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Dec. 15, 2003

Patricia Daniels, Director
Supplemental Food Programs Division
FNS, USDA
3101 Park Center Drive, Room 520
Alexandria, Virginia 22302

Dear Ms. Daniels;

am enclosing with this letter my comments for the revision to the WIC food packages.

Sincerely,

Lucia Kaiser

Lucia Kaiser, Ph.D. R.D., Community Nutrition Specialist

Comments on the WIC program food package

Which nutrients should be established as priority nutrients for the WIC population?

In establishing priority nutrients, the WIC program must not only determine specific nutrients that appear to be lacking in diets of the target population but should also consider which nutrients may be in excess. Thus, population intakes should be compared to both the Estimated Average Requirement (EAR) or Adequate Intake (AI) and the Upper Tolerable Intake Level (UL). Accordingly, target nutrients will probably vary according to category of WIC participant.

Even with food fortification, 68-87% of women of childbearing age have intakes of synthetic folic acid less than the recommended intake of 400 ug/day which is considered important to decrease risk of neural tube defects (Lewis, Crane et al. 1999). On the other hand, low intake of folic acid is much less of a concern in young children: about 26% of one-to-five year olds exceed the UL for this nutrient.

Although an EAR is not available for calcium, more than 75% of women have a calcium intake less than the adequate intake(Arab, Carriquiry et al. 2003).

Vitamins A and C should continue to be priority nutrients for pregnant women. In a study among healthy pregnant women *enrolled in the WIC program and taking supplements*, 17-23% had low blood concentrations of vitamin A and 9-11% had low levels of vitamin C. Vitamin B6 may also be a concern: 6-17% had low levels of vitamin B6 (Baker, DeAngelis et al. 2002).

Zinc does not appear to be a nutrient of concern for low-income infants who are formula-fed and children (Arsenault and Brown 2003). While less than 1% of US preschoolers have inadequate intakes, 86%-92% of infants and 51% of one- to- three year olds have intakes above the UL. Even after controlling for WIC participation, children in the lowest income categories had higher zinc intakes.

Can the WIC food package be revised to have positive effect on addressing overweight concerns?

The relationship between excessive juice intake and overweight among young children has been controversial. In studies conducted among white middle-class children, no relationship between juice and weight status is found (Skinner, Carruth et al. 1999),(Skinner and Carruth 2001). However, two other studies in more diverse populations have found a positive relationship (Dennison, Rockwell et al. 1998), (Tanasescu, Ferris et al. 2000) . We also have data from a low-income Latino population that juice intake in the highest tercile increases the risk of overweight among preschoolers (Odds Ratio: 2.33, 95% CI: 1.09, 4.98) (Melgar and Kaiser Submitted). In the two papers where no relationship between juice intake and weight status was found,

the studies were carried out among white, middle-class households where preschoolers may be exposed to very different child feeding practices and food supplies.

One option that may be considered is allowing states to substitute tomatoes and/or oranges for some of the juice provided to some categories of WIC participants. However, for infants less than 6 months of age, juice should not be provided at all (Pediatrics 2001). Offering juice to infants less than 6 months has no nutritional benefit and may replace intake of more nutritious foods, including breast milk and infant formula. Low-income preschool children are less likely than children of higher income families to meet Food Guide Pyramid recommendations for fruit (Lino, Basiotis et al. 2002). Vegetable intake is also very low. Our data from low-income Latino families indicates the supplies of fruit and vegetables are particularly vulnerable when families are food insecure (Kaiser, Melgar-Quinonez et al. 2003).

References

Arsenault JE and Brown KH. (2003). "Zinc intakes of US preschool children exceeds new dietary reference intakes". Am J Clin Nutr. 78: 1011-1017.

American Academy of Arab, L., A. Carriquiry, et al. (2003). "Ethnic differences in the nutrient intake adequacy of premenopausal US women: results fromt he Third National Health Examination Survey." J Am Diet Assoc **103**(8): 1008-1014.

Baker, H., B. DeAngelis, et al. (2002). "Vitamin profile of 563 gravidas during trimesters of pregnancy." J Am Coll Nutr **21**(1): 33-37.

Dennison, B. A., H. L. Rockwell, et al. (1998). "Excessive fruit juice consumption by preschool-aged children is associated with short stature and obesity." Pediatrics **99**(1): 15-22.

Kaiser, L., H. Melgar-Quinonez, et al. (2003). "Food insecurity and food supplies in Latino households with young children." J Nutr Educ Behav **35**(3): 148-153.

Lewis, C. J., N. T. Crane, et al. (1999). "Estimated folate intakes: data updated to reflect food fortification, increased bioavailability, and dietary supplement use." Am J Clin Nutr **70**: 198-207.

Lino, M., P. P. Basiotis, et al. (2002). "The quality of young children's diets." Family Economics and Nutrition Review **14**(1): 52-59.

Melgar, H. R. and L. L. Kaiser (Submitted). "Relationship of child feeding practices to overweight in low-income Mexican-American preschoolers." J Am Diet Assoc.

Pediatrics, A. A. o. (2001). "The use and misuse of fruit juice in pediatrics." Pediatrics **107**(5): 1210-1213.

Skinner, J. D. and B. R. Carruth (2001). "A longitudinal study of children's juice intake and growth; The juice controversy revisited." J Am Diet Assoc **101**: 432-437.

Skinner, J. D., B. R. Carruth, et al. (1999). "Fruit juice intake is not related to children's growth." Pediatrics **103**(1): 58-64.

Tanasescu, M., A. M. Ferris, et al. (2000). "Biobehavioral factors are associated with obesity in Puerto Rican children." J Nutr **130**: 1734-1742.