



HOW LOW CAN YOU GO? LDL (BAD) CHOLESTEROL LIMBO

By Narendra Singh, MD

By now we all recognize that there are two forms of cholesterol- HDL (good) and LDL (bad). Raising good cholesterol has been a challenge. Multiple drugs such as niacin, fibrates, hormone therapy and CETP inhibitors have all failed. Exercise and alcohol (in moderation) remain the best ways to raise your good cholesterol.

Lowering bad cholesterol however is a different story. Dietary cholesterol represents only 25% of the cholesterol in your body. The remainder is produced by the liver. Statins are medications that turn off the production of cholesterol by the liver. Almost every clinical trial done with a statin has shown a consistent reduction in LDL. This has translated to a reduction in heart attacks, strokes and death. All of the statins have now gone generic and therefore are relatively inexpensive. The most commonly used are lovastatin (Mevacor) pravastatin (Pravachol) simvastatin (Zocor) atorvastatin (Lipitor) and rosuvastatin (Crestor). These medications can lower your cholesterol by 25- 60%.

Studies have shown that lowering your LDL to < 100 mg/dl prevents the buildup of plaque, while lowering it to 70 mg/dl causes the plaque to regress (shrink and stabilize).

Drugs that lower LDL cholesterol by preventing the absorption of dietary cholesterol

have had only modest success. Powdered substances such as cholestyramine and cholestevlam are difficult to take and have limited benefit. Ezetimibe (Zetia) is a tablet and easier to administer. Taken on its own, it lowers LDL cholesterol only 15-20% and has no clinical benefit. However, in a large study called IMPROVE-IT the combination of ezetimibe and simvastatin reduced heart attacks and strokes by 10% over 7 years. The combination lowered LDL cholesterol to 53 mg/dl.

A new class of drugs called PCSK9 inhibitors have recently come to market. These are monoclonal antibodies that improve the liver's ability to get rid of excess cholesterol by increasing LDL receptors. There are two on the market evolucumab (Repatha) and alirocumab (Praluent). They lower LDL cholesterol an additional 50-60% on top of statins. They achieve this without the muscle aches and liver test abnormalities sometimes seen with statins. In March 2017, in the FOURIER study, evolucumab was able to reduce heart attacks and strokes by 20% over 2 years. It did this by lowering LDL cholesterol to 30 mg/dl. In 2018, alirocumab is expected to release similar findings. Use of these antibodies given as a twice monthly injection is expensive and currently restricted to high risk patients.

LDL cholesterol less than 30mg/dl were previously unheard of; that is lower than the LDL

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cholesterol we are born with! At least in the short term these low numbers have not shown any adverse effects specifically regarding memory deficits and motor function. Not everyone needs a LDL cholesterol this low. How low one should go depends on a number of findings including your family history, previous heart attack or strokes, other cardiac risk factors and medication tolerability and long term compliance. Also, getting a coronary calcium score can identify if you already have early plaque buildup in your heart and determine if you even need meds.

Remember the LDL rule—lower is better for longer. It's also important to know that while effectively lowering your LDL cholesterol is lifesaving, other risk factors should not be ignored. Stopping smoking, lowering blood pressure, avoiding diabetes, reducing psychosocial stressors, exercising regularly and increasing fresh fruit and vegetable consumption all contribute to your heart health! ■

NARENDRA SINGH, MD, FRCP(C), FACC, FAHA
Clinical Assistant Professor –
Medical College of Georgia at
Augusta University
Director, Clinical Research,
Atlanta Heart Specialists LLC, Atlanta, GA

DrSingh@ahsmed.com
www.heartdrsingh.com