



Are You in Control of Your Cholesterol?

What is Cholesterol?

Cholesterol is a white, waxy substance produced by our liver and found in animal products. It's not inherently "bad". In fact, cholesterol is crucial to making vitamin D, hormones (like testosterone and estrogen), bile (for dissolving fat) and cell membranes. In fact, cholesterol is so important that your liver and intestines make about 80% of the cholesterol that you need to stay healthy.

LDL vs HDL

Since cholesterol is waxy, it can't travel alone in the bloodstream (imagine bacon fat globs floating in a pot of water). To get around this problem, the body packages it into tiny protein covered lipoproteins. Of these, the one that gets the most attention is low-density lipoprotein—better known as LDL. The role of LDL, often called "Lousy" or "bad" cholesterol is to transport cholesterol to various body cells and then deposit any excess cholesterol in your artery walls. Not ideal. When cholesterol forms a plaque on your artery wall, the muscle cells around it are triggered to multiply and form a cap over the area. But the soft plaque beneath the cap is dangerous. If your blood pressure spikes, it puts pressure on the plaque, which can break open. Inflammation, like the type caused by stress hormones like cortisol, can also weaken the blood vessel wall which might then tear. Your body will try to form a clot over the tear. Once a clot forms, the consequences will depend on various things, including how big the blood clot is. A big clot can completely block the blood vessel, or dislodge and float downstream to block a smaller blood vessel. If the blood vessel that gets blocked is in the heart, it causes a heart attack. If it happens in a blood vessel in the brain, it causes a stroke. But the blood clots that form are often only small – they fix the damage in the blood vessel wall and do not have any noticeable consequences. However, as the tear heals, scar tissue forms. Gradually this makes your blood vessel narrower. Over time, the blood vessel wall becomes thicker and stiffer, a process called atherosclerosis.

So that's why LDL has a bad reputation, the more cholesterol being deposited in your artery walls the unhappier your cardiac rehab team is.

But, there's good news. Where LDLs job is to transport cholesterol TO your cells and blood vessels, HDL, or high-density lipoproteins job is to transport cholesterol FROM the artery walls and your bloodstream back to the liver where it is used in digestion or disposed of. It is literally the Cholesterol Recycling System of the body and the higher your numbers of HDL (or "healthy" cholesterol), the better! And how do you raise your levels of HDL?? Exercise.

How Does Exercise Improve HDL Cholesterol?

Improved reverse transport system (the recycling system that removes cholesterol from your vessel walls). Exercise helps increase the production and efficiency of certain enzymes that enhance this process. HDL can increase by between 3% and 6%.

Lipoprotein particle size. Moderate exercise can increase the size of your LDL particles until they

no longer carry the same heart disease risks as small, dense LDL. In one study, a 12-week endurance exercise program reduced small, dense LDL by up to 17%.

Absorption. Studies have shown that eight to 12 weeks of endurance exercise may reduce the absorption of cholesterol from the small intestine into the bloodstream. Of note, the amount of cholesterol made by the liver (LDL) does not appear to be affected by exercise, so we're just talking about HDL here.

Of note, it's the duration (length of time) of exercise sessions, not the frequency (how many times a week) or intensity that was most related with increasing HDL levels. A modest improvement was seen with 20 minute exercise sessions, but HDL improvement increased 1.4 mg/dL with each 10 minute interval added. 40 minutes of moderate exercise at a time is now the recommendation for optimizing cholesterol levels.

Cholesterol Levels

If you have a history of, or are at a high risk of cardiac problems, your levels of LDL cholesterol should be less than 2mmol/L, and your HDL cholesterol levels should be higher than 1.2mmol/L.

Lifestyle Tips To Improve Cholesterol Levels

Don't smoke. Smoking increases the ability of LDL cholesterol to get into artery cells and cause damage. It can also decrease your HDL by up to 10%.

Lose any excess body fat. Losing weight has a measurable effect on HDL, and lower your LDL at the same time.

Control your blood sugar levels if you have diabetes or prediabetes. High blood sugars are linked to higher levels of LDL, lower HDL and more atherosclerosis (narrowing of arteries) because of how insulin resistance affects your cells.

Exercise regularly.

Eat Healthy. Follow the Mediterranean diet. Ask a Registered Dietitian to learn more or if you would like an appointment to review your own eating habits.

A Final Word, Controlling Your Cholesterol Is Not Just For Your Heart... Cholesterol and Dementia

Having low LDL ("lousy cholesterol") and high HDL ("healthy cholesterol) not only prevents future heart problems, but your brain as well. In the last ten years, the relationship between cholesterol and Alzheimer's has been extensively investigated, and it has been established that having high LDL levels in mid to late life has a significant impact on the development of Alzheimer's. The connection between high HDL ("healthy cholesterol") values and lower risk of dementia has been observed as well. Another great reason to keep those cholesterol numbers where you want them!

These Canadian Cholesterol values are recommended for patients diagnosed with heart disease:

A healthy target for your LDL (bad) cholesterol level is less than 2.0 mmol/L.

A healthy target for your HDL cholesterol level is greater than 1.0 mmol/L.

A healthy target for triglycerides is less than 1.7 mmol/L for people living with pre-diabetes and diabetes.

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