



# Cholesterol and Heart Health

## About cholesterol

- Cholesterol is a waxy, fat-like substance found in your blood. It's an essential building block used to form your body's cells and hormones.
- Too much cholesterol, however, can increase your risk of developing heart disease or of having a heart attack.
- Cholesterol comes from two sources:
  - Your body makes some cholesterol naturally.
  - Cholesterol is found in foods you eat from animal sources (plant foods do not have cholesterol).
- Lowering cholesterol can significantly reduce the risk of a future heart attack.

## Measuring cholesterol

- Cholesterol (fat) cannot travel through the body on its own; it needs to be attached to a protein. This combination of cholesterol (fat) and protein is referred to as a lipoprotein.
- Lipoproteins vary in how much fat and protein they carry. The more protein they have (or density), the better. They are classified as high-density (HDL), low-density (LDL) or very-low-density (VLDL).
- A simple blood test to assess cholesterol is commonly referred to as a "lipid panel" or "lipid profile." This test measures LDL, HDL and triglycerides (fats in the blood that are also linked to heart disease).

Type of lipid	What is it?
<b>Total cholesterol</b>	Total cholesterol reflects sum of your LDL, HDL and a fraction of your triglycerides.
<b>Low-density lipoprotein (LDL)</b>	LDL cholesterol is often called the "bad" cholesterol. It is the major cholesterol carrier in the blood that can build up in the walls of the arteries.
<b>High-density lipoprotein (HDL)</b>	HDL is the "good" cholesterol. HDL may remove the excess cholesterol from the plaque in your arteries.
<b>Triglycerides</b>	Triglycerides are the fat in your blood. When you eat, the calories from food that you don't use immediately are transformed into triglycerides and stored as fat.

**Additional cholesterol factors: Lp(a)**

Sometimes, your doctor may look at additional cholesterol factors, such as lipoprotein a or Lp(a). Lp(a) is a type of LDL cholesterol that is determined by your genes and is not generally affected by lifestyle.

Your doctor may order a Lp(a) test if you:

- Have a strong family history of heart disease.
- Have a diagnosis of atherosclerosis or heart disease, but your cholesterol levels are within acceptable levels.
- If your LDL is not responding well to therapy.

**Risks of elevated cholesterol**

When there is too much cholesterol in your blood, plaque builds up in the walls of your arteries. Over time, this buildup — also known as atherosclerosis — can cause arteries to become narrowed, limiting the amount of blood flow to the heart. Without enough oxygen-rich blood flow, chest pain, a heart attack or stroke may result.

**Treatments for elevated LDL cholesterol**

The main goal of cholesterol-lowering treatment is to reduce your risk of developing heart disease or having a heart attack or a stroke.

Lowering your LDL can be accomplished by making changes in your lifestyle through improved nutrition choices and increased exercise, and by taking cholesterol lowering medications as prescribed.

**Lifestyle changes**

Lifestyle changes can significantly impact your cholesterol and reduce your risk for heart disease.

**Quit smoking.** If you are a smoker, quitting smoking is considered the single best thing you can do to improve your health.

**Eat heart healthy.** Choose healthier fats more often. Replace unhealthy saturated fat and trans fat whenever possible with monounsaturated fats or other healthier options, such as polyunsaturated fats or omega 3 fatty acids. Monounsaturated fats — found in olive, peanut and canola oils, as well as avocados, nuts and seeds — can help lower LDL “bad” cholesterol without lowering HDL “good” cholesterol.

**Eat more fruits and vegetables.** Fruits and vegetables are good sources of soluble fiber and other compounds, which can help lower cholesterol. Aim to eat five to nine servings of fruits and vegetables each day.

**Eat more fiber.** Fiber is found in food from plants — fruits, vegetables, legumes (e.g., beans, peas and lentils) and whole grains (e.g., whole oat, whole rye). Eating fiber-rich foods helps lower LDL cholesterol.

**Exercise.** Regular physical activity — 30 minutes on most, if not all, days — is recommended for everyone. It can help raise HDL and lower LDL and triglycerides.

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### Medication management

There are many different types of cholesterol disorders and many medications to treat them, so make sure talk with your doctor to find a treatment that is right for you.

Cholesterol medications are most effective when combined with healthful eating and exercise.

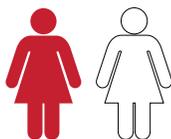
**Statins** are the first therapy choice for most people with high cholesterol or those who have been found to be at risk for a heart attack or stroke. Statins block the production of cholesterol your body naturally makes. Statins can help you reduce your risk of having a heart attack.

### Genetic influences

**Familial Hypercholesterolemia (FH)** is a genetic disorder, affecting one in 500 people, that is characterized by significantly elevated cholesterol levels. FH can lead to heart disease early in life, so early detection is key to prevent a heart-related event. FH is a dominant genetic disorder, which means that all first-degree relatives (i.e., children, siblings, parents) of those affected have a one in two chance of having FH. According to the National Lipid Association, an estimated 80 percent of FH is undiagnosed.

**Treatments in development:** Many exciting new cholesterol-lowering medications are being developed for patients with FH, or for individuals who do not respond well to traditional cholesterol medications. Talk to your doctor to learn more about the treatment options available to you.

## Fact:



**Nearly one in every two American women have high or borderline high cholesterol.**

### Role of a lipid specialist

Lipid specialists primarily treat individuals with disorders or disruptions in the amount of lipids in the blood (dyslipidemia). A lipid specialist has received additional training and expertise in the diagnosis and treatment of dyslipidemias, and may prescribe drug therapy, changes in diet, and lifestyle modifications as needed to help patients achieve and maintain good health.

### Questions to ask your doctor or lipid specialist

- How do my cholesterol levels affect my heart health?
- What are my treatment options for my elevated cholesterol levels?
- What are some of the side effects with cholesterol medications?
- Would it be helpful for me to see a lipid specialist?
- If I am diagnosed with FH or elevated cholesterol levels, are there any research studies I could participate in?

**National guidelines for the treatment of cholesterol and heart disease risk recommend you talk to your doctor to develop an individualized treatment plan.**

### Additional resources

- [www.womenheart.org](http://www.womenheart.org)
- National Cholesterol Education Program  
[www.nhlbi.nih.gov/health/public/heart/chol/wyntk.pdf](http://www.nhlbi.nih.gov/health/public/heart/chol/wyntk.pdf)
- [www.fhjourneys.com](http://www.fhjourneys.com)
- [www.learnyourlipids.com](http://www.learnyourlipids.com)
- [www.thefhfoundation.org](http://www.thefhfoundation.org)