

Pistachios and Heart Disease

The 2010 Dietary Guidelines for Americans recommends nuts, such as pistachios, as a nutrient rich food to include in a healthy diet. Pistachios also are mentioned as a protein food that can contribute to improved nutrient intake and health benefits. Specifically, “moderate evidence indicates that eating peanuts and certain tree nuts (i.e., walnuts, almonds, and pistachios) reduces risk factors for cardiovascular disease when consumed as part of a diet that is nutritionally adequate and within calorie needs.” P. 38 ⁴

In February 2013, the landmark PREDIMED study published in the *New England Journal of Medicine* showed a Mediterranean diet supplemented with nuts, such as pistachios, significantly reduced cardiac events. In this clinical trial of about 7400 subjects, those who ate a Mediterranean diet with either 1 ounce of nuts per day or 1 liter of olive oil per week had a 30% risk reduction in heart disease-related events. Importantly, this risk reduction is the same as for statins, which are cholesterol-lowering drugs. ⁵

Pistachios likely reduce overall heart disease risk beyond just a decrease in total and LDL cholesterol alone. Numerous studies have looked at the effects of eating pistachios on many risk factors for cardiovascular disease. ⁶⁻¹⁴ These studies suggest eating pistachios daily (1 to 3 ounces or as 10%-20% of calories) may reduce the risk of heart disease in five ways:

- 1) Lowering total cholesterol, LDL cholesterol and non-HDL cholesterol
- 2) Increasing antioxidants in the blood and decreasing oxidized-LDL
- 3) Decreasing small dense LDL and increasing phytosterols levels in the blood
- 4) Providing beneficial anti-inflammatory properties
- 5) Reducing acute stress by lowering blood pressure, heart rate and peripheral vascular responses.



“Scientific evidence suggests but does not prove that eating 1.5 ounces per day of most nuts, such as pistachios, as part of a diet low in saturated fat and cholesterol may lower the risk of heart disease.”

United States Food and Drug Administration,
Qualified Health Claim, July 2003
<http://www.fda.gov>

Subjects who ate a Mediterranean diet with either 1 ounce of nuts per day or 1 liter of olive oil per week had a **30% risk reduction in heart disease-related events** – the same risk reduction attributed to statins (cholesterol-lowers drugs).

The PREDIMED Study, Estruch R, et al. *New Engl J Med*. 2013 Apr 4;368(14):1279-1290.

Published in 2010 in the *Archives of Internal Medicine*, a pooled analysis of 25 studies suggests eating nuts, such as pistachios, has a total and LDL (bad) cholesterol-lowering effect, further confirming the evidence that regular nut consumption can lower the risk of coronary heart disease. ¹⁵

Two other PREDIMED study papers, published in 2013 in the *Public Library of Science Online Journal* and *BioMed Central*, presented cross-sectional data from the beginning of the trial. Both assessed 7216 subjects and the associations between the frequency and amount of nuts participants ate. Those subjects who ate more than three servings of nuts, including pistachios, per week had a 39% lower mortality risk. Notably, the researchers also found similar reductions for cancer and cardiovascular mortality risk. A second cross-sectional analysis showed those subjects who ate more than three servings of nuts, including pistachios, per week had a lower incidence of obesity, including abdominal obesity, metabolic syndrome and diabetes. ^{16, 17}

²² Kennedy-Hagan K, et al. The effect of pistachio shells as a visual cue in reducing caloric consumption. *Appetite*. 2011;57:418-420.

²³ Honselman CS, et al. In-shell pistachio nuts reduce caloric intake compared to shelled nuts. *Appetite*. 2011;57:414-417.

²⁴ Li Z, et al. Pistachio nuts reduce triglycerides and body weight by comparison to refined carbohydrate snack in obese subjects on a 12-week weight loss program. *J Am Coll Nutr*. 2010;29(3):198-203.

²⁵ O’Neil CE, et al. Out-of-hand nut consumption is associated with improved nutrient intake and health risk markers in US children and adults: National Health and Nutrition Examination Survey 1999-2004. *Nutr Res*. 2012;32:185-194.

²⁶ O’Neil CE, et al. Nut consumption is associated with decreased health risk factors for cardiovascular disease and metabolic syndrome in U.S. adults: NHANES 1999-2004. *J Am Coll Nutr*. 2011;30(6):502-510.

²⁷ Bes-Rastrollo M, et al. Prospective study of nut consumption, long-term weight change, and obesity risk in women. *Am J Clin Nutr*. 2009;89:1913-1919.

²⁸ Kendall CWC, et al. The impact of pistachio intake alone or in combination with high-carbohydrate foods on post-prandial glycemia. *Eur J Clin Nutr*. 2011;65(6):696-702.

²⁹ Sauder KA, et al. Effect of pistachios on lipids, lipoproteins, glucose metabolism, and insulin sensitivity in type 2 diabetes. *FASEB J*. 2013;27:A2313.368.4.

³⁰ Jenkins DJA, et al. Nuts as a replacement for carbohydrates in the diabetic diet. *Diabetes Care*. 2011 Aug;34(8):1706-1711.

³¹ Li TY, et al. Regular consumption of nuts is associated with a lower risk of cardiovascular disease in women with type 2 diabetes. *J Nutr*. 2009;139:1333-1338.