

Coronary Artery Disease (CAD)

Keystone **ACO**

Welcome to the HeartWise Health Management Program

Heart disease is the #1 killer of American men and women in the United States. But, it doesn't have to be. There are many steps you can take to manage heart disease and live a long, healthy life. If you have heart disease, or are at risk for developing it, this information can help you.

The HeartWise Health Management program has been designed to help you recognize the role you have in managing your heart disease.

The goals for the program include:

- Aspirin therapy
- Beta Blocker therapy
- LDL cholesterol less than 100 mg/dl
- Cholesterol medicine if your LDL cholesterol is above 100 mg/dl

The above strategies have clear benefits in reducing your risk for a first or repeat heart attack. Take some time and read through this information and talk with your health care provider or Case Management nurse if you have any questions.

Know the facts of heart disease

Over 12 million Americans have coronary artery disease (CAD), the most common form of heart disease. CAD is caused by a narrowing of the coronary arteries that supply the heart with blood and oxygen and is the number one killer of men and women in the United States.

The good news is that many of the deaths from heart disease can be prevented. Simply changing certain lifestyles can control many of the risk factors that increase the chances of developing heart disease. Risk factors for coronary artery disease

Controllable

- Obesity
- Physical inactivity
- Tobacco use
- High cholesterol
- Uncontrolled diabetes
- High blood pressure
- Stress

Uncontrollable

- Age: Men over 45; Women over 55
- Gender
- Family history of heart disease

How does coronary artery disease develop?

The heart, like any other muscle, receives oxygen and other nutrients from blood in the coronary arteries. Several factors contribute to the development of CAD. Clogging of arteries begins when high blood pressure, smoking, diabetes or other factors injure the lining of the artery. Cholesterol and fat circulating in the blood, build up at the damaged sites, creating "plaque deposits". These plaque reduce the blood flow to the heart muscle.

If a plaque ruptures or breaks open, clotting materials rush to the site further blocking the artery. When blood flow is cut off completely, the heart muscle in that site does not receive oxygen and the result is a heart attack.

What is atherosclerosis?

The smooth lining of healthy arteries allows the blood to flow easily.

In atherosclerosis, there is a build-up of fatty deposits inside the arteries. Atherosclerosis occurs in three steps:

1. Deposits of cholesterol form below the inner lining of the arteries.
2. Over time, the cholesterol hardens and forms plaques. This is called atherosclerosis.
3. The arteries narrow as a result of these plaques and blood supply to the heart muscle is reduced.

Atherosclerosis leads to coronary artery disease (CAD).

Symptoms of coronary artery disease

- Chest pain (angina)
- Shortness of breath
- Heaviness, tightness, burning, squeezing or pressure over the chest
- Neck, jaw or left shoulder/arm pain
- Nausea/sweating

Some people, for example persons with diabetes or women, may not experience the “usual” symptoms. Symptoms vary from person to person. Discuss any unusual symptoms with your primary care provider.

Recommended treatment for heart disease

1. Lifestyle change – Healthy eating plan

- Eat less fat – Try and limit fat intake to less than one-third of your total calories. Pick your fats wisely. Reduce the amount of saturated fats from animal sources such as lard, butter or fatty meats, and vegetable sources such as coconut, palm and “partially hydrogenated” oils in processed foods. Saturated fats can raise your cholesterol levels. Instead, choose monounsaturated fats that come from vegetable sources such as olive and canola oil. Monounsaturated fats lower LDL (bad) cholesterol and may increase HDL (good) cholesterol levels.
- Eat less cholesterol – High-cholesterol foods may raise your cholesterol level. Limit the use of high cholesterol foods such as eggs, lunch meats and organ meats.
- Eat more fiber – Fiber, which comes from plants, helps to keep cholesterol from being absorbed by the body. Whole grains, beans and fresh fruit are high in fiber.
- Limit alcohol – Drinking too much alcohol can raise blood pressure and fat levels in your blood, particularly triglycerides. Limit alcohol intake to no more than 2 drinks per day.

2. Why should I follow a low fat, low cholesterol diet?

Diets high in cholesterol and fat, especially saturated fat, raise your risk of developing heart disease. When there is too much cholesterol and saturated fat in the blood, your arteries are more likely to become clogged.

This cholesterol and fat can come from food you eat. This diet will help you cut down on your total fat and cholesterol intake. Speak to a registered dietitian regarding a low fat, low cholesterol diet.

The following definitions will help you better understand the low fat, low cholesterol diet and why you should limit certain foods.

Dietary cholesterol – is a waxy substance found only in animal products (meat, chicken, turkey, fish, organ meats, eggs, and dairy products). It is not fat.

Saturated fats – is generally solid at room temperature. It can raise your blood cholesterol level. Sources of saturated fat include: butter and other animal fats, palm oil, palm kernel oil, coconut oil, cocoa butter (found in chocolate), and solid and hydrogenated shortening such as Crisco.

Trans fats – occur naturally in meat and dairy products. They are also found in processed foods such as snack crackers, chips, baked goods and in stick margarines, hydrogenated oils, and fast food. Trans fats, like saturated fat, raise blood cholesterol level.

3. Is there any type of fat I can use?

Unsaturated fats may help to lower your blood cholesterol. They are usually liquid at room temperature. Sources include vegetable oils such as safflower, corn, canola, and olive oil. While these oils are better to use than saturated fats, you should still limit the amounts. Your goal is to cut down on the total amount of fat in your diet, not just the saturated fat.

4. Healthy cooking tips

- Trim all visible fat, including poultry skin before cooking. Limit your meat/meat alternative servings to 6 ounces (cooked portion) daily. Six ounces is about the size of two decks of playing cards.
- Bake, broil, boil, grill, roast, or microwave foods with little or no added fats and oils.
- Refrigerate broths, soups, and gravies for several hours and then skim off the fat from the top before eating. Avoid soups containing high fat ingredients, including whole or 2% milk, cream, meat/poultry fat, or poultry skin.

5. Healthy eating tips

- Limit the amount of margarine, oils, salad dressings, and mayonnaise added to foods.
- Limit deep fried food and eating at restaurants that serve only high fat foods.
- Choose plenty of whole grains, vegetables, and fruits. These foods are generally low in fat and contain fiber, vitamins, and minerals. Include 6 ounces whole grains, 2 ½ cups vegetables, and 2 cups fruit every day.

If you need help following this diet or have other dietary restrictions, ask your physician for a referral to a registered dietitian.

6. Exercise

- Regular physical activity can help to reduce your risk of coronary heart disease. Being active helps take off extra pounds, helps to control blood pressure, and boosts the level of “good” HDL cholesterol. Exercise also strengthens the heart and helps to control blood sugar. Some studies show that being inactive increases your risk of a heart attack.
- Low- to moderate-intensity activity can help lower the risk of heart disease.
- Walking, stair climbing, gardening, dancing and bicycling are examples of activity that will help promote a healthy heart.
- Exercise at least 3 or 4 times each week for 30 minutes. Start slow and listen to your body. Sessions of 10 minutes, 2-3 times a day are helpful. If you experience sudden dizziness, cold sweat, fainting or pain/pressure in your upper body – stop exercising and call your doctor immediately.

7. Medications

Medications are often needed to help prevent or control heart disease and help to reduce the risk of a first or repeat heart attack. But, if medications are needed, lifestyle changes are still important in the treatment of heart disease. Do not take any medications including aspirin or aspirin-like products without speaking to your health care provider.

Aspirin therapy

- Can reduce heart damage during a heart attack
- Helps to keep blood from clotting
- Recommended dose 81 – 325 mg per day
- Enteric coated to provide protection against stomach upset
- Do not take if allergic to aspirin or if you are taking other anticoagulants unless a health care provider tells you to
- Do not take if you have bleeding ulcers

Beta blockers

- Slow the heartbeat, lower blood pressure, and reduce the workload of the heart
- Over time, they improve the heart’s pumping ability
- Studies have shown that beta blockers help to prevent a repeat heart attack
- Should not be used in persons with asthma, heart block, slow heart beat, or very low blood pressure

Cholesterol-lowering agents (statins)

- Block the production of cholesterol in the liver
- Generally first choice in treating high cholesterol
- Lower LDL (bad) cholesterol in the blood
- Help to decrease the blockages in the arteries
- May also help to decrease the inflammation in the lining of arteries
- Side effects may include muscle aches, skin rashes, abdominal pain, constipation or abnormal liver tests

ACE (angiotension converting enzyme) inhibitors

- Stop the production of a chemical that makes blood vessels narrow
- Improve the amount of blood your heart pumps and lower blood pressure
- Studies have shown ACEs to be very beneficial for persons with diabetes, heart failure, or a recent heart attack
- Helps the heart pump blood more efficiently after a person has had a heart attack

Diuretics

- Decrease fluid in the body and lower blood pressure
- Getting rid of extra fluid makes it easier for the heart to pump
- Sometimes referred to as “water pills”

Digitalis

- Makes the heart contract harder when the pumping function has weakened
- Slows fast heart rates
- Your provider may recommend that you take and record your pulse daily

Nitrates (including nitroglycerin)

- Relax blood vessels allowing more blood to flow
- Used to stop angina because of their fast effect

8. Reducing risk factors

- **Tobacco use** – Stop smoking. Nicotine constricts blood vessels and decreases blood flow and oxygen to the heart. Smoking also lowers the HDL or good cholesterol. Tobacco use doubles your risk for heart disease, and smokers are much more likely to die if they suffer a heart attack. If you have tried to quit in the past, don't be discouraged. Most smokers usually try to quit several times before quitting for good. Talk to your health care provider about enrolling in Geisinger Health Plan's Tobacco Cessation program or call 800-883-6355.
- **High blood pressure** – Over 50 million people in the United States have hypertension (high blood pressure), making it the most common risk factor for heart disease. Control high blood pressure through diet, exercise and medications if prescribed. Reduce your sodium (salt) intake. Target blood pressure should be less than 130/80.

Geisinger Health Plan offers a Hypertension Health Management Program to help you learn about the tools to control blood pressure.

- **Uncontrolled diabetes** – Diabetes is also one of the leading causes of heart disease. Carefully monitor blood sugars and aim for an A1c of less than 7%. If you have diabetes, your provider may recommend a medication called an ACE inhibitor. These medicines have been proven to decrease the risk for heart disease in people with diabetes. Enroll in GHP's Diabetes Care Program if you have diabetes.
- **High cholesterol** – Have your cholesterol checked at least one time per year. Target goal for LDL cholesterol is less than 100 mg/dl for all persons with heart disease. Diet and exercise can help to lower cholesterol as described earlier, but most people with heart disease and high cholesterol need to take medications to help lower the LDL. Many good medications are available to help lower your LDL to target. These medications are known as “statins” and have demonstrated good effects on cholesterol and decreasing the risk for a heart attack. Know your LDL cholesterol, if you don't know ask your provider and discuss the options for treatment if necessary.
- **Obesity** – Being overweight increases your risk for heart disease. People who are overweight store more fat and cholesterol. Carrying weight around the middle (central obesity) also seems to be more associated with heart disease. Decreasing your calorie intake by just 300 – 500 calories each day will help you to lose a pound every week or two. Reduce your serving sizes by serving food on a smaller plate and put leftovers away immediately. Eat at the table, not in front of the TV. Choose lower fat snacks and share meals/desserts when eating out. Adding 20 – 30 minutes of exercise daily will also help the body to burn more calories and promote weight loss.

Cholesterol – Know your numbers

Cholesterol helps your body build new cells and produce hormones. Normally, the liver makes all the cholesterol the body needs. But cholesterol also enters the body from food, such as animal-based products like eggs, meat and milk. Too much cholesterol in the blood can lead to coronary artery disease. Often your health care provider will order what is known as a lipid profile. This test will include several cholesterol values. If you have heart disease, your primary care provider should be monitoring your cholesterol levels at least annually. If your cholesterol is above target or you are on medications for your cholesterol, the frequency may be every 3 – 4 months.

- **Total cholesterol:** the total level of cholesterol in your blood.
- **HDL cholesterol:** high-density lipoprotein. HDL is called the good cholesterol because it carries cholesterol in the blood vessel back to the liver for disposal.
- **LDL cholesterol:** low-density lipoprotein. LDL is called the bad cholesterol because it carries cholesterol to different parts of the body and can become stuck inside the blood vessel walls causing blockages

Goals for cholesterol values		
Type of cholesterol	Target goal	Your result
Total cholesterol	Less than 200	
HDL cholesterol	Greater than 40	
LDL cholesterol	Less than 100	

*Very important in the fight against heart disease.
 If you have not had a lipid profile or LDL cholesterol done within the last year, or do not know your LDL results, talk with your health care provider. Medications are available to help get your cholesterol to goal.

What are your risk factors?

Check all risk factors that apply to you:

- High cholesterol
- High blood pressure
- Uncontrolled diabetes
- Obesity
- Physical inactivity
- Tobacco use
- Family history of heart disease
- Male over 45 or female over 55

What can you do to change your lifestyle or reduce your risk factors for heart disease? Even if you set 1 or 2 goals – you will be on your way.

1. _____

2. _____

3. _____

Warning signs for heart attack

- Chest discomfort – pressure, squeezing, fullness or pain in center of chest that lasts more than a few minutes, or goes away and comes back
- Shortness of breath – may come with chest discomfort
- Discomfort in arms, back, jaw or stomach
- Nausea, cold sweats, or light-headedness

What do you do if you think you are having a heart attack?

1. **Call 911.** Do not wait more than a few minutes to call. Time is very important.
2. Always have information ready to share with emergency personnel about any medications you are currently taking or are allergic to.
3. Always have information ready on who you want notified if you go to the hospital.

There have been tremendous advances in the diagnosis and management of coronary artery disease over the last several years. Many of the risk factors for heart disease are controllable with changes in your lifestyle. How can you reduce your risk for developing heart disease or a repeat heart attack? Make small, realistic changes in your diet and exercise plan; discuss your risk factors with your provider; and take all your medications as prescribed.

Source information: Health information provided by healthcare professionals at Geisinger.

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