



Article 2*

The Non-Medicated Life: Implementation Strategies

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This is the second in a series on optimal diet and lifestyle to help prevent disease and responsibly avoid an over reliance on medications. This complementary approach is based in the medical evidence of the most successful research trials and the best science available. Any planned change in diet, exercise or treatment should be discussed with and approved by your personal physician before implementation. Consultation with a registered dietitian is strongly advised.

Medications are an important part of the western medical tradition and have been proven to reduce the risk of strokes, heart attacks and cardiovascular death. As the March Health column described, optimal diet and lifestyle may accomplish for most individuals many, if not most, of the benefits of medication. When not achieving most of the benefits of medications, optimal diet and lifestyle may still reduce the number of medications as well as the dose of medication, thus decreasing cost as well as side effects. Individuals may determine the proper mix of medicine, diet and lifestyle by first knowing the national guideline targets for cardiovascular event reduction and then empirically attempting to reach those targets with the mix that makes most sense to them. For cardiovascular event reduction, there may, indeed, be more than one way to skin the proverbial cat.

The recent reformulation of cholesterol guidelines for physicians by the National Cholesterol Education Program (NCEP), identifies targets for the “bad” cholesterol (LDL), the “good” cholesterol (HDL), and the triglycerides (TG), the storage form of fat. LDL targets are determined by an individual’s overall or global level of cardiovascular risk. Risk level, in turn, is determined by the number of traditional risk factors an individual may have. Risk factors include age greater than 45 for men or 55 for woman, family history of premature

heart disease in a father less than 55 years and a mother less than 65 years, the presence of hypertension greater than 140/90 millimeters of mercury (mmHg), or low HDL less than 40 milligram per deciliter (mg/dl). In general, those having 0-1 risk factors are at low risk and their LDL target is less than 160 mg/dl. Those having 2 or more risk factors are at medium risk and the LDL target is less than 130 mg/dl. Those with previously diagnosed heart disease (prior heart attack, bypass surgery, angioplasty or stent), stroke or cholesterol deposits in leg arteries or the body’s main blood vessel called the aorta are at highest risk and have an LDL target of less than 100 mg/dl. Whatever the LDL goal, targets for HDL are greater than 40mg/dl and for TG are less than 150 mg/dl.

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LDL targets may be achieved with statin drugs that may decrease LDL by as much as 30-50 percent at maximum drug dose. Significantly, a reduction of saturated fat to less than 7 percent of total calories may allow one’s physician to reduce the statin dose by 50 percent and yet, still achieve the same LDL target. For those with only moderate elevations of LDL, saturated fat restriction alone may obviate the need for drug.

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Saturated fat is found in all animal products and simple, non-draconian changes can produce significant reductions. Avoiding the skin of the chicken may reduce the saturated fat from chicken consumption by 50 percent. Using lean cuts of red meat such as filet mignon or eye of the round may reduce saturated fat consumption gram for gram almost to the level of chicken breast. While relatively heart healthy, consuming chicken breast or lean red meat can still be counterproductive if the amount is excessive. Individuals should usually not consume a portion size of chicken breast larger than the palm of their hand and red meat should be limited to a 3-ounce portion.

LDL may also be decreased by the consumption of certain functional foods. Functional foods provide health benefits beyond basic nutrition. The FDA has approved oat bran (beta glucan) and psyllium seed husk (Metamucil) as viscous soluble fibers that can decrease LDL. One cup of oatmeal containing 3-4 grams of oat bran or 7 grams per day of psyllium may reduce LDL by 4-5 percent. Plant sterols and stanols contained in margarines by the name of Take Control and Benechol may reduce LDL 7-14 percent when 2 tablespoons per day are consumed. Use of such foods may obviate the need for drug or decrease the dose of drug needed to achieve LDL target.

As shown from the work of Dr. Dean Ornish and others, those interested in a low fat vegetarian (vegan) diet with a saturated fat restriction to less than 3 percent of calories may reduce the LDL by 30 percent and obviate the need for drug. Dr. Ornish's clinical research has shown cardiovascular event reductions and overall cholesterol plaque shrinkage with a diet and lifestyle approach. Consumption of a Mediterranean diet may also significantly reduce saturated fat because olive oil, the main source of fat in such a diet, is inherently low in saturated fat. Additionally, a Mediterranean diet usually has restricted meat consumption by decreasing the frequency of consumption to about once a week. Since meat is relatively high in saturated fat, such a diet may decrease saturated fat in this way as well and thus lower LDL. Interestingly, the Lyon Diet Heart Study, comparing a high

omega-3 Mediterranean diet with a prudent western diet, showed no significant reduction in LDL cholesterol, but still showed a 70 percent reduction in cardiovascular death. It would seem that diet may decrease the risk of cardiovascular death significantly both by a LDL cholesterol lowering mechanism as well as a non-cholesterol lowering mechanism.

How can one be sure beforehand that a given restriction in saturated fat will decrease LDL to one's guideline target? Unfortunately, one can't. As with any therapeutic intervention, while an average response for a population is known, the response of any given individual is not known until the intervention is tried in that individual. Usually a dietary change will have to be implemented for a period of 2-3 months before a cholesterol test will show maximal response. If one is on a cholesterol lowering medicine and wishes to discontinue the medicine under the supervision of a physician, it is prudent to slowly decrease the medicine and check whether the lifestyle and dietary change can still control the cholesterol to guideline target. Every halving of a statin dose will raise the LDL by about 6 percent. One would therefore have to show that the LDL after dietary change was below guideline target and then one could safely halve the statin and obtain a repeat LDL after approximately four weeks. If the LDL was still 6 percent or more below target the statin could again safely be halved.

There is one caution in trying, even under physician supervision, to discontinue statin drugs, if one has a history of heart disease, stroke or mini strokes or peripheral vascular disease (plaque in the arteries of the legs which decreases pulses in the feet). As was described in the March Health column, heart attacks and strokes may be caused by inflammation in arteries. Statin drugs reduce inflammation. Therefore, even if LDL is controlled by diet, statin drugs may have benefit. This is especially true if there is an elevation of the inflammatory marker called high sensitivity C reactive protein (hs-CRP). Folks attempting under a physician's supervision to discontinue a statin drug should

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do so only if the hs-CRP remains low (less than 0.6 milligrams per liter (mg/L)) even after statin reduction and discontinuation. Thus, while dietary composition change may lower LDL, those interested in living the non-medicated life may need to also consider other lifestyle changes to naturally lower hs-CRP. As described in the March Health column, if obese, a weight loss of approximately 20 pounds may decrease hs-CRP by 30 percent.

As noted above, heart healthy targets for HDL and TG as established by the national guidelines are greater than 40 mg/dl and less than 150 mg/dl respectively. Living the non-medicated life means making changes in lifestyle and diet to address these targets as well. As described in the March Health column, HDL is the good or protective cholesterol. An increase of 1mg/dl in HDL will decrease risk by 3 percent. HDL functions like a vacuum cleaner suctioning up LDL from cholesterol plaques and returning it to the liver. What are the non-medicated approaches to raise HDL? For those who smoke, cessation may be expected to raise HDL by 5 mg/dl. For those without a personal or family history of alcoholism or other medical contraindication and with the approval of one's physician, 4 fluid ounces of wine per day may increase HDL by 4 mg/dl. 20 pounds of weight loss will increase HDL by 4-6 mg/dl, especially if monounsaturated fats are included in the diet. With the approval of one's physician, aerobic exercise such as jogging or running may increase HDL 2 mg/dl for every 10 kilometers covered per week.

Like HDL, TG may also be controlled by diet and lifestyle. For most individuals, carbohydrates, which include sugars and starches, will increase TG. Therefore, consumption of products, which are low in fat or fat free, may exacerbate TG increases because of the sugars and starches such products contain. Consuming fish, especially high omega-3 containing fish will lower TG. Such fish include sardines, mackerel, anchovies (for those without high blood pressure or heart failure), salmon, and herring. Tuna is also excellent but because of mercury contamination should be limited to no more than once a week.

Fish oil capsules are a reasonable alternative for those who do not like eating fish or for those with very high TG. Fish oil should be used under physician supervision and at doses of 6-9000 mg per day may reduce TG by 40 percent. This is as significant a reduction as one would get with the most powerful TG lowering medication.

Weight loss also dramatically reduces TG. In an obese or markedly overweight individual with elevated TG, 20 pounds of weight loss may decrease TG over 60 percent. Moderate aerobic daily exercise such as walking may also substantially reduce TG even in the absence of weight loss.

Medicines are part of the western medical tradition and have been shown to reduce the risk of heart attacks, strokes, and cardiovascular death. Optimal diet and lifestyle can achieve for most individuals many, if not most, of the benefits of medications. For those interested in living the non-medicated life or the minimally medicated life, determining one's cholesterol targets for LDL, HDL and TG is an essential first step. With the help of one's own physician, a registered dietitian and the strategies outlined above, the non-medicated life and the minimally medicated life can become a realistic approach to optimal cardiovascular health.

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