



Heart Disease in Women



What is heart disease?

Heart disease, cardiovascular disease (CVD), includes stroke and coronary heart disease, which are serious disorders of the heart and blood vessel system. **Heart disease is the leading cause of illness and death in North American women.** One of every two women will die of some form of heart disease. After menopause, a woman is just as likely as a man to have a heart attack. Women are more likely than men to die within a year after having a heart attack.

What are the risk factors for heart disease in women?

Risk factors include: high blood cholesterol, cigarette smoking, high blood pressure, overweight, physical inactivity, diabetes mellitus, age, and family history. Some are more modifiable than others.

The **most modifiable risk factors** for heart disease are:

- high blood cholesterol
- cigarette smoking
- high blood pressure
- overweight
- physical inactivity
- diabetes mellitus.

If women have high blood pressure or diabetes mellitus, they are at greater risk of heart disease compared to men.

Risk factors that are **not** modifiable:

- age
- family history of early heart disease.

A woman's risk of heart disease increases once she reaches age 55 or menopause. The more risk factors you have, the greater your chance of heart disease.

High blood cholesterol greatly increases your chances of developing heart disease because extra cholesterol in the blood collects on the inner walls of the arteries, narrowing them and making it more difficult for blood to pass to the heart. Today, approximately one-fourth of American women have blood cholesterol levels high

enough to pose a serious risk for heart disease. Blood cholesterol in most women rises sharply starting around age forty until about age sixty, corresponding to menopause.

What is blood cholesterol and how does it affect heart disease risk?

Cholesterol is a waxy substance found in all parts of your body. It helps make cell membranes, some hormones, and vitamin D. Cholesterol in your blood comes from two sources: your body makes it and from the food you eat. Your liver makes all the cholesterol your body needs. Over a period of years, extra cholesterol and fat circulating in the blood are deposited in the walls of the arteries that supply blood to the heart. These deposits make the arteries narrower and narrower. As a result, less blood gets to the heart and the risk of heart disease increases.

Cholesterol travels in the blood in packages called **lipoproteins**. **Low density lipoprotein (LDL)** carries most of the cholesterol in the blood. Cholesterol packaged in LDL is often called "**bad**" cholesterol, because too much of it can lead to cholesterol buildup and blockage in the arteries.

Another type of cholesterol, which is packaged in **high density lipoprotein (HDL)**, is known as "**good**" cholesterol. That is because HDL helps remove cholesterol from the blood, preventing it from piling up in the arteries.

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All women over the age of 20 should have their blood cholesterol checked. The higher your total blood cholesterol level, the higher your risk for heart disease. For all adults, a desirable total blood cholesterol level is less than 200 mg/dL. A level of 240 or above is considered high blood cholesterol. Levels in the “borderline-high” range (200-239 mg/dL) also increase the risk of heart disease. If your total cholesterol is 200 mg/dL or higher, a full blood lipid profile should be measured, which includes your LDL, HDL and triglyceride levels.

LDL

The LDL level is a major influence on your heart disease risk. A LDL level below 130 mg/dL represents the lowest risk while 130-159 mg/dL is in the “borderline-high” range. LDL levels of 160 mg/dL or above indicate a high risk for heart disease. Lowering LDL-cholesterol is the main goal of treatment to lower blood cholesterol levels.

HDL

Your blood level of HDL can effect heart disease risk also. If your HDL level is less than 35 mg/dL, your risk of heart disease increases, especially if your LDL level is elevated. The recommended range for HDL is 35 mg/dL or above. At 60 mg/dL or above, HDL is considered protective against heart disease in women.

Triglycerides

Triglycerides are also a risk factor for women. Desirable levels are under 200 mg/dL. The borderline high range is 200 to 400 mg/dL, 400 to 1000 is high and 1,000 or greater is very high. Women with elevated levels of triglycerides are advised to restrict alcohol because alcohol raises triglyceride levels.

Table 1. Cholesterol and Triglyceride Values

	Optimal	Borderline	High Risk
Total Cholesterol	< 200 mg/dL	200-239 mg/dL	≥ 240 mg/dL
LDL Cholesterol	< 130 mg/dL	130-159 mg/dL	≥ 160 mg/dL
HDL Cholesterol	> 60 mg/dL	35-59 mg/dL	< 35 mg/dL
Triglyceride	< 200 mg/dL	200-399 mg/dL	> 400 mg/dL

People over 20 years of age should be reevaluated if their total cholesterol (TC) is greater than or equal to 200 mg/dL.

How can you lower your blood cholesterol?

Reducing your blood cholesterol level can greatly lessen the chances of developing heart disease. Most people can lower their blood cholesterol by changing their diet, losing excess weight, stopping smoking and increasing physical activity. But, not everyone’s blood cholesterol will respond in the same way to dietary changes. Certain individuals blood cholesterol levels will decrease very little or actually increase while they are following a low fat diet, in which case a physician should be consulted.

What are the guidelines for Heart-Healthy Living?

Whatever your blood cholesterol level, you can make changes to help lower it or keep it low and reduce your risk for heart disease. Below are guidelines for women, as well as the whole family (including children ages 2 and above), to follow for heart-healthy living:

- 1) **Choose foods low in saturated fat.** All foods that contain fat are made up of a mixture of saturated and unsaturated fats. Saturated fat raises your blood cholesterol level more than anything else you eat. The best way to reduce blood cholesterol is to choose foods lower in saturated fat. Foods naturally low in total fat, saturated fat and cholesterol include fruits, vegetables, whole grains and beans. These foods are also good sources of vitamins, minerals, fiber and starch, which will also help cut your risk for heart disease. Saturated fat is found mainly in foods that come from animals. A few vegetable fats — coconut oil, cocoa butter, palm kernel oil, and palm oil — are also high in saturated fat.
- 2) **Choose foods low in total fat.** Since many foods high in total fat are also high in saturated fat, eating foods lower in total fat will help you eat less saturated fat. When you do eat fat, substitute unsaturated fat for saturated fat, like soft margarine or oils instead of butter or stick margarine. Unsaturated fat helps to lower cholesterol levels when you use it in place of saturated fat. Fat is high in calories; therefore, eating foods low in fat will also help you eat fewer calories. Eating fewer calories will help you to lose weight, which is important since excess weight is a risk factor for heart disease.
- 3) **Choose foods high in starch and fiber.** Foods high in starch and fiber are good substitutes for foods high in saturated fat. These foods include whole grains, like whole grain breads, whole grain cereals, and whole grain pasta. Fruits, vegetables and beans are also low in saturated fat and cholesterol and high in fiber. They are also lower in total calories than high fat foods.

- 4) **Choose foods low in cholesterol.** Dietary cholesterol can raise blood cholesterol, although not as much as saturated fat. So it's important for you to **choose foods low in dietary cholesterol.** Dietary cholesterol is found only in foods that come from animals. And even if an animal food is low in saturated fat, it may be high in cholesterol; for instance, organ meats like liver and egg yolks are low in saturated fat but high in cholesterol. Egg whites and foods from plant sources do not have cholesterol.
 - 5) **Choose foods low in hydrogenated oils or partially hydrogenated oils.** Hydrogenated oils contain “trans” fats, which have been shown to **increase blood cholesterol** as much as saturated fat. **Hydrogenated oils** are found in **processed foods** such as crackers, cookies, cakes, margarine and some candy.
 - 6) **Choose foods with little or no added salt.** If your blood pressure is sensitive to sodium, keep your **sodium intake under 2,400 milligrams or 1 teaspoon daily.**
 - 7) **Be more physically active.** Being physically active can raise HDL and lower LDL levels, which improves your blood cholesterol profile. Being active can also help you lose weight, lower your blood pressure, improve the fitness of your heart and blood vessels, and reduce stress. **Aim for activity every day lasting at least 20 to 30 minutes.**
 - 7) **Maintain a healthy weight, and lose weight if you are overweight.** People who are overweight tend to have higher blood cholesterol levels than people of a healthy weight. Overweight adults with an “apple” shape — bigger (pot) belly — tend to **have a higher risk for heart disease** than those with a “pear” shape — **bigger hips and thighs.** Whatever your body shape, when you cut the fat in your diet, you cut down on the richest source of calories. An eating pattern high in starch and fiber instead of fat is a good way to help control weight. **Crash diets** that are very low in calories can be harmful to your health. If you are overweight, losing even a little weight can help lower LDL-cholesterol and raise HDL-cholesterol.
- Start your day out right. Have some form of whole-grain bread, English muffins, bagels, or cereal and fruit for breakfast.
 - Think of grains and vegetables as your main dish in lunches and dinners. If you're serving meat or poultry as a main dish, add a tossed salad or a vegetable to the plate.
 - Add beans to leafy salads, pasta salads and stews—chick peas, kidney beans and navy beans have been shown to reduce LDL-cholesterol levels.
 - Drink more fat-free or 1 percent milk, rather than whole or 2 percent milk. Look for fat-free or very low fat yogurt and cheese, too.
 - Try soy products. Soy has come a long way in the last few years. Today, you can find soy products in many grocery stores and health food stores. Try veggie-soy burgers, soy hot dogs, tofu, tempeh or soy milk.
 - Serve raw or cooked fruits with fat-free or low-fat yogurt for dessert.
 - Eat only a little oil. If you want to use oil for cooking, try olive oil or canola oil instead of oils high in polyunsaturated fat, such as corn oil, peanut oil, and many margarines. Both olive oil and canola oil are high in monounsaturated fat, which decreases LDL and total cholesterol levels.
 - Eat a small amount of sweets and eat them less often.
 - Eat one to two servings of fish or seafood each week especially if you already have heart disease.
 - Cook with garlic. Several studies have shown that garlic reduces LDL cholesterol and lowers blood pressure.
 - Eat moderate amounts of nuts that are rich in monounsaturated fat, like hazelnuts, almonds, pecans, cashews, pistachios and macadamia nuts. These nuts have been shown to lower LDL-cholesterol levels. Avoid eating nuts by the handful. Instead, add one tablespoon of chopped nuts to salads, cereals or steamed vegetables per person or serving for great healthy flavor.

What foods can you add to your diet to live the Heart-Healthy way?

To lower your LDL-cholesterol, add foods that are low in saturated fats and cholesterol, because your body turns saturated fats into cholesterol. There are lots of ways to add healthy foods to your diet. **Follow these tips and the serving-size guidelines below:**

Lean* Cuts of Meat

Beef	Eye of the round, Top round
Veal	Shoulder, Ground veal, Cutlets, Sirloin
Pork	Tenderloin, Sirloin, Top loin
Lamb	Leg, Shank

*Lean defined as less than 10 grams of fat and 4.5 grams or less of saturated fat in 3 cooked ounces, as currently used on food labels.

Table 2. Food Pyramid Food Groups and Suggested Serving Size		
FOOD GROUP	DAILY SERVINGS	SERVING SIZE
Vegetables	3-5	1 cup raw leafy vegetables, 1/2 cup other vegetables
Fruits	2-4	1 medium apple, banana, orange, 1/2 cup fruit: fresh, cooked, canned, 3/4 cup fruit juice
Bread, cereal, rice, and pasta	6-11	1 slice bread, 1/2 bun or bagel, 1 ounce dry cereal, 1/2 cup cooked cereal, rice or pasta
Milk, yogurt, and cheese	2-3	1 cup milk, 8 oz. lowfat yogurt, 1 1/2 oz. natural cheese, 2 oz. processed cheese
Meat, poultry, fish, dry peas and beans, eggs, and nuts	2-3	2-3 oz. cooked lean meat, poultry or fish. Foods which count as 1 ounce of meat: 1/2 cup cooked dry beans, 1 egg or 2 egg whites, 2 Tbsp. peanut butter, 1/3 cup nuts

References

- Facts About Heart Disease and Women: Reducing High Blood Cholesterol.* U.S. Department of Health and Human Services, Public Health Service, National Institutes of Health, National Heart, Lung and Blood Institute. July 1994
- Healthy Heart Handbook for Women.* U.S. Department of Health and Human Services, Public Health Service, National Institutes of Health, National Heart, Lung and Blood Institute. July, 1997
- Facts About Blood Cholesterol.* National Cholesterol Education Program & NHLBI Obesity Education Initiative and coordinated by the U.S. Department of Health and Human Services, Public Health Service, National Institutes of Health, National Heart, Lung and Blood Institute. August, 1996
- Dietary Therapy for Preventing and Treating Coronary Artery Disease. Masley, Steven C. *American Family Physician*, March 15, 1998/Volume 57, number 6.

Table 3. Recommendations for Food Choices	
EAT LESS OF THESE FOODS	EAT MORE OF THESE FOODS
potato chips, tortilla chips, french fries, high-fat crackers, cornbread	whole-grain breads, whole-grain pasta, brown rice, whole-grain lowfat crackers, whole grains
vegetables or fruit cooked in butter, cheese, cream sauces, or margarine	fresh, frozen, baked or steamed fruits and vegetables
fried foods	steamed, baked or fresh foods
whole milk, full-fat cheeses, full-fat yogurt	fat-free or 1 percent milk, nonfat dry milk, fat-free or lowfat yogurt, fat-free or very lowfat cheeses
bacon, sausage, organ meats (liver), pepperoni, bologna, salami, or other high-fat deli meats	fish, skinless poultry, soy products, dried beans, lean cuts of meat with fat trimmed off
egg yolks	egg whites, egg substitutes
cakes, pies, cheesecake, pastries, doughnuts, cookies, ice cream or other high-fat sweets	angel food cake, fig bars, animal crackers, graham crackers, air-popped popcorn, fat-free or lowfat frozen desserts (yogurt, sherbet, ice milk)
butter and margarine	olive oil or canola oil nuts or nut butters in very small amounts (1 tsp per meal/serving for oil and 1 Tbsp for nuts or nut butters per meal/serving)

Position of the American Dietetic Association and the Canadian Dietetic Association: Women's health and nutrition. Beatty, D. and S.C. Finn *JADA* 95(3):362-366, 1995

Recommendations Regarding Public Screening for Measuring Blood Cholesterol. U.S. Department of Health and Human Services, Public Health Service, National Institutes of Health, National Heart, Lung and Blood Institute and the American Heart Association. September 1995 (see Table 1 on p. 2 and Table 2 on p. 4).

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