

Revisions to the WIC Food Packages
Recommendations by the Center for Science in the Public Interest
December 15, 2003

I. Introduction

The Center for Science in the Public Interest (CSPI) is a health advocacy group that conducts innovative research and advocacy programs in health and nutrition, and provides consumers with current, useful information about their diets and health.

Nutrient deficiency, while still a problem for participants of the Special Supplemental Program for Women, Infants and Children (WIC), is not their only dietary challenge. Dietary excesses are having a deleterious effect on long-term eating habits and health.

Obesity is the nation's fastest rising public health problem. Obesity rates among U.S. adults increased by 75% between 1991 and 2001¹ and rates doubled in children and tripled in teens over the last 20 years.² The negative health consequences of rising obesity rates are already evident. Rates of diabetes (most of which is type 2, which is largely due to obesity, poor diet and inactivity) rose 60% between 1990 and 2001.¹ Obesity is also a risk factor for heart disease, cancer, stroke, and high blood pressure. **While we do not consider the WIC Program to be a major contributor to the obesity problem, the program should better address the issue of over-nutrition.**

All foods provided by the WIC Program should make positive nutritional contributions to the diets and health of the women and children served by the program. For that reason, we urge the committee to consider, and where appropriate, set upper limits for nutrients that are typically *over*-consumed, such as saturated and trans fat, salt, and sugars in all categories of food.

II. Recommended Changes to the Types of Foods Currently Authorized in the WIC Food Packages, Recommended Quantities, and Cost Implications

We recommend that the committee carefully consider the types of nutrient-dense foods that are under-consumed by WIC participants (e.g., fruits, vegetables, and whole grains) and ways to provide more of them through the WIC food packages. Currently, the proportion of types of foods offered in the WIC food packages do not reflect the proportions from different food groups recommended by the Food Guide Pyramid.

A. Increase Fruit and Vegetable Offerings

The food group most conspicuously underrepresented in the WIC food packages is the fruit and vegetable group. The only fruits offered by the WIC Program are in the form of juice, and the only vegetables offered are carrots, which are only provided in one of the seven packages. **CSPI recommends increasing the amount of fruits and vegetables offered in food packages II, III, IV, V, VI, and VII, and allowing substitutions of fresh, canned, and frozen fruits and vegetables for the current juice allocations.** That is, USDA should create a fruit and vegetable category of WIC foods, in which 100% juice is but one offering within this category. Fruit and vegetable consumption should also be encouraged through WIC nutrition education.

Eating a sufficient amount of fruits and vegetables is important for providing key nutrients and reducing the risk of cancer, heart disease, high blood pressure, and other diseases. One-third of cancer deaths could be prevented by healthy diets.³ People who eat five or more servings of fruits and vegetables each day appear to have half the cancer risk of those who eat fewer than two servings per day.⁴ Despite the potential benefits, 77% of Americans do not eat the recommended amount of fruits and vegetables each day.⁵

Allowing substitutions of fresh, canned, and frozen fruits and vegetables for the current juice allocations will encourage and support consumption of a wider variety of fruits and vegetables. Intake of whole fruits and vegetables is important because they contain fiber not present in juice. For example, a whole orange has 27 times more fiber than an equivalent amount of orange juice.⁶ In addition, fruits and vegetables contain more than 100 different vitamins and minerals and antioxidants that help to prevent chronic disease.⁶ Pediatricians have been concerned about over-consumption of fruit juice by infants and young children.⁷ Criteria should be set limiting the amount of added sugars, salt, saturated and trans fat in canned, dried, frozen and prepared fruits and vegetables.

Increasing the amount of fruits and vegetables available through the WIC food packages would support the Memorandum of Understanding signed by the U.S. Department of Agriculture (USDA) and the U.S. Department of Health and Human Services (HHS) in March 2002, by which these departments committed to work together to encourage all Americans to eat five to nine servings of fruits and vegetables each day.

We recommend that the amount of juice allowed in food package II be reduced, since infants age 4-11 months consume 305% of the RDA for vitamin C.⁸ Food package IV, for children one to five years old, also provides too much juice. We recommend that the allowed amount be reduced and that it be replaced with fresh, canned, or frozen fruits and vegetables. According to the American Academy of Pediatrics (AAP), children between six months and six years of age

should drink no more than 4-6 ounces of juice per day, which is 124-186 ounces per month.⁷ WIC food package IV provides 288 fluid ounces of juice.

The American Academy of Pediatrics recommends that infants younger than six months old not be introduced to juice, and that infants younger than four to six months only consume breast milk.⁷ Accordingly, we recommend that USDA consider that food package I be designated for infants ages 0-5 months, and that food package II be designated for infants ages 6-12 months.

B. Increase Whole Grain Offerings

We recommend that **whole grain content be added to the minimum requirements for cereals in food packages III, IV, V, VI, and VII** (including ready-to-eat, instant, and regular). WIC cereals should be required to have a whole grain as the first or second ingredient or contain a minimum of three grams of fiber per serving (bran should be treated as a whole grain because that is the fraction that is often missing in refined grains). Also, we recommend that a variety of grain products that meet relevant nutritional criteria be offered as substitutes for the current cereal offerings in the WIC food packages. Possible grain products to consider offering include whole grain (or at least 50% whole grain) pasta, bread, and tortillas, and brown rice. The nutritional criteria for grain products should include content of iron, sugars, whole grains, and saturated plus trans fat. It is important to retain the limits on the sugars content of WIC cereals.

Consumption of whole grains is associated with lower risk of type 2 diabetes,⁹ coronary heart disease,¹⁰ ischemic stroke,¹¹ and weight gain.^{12,13} Whole grains contain fiber, antioxidants, and the components of antioxidant enzymes such as selenium, copper, and manganese that may help to prevent disease. Despite these benefits, two-thirds of Americans have intakes of whole grains below one serving per day, falling short of the U.S. Department of Health and Human Services' recommendation of three servings of whole grains per day.¹⁴ Among low-income individuals, intakes of whole grains are 40% lower than the intakes of individuals with high incomes and levels of education,¹⁴ suggesting that whole-grain intake is of particular concern among the WIC-eligible population.

C. Limit Saturated Fat from Dairy Sources

We recommend that all milk provided in packages IV, V, VI, and VII be 1% or fat-free and that other sources of calcium be allowed as alternatives. Whole or 2% milk should only be provided if there is a child aged two years or younger in the household. Calcium-fortified soy-based beverages, low-fat yogurt, and other alternative milk/calcium-rich foods should be allowed as replacements for milk.

We recommend that all cheese provided by the WIC Program be light, reduced, or low in fat. While osteoporosis is a significant public health problem,

heart disease is the leading cause of death for American women (and men).¹⁵ Other sources of calcium are available, including low-fat and fat-free milk, yogurt, calcium-fortified fruit juice, and calcium-fortified soy milk, which contain less saturated fat than cheese does. Cheese is the leading source of saturated fat in the diets of American adults¹⁶ and the second largest source in children's diets.¹⁷ The intake of saturated fat raises LDL ("bad") blood cholesterol levels and thereby increases the risk of heart disease.¹⁸

Since the foundations of heart disease are laid in childhood, it is important to minimize the saturated fat in children's diets as well. One quarter of children ages five to ten years have risk factors for heart disease, such as elevated blood cholesterol or high blood pressure.¹⁹ Autopsy studies of 15- to 19-year-olds have found that all have fatty streaks in more than one artery, and about 10% have advanced fibrous plaques.²⁰

In light of these concerns, the food packages should provide lower-fat or fat-free milk and only light, reduced-fat or low-fat cheeses should be allowed as substitutes for milk in the food packages III, IV, V, VI, and VII and for the cheese provided in package VII.

III. Adjustments Needed to the Quantities of Foods Currently Authorized in the WIC Food Packages

A. Milk

We recommend reducing the quantity of milk (and any permitted alternative sources of calcium) offered in food packages IV, V, VI, and VII (the reduction would help to offset the cost of increasing the quantity of fruits and vegetables offered). The current amounts of milk offered in these packages exceed the recommendations in the USDA Food Guide Pyramid and the *Dietary Guidelines for Americans*. The *Dietary Guidelines for Americans* recommends two servings (*i.e.*, two cups) of milk per day for children below the age of nine years and for women between the ages of 18 and 50 years. For teenage mothers aged 18 years and younger, three servings of milk are recommended. Food packages IV and VI each provide 24 quarts of milk, which is three cups per day. Food packages V and VII each provide 28 quarts of milk, which amounts to 3.6 cups per day. Considering that the food packages provided by the WIC Program are designed to be *supplemental* to other foods in the diet, it is questionable whether the food packages should provide all the dairy servings recommended. Certainly, the WIC food packages should not provide more than the recommended amount. A reasonable amount of milk to offer might be 15 quarts per month (*i.e.*, two cups per day) or less.

B. Protein

All categories of WIC participants are consuming protein in amounts that exceed the RDA.^{8,21,22} Since protein is no longer a problem nutrient for this population, we recommend that it be dropped as a priority nutrient for the WIC Program. CSPI recommends offering alternatives to eggs, which are high in cholesterol, in food packages IV, V, VI, and VII. USDA should allow substitutions with healthier sources of protein, such as tuna, canned salmon, dried or canned beans, luncheon meats that meet the FDA definition of healthy (*i.e.*, which are low in fat and limited in sodium) and peanut butter (for children over three years).

Eggs are the single largest source of cholesterol in the diets of both adults¹⁶ and children.¹⁷ Public health and nutrition authorities including the American Heart Association, U.S. Department of Agriculture (through *Dietary Guidelines for Americans* and the Food Guide Pyramid), U.S. Department of Health and Human Services (through the *Dietary Guidelines for Americans*) and the National Institutes of Health's National Cholesterol Education Program, all recommend choosing foods low in cholesterol to reduce heart disease risk.^{23,18,24,25}

We recommend that Albacore tuna not be offered in food packages and that only light and chunk light tuna be offered in the WIC Program to ensure that levels of methylmercury in tuna are safe.²⁶ The Food and Drug Administration (FDA) has advised pregnant and breastfeeding women to avoid eating fish with high levels of methylmercury because it is potentially harmful to the developing nervous system of unborn babies.²⁷

C. Juice

Reduce the amount of juice offered in the food packages, and allow substitutions of other fruits and vegetables for the current juice allocations (see p. 2).

D. Cost Implications

Reducing the amount of milk, cheese, eggs, and juice provided in the food packages would reduce the cost to the WIC Program. The resulting savings could be used to increase the provision of fruits, vegetables, and whole grains in the food packages.

E. Other Concerns to Be Considered

We recommend that USDA explore ways to expand the benefits for enhanced package VII (for exclusively breastfeeding women) to provide greater incentives for women to breastfeed. According to the USDA, breastfeeding is associated with decreased incidence of lower respiratory infection, otitis media, diarrhea, bacterial meningitis, necrotizing enterocolitis, and urinary tract infection and it may enhance cognitive development.²⁸ In addition, increased breastfeeding

rates among WIC participants would likely decrease the costs of providing infant formula through the WIC Program. In 1993, the General Accounting Office estimated that a 10-percent increase in breastfeeding rates within the WIC Program would yield \$408,000 in annual savings.²⁹

F. Participant Flexibility in Choosing among Authorized Food Items

We recommend giving participants a range of food options within each target nutrient and food group to help ensure that options are available within each category that appeal to participants with varying food tastes and preferences, that are culturally appropriate, and that meet the WIC Program's nutritional criteria.

¹ Mokdad A, et al. "Prevalence of Obesity, Diabetes, and Obesity-Related Health Risk Factors, 2001." *Journal of the American Medical Association* 2003, vol. 289, pp. 76-79.

² Ogden C, et al. "Prevalence and Trends in Overweight among U.S. Children and Adolescents, 1999-2000." *Journal of the American Medical Association* 2002, vol. 288, pp. 1728-1732.

³ U.S. Department of Health and Human Services. *The Surgeon General's Report on Nutrition and Health*. Washington, D.C.: U.S. Department of Health and Human Services, Public Health Service, 1988.

⁴ Block G, Patterson B, Subar A. "Fruit, Vegetables, and Cancer Prevention: A Review of the Epidemiological Evidence." *Nutrition and Cancer* 1992, vol. 18, pp. 1-29.

⁵ Centers for Disease Control and Prevention (CDC), U.S. Department of Health and Human Services. Behavioral Risk Factor Surveillance System. Accessed at <http://apps.nccd.cdc.gov/brfss/Trends/trendchart.asp?qkey=10150&state=US> on December 8, 2003.

⁶ U.S. General Accounting Office (GAO). *Fruits and Vegetables: Enhanced Federal Efforts to Increase Consumption Could Yield Health Benefits for Americans*. Washington, D.C.: GAO, 2002.

⁷ Committee on Nutrition, American Academy of Pediatrics. "The Use and Misuse of Fruit Juice in Pediatrics." *Pediatrics* 2001, vol. 107, pp. 1210-1213.

⁸ U.S. Department of Agriculture (USDA). *Review of the Nutritional Status of WIC Participants*. Washington, D.C.: USDA, 1999.

⁹ Fung T, Hu F, Pereira M, Liu S, Stampfer M, Colditz G, and Willett W. "Whole-Grain Intake and the Risk of Type 2 Diabetes: a Prospective Study in Men." *American Journal of Clinical Nutrition* 2002, vol. 76, pp. 535-540.

¹⁰ Liu S, Stampfer M, Hu F, Giovannucci E, Rimm E, Manson J, Hennekens C, and Willett W. "Whole-Grain Consumption and Risk of Coronary Heart Disease: Results from the Nurses' Health Study." *American Journal of Clinical Nutrition* 1999, vol. 70, pp. 412-19.

¹¹ Liu S, Manson J, Stampfer M, Rexrode K, Hu F, Rimm E, and Willett W. "Whole Grain Consumption and Risk of Ischemic Stroke in Women." *Journal of the American Medical Association* 2000, vol. 284, pp. 1534-1540.

¹² Ludwig D, Pereira M, Kroenke C, Hilner J, Van Horn L, Slattery M, and Jacobs D. "Dietary Fiber, Weight Gain, and Cardiovascular Disease Risk Factors in Young Adults." *Journal of the American Medical Association* 1999, vol. 282, pp. 1539-1546.

¹³ Liu S, Willett W, Manson J, Hu F, Rosner B, and Colditz G. "Relation between Changes in Intakes of Dietary Fiber and Grain Products and Changes in Weight and Development of Obesity among Middle-Aged Women." *The American Journal of Clinical Nutrition* 2003, vol. 78, pp. 920-927.

¹⁴ Putnam J, Allshouse J, and Kantor L. "U.S. Per Capita Food Supply Trends: More Calories, Refined Carbohydrates, and Fats." *FoodReview* 2002, vol. 25, pp. 2-15.

- ¹⁵ American Heart Association (AHA). *Heart Disease and Stroke Statistics -- 2003 Update*. Dallas, TX: AHA, 2002.
- ¹⁶ Subar A, Krebs-Smith S, Cook A, Kahle L. "Dietary Sources of Nutrients among U.S. Adults, 1989 to 1991." *Journal of the American Dietetic Association* 1998, vol. 98, pp. 537-547.
- ¹⁷ Subar A, Krebs-Smith S, Cook A, Kahle L. "Dietary Sources of Nutrients among U.S. Children, 1989-1991." *Pediatrics* 1998, vol. 102, pp. 913-923.
- ¹⁸ U.S. Department of Agriculture (USDA) and the U.S. Department of Health and Human Services (HHS). *Dietary Guidelines for Americans, Fifth Edition*. Washington, D.C.: USDA, 2000.
- ¹⁹ Freedman D, Dietz W, Srinivasan S, Berenson G. "The Relation of Overweight to Cardiovascular Risk Factors among Children and Adolescents: The Bogalusa Heart Study." *Pediatrics* 1999, vol. 103, pp. 1175-1182.
- ²⁰ Pathobiological Determinants of Atherosclerosis in Youth (PDAY) Research Group. "Natural History of Aortic and Coronary Atherosclerotic Lesions in Youth; Findings from the PDAY Study." *Arteriosclerosis and Thrombosis* 1993, vol. 13, pp. 1291-1298.
- ²¹ Swensen A, Harnack L, Ross J. "Nutritional Assessment of Pregnant Women Enrolled in the Special Supplemental Program for Women, Infants, and Children (WIC)." *Journal of the American Dietetic Association* 2001, vol. 101, pp. 903-908.
- ²² Giddens J, Krug S, Tsang R, Guo S, Miodovnik M, Prada J. "Pregnant Adolescent and Adult Women Have Similarly Low Intakes of Selected Nutrients." *Journal of the American Dietetic Association* 2000, vol. 100, pp. 1334-1340.
- ²³ Krauss et al. "Revision 2000: A Statement for Healthcare Professionals from the Nutrition Committee of the American Heart Association." *The Journal of Nutrition* 2001, vol. 131, pp. 132-146.
- ²⁴ Center for Nutrition Policy and Promotion, U.S. Department of Agriculture (USDA). *The Food Guide Pyramid*. Washington, D.C.: USDA, 1996.
- ²⁵ National Cholesterol Education Program, National Heart, Lung, and Blood Institute, National Institutes of Health (NIH), U.S. Department of Health and Human Services. *High Blood Cholesterol: What You Need to Know*. Bethesda, MD: NIH, 2001.
- ²⁶ Burger J, Gochfeld M. "Mercury in Canned Tuna: White versus Light and Temporal Variation." Article currently in press (to be published in 2004).
- ²⁷ Center for Food Safety and Applied Nutrition, U.S. Food and Drug Administration (FDA). *Consumer Advisory: An Important Message for Pregnant Women and Women of Childbearing Age Who May Become Pregnant about the Risks of Mercury in Fish*. Rockville, MD: FDA, 2001.
- ²⁸ Weiner J. Food and Rural Economics Division, Economic Research Service, USDA. *The Economic Benefits of Breastfeeding: A Review and Analysis*. Washington, D.C.: USDA, 2001.
- ²⁹ U.S. General Accounting Office (GAO). *Breastfeeding: WIC's Efforts to Promote Breastfeeding Have Increased*. Washington, D.C.: GAO, 1993.