

high BLOOD CHOLESTEROL

High blood cholesterol is another important risk factor for heart disease that you can do something about. All women should keep their cholesterol levels down to lessen the chances of developing heart disease or having a heart attack.

If you already have heart disease, it is particularly important to lower an elevated blood cholesterol level in order to prevent a future heart attack. Women with diabetes also are at especially high risk for a heart attack.

If you have diabetes, you will need to take special steps to keep both your cholesterol and your diabetes under control. Although young women tend to have lower cholesterol levels than young men, between the ages of 45 and 55, women's levels begin to rise higher than men's. After age 55, this "cholesterol gap" between women and men becomes still wider. Women's overall risk of heart disease continues to be lower than that of men. Still, the higher a woman's blood cholesterol level, the greater her chances of developing heart disease.

Cholesterol and Your Heart

The body needs cholesterol to function normally. However, your body makes all the cholesterol it needs. Over a period of years, extra cholesterol and fat circulating in the blood build up in the walls of the arteries that supply blood to the heart. This buildup makes the arteries narrower and narrower. As a result, less blood gets to the heart. Blood carries oxygen to the heart, and if enough oxygen-rich blood cannot reach your heart, you may suffer chest pain. If the blood supply to a portion of the heart is completely cut off, the result is a heart attack. 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 LDL in the blood can lead to cholesterol buildup and blockage in the arteries. Another type of cholesterol is high-density lipoprotein (HDL), known as "good" cholesterol. That's because HDL helps remove cholesterol from the blood, preventing it from piling up in the arteries.

Getting Tested

All women should have their cholesterol levels checked by means of a blood test called a "lipoprotein profile." Be sure to ask for the test results, so you will know whether or not you need to lower your cholesterol. Total cholesterol is a measure of all of your lipoproteins, including LDL and HDL. An LDL level below 100 mg/dL is considered "optimal," or ideal. As you can see on the next page, there are four other categories of LDL level. The higher your LDL number, the higher your risk of heart disease. Knowing your LDL number is especially important because it will determine the kind of treatment you may need. Your HDL number tells a different story. The *lower* your HDL level, the higher your heart disease risk. Your lipoprotein profile test will also measure levels of triglycerides, which is another fatty substance in the blood.

What are Triglycerides?

Triglycerides are another type of fat found in the blood and in food. Triglycerides are produced in the liver. When you drink alcohol or take in excess calories, your liver produces more triglycerides. Recent research indicates that triglyceride levels that are borderline high (150-199 mg/dL) or high (200 mg/dL or more) increase your risk of heart disease. To reduce blood triglyceride levels, doctors recommend a low-saturated fat, low cholesterol diet that also limits carbohydrates. It is also important to control your weight, get more physical activity, and avoid smoking and alcohol. Sometimes, medication is needed.

Note :Cholesterol levels are measured in milligrams (mg) of cholesterol per deciliter (dl) of blood.

What's Your *number*?

Blood Cholesterol Levels and Heart Disease Risk *	
Total Cholesterol Level	Category
Less than 200 mg/dl	Desirable
200-239 mg/dl	Borderline high
240 mg/dl and above	High
LDL Cholesterol Level	Category
Less than 100 mg/dl	Optimal (ideal)
100-129 mg/dl	Near optimal / above optimal
130-159 mg/dl	Borderline high
160-189 mg/dl	High
190 mg/dl and above	Very high
HDL Cholesterol Level	Category
60 mg/dL or higher	Protective **
45-55 mg/dL	Desirable
Less than 40 mg/dL	A major risk factor

Heart Disease Risk and Your LDL Goal

In general, the higher your LDL level and the more other risk factors you have, the greater your chances of developing heart disease or having a heart attack. The higher your risk, the lower your LDL “goal” level will be. Here is how to determine your LDL goal:

Step 1: Count Your Risk Factors.

Below are risk factors for heart disease that will affect your LDL goal. Check to see how many of the following risk factors* you have:

- ♥ Cigarette smoking
- ♥ High blood pressure (140/90 or higher, or if you are on blood pressure medication)
- ♥ Low HDL cholesterol (less than 40 mg/dL)**
- ♥ Family history of early heart disease (your father or brother before age 55, or your mother or sister before age 65)
- ♥ Age (55 or older)

If you have two or more risk factors on the above list, you will need to figure out your “Risk Score.” This score will show your chances of having a heart attack in the next 10 years.

** Even though overweight and physical inactivity are not on this list, they are conditions that need to be corrected.*

***If your HDL cholesterol is 60 mg/dL or higher, subtract 1 from your total.*

Step 2: Find Out Your Risk Score (Framingham Heart Study Point Scores)

Use these risk tables to find your chances of having a heart attack in the next 10 years, given as a percentage.

Points		Points	
Age 20-34	-7	Age 55-59	8
Age 35-39	-3	Age 60-64	10
Age 40-44	0	Age 65-69	12
Age 45-49	3	Age 70-74	14
Age 50-54	6	Age 75-79	16

Total Cholesterol	Points				
	Age 20-39	Age 40-49	Age 50-59	Age 60-69	Age 70-79
<160	0	0	0	0	0
160-199	4	3	2	1	1
200-239	8	6	4	2	1
240-279	11	8	5	3	2
= 280	13	10	7	4	2

	Points				
	Age 20-39	Age 40-49	Age 50-59	Age 60-69	Age 70-79
Nonsmoker	0	0	0	0	0
Smoker	9	7	4	2	1

HDL (mg/dL)	Points	HDL (mg/dL)	Points
= 60	-1	40-49	1
50-59	0	< 40	2

Systolic BP (mmHg)	Points		Systolic BP (mm Hg)	Points	
	If Untreated	If Treated		If Untreated	If Treated
< 120	0	0	140-159	3	5
120-129	1	3	= 160	4	6
130-139	2	4			

Point Total	10-Year Risk %	Point Total	10-Year Risk %	Point Total	10-Year Risk %
< 9	< 1	14	2	20	11
9	1	15	3	21	14
10	1	16	4	22	17
11	1	17	5	23	22
12	1	18	6	24	27
13	2	19	8	= 25	= 30

Step 3: Find Out Your Risk Category

Use your number of risk factors, risk score and medical history to find out your category of risk for heart disease or heart attack. Use the table below.

If You Have	Your Category Is
Heart disease, diabetes, or a risk score of more than 20%*	Highest Risk
2 or more risk factors and a risk of 10-20%	Next Highest Risk
2 or more risk factors and a risk score of less than 10%	Moderate Risk
0-1 risk factor	Low to Moderate Risk

* Means that more than 20 of 100 people in this category will have a heart attack within 10 years.

A Special Type of Risk

Some women have a group of risk factors known as “metabolic syndrome,” which is often connected to overweight/obesity and physical inactivity. This cluster of risk factors increases your risk of heart diseases, no matter what your LDL cholesterol level. Women have metabolic syndrome if they have three or more of the following conditions:

- ♥ A waist measurement of more than 35 inches
- ♥ Triglycerides of 150 or more
- ♥ An HDL level of less than 50
- ♥ Blood pressure of 130/85 or more (either number counts)
- ♥ Blood sugar of 110 or more

If you have metabolic syndrome, you should calculate your risk score and risk category as above. But because having metabolic syndrome adds additional risk, you should make a particularly strong effort to reach and maintain your LDL goal.

Your LDL Goal

The main goal of cholesterol-lowering treatment is to lower your LDL level enough to reduce your risk of heart disease or heart attack. The higher your risk category, the lower your LDL goal will be. To find your personal LDL goal, see the table below:

If you are in this risk category	Your LDL goal is
Highest Risk	Less than 100 mg/dL
Next Highest Risk	Less than 130 mg/dL
Moderate Risk	Less than 130 mg/dL
Low-to-Moderate Risk	Less than 160 mg/dL