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The Non-Medicated Life: Vitamins and Supplements for Heart Health (Part Two)

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This is the sixth 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.

Medicines are a mainstay of American life and the healthcare system not only because they are perceived to work by the individual taking them, but also because they can be shown to work by the objective assessment of scientific study. The most helpful medications have been proven in clinical research trials to affect some of the most important clinical outcomes. Clinical trials, for example, have shown that some of the medicines of western science may reduce heart attacks, strokes, and cardiovascular death. As has been shown in the first five installments of *The Non-Medicated Life*, informed diet and lifestyle may accomplish, naturally, for the majority of individuals, many, if not most, of the benefits of medications. As part of this dietary and lifestyle approach, certain dietary supplements have been shown by rigorous scientific scrutiny to help protect the heart, while for others there is some preliminary data; finally, for some there is no reliable data to recommend use.

Of the dietary supplements for heart health, omega-3 fish oil has the most compelling data to support its use. As is frequently the case in medicine, epidemiological or population-based data helped direct researchers to investigate fish oil. It was observed that Inuit peoples (Eskimos) had both very low rates of coronary artery disease and a higher than normal consumption of fat. As compared to western diets, however, the fat was high in omega-3 fatty acids EPA (ecosapentaenoic acid) and DHA

(docosahexaenoic acid). Clinical trials were designed to investigate the effect of fish oil on individuals at the highest risk for heart attack - those who had already suffered their first attack. The Diet and Reinfarction Trial (DART) and the Gissi Prevention Study showed marked benefit. DART showed a 29 percent lower death rate from fatal heart attacks in those consuming 500 milligrams per day of fish oil consumed as fish; Gissi showed a 45 percent reduction in sudden cardiac death in those consuming 850 milligrams per day of fish oil from capsules.

On the basis of these and other clinical trials, the American Heart Association recommends the consumption of 2 fatty fish meals a week for everyone and if one has heart disease the consumption of 1 gram per day of omega-3 fish oil either from fish or supplements. The fish highest in omega-3 (salmon, mackerel, anchovies, sardines, herring or the acronym S.M.A.S.H.) will generally have between 1.0 and 1.8 grams of omega-3 fish oil in a 4-ounce portion. Other types of fish may have as low as 0.1 grams, so the type of fish chosen is important to the decision to use supplements.

An additional consideration is how the fish was raised. Farm-raised fish may have one-third less omega-3 than ocean-harvested fish of the same type. Moreover, farm-raised fish are fed fish feed of variable purity. Some farm-raised fish will

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have higher levels of polychlorinated bi-phenyls (PCBs) or dioxin, contaminants which may have serious adverse health consequences and should be avoided. As long as the consumer is not told the gram quantity of omega-3 in a 4-ounce portion of farm-raised fish, nor the results of an independent lab assessment of the amount of PCBs and dioxin present as compared to wild fish of the same type, it is prudent to minimize or avoid consuming such fish. Canned or frozen ocean-harvested fatty fish available year round or seasonal, fresh ocean-harvested fatty fish is best.

“Omega-3 fish oil and plant-based omega-3 fatty acid has been rigorously shown to be heart protective and to reduce clinical events.”

As an alternative, fish oil supplements provide established amounts of omega-3s and have been tested by independent labs for the presence of PCBs and dioxin. Such supplements are generally as free of contaminants as if one were getting the same amount of fish oil from wild ocean-harvested fish (see Consumer Reports, July 2003). Finally, the consumption of certain ocean-raised fish such as king mackerel, swordfish and to some degree tuna that tend to be larger and concentrate mercury in their bodies should also be minimized or avoided. Children, pregnant women as well as nursing mothers and women trying to conceive should avoid consuming such fish and should check with their physician for specific recommendations. Recent data would also suggest mercury may damage the heart, so those using omega-3 fatty acids for heart protection may want to consider supplements for this reason as well.

Finally, apart from reducing the risk of cardiovascular sudden death, fish oil supplements used under a physician's care may reduce blood triglycerides by 30-50 percent. The dose of fish oil used for this purpose is much higher, in the range of 6-9 grams per day. In those with elevations of both the bad cholesterol (LDL) and triglycerides, fish oil may be combined with statin drugs to reduce the dose of the statin or avoid the addition of a second medication.

Flax seed oil is another supplement that has some data to support its use, but the data is less conclusive than for fish oil. Flax seed oil is 50 percent alpha-linolenic fatty acid, a plant-based omega-3 fat. Alpha-linolenic fatty acid is not synthesized in the body and thus must be supplied in the diet and most interestingly is converted by the body to EPA and DHA or fish oil. The conversion, however, is not efficient and only 15-30 percent of alpha-linolenic fatty acid is converted to fish oil. In the presence of omega-6 polyunsaturated fats, saturated fat and trans-fat the conversion is markedly reduced.

Nevertheless, there is clinical trial data to support the heart benefit of such plant based omega-3 fats. The Lyon Diet Heart Study (see The Non-Medicated Life, October 2003) showed that those consuming a high alpha-linolenic fatty acid Mediterranean diet had a 70 percent reduction in cardiovascular deaths and non-fatal heart attacks as compared to those eating a prudent western diet. In this clinical trial, the higher level of alpha-linolenic fatty acid was achieved by the consumption of canola oil margarine as a supplement to a base of olive oil. Other sources of alpha-linolenic fatty acid include ground flax seed, walnuts, almonds and a vegetable called purslane. Those interested in increasing their alpha-linolenic fatty acids from nuts should discuss this first with their physician as the presence of diverticulosis of the bowel may predispose those eating nuts to diverticulitis, a potentially life-threatening infection of the bowel wall. Those choosing instead to consume flax seed oil as a supplement should do so in capsules rather than from a bottle. Flax seed oil oxidizes and degrades quickly after a bottle is open and the potential benefit may be lost.

Although not supported by clinical trial data soy protein, psyllium husk (Metamucil) and plant sterol esters are recommended by the National Cholesterol Education Program to reduce the risk of cardiovascular disease on the basis of their proven ability to reduce LDL, a measurable marker of heart disease risk. To this end, soy protein should be consumed in

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the amount of 25 grams per day usually as a protein drink. Soy protein may reduce LDL by up to 5 percent. Psyllium husk may be taken as a rounded teaspoon in 8 ounces of water up to three times a day with a meal. Psyllium husk capsules are a more convenient alternative and one would work up to 5 capsules with 8 ounces of water three times a day with meals. Psyllium husk may reduce LDL up to 5 percent. Plant sterol esters in margarines such as Take Control and Benecol taken in the amount of 2 grams per day may reduce LDL 7-14 percent. Plant stanol capsules may be less effective, if not consumed with sufficient fat. Finally, other products have no clinical trial data at present to support their use and no marker of heart disease risk that they reduce. Coenzyme Q-10 a much talked about supplement which has some data supporting its consideration in heart failure patients has no clear data to date for preventing or treating coronary artery disease.

In summary, the consumption of omega-3 fish oil and to a lesser degree plant-based omega-3 fatty acid has been rigorously shown in clinical trials to be heart protective and to reduce clinical events. Soy protein, psyllium husk, and plant sterol esters have been shown in clinical trials to reduce cholesterol markers of disease risk. The use of such evidenced based supplements for heart health may augment a more natural approach including diet and lifestyle and thus reduce an over reliance on the proverbial bottle of pills to solve all of an individual's health care problems.

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