NAWD WIC Food Prescription Recommendations

Introduction

The Special Supplemental Nutrition Program for Women, Infants, and Children (WIC) provides supplemental foods and nutrition education to low-income pregnant, breastfeeding, and postpartum women, infants and children. WIC nutrition services include nutrition counseling and education responsive to identified participant needs and preferences and the prescription of supplemental food packages.

The nutrition education component of the WIC Program focuses on ensuring both positive pregnancy outcomes for women and optimal nourishment for infants and children. It guides parents and caregivers in establishing long-term healthy dietary patterns for their children and families.

The supplemental food component of the Program is key to its success. The supplemental foods assist participants in implementing the recommendations provided by the WIC nutrition staff in their nutrition counseling and education efforts.

Federal regulations include seven food packages that were established at the inception of the WIC Program. The content of the packages was based on the scientific knowledge and information available on the nutritional requirements of the eligible population and on the nutrients known to be limited in their diets. The food packages were designed to target specific nutrients (protein, iron, calcium and vitamins A and C). They include foods that are good sources of these nutrients.

Each State WIC agency is required to identify specific foods, in accordance with federal regulations, for the development of individually tailored food prescriptions. States have created numerous food prescriptions with various combinations and amounts of WIC allowable foods from each food category. The local WIC Program’s Competent Professional Authorities (CPA) assess nutritional needs, identify food preferences and prescribe the specific supplemental food prescription which best responds to the participants’ nutritional needs.

Since 1979, the United States Department of Agriculture Food and Nutrition Service (USDA-FNS) has conducted one major review of the WIC food prescriptions and solicited comments regarding availability of culturally appropriate foods and the existing federal 6-gram sugar limit for WIC-eligible adult cereals. The extensive range of comments received on the latter topic prompted USDA-FNS to expand the review to all components of the WIC food prescriptions. To date, with the exception of the special food package for exclusively breastfeeding women and for homeless participants, no significant changes have been made to the food packages since the inception of the Program in 1974.
In 1998, the Center for Nutrition Policy and Promotion, USDA, was directed to review the WIC food packages. The Center was charged to determine how well the current seven WIC food packages deliver important nutrients to WIC participants. The Center also examined the types and amounts of WIC foods offered for consistency with the 1995 Dietary Guidelines for Americans and USDA's Food Guide Pyramid.

Concurrent with the Center for Nutrition Policy and Promotion's review, and in advance of partnering with USDA's Food and Nutrition Service, the National Association of WIC Directors, NAWD, has completed an independent review. In addition to identifying ways to enhance food prescription quality and nutritional value, NAWD seeks to:

- improve dietary patterns established through the consumption of foods included in the specific food prescription provided to participants;
- enhance the nutritional contributions of the food prescriptions to the current and long-term health and well-being of WIC participants; and
- ensure food prescription consistency and congruency with nutritional recommendations from recognized authorities including the United States Department of Agriculture, the Department of Health and Human Services, the National Academy of Science's Institute of Medicine, the American Dietetic Association, and the American Academy of Pediatrics.

In developing the recommendations in this paper, NAWD compared the WIC foods and food packages with various current national nutrition recommendations. In addition, NAWD utilized results from a 1996 survey of its membership to identify needs and issues related to local and regional food prescriptions.

Definitions
For clarity of this paper, the following definitions will be used:

Food Package: The seven food packages authorized by WIC Program regulation.

Food Prescription: The specific combination and quantities of allowable foods issued to WIC participants to address both their nutrition risks and cultural, dietary and related health needs.

Purpose of the WIC Food Prescriptions
It is the position of NAWD that the purpose of the WIC food prescription is to:

- help participants establish dietary patterns that promote life-long good nutritional health;
- provide the tools by which participants apply the nutrition knowledge gained from counseling and education to make dietary changes to improve their nutritional health; and
- provide a reliable source of supplemental food.
NAWD Food Prescription Recommendations

The NAWD food prescription recommendations presented in this paper reflect a significant departure from current available WIC food prescriptions. The recommendations are based on the current body of nutrition science information now available, the current national nutrition recommendations for good health, and the dietary pattern established by the regular consumption of WIC foods. The rationale and justification for each recommendation is documented in Table 1. These recommendations provide a framework for redesigning the WIC food prescriptions.

NAWD looks forward to collaborating with USDA-FNS to develop WIC food prescriptions that reflect current nutrition guidelines, support nutrition education messages from WIC, and assist WIC participants in establishing dietary patterns that promote life-long good nutritional health. The implementation of the recommendations will necessitate changes in the current management information systems, program integrity, and vendor involvement and accountability. Open discussions and flexibility will prove to be vital in moving forward on this issue.

Recommendation #1

WIC food prescriptions should be consistent and compatible with dietary recommendations made in the "Dietary Guidelines for Americans" (USDA & USDHHS, 1995) by offering standard portions of the recommended number of servings from each food group in the Food Guide Pyramid and targeting specific nutrients that address the nutritional needs of participants.

States should have the flexibility to select the specific foods offered, depending on availability, participant choices, cultural acceptability, cost, and administrative feasibility. Food portions available will continue to be supplemental while offering a proportional balance from each food group. The number of portions offered from each food group will be related to nutrition needs. Therefore, the number of portions from each food group will vary for each participant category.

a. Offer choices of grain products, in addition to, or in partial replacement of cereals for all women and children.

Selection criteria should include low-sugar (naturally occurring or added), low-fat, and iron-, folic acid-, and B vitamin-enriched. A portion of the cereal/grain products should be high in fiber. Possible items might include: whole grain bread, enriched rice, other enriched rice products, pasta, tortillas, or cornmeal.

b. Offer choices of fruits and vegetables - fresh, frozen, or canned - in addition to or in partial or full replacement of juice for all women and children.

Selection criteria should include fruits and vegetables high in vitamin A, vitamin C, folic acid, B6, magnesium, fiber and antioxidants, with year round availability at a low to moderate price. The inclusion of cruciferous vegetables is encouraged. Possible items would include: carrots, citrus fruits, tomatoes, sweet potatoes, greens, or broccoli. These foods would be offered in addition to any produce available through the WIC Farmers’ Market Nutrition Program.

c. Exclude juice from the infant food package or reduce the total quantity of juice and prescribe it only when the infant is developmentally able to drink it from a cup.
d. Reduce the maximum quantity of milk for children. Offer lower fat milks as the standard milk for all women and children over 2 years of age. Allow for the use of alternative milk/calcium-rich food sources, such as tofu, soymilk, or yogurt as replacement for milk and restrict the maximum allowable amount of cheese for all women and children.

Selection criteria for alternative milk/calcium-rich foods will be defined.

e. Offer beans/peas (legumes) - canned or dried - to all women and children.

f. Reduce the quantities of protein-rich foods for children. Allow substitution between protein-rich food items such as eggs, peanut butter, and other alternative protein sources for all women and children.

Selection criteria for protein-rich foods will be defined.

g. Offer a combination of types and quantities of foods (as recommended in parts 1a through 1f) to meet a specified nutrient range for protein, calcium, iron, vitamin A, vitamin C, folic acid, magnesium, zinc, B6, and fiber.

A specific range for each nutrient will be identified for each participant category. The content of the total food prescription will be used to determine the contribution for each of the identified nutrients.

Recommendation #2

Allow States the flexibility to offer regionally or locally available, culturally appropriate nutritious foods that are affordable and can be assimilated into dietary patterns that contribute to life-long good health.

States should be allowed the flexibility to determine which specific foods to provide within defined categories. Foods may differ by state as a result of cultural, local or regional preferences, availability, distribution, and cost issues.

a. Offer foods that reflect the cultural dietary consumption patterns of the participants served.

States should offer foods that reflect participant choice, cultural dietary patterns, medical diagnosis and nutritional intervention plans. Foods offered should be available year round at low to moderate prices.

b. Offer foods that allow for variety and versatility in a way that can be easily incorporated into the regular dietary pattern. Food prescriptions should provide foods packaged in portions that can be consumed by participants before expiration dates and/or spoilage.

Selection criteria should include consideration of a participant's resources, such as food preparation time, the availability of cooking equipment, cooking skills, etc.

c. Offer foods that are reasonably priced and readily available in retail food stores throughout the year.

To encourage consumption, foods should be readily available to participants from a wide range of vendors (small/medium/large, chain/independent).
Recommendation #3

Allow States the ability to offer food prescriptions that include all WiC foods in combination with a special formula offered in Food Package III. Maximum allowable quantities of special formulas should yield consistent reconstituted amounts.

States should have the flexibility to prescribe specific quantities of WiC foods in addition to special formulas or prescribe special formulas as a supplement to WiC foods, based on medical diagnosis, intervention plans, participant's ability to consume foods, and participant preferences. The amount of special formula a participant receives should be an established standard number of ounces based on the yield of reconstituted formula (monthly or daily).

Recommendation #4

Complete research and policy analysis to support planning and implementation of the WiC food prescriptions.

Topics to consider for additional research include:

- National WiC food preference survey of participants to identify the foods most accepted by participants with special attention given to ethnic/cultural groups
- Appropriate foods for an enhanced breastfeeding food prescription to meet additional nutritional needs and serve as an incentive to breastfeed
- Overall nutrient contribution of the WiC Food Prescriptions in comparison to RDA's/DRI's
- Identification and resolution of inconsistencies between WiC and other Federal food assistance and nutrition programs
- Appropriate payer for special formulas
- Appropriate food prescription amounts (including regular and special formulas/medical foods) for all participant categories
- Cost analysis of implementation of proposed food prescription changes
- Alternative WiC foods and incidence/prevalence of food allergies (i.e. peanut butter, cow's milk, wheat, corn, eggs, legumes)
- Food consumption patterns of WiC participants, low to moderate-income families not on WiC, and the general population of pregnant, breastfeeding, postpartum women and children
- Appropriate fruits and vegetables to offer
Conclusion

The WIC food prescription is key to WIC Program services. The WIC Program is recognized as a reliable and credible source of nutrition information, providing counseling and education to help participants make dietary choices to improve their nutritional health during critical periods of growth and development, as well as develop educational and professional resources utilized by other health care providers. The WIC food prescription offers supplemental foods to aid participants in applying the nutrition counseling/education they receive. Food prescriptions must exemplify and be in congruence with the dietary patterns recommended and endorsed by nutrition authorities. The prescriptions must accommodate cultural preferences and regional food availability. In addition, food prescriptions should assist participants in establishing dietary patterns that can be maintained to promote lifelong good nutritional health.

The nutrition recommendations reflected by the proposed food prescription revisions are:

- increased consumption of fruits, vegetables, whole grains, and fiber-rich foods,
- reduction in the fat content of specific foods and the overall food package/prescription,
- balanced contribution from the major food groups in the Food Guide Pyramid,
- increased availability of nutrient-dense food prescriptions, and
- substantially increased flexibility of States to offer locally available foods that reflect cultural groups served and regional dietary patterns.

The redesign of the WIC food prescriptions should offer foods that provide a percentage of the target nutrients and a recommended portion from each food group of the Food Guide Pyramid. The combination of all WIC foods offered in each food prescription should be considered for their overall nutrient contribution.

The recommendations put forth in this paper offer a framework by which the WIC food prescriptions could be revised or individualized by each State agency. This affords States the ability to select foods that best serve their participants. States would be able to offer food prescriptions that respond to cultural or religious needs, State agency management and administrative capacities, local agency and vendor capabilities, availability, and cost control issues. It is believed that offering food prescriptions that support sound nutrition advice and national nutrition recommendations will make the WIC Program an even more effective public health program.

WIC nutrition education helps families incorporate WIC foods into daily dietary patterns to prevent nutritional imbalances and promote a life-long pattern of healthy eating. WIC foods must be acceptable to and valued by participants in order to meet the desired nutritional outcome. The synergistic relationship between nutrition education and WIC foods helps participants and their families achieve long-term positive nutritional health and maintain health status after WIC participation ends.

As the leading public health nutrition program, WIC should encourage healthy lifestyles through changes at both program and individual levels.
The implementation of the recommendations will present challenges to many aspects of WIC Program management. Food cost containment and vendor management are acknowledged as critical factors in the implementation process.

This paper offers an opportunity to begin dialogue with USDA-FNS. It is NAWD’s goal to collaborate with USDA to implement nutrition policy and practice changes related to the WIC food packages that will positively impact the WIC population. It is hoped that representatives from all components of the WIC program will be involved in the discussion process and will work together in a cooperative environment to bring this issue forward and achieve a successful outcome.
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<th>Recommendations</th>
<th>Rationale/Justification</th>
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<td>Recommendation #1</td>
<td>The “Dietary Guidelines for Americans” (2) were designed to help Americans stay healthy, providing Americans, age 2 years and over with advice about food choices that promote health and prevent disease. The purpose of the Pyramid is to provide guidelines for selecting the type and quantity of foods needed for a healthy diet. The Dietary Guidelines and the Pyramid are widely used and respected nationally as the standard for evaluating dietary quality. They provide the framework for participant nutrition counseling and education. Healthy People 2000 – National Health Promotion and Disease Prevention Objectives (3) are a broad-based initiative to improve the health of Americans. Included in the objectives are recommendations that are consistent with and reflect the “Dietary Guidelines” recommendations. The American Dietetic Association has published numerous position papers focusing on dietary recommendations for Americans. These include: <em>Dietary Guidance for Healthy Children</em> (4), <em>Nutrition Care for Pregnant Adolescents</em> (5), <em>Oral Health and Nutrition</em> (6), <em>Child and Adolescent Food and Nutrition Programs</em> (7), and <em>The Role of Nutrition in Health Promotion and Disease Prevention Programs</em> (8). The recommendations in these papers are consistent with those in the Dietary Guidelines and the Food Guide Pyramid. The Institute of Medicine’s Subcommittee on Dietary Intake and Nutrient Supplements During Pregnancy (9) has made recommendations related to dietary intake of pregnant and breastfeeding women that support and are consistent with the Dietary Guidelines/Food Guide Pyramid. The Maternal and Child Health Bureau, Health Resources and Services Administration, Department of Health and Human Services, Expert Committee recommends utilizing the Food Guide Pyramid (10). The <em>What We Eat in America</em> survey (Continuing Survey of Food Intakes of Individuals, 1994-96) (11) identified that Americans choose a wide variety of foods but the serving sizes often do not correspond to those suggested in the Food Guide Pyramid. The average number of servings from fruit, dairy and meat groups are below minimum recommended amounts, while grains and vegetables (largely potatoes in the form of french fries) are near the bottom of recommended ranges. In addition, calories from fats and sugars exceed recommendations.</td>
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The foods and food portions offered in the WIC food prescriptions are inconsistent with those recommended in the Food Guide Pyramid. See Table 2, “WIC Food Package and the Food Guide Pyramid” and Table 3, “Food Guide Pyramid, Serving Sizes by Category”.

The quantities and daily portions of WIC foods should support a dietary pattern that promotes sound nutrition practices and dietary patterns.

| a. Offer choices of grain products, in addition to or in partial replacement of cereals for all women and children. | This recommendation is consistent with the information and dietary recommendations from:
- The Dietary Guidelines for Americans (2)
- The American Dietetic Association (4, 7, 8)
- The Institute of Medicine (9)
- Center for Nutrition Policy and Promotion (CNPP), USDA (12)

The Dietary Guidelines and Food Guide Pyramid recommends that individuals of all ages consume 6-11 servings of grain products daily. These include bread, cereal, rice, pasta and whole grain products.

The What We Eat in America survey (11) reports that less than one-third of adults think it is important to choose a diet with plenty of grain products.

The Center for Nutrition Policy and Promotion identified folic acid, zinc, vitamin B6 and magnesium as nutrients of concern for the WIC population, all of which are found in whole grain products.

The consumption of whole grain products is associated with lower risk for many chronic diseases. Folate, a B vitamin found in whole grains, has been shown to reduce the risk of some birth defects including spina bifida, anencephaly, cleft lip and cleft palate.

There has been significant discussion and review of the impact of sugar consumption on the health of women and children. Current scientific literature has not clearly established a definitive level of sugar ingestion for good health and disease prevention. It has been established, however, that diet and dental caries are closely related. The American Dietetic Association recommended that foods, beverages, and meal/snacking patterns for infants and children promote oral health and prevent tooth decay (6). CNPP reported that children 1-4 years of age consume 11-17 teaspoons of added sugar, well above the recommended level of 5-8 teaspoons (Food Guide Pyramid). Even though the WIC food packages are estimated to supply approximately 1 teaspoon of sugar, relaxing the sugar limit in cereals would contribute further to the over-consumption of sugar by children. NAWD supports the retention of the 6 grams sugar per ounce limitation and restriction of caries-promoting food items. It is, therefore, important to include low-sugar grain products in the food prescriptions.

CNPP reported that low-income non-WIC children have greater intakes of fiber (12). Increasing the
availability of foods that provide fiber in the WIC food prescriptions is warranted. (See comments on importance of dietary fiber and recommendations in Recommendation #1b below.) WIC cereals provide varying quantities of fiber, though some provide none at all. Offering other choices of grain products would assist the WIC population in meeting fiber recommendations and promote the development of sound dietary habits.

Increased customization and substitutions would be a welcome change for participants from different cultural groups who often feel forced into western food patterns, such as using ready-to-eat cereals, and away from eating patterns which might be more healthful.

Equally important is the overall availability of cereal products in contracted WIC stores. In the NAWD survey, the membership supports offering both national- and store-brand WIC-eligible cereals.

This recommendation is consistent with the information and dietary recommendations from:
- The Dietary Guidelines for Americans (2)
- The American Dietetic Association (4, 7, 8)
- The Institute of Medicine (9)
- Center for Nutrition Policy and Promotion, USDA (12)

The Food Guide Pyramid recommends the consumption of 3-5 servings of vegetables and 2-4 servings of fruit per day. The American Dietetic Association encourages individuals to eat fruits and vegetables high in vitamins A and C and fiber daily and to consume vegetables from the cabbage family weekly. In addition, the national “5 A Day” campaign recommends a minimum of 5 servings of fruits and/or vegetables daily.

Fruits and vegetables are a vital part of a healthy diet. They are generally a good source of vitamins A and C and may supply a significant amount of folate, vitamin B6, potassium, selenium, magnesium, and calcium. These nutrients may help reduce the risk of heart disease and some cancers. Fruits and vegetables are low in fat and sodium and are excellent sources of complex carbohydrates, fiber, antioxidants, and other healthy substances.

Scientific research has established the link between fruit and vegetable consumption and a decreased risk of chronic diseases such as cancer, heart disease, stroke, and diverticulosis. Studies have also indicated strong links between fruit and vegetable intake and reduced risk of other disease states such as chronic obstructive pulmonary disease, cataracts, and neural tube defects. This recommendation also supports culturally diverse dietary patterns. The Food Guide Pyramids for Asian, Hispanic, and Mediterranean cultures all depict the promotion of daily consumption of fruits, vegetables, and legumes as core components of their dietary patterns.

The *What We Eat in America* survey (11) identified that two-thirds of adults think eating a diet with
plenty of fruits and vegetables is important, yet there has only been a slight increase in consumption since the late 1970's. The average number of servings consumed from the fruit and vegetable groups are below minimum recommended amounts.

Dietary fiber is associated with benefits such as the promotion of normal bowel function and the prevention of gastrointestinal disorders, the prevention and treatment of childhood obesity, the reduction of blood cholesterol levels, and the modulation of hyperglycemia and glucose intolerance. Fiber may also reduce the risk of chronic diseases, such as cancer, cardiovascular disease, and Type II diabetes.

In USDA's 1991 Technical Papers: Review of WIC Food Packages, technical paper#10 addressed dietary fiber (1). It concluded that data on the total fiber content of foods and intakes of dietary fiber by women, infants, and children was sparse, and that an increased need for dietary fiber during reproduction and growth was not established. Therefore, it was not recommended that dietary fiber be targeted in the WIC food prescriptions.

Studies since 1991 have noted increased fiber intakes in children but intakes are still sub-optimal. CNPP reported that low-income non-WIC children have greater intake of fiber (12). In 1995, a landmark recommendation for the intake of fiber during childhood was published in Pediatrics (13). This recommendation, "age plus 5 g/day," has been included in subsequent publications and professional position papers.

For adults, 21-25 grams of fiber per day are recommended. This would include 2-3 servings of whole grains as a part of the daily 6-11 servings of grains, 5 servings of fruits and vegetables daily and legumes at least once or twice a week.

Literature on fiber recommendations specific for children aged 2 and under and for pregnant and lactating women is still limited. It is recommended, however, that a substantial amount of fiber be eaten by pregnant and breastfeeding women to ensure normal bowel function.

In the WIC food package, cereals and juices provide varying quantities of fiber, though some provide none at all. While legumes and peanut butter provide fiber, milk, cheese, and eggs provide only a negligible amount. Therefore, including fruits and vegetables, as well as assuring an adequate selection of cereals that provide fiber would assist the WIC population in meeting fiber recommendations and promoting the development of sound dietary habits.

Although many states currently offer the WIC Farmer's Market Nutrition Program, this program is limited because it offers coupons for fresh fruits and vegetables only during the summer harvest season. It is limited in value, allowing $10-$20/person or family per season. In addition, it is limited in variety as only locally grown products are offered.
The provision of fruits and vegetables allows WIC participants to increase their intake of various
nutrients, expands product selection and addresses individual preferences. Because the availability
of fresh fruits and vegetables varies by season and region, offering frozen and canned fruits and
vegetables can ensure a plentiful supply throughout the year.

c. Exclude juice from the infant food
package or reduce the total quantity of
juice and prescribe it only when the infant
is developmentally able to drink it from a
cup.

Fruit juice is not an essential component in an infant's diet. The Center for Nutrition Policy and
Promotion (12) found that WIC infants between 4-11 months consumed 305% of the RDA for
vitamin C, of which 250% is provided by the food package. Infant formula provides over 40 mg of
vitamin C per 26 fluid ounces. Since the RDA for infants 6 months to 1 year of age is 35 mg, only
an older, exclusively breastfed infant would require additional vitamin C - about 5 mg, the amount in
about a half ounce of juice. However, given the uncertainty of the mother's intake and the concern
for prevention of iron deficiency anemia, a larger quantity (though less than the current maximum of
3 oz per day), may assure adequate vitamin C intake.

Juices, which may be introduced when the infant can drink from a cup, should not replace
breastmilk or infant formula. Provision of juice in the WIC food package prior to the infant's being
ready to drink it from a cup may facilitate the displacement of breast milk or infant formula.

The American Academy of Pediatrics notes that fruit juice, especially apple juice, is an increasingly
common beverage for young children. Fruit juice, which often replaces milk in the diet, can have a
negative impact on the nutritional health of the child. Excessive juice consumption of more than 6-
t0 ounces a day increases the risk of loose stool and diarrhea (14). Excessive fruit juice
consumption has also been associated with failure to thrive, carbohydrate malabsorption, and
chronic diarrhea. It has been reported that consumption of 12 ounces or more of fruit juice by young
children is associated with short stature and obesity (15). In addition, infants permitted to suck from
a bottle of any fluid that contains carbohydrates, including juice and milk, for prolonged periods are
at risk for developing nursing-bottle caries (14).

Nutrition counseling and education on appropriate infant feeding practices and food choices should
be provided to all parents/caregivers of infants and young children to ensure the establishment and
development of good eating patterns and habits. Counseling should include beverage selection -
milk, juice, or water - and the use of appropriate utensils (bottle and cup), at the appropriate
developmental stages.

States should be able to disallow juice from the infant food prescriptions due to common misuse. If
States allow juice, the quantity should be reduced and the introduction should be delayed to when
the infant can drink it from a cup.
d. Reduce the maximum quantity of milk for children. Offer lower fat milks as the standard milk for all women and children over 2 years of age. Allow for the use of alternative milk/calcium-rich food sources, such as tofu, soymilk, or yogurt as replacement for milk and restrict the maximum allowable amount of cheese for all women and children.

Selection criteria for alternative milk/calcium-rich foods will be defined.

This recommendation is consistent with the information and dietary recommendations from:
- The Dietary Guidelines for Americans (2)
- The American Dietetic Association (4, 7)
- The Center for Nutrition Policy and Promotion, USDA (12)

The current quantities of milk for children available in the food prescription are 24 quarts per month. These exceed the Dietary Guidelines – Food Guide Pyramid recommendation of 16 quarts per month (Refer to Table 2).

CNPP reported that while the food package for 1- to 3-year-olds provides 123% of the RDA for calcium, the children in the survey only consumed 99% of the RDA for this nutrient. If the 1997 Dietary Reference Intake (RDI) is used for comparison instead of the higher level used in the RDA, the milk/cheese component of the food package would have provided 197% of the calcium DRI. In this case, the children’s calcium consumption would have been as high as 158%. For 4-year-olds, the food package provides 123% of the RDA for calcium and the children’s consumption level was also at 99%.

CNPP reported that the food package supplies over 100% of the RDA for protein for all children. (For information regarding the contribution of the WIC food package to protein intakes of WIC participants, see comments in Recommendation #1).

The *What We Eat in America* survey (11) identified that two-thirds of adults whose diets exceed the recommendation for fat (less than 30% of total calories from fat), but only half think they take in too much of this nutrient. While about 60% of adults whose diets exceed the recommendations for saturated fat (less than 10% of total calories from saturated fat), only one-third think they take in an excess amount.

The prevalence of obesity is rising. Based on the lower threshold for obesity set by the National Institute of Health, 55% of the US population is categorized as being overweight or obese (16). In children, one in five are overweight (17). Based on the 95th percentile weight for height cutoff point, the prevalence of overweight in low-income children under 5 years of age has increased from 8.5% in 1983 to 10.2% in 1995. Based on the 85% weight for height, the increase is from 18.6% in 1983 to 21.6% in 1995. These increases make overweight a growing public health problem among preschool children in low-income populations.

Once established, dietary patterns and food preferences are difficult to alter. The WIC Program should help individuals and families establish a dietary pattern that meets recommendations for fat intake. Since milk is a major dietary component in the food prescriptions for pregnant and breastfeeding women and children, the inclusion of whole milk as a standard milk option contributes a significant amount of dietary fat to the total diet. The Center for Nutrition Policy and Promotion (12) found that pregnant and postpartum WIC participants exceeded the recommendation to consume no...
more than 30% of calories from fat and 10% of calories from saturated fat.

Limiting fat intake may help prevent over consumption of dietary fat and excess weight gain in WIC women. Modest reductions in dietary fat, such as the use of low-fat milk rather than whole milk, are not hazardous or harmful to children over 2 years of age. Reduced-fat milks should be offered as the standard milk for women and children over 2 years of age.

WIC participation represents a more culturally diverse population than census data reflect. Responding to food preferences and food traditions in the WIC food prescriptions is tantamount to the provision of effective WIC services and eliminating discrimination of equal access to WIC services and benefits. The current WIC food prescriptions offer foods, such as cow's milk and cheese that are not a part of the daily consumption patterns of many cultures served by the WIC Program. In addition, lactose intolerance is commonly experienced by many individuals and requires milk restriction or total milk elimination from the diet. Incorporation of alternative milk/calcium-rich food sources as replacement for milk will support the dietary preferences and patterns of these participants while ensuring intake of this essential nutrient.

A reduction in the milk/cheese quantity is consistent with the goal of Recommendation 1, and would continue to contribute significant amounts of calcium and protein to the diet for all children. Restricting the maximum allowable amount of cheese as a milk substitute and promoting the use of lower fat milks will reduce the fat content of the food prescriptions, thereby, supporting dietary recommendations and education/counseling messages. Whole milk should only be available to participants between 1-2 years of age and others with specific documented nutritional needs. Alternative sources of calcium-rich foods, such as tofu, soymilk, yogurt or calcium-fortified juice, should be allowed and provided to individuals based on food preferences and nutritional needs. Selection criteria will be defined for each participant category.

e. **Offer beans/peas (legumes) -- canned or dried -- to all women and children.**

This recommendation is consistent with the information and dietary recommendations from:
- The Dietary Guidelines for Americans (2)
- The American Dietetic Association (18)

Beans, which are low in fat, provide important nutrients (folic acid, fiber, iron, and protein) to the diet, should be consumed at least once or twice a week.

Although beans and legumes are a common food consumed among many different cultural groups who receive WIC services, lengthy preparation time and equipment needs have led to limited usage. Offering the canned varieties will increase their consumption.
f. Reduce the quantities of protein-rich foods for children. Allow substitution between protein-rich food items such as eggs, peanut butter and other alternative protein sources for all women and children.

Selection criteria for protein-rich foods will be defined.

This recommendation is consistent with the information and dietary recommendations from:
- The Dietary Guidelines for Americans (2)
- The Center for Nutrition Policy and Promotion, USDA (12)

The combination of the current quantities of foods available in the food prescriptions results in offering a disproportionately high level of protein as compared to the other target nutrients for children. The Center for Nutrition Policy and Promotion (12) provides support for decreasing the quantities of protein foods and allowing substitutions for children. For children from 1-3 years, the food package provides 234% of the RDA for protein while their reported actual intake is 308%. For children 4 years of age, the food package provides 156% of the RDA for protein and total reported actual intake provides 249%. Therefore, the amount of protein could be decreased without compromising the integrity of the food package.

The Food Guide Pyramids for Asian, Hispanic, Mediterranean, and Navajo cultures call for consumption of protein foods only several times a week. This recommendation will respond to cultures that meet their protein needs in foods other than milk, cheese and eggs.

The implementation of this recommendation will offset some of the cost of offering fruits and vegetables and other grain products in the food prescription. It will also ensure the provision of corresponding contributions of other essential foods and nutrients.

g. Offer a combination of types and quantities of foods (as recommended in 1a through 1f) to meet a specified nutrient range for protein, calcium, iron, vitamin A, vitamin C, folic acid, magnesium, zinc, B6, and fiber.

A specific range for each nutrient — protein, calcium, iron, vitamin A, vitamin C, folic acid, magnesium, zinc, B6, and fiber — will be identified for each participant category. The content of the total food prescription will be used to determine the contribution for each of the identified nutrients.

NAWD strongly supports retaining calcium, iron, protein, vitamin A and vitamin C as the target nutrients and recommends that folic acid, magnesium, zinc, B6, and fiber be designated as target nutrients. The nutritional needs for these specific nutrients for the WIC population are significant. Inadequate intake of these nutrients may have a life-long negative impact. The need for these nutrients is further supported by:
- The 1991 Technical Review (1)
- The What We Eat in America survey (11)
- Center for Nutrition Policy and Promotion, USDA (12)

In addition, it is well documented that folic acid is needed both before and during the early weeks of pregnancy to help reduce the risk of neural tube defects in the fetus. The 1991 Technical Review (1) further noted that "fetal inadequacy is a nutritional problem among many sub-groups served by the WIC Program." Pregnant and breastfeeding women are at increased risk of developing folic acid deficiency. Compromised folic acid status is particularly evident among low-income adolescents." The report concluded that folate may be of concern for vulnerable population groups such as WIC.

The Center for Nutrition Policy and Promotion Review noted that folic acid, zinc, vitamin B6, and magnesium have recently been identified as nutrients of potential concern for the WIC population. CNPP found that in the diets of children 1-3 years of age and 4 years of age, zinc intake was lower
than the recommended levels, with the WIC food package supplying only 41% of the RDA for both groups. The diets of WIC pregnant, breastfeeding, and postpartum women were all found to be low in folic acid, zinc, vitamin B6, and magnesium. CNPP recommended that these four nutrients be included in the mix of WIC foods provided to WIC population subgroups as additional new target nutrients (12).

For information regarding fiber, see comments in Recommendation #1b.

Individuals think of eating in terms of foods and not nutrients. The WIC food prescriptions should offer food combinations that meet a specified content range for each of the target nutrients. (The specific range for each nutrient will be defined for each participant category). The content of the total food prescriptions will be used to determine the contribution for each of the identified nutrients.

**Recommendation #2**

**Allow States the flexibility to offer regionally or locally available, culturally appropriate foods that are affordable and can be assimilated into dietary patterns contributing to life-long health.**

States should be allowed the flexibility to determine which specific foods to provide within defined categories. Foods may differ by state as a result of cultural, local or regional preferences, availability, distribution and cost issues.

| a. Offer foods that reflect the cultural dietary consumption patterns of the participants served. | The WIC food prescriptions should offer foods that are responsive to participant choice and easy to incorporate into dietary patterns. The Center for Nutrition Policy and Promotion reported that WIC pregnant women might not be consuming all the WIC foods (12).

Allowing States to select and offer foods that reflect local availability and preference will promote an on-going consumption of a nutritionally adequate diet and development of good dietary patterns after WIC participation. The WIC food prescriptions must have "personal value" to participants for them to be fully utilized.

In many states, WIC participation represents a much more culturally diverse population in comparison to census data. Nationwide, WIC serves participants who speak more than 131 different languages/dialects and come from many diverse cultures. Responding to food preferences and food traditions in the WIC food prescriptions is essential for the provision of effective and equal access to WIC services.

Dietary beliefs and practices are the most basic of human values and are the least likely to be altered during pregnancy and lactation. Foods and food habits are often associated with religious beliefs and ethnic behaviors. Offering foods that are not acceptable results in "cultural conflicts" that affect the individual personally and nutritionally. The WIC Program should not be forcing participants into making the choice between following their cultural food patterns or a more "western" food pattern. |
b. Offer foods that allow for variety and versatility in a way that can be easily incorporated into the regular dietary pattern. Food prescriptions should provide foods packaged in portions that can be consumed by participants before expiration dates and/or spoilage.

Selection criteria should include consideration for a participant’s resources, such as food preparation time, the availability of cooking equipment, cooking skills, etc.

The WIC food prescriptions should offer cultural food items in proportions that reflect the recommended cultural dietary patterns. This will enhance the use of the WIC foods to respond to nutritional needs and encourage a dietary pattern that will be maintained after WIC participation ends. Unlike the Food Guide Pyramid for Americans, those that have been developed by the Asian, Hispanic, Mediterranean, and Navajo cultures promote daily consumption of fruits, vegetables, and legumes and weekly consumption of meats, poultry, fish, eggs, milk, and cheese.

The addition of fruits, vegetables, grain products, and protein substitutions would offer food prescriptions which are more culturally acceptable and which promote a healthy diet.

Offering variety and versatility of WIC food items will allow participants to select foods that they like and will consume on an on-going basis. Foods should be acceptable to the participant and can be easily assimilated into the participant’s dietary pattern to improve immediate and long-term consumption patterns.

Dried beans, for example, are under-utilized by WIC participants due to lengthy preparation time. In addition, they are not easily apportioned into daily serving sizes for WIC participants. On the other hand, canned beans can be prepared in a variety of ways, in smaller quantities, with limited cooking facilities and shorten preparation time.

Beans can provide important nutrients, such as folic acid, fiber, iron, and protein for participants. They are also lower in fat than peanut butter. For these reasons, offering canned beans will aid WIC participants in increasing their consumption of this food, and gaining the associated nutritional benefits.

Canned beans are cost-neutral when compared to peanut butter, a comparable substitute. Four 16-ounce cans (or 8 8-ounce cans) of beans/peas are cost-equivalent to 18-ounces of peanut butter (19).

Finally, the NAWD food prescription survey documented support for the inclusion of canned beans as an option in food prescriptions for all women and children, based on the reasons noted above.

Currently, some WIC food items are prescribed in serving sizes and quantities that are impractical for daily usage or that promote over-consumption by the participant. For example, it is impractical to cook dried beans in single serving portions. Cooking larger quantities, on the other hand, often result in an uneven dietary pattern with the participant consuming the cooked beans for consecutive days yet not have enough to last until the next food prescription voucher(s) can be redeemed. Similarly, the excessive amount of milk given in the Children’s food package, coupled with this item having to be purchased in gallon portions in some states, results in over-consumption by participants or in spoilage.
c. Offer foods that are reasonably priced and readily available in retail food stores throughout the year.

Foods should be readily available to participants from a wide range of vendors (small/medium/large, chain/independent).

Foods offered should be affordable to ensure their continued consumption by participants after WIC participation ends, as well as to ensure States the ability to manage and control overall food package costs.

Foods available from a wide range of vendors will encourage on-going consumption after WIC participation ends.

Recommendation #3

Allow States the ability to offer food prescriptions that include all WIC foods in combination with special formula offered in Food Package III. Maximum allowable quantities of special formulas should yield consistent reconstituted amounts.

States should have the flexibility to prescribe specific quantities of WIC foods in addition to special formulas or prescribe special formulas as a supplement to WIC foods, based on medical diagnosis, intervention plans, participant's ability to consume foods, and participant preferences. The amount of special formula a participant receives should be an established standard number of ounces based on the yield of reconstituted formula (monthly or daily).

Food Package III – Children/Women with Special Dietary Needs – includes up to 910 fluid ounces of formula, 36 ounces of cereal, and 144 ounces of juice. (WIC Consolidated Regulations, Jan. 1996, p. 295). In comparison to the regular Children/Women food prescriptions, this prescription does not include eggs, peanut butter or dry beans/peas, and contains only half the amount of juice. The special needs prescription is adequate for a young child who has a medical condition that prevents the child from transitioning from an infant food prescription to a child prescription on their first birthday. However, it is not adequate for children or women who can consume regular foods, but who have increased nutritional needs due to disease, illness, surgery, etc.

States should have the ability to determine the specific foods and the quantities to provide within parameters to be defined. The food prescriptions should be based on the participant's medical diagnosis and intervention plans, food preferences and ability to consume the various WIC foods. For example, a pregnant woman recovering from hyperemesis gravidarum may benefit from the nutrients and calories in a product such as Ensure or Boost, but may not need 96 cans per month. Rather, a prescription with 20 quarts of milk (2 1/2 cups/day) and 32 8-oz cans of Ensure or Boost (about 1 cup/day), along with the other foods in the regular WIC food prescription, would better meet her needs. A child with delayed developmental feeding skills transitioning to regular food consumption from long-term nasogastric tube-feeding, for example, may benefit from a combination of tube-feeding formula and a supplement of solid foods from the WIC food prescription.
<table>
<thead>
<tr>
<th>Recommendation # 4</th>
<th>Topics to consider for additional research include:</th>
</tr>
</thead>
</table>
| Complete research and policy analysis to support planning and implementation of the WIC food prescriptions. | - National WIC food preference survey of participants to identify the foods most accepted by participants with special attention given to ethnic/cultural groups  
- Appropriate foods for an enhanced breastfeeding food prescription to meet additional nutritional needs and serve as an incentive to breastfeed  
- Impact and implications of RDA's/RDI's on the WIC food prescription  
- Identification and resolution of inconsistencies between WIC and other federal food assistance and nutrition programs  
- Appropriate payer for special formulas  
- Appropriate food prescription amounts (including regular and special formulas/medical foods) for all participant categories  
- Cost analysis of implementation of proposed food prescription changes  
- Alternative WIC foods and incidence/prevalence of food allergies (i.e. peanut butter, cow's milk, wheat, corn)  
- Food consumption patterns of WIC participants, low-moderate income families not on WIC, and general population of pregnant, breastfeeding, postpartum women and children  
- Appropriate fruits and vegetables to offer |
Table 2

WIC Food Packages and the Food Guide Pyramid

The Food Guide Pyramid shows the recommended balance of food among the food groups in a daily eating pattern. The following chart compares the WIC food packages to the recommended number of servings depicted in the Pyramid.

<table>
<thead>
<tr>
<th>Minimum Daily Intake Recommended by the Food Guide Pyramid*</th>
<th>Bread Servings</th>
<th>Vegetable Servings</th>
<th>Fruit Servings</th>
<th>Milk Servings</th>
<th>Meat Total Ounces</th>
</tr>
</thead>
<tbody>
<tr>
<td>6: C** and PP**</td>
<td>3: C and PP</td>
<td>2: C and PP</td>
<td>2: C and PP</td>
<td>3: PG and BF</td>
<td>Eggs, Tuna, Beans, Peanut Butter</td>
</tr>
<tr>
<td>9: PG** and BF**</td>
<td>4: PG and BF</td>
<td>3: PG and BF</td>
<td>3: PG and BF</td>
<td></td>
<td>3.5 oz: 2-3 yrs</td>
</tr>
<tr>
<td>WIC Foods</td>
<td>Cereal</td>
<td>Carrots</td>
<td>Juice</td>
<td>Milk Cheese</td>
<td>5.0 oz: 4-5 yrs and PP</td>
</tr>
<tr>
<td>Food Pkg IV (Children 2-3 years)</td>
<td>30%</td>
<td>0 %</td>
<td>115%</td>
<td>160%</td>
<td>6.0 oz: PG and BF</td>
</tr>
<tr>
<td></td>
<td>1.8 servings</td>
<td>0 serving</td>
<td>2.3 servings</td>
<td>3.2 servings</td>
<td>49% (Eggs + Peanut Butter)</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>.68 servings</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>46% (Eggs + Beans)</td>
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<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>.64 servings</td>
</tr>
<tr>
<td>Food Pkg IV (Children 4-5 years)</td>
<td>20%</td>
<td>0%</td>
<td>75%</td>
<td>160%</td>
<td>34% (Eggs + Peanut Butter)</td>
</tr>
<tr>
<td></td>
<td>1.2 servings</td>
<td>0 serving</td>
<td>1.5 servings</td>
<td>3.2 servings</td>
<td>.68 servings</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>32% (Eggs + Beans)</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>.64 servings</td>
</tr>
<tr>
<td>Food Pkg V (Pregnant/Breastfeeding Women)</td>
<td>13%</td>
<td>0%</td>
<td>50%</td>
<td>123%</td>
<td>28% (Eggs + Peanut Butter)</td>
</tr>
<tr>
<td></td>
<td>1.2 servings</td>
<td>0 serving</td>
<td>1.5 servings</td>
<td>3.7 servings</td>
<td>.68 servings</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>27% (Eggs and Beans)</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>.64 servings</td>
</tr>
<tr>
<td>Food Pkg VI (Non-Breastfeeding Postpartum Women)</td>
<td>20%</td>
<td>0%</td>
<td>50%</td>
<td>160%</td>
<td>24% (Eggs)</td>
</tr>
<tr>
<td></td>
<td>1.2 servings</td>
<td>0 servings</td>
<td>1 serving</td>
<td>3.2 servings</td>
<td>.48 servings</td>
</tr>
<tr>
<td>Food Pkg VII (Exclusively Breastfeeding Women)</td>
<td>13%</td>
<td>9%</td>
<td>60%</td>
<td>137%</td>
<td>50% (Eggs + Peanut Butter + Beans + Tuna)</td>
</tr>
<tr>
<td></td>
<td>1.2 servings</td>
<td>28 servings</td>
<td>1.8 servings</td>
<td>4.1 servings</td>
<td>1.2 servings</td>
</tr>
</tbody>
</table>

* See Table 3 for serving sizes by category utilizing the Food Guide Pyramid.

** C = children 2-5 yrs, PP = non-breastfeeding postpartum women, PG = pregnant women, BF = breastfeeding women
### Table 3

**Food Guide Pyramid**  
**Serving Sizes by Category**

<table>
<thead>
<tr>
<th>Food Group</th>
<th>Toddlers (ages 2-3 Years)*</th>
<th>Preschoolers (ages 4-5 Years), Adults</th>
</tr>
</thead>
</table>
| **Bread, Pasta, Rice, Cereal** | 5 tbsp cooked cereal, rice, pasta  
2/3 oz (2/3 cup) ready-to-eat cereal  
2/3 slice bread or 2/3 of a 7" tortilla  
1/3 roll, bagel, or English muffin  
1 3" pancake  
6 animal crackers          | ½ cup cooked cereal, rice, pasta  
1 oz (1 cup) ready-to-eat cereal  
1 slice bread or a 7" tortilla  
½ roll, bagel, or English muffin  
1 4" pancake  
9 animal crackers          |
| **Vegetables or Fruits**    | 2/3 cup raw leafy vegetables  
5 tbsp cut-up fresh, canned, or cooked fruit  
5 tbsp cut-up fresh, canned, or cooked vegetable  
½ cup juice  
1 small orange, or apple, or banana  
1 small baked potato          | 1 cup raw leafy vegetables  
½ cup cut-up fresh, canned, or cooked fruit  
½ cup cut-up fresh, canned, or cooked vegetable  
3/4 cup juice  
1 medium orange, apple, or banana  
1 medium baked potato          |
| **Milk, Yogurt, Cheese**    | 1 cup milk or yogurt  
1 ½ oz natural cheese  
2 oz processed cheese         | 1 cup milk or yogurt  
1 ½ oz natural cheese  
2 oz processed cheese         |
| **Meat, Poultry, Fish, Beans, Eggs, Nuts** | 1 1/3-2 oz cooked lean meat, poultry, fish  
2/3 cup cooked beans/peas  
2 2/3 tbsp peanut butter  
2 medium eggs          | 2-3 oz cooked lean meat, poultry, fish  
1 cup cooked beans/peas  
4 tbsp peanut butter  
2 large eggs          |
| **Fats, Oils, Sweets**      | Use sparingly               | Use sparingly               |

* Serving sizes for toddlers are 2/3 of the sizes recommended for preschoolers and adults, with the exception of milk and milk products for which the equivalent of 2 cups of milk is recommended.

** The quantities of meat/poultry/fish recommended per day are: 3.5 oz for toddlers, 5 oz for preschoolers and postpartum non-breastfeeding women, and 6 oz for pregnant and breastfeeding women. One ounce of meat/poultry/fish is equivalent to 1 egg, 2 tbsp peanut butter, and ½ c. cooked beans.
References


