you understand how the heart works, what a heart attack is and what you can do to stay healthy. This booklet helps outline:

- Signs and symptoms of a heart attack
- When to call 9-1-1 if you suspect you or someone you know may be having a medical emergency such as a heart attack or stroke
- Risk factors for a heart attack
- How to make changes to those risk factors to reduce the chances of having a heart attack

Our health care team is here to help you understand what your medical problem is and what is available to manage your health. This will help to improve the quality of your care.

In order to get the greatest benefit from a visit to your doctor, nurse practitioner or any health care professional, it is important to ask 3 simple questions at the end of your visit.

1. What is my main problem?
2. What do I need to do?
3. Why is it important for me to do this?

HERE'S TO HEALTHY YOU!

RESOURCES AVAILABLE AT CHESTER COUNTY HOSPITAL

Penn Heart and Vascular Chester County Hospital

1.866.DRHEART (1.866.374.3278)

866drheart.com

Cardiovascular Nurse Navigator

610.220.0432

Cardiovascular Nurse Educator

610.738.2583

Outpatient Diabetes and Nutrition Services

610.738.2835

diabetes@uphs.upenn.edu

Stroke Coordinator

610.431.5059

Cardiac Rehabilitation

610.738.2410

Pulmonary Rehabilitation

610.738.2410

Wellness Programs

610.738.2300

chestercountyhospital.org/wellness

- Smoking Cessation
- Nutrition Education
- Weight Management Classes
- Disease Specific Programs
- Pre Diabetes Class



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Chester County Hospital
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West Chester, PA 19380
ChesterCountyHospital.org

REFERENCES:

American College of Cardiology
American College of Sports Medicine
Academy of Nutrition and Dietetics
American Heart Association
Heart Rhythm Society
National Institutes of Health

