



## What Your Healthcare Provider Means By... Cholesterol

Like oil and water, *cholesterol* (a waxy, fat-like substance) and blood don't mix. Cholesterol is produced naturally from the liver and supplied in your diet, primarily from animal foods. However, problems arise when there is too much cholesterol in the blood, increasing your risk for heart disease or stroke. This information can help you understand cholesterol and the options available for a healthy heart.

### Q What are the "good" and "bad" cholesterol?

Because cholesterol can't dissolve in the blood, which is made mostly of water, it is transported by protein packages called **lipoproteins**. **Low-density lipoprotein-cholesterol (LDL-C)** is "bad" because it carries cholesterol to artery walls and forms deposits, also known as **plaque**. This can lead to a condition called **atherosclerosis** or "hardening" of the artery walls. With time, plaque builds up and blood flow slows down or stops. **High-density lipoprotein-cholesterol (HDL-C)** is "good" because it carries cholesterol from artery walls back to the liver and can reduce or prevent plaque build up.

### Q What are triglycerides?

Like cholesterol, triglycerides (TGs) are **lipids** (fats) that circulate in your bloodstream and are contained in lipoproteins. They are the most common type of fat in the body and are important to your health. However, high amounts of TGs can increase your risk for heart disease.

### Q What is a lipid profile?

It's a blood test that measures your levels of total cholesterol (TC), HDL-C, LDL-C, and TG. All of these levels are expressed in milligrams per deciliter (mg/dL) of blood. If any or all of your levels are unsafe, you may be at increased risk for heart disease, heart attack, stroke, and other diseases of the blood vessels.

### Q What do all of those numbers mean?

- ▶ **TC:** Values less than 200 mg/dL are desirable; those of 200 to 239 are borderline high; and those at 240 or more are considered high. Your healthcare provider may want to talk with you about how to lower elevated values.
- ▶ **HDL-C:** Higher levels of this are actually better. Values less than 40 mg/dL (for men) and less than 50 mg/dL (for women) are low, and are considered a major risk factor for heart disease. Values of 60 mg/dL or more are high—and are seen as being *protective* against heart disease.
- ▶ **LDL-C:** Values less than 100 mg/dL are optimal; 100 to 129, near or above optimal; 130 to 159, borderline high; 160 to 189, high; and those 190 or more are very high.
- ▶ **TG:** Values less than 100 mg/dL are optimal; less than 150, normal; 150 to 199, borderline high; 200 to 499, high; and those 500 or more are very high.

### Q How can I improve my lipid levels?

Talk to your healthcare provider about changing your lifestyle. Lifestyle changes may include following a cholesterol-lowering diet, losing weight, quitting smoking, and increasing physical activity. Saturated fats (found in meat, poultry, whole-milk dairy products, lard, and tropical oils such as coconut, palm kernel, and palm) are the worst offenders; they make your body hold onto cholesterol, which can end up on your artery walls. Regular aerobic exercise offers several benefits: It may reduce TG and LDL-C, and may raise HDL-C.

### Q What's so important about lowering LDL-C?

Research has shown that reducing your LDL-C level will decrease your risk of developing heart disease. Your personal LDL-C goal depends on your risk for heart disease. Talk with your healthcare provider about heart disease risk factors that you may have; this will help determine your LDL-C goal.

**REFERENCES** American Heart Association. Drug therapy for cholesterol; Lifestyle changes and cholesterol; What your cholesterol levels mean. All available at: <http://www.heart.org>. Expert Panel on Detection, Evaluation, and Treatment of High Blood Cholesterol in Adults. *JAMA*. 2001;285(19):2486-2497.; Grundy SM, et al. *Circulation*. 2004;110(2):227-239.; Heart Protection Study Collaborative Group, et al. *Lancet*. 2011;378(9808):2013-2020.; Murphy SL, Xu JQ, Kochanek KD. Deaths: Preliminary data for 2010. National vital statistics reports; vol 60 no 4. Hyattsville, MD: National Center for Health Statistics. 2012. All websites accessed September 13, 2012.

## SUPPOSE THAT'S NOT ENOUGH...

Your healthcare provider may prescribe medication from one or more of these drug classes:

- ▶ **Statins** block cholesterol production in the liver. They are particularly effective in reducing LDL-C, which is the main goal of cholesterol-lowering drug treatment.
- ▶ **Nicotinic acid** (also known as niacin) works in the liver to reduce blood fats. It lowers TG and LDL-C, and raises HDL-C.
- ▶ **Fibrates** lower TG in the blood and can increase HDL-C as an adjunct to diet.
- ▶ **Bile acid sequestrants** work in the intestines and help to lower LDL-C.
- ▶ **Omega-3 fatty acids** help to reduce very high TG levels when used as an adjunct to diet.
- ▶ **Cholesterol absorption inhibitors** work by preventing cholesterol from being absorbed by the intestine. They are most effective at lowering LDL-C but may also have a modest effect on lowering TG and raising HDL-C.

## IN CLOSING...

Heart disease is the leading cause of death in the United States. Ask your healthcare provider to measure your lipid profile and your risk. Together, you can decide what treatment is best for you. Most people should improve their diet and get more exercise; some also need medication. These steps reduce disease and death and help to keep people healthy.

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