"Good" and "bad" cholesterol

Dear Alice,

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

Answer

Dear Reader,

Cholesterol is a necessary component for living cells. However, high levels of blood cholesterol are associated with an increased risk of heart disease. To complicate matters even more, blood cholesterol can be divided into two types, one of which actually lowers the risk of heart disease! To get the story on cholesterol straight, it's necessary to understand something about how cholesterol works in the body and how it can contribute to heart disease.

Most of the cholesterol in the body is produced by the liver. A significantly smaller amount comes from dietary sources, such as meat, eggs, and dairy products. Cholesterol travels throughout the body via the blood stream, being absorbed by cells along the way to be used for important processes, such as hormone production and cell membrane repair. Because it isn't water soluble, cholesterol is ferried along the bloodstream encased in protein. These cholesterol-filled protein orbs are called lipoproteins. Lipoproteins come in a variety of sizes that behave differently from one another. Broadly, health care providers and scientists talk about low-density lipoproteins (LDL) and high-density lipoproteins (HDL).

The role of both types of cholesterol in heart disease centers around the formation of arterial plaques - fatty, filmy deposits on arterial walls. Over time, plaques become hardened, leading to narrow, rigid arteries that impede blood flow and thereby increase the risk of heart attack. Also, smaller plaques sometimes develop blood clots on their surface, which can then detach and go on to block arteries downstream, potentially leading to heart attack. Although the biochemistry involved isn't simple, the take home message is that LDL contributes to the formation of plaques on the artery walls, while HDL helps prevent their formation. Accordingly, LDL is often called "bad" cholesterol while HDL is called "good" cholesterol. (These terms apply only to blood cholesterol; dietary cholesterol is neither good nor bad in this sense.)

For more information on cholesterol and heart disease, read the Related Q&As listed below.

Alice!

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