

Ten Things Your Physician Probably Doesn't Know About Cholesterol #2

Last week I started a series about the ten things that your doctor probably doesn't understand about cholesterol. The first point I talked about is the mystique surrounding the total cholesterol number of 200. The article is posted on both WebMD and the Examiner.com. I think point number 2 is probably the most misunderstood fact surrounding the treatment of high cholesterol. I hear every single day from family, friends, and other doctors that they are in great shape because their HDL cholesterol (the good cholesterol) is high and that is the most important number to look at in a lipid panel. Well guess what everyone, unfortunately many of you are quite wrong, and I will explain why.

We know that low HDL cholesterol (good cholesterol) is a major risk factor for cardiovascular morbidity and mortality. It is included in the most well known risk factor scoring system for cardiovascular disease called the Framingham scoring. Surprisingly, there is little clinical evidence that therapies directed at raising HDL cholesterol reduce risk. I will say that again, **there is little evidence that raising one's good cholesterol number protects them from having a heart attack, a stroke, or dying.** For this reason, the National Cholesterol Education Panel (NCEP) does not specify a number that would be the "optimal" HDL level of therapy. NCEP also states that raising one's HDL is not a primary or secondary goal of therapy in order to reduce cardiovascular events or death. NCEP ATP-III statements about low HDL cholesterol were published in the journal titled Circulation in 2002. Here are some random quotes from the article.

- a) A categorical low HDL-C should be defined as a level of <40 mg/dL, in both men and women
- b) Whether raising HDL per se will reduce risk for CHD has not been resolved. (Still true in 2010)
- c) Some persons with severe deficiency of HDL do not manifest premature coronary heart disease; this suggests that HDL is not uniquely involved in atherogenesis (clogging of the arteries), as is LDL cholesterol (the bad cholesterol).
- d) A specific HDL cholesterol goal level to reach with HDL raising therapy is not identified.

In summary, when we measure HDL cholesterol, we are just measuring a number that tells us nothing about how well it functions. There is no way yet to measure how well one's HDL functions, and thus, if one's level is within normal limits, does the person with a higher HDL number have fewer events than a person with lower HDL number? This has never shown to be true in any randomized prospective human studies. This is also defined in scientific terms as no Level 1 evidence. There is only data in retrospective and epidemiological studies that show that the higher the HDL cholesterol number the lower the cardiovascular event rate. I will put another twist in the HDL discussion. There is a level at which the HDL cholesterol in some people may be too high and dysfunctional, and actually be harmful to the arteries. There is another group of people whose HDL is called

ApoA1 Milano, who are all originally from Limone, Italy, and have very low levels of HDL cholesterol. Approximately 3.5% of these people have HDL levels below 10mg/dl and have virtually no evidence of cardiovascular disease whatsoever. This is a kind of “super HDL”.

The major theme of this review article should be that in most people, low HDL cholesterol is bad and is a major risk factor for cardiovascular disease, but a high level may not be protective. The name of the game is to get the LDL cholesterol (the bad cholesterol) down. If anybody is really curious about this point, they can goggle the Heart Estrogen Replacement Study. In this study, 20% of the women who had heart attacks had HDL cholesterol levels in the 60-80 mg/dl range, which is well above normal.