

Nutritional Power of **SUNFLOWER** Seeds



VOLUME 2.1

Sunflower seeds are the best whole-food source of vitamin E. They provide an ideal heart-healthy fat profile, are high in protein and naturally low in carbohydrate.

Sunflower Seeds: Ideal as a Snack and an Ingredient

High-protein, low-carbohydrate (or "low-carb") diets are nothing new, but nonetheless, they are the latest rage. The amount of people willing to try low-carb diets to lose weight has skyrocketed over the past several decades, as have the number of low-carb products entering the market. Because these diets are here to stay, it may be more important than ever to make sure they are full of naturally healthy foods such as sunflower seeds.

One of the Best Food Sources of Antioxidants — Especially Vitamin E

Unlike the many high-protein, low-carb foods on the market that may be increasing risk of heart disease due to their saturated-fat contents, sunflower seeds are naturally full of several nutrients including antioxidants that may help prevent heart disease. For one, sunflower seeds package 76% of the Recommended Dietary Allowance (RDA) for vitamin E, which makes them the richest whole-food source of vitamin E (1). Furthermore, most of the vitamin E in sunflower seeds is in the form of alpha-tocopherol, the most beneficial, biologically active form.

In fact, data suggest it may be more beneficial to eat vitamin E-rich foods such as sunflower seeds instead of taking supplemental vitamin E. The Iowa Women's Health Study has shown vitamin E-rich foods are associated with a lower risk of death from stroke, but the same was not true for supplemental vitamin E (2). Other recent studies support that the vitamin E in foods, but not from supplements, was found to be associated with a lower risk of Alzheimer disease and Parkinson's disease



(3,4). However, large-scale clinical studies have failed to confirm that mega-doses of vitamin E in supplemental form are beneficial for health (5).

Vitamin E from foods may be better than from supplements because nutrients are thought to work together in foods to provide health benefits. An ounce of sunflower seeds also provides about 25% of daily needs for selenium, another antioxidant that has been shown to work with vitamin E to protect cells from damage that may cause heart disease. In addition, sunflower seeds contain copper, which plays a vital role in antioxidant enzymes in the body. This may further prevent oxidative stress, which has been associated with heart disease. Sunflower seeds provide 25% of the Daily Value for copper in one ounce (1).

Sunflower Seeds: Favorable Fat

Unsaturated fat like the kind found in sunflower seeds does not increase heart disease risk. In fact, almost 90% of the fat in sunflower seeds is the healthiest type for the heart — "good," unsaturated fat (1), which can actually reduce the risk of heart disease. According to a recent Harvard review study, substituting "good" unsaturated fats for saturated and trans fats is one of the top three most effective diet strategies for preventing coronary heart disease (6). Sunflower seeds contain mono- and polyunsaturated fat, both of which are important to health.

A common concern from health professionals about high-protein, low-carb diets is that they typically allow unlimited amounts of "bad" saturated fat. Research has shown for decades that saturated fat raises total and the "bad" low-density lipoprotein (LDL) cholesterol, which thereby increases heart disease risk (7). Thus, the National Cholesterol Education Program recommends limiting saturated fat in the diet to less than 7% of calories from fat (8). Similarly, trans fat has been shown to increase total and LDL cholesterol, but may also decrease the "good" high-density lipoprotein (HDL) cholesterol. Guidelines released in 2003 recommend decreasing

trans fat in the diet as much as possible (9).

Naturally “Low-Carb” Seeds

Replacing carbohydrates in the diet with “good” poly- or monounsaturated fats may be beneficial for heart disease as well. In the Nurses’ Health Study, Harvard researchers found that replacing 80 calories of carbohydrates with 80 calories of either polyunsaturated or monounsaturated fats lowered risk for heart disease by about 30 to 40 percent (10).

Sunflower seeds are naturally “low-carb” and provide healthful unsaturated fat and fiber to replace carbohydrates in the diet, potentially protecting against heart disease. Sunflower seeds provide only four grams of carbohydrate per one-ounce serving, two of which are fiber. Fiber is the indigestible part of plants that has been shown to lower cholesterol. Furthermore, sunflower seeds can be added to foods that also contain fiber, such as salads, whole-grain breads, oatmeal, or trail mix. When eaten in these ways, sunflower seeds offer a way to increase flavor and provide crunchy texture for other food sources of fiber. Experts recommend aiming for 20 to 35 grams of fiber per day (11).

Sunflower Seeds: Protein Packed

Emerging research is showing that high-protein, low-carb diets can be effective for losing weight. Although most of these diets are low in calories, protein may also contribute to weight loss. Protein, along with fiber, has been shown to help with satiety, or curbing appetite (12). Sunflower seeds are packed with a surprising amount of protein — 6 grams per ounce. Coupled with fiber and tasty “good” fat, sunflower seeds may help increase satisfaction and stave off hunger, thereby promoting weight loss.

Source of Hard-to-Get Nutrients

Another common concern of many high-protein, low-carb diets is that they typically do not allow an abundance of fruits and vegetables, which means dieters may not be getting all the essential nutrients they need.

Sunflower seeds provide only four grams of carbohydrate per one-ounce serving, two of which are fiber.

Eating sunflower seeds as part of a high-protein, low-carbohydrate diet provides several hard-to-get nutrients including folate and magnesium. Evidence has shown that both nutrients, may lower risk for heart disease (13,14). Furthermore, new research suggests that eating adequate amounts of magnesium may lower risk of type 2 diabetes (15).

Sunflower seeds also deliver phytochemicals, such as phenolic acids and lignans, which may help prevent heart disease and cancer. Experts recommend eating a variety of whole foods, like sunflower seeds, to meet nutrient needs.

Sunflower & “Nutrient-Added”

Try these tips for creating “nutrient-added” foods with sunflower seeds.

- Pack breads and muffins with nutrition by adding sunflower seeds.
- Coat fish or chicken in crushed sunflower seeds for added crunch.
- Sprinkle sunflower seeds into stuffing mixes for a nutty flavor.
- Replace croutons in salads with a half-ounce of sunflower seeds.

Fitting foods naturally full of “good” fat such as sunflower seeds into a high-protein, low-carb diet for weight loss may offer protection against heart disease. Also, the synergy of nutrients in sunflower seeds that are not present in processed low-carb products may improve health beyond our expectations.

References:

1. USDA National Nutrient Database for Standard Reference, Release 16, July 2003. http://www.nal.usda.gov/finic/cgi-bin/nut_search.pl
2. Kushi LH, Folsom AR, Yochum LA. Intake of antioxidant vitamins and risk of death from stroke in postmenopausal women. *American Journal of Clinical Nutrition*. 2000;72:476-483.
3. Morris MC, et al. Dietary intake of antioxidant nutrients and the risk of incident Alzheimer disease in a biracial community study. *Journal of the American Medical Association*. 2002;287:3230-3237.
4. Zhang SM, Hernan MA, Chen H, et al. Intakes of vitamins E and C, carotenoids, vitamin supplements, and PD risk. *Neurology*. 2002;59:1161-1169.
5. Dutta A, et al. Vitamin E and its role in the prevention of atherosclerosis and carcinogenesis: a review. *Journal of the American College of Nutrition*. 2003;22(4):258-268.
6. Hu FB, Willett WC. Optimal diets for the prevention of coronary heart disease. *Journal of the American Medical Association*. 2002;288(20):2569-2578.
7. McGill HC. The relationship of dietary cholesterol to serum cholesterol concentration and to atherosclerosis in man. *American Journal of Clinical Nutrition*. 1979;32:2664-2702.
8. US National Cholesterol Education Program. Third Report of the Expert Panel on Detection, Evaluation, and Treatment of High Blood Cholesterol in Adults (Adult Treatment Panel III) Full Report. September 2002. http://www.nhlbi.nih.gov/guidelines/cholesterol/atp3_rpt.htm
9. Institute of Medicine, Food and Nutrition Board. Letter Report on Dietary Reference Intakes for Trans Fatty Acids. July 10, 2002. <http://www.iom.edu/boardreports.asp?id=3788>
10. Hu FB, et al. Dietary fat intake and the risk of coronary heart disease in women. *New England Journal of Medicine*. 1997;337(21):1491-1499.
11. Institute of Medicine, Food and Nutrition Board. Dietary Reference Intakes for Energy, Carbohydrate, Fiber, Fat, Fatty Acids, Cholesterol, Protein, and Amino Acids. September 2002. <http://www.iom.edu/report.asp?id=4340>
12. Kirkmeyer M and Mattes, RD. Effects of food attributes on hunger and food intake. *International Journal of Obesity*. 2000;24:1167-1175.
13. Rimm E, et al. Folate and vitamin B6 from diet and supplements in relation to risk of coronary heart disease among women. *Journal of the American Medical Association*. 1998;279:359-364.
14. Abbott RD, et al. Dietary magnesium intake and the future risk of coronary heart disease (The Honolulu Heart Program). *American Journal of Cardiology*. 2003;92:665-669.
15. Fung TT, et al. The association between magnesium intake and fasting insulin concentration in healthy middle-aged women. *Journal of the American College of Nutrition*. 2003;22(6):533-538.

For more information on NuSun™ sunflower oil or sunflower seeds, contact:



4023 State Street • Bismarck, ND 58503 • 701-328-5100 • FAX: 701-328-5101

www.sunflowernsa.com