



## Is there a bigger picture to the prevention of heart disease than simply lowering cholesterol?

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A recent study done by Mayo Clinic (Mayo Clin Proc. 2008;83(7):758-764, compared the lipid lowering effects of an alternative regimine (lifestyle changes, red yeast rice, and fish oil) with a standard dose of a 3-hydroxy-3-methylglutaryl Coenzyme A reductase inhibitor (statin).

Lifestyle changes combined with ingestion of red yeast rice and fish oil reduced LDL-C in proportions similar to standard therapy with simvastatin. To quote from the article: "Overwhelming scientific evidence shows that statins are beneficial to patients for primary prevention of coronary artery disease.<sup>(33)</sup> Although the safety of these medications is established,<sup>(34)</sup> adherence can be troublesome.

As many as 40% of patients who receive a prescription for a statin are thought to take it for less than 1 year.<sup>(35,36)</sup> Possible reasons include the cost of these medications, adverse effects, poor explanations of their benefits by physicians, and patients' reluctance to take prescription or long-term medications.<sup>(37)</sup> It is difficult to estimate the number of patients who seek alternative therapies to statins, and most do not discuss this choice with their physicians."<sup>(38,39)</sup>

Statin drugs work by inhibiting HMG-CoA-reductase in the liver which is required to synthesize cholesterol. In fact "statin drugs inhibit not just the production of cholesterol,

but a whole family of intermediary substances, many, if not all of which have important biochemical functions in their own right" say Enig and Fallon.<sup>(3)</sup>

Firstly, statins deplete the body of coenzymeq10 (CO-Q10), which is beneficial to heart and muscle function. This depletion can lead to fatigue, muscle weakness, soreness, and eventually heart failure. This is why I personally always suggest CO-Q10 supplementation when prescribing a statin (the best form is ubiquinol CO-Q10). Muscle pain and weakness, and rhabdomyolysis occurs when statins activate the atropine-1 gene, which plays a key role in muscle atrophy.<sup>(13)</sup>

This muscle pain and weakness may be an indication of tissue breakdown which can also cause kidney damage.

According to Dr. Mercola, a practitioner from Chiago in the USA, claims that statins have been linked to:<sup>(41)</sup>

- a) an increased risk of polyneuropathy (nerve damage that causes pain in the hands and feet and trouble walking)
- b) dizziness
- c) cognitive impairment, including memory loss<sup>(14)</sup>
- d) is a potential risk of cancer<sup>(15)</sup>
- e) decreased function of the immune system<sup>(16)</sup>
- f) depression<sup>(4)</sup>
- g) violent behaviour<sup>(6)</sup>
- h) liver problems, including a potential increase in liver enzymes (regular liver function monitoring is suggested)

i) neurodegenerative disease like amyotrophic lateral sclerosis<sup>(17)</sup>

j) impotence due to lowering of sex hormones

### Lipoprotein(a)

This is a substance that is made of an LDL "bad cholesterol" part plus a protein (apoprotein A). Elevated Lp(a) levels is a very strong risk factor for heart disease. Statins do not lower Lp(a), in fact they may increase it.

Research has shown that people with high lipoprotein(A) have a 70% higher risk of developing heart disease over 10 years.<sup>(40)</sup>

Dr Mercola points out on his website, also the importance of checking the numbers needed to treat. What are the numbers needed to treat (NNT)? (how many people have to take the drug to avoid one incident, such as a heart attack). For example a NNT of 50, for heart attacks, equates to 50 people needing the drug to prevent 1 heart attack.

Business Week did an excellent story and found the REAL numbers right on a pharmaceutical ad.<sup>(19)</sup> At first glance the ad boasts that this particular statin reduces heart attacks by 36%. There is an asterix though, and in smaller print the following appears: "That means in a large clinical study, 3% of patients taking a sugar pill or placebo had a heart attack compared to 2% using this particular statin"

What this means is that for every 100 people who took the drug for 3.3



# ADVERTORIAL

years, 3 people on placebos, and 2 on the statin, had heart attacks. This equates to 1 less person per hundred having a heart attack on this particular statin.

The answer seems to be not only to turn to a drug to lower your cholesterol and LDL.

It is inflammation and oxidative stress that causes LDL (“bad cholesterol”) to cause blood vessel disease (atherosclerosis).

Cholesterol has been described, the last few decades, as the smoking gun of heart disease. Cholesterol per se is not the cause of heart disease.

You actually need cholesterol!

Cholesterol is in every cell of the body, where it helps produce cell membranes, steroid hormones, including sex hormones, vitamin D and bile acids that are needed to digest fat. Cholesterol also helps in the formation of new memories and is vital for normal neurological functioning.

The liver produces about 75% of your body’s cholesterol.<sup>(1)</sup>

The American Heart Association recommends that your total cholesterol and LDL be kept below a certain level (and these guidelines are constantly being aggressively modified to lower your cholesterol even more). However total cholesterol is not a good predictor of heart disease, unless extremely high.

What about other ratios that are perhaps better predictors of heart disease :

- a) total cholesterol/hdl ratio <4 is optimal

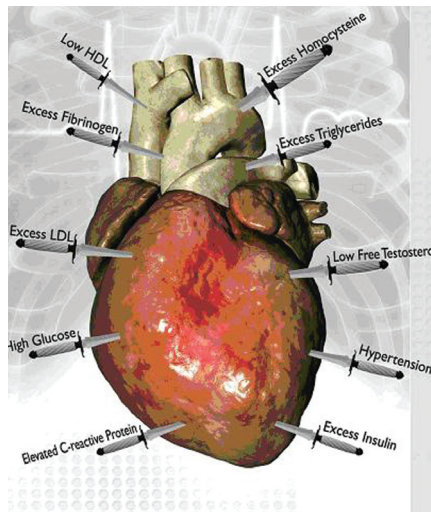
Each drop in 1 equates to a 60% change in risk, ie a value of 6 = 120% increased risk, a value of 3 a 60% reduction in risk

- b) Triglyceride/hdl ratio. This should be below 2

HDL (good cholesterol) is a very potent heart disease risk factor. Why do we concentrate so much on total cholesterol and LDL levels, when high levels of these aren’t always associated with heart disease (if your inflammation and oxidative stress are low)? Shouldn’t we be looking at ways to lower inflammation and oxidative stress and look at ALL

the cardiovascular risk factors? One might say there is good LDL and bad LDL (inflamed oxidised LDL)

Remember cholesterol is not the only player in the risk of heart disease. There are many risk factors:



## Cholesterol and inflammation

Inflammation is sometimes a good thing, as it is the body’s natural response to invaders it perceives as threats, in other words it helps the body heal. If your arteries are damaged however, a similar process occurs, except the result is plaque formation. This plaque, along with thickening of your blood and constriction of the blood vessels increases your risk for high blood pressure and heart attacks. Cholesterol comes into the picture, because it is necessary to replace the damaged cells. No cell can form without cholesterol. So the liver will generate more cholesterol when necessary to produce healthy cells.

The test normally performed to assess chronic inflammation is crp (c-reactive protein, preferably highly sensitive crp <1, low risk, 1-2 moderate risk, >3 high risk for heart disease).

In the eyes of conventional medicine, when there is a raised cholesterol it is a sign of increased risk - is there a counter argument?

Sally Fallon, the president of the Weston A. Price Foundation, and Mary Enig, PhD, an expert in lipid biochemistry, have gone so far as to

call high cholesterol “an invented disease, a problem that emerged when health professionals learned how to measure cholesterol levels in the blood.”<sup>(3)</sup>

## What is the explanation to their statement?

If you have increased levels of cholesterol, it is at least in part because of the increased inflammation in the body - this is to help the body heal and repair.

Is there an explanation as to why some people with high LDL and total cholesterol values don’t necessarily have plaque formation and people with normal LDL and /or cholesterol can have extensive plaque formation? It is not as simple as just lowering LDL cholesterol, there are many other risk factors to look at, and the actual total cholesterol and LDL value aren’t always good predictors. Remember it is inflamed, oxidised LDL cholesterol that forms plaques. Dealing with the inflammation and oxidative stress might be another option to consider.

As Dr Rosedale points out<sup>(2)</sup> “if excessive damage is occurring, such that is necessary to distribute extra cholesterol through the bloodstream, it would not seem wise to merely lower cholesterol and forget about why it is there in the first place. It would seem much smarter to reduce the extra need for the cholesterol - the excessive damage that is occurring, the reason for the chronic inflammation.”

In 2006 a review in the Annals of Internal Medicine<sup>(8)</sup> found that there is insufficient evidence to support the target numbers outlined by the panel. The authors of the review were unable to find research providing evidence that achieving a specific LDL target level was important and found that the studies attempting to do so suffered from major flaws.

According to data from Medco Health Solutions Inc., more than half of insured Americans are taking drugs for chronic health conditions. And cholesterol lowering medications are the second most common variety among this group.



Disturbingly, as written in Business Week early in 2008, "Some researchers have even suggested - half jokingly - that the medications should be put in the water supply."<sup>(12)</sup>

Chronic inflammation is caused by, for example :

- oxidised cholesterol (cholesterol that has gone rancid, such as that from overcooked, scrambled eggs)
- eating lots of sugar and grains
- eating foods cooked at high temperatures
- eating trans fats
- a sedentary lifestyle
- smoking
- emotional stress
- alcohol

### To lower cholesterol naturally:

- make sure that you are getting plenty of high-quality, animal based omega 3 fats like krill oil or heavy metal free omega 3 fishoil
- reduce grains and sugars
- eat a good proportion of raw foods
- eat healthily, preferably a large amount of raw vegetables, fats including: olive oil, coconut and coconut oil, organic raw dairy products, avocados, raw nuts, seeds, eggs (lightly cooked with yolks intact or raw), organic grass fed meats.
- get the right amount of exercise
- avoid smoking and drinking excessively
- address your emotional challenges

### Oxidation theory

Oxidation refers to the process of some material combining with oxygen, either in the air or in the body. Fats that have become oxidised are referred to as being rancid. The process begins with damage to the inner lining of the blood vessels. Cells in the arterial wall begin to pick up oxidised lipoprotein from the blood (like oxidised LDL). Other materials such as cholesterol esters, calcium, fibrinogen, and other fatty materials, become incorporated in the build up of atheromas. This accumulation of

oxidised fats can occur only if tissue levels of antioxidants (Vit A, E, C, Superoxide dismutase, etc) are depleted. (Prevent arterial "rust" references 25-32).

So where to from here, with the conflicting information highlighted above regarding statins? In conclusion, my suggestion would be to prescribe statins, where indicated, but to supplement with CO-Q10 and monitor liver functions, muscle enzymes, and potential side effects. Suggested also, is to look at the bigger picture of risk factors, and remember that inflammation and oxidative stress are key players in the development of atherosclerosis, endothelial dysfunction, and coronary artery disease.

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