Patient & Family Education
In Cardiac Rehabilitation
Your Patient Education Manual

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CARDIAC REHABILITATION

After a heart attack, most people can return to full activity in a matter of weeks. Slowly add back bits of your daily routine until you can do all your normal activity.

A cardiac rehabilitation program can help you get back to full activity. It will help you learn to exercise safely and become stronger. Many people become stronger than they were before their heart attack. It will also teach you how to reduce your risk of future heart problems. It can help you form heart-healthy habits you will keep for life.

Cardiac rehabilitation is a great support system. You can share your feelings and problems with others who have had a heart attack. No one feels embarrassed because everyone is in the same boat. You can also bring family and friends for support. This will ease their minds about how much exercise you can safely do.

Ask your doctor about getting into a cardiac rehabilitation program. Most programs are covered by insurance.
Unit One: Treat Heart Disease Sessions 1-22

Knowing what happened to you is important. If you had a heart event (such as a heart attack) or a heart procedure (such as an angioplasty or heart surgery) you were likely given lots of information about what happened to you. However, you may not remember everything that was said to you when you were in the hospital as these events tend to cause a lot of stress and anxiety.

This unit provides answers to some commonly asked questions. These include:

- How does my heart work?
- What is an irregular heartbeat?
- What does it mean to have coronary artery disease? How was my coronary artery disease diagnosed?
- What heart procedures can be done to help me manage my coronary artery disease?
- What do my heart medications do?
- What are my risk factors for coronary artery disease?
- It is important for you to be able to identify what happened to you and understand why certain procedures were done to help you. You will then be in a better position to start taking control and managing your heart disease.

What Happened to my Heart?

A heart attack is most often caused by a blood clot. It forms a dam in the stream of blood taking oxygen to your heart muscle.

*Ask your doctor to show you the artery blockage and the part of your heart that was damaged.*

Coronary arteries carry blood and oxygen to your heart muscle. Over time, these arteries can become narrowed by fatty deposits called *plaque*. This is like rust building up inside a pipe. Inflammation of the artery lining is likely a key part of this process, called *coronary artery disease* (CAD), or also called *coronary artherosclerosis*.

When the artery lining is inflamed, splits in the plaque are likely making it easier for blood clots to form. These clots block the flow of blood and oxygen to the heart muscle. Without oxygen, part of the heart is damaged. This is a *heart attack*, also called a *myocardial infarction*, a *coronary*, or *acute coronary syndrome* (ACS).
Introduction

The heart is like a house.

- It has **rooms**. There are 4 rooms (called chambers) in the heart:
  - 2 small ones (called atria)
  - 2 larger ones (called ventricles)

- It has **doors**. There are doors (called valves) between the rooms that open and close to allow blood to flow through the heart.

- It has **electricity**. The heart’s electrical system has a built-in pacemaker.

- It has **plumbing**. The heart has small pipes (called coronary arteries).

- **Everything works together to keep it functioning.**
  - The rooms (chambers) and doors (valves) work together as a pump. The heart is a muscle that pumps blood to the lungs and the body. Each time the heart contracts (beats), this pumping action is felt in the large arteries of the body as a pulsing sensation. This is what you feel when you take your pulse.
  - The electricity allows the heart to pump 24 hours a day, 7 days a week.
  - The pipes supply oxygen-rich blood to the heart muscle.

How the Heart Works

The flow of blood through the heart.

Your heart is located slightly to the left of the center of your chest. It is about the size of your fist.

Your heart is a muscle that pumps more than 100,000 times per day.

The heart’s job is to supply the entire body with oxygen-rich blood. To do this, the heart has:

- a pump.
- an electrical system.
- a blood supply.
The Heart’s Pump

The heart is made up of:

- 4 chambers:
  - 2 upper chambers called the atria
  - 2 lower chambers called the ventricles
- small valves that:
  - open and close when your heart beats
  - keep the blood flowing through the heart in one direction
  - link the upper and lower chambers of the heart

Blood is pumped through these chambers and valves in the following way.

1. Blood returning to the heart from the body (by way of the vena cava) flows into the right atrium.
2. When the atrium contracts, it forces blood through the tricuspid valve into the right ventricle.
3. From the right ventricle, it is pumped through the pulmonary artery to the lungs where it picks up oxygen.
4. From the lungs, it returns to the heart through the left atrium.
5. From the left atrium, it goes through the mitral valve to the left ventricle.
6. The left ventricle pumps the blood into the aorta and then to all parts of the body.

Each time the heart contracts or beats, this pumping action is felt in the large arteries of the body as a pulsing sensation and that is what you feel when you take your pulse.

The Heart’s Electrical System

A normal electrocardiogram (ECG)

The heart sends electrical signals from one part of itself to another. These signals make each chamber of the heart contract in the correct sequence to squeeze blood from one area to the next, eventually pumping blood out of the heart to the rest of the body.

The passage of the electrical signal through the heart can be recorded on an electrocardiogram.
The Heart’s Blood Supply

Arteries of the heart

The heart’s job is to deliver blood filled with oxygen and nutrients to the entire body. The heart also needs its own blood supply so that the muscle can contract (squeeze). The heart’s blood supply is delivered through the coronary arteries surrounding the heart muscle.

The three main coronary arteries include:
- right coronary artery (RCA) on the right side of the heart, which supplies blood to the walls of the ventricles and the right atrium
- left coronary artery (LCA) on the left side of the heart. The left main artery splits into 2 branches:
  - left anterior descending (LAD) artery, which supplies blood to the front of the heart, walls of the ventricles and the left atrium
  - circumflex artery, which supplies blood to the back of the heart, walls of the ventricles and left atrium.

What is an Irregular Heart Beat?

When you take your pulse, you are counting your heart rate and feeling the heart rhythm.
- A normal rhythm has a regular, predictable beat, one after the other.
- An irregular beat is when the heart contracts early.

When the heart contracts early, there is not enough time for the ventricle (chamber) of the heart to fill up with blood before it contracts. This means that when it contracts, less blood than usual is pumped out to your body.

What Can Cause Irregular Beats?

Your heartbeat is controlled by electrical signals. In a normal heart, these signals are started by a group of special cells called the Sino-Atrial Node (SA-Node).

ECG showing normal beats and skipped beats
However, other cells in the heart can also create electrical signals. If these other cells turn on and send out signals too early, they can interrupt the normal rhythm of the heart by causing it to contract early. This causes an irregular or “skipped” beat.

You may feel a skipped beat as a pause in the rhythm of your pulse. We can see this skipped beat in an ECG.

Many things can irritate the cells of the heart and cause a skipped beat. These include:
- caffeine
- smoking
- excessive alcohol or binge drinking
- stressful situations
- fatigue and illness
- hot and humid weather conditions
- exceeding your exercise prescription

What Should I Do If I Have Irregular Heart Beats?
- Report any irregular or skipped beats to your cardiovascular prevention & rehab team.
- Record these beats on your exercise diary:
  - count the number of beats you feel over the 10 second count
  - count the number of pauses you feel
  - for example, if you felt 12 beats over 10 seconds and felt 1 pause, record it as 12 + 1.
- Cut back on your intake of caffeinated drinks such as tea, coffee and soda.
- Modify your exercise prescription if you have had an illness or symptoms. You can modify your exercise prescription by walking at a slower pace, shortening the distance that you walk, or both.
- Make sure you do a good cardiovascular warm-up before exercising.
- Get plenty of rest and relaxation.

When Should I Be Concerned About Irregular Heart Beats?

Most people, with or without heart disease, may experience skipped beats at some time. Occasional skipped beats are not a problem. If you feel unwell or experience shortness of breath, light-headedness, dizziness or signs of angina when you have the skipped beats, contact your doctor for further advice.

Diagnosing Heart Disease

What Are the Common Cardiac Procedures Used to Diagnose Coronary Artery Disease?

Your doctor may refer you for some or all the following diagnostic tests to help determine if there is a problem with your heart.
- Electrocardiogram (ECG or EKG)
- Echocardiogram (Echo)
- Holter monitor
- Exercise stress test
- Nuclear stress test
- Stress echo
- Angiogram
A resting ECG measures the heart’s electrical activity at rest. A resting ECG is used to:
- assess abnormal heart rhythms
- diagnose heart problems such as heart attack
- monitor recovery from or progression of heart disease

Electrocardiogram

Echocardiogram

Assessing heart structure and function
An echocardiogram uses sound waves (ultrasound) to create a picture of the heart. A machine records important information about the heart’s shape, movement, chambers and valves.

Holter Monitor

You may have a Holter Monitor test if you experience:
- palpitations (an unpleasant sensation in the chest due to an irregular or forceful beating of the heart)
- dizziness

Holter monitoring diagnoses irregular heart rhythms.
- During this test, electrodes are placed on the chest and connected to a small device that records heart rate and rhythm.
- Typically, people wear this device for a 24-hour period while performing regular daily activities.

Exercise Stress Test

ST segment depression suggesting “ischemia” or lack of oxygen getting to the heart. An exercise stress test helps to determine the presence or absence of coronary artery disease.
If you have been diagnosed with coronary artery disease, you may have an exercise stress test to help determine the severity of the disease or what exercise you can do safely.

- During this test, you walk on a treadmill or while your heart is monitored by an electrocardiogram (ECG).
- During each stage of the test, the intensity of the exercise increases. For example, you may walk faster on a steeper incline of the treadmill.
- The test is stopped when you can no longer continue to increase the intensity of your exercise either because you are too tired, or it is unsafe to continue.

Your cardiovascular prevention and rehabilitation team will use this information to determine a safe level of exercise for you.

**Nuclear Stress Test**

A nuclear stress test can help doctors find out more about the blood supply to the heart and the location of injured muscle after a heart attack.

- During this test, a radioactive substance and a special camera are used to help determine how much blood is getting to the heart muscle.

The test may be carried out before and after you exercise on a treadmill, or with medication.

The resting scan ("A" below) is compared to the exercise or post-stress scan ("B" below).

**Stress Echo**

This test combines the exercise stress test with an echocardiogram.

- First, you will undergo a resting echocardiogram. This test uses sound waves (ultrasound) to create a picture of the heart. Important information about the heart’s shape, movement of the muscle, chambers and valves is recorded.
- Next is the exercise stress test. You will undergo another echocardiogram either as your heart rate is increasing or at the peak of exercise.

The images for the resting and exercise echocardiograms are then compared. If any parts of the heart are not getting enough blood and oxygen during exercise, this will show up on the exercise echocardiogram.

**Angiogram**

Arteries that feed the heart muscle blood and oxygen are called coronary arteries. An angiogram can determine how much narrowing (or blockage) exists in the coronary arteries.

- During this procedure, a thin tube called a catheter is inserted from the groin (femoral artery) or wrist (radial
artery) up to the heart and to the coronary arteries.

- A dye is then injected through the catheter and allows the doctor to see the blood flow through the coronary arteries, like a roadmap.

Angiogram through femoral artery
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What is Heart Disease

Plaque build-up in the lining of artery
Coronary artery disease (heart disease) is the build-up of plaque (fatty materials, cholesterol, and calcium) in the coronary arteries.

The coronary arteries are the blood vessels that supply blood to your heart. The building up of plaque is often called “atherosclerosis”.

This build-up can narrow the coronary arteries and prevent oxygen-rich blood from getting to the heart. The build-up of plaque is slow and can begin as early as childhood.

The build-up of plaque is caused by an injury to the lining of the coronary arteries. Things that can injure the lining include:
- high blood cholesterol (LDL cholesterol).
- diabetes.
- obesity.
- smoking.
- high blood pressure.
- lack of physical activity.
- stress.
- family history.

Angina

What Is Angina?
The heart is a muscle. It needs blood and oxygen just like any other muscle in the body.

When there is not enough blood and oxygen getting to your heart muscle because of plaque (fatty materials, cholesterol, calcium) in the coronary artery, you may feel pain (discomfort). This pain or discomfort may be felt in many different places. You may also feel shortness of breath or fatigue.

This is angina. Angina is a warning signal that your heart is under stress. Angina occurs when there is a partial blockage in the coronary artery.
Blocked coronary artery - The heart does not receive enough oxygen-rich blood when the artery is narrowed due to a partial blockage from coronary artery disease. A normal coronary artery allows oxygen-rich blood to flow freely to the heart.

Signs of Angina

Signs (what you feel when you get angina) may be pain (discomfort) in the:
- chest
- jaw
- arms
- upper back
- throat

You may also feel shortness of breath or fatigue. You may feel these symptoms in some or all these areas. It is different for every person and can be different between men and women.

It is important to know your signs of angina and be able to answer the following questions.
- Where on your body do you feel it?
- When do you feel it?
- What are you doing when you feel it?
- How long does it last?
- What brings it on?
- What takes it away?
- How often do you feel it?
- How severe is it on a scale of 0-10?

Types of Angina

Stable angina

This type of angina may occur during physical activity, under stressful situations, or after a heavy meal. Stable angina is predictable. It follows a pattern. It usually has a short duration and is relieved by rest or Nitroglycerine.

Unstable angina

This type of angina may occur at any time; at rest, while sleeping, or with a small amount of physical effort. It is not predictable, and episodes may last up to 30 minutes. Unstable angina requires immediate medical attention. If you experience unstable angina, call Emergency Medical Services in your area (e.g. in Ohio dial 9-1-1).

Silent angina (or silent ischemia)

Silent angina is when there is not enough blood and oxygen getting to the heart, but you do not feel any symptoms. This lack of blood and oxygen can be seen on an electrocardiogram (ECG) of your heart. Silent angina can happen if you do not prepare your body for activity (e.g. skip your warm up before exercising). It may also occur in persons living with diabetes.

How Do I Prevent Angina When I Do Exercise?

- Take your cardiac medications regularly as prescribed by your doctor.
- Do a cardiovascular warm-up for at least 5 minutes before your exercise.
- Follow your exercise prescription (do not do more).

If you feel angina during exercise

- Slow your exercise
- If angina does not go away, Stop exercising, sit down and wait one minute.
- If angina does not go away, take your nitroglycerine as prescribed by your doctor. Rest for 5 minutes.
• If angina still does not go away, take a second nitroglycerine and rest for 5 more minutes.
• If angina does not go away, take your third nitroglycerine, and Call 9-1-1 for help.

When to See Your Doctor or Call 911

See your doctor
• If you experience a change in your symptoms.
• If you have new symptoms.
• If you feel angina more frequently or at a lower level of physical activity.

Call 911
• If you experience angina that doesn’t go away after 3 sprays of Nitroglycerine.

Heart Attack

Heart attack in the front part of the heart muscle.

When there is a complete blockage of the coronary artery, a heart attack or “infarct” may occur.

During a heart attack part of the heart does not receive any blood or oxygen. The lack of blood and oxygen can damage that part of the heart muscle. When there is damage to the heart muscle, the heart’s ability to pump blood may be affected.

During a heart attack you may feel some or all the following symptoms:
• chest discomfort, squeezing, pressure, burning, or heaviness
• discomfort in the neck, jaw, back, arms, or shoulders
• shortness of breath
• sweating
• nausea
• light-headedness

It is important to know that different people have different symptoms. Men and women can also experience different symptoms.

Although these are the most common symptoms felt during a heart attack, some people may experience a combination of them while others may not feel any of them. The symptoms can be like angina symptoms but more intense.

Many people deny that they feel symptoms. If you feel any of these symptoms and they are not relieved by rest or Nitroglycerine, call 9-1-1 or your local emergency department for help.

If you are having a heart attack, it is important to get professional help as quickly as possible to try to reduce the amount of damage to your heart.

Heart Failure (Congestive)

Heart failure is when the chambers of the heart are not able to pump effectively. This means that the rest of the body is not able to get enough blood and oxygen. The poor pumping ability of the heart can also cause a backup of fluid in the lungs and other parts of the body.
The Causes of Heart Failure

Heart failure can be caused by:
- poor blood flow to the heart over a long period of time (coronary artery disease)
- damage to the heart muscle from a heart attack
- years of untreated high blood pressure
- a faulty heart valve
- viral infections
- a disease of the heart muscle

The Signs of Heart Failure

Common signs of heart failure include:
- shortness of breath
- swollen ankles and legs
- sudden weight gain
- tiredness or loss of energy
- a night-time cough caused by fluid build-up in the lungs

When to Call Your Doctor

If you have heart failure it is important to call your doctor if:
- you have increased shortness of breath
- your weight has increased more than 2 pounds over 2 days or 5 pounds in one week
- you have extreme swelling of the feet or legs
- you have increased urination at night

Follow your health care team’s instructions for managing your heart failure, including taking medications regularly, monitoring fluid intake and avoiding excess salt.

How Is Heart Failure Treated?

Treatments for heart failure include:
- medications, such as
  - Blood pressure medications
  - ACE inhibitors
  - Beta blockers
  - Diuretics (water pill).
- surgery
  - pacemaker.
  - implantable cardiac defibrillator.
  - heart transplant (usually for end stage heart failure).
- nutrition, such as
  - sodium (salt) restrictions.
  - fluid restrictions.
- exercise
  - aerobic exercise.
  - resistance training, under supervision.

What Do Heart Valves Do?

The valves in the heart act like plumbing valves and prevent backflow of blood. This allows blood to flow in one direction between the different chambers of the heart.

There are four major valves in the heart:
- mitral valve
- aortic valve
- tricuspid valve
- pulmonary valve
The Different Types of Heart Valve Disorders

- **Stenosis or narrowing of the valve.** This disease of the valve prevents it from opening and closing.
- **Prolapse (faulty valve).** The flaps do not close smoothly or evenly.
- **Regurgitation** of the valve occurs when the valve does not close securely, allowing the blood to flow backwards.

The Signs of Heart Valve Disorders

Valve disorders may cause:
- shortness of breath (main symptom)
- chest discomfort
- palpitations

When to Call Your Doctor

If you have fainting or almost-fainting episodes, see your doctor immediately. You should have follow-up visits with your doctor or cardiologist on a regular basis.

How Are Heart Valve Disorders Treated?

Depending on the severity of the disorder, you may need surgery to either repair or replace the valve.

Heart Arrhythmias

(Rhythm problems)

There are arrhythmias with a slow heartbeat, such as:
- bradycardia (*slow heart rate less than 60 beats per minute*)
- heart blocks

There are also arrhythmias with a fast heartbeat, such as:
- tachycardia (*fast heart beat greater than 100 beats per minute*)
  - atrial flutter.
  - atrial fibrillation.
- supraventricular tachycardia
- ventricular tachycardia
- ventricular fibrillation

The Signs of Arrhythmia

Signs of a too slow or too fast heartbeat may include:
- chest pain or discomfort
- shortness of breath
- weakness
- dizziness
- palpitations

Heart Medicines

Why Are Cardiac Medicines Important?

People with heart disease often take medicines to improve and manage their health.

Your doctor will decide on the best combination of medicines for your condition and situation.

You may need to take some of these medicines for the rest of your life.

Cardiac medicines can:
- improve the lining of your arteries
- improve your cholesterol
- control your blood pressure
- prevent blood clots
- reduce the amount of work your heart must do
Classes of Medicines

Medicines are divided into classes. Each class does something different to help manage your condition. Common classes of medicines are:

- Anticoagulants
- Antiplatelets
- ACE inhibitors
- Angiotensin II receptor blockers/inhibitors
- Beta blockers
- Calcium channel blockers
- Diuretics
- Nitrates
- Digitalis preparations
- Cholesterol lowering agents

Anticoagulants

Benefits
- Helps prevent harmful blood clots from forming in the blood vessels.
- Can lower the risk of stroke in patients with artificial heart valves or atrial fibrillation.

Action
- Decreases blood clotting.

Potential Side Effects
- nosebleeds
- bleeding from the gums
- unusual bleeding while shaving
- easy bruising

Common Names
- Warfarin (Coumadin®)
- Heparin (various)
- Rivaroxaban (Xarelto®)
- Enoxaparin (Lovenox®)
- Apixaban (Eliquis®)

Note

For some of these medications, your doctor will send you for weekly or monthly blood tests to ensure you are taking the correct doses.

Foods rich in vitamin K, such as leafy green vegetables, may interfere with these drugs. Speak with your doctor about these foods. It is likely you can eat them, but you will need to avoid sudden changes in the amount you eat each day.

Antiplatelets

Benefits
- Reduces the risk of dangerous blood clots forming in the body that may cause a heart attack or stroke.
- Reduces stent cloting.

Action
- Prevents the blood platelets (cells) from sticking together and forming clots.

Potential Side Effects
- easy bruising
- nausea (upset stomach)
- vertigo
- ringing in ears (tinnitus)
- light-headedness
- abdominal pain, bleeding ulcers (black tarry stool)
- impaired kidney or liver function
- shortness of breath

Common Names
- Acetylsalicylic acid, ASA (Aspirin®)
- Ticagrelor (Brilinta®)
- Clopidogrel (Plavix®)
- Prasugrel (Effient®)
ACE Inhibitors

Benefits
- Can prevent further damage to an already weakened heart.
- Prescribed for patients with high blood pressure or heart failure.

Action
- Expands (opens) blood vessels to lower blood pressure and increase the amount of blood the heart pumps.

Potential Side Effects
- dry cough (very common)
- rash
- rapid swelling of the lips or face
- low blood pressure
- dizziness
- nausea
- altered sense of taste
- headache

Common Names
- Captopril (Capoten®)
- Cilazapril (Inhibace®, Zapril®)
- Ramipril (Altace®)
- Enalapril (Vasotec®)
- Benazepril (Lotensin®)
- Moexipril (Univasc®)
- Quinapril (Accupril®)
- Fosinopril (Monopril®)
- Trandolapril (Mavik®)
- Perindopril (Coversyl®, Aceon®)
- Lisinopril (Prinivil®, Zestril®)
- Reduces the chance of another heart attack or experiencing angina (chest pain).
- Slows heart rate.

Beta Blockers

Benefits
- Lowers blood pressure.

Calcium Channel Blockers

Benefits
- Controls high blood pressure.
- Controls irregular heartbeats.
- Reduces angina (caused by not enough blood supply to the heart).

Action
- Relaxes (opens) blood vessels to improve blood flow to the heart.
• May slow heart rate and lower the oxygen needs of the heart.

Potential Side Effects
• headache
• edema (ankle swelling)
• nausea
• facial flushing
• dizziness
• constipation

Common Names
• Amlodipine (Norvasc®, Lotrel®)
• Diltiazem (Cardizem®, Tiazac®)
• Bepridil (Vascor®)
• Felodipine (Plendil®)
• Verapamil (Calan®, Isoptin®, Verelan®)
• Nisoldipine (Sular®)
• Nifedipine (Adalat®, Procardia®)
• Nimodipine (Nimotop®)

Diuretics (Water Pills)

Benefits
• Helps manage high blood pressure.
• Helps manage heart failure.

Action
• Helps the body to get rid of extra fluid. This lowers the amount of work the heart must do.
• Reduces extra fluid buildup in the lungs, lower legs and ankles.

Potential Side Effects
• low blood pressure
• kidney complications
• electrolyte imbalance (low potassium, low magnesium, low sodium)

Common Names
• Chlorthalidone (Hygroton®)
• Spironolactone (Aldactone®)
• Amiloride (Midamor®)
• Bumetanide (Bumex®)
• Furosemide (Lasix®)
• Hydrochlorothiazide or HCTZ (Esidrix®, Hydrodiuril®)
• Chlorothiazide (Diuril®)
• Indapamide (Lozol®, Lozide®)

Note
Take this pill in the morning. It will cause multiple trips to the bathroom during the day but will help to avoid disruption to your sleep at night.

Nitrates

Benefits
• Helps relieve angina (chest pain).

Action
• Relaxes (opens) blood vessels to allow blood (and oxygen) to flow more easily.

Potential Side Effects
• headaches
• flushing (increase in blood flow to the skin)
- low blood pressure
- fainting or dizziness when sitting up or standing up too quickly

Common Names
- Nitroglycerine sublingual (Nitrostat®)
- Nitropatch (Nitrodur®, Transderm-Nitro®)
- Nitroglycerine sublingual* spray (Nitrolingual pump spray®)
- Nitropaste (Nitrol®)
- Hydralazine (Apresoline®)
- Isosorbide dinitrate (Isordil®)
- Isosorbide mononitrate (Imdur®)

If the dose is too high, you may experience loss of appetite, nausea, vomiting, and headaches.
- May occasionally cause an irregular heartbeat.
- Report these side effects to your doctor immediately.

Common Names
- Digoxin (Lanoxin®)

Digitalis

Benefits
- Helps manage heart failure.
- Help manage irregular heartbeats.
- May be prescribed to patients with heart failure who are not responding to ACE inhibitors or diuretics.

Action
- Strengthens the pumping action of the heart, slows irregular heartbeats.

Potential Side Effects

Cholesterol Medications
- Statins
- Resins
- Nicotinic Acid
- Fibrates

Statins

Benefits
- Lowers LDL (bad) cholesterol.
- Raises HDL (good) cholesterol.
- Lowers triglyceride levels.
Prescribed for patients with high LDL cholesterol or those at risk of heart disease, stroke or diabetes.

**Action**
- Prevents the liver from producing too much cholesterol.

**Potential side effects**
- muscle pain
- muscle weakness
- abnormal liver function
- allergic reaction (skin rashes)
- heartburn
- dizziness
- abdominal pain
- constipation

**Common names**
- Rosuvastatin (Crestor®)
- Fluvastatin (Lescot®)
- Pravastatin (Pravachol®, Pravigard®)
- Simvastatin (Zocor®)
- Atorvastatin (Lipitor®)
- Lovastatin (Mevacor®, Advicor®, Altoprev®)

**Note:** Increased muscle pain and weakness can be a sign of a rare but serious side effect and should be reported to your doctor immediately.

**Resins**

**Benefits**
- Lowers LDL (bad) cholesterol.
- Prescribed for patients with high LDL cholesterol or those at risk for heart disease, stroke or diabetes.

**Action**
- Works inside the intestine.
- The drug binds to bile from the liver and prevents it from going into the circulatory system. Bile is made largely from cholesterol, so these drugs work by depleting the body’s supply of cholesterol.

**Potential side effects**
- constipation
- gas
- upset stomach

**Common names**
- Cholestyramine (Questran®, Questran Light®)
- Colestid (Colestipol®)

**Note:** Any cholesterol-lowering medication can cause muscle pain, muscle weakness, abnormal liver function, allergic reaction (skin rashes), heartburn, dizziness or abdominal pain.

**Fibrates**

**Benefits**
- Lowers LDL (bad) cholesterol.
- Raises HDL (good) cholesterol.
- Lowers triglyceride levels.
- Prescribed for patients with high LDL cholesterol or those at risk of heart disease, stroke or diabetes.

**Action**
• Blocks the production of certain types of cholesterol.
• Increases HDL (good) cholesterol.

Potential side effects
• stomach pain
• gas
• heartburn

Common names
• Fenofibrate (Lipidil®)
• Bezafibrate (Bezalip®)
• Gemfibrozil (Lopid®)

Note:
There are other medications used to lower cholesterol.
Any cholesterol-lowering medication can cause muscle pain, muscle weakness, abnormal liver function, allergic reaction (skin rashes), heartburn, dizziness or abdominal pain.

Your risk of worsening heart disease increases when you have more than one risk factor. Coronary artery disease (CAD) is a progressive disease, which means that it is more likely to get worse if your risk factors are not under control.

Managing your risk factors means that you need to pay attention to all the risks that could affect your heart disease. It also means you will likely need to make some changes in your lifestyle to help get them under control.

Types of Risk Factors
There are two types of risk factors:
Modifiable risk factors; These factors you can change and control.
• Physical inactivity
• Unhealthy Eating
• Stress factors
• Smoking
• High blood pressure
• High cholesterol levels

Diabetes
• Large waist size

Non-modifiable risk factors; These are factors that you cannot change or control.
• Age
• Gender
• Family history of heart disease
• Ethnicity

Control Your Risk Factors
Act to control your modifiable risk factors.
• Know your risk factors for coronary artery disease.
• Know your numbers. For example, what is your blood pressure?

Why Should I Control My Risk Factors?
Cardiac risk factors increase the chance that you may get heart disease. They can also increase the risk of your heart disease getting worse.
Identify which risk factors are “under control” and which are “not under control”.

Learn what steps you need to take to control your risk factors.

Physical Inactivity

What Is Physical Inactivity?

You are physically inactive if you do not get at least 30 minutes of moderate intensity exercise on most, if not all, days of the week. There is a difference between physical activity and exercise:

- Physical activity can be spontaneous or un-planned. For example, walking to the bus stop, gardening, dancing, brisk walking, cycling, etc.
- Exercise is planned, structured, repetitive, and purposeful. For example, walking 30 minutes on a measured route or treadmill, 5 times per week.

You can reduce your risk of heart disease by carefully planning your exercise routine.

Desirable activity level

- Daily: Sit less and move more during the day.
- Aerobic Exercise: Moderate to vigorous intensity, 30-60 minutes, 5 times per week.
- Resistance Training: Moderate intensity, 10-15 reps, 2-3 times per week.

Why Are Physical Inactivity and a Sedentary Lifestyle Risk Factors?

Physical inactivity can contribute to:

- high blood pressure
- high cholesterol
- diabetes
- obesity

- plaque formation in the blood vessels, which can decrease blood flow

All these conditions can lead to heart disease.

Sitting too much is a health risk. Physical inactivity on its own is as much of a risk for heart disease as smoking, high blood pressure and high cholesterol. Being physically active and participating in structured exercise can control these conditions and improve the health of your blood vessels.

Unhealthy Eating

Why Is an Unhealthy Diet a Risk Factor?

Unhealthy eating habits can lead to:

- weight gain
- high blood pressure
- high cholesterol

What Is a "Heart Healthy" Diet?

A heart healthy diet is one that includes:

- plenty of vegetables and fruits
- healthy fats in place of saturated and trans fats
- whole grains and cereals, beans and lentils
- fatty fish at least twice a week
- a handful of unsalted nuts and seeds most days
- lower fat dairy products

Desirable level

- Total fat intake: Less than 30% of total calories per day (less than 7% of calories from saturated fat and less than 1% of calories from trans-fat)
- Fiber intake: 25-50 grams per day
• Sodium intake: Less than 1500 mg/day
• Added sugar:
  – Discuss added sugars with your dietitian.

What Does "A Fat Intake of Less Than 30% of Total Calories" Mean?
If you are a man consuming 1800 calories per day:
• Total fat for the day = 60 grams with up to 14 grams (approximately 3 teaspoons) from saturated fat
If you are a woman consuming 1500 calories per day:
• Total fat for the day = 50 grams with up to 11 grams (approximately 2.5 teaspoons) from saturated fat

High Blood Pressure
What Is Blood Pressure?
Blood pressure is a measure of the force of the heart pumping blood against the walls of the arteries.
Blood pressure is expressed as two numbers, such as 120/80, and is measured in millimeters of mercury (mmHg).
• The top number (systolic blood pressure) is the force of blood when the heart contracts.
• The bottom number (diastolic blood pressure) is the force of blood when the heart relaxes. Both numbers are important.

Blood pressure levels:
• Less than 120/80 mmHg
• Elevated 120-129 and less than 80 mmHg.

• Stage I Hypertension between 130-139 or 80-89 mmHg.
• Stage 2 Hypertension 140 or higher or 90 or higher.

High Cholesterol Levels
What is Cholesterol?
Cholesterol is a type of lipid (fat), found in the blood, which our body needs.
The body gets cholesterol in two ways:
1. from the liver
2. by eating animal food products

Types of cholesterol
There are three types of cholesterol.
1. Low density lipoproteins (LDL): the “bad cholesterol”
2. High density lipoproteins (HDL): the “good cholesterol”
3. Triglycerides: a form of fat carried in the blood that contributes to the fat that is stored in the body’s tissues. High-fat foods, sugar and alcohol contribute to high levels of triglycerides.

Desirable cholesterol levels
• Total cholesterol: Less than 200 mg/dL
• HDL cholesterol: more than 40 mg/dL
• LDL cholesterol: less than 130 mg/dL
• Triglycerides: less than 150 mg/dL
• Total Cholesterol to HDL Cholesterol Ratio: Less than 4.0

Why is Cholesterol a Risk Factor?
Too much LDL cholesterol contributes to plaque formation (build-up) in the coronary arteries. LDL acts like a “dump truck”, depositing LDL cholesterol into the arteries
and causing blockages. A blockage makes it difficult for blood to pass through the vessels. Blockages can lead to a heart attack. Low levels of HDL cholesterol also increase the risk for heart disease. HDL cholesterol acts like a "garbage truck", taking LDL cholesterol away from the arteries and eliminating it through the liver. High levels of triglycerides increase the risk of obesity, diabetes and heart disease.

Diabetes

What is Fasting Blood Glucose?

Fasting blood glucose is the amount of glucose (sugar) in your blood after you have not eaten for at least 8 hours. This measurement is taken to determine if you have or are at risk for diabetes.

Blood glucose desirable levels

Fasting blood glucose:
- 70 – 100 mg/dL normal
- 101-125 pre-diabetic
- 126+ diabetic

A1c (average level of blood glucose over the past 3 months):
- 5.6% or below
- 5.7 to 6.4% pre-diabetes
- 6.5 % or above diabetic

Why is an Abnormal Fasting Blood Glucose Level a Risk Factor?

High levels of blood glucose can increase your risk of getting diabetes and heart disease.

An organ of the body named the pancreas releases a hormone called insulin. Insulin is responsible for lowering blood glucose. It does this by allowing blood glucose to enter the body's muscle cells. The muscle cells then use the glucose as energy for the body.

Over time, excess weight, especially around the abdomen, can cause "insulin resistance". Insulin resistance means that your body is no longer able to use insulin effectively to allow blood glucose to be used as energy. This means that high levels of glucose stay in the bloodstream.

An A1C between 5.7 % and 6.4 % or fasting blood glucose between 101-125 mg/dL indicates "pre-diabetes". Lifestyle changes including regular exercise and a healthy diet can delay or prevent diabetes by lowering blood glucose levels and improving how the body uses insulin.

If you are living with heart disease or concerned about your risk factors for heart disease, a fasting blood glucose test is recommended. Talk to your doctor about how often this test should occur.

Smoking & Second-Hand Smoke

What Are Smoking and Second-Hand Smoke?

Both smoking (cigarette, cigar or pipe) and chewing tobacco increase the risk of getting or worsening heart disease.

Second hand smoke can also increase the risk of getting or worsening heart disease. Second hand smoke can come from two places:

1. Smoke that comes from the tip of a burning cigarette, cigar or pipe
2. When a smoker exhales
Desirable level
1. 0 cigarettes per day.
2. No exposure to second hand smoke.

**Why Are Smoking (Including Chewing Tobacco) and Second-Hand Smoke Risk Factors?**

Carbon monoxide and many of the other harmful chemicals in cigarette smoke cause health problems, including damage to the arteries. This damage can cause plaque to build up in the arteries, blocking blood flow. It can also increase the risk of blood clots and reduce the amount of oxygen in the blood. Smoking increases your blood pressure and makes the heart work harder.

Nicotine is a highly addictive substance found in tobacco products. It leads a smoker to continue to seek these harmful exposures.

Second hand smoke contains the same chemicals and causes the same health effects listed above. There is no safe distance from a burning cigarette.

**Stress Factors**

**What Is Stress?**

Stress is our body’s response to change. Stressors are the situations that bring about change. How we deal with and react to stress determines how it will affect our body.

**What Kinds of Change Can Lead to Stress**

- Health
- Relationships
- Work
- Family
- Lifestyle
- Financial resources

Loss if often involved in these changes.

High levels of stress and chronic stress can lead to anxiety and depression. Ongoing anxiety and depression are huge stressors.

**Factors that impact your stress level**

Medical research has found seven factors that contribute to your overall stress level. The seven stress risks are:

1. Depression
2. Sleep apnea
3. Distress
4. Disturbed sleep
5. Loss of control
6. Chronic stress
7. Many life events in the past year.

**Why is Stress a Risk Factor?**

Chronic stress is ongoing stress that continues for months at a time. Long term exposure to stressors is a concern. Our body begins to respond negatively to this stress, and over time this can negatively affect our health.

Also, repeated “peaks” of your stressors will increase your overall stress level, and may increase your risk of a heart attack.

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**Unit Two: Exercise**

**Sessions 23 and 24**

Getting active and staying active is important in managing and preventing heart disease. Being active means:

- Doing more aerobic exercise.
- Doing more recreational activities and sports.
• Doing more walking in your day-to-day chores.
• Doing less sitting.

Being active can help you stop, slow down or reverse heart disease. An action plan can help you get the right amount of exercise for you.

Your safety is important. Knowing how to modify your activities in hot and cold weather and knowing when you should skip exercise will keep you safe.

Get Active and Stay Active

Getting active is important in managing and preventing heart disease. Being active means:

• doing more aerobic exercise.
• doing more resistance training
• doing more recreational activities and sports.
• doing more walking in your day-to-day chores.
• doing less sitting.

Your safety is important. Knowing how to modify your activities in hot and cold weather and knowing when you should skip exercise will keep you safe.

Sit Less Move More

Being more active is a frame of mind. We are so accustomed to sitting during the day that it takes effort to move more.

The first step to sitting less and moving more is to become aware of how much sitting you are doing.

• Do you sit while doing the following activities?
  • watching television
  • talking on the telephone
  • working
  • commuting to and from work
• When given the option between either walking or taking an elevator up one flight or down two flights of stairs, which do you choose most often?
• Do you try to find the closest parking spot at the shopping center?

If you answered yes to any of the above, you are not alone. With modernization and all the conveniences that come with it, our lives have become more sedentary. Unfortunately, this comes at a cost to our health because we are sitting more than ever.

How Do I Sit Less and Move More?

Reflect on the activities you do sitting. Is there a way you could do them without sitting?

• Can you get up and stretch and go for a short (2 minute) walk every hour that you sit either at work or watching television?
• If you have a cordless phone would you consider getting up and moving around while talking for some or all the conversation?
• Instead of finding the closest parking spot, would you consider parking or getting off public transit a short distance away from where you are going?
• Can you walk or bike part of your commute to work?

The final step to sitting less and moving more is to make an action plan.

• Pick one thing you could do to sit less and move more.
• Start small and build your way to a
  more
  active life.
Some people find wearing a pedometer (a
small device that measures the number of
steps you walk) very helpful to see how
much they are engaging in active living.
Once you have a baseline of the number of
steps you take in a day (using a pedometer)
you could challenge yourself to increase
that number!

Benefits of Exercise

Regular aerobic exercise can:
• improve your cardiovascular fitness.
  This means making your heart and
  lungs stronger and more efficient.
• make changes in your body
  composition such as:
  o decreasing your waist size.
  o decreasing your body fat.
  o increasing your muscle mass.
• improve your blood glucose (sugar)
  levels.
• reduce your risk for heart disease.

The narrowed coronary arteries restrict the
flow of blood to the heart.
A warm-up allows your blood vessels,
including the coronary arteries, to relax and
open. This increases the blood flow to the
working muscles and the heart. The
increased blood flow means that more
oxygen is available to the working muscles
(such as the legs) and to the heart muscle.
This allows the body to exercise without too
much physical stress. This means:
• the demand and supply of oxygen to
  the heart are in balance
• symptoms of angina, irregular
  heartbeats, dizziness and shortness
  of breath are less

How Do I Warm Up?
Your warm-up can be the same type of
exercise you are doing to train your heart
and lungs.
• If you are walking for your exercise,
  then your warm-up can be walking.
• If you are cycling for your exercise,
  then you can warm up by cycling.

Warm-Up

Why is it Important to Warm-Up?
The purpose of a warm-up is to gradually
prepare the heart, lungs, blood vessels, and
muscles for safe and comfortable exercise.
People with heart disease have narrowed
coronary arteries because there are plaque
deposits on the inner lining of the arteries.

To make sure you warm up safely:
• warm up for at least 5 minutes
• warm up at a lower intensity or
  speed than your prescribed exercise
  o If you walk for your exercise,
    then walk at a slow pace
  o If you exercise on a
    stationary bicycle, then cycle
    at a slow pedal speed, with
    little or no resistance
Cool-Down

Why is it Important to Cool Down?
A cool-down reduces blood pooling (when blood collects in one area) in the legs. During walking and cycling, blood flow to the muscles in your legs increases. If the extra blood in the legs is not returned to the upper body in a balanced way, blood will pool in the legs.

Your leg veins are next to the muscles in your leg. When you exercise, your leg muscles alternately contract and expand, pressing against the leg veins. The movements of the muscles help move the blood through the veins and back to the heart.

- If you stop exercising suddenly, your leg muscles no longer help move blood back to the heart. This means that the amount of blood flowing into the legs is greater than the amount of blood flowing back to the heart, and the blood begins to pool in the legs.
- With less blood returning to the heart than leaving it, there is less blood to fill the heart and less blood for the heart to pump out. The reduced blood flow to the heart and head could cause you to experience angina, skipped beats, or light-headedness.

During a cool-down, the leg muscles continue to move and to help pump blood back to the heart. This reduces blood pooling in the legs. Because blood flow to the heart and head has been maintained, you are less likely to experience problems.

How Do I Cool Down?

Your cool-down can be the same type of exercise you do to train your heart and lungs. If you are walking for your exercise, then your cool-down can be walking. If you are cycling for your exercise, then you can cool down on the bicycle.

Follow these tips to make sure you cool down safely.
- Cool down for at least 5 minutes.
- Cool down at a lower intensity or speed than your prescribed exercise.
  - If you walk for your exercise, cool down by walking at a slower pace for at least 5 minutes.
  - If you exercise on a bicycle, cool down by cycling at a slow pedal speed with little or no resistance for at least 5 minutes.

Stretching

Stretching exercises are sometimes referred to as warm-up or cool-down exercises. Do not confuse stretching exercises with your cardiovascular warm-up and cool-down exercises.

Stretching your muscles (flexibility training) is an important part of staying fit. Stretching improves the flexibility of your muscles and reduces the risk of injury when doing aerobic and resistance training.

Static stretching involves holding a position for a period. It is important to do at least 5 minutes of cardiovascular warm-up before stretching a muscle. A good time to stretch is after your aerobic training, when your muscles are already warm.

How Do I Stretch?
To do a static stretch, stretch to the farthest point you comfortably can. You should feel tightness, but the stretch should not cause pain or discomfort in the muscle. Hold the stretch while continuing to breathe for 15-30 seconds.

- Remember not to bounce or change position while you are holding the stretch.

Stretching exercises
Below is a series of upper and lower body stretches you can include in your exercise routine.

- chest stretch (pectoral muscle)
- shoulder stretch (deltoid muscle)
- thigh stretch (quadriceps muscle)
- hamstring stretch
- calf stretch

How to Progress Exercise
The first step in progressing your exercise is to determine if you are ready to move forward.

In aerobic training we discussed the FITT principle for developing an exercise prescription:

- **Frequency** of your exercise
- **Intensity** of your exercise
- **Type** of exercise
- **Time** or duration of the exercise

A progression in your exercise program could occur in any of these areas. Only make changes in one area at a time.

**Frequency**
The goal for your prescribed exercise is 5 times per week. You also want to make sure you are active every day.

If you are not currently exercising 5 times per week, you can increase the frequency of your exercise as a way of progressing your program.

**Intensity**
You can progress the intensity of your exercise by working harder.

You are not ready to progress the intensity of your exercise unless all three points below are true for you.

1. Your rating of perceived exertion (RPE) is less than 11 (light work) on the scale.
2. Your heart rate during your exercise is below the training heart rate set by your cardiovascular prevention and rehabilitation team.
3. You currently do not feel any signs of shortness of breath, angina, chest pain, chest discomfort, muscle or joint aches or pains.

Do not progress the intensity of your exercise if:

- your current level of exercise is challenging (your RPE is greater than 13 or somewhat hard work)
- you feel unwell
- you have had a change in your medical status (new symptoms, new diagnoses)
- you have had a recent change in your medication
- you are getting used to exercising in new weather conditions
- your heart rate during exercise is above the training heart rate set by your cardiovascular prevention and rehabilitation team
- you are happy with your current level of fitness

The type of exercise you do will determine how the intensity could change. Here are
some examples for walking, jogging and cycling.

- To progress the intensity of walking, increase the speed of your walk. Increase your speed by no more than 1 minute per mile (or minute per 1.6 kilometer) each time you progress your program.
- To progress the intensity of jogging, increase how often you jog or increase the length of time you jog in your routine.
- To progress the intensity of cycling, increase the speed (revolutions per minute) of your cycling or how much tension is on the fly wheel.

Type of Exercise

You may want to try a new exercise. For example, you might want to start cycling in addition to walking.

Variety is important, especially if you feel bored with your program.

Changing the type of exercise, you do is a way of progressing your program.

Time or Duration of Exercise

The duration of your aerobic exercise is important.

The goal is to exercise between 20 and 60 minutes each session depending on your level of fitness, medical history and goals.

The durationon of your exercise is usually the first step in progressing your exercise program. You should increase the duration before you increase the intensity.

Exercise & Cold Weather

Do not exercise outdoors when the temperature is below -10°C (15°F) or when the combined air temperature and wind-chill are below this level.

Can I Exercise in Cold Weather?

The answer to this question depends on what the outdoor temperature is. You can exercise outdoors if the temperature is above -10°C with the wind chill factor.

Check the temperature before going out for your exercise. For the most up-to-date information check the weather channel on a TV, radio or internet website.

If it is too cold to exercise outdoors, there are lots of places you can exercise indoors.

Avoid Exercise in Certain Weather Conditions

Snow-covered and icy Surfaces

Avoid walking on icy and snow-covered surfaces.
- It may be harder to walk through snow. This puts an increased strain on your heart.
- Walking on ice increases your risk of slipping and falling.

Headwinds

The wind can make it harder for you to exercise. Headwinds (when you walk into the wind) increase the chance of you feeling chilled. It also increases your level of effort.

Rain and wet snow

Avoid exercising outdoors in rain or wet snow. Your clothing will not keep you warm and you will lose body heat.

Pay attention when the sunshine turns to overcast
Pay attention when sunshine turns to cloudy conditions. When this change happens, the temperature can drop by 7°C.

Avoid Shoveling Snow

The highest number of admissions to emergency rooms for heart-related problems and sudden cardiac death occurs with the first heavy snowfalls of the year. This is because snow shoveling increases the risk of having a heart attack, especially for people with:
- low levels of fitness
- existing heart disease
- a history of stroke

Shoveling snow takes the same amount of effort continuously jogging or running. This large amount of effort, in combination with the added strain on the heart caused by cold weather, will put you in a high-risk scenario if you decide to shovel snow.

- Get professional snow removal services or ask someone in your household who is not living with heart disease to remove the snow.
- Some cities and townships provide free snow-removal services for residents living with heart disease or a chronic condition. Contact your local city office to ask about snow removal services before winter begins.

Exercise & Hot Weather

When you exercise, the working muscles in your body create heat, which is transported around the body by your blood.

- As your body temperature increases, the blood vessels near the skin open and the sweat glands work harder.
- The body is cooled by the evaporation of sweat from the skin and the transfer of heat from the blood to the air.

In this way, the body tries to maintain its ideal temperature of 37°C.

Exercising in Hot Humid Weather

When the air is humid (already saturated with water), it limits the amount of sweat that can evaporate; instead, sweat just rolls off your skin. When the air is hot, it does not cool the blood close to the surface of your skin. These conditions put you at risk of becoming overheated and dehydrated.

Overheating

Fluid is lost from your blood when you sweat heavily while exercising in hot humid weather. When there is less fluid in the blood, your heart must work harder to deliver blood and oxygen to exercising muscles.

Signs of overheating include:
- an increase in heart rate
- excessive fatigue
- an increase in irregular or skipped heart beats.
- light-headedness or dizziness.

Dehydration

Dehydration occurs when the body does not have enough fluid. Dehydration can occur in phases, with each phase becoming more serious.

There are 3 stages of dehydration.

Stage 1: Heat Cramps
Heat cramps may happen when you first start to become dehydrated.  
Signs of heat cramps  
- Cramps in the calves and/or abdomen due to a loss of sodium from muscle cells.

Stage 2: Heat Exhaustion  
Heat exhaustion can occur when you are exposed to high temperatures and you do not replace fluids.  
Signs of heat exhaustion  
- Fatigue and weakness leading to dizziness.  
- Shortness of breath.  
- Nausea.  
- Vomiting.  
- Unsteadiness.

Stage 3: Heat Stroke  
Heat stroke is a medical emergency. Heat stroke happens when the body’s temperature has risen to 39°C or higher.  
Signs of heat stroke  
- Be unbalanced or unsteady on your feet.  
- Feel confused or disoriented.  
- Have bizarre behavior.  
- Your body can no longer sweat!

Tips for Safe Hot Weather  
Exercise  
Drink Water  
Drink before, during and after your exercise. Water is the best fluid replacement.  
Follow these guidelines to stay well hydrated.

- Drink 6-8 ounces before exercise, every 20 minutes during exercise, and following cool-down.  
- Do not wait until you feel thirsty to drink.  
- Speak to your doctor if you have been restricted on how much fluid you can have in a day.

Dress for the Hot Weather  
- Wear light-colored, loose weave and comfortable clothing. This allows for air circulation.  
- Wear running shoes.  
- Wear a light-weight hat.

Avoid Drinking Alcohol  
Alcohol acts as a diuretic. This means that it reduces the amount of water in your body.  
Alcohol can also affect your judgment. Do not exercise after drinking alcohol.
Unit Three: Healthy Eating Sessions 25-28

A heart-healthy diet is important in preventing and managing heart disease. A “diet” means “a way of eating”.

A heart-healthy diet means:

- eating more good fats (omega-3s) and less bad fats (saturated and trans) and cholesterol.
- eating more fiber (whole grains and plant foods).
- eating less sodium.
- eating less sugar.

Knowing how to read a food label on the packaged foods you buy will help you identify what is in the foods you are eating. You will be able to find out how much fat, fiber, sodium and sugar you are eating.

To get a better idea of what your diet looks like you may find it helpful to fill out a 3-day food diary. Write down everything you eat and drink for 2 days during the week and 1 day on the weekend. This will give you an overall idea of your current “way of eating”.

It can be overwhelming to think about the number of changes you need to make to your diet to eat more healthily. Start with one small change and build on your success. An action plan will help you get there.
Fruits and Vegetables

Fruits and vegetables provide us with vitamins, minerals, fiber and antioxidants. www.MyPlate.gov recommends that adult men and women receive seven servings of fruits and vegetables daily. Planning your meals and snacks ahead of time can help ensure that you include fresh or frozen fruits and vegetables daily.

One serving of fruits and vegetables equals:
- medium piece of fruit, the size of a tennis ball
- green leafy veggies: 1 cup
- fresh or frozen fruit or cut vegetables: 1 cup
- dried fruit: 2 tablespoons

Are you getting enough servings of fruits and vegetables each day? Watch the video above to learn more serving sizes and whether you are getting enough fruits and vegetables.

Fiber

Fiber is the part of the plant that your body cannot break down. Fiber is only found in plant foods.

Types of Fiber

There are two types of fiber:
1. soluble fiber
2. insoluble fiber

Soluble Fiber

Foods with soluble fiber absorb water. As the fiber absorbs water the foods begin to swell and thicken, becoming sticky and gel-like. Foods with soluble fiber include:
- oats
- legumes
- barley
- eggplant
- squash
- carrots
- psyllium
- flaxseed

Insoluble Fiber

Foods with insoluble fiber do not absorb water. Insoluble fiber is found in the skins of fruit and vegetables and the bran portion of whole grains.

Why is Fiber Important?

Fiber helps your digestive tract stay healthy by keeping you regular. As fiber passes through your digestive tract it binds to fat and glucose. This reduces the amount of fat and glucose absorbed into your body.

Fiber also helps to decrease the production of cholesterol by the liver. Because you do not digest fiber it makes you feel full longer, making meals more satisfying.
How Much Total Fiber Do You Need?

Aim for 25-50 grams of fiber every day.

If you are eating less fiber than 25-50 grams per day, increase the amount of fiber in your diet slowly. Increase your water intake as you increase your fiber intake to help prevent gas and bloating. Eat some fiber at every meal so your fiber intake is spread out over the whole day.

How Can You Get More Fiber?

1. Start your day with a high-fiber cereal. Try steel cut oats, Bran buds® or Fiber 1® cereal. Add fruit.
2. Sprinkle ground flax, psyllium or oat bran on top of foods. Use them when you bake.
3. Plan your meals and snacks to always include fresh or frozen fruit and vegetables.
4. Cover half of your plate with vegetables. The more color on your plate, the better.
5. Add legumes and beans to recipes. Put kidney beans or chickpeas in salads or rice dishes. Add lentils or black beans to soups. Include a bean salad as a side dish.

Legumes

Legumes vary in shape, texture, color, and taste. Dried beans, peas and lentils all belong to the legume family and are among the most versatile and nutritious foods available that can be eaten all year round.

By adding legumes and beans to recipes, you can also increase your daily intake of fiber which helps your digestive tract stay healthy by keeping you regular and preventing constipation. As fiber passes through your digestive tract, it binds to cholesterol and helps remove it from your body.

Fiber also helps to control your blood sugar as it slows down the absorption of sugar from food into your blood stream.
What Are Fats?

Fats are also called ‘fatty acids’ or ‘lipids.’ Fats in our body are made up of three molecules joined together. This three-molecule structure is called a “triglyceride”.

Most of the fat we need is made by our bodies, but there are some fats our bodies cannot make. We can only get these fats by eating them. These fats are called “essential” fats because it is essential that we get them from food. Essential fats include Omega-3 fats (found in foods such as fish and flax seed) and Omega-6 fats (found in foods such as nuts, seeds, and corn oil).

There are three main types of fat in the foods you eat:

1. unsaturated fats from plant foods.
2. saturated fats from animal foods.
3. Trans fats from commercially prepared, processed foods.

Why is Fat Important?

Getting enough fat in your diet is important for staying healthy.

Eating only very, very low levels of fat is not recommended. We need fat because:

- fat helps absorb vitamins, like vitamins A, D, E, and K
- fat keeps our skin healthy
- essential fats like Omega-3 are important for heart health
- healthy fats, like unsaturated fats from plant oils, can help lower levels of LDL (lousy) cholesterol
- fat adds flavor to food
- fat keeps you feeling satisfied longer after a meal

How Much Fat Do You Need?

- The Heart and Stroke Foundation and the American Heart Association recommend that less than 30% of our energy (calorie intake) comes from any kind of fat.
- Saturated fat (the less healthy type of fat) should not be more than 7% of total calories. Saturated fats raise LDL (lousy) cholesterol in the body.

What Does % of Calories Mean?

The recommended % of calories for total and saturated fat can be different for each person. These recommendations depend on age, gender, and activity level. Find your recommended amounts below.

Calorie and fat intake recommendations for men

- Daily Calories: 1800 - 2000
- Recommended Daily Total Fat Intake: 60 - 65g*
- Recommended Maximum Daily Saturated Fat Intake: 14 - 15.5g**
Saturated Fats

Saturated fats:
• raise levels of LDL (lousy) cholesterol in your body
• are found in all animal products
• are found in tropical oils such as:
  o cocoa butter
  o palm oil
  o coconut and coconut oil
  o palm kernel oils

Food and Meal Planning

Foods high in saturated fat
Marbled or fatty meats:
• corned beef, brisket
• ground beef, short or spare ribs
• skin on chicken and turkey, chicken wings
• bacon
• sausages
• goose and duck
• breaded or battered foods
• high fat luncheon meats
High fat dairy foods:
• whole milk (3.5%)
• high fat cheeses with more than 20% M.F. (milk fat)
• yogurts with more than 2% M.F
• butter
• cream

Ways to reduce saturated fat
Choose leaner meats:
• beef: round, sirloin, chuck, loin, extra lean ground beef
• lamb: leg, arm, or loin

Unsaturated Fats

Unsaturated fats:
• are found in plant foods and oils
• are healthy fats, but should be eaten in moderation

There are two types of unsaturated fats:
• mono-unsaturated fats
• poly-unsaturated fats

Mono-Unsaturated Fats and Oils
Mono-unsaturated fats and oils:
• lower levels of LDL (lousy) cholesterol in your body
• increase levels of HDL (healthy) cholesterol in your body

Food sources include:
• olive oil and olives
• canola oil
• peanuts, peanut oil and natural peanut butter
• avocado
• almonds
• cashews

Poly-Unsaturated Fats and Oils
Poly-unsaturated fats and oils:
• lower levels of LDL (lousy) cholesterol in your body
• Omega-3 fats increase levels of HDL and lower levels of triglycerides

Food sources include:
• walnuts
• ground flax seed and flax seed oil
• hemp seed and hemp hearts
• chia seed
• canola oil
• fatty fish such as mackerel, salmon, unsalted herring, sardines (fresh or canned), trout
Trans Fats

1. Trans fats raise levels of LDL (lousy) and lower levels of HDL (healthy) cholesterol in your body.
2. Trans fats are also called partially hydrogenated vegetable oil or shortening.

What Are Trans Fats?

Trans fats are produced when a healthy fat, such as soybean or olive oil, goes through a chemical process called “partial hydrogenation”. This means that hydrogen atoms are added to the oil. Adding hydrogen atoms turns a liquid oil into a solid.

Manufacturers hydrogenate oils because it prevents the oil from separating from other ingredients in the product. As an example, let’s look at natural and regular peanut butter.

- Natural peanut butter needs to be stirred before spreading because the oil separates from the crushed nuts.
- Regular peanut butter does not need to be stirred because the hydrogenation process prevents the oil from separating from the nuts.

Hydrogenation can also improve the texture of the product.

Look for “partially hydrogenated” or “hydrogenated” oils or fats on the ingredients list on the food label. If either of these fats or oils is on the label it means that there is trans-fat in the product.

Foods with trans fats

Foods with trans fats include:

- store-bought crackers and cookies
- store-bought cakes, pie crusts, pastries, donuts

- vegetable shortening, hard margarine
- French fries, potato and corn chips
- deep-fried foods

Ways to avoid trans fats

Replace commercially prepared, processed foods with healthy choices such as:

- fruit and ¼ cup unsalted nuts
- raw veggies and hummus
- low-fat low-sugar yogurt
- whole-grain crackers and low-fat ricotta cheese

Use healthy oils in home baking and cooking.

Why & How to Reduce Salt

Where Does the Average Person Get Salt From?

- 10% from foods naturally consumed
- 10-25% from the salt shaker
- 75% from processed foods and meals eaten away from home

Why Reduce Salt?

Americans eat more sodium than they need. Salt (sodium chloride) is the most common form of sodium in the diet. Having too much sodium in your diet is linked to high blood pressure and fluid retention. High blood pressure is a risk factor for heart disease.

To stay healthy, keep your sodium intake to 1500 mg or less each day. 1500 mg of sodium is approximately 2/3 of a teaspoon of table salt.
What Foods Have Sodium?
Sodium in the diet comes from three main areas.
1. Foods that you eat which naturally contain sodium.
2. Salt added when cooking or at the table.
3. Salt that is added to foods during commercial processing.

Season Your Food Without Salt
Herbs and spices can make food tasty and flavorful without adding sodium. Blend these herb mixtures together and use them to season your food instead of salt.
- Food flavoring recipe
- All-purpose flavoring
- Herb mix

Food flavoring recipe
Combine all ingredients. Store in an air-tight container or fill an empty seasoning jar with holes large enough for easy shaking.
- 4 tbsp. basil
- 4 tbsp. oregano
- 1 tbsp. garlic powder
- 4 tsp onion powder
- 2 tsp dill
- 2 tsp sage
- 1 tsp ground black pepper
- 2 tsp rosemary

How Do You Lower Your Blood Pressure?
There are actions you can take to lower your blood pressure.
- Eat foods that are lower in sodium
- Drink less alcohol
- Exercise regularly
- Follow the DASH Diet

Eat Foods That Are Lower in Sodium
Many people get too much sodium (found in salt) even without a salt shaker.
To get less sodium, eat:
- more fruits, grains, beans, and vegetables that are not processed. Processed foods include canned goods, granola bars, breakfast cereals, lunch meat, frozen dinners etc.
- fresh meats, fish and poultry
- unsalted nuts and seeds
- make sure the foods you choose do not have added salt.

Follow the DASH Diet
DASH stands for “dietary approaches to stopping hypertension”. DASH is a way of eating that helps lower your blood pressure.
The DASH diet was developed after good research was done to find out how diet affects blood pressure.
DASH is a diet that:
- is low in sodium
- is rich in magnesium, potassium, and calcium
- has lots of fruits and vegetables
- has low fat dairy products
- includes whole grains, fish, poultry, and nuts
- has lower amounts of red meats, sweets, and sugar-containing beverages than the average North American diet
DASH diet breakdown

<table>
<thead>
<tr>
<th>Food Group</th>
<th>Daily Servings</th>
</tr>
</thead>
<tbody>
<tr>
<td>Grains and grain products</td>
<td>7-8</td>
</tr>
<tr>
<td>Vegetables</td>
<td>4-5</td>
</tr>
<tr>
<td>Fruits</td>
<td>4-5</td>
</tr>
<tr>
<td>Low fat dairy</td>
<td>2-3</td>
</tr>
<tr>
<td>Meats, poultry, and fish</td>
<td>2 or less</td>
</tr>
<tr>
<td>Fats and oils</td>
<td>2-3</td>
</tr>
<tr>
<td>Nuts, seeds, legumes</td>
<td>4-5 per week</td>
</tr>
</tbody>
</table>

Choosing Low Sodium Foods

- Remember that unprocessed fresh foods like fruits and vegetables contain lots of nutrients and are naturally low in sodium.
- Choose products with less than 200 mg of sodium per serving, or less than 10% Daily Value.
- Avoid products with more than 400 mg of sodium per serving. Limit products that contain between 200-400 mg of sodium per serving.
- Pay attention to serving size. How big is the portion in comparison to how many servings you will eat? For example, breads and cereals are a significant source of sodium in our diets because we consume many servings a day.
- All salts (table, Kosher, rock, sea, Himalayan) contain approximately 100% sodium chloride. One teaspoon of salt is about 2300 mg of sodium. The Heart & Stroke Foundation recommends 1500 mg a day for adults.

- In restaurants, ask about lower sodium options and request no salt be added if possible. Be wary of soups made with salty broths and salads with lots of toppings and dressing.
- Think about how you can prepare traditionally salty foods with less sodium.

Cholesterol

Cholesterol is a wax-like substance found in the body. There are two types of cholesterol:

1. **Low-density lipoprotein (LDL) cholesterol is the “lousy” cholesterol.** LDL cholesterol picks up cholesterol in the blood and deposits it in the endothelium (inner wall) of the artery. This leads to plaque build-up in the artery.

2. **High-density lipoprotein (HDL) cholesterol is the “healthy” cholesterol.** HDL cholesterol carries LDL cholesterol away from the blood and carries it to the liver to be recycled. By doing this, HDL cholesterol keeps the endothelium (inner wall) of the arteries healthy.

Our bodies need cholesterol:

- to make vitamin D, which helps our body absorb calcium and promote bone growth
- to make hormones like testosterone and estrogen for normal growth and reproduction
- to keep cell membranes healthy. Cell membranes are the thin outer layer surrounding a cell that controls what goes in and out of the cell
Eating foods high in saturated and trans-fat leads to more LDL (lousy) cholesterol in the body. LDL cholesterol slowly builds up along the walls of the arteries. Over time, this can lead to plaque build-up that can make our arteries narrower. It is possible for the arteries to become so narrow that blood cannot flow through them. When blood is not able to flow to the heart or the brain, the result is a heart attack or stroke.

Cholesterol in Food

Our bodies produce cholesterol, and we also get cholesterol from the foods we eat. Although foods high in saturated fat contain cholesterol, foods high in cholesterol are not always high in saturated fat.

People with a heart condition or diabetes should get 200mg or less of cholesterol from food each day.

Examples of cholesterol content in common foods

This table tells you how much cholesterol is in some common foods.

<table>
<thead>
<tr>
<th>Food</th>
<th>Serving Size</th>
<th>Cholesterol Content (mg)</th>
<th>Saturated Fat (g)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Egg</td>
<td>1 large</td>
<td>202</td>
<td>1.7</td>
</tr>
<tr>
<td>Shrimp (boiled, steamed)</td>
<td>6 medium (30 g)</td>
<td>59</td>
<td>0.1</td>
</tr>
<tr>
<td>Shrimp (breaded, fried)</td>
<td>6 medium (30 g)</td>
<td>117</td>
<td>1.4</td>
</tr>
<tr>
<td>Calamari (breaded, fried)</td>
<td>1/2 cup (79 g)</td>
<td>197</td>
<td>1.7</td>
</tr>
<tr>
<td>Crab Cake</td>
<td>1 (60 g)</td>
<td>90</td>
<td>0.9</td>
</tr>
<tr>
<td>Lobster (boiled, steamed)</td>
<td>1/2 cup (77 g)</td>
<td>55</td>
<td>0.1</td>
</tr>
</tbody>
</table>

Liver, beef            | 2.5 oz (75 g) | 286                      | 1.1               |
Kidney, beef           | 2.5 oz (75 g) | 537                      | 0.8               |
Short ribs, lean + fat | 2.5 oz (75 g) | 57                       | 11.2              |

Triglycerides

Triglycerides are a type of fat made by your body. They are called “storage fat”. When we eat more calories than our body needs, the body converts these extra calories into triglycerides. High triglyceride levels can raise the risk of heart disease and increase your risk of heart attack.

A safe target for triglycerides is: less than 1.7 mmol/L (“mmol/L” is the unit of measurement used to measure cholesterol and triglyceride levels in laboratories).

Improve Triglyceride Levels

Ways to reduce triglyceride levels:

1. Reduce your intake of sugars, sweets, and refined, processed carbohydrates
2. Reduce alcohol intake
3. Eat foods containing omega-3 fats, like fish, more often. Aim to eat fatty fish 2-3 times a week
4. Decrease the amount of total fat and trans-fat that you eat

Reduce your intake of sugars, sweets, and refined, processed carbohydrates. A diet high in simple sugars and refined carbohydrates raises triglycerides.

Food Labels

The “Label Ease Method”
Items you need are a food label and a hand: Raise a finger if the food has;
Unit Four - Feel Well

Taking care of your emotional wellbeing is important in the management of your heart disease. Emotional distress is linked to poor outcomes in people living with heart disease.

Knowing if you are at risk for having a poor emotional wellbeing and understanding the steps you need to take to achieve a healthier emotional wellbeing is important to your quality and length of life. Making an action plan can help you achieve and maintain a healthy emotional wellbeing.

There are actions you can take to feel well.

- Take control of your life.
- Sleep well.
- Deal with stress in a positive way.
- Manage your depression, if you have it.
- Have healthy relationships with family and friends.
- Know how to communicate with your partner.

Sleep

A good night sleep for adults means getting 7 to 8 hours of sleep each night.

Act if you have disturbed sleep or if you have sleep apnea.

Having a good night’s sleep is important to your emotional wellbeing.

The amount of sleep needed to feel well rested is different for everyone, but for most people 7.5 hours of sleep each night allows them to stay alert, be healthy, and function well in their day-to-day activities.

As we age, it becomes difficult to sleep well through the night. Having difficulty sleeping is called disturbed sleep. You may be suffering from disturbed sleep or a more serious condition called sleep apnea if:

- you wake up feeling tired, irritable, or depressed
- you are having memory difficulties
- you have difficulty staying awake during the day

Talk to your doctor if you have any of these symptoms.

Sleep Apnea

Sleep apnea makes your body’s stress response system work very hard during the night to keep you breathing.

You may have sleep apnea if you:

- snore loudly
- feel very tired during the day
- stop breathing at night
- have high blood pressure
Ask your doctor if you should go for a sleep test.

The word apnea means “no breath”. Sleep apnea is when you pause in your breathing or have shallow breathing while you sleep. This pause can last anywhere from 10 seconds to several minutes.

If you have sleep apnea, the airway to your lungs becomes blocked when you sleep.

- When you are lying down during sleep, your tongue and the tissues behind it can sag back into your throat and block the airway. This causes you to snore loudly.
- When your airway is blocked your lungs do not get air. This causes your brain to start the stress response system in your body.
- The stress response wakes you up, so you can start breathing again. This stress response can happen every few minutes during your sleep. This means that you are in a “high stress” state all night long. You do not get good deep sleep at night.
- The cycle of stopping breathing and starting the stress system to breathe again can happen as many as 60 times during every hour of sleep.

There are three types of sleep apnea.

- **Mild**: When you have less than 15 breathing stoppages per hour
- **Moderate**: When you have between 15 and 29 breathing stoppages per hour
- **Severe**: When you have greater than 30 breathing stoppages per hour

#### Anxiety & Depression

Learn the signs of anxiety and depression and act to feel better.

Suffering from depression or anxiety can have a negative effect on your recovery from your heart attack and your quality of life. It is important to speak with your doctor if you think you may be suffering from depression or anxiety.

These pages can help you to recognize the signs and find treatments and resources.

- Learn the signs of depression and what to do if you have them
- Learn to signs of anxiety and what to do if you have them

#### Depression

Depression is a constant feeling of apathy, sadness or loss. Act to help yourself if you are depressed.

- Know the signs of depression.
- Talk to your doctor.
- Be social.
- Get active.

We all feel down on some days. We usually stop feeling this way when something good happens to us. Feeling down does not mean that you are depressed.

**What is Depression?**

Depression is more than having a few days every now and then when you feel down, discouraged, or overwhelmed. Depression is having many harmful feelings that interfere with your work or social life. People with depression have these feelings continuously for at least a few weeks or, more usually, for several months.
You may have depression if you have some of these signs.

• sadness
• irritability
• hopelessness
• helplessness
• anger
• lack of motivation
• lack of energy to do things you enjoy
• loss of appetite
• poor sleep
• no interest in sexual activity

Effects of Depression

If you feel depressed, you may also notice that your attitudes and thinking have changed. You may see only negative things in yourself, others, your future, or your life.

The signs of depression usually get in the way of daily life. They hold you back from feeling interested in doing work or seeing your friends and family. There is a shift in how involved you feel in life. You feel different from your “normal” self and don’t feel effective in the things you do.

If you have had depression before, you may find that the depression returns with a new crisis in your life, like having a heart attack. Depression can affect your heart, so it is important to look after your depression to prevent more problems with your heart.

Act to Reduce Depression

If you are living with depression, you can act to reduce or even eliminate it.

There are many different things you can try. Find something that works for you.

1. Learn new skills
   • Handle your emotions in more direct and effective ways by naming your feelings and acknowledging your thoughts.
   • Let go of being perfect.
   • Do not put off doing things that need to be done.

2. Try connecting and communicating with the people around you differently
   • Talk with people you trust. Talk honestly about the challenges you have.
   • Find new ways to deal with conflicts in your day - listen more, try different solutions to conflicts, and speak up.

3. Add positive activities to your day
   • Start each day by identifying something positive you can do for yourself.
   • Write that action into your day plan and make sure you do it.
   • Walk every day, after talking with your doctor about whether you are ready for regular exercise.

4. Watch your nutrition and supplements
   • Follow a heart-healthy diet.
   • Make sure you are getting the right amount of:
     - B Vitamins (particularly Vitamin B-12)
     - Omega-3s

Anxiety

Anxiety is a very strong feeling of being nervous or worried. Act to manage your feelings of anxiety.

• Know the signs of anxiety.
• Talk to your doctor.
• Do relaxation exercises.
• Do more things that make you happy.
• Be social.
• Get active.
When you are anxious, you worry too much and tend to feel:

- fearful
- restless
- nervous
- irritable
- tired (from trouble sleeping)
- muscle tension

Experiencing anxiety from time to time can be a normal part of life.

When worrying and fear start to interfere with your ability to get things done and enjoy your life, it can become a more persistent problem.

Persistent anxiety can develop into a type of anxiety disorder. Below are some examples of anxiety disorders.

- **Phobias.** Anxiety from a specific trigger, such as fear of needles, fear of public speaking.
- **Post-Traumatic Stress Disorder (PTSD).** Anxiety from surviving a traumatic or life-threatening event (such as surviving a heart attack, or heart surgery). This can even affect people who witness the event and are not directly involved, like family members.
- **Panic Disorder (anxiety attacks).** Anxiety that appears suddenly and overpowers the person with physical symptoms.
- **Generalized Anxiety Disorder.** A generalized continuous level of anxiety (nervousness and feeling on edge) that lasts from day to day without relief. It is different from a phobia which is set off by a specific situation (such as fear of water, fear of flying).

If you think you may be suffering from any of these conditions, speak with someone you can trust such as your family doctor or other healthcare professional you are comfortable with.

**Panic Attacks**

Women and men can both develop serious anxiety difficulties after a heart event. After a heart attack, you may feel anxious. If you experience panic attacks (where anxiety comes up suddenly) you may feel like you are having another heart attack.

It is important to get medical attention right away if you suddenly feel:

- very fearful
- chest pain
- sweaty
- short of breath
- palpitations (irregular or fast heart beat)
- upset stomach

The most confusing thing about panic for a heart patient is that it is very difficult to know if the symptoms you are feeling are due to a panic attack or another heart attack. This is especially true when you have a panic attack for the first time after surviving a heart attack. That is why it is important for people living with heart disease that are experiencing these symptoms to seek medical attention.

The doctor at the emergency room can test your blood and look at your heart rhythm to determine if you are experiencing another heart attack.

- If you are not having a heart attack, your doctor can help you decide how to manage your anxiety.

Remember, surviving a heart attack is a frightening experience that can leave you suffering from post-traumatic stress (anxiety from surviving a life-threatening incident).
Act to Reduce Anxiety

The best ways to help your anxiety are to:

Talk to your doctor
- Your doctor can help you find the best ways to manage your anxiety. This may include medication, cognitive behavioral therapy, or breathing exercises.

Stay connected
- Talk to your friends and family about how you are feeling and what you are worrying about. Many people feel as though they should be able to handle what they are going through alone, and they feel ashamed if others see their anxiety. This can lead to withdrawing from social situations.
- If you find yourself withdrawing from your friends and loved ones, talk to your doctor.
- Try to find at least one person you can share your feelings with.

Join a cardiac rehabilitation program
- You may find it helpful to connect with other people living with heart disease who may be feeling just like you. Together, you can share and learn from one another about managing your anxiety.

Get active
- When you do aerobic exercise (like walking) your brain releases chemicals called endorphins that make you feel happier.
- Your body also makes chemicals that turn down the stress system and begin to burn off stress hormones.

Do relaxation exercises
Finding ways to relax your body and mind may be helpful. There are lots of other ways to learn to relax your body and mind but finding what works for you is what matters.
- Learn to do deep belly breathing (diaphragmatic breathing). Deep belly breathing is very helpful because shallow breathing can bring on panic and make anxiety worse. Deep belly breathing will calm you down.
- Meditate every day.
- Do progressive relaxation exercises.
- Do mental imagery exercises.

Start doing more of the things that make you happy
- You may find it easiest to start small. Choose one thing to do this week that makes you happy and go from there.

Surviving a heart attack gives you an advantage that others may not have; you now know how precious life is and that finding ways, even small ways, to be happy is important to do today.

Avoid alcohol and sleeping pills
Unfortunately, good intentions and desperation to be rid of anxiety can lead to self-medicating with alcohol and sleeping pills. Both are habit-forming and can interact with your heart medications.

If you find yourself regularly drinking alcohol or taking pills to ease your anxiety, please speak with your doctor or a trusted healthcare professional. Together, you will find a better solution to your anxiety.
Relationships

Healthy relationships are an important part of good health. Build healthy romantic relationships by talking about sexual intimacy with your partner.

Having a healthy relationship with your partner is important to your recovery from a heart attack and living with heart disease. Living with heart disease can affect your body, mind, and what you are able to do.

These pages can give you information about:

- communicating your thoughts and feelings to your partner
- reintroducing sexual intimacy back into your relationship

Communication

Dealing with heart disease can be stressful. Communicate your feelings and thoughts to your family to make them aware of your needs.

- Be clear and specific when explaining how you feel.
- Be specific in asking for what you want.
- Get additional help from a social worker or psychologist.

Communicating your feelings and thoughts to your family is important as it makes them aware of your needs. Our families do not always know how to provide support and cannot always tell what we need. Be specific in asking for what you want.

- For example, you can say, ‘I just need to vent’ or ‘I want you to spend more time with me’.

Our families cannot read minds; therefore, it is helpful to state your needs clearly.

Dealing with heart disease can be stressful. Some families find it helpful to get additional support. Social workers and psychologists can help with communication, conflict, and family stress. Talk to your family doctor if you would like a referral to a social worker or psychologist.

Sexual Intimacy

Intimacy, sexuality, respect, sharing and trust are important in a romantic relationship. Having and recovering from a heart condition can impact your sexual intimacy.

Some examples of feeling words are:

- happy
- sad
- frustrated
- anxious
- irritated

Feelings can be described in one word.
Act to have and maintain healthy sexual intimacy.

- Talk to your partner about your needs, desires, and fears about sex.
- Let your partner know you support them.
- Talk to your doctor about your medical concerns, stress, anxiety and depression.
- Adjust how you have sex so that it is safer for you while you are recovering.
- Know how your medication can affect your sexual function.
- Be intimate with your partner in other ways such as hugging, massaging and making eye contact.

Being intimate (feeling and being close) with your loved one is important to living well.

Sexual intimacy is part of being close to your loved one. In a survey of cardiac patients, 75% of them told us that sexual activity was important in living well. Sex includes all the activities that allow a couple to feel pleasure in physical contact and emotional connection with each other.

Our patients told us they wanted to know more about the questions below.

1. How do I talk to my partner about sexual intimacy?
2. How do I deal with feelings of fear and anxiety around sexual intimacy?
3. When is it ok to get back to sexual intimacy?
4. How do medications affect sexual function?
5. What are other ways to be intimate with a partner?

How Do I Talk to My Partner About Sexual Intimacy?

Talking to your partner about your needs, desires, and fears about sex is important as you get back to sexual activity after your heart event. Remember, your partner will also have needs, desires, and fears. Try the methods below to help you support each other.

Hear and understand each other’s emotions

Ask what your partner is feeling and hear what your partner is saying. What are his/her fears? Listen and focus on his/her experience. Let him/her know you understand and acknowledge that what s/he is feeling is real. You may be having the same feeling.

Once you have understood where your partner is coming from, share your thoughts and feelings. Sharing each other’s feelings and emotions helps to build intimacy. This will help make your sexual experience better.

Offer support

Let your partner know you support him/her. Support each other by:

- listening.
- expressing that you hear each other.
- normalizing each other’s emotions (“I feel the same way”).
- problem-solving together. Try not to take over. Collaborate with your partner.
- not being judgmental of each other or yourself. Be compassionate.
- being open minded to new ideas, feeling and thoughts.
- working together to find solutions.
How Do I Deal with Feelings of Fear and Anxiety Around Sexual Intimacy?

Many people feel anxiety or fear around sexual intimacy after a heart event.

To decrease feelings of anxiety or fear:
1. talk to your cardiologist or family doctor
2. ask questions about risks and dangers, and what precautions to take

Any fears or anxieties you feel are your brain’s way of protecting you from danger. Fears are a normal part of your recovery. Recognize them and address them. This will help.

Before you get back to sexual activity with your partner, talk about your fears together.

Ask yourself:
- How realistic are these fears?
- What evidence do I have to support these worries?
- What does my doctor say about these risks?

When you get back to sexual activity with your partner:
- do what is comfortable for you.
- let go of any fears you may have. Be in the moment. This can help you enjoy the closeness with your partner.
- go slow. Getting back to your normal intimacy takes time.

It is normal for anyone who has had a heart event to have anxiety, fears, and even depression. Many people need a few months to recover from these fears.

- Learn the signs of anxiety and what to do if you have them

If you struggle with anxiety, fears, or depression, you may find that your normal interests in intimacy and sexual activity are gone. Talk to your partner and to your healthcare professional about these concerns.

When Is It Okay to Return to Sexual Activity?

Returning to sexual activity with your partner may be an important part of living well for you. For some people, it is like returning to exercise, driving, work, or air travel.

If you have had a heart attack, the risk of having another heart attack while having sex is very low. Most people can get back to sexual activity within 2-3 weeks of going home from the hospital.

Remember this:
If you can easily walk up two flights of stairs or walk briskly, your heart should be safe during sex.

How to have sex safely

To keep your heart safe and comfortable during sex:
- slow down to reduce the work the heart must do
- avoid holding positions where you must support your own body weight
- use the spoon position. This involves lying down with the man snuggled up behind his partner.
- have your partner on top to lower your effort and reduce the work you must do
Returning to sexual activity gradually can help you avoid symptoms of angina. If you do get angina, talk to your doctor. Remember, if you are not ready for sex you can do other intimate things like:

- hugging
- snuggling
- kissing

How Do Medications Affect Sexual Function?

Medications can affect sexual function in both men and women. Common cardiac medications like beta blockers can affect how you perform during sex. Medications you take to help with depression can decrease your desire for sexual intimacy.

For Men

For men, erectile dysfunction is often a concern. This means your penis does not get erect. Erectile dysfunction can be caused by your medications or by low levels of testosterone (a sex hormone). It is common for testosterone levels to be low after a heart event. These low levels make it difficult to respond physically during sex.

There are medications that can help men with erectile dysfunction. These medications increase the blood flow to the penis. Be careful if you are using these medications. If these medications are used with nitroglycerin (a drug to help your angina), they can lower your blood pressure and cause a potentially fatal situation. Talk to your doctor about whether erectile dysfunction medications are a safe option for you.

Talk to your health care team if your sexual function is affected in any way after a heart event. Your team can give you advice on the best way to proceed.

For Women

In women, often the most common concern is difficulty with lubrication. This can make intercourse painful. Achieving orgasm is difficult.

To treat vaginal dryness, there are several choices of personal lubricants that you can purchase at your local pharmacy or an adult store.

Talk to your health care team if your sexual function is affected in any way after a heart event. Your team can give you advice on the best way to proceed.

Talk to your health care team if your sexual function is affected in any way after a heart event. Your team can give you advice on the best way to proceed.