

# CHOLESTEROL

**What is it?**

**What does it do?**

**What do the numbers mean?**

**Why do they matter?**



CIRCLE WELLNESS

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**Cholesterol is a soft, waxy substance essential to the formation of cell membranes throughout the body.** It is comparative to the mortar that holds a brick wall together. Cholesterol also assists in the production of hormones, converts vitamin D in the skin, and aids in digestion. Genetic predisposition plays a significant role in one's cholesterol levels.

**Cholesterol is produced primarily in the liver, which is capable of supplying a sufficient amount for the body's needs.** Foods of animal origin, such as meat, eggs, and dairy products, contain cholesterol. Foods of plant origin, such as fruits, vegetables, and grains, are cholesterol-free.

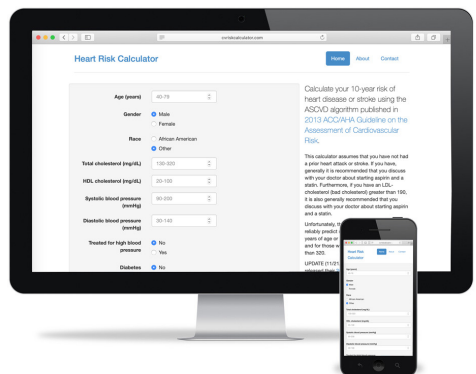
**High cholesterol alone does not cause symptoms.** When there is too much cholesterol in your blood, it builds up on the walls of your arteries. The arteries become narrowed and blood flow is slowed down or blocked. When this occurs in the heart, a heart attack can result; when it occurs in the brain, a stroke can result.

Because cholesterol is unable to move through the bloodstream to the cells by itself, proteins attach to the cholesterol to move it throughout the body. LDL (low-density lipoproteins) and HDL (high-density lipoproteins) are the proteins that transport cholesterol.

- **LDL is known as the “bad cholesterol.”** When excess LDL cholesterol joins with fats in the bloodstream, it builds up on the inner walls of the arteries, which can lead to cardiovascular disease (heart attack or stroke).
- **HDL cholesterol is considered the “good cholesterol”** because it takes excess cholesterol back to the liver, where the cholesterol is converted to bile and excreted from the body through the intestines.

## Cholesterol and the Big Picture

Many factors affect your risk for heart attack or stroke, with cholesterol being just one of them. The American Heart Association (AHA) and many health-care providers recommend using a risk assessment tool created by the AHA to calculate individual 10-year risk of heart attack and stroke. To see your 10-year risk, visit [www.cvriskcalculator.com](http://www.cvriskcalculator.com).

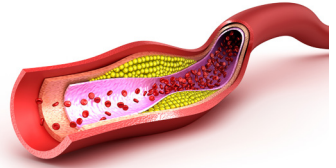


# KNOW YOUR NUMBERS

## Total Cholesterol

The sum of HDL + LDL + 20% of triglyceride level

Total Cholesterol	Category
Less than 200 mg/dl . . . . .	Optimal
200-239 mg/dl . . . . .	Borderline high
240 mg/dl or greater . . . . .	High blood cholesterol



## LDL Cholesterol: “The Bad Guys”

High levels of LDL significantly raise the risk of heart attack and stroke. LDL levels are increased by the consumption of saturated and trans fats, a lack of physical activity, and being overweight or obese.

LDL Cholesterol	Category
Less than 100mg/dl . . . . .	Optimal
100-129 mg/dl . . . . .	Above optimal
130-159 mg/dl . . . . .	Borderline high
160-189 mg/dl . . . . .	High
190 mg/dl and above . . . . .	Very high

## Triglycerides: “The Other Bad Guys”

Triglycerides are the chemical form of fat. Calories ingested in food and not used immediately as energy by the body are converted to triglycerides and stored in fat cells. High triglyceride levels can be associated with insulin resistance or type 2 diabetes and can increase the risk of heart attack and stroke. Factors contributing to high triglyceride levels include overweight/obesity, physical inactivity, smoking, excessive alcohol intake, and high carbohydrate consumption.

Triglyceride	Category
Less than 150mg/dl . . . . .	Best
150-199 mg/dl . . . . .	Borderline high
200-499 mg/dl . . . . .	High
500mg/dl or greater . . . . .	Very high

## HDL Cholesterol: “The Good Guys”

Higher levels of HDL can lower an individual’s risk for heart disease and stroke by removing cholesterol from the arteries. HDL cholesterol can be increased through exercise, maintaining a healthy weight, and avoiding tobacco smoke.

HDL Cholesterol	Category
Men: less than 40 mg/dl	Poor
Women: less than 50 mg/dl . . . . .	
Men: 40-59 mg/dl	Better
Women: 50-59 mg/dl . . . . .	
Everyone: 60 mg/dl and above . . . . .	Best

\*The tables in each area indicate normal values and level of risk for healthy adults without chronic diseases such as heart disease and diabetes.

## Choose better fats: Plant and Fish Sources

These fats can lower total and LDL (bad) cholesterol levels in the body.

- **Monounsaturated fats:** Found in **vegetable oils** (olive oil, canola oil, peanut oil, sunflower oil, sesame oil), **avocados**, **peanut butter** and **many nuts**
- **Polyunsaturated fats:** Found in **vegetable oils** (soybean oil, corn oil, safflower oil), **fatty fish** (salmon, mackerel, herring, trout), and **some nuts** (walnuts, sunflower seeds)

## Limit bad fats: Animal and Man-made Sources

### Saturated fats:

- Found in fatty **beef, lamb, pork, poultry with skin; dairy products** made from whole or reduced-fat milk (eg. butter, cheese, yogurt); **egg yolks**; and **tropical oils** (eg. coconut, palm)
- Can raise total and LDL (bad) cholesterol levels

### Trans fats:

- Found in stick margarines, shortening, fried foods and baked goods. Also called **hydrogenated** or **partially hydrogenated vegetable oil**
- Can raise LDL (bad) cholesterol and lower HDL (good) cholesterol

## Get enough fiber

Consume heart-healthy foods high in fiber such as **fruits, vegetables, whole grains and nuts**. A diet high in fiber can reduce cholesterol levels by as much as 10 percent.

## Be active

Regular exercise can decrease LDL levels and increase HDL levels. Experts recommend 30 minutes of moderately-intense activity on most days of the week. Examples include brisk walking, dancing, bowling, bicycling, gardening, and house cleaning.

## Maintain a healthy weight

Losing weight can help reduce LDL cholesterol, total cholesterol and triglyceride levels.

## If you smoke, quit!

Smoking reduces HDL cholesterol levels and increases triglyceride levels, so quitting smoking reduces your risk of a heart attack or stroke.