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The Role of Nuts in a Healthy Diet

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While not a staple in the American diet, nuts are consumed by many Americans. This *Nutrition Insight* examines the contribution nuts can make to a diet, consumption of nuts, characteristics of people who eat nuts, and the association of nut consumption with diet quality. Nuts are generally divided into two groups—tree nuts (almonds, pecans, etc.) and peanuts. Peanuts, technically a legume (a dried pea, bean, or lentil), are typically included in the nut group because they are used in a manner comparable to nuts and have a similar nutrient profile.

Contributions of Nuts to the Diet

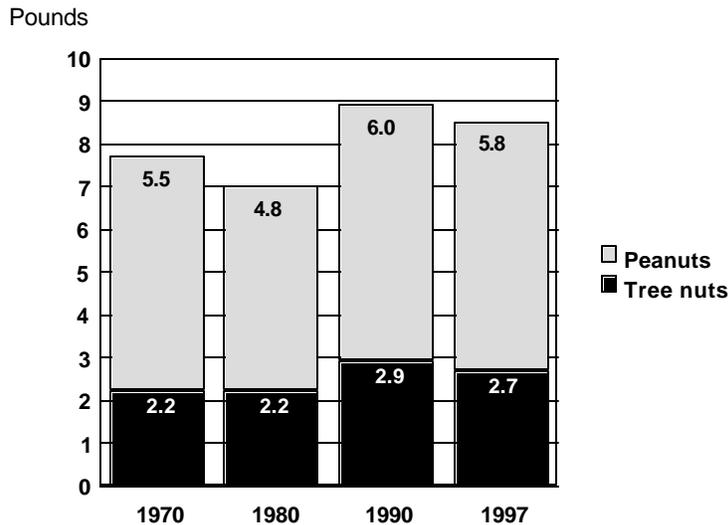
Nut consumption can make beneficial contributions to the diet but at a cost—increased calories. Recent research indicates that frequency of nut consumption may have an inverse association with the risk of heart disease for men, women, and the elderly (Sabate, 1999). Eating nuts also seems to lower serum cholesterol and favorably changes a person's lipoprotein profile (Sabate, 1993). Walnuts have specifically been studied for their effect on serum lipids and blood pressure. Results have shown that incorporating a moderate amount of walnuts into a cholesterol-lowering diet decreases serum total cholesterol levels and favorably changes the lipoprotein profile in healthy men (Sabate et al., 1993).

Growing evidence shows that nuts have bioactive constituents (like plant protein, dietary fiber, and some micronutrients) that elicit protective effects on the heart. When subjects ate test diets including nuts, the cholesterol-lowering response was greater than predicted. This suggested that constituents of nuts, other than fatty acids, have additional cholesterol-lowering effects (Kris-Etherton et al., 1999). Findings from epidemiologic studies suggest an inverse association between death from stroke and intake of the most concentrated food sources of vitamin E, such as nuts (Yochum et al., 2000). A review of the beneficial effects of vegetarian foods, including nuts, also has shown such foods lead to improved control of blood-glucose concentration, lower insulin requirements, and better weight control for diabetic patients (Segasothy et al., 1999).

Nut Consumption in the United States

Annual per capita consumption of nuts in the United States (based on food disappearance data) has ranged from 7.0 to 8.9 pounds over the 1970-97 period (fig. 1). Nut consumption decreased slightly between 1990 and 1997 (8.9 to 8.5 pounds). Peanuts (which include peanuts in peanut butter and candy) accounted for most of this nut consumption—68 percent of total nut consumption in 1997. Tree nuts

Figure 1. Annual per capita consumption of nuts



Source: U.S. Department of Agriculture, Economic Research Service.

accounted for the minority share of per capita nut consumption. In 1997, the most commonly consumed tree nuts were almonds (19 percent of per capita tree nut consumption), coconuts (18 percent), pecans (17 percent), and walnuts (17 percent). As a percentage of total annual per capita consumption of food, nuts accounted for a very small share, compared with other foods. For example, the per capita consumption of meat, poultry, and fish was 190 pounds in 1997, compared with 8.5 pounds for all nuts (Putnam et al., 1999).

Nut Eaters and the Quality of Their Diet

Who in the United States eats nuts? And what is the quality of their diet? To answer these questions, we used data from the Market Research Corporation of America (MRCA) Information Services. We used information from 6,928 people for the 1992-94 period; these data were weighted to provide

population estimates. MRCA collected information on people's consumption of nuts based on detailed diaries of foods eaten over a 14-day period. "Nut eaters" were defined as people who consumed any type of nut over a 14-day period, and "non-nut eaters" were defined as people who did not consume any type of nut over this same period. Forty-one percent of people were "nut eaters," and 59 percent were "non-nut eaters."

Of the five characteristics examined (gender, age, income, race, and region of residence), age and race of nut eaters and non-nut eaters were significantly different (table 1). Compared with non-nut eaters, a significantly higher percentage of nut eaters were younger and were White. Among nut eaters, 37 percent were under age 19, compared with 25 percent of non-nut eaters. In addition, among nut eaters, 90 percent were White, compared with 86 percent of non-nut eaters.

To answer the question of whether nut eaters have a better diet than do non-nut eaters, we used a modified version of the Healthy Eating Index (HEI). This modified version uses 9 of the original 10 HEI components. Components 1-5 measure the degree to which a person's diet conforms to serving recommendations of the Food Guide Pyramid food groups: Grains (bread, cereal, rice, and pasta), vegetables, fruits, milk (milk, yogurt, and cheese), and meat (meat, poultry, fish, dry beans, eggs, and nuts). As a percentage of total intake of food energy, component 6 measures consumption of total fat; component 7, saturated fat. Component 8 measures total cholesterol intake; component 9, sodium intake. The score for each component ranges from zero to 10, with higher component scores indicating intakes that are closer to recommendations. The MRCA data set does not provide enough information to calculate the variety of a person's diet (component 10 of the original HEI), so variety was not calculated. All total HEI scores on the modified version were adjusted to a 100-point scale. Scores greater than 80 imply a good diet; between 51 and 80, a diet that needs improvement; and less than 51, a poor diet.

For nut eaters, the mean score on the modified HEI was slightly, but significantly, higher than the score for non-nut eaters (60.8 vs. 56.9). Both groups, however, had total scores that indicated their diet needed improvement. The average daily caloric intake of nut eaters also was significantly higher—about 10 percent—than that of non-nut eaters. On the individual components of the HEI, nut eaters, compared with non-nut eaters, had significantly higher scores for grains, fruits, milk, fat, saturated fat, and cholesterol. The higher HEI fat score—indicating nut eaters consume less fat as a percentage of total calories—may seem surprising because nuts contain fat. It appears that nut eaters consume less fat from other

Table 1. Characteristics of nut eaters and non-nut eaters, 1992-94

Characteristic	Nut eaters	Non-nut eaters
	<i>Percent</i>	
Gender		
Male	47	46
Female	53	54
Age (years)*		
<19	37	25
19 - 51	36	51
>51	27	24
Income		
200% of poverty or less	45	42
More than 200% of poverty	55	58
Race*		
White	90	86
Non-White	10	14
Region		
Northeast	19	20
South	25	25
Midwest	33	35
West	23	20

*Significant at .05 level, based on unweighted data.

foods in their diet, compared with non-nut eaters, or given their caloric level is higher, they consume less fat as a percentage of total energy. Non-nut eaters had significantly higher scores for vegetables and sodium that did nut eaters. The meat score for the two groups was not significantly different.

Other factors (such as age and race) may influence the modified HEI scores of nut eaters and non-nut eaters. However, even when using multivariate analytic procedures to control for all five characteristics previously examined, we found that the modified HEI score for nut eaters was significantly higher than the score for non-nut eaters.

Conclusion

Although nut consumption is low, compared with other protein sources such as meat and poultry, nuts provide many of the same nutrients to the diet and have potential health benefits. A significantly higher percentage of nut eaters than non-nut eaters were younger and were White. In addition, compared with non-nut eaters, nut eaters had a slightly better diet, albeit one that needed improvement.

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