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 6gram 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 1998 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 life-long 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.
## Table 1
### Rationale and Justification of NAWD Recommendations for WIC Food Package Changes

<table>
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<tr>
<th>Recommendations</th>
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<tr>
<td>Recommendation #1</td>
<td>WIC food prescriptions should be consistent and compatible with dietary recommendations made in the &quot;Dietary Guidelines for Americans&quot; (USDA &amp; 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 of high nutritional need 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 a supplemental food source while offering a proportional balance from each food group. The number of portions offered from each food group will be related to nutritional needs. Therefore, the number of portions from each food group will vary for each participant category.</td>
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<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: Dietary Guidance for Healthy Children (4), Nutrition Care for Pregnant Adolescents (5), Oral health and Nutrition (6), Child and Adolescent Food and Nutrition Programs (7), and The Role of Nutrition in Health Promotion and Disease Prevention Programs (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 What We Eat in America 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</td>
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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.

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.

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

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<th>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.</th>
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<td>Selection criteria should include fruits/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 vegetables would be offered in addition to produce made available through the Farmer’s Market Nutrition Program.</td>
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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 ensuring 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 8-10 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 1-3 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, and 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 #1f).

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 that 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.
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<th>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.</th>
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<td>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.</td>
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<td>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.</td>
</tr>
<tr>
<td>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.</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>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.</th>
</tr>
</thead>
<tbody>
<tr>
<td>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.</td>
</tr>
<tr>
<td>NAWD strongly supports retaining calcium, iron, protein, vitamin A and vitamin C as the target nutrients and recommend 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 are further supported by:</td>
</tr>
<tr>
<td>- The 1991 Technical Review (1)</td>
</tr>
<tr>
<td>- The <em>What We Eat in America</em> survey (11)</td>
</tr>
<tr>
<td>- Center for Nutrition Policy and Promotion, USDA (12)</td>
</tr>
<tr>
<td>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 “folate inadequacy is a nutritional problem among many sub-groups served by the WIC Program.” Pregnant and breast feeding women are at increased risk of developing folate deficiency. Compromised folate status is particularly evident among low-income adolescents.” The report concluded that folate may be of concern for vulnerable population groups such as WIC.</td>
</tr>
<tr>
<td>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</td>
</tr>
</tbody>
</table>
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 | 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.

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

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.

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.

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.

WIC food items and prescriptions need to enable participants to consume foods in recommended portion sizes. See Table 3, “Food Guide Pyramid, Serving Sizes by Category.”
c. Offer foods that are reasonably priced and readily available in retail food stores throughout the year.

| 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 medical diagnosis and intervention plans, the participant’s ability to consume the various WIC foods, and food preferences of the participant. 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 ½ 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. |

| 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 |
<table>
<thead>
<tr>
<th>nutritional needs and serve as an incentive to breastfeed</th>
</tr>
</thead>
<tbody>
<tr>
<td>• Impact and implications of RDA's/RDI's on the WIC food prescription</td>
</tr>
<tr>
<td>• Identification and resolution of inconsistencies between WIC and other federal food assistance and nutrition programs</td>
</tr>
<tr>
<td>• Appropriate payer for special formulas</td>
</tr>
<tr>
<td>• Appropriate food prescription amounts (including regular and special formulas/medical foods) for all participant categories</td>
</tr>
<tr>
<td>• Cost analysis of implementation of proposed food prescription changes</td>
</tr>
<tr>
<td>• Alternative WIC foods and incidence/prevalence of food allergies (i.e. peanut butter, cow's milk, wheat, corn)</td>
</tr>
<tr>
<td>• Food consumption patterns of WIC participants, low-moderate income families not on WIC, and general population of pregnant, breastfeeding, postpartum women and children</td>
</tr>
<tr>
<td>• Appropriate fruits and vegetables to offer</td>
</tr>
</tbody>
</table>
### 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** 9: PG** and BF**</td>
<td>1.8 servings</td>
<td>0 serving</td>
<td>2.3 servings</td>
<td>3.2 servings</td>
<td>3.5 oz: 2-3 yrs</td>
</tr>
<tr>
<td>3: C and PP 4: PG and BF</td>
<td></td>
<td></td>
<td>115%</td>
<td>160%</td>
<td>5.0 oz: 4-5 yrs and PP</td>
</tr>
<tr>
<td>WIC Foods</td>
<td></td>
<td></td>
<td>115%</td>
<td>160%</td>
<td>6.0 oz: PG and BF</td>
</tr>
<tr>
<td>Cereal</td>
<td></td>
<td></td>
<td>115%</td>
<td>160%</td>
<td></td>
</tr>
<tr>
<td>Carrots</td>
<td></td>
<td></td>
<td>115%</td>
<td>160%</td>
<td></td>
</tr>
<tr>
<td>Juice</td>
<td></td>
<td></td>
<td>115%</td>
<td>160%</td>
<td></td>
</tr>
<tr>
<td>Milk</td>
<td></td>
<td></td>
<td>115%</td>
<td>160%</td>
<td></td>
</tr>
<tr>
<td>Milk</td>
<td></td>
<td></td>
<td>115%</td>
<td>160%</td>
<td></td>
</tr>
<tr>
<td>Eggs, Tuna, Beans, Peanut Butter</td>
<td></td>
<td></td>
<td>115%</td>
<td>160%</td>
<td></td>
</tr>
<tr>
<td><strong>Food Pkg IV</strong> (Children 2-3 years)</td>
<td></td>
<td></td>
<td>115%</td>
<td>160%</td>
<td></td>
</tr>
<tr>
<td>30%</td>
<td>1.8 servings</td>
<td>0 serving</td>
<td>2.3 servings</td>
<td>3.2 servings</td>
<td></td>
</tr>
<tr>
<td>49% (Eggs + Peanut Butter)</td>
<td></td>
<td></td>
<td>115%</td>
<td>160%</td>
<td></td>
</tr>
<tr>
<td>46% (Eggs + Beans)</td>
<td></td>
<td></td>
<td>115%</td>
<td>160%</td>
<td></td>
</tr>
<tr>
<td><strong>Food Pkg IV</strong> Children 4-5 years)</td>
<td></td>
<td></td>
<td>115%</td>
<td>160%</td>
<td></td>
</tr>
<tr>
<td>20%</td>
<td>1.2 servings</td>
<td>0 serving</td>
<td>1.5 servings</td>
<td>3.2 servings</td>
<td></td>
</tr>
<tr>
<td>34% (Eggs + Peanut Butter)</td>
<td></td>
<td></td>
<td>115%</td>
<td>160%</td>
<td></td>
</tr>
<tr>
<td>32% (Eggs + Beans)</td>
<td></td>
<td></td>
<td>115%</td>
<td>160%</td>
<td></td>
</tr>
<tr>
<td><strong>Food Pkg V</strong> (Pregnant/Breastfeeding Women)</td>
<td></td>
<td></td>
<td>115%</td>
<td>160%</td>
<td></td>
</tr>
<tr>
<td>13%</td>
<td>1.2 servings</td>
<td>0 serving</td>
<td>1.5 servings</td>
<td>3.7 servings</td>
<td></td>
</tr>
<tr>
<td>28% (Eggs + Peanut Butter)</td>
<td></td>
<td></td>
<td>115%</td>
<td>160%</td>
<td></td>
</tr>
<tr>
<td>27% (Eggs and Beans)</td>
<td></td>
<td></td>
<td>115%</td>
<td>160%</td>
<td></td>
</tr>
<tr>
<td><strong>Food Pkg VI</strong> (Non-Breastfeeding Postpartum Women)</td>
<td></td>
<td></td>
<td>115%</td>
<td>160%</td>
<td></td>
</tr>
<tr>
<td>20%</td>
<td>1.2 servings</td>
<td>0 serving</td>
<td>1.5 servings</td>
<td>3.2 servings</td>
<td></td>
</tr>
<tr>
<td>24% (Eggs)</td>
<td></td>
<td></td>
<td>115%</td>
<td>160%</td>
<td></td>
</tr>
<tr>
<td>.48 servings</td>
<td></td>
<td></td>
<td>115%</td>
<td>160%</td>
<td></td>
</tr>
<tr>
<td><strong>Food Pkg VII</strong> (Exclusively Breastfeeding Women)</td>
<td></td>
<td></td>
<td>115%</td>
<td>160%</td>
<td></td>
</tr>
<tr>
<td>13%</td>
<td>1.2 servings</td>
<td>9% .28 servings</td>
<td>1.8 servings</td>
<td>4.1 servings</td>
<td></td>
</tr>
<tr>
<td>50% (Eggs + Peanut Butter + Beans + Tuna)</td>
<td></td>
<td></td>
<td>115%</td>
<td>160%</td>
<td></td>
</tr>
<tr>
<td>1.2 servings</td>
<td></td>
<td></td>
<td>115%</td>
<td>160%</td>
<td></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


Appendix 1
Comparison of the Current WIC Food Prescription to Current Nutrition Guidelines

The WIC food prescription should be consistent with national nutrition recommendations, enabling a participant to meet these recommendations. The prescription should guide participants in making wise food choices and developing a dietary pattern that promotes lifelong health and prevents diseases.

A conceptual comparison of the WIC food prescription with national nutritional guidelines was completed by NAWD to formulate the recommendations in this paper. The recommendations in this comparison included: The Dietary Guidelines for Americans, the Healthy People 2000 – National Health Promotion and Disease Prevention Objectives, the Institute of Medicine recommendations, and the American Dietetic Association position papers.


The Dietary Guidelines were designed to help Americans stay healthy, by providing Americans, age 2 years and over, advice about food choices that promote health and prevent diseases. To meet the Dietary Guidelines, it is recommended that individuals consume a diet with most of the calories from grain products, vegetables, fruits, low-fat milk products, lean meats, fish, poultry and dry beans. A healthy diet will help children grow, develop, and perform better in school and enable people of all ages to work productively and feel their best. A good diet can reduce major risk factors for many chronic diseases, especially those that are the leading causes of death and disability among Americans. These guidelines promote a diet that contains the amounts of essential nutrients and calories needed to prevent nutritional deficiencies and excesses, and provides the right balance of carbohydrate, fat and protein to reduce the risks for chronic diseases. Such a diet includes a variety of foods that are available, affordable and enjoyable.

The comparison of the WIC food prescription and the Dietary Guidelines is summarized below:

- Eat a variety of foods.

To assure a diet that includes a variety of foods, this guideline recommends choosing the recommended number of servings from the Food Guide Pyramid. The Pyramid is a research-based food guidance system for healthy Americans 2 years and older.

The Food Guide Pyramid shows the recommended balance of food among the food groups in a daily eating pattern. Most of the daily servings should be selected from the food groups that make up the base of the Pyramid. The Pyramid guides individuals to choose most of their calories from foods in the grain, vegetable and fruit groups, with moderate amounts of foods from the dairy and meat/beans group. The following chart compares the WIC food package to the recommended number of servings depicted in the Pyramid.
Comparison of WIC Food Prescription with Recommendations from the Food Guide Pyramid

<table>
<thead>
<tr>
<th>WIC Food Package</th>
<th>Bread 6-11 servings*</th>
<th>Vegetable 3-5 servings*</th>
<th>Fruit 2-4 servings*</th>
<th>Milk 2-3 servings*</th>
<th>Meat 2-3 servings*</th>
</tr>
</thead>
<tbody>
<tr>
<td>WIC Foods</td>
<td>Cereal</td>
<td>Carrots</td>
<td>Juice</td>
<td>Milk Cheese</td>
<td>Eggs Peanut Butter Beans Tuna</td>
</tr>
<tr>
<td>Food Pkg. IV</td>
<td>1</td>
<td>0</td>
<td>1.5 (6oz) or 2.2 (4 oz)</td>
<td>6 (4 oz) or 4 (6 oz)</td>
<td>1.3 – eggs &amp; Peanut Butter or 1.1 - eggs and beans</td>
</tr>
<tr>
<td>(Children ages 1-5)</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Food Pkg. V</td>
<td>1</td>
<td>0</td>
<td>1.5</td>
<td>3.6</td>
<td>1.3 – eggs &amp; Peanut Butter or 1.1 - eggs and beans</td>
</tr>
<tr>
<td>(Pregnant &amp; Breastfeeding Women)</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Food Pkg. VI</td>
<td>1</td>
<td>0</td>
<td>1</td>
<td>3</td>
<td>0.8</td>
</tr>
<tr>
<td>(Non-Breastfeeding Postpartum Women)</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Food Pkg. VII</td>
<td>1</td>
<td>0.5</td>
<td>1.8</td>
<td>3.9</td>
<td>2.4</td>
</tr>
<tr>
<td>(Exclusively Breastfeeding)</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Note: See page 19 for portion sizes by category utilizing the Food Guide Pyramid.

The number of servings offered in the various WIC food prescriptions are inconsistent with those in the Food Guide Pyramid. The quantities and portions of WIC foods should reflect the dietary consumption pattern recommended in the Pyramid.

- **Balance the food you eat with physical activity - maintain or improve your weight.**

It is noted that many Americans gain weight during their adult years, increasing their risk for many chronic diseases. This recommendation encourages Americans not to gain weight as adults, or if overweight, to lose weight by balancing the amount of calories in foods and beverages with the amount of calories the body uses. Americans are encouraged to increase their physical activity to expend dietary energy.

Limiting fat intake is not encouraged for children under 2 years of age. However, limiting fat intake may help prevent excess weight gain in older children. Modest reductions in dietary fat, such as the use of low-fat milk rather than whole milk, are not hazardous or harmful.

Recommendations to decrease caloric intake include: a) eat a variety of food low in calories and high in nutrients, b) eat less fat and fewer high fat foods, c) eat smaller portions and limit second helpings of foods high in fat and calories, d) eat more vegetables and fruits, e) eat
pasta, rice, breads and cereals without fats and sugars added in preparation or at the table, f) eat less sugars and fewer sweets (candy, cookies, cakes, soda), and drink less or no alcohol.

The current WIC foods and quantities available in the food prescription do not support the recommendation of eating less fat and fewer high fat foods, thereby not supporting the dietary recommendations of this guideline. Reducing the maximum quantity of milk and cheese, offering lower fat milks as the standard milk, and offering fruits, vegetables and grain products in the WIC food prescription is warranted.

- Choose a diet with plenty of grain products, vegetables, and fruits.

Grain products, vegetables, and fruits are key parts of a varied diet, providing vitamins, minerals, complex carbohydrates (starch and dietary fiber), and other substances that are important to good health. Eating a variety of fiber-containing plant foods is important for proper bowel function and can reduce symptoms of chronic conditions and lower the risk of heart disease and some cancers. In addition, these foods are low in fat. Consumption of recommended amounts of these foods substantially lowers the risk of many chronic diseases and certain types of cancers. Most of the calories consumed should come from these food items.

Optimal dietary intake is important for children to achieve proper growth and development. It is, therefore, appropriate to offer grain products, vegetables and fruits in the regular Children’s food prescription. In addition, these foods can be consumed in place of the higher fat items in the food prescription as a measure to combat obesity.

The availability of fresh fruits and vegetables varies by seasons and by region. Therefore, frozen and canned fruits and vegetables will ensure a supply of these foods is available year round.

For a diet with plenty of grain products, vegetables and fruits, it is recommended that 6-11 servings of grain products, 3-5 servings of various vegetables and vegetables juices, and 2-4 servings of various fruits and fruits juices be consumed daily.

Milk, cheese, eggs and juice provide negligible fiber. WIC cereals provide varying quantities of fiber, with some providing none at all. Legumes and peanut butter are the only additional foods that provide fiber. Including fruits and vegetables, as well as assuring an adequate selection of cereals and other grain products would assist the WIC population in meeting this recommendation and help children and adults establish a dietary pattern that supports this guideline.

- Choose a diet low in fat, saturated fat, and cholesterol.

Fat supplies energy and essential fatty acids and promotes the absorption of the fat-soluble vitamins A, D, E, and K. Some dietary fat is needed for good health. However, high levels of saturated fat and cholesterol are linked to increased blood cholesterol levels and greater risk for heart disease. Many people continue to eat a high-fat diet. The number of overweight people in the U.S. has increased. The risk of heart disease and certain cancers (linked to fat intake) remains high. This guideline recommends the consumption of less total fat, saturated fat, and
cholesterol.

Fat, whether from plant or animal sources, contains more than twice the number of calories of an equal amount of carbohydrate or protein. Many foods in the milk group and in the meat/beans group are high in fat. Choosing lower fat options among these foods allows one to eat the recommended servings from these groups without taking in excessive fat calories.

Fats contain both saturated and unsaturated fatty acids. Saturated fat raises blood cholesterol more than other forms of fat. It is recommended that saturated fats be reduced to less than 10 percent of total daily calorie intake. The fats from meat, milk, and milk products are the main sources of saturated fats in most diets.

Fat consumption guidelines do not apply to infants and toddlers under 2 years of age. This population requires specific amount of fat in the diet for growth and development. By about 5 years of age, children should gradually adopt a diet that contains no more than 30 percent of calories from fat. As they begin to consume fewer calories from fat, children should replace these calories by eating more grain products, fruits, vegetables, and low-fat milk products and protein-rich foods.

The WIC food prescription offers milk, cheese, eggs, and peanut butter. The combined quantities and variations of these foods provided in the various prescription, coupled with participant preferences, often do not support the recommendation of choosing a diet low in fat, saturated fat and cholesterol. Therefore, promoting the use of low-fat and non-fat milks, reducing the quantity of milk and cheese, and reducing the total amount of eggs and peanut butter is warranted. Whole milk should only be available to participants between 1-2 years of age and others with specific documented nutritional needs.

• Choose a diet moderate in sugar.

Sugars occur naturally in many foods. These include milk, fruits, vegetables, breads, cereals, and grains that also supply other nutrients. Americans eat sugars in many forms. Some high sugar foods supply calories but few or no nutrients (i.e., foods in the top section of the Pyramid). To maintain a nutritious diet and a healthy weight, sugar should be used in moderation by most healthy people and sparingly by people with low caloric needs. This guideline cautions against eating large amounts of sugar in foods and beverages that supply few nutrients.

Sugar consumption should be further discouraged as diet and dental caries are closely related. There is a greater risk for tooth decay when sugary foods and beverages are in frequent contact with the teeth for extended periods of time.

Overall, the current food prescriptions are low in sugar. WIC cereals and fruit juices are the major sources of sugar in the food prescriptions. Milk and peanut butter with sugar provide some additional sugar to the total prescription. Therefore, retaining the 6 gram per ounce sugar limit for cereals and reducing the amount of juice currently offered in the Children food prescription is warranted in order to minimize the incidence of tooth decay.
• **Choose a diet moderate in salt and sodium.**

Sodium and salt are found mainly in processed and prepared foods. Sodium plays an essential role in regulation of fluids and blood pressure in the body. High sodium intake may be associated with higher blood pressure.

*Some WIC foods are high in sodium. The WIC food prescriptions should offer foods that are low in sodium content. The amount of cheese available in the food prescriptions, therefore, should be reduced. To further reduce the overall sodium content of the food prescriptions, it may be necessary for States to identify the maximum sodium level of WIC foods.*

**B. Healthy People 2000 - National Health Promotion and Disease Prevention Objectives.**

“Healthy People 2000” is a broad-based initiative to improve the health of Americans. There are 22 areas of high public health priority along with 298 objectives. The specific nutrition priority objectives relevant to the review of the WIC food prescription include:

- Reduce coronary heart disease
- Reverse the rise in cancer deaths
- Reduce growth retardation among low-income children under 5 years of age
- Decrease the intake of dietary fat, particularly saturated fat
- Double the consumption of complex carbohydrates and fiber-containing foods to five or more daily servings of fruits and vegetables and six or more daily servings of grain products
- Increase consumption of calcium-rich foods
- Increase the percentage of overweight people aged 12 years and older who have adopted sound dietary practices combined with regular physical activity to attain appropriate body weight
- Reduce iron deficiency among children 1-4 years and among women of childbearing age
- Increase the proportion of mothers who breastfeed their babies
- Increase the proportion of parents and caregivers who use feeding practices that prevent baby bottle tooth decay
- Increase the proportion of people aged 19 and older who use food labels to make nutritious food selections

*These objectives identify the priority nutrition-related public health issues. It is important for the WIC Program to work together with other nutrition and health program/providers to implement activities to improve the health of the American people. The WIC food prescription should provide foods and a dietary intake pattern that would support the achievement of these objectives. Offering a WIC food prescription that includes fruits, vegetables, additional grain products, lower fat milks as the standard, reduced amounts of cheese, peanut butter and eggs is warranted.*

**C. Institute of Medicine**

1. **Nutrition During Pregnancy, 1990**
The Committee on Dietary Intake and Nutrient Supplements During Pregnancy considers food as the optimal vehicle for delivering nutrients and that nutrient supplementation being a mean for intervention. The Committee concluded that iron is the only nutrient whose requirements cannot be met by diet alone during pregnancy. During this period, dietary intakes should still be based on the Dietary Guidelines. There is no evidence of differences in nutrient requirements among various ethnic groups. However, differences in food choices of these groups and consequently, in the mean intake of certain nutrients do exist. Lactose intolerance and the subsequent low intake of calcium and vitamin D is such an example.

2. Nutrition During Lactation, 1991*

The Subcommittee recommends that lactating women should be encouraged to obtain their nutrients from a well-balanced, varied diet rather than from vitamin and mineral supplements. Encouragement should be provided to lactating women to follow the Dietary Guidelines that promote a generous intake of nutrients from fruits and vegetables, whole-grain breads and cereals, calcium-rich dairy products, and protein-rich foods such as meats, fish, legumes.


According to this report, pregnant and lactating women should be encouraged to follow the Dietary Guidelines. Folic acid supplementation, as well as foods rich in folic acid, in particular, should be encouraged. In addition to the daily consumption of milk and milk product, a diet that includes some meat, poultry, fish or vitamin C-rich foods such as orange juice, broccoli, and strawberries are encourage to promote iron absorption.

* Institute of Medicine, National Academy of Sciences, Washington, D.C., National Academy Press.

The dietary recommendations made in these IOM publications support the intake of a varied diet during and pregnancy and lactation. Currently, the WIC food prescription does not promote such a dietary pattern. Offering a WIC food prescription that includes fruits, vegetables, and additional grain products is warranted to meet these recommendations.

D. American Dietetic Association

The American Dietetic Association (ADA) has published numerous position papers to provide information, guidance, and recommendations related to dietary intake, promotion of optimal nutritional health, and disease prevention.

‘Dietary Guidance for Healthy Children’ notes that the first priority for dietary guidance for healthy children is “to emphasize the attainment of adequate nutrients for growth and development. A second priority is to focus on the role of diet and disease prevention, which is critical to creating a healthier America.” Improving the health and well being of children should
emphasize improved nutritional quality through food choices that offer balance, variety and moderation. Diets for healthy children should include a wide variety of foods from each of the major food groups in moderate amounts to provide adequate energy and nutrients to support normal growth. (4)

ADA position paper ‘Nutrition Care for Pregnant Adolescents’ notes that nutrition education would help improve food choices of all young women. Many teens eat erratically, depending mostly on fast-food restaurants and convenience stores for their meals. They often skip meals, eat on the run and give low priority to healthy dietary habits. As a result, nutrients such as calcium, iron, zinc, vitamins A, D, and B6, riboflavin, folic acid and total energy are most likely to be inadequate. Referring pregnant teens to the WIC program is one way that these individuals can obtain the assistance needed to improve their diet quality. (5)

‘Oral Health and Nutrition’ discusses the link between oral health and nutrition, noting that diet and nutrition have a direct influence on the progression of tooth decay. Baby bottle tooth decay (maxillary anterior caries), for example, is the major nutrition-related dental disease found in young children. In addition, mild to moderate malnutrition is associated with increased incidence of caries later in life. Infants and children are identified as a high-risk group, requiring adequate nutrients for normal growth and development of the oral cavity. The paper, therefore, suggests that nutrition counseling include the importance of improved dietary habits to support good oral health, as well as good general health. (6)

‘Child and Adolescent Food and Nutrition Programs’ notes that food and nutrition programs for children and adolescents are an important way to ensure that US children have access to a healthful diet. The position paper recommends that food programs provide nutritious, appealing and wholesome foods that reflect the Dietary Guidelines for Americans and the Food Guide Pyramid. It also encourages for meals to be served in an environment that are conducive to their acceptance. Malnutrition early in life can limit long-term intellectual development while learning capabilities can be affected by how recently one has eaten. Continued support for child nutrition programs, therefore, is necessary to respond to concerns such as the population’s intake of excess dietary fat, particularly saturated fat, the lack of dietary fiber levels and the inadequate consumption of key vitamins and minerals. (7)

The American Dietetic Association recommends food intake patterns include a wide variety of plant foods to achieve adequate fiber intakes in healthy children and adults in the position paper, ‘Health Implications of Dietary Fiber’. It suggests the inclusion of 2-3 servings of whole grains as 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. A diet with excess bulk, on the other hand, is not desired for children as it may not contain sufficient energy to support normal growth. (17)

In the position paper, ‘The Role of Nutrition in Health Promotion and Disease Prevention Programs,’ it is noted that public health programs’ effective prevention strategies must address environmental change, such as providing access to healthful foods, along with personal health behavior change. In addition, these programs need to shift its focus to addressing the nutrient needs for good health throughout the life cycle instead of combating isolated nutrient deficiencies. JADA, Vol. 98, No. 2, February, 1998. (8)
The current WIC food prescription does not support the recommendations made in the key position papers of the American Dietetic Association. NAWD recommends offering fruits, vegetables, and additional grain products as well as eliminating or reducing juice for infants.
Appendix 2

NAWD Membership Survey on Food Prescriptions

A survey of the NAWD membership was conducted in 1998 soliciting opinion and guidance regarding the priorities of WIC food package prescription changes. The survey included recommendations put forth by NAWD in response to the 1991 USDA food prescription review and issues that have come to the forefront since that time. Of the 88 surveys sent, there was a 62.5% response rate, with a total or 55 comments received.

The following issues emerged with the highest priority for consideration:

- Retain the 5 target nutrients
- Add folic acid, zinc, and vitamin B6 as target nutrients
- Retain the 6 grams of sugar criteria
- Retain current maximum allotment of 36 ounces cereal per month
- Offer national and store brand cereals
- Add carrots for women and children
- Reduce the amount of juice for children
- Allow combinations of Food Prescription III (special dietary needs packages) and Food Prescriptions IV, V, and VI (regular packages for children and women)

Strong support was received for the following:

- Add fiber as a target nutrient
- Add whole wheat bread to women and children food prescriptions
- Add fruits and vegetables to women and children food prescriptions
- Maintain overall food prescription cost neutrality
- Reduce milk for postpartum non-breastfeeding women and children
- Add soy milk and other soy products in replacement of cow's milk
- Allow canned beans/peas (legumes) for women and children
- Increase beans to 2 pounds per month for women and children
- Allow more flexibility in the substitution of WIC foods with more culturally-appropriate and regionally-available foods on a state by state basis