

ESTIMATION OF NUTRIENT CONTENT OF RAW FRUITS AND VEGETABLES JUICES EMERGING AS NEW FAST FOODS.

B.J. McCabe, PhD, RD, LD. University of Arkansas for Medical Sciences, Little Rock, AR and Nutrition Matters, Little Rock, AR

A recent review article on the relationship between vegetable and fruit consumption and risk of cancer cited 206 human epidemiologic and 22 animal studies as consistent for the protective effect of fruits and vegetables for eight cancer types. Raw vegetables were most frequently cited as protective. As public awareness increases, a new type of fast food is emerging in the form of juices prepared on the premise from raw fruits and vegetables. These juices are being sold from vendor carts, from juice bars located within health food stores, and more recently from independent stores. Dietitians face lack of accurate data on nutrient content of fresh juices, especially 'raw' vegetable juices. Nutrient databanks contain values for some canned vegetable juices but not for "raw". A process by which nutrient content of these juices could be estimated using the gram weight of the raw vegetable or fruit and outcome volume measure in milliliters was tested. Food Intake Analysis System (FIAS3, version 3.0) software was used to estimate nutrient content of three fresh vegetable juices, eight fresh fruit juices, and three mixed fruit and vegetable juices. Juice Works® provided equipment, recipes, and ingredients. While many fresh juice bars provide nutrient information and claims, the procedures may not be standardized. This study contributes both a standardized procedure and nutrient estimates using a research quality software program.

MINNESOTA NUTRITION DATA SYSTEM FOR RESEARCH. JH Himes, G Weil, J Ditter-Johnson, P Goldstein, M Stevens, N Van Heel, AL Eldridge. Nutrition Coordinating Center, University of Minnesota, Minneapolis, MN.

The Nutrition Coordinating Center (NCC) has re-designed the Minnesota Nutrition Data System (NDS) to provide a Windows-based interview system for dietary data collection in research settings. The NDS program, a computerized dietary assessment tool provided by NCC since 1988, incorporates standardized interview prompts and multiple pass data collection methods, and uses one of the most valid, reliable, and comprehensive food and nutrient databases available in the United States. The NCC food and nutrient databases have been continuously updated and expanded to add nutrients of scientific interest and to reflect marketplace changes. However, there have been few substantive changes in the interview program itself. The new Nutrition Data System for Research, version 4.0, provides a Windows-based interface that is graphical and intuitive and follows industry standard. Enhancements increase adaptability, usability, and flexibility for the data collection and management process. The program performs sophisticated food search operations and allows user-defined recipes to be inserted for use in dietary data collection. Collected data are written to output files that support statistical analysis for research purposes. Enhanced reporting capabilities and improved tracking of dietary records facilitate data management and statistical analysis. The program was developed using PowerBuilder 5.1 and S-Designor with Structured Query Language for its database engine. Supported by NHLBI Contract N01-HV-48140.

SOURCES OF CALCIUM IN THE U.S.: FOOD vs. SUPPLEMENTS vs. WATER.

Y.K. Park, M.S. Calvo and E.A. Yetley. Office of Special Nutritionals, Food and Drug Administration, Washington, DC, 20204

Currently available U.S. population estimates of calcium (Ca) intakes are largely based on food intake only and do not include Ca intakes from vitamin/mineral supplements (SUP) or water. Supplement use is widespread in the U.S. and water can be a source of Ca, particularly in hard water areas. Using individual intakes of food and drinking water, and frequency and types of SUP use from the 1989-91 USDA Continuing Survey of Food Intakes by Individuals, potency of SUP from the 1986 National Health Interview Survey and label directions for daily dosage, and median Ca content of finished ground water from the 1989-92 survey of the American Water Works Association, we estimated Ca intakes from food+SUP+drinking water by 4 age/sex groups of adults in the East North Central region of the U.S. To these estimates, we added estimates of Ca intakes from the water used in food preparation (recipe water) to determine Ca intakes from food+SUP+total water. The results showed that about 70 to 85% of mean Ca intakes came from food, 2 to 13% from SUP, and 12 to 18% from water. Recipe water contributed almost as much to the Ca intake from water as drinking water. Supplements increased mean Ca intakes by about 2 to 20% above the intakes from food only. Water increased mean Ca intakes by about 15 to 20% above the intakes from food+SUP. Supplements increased upper percentile intakes of older women the most. Water, on the other hand, increased Ca intakes of people in the lower percentiles the most, regardless of age or sex. The findings of this study underscore the importance of including Ca intakes from SUP and water (especially in hard water areas) in estimating Ca intakes of the U.S. population.

NUTRIENT DATABASE FOR USA MILITARY OPERATIONAL RATIONS

D. Sherman, U.S. Army Research Institute of Environmental Medicine, Natick, MA, USA

The purpose of this project was to update an earlier military nutrient database and expand it to include dietary fiber, copper, and the saturated, monounsaturated and polyunsaturated fatty acids. The new database provides a nutrient profile on ration components complete for 30 nutrients with no missing values, and is consistent with the nutrients and the units of measure reported in the United States Department of Agriculture survey nutrient data set. Most values in the military nutrient database are derived from chemical analyses of the ration components. Where information is missing, manufacturers' data, values for similar items, and computer analyses of the formulation are utilized to impute nutrients (nonzero values comprise 4% of the values and estimated zeroes make up 12% of the data). The computerized nutrient database is being used to evaluate menus for rations and to support the analysis of food intake data collected during field studies. When utilized for comparison to the USA military standards, data from the current database increase the accuracy of assessing nutritional adequacy.

