Types of cholesterol

Dear Alice,

What is the difference between good and bad cholesterol and its effect upon the heart?

Answer

Dear Reader,

The “good” and “bad” cholesterol you speak of are typically referred to as high-density lipoproteins (HDL) and low-density lipoproteins (LDL), respectively. However, cholesterol really only becomes a problem if someone has too much or too little. To really get the story on cholesterol straight, it's necessary to understand what it does in the body. In addition to being found in foods such as meat and dairy products, the majority of the body’s cholesterol is made in the liver. The body needs cholesterol as it's a necessary component of all living cells. It travels throughout the body via the bloodstream, often absorbed by cells to be used as a building block for vital compounds such as estrogen, testosterone, vitamin D, and digestive enzymes. Since cholesterol is a hydrophobic molecule (meaning it can't dissolve in water or blood), it must be combined with carrier lipoproteins, namely LDLs and HDLs, to travel in the bloodstream. The specific functions of each lipoprotein and the ways they can impact heart health may provide more information beyond the “good” or the “bad.” In addition, there are strategies to manage and maintain recommended cholesterol levels and keep the ticker in tip-top shape.
The role of LDL and HDL cholesterol in heart health centers around arterial plaques — fatty, filmy deposits on the walls of the arteries. Generally speaking, it's recommended that LDL cholesterol levels be low and HDL cholesterol levels be high. This has to do with how these lipoproteins function in the body — which tends to coincide with their alleged reputations. LDL itself isn't exactly “bad,” but it can become cause for concern when there's too much of it. Excess LDL cholesterol in the blood may form plaques, which harden and narrow arteries over time. This plaque buildup may break apart or result in the formation of blood clots, which can block arteries that provide blood to key organs such as the brain, heart, or kidneys. In turn, that lack of oxygen and blood flow may lead to a heart attack or stroke. On the other hand, HDL cholesterol is considered helpful because it actually assists in the prevention of plaque formation. It can be found scavenging for LDL cholesterol, carrying it away from the artery walls and back to the liver where it's broken down.

In addition to HDL and LDL cholesterol levels, there's another component to the lipids plus heart health equation worth mentioning: triglycerides. These are a type of lipid (or fat) that is created when excess calories are consumed to provide energy between meals. Regularly eating more calories than are burned may lead to elevated levels of triglycerides. In high amounts and in combination with a high LDL or low HDL, triglycerides may also contribute to the thickening and hardening of the walls of the arteries, leading to an increased risk of heart disease.

With this to chew on, there are ways a person may optimize their cholesterol levels and maintain heart health. First, getting a baseline cholesterol measurement may be in order. This can be done by asking a health care provider to perform a cholesterol screening test to calculate your total cholesterol. If the total count is less than ideal, making dietary changes that focus on foods that up HDL and lower LDL cholesterol may be recommended. Meeting with a registered dietitian may help determine how to meet your dietary needs and match your lifestyle. If you're interested, some foods to improve cholesterol levels may be found on Mayo Clinic's website. Furthermore, getting regular physical activity and managing stress can also positively impact cholesterol levels and heart health. Keep in mind that the body normally needs time to adjust to lifestyle changes, so differences in the body may not be seen or felt right away when implementing these strategies. The Centers for Disease Control and Prevention have multiple resources and tips for preventing high cholesterol. If heart-healthy lifestyle strategies aren’t enough to see changes in cholesterol levels, following up with a health care provider may inform next steps, which could include medication. When it comes to the body, it's not always as simple as good or bad, but hopefully this response gave you a healthy dose of information to think about!
Milk — Good or bad for you? [8]

Resources

Medical Services (Morningside) [9]
Columbia Health Nutrition Services (Morningside) [10]
Medical Services (CUIMC) [11]
Student Health Service Nutrition Services (CUIMC) [12]

Published date:
Apr 05, 1996
Last reviewed on:
Feb 21, 2020

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