



Walnuts: Heart-Health And Beyond

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WALNUTS ARE THE 21ST CENTURY ‘SUPER FOOD’

There are few foods that are as nutritiously complete and good for the human body as walnuts. For more than a dozen years, research by highly-respected scientific and clinical experts has continued to reveal that this “Super Food” is packed with nutrients that positively affect the body on a multitude of levels.

Walnuts are unique as one of the most nutrient-dense whole food sources of alpha-linolenic acid (ALA), an essential omega-3 fatty acid. Numerous studies have concluded that omega-3s help reduce the potential for heart disease, cancer, stroke, diabetes, high blood pressure, obesity and clinical depression.

The bottom line is that walnuts contribute nutrients essential to a healthy lifestyle. Eating walnuts is one of the easiest things a person can do to improve their health. Best of all, they taste great and are ideally suited for inclusion in any diet, as part of meals or snacks.

NEW DIETARY GUIDELINES: POLYUNSATURATED FAT IN WALNUTS A WISE CHOICE

The January 2005 announcement by the U.S. Department of Health and Human Services (HHS) and the U.S. Department of Agriculture (USDA) stresses the need for consumers to be more aware of the benefits of polyunsaturated fat in order to achieve a healthy diet. The main benefit is the essential fatty acids available only from polyunsaturated fat. When it comes to this subject, more people need to know fish are not the only source of these essential fatty acids. The guidelines suggest that people consume the majority of their daily fat calories from unsaturated fat. Plant sources of polyunsaturated omega-3 fatty acids such as walnuts are specifically noted. This recommendation reaffirms the recommendations made by other authoritative bodies such as the American Heart Association (AHA), the U.S. Food and Drug Administration (FDA) and the National Academy of Sciences.

“I am convinced that if people eat the proper diet they will have more reduction in their heart risk than just taking a medication,” says Anderson Morris, M.D., FACC, medical director, HealthSouth Heart College. “Walnuts are a very good source of antioxidants, vitamins, fiber, and omega-3 fatty acids. That’s why I tell my patients that eating walnuts is like wearing a seat belt for your heart.”

CLINICAL STUDY SHOWS WALNUTS PROTECTIVE FOR PEOPLE WITH TYPE 2 DIABETES

A recent study conducted in Australia shows that, for patients with type 2 diabetes, a whole foods diet including walnuts can reduce LDL “bad” cholesterol by as much as 10 percent. Findings of this new study are published in the December 2004 issue of *Diabetes Care*, a journal of the American Diabetes Association (ADA).

Primary study investigator Linda Tapsell, Ph.D., APD, director of the National Centre of Excellence in Functional Foods, located at the University of Wollongong, Australia, says, “This is one of the first studies to look at the effect of polyunsaturated fatty acids on diabetes management. Walnuts are an easy and convenient way of getting polyunsaturated omega-3 fatty acids into the diet. And they’re particularly important for people with diabetes because they are a simple snack food, which is an integral component of managing the diet in diabetes.”

Tapsell says that a diet including walnuts can help the body address one of the problems associated with early stage type 2 diabetes – insulin resistance – which hinders the absorption of glucose from the bloodstream into human cells.

These findings are significant. According to the ADA, more than 65 percent of people with diabetes die from heart disease or stroke. In the U.S., 18.2 million people, or 6.3 percent, have diabetes and most have the type 2 form of the disease. The World Health Organization reports that at least 171 million people worldwide have diabetes and this number will likely double by 2030.

WALNUTS REDUCE THE RISK OF HEART DISEASE

An ever-growing body of research has shown that walnuts play a significant role in reducing the risk of heart disease. The heart benefits of walnuts include lowering cholesterol, reducing inflammation and improving arterial function.

Results from a November 2004 study from The Pennsylvania State University – published in the *Journal of Nutrition* – showed that eating walnuts can significantly reduce C-reactive protein and harmful plaque adhesion molecules, two significant markers of inflammation in arteries.

Penny Kris-Etherton, Ph.D., distinguished professor of nutrition at Penn State and primary investigator for the study says, “The important new finding with our research is that a diet high in walnuts beneficially affects multiple risk factors for coronary heart disease, which can have a greater impact on decreasing cardiovascular risk than just targeting single risk factors.”

Many people look to fish, such as salmon, for omega-3s. However, Kris-Etherton says, “The omega-3 fatty acids in walnuts were converted to the same omega-3 fatty acids found in marine sources, and had a similar effect on inflammation. Reducing inflammation can help decrease the progress of arteriosclerosis – the development and build-up of plaque in the arteries.”

A March 2004 clinical study from the University of Barcelona showed that substituting walnuts for monounsaturated fat in a Mediterranean diet improved, and even restored, endothelial function (the elastic property of arteries to dilate when meeting an increased demand of blood). The study also showed that walnuts reduce cell adhesion molecules associated with atherosclerosis, commonly known as hardening of the arteries. These dual effects enhance the circulatory system, aiding in the prevention of heart disease. According to the researchers, walnuts are the first whole food to show such cardiovascular benefits. The study was published in *Circulation: Journal of the American Heart Association* (March/April 2004).

Research from The Pennsylvania State University showing that an ALA diet improves vascular function was reported at the American Heart Association’s 5th Annual Conference on Arteriosclerosis, Thrombosis, and Vascular Biology in San Francisco (May 2004). Lead author Sheila G. West, Ph.D. says, “Our findings suggest that the special kind of fatty acids that are present in walnuts can improve the function of arteries and allow them to dilate better.” Additionally, a University of San Francisco study published in *Stroke* in 1995 found omega-3s reduced the incidence of stroke.

California's Loma Linda University, in 1993 clinical trials, was the first to find that walnuts in a controlled diet reduced “bad” LDL cholesterol and heart disease risk significantly more than the Step 1 diet that was then recommended by the American Heart Association. Five walnut studies reviewed in 2002 by the Life Sciences Research Office (LSRO) – an independent, non-profit organization that conducts peer-reviewed scientific reviews, prepares expert documents and manages scientific meetings – confirmed these findings, which also demonstrated that the walnut diet out-performed a healthy Mediterranean diet. In addition, the Kyushu University (Japan) clinical study, also published in 2002, showed a healthy Asian-style diet to be even healthier with walnuts.

THE HEALTHY POWER OF OMEGA-3s

There have been major changes in the American diet in the past few decades as people have increased their use of processed foods, which are loaded with unhealthy doses of saturated- and trans-fats. This has led to an unhealthy balance of essential fatty acids (EFAs). Ideally, the two families of EFAs (omega-6 and omega-3) should be balanced in a ratio of no more than 4:1 for optimum health. The average American’s dietary ratio can be in excess of an alarming 20:1, or more. Artemis P. Simopoulos, M.D., president of The Center for Genetics, Nutrition and Health and author of *The Omega Diet* says, “Walnuts are unique because they have a perfect balance of omega-6 and omega-3 polyunsaturated fatty acids, a ratio of 4:1, which has been shown to decrease the risk of sudden death in the Lyon Heart Study.” Simopoulos says omega-3s reduce the bloodstream levels of LDL (bad) cholesterol and maintain or raise HDL (good) cholesterol.

The presence of omega-3s reduces blood pressure, arterial inflammation and the stickiness of platelets, making them less likely to cling together and form plaque, which can build-up, rupture and plug arteries. EFAs, particularly omega-3s, may also play a role in reducing arrhythmia (irregular heart beat pattern) and cardiac arrest. Take, for example, the U.S. Physicians’ Health Study (Harvard), published in June 2002. The study, which followed 21,454 men for an average of 17 years, illustrated that dietary nut intake was associated with a significantly reduced risk of sudden cardiac death. The Lyon Heart Study published in *Lancet* in 1994 showed healthy EFAs in the blood reduced clotting and inflammation, decreasing risk for clogging of the arteries and sudden heart attack by 70 percent.

Studies have shown omega-3s to be effective at preventing the development of clinical depression. In a study released in *Biological Psychiatry* (February 2005), a team of researchers from McLean Hospital, associated with Harvard University, confirmed that omega-3s “have antidepressant-like effects.”

ANTIOXIDANTS: FOOT SOLDIERS IN THE BATTLE AGAINST DISEASE

Reported in June 2004, a USDA study of food antioxidants noted the high antioxidant concentration in walnuts. Antioxidants help the body ward off life-threatening maladies such as cancer, heart disease and diabetes, as well as debilitating ailments such as arthritis, osteoporosis and Alzheimer’s disease. While there are several different methods used to measure antioxidant levels, such as the oxygen radical absorbance capacity (ORAC) and the ferric-reducing ability of plasma (FRAP) methods, walnuts rank highly under either method.

WALNUTS AND WEIGHT MANAGEMENT

The latest study from Australia once again affirmed that the health benefits from eating walnuts do not come at the expense of weight gain. Researchers have noted in many walnuts studies that subjects did not gain weight when walnuts were substituted for other fat in the diet. People reported feeling more satisfied; many said walnuts made it easier to stick to a diet. This response was also noted by McManus et al in their study published in October 2001 by the *International Journal of Obesity*, which concluded that people following a moderate fat weight loss diet, including peanuts and tree nuts, such as walnuts, were able to improve weight loss and keep weight off for a longer period than people following the traditionally recommended low-fat diet.

FDA ALLOWS HEALTH CLAIM FOR WALNUTS

In a landmark decision in March 2004, the FDA delivered the strongest governmental endorsement of walnuts to date when it affirmed: “Supportive but not conclusive research shows that eating 1.5 ounces per day of walnuts, as part of a low saturated fat and low cholesterol diet and not resulting in increased caloric intake, may reduce the risk of coronary heart disease. See nutrition information for fat content.” This FDA decision came in response to a petition filed by the California Walnut Commission, which highlighted a body of international scientific research substantiating the benefits of eating walnuts as part of a heart-healthy diet. The body of evidence suggests that the nutritional composition of walnuts contributes to these heart health benefits.

GOOD FAT PROMOTES GOOD HEALTH

Many clinical studies published in peer-reviewed scientific journals have provided strong evidence that “good” fats, like omega-3 fatty acids, promote good health. As a result, new dietary guidelines have been established by several leading health organizations and government agencies:

- ✓ The HHS and USDA issued new “Dietary Guidelines for Americans” (January 2005) which recommends plant sources of omega-3 polyunsaturated fatty acids, such as walnuts.
- ✓ The American Institute for Cancer Research (AICR) announced its support (May 2004) of the FDA decision to permit nutrient content claims for foods rich in omega-3s, given a link between omega-3s and reduced risk of some cancers. With news about toxins in certain marine sources of omega-3s, as well as nutritional questions about farm-raised fish, the AICR recommended walnuts as a beneficial alternative source of the essential nutrient.
- ✓ In July 2003, the FDA announced its Consumer Health Information for Better Nutrition Initiative and identified omega-3 fatty acids as a key area of focus.
- ✓ The AHA issued a statement in November 2002 that urged a daily dose of omega-3-rich foods, such as fish, walnuts, flaxseed and some vegetable oils.
- ✓ The Food Nutrition Board of the National Academies’ Institute of Medicine (National Academy of Sciences) released dietary recommendations in September 2002 that said, “People must get two types of polyunsaturated fatty acids, known as alpha-linolenic acid (an omega-3 fatty acid) and linoleic acid (an omega-6 fatty acid), from the foods they consume since neither is synthesized in the body.” For alpha-linolenic acid, the recommendation is 1.6 and 1.1 grams per day for men and women, respectively. **The 2.5 grams of alpha-linolenic acid in just one ounce of walnuts more than satisfies the National Academies’ daily dietary recommendation.**

FAST FORWARD, FLASHBACK

In historical terms, walnut science is new and cutting-edge. Yet their health lore is ancient. It's interesting to glance back and remember that during Medieval times, walnuts were considered a medicine. A potion containing walnut leaves was used to treat muscular aches and pains and walnuts were believed to soothe the digestive system. Later, in the 16th and 17th centuries, herbal treatments became official medical practice under the “Doctrine of Signatures,” and various plants were prescribed due to their resemblance to a particular body part. Hence, the walnut, with its visual likeness to the human brain, was used to treat head ailments, boost intellect and calm emotions. Even today, in Asian cultures, the walnut is considered a brain food; college students there munch on walnuts by the handful before exams, hoping to boost their scores. Depending on which way a walnut is cracked open, it has a striking resemblance either to the brain or the heart. Crack a walnut and see the hearts for yourself. You won’t get a “perfect” heart every time, but you’ll get the message – walnuts are heart-healthy.

SCIENTIFIC ADVISORY COUNCIL

The walnut industry has been a leader in health research for more than a decade, the first among nuts to commission clinical studies in the early 1990s. Committed to producing the highest quality foods, the industry also believes in the nutritional power of whole foods. To assess research in progress around the world, and to review proposals and study results, a decade ago the California Walnut Commission established an advisory board of scientists from leading universities.

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