



THE AMERICAN PECAN

CRACKING OPEN THE NUTRITION
STORY OF OUR NATIVE NUT



YOU THINK OF THEM FOR PIE. YOU ADORE THEM IN PRALINES. BUT DID YOU KNOW PECANS ARE ACTUALLY A NUTRITION POWERHOUSE?

Don't be fooled by their rich, buttery texture and naturally sweet taste, pecans are extremely nutrient dense.

Pecans contain the same beneficial unsaturated fats that are found in other nuts, and nearly two decades of research suggests that nuts, including pecans, may help promote heart health.

In each 1-ounce serving of raw pecans you'll get 12 grams of "good" monounsaturated fat, with zero cholesterol or sodium.¹ Compared to other nuts, pecans are among the lowest in carbs and highest in fiber.

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

U.S. Food and Drug Administration



*One serving of pecans (28g) contains 18g of unsaturated fat and only 2g of saturated fat.

The macronutrient profile of pecans is appealing to many people: protein (3 grams), carbohydrate (4 grams) and fat (20 grams).

A handful of pecans – about 19 halves – is a good source of fiber, thiamin, and zinc, and an excellent source of copper and manganese – a mineral that's essential for metabolism and bone health.

To top it off, pecans contain polyphenols, specifically flavonoids – which are the types of bioactive compounds found in brightly colored produce.² So think of pecans as a supernut.

DELICIOUS KERNELS OF GOODNESS

Pecans are a complex whole food packed with multiple health-promoting nutrients and bioactive compounds.

PHYTONUTRIENTS

10 mg of flavonoids
36 mg of plant sterols

PLANT PROTEIN

3 grams of plant-based protein

UNSATURATED FAT

18 grams of unsaturated fat, including oleic acid (only 2 grams of saturated fat)



DIETARY FIBER

Good source of filling dietary fiber, 11% DV

ANTIOXIDANT VITAMINS

8 mcg of beta carotene, or provitamin A
7 mg gamma-tocopherols, a form of vitamin E

MIGHTY MINERALS

A trio of essential minerals:
60% DV manganese,
40% DV copper and 10% DV zinc

Serving size = 1 ounce or about 19 halves

DV = % Daily Value

Source: USDA National Nutrient Database for Standard Reference

A HEART-SMART FOOD

Like other nuts, pecans contain primarily unsaturated fats, but they're among the highest in monounsaturated fats, especially the beneficial oleic acid that's found in olive oil.¹ Four large epidemiological studies, including the Harvard-based Nurses' Health Study,³ have consistently shown that nut consumption is associated with a reduced risk of cardiovascular disease.

An analysis of 61 controlled intervention trials⁴ examined the effects of tree nuts on a number of cardiovascular biomarkers, including blood lipids and blood pressure. Reductions were seen for total cholesterol and LDL cholesterol in both randomized and nonrandomized trials. The stronger effects were observed when participants consumed 60 grams or more of nuts per day.

For apolipoprotein B (ApoB), stronger effects were observed among people with type 2 diabetes than in healthy individuals. No significant effects were identified for HDL cholesterol, apolipoprotein A (ApoA) or blood pressure.

Another analysis of epidemiologic studies⁵ found that nut consumption was associated with a lower risk of cardiovascular disease, cancer mortality and all-cause mortality for individuals

The unique mix of unsaturated fats, plant sterols, fiber and flavonoids all add up to make pecans a heart-healthy superfood.

with the highest consumption of nuts compared to those who do not eat nuts. The findings are reported as pooled risk ratios that include multiple factors. The authors identified several qualifiers that the presence of confounding factors should be considered when interpreting the findings.

In a 30-year observational study of 76,464 female nurses and 42,498 male health professionals,⁶ the participants who regularly consumed a 1-ounce serving of nuts, including pecans, seven times or more a week, were shown to have a hazard ratio for death of 20% lower compared to those who did not eat nuts. Likewise, those participants consuming nuts five or more times per week had a 29% lower hazard ratio for death from heart disease compared to those who did not eat nuts.

Epidemiological or observational studies establish associations, not causality, and not all findings from observational studies have been confirmed in controlled, randomized clinical trials.

In one of the first pecan studies on heart health, researchers at New Mexico State University tested the effect of pecans on cholesterol levels.⁷ The researchers used a randomized parallel study design to compare blood lipid concentrations of 19 men and women with normal blood cholesterol levels. In the study, 10 participants were assigned to the pecan group (68 grams or about ¾ cup of pecans per day) for 8 weeks. The control group of 9 avoided nuts and consumed self-selected diets. The participants who consumed pecans experienced a 10% reduction in LDL “bad” cholesterol at week 4 and a 6% reduction at week 8. Body mass indexes and body weight were unchanged in both groups.

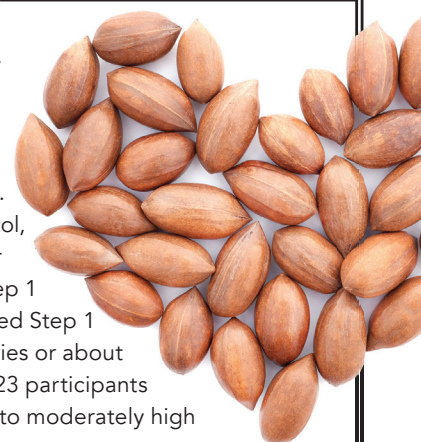
A 2001 investigation published in the *Journal of Nutrition*⁸ found

that a pecan-enriched diet not only reduced total cholesterol, LDL cholesterol levels and triglycerides, it also increased “good” HDL cholesterol among the participants. Using a controlled metabolic protocol, subjects were randomized to either the American Heart Association Step 1 diet as a control, or a pecan-enriched Step 1 diet with pecans (20% of total calories or about 60 grams per 2,000 calories). The 23 participants were men and women with normal to moderately high blood cholesterol levels.

Although both diets lowered blood lipids, the pecan-enriched diet altered the lipid profile more favorably than the Step 1 diet, including 6.7% reduction in total cholesterol, 10.4% reduction in LDL cholesterol, and 11.1% reduction in triglycerides after four weeks. HDL “good” cholesterol was increased by 5.6%, and there were no changes in body weight.

The researchers said the observed alterations in blood lipids were greater than expected when calculated by predictive equations based on changes in dietary fatty acids and cholesterol.

While these studies provide insights into the potential relationship between pecan-rich diets and cholesterol levels, the results are unique to the study design. Since evidence is limited, more research is needed to understand how compounds in pecans may play a role in supporting normal cholesterol and blood lipids.



A CLOSER LOOK AT VITAMIN E

Compared to other nuts, pecans have the highest levels of a form of vitamin E called gamma-tocopherols. Ella Haddad and colleagues at Loma Linda conducted two studies to explore the potential benefits of the gamma-tocopherols in pecans, specifically the role on oxidative stress, which is implicated in cardiovascular disease.

A 2006 randomized, controlled crossover feeding study of 24 participants published in *Nutrition Research*⁹ found that a pecan-enriched diet (equivalent to 20% of calories) helped participants increase blood levels of gamma-tocopherols and reduced markers of lipid oxidation after eight weeks. The men and women in the study (ages 25-55) were in good health with no history of heart disease. The Loma Linda University researchers concluded that pecans can serve as a valuable source of gamma-tocopherols in the diet, along with flavonoids (particularly proanthocyanidins and flavan-3-ols), which may have positive effects on heart health; however, additional research is needed to determine the significance of this effect.



Similarly, a 2011 study published in the *Journal of Nutrition*¹⁰ investigated the effect of pecans on biomarkers of oxidation and lipid peroxidation, antioxidant capacity, and plasma tocopherols. In a placebo-controlled, 3-way crossover study, 16 healthy participants (ages 23-44 years) consumed test meals of either 90 grams of whole pecans (about 3 servings) plus water, 90 grams of pecans blended with water, or a similar control diet without pecans. Blood samples were drawn and total polyphenols and gamma-tocopherol levels were significantly increased in both the pecan groups. Additionally, oxidized LDL decreased following the pecan meals. Whether the improvements were due to the gamma-tocopherols, flavonoids, or both acting in synergy remains to be determined, the authors concluded.

GAMMA-TOCOPHEROLS

(mg per ounce)

Almonds	0.18
Brazil Nuts	2.71
Cashews	n/a
Hazelnuts	0
Macadamias	0
Pecans	6.93
Pine Nuts	3.16
Pistachios	6.64
Walnuts	5.91

Source: USDA National Nutrient Database for Standard Reference

POLYPHENOL PROFILE OF PECANS

Pecans contain a mix of polyphenols, specifically flavonoids.² These bioactive compounds, particularly proanthocyanidins, anthocyanidins and flavan-3-ols, have been the focus of emerging research on cardiovascular health.¹¹⁻¹³

While these studies examined total flavonoid consumption, and not pecans specifically, pecans do help contribute to America's flavonoid intake. Pecans contain 898 mg proanthocyanidins, 18 mg of anthocyanidins and 16 mg of flavan-3-ols per 100 g, including epicatechin and catechin.²



IT'S TIME TO PICK PECANS

When it comes to America's native nut, great taste is just the beginning. No longer should pecans be overlooked in health conversations. This nutrient-dense nut is deserving of attention – and not just during the holidays. Whether tossed in salads and grain bowls, blended in a smoothie, transformed into pecan butter, added to vegetables and main dishes, or eaten whole as a snack – the American Pecan is a wholesome and homegrown nut that's ideal any time of the year.

To learn more about the American Pecan, including recipes, health research, and how the country's only indigenous tree nut is grown and harvested, visit AmericanPecan.com.



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