HEART CARE

A Guide for Patients and Their Families

LEE HEALTH
Caring People. Inspiring Health.
Welcome

With caring hearts and capable hands, the cardiac program at Lee Health strives to provide first-class care so our patients have a higher quality of life.

Every cardiac patient who walks through our doors is treated with the personalized care that is the hallmark of our service. We also maintain a team atmosphere throughout our cardiac program, whether it is our highly skilled staff members working together to help you, or one of our team members helping you during your treatment process.

Every step of the way, we will involve you in your comprehensive planned course of treatment to help you know what to expect during your time at our facilities and at home. Our cardiac program has all of the services that you need to keep your heart healthy: diagnostics, interventional cardiology, cardiovascular surgery, specialized hospital care, rehabilitation services, home care and community education programs.

Your health care team within Lee Health includes a wide variety of professional services. Physicians and nurses, care managers, cardiac rehabilitation nurses, dieticians, physical and occupational therapists, spiritual services, as well as guest services, are available to assist you with your areas of greatest need, be it physical, financial, social, emotional or spiritual. Let us know how we may better serve you. You are in good hands.

This book is for education purposes, not for use in the treatment of medical conditions. It is based on skilled medical opinion as of the date of publication. However, medical science advances and changes rapidly. Furthermore, diagnosis and treatment are often complex and involve more than one disease process or medical issue to determine proper care. Consult with your health care provider for any medical questions or concerns you may have.
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Your Heart

The Heart and Circulatory System (Cardiovascular System)

The Heart and How it Works

The heart is at the center of your circulatory system, which is a network of blood vessels (arteries and veins) that deliver blood and oxygen to every part of your body.

The heart is a muscular organ about the size of a fist and sits in the chest cavity between your lungs. Its walls are made up of muscle that can pump blood out every time the heart “beats” or contracts.

Fresh, oxygen-rich air is brought into the lungs every time you take a breath. The lungs are responsible for delivering oxygen to the blood. The heart circulates the blood through the lungs and out to the different parts of the body. This is essential to keep the body’s organs healthy and working properly.

- Your heart pumps about five liters of blood every minute while you are at rest.
- During exercise, this can increase to as much as 21 liters a minute.
- The heart beats about 100,000 times in one day—that’s about 35 million times in a year.

The heart has four chambers: two chambers on the left side and two on the right. The upper chamber on each side, called the atrium, receives and collects blood returning to the heart. The lower chamber on each side, called a ventricle, pumps blood out of the heart to different parts of the body. The four chambers work together to contract (squeeze) and pump blood.
The Coronary Arteries

In order to keep pumping day and night, the heart needs its own supply of oxygen. Blood vessels, called coronary arteries, (about the size of a strand of spaghetti) are located on the outer surface of the heart and divide into smaller branches. These branches then penetrate deep into the heart muscle, carrying oxygen-rich blood to all the cells of the heart. The aorta is the body’s main artery. It supplies blood to the arteries of the heart, as well as to the body. As blood leaves the left ventricle, it is pumped into the aorta and then out to the body. The “left” and “right” coronary arteries begin near the top of the heart, at the aorta.

1. **Left main coronary artery (LMCA)** is the first part of the left coronary artery that branches into two slightly narrower arteries (left anterior descending and circumflex).

2. **Left anterior descending (LAD)** travels down the front side of the heart, supplying blood to the front of the heart.

3. **Circumflex (CX)** circles around the left side to the back of the heart, supplying blood to the side of the heart.

4. **Right coronary artery (RCA)** branches off the aorta, circles around the right side, to the back of the heart, supplying blood to the back or underside of the heart.

Here you can see the network of blood vessels that feed your heart with oxygen-rich blood.
The Heart Valves

The valves of your heart keep blood flowing in the proper direction in and out of the chambers of the heart. These valves function like a trapdoor, opening and closing with each heartbeat and are designed to keep blood flowing forward.

The four heart valves are:

- **Tricuspid valve**—Directs blood flow between the right atrium and right ventricle.
- **Pulmonary valve**—Directs blood flow between the right ventricle and pulmonary artery.
- **Mitral valve**—Directs blood flow between the left atrium and left ventricle.
- **Aortic valve**—Directs blood flow between the left ventricle and the aorta.

The Conduction System of the Heart

Your heart also has an electrical system which keeps it beating. Electrical impulses begin high in the right atrium and travel through specialized pathways to the ventricles, delivering the signal for the heart muscle to contract (squeeze) and pump blood to the entire body.

The conduction system keeps your heart beating in a coordinated and normal rhythm, which in turn keeps blood circulating. The continuous exchange of oxygen-rich blood with oxygen-poor blood is what keeps you alive.
Cardiovascular disease (CVD), including heart disease and stroke, remains the leading cause of death worldwide.

Atherosclerosis

Atherosclerosis, the hardening and narrowing of the body’s arteries, is the primary cause of CVD. It is caused by a slow, progressive build-up of plaque in the inner lining of the artery wall. Atherosclerosis or plaque build-up appears to be triggered by an inflammatory process or damage to the inner blood vessel wall. This can potentially cause serious problems such as coronary artery disease, heart attack, stroke, peripheral artery disease, kidney disease and weakened arteries (aneurysm).

This damage is often caused by high blood pressure, elevated glucose levels that occur in diabetes, excess weight, smoking, an unhealthy diet, poor quality sleep, abnormal cholesterol, and severe stress. The damaged blood vessel wall is then more susceptible to attract fat, cholesterol, calcium and blood clots to burrow into the inner surface of the artery.

Atherosclerosis can potentially affect any blood vessel in the body. Advanced atherosclerosis reduces blood flow to the area it supplies.

• Reduced blood flow to the heart can lead to a heart attack.
• Reduced blood flow to the brain can lead to a stroke and vascular dementia.
• Reduced blood flow to the arms or legs can lead to peripheral artery (vascular) disease.
• Reduced blood flow to the kidneys can lead to persistent high blood pressure.
• Reduced blood flow to the groin area can contribute to erectile dysfunction.

Many people do not know they have atherosclerosis until it is advanced enough to cause health problems. Learning about risk factors, making healthy choices each day, getting regular cholesterol screenings and following your health care provider’s advice can help prevent the progression of this disease.
Coronary Artery Disease (CAD)

Coronary artery disease (CAD) results when the blood vessels to the heart (coronary arteries) are affected by inflammation and atherosclerosis. Too often, a heart attack is the first sign of CAD.

Angina is a symptom experienced when there is not enough oxygen or blood flow to the heart muscle.

Causes of angina: Coronary artery disease (CAD), a blood clot, plaque disruption or coronary artery spasm (a sudden tightening present within the artery). Other causes: abnormal heart rhythms, anemia, heart failure, heart valve disease, overactive thyroid and by the abuse of certain drugs like marijuana, amphetamines, alcohol, ephedrine-based weight-loss products and illegal drug use (such as a stimulant like cocaine).

Symptoms of angina and heart attack can occur anywhere in the upper body:

- A feeling of heart burn or indigestion, nausea or vomiting.
- Discomfort, pain, aching, pressure, heaviness, fullness, squeezing, burning, tightness or a strange feeling in the chest, shoulders, neck, throat, jaw, across the back, between the shoulder blades, or upper abdomen.
- Heaviness, discomfort, tingling or numbness in one or both arms, elbows, wrists, hands or fingers.
- Anxiety, breaking out in a sweat, shortness of breath, light-headedness, extreme fatigue, severe weakness or palpitations (fast heart rate).

Some women are more likely than men to experience some of the other symptoms, particularly shortness of breath, nausea, vomiting, jaw pain or pain across the back. Often only vague symptoms are experienced such as anxiety, fatigue or a feeling that something is wrong.

Angina can be classified as stable or unstable.

- Stable angina
  - Predictable, often triggered by exercise, physical exertion, cold weather, emotional stress or large meals.
  - Symptoms go away with rest or nitroglycerin.
  - If you have stable angina, see your doctor.

- Unstable angina or acute coronary syndrome (ACS)
  - Often occurs at rest and is unexpected or unpredictable.
  - Taking nitroglycerin may not completely relieve symptoms.
  - Symptoms occur for the first time, symptoms are getting worse, lasting longer, occurring more frequently, or occurring at rest.
  - Unstable angina is a medical emergency, call 9-1-1.
Heart Attack

Heart attack, acute coronary syndrome (ACS) or myocardial infarction (MI)

- Occurs when blood flow to the heart is suddenly cut off.
- In the past, we thought heart attacks occurred when plaque built up until the arteries were too narrow to allow blood to flow to the heart (a plumbing problem).
- We now know that the majority of heart attacks occur when the artery is only partially narrowed.
- Heart attacks occur when the inflammatory response causes unstable plaque to break away from the inner blood vessel wall.
  - This triggers a blood clot (thrombus) to form called athero-thrombosis.
  - Results in partial or total blockage of the artery.
  - A lack of blood flow and oxygen leads to heart muscle damage.
  - Athero-thrombosis is the major cause of heart attack, acute coronary syndrome (ACS) and cardiovascular death.

For patients with coronary disease, it is crucial to take steps to reduce inflammation, including both evidence-based lifestyle changes (smoking cessation, exercise, stress reduction, and a heart healthy diet) and taking medications that reduce inflammation and prevent thrombosis (aspirin and statins). These are the most effective measures to preventing a heart attack.

- Intense exercise, sudden strong emotion, drug abuse or illegal drug use (such as a stimulant, like cocaine) can trigger a heart attack.
- In some cases, there is no clear reason why heart attacks occur when they do.

Immediate medical attention is required.

- Blood supply must be restored. Acting immediately can save your life and limit heart muscle damage. Act in Time! Dial, Don’t Drive!
- Medications and treatments are available to restore blood flow. To be most effective, these treatments must be given as soon as possible—within 1 hour of the start of heart attack symptoms.
**Recovery:** The healing process after a heart attack begins within 2 to 3 weeks, and usually takes 4 to 8 weeks depending on the extent of heart muscle damage. Refer to Guidelines for Activity Progression under Physical Activity.

- During the healing process, a scar gradually forms. The heart’s pumping strength (ejection fraction) may be weakened, increasing risk of heart failure, abnormal heart rhythms and sudden death.
- Ask your physician when it is safe for you to begin exercising or a cardiac rehabilitation program after a heart attack.
- Over time, moderate to vigorous aerobic exercise may stimulate the formation of collateral or supplemental branches of the coronary arteries.
- Participation in a cardiac rehabilitation program is associated with a 20-30 percent reduction in mortality rates and significant improvement in quality of life. For more information on cardiac rehabilitation, refer to the After Discharge-Recovery section of this book.

**Peripheral Artery Disease (PAD)**

Peripheral artery disease (PAD), also called peripheral vascular disease (PVD), is a build-up of plaque in the peripheral arteries (or outer regions away from the heart).

- Some of the more commonly affected peripheral areas include the arteries in the pelvis, legs, arms, kidneys and neck.
- Some patients may have both coronary artery disease and peripheral artery disease.
- People with PAD have 4-5 times the risk of heart attack or stroke.
- The symptoms experienced depend on the location of the artery affected and how severely the blood flow is reduced.
- Symptoms may include:
  - Claudication (dull, cramping pain in hips, thighs or calf muscle)
  - Leg pain that often occurs when walking or exercising and is relieved by rest
  - Buttock pain
  - Numbness, tingling or heaviness in the leg, foot, toes or arms
  - Changes in skin color (pale, bluish or reddish discoloration)
  - Changes in skin temperature, coolness
  - Impotence
  - Infection or sores that do not heal
  - Thickened nails

The first goal of treatment for PAD is to identify and change lifestyle risk factors. Treatment may include medications to lower the risk of heart attack and stroke. Interventions such as balloon angioplasty, stenting or even surgery may be needed if blood flow to certain areas is significantly decreased. In rare cases, amputation is done when the damage to the leg, foot or part of a foot is severe, possibly life-threatening and other treatments have failed.
Heart Valve Diseases

There are four valves in the normal heart. Valves open wide enough for blood to flow through the chambers of the heart, then close tightly so the blood does not leak backward. When a valve is damaged, the flow of blood changes. Valves may be damaged from a birth defect, infections or rheumatic heart disease that scars the valves. Valve damage can also occur with aging.

Valve disease usually results in a narrowing of the valve opening (stenosis) and/or leaking of a valve (regurgitation). A narrow valve restricts blood flow through the heart. A leaking valve results in less blood being pumped through the heart as blood leaks backward. The defect causes strain on the heart as it works harder and the heart muscle becomes stretched. Irregular beats, shortness of breath, swelling and the formation of blood clots can result. In the early stages of valve disease, medications, diet and exercise can control symptoms. When symptoms worsen, surgery is often necessary to repair or replace the diseased valve.

Heart Failure (HF)

More than 5.7 million Americans have heart failure. It is the leading cause of hospital readmissions among adults older than 65 years of age in the U.S. Heart failure does not mean that your heart has stopped beating but refers to a number of conditions that can affect the way the heart works and/or its structure. Over time, heart failure makes it harder and harder for the heart to pump enough blood and oxygen to meet the body’s needs. That’s why most people with heart failure get short of breath, especially when they are active. Symptoms depend on the type of heart failure you have.

Because it’s a lifelong condition, you must take an active role in your care to stay well. The more you are able to manage your heart failure, the better you will feel. Refer to Disease Specific Management-Heart Failure (HF)
Cardiomyopathy

Every day, your heart pumps the equivalent of 2,000 gallons of blood throughout your body and creates enough energy to drive a truck 20 miles. It’s no wonder the heart is the most important muscle in the body. But certain conditions can affect how well it works.

Cardiomyopathy is a disease that affects the heart muscle and the way it pumps. The most common types of cardiomyopathy and some of their causes are:

- **Ischemic cardiomyopathy**—caused by heart attack and coronary artery disease.
- **Dilated cardiomyopathy**—the chambers of the heart enlarge and weaken caused by a variety of toxins, including viruses, alcoholism and genetic conditions.
- **Hypertrophic cardiomyopathy**—the heart muscle thickens and cannot relax; caused by genetic conditions and high blood pressure (hypertension).
- **Restrictive cardiomyopathy**—the heart muscle gets stiff from a variety of conditions.

Each type of cardiomyopathy makes it difficult for your heart to pump blood effectively and can lead to heart failure and/or irregular heartbeats.

Treatment depends upon the type of heart problems that occur as a result of the changes in the heart muscle. This may include medications, lifestyle changes (like diet and exercise) with varying surgical options such as biventricular pacemaker, implantable defibrillator, heart assist device and more.

Takotsubo Cardiomyopathy

Takotsubo Cardiomyopathy (Stress Induced Cardiomyopathy or Broken Heart Syndrome) is a weakening of the left ventricle, the heart’s main pumping chamber. Usually it is a result of severe emotional or physical stress, such as a sudden illness, the loss of a loved one, a serious accident, or a natural disaster. It occurs predominately in post-menopausal women.

**Features of Takotsubo Cardiomyopathy**

- Chest pain, shortness of breath and symptoms of acute heart failure
- Electrocardiogram abnormalities that mimic those of a heart attack
- A rapid but small rise in cardiac biomarkers (substances released into the blood when the heart is damaged)
- No evidence of coronary artery disease
- Ballooning of the left ventricle

Takotsubo Cardiomyopathy is treatable, usually with medication and stress management. It is usually temporary and most people who experience it make a full recovery within weeks and are at a low risk of recurrence. Follow-up echocardiogram may be necessary to determine if left ventricle function has returned to normal.
Abnormal Heart Rhythms (Arrhythmias)

A heart rhythm problem (arrhythmia) can occur when the heart’s electrical impulses that coordinate the heart beat do not work properly, causing it to beat too fast, too slow or irregularly. A healthy adult heart normally beats 60 to 100 times a minute when a person is at rest. A medical professional can detect an irregular heartbeat during a physical exam, by taking your pulse, listening to your heart sounds, by an electrocardiogram (ECG) or when connected to a cardiac monitor.

Causes: CAD, electrolyte imbalances in the blood (such as sodium, potassium or magnesium), injury or damage from a heart attack, changes in your heart muscle and after heart surgery during the healing process. An arrhythmia can also occur in a normal healthy heart.

Premature ventricular contractions (PVCs) can occur in people with or without heart disease. This is the skipped heartbeat we all occasionally experience. Causes: stress, anxiety, too much caffeine or nicotine, stimulants used in cough and cold medicines, illegal drugs, too rigorous exercise, or sleep deprivation; heart disease or electrolyte imbalance. People who have a lot of PVCs and/or symptoms associated with them should be evaluated by a cardiologist (heart doctor). In most people, PVCs are usually harmless and rarely need treatment.

Atrial fibrillation (AF or Afib): a common irregular heart rhythm that causes the upper chambers (the atria) of the heart, to contract abnormally. You might feel short of breath, dizzy and overly tired, though not everyone has these symptoms. Afib affects more than 2.5 million Americans. If untreated, it can lead to blood clots, stroke and heart failure. People with Afib are five times more likely to have a stroke than people without the condition. As with other heart problems, the choices you make every day can make a difference in your symptoms and general heart health. Refer to Disease Specific Management- Afib.

Bradycardia: a slower than normal heart rate at rest (< 60 beats a minute). For many people, bradycardia doesn't cause symptoms or complications. Certain slow heart rhythms that cause symptoms due to the heart not pumping enough oxygen-rich blood to the body may be treated with an implanted pacemaker.

Tachycardia: a faster than normal heart rate at rest (> 100 beats a minute). Heart rate is controlled by electrical signals sent across heart tissues. Certain fast heart rhythms that cause symptoms may be treated with medications or by treating the underlying cause.

Ventricular tachycardia (VT or Vtach): a rapid heart rhythm originating with the lower chambers (or ventricles) of the heart which prevents the heart from filling adequately with blood; therefore, less blood is pumped throughout the body. A heart doctor should evaluate this rhythm as soon as possible.

Ventricular fibrillation (VF or Vfib): an erratic, disorganized firing of impulses from the ventricles. The ventricles quiver and are unable to contract or pump blood to the body. This is a medical emergency that must be treated with (CPR) cardiopulmonary resuscitation and defibrillation as soon as possible.
Diagnosing Heart Disease

The following diagnostic tests are noninvasive and, with the exception of blood testing and intravenous injections, are usually painless medical tests that help physicians diagnose and evaluate medical conditions.

**Laboratory tests**

Certain blood tests can be used to either predict your risk for heart disease (cholesterol profile, advanced lipid testing, blood glucose, A1C test, (hs-CRP), for example) or to diagnose a current or recent heart attack (cardiac markers: CPK-MB and troponin). In the latter case, blood is tested to monitor the baseline changes in cardiac enzymes and proteins that leak out of injured or damaged heart muscle cells when a heart attack occurs.

**Electrocardiogram (EKG or ECG)**

An electrocardiogram (EKG or ECG) is a simple test that records the electrical activity of your heart. Several electrodes (small pads) are placed on your chest, arms and legs. The heart’s electrical impulses create a wavy line tracing of the heartbeat. By examining the ECG tracing, doctors can diagnose normal and abnormal heart rhythms or detect possible signs of a current or past heart attack.

**Holter and Event Monitors**

A Holter monitor is a small, portable heart monitor used to continually record the heart rhythm, for 24-48 hours or longer, depending on the monitor used while you go about your usual daily activities. It is useful for recording and detecting abnormal heart rhythms (arrhythmias) that occur infrequently and may not appear during a resting ECG.

An event monitor is similar to a Holter monitor. When you have symptoms, such as palpitations, you press a button to activate the recorder. After the test, the doctor compares the timing of your activities and symptoms with the recording.

**Exercise Stress Test**

An exercise stress test is usually done to help the physician identify how the heart responds to physical stress in a controlled environment. During the test, you usually walk on a treadmill, pedal a stationary bike or are given a medicine to make the heart work harder while the doctor monitors your heart rhythm and vital signs (heart rhythm, the speed of the heart beat or rate, blood pressure, breathing, oxygenation and the presence of other symptoms such as angina or chest pain). Stress tests are usually performed to help diagnose heart disease or to see how far known disease has progressed. A stress test is also used to determine an exercise prescription prior to entering and at the end of an outpatient cardiac rehabilitation program.
Nuclear Stress Test
A nuclear stress test can show areas of the heart that lack blood flow or are damaged. It also can reveal problems with the heart’s pumping action. A small amount of radioactive material is injected into a vein, usually in the arm. A scanning camera positioned over the heart records whether the nuclear material is taken up by the heart muscle (healthy areas) or not (damaged areas). The camera also can evaluate how well the heart muscle pumps blood. This test can be done during both rest and exercise, enhancing the usefulness of its results.

Echocardiogram
An echocardiogram evaluates the heart’s function by using sound waves (ultrasound) to look at the heart. It can provide information about the heart, including the size, shape and pumping strength (ejection fraction), as well as the location and extent of any damage to the heart’s tissues. An echocardiogram also allows doctors to evaluate the heart valves and detect abnormalities in the pattern of blood flow.

Vascular Studies
Vascular ultrasound detects blood vessel problems over major arteries and veins by using sound waves (ultrasound). It produces images that allow providers to look at blood flow and blockages.

Computed Tomography Scan (CT scan)
Computed tomography scan (CT scan) combines multiple X-ray images with the aid of a computer to produce cross-sectional views of the body. CT scans used in the diagnosis of heart disease have different purposes.

• Coronary CT Angiography (CTA) is a cardiac CT scan used to make very detailed pictures of the heart anatomy, coronary circulation and great vessels (the aorta, pulmonary veins, and arteries).
• Calcium-Score Screening Heart Scan is a cardiac CT scan used to detect calcium deposits found in atherosclerotic plaque in the coronary arteries.
  o If calcium is present, the computer will create a calcium score that estimates the extent of disease based on the number and density of calcified coronary plaques in the coronary arteries.
  o Absence of calcium is considered a negative exam. However, because certain forms of CAD, such as soft plaque atherosclerosis, escape detection, it’s important to remember a negative test indicates low risk, but does not absolutely exclude the possibility of a future cardiac event such as a heart attack.

Positron Emission Tomography (PET)
Positron emission tomography, (PET imaging or scan) is a type of nuclear medicine imaging that uses small amounts of radioactive material to diagnose and determine the severity of or treat a variety of diseases, including heart disease. Because nuclear medicine procedures are able to pinpoint molecular activity within the body, they offer the potential to identify disease in its earliest stages as well as a patient’s immediate response to therapeutic interventions.
Magnetic Resonance Imaging (MRI)

Magnetic resonance imaging (MRI) uses a powerful magnetic field, radio frequency pulses and a computer to produce detailed pictures of organs, soft tissues, bone and virtually all other internal body structures. Magnetic resonance angiogram (MRA) is an MRI scan that provides pictures of blood vessels inside the body. In many cases, MRA can provide information that can't be obtained from an X-ray, ultrasound or CT scan. MRI doesn't use ionizing radiation (x-rays).

Cardiac Catheterization (Cardiac Cath) or Coronary Angiogram

Cardiac catheterization or coronary angiogram is an invasive diagnostic procedure used primarily to check for blockages and narrowed areas inside the coronary arteries. It is also used to measure the pressures inside the heart, study how well the heart is pumping blood, and take pictures of the coronary arteries and the heart chambers.

- During cardiac catheterization, the doctor inserts a long, thin, flexible tube (catheter) into a blood vessel in your leg or arm and guides it toward the heart.
- As part of the procedure, X-ray dye (contrast) is injected into the coronary arteries. As the arteries fill with contrast, they can be clearly seen on X-rays. The resulting image is called an angiogram.
- A normal coronary artery has smooth walls and tapers down (gets smaller) gradually. A diseased artery may show a narrowed area, called a lesion. Other times the artery may be completely blocked.
- A doctor can estimate how serious the problem is based on how severe the lesion is, where it is located and how many arteries are diseased.
- There are several ways to treat coronary heart disease including medications, balloon angioplasty, stents and heart surgery.

Electrophysiology Study (EP Study or EPS)

An electrophysiology study (EPS Study or EPS) is an invasive diagnostic catheterization that examines the heart’s electrical activity and its pathways. Electrode catheters, (flexible, insulated wires with metal electrode tips) are guided up into the heart, where electrodes are placed in the proper area in order to study the heart’s electrical system. An EP study may be used to:

- Diagnose the source of an abnormal heart rhythm (slow or fast).
- Evaluate effectiveness of medications used to treat abnormal heart rhythms.
- Provoke and diagnose heart arrhythmias that occur infrequently.
- Evaluate risk for sudden cardiac death and the need for a pacemaker or implantable cardiac defibrillator.
- Sometimes the problem can be fixed at the same time by a procedure called catheter ablation.
Risk Factors and Management

There are several risk factors for heart disease, some you can change (modifiable) and some you can’t change (non-modifiable). A proven way to help decrease your risk of heart disease and disease progression is by making lifestyle changes. Lifestyle change (risk factor modification) is perhaps the most potent treatment option.

Non-Modifiable Risk Factors

**Age (45 and older for men; 55 and older for women)**
Because your organs age with the rest of your body, your chance of developing heart disease increases as you get older.

**Sex**
Men have a greater risk of coronary artery disease than women, but after menopause the risk is equal for both sexes.

- Cardiovascular diseases are the No. 1 killer of men and women.
- Women who smoke, or women over the age of 35 who use oral contraceptives, which may raise blood pressure and cholesterol levels, have a much higher risk of having a heart attack.

**Race / Ethnicity**
Blacks and Hispanic/Latino Americans have a higher rate of hypertension (high blood pressure), obesity and diabetes, thus increasing the risk of heart disease.

**Heredity / Genetic Family History of Heart Disease**
People with one or more close relatives who have or had early heart disease (younger than age 55 for men and younger than age 65 for women) are at an increased risk. Lipid disorders and the tendency to develop certain risk factors, such as high cholesterol and high blood pressure, may be related to specific inherited genes. Genes are passed on from parent to child and are a code that determines how our bodies are made and how they function. In addition to inherited factors, there is probably a large environmental and social component to the increased risk seen in some families.

- Children of parents who smoke are more likely to smoke and be exposed to second-hand smoke than children of nonsmokers.
- Dietary habits may also play a role. Families who eat fatty diets are more likely to develop CAD than those who eat more balanced diets.
- Children of parents who are overweight and sedentary may be more likely to be overweight and sedentary.
- Our social history is the acquired behaviors we learn and have continued (healthy or not) from our parents and grandparents. Quite often the way we eat, cook, handle stress, whether we smoke or lead an active lifestyle is greatly influenced by our upbringing. This type of social family history, our learned behaviors, is a modifiable risk.
Researchers continue to work to better understand exactly why CAD runs in families. Addressing each of these family-related behaviors may greatly reduce your chance of developing CAD. You can’t change the cards you’ve been dealt in life, but you can control how well you play them by living heart healthy.

Modifiable Risk Factors

A heart-healthy lifestyle is essential to prevent the progression of heart disease. Some lifestyle modifications are important for everyone.

- **Eat fewer animal products and more plant-based foods** from the ground. Eat a heart-healthy diet that includes plenty of vegetables, legumes (beans, lentils, peas) high-fiber whole grains, fruits and raw nuts, with minimal added fats. Use only plant-based oils, such as olive oil, in small amounts. Excellent plant sources of Omega-3s besides fish are: hemp, chia, flax, and savi seeds, which are packed with anti-inflammatory properties, anti-oxidants, protein, vitamins and minerals, and fiber. Avoid foods high in simple carbohydrates that are poor in nutrients and fiber, excess amounts of processed oils, saturated animal fat, and all trans fats.

- **Lose weight**, if you need to. Losing just 5-10 pounds (2.3 kg to 4.5 kg) can lower your cholesterol. It will also help lower your blood pressure and risk for type 2 diabetes.

- **Get regular exercise** on most, if not all, days of the week. Walking is great exercise that most people can do. A good goal is 30 minutes or more a day.

- **Don’t smoke**. Quitting can help raise your HDL and improve your heart health.

Changing old habits may not be easy, but it is very important to help you live a healthier and longer life. Having a plan can help. Start with small steps. For example, commit to adding one fruit or one vegetable a day for a week. Instead of having dessert, eat fresh fruit or take a short walk.

Smoking / Tobacco Use

Smokers are twice as likely as nonsmokers to have a heart attack and are five times as likely to die from sudden cardiac death. This risk is further compounded when you also have other risk factors such as diabetes, hypertension, abnormal cholesterol, obesity, poorly managed stress or depression. A return to tobacco products after a heart attack doubles the risk of a second heart attack. No single lifestyle change does as much to reduce your risk of heart disease as quitting smoking and the use of tobacco products. Refer to Smoking/Tobacco Cessation under Lifestyle Changes.

Passive Smoking

When nonsmokers are exposed to environmental tobacco smoke or second hand smoke, it is called passive smoking. Nonsmokers who breathe in second hand smoke take in nicotine and other toxic chemicals just like smokers do.

Secondhand smoke contains more than 4,000 chemical compounds. More than 60 of these are known or suspected to cause cancer. Each year, in the United States alone, secondhand smoke is responsible for:

- An estimated 46,000 deaths from heart disease in nonsmokers who live with smokers.
- Nearly 3,400 lung cancer deaths in nonsmoking adults.
• Other breathing problems in nonsmokers, including coughing, mucus, chest discomfort, lung infections, asthma attacks and middle ear infections.

• Secondhand smoke causes disease and premature death in children and adults who do not smoke.

High Blood Pressure (Hypertension)

Blood pressure is the pressure of blood moving against the artery walls.

High blood pressure, also known as hypertension, doubles your risk of heart disease. It makes the heart work harder. Over time, it can weaken the heart, increasing the risk of developing heart disease, kidney disease and stroke. High blood pressure, known as the silent killer, usually has no symptoms, so it is important to have it checked on a regular basis.

Blood pressure is typically recorded as two numbers, written as a ratio:

117/76 mm Hg

Read as “117 over 76 millimeters of mercury”

The American Heart Association recommendation for healthy blood pressure:

The optimal goal for blood pressure is 120/80. Blood pressure is considered hypertensive when it is ≥ 130/80. A single high reading does not necessarily mean that you have high blood pressure.

<table>
<thead>
<tr>
<th>Blood Pressure Category</th>
<th>Systolic (upper #)</th>
<th>Diastolic (lower #)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Normal</td>
<td>Less than 120</td>
<td>And Less than 80</td>
</tr>
<tr>
<td>Elevated Blood Pressure</td>
<td>120 - 129</td>
<td>Or Less than 80</td>
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<tr>
<td>High Blood Pressure (Hypertension) Stage 1</td>
<td>130 - 139</td>
<td>Or 80 - 89</td>
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<td>High Blood Pressure (Hypertension) Stage 2</td>
<td>140 or higher</td>
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<tr>
<td>Hypertensive Crisis (Emergency care needed)</td>
<td>Higher than 180</td>
<td>Or Higher than 120</td>
</tr>
</tbody>
</table>

• If readings stay at 130/80 or above over time, your doctor will likely want you to begin a treatment program.

• Normal blood pressure is best achieved through lifestyle changes, such as salt/sodium restriction (≤ 2,000 mg sodium a day), smoking cessation, weight control, physical activity, stress management and alcohol moderation.

• It is important to consume a diet rich in vegetables and fruits, high in fiber, and low in saturated and total fat content. Refer to Heart Healthy Eating for Life.

• Work closely with your physician to determine what is best for you.

• After three to six months, if lifestyle interventions alone do not achieve the desired goal, then medications may be needed to control blood pressure.

• Take blood pressure medications exactly as prescribed by your health care provider.
• If, while monitoring your blood pressure, you get a systolic (top) reading of 180 or higher OR a diastolic (bottom) reading of 120 or higher, wait a couple of minutes and take it again. If the reading is still at or above that level, you should seek immediate emergency medical treatment for a hypertensive crisis or emergency. If you can’t access the emergency medical services (EMS), have someone drive you to the hospital right away.

High Cholesterol (Hyperlipidemia) or Abnormal Cholesterol (Dyslipidemia)

Cholesterol is a soft, fat-like, waxy substance found in all your body’s cells and in the bloodstream. Cholesterol actually helps create the outer coating of our cells and aids the body in making vitamin D and certain hormones. It comes from two sources: our liver and the animal foods we consume (such as milk, meat, egg, cheese, shellfish, and organ meats).

Cholesterol travels through your bloodstream in tiny, protein-covered particles called lipoproteins. These particles contain cholesterol and triglycerides, a type of fat.

High-density lipoproteins (HDL) particles are known as “good” cholesterol. They help remove cholesterol from artery walls. Low-density lipoprotein (LDL) particles are known as “bad” cholesterol. They add cholesterol to the artery walls where it creates artery-clogging plaque that can trigger a heart attack or stroke.

The level of cholesterol in the bloodstream greatly affects the risk of developing atherosclerosis and heart disease. Having a high level of bad cholesterol (LDL) and triglycerides, and a low level of good cholesterol (HDL), increases your risk for heart disease or heart attack.

Optimal Lipid Profile (National Cholesterol Education Program- NCEP Guidelines)

• Total cholesterol lower than 200
• Triglycerides less than 150
• HDL more than 40 (men); more than 50 (women); more than 60 is best
• LDL less than 100
• Discuss your individualized cholesterol goals with your health care provider; many prefer LDL <70 for high risk patients with CAD or CAD with metabolic syndrome

If you have abnormal cholesterol (high LDL or triglycerides; low HDL), you may need treatment (lifestyle modifications and medicine) to lower your risk of heart attack and stroke.

You’ll probably need a cholesterol-lowering medicine, such as a statin, if lifestyle modifications don’t lower your cholesterol to desired goal, your risk of heart attack is high, or you have atherosclerosis. Statins help normalize cholesterol numbers, decrease inflammation, and stabilize existing plaque, decreasing the likelihood of plaque rupture and heart attack.
Things that can cause high or abnormal cholesterol:

- Eating too much saturated fat (from animals), trans fat (in stick butter and margarine, snack foods), and cholesterol
- Being overweight, even as few as 10-20 pounds
- Not getting enough exercise and sitting still for long periods
- Getting older—cholesterol starts to rise around age 20 and even faster after age 40
- Family history
- Overall health—diseases such as hypothyroidism can raise cholesterol

If you have heart disease without obvious risk factors (such as normal cholesterol levels), advanced cholesterol testing might help to better understand underlying cholesterol abnormalities (like the number and size of lipoprotein particles). When a high number of LDL particles transport cholesterol, a large amount of plaque can be deposited into the lining of the arteries.

**Physical Inactivity**

Individuals who lead a sedentary lifestyle are at a greater risk for heart disease than physically active individuals. To protect your heart, you need to do 30 minutes of moderate intensity activity on most, and preferably, all days of the week. If 30 minutes is too much activity at one time for you, you can break it up into periods of at least 10 minutes each. If you’ve been inactive, you should start slowly.

Begin a safe exercise program based on the advice of your doctor. As often as possible, include physical activity in your daily life.

Benefits of regular moderate intensity physical activity—such as walking, cycling, or sports: Decreased risk of cardiovascular diseases, obesity, diabetes, colon and breast cancer, high blood pressure, anxiety, depression, and deep vein thrombosis; help manage weight and decrease the risk of hip or vertebral fracture. Refer to Physical Activity under Lifestyle Changes.

**Overweight / Obesity**

Overweight is having extra body weight from fat. Obesity is having a high amount of extra body fat or an excess proportion of total body fat. Two of the measures that assess whether or not a person is overweight or obese are body mass index (BMI) and waist circumference. BMI is a measure of weight relative to height. Waist circumference measures abdominal fat.

- The risk of developing heart and other diseases increases with a waist circumference of more than 40 inches for men and more than 35 inches for women.
- A person is overweight when BMI is between 25 - 29.9. A person is considered obese when the BMI is 30 or over and weight is 20% or more above normal weight.
- Morbid obesity means that a person is either 50 – 100% over normal weight, more than 100 pounds over normal weight, has a BMI of 40 or higher, or is sufficiently overweight to severely interfere with health or normal function.
Changing the way you approach weight loss can help you be more successful at weight management. Instead of focusing on the goal of weight loss, focus on the goal of making permanent lifestyle changes such as following a healthy eating plan, watching portion sizes, being physically active and reducing sedentary time. The behaviors you adopt in order to lose weight are the same behaviors you must maintain for permanent weight loss. Refer to Weight Management under Lifestyle Changes.

**Insulin Resistance**

Insulin resistance occurs when the body can’t use its own insulin properly. Insulin is a hormone that helps move sugar into cells where it is used. Insulin resistance is often a dangerous precursor to diabetes. Individuals who are “apple shaped,” with excessive abdominal or belly fat around the stomach and abdomen, show a stronger association with insulin resistance and type 2 diabetes than the “pear shaped,” in which fat is deposited on the hips and buttocks. Treatment is much like that generally recommended for diabetes itself: diet, exercise and medications that attack insulin resistance at the source.

**Diabetes**

Diabetes is a condition in which sugar (glucose) remains in the blood rather than entering the body's cells to be used for energy. This results in high blood sugar. Over time, high blood sugar can damage many body systems.

Symptoms of diabetes include increased thirst and frequent urination (especially at night); unexplained increase in appetite, unexplained weight loss, fatigue, erection problems, blurred vision; and tingling, burning, or numbness in the hands or feet.

Diabetes potentially damages all blood vessels in the body, including but not limited to, the coronary arteries. Diabetes can also lead to kidney failure, nerve damage, high blood pressure and other serious problems of the eyes, skin, legs, feet, hearing and oral health.

Diabetes is treated with diet and lifestyle changes and also with medicine. If blood sugar levels are kept within the recommended range, the risk for many complications decreases.

You can manage or prevent diabetes through eating heart healthy, becoming physically active and maintaining a healthy weight. Management also includes checking your blood sugar and taking medications as prescribed, going to your appointments and learning all you can about diabetes. Refer to Disease Specific Management-Diabetes.

**Stress**

Stress consists of both an individual's perception of an event and the circumstances surrounding the event. It is important to manage stress properly because ineffective coping leads to health problems.

Develop positive coping methods. Consider stress reduction exercises, deep breathing, meditation, yoga or counseling to minimize the negative effects of stress on your health. Refer to Stress Management under Lifestyle Changes.
Cardiac Personality
People who have strong feelings of anger or negative emotions have been identified as having a cardiac connection, which can increase risk of heart disease. Research shows that the most commonly reported trigger for a heart attack is an emotionally upsetting event, particularly one of anger.

• Anger includes feelings from mild irritation or annoyance to rage and fury.
• Hostility includes feelings of ill will or negative reactions to people and things.
• People who often feel depressed, worried, socially isolated, withdrawn, and alone may also have an increased risk of heart disease.
• People who have these feelings should tell their health care professional. Refer to Stress Management, Psychosocial Wellness and Spiritual Health under Lifestyle Changes.

Metabolic Syndrome
Metabolic syndrome is a combination of metabolic risk factors that when present together, increase the risk of developing cardiovascular disease and other diseases, such as diabetes, stroke and peripheral vascular disease.

Metabolic syndrome occurs when a person has three or more of the following measurements:

• Abdominal obesity
  Men > 40 inches
  Women > 35 inches
• Elevated triglycerides ≥150 or use of medication to lower triglycerides
• Low HDL (the good cholesterol)
  Men < 40
  Women < 50
• Elevated blood pressure: ≥120/80 or use of medication for hypertension
• Elevated fasting glucose: ≥100 or use of medication for hyperglycemia
• Insulin resistance or glucose intolerance (body can't properly use insulin or blood sugar)
Inflammation

Researchers have discovered that chronic low-level inflammation in the body may contribute to heart disease. It is a natural immune reaction, but when it occurs over a long period of time, it can cause injury and inflammation in the blood vessels, damage organs and cause disease.

C-reactive protein (CRP) is a blood test that measures inflammation affecting the whole body. Highly sensitive CRP (hs-CRP) measures inflammation in the blood vessel and is a strong predictor of risk very early in life for future heart attack and stroke, as well as risk of recurrent events after a first heart attack.

Several therapeutic approaches are under development to reduce inflammation in those with heart disease. But the good news is that the most widely used cholesterol-lowering drugs—statins—have the added benefit of exhibiting strong anti-inflammatory effects.

- Statins reduce CRP levels rapidly and for extended periods independently of any effect on cholesterol levels. Most people know their cholesterol numbers, but few know if they have chronic inflammation as measured by a CRP blood test.
- But the benefits of statin drugs may be particularly important for individuals who have normal or low LDL bad cholesterol, yet have a high level of inflammation.

Contributors to chronic inflammation include: poor quality sleep, stress, sedentary lifestyle or lack of exercise, active infections, exposure to toxins (like tobacco products or second hand smoke) and a diet high in saturated fat and processed, refined foods (carbohydrates like sugar, white flour and refined oils found in many processed foods).

Other Risk Factors

**Drug abuse** causes damage to the cardiovascular system by causing blood pressure to rise and sudden narrowing of the arteries. Drug abusers that have pre-existing medical conditions such as high blood pressure, irregular heartbeat and other heart conditions are at a greater risk for heart attack and stroke. Street drugs may contain dangerous additives that compound one’s risk. Drugs affect every system in the body and can cause damage that is difficult or impossible to reverse.

**Alcohol** in excess or heavy drinking can damage the heart muscle and worsen other risk factors for heart disease. Moderate alcohol intake is no more than one drink per day for women and two drinks per day for men. One drink equals 12 ounces beer, 4 ounces of wine, 8 ounces malt liquor, 1.5 ounces of 80-proof spirits or 1 ounce of 100-proof spirits.

**Viral and bacterial infections** also have been shown to play an important role in determining cardiovascular risk. It is important to have yearly flu shots and to receive the pneumonia vaccine.

**Homocysteine** is an amino acid in the blood. Evidence suggests that elevated homocysteine levels in the blood damage the inner lining of the arteries and cause blood clots, which may increase the risk for coronary vascular disease, stroke and peripheral vascular disease. It is important to get enough dietary folic acid, vitamins B6 and B12.
Periodontal gum disease has been linked to an increase risk of heart disease. A person with periodontal disease is 2-3 times more likely to have a heart attack. Plaque that builds up on the teeth produces inflammation of the gums. If the plaque isn’t removed, the gums separate from the teeth, leaving pockets that fill with bacteria. When bacteria enter the blood stream, it can be a cause of heart attacks, strokes and damage to heart valves.

- Brush teeth at least twice per day and floss at least once per day.
- See your dentist for regular cleanings.
- Sugarless gum containing xylitol has been shown to suppress cavity-causing bacteria in the mouth.
- Eat a heart-healthy diet. Avoid food or drinks with added sugar.

Sleep problems have been shown to have a negative impact on heart health.

- Researchers have shown that not getting a good night’s sleep or not enough sleep is linked to higher levels of inflammation.
- Sleep Apnea is a disorder in which the breathing stops and gets very shallow while a person sleeps. Untreated sleep apnea can raise the chances of having high blood pressure, diabetes, and even a heart attack or stroke.

Know Your Numbers!

Key Markers of Heart Health include:

- Blood Pressure
- Cholesterol
- Blood Sugar / A1C measures average glucose control for the past 2-3 months
- Waist Measurement measures abdominal fat
- Body Mass Index (BMI) measures weight relative to height
- hs-CRP (highly sensitive-CRP) measures inflammation in the blood vessels

It is important that YOU and your doctor know your numbers and understand what they mean. Keeping those numbers within a healthy range will greatly improve your heart health and reduce your risk for heart disease.
Heart Healthy Nutrition Plan

The Heart Healthy Nutrition Plan not only applies to those who have been diagnosed with heart disease but also to those who are at risk for diseases such as heart disease, heart failure, diabetes, peripheral vascular disease (PVD), cancer, high blood pressure, high cholesterol and obesity - as well as to the general public. Your doctor or dietitian may make further restrictions for your specific condition.

Your body weight, blood sugar and cholesterol levels, as well as blood pressure are affected by the foods you eat. If you're overweight, losing as little as 8-10 pounds can result in an improvement in these numbers.

Tools That Can Help You Make Good Food Choices

- Plant-Based Plate - www.SustainablePowerPlate.org
- American Heart Association - www.heart.org
- Visual Aids Make ‘Portion Sense’
- Food Label (Nutrition Facts Label and List of Ingredients)

MyPlate is the U.S. Government’s website for healthy eating guidelines. The icon, called “My Plate,” illustrates different food groups using a placesetting that everyone can relate to and visualize.

The Plant-Based Plate

Science supports a low-fat, plant-based diet for optimal health. Studies continue to show that plant-based diets can aid in reversing the symptoms of America’s most devastating diseases like type 2 diabetes, cardiovascular disease and some types of cancer.

For more information on plant-based nutrition and resources, refer to Support and Information Resources section. You may also visit the website for The Power Plate (low-fat plant-based plate); www.sustainablepowerplate.org or www.pcrm.org/health/diets/pplate/power-plate.

American Heart Association Guidelines:

1. Use up (or burn) at least as many calories as you take in.
2. Eat a variety of nutritious foods from all food groups.
3. Eat more of the nutrient-rich foods and less of the nutrient-poor foods.
4. As you make daily food choices, base your eating pattern on recommendations in this booklet.
Visual Aids Make ‘Portion Sense’

The following visual cues can help you develop good “portion” sense.

1 teaspoon (tsp) margarine, spreads = one die
1 Tablespoon (Tbsp) mayonnaise, oils, dips = thumb tip
2 Tablespoons (Tbsp) peanut butter = ping pong ball
1 ounce of cubed cheese = 4 dice
1 ounce pretzels or snack food = rounded handful
3 ounces meat, poultry, seafood = size of a deck of cards, or palm of hand
¼ cup dried fruit = large egg, or golf ball
¼ cup beans and peas = rounded handful
½ cup cut fruit, vegetables, cereal, rice or pasta = rounded handful
½ cup ice cream = tennis ball
1 cup chopped raw veggies, cooked beans, or medium piece of fruit = baseball or woman's fist
1 small baked potato = computer mouse
1 pancake or waffle = 4 ½ inch CD
4 ounces dried spaghetti = diameter of a quarter

Food Label (Nutrition Facts Label and List of Ingredients)

The Nutrition Label found on all packaged foods provides serving size, calories, amount of total fat, saturated fat, trans fat, cholesterol, sodium, total carbohydrates, sugar, fiber and protein in each serving.

The List of Ingredients states the ingredients of the product in order of decreasing weight. Those present with the greatest amount are listed first and those in the least amount are listed last.

Serving Size

Serving sizes are standardized to make it easier to compare similar foods. They are provided in familiar units (cups, teaspoons, pieces) followed by weight amount (grams, ounces). Always look at the serving size first and then compare how much you actually eat to the serving size listed on the label. If you eat more than one serving, you consume more calories and nutrients.

Calories

Calories are a measure of how much energy you get from a serving of that particular food. Many Americans eat more calories than they need. Look at the number of calories in one serving. Remember, the number of servings you eat multiplied by the calories per serving is the total number of calories you’ve consumed.
• 40 calories per serving = low calorie
• 100 calories per serving = moderate calorie
• 400 calories per serving = high calorie

**Total Fat, Saturated Fat, Trans Fat and Cholesterol**

Look at the grams of total fat, saturated fat and trans fat in one serving.

- Total fat calories should be less than 25 percent of your daily calories.
- Saturated fat calories should be less than 7 percent of your daily calories. One (1) fat gram equals 9 calories. A man on a 2,000 calorie plan could consume 56 grams of total fat and 15 grams saturated fat per day. A woman on a 1,600 calorie plan could consume 44 grams of total fat and 12 grams of saturated fat per day.
- Trans fat grams should be zero. Avoid foods with partially hydrogenated fat or oils listed as an ingredient. If it contains hydrogenated or partially hydrogenated oil in the list of ingredients, then it contains trans fats. If the serving has less than a half a gram of trans fat, the label will say zero trans fat, so read ingredients carefully.
- Cholesterol intake should be limited to less than 200 mg a day.

**Sodium**

Aim for less than 2,000 mg of sodium a day. Look at the sodium content of the food. Choose foods with less than 140 mg of sodium per serving. Helpful hint: Food selections should contain less than 5% sodium or about the same amount of sodium as calories.

**Sodium Claims on Food Labels**

- No-Salt-Added or Unsalted ➔ No salt is added during processing, but not necessarily sodium-free.
- Salt/Sodium-Free ➔ Less than 5 mg of sodium per serving
- Very Low Sodium ➔ 35 mg of sodium or less per serving
- Low Sodium ➔ 140 mg of sodium or less per serving
- Reduced Sodium ➔ At least 25% less sodium than in the original product
- Light in Sodium or Lightly Salted ➔ 50% less sodium than the regular product

**Sugars**

Sugar can add extra calories. There is no minimum amount of sugar that is needed to be healthy. Choose and prepare foods with little added sugar. Check for added sugars in the ingredient list. When sugar is one of the first three ingredients listed or if there is more than one type of sugar listed, then the food is high in added sugars. Some names for added sugars include sucrose, glucose, dextrose, fructose, high fructose corn syrup, corn syrup, maltose, maple syrup and honey.

**Total Carbohydrates**

Sugars are included in the total carbohydrates on the Nutrition Facts label. People with diabetes need to monitor their carbohydrate intake and limit to ~45 to 60 grams per meal. Everyone should look for “100% whole grain” or “100% whole wheat” which is a better choice compared to enriched grains or a mixture of whole and refined grains. If you have high triglycerides, choose foods higher in fiber and low in sugar.
**Dietary Fiber**

Aim to get 25-35 grams of dietary fiber each day by including foods with at least 3-5 grams of fiber per serving. Eat more beans, peas, lentils, oats, whole grains, ground flaxseed, and fresh or frozen vegetables and fruit.

**Percentage Daily Value**

The Percentage Daily Value is a guide and is based on a 2,000 calorie diet. Focus on foods with a Percentage Daily Value of 5 percent or less for sodium and fats. Use moderately foods with greater than 5 percent Daily Value for sodium and fats. Avoid foods with Percentage Daily Value of 20 percent or higher for sodium and fats.

**Heart Smart Hints**

The following hints and guidelines can reduce your risk of heart disease. Not everything that is advertised or labeled as healthy is truly good for you. Always read the nutrition label and the list of ingredients to know whether a food selection is healthy.

**Focusing on Fats**

Heart healthy eating not only considers total fat, but also the type of fat consumed. Read food labels and list of ingredients to find the amount and types of fats found in the product. Focus on choosing the “good” fats and avoid the “bad” and “ugly” fats.

**The Good: Polyunsaturated Fat (omega-3 and omega-6)**
- Corn, soybean, safflower and cottonseed oil
- Sesame and sunflower seeds
- Soybeans
- Walnuts
- Flaxseed
- Tahini
- Cold water fish, such as tuna, salmon, mackerel and sardines

**The Good: Monounsaturated Fats**
- Olive, peanut and canola oil
- Avocado
- Olives
- Almonds, cashews and peanuts
- Natural peanut butter

**The Bad: Saturated Fats**
- Butter
- Stick margarine
- Lard shortening
- Whole milk dairy products—use low fat or fat free versions
- High fat cheese—use low fat or fat free versions
- Egg yolks
- High-fat meats
- Luncheon meats
- Chicken skin
- Cocoa butter
- Coconut, palm and palm kernel oil
- Beef tallow
- Partially hydrogenated oil or fats
The Ugly: Trans Fats (consume less than 1 gram per day)

- Hydrogenated vegetable oils
- Stick margarine
- Shortening
- Commercially baked goods made with partially hydrogenated oils/fats

Reduce Your Intake of Saturated Fats and Cholesterol

A diet high in fat, especially saturated fat, increases your risk for heart disease, obesity and some types of cancer. The most effective way to lower blood cholesterol is to eat less saturated fat and cholesterol. Cholesterol is found only in foods derived from animals. A good way to know if a food has cholesterol is to remember, if it swims, walks or flies or comes from something that swims, walks or flies, it has cholesterol.

The American Heart Association recommends for those with heart disease or with risk factors for disease:

- **Limit daily cholesterol intake to < 200 mg**
- **Limit daily saturated fat to less than 7 % of total calories**

Within these recommendations, you can determine the amount of a particular food consumed daily or weekly. Given the ongoing discussion about eggs, shellfish and more, it is important to tailor your food intake to adhere to these recommendations:

**Examples of foods and their cholesterol amount:**

1 egg = 200 mg
3 oz shrimp = 161 mg
3 oz chicken = 90 mg
3 oz turkey = 60 mg
3 oz 85% lean ground beef = 71 mg
3 oz lamb = 82 mg
3 oz liver = 207 mg
3 oz cod = 47 mg
3 oz canned salmon = 71 mg
3 oz farmed Atlantic salmon = 54 mg
1 cup skim milk = 5 mg
1 cup whole milk = 24 mg
1 slice cheddar cheese = 29 mg
1 Tbsp butter = 31 mg

Dairy products are relatively low in cholesterol but high in saturated fat, so choose food lowest in saturated fat: skim, fat-free or 1% milk and dairy products (such as cheese, butter, yogurt, cottage cheese, sour cream, cream cheese, etc.).

- Avoid consumption of red meats. If consumed, choose small portions of lean cuts of meats, such as loin or round (pork tenderloin, 93-99 percent lean ground beef or ground turkey breast, beef tenderloin, sirloin, flank, or round steak.
- Choose meatless meals using beans, peas, lentils, soy foods and whole-grains.
- Trim all visible fat and skin from meats and poultry before cooking. Drain the liquidized fat from all meats.
- Avoid fried foods. Instead bake, grill, broil, roast, poach, microwave, steam or stir-fry food.
Avoid meats canned or cured in brine and high-sodium broths.

Limit egg yolks. Choose egg whites or egg substitutes instead. Use two egg whites (cholesterol free) to replace each whole egg in baked recipes.

Shellfish are high in cholesterol but low in saturated fat and total fat, so eat them in moderation.

Eat 4 ounces of baked or grilled fish at least 2-3 times per week, especially salmon, instead of beef or chicken.

Choose natural, no salt added ground nut butters and unsalted nuts: almonds, cashews, pecans or walnuts. Limit eating nuts to ½ to 1 ounce per day due to their high calorie and fat content.

Use fat-free or 1% dairy products including milk, yogurt, cheeses, ice cream and sherbet.

Avoid high-fat cheeses made from whole or 2 % milk. Buy low fat, fat free, no sodium added or sodium reduced cheeses.

Choose fresh or frozen vegetables, without added salt. Rinse canned foods to decrease salt and sodium content.

Cook with a liquid oil, such as olive, canola or peanut oil. Use small amounts of oils to avoid excess fat and calories.

Saute´ foods in water or vegetable broth. Nonfat cooking sprays are okay to use.

Chill soups, stew and meat or poultry broth until fat becomes solid. Spoon off the fat before using.

Avoid Trans Fats

Trans fats act like saturated fat in your body. They raise LDL cholesterol, total cholesterol and reduce HDL cholesterol.

Common sources are stick margarine, vegetable shortening, deep-fried foods and partially hydrogenated or hydrogenated vegetable oil/fats.

Choose liquid or tub margarines containing 2 grams or less saturated fat per tablespoon and zero trans fat.

Avoid store-bought foods, such as cakes, cookies, doughnuts, pastry, crackers, pies and deep-fried foods.

Increase Fiber

Soluble fiber in your diet can help lower both your total and LDL cholesterol. Ideally, fiber should be included in every meal—8 to 10 grams of fiber per meal.

Good sources of fiber include dried or canned no added salt beans, lentils, peas, oats, apples, fruits and vegetables with skins, flaxseed, and 100% whole grain breads and cereals.

Choose 100% whole wheat or multigrain breads with at least 3 grams of fiber per serving. Look for products with whole wheat, rye or oats as the first ingredient. Bake with whole wheat flour.

Choose 100% whole grain pastas. Choose cereals with at least 3-5 grams of fiber per serving.

Choose rice with at least 2-4 grams of fiber per serving.

Try different grains including quinoa, barley, oats, amaranth, kasha, bulgur, whole wheat pasta and whole wheat couscous.
**Five or More A Day Fruits and Vegetables**

- Fruits and vegetables are low in calories, fat and sodium and make great choices for healthy snacks. Replace high-calorie desserts with fresh fruits.
- Eat a rainbow of fruits and vegetables.
- Select fresh or frozen vegetables or fruit.
- Avoid vegetables with sauces, gravies or seasonings that are high in fat and salt.
- Steam, broil or bake vegetables. Stir-fry vegetables with water, low-sodium broth or small amount of liquid oils, such as canola, olive or peanut oil.
- Select fruit canned in natural juice for lower sugar content.
- Buy low-sodium or no salt added canned vegetables or vegetable juices.

**Give Soy a Try**

Studies suggest soy products such as tofu, tempeh, edamame, soy milk, soy cheese, soy nuts and soy powders may lower cholesterol. Look for a soy cookbook to incorporate more soy products into your daily diet. Aim for at least 25 grams of soy protein per day.

**Use More Garlic in Your Recipes**

One to two cloves per day may help lower total cholesterol.

**Caffeine and Alcohol Intake**

Moderate caffeine intake is one to two cups per day. Minimize soda intake. Avoid supplemental stimulants such as energy drinks or very strong caffeinated beverages.

Moderate alcohol intake is no more than one drink per day for women and two drinks per day for men. One drink equals 12 ounces beer, 4 ounces of wine, 8 ounces malt liquor, 1.5 ounces of 80-proof spirits or 1 ounce of 100-proof spirits.

**Restrict Sodium Intake to Less Than 2,000 mg per Day**

**Why Watch Salt?**

Too much salt (sodium chloride) is not good for anyone, but when you have a heart condition, it is even more important to watch your sodium intake. Excessive sodium can cause water retention, high blood pressure and shortness of breath. The average American consumes 3,400 mg sodium each day. One teaspoon of salt equals 2,300 mg of sodium. To avoid excess sodium intake, eat regular meals and snacks made up of fresh foods and read the food label for sodium content and hidden sources of sodium. Sodium is found naturally in many foods like milk but many convenience foods have added sodium as a preservative. Avoid foods with the word “salt” – sea salt, kosher salt, garlic salt, celery salt, iodized salt, salt substitutes or lite salt and foods containing other sources of sodium such as sodium nitrates and other sodium containing preservatives.

Adults with high blood pressure (hypertension) and pre high blood pressure (prehypertension) would particularly benefit from blood pressure lowering. For these individuals (two thirds of Americans), **further sodium reduction to 1,500 mg per day can result in even greater blood pressure reduction**. Every incremental decrease in sodium intake is encouraged. Even without reaching the 1,500 mg sodium recommendation, strong evidence indicates that reduced sodium intake can lower blood pressure. This is a challenge but with proper food choices using fresh and unprocessed foods, this goal can be achieved.
**General Guidelines**

- **Read the Nutrition Facts Label** to see how much sodium is in the food.
- **Salt is salt.** Sea salt and table salt contain equal sodium. Sea salt is not a low-sodium alternative to table salt.
- **Salt substitute** or sodium containing medications, such as antacids or baking soda product should be discussed with your physician if you wish to use one.
- **Prepare your own food when you can.** Don’t salt foods before or during cooking. Remove the salt shaker from the table.
- **Add flavor without adding sodium.** Use herbs and spices instead of salt to add flavor to your foods. See “Flavoring Food Without Salt.” Do not use bouillon cubes unless sodium-free.
- Condiments are usually high in sodium (soy sauce, ketchup, salad dressings, and seasoning packets). Choose low sodium or no sodium alternatives.
- Avoid mixes and instant products that already contain salt and additives.
- **Choose fresh or frozen vegetables** (without sauce), or low sodium or no-salt-added canned vegetables.
- Use canned foods (such as tuna, vegetables or beans) that are sodium free or low in sodium. Otherwise rinse well before using, to remove part of the sodium.
- **Choose a product with less than 5% of the Daily Value for sodium.** Many raw meats have added broth with sodium salts that make the meat hold moisture. Most rotisserie chickens are high in sodium and fat, having been enhanced with this salt-containing solution prior to cooking.
- **Avoid canned, smoked or processed meats** like luncheon meats, frankfurters, sausages, bacon, turkey bacon, and corned beef.
- **Cheese** is naturally high in salt—use unsalted cheeses. Avoid processed cheeses.
- **Snack products** such as chips and pretzels, nuts and seeds, should be labeled ‘low sodium’ or ‘no-salt-added’—or munch on fresh cut-up veggies instead.

**Shopping Tips**

- **Make a list and stick to it.**
- Most grocery stores have fresh and frozen fruits and vegetables, milk, meat, eggs and cheese on the outer walls of the store. Avoid the high-fat dairy, cheeses and meats.
- The interior of the store has many beneficial foods, including high-fiber cereals, whole grain bread and pastas, dried beans, legumes, brown rice and other grains. Avoid all processed foods.

**Dining Out General Guidelines**

- Read the menu carefully. Look for low-fat and low-sodium options.
- Ask that your meal be prepared without added salt, MSG or salted butter.
- Make substitutions for side dishes. Choose steamed unsalted vegetables instead of mashed potatoes.
- Ask for dressings, sauces and gravies on the side. Dip your fork into the salad dressing and then pick up the salad.
- Ask to hold salted rubs from meats and seafood.
- **Don’t go shopping when you are hungry. Drink water while shopping to calm your hunger and to avoid making the wrong food choices.**
- **Allow enough time to read labels and make healthy decisions.**
- **Read labels carefully. Salt and sodium ingredients are often added to foods during processing. Reduced sodium items are not always low in sodium.**
- Blackened dishes usually contain salt.
- **Watch serving sizes—the larger the portion, the more the sodium. Share your meal with someone or take half of the meal home.**
- **Avoid buffets and all-you-can-eat restaurants.**
- **Avoid Chinese and Mexican dishes—very high in sodium and fat.**
- **Make healthy choices a habit.**
## Restricted Fat, Cholesterol and Sodium Diet

### Food List

<table>
<thead>
<tr>
<th>Food Group</th>
<th>Servings Daily</th>
<th>Foods Allowed</th>
<th>Foods to Avoid</th>
</tr>
</thead>
<tbody>
<tr>
<td>Milk, Yogurt And Cheese</td>
<td>2 servings per day</td>
<td>Fat free and low fat (1%) milk and all other dairy products (skimmed evaporated milk, nonfat dry milk solids, yogurt made with fat free milk, low fat, unsalted and part skim milk cheeses, unsalted low fat cottage cheese)</td>
<td>Whole and 2% milk and all other dairy products (buttermilk, chocolate milk, milkshakes, melted milk, eggnog, evaporated milk, sweetened condensed milk, yogurt made from whole milk, cheeses made from whole milk, processed cheese spreads, or goat milk)</td>
</tr>
<tr>
<td>Meat, Poultry, Fish, Dried Beans, Eggs and Nuts</td>
<td>4-6 ounces or servings per day</td>
<td>All lean (93 to 99%) fresh or low sodium frozen meats (beef, pork, veal, lamb- loin, round or chop), fish, poultry (without skin), shellfish, lean ground beef &lt;7% fat, venison, buffalo, canned fish packed in water (rinsed), tofu, legumes cooked without added fat, egg whites**, commercial egg substitutes, low sodium nut butter, frozen dinners (&lt;450 mg sodium)</td>
<td>Fried, fatty, salted cured, in brine, koshered, canned or smoked meats including ham, bacon, sausage, spare ribs, salt pork, ham hocks, corned beef, luncheon meats, hot dogs, duck, goose, capon, poultry skin, Spam, oil-packed fish, meats prepared in sauces and gravy, high fat cuts of beef (ribs, prime rib, t-bone steak, ground beef &gt;7% fat, rib-eye steak), frozen entrees (&gt;450 mg sodium), crab, lobster, imitation seafood, marinated herring, pickled eggs, liver and all other organ meats</td>
</tr>
<tr>
<td>Bread, Cereal, Grains, Rice, and Pasta</td>
<td>5-8 ounces per day</td>
<td>100% whole grain, whole wheat or stone ground breads, enriched white, wheat, rye and pumpernickel breads, rolls made without fat, most high fiber cereals, cooked cereals without added salt, unsalted plain crackers, graham crackers, Matzo, white/brown rice, whole grain pasta/noodles (no salt added), barley, homemade stuffing without salt, unsalted: pretzels, baked tortilla chips, baked potato chips and fat-free popcorn</td>
<td>Biscuits, muffins, butter rolls, croissants, corn bread, sweet rolls, pancakes, waffles, fritters, dumplings, popovers, chow mein noodles, chips, regular &amp; butter crackers, pasta in cream sauce, salted: pretzels, popcorn, chips, snack foods, commercially prepared potato, rice, pasta or stuffing mix</td>
</tr>
<tr>
<td>Beverages</td>
<td>Fluid intake as recommended by your physician</td>
<td>Water, 100% natural fruit juices (limit to 4 oz or 1 serving), low-sodium, salt-free vegetable juices, low sodium carbonated beverages in moderation, coffee and tea in moderation</td>
<td>Regular vegetable or tomato juices, commercially softened water used for drinking or cooking</td>
</tr>
</tbody>
</table>

* Refer to page 30 for a food list and cholesterol amounts

Keep cholesterol <200 mg/day*

(1 egg yolk = 200 mg cholesterol)

---

34 — Lifestyle Changes  
Lee Health
<table>
<thead>
<tr>
<th>Food Group</th>
<th>Servings Daily</th>
<th>Foods Allowed</th>
<th>Foods to Avoid</th>
</tr>
</thead>
<tbody>
<tr>
<td>Vegetable</td>
<td>3-5 servings or 2 ½-3 cups per day</td>
<td>Fresh, frozen vegetables &amp; low sodium canned or dried vegetables prepared without fat or with limited healthy fats and oils or with low fat sauces, mashed, boiled or baked white or sweet potatoes</td>
<td>Vegetables or potatoes: canned, pickled in brine, in sauces, seasoned with ham, bacon or salted pork, au gratin, battered, fried, prepared in sauces made with whole milk, cream, sour cream, eggs or cheese, sauerkraut</td>
</tr>
<tr>
<td></td>
<td>½ cup cooked</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>1 cup raw</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>¾ cup vegetable juice</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>Fresh or frozen is the best; canned or dried, as tolerated, fruit juices, fruit flavored drinks</td>
<td>Avocado in excess of amount allowed in fat category, coconut or coconut milk</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Fruits</td>
<td>3-4 servings or 1 ½-2 cups per day</td>
<td>Fresh or frozen is the best; canned or dried, as tolerated, fruit juices, fruit flavored drinks</td>
<td>Avocado in excess of amount allowed in fat category, coconut or coconut milk</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>½ cup fruit (cut)</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>1 medium fruit</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>½ cup canned fruit</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>½ cup fruit juice</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Fats and Oils</td>
<td>Limit to 2-3 tsp per day</td>
<td>Light soft margarine, trans-fat free margarine, light or fat free: (mayonnaise, salad dressings, sour cream, or cream cheese), 1/8 avocado, olive oil, canola oil, peanut oil, non-stick cooking spray</td>
<td>Stick margarine, shortening, butter, coconut or palm oils, meat drippings, gravy (canned/mixes), grease, lard, regular: sour cream, cream cheese, salad dressings, mayonnaise, salted nuts, any food with hydrogenated or partially hydrogenated listed as an ingredient</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>1 tsp margarine</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>1 tsp vegetable oil</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>1 Tbsp salad dressing</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Sweets and Desserts</td>
<td>Use sparingly (sugar-free if diabetic or pre-diabetic)</td>
<td>Jelly, jam, sugar, syrup, honey, molasses, plain sugar candy (jelly beans, gum drops, hard candy, marshmallows), angel food cake, sherbet, fruit ices, gelatin desserts, popsicle, meringue, low-fat desserts, desserts made with fat free milk</td>
<td>All other cakes, pies, cookies, pastries, candy, doughnuts, ice cream, non-dairy whipped topping, any dessert made with whole milk, cream, chocolate, coconut, any dessert containing fat in excess of allowed amounts</td>
</tr>
<tr>
<td>Miscellaneous</td>
<td>As desired</td>
<td>Pepper, spices and herbs, vinegar, lemon or lime juices, garlic or onion powder; limit seasonings like ketchup, hot sauce and mustard, even if it’s reduced sodium</td>
<td>Any seasoning containing salt, (garlic salt, celery salt, onion salt, sea salt, rock salt, kosher salt), meat tenderizers, soy sauce, monosodium glutamate, Worcestershire sauce, steak sauce, barbecue sauce, ketchup, some flavored vinegars, pickles, olives, relish, horseradish sauce, salt substitute (with sodium and potassium chloride), regular canned, cream or dehydrated soups, broths or bouillon</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Mrs. Dash seasoning powders without sodium/salt</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>Low sodium canned or dehydrated soups, broths, bouillons, and homemade soups without salt</td>
<td></td>
</tr>
</tbody>
</table>
## Sample Menu (Restricted Fat, Cholesterol and 1500 mg Sodium Diet)

<table>
<thead>
<tr>
<th>Breakfast</th>
<th>Lunch</th>
<th>Dinner</th>
</tr>
</thead>
<tbody>
<tr>
<td>1 cup blueberries</td>
<td>Sandwich: 2 slices whole wheat bread</td>
<td>2 oz grilled chicken breast or fish fillet or 1 cup beans</td>
</tr>
<tr>
<td>1 cup plain cooked oatmeal</td>
<td>3 oz no added salt, oven roasted turkey breast, lettuce, tomato, onion</td>
<td>½ cup brown rice</td>
</tr>
<tr>
<td>2 Tbsp pecans or walnuts</td>
<td>2 tsp mustard</td>
<td>1 ½ cup broccoli or any vegetable combination</td>
</tr>
<tr>
<td>1 cup fat free milk</td>
<td>Pasta Salad: ½ cup cooked whole wheat pasta</td>
<td>1 cup tossed veggie salad</td>
</tr>
<tr>
<td>1 small banana or 4 oz fresh squeezed orange juice</td>
<td>½ cup veggies</td>
<td>1 Tbsp low fat Italian dressing</td>
</tr>
<tr>
<td>1 cup decaf coffee</td>
<td>2 tsp extra virgin olive oil</td>
<td>1 cup strawberries</td>
</tr>
<tr>
<td></td>
<td>1 Tbsp red wine vinegar</td>
<td>1 whole wheat dinner roll</td>
</tr>
<tr>
<td></td>
<td>1 medium apple</td>
<td></td>
</tr>
</tbody>
</table>

### Snacks

| Snack-morning: 1 medium orange | Snack-afternoon: light yogurt (8 oz) + 1/2 cup raspberries | Snack-before bed: 3 cups air popped popcorn |

<table>
<thead>
<tr>
<th>Calories</th>
<th>1700</th>
<th>Cholesterol</th>
<th>122 mg</th>
</tr>
</thead>
<tbody>
<tr>
<td>Carbs</td>
<td>250 g</td>
<td>Sodium</td>
<td>1506 mg</td>
</tr>
<tr>
<td>Protein</td>
<td>93 g</td>
<td>Fiber</td>
<td>40 g</td>
</tr>
<tr>
<td>Total Fat</td>
<td>38 g</td>
<td>Sugars</td>
<td>110 g</td>
</tr>
<tr>
<td>Saturated Fat</td>
<td>3 g</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

### Flavoring Food without Salt

#### Vegetables

- **Asparagus**: Lemon, chives
- **Broccoli**: Lemon, oregano, rosemary
- **Carrots**: Lemon, orange, nutmeg, mint, basil, marjoram, oregano, thyme, brown sugar, ginger, cinnamon, mace, anise, dry mustard
- **Corn**: Green pepper, fresh tomatoes, paprika, hot pepper sauce
- **Peas**: Mint, dill, fresh mushrooms, basil, marjoram, savory
- **Potatoes**: Mace, chives, rosemary, dill
- **Sweet Potatoes**: Mace, ginger, basil, cinnamon, cloves, brown sugar, nutmeg, allspice, oregano, lemon, orange
- **Spinach**: Nutmeg, oregano, basil, marjoram, rosemary, thyme, allspice, mace, lemon
- **Tomatoes**: Basil, oregano, thyme, sugar, dill, marjoram, vinegar

#### Meats, Poultry, Fish and Eggs

- **Beef**: Bay leaf, dry mustard, nutmeg (in meat loaf), sage, dill, green pepper, fresh mushrooms, tomatoes
- **Veal**: Bay leaf, curry, ginger, apricot or currant jelly, fresh mushrooms, tomatoes, tarragon, dry mustard
- **Pork**: Sage, caraway, nutmeg, apples, applesauce, cranberry sauce, tarragon, dry mustard
- **Lamb**: Curry, mint, dill, sage
- **Poultry**: Sage, tarragon, fresh mushrooms, poultry seasoning, curry, peach, apricot, pineapple, lemon, hot pepper sauce, bay leaf
- **Fish & Eggs**: Dill, basil, tarragon, curry, dry mustard, paprika, cayenne, thyme, green pepper, fresh mushrooms, tomatoes, hot pepper sauce, chives, and bay leaf adds flavor to fish chowders
Diet Comparison

The Diet Comparison chart provides a comparison of the Standard American Diet (SAD) to the recommendations from American Heart Association (AHA), Prevention Diet and Reversal Diet (based on combined research by Dean Ornish, M.D. and Caldwell B. Esselstyn, Jr., M.D.). Based on freedom of choice, your lifestyle should empower you to take control, making dietary changes to reach the goals determined by you and your physician. Those with coronary artery disease or at risk should adjust their dietary habits to meet the American Heart Association (AHA) recommendations for heart health. To the degree that you move toward the Prevention and Reversal diets, you will feel better, gain health, lose weight, while preventing disease progression.

<table>
<thead>
<tr>
<th>Heart Disease Reversal</th>
<th>Heart Disease Prevention</th>
<th>American Heart Association (AHA)</th>
<th>Standard American Diet (SAD)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Daily Cholesterol Intake</td>
<td>0 mg</td>
<td>&lt; 10 mg</td>
<td>&lt; 200 mg</td>
</tr>
<tr>
<td>Fats</td>
<td>5%</td>
<td>&lt; 10%</td>
<td>25 - 30%</td>
</tr>
<tr>
<td>Added Oil</td>
<td>none</td>
<td>minimal</td>
<td>&lt; 2 - 3 tsp</td>
</tr>
<tr>
<td>Protein</td>
<td>12 - 15%</td>
<td>12 - 20%</td>
<td>10 - 20%</td>
</tr>
<tr>
<td>Complex Carbohydrates</td>
<td>65 - 75%</td>
<td>65 - 70%</td>
<td>50 - 60% at least half from whole-grains</td>
</tr>
<tr>
<td>Whole Grains</td>
<td>100%</td>
<td>100%</td>
<td>&gt; 50%</td>
</tr>
<tr>
<td>Sugar</td>
<td>minimal</td>
<td>decreased</td>
<td>&lt; 2 tsp (8 grams)</td>
</tr>
<tr>
<td>Sodium</td>
<td>&lt; 2,000 mg</td>
<td>&lt; 2,000 mg</td>
<td>1,500-2,400 mg</td>
</tr>
<tr>
<td>Fiber</td>
<td>&gt; 40 g</td>
<td>&gt; 30 g</td>
<td>25 - 30 g total</td>
</tr>
<tr>
<td>Alcohol</td>
<td>none</td>
<td>0 - 1 drink per day *</td>
<td>0 - 1 drink female *</td>
</tr>
<tr>
<td>Fish - Animal Protein</td>
<td>no fish</td>
<td>no fish</td>
<td>2 (3.5) oz servings / week or fish oil supplements</td>
</tr>
<tr>
<td>Lean Beef, Pork, Poultry - Animal Protein</td>
<td>no animal protein, use plant-based protein alternatives</td>
<td>no animal protein, use plant-based protein alternatives</td>
<td>&lt; 3 - 6 oz /day or &lt; 4 - 5 servings / week</td>
</tr>
<tr>
<td>Eggs</td>
<td>no eggs</td>
<td>0 - 2 servings egg whites</td>
<td>&lt; 2 egg yolks / week</td>
</tr>
<tr>
<td>Dairy</td>
<td>no dairy</td>
<td>0 - 2 servings fat free dairy or non-dairy alternative</td>
<td>2 - 3 servings fat free or low fat (1%) dairy or non-dairy alternative</td>
</tr>
<tr>
<td>Nuts</td>
<td>no nuts</td>
<td>sparingly</td>
<td>3 - 5 ounces / week</td>
</tr>
<tr>
<td>Seeds</td>
<td>1-2 Tbsp ground flax or chia seed for omega-3 fatty acids</td>
<td>1-2 Tbsp ground flax or chia seed for omega-3 fatty acids</td>
<td>included with nuts</td>
</tr>
<tr>
<td>Legumes, Soy, Whole Grains - Plant Protein</td>
<td>only source of protein</td>
<td>main source of protein</td>
<td>can be your sole source of protein</td>
</tr>
<tr>
<td>Portion Control</td>
<td>eat freely all plant food groups except oils &amp; nuts, no processed foods</td>
<td>same as reversal except tight portion control for oils &amp; nuts</td>
<td>limit to AHA recommendations, minimize processed</td>
</tr>
<tr>
<td>Calories</td>
<td>unrestricted</td>
<td>limit if weight loss is desired</td>
<td>adjust to maintain desirable body weight</td>
</tr>
<tr>
<td>Total Cholesterol Goal</td>
<td>&lt; 150 mg / dl</td>
<td>&lt; 150 mg / dl</td>
<td>&lt; 200 mg / dl</td>
</tr>
<tr>
<td>LDL Cholesterol Goal</td>
<td>&lt; 80 mg / dl</td>
<td>&lt; 80 mg / dl</td>
<td>&lt; 100 mg / dl</td>
</tr>
</tbody>
</table>

Heart Care

Lifestyle Changes— 37
Physical Activity

Activity/Exercise Guidelines

Exercise is an important part of your recovery and will help you return to an active lifestyle. Bed rest, inactivity, heart disease and suffering a heart attack can make you feel tired, weak and deconditioned. Exercise strengthens your heart, mind and body with many positive health benefits:

- Helps to lower blood pressure
- Helps to increase HDL levels
- Helps to decrease LDL levels
- Helps to decrease weight and body fat
- Helps to control blood sugar and diabetes
- Improves strength, flexibility and endurance
- Increases energy, helps to manage stress
- Helps you feel good about yourself
- Helps to relieve anxiety and depression
- Promotes improved circulation, elimination, muscle tone and posture

Your heart is a special muscle. Continuous exercise improves muscle tone and strength. As tolerated, gradually increase walking time and distance to 20-30 minutes per day. Do not compare yourself with others; everyone recovers differently. Set realistic goals for yourself, both short- and long-term.

- If you have had a heart attack, your heart needs anywhere from 4-8 weeks to heal and recover. During this time, light to moderate walking is encouraged as tolerated.

- If you have had an angioplasty/coronary stent, regular activities can usually be resumed after 1-2 weeks.

- If you have had heart surgery with a sternotomy, without complications, your heart needs 6-8 weeks to heal and recover.

- If you have had minimally invasive heart surgery, without complications, your body needs as much as 4 weeks to heal and recover.

- These are general guidelines. As always, ask your physician when you can drive, if and when you may return to work, and when you can resume regular activities, as well as an exercise program.

Remember, all activities place some demand upon your heart.

- Make walking and exercise part of your daily life.
- Plan ahead.
- Space your day so you have rest periods between activities.
• Increase your activities gradually.
• Rest when you feel tired.
• Walk or exercise with a buddy.
• Walk inside if weather is hot, humid, too cold or windy.
• Be consistent without excuses.
• Keep a log to monitor your progress.

Exercise DOs & DON’Ts

DO begin your exercise program at a light to moderate intensity.

DO warm-up and cool-down activities before and after each exercise session.

DO exercise when you are rested.

DO exercise before eating, or wait one hour after meals.

DO drink 6-8 ounces of water before and during exercise, unless fluid restricted.

DO wear comfortable clothing and shoes.

DO start with 3-5 minutes of walking at a steady pace, 4-6 times per day.

DO increase your intensity by 1-3 minutes per day. Your long term goal is 30-60 minutes of continuous walking.

DO modify for any orthopedic issues or concerns.

DO try to find a walking partner to make exercise more enjoyable.

DO pace yourself appropriately during your walk or other physical activity and be sure to keep your perceived exertion light to moderate throughout your recovery.

DO use the ‘talk test’ as an exercise guideline. If you cannot maintain a normal conversation without feeling short of breath, you are walking too fast.

DO climb stairs at a rate of one stair for every 2-3 seconds and remember to include stair climbing activity in your total exercise time.

DO keep your movements smooth and slow.

DO maintain good posture.

DON’T exercise if you feel overtired or lightheaded. Wait until you feel rested.

DON’T attempt activities that require bursts of energy.

DON’T hold your breath while exercising. This raises your blood pressure and places a strain on your heart.

DON’T exercise if you have an acute illness, infection or fever. Wait until a few days after your symptoms disappear before you exercise.

DON’T exercise in extreme weather conditions. Walk in the morning or evening during the hot and humid summer months.
DON’T take extremely hot or cold showers after exercise.

DON’T drink alcohol before exercise.

DON’T drink caffeine (found in coffee, tea and many sodas) two hours prior to exercise.

DON’T lift objects more than 10 pounds for 6-8 weeks if you have had recent open heart surgery. This includes children, pets and grocery bags.

**Physical Activity Goal**

American Heart Association recommends 150 minutes per week of moderate exercise or 75 minutes per week of vigorous exercise (or a combination of both).

- 30 minutes/day of moderate-intensity aerobic activity, 5 days/week. You can also divide your time (2 or 3 segments of 10 to 15 minutes/day) or
- 25 minutes/day of vigorous aerobic activity, 3 days/week (75 minutes/week) or
- Combination of both moderate and vigorous activity
- Moderate to high intensity muscle-strengthening activity, at least 2 days per week for additional health benefits

Physical activity is anything that makes you move your body and burn calories, such as climbing stairs or playing sports. Aerobic exercises such as walking, jogging, swimming or biking benefit your heart. Strength and stretching exercises are best for overall stamina and flexibility.
Activity Progression

A simple, positive change you can make to effectively improve your heart health is to start walking. It’s enjoyable, free, easy, social and great exercise. A walking program is flexible and boasts high success rates because people can stick with it. It’s easy for walking to become a regular and satisfying part of life.

After a cardiac event, a safe walking program starts slowly, gradually building on both time and distance. Your walking program will begin while you are in the hospital.

**Level 1**
Walk 3-5 minutes, 4-6 times per day

**Level 2**
Walk 5-10 minutes, 3-4 times per day

**Level 3**
Walk 10-15 minutes, 2-3 times per day

**Level 4**
Walk 15-20 minutes, 1-2 times per day

**Level 5**
Walk 20-30 minutes, 1 time daily, most days of the week

**Guidelines to remember:**
- Initially walk shorter distances more frequently, alternating periods of activity with rest.
- Proceed through the levels of walking as tolerated.
- When you complete the maximum number of minutes in each level without going over your prescribed level of exertion (light to moderate) for 2 days in a row, you may proceed to the next level.
- Gradually increase time and distance.
- You may begin to stack activities, as you increase in endurance and strength.
- Listen to your body as you safely progress through all activity.
- Modify for orthopedic issues or concerns.
- Once medically cleared, walking can be replaced with biking, dancing, swimming, etc.
- **Follow-up with your physician to discuss outpatient Cardiac Rehabilitation options.**
Rate of Perceived Exertion Scale

Use this scale to determine how hard you are working.

- The lowest rate, 0, is how you generally feel when you are completely at rest.
- The highest rate, 10, is the hardest you could ever push yourself.

Initially, your walks and other activities after discharge should feel light to moderate on this scale.

0  Nothing at all
0.5 Very, very light
1  Very light

<table>
<thead>
<tr>
<th>Desired Level of Exertion</th>
</tr>
</thead>
<tbody>
<tr>
<td>2  Light</td>
</tr>
<tr>
<td>3  Moderate</td>
</tr>
<tr>
<td>4  Somewhat hard</td>
</tr>
<tr>
<td>5  Hard</td>
</tr>
<tr>
<td>6</td>
</tr>
<tr>
<td>7  Very hard</td>
</tr>
<tr>
<td>8</td>
</tr>
<tr>
<td>9</td>
</tr>
<tr>
<td>10 Very, very hard</td>
</tr>
</tbody>
</table>

Abnormal Responses to Walking or Exercise

- Symptoms of angina; chest pain, pressure or discomfort
- Indigestion or heartburn
- Pain or discomfort in the jaw, neck, arms, shoulders or back
- Severe shortness of breath
- Dizziness or light-headedness
- Frequent skipped heartbeats or palpitations
- Excessive fatigue or sweating
- Nausea or vomiting
- Blurred vision

STOP exercising immediately and rest if you develop any of these symptoms.

If indicated, take your nitroglycerin as directed. Call your physician if these symptoms persist, or call 911 if you have an emergency situation.
Sex for the Recovering Heart

Many patients have questions regarding sexual activity after a cardiac event. This book gives a few basic guidelines. Ask your doctor when it is safe for you to resume sexual activity or about any concerns that are not covered here.

You can usually resume sexual activity after a cardiac event. How soon you resume sexual activity depends on the severity of your event. If you are able to climb two flights of stairs at a moderate pace or walk briskly for 10 minutes with no chest discomfort, sex is probably safe. Meanwhile, remember that loving, hugging, touching and stroking help the recovery process.

When you are ready to resume sex, keep these hints in mind:

• Don’t put too much emphasis on the first time. Stay relaxed. Remember that hugging and touching does not need to lead to sex.
• Allow time to rest after walking, working or performing other activities before having sex.
• Do not have sex after a heavy meal because there is already an increased demand on the heart. Avoid alcohol before sex.
• Use positions that let you breathe easily.
• Avoid stimulants before sexual activity, such as caffeine and nicotine. Avoid extremes in temperatures, such as very hot or cold baths and showers. Extreme temperatures can cause a change in your blood pressure.

You may experience symptoms of angina during sex just as you may with other activities. If this occurs, take nitroglycerin if prescribed by your doctor and rest before continuing sex. Be aware you cannot take any form of nitrates if you take medication for erectile dysfunction. Refer to the Medications section for information regarding nitrates and erectile dysfunction drugs.

Some medications may lessen your sex drive or sexual function. If you have questions about the side effects of any drug, do not stop taking it. Talk with your doctor—often times adjustments can be made to lessen the negative side effects.
Low Level Exercises - Exercises for Heart Failure, Heart Attack and Heart Surgery Patients

**Deep Breathing Exercises**
Deep breathing exercises help to expand the lungs and increase oxygen to the bloodstream. Deep breathing exercises can be done lying in bed, sitting or standing.

Breathe in slowly and as deeply as you can.

Then exhale slowly.

Repeat 10 times.

Do this at least 6 times per day.

My personal goal is _______ times per day.

It is important to remember to take slow, deep breaths any time you feel short of breath.
Exercises to Do When Lying in Bed

These exercises help blood to flow from your feet back to your heart, and help to control swelling in your ankles.

Point your toes toward your nose.

Then extend your toes as far as possible.
Repeat 10 times.

Rotate each ankle 10 times by making circles with your toes.

Do each of the above exercises at least 6 times per day.

My personal goal is _______ times per day.

Don't forget to do the deep breathing exercises when lying down.
Exercises to Do When Sitting

The following exercises help blood to flow from your feet back to your heart, and help to control swelling in your ankles.

Lift your heels off the floor.
Repeat 10 times.

Lift your toes off the floor.
Repeat 10 times.

Rotate each ankle 10 times.

Whenever you are sitting, lift your feet up as often as possible.

Do each of the above exercises at least 6 times per day.

My personal goal is _______ times per day.

Don't forget to do the deep breathing exercises when sitting.
Exercises to Do While Standing
These exercises also help blood flow from your feet back to your heart and help to control swelling in your ankles.

Lift heels off the floor.
Repeat at least 10 times.

Shift your weight from leg to leg.
Repeat at least 10 times.

Do each of the exercises listed above at least 6 times per day.

My personal goal is _______ times per day.

Do not stand still for long periods of time. Ankles are more likely to swell when standing still.
**Walking Exercises**
When you are able, go for walks regularly.

Start with walking around in your room.

Walk around in your house or down a hall.

When you feel stronger, take 5 minute walks 2 or 3 times per day. Increase the time as tolerated.

It is important to alternate periods of activity with rest.

If you become short of breath or notice any other symptoms, stop and rest.

Call your doctor if symptoms do not go away within a few minutes.

**Moderate Level Exercises- Warm-Up & Stretches**

**Seated Warm-Up Activities**

**Ankle Pumping**

Sit with your feet out in front of you. Pump ankles to move feet up and down through the full range of motion. Keep heels on the floor.

Repeat____times.

**Knee Straightening**

Raise foot to straighten knee fully. Then, lower foot to floor.

Repeat____times each leg.
**Hip Bending**
Sitting in a chair, lift one knee up toward the ceiling. Lower the knee on one leg as you raise the other knee. Alternate each leg as if to march while sitting in place.

Repeat____ times.

**Overhead Reaching**
Sitting in the chair, raise one arm to the front until your hand is overhead pointing toward the ceiling. Keep your elbow straight. Slowly lower the arm to your side.

Repeat____ times each side.

**Shoulder Touching**
Sit in a chair with arms at your sides and your palms facing forward. Bend your elbows until you can touch your shoulders with your hands.
Lower your hands to your sides.

Repeat____ times.

**Arm Circles**
Lift your arms slightly out to your side—approximately 1 or 2 feet from your body. Then rotate your arms in a circle while keeping your elbows straight.

Repeat____ times each direction.
**Single Arm Lifts**

Sit in a chair with your arms at your sides. Raise one arm to the side no higher than shoulder height. Keep your elbow straight and palm facing the floor. Slowly lower your arm back down to your side.

Repeat with your other arm.

Repeat ____ times each side.

**Shoulder Shrugs**

Bring your shoulders forward and up toward your ears and then backward and down in a smooth circular motion.

Repeat ____ times.

**Single Shoulder Circles**

With one hand touching your shoulder, make large circles with your elbow. Circle your shoulder clockwise then counterclockwise.

Repeat ____ times each direction with each side.

**Standing Warm-Up Activities**

**Ankle Pumping**

Hold on to a sturdy object for balance, then pump your ankle to move your foot up and down through full range of motion.

Repeat ____ times each leg.
**Leg Circles**
Hold on to a sturdy object for balance. Lift your leg to the back and circle that leg in small circles while keeping your knee straight. Circle the leg from the hip joint both clockwise and counterclockwise.

Repeat____times each leg.

**Lateral Leg Lifts**
Hold on to a sturdy object for balance, then carry your leg out to your side. Keep your toes pointed forward and your knee straight. Lead with your heel out to side, then lower leg back to the floor.

Repeat____times each leg.

**Trunk Turns**
Stand with your feet shoulder width apart and a slight bend in your knees. Slowly turn your trunk to one side. Return to starting position and then turn trunk to the other side. Do not twist your neck.

Repeat____times each side.

**Shoulder Touching**
Stand with your arms at your side and your palms facing forward. Bend both elbows until your hands touch your shoulders. Lower hands to your side.

Repeat____times.
Arm Lifts to Side
Stand with your arms at your side. Raise one arm to the side no higher than shoulder height. Keep your elbow straight and palm facing the floor. Slowly lower your arm back down to your side. Repeat with your other arm.

Repeat____times with each arm.

Arm Circles
Lift your arms slightly out to the side—approximately 1 to 2 feet from your body. Then rotate your arms in a circle with elbows straight.

Repeat____times in each direction.

Overhead Reaching
Stand with your arms at your side, then raise one arm toward the front until your hand is overhead pointing to the ceiling. Keep your elbows straight. Slowly lower your arm to your side.

Repeat____times with each arm.
Stretching Activities

Do not cause yourself pain when stretching. Do not bounce or use jerking motions. Correct stretching is a steady, static pull. Remember to focus on steady breathing without holding your breath.

**Calf Stretch, option 1**

Stand facing the wall keeping toes pointed forward. Put one foot about 12 inches in front of the other. Bend the knee of your front leg and lean forward. Keep the knee of your back leg straight and your heel on the floor. Lean forward until you feel a mild stretch in the calf.

Repeat____times with each leg.

**Calf Stretch, option 2**

Stand holding on to a sturdy handrail or wall. Place the ball of one foot on a stair as shown. Lower your heel down toward the step below until your feel a gentle pull in your calf. Hold for 20 seconds.

Repeat____times with each leg.

**Quadriceps Stretch**

Stand on one leg with the other leg bent at the knee. Grasp your ankle of the bent leg behind you and pull backward until you feel the stretch.

Repeat____times with each leg.
**Hamstring Stretch, option 1**

Hold onto a wall or firm object in a standing position. Place one leg on a chair, stool or step. Choose a comfortable height that allows you to keep your knee straight. Lean forward to stretch the back of your thigh while keeping your spine straight. If balance is unsteady, sit in a chair for this stretch.

Repeat _____ times each leg.

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**Hamstring Stretch, option 2**

Sit on the edge of a bed or sofa as shown. The leg on the bed should be kept straight. Slowly slide your hands down the leg on the bed until you feel a gentle pull in the back of the thigh. Hold this position for 20 seconds. Keep your back straight. Remember to focus on steady breathing without holding your breath.

Repeat _____ times with each leg.
Weight Management

Lose weight if necessary. The behaviors you adopt in order to lose weight are the same behaviors you must maintain for permanent weight loss. Research has shown that your health can be greatly improved by a loss of 5–10 percent of your starting weight. That doesn't mean you have to stop there, but it does mean that an initial goal of losing 5–10 percent of your starting weight is both realistic and valuable.

Your doctor or dietician can recommend a safe weight-loss plan and a reasonable target weight. In order to lose weight, you need to burn more calories than you eat. Every good weight-loss plan has the same two parts: food and physical activity. Wise food choices (no fad diets) and watching portion sizes can help you eat fewer calories. Daily physical activity helps you burn off some of the calories you consume. You lose weight more easily and you’re more likely to keep it off.

To lose weight and sustain weight loss, you will need a high amount of physical activity unless you also adjust your diet and reduce the amount of calories you’re eating and drinking. Most people need at least 60-90 minutes of physical activity of moderate intensity on most days of the week. If you have orthopedic issues or other concerns that limit your ability to be physically active, then make a goal to NOT gain weight. Also, speak with your health care provider about whether the gentle low and moderate level exercises listed in this guide are suitable for you.

Here are more tips:

• Drink water.
• Eat vegetables to help you feel full.
• Keep tempting foods out of your home.
• Eat fresh fruit instead of desserts.
• Stay busy—you don’t want to eat just because you’re bored.
• Eat only from a plate, while seated at a table. No grazing in front of the refrigerator.
• Eating slowly will help you feel satisfied.
• Don’t skip meals.

Learn what social or environmental cues (triggers) seem to encourage undesired eating. Then try to change the situation, avoid or eliminate the cue or change the circumstances surrounding the cue. In general, visible and reachable food items are often cues for unplanned eating.

Keeping a food journal and writing down everything you eat can help you stay on track. Besides jotting down what you ate and when, you might also want to note how you were feeling right before you ate it. Were you anxious, worried, stressed or bored? We often focus so much on foods and calories, but our emotions are a huge part of our eating habits. If you see a persistent pattern in your emotional eating that you are unable to change, consider talking to a counselor about it to learn healthier ways to handle your feelings.
If you feel you need extra support to lose weight, look for a weight-loss program that's been proven safe and successful. Look for a program that:

- Stresses a healthy eating plan (low in saturated fat, trans fat, cholesterol and sodium—with plenty of vegetables, fruits, whole grains, beans, legumes, lean protein and fat-free or low-fat dairy).
- Includes daily physical activity.
- Provides accountability and personal support from a group, buddy or dietitian.
- Does not completely deprive you of the foods you enjoy.
- Has a system to help you keep track of what you eat and drink.
- Recommends a gradual weight loss of 1 to 2 pounds per week until a healthy weight is reached.
- For diabetics, doesn't conflict with your diabetic diet. Talk to your doctor or diabetes educator for questions.
- Includes a maintenance program for keeping off weight.

Smoking/Tobacco Cessation

Cigarette smoking is the most important preventable cause of premature death in the United States. It accounts for more than 440,000 of the more than 2.4 million annual deaths. Cigarette smokers have a higher risk of developing several chronic disorders including atherosclerosis (buildup of fatty substances in the arteries), several types of cancer and chronic obstructive pulmonary disease (lung disease). Cigarette smoking is a major cause of coronary heart disease, which leads to heart attack.

Benefits of Quitting Smoking

- Longer life
- Better overall health
- Improved appearance
- Better stamina
- Better senses (taste and smell)
- Improved health and well-being of those around you

What happens to your body after you stop smoking?

- 20 minutes - Blood pressure and pulse return to normal.
- 8 hours - Oxygen level in blood increases and carbon monoxide level returns to normal.
- 24 hours - Mucus in the airways breaks up and clears out of your lung.
- 24 to 48 hours - Chance of a heart attack decreases.
- 5 to 7 days - Nicotine is out of your system.
- 2 to 12 weeks - Circulation improves; walking becomes easier.
- 3 to 9 months - Lung function improves and respiratory symptoms decrease, such as sinus congestion, wheezing and shortness of breath.
• 1 year - Excess risk of coronary heart disease is reduced to half that of a smoker.
• 10 years – Risk of lung cancer drops to half that of a smoker. Risk of cancer of the mouth, throat and esophagus decreases.
• 15 years – Risk of heart disease and premature death drops to nearly that of a person who never smoked.

Nicotine Withdrawal
As your body begins to repair itself, you may feel worse instead of better. It’s important to understand that healing is a process—it begins immediately, but continues over time. Think of this transition as a positive step toward your goal of quitting. Your withdrawal pangs are actually symptoms of the recovery process.

Immediately after quitting, many ex-smokers have “symptoms of recovery”, such as headaches and restlessness. You may feel edgy, hungry, short-tempered and more tired than usual. You may have trouble sleeping and may notice you’re coughing a lot. All these symptoms are a result of your body’s clearing itself of nicotine, which is a powerful and addictive chemical.

Most of the nicotine is removed from the body in about 5 to 7 days. Symptoms are the worst in the first week or so after quitting. The average length of time a person deals with withdrawal symptoms is 2 to 3 weeks. The craving for cigarettes and increased appetite can last for months. To help ease your withdrawal symptoms, a doctor may recommend medications. These medications can double your chance of quitting for good, according to the National Cancer Institute.

You Can Do It
In this next section you will find tips and helpful hints on how to stop your tobacco habits, no matter where you are in the process of quitting. After reviewing the options, talk to your health care provider about the choice that will best assist you toward your goal of quitting. Nicotine replacement products can reduce withdrawal symptoms. Use of quit-smoking medicines, counseling or support groups, a nutritious diet, and regular exercise may also help. It may take some time for you to quit for good, so don’t get discouraged—you can do it!

Methods Approved by FDA to Help You Quit
The United States Food and Drug Administration has approved several medications to help smokers quit. Some of these medications help you manage withdrawal symptoms and cravings to smoke by providing small amounts of nicotine. This is called nicotine replacement therapy. If you and your health care provider decide that any of these medications may be right for you, refer to the package inserts for instructions and information.

Nicotine patches provide a measured dose of nicotine through the skin. The nicotine doses are tapered over 6-12 weeks, weaning the smoker away from nicotine gradually. Patches are purchased by prescription or over the counter.

Nicotine gum provides quick absorption of nicotine through the mucous membrane of the mouth. When you have a craving to smoke, chew the gum and then hold it in your cheek. It is available in different strengths and can be purchased by prescription or over the counter.
**Nicotine lozenges,** similar to nicotine gum, also are available over the counter.

**Nicotine nasal spray** gives immediate relief from withdrawal symptoms and offers a sense of control over nicotine cravings. Dosing is weaned within three months and is available by prescription only.

**Nicotrol inhaler** delivers nicotine through a plastic tube as you inhale. The nicotine is absorbed through the membranes in the mouth. Each inhaled puff contains 8-10 times less nicotine than a cigarette puff, without the tar and toxins that cigarettes deliver. It is available by prescription only.

**Prescription drug options** that are FDA approved are the nicotine-free prescription drugs varenicline (Chantix), buproprion (Zyban). Research shows that taking these medications helps reduce cravings for cigarettes. These medications inhibit the chemicals in your brain that make you have urges to smoke. They do not contain any nicotine, are available by prescription only and are most effective if used for 7-12 weeks.

**Methods Not Recommended by FDA**

**Electronic cigarettes** (e-cigarettes or vaporizer) are battery-operated devices that simulate traditional tobacco cigarettes. They contain cartridges filled with flavors, chemicals and the highly addictive substance nicotine, which are vaporized, inhaled and then absorbed into the lungs. It is usually sold as a way to get nicotine in places where smoking is not allowed.

E-cigarettes are currently unregulated, and therefore not FDA approved as an aid to quit. The long-term health effect caused by inhaling some of the unknown chemicals is not well researched. Those who choose the electronic cigarette as an aid to quit smoking should also make the goal of tapering off nicotine completely. Further research is needed to assess the potential public health benefits and risks. For additional up to date information, visit: FDA's Electronic Cigarettes webpage, WWW.CDC.gov/tobacco or the American Cancer Society website.

**Smokeless tobacco,** (chewing tobacco, spit tobacco, snuff or dip) is not a safer alternative to smoking. It contains nicotine, which is absorbed through the gums and lining of the mouth. The nicotine dose is at least double that of cigarettes, making it much more addictive.

Smokeless tobacco does not improve physical performance. As a stimulant, it increases heart rate and blood pressure, which can cause a buzz or rush, placing extra stress on the heart. Smokeless tobacco causes tooth decay, gingivitis, recession of the gums, mouth sores and oral cancers. Although most smoking cessation programs focus on cigarette smokers, in many ways, however, the strategies and suggestions are transferable or adaptable to quitting smokeless tobacco, as well.
Tips for Quitting Smoking

Use the six Ds:

-Delay. The urge will pass whether you smoke or not.

-Drink water to flush the nicotine out of your system and keep hydrated.

-Do something else. Keep your mind off of smoking.

-Deep breaths. Take slow, deep breaths. Inhale deeply and exhale slowly.

-Don’t be too hard on yourself. One slip doesn’t mean you’re a failure.

-Don’t fall into all-or-nothing thinking. You can learn from the experience and move on.

• You have to want to quit smoking!
• Talk to your doctor about getting help to quit.
• Set a quit date.
• Tell family, friends and co-workers that you plan to quit.
• Remove cigarettes and other tobacco products from your home, car and work.
• Keep oral substitutes within reach: sugar free candy, gum, raisins, carrots, sunflower seeds…
• Keep your hands occupied. Develop a new hobby.
• Anticipate triggers (alcohol, coffee, stress…) and avoid them. Think of ways to cope without smoking.
• Maintain positive thinking. You can do it!

Congratulate yourself for having the courage to choose a healthier life. You and those you love will never regret your choice. Refer to Support and Information Resources for further assistance in quitting tobacco.
Stress Management

Balancing the effects of stress in our lives is one of the greatest health challenges that we face. Severe and prolonged stress that goes unrelieved for a period of time can have a negative effect on our lives, our personalities, our relationships and our health. Stress is a challenge to be controlled and overcome. Strive to develop healthy methods of coping.

Several ways to manage stress:

- Maintain a positive and optimistic outlook.
- Practice self-care: eat heart healthy, drink adequate fluids; exercise three or more times per week; maintain physical fitness and healthy weight.
- Get adequate sleep, sunshine, fresh air; avoid extremes.
- Maintain a tobacco free lifestyle; avoid second-hand smoke.
- Learn to set realistic and appropriate goals.
- Prioritize and manage time more effectively.
- Don’t isolate yourself; have friends; nurture relationships with good communication; develop a support network.
- Keep your mind active; reading, writing, journaling, listening to music, working on personal projects, participating in recreation, favorite activities or hobbies.
- Practice relaxation skills regularly: deep breathing, prayer, meditation, religious ceremonies, mindfulness, stretching, yoga, progressive muscle relaxation, mental imagery, bio-feedback, hypnosis, massage, and aromatherapy.

Psychosocial Well-Being

**The mind and body are powerful allies.** How you think can affect how you feel. And how you feel can affect your thinking. Your mind can also have a positive effect on your health. Having a positive outlook on life might help you better handle illness and stay healthier than someone who is less hopeful.

Research shows that what your brain produces depends in part on your thoughts, feelings and expectations. If you’re sick but have hope and a positive mental attitude and you believe you’ll get better, your brain is likely to produce chemicals that will boost your immune system. Negative thoughts and emotions can keep your brain from producing some of the chemicals that help healing. But this doesn’t mean you should blame yourself for getting sick or feeling down about a health problem. Some illnesses are beyond your control. But your thoughts and state of mind are resources you can use to get better.

- Resiliency is an inner strength and ability to tolerate and resist the negative effects of stress on your health.
- Recovery is the ability to bounce back from significant stress reactions.
- When you are resilient, you may recover more quickly from setbacks or difficult changes, including illness.

Being resilient doesn’t mean that you find it easy to deal with difficult or stressful situations or that you won’t feel angry, sad, or worried during tough times. But it does mean that you won’t feel so overwhelmed. You’ll be less likely to give up and more likely to cope with stressful situations in healthy ways.

It’s normal for heart problems to result in a certain amount of fear, anxiety, and depression. Improving physical health, pursuing worthwhile goals, practicing
positive mental attitudes and spiritual values can help deal with negative thoughts and emotions. Talk to your health care provider about things that upset you longer than four weeks or cause significant disruption to normal life pursuits like work and home life. Seek professional assistance as needed.

The existence of one or more of the following conditions may indicate the need for additional assistance. Early professional care is more effective than delayed care.

- Chronic sleep disturbance
- Chronic feelings of depression
- Feeling generally unhappy for long periods of time
- Seriously declining job performance
- Seriously troubled relationships with family
- Significant loss of interest in usual pursuits
- Withdrawal from others
- Frequent loss of emotional control
- Frequent crying spells
- Chronic anger or rage
- Feeling mentally confused, lost, insecure, anxious or fearful
- Feeling paranoid
- Inability to stop thinking about painful issues
- Suicidal or homicidal thoughts (immediate professional care is needed)
- Suicidal actions (immediate professional care is needed)

We humans are social creatures; therefore, social support is important to our well-being. We need the sense of community and belonging that comes out of our relationships with others. When we feel isolated or in conflict, it is much easier to slip into worrying and depression.

Think of the important relationships in your life. Imagine that each one of them represents an emotional bank account. Acts of love, kindness, understanding and respect are deposits to these accounts; acts of selfishness, impatience, anger and neglect are withdrawals.

Managing a chronic (or ongoing) condition can take a lot out of you. There will be good and bad days. Joining a support group, talking openly with family and friends or keeping a journal can help you cope. Consider bringing a family member or trusted friend to your doctor visits.

A cardiac event has a big emotional impact on the entire family. Because this is a trying time, there's a greater need to be understanding, supportive and sympathetic toward one another.

Take heart. Remember that you're not alone. In fact, one out of every three American adults will have some type of cardiovascular disease. The good news is that major advances in treatments have been made, so treatments are better than ever before. There is also much greater awareness, support and resources to help you along your journey.
Spiritual Health

One of life’s challenges is to find meaning and acceptance in the midst of suffering or acute or chronic illness. For many people, religion and spirituality form the basis of meaning and purpose. At the same time as a patient dealing with the physical aspects of disease, you may also be struggling or suffering mentally and spiritually while considering some of the deeper questions of life:

- Why is this happening to me now? What will happen to me after I die?
- Will my family survive my loss? Will I be missed? Will I be remembered?
- Is there a God? If so, will he be there for me? Will I have time to finish my life’s work?

The American Pain Society showed that personal prayer was the most commonly used nondrug method of controlling pain: 76% of the patients made use of it. In this study, prayer as a method of pain management was used more frequently than intravenous pain medication (66%), pain injections (62%), relaxation (33%), touch (19%), and massage (9%). Another study showed that spiritual well-being was related to the ability to enjoy life even in the midst of symptoms, including pain, suggesting that spirituality may be an important clinical target.

Like all things of value, cultivating the spiritual side of our nature takes an investment of time, shifting attention from immediate concerns to deeper, more eternal issues. We need time for relaxation, stillness and renewal, away from the commotion and noise of our everyday lives. Some questions to consider might be:

- Do I make time for prayer or meditation daily?
- Do my values and beliefs guide my decisions and actions every day?
- Have I resolved all issues in my life that interfere with my spiritual growth?
- Am I drawing inspiration and strength from my faith?

Spiritual health may also be assessed and improved by other behaviors or emotions present in your life. Some examples include:

- Ability to give and receive love
- Gratitude, generosity
- Resolve misunderstandings and mistrust
- Overcome anger, guilt or shame
- Forgiveness
- Being other-focused rather than self-focused
- Time of meditation or prayer
- Reading religious scripture or literature
- Confiding in a trusted friend, counselor or minister
- Meeting with others who share your spiritual beliefs

Consideration or reflection of one’s spiritual and emotional health may provide some benefit and greater balance as you journey toward optimal health.
Disease Specific Management

Atrial Fibrillation (AF or Afib)

Did you know the human heart beats more than 100,000 times a day? At that pace, it's no wonder you might feel your heart skip a beat or flutter from time to time. However, if you notice your heart suddenly races or if you have uneven heartbeats that last several minutes, you may have a condition known as atrial fibrillation or Afib.

Normally, the heart beats in a strong, steady rhythm. In Afib, a problem with the heart's electrical system causes the two upper parts of the heart, the atria, to quiver or fibrillate. The quivering upsets the normal rhythm between the atria and the lower parts of the heart, the ventricles.

• This is dangerous because if the heartbeat isn't strong and steady, blood can collect, or pool, in the atria. And pooled blood is more likely to form clots. Clots can travel to the brain; block the flow of blood and cause a stroke.
• Besides a stroke, Afib can lead to heart failure. Heart failure means that your heart is not pumping as well as it should and therefore does not pump as much blood as your body needs. It doesn't mean that your heart has stopped.

Conditions that damage or strain the heart may cause atrial fibrillation, including:

• High blood pressure
• Coronary artery disease
• Heart attack
• Heart valve disease

Other possible causes include:

• Medical problems, such as heart failure, lung disease, pneumonia, or thyroid problems.
• Heart surgery.
• Heavy alcohol use. This includes having more than 3 drinks a day over many years, as well as drinking a large amount of alcohol at one time (binge drinking).
• Use of some prescription medicines, such as albuterol or theophylline.
• Use of stimulants. These include caffeine, nicotine, medicines such as decongestants, and illegal drugs such as cocaine.

Know what type of Afib you have:

• Paroxysmal: Starts and stops suddenly. You may have symptoms for only seconds or minutes. Or the symptoms may last hours or days at a time. Your doctor will decide what treatment is best for you.
• Persistent: This type of Afib comes back and doesn't stop on its own. With persistent Afib, you need treatment to return the heart to a normal heart beat or rhythm.
• Permanent: Permanent Afib continues even with treatment. The heart won’t return to a normal heart beat. The goal of treatment is to control the heart rate and protect you from having a stroke or heart failure.

Managing Atrial Fibrillation (AF or Afib)

Diagnosing and treating atrial fibrillation promptly can help you avoid serious problems. Treatment depends on the cause of Afib, your symptoms and your risk for stroke. Medicines are an important part of treatment. They may include:

• Anti-clotting medications, such as aspirin or other prescription medicines, to help prevent strokes.
• Rate-control medicines to keep your heart from beating too fast.
• Rhythm-control medicines to help bring your heart rhythm back to normal.
• Doctors sometimes use a procedure called electrical cardioversion to convert the heart rhythm (Afib) back to its normal beat using a low-voltage electrical shock.
• If symptoms keep bothering you, a procedure called catheter ablation may help. Catheter ablation uses heat to destroy small areas of the heart to create scar tissue. The scar tissue blocks or destroys the areas that are causing the abnormal heart rhythm.

Afib is often the result of heart disease or damage. So, making changes that improve the condition of your heart may also improve your overall health. Self-care includes:

• Management of stress, blood pressure, blood cholesterol and blood sugar.
• Check your heart beat, or pulse, every day. Call your doctor if your pulse is more than 100 beats per minute; or if your pulse has been regular, and now it isn’t.
• Avoiding caffeine, alcohol and stimulants.
• Avoiding getting sick from the flu. Get a flu shot every year.
• Not smoking; avoid second-hand smoke.
• Eating a heart healthy diet, getting regular exercise and adequate sleep.
• If taking the medication warfarin (Coumadin), blood work must be monitored frequently for safe dosing.

Call your doctor if you experience the following symptoms:

• Feeling dizzy or lightheaded; feeling weak and tired; fainting.
• Uneven, fluttering, racing, or pounding heart beat (palpitations).
• Feeling out of breath; having chest discomfort or tightness (angina).
• Sudden weight gain—2 or more pounds overnight or 5 pounds in a week.
Heart Failure (HF)

What is heart failure?
Heart failure is a condition in which the heart is unable to pump the necessary amount of oxygen-rich blood and fluid throughout the body. Most conditions which cause heart failure affect both sides of the heart to some degree and most frequently include some impairment of left ventricular function. Being larger and more muscular, the left ventricle is the heart’s main pumping chamber, sending oxygen-rich blood to the head, major organs and the rest of the body.

Heart failure is present when:

- The heart muscle (left ventricle) cannot pump (eject) the blood out of the heart very well. This is called reduced ejection fraction or systolic heart failure.
- The heart muscle (ventricle) is stiff and does not fill up with blood easily. This is called preserved (normal) ejection fraction or diastolic heart failure.

Ejection Fraction (EF) is one of the measurements used to assess how well the heart is functioning and in diagnosing and tracking heart failure. “Ejection” refers to the amount of blood that is pumped out of the heart’s main pumping chamber during each heartbeat. “Fraction” refers to the fact that, even in a healthy heart, some blood always remains within this chamber after each heartbeat. An ejection fraction is usually expressed as a percentage. For example, an ejection fraction of 60 percent means that 60 percent of the total amount of blood in the left ventricle is pumped out with each heartbeat.

Left Ventricular Ejection Fraction (EF) is measured most often by an echocardiogram (echo), but also by cardiac catheterization, MRI, CT and nuclear imaging tests like a MUGA scan.

- An EF of about 55-70 percent is considered normal.
- An EF of 40-55 indicates damage, perhaps from a previous heart attack.
- An EF below 40 may be evidence of heart failure or cardiomyopathy.
- An EF below 35 percent increases the risk of heart failure, life-threatening irregular heart rhythms and sudden cardiac death.
- An EF above 75 percent may indicate a heart condition like hypertrophic cardiomyopathy.

As the heart’s pumping ability becomes less effective, blood may back up in other areas of the body. The fluid can build up or ‘congest’ the liver, lungs, abdomen, pelvis and legs.

Some patients only experience trouble breathing or inability to perform their normal daily tasks. Because not all patients have congestion in and around the lungs due to fluid build-up, the term “heart failure” is preferred today over the older term “congestive heart failure.”

Symptoms vary for each person:

- Fatigue or tiredness; inability to perform normal tasks of everyday living.
- Trouble breathing or shortness of breath with activity or when you lie down. This can manifest in several ways:
  - Dyspnea—difficulty breathing, just from walking, climbing stairs or doing simple activities.
o Paroxysmal nocturnal dyspnea—waking up from sleep due to shortness of breath or gasping for air.
o Orthopnea—breathlessness that occurs when lying flat; inability to breathe easily unless sitting up straight or propped up with pillows.
• Swelling in the ankles, feet, legs and abdomen; occasionally in neck veins.
• Feeling of abdominal bloating.
• Frequent dry hacking cough, especially at night and/or while lying down.
• Weight gain of 2 or more pounds.
• Frequent urination during the night.
• Loss of appetite.
• Uneven, fluttering, racing, or pounding heart beat (palpitations).

Heart Failure Causes and Treatments
• Three major contributors to heart failure are coronary artery disease (CAD), hypertension and dilated cardiomyopathy (enlarged, thickening of the pumping chamber). HF can also result from heart defects, arrhythmias like atrial fibrillation, unhealthy lifestyles, and more. Heart failure can develop suddenly or slowly over the course of several days or weeks.
• Treatment usually consists of reducing risk factors, lifestyle changes, medications (diuretic, ACE inhibitor and beta-blocker) or surgery (biventricular pacemaker, implantable cardioverter-defibrillator (ICD), cardiac resynchronization therapy (CRT) or heart assist device).
• When heart failure worsens and does not respond to therapies (called end-stage heart failure), the physician and patient must decide an appropriate level of care - compassionate end-of-life care/hospice or extraordinary measures (heart transplant, chronic infusions, permanent mechanical support or experimental surgery/drugs).

Managing Heart Failure: Seven Keys
There are many things you can do to help limit and/or control symptoms of heart failure. Follow your doctor’s advice regarding activity, fluid and sodium intake.

Symptoms: Know Your Zone
• Green zone—All clear: No symptoms of heart failure (no shortness of breath, weight gain, chest pain, worsening fatigue, or worsening dizziness).
• Yellow zone—Call your doctor: Weight gain of 2 pounds or more overnight or 5 pounds in a week; worsening shortness of breath, worsening fatigue, worsening orthopnea (difficulty breathing when lying down), worsening dizziness.
• Red zone—Call 9-1-1: Struggling to breathe or shortness of breath not improving with rest, unrelieved chest pain or angina lasting longer than 10-15 minutes or worsening confusion.
Medications

- Know your medications. What is my medication? What is it for? Why is it important? What are the side effects?
- Take medication only as prescribed. Do not stop taking a medication without first discussing with your doctor.
- Carry a complete updated list of current medications with doses and schedules. Include over-the-counter medications. Take list with you to every doctor appointment.
- Diuretics help your body get rid of excess fluid by causing you to urinate more. You must urinate to lose this fluid. Report to your doctor: leg cramps or heart rhythm irregularities as diuretics can cause low potassium.
- Diuretics may make you prone to dehydration, leading to problems that could require medical attention. Signs of dehydration are dark colored urine, headache, dizziness, significant drop in your normal blood pressure, and persistent constipation. If these symptoms persist, you may need to talk to your doctor about adjusting your diuretic dosage.
- Ace inhibitors make the heart pump better and stronger which should improve your energy. Report to your doctor: headache, dry cough, nausea, vomiting or dizziness.
- Beta blockers strengthen the heart pump and help the heart work better. Report to your doctor: dizziness, slow heartbeat, weakness or fatigue.
- Do not take NSAIDs (non-steroidal anti-inflamatory drugs), antacids, baking soda products, herbal supplements or any other drugs without first asking your doctor, pharmacist or nurse about them. Drugs that may make your heart failure worse include: erectile dysfunction medications and NSAIDs like aspirin, Bayer, Exedrin, Celebrex, Voltaren, ibuprofen, Advil, Motrin, Indocin, Mobic, naproxen, Aleve, Daypro, Feldene, Vioxx and more. Tylenol is not an NSAID or anti-inflammatory medication.

Sodium Limitation

- Eating too much salt or sodium makes your body hold onto liquid or fluid.
- Limit your daily sodium intake to no more than 2 grams (2,000 mg), or as directed by your physician.
- Use a low sodium cookbook.
- Read labels. Choose low sodium options: 140 mg of sodium or less per serving.
- Avoid adding salt to your foods. Remove the salt shaker from the table and stove. Use pepper, herbs, spices, onion, garlic or lemon juice to season food. Avoid seasonings that contain salt by reading the label. Ask your doctor before using a salt substitute.

Fluid Limitation

- Drink no more than 64 ounces per day (eight 8-ounce cups or 2 quarts) or less in some cases as directed by your physician.
- Fluid is heavy and makes your weight increase each day. Count as fluid any food that is liquid at room temperature such as ice, ice cream, popsicles or Jell-O.
- Ask your doctor if you can have alcohol.
Activity Level

- Regularly do the exercises listed under Activity and Exercise Guidelines.
- Stay active but pace yourself. Alternate activities with rest. Elevate legs when possible.
- Walk or ride a stationary bicycle. Ask your doctor for a safe and effective exercise plan.
- Gradually increase daily activity level as tolerated.
- As you increase your level of activity, you should still be able to carry on normal conversation.
- Reduced demands on your heart. For example, avoid temperature extremes.
- Do not exercise on days when weight has gone up from fluid or you are not feeling well.
- Stop activity, if short of breath, weak, dizzy or experience symptoms of angina.

Daily Weight Monitoring

- Use a weight chart (like the one in this section) to record your weight every morning.
- Post the Heart Failure Zones (in this section) on your refrigerator for daily reminders.
- Weigh yourself at the same time each morning on the same scale located on a hard surface, in the same type of clothing, after using the bathroom and before eating.
- Compare it with dry weight. Dry weight is your weight without extra fluid in your body.
- Take extra water pills for weight gain, only as directed by your doctor.
- Call your doctor for weight gain of 2 or more pounds overnight or 5 pounds in a week.

Follow-up Appointment

- Schedule a follow-up appointment within seven days of discharge with your primary care physician prior to leaving the hospital.
- Patients who follow up with their doctors, and adhere to discharge instructions, have fewer hospital admissions, live longer, with a higher quality of life.
- Speak to your physician about participating in an outpatient Cardiac Rehabilitation program which focuses on exercise and lifestyle changes.
Heart Failure Zones

**Every Day**
- Weigh yourself in the morning before breakfast, write it down and compare to yesterday’s weight.
- Take your medications as prescribed.
- Check for swelling in your feet, ankles, legs and stomach.
- Eat low-salt food: less than 2,000 mg of sodium per day or as directed.
- Limit fluids: no more than 64 ounces (2 quarts) of fluid per day or less in some cases.
- Balance activity and rest periods. Elevate legs when sitting.

Which Heart Failure Zone are you today? **GREEN, YELLOW or RED?**

**Green Zone**

ALL CLEAR – THIS ZONE IS YOUR GOAL
Your symptoms are under control. You have:
- No shortness of breath.
- Weight gain less than 2 pounds overnight (weight may change 1 - 2 pounds some days).
- No swelling of your feet, ankles, legs or stomach.
- No chest pain.

**Yellow Zone**

CAUTION – THIS ZONE IS A WARNING
Call Dr. ________________________ at _____________________ if you experience:
- Weight gain of 2 pounds or more overnight or 5 pounds in a week.
- More shortness of breath.
- More swelling of your feet, ankles, legs or stomach.
- Feeling more tired. No energy.
- Dry hacking cough.
- Dizziness.
- Feeling uneasy, you know something is not right.
- It is harder for you to breathe when lying down. You need to sleep sitting up in a chair.

**Red Zone**

EMERGENCY
CALL 9-1-1 IF YOU HAVE ANY OF THE FOLLOWING:
- Struggling to breathe.
- Chest pain.
- Confusion or cannot think clearly.
# Sodium and Fluid Tracker

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<tr>
<th>Meal</th>
<th>Food</th>
<th>Sodium</th>
<th>Fluid</th>
<th>Notes</th>
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Follow your doctor’s advice about limiting salt and fluid intake. Most people with heart failure limit daily sodium intake to less than 2,000 mg (2 grams) and daily fluids to no more than 2 quarts (64 ounces) to avoid fluid build-up and weight gain.

**Tracking Sodium**
- Choose lower-sodium foods and cook at home more often.
- Check the Nutrition Facts label for the amount of sodium per serving AND the number of servings per container. Assorted brands of the same food often have different sodium amounts.
- When preparing homemade foods, check the sodium content in individual ingredients, then add up the totals.
- When eating out, ask your server for sodium content of restaurant foods.
- Look for the American Heart Association’s Heart-Check mark to find products that can help you make smarter choices about the foods you eat.
- Visit heart.org/sodium for more information.

**Tracking Fluid**

Common Household Measurements for Fluid:
- 60 cc = 2 oz = ¼ cup
- 120 cc = 4 oz = ½ cup
- 240 cc = 8 oz = 1 cup
- 480 cc = 16 oz = 2 cups = 1 pint
- 960 cc = 32 oz = 4 cups = 1 quart
- 1000 cc = 1 liter

Fluids and foods with high liquid content have to be counted including all beverages even liquids taken with medicines, ice cubes, Jello, and ice cream (Column A). Ask your healthcare provider if the high liquid foods in (Column B) must also be included. Even if you are told to only restrict foods in column A, avoid large amounts of these high moisture foods in Column B.

<table>
<thead>
<tr>
<th>Column A</th>
<th>Liquid Equivalent</th>
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<tbody>
<tr>
<td>½ cup ice cream or sherbet; 3 oz Popsicle</td>
<td>= 2 oz</td>
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<td>½ cup fruited Jello</td>
<td>= 3 oz</td>
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<td>½ cup pudding or custard</td>
<td>= 3.5 oz</td>
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<td>1 cup low-sodium broth-based soup</td>
<td>= 7 oz</td>
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<td>1 cup yogurt, low-sodium cream soup or can of nutritional supplement</td>
<td>= 6 oz</td>
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<tr>
<td>Medium-size pear</td>
<td>= 4.5 oz</td>
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<td>1 cup watermelon</td>
<td>= 5 oz</td>
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<th>Column B</th>
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<td>15 grapes</td>
<td>= 1 oz</td>
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<tr>
<td>½ cup cherries or medium-size lemon</td>
<td>= 2 oz</td>
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<tr>
<td>9 inch banana or medium-size peach</td>
<td>= 2.5 oz</td>
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<tr>
<td>½ cup applesauce, canned peaches, pears or pineapple</td>
<td>= 3 oz</td>
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<tr>
<td>½ cup fruit cocktail</td>
<td>= 3.5 oz</td>
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<tr>
<td>Medium-size apple, nectarine, orange, ½ grapefruit or 1 cup strawberries</td>
<td>= 4 oz</td>
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Weigh yourself at the same time every day and write on this chart. Call your doctor if you've gained 2 pounds or more overnight or 5 pounds during one week.

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Diabetes

Diabetes mellitus is a condition characterized by hyperglycemia (high blood sugar) resulting from the body's inability to use blood glucose (a type of sugar) for energy. Glucose is the main source of energy for the body’s cells. Insulin is a hormone that lowers the level of glucose in the blood. It is made by the pancreas and released into the blood when the glucose level goes up, such as after eating. Insulin helps glucose enter the body’s cells, where it can be used for energy or stored for future use. In Type 1 diabetes, the pancreas no longer makes insulin; therefore blood glucose can’t enter the cells to be used for energy. In Type 2 diabetes, either the pancreas doesn’t make enough insulin or the body is unable to use insulin correctly.

The following symptoms of diabetes are typical. However, some people with type 2 diabetes have symptoms so mild that they go unnoticed.

Common symptoms of diabetes:

- Urinating often
- Feeling very thirsty
- Feeling very hungry—even though you are eating
- Extreme fatigue
- Blurry vision
- Cuts/bruises that are slow to heal
- Weight loss—even though you are eating more (type 1)
- Tingling, pain, or numbness in the hands/feet (type 2)

Three different blood tests used to determine whether you have pre-diabetes or diabetes:

- A1C test
- Fasting Plasma Glucose test (FPG)
- Oral Glucose Tolerance test (OGTT)

The blood glucose levels measured from these tests determine whether you have a normal metabolism, or whether you have pre-diabetes or diabetes.
A1C or HbA1C

The A1C test gives a picture of your average blood glucose control for the past 2-3 months

- Gives you a good idea of how well your diabetes treatment plan is working.
- Determined by measuring the percentage of glycated hemoglobin (HbA1C) in the blood.
- Should be checked twice a year at a minimum, or more frequently when necessary. It can show how healthy choices make a difference in diabetes control.
- Does not replace daily self-testing of blood glucose which tells you what your blood sugar level is at any one time.

How does it work?

- Hemoglobin, a protein that links up with sugars such as glucose, is found inside red blood cells. Its job is to carry oxygen from the lungs to all the cells of the body.
- With uncontrolled diabetes, there is excess glucose in the bloodstream. This extra glucose enters the red blood cells and links up (glycates) with molecules of hemoglobin.
- The more excess glucose in your blood, the more hemoglobin gets glycated.
- By measuring the percentage of A1C in the blood, you get an overview of your average blood glucose control for the past few months.

How does the A1C test look backward?

- Suppose your blood sugar was high last week. What happened? More glucose hooked up (glycated) with your hemoglobin. This week, your blood glucose is back under control. Still, your red blood cells carry the “memory” of last week’s high blood glucose in the form of more A1C. This record changes as old red blood cells in your body die and new red blood cells (with fresh hemoglobin) replace them. The amount of A1C reflects blood sugar control for the past 120 days, or the lifespan of a red blood cell.
- In a person who does not have diabetes, about 5 percent of all hemoglobin is glycated.
• For someone with diabetes and high blood glucose levels, the A1C level is higher than normal. How high the A1C level rises depends on what the average blood glucose level was during the past weeks and months. Levels can range from normal to as high as 15 percent or more if diabetes is badly out of control for a long time.

• A1C level should be measured when diabetes is diagnosed or when treatment for diabetes is started. To watch your overall glucose control, your doctor should measure your A1C level at least twice a year. There are times when you need to have your A1C level tested about every three months. If you change diabetes treatment—such as starting a new medicine, or if you are not meeting your blood glucose goals, you and your doctor will want to keep a closer eye on your control.

What are the limitations of the A1C test?

Although the A1C test is an important tool, it can’t replace daily self-testing of blood glucose for those who need it. A1C tests do not measure day-to-day control. You can’t adjust insulin on the basis of A1C tests. That’s why self-testing of blood sugar and your log of results is so important to maintain effective control. Blood glucose monitoring is your main tool to check your diabetes control. Talk to your doctor about the frequency of checking your blood glucose.

Checking Your Blood Glucose

Blood glucose monitoring is the main tool you have to check your diabetes control. This check tells you your blood glucose level at any one time.

• Using a meter is the most accurate way to check your blood glucose.
• Keep a log of your results and look for patterns. Review the log with your health care team to gauge how well your diabetes plan is working.

Blood glucose targets are individualized, based on duration of diabetes, age/life expectancy, comorbid conditions, known cardiovascular disease (CVD) or advanced microvascular complications, hypoglycemia unawareness and individual patient considerations.

The American Diabetes Association suggests the following targets for most nonpregnant adults with diabetes. More or less stringent glycemic goals may be appropriate for each individual. Work with your doctor or diabetes educator to learn what your results mean for you.

Managing Diabetes: Practical Tips to Control Your Blood Sugar Levels

Living with diabetes is a lifelong journey. To successfully maintain your health, you must stay engaged in care and prevention. Controlling your blood sugar requires change toward a healthier way of living. It’s unrealistic to expect change overnight. It takes time to develop habits. Remember: “A journey of a thousand miles begins with one step.”
**Glycemic Control**

<table>
<thead>
<tr>
<th>Test Description</th>
<th>Target</th>
</tr>
</thead>
<tbody>
<tr>
<td>A1C blood test</td>
<td>&lt;7%</td>
</tr>
<tr>
<td>Preprandial plasma glucose (blood sugar test before a meal)</td>
<td>70–130 mg/dl</td>
</tr>
<tr>
<td>Postprandial plasma glucose (blood sugar test 1-2 hours after beginning a meal)*</td>
<td>&lt;180 mg/dl</td>
</tr>
</tbody>
</table>

*Postprandial glucose may be targeted if A1C goals are not met despite reaching preprandial glucose goals.

- **Diet**—Managing diabetes involves following a healthy diet. Carbohydrates (starches, fruits, milk, sweets) break down to sugar in the body. While we don’t want to cut carbohydrates out of the diet, we need to spread them evenly throughout the day. That way, our blood sugar levels will be more consistent. Although proteins and fat are necessary in the diet, protein from beef, chicken, fish, pork, cheese, eggs; and fats from oils, butter, cream, and mayo should only be consumed in small amounts. When choosing protein, stick with lower fat choices—chicken breast, baked or grilled fish and lean beef—most of the time. Fats should primarily come from unsaturated fats such as vegetable oils, vegetable spreads (instead of butter) and nuts. You only need a little bit in the diet.

- **Exercise**—Physical activity is a key part of this journey. Set realistic, measurable goals within your limits—20-minute walks, three times per week, for example. Once that becomes easy, conquer a higher goal. Discuss with your doctor the best times to exercise in relation to when you eat and when you take your medications. It may be necessary to monitor your blood sugar level before, during and after exercise to ensure that your blood sugar level is not dropping too low. Ask your doctor for specifics.

- **Medication**—If you need medication to help control your blood sugar, your doctor or nurse should explain the appropriate time to take it. Some diabetes medications require you to take it just before eating, some do not. If you are considering taking over-the-counter medication, check with your doctor. Keep a list of all your medications and be sure anyone who treats you knows you have diabetes.

- **Illness**—Eating and drinking can be a real chore when you’re not feeling well. It’s important to stay as close as possible to your normal eating plan. If you find that you are unable to do this, consider calling your doctor or diabetes educator for advice.

- **Stress**—It is easy to fall out of routine when you’re feeling overwhelmed, but letting diabetes get out of control will only make matters worse. Being sick or stressed raises your blood sugar level. Stress management is an integral part of managing diabetes. Try something that can take your mind off of the stressful situation, such as reading a book or talking a walk. Exercise is a known stress reducer.

- **Alcohol**—Discuss with your doctor whether it is appropriate to consume alcoholic beverages. Provided your diabetes is under control, it may be acceptable to consume alcohol in moderate amounts. Overindulging can send your blood sugar on a roller coaster ride.
• **Responsibility**—If you do not currently test your blood sugar, ask your physician if you should be doing so, what your target ranges should be, and when and how frequently you should be testing. Knowing and putting into place diabetes self-care behaviors can significantly reduce your risk of its debilitating complications. Lee Health Solutions offers a comprehensive diabetes self-management program to help you gain better control of your diabetes. Staffed by registered nurses and registered dietitians, they will help you learn what is required to achieve healthy blood sugar levels. Lee Health Solutions helps people to manage chronic health conditions. For information, call 239-424-3120.

### Healthy Ideas for a Diabetic Snack

<table>
<thead>
<tr>
<th>15 to 20 grams Carbohydrates</th>
<th>1 fat-free ice cream bar</th>
</tr>
</thead>
<tbody>
<tr>
<td>+ 1 oz Protein</td>
<td>+ ¼ cup unsalted almonds</td>
</tr>
<tr>
<td>1 small banana</td>
<td>1 cup low-fat milk</td>
</tr>
<tr>
<td>+ 2 Tbsp peanut butter</td>
<td>1 cup ice</td>
</tr>
<tr>
<td>1 small apple</td>
<td>½ cup strawberries</td>
</tr>
<tr>
<td>+ 2 Tbsp nut butter</td>
<td>+ 2 Tbsp nut butter (shake)</td>
</tr>
<tr>
<td>7 Triscuit crackers (“Hint of Salt” whole wheat)</td>
<td>2 Tbsp Cranraisins</td>
</tr>
<tr>
<td>+ 1 oz low-fat cheese</td>
<td>+ ¼ cup unsalted walnuts</td>
</tr>
<tr>
<td>1½ cups watermelon</td>
<td>½ cup canned fruit (light)</td>
</tr>
<tr>
<td>+ ¼ cup unsalted nuts</td>
<td>+ hard-boiled egg</td>
</tr>
<tr>
<td>¾ cup whole grain cereal</td>
<td>2 Tbsp hummus</td>
</tr>
<tr>
<td>+ ½ cup low-fat milk</td>
<td>2 whole wheat mini</td>
</tr>
<tr>
<td>1 small granola bar (whole grain rolled oats)</td>
<td>Pitettes (mini mini pita)</td>
</tr>
<tr>
<td>+ ¼ cup unsalted nuts</td>
<td>2 Tbsp raisins</td>
</tr>
<tr>
<td>2 Tbsp raisins</td>
<td>+ ¼ cup unsalted nuts</td>
</tr>
<tr>
<td>½ English muffin (whole grain or high fiber)</td>
<td>½ cup low-fat, low-salt cottage cheese or ricotta</td>
</tr>
<tr>
<td>+ ¼ cup low-fat, low-salt cottage cheese or ricotta</td>
<td>1 slice whole grain bread</td>
</tr>
<tr>
<td>1 slice whole grain bread</td>
<td>+1 Tbsp light jelly</td>
</tr>
<tr>
<td>+1 Tbsp nut butter</td>
<td>+ 1 Tbsp nut butter</td>
</tr>
<tr>
<td>1 slice whole grain bread</td>
<td>1 slice whole grain bread</td>
</tr>
<tr>
<td>+ 1 oz low-fat cheese (cheese melt)</td>
<td>+ 1 oz low-fat cheese (cheese melt)</td>
</tr>
<tr>
<td>1 slice whole grain bread</td>
<td>1 egg (egg sandwich)</td>
</tr>
<tr>
<td>+ 1 egg (egg sandwich)</td>
<td>17 grapes</td>
</tr>
<tr>
<td>17 grapes</td>
<td>+ ¼ cup low-fat, low-salt cottage cheese</td>
</tr>
<tr>
<td>+ ¼ cup low-fat, low-salt cottage cheese</td>
<td>1 small orange</td>
</tr>
<tr>
<td>1 small orange</td>
<td>+ low-fat cheese stick</td>
</tr>
</tbody>
</table>
Treatments

Ongoing communication and follow-up visits with your physician or health care provider is vital to the overall management of your heart disease and other health issues.

Treatments for heart problems may include but are not limited to the following: medications, lifestyle changes, cardiac rehabilitation, balloon angioplasty, coronary stenting, coronary artery bypass graft surgery, heart valve surgery, catheter ablation, pacemaker, cardiac resynchronization, electrical cardioversion, life vest, implantable cardioverter defibrillator, ventricular assist device, and heart transplant.

Medications

The following drug information should not be construed as complete or inclusive.

It describes the different types, or classifications, of heart medications and what they are designed to do. There are a number of different name brands within each type of medication. If you are unsure what classification your medication falls under, please ask your physician or pharmacist. Each class of medicine plays its own unique role in your treatment and is important to keep your heart healthy in a specific way.

Contact your physician or pharmacist for any questions or concerns about medications. Read all medication instructions that come with your filled prescription for the most up-to-date information.

Nitrates

Nitrates are medicines used to prevent and relieve symptoms of angina (like chest pain) due to coronary artery disease. They work by dilating the blood vessels, so more blood and oxygen are available to the heart. This dilating effect may cause side effects, such as headache, flushing of the skin or dizziness. Your blood pressure may drop, so always sit or lie down before taking short-term or rapid-release nitroglycerin tablets or spray. Also, do not take these short-term nitrates while driving.

Nitrates can be used to treat angina in three ways:

• Quick-acting or rapid release nitrates are taken to relieve angina on an as-needed basis (tablet or spray, taken sublingually—under the tongue).
  Example: Nitrostat

• There are times when a physician will instruct a patient to take a nitroglycerin tablet or spray just before an activity known to cause angina in order to prevent it.

• Long-acting or extended release nitrates are taken daily to decrease the number of angina attacks (pill, skin patch, or ointment).
  Examples: isosorbide mononitrate (Imdur), isosorbide dinitrate (Isordil), ranolazine (Ranexa)

There are two schedules for using quick-acting or rapid-release nitroglycerin during an angina attack. Follow the schedule or recommendation your doctor tells you to follow.
The first schedule and recommendation for taking nitroglycerin tablets or spray emphasizes the need for earlier activation of EMS—after 5 minutes not 15 minutes. These guidelines were updated in 2004 by the American College of Cardiology and the American Heart Association, recognizing that delays in seeking medical attention adversely affect patient survival.

1. **First schedule** to follow when you have angina is to take 1 tablet or spray under the tongue, then wait 5 minutes. If you still have angina 5 minutes after you use the medicine or if your angina gets worse, this is an emergency. Call 911 for an ambulance to take you to the nearest hospital.

2. **Second schedule** is to take 1 tablet or spray every 5 minutes until the angina is gone, for up to 15 minutes. If you have taken 3 tablets or sprays and are still having angina, this is an emergency and you need to call 911.

Calm yourself by focusing on your breathing. Breathe in through the nose and breathe out slowly from the mouth. The best choice is to go to the hospital in an ambulance. Paramedics can begin lifesaving treatments. If you can’t reach emergency services, have someone drive you to the hospital. Do not drive yourself unless you absolutely have no other choice.

Important Tips:
- Read all medication instructions from your pharmacist thoroughly.
- Store nitroglycerin in original container and avoid exposure to heat or moisture.
- Once expired, replace your prescription with a new one. Carry it with you at all times.
- Avoid using alcohol.
- Nitrates cannot be taken for 24-48 hours after using a prescription erectile dysfunction medication. Examples: sildenafil (Viagra, Revatio), tadalafil (Cialis) or vardenafil (Levitra). Emergency services typically give some form of nitrates for those with acute coronary syndrome (unstable angina or heart attack).
- The combination of erectile dysfunction medications and nitrates can produce severe irreversible hypotension, or low blood pressure, that could result in death.

Everyone is unique, and the extent to which the information applies specifically to you should be a key point of discussion between you and your health care provider so that the ultimate judgment regarding your care is in light of circumstances specific to you as a patient.

**ACE Inhibitors - Angiotensin-Converting Enzyme Inhibitors**
Examples: captopril (Capoten), enalapril (Vasotec), lisinopril (Prinivil, Zestril), ramipril (Altace), quinapril (Accupril)
- Used to treat high blood pressure, heart attack, heart failure, and diabetes
- Relax and expand blood vessels, allowing blood to flow more easily
- Increase the supply of blood and oxygen to the heart
- Allow the heart to work more easily and efficiently
**ARBS - Angiotensin II Receptor Blockers**
Examples: losartan (Cozaar), valsartan (Diovan), irbesartan (Avapro), candesartan (Atacand), eprosartan (Tevetan), Olmesartan (Benicar), telmisartan (Micardis)

- Used to treat high blood pressure, heart failure, coronary artery disease and diabetes
- Help blood vessels relax
- Increase the supply of blood and oxygen to the heart muscle

**Beta Blockers**
Examples: carvedilol (Coreg), metoprolol (Lopressor, Toprol-XL), tenormin (Atenolol), bisoprolol (Zebeta), propranolol (Inderal), sectral (Acebutolol)

- Used to treat high blood pressure, angina, abnormal heart rhythms, heart attack and heart failure
- Act by decreasing the workload of the heart
- Slow the heart rate
- Improve the ability of the heart itself to relax

**Calcium Channel Blockers**
Examples: amlodipine (Norvasc), diltiazam (Cardizem, Tiazac), felodipine (Plendil), verapamil (Calan, Verelan, Isoptin, Covera-HS), nifedipine (Procardia, Adalat), nicardipine (Cardene), nisoldipine (Sular)

- Used to treat coronary artery disease, coronary spasm, angina, abnormal heart rhythms, certain types of heart failure and cardiomyopathy
- Help the heart and blood vessel muscles to relax
- Slow the heart rate
- Lower blood pressure

**Diuretics**
Examples: furosemide (Lasix), bumetanide (Bumex), torsemide (Demadex), spironolactone (Aldactone), hydrochlorothiazide or HCTZ, HCT (Microzide, Aquazide, Hydrodiuril), metolazone (Zaroxolyn)

- Often used for treating high blood pressure, heart failure and edema
- Affect the kidneys by helping get rid of excess fluid in the body through the urine. This reduces blood pressure and swelling
- Make it easier for your heart to pump

**Anti-Arrhythmics**
Examples: sotolol (Betapace), amiodarone (Cordarone, Pacerone), flecainide (Tambacor), procainamide (Procan, Procanibid), dofetilide (Tikosyn)

- Help restore a regular heartbeat by affecting the electrical impulses that cause the heart to beat in proper sequence

**Digoxin (lanoxin)**

- Used to treat heart failure, atrial fibrillation and fast heart rates
- Strengthen the force of the heart muscle's contractions
- Slow the heart rate, and improve blood circulation
• Decrease the workload of the heart, while supplying enough blood flow to the body

**Cholesterol / Lipid Lowering Medications**

Examples: simvastatin (Zocor), atorvastatin (Lipitor), rosuvastatin (Crestor), pravastatin (Pravachol), nicotinic acid, niacin or vitamin B-3 (Niaspan), ezetimide (Zetia)

• Limit the formation of cholesterol by the liver
• Decrease the absorption of dietary cholesterol in the intestines
• Decrease the formation of triglycerides
• These medications are metabolized in the liver; therefore, periodic blood tests are necessary

**Antiplatelet and Anticoagulant Medications**

Antiplatelet and anticoagulant (anti-clot) medications are often called blood thinners, even though they don't really thin the blood. Antiplatelet and anticoagulant medications slow down the blood's ability to form new clots that can cause life-threatening problems such as stroke, heart attack and pulmonary embolism. These medicines can also keep pre-existing blood clots from getting bigger.

Although these medicines work in different ways to prevent blood clots, they all raise the risk of serious bleeding. This can happen from an injury or it can occur suddenly inside your body.

• Antiplatelet drugs prevent blood cells, called platelets, from clumping together to form a clot. Examples: aspirin, clopidogrel (Plavix), prasugrel (Effient), ticagrelor (Brilinta).
• Anticoagulants inhibit the production of certain clotting factors in the liver. Example: warfarin (Coumadin, Jantovan)
• Some anticoagulants interfere with blood clotting by blocking the activity of thrombin or factor Xa. Examples: heparin, rivaroxaban (Xarelto), enoxaparin (Lovenox), apixaban (Eliquis), dabigatran (Pradaxa).

**Warfarin (Coumadin or Jantovan)** is an anti-coagulant that increases the time it takes for your blood to clot. For safe dosing of warfarin, blood work must be monitored regularly in order to maintain therapeutic levels of warfarin.

The standard for monitoring the effects of warfarin is a blood test called International Normalized Ratio (INR). If normal INR is 1, then taking anticoagulant therapy (warfarin) adjusts INR to 2-4, meaning anticoagulated blood takes 2 to 4 times as long to clot. Your physician will tell you what your INR level should be based on the reason you are taking the medication.

• Vitamin K plays a role in blood clotting. Large intakes of foods or supplements high in vitamin K interfere with the warfarin’s ability to work properly.

**Foods that contain vitamin K should not be avoided; however, it is critically important that your Vitamin K intake is consistent from one day to another. This will help keep your warfarin blood level in the appropriate range.**

• Talk to your pharmacist or physician for a list of foods and supplements containing vitamin K. Read all medication instructions for the most up-to-date information.
Interventions

Percutaneous Coronary Interventions (PCI)

**PCI** refers to the broader group of techniques where the approach is a minor incision or cut through the skin. The most common percutaneous coronary interventions include balloon angioplasty and stent. These procedures take about 1-2 hours to complete while awake, but sedated. In addition to the coronary arteries, balloon angioplasty with stenting can be performed in many other major blood vessels within the body.

**Balloon Angioplasty**

After having a cardiac catheterization, your doctor may recommend coronary angioplasty, also known as PTCA. It is a procedure used to open clogged arteries or clogged vein bypass grafts. A catheter is inserted into the artery of your arm or groin. The catheter, which has a tiny balloon at the tip, is guided into the affected artery using X-ray pictures which are displayed on a television monitor. Once in the artery, the balloon is quickly inflated and deflated to stretch open the narrowed portion of the blood vessel and thereby improves passage of the blood. Then, the balloon and catheter are removed.

**Stent**

Depending on the location, shape and type of blockage, your doctor may place a small expandable tube or stent in the artery to keep the narrowed artery open. Because the stent is like woven mesh, the cells lining the blood vessel grow through and around the stent to help secure it. Your doctor may use a bare metal stent or a drug-eluting (drug-coated) stent. To decide which type of stent to use, your doctor will consider your overall health, your risk of a heart attack and whether you can and are willing to take blood-thinning medicines for at least one year.

**Thrombectomy**

When an artery is blocked by a blood clot (thrombus), the doctor may perform a thrombectomy (removal of the clot) prior to inserting a balloon or stent.

**Atherectomy**

When an artery is narrowed by hard plaque and calcium, the doctor may perform an atherectomy, using a shaving device to remove the build-up, prior to inserting a stent.

**Catheter Ablation**

Normally the heart has a strong, steady beat controlled by its electrical system. Sometimes that system misfires, causing a heartbeat that is too fast or irregular (supraventricular tachycardia or SVT and atrial fibrillation). When medicine isn’t effective or tolerated, cardiac ablation—a nonsurgical procedure—may be
appropriate. Thin, flexible wires are inserted into a vein in the leg or neck and threaded to the heart. An electrode at the tip of the wires sends out radio waves that create heat or cold to destroy the specific area that causes the abnormal heart beat. Options for a surgical ablation procedure may be combined with minimally invasive or open-heart surgery as well.

**Pacemaker**

Pacemakers help your heart beat in a regular rhythm and at a normal speed. They are inserted to treat a heart rate that is too slow, too fast, or irregular. A pacemaker is a small, battery-powered device that sends out small electrical impulses to make the heart muscle contract.

The pacemaker itself is a waterproof device about the size of a silver dollar. It consists of a pulse generator and battery that create the electrical impulses; and wires (or leads) that transmit electricity to the heart. Pacemakers are typically placed under the skin of the chest and are permanent. Sometimes, while in the hospital, pacemakers are needed for a short time. A temporary pacemaker is not surgically inserted but is placed outside the body.

**Cardiac Resynchronization (CRT)**

Cardiac Resynchronization (CRT), or biventricular pacing, is a treatment for heart failure that uses a pacemaker implanted in the chest. The pacemaker sends tiny electrical impulses to the heart muscle to coordinate the pumping of the chambers of the heart, improving pumping efficiency and reducing the symptoms of heart failure. CRT devices that have a defibrillator are called CRT-D.

**Cardioversion**

Cardioversion is the delivery of an electrical shock to a person's heart to rapidly restore an abnormal heart rhythm (arrhythmia) back to normal. External cardioversion is performed with a defibrillator, either in an emergent situation or as a scheduled treatment.

**Life Vest or Wearable Cardioverter Defibrillator (WCD)**

A life vest is a wearable cardiac defibrillator, worn by patients at risk for sudden cardiac arrest (SCA). It's lightweight, allowing for regular activity, while being protected from SCA. A life vest continuously monitors the heart, and if a life-threatening heart rhythm is detected, it delivers a treatment shock to restore normal heart rhythm.

Covered by most U.S. health plans, a life vest is used for a wide range of patient conditions or situations that place them at particular risk. It provides protection during their changing condition and allows the physician time to assess long-term risk and make appropriate plans, (medication adjustments or implantation of a permanent implantable cardiac defibrillator).

**Implantable Cardioverter-Defibrillator (ICD)**

If you have had a serious episode with an abnormally fast heart rhythm (ventricular tachycardia) or are at high risk for one (usually due to a weakened heart muscle), you may need an implantable cardioverter-defibrillator (ICD). An ICD is a small device similar to a pacemaker that delivers internal cardioversion, using electrical shocks to help control abnormal life-threatening heart rhythms.
An ICD device is implanted under the skin in the chest. A wire threaded through a large vein connects the device to the heart. The ICD continuously monitors the heart. If a life-threatening rapid heart rhythm is detected, it tries to slow the rhythm back to normal. If the dangerous rhythm does not stop, it delivers a treatment shock to restore normal heart rhythm, and then goes back to its watchful mode. If the heart is beating too slowly, it can act as a pacemaker, sending mild electrical pulses to bring the heart rate back up to normal. ICD’s do not prevent life-threatening episodes of abnormal heart rhythms. Medicine is necessary to prevent or at least decrease their frequency.

**Ventricular Assist Device (VAD)**

A ventricular assist device (VAD) is a mechanical circulatory device that is used to partially or completely replace the function of a failing heart. Some VADs are intended for short-term use as a bridge to recovery, while others are intended for long-term use, typically for patients suffering from advanced heart failure.

VADs are different from artificial hearts, which are designed to completely take over cardiac function and generally require the removal of the patient’s heart. Depending on the underlying heart disease, VADs are designed to assist either the right (RVAD) or left (LVAD) ventricle, or both at once (BIVAD). Long term VADs are normally used to keep patients alive with an improved quality of life while they wait for heart transplantation.

**Heart Surgery**

**Coronary Artery Bypass Graft (CABG) Surgery**

Coronary artery bypass graft surgery is performed to improve the flow of blood to the heart muscle. Although bypass surgery is not a cure for heart disease, it should decrease or stop angina, improving your quality of life. Heart surgery usually takes 3-6 hours. The healing and recovery time is usually 4-8 weeks.

During bypass surgery, a blood vessel from your leg (saphenous vein), arm (radial artery) and/ or chest wall (internal mammary artery) is used to bypass the blockage. The location, size, and number of blockages will determine which blood vessel is used. The location of blockages will also determine whether the surgery can be performed through a sternotomy, which splits the entire breast bone, or through a small incision under the left breast.

One end of the harvested blood vessel is usually grafted onto the aorta, while the other end is grafted onto the coronary artery below its blockage. The original blockage remains, but blood is routed around it. The graft (transplanted artery or vein) functions like a detour directing traffic around a blocked-off road, providing the heart muscle a new supply of oxygen-rich blood.
After heart surgery, you may experience some chest pain or discomfort from the incision in your chest. Incisional pain from surgery is different from angina (symptoms you may have had leading up to your hospitalization). Incisional pain does not radiate to your arms or jaw like angina. It does not go away with rest and will worsen if you push on or near the incision. Incisional pain from surgery can be relieved with pain medicines.
Heart Valve Surgery

Heart valve surgery is performed to improve blood flow through the heart. The negative symptoms experienced from the poorly functioning valve should decrease or stop. In valve replacement surgery, the surgeon performs a sternotomy, opening the breast bone to remove the diseased valve and replace it with a new valve. Valves are made of plastic, metal, or tissue.

Valvuloplasty or Annuloplasty is another type of valve surgery. Instead of replacing the defective heart valve, the valve is simply repaired. A torn valve or one with a very wide opening may be repaired by sewing the edges together. Weak valves can be supported by adding a ring around the edges.

Minimally Invasive Surgery and Robotic-Assisted Heart Surgery can be used in certain cases. They are new, gentler techniques that allow for a less invasive approach. Using smaller incisions and tiny surgical instruments to perform these procedures, patients enjoy the benefits of less pain and quicker recovery with comparable outcomes. The healing and recovery time after minimally invasive surgery is usually four weeks.

With certain types of valves, you will need to take medicine to prevent blood clots from forming on the new valve. The length of time you will need to be on this medication, dosage and monitoring will be decided by your physician. The amount or dosage of medicine is adjusted according to blood tests (INR) that show the time it takes for your blood to clot.

TAVR or Transcatheter Aortic Valve Replacement is a procedure for patients with severe aortic stenosis and for those who are a high surgical risk, not suitable for open-heart surgery. TAVR is less invasive, not requiring open-heart surgery. TAVR produces results that can lengthen patients' lives.

The TAVR procedure can be performed through two different approaches:

- Transfemoral approach: the valve is delivered into the heart in a tube (catheter) placed in a small incision in the groin (femoral artery).
- Transapical approach: the valve is delivered in a tube (catheter) through a small incision on the chest into the heart (the apex).

A TAVR Heart Team includes many health care professionals, including interventional cardiologists, cardiothoracic surgeons, TAVR coordinators, and imaging specialists.

Heart Transplant

A heart transplant is a procedure in which a surgeon removes a diseased heart and replaces it with a donor heart. During a heart transplant, a mechanical pump circulates blood through the body while the diseased heart is removed and replaced with a healthy heart from a recently deceased donor.

The surgeon connects the donor heart to the major blood vessels and hooks the heart up to wires that temporarily control the heartbeat. The procedure takes several hours.

To prevent the body from rejecting the donor heart, powerful immunosuppressant drugs are given, and must be taken continually.
After Discharge

Recovery

Lee Health - Home Health Services

Your physician may write orders for you to have home health. In the privacy of your own home, you can receive highly-skilled care from our Home Health’s registered nurses, physical, speech and occupational therapists, certified home health aides and medical social workers. Today, high technology medical equipment for use in the home provides treatments and services that once were available only in the hospital, including Telehealth electronic monitoring, Lifeline medical alert and medication dispensing systems.

Lee Health - Home Health Services .......................................... 239-418-2900

HealthPark Care and Rehabilitation Center

HealthPark Care and Rehabilitation Center is a full service skilled nursing facility with a dedicated Heart Failure program coordinator. As part of the continuum of care, HealthPark Care and Rehabilitation Center closely monitors recovering patients, helps patients and family members gain a better understanding of HF by teaching them how to take control of the management of their disease.

HealthPark Care & Rehabilitation Center ................................239-343-7300

Cardiac Rehabilitation

For optimal outcomes, it is recommended that all appropriate heart patients participate in an outpatient cardiac rehabilitation program. Most physicians at Lee Health will order this while you are hospitalized. Discuss referral to participate at your follow-up appointment.

Cardiac Rehabilitation is a medically supervised program that uses telemetry monitored exercise, education, and support to help people recover from a heart attack, heart surgery (coronary artery bypass graft, valve repair or replacement or heart transplant), or other heart problems such as heart failure, stable angina and angioplasty, and stent.

Cardiac rehabilitation programs are individually designed based on a person’s needs and overall health. Benefits include but are not limited to helping patients understand:

- Cardiac risk factors, such as inflammation, increased weight, inactivity, high blood pressure, abnormal cholesterol, high blood sugar, tobacco use, depression, and stress, and how they contribute to heart disease.
- Signs and symptoms of heart disease.
- Importance and proper techniques of safe exercise.
- Medications.
- When to return to usual activities, including work.
- Nutrition education and individualized counseling.
- Stress management techniques.
Research has also shown that patients who complete a cardiac rehab program have improvement in their quality of life and reduce their risk of dying from heart disease.

Supervised by cardiac RNs and exercise physiologists, Lee Health offers a medically supervised and telemetry monitored outpatient cardiac rehabilitation program at two locations.

Our comprehensive services include exercise, risk factor education, lifestyle modification classes and other support services, as needed. For additional information, please call the location of your choice:

**Cardiac Rehabilitation at HealthPark Medical Plaza One.... 239-343-5720**
**Cardiac Rehabilitation at Cape Coral Hospital ................. 239-424-2396**
**Cardiac Rehabilitation at Coconut Point.......................... 239-468-0030**
  - You need a physician referral to start a cardiac rehabilitation program.

Medicare and most insurance companies cover cardiac rehabilitation; however, you should verify with your insurance company regarding your plans specific coverage and benefits. If you live outside of this area and are planning to recuperate there, contact your local physician for a referral to a cardiac rehabilitation program near you.

**Emergency Management**

The most important survival technique is to be prepared in case of an emergency.

- Stay calm.
- Think and act quickly—every second counts.
- Use the emergency help that is available.

When an emergency occurs, it is important that you know what to do:

- Be prepared for emergencies before they happen.
- Be aware of conditions that call for immediate attention.
- Know who to call and what to tell them.
- Have current list of home medications available.

**Emergency Aid**

The most widely used emergency aid number, and usually the fastest way to get treatment, is 911. Use 911 for all types of emergencies, including health, accident, fire and police.

The operator will ask you for the following information:

- Your full name, phone number and address with directions and landmarks
- A description of illness, accident or the problem

Remember to stay calm and let the operator hang up first to ensure that he or she has received all of the necessary information. Response time is quicker when the operator knows the address and directions.
**Early Heart Attack Care**

If you or someone you are with begins to have chest discomfort, especially with one or more of the other symptoms of a heart attack, call 911 immediately. Do not wait more than a few minutes and no more than 5 minutes to call 911. If you are having symptoms and 911 is not available, have someone else drive you to the hospital immediately. Never drive yourself, unless you have absolutely no other choice. If you have been given a prescription for nitroglycerin tablets or spray (rapid release nitrate), use them as directed. Refer to Medications section under Treatments.

**Remember: Act in Time! Dial, Don’t Drive!**

**Heart Attack, Stroke and Heat Stroke Warning Signs**

**Heart Attack Warning Signs (Angina)**

Some heart attacks are sudden and intense, so there is no doubt about what is happening. But most heart attacks start slowly, with mild pain or discomfort. The warning signs of a heart attack (angina) may potentially occur anywhere in the upper body:

- A feeling of heart burn or indigestion, nausea or vomiting.
- Discomfort, pain, aching, pressure, heaviness, fullness, squeezing, burning, tightness or a strange feeling in the chest, shoulders, neck, throat, jaw, across the back, between the shoulder blades, or upper abdomen.
- Heaviness, discomfort, tingling or numbness in one or both arms, elbows, wrists, hands or fingers.
- Other signs may include anxiety, breaking out in a sweat, shortness of breath, light-headedness, extreme fatigue, severe weakness or palpitations (fast heart rate).

**Stroke Warning Signs**

- Sudden numbness, tingling, weakness, or loss of movement, of the face, arm, or leg, especially on one side of the body
- Sudden confusion, trouble speaking or understanding simple statements
- Sudden vision changes
- Sudden trouble walking, dizziness, loss of balance or coordination
- Sudden, severe headache that is different from past headaches

**Heat Stroke Warning Signs**

Heat stroke is usually caused by water depletion, a rise in core body temperature and failure of all mechanisms for cooling the body.

- Irritability, aggressiveness or emotional instability
- Disorientation
- Unsteady gait
- Glassy stare
- Hot and dry skin
- Rapid pulse, or drop in blood pressure

It is very important to cool the body with ice or wet compresses while waiting for help or while on the way to the hospital.
If you or someone with you has one or more of these signs, call 911 immediately. Also, check the time so you can report when the symptoms first appeared.

Medical and Contact Information: In Case of Emergency (ICE)
The ICE Emergency Information Program provides first responders vital information about you, your medications, medical history and preferred contacts if you are unable to speak during an emergency.

To identify emergency contacts on your cell phone, you simply enter the word ICE before the person you chose to be your emergency contact in your contacts list. If you have more than one emergency contact, you enter ICE1, ICE2, ICE3, etc.

Call SHARE Club at 239-424-3298 to request your ICE pack. The pack includes an information form and red magnetic envelope, as well as ICE stickers for your home and vehicles.

For more information on ICE, or to download information forms, go to: www.leecountyinjuryprevention.org

Basic Life Support
It’s a good idea to be knowledgeable in Basic Life Support (CPR). According to the American Heart Association, less than one-third of cardiac arrest victims get CPR from someone nearby. Four to six minutes is the window of opportunity for someone to act before it’s too late.

- Most anyone can learn these easy to perform techniques: adult CPR, choking, and use of an automated external defibrillators (AED)—a portable electronic device that is used to reestablish an effective heart rhythm.
- The following web-sites can assist you with first aid classes offered near you: www.heart.org/handsonlyCPR or www.redcross.org.
Support and Information Resources

Heart Disease
Lee Health .......................................................................................... www.LeeHealth.org
American Heart Association .................................................................. www.heart.org
National Coalition for Women with Heart Disease ........ www.womenheart.org
CardioSmart-American College of Cardiology .................. www.cardiosmart.org
(Patient education, A-Z topics, glossary, tools and videos)
Seconds Count (Tips, tools, stories and resources) ..... www.secondscount.org
Heart Disease ........................................................................ www.cdc.gov/heartdisease
American Association of Cardiovascular and Pulmonary Rehabilitation
(Directory to search for a cardiac rehab program near you) ... www.aacvpr.org

Risk Factor Modification
Cardiac Rehabilitation at HealthPark Medical Plaza One .......... 239-343-5720
Cardiac Rehabilitation at Cape Coral Hospital ......................... 239-424-2396
Cardiac Rehabilitation at Coconut Point ..................................... 239-468-0030
Lee Health Solutions ........................................................................ 239-424-3120
  • Chronic Disease Management .................................................. 239-424-3122
  • Weight Management ............................................................... 239-424-3120
  • Diabetes Care ........................................................................... 239-424-3127
Institute of Functional Medicine ............................. www.functionalmedicine.org

Plant-Based Resources
Complete Health Improvement Program (CHIP)............ www.chiphealth.com
(Lifestyle education courses) k.reynaert@chiphealth.com
Food for Life .... k.reynaert@chiphealth.com or pcrm.org/health/diets/ffl/classes
(Health education and cooking instruction) ....................... 239-910-0755
Neal Barnard, M.D. ............................................................... www.nealbarnard.org
Caldwell Esselstyn, M.D. ....................................................... www.dresselystyn.com
Joel Fuhrman, M.D. ............................................................... www.drfuhrman.com
Dean Ornish, M.D. ................................................................. www.drornish.com
John McDougall, M.D. ............................................................... www.drmcdougall.com
The Pritikin Longevity Center. ............................................. www.pritikin.com
Michael Greger, M.D. ................................................................. www.nutritionfacts.org
Plant Pure Nation ............................................................... www.plantpurenation.com

Stress Management
Hearts' Path to Mindful Living ..................................................... 239-277-0646
(Mindfulness-based stress reduction) ....................... www.pathtomindfulness.org
Neurotherapy Center ...............................................239-337-4332 or 800-926-6766
(Angiety, depression, pain, addiction))........................www.DrMaryBonnette.com
Daily Strength .............................................................................www.dailystrength.org

**Smoking Cessation**
Smoking and Health..............................................................www.CDC.gov/tobacco
Tobacco Free Florida............................................................ www.TobaccoFreeFlorida.com
I Quit with AHEC (Area Health Education Center)....................877-848-6696
(Provides free tobacco cessation services in your area)www.ahectobacco.com
Florida Quit Line.................................................................877-U-CAN-NOW or 877-822-6669
(Translation services; TDD for hearing impaired)...... www.quitnow.net/florida
National American Lung Association ...........................................800-LUNG-USA
American Lung Association of Florida ........................................239-908-2685
National Cancer Institute .........................................................877-44U-QUIT
Nicotine Anonymous ..............................................................877-TRY-NICA

**Supportive Services**
Find a Doctor Physician Referral .................. www.leehealth.org or 239-481-4111
Lee Pharmacy at Cape Coral Hospital ..................................239-424-2456
Lee Pharmacy at Gulf Coast Medical Center .......................239-343-1600
Lee Pharmacy at HealthPark Medical Center ...................239-343-5100
Lee Pharmacy at Lee Memorial Hospital ................................239-343-2800
SHARE Club / Older Adult Services.................................239-424-3765
Caregivers Support Group ...................................................239-343-1126
Mended Hearts.................................................................www.mendedhearts.org or 239-461-0980
ICD (implanted cardioverter defibrillator) Support Group........239-343-0169
www.icdsupportgroup.org
American Diabetes Association .............................800-DIABETES www.diabetes.org
Diabetes ...............................................................................www.CDC.gov/diabetes
Alcohol and Public Health ....................................................www.CDC.gov/alcohol
Mental Health .......................................................................www.CDC.gov/mentalhealth
Hope HealthCare Services .............................................800-835-1673
(Counseling for crisis support, loss after suicide).HopeHCS.org/caregivertips
Hope Biblical Counseling and Training Center .................239-481-0777
www.HopeBiblicalCounseling.org
United Way Hotline .....................................................................211
Tools

My Goals

Date _________________

The goal I choose to work on between now and my next visit: ______________________________________
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_______________________________________________________________________________
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The change(s) I am willing to make: _________________________________________________
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Date _________________

The goal I choose to work on between now and my next visit: ______________________________________
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The change(s) I am willing to make: _________________________________________________
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Weight Chart

Weigh yourself at the same time every day and write on this chart. Call your doctor if you've gained 2 pounds or more overnight or 5 pounds during one week.
This is a general guide to assist you in your progressive recovery. Depending on your individual recovery progress, you may be ahead or behind of this plan for daily progression. Use this tool to sign off as instructed. Keep it at your bedside for reference in order to document your progress. It will also communicate to your health care team all that you’ve accomplished. Best wishes toward a heart healthy recovery!

### Activity Guide After Heart Surgery

<table>
<thead>
<tr>
<th>CATEGORY</th>
<th>Date: ___________________</th>
<th>Date: ___________________</th>
<th>Date: ___________________</th>
<th>Date: ___________________</th>
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</thead>
<tbody>
<tr>
<td><strong>BREATHING EXERCISES</strong></td>
<td>Practice breathing exercises with incentive spirometer hourly while awake.</td>
<td>Practice breathing exercises with incentive spirometer hourly while awake.</td>
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<td>Practice breathing exercises with incentive spirometer hourly while awake.</td>
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<td>Use heart pillow to cushion chest incision while coughing or moving. □</td>
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</tr>
<tr>
<td><strong>ACTIVITY</strong></td>
<td>Perform 10 ankle pumps and 10 ankle rotations on each foot 6 times or more per day. □ □ □ □ □ □</td>
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<td>Out of bed in chair at least 2 times today. □ □</td>
<td>Out of bed in chair for all meals. □ □ □ □</td>
<td>Out of bed in chair for all meals. □ □ □ □</td>
<td>Out of bed in chair for all meals. □ □ □ □</td>
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<td></td>
<td>With assistance, step in place or walk 25-50 feet, 2 times today. □ □</td>
<td>With assistance, walk 50-100 feet, 3 or more times today. □ □ □ □</td>
<td>With assistance, walk 100-300 feet, 4 or more times today. □ □ □ □</td>
<td>With assistance, walk 300 feet or more, 5 or more times today. □ □ □ □ □</td>
</tr>
</tbody>
</table>

**PHYSICIAN ACTIVITY ORDERS:** As tolerated, progress to out of bed 4-6 times per day. No sitting for greater than 3 hours at a time. Elevate legs while sitting. Walking is encouraged. Rest in between each activity (eating, walking, bathing, toileting).
Questions for my Doctor

**Examples:**
- Did I have a heart attack? If so, was there heart muscle damage?
- What is my ejection fraction (EF)? What are my restrictions?
- When can I return to work? When can I travel? When can I exercise or have sex?
- What should I do if I experience symptoms of angina?
- Do I need a prescription for Nitroglycerin “as needed” for angina?
- When will you refer me to a cardiac rehabilitation program?

Use this space to write other questions you may have.

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Purpose: To track your progress from your hospitalization to entry to Cardiac Rehab

☐ At discharge, your Doctor has sent your referral to Outpatient Cardiac Rehab
  Group Orientation has been scheduled/declined/deferred

  Or

☐ At discharge, your Doctor has not sent your referral to Outpatient Cardiac Rehab
  You should request a referral from your doctor at your follow-up appointment
    o You may start Cardiac Rehab as soon as Doctor’s referral is received
    o Heart Failure patients must be 6 weeks stable without hospital readmission
      to enter Cardiac Rehab

☐ Cardiac Rehab will call you to schedule an orientation/initial evaluation
  appointment after obtaining the referral, medical records and test results
    o If you have not received a call from Cardiac Rehab within a week after your
      Doctor’s appointment or if you have questions, please call Cardiac Rehab
      to follow-up

☐ Outpatient Cardiac Rehab Exercise Classes (monitored exercise)
  o Classes offered Monday through Friday
  o Medicare and most insurance companies cover Outpatient Phase 2 Cardiac
    Rehab. However, you should verify with your insurance company regarding
    your health plan’s specific coverage and benefits; deductibles and co-
    payments may be required.

Medical Plaza One
239-343-5720
9800 S. HealthPark Drive, Suite 140
Fort Myers, FL 33908

Cape Coral Hospital
239-424-2396
636 Del Prado Blvd.
Cape Coral, FL 33990

Coconut Point
239-468-0030
23450 Via Coconut Point
Estero, FL 34135

Website for national directory of cardiac rehab programs www.aacvpr.org
Website for heart healthy nutrition: www.NutritionFacts.org
Lee Health Hospitals
- Lee Memorial Hospital
  239-343-2000
- Rehabilitation Hospital
  239-343-3900
  2776 Cleveland Avenue
- Gulf Coast Medical Center
  239-343-3000
  13681 Doctor’s Way
- Cape Coral Hospital
  239-424-2000
  636 Del Prado Boulevard
- HealthPark Medical Center
  239-343-5000
  Golisano Children’s Hospital of Southwest Florida
  239-343-KIDS (5437)
  9981 S. HealthPark Drive

Outpatient Center Locations
1. HealthPark Commons
   16281 HealthPark Commons
   239-432-3000
2. Sanctuary
   8960 Colonial Center Drive
   239-343-9400
3. Plantation
   13601 Plantation Road
   239-343-0776
4. Riverwalk
   12600 Creekside Lane
   239-432-9012

Outpatient Rehabilitation at Riverwalk
8350 Riverwalk Park Blvd, Suite 3
239-343-1999

Convenient Care Locations
1. Fort Myers
   4771 S. Cleveland Avenue
   239-481-4111
2. Fort Myers
   16230 Summerlin Road, Suite 215
   239-481-4111
3. Fort Myers
   13340 Metro Parkway, Suite 100
   239-481-4111
4. Cape Coral
   1682 NE Pine Island Road
   239-481-4111

Lee Community Healthcare
1. Cape Coral Clinic
   1435 S.E. 8th Terrace
   239-424-2757
2. Dunbar Clinic
   3511 Dr. Martin Luther King Blvd.
   239-343-4910
3. North Fort Myers Clinic
   13279 N. Cleveland Ave.
   239-652-4111
4. Lehigh Acres Clinic
   5705 Lee Blvd., Suite 1
   239-343-1800

Lee Health
Caring People. Inspiring Health.

P.O. Box 2218 • Fort Myers, Florida 33902
leehealth.org