



LOWERING YOUR CHOLESTEROL WITHOUT MEDICATIONS

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New guidelines (November 2013) from the American Heart Association and the American College of Cardiology stress the importance of lowering the risk of atherosclerotic vascular disease with “statins” such as atorvastatin (Lipitor) and rosuvastatin (Crestor). These medications are recommended for persons with cardiovascular disease (such as stroke, heart attack) or for those who are at “high risk” of developing vascular disease. (This is defined as a combined risk of heart attack plus stroke greater than 7.5% in 10 years, as calculated by: http://static.heart.org/ahamah/risk/Omnibus_Risk_Estimator.xls)

Statins are safe and effective medications, yet many people choose to lower their cholesterol levels without medications because they want to avoid possible side effects, or because their cholesterol levels or cardiac risk are only modestly elevated, or because they feel that it is a more natural way to take control of their health. Although advertisements for "cures" are all over the media, the approaches we will discuss have at least some scientific basis. We use several of them in our practice, sometimes instead of medication, and sometimes to enhance the effect of medication. In any case, **nothing is superior to a healthy diet and achieving a good level of fitness in preventing cardiovascular disease.**

Fish Oil: Fish oils, found particularly in fatty fish such as salmon, have high concentrations of *omega-3 fatty acids*. Fatty fish is a core component of the diet of Eskimos who have extremely low cholesterols (often less than 60mg/dl) and have almost no heart disease. High quality fish oil concentrates in doses of 6gm per day have been shown to decrease triglycerides by 50%. For every drop in triglyceride of 5 points, total cholesterol drops by 1 point.

Several previous research studies have demonstrated that the use of fish oil not only improves total cholesterol by 20-40 mg/dl (this will depend on your triglyceride level), but also improves survival. In one study of 11,324 patients who had experienced a heart attack, the use of fish oil improved survival by 30%. Another study demonstrated a beneficial effect of fish oil in patients suffering from congestive heart failure. Older persons whose levels of fish oil are in the upper quartile have increased brain volume and size of the hippocampus- the area of the brain that controls memory. Unfortunately, the bulk of recently published evidence shows that the benefits of supplemental fish oil are of doubtful significance: 20 trials between 1989-2012 including 64,000 patients failed to show benefit from fish oil supplements in terms of heart attack or stroke. This is a 1.1 billion dollar industry, so we are certainly bombarded with advertisements.

- Therefore, we recommend at least 2 servings of fish per week for all our patients (and ourselves) rather than supplements. Fish with high omega-3 content include salmon, herring, mackerel, sardines and swordfish.
- There are some “fish caveats”: predator fish concentrate mercury (especially swordfish). Caution should be exercised with fish that are farm-raised or from the Pacific Ocean (due to concerns about radiation exposure). Halibut, lake trout and albacore tuna seem to have good levels of omega-3 and low level of mercury
- Other sources of omega-3 fatty acids such as flaxseed oil, canola oil, soybean oil and nuts are not as effective as fish oil. This is because the body needs to convert these oils to the active form, a process that is only 10-15% efficient.
- For patients with particularly high triglycerides, especially those who are diabetic or pre-diabetic, we often recommend fish oil tablets up to 4 grams per day.

Side effects of high quality fish oil tablets are minimal; the fishy aftertaste and belching can be minimized by keeping the tablets in the freezer. Nordic naturals offers reliable fish oil products.

Fiber: An important goal in any healthy diet is to limit the intake of saturated and trans-unsaturated fats. These unhealthy fats are solid at room temperature and are found in most processed foods and meats. Previous diets recommended by the AHA recommended substituting carbohydrate (starches such as pasta, rice, potatoes) for energy rich fats; such diets unfortunately increase the insulin response

(carbohydrates are simply larger molecules of covalently bonded sugars) and may have contributed to the epidemic of Type 2 diabetes and fatty liver .

A better way to approach avoid the ill effects of increasing carbohydrates is to incorporate more fiber into your diet or increase the amount of good fats such as olive oil. Unprocessed whole foods are digested in a slower and more controlled fashion in the GI tract, causing less insulin release. In fact, soluble fibers such as psyllium, pectin, and oat products will reduce LDL by an average of 30mg/ per 2 tablespoons per day. (This is why Cheerios advertises itself as a cholesterol-lowering agent). Therapy with plant sterols and psyllium seeds has been shown to decrease LDL-cholesterol by 10% on average, and will also enhance the cholesterol-lowering effects of statin-therapy.

- We recommend incorporating more dietary fiber into your daily meal planning. You can do this by eating a variety of different foods such as whole grains, brown rice, lentils, bread with 3-5 grams of fiber per slice, beans, quinoa, barley or oatmeal.
- Do not drink juices; they contain a bolus of carbohydrates that will increase your blood sugar and insulin level. Instead, eat whole fruits which contain both fiber and carbohydrate.
- Use extra-virgin (not light) olive oil in salads and cooking; about 2 TBS per day is recommended
- Soluble fiber such as found in oatmeal, kidney beans, apples, pears and prunes are also rich sources of fiber than may modestly lower LDL-cholesterol

Mediterranean Diet: Ever wonder why the southern Europeans have a markedly lower incidence of heart disease despite smoking more and exercising a lot less than many Americans? Nutrition researchers believe it is probably due to a diet rich in fresh fruits (see above), vegetables, whole grains, beans, and seeds. Major sources of fat in their diet are mono-unsaturated olive oil and nuts; major sources of protein include nuts, moderate amounts of fish, poultry and small portions of lean red meat. Studies in American men and women who have followed this diet have shown marked improvement not only in cholesterol levels, but also in blood pressure and other markers for coronary disease.

- Although there are many potential successful diets, due to its success in improving blood glucose, cholesterol and inflammatory markers, the Mediterranean Diet is at the core of a healthy lifestyle
- We recommend using only extra virgin olive oil in salads, and olive or canola oil in cooking
- Increase your intake of fresh fruits, salads and vegetables to several portions daily
- Minimize intake of red meat and **NO** processed foods.
- Avoid fried food; heated oils are toxic

Nuts: Tree nuts, in particular almonds and walnuts, have a beneficial on LDL cholesterol, and are a part of the Mediterranean Diet. Clinical studies have shown a decrease in LDL from 3-19%. These foods are rich in saturated fats and phytosterols, while being low in saturated fats. Since they are high in calories, no more than a handful, or 1.5 ounces per day, would represent a healthy snack that will benefit your cholesterol.

Soy: Soy is an excellent source of protein that contains isoflavones, micronutrients with properties similar to estrogen. Recent studies have, unfortunately, failed to prove a meaningful clinical benefit (or risk) to these nutrients. Nevertheless, substituting soy for animal protein can lead to 3% decrease in your LDL-cholesterol. Using soy milk instead of cow's milk can also relieve the diarrhea and gas that is frequent in many lactose intolerant adults.

- We recommend that you consider using soy as a protein source in your diet as a substitute for red meat or cow's milk.
- The use of soy should not become excessive

Red Yeast Rice: Red yeast rice is a fermented rice product used in Chinese cuisine and in traditional Chinese medicine to promote circulation. This rice contains the active ingredient found in the medications known as "statins"- but usually with fewer side effects. The effectiveness of Red Yeast rice depends on the amount of "statin" in the rice, and it can lower your cholesterol as much as a half-tablet of a starting dose of a prescribed statin.

- If you need to avoid statins due to side effects, we recommend using Red Yeast rice as an addition to a healthy diet and exercise program
- As these products are foods, their quality and reliability are not monitored by the FDA. Obtain Red Yeast rice from a “holistic” pharmacy such as Pharmaca or Marin Medical in Marin County.
- Two reliable products are: *Cholesterol Complete*, a combination of red yeast rice, niacin and guggulipids. Many patients achieve a 10-15% reduction in their total cholesterol level with the use of this supplement; and *Omega LDL*, a combination of red yeast rice, Coenzyme Q10 (which may minimize muscle aches and help to lower blood pressure) and fish oil. One to three tablets daily can achieve a 50 point drop in your cholesterol.

Plant Sterols and Margarine: Plant sterols have a chemical structure similar to cholesterol and block the absorption of cholesterol in the intestine. Recently, synthesized margarines have used this chemical similarity to market products that are “heart-healthy” and cholesterol-lowering; there are also yogurt and juices enhanced with plant sterols. Short term studies have shown decreases averaging 10% in LDL-cholesterol with no adverse effects. No long term studies on patient outcomes, such as heart attacks or survival, have been published.

- We recommend caution in the use of these products until longer term studies are available. For example, use of such margarines might affect the level of anti-oxidants and other micronutrients. The Nutrition Committee of the American Heart Association concluded that these products may be a promising addition to dietary treatment, but further studies are required.
- In general, we do not recommend juices or juicing as this provides a surge in carbohydrates and breaks down the fiber in the fruit.

Other Products: We have found that the substances below lack sufficient evidence to be recommended as agents for the treatment of elevated cholesterol. Green tea and polyphenols have other beneficial effects; judicious use of calcium is helpful to help prevent osteoporosis.

- Garlic
- Guggulipid
- Policosanol
- Polyphenols

- Calcium
- Green Tea

And now a few words about exercise: Make exercise a part of your daily routine. Fitness is an excellent predictor of longevity, and has other benefits including improving mood! Exercise lowers triglycerides and is the best way to modestly improve HDL levels (the good cholesterol). Build up to at least 30 minutes of aerobic exercise (using large muscle groups such as in swimming, brisk walking, cycling, elliptical) on most days; the optimum level is 200 minutes per week. My old physiology professor used to say the intensity should be high enough that you cannot sing, but low enough that you can still carry on a conversation. I often recommend “dosing” exercise into units of 15-20 minutes twice per day to minimize effects on joints.

For more information see:

- Healthy Living. [Managing Cholesterol with Exercise](#). 2013
- American Heart Association. [Get Moving: Tips to get active](#). 2013

When should you consider taking medication? The answer to this question is a personal decision based on the assessment of your risk for vascular disease (coronary heart disease, stroke, and peripheral vascular disease) balanced against the cost and relatively small risk of taking the medications. In general, in almost all studies, the “statins” lower the risk of vascular disease events by about 30%. Therefore, the higher your risk, the more you will benefit from taking the medication. If your risk of vascular disease is 3% in ten years, you will have to take these medications for 10 years to decrease that risk to 2%; if your risk is 15%, ten years of treatment will lower your risk to 10%- a more meaningful proposition.

To calculate your 10 year risk of atherosclerotic disease the use new Omnibus Calculator: http://static.heart.org/ahamah/risk/Omnibus_Risk_Estimator.xls

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