

## Why do I need Nutritional Supplements?

**Solution:** For over 50 years we've been led to believe that RDA levels are adequate. Adequate for what? Adequate to prevent clinically obvious nutritional deficiencies like scurvy, beriberi, rickets, and pellagra?

According to the Food and Nutrition Board (under the umbrella of the National Institutes of Health), "The Recommended Dietary Allowance (RDA) is the average daily dietary intake level that is sufficient to meet the requirement of nearly all apparently healthy individuals in a particular life stage and gender group." The Food and Nutrition Board further defines "requirement" as "the lowest continuing intake level of a nutrient that, for a specified indicator of adequacy, will maintain a defined level of nutriture in an individual." Basically, the RDA is (by their own definition) the lowest level of nutrient intakes that will prevent deficiencies in apparently healthy individuals. And while RDA levels may have helped us to avoid acute deficiency diseases, they do not address the issues of optimal nutrition.

The RDAs have certainly played an important role in public health. Most assuredly, they provide amounts that will prevent you from getting scurvy, pellagra, rickets or beriberi. However, in the general population, these vitamin-related diseases are of little concern. Products based solely on RDA amounts are fine for their intended purpose (i.e. providing minimal amounts of important vitamins and minerals), but the RDA of vitamins and minerals is not always enough to help prevent certain degenerative disease or to provide protection from oxidative damage. In other words, there is more to the benefits of nutritional supplementation than preventing rare deficiencies. Therefore, the RDA should be considered the "minimum wage" of nutrition.

USANA's products are formulated with more nutritional research in mind, and with little relevance to the RDA's. We are concerned with vast majority of people who are "apparently" healthy. How long is a person "apparently" healthy before they have a heart attack? Or break a hip due to osteoporosis? These health concerns and other degenerative diseases develop over a lifetime, often to unsuspecting individuals. Minimal nutrient intakes and the RDAs are simply not always adequate or even designed to address many of these common health challenges.

According to the Centers for Disease Control (CDC) much of the illness, disability, and death associated with chronic disease is avoidable through known prevention measures. Furthermore, a recent study examining the potential economic benefits of vitamin supplementation concluded that there are substantiated cost reductions associated with the use of vitamin supplements, based on preventative nutrition. Bottom line- there can be substantial cost reductions associated with vitamin supplements based on preventative nutrition.

If you are eating healthy, do you still need to take supplements? A healthy diet is a necessary foundation for any program of optimal nutrition, and there is no substitute for eating well. In this context, USANA's nutritional supplements are designed to compliment a healthy diet not replace it. Our supplements are designed to provide the advanced levels of the essential vitamins, minerals, and antioxidants that are difficult to obtain from diet alone; levels that we all need, everyday, to promote good health lifelong. More importantly, we are not the only one's who are convinced of the health benefits of nutritional supplements. Last June, the Journal of the American Medical Association published two articles by health researchers at Harvard University. Their articles were entitled " Vitamins for Chronic Disease Prevention in Adults". Through their research, these authors concluded that the "suboptimal intake of some vitamins, above levels causing classic vitamin deficiency, is a risk factor for chronic diseases and common in the general population, especially the elderly. Suboptimal folic acid levels, along with suboptimal levels of vitamins B6 and B12, are a risk factor for cardiovascular disease, neural tube defects, and colon and breast cancer; low levels of vitamin D contribute to osteopenia and fractures; and low levels of the antioxidant vitamins (vitamins A, E and C) may increase risk for several chronic diseases. The scientific evidence supporting the health benefits of nutritional supplements is solid and

growing daily. And more health care professionals than ever before are now siding with the conclusions drawn from these two review articles published in the Journal of the American Medical Association.

The science of nutrition and nutritional supplementation is advancing at a rapid pace. For over a decade, USANA Health Sciences has been a leader in providing high quality nutritional supplements containing advanced levels of vitamins, minerals and other important nutrients associated with long-term health. There has never been a better time put the science of nutrition to work in promoting your health. And there has never been a better time to be associated with USANA.

## REFERENCES OF INTEREST

***Bendich A, Mallick R, Leader S. Potential health economic benefits of vitamin supplementation.***

***West J Med 1997 May; 166(5):306-12.*** This study used published relative risk estimates for birth defects, premature birth, and coronary heart disease associated with vitamin intake to project potential annual cost reductions in U.S. hospitalization charges. Epidemiological and intervention studies with relative risk estimates were identified via MEDLINE. Preventable fraction estimates were derived from data on the percentage of at-risk Americans with daily vitamin intake levels lower than those associated with disease risk reduction. Hospitalization rates were obtained from the 1992 National Hospital Discharge Survey. Charge data from the 1993 California Hospital Discharge Survey were adjusted to 1995 national charges using the medical component of the Consumer Price Index. Based on published risk reductions, annual hospital charges for birth defects, low-birth-weight premature births, and coronary heart disease could be reduced by about 40, 60, and 38%, respectively. For the conditions studied, nearly \$20 billion in hospital charges were potentially avoidable with daily use of folic acid and zinc-containing multivitamins by all women of childbearing age and daily vitamin E supplementation by those over 50.

***Fairfield KM, Fletcher RH. Vitamins for chronic disease prevention in adults: scientific review. JAMA 2002; 287:3116-3126.*** CONTEXT: Although vitamin deficiency is encountered infrequently in developed countries, inadequate intake of several vitamins is associated with chronic disease. OBJECTIVE: To review the clinically important vitamins with regard to their biological effects, food sources, deficiency syndromes, potential for toxicity, and relationship to chronic disease. DATA SOURCES AND STUDY SELECTION: We searched MEDLINE for English-language articles about vitamins in relation to chronic diseases and their references published from 1966 through January 11, 2002. DATA EXTRACTION: We reviewed articles jointly for the most clinically important information, emphasizing randomized trials where available. DATA SYNTHESIS: Our review of 9 vitamins showed that elderly people, vegans, alcohol-dependent individuals, and patients with malabsorption are at higher risk of inadequate intake or absorption of several vitamins. Excessive doses of vitamin A during early pregnancy and fat-soluble vitamins taken anytime may result in adverse outcomes. Inadequate folate status is associated with neural tube defect and some cancers. Folate and vitamins B(6) and B(12) are required for homocysteine metabolism and are associated with coronary heart disease risk. Vitamin E and lycopene may decrease the risk of prostate cancer. Vitamin D is associated with decreased occurrence of fractures when taken with calcium. CONCLUSIONS: Some groups of patients are at higher risk for vitamin deficiency and suboptimal vitamin status. Many physicians may be unaware of common food sources of vitamins or unsure which vitamins they should recommend for their patients. Vitamin excess is possible with supplementation, particularly for fat-soluble vitamins. Inadequate intake of several vitamins has been linked to chronic diseases, including coronary heart disease, cancer, and osteoporosis

***Fletcher RH, Fairfield KM. Vitamins for chronic disease prevention in adults: clinical applications. JAMA 2002; 287:3127-3129.*** Vitamin deficiency syndromes such as scurvy and beriberi are uncommon in Western societies. However, suboptimal intake of some vitamins, above levels causing classic vitamin deficiency, is a risk factor for chronic diseases and common in the general population, especially the elderly. Suboptimal folic acid levels, along with suboptimal levels of vitamins B(6) and B(12), are a risk factor for cardiovascular disease, neural tube defects, and colon and breast cancer; low levels of vitamin D contribute to osteopenia and fractures; and low levels of the antioxidant vitamins (vitamins A, E, and C) may increase risk for several chronic diseases. Most people do not consume an optimal amount of all vitamins by diet alone. Pending strong evidence of effectiveness from randomized trials, it appears prudent for all adults to take vitamin supplements. The evidence base for tailoring the contents of multivitamins to specific characteristics of patients such as age, sex, and physical activity and for testing vitamin levels to guide specific supplementation practices is limited. Physicians should make specific efforts to learn about their patients' use of vitamins to ensure that they are taking vitamins they should, such as folate supplementation for women in the childbearing years, and avoiding dangerous practices such as high doses of vitamin A during pregnancy or massive doses of fat-soluble vitamins at any age.

***Kant AK. Consumption of energy-dense, nutrient-poor foods by adult Americans: nutritional and health implications. The third National Health and Nutrition Examination Survey, 1988-1994. Am J Clin Nutr 2000 Oct; 72(4):929-36.*** BACKGROUND: Current dietary guidance recommends limiting the intake of energy-dense, nutrient-poor (EDNP) foods, but

little is known about recent consumption patterns of these foods. OBJECTIVE: The contribution of EDNP foods to the American diet and the associated nutritional and health implications were examined. DESIGN: Data from the third National Health and Nutrition Examination Survey (n = 15611; age  $\geq$ 20 y) were used. EDNP categories included visible fats, nutritive sweeteners and sweetened beverages, desserts, and snacks. The potential independent associations of EDNP food intake with intakes of energy, macronutrients, micronutrients, and serum vitamin, lipid, and carotenoid profiles were examined with linear and logistic regression procedures. RESULTS: EDNP foods supplied approximately 27% of energy intake; alcohol provided an additional 4%. The relative odds of consuming foods from all 5 food groups and of meeting the recommended dietary allowance or daily reference intake for protein and several micronutrients decreased with increasing EDNP food intake (P: < 0.0001). Energy intake and percentage of energy from fat were positively related to EDNP intake. Serum concentrations of vitamins A, E, C, and B-12; folate; several carotenoids; and HDL cholesterol were inversely related (P:  $\leq$  0.0005) whereas serum homocysteine concentration was positively related (P: = 0.02) to EDNP food intake. CONCLUSIONS: The results suggest that EDNP foods were consumed at the expense of nutrient-dense foods, resulting in 1) increased risk of high energy intake, 2) marginal micronutrient intake, 3) poor compliance with nutrient- and food group-related dietary guidance, and 4) low serum concentrations of vitamins and carotenoids.

**Patterson BH, Harlan LC, Block G, Kahle L. Food choices of whites, blacks, and Hispanics: data from the 1987 National Health Interview Survey. *Nutr Cancer* 1995;23(2):105-19.** Dietary guidelines posit an association between diet and cancer. Different cancer mortality rates among whites, blacks, and Hispanics may be related to differences in diet. Food frequency data from the 1987 National Health Interview Survey on 20,143 adults were used to estimate the percentage of adults, by gender and race/ethnicity, who consume some 59 foods six or more times per year, median number of servings for consumers, and frequency of consumption of skin on poultry and fat on red meat. On the basis of percent consumption of these foods, women appear to have a more diverse diet than men. Women eat more fruits and vegetables, less meat, and fewer high-fat foods and drink fewer alcoholic beverages. Whites eat a more varied diet than blacks and Hispanics; blacks eat more fried and high-fat food; consumption of high-fat foods is lowest among Hispanics. Public health messages, especially those aimed at cancer prevention, should be targeted at increasing the overall consumption of fruits and vegetables, decreasing consumption of high-fat foods, especially among white and black men, and increasing consumption of those healthful foods already consumed by particular race/ethnicity groups.

**Starkey LJ, Johnson-Down L, Gray-Donald K. Food habits of Canadians: comparison of intakes in adults and adolescents to Canada's food guide to healthy eating. *Can J Diet Pract Res* 2001 Summer;62(2):61-9.** Over 25 years have elapsed since national food and nutrient intake data became available in Canada. Our goal was to describe present dietary intakes based on sociodemographic and 24-hour recall dietary interviews with adults and adolescents from households across the country. Within a multistage, stratified random sample of 80 enumeration areas, 1,543 randomly selected adults (aged 18-65) were enrolled in the study; 178 adolescents within the sampled households also participated. A comparison of food intake with Canada's Food Guide to Healthy Eating indicated that only males aged 13-34 met the minimum recommended intake levels for all four food groups. Mean milk products intake was below the minimum recommended level for all age groups of females and for men aged 35-65 years. Adolescent girls had low intakes of meat and alternatives. Daily grain product intakes were below five servings for women aged 50-65, as were vegetable and fruit intakes for women aged 18-40. Food choices from the "other foods" group contributed over 25% of energy and fat intake for all age and gender groups. These up-to-date data will be useful to dietitians, nutrition researchers, industry, and government in their efforts to promote Canadians' continued progress toward meeting food intake recommendations.

**Nicklas TA, Baranowski T, Baranowski JC, Cullen K, Rittenberry L, Olvera N. Family and child-care provider influences on preschool children's fruit, juice, and vegetable consumption. *Nutr Rev* 2001 Jul;59(7):224-35.** Children's intakes of fruit, juice, and vegetables (FJV) do not meet the recommended minimum of five daily servings, placing them at increased risk for development of cancer and other diseases. Because children's food preferences and practices are initiated early in life (e.g., 2-5 years of age), early dietary intervention programs may have immediate nutritional benefit, as well as reduce chronic disease risk when learned healthful habits and preferences are carried into adulthood. Families and child-care settings are important social environments within which food-related behaviors among young children are developed. FJV preferences, the primary predictor of FJV consumption in children, are influenced by availability, variety, and repeated exposure. Caregivers (parents and child-care providers) can influence children's eating practices by controlling availability and accessibility of foods, meal structure, food modeling, food socialization practices, and food-related parenting style. Much remains to be learned about how these influences and practices affect the development of FJV preferences and consumption early in life.

**Magarey A, Daniels LA, Smith A. Fruit and vegetable intakes of Australians aged 2-18 years: an evaluation of the 1995 National Nutrition Survey data. *Aust NZ J Public Health* 2001 Apr;25(2): 155-61.** OBJECTIVE: To evaluate the fruit and vegetable intakes of 2 to 18-year-old Australians. METHODS: Intake data were collected as part of the National Nutrition Survey 1995 representing all Australian States and Territories, urban, rural and remote areas. Dietary intake of 3,007, two to 18-year-olds was assessed using a 24-hour structured diet recall method. Intake frequency was assessed as the percentage of participants consuming fruit and vegetables on the surveyed day, and variety was assessed as the number of sub-groups of fruit and vegetables eaten. Intake levels were compared with the recommendations of the Australian Guide to Healthy Eating, the 1993 Goals and Targets for Australia's Health in 2000 and beyond, and intakes of the 1985 National Dietary

Survey. RESULTS: One-quarter of children and adolescents did not eat fruit on the day of survey and one fifth did not eat vegetables. Adolescents were less likely to include fruit (65%) than young children (80%) but slightly more adolescents (85%) included vegetables than young children (77%). Less than 50% of all participants (<25% of adolescents) had an adequate fruit intake, and only one-third of children and adolescents met the vegetable intake recommendations. CONCLUSIONS: Fruit and vegetable intakes of Australian children and adolescents fall well below recommendations and appear to have declined in the past 10 years. IMPLICATIONS: Strategic approaches involving a broad range of sectors are urgently needed to create a supportive environment for consuming recommended levels of a wide variety of fruit and vegetables.

**Kantor LS, Variyam JN, Allshouse JE, Putnam JJ, Lin BH. Choose a variety of grains daily, especially whole grains: a challenge for consumers. J Nutr 2001 Feb; 131(2S-1):473S-86S.** The 2000 edition of Nutrition and Your Health: Dietary Guidelines for Americans is the first to include a specific guideline for grain foods, separate from fruits and vegetables, and recognize the unique health benefits of whole grains. This paper describes and evaluates major tools for assessing intakes of total grains and whole grains, reviews current data on who consumes grain foods and where, and describes individual- and market-level factors that may influence grain consumption. Aggregate food supply data show that U.S. consumers have increased their intake of grain foods from record low levels in the 1970s, but consumption of whole-grain foods remains low. Data on individual intakes show that consumption of total grains was above the recommended 6 serving minimum in 1994-1996, but consumption of whole grains was only one third of the 3 daily servings many nutritionists recommend. Increased intake of whole-grain foods may be limited by a lack of consumer awareness of the health benefits of whole grains, difficulty in identifying whole-grain foods in the marketplace, higher prices for some whole-grain foods, consumer perceptions of inferior taste and palatability, and lack of familiarity with preparation methods. In July 1999, the U.S. Food and Drug Administration authorized a health claim that should both make it easier for consumers to identify and select whole-grain foods and have a positive effect on the availability of these foods in the marketplace.

**Cavadini C, Siega-Riz AM, Popkin BM. US adolescent food intake trends from 1965 to 1996. West J Med 2000 Dec; 173(6):378-83.** OBJECTIVE: To examine adolescent food consumption trends in the United States with important chronic disease implications. METHODS: Analysis of dietary intake data from 4 nationally representative US Department of Agriculture surveys of persons aged 11 to 18 years (n = 12,498). RESULTS: From 1965 to 1996, a considerable shift occurred in the adolescent diet. Total energy intake decreased, as did the proportion of energy from total fat (39%-32%) and saturated fat (15%-12%). Concurrent increases occurred in the consumption of higher-fat potatoes and mixed dishes (pizza and macaroni and cheese). Lower-fat milks replaced higher-fat milks, but total milk consumption decreased by 36%. This decrease was accompanied by an increase in the consumption of soft drinks and noncitrus juices. An increase in high-fat potato consumption led to an increase in vegetable intake, but the number of servings for fruits and vegetables is still lower than the recommended 5 per day. Iron, folic acid, and calcium intakes continue to be below those recommended for girls. CONCLUSIONS: These trends, far greater than for US adults, may compromise the health of the future US population.

**Johnson RK. Changing eating and physical activity patterns of US children. Proc Nutr Soc 2000 May;59(2):295-301.** The number of US children who are overweight has more than doubled over the last decade. This change has broadened the focus of dietary guidance for children to address nutrient overconsumption and physical activity patterns. Total fat consumption expressed as a percentage of energy intake has decreased among US children. However, this decrease is largely the result of increased total energy intake in the form of carbohydrates and not necessarily due to decreased fat consumption. The majority of children aged 5-17 years are not meeting recommendations for Ca intakes. Much of this deficit is attributed to changing beverage consumption patterns, characterized by declining milk intakes and substantial increases in soft-drink consumption. On average, US children are not eating the recommended amounts of fruits and vegetables. US adolescents become less active as they get older, and one-quarter of all US children watch > or = 4 h television each day, which is positively associated with increased BMI and skinfold thickness. There is an urgent need in the USA for effective prevention strategies aimed at helping children grow up with healthful eating and physical activity habits to achieve optimal health.

## Location of Hyperlink File:

**Created By:** Science Information Services

**Date Created:** 06/04/2003

**These statements have not been evaluated by the Food and Drug Administration. The contents of the "Ask the Scientists" site are for informational purposes only. The content is not intended to be a substitute for professional medical advice, treatment, or diagnosis.**