

High Cholesterol

"Cholesterol" is the word we use for the fatty protein particles in our blood - there are actually several kinds.

- "Good" cholesterol is called HDL (H is for High, and it's supposed to be high). It *protects* us from heart attacks and strokes.
- "Bad" cholesterol is called LDL (L is for Low, and it's supposed to be low). It is a major *cause* of heart attacks and strokes.
- Triglycerides are basically fats in the bloodstream. They are only *indirectly* related to heart attacks and strokes. (See below.)

How does it work?

- If you have too much "bad" cholesterol, it basically sticks to the arteries, clogging them up and causing inflammation and damage that results in blood clots. If an artery in the heart gets blocked, it's a heart attack. In the brain, it's a stroke. You have to treat the clotting, the inflammation, and the cholesterol.
- "Good" cholesterol scrubs the arteries and the bloodstream, removing the excess "bad" cholesterol.
- Triglycerides do *not* build up in the arteries. They are just fats, which the body can use as a quick energy source, or can make into blood sugar. If they are too high, they contribute to the Metabolic Syndrome (with pre-diabetes, excess abdominal fat, and high blood pressure), which can later lead to heart attacks and strokes.

Why do we have cholesterol?

Cholesterol is used to make hormones in our bodies, like estrogen, testosterone (sex hormones), and cortisol (which controls energy level, blood pressure, blood sugar, etc.). It is also used to make the strong, flexible, protective membrane surrounding each cell in the body. We need to have some cholesterol - but not too much!

Cholesterol goal levels

Total cholesterol goal = less than 200

Triglycerides goal = less than 150

LDL goal = less than 100

HDL goal = **more** than 50

Note: If triglycerides are too high, the LDL can't be measured - triglycerides mess up the test!

About Statins

Many people (more than 20 million estimated) use a statin to normalize cholesterol. Several are old, tried and true, generic, and cheap. Statins have saved a lot of lives by preventing heart attacks and strokes in people who would otherwise have had them. One possible side effect that we warn people about is a rare disease called rhabdomyolysis ('*RAB-doh-my-ALL-a-sis*'), which means "muscles falling apart." In rhabdomyolysis, the body starts destroying muscle tissue, and the breakdown products are very hard on the kidneys, causing cola-colored urine. We're not sure why it happens. It occurs about 0.02% of the time.

Because it's been in the news, many people taking statins are more aware of how their muscles feel - they are subconsciously worrying about it. Having aches and pains is NOT the same as this serious adverse reaction! Rhabdomyolysis is diagnosed by blood tests. It goes away if the person stops taking the drug. It is very unusual, only appearing in about two people out of every ten thousand. If you started a statin, we would monitor blood tests for cholesterol and liver function every few months during the first year, to make sure you were safe.

Natural Remedies

You can use some or all of these together:

- **Red yeast rice** is a natural form of statin, though more expensive (see <http://bit.ly/de2jxB>). It can **lower cholesterol** by 10-20%. It is possible that it could have the same side effects as other statins.
- **Soluble fiber** supplements: 10-15 grams soluble fiber daily, from psyllium, oat bran, or other sources, can **lower LDL** by 5-10%. Remember, more expensive is not necessarily better!
- **Plant stanol/ sterol** fortified foods (for example, orange juice, margarine) mainly seem to **lower LDL** (but do not lower triglycerides or increase HDL, by themselves). Brand names include Benecol and Take Control. See <http://bit.ly/7xpZb9> for more info.
- **Niacin** (vitamin B-3) **lowers LDL, and raises HDL** "good" cholesterol, by about 20%. Also said to help with depression and anxiety. Start with 25 mg, with meals, and slowly increase the dosage (add 25mg per day) up to 500-1000 mg with meals. Side effect: hot flash for about ten minutes after taking it. If it lasts longer, you're taking too much.
- **Fish oil** (1000 mg three times a day) **lowers triglycerides** by about 45%, and **increases HDL** ("good") by about 9%. Also helps with aches and pains, as it is a natural antiinflammatory.

Updated 5/2011 by Leigh Saint-Louis, MD