



International Dairy Foods Association
Milk Industry Foundation
National Cheese Institute
International Ice Cream Association

PI-19

December 15, 2003

Patricia Daniels
Director, Supplemental Food Programs Division
Food and Nutrition Service
USDA
3101 Park Center Drive
Room 520
Alexandria, VA 22302

RE: Revisions to the WIC Food Packages

Dear Ms. Daniels:

For more than 25 years, the Special Supplemental Nutrition Program for Women, Infants and Children (WIC) has made positive impacts on the lives of WIC participants: increasing successful pregnancies, increasing nutrient intake of preschool children, and health care savings. WIC has proven itself to be one of the most successful public health programs in the United States and we are proud that dairy is part of the WIC food packages.

IDFA, which represents the nation's dairy processing and manufacturing industries and their suppliers, is composed of three constituent organizations: the Milk Industry Foundation (MIF), the National Cheese Institute (NCI), and the International Ice Cream Association (IICA). Its 500-plus members range from large multinational corporations to single-plant operations, representing more than 85% of the volume of milk, cultured products, cheese, ice cream and frozen desserts produced and marketed in the United States-- an estimated \$70 billion a year industry.

IDFA and the entire dairy industry are proud that dairy has been part of the WIC food packages since the program's inception. Milk and dairy products' essential role in a nutritious diet has been established by the nutrition and medical community, including the National Institute of Child Health and Human Development, the American Academy of Pediatrics, the National Osteoporosis Foundation, the American Academy of Orthopedic Surgeons, and many other health organizations. Milk is a naturally rich source of calcium and is also an important source of Vitamin D, protein, riboflavin, vitamin A, magnesium and potassium in the American diet.

1. Please indicate what elements of the WIC food packages you would keep the same and why.

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Milk should continue to be part of the food packages at the levels currently provided. Milk and dairy are included in the current food packages because of the concentrated natural source of calcium that dairy foods provide. There are also other nutritional and health benefits of milk that recommend its continued inclusion in WIC food packages at current levels.

Calcium is one of the nutrients targeted by WIC food packages. While 65% of the total U.S. population falls short of the recommended calcium intake,¹ the number of low-income individuals, particularly women and children, meeting calcium recommendations is even lower.² Milk and dairy foods provide 72% of the calcium in the American food supply.³ In fact, it is difficult to meet the recommended levels of calcium without milk or dairy.^{4,5}

Scientific research continues to reinforce the health benefits of calcium. Calcium is best known for building strong bones and preventing osteoporosis. Ensuring adequate calcium intake in children is the best way to prevent osteoporosis in later life.⁶ Adequate calcium consumption is also associated with lower blood pressure, a particular health concern for African Americans.^{7,8,9,10} Calcium given to pregnant women has been shown to lower the systolic blood pressure of their children.¹¹

An exciting benefit of dairy foods demonstrated by recent research is an association with healthier body weight and body composition. This means a food that is already part of WIC food packages may be able to help participants control their weight. Dairy and weight control research will be outlined in the response to question number 5.

Milk is also one of the most important sources of Vitamin D in the United States. Even though Vitamin D is not one of the nutrients targeted by WIC food packages, it is important because of the current reemergence of rickets in the United States.^{12,13,14} Rickets, brought on by Vitamin D deficiency, causes bowing of the legs in young children. Vitamin D deficiency is being identified more often in both children and adults.^{15,16,17} Research recently published in the Mayo Clinic Proceedings indicates that 93% of children and adults who have persistent, nonspecific muscle or skeletal pain are severely deficient in Vitamin D. African Americans and women of childbearing age were more likely to have low levels of Vitamin D.¹⁸

In addition to calcium and vitamin D, milk also provides conjugated linoleic acids (CLAs), a kind of trans fat with positive health effects. An Institute of Medicine report released in July 2002 acknowledged emerging research that indicates that conjugated linoleic acids can reduce fat storage in fat cells and inhibit the onset of cancer.¹⁹ An article recently published in the Bulletin of the International Dairy Federation highlighted the positive health effects of conjugated linoleic acids, including anticarcinogenic effects, antiatherogenic effects, reduction of fat mass and increase of lean mass, increase in antibodies, and normalization of glucose tolerance.²⁰ These benefits of CLA have also been demonstrated in other studies.²¹

In addition to maintaining milk as a component of WIC food patterns, all varieties of milk should continue to be available through the WIC program. Consuming whole milk is important for children under the age of 2. African Americans and Hispanic Americans often prefer whole milk to lowfat or skim.^{22, 23} If whole milk were not available, these families may stop drinking milk altogether. Consuming whole or reduced fat milk may be the difference between getting the calcium and vitamin D they need and being deficient in these nutrients.

In conclusion, the WIC package should continue to provide foods based on its original purpose: to supply nutrients that are most likely to be lacking in the diets of low-income women, infants and children. Milk is an ideal food to help accomplish this laudable goal.

2. What changes, if any, are needed to the types of foods currently authorized in the WIC food packages? If you recommend additions or deletion to the types of foods currently offered, please discuss recommended quantities and cost implications.

Yogurt is a nutritious alternative to milk and should be allowed by the WIC food packages. It is a good source of calcium and has a lower lactose content which makes it easily digested by people diagnosed with lactose intolerance. It can be used as a snack or as a substantial component of a meal. Yogurt is recognized as a high quality protein source by the National School Lunch Program. With a similar nutrient profile to milk, yogurt would provide an excellent alternative to milk in the WIC food packages.

There have been proposals to add foods, specifically fresh fruits and vegetables, to the WIC food packages in order to make the packages consistent with the Food Guide Pyramid. This is an inappropriate change, considering the mission and participants in the WIC program. As stated in the ANPR, the WIC program was designed to provide foods that are rich in nutrients commonly deficient in low income women, infants and children. Other nutrition programs are available that can, and do, supply foods balanced through the Food Guide Pyramid. WIC is intended to target the "at risk" nutrients. If WIC were to expand its focus to the entire Food Guide Pyramid, program participants would consume less of these target nutrients, placing themselves at additional health risk. The Food Guide Pyramid may not even be an appropriate goal of a healthful diet for WIC participants. The Pyramid was developed for a healthy population older than 2 years of age. In order to participate in the WIC program, individuals have to be nutritionally at risk. Therefore, the Pyramid's recommendations may not apply to them. WIC participants may need higher levels of certain nutrients in order to become and stay healthy. IDFA encourages further study into the nutritional needs of WIC participants.

In the environment of cost neutral changes to the food packages, adding foods could result in the reduction of other foods, such as milk and cheese, in the packages. The effect of such a change could decrease the calcium and vitamin D intake of WIC participants and therefore increase their risk for osteoporosis, hypertension, overweight and rickets. IDFA stands against any changes to the WIC food packages that would decrease the dairy foods available to WIC participants. If new foods were to be added to the food packages, the impact of their addition on the nutrient content of the entire

package should be studied carefully. If foods are to be introduced, they should replace foods already in the package that provide the same target nutrients.

3. Should the quantities of foods in the current WIC food packages be adjusted? If yes, by how much and why?

The amount of dairy foods provided by the WIC food packages should remain the same. While the current milk prescription provides more than 100% of the DRI of calcium, this may be an appropriate level for these children. As stated above, low income children at nutritional risk may have higher requirements for some nutrients than healthy middle class children. For these reasons, IDFA is opposed to any proposal to reduce the amount of milk provided to children and reduce the amount of cheese available for women and children.

While the amount of dairy is adequate for many WIC participants, the amount of milk provided to pregnant and breastfeeding women in their food package does not provide for the full DRI for calcium, particularly for those under 18. The amount of milk in the food packages for pregnant and breastfeeding women should be increased in order to provide these women with the calcium that they need.

The importance of providing an adequate intake of all the nutrients provided by dairy is supported by the scientific research outlined above in the response to question 1. The only way that nutrients should be considered for reduction is if scientific research on the WIC population shows they are needed in lesser amounts.

4. Recognizing that the WIC program is designed to provide supplemental foods that contain nutrients known to be lacking in the diets of the target population, what nutrients should be established as priority nutrients for each category of WIC participant, e.g. pregnant women, children 1-5, etc.? Please provide the scientific rationale for them.

Calcium should continue as a priority nutrient in the WIC program. As outlined in the response to question number 1, calcium is a nutrient with important health benefits that continues to be deficient in the diets of all Americans, including pregnant women and young children. While calcium's benefits for bone health and blood pressure are well documented, new research on its benefits for weight control make calcium's continued status as a priority nutrient even more important.

Vitamin D is emerging as a nutrient that is more and more likely to be deficient in young children and women of childbearing age. In addition, rickets caused by a deficiency of vitamin D can have a severe impact on young children. As such, vitamin D is of great importance to low-income women, infants and children.

5. Keeping in mind that foods provided by WIC are designed to be supplemental, can the WIC food packages be revised (beyond what is allowed under current

regulations) to have a positive effect on addressing overweight concerns? If so, how? Please be specific.

In addition to providing essential nutrients, dairy has been shown to be helpful in weight loss and weight maintenance. A number of scientific studies have demonstrated a relationship between dairy food consumption and weight control. Some studies have shown that people who consume more dairy products are less likely to be overweight or obese.^{24,25,26} This positive effect of calcium on weight loss or prevention of weight gain has been demonstrated in people of differing ages, genders and races.²⁷ Women who consume high levels of calcium while trying to lose weight, lose more weight than women with lower calcium intakes. Overweight and obese women may need to consume more calcium in order to aid in their weight loss.²⁸

Studies have also shown that calcium in dairy foods plays a role in body composition, specifically maintaining muscle while lowering body fat. This has been demonstrated in women^{29,30} and children.³¹ Another study's results showed that including dairy in patients' calorie-restricted diets helped them lose weight faster and lose more fat from their abdomen. This effect was stronger with dairy products than with calcium supplements.³² Higher acute calcium intakes were shown to be connected with higher rates of fat oxidation.³³ The association between weight loss and calcium intake has been hypothesized to be related to the intracellular calcium in fat cells.^{34,35,36,37,38}

6. Are there other concerns that affect foods issued through the WIC food packages that should be considered in designing the food packages? For example, should WIC provide options to address allergies, cultural patterns or food preferences?

WIC should make allowances for participants that are food allergic. Since food allergies are potentially hazardous, these participants should not be provided with foods to which they are allergic.

In making allowances for those with a milk allergy, it is important to remember the difference between true milk allergy and lactose intolerance. Many people are misinformed about lactose intolerance, either believing that they have a milk allergy or that they cannot consume any dairy products in any amount. Most people who have been diagnosed with lactose intolerance can comfortably eat yogurt and cheese and drink milk in small amounts at a time, particularly with meals. Therefore, lactose intolerance can be addressed through the WIC food packages by encouraging cheese consumption, education about lactose intolerance and the addition of yogurt and lactose reduced milk as options within the packages. All of these foods are natural sources of calcium with standards of identity to ensure the consistency of the calcium supplied.

Non-dairy sources of calcium have been proposed as alternatives to the milk and dairy in the food packages. None of these foods provide the concentrated natural source of calcium that milk does. Soy beverages do not naturally contain calcium and the fortified versions are not consistent in the amount of calcium supplied. Vegetable sources of calcium, such as spinach or broccoli, contain much lower levels of calcium.

Providing calcium through non-dairy sources is also more expensive than calcium from dairy. In a study comparing the cost of calcium from different sources, milk was one of the cheapest food sources of calcium. Taking into account the bioavailability of calcium from various sources, the cost to absorb 300 mg of calcium from skim milk was 65 cents, compared to \$2 for calcium fortified soy beverages and \$3.33 for frozen broccoli.³⁹

In addition to cost, the availability and ease of selection in the store is preferable for dairy. While even small convenience stores with little refrigerator space stock milk, far fewer stores carry soy beverage or vegetables. Milk and dairy are easy to select, whereas selecting the calcium fortified beverage from among the varieties of soy beverages would be more complicated. This would increase confusion and frustration for WIC participants and impart additional administrative burden on participating stores.

7. What data and/or information should the Department consider in making decisions regarding revisions to the WIC food packages?

Research should be conducted in a group of people eligible for the WIC program to determine their nutritional needs and the acceptability of foods that provide those nutrients. After this has been determined, pilots should be run to test the practical application of a new food package.

8. Recognizing that current legislation requires WIC food packages to be prescriptive, should participants be allowed greater flexibility in choosing among authorized food items?

Greater flexibility could increase participant satisfaction and consumption of food in the package. However, it could greatly increase both food and administrative costs. In order to maintain the nutritional integrity of the program, the foods that may be substituted for each other should have similar nutritional profiles in regard to the WIC target nutrients. Food costs should also be considered and kept similar.

9. How can WIC food packages best be designed to effectively meet nutritional needs in culturally and ethnically diverse communities?

WIC food packages for diverse groups of participants could be set up in a similar manner to the flexibility response above. Food packages could allow for substitutions that are nutritionally and cost equivalent while allowing diversity of choices.

10. Should WIC State agencies be afforded more or less flexibility in designing WIC food packages?

Currently states are able to customize food packages that meet the special restrictions or needs of the WIC programs and participants in their state. This benefits everyone involved in the program and should continue.

11. It would be helpful if commenters would identify/recommend WIC food selection criteria, describe how the criteria interact, indicate their relative weighting or importance and provide supporting rationale.

Since the goal of the WIC program is to improve the nutritional status and health outcomes of its participants, the first consideration when selecting foods for the WIC food packages should be the nutrition provided by those foods and the degree to which this fits with the needs profile of WIC participants. Practical concerns, such as cost, availability and participant acceptance need to also be considered when selecting foods for the WIC food packages.

IDFA believes that milk and dairy should continue to have a prominent role in the WIC food packages based on the unique nutrient profile of dairy foods. Calcium continues to be an important nutrient that is often deficient in the American diet, while Vitamin D deficiency is a rising public health concern. Concerns about lactose intolerance can easily be addressed through education and the use of other dairy products, such as yogurt and cheese.

The proven success of the WIC program is a strong arguments against lightly considered revisions. To change WIC from a program focusing on nutrients that are often deficient in low-income women, infants and children to one that reflects the Food Guide Pyramid is ill-advised. Only changes that are recommended through careful research of the nutrition needs and food preferences of WIC participants should be implemented.

IDFA is proud that dairy has been part of the success of the WIC program for more than 25 years and we look forward to continuing to be part of that success.

Sincerely,


Constance E. Tipton
Executive Vice President


Michelle Albee Matto, MPH, RD
Regulatory Affairs Manager

¹ US Department of Agriculture, Agriculture Research Service. Results from USDA's 1994-96 Continuing Survey of Food Intakes by Individuals, Table Set 12: Supplementary Data Tables: 1994-96 CSFII. www.barc.usda.gov/bhnrc/foodsurvey/home.htm

² US Department of Agriculture, Agriculture Research Service. Results from USDA's 1994-96 Continuing Survey of Food Intakes by Individuals, Table Set 14: Food and Nutrient Intakes by Income, 1994-96. www.barc.usda.gov/bhnrc/foodsurvey/home.htm

³ Gerrior S, Bente L. Nutrient Content of the US Food Supply 1909-1997, Home Economics Research Report # 53. Washington DC: US Department of Agriculture, Center for Nutrition Policy and Promotion, 2001.

⁴ NIH Consensus Panel on Optimal Calcium Intake. Optimal Calcium Intake. *JAMA*. 272;1942:1994.

- ⁵ American Medical Association Council on Scientific Affairs. Intake of Dietary Calcium to Reduce the Incidence of Osteoporosis. *Arch Fam Med.* 1997;6:495.
- ⁶ Power ML, Heaney RP, Kalkwarf HJ et al. The role of calcium in health and disease. *Am J Obstet Gynecol.* 1999;181:1560.
- ⁷ Appel LJ et al. A clinical trial of the effects of dietary patterns on blood pressure. *N Engl J Med.* 1997;336:1117.
- ⁸ Sacks FM et al. A clinical trial of the effects on blood pressure of reduced dietary sodium and the DASH dietary pattern. *N Engl J Med.* 2001;344:3.
- ⁹ Griffith LE, Guyall GH, Cook RJ, Bucher HC, Cook DJ. The influence of dietary and nondietary calcium supplementation on blood pressure and updated metaanalysis of randomized controlled trials. *Am J Hypertens.* 1999;12:84.
- ¹⁰ Pereira MA et al. Dairy consumption, obesity, and the insulin resistance syndrome in young adults: the CARDIA study. *JAMA.* 2002;287:2081.
- ¹¹ Hatton DC et al. Gestational calcium supplementation and blood pressure in the offspring. *Am J Hypertens.* 2003;16:801.
- ¹² Pugliese MF, Blumberg DL, Hludzinski J, Kay S. Nutrition rickets in suburbia. *J Am Coll Nutr.* 1998;17:637.
- ¹³ Sills IN, Skuza KA, Horlick MN, Schwartz MS, Rapaport R. Vitamin D deficiency rickets. Reports of its demise are exaggerated. *Clin Pediatr (Phila).* 1994;33:491.
- ¹⁴ Abrams, SA. Nutritional rickets: an old disease returns. *Nutr Rev.* 2002;60:111.
- ¹⁵ Nesby-O'Dell S et al. Hypovitaminosis D prevalence and determinants among African American and white women of reproductive age: third National Health and Nutrition Examination Survey, 1998-1994. *Am J Clin Nutr.* 2002;65:67.
- ¹⁶ Tangpricha V, et al. Vitamin D insufficiency among free-living healthy young adults. *Am J Med.* 2002;112:659.
- ¹⁷ Lee JM, Philip BL, Hirsch, DS and Holick MF. Unpublished data, 2003.
- ¹⁸ Plotnikoff GA & Quigley JM. Prevalence of severe hypovitaminosis D in patients with persistent, nonspecific musculoskeletal pain. *Mayo Clin Proc.* 2003;78:1463.
- ¹⁹ Food and Nutrition Board, Institute of Medicine. Letter Reports on Dietary Reference Intakes for Trans Fatty Acids, Drawn from the Report on Dietary Reference Intakes for Energy, Carbohydrate, Fiber, Fat, Fatty Acids, Cholesterol, Protein and Amino Acids. Washington, DC: National Academy of Sciences, 2002.
- ²⁰ Soustre Y et al. Trans Fatty Acids. *Bulletin of the IDF.*
- ²¹ Belury MA. Dietary conjugated linoleic acid in health: physiological effects and mechanisms of action. *Annu Rev Nutr.* 2002;22:505.
- ²² US Department of Agriculture, Agriculture Research Service. Results from USDA's 1994-96 Continuing Survey of Food Intakes by Individuals, Table Set 11: Food and Nutrient Intakes by Race: 1994-96. www.barc.usda.gov/bhnrc/foodsurvey/home.htm
- ²³ US Department of Agriculture, Agriculture Research Service. Results from USDA's 1994-96 Continuing Survey of Food Intakes by Individuals, Table Set 16: Food and Nutrient Intakes by Individuals in the United States, by Hispanic Origin and Race: 1994-96. www.barc.usda.gov/bhnrc/foodsurvey/home.htm
- ²⁴ Davies, KM et al. Calcium intake and body weight. *J Clin Endocrin & Metab.* 2000;85:4635.
- ²⁵ Pereira, MA et al. Dairy consumption, obesity, and the insulin resistance syndrome in young adults. The CARDIA study. *JAMA.* 2002;287:2081.
- ²⁶ Heaney, RP et al. Calcium and Weight: Clinical Studies. *J Am Coll Nutr.* 2002;21:152S.
- ²⁷ Teegarden D. Calcium intake and reduction in weight or fat mass. *J Nutr.* 2003;133:249S.
- ²⁸ Gentile C et al. Calcium intake in overweight and obese women may not be high enough to facilitate weight loss. *Obesity Research.* 2001;9:615.
- ²⁹ Zemel MB et al. Regulation of adiposity by dietary calcium. *FASEB J.* 2000;14:1132.
- ³⁰ Jacqmain M et al. Calcium intake, body composition, and lipoprotein-lipid concentration in adults. *Am J Clin Nutr.* 2003;77:1448.
- ³¹ Carruth BR & Skinner JD. The role of dietary calcium and other nutrients in moderating body fat in preschool children. *J Obesity.* 2001;25:559.
- ³² Zemel, MB et al. Dietary calcium and dairy products accelerate weight and fat loss during energy restriction in obese adults. *AJCN.* 2002;75:342S.

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- ³³ Melanson, EL et al. Relation between calcium intake and fat oxidation in adult humans. *Int J of Obesity*. 2003;27:196.
- ³⁴ Zemel, MB et al. Regulation of adiposity by dietary calcium. *FASEB J*. 2000;14:1132.
- ³⁵ Shi H et al. $1\alpha,25$ dihydroxyvitamin D₃ modulates in human adipocyte metabolism via nongenomic action. *FASEB J*. 2001;15:2751.
- ³⁶ Xue B et al. Mechanism of intracellular calcium inhibition of lipolysis in human adipocytes. *FASEB J*. 2001;15:2527.
- ³⁷ Zemel, MB. Calcium modulation of hypertension and obesity: mechanisms and implications. *J Am Coll Nutr*. 2001;20:428S.
- ³⁸ Zemel, MB. Regulation of adiposity and obesity risk by dietary calcium: mechanisms and implications. *J Am Coll Nutr*. 2002;21:146S.
- ³⁹ Keller JL, Lanou AJ, Barnard ND. The consumer cost of calcium from food and supplements. *J Am Diet Assoc*. 2002;102:1669.