Margarine – a Functional Food?

Elevations of blood cholesterol levels are in most cases a result of poor dietary and lifestyle choices, although some people may have a genetic predisposition to high cholesterol. Over the years the media has confused the public about what constitutes a “heart healthy” diet, with controversies over such things as egg intake and butter vs. margarine. Scientific research has settled some debates. The cholesterol that you take in through foods has little impact on blood cholesterol. Furthermore, the real villains include damaged fats found in hydrogenated oils and margarines, shortening, and many processed/convenience products. In the process called hydrogenation, a vegetable oil (mostly likely highly processed) is turned into a man-made product that has saturated fat-like properties. Additionally, the heat and chemicals used to transform vegetable oils into margarine change fatty acids into harmful shapes called trans-fatty acids. Not only do these artificially-produced trans-fatty acids increase one’s risk for heart disease by raising the LDL form of cholesterol (the dangerous form associated with increased risk of heart disease), but they also may increase cancer risks, promote inflammation and accelerate tissue degeneration. Therefore, butter truly is FAR better than margarine!

A dietary change often recommended to help lower cholesterol is to reduce damaged fat and sugar intake – which is easier said than done. Thus, two new cholesterol-lowering margarines have been approved by the FDA, Johnson & Johnson’s Benecol™ and Unilever’s Take Control™ (the makers of Promise®). These products are being marketed as a way to lower cholesterol in people with mild hypercholesterolemia (high cholesterol). These foods can be called “functional” – meaning they are designed to have medicinal values beyond their intrinsic nutritional status. To understand how these “functional” foods work, one has to understand plant sterols and their man-made counter parts, stanol esters.

Plant sterols are beneficial plant fats very similar in structure to the animal fat cholesterol. In fact, the health-promoting qualities of some herbs and foods is actually due to their content of sterols. All plants, including fruits, vegetables, seeds and nuts, contain sterols. Unfortunately, sterols are very susceptible to damage in food processing, such as cooking, freezing and boiling. Raw unprocessed nuts and seeds and their unrefined/unprocessed oils are the richest natural sources. Sterols have been shown to be helpful in lowering blood cholesterol, strengthening the immune system, and reducing pro-inflammatory substances in the body.

The difference between a plant sterol and a stanol ester (the form found in the above “functional” margarines) is that the original, naturally-occurring sterol is chemically modified, much like what is done to an oil when it is hydrogenated, to make it more saturated, which makes it more stable at room temperature conditions. Thus, a naturally-occurring, health-potentiating substance is changed, not because it makes it better for you, but to make it more shelf stable and because it can also be patented. While this stanol ester additive has been demonstrated to have cholesterol-lowering effects, it has potential side effects, which do not exist in the natural plant sterol from which it is derived. (The side effects will be discussed shortly.) Because plant stanols and sterols are fat-soluble, they can be incorporated into the fatty parts of foods without changing the physical properties or taste. This is why these compounds work well in margarine and may soon be found in foods such as salad dressing, ice cream, and yogurt.

Plant sterols and their man-made counterpart stanols affect cholesterol levels in the same way, by reducing and/or preventing absorption of cholesterol from the intestinal tract. Thus, their impact on cholesterol levels is modest (reducing levels by 7% to 10% in one study) and would...
have the greatest potential impact in those who consume cholesterol-containing foods. Remember that cholesterol from foods has little if any effect on cholesterol in the body, as opposed to the consumption of damaged fats and sugar, which has a much more substantial impact. Sterols and stanols have no impact on the increase in cholesterol caused by the over-consumption of these types of foods.

Aside from their similar impact on cholesterol absorption, sterols and stanols have some significant differences. First, stanols are not absorbed, whereas sterols are. This is most likely why several studies have indicated that stanols affect the absorption of beta-carotene. This nutrient has many functions, including being the precursor to vitamin A, acting as an antioxidant (which protects the body against cell damage), providing immune-enhancing effects, and playing a role in fertility. On the other hand, the natural plant sterols that are absorbed have no negative side effects and provide numerous health benefits, some of which are mentioned above.

**Benecol™**

This “functional” margarine is made from refined canola and soybean oil. Since both of these oils are refined, their original content of naturally-occurring sterols has been removed. In their place a sterol extracted from wood-pulp and processed into a stanol, a more stable additive with questionable side effects is added. The ingredient list also contains several artificial and potentially toxic additives as well, including partially hydrogenated soybean oil, artificial flavorings, and EDTA, which is on the FDA list of food additives to be studied for toxicity. Vegetable mono- and diglycerides are also included in this product, which maintains softness and is on the FDA list to be tested for mutagenic (cancer-causing) properties.

**Take Control™**

The margarine base of this product is refined canola oil, sunflower oil (which is an unstable oil that denatures easily when heated), and partially hydrogenated soybean oil. Once again, since these three oils are refined, their original content of naturally-occurring sterols has been removed. This product contains a soybean extract to provide the plant sterols, unlike the synthetic stanols in Benecol™. Similar to Benecol™, Take Control™ contains the same artificial ingredients: EDTA, artificial flavorings, and vegetable mono- and diglycerides, and has their same potential health dangers.

A Harvard research study found that the “risk of heart attack doubled, and cancer was linked, to the increased consumption of margarines and hydrogenated oils and shortenings.” Now manufacturers and scientists tell us that these same foods will lower cholesterol as long as they have plant sterols or stanols added to them. Ironically, these are the very same sterols that were removed from these foods in the first place, through the refining process, but are now added back to make a “functional?” food. (And you get to pay more for it as well.) Both “functional” margarines are highly processed, contain artificial additives, and while they add back cholesterol-lowering compounds that may help lower cholesterol in some people, they are also needed to “cover-up” the negative impact of the product itself. For these reasons, Vitamin Cottage will not sell these “functional” margarines or any products that contain the synthetic cholesterol-lowering additive discussed. We encourage people with high cholesterol levels to use more natural dietary and lifestyle factors to support the body and reduce cholesterol in a whole body, more permanent way, which could include the use of the following whole foods:

- **Olive oil:** Clean, unrefined extra virgin olive oil contains high amounts of monounsaturated fat and plant sterols which lower LDL cholesterol and increase beneficial HDL cholesterol.
• **Garlic**: Studies have shown that garlic decreases total serum cholesterol up to 9%. Consume garlic in any meal you can by chopping it up and adding it as the last step in the cooking process to preserve its healing properties. Another option is to just swallow a small cut garlic clove like a pill. To get the most out of garlic and its active components, chop it and wait about 5 minutes before adding it to your meal or consuming.

• **Fiber**: Soluble fiber from beans, oats, psyllium seed, flaxseed meal, and fruit pectin has lowered cholesterol levels in most trials. Doctors often recommend that people with elevated cholesterol eat more of these high soluble fiber foods.

**Products to Use in Place of “Functional” Margarines:**

Use these products in conjunction with the dietary and lifestyle cholesterol lowering tips.

• **Ghee (clarified butter)** has fewer calories and fat than regular butter.

• **Better Butter**: In the food processor combine 1 stick of (organic) butter with 1 cup unrefined (extra virgin) olive oil, blend and refrigerate. Optional ingredients include ¼ tsp lecithin, salt, garlic, and or other seasonings you desire.

• **Earth Balance Natucol** is an alternative to the sterol spreads and contains much cleaner ingredients. natural oil blend(palm fruit, soybean, canola & olive oils), natural plant sterols and stanols oil blend) It contains free (non-chemically modified) plant sterols and stanols - they are neither hydrogenated nor esterfied (450 mg of phytosterols per Tablespoon) nonhydrogenated, nondairy, trans fat free, lactose & gluten free, and no artificial flavor or color.

Butter is truly BETTER!

**Top Tips for Lowering Cholesterol:**

The most important approach to lowering a high cholesterol level is a healthful diet and lifestyle.

• Eat less damaged fat and trans-fats by reducing or eliminating consumption of margarine, processed foods that contain partially-hydrogenated oils (which include most processed foods in the conventional grocery store), and deep-fried foods.

• Eat more fiber-rich foods, such as vegetables, fruits, grains and legumes.

• Lose weight if appropriate.

• Get regular aerobic exercise, at least 3 times per week for 30 to 45 minutes.

• Don’t smoke.

• Reduce or eliminate consumption of caffeine found in coffee, tea or chocolate.

**References:**

Benecol web site and information #: www.beneceol.com and 1-888-benecol
Take Control web site and information #: www.takecontrol.com and 1-800-735-3554
Well, Andrew, Dr. www.cgi.pathfinder.com/drwell/. *Margarine: The Spreadable Inedible?*