

# Cholesterol

Cholesterol is a *waxy*, fat-like substance that occurs naturally in all parts of the body and your body needs it to function normally. It is present in cell walls or membranes everywhere in the body, including the brain, nerves, muscle, skin, liver, intestines, and heart. Your body uses cholesterol to produce many hormones, vitamin D, and bile acids that help to digest fat. It takes only a small amount of cholesterol in the blood to *meet* these needs. If you have too much cholesterol in your bloodstream, the excess is *deposited* in arteries, including the coronary arteries, where it *contributes* to the narrowing and blockages that cause the signs and symptoms of heart disease.

There are several types of lipoproteins for transporting cholesterol through the blood. In order of increasing density:

Chylomicrons

Very-low-density lipoprotein (VLDL)

Low-density lipoprotein (LDL) - the main source of cholesterol *build-up*. When too much of it circulates in the blood, it can clog arteries, increasing your risk of heart attack and stroke.

High-density lipoprotein (HDL) - the good cholesterol that helps to keep cholesterol from building up in arteries.

## Sources

Cholesterol comes from two sources: Your body and food. Your liver and other cells in your body make about 75 percent of blood cholesterol. The other 25 percent comes from the foods you eat. Cholesterol is only found in animal products.

## Level of cholesterol

Your blood cholesterol level is affected not only by what you eat but also by how quickly your body makes LDL (Low Density Lipoprotein; „bad“) cholesterol and *disposes* of it. Many factors help determine whether your LDL-cholesterol level is high or low. The following factors are the most important:

- Heredity:

Your genes influence how high your LDL cholesterol is by affecting how fast LDL is made and removed from the blood. One specific form of inherited high cholesterol that affects 1 in 500 people is *familial* hypercholesterolemia, which often leads to early heart disease. But even if you do not have specific genetic form of high cholesterol, genes play a role in influencing your LDL-cholesterol level.

- Food:

Two main nutrients in the foods you eat make your LDL cholesterol level go up. The first is *saturated* fat, a type of fat found mostly in foods that come from animals, and the second is cholesterol, which comes only from animal products. Saturated fat raises your LDL cholesterol level more than anything else in the diet. Eating too much saturated fat and cholesterol is the main reason for high levels of cholesterol and a high rate of heart attacks. Major dietary sources of cholesterol include cheese, egg yolks, beef and pork. Reducing the

amount of saturated fat and cholesterol you eat is a very important step in reducing your blood cholesterol levels.

- **Weight:**

Excess weight tends to increase your LDL cholesterol level. If you are overweight and have a high LDL-cholesterol level, losing weight may help you lower it. Weight loss also helps to lower triglycerides (a type of fat in the blood that increases after you eat) and raise HDL (High Density Lipoprotein, „good“) cholesterol levels.

- **Physical activity:**

Regular physical activity may lower LDL cholesterol and raise HDL cholesterol levels. Make exercise a part of your lifestyle.

- **Age and sex:**

As women and men get older, their blood cholesterol levels rise until about 60 to 65 years of age. After the age of about 50, women often have higher total cholesterol levels than men of the same age.

- **Alcohol:**

Alcohol intake increases HDL cholesterol but does not lower LDL cholesterol. Doctors do not know for certain whether alcohol also reduces the risk of heart disease. Drinking too much alcohol can damage the liver and heart muscle, lead to high blood pressure, and raise triglycerides. Because of the risks, alcoholic beverages should not be used as a way to prevent heart disease.

- **Stress:**

Stress over the long term has been shown in several studies to raise blood cholesterol levels. One way that stress may do this is by affecting your habits. For example, when some people are under stress, they *console* themselves by eating fatty foods. The saturated fat and cholesterol in these foods contribute to higher levels of blood cholesterol.

## **Signs and symptoms of high blood cholesterol**

There are usually no signs or symptoms of high blood cholesterol. Many people do not know that their cholesterol level is too high. Everyone age 20 and older should have their cholesterol levels checked at least once every 5 years.

## **Diagnosis**

High blood cholesterol is diagnosed by checking the levels of cholesterol in your blood. It is best to have a blood test called a lipoprotein profile to measure your cholesterol levels. The lipoprotein profile will give information about your LDL cholesterol, HDL cholesterol and triglycerides.

If a lipoprotein profile cannot be done, it is also possible to only test the total levels of cholesterol.

Cholesterol levels are measured in mmol/l.

Total cholesterol level – 6,2 mmol/l and above

LDL cholesterol level – less than 3 mmol/l

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### Vocabulary

<i>waxy</i>	voskovitý
<i>to meet</i>	vyhovět
<i>deposited</i>	usazený
<i>to contribute</i>	příspěvat
<i>dispose of</i>	zbavit se (2.p.)
<i>familial</i>	rodinný, dědičný v rodině
<i>saturated</i>	nasycený
<i>to console</i>	utěšit
<i>build-up</i>	hormadění

### Question

- 1 What is cholesterol?
- 2 ~~Does~~ is cholesterol harmful?
- 3 Define LDL and HDL cholesterol.
- 4 What factors help determine whether your LDL-cholesterol level is high or low?
- 5 What symptoms of High Blood Cholesterol are?
- 6 How can you avoid of High blood cholesterol?  
What value of total cholesterol level is already harmful?

