



Lowering Cholesterol by Eating a Soy-Rich Diet—What's in the Portfolio Eating Plan®?

Can eating a high soy protein diet really have an impact on your high cholesterol levels and your heart's health? Some soy-containing foods have an FDA approved health claim on the label that states "Diets low in saturated fat and cholesterol that include 25 grams of soy protein a day may reduce the risk of heart disease. One serving of (name of food) provides ___ grams of soy protein." To qualify for the claim, foods must contain per serving the following: 6.25 grams of soy protein; low fat (less than 3 grams); low saturated fat (less than 1 gram); low cholesterol (less than 20 milligrams); and sodium value of less than 480 milligrams for individual foods, less than 720 milligrams if considered a main dish, and less than 960 milligrams if considered a meal.

Numerous research studies done over the last 15 years with animals and humans suggest that diet modification can have a substantial impact on cholesterol profiles, and therefore, may reduce the risk of cardiovascular disease. In 1995, a meta-analysis of an array of published research suggested that consuming 25 to 50 grams of soy protein potentially could lower cholesterol by an average of 13%. The effect was particularly noted in those individuals who had high cholesterol to begin with. More recent studies and meta-analyses show minimal impact of less than 5% reduction.

Most nutritionists agree that eating soy as part of low fat diet and replacing high fat animal products with soy foods can play a role in heart health. But for those who have high LDL-cholesterol, is taking a drug like the statins the only answer? Researchers at the University of Toronto, led by Dr. David Jenkins, have published four studies showing that a diet that is high in soy protein, viscous fiber, plant sterols and almonds, can be as effective as the statins in reducing LDL-cholesterol concentration. The diet has been dubbed the "portfolio diet" or the "Portfolio Eating Plan®" and is promoted by the Almond Board of California (<http://portfolioeatingplan.com>).

The eating plan is challenging and is for those who are willing to make substantial changes in their diets for the long term to improve heart health and avoid drugs. The recommendations are to consume certain types of foods every day to provide a diet high in soy protein (22.5 grams or 0.8 oz /1000 kcal from foods like tofu, soymilk or meat alternatives), plant sterols (1 gram or 0.03 oz. /1000 kcal from margarine substitutes such as Benecol® or Take Control®), viscous fiber (10 grams or about 0.5 oz from foods such as oats, barley or psyllium containing cereal), and almonds (about 15 nuts or 0.5 oz /1000 kcal). A vegetarian diet is ideal, but small amounts per week of lean meat or fish and egg

whites or substitutes can be included.

The dietary portfolio plan depends on using a variety of soy products every day to meet the recommended amounts of soy protein. It is important to note that the soy foods must replace equivalent servings of animal-based foods. For example, 1 vegetarian patty, such as Boca® Burgers, contains 10 grams of soy protein. A cup of soymilk will have about 6 to 8 grams of soy protein. And tofu will contain about 6 grams of soy protein per 3 oz. serving.

The University of Toronto group recently published a one-year study of “motivated participants” who adhered to the dietary portfolio under real-world conditions (American Journal of Clinical Nutrition 83:582-91, 2006). The LDL-cholesterol levels were reduced in this group by >20%. Everyone may not achieve the dietary changes these individuals made, but even small changes in the diet to reach the recommended amounts of soy protein, plant sterols, viscous or soluble fiber, and almonds can be beneficial.

Soy foods can be an important part of a heart healthy diet, particularly when they replace higher fat alternatives. If your aim is to reduce your “bad” cholesterol, following the guidelines for the Portfolio Eating Plan® can be a useful tool. Remember that it is important to keep your calorie and saturated fat intake low if you are also trying to lose weight.

For more information on this dietary program, recipes and menus, check out the website: <http://www.portfolioeatingplan.com/>. Check out our cookbooks for other ideas as well.

Illinois Center for Soy Foods Consumer Information Sheet

For more information

Visit the Illinois Center for Soy Foods on the internet at
www.soyfoodsillinois.uiuc.edu