

ALTERNATIVE MEDICATIONS IN CARDIOVASCULAR HEALTH

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Omega-3 Fatty Acids

Several large randomized trials have concluded that intake of fish, fish oil supplements, or both containing omega-3 fatty acids eicosapentaenoic acid (EPA) and docosahexaenoic acid (DHA) is associated with many health benefits. Consuming 1-2 servings/week reduces the risk of coronary death by 36% and total mortality by 17%. The mechanism by which omega-3 fatty acids work are by reducing triglyceride levels, inflammation, blood pressure, blood clotting, arrhythmias, and atherosclerotic plaque formation. Benefits have been reported beginning after 3 months of use and for as long as 3.5 years of follow-up.

Animal sources of omega-3s are of course fish, such as salmon, mackerel, halibut, anchovies, and sardines. Vegetable sources include English walnuts, flaxseeds, tofu/soy, and some vegetable oils (canola, soy, flaxseed, and olive).

The problem today is that we've replaced a vast majority of our omega-3 fatty acid intake with omega-6s, found commonly in other vegetable oils like corn, safflower, and sunflower oils, which all contain linoleic acid. These compete with omega-3 fatty acids to be converted to active proinflammatory metabolites in the body.

The most common side effects from fish oil supplements are GI upset, eructation, fishy taste, loose stools, and nausea. High doses can be harmful.

Source:

McPhee, Stephen J., and Maxine A. Papadakis. "Omega-3 Fatty Acids." *Current Medical Diagnosis & Treatment 2010*. New York: McGraw-Hill Medical, 2010. 1511. Print.

Magnesium

Magnesium is the fourth most abundant mineral in the body and about half of total body magnesium is found in bone. The other half is found mainly inside cells of body tissues and organs. Only 1% of magnesium is found in blood, which stays constant in a healthy body. Magnesium is used in more than 300 biochemical reactions in the body and helps maintain normal muscle/nerve function, keeps heart rhythm steady, supports a healthy immune system, and keeps bones strong.

Magnesium also helps regulate blood sugar levels, promotes normal blood pressure, and is known to be involved in energy metabolism and protein synthesis. That is why there is an increased interest in the role of magnesium in preventing and managing disorders such as hypertension, cardiovascular disease, and diabetes.

Magnesium metabolism is very important to insulin sensitivity and blood pressure regulation, and magnesium deficiency is common in individuals with diabetes. Some observational surveys have associated higher blood levels of magnesium with lower risk of coronary heart disease. Additionally, some dietary surveys suggest that a higher magnesium intake may reduce the risk of having a stroke. There is also evidence that low body stores of magnesium increase the risk of abnormal heart rhythms, which may increase the risk of complications after a heart attack. These studies suggest that consuming recommended amounts of magnesium may be beneficial to the cardiovascular system.

Several small studies propose that magnesium supplementation may improve clinical outcomes in individuals with coronary disease. In one of these studies, the effect of magnesium supplementation on exercise tolerance, chest pain caused by exercise, and quality of life was examined in 187 patients. At the end of the study, patients receiving magnesium had a 14% improvement in exercise duration as compared to no change in the placebo group. Those receiving magnesium were also less likely to experience chest pain caused by exercise.

There are several other studies that link strong serum magnesium levels to better cardiovascular health. These studies are encouraging, but involved small numbers. Further studies are needed to better understand the complex relationships between magnesium intake, indicators of magnesium status, and heart disease.

Source:

“Magnesium.” *Office of Dietary Supplements (ODS)*. Web. 13 Jan. 2011.
<<http://ods.od.nih.gov/factsheets/magnesium/>>.

Policosanol

Policosanol is a mix of compounds usually derived from sugar cane wax or beeswax; it may also come from wheat germ, rice bran, or other plant foods. Of all the dietary supplements claiming to improve blood cholesterol levels, policosanol is one of the more promising.

It is claimed to lower blood cholesterol and is supposedly safer than prescription drugs (statins). Evidence comes from studies in Cuba using policosanol from sugar cane that shows that it lowers LDL cholesterol by 10 to 30% and raises HDL cholesterol by about 10%, on average. It may work better than plant sterols/stanols (the cholesterol-lowering ingredients added to some foods). Some research suggests it may even be as effective as low doses of certain statins. But in the first independent study on Cuban policosanol in 2006, German researchers found it ineffective. Another study found policosanol made in the U.S. from sugar had no effect either. It's also not known if other sources of policosanol, besides sugar, work. In European studies, neither policosanol from wheat germ nor policosanol from rice showed benefits.

To conclude, it's too early to say if policosanol lives up to its cholesterol-lowering reputation. No one knows what source of policosanol is best or what the optimal dose is. Only Cuban products, made from sugar cane, have been well tested, but they are not available in the U.S. Studies lasting up to three years provide some assurance that policosanol is not toxic, but its safety beyond that is not established. If it affects cholesterol, it may have other effects in the body. Cholesterol-lowering drugs, on the other hand, have been carefully studied and are proven to lower your risk of heart disease with only rare side effects.

Source:

“UC Berkeley Wellness Guide to Dietary Supplements: Policosanol.” *Wellness Online: Home of the Wellness Letter*. Web. 13 Jan. 2011.

<<http://www.wellnessletter.com/html/ds/dsPolicosanol.php>>.

Berberine + Red Yeast Rice + Policosanol

Italian researchers studying a “nutraceutical” combination of berberine, red yeast rice, and policosanol contend that it significantly lowers total and LDL cholesterol while improving endothelial-dependent flow-mediated coronary dilation. “Nutraceuticals” refer to any substance that is a food or part of a food and provides medical or health benefits. Red yeast rice has been shown to inhibit cholesterol synthesis; berberine has typically been used for gastrointestinal problems and also for the treatment of diabetes; and policosanol is intended to lower cholesterol.

The small double-blind trial enrolled 50 hypercholesterolemic patients and randomized them to either a daily oral dose of the nutraceutical combination (500-mg berberine, 200-mg red yeast rice, and 10-mg policosanol) or to placebo for a six-week period. After the initial six weeks, all patients were given the nutraceutical in a four-week open-label extension study.

The trial showed that after six weeks, total and LDL cholesterol decreased in the nutraceutical group, but not in the placebo group (a statistically significant difference); similarly, flow-mediated dilation improved by 3% in the nutraceutical group, but did not change in the placebo group ($p < 0.05$). Patients taking the nutraceutical also appeared to have significantly improved insulin sensitivity. No adverse effects were seen in either group over the course of the study.

While no conclusive data can be made from such a small trial, it seems that a combination of anti-cholesterol “nutraceuticals” seem to make a collective difference to some individuals with a history of hypercholesterolemia.

Source:

Wood, Shelly. "Berberine, Red Yeast Rice, Policosanol Combo for Lipid-lowering?" *Theheart.org: Trusted Cardiology News and Opinions*. University of Naples, 6 May 2010. Web. 13 Jan. 2011. <<http://www.theheart.org/article/1075105.do>>.