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Ask The Doctor

Can Vegetarian Diets Improve your Health?

Q: *I am considering vegetarian diets and was wondering whether vegetarians are generally healthier and less susceptible to chronic diseases than non-vegetarians. Are there any nutritional or other health drawbacks to a vegetarian diet?*

A: A vegetarian diet is plant-based as opposed to animal-based. The four distinct categories of vegetarian diets are: 1) lactovegetarian (which includes dairy products); 2) ovovegetarian (which includes eggs); 3) lactoovovegetarian (which includes dairy products and eggs); and 4) vegan (which excludes all animal products). Estimates vary, but 1-2.5% of US adults are vegetarians.[1]

In the last few centuries, the causes of our most prevalent diseases have changed, from disorders owing largely to nutritional deficiencies (e.g., scurvy, rickets, beriberi) and infectious diseases (e.g., "black death," typhus, yellow fever, smallpox) to chronic and degenerative conditions such as heart disease, high blood pressure, diabetes, and obesity. Current evidence-based medicine clearly indicates that meat-free or meat-reduced diets (e.g., vegetarian, Asian, and Mediterranean) re-duce both chronic disease risk and all-cause mortality. Never-theless, as a group, vegetarians live longer and healthier lives than non-vegetarians. While an adequate diet (as promoted by the USDA) prevents nutritional deficiencies, an optimal diet (e.g., vegetarian, Asian, and Medi-terranean) promotes health and longevity.

Vegetarians derive less energy from their diets than do non-vegetarians. Likewise, they have, on average, a correspondingly lower body mass index (BMI) of 22 versus 26 for non-vegetarians (a BMI of 18-22 is considered ideal).[2] Research has shown that a below-average weight maintained throughout one's life span is associated with greater longevity.[1] Vegetarians benefit from the antioxidants, anticarcinogens, and fiber found naturally in plant sources. While not all protective phytochemicals have been described, the common ones include vitamins (i.e., carotenoids, ascorbic acid, tocopherols, and folic acid), fiber, indoles, thiocyanates, cumarins, phenols, flavonoids, terpenes, protease inhibitors, and plant sterols. In a 12-year California-based study of more than 34,000 subjects, researchers found that a history absent of cigarette use and including regular physical exercise, daily nut consumption, and a vegetarian diet was independently associated with longer life,[3] and that the combination of these traits basically added 10 years to one's life.

While the rate of colorectal cancer in vegetarians is roughly one-half of that in non-vegetarians, rates of breast and prostate cancers are similar for vegetarians and non-vegetarians.[1] Vegetarians have a reduced risk for many chronic and degenerative diseases, such as obesity, coronary artery disease, hypertension, and diabetes mellitus.[4] Both men and women who follow a vegetarian diet have marginal iron status as reflected by low serum ferritin concentrations, which in turn is associated with a reduced risk of cardiovascular disease.[5]

Based on human dietary intake studies, a vegetarian diet may reduce chronic disease risk by any or all of the following mechanisms: increased antioxidant activity, modulation of detoxification enzymes, stimulation of the immune system, decreased platelet aggregation, favorable alteration in cholesterol metabolism, regulation of steroid hormone concentrations and hormone metabolism, reduced blood pressure, and antibacterial and antiviral activity.

Lactovegetarians, ovovegetarians, and lactoovovegetarians are most susceptible to iron and zinc deficiencies, while vegans are susceptible to deficiencies of iron, zinc, calcium, vitamin B12, riboflavin, and vitamin D. Diets comprising a variety of plants, including grains, legumes, seeds, and nuts, have been shown to be nutritionally sufficient for all types of vegetarians, with the exception of supplying sufficient amounts of vitamins B12 and D.4 It is therefore recommended that vegetarians take vitamin B12 (6 mcg daily)[6] and vitamin D (400-1000 IU daily) if sunlight exposure is inadequate (5-15 minutes of sun exposure to the hands, arms, and face daily).

Protein is required in the diet as a source of nitrogen for the 11 non-essential amino acids, for purine and pyrimidine synthesis (nucleic acid bases), and for the 10 essential amino acids that are inadequately produced endogenously. Complete proteins contain all the essential amino acids necessary for protein synthesis, while incomplete proteins have insufficient amounts of some essential amino acids. The National Research Council currently recommends a daily protein intake requirement of 0.8 grams of protein per kilogram of body weight, which is approximately 8-9% of daily caloric intake. In a study conducted at Loma Linda University in California, the protein intake of nearly one-half of the subjects fell short of this recommendation.[1] Based on a thorough review of the literature on vegetarian diets, however, mixtures of incomplete proteins complement one another and protein supplementation is therefore not generally recommended.

The Inuits, a Canadian Arctic Eskimo people, eat a diet very high in saturated fat. Paradoxically, the Inuits do not exhibit the expected high rate of cardiovascular disease. Because the correlation between high saturated fat intake and increased incidence of cardiovascular disease is well established, some genetic or dietary factor must protect the Inuits or neutralize this diet-disease relationship. It is now believed that omega-3 fatty acids assume that protective role. The source of saturated fat in the Inuit diet is primarily seal and whale blubber rich in omega-3 fatty acids. Although vegetarians consume less saturated fats than nonvegetarians,[1] the potential protective effect of supplementary omega-3 fatty acids (i.e., highly concentrated fish oil capsules) merits serious consideration by vegetarians.

Reference

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