

Coronary artery disease (CAD) is a chronic condition in which the heart muscle does not receive enough oxygen-carrying blood to do its job of supplying oxygen to the body. This is due to plaque build up in the coronary arteries, which carry blood to the heart muscles.

You have CAD if:

- You have had a heart attack.
- You have angina (chest pains).
- You have had an angioplasty, or “balloon therapy,” to reopen a coronary artery.
- You have had coronary bypass surgery.

Because CAD is a chronic disease, you need to take steps to stay as healthy as you can be and to prevent the disease from getting worse. You may think it is too late to make changes, but it is not. You may be able to stop the disease from getting worse or even reverse it by taking steps like quitting tobacco use, knowing your blood cholesterol, knowing your blood pressure and taking all medications as prescribed, including aspirin if appropriate.

This brochure gives you information about regular testing, lifestyle changes and medications to help you stay healthy with CAD. For more information, visit the following Web sites.

**Park Nicollet Health Services**  
([www.parknicollet.com/healthadvisor](http://www.parknicollet.com/healthadvisor))

**National Institutes of Health**  
([www.nih.gov](http://www.nih.gov))

**American Heart Association**  
([www.americanheart.org](http://www.americanheart.org))

## Controlling risk factors

Controlling risk factors continues to be important after you have been diagnosed with CAD. Risk factors include abnormal blood fats (cholesterol and triglyceride), high blood pressure, tobacco use, diabetes, lack of exercise and being overweight or obese. By reducing your risks, you are taking steps to live healthier and lessen the chances of damaging your heart further. Visit your doctor yearly to keep these risk factors in check.

### **Tobacco use**

Tobacco use lowers your level of HDL (see below), raises your blood pressure and promotes blood clotting. All of these contribute to further blood vessel damage. If you use tobacco, you need to stop! Improvements in your health begin soon after quitting.

### **Blood fats**

Cholesterol is one of the major controllable risk factors for CAD. In order for cholesterol to move throughout your body easily, it is packaged with a protein. The protein package is called a lipoprotein.

**Low-density lipoprotein cholesterol (LDL or “bad cholesterol”)** accounts for most of the cholesterol in your blood and is responsible for the formation of plaque, a fatty substance that builds up on the walls of the arteries. Most people with CAD will require medication to achieve optimal LDL levels.

**High-density lipoprotein cholesterol (HDL or “good cholesterol”)** protects against CAD when higher levels are present.

**Triglycerides** are fats that are carried in the bloodstream. Elevated triglycerides, especially when accompanied by low HDL levels, increase the risk for CAD.

### **High blood pressure**

High blood pressure is a risk factor for heart attack and the major cause of stroke. The blood pressure goal for patients with CAD is at 130/80 or less. Check your blood pressure at every clinic visit or at least once every year. High blood pressure can often be lowered with regular exercise, avoiding tobacco, maintaining a healthy weight and limiting sodium. Some people will also require medication.

### **Lack of exercise**

Even people who have had a heart attack can increase their chances of survival if they change their habits to include regular physical activity. It can help control blood fats, blood glucose and maintain weight as well as help to lower blood pressure. Thirty minutes of activity almost every day can make a difference.

### **Overweight or obesity**

Obesity increases risk for CAD. Obesity also contributes to other risk factors including hypertension, high blood cholesterol and diabetes. The good news is that often individuals see a health benefit from losing five to 20 pounds, even though they continue to weigh more than their so-called “ideal” body weight.

### **Diabetes**

People with diabetes are at risk for CAD. It is especially important for people with diabetes to have good blood pressure and blood fat control, to avoid tobacco and to talk with their doctor about taking aspirin regularly. In addition to controlling blood pressure and blood fats, people with diabetes should monitor the following:

- **A1C.** This test measures average blood glucose over the past two to three months. It should be checked at least every six months. The A1C goal is less than 7 percent.
- **Urine microalbumin or urine protein.** This test measures how well the kidneys are working. If the microalbumin is greater than 30, your doctor will recommend you start taking a medication called an ACE-inhibitor.
- **Retinal exam.** This exam is done by dilating your eyes. It indicates if you have any changes related to diabetes. You should have this test every year.

Though there is no cure for diabetes, it is important to keep your blood glucose and A1C close to normal. Studies show improved diabetes control reduces complications.

## Lifestyle changes

### Stop using tobacco

Set a stop date. Even if you have tried to quit smoking or chewing before, it doesn't mean you will be unsuccessful this time. Use your past experience to identify strategies for quitting now. Within days of quitting, you will be healthier. Talk to your doctor about ways to quit.

### Be active

Regular physical activity is vital to staying healthy with CAD. First, check with your doctor to see if you have any activity restrictions. Gradually work up to a routine of at least 30 minutes of activity on most days of the week. Walking is a great way to start!

### Lose or maintain weight

Follow a healthy meal plan to help you lose weight. Avoid diets that claim to be quick fixes. Most women can lose weight by reducing calories to 1200 to 1500 a day, while men can be successful with 1500 to 1800 calories a day. Gaining extra pounds can aggravate blood fats and blood pressure, so take steps to maintain your weight if you are not overweight.

### Choose a diet low in fat and high in fiber

A diet low in saturated fat and high in fiber can help lower blood fat levels. Aim for 25 grams of dietary fiber a day. How much saturated fat you have need each day depends on how many calories you eat and whether you want to lose weight or just maintain it. To find out more about healthy eating, talk to a registered dietitian for help with meal planning.

Use the following as a guide to start setting your goals.

Goal	Calories	Total fat (gm)	Saturated fat (gm)
Weight loss	1200	35 to 45	9
	1500	40 to 60	12
Weight maintenance	1800*	50 to 70	14
	2100	60 to 80	16
	2400	75 to 95	19

\*Men can eat up to 1800 cal/day for weight loss.

## Medications

Weight loss, diet and exercise are all important in staying healthy with CAD. However, most people with CAD require the added benefit of medications to stay healthy. In addition to blood pressure and blood fat-lowering medications, ask your doctor if any of the following medications are appropriate for you.

- **Aspirin or other antiplatelet medication.** Helps prevent blood clots in vessels.
- **Cholesterol-lowering medications (usually known as statins).** Help lower cholesterol and stabilize plaque, making it less likely to rupture or cause heart attacks.
- **Beta blockers.\*** Prevent recurrence of chest pain and heart attacks by decreasing the workload of the heart. Protect the heart muscle in weakened hearts.
- **ACE-inhibitors or ARBs.\*\*** Help the heart pump more easily. They are especially useful when congestive heart failure is present. Also used for treating high blood pressure in people with diabetes.

\*Beta blockers include propranolol (Inderal<sup>®</sup>), atenolol (Tenormin<sup>®</sup>), nadolol (Corgard<sup>®</sup>), metoprolol (Lopressor<sup>®</sup>, Toprol XL<sup>®</sup>).

\*\*ACE-inhibitors include lisinopril (Zestril<sup>®</sup>, Prinivil<sup>®</sup>), enalapril (Vasotec<sup>®</sup>), captopril (Capoten<sup>®</sup>). ARBs include irbesartan (Avapro<sup>®</sup>), losartan (Cozaar<sup>®</sup>) and valsartan (Diovan<sup>®</sup>).

## Regular testing

Use the following personal preventive care schedule to stay healthy with CAD.

### Regular medical tests

Test	Goal	How often
Blood pressure	Less than 130/80	Every year
Total cholesterol	Less than 200	Every year
LDL cholesterol	Less than 100	Every year
HDL cholesterol	Greater than 40	Every year
Triglyceride	Less than 150	Every year
<i>If you have diabetes:</i>		
-A1C	Less than 7 percent	Every six months
-Urine microalbumin	Less than 30, treatment not recommended	Every year

### Lifestyle changes

Lifestyle	Recommendation
Smoke/use tobacco	Stop
Inactive	At least 30 minutes of activity most days of the week
Overweight/obese	Lose five to 20 pounds

### Medication use

Medication	Recommendation
Aspirin or other antiplatelet therapy	Take daily
Statins	Talk to your doctor about usage
Beta blockers	If had a heart attack or heart failure, talk to doctor about usage
ACE-inhibitors	If had congestive heart failure, talk to doctor about usage

This brochure is based on guidelines developed by a team of health care experts at the Institute for Clinical Systems Improvement (ICSI), of which Park Nicollet Health Services is an active member. It will be reviewed and updated on a regular basis as scientific evidence changes. This material is for informational purposes only and is not intended to be a substitute for professional medical advice, diagnosis or treatment.

# Steps to Stay Healthy with Coronary Artery Disease