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FDPIR
Food Package Nutritional Quality

Report to Congress

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FDPIR Food Package Nutritional Quality:

Report to Congress

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Abstract: *This report responds to the legislative requirement of P.L.110-246 to review the nutritional quality of the food package provided through the USDA* ***Food Distribution Program on Indian Reservations (FDPIR)***. *Since 2002, the FDPIR Food Package Review Work Group, a partnership between FNS and the American Indian community, has worked to improve the food package to better meet the nutritional needs and food preferences of recipients. This report compares the FDPIR food package to scientific standards including the Dietary Guidelines for Americans, the Dietary Reference Intakes (DRIs), the Thrifty Food Plan (TFP) nutrient standards and the Healthy Eating Index-2005 (HEI-2005). The analysis finds that the FDPIR food package provides a nutritious variety of foods. Similar to American diets in general, there is room for improvement in the quantities of fruits, vegetables, low-fat dairy products, and whole grains. However, the FDPIR food package provides sufficient calories to meet the energy needs of most sedentary individuals and many moderately active children.* ***Individuals meeting their energy needs by consuming FDPIR foods in the quantities provided would achieve a HEI-2005 score of 81 out of 100, considerably better than Americans in general (58 out of 100) and Food Stamp Program participants (52 out of 100).***

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Glossary of Acronyms and Abbreviations

AI	Adequate Intake
AMDR	Acceptable Macronutrient Distribution Range
ARS	USDA Agricultural Research Service
CNPP	USDA Center for Nutrition Policy and Promotion
CSFII	Continuing Survey of Food Intakes by Individuals
DGA	Dietary Guidelines for Americans 2005
DRI	Dietary Reference Intake
DFE	Dietary Folate Equivalent
EAR	Estimated Average Requirement
FDPIR	Food Distribution Program on Indian Reservations
FNS	USDA Food and Nutrition Service
FSP	Food Stamp Program
FY	Fiscal Year
g	Grams
HEI-2005	Healthy Eating Index 2005
HHS	United States Department of Health and Human Services
IHS	Indian Health Service
IOM	National Academies' Institute of Medicine
ITO	Indian Tribal Organizations
kcal	Kilocalorie
mcg	Micrograms (μg)
mg	Milligrams
MPED	MyPyramid Equivalents Database for USDA Food Codes, Version 1.0
MP	MyPyramid
NHANES	National Health and Nutrition Examination Survey
NIH	National Institutes of Health
oz	Ounce
RAE	Retinol Activity Equivalent
RDA	Recommended Dietary Allowance
SNAP	Supplemental Nutrition Assistance Program
SoFAAS	Solid fats, alcohol, and added sugar
SR20	USDA National Nutrition Database for Standard Reference, Release 20
TFP	USDA Thrifty Food Plan
UHT	Ultra High Temperature
UL	Tolerable Upper Intake Level
USDA	United States Department of Agriculture
WIC	Special Supplemental Nutrition Program for Women, Infants, and Children

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Executive Summary

Background

The Food Distribution Program on Indian Reservations (FDPIR) provides USDA foods to low-income households living on Indian reservations, American Indian households residing in approved areas near reservations or in Oklahoma, and Alaska Natives. FDPIR is administered at the Federal level by USDA's Food and Nutrition Service (FNS). It is designed to serve as an alternative to the Supplemental Nutrition Assistance Program (SNAP, formerly known as the Food Stamp Program), the Nation's basic household nutrition assistance program.

FDPIR was established by the Food Stamp Act of 1977. The joint conference committee report that accompanied the legislation noted that the conferees did not intend that "the commodity package will necessarily in and of itself constitute a nutritionally adequate diet." Program regulations current as of mid-2008 specify that "[t]he food package offered to each household shall…provide eligible households with an opportunity to obtain a more nutritious diet and shall represent an acceptable nutritional alternative to Food Stamp Program benefits."[1]

In Fiscal Year (FY) 2008, operating through 99 Indian Tribal Organizations (ITOs) and five State agencies, FDPIR provided benefits to an average of over 88,000 individuals per month in 271 tribes. In FY 2008 Congress appropriated $88.5 million for FDPIR, with about $53.8 million designated for food and about $34.7 million for local administrative expenses.

This report responds to section 4211(b) of the Food, Conservation, and Energy Act of 2008[2], which directs the Department to prepare a report that 1) describes how the FDPIR package is determined; 2) reviews the nutrient content of the FDPIR food package, its conformance with the 2005 *Dietary Guidelines for Americans*, and its relationship to the nutritional needs of program participants; and 3) describes plans, if any, to revise the package.

Nutritional and Health Challenges

While specific information on the health and nutritional challenges of the low-income population eligible for FDPIR is limited, American Indians and Alaska Natives in general are known to experience high rates of overweight, obesity, and diabetes. About 16.5 percent of the total American Indian and Alaska Native adult population served by Indian Health Service (IHS) has been diagnosed with diabetes, about twice the rate found in the U.S. non-Hispanic white population. Diabetes-related mortality for American Indians and Alaska Natives is about three times the national rate.

In addition, up to 75 percent of American Indians have some degree of lactose intolerance. The *Dietary Guidelines* offer recommendations for the lactose intolerant, such as consumption of lactose-reduced milk products, smaller servings of milk, consumption of other calcium-rich foods, or use of the enzyme lactase. Nevertheless, lactose intolerance potentially limits FDPIR

[1] 7 CFR 253.3(d)
[2] Public Law 110-246, also known as the 2008 Farm Bill

participants' use of low-cost dairy products and presents a challenge in delivering adequate calcium, potassium, and vitamin D.

How the FDPIR Food Package is Determined

USDA makes nearly 100 different foods available through FDPIR. Each ITO chooses which foods it will provide to recipients from among the several food categories that make up the food package. These choices must take into account the tribe's storage, warehousing, and distribution resources, as well as, the preferences and storage capabilities of their clients.

The FDPIR food package is frequently adjusted to respond to the *Dietary Guidelines*, participant preference, and market factors. Since 2002, FNS has partnered with the American Indian community to improve the food package. A FDPIR Food Package Review Work Group made up of FDPIR directors, officials that play a vital role in Native American health issues, and FNS staff, periodically reviews the FDPIR food package and makes recommendations to better meet the nutritional needs and food preferences of program recipients without significantly increasing overall food package costs.

The *Dietary Guidelines* has and will continue to serve as the guiding principle for any changes to the food package resulting from the Food Package Review Work Group. Improvements resulting from this partnership include removing high fat, high sodium, and non-nutrient dense food items, offering more fresh fruits and vegetables and offering foods packed in smaller pack sizes to accommodate one-person households. In addition, to further improve consistency with the 2005 *Dietary Guidelines*, USDA recently removed shortening, corn syrup, luncheon meat, and butter from the food package, added four new healthier products (fortified Ultra High Temperature (UHT) 1% milk, frozen turkey hams and beef roasts, and fresh tomatoes) and reduced the fat and sodium in some other products.

Methods for Assessing the Nutritional Quality of the Food Package

To assess the food and nutrient content of the FDPIR food package, all foods made available through FDPIR as of 2008 were analyzed using the most recent available versions of nutrition databases. Analysis was conducted at two levels: one, referred to as the "as-offered" package, reflects the full variety of foods *offered* by USDA/FNS to participating ITOs and State agencies, and the second, referred to as the "as-delivered" package, reflects the foods available to the participating households at the local level, based on the relative quantities of the foods actually ordered by and *delivered* to these distribution sites.

The results of this analysis were compared to four external standards: 1) the Institute of Medicine Dietary Reference Intakes (DRIs), 2) the food quantities recommended by the USDA Food Guide contained in the 2005 *Dietary Guidelines*, 3) the nutrient standards used for development of the USDA Thrifty Food Plan (TFP), and 4) the USDA Center for Nutrition Policy and Promotion's Healthy Eating Index-2005 (HEI-2005). The results focus on findings for the legislatively defined reference household of SNAP, which includes an adult male age 20-50, an adult female age 20-50, a child age 9-11 years and a child age 6-8 years.

Key Findings from the Assessment of Nutritional Quality

Overall, the FDPIR food package provides a nutritious variety of foods. Similar to American diets in general, there is room for improvement in the quantities of fruits, vegetables, low-fat dairy products, and whole grains in the package. However, FDPIR provides sufficient calories to meet the energy needs of most sedentary individuals and many moderately active children. **Individuals consuming only the FDPIR foods in the quantities provided would achieve a HEI-2005 score of 81 out of 100, considerably better than Americans in general (58 out of 100) and SNAP participants (52 out of 100).**

- ***On average, the FDPIR food package meets many, but not all, of the Dietary Reference Intakes (DRIs) of reference household members.*** As delivered, the average food package provides protein, total fat, essential fatty acids (linoleic and alpha-linolenic acid), and carbohydrate at levels that fall within acceptable DRI ranges for a healthy diet. The food package also provides levels of saturated fat and cholesterol that meet the *Dietary Guidelines* recommendations.

  The average package provides enough nutrients to fulfill the average household Recommended Dietary Allowance (RDA) or Adequate Intake (AI) level for copper, iron, phosphorus, zinc, thiamin, riboflavin, niacin, folate, and vitamins B6, B12, and C. It provides less than the RDA or AI for calcium, potassium, dietary fiber, and vitamins A and E. The average household magnesium RDA is met by the packages offered, but not by those delivered. The average package provides sufficient but not excessive sodium.

- ***Most, but not all of the Thrifty Food Plan (TFP) nutrient standards are met.*** Of the 25 nutrient standards established for the current TFP and assessed in this analysis, the FDPIR food package for the reference household meets standards for 19 nutrients, but does not meet standards for the following five nutrients: calcium, potassium, dietary fiber, vitamin A, and vitamin E. Magnesium is met by the packages offered, but not by those delivered (see table ES-1).

- ***FDPIR provides more grains, about half the fruits, vegetables, and low-fat dairy, and nearly all the meat/beans recommended in the USDA Food Guide of the Dietary Guidelines.*** Compared to the recommended major food group and whole grain recommendations for a reference household, and on a per 2,000 calorie basis, the average FDIPR food package provides two times the required total grains, and about 45 to 60 percent of the recommended quantities of fruits (offered 58 percent; delivered 54 percent), vegetables (offered 58 percent; delivered 52 percent), and milk/dairy (offered 48 percent; delivered 50 percent). Meat/beans (offered 89 percent; delivered 91 percent) and oils (offered 89 percent; delivered 103 percent) are provided at closer to the recommended levels. Ample whole grains are offered (129 percent), but the quantity in the packages requested by and delivered to ITOs and State agencies is less than half of the recommendation (45 percent).

- ***The FDPIR food package is considerably more nutritious than the foods consumed by almost all Americans.*** USDA developed the Healthy Eating Index (HEI) in the mid-1990's and refined it in 2005 (HEI-2005) to provide a single numeric score with a maximum of 100 to represent the quality of overall dietary intake based on the 2005 *Dietary Guidelines*. For this analysis, HEI-2005 scores were developed as if the average FDPIR food package comprised all of the food eaten. The average FDPIR food package as offered achieves a score of about 87, and the package as delivered scores 81 out of 100. These scores are considerably above those achieved by Americans on average (58 out of 100) and by SNAP participants (52 out of 100). Individuals eating foods solely from the FDPIR food package would have HEI-2005 scores in the top 10 percent of the U.S. population (see Figure ES-1).

Distribution Costs and Challenges

While providing a nutritious diet to participants, the variety and types of items provided in the FDPIR food package are limited by the resources available to the program. Making small deliveries of foods to remote locations is costly, and those transportation costs reduce the amount of resources available to procure food. The food package is designed to ensure that foods can be transported, stored and used safely, and cost-effectively across the various circumstances faced by ITOs and the clients they serve. USDA offers nearly 100 different items, and ITOs choose within food categories which of those items they provide to participants based on the tribe's storage and warehousing facilities, as well as, the preferences and storage capabilities of their clients.

Plans for the FDPIR Food Package

The Food Package Review Work Group regularly reviews the content of the package to ensure that its nutrient profile is consistent with the latest version of the *Dietary Guidelines*. In spring 2008, the food package was updated in accordance with key recommendations of the 2005 *Dietary Guidelines*. The Work Group also recommends changes to the package to better reflect participants' food preferences. The FDPIR food package is constantly evolving to offer highly nutritious and acceptable foods to its participants. USDA will continue to use recommendations provided in the *Dietary Guidelines* to assess the food package for future improvements.

Conclusion

The current FDPIR food package, which contains over 100 items, reflects the dietary preferences of program participants and makes available a variety of healthful foods. The nutritional quality of the FDPIR food package is considerably better than diets generally consumed by all Americans and SNAP participants, as measured by the HEI. Over time, a series of improvements have been made to the FDPIR food package that has resulted in a food package that supports the nutritional health of participants. USDA eliminated products such as shortening, corn syrup, luncheon meat, and butter and replaced these items with healthier products including shelf-stable low-fat milk, lean meats, and more fresh vegetable choices. Future improvements should be considered to better meet the 2005 Dietary Guidelines once the impact of the most recent improvements can be assessed. A food package fully consistent with

the Dietary Guidelines would include more fruits, vegetables, fat free or low-fat dairy products, and whole grains, and offer fewer refined grain products.

The joint conference committee report that accompanied the establishment of FDPIR is somewhat ambiguous on the intended role of the package in meeting the dietary requirements of program participants. If FDPIR recipients are regularly acquiring food from sources other than the FDPIR package, then it may be appropriate for Congress to clarify the intent of the program and, perhaps, the nutrient content of the package. Any such changes should be made in the context of the health and nutritional priorities of the American Indian and Alaska Native populations, and in consultation with tribal organizations.

Table ES-1
Food Energy, Nutrient Content, Food Group Checklist for the FDPIR Food Package
✓ = Reference Household Average Per-Person Quantity
Meets the Applicable DRI or TFP Standard

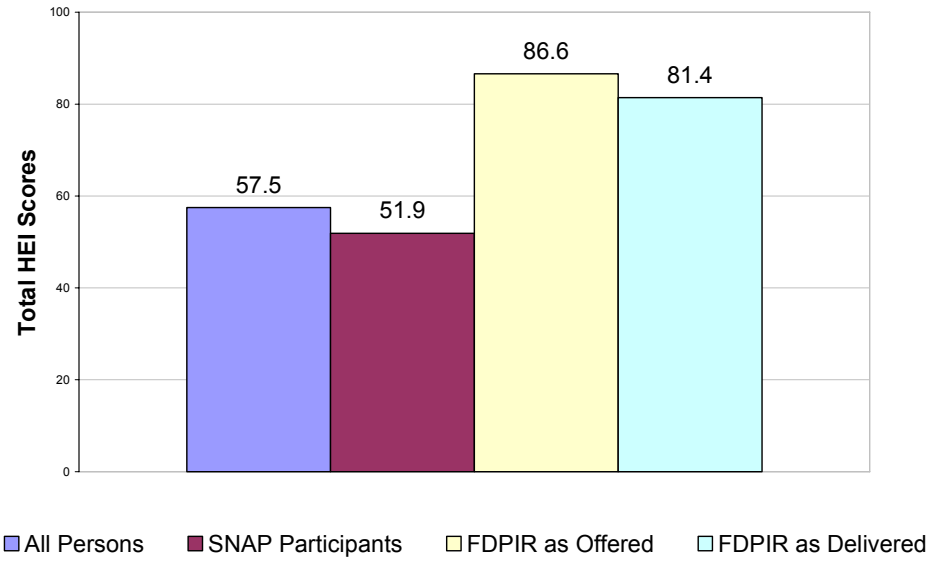
Nutrient / Macronutrient	FDPIR Food Package			
	Met Reference Family Calorie Assignment and DRI Recommendations[1]		Met Average TFP Standard for SNAP Reference Household	
	Offered	Delivered	Offered	Delivered
Calories			N/A	N/A
Protein, g	✓	✓	N/A	N/A
Protein, % kcal	✓	✓	✓	✓
Carbohydrate, g	✓	✓	N/A	N/A
Carbohydrate, % kcal	✓	✓	✓	✓
Total fat, g	N/A	N/A	N/A	N/A
Total fat, % kcal	✓	✓	✓	✓
Saturated fat, g	N/A	N/A	N/A	N/A
Saturated fat, % kcal	N/A	N/A	✓	✓
Linoleic acid, g	✓	✓	N/A	N/A
Linoleic acid, % kcal	✓	✓	✓	✓
Alpha-linolenic acid, g	✓	✓	N/A	N/A
Alpha-linolenic acid, % kcal	✓	✓	✓	✓
Cholesterol, mg	N/A	N/A	✓	✓
Total dietary fiber, g				
MINERALS				
Calcium, mg				
Copper, mg	✓	✓	✓	✓
Iron, mg	✓	✓	✓	✓
Magnesium, mg	✓		✓	
Phosphorus, mg	✓	✓	✓	✓
Potassium, mg				
Sodium, mg	✓	✓	✓	✓
Zinc, mg	✓	✓	✓	✓
VITAMINS				
Vitamin A, µg (RAE)				
Vitamin C, mg	✓	✓	✓	✓
Vitamin E, mg				
Thiamin, mg	✓	✓	✓	✓
Riboflavin, mg	✓	✓	✓	✓
Niacin equivalents, mg	✓	✓	✓	✓
Vitamin B6, mg	✓	✓	✓	✓
Vitamin B12, µg	✓	✓	✓	✓
Folate, µg (DFE)	✓*	✓*	✓*	✓*
FOOD GROUPS				
Total Fruit	N/A	N/A		
Total Vegetables	N/A	N/A		
Total Grains	N/A	N/A	✓	✓
Whole Grains	N/A	N/A	✓	
Milk	N/A	N/A		
Meat and Beans	N/A	N/A		
Oils	N/A	N/A		

Table notes:

1 Food pattern assignment for Age-gender group, based on moderate activity level and median weight and height (NHANES 2001-2002)

* At the individual level, the nutrients do not exceed the UL except for folate for children. However, no adverse effects have been associated with excess consumption of the amounts of folate normally found in foods.

Figure ES-1
Healthy Eating Index 2005 Overall Scores for the Average American Diet, the Average Diet of SNAP Participants, and the FDPIR Food Package



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FDPIR Food Package Nutritional Quality: Report to Congress

I. Introduction

The Food Distribution Program on Indian Reservations (FDPIR) is a Federally funded nutrition assistance program that provides USDA foods and nutrition education to eligible households. Eligibility is limited to low-income households located on Indian reservations or in approved areas near reservations or in Oklahoma, and Alaska Natives. Eligible households not located on a reservation must include at least one member of a Federally recognized tribe. FDPIR is administered at the Federal level by the U.S. Department of Agriculture (USDA). The program is administered at the local level by the States or by Indian Tribal Organizations (ITOs). FDPIR serves as an alternative to the Supplemental Nutrition Assistance Program (SNAP).[3]

This report responds to section 4211(b) of the Food, Conservation, and Energy Act of 2008[4], which directs the Department to prepare a report that 1) describes how the FDPIR package is determined; 2) reviews the nutrient content of the FDPIR food package, its conformance with the 2005 *Dietary Guidelines*, and its relationship to the nutritional needs of program participants; and 3) describes plans, if any, to revise the package.

Overall, this review finds that the FDPIR food package as provided in mid-2008 meets most, but not all dietary standards, and is considerably more nutritious than the mix of foods typically consumed by either SNAP participants or the U.S. population in general.

- Section II provides background information useful in understanding FDPIR and the discussions that follow.

- Section III discusses the nutritional and health challenges faced by the U.S. American Indian and Alaska Native populations. The discussion focuses specifically on diet-related health issues.

- Section IV of the report describes how the USDA determines the content of the FDPIR food package. Section IV discusses recent changes undertaken by the USDA to more closely align the FDPIR package with the 2005 *Dietary Guidelines for Americans*,[5] the standard developed by the USDA and the U.S. Department of Health and Human Services to be the primary source of dietary health information for policymakers, nutrition educators, and health providers. The section concludes with a discussion of the USDA's plans for continued improvement of the FDPIR package, as well as, its ongoing work of monitoring participant acceptance of recently implemented changes.

[3] Formerly the Food Stamp Program.
[4] Public Law 110-246, also known as the 2008 Farm Bill
[5] See U.S. Department of Health and Human Services and U.S. Department of Agriculture. *Dietary Guidelines for Americans*, 2005. 6th Edition, Washington, DC: U.S. Government Printing Office, January 2005 http://www.health.gov/dietaryguidelines/

- Section V begins with an examination of the nutritional content of the FDPIR food package. This section measures the FDPIR package against the *Dietary Guidelines*; Section V also compares the nutrient content of the FDPIR food package to the Dietary Reference Intakes (DRIs), the nutrient intake recommendations of the Institute of Medicine. Finally, section V compares the nutritional content of the FDPIR package to the benefit package extended to SNAP participants. SNAP offers its participants a cash benefit that is determined by the cost of the Thrifty Food Plan (TFP.)[6] The TFP is a minimal cost model diet that is informed by current nutrition science, and reflects, where possible, participant preferences and consumption patterns. This report compares the FDPIR package to the TFP model as well as to the actual diets consumed by SNAP participants.

- Section VI is a discussion of the implications of these food and nutrition analyses.

II. Background on Program Operations

The FDPIR provides USDA foods to low-income households on Federally recognized Indian reservations, American Indian households located in approved areas near reservations or in Oklahoma, and Alaska Natives. FDPIR is authorized under Section 4(b) of the Food and Nutrition Act of 2008[7], and Section 4(a) of the Agriculture and Consumer Protection Act of 1973. Eligible households must meet income and resource standards similar to the standards that determine eligibility for SNAP benefits; households must be recertified for FDPIR benefits annually. FDPIR and SNAP are complementary programs intended to serve economically similar populations; FDPIR-eligible households may choose to participate in either program, but may not receive FDPIR and SNAP benefits in the same month.

During Fiscal Year (FY) 2008, the USDA purchased and shipped foods to 99 ITOs and five State agencies that administer the program at the local level.[8] The distribution of USDA foods to program participants is a two step process. The administering agencies order food from the USDA based on the expected demand of participant households for particular products. Participants later pick up their packages from distribution sites operated by the administering States and ITOs.

USDA makes nearly 100 different food items available through FDPIR. Each ITO chooses which USDA foods it will provide to recipients from among the several food categories that make up the food package. Most FDPIR foods are shelf-stable, dry or canned products; a few foods are frozen. However, since 1995, FDPIR also offers a wide variety of fresh produce to

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[6] Carlson, Andrea, Mark Lino, WenYen Juan, Kenneth Hanson, and P. Peter Basiotis. *Thrifty Food Plan, 2006*. U.S. Department of Agriculture, Center of Nutrition Policy and Promotion, April 2007. http://www.cnpp.usda.gov/Publications/FoodPlans/MiscPubs/TFP2006Report.pdf

[7] Formerly the "Food Stamp Act of 1977." The "Food Stamp Act of 1977" was renamed the "Food and Nutrition Act of 2008" by the Food, Conservation, and Energy Act of 2008 (P.L. 110-246, also known as the 2008 Farm Bill.)

[8] Food and Nutrition Service "Food Distribution Fact Sheet", July 2008 http://www.fns.usda.gov/fdd/programs/fdpir/pfs-fdpir.pdf, accessed September 15, 2008

participant households through the Department of Defense Fresh Fruit and Vegetable Program.[9] With the approval of the ITO or State administering agency, FDPIR participants may substitute fresh produce for all or a portion of the canned fruits and vegetables in their food packages.[10]

FDPIR is a household program intended to provide improved access to nutritious foods for all members of participating households. As with SNAP benefit levels, FDPIR benefit levels are based on the number of individuals in an eligible household and are not tailored to the age, gender, activity level, or energy needs of the mix of individuals in a household. The package offered to a family of four (for example) contains roughly four times the food of the package offered to a single member household. Once a household meets financial and other eligibility criteria, benefits do not vary according to the household's level of income or resources.

FDPIR's administering agencies order, store, and distribute program foods. They also determine applicant eligibility, and provide nutrition education to recipients. Nutrition education programs may include individual counseling, cooking demonstrations, nutrition classes, and the dissemination of information on the proper storage of food. The USDA provides participating State agencies and ITOs with funds for these administrative costs.

In FY 2008, FDPIR served American Indian households from 271 tribes.[11] Average monthly participation exceeded 88,000 individuals.[12] In FY 2008, Congress appropriated $88.5 million for FDPIR.[13] Approximately $34.7 million of this was designated for local administrative expenses; the remainder was designated for food purchases. In addition to foods purchased with funds appropriated specifically for FDPIR, foods purchased under agricultural support programs may be distributed to FDPIR recipients.[14] A previous study found that compared to SNAP, FDPIR households more often include an elderly individual.[15]

In 2006, FNS estimated that the cost to the USDA of acquiring FDPIR foods for a three person household was about $123. At average retail prices, the same package would have cost more than twice as much – approximately $258. The difference between program cost and the retail value of FDPIR foods may be even greater if retail prices on or near reservations exceed the national average.

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[9] USDA Food Distribution Programs, "Department of Defense Fresh Fruit and Vegetable Program," http://www.fns.usda.gov/FDD/programs/dod/DoD_FreshFruitandVegetableProgram.pdf, accessed September 15, 2008.

[10] USDA Food Distribution National Policy Memorandum, http://www.fns.usda.gov/fdd/PolicyMemo/pmfd022_FDPIR-AdjRates-FV.pdf, accessed September 15, 2008.

[11] Food and Nutrition Service "Food Distribution Fact Sheet", July 2008 http://www.fns.usda.gov/fdd/programs/fdpir/pfs-fdpir.pdf, accessed September 15, 2008

[12] USDA Food and Nutrition Service, preliminary data

[13] Food and Nutrition Service "Food Distribution Fact Sheet", July 2008 http://www.fns.usda.gov/fdd/programs/fdpir/pfs-fdpir.pdf, accessed September 15, 2008

[14] Ibid.

[15] For a brief discussion of the origins of the FDPIR program, see Usher, Charles L., David S. Shanklin, and Judith B. Wildfire. *Evaluation of the Food Distribution Program on Indian Reservations.* U.S. Department of Agriculture, Food and Nutrition Service, June 1990.

III. American Indian/Alaska Native Nutritional and Health Challenges

There are an estimated 3.3 million American Indian and Alaska Natives living in the United States.[16] Compared to other groups of Americans, American Indian and Alaska Natives experience a disproportionate prevalence of disease and chronic medical conditions, lower life expectancy and higher mortality rates. During FY 2008, FDPIR served a monthly average of more than 88,000[17] low-income members of this population who experience these collective challenges to health and nutrition.

Obesity and Chronic Diseases

Over the past three decades, the prevalence of obesity in the American Indian and Alaska Native populations has increased sharply.[18] Studies indicate that the problem of obesity begins early for American Indian and Alaska Native children; obesity also presents a significant problem for the adult population.[19] While this nutrition-related epidemic is not unique to this group, it presents substantial health related issues.

Behavioral and lifestyle conditions as they relate to diet and level of physical activity share a relationship to the development and extent of obesity.[20] Within the U.S. population, there is a dietary trend towards consuming a greater proportion of processed and commercially prepared food and fewer traditional and homegrown foods. Historically, the American Indian diet was high in complex carbohydrates and low in fat. The diet of this population has shifted to one that is low in fruits and vegetables and high in refined carbohydrates, fat, and sodium.[21] [22] Reservation-based studies have also found that dietary fat intake ranges from 31 to 47 percent and is often above recommended levels.[23]

Further, the American Indian population suffers adverse health effects from the increasing prevalence of obesity. Obesity is causally related to chronic diseases such as diabetes, heart disease, stroke, arthritis, and breathing problems.[24, 25] The health impact is also evident in part,

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[16] Rates are based on "American Indian and Alaska Native" alone; 2000 U.S. Census with bridged-race categories.
[17] USDA program data. Since November 2007 FDPIR has served a monthly average of less than 100 Alaska Natives.
[18] Halpern, Peggy. *Obesity and American Indians/Alaska Natives*. U.S. Department of Health and Human Services, Office of the Assistant Secretary for Planning and Evaluation, April 2007. http://www.fns.usda.gov/fdd/programs/fdpir/DHHS_obesityreport.htm
[19] Charles-Azure, Jean, Elizabeth Warren-Boulton, and Brenda Broussard. *IHS Report to Congress: Obesity Prevention and Control for American Indians and Alaska Natives*. U.S. Department of Health and Human Services, Indian Health Service, April 2001. http://www.ihs.gov/hpdp/documents/obesitypreventionreport.doc
[20] Ibid.
[21] Porter J. *Native Americans: Nutrition and Diet-Related Diseases*. Washington, D.C.: Congressional Research Service Report for Congress, July, 1987.
[22] Pearce J. *Dietary Changes in a Northern Minnesota Indian Community in the Last Fifty Years*. In The IHS Primary Care Provider 1990; 15:127-31, U.S. Department of Health and Human Services, Indian Health Service.
[23] Studies conducted from 1986-1997. Story, M., K. Strauss, T.J. Gilbert, and B.A. Broussard. *2000 Nutritional Health and Diet-Related Conditions*. In E.R. Rhoades (Ed), *American Indian Health* (pp. 201-220). Baltimore and London: The Johns Hopkins University Press, Baltimore, 2000.
[24] U.S. Department of Health and Human Services, Public Health Service, Office of the Surgeon General, *The Surgeon General's Call to Action to Prevent and Decrease Overweight and Obesity*. 2001. http://www.surgeongeneral.gov/topics/obesity/calltoaction/CalltoAction.pdf

in increased mortality rates. There is evidence that demonstrates that following a diet that complies with the *Dietary Guidelines* may reduce the risk of chronic disease. It is reported that dietary patterns consistent with recommended dietary guidance are associated with a lower risk of mortality among individuals age 45 years and older in the United States.[26]

Diabetes

While diabetes is a significant health concern for the entire U.S. population, American Indians and Alaska Natives experience a higher relative risk of developing diabetes and a greater likelihood of suffering from its associated complications than other population groups. The rate of diabetes among American Indians is approximately twice the rate for the non-Hispanic white population.[27] The 2005 IHS user population data reflect that 16.5 percent of the total American Indian and Alaska Native adult population served by IHS were diagnosed with diabetes.[28] Contributing factors to the prevalence of this chronic disease within this high-risk population include nutrition-related challenges such as obesity, decreased physical activity and increased fat intake; changing demographics including aging and the growth of the at-risk population; cultural and community practices; and socioeconomic standing.[29]

In 2006, diabetes was the seventh leading cause of death in the United States.[30] This chronic disease remains a significant contributor to morbidity and mortality particularly within the American Indian population. The IHS reports that the diabetes-related mortality rate in the Alaska Native and American Indian population group is 2.9 times as high as the general U.S population mortality rate.[31]

The American Diabetes Association (ADA) recommends an individualized meal plan for people with diabetes, and supports the emphasis placed by the *Dietary Guidelines for Americans* on the importance of daily physical activity and a high quality diet. A range of servings by food group is suggested in a Diabetes Food Pyramid published by ADA. The number of servings is dependent on individual diabetes goals, calorie and nutrition needs, food preference, and lifestyle requirements. A diet following the minimum number of servings in each group consists of 1,600 calories while a diet following the upper limit of servings consists of 2,800 calories.[32] The Diabetes Pyramid diverges slightly from the *Dietary Guidelines* USDA Food Guide. Foods are

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[25] Story, et al, 2000.
[26] Kant, Ashima K., Barry I. Graubard, and Arthur Schatzkin. *Dietary Patterns Predict Mortality in a National Cohort: The National Health Interview Surveys, 1987 and 1992*. Journal of Nutrition, 134:1793-1799, July 2004.
[27] U.S. Department of Health and Human Services, Centers for Disease Control and Prevention and National Institutes of Health. *Healthy People 2010 Midcourse Review*. Chapter 5: Diabetes. http://www.healthypeople.gov/data/midcourse/pdf/FA05.pdf.
[28] U.S. Department of Health and Human Services, Centers for Disease Control and Prevention. *National Diabetes Fact Sheet: General Information and National Estimates on Diabetes in the United States, 2007*. Published 2008. http://www.cdc.gov/diabetes/pubs/pdf/ndfs_2007.pdf
[29] HHS/CDC, *Healthy People 2010 Midcourse Review*.
[30] HHS/CDC, *National Diabetes Fact Sheet*, 2008
[31] 2002-2004 IHS service population data and 2003 U.S. all other races adjusted for age. U.S. Department of Health and Human Services, Indian Health Service. *Indian Health Disparities*. IHS Fact Sheet, June 2008. http://info.ihs.gov/Disparities.asp
[32] American Diabetes Association, "Using the Diabetes Food Pyramid." http://www.diabetes.org/nutrition-and-recipes/nutrition/foodpyramid.jsp, accessed September 15, 2008.

grouped based on their carbohydrate and protein content instead of their food classification and portion sizes are adjusted so that the same carbohydrate content is found in each serving.

Lactose Intolerance/Calcium Consumption

National Institutes of Health (NIH) estimates that between 30 and 50 million Americans have some degree of lactose intolerance and conclude that this condition is more common in certain ethnic groups. Up to 75 percent of adult American Indians are considered to be lactose intolerant.[33] More than 70 percent of the calcium consumed by Americans is provided by milk and milk products which is the primary source of lactose in the diet.[34] Overall diet quality and adequacy of nutrient intake is associated with milk consumption. Therefore, those who reduce or avoid milk because of its lactose or for other considerations need dietary substitutions rich in the sources of nutrients provided by milk; specifically calcium, potassium, magnesium, vitamin A, and vitamin D.[35] For individuals who are lactose intolerant, the *Dietary Guidelines* recommend using lactose reduced or low lactose milk products. Other *Dietary Guidelines* recommendations include, taking several small servings of milk per day, taking the enzyme lactase before consuming milk products, or eating other sources of calcium rich foods.

Cultural Considerations

Varying cultural and food consumption preferences exist across the American Indian and Alaska Native populations that present additional challenges to health and nutrition. With respect to existing family and community preferences, FDPIR participants have expressed frustration in changing dietary practices.[36] Nutrition-related problems were identified by FDPIR focus groups as issues of health concern to the reservation, and these problems persist in part due to misconceptions and a lack of science-based information available to tribes about how to improve dietary habits.[37]

There are many foods that are mainstays of traditional diets for American Indians; these include bison, blue corn, salmon, and wild rice.[38] Tribal leaders have requested that USDA add more traditional foods to the FDPIR food packages in response to tribal needs and wants, and USDA has made an effort to respond whenever practicable. For example, bison meat was added to the list of available USDA food options beginning in FY 2001. While issues of food cost, shelf life, and nutritional quality can limit the Department's ability to add certain traditional foods to the FDPIR package, the FDPIR Food Package Review Work Group continually strives to improve

[33] U.S. Department of Health and Human Services, National Institutes of Health, Osteoporosis and Related Bone Diseases ~ National Resource Center. "What People With Lactose Intolerance Need to Know About Osteoporosis." http://www.niams.nih.gov/Health_Info/Bone/Osteoporosis/Conditions_Behaviors/lactose_intolerance.pdf, accessed September 15, 2008.
[34] *Dietary Guidelines for Americans*, 2005
[35] Ibid.
[36] Usher, et al, 1990
[37] Ibid.
[38] Finegold, Kenneth, Nancy Pindus, Laura Wherry, Sandi Nelson, Timothy Triplett, and Randy Capps. *Background Report on the Use and Impact of Food Assistance Programs on Indian Reservations*. U.S. Department of Agriculture, Economic Research Service, January 2005. http://www.ers.usda.gov/publications/CCR4/CCR4.pdf

the food selection available to participants.[39] Additionally, new provisions in the Farm Bill strive to increase the availability of traditional foods through FDPIR. Section 4211(b) authorizes $5 million, subject to appropriations, for USDA to purchase traditional and locally-grown foods for FDPIR participants if such products can be purchased cost-effectively.

Demographics

The high rates of poverty (approximately 25 percent in 2003-2005)[40] and unemployment experienced by American Indians and Alaska Natives may limit the population's ability to purchase a healthful food supply.[41] FDPIR households have very low levels of income and are eligible to participate in additional food assistance programs such as the Special Supplemental Nutrition Program for Women, Infants, and Children (WIC) program and the National School Lunch and School Breakfast Programs.

The historic FDPIR demographic profile also suggests an older population.[42] In 1990, more than one-third of all FDPIR households included someone age 60 or older. More than one-fourth of those households participated in one or more senior citizen assistance programs.[43]

IV. How the FDPIR Food Package is Determined, and Plans for the Future

This section specifically addresses the legislative requirements to provide information on 1) how USDA derives the process for determining the FDPIR food package; 2) the extent to which the food package may be limited by distribution costs or challenges in infrastructure; 3) plans to revise the food package to conform with the *Dietary Guidelines*; and 4) the rationale for current policy directions.

How USDA Derives the Process for Determining the FDPIR Food Package

The FDPIR food package started with the Needy Family Program, established in 1936 as a State-administered program to distribute surplus agricultural commodities to needy people. Many Indian reservations were among the areas served. By the 1950s, the program provided five commodity items: rice, cornmeal, flour, dry beans, and nonfat dry milk. In the 1960s, the package was expanded to include rolled oats, canned luncheon meat, fruits, vegetables, and juices. The nutritional content of the food package did not become a primary concern until the late 1970s and early 1980s when many Americans became more nutrition conscious.

In 1964, the Food Stamp Program was established and, by the mid 1970s, the Needy Family Program was almost eliminated due to expansion of the FSP into all States and some territories.

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[39] Ibid.
[40] U.S. Census Bureau, Poverty 2005. http://www.census.gov/hhes/www/poverty/poverty05/table5.html, accessed September 15, 2008. The rate reflects a three year average using single-race population data.
[41] Population Resource Center, 2006. *Factsheet: American Indian and Alaska Native Heritage Month*.
[42] Usher, et al, 1990
[43] Ibid.

The FDPIR was created by the Food Stamp Act of 1977 to replace the Needy Family Programs that operated on reservations, and serve as an alternative to the FSP for Indian households.[44] The Agriculture and Consumer Protection Act of 1973, as amended, directs the Secretary to administer a program that "improve[s] the variety and quantity of commodities supplied to Indians in order to provide them an opportunity to obtain a more nutritious diet." The 1977 report of the joint conference committee noted that the conferees did not intend that "the commodity package will necessarily in and of itself constitute a nutritionally adequate diet."[45] The preamble of the December 8, 1978, FNS rule proposing to implement FDPIR states: "In this regard the Department shall offer a variety and quantity of commodities for Indian households such that the commodity package represents an acceptable alternative to Food Stamp Program benefits."

As a result of the Food Stamp Act of 1977, the food package was expanded in 1978-1979 to include about 60 food items. As is the case in SNAP, the food package was not intended to be the sole source of food for participating households. Items were chosen to offer a variety of the four major food groups recognized by the nutrition standards of that time: the meat, bread-cereal, vegetable-fruit, and milk groups. Consideration was also given to cost, market availability, market support, package size, household preference, and nutritional content. Specific attention was paid to ensuring the foods were shelf stable since many warehouse and distribution systems at the local level lacked refrigeration and were located in remote areas.

In the 1979 final rule implementing FDPIR, USDA estimated that the new FDPIR food package would provide the equivalent of the average Recommended Daily Allowance[46] for food energy, protein, most vitamins, and minerals. As a result, USDA determined that the food package represented an acceptable alternative to the FSP benefit. The final rule also required ITOs/States administering FDPIR to review household food preferences as part of an annual monitoring review of program operations.

In the early 1980s, USDA adjusted the food package in response to limited food preference surveys and an analysis of commodity take rates. These changes better met participant preferences and made the food package more consistent with the *Dietary Guidelines for Americans* first published in 1980. Significant changes were made in the latter half of the 1980s in response to the 1986 recommendations of a Food and Nutrition Service Task Force. The Task Force analyzed the nutrition profile of the food package to determine how well it met participants' nutritional needs, and to see if it provided nutritional benefits similar to the TFP. The TFP is a representative healthful and low-cost meal plan for people with limited resources that was developed to be used as the basis for calculating the food stamp allotment. In areas where the Task Force found the FDPIR food package to be deficient, the package was modified to more closely meet Thrifty Food Plan goals and better meet recipient preferences. These modifications included increasing fruit and vegetable servings, packing all fruits in light syrup or natural juices,[47] and reducing the quantity of high fat offerings.

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[44] Title XIII of the Food and Agriculture Act of 1977, Public Law 95-113

[45] Conference Report to Accompany the Food and Agriculture Act of 1977, S. Rep. No. 95-418

[46] National Academy of Sciences, 1974, *Recommended Dietary Allowances*, Eighth Edition.

[47] As of mid-2008, almost all commodity canned fruit is packed in light syrup, and this is reflected in the FNS analysis.

In 1993 a USDA tri-agency task force reviewed specifications for all USDA foods in all programs. The food package was refined to provide a better variety of more convenient items and to better conform USDA foods to the latest available *Dietary Guidelines*. Within the next few years, items were added such as frozen ground beef, low-fat macaroni and cheese, and additional cereal choices. These items were well accepted by FDPIR recipients.

In 1998, the FDPIR food package was updated in response to an extensive review of all USDA foods, in all programs. The review was recommended by a group of senior USDA officials, called the Commodity Improvement Council, in response to general concerns about the healthfulness of USDA foods. A FDPIR food package review team was established, consisting of tribal officials and staff from USDA and other Federal agencies. As a result of the team's recommendations, USDA increased servings of vegetables and grains, increased the variety of already existing products, and added several new items to the food package including low-fat refried beans, bran cereal, canned mixed vegetables, reduced-sodium tomato and vegetable soups, frozen cut-up chicken, meatless spaghetti sauce, cranberry-apple juice, and egg noodles.

In 2002, the FDPIR Food Package Review Work Group was formed at the request of the National Association of Food Distribution Programs on Indian Reservations (NAFDPIR). The Work Group brings together stakeholders that provide the necessary perspective and expertise on Native American health issues, participant food preferences, and the federal commodity procurement and delivery process. These experts include Federal and Tribal health professionals, NAFDPIR officials and other representatives from the Indian Tribal Organizations and State agencies that administer FDPIR, commodity procurement specialists from USDA, and Food and Nutrition Service Regional and National Office staff that administer FDPIR. NAFDPIR was instrumental in nominating the Tribal health professionals and FDPIR representatives on the Work Group.

The Work Group meets on an ongoing basis to periodically review the FDPIR food package. Its goal is to consider revisions to the food package to better meet the nutritional needs and food preferences of program recipients without significantly increasing overall food package costs. Changes resulting from the Work Group include the addition of whole-wheat flour, canned kidney beans to replace dry kidney beans, sliced reduced-fat cheese blend, and diced tomatoes.

The Extent to Which the Food Package May Be Limited by Distribution Costs or Challenges in Infrastructure

The FDPIR food package is designed to ensure that foods can be transported, stored, and used safely and cost-effectively across the various circumstances faced by ITOs and the clients they serve. While providing a nutritious diet to participants, the variety and types of items provided in the FDPIR food package are limited by the resources available to the program.

USDA makes nearly 100 different foods available through FDPIR. Each ITO chooses which USDA foods it will provide to recipients from among the several food categories that make up the food package. These choices must take into account the tribe's storage, warehousing, and distribution resources, as well as the preferences and storage capabilities of their clients. Many

ITOs are located in remote areas or have only a small number of FDPIR recipients. Making small deliveries of foods to remote locations is costly, and those transportation costs reduce the amount of resources available to procure food.

Within reservations, poor weather, rural roads, and distances between households can create delivery challenges. To shorten the distances that some households in rural areas must travel to pick up their food package, some reservations move FDPIR foods from their primary warehouse to satellite sites. To do this, pallets must be broken down, reassembled, and re-loaded. In some instances, USDA foods may be distributed to recipients directly out of the back of a vehicle. These distribution methods are staff intensive and can drain resources. Many ITOs try to compensate for this by recruiting volunteers to assist with distributing USDA foods. The Consolidated Appropriations Act of 2008 provided ITOs with additional administrative funds which they can use to improve the food distribution infrastructure. While the costs associated with delivering small quantities of food to scattered populations in remote locations will always remain high, the food distribution infrastructure on Indian reservations continues to improve.

Plans to Revise the Food Package to Conform to the *Dietary Guidelines*

Since 2002, the FDPIR Food Package Review Work Group has met on an ongoing basis to review and revise the food package. The *Dietary Guidelines* has and will continue to serve as the guiding principle for any changes to the food package resulting from the Food Package Review Work Group.

During the last few years, the Work Group has focused on removing high fat, high sodium, and non-nutrient dense food items from the FDPIR food package. The Work Group's goal has been to offer foods that aid in helping participants deal with dietary health issues such as obesity, hypertension, and diabetes. Some of the changes the Work Group has made to the food package include offering more fresh fruits and vegetables and offering foods packed in smaller pack sizes to accommodate the one-person household.

In addition, USDA recently initiated changes to the FDPIR food package to further align it with the *Dietary Guidelines*. USDA removed shortening, corn syrup, luncheon meat, and butter from the food package. Offering these foods directly conflicted with the key recommendations from the *Dietary Guidelines*, and they mainly offered calories with little nutritional value.

Luncheon meat is high in saturated fat and sodium relative to its overall nutritional profile. Butter and shortening significantly complicate conformance with the guidance found in the *Dietary Guidelines* which recommends keeping trans fatty acids as low as possible; consuming less than 10 percent calories from saturated fatty acids; and limiting intake of fats and oils high in saturated and/or *trans* fatty acids. The food package is designed to offer basic food staples and the consumption of added sugars provides empty calories while providing little, if any, essential nutrients to help participants meet their nutritional needs according to the *Dietary Guidelines*.

In spring 2008, four new products were added to improve the food package: fortified Ultra High Temperature (UHT) 1% milk, frozen turkey hams and beef roasts, and fresh tomatoes. In

addition, several other changes were made such as offering only low-fat bakery mix instead of the regular bakery mix, offering low-sodium (140 mg/ serving) canned beans and tomato products with the goal of lowering the sodium in all canned vegetables to 140 mg/ serving by FY 2010, and reintroducing canned chicken into the FDPIR food package which has a better nutrition profile than the previous product. Whole grain rotini will be offered during 2009.

The Rationale for Current FDPIR Food Package Policy Directions

The FDPIR food package is constantly evolving to offer more nutritious and acceptable foods to its participants. The FDPIR Food Package Review Work Group monitors the food package to determine the nutritional and cultural needs of Native Americans. USDA remains committed to the goal of improving the quality and nutritional content of the food package in consultation with the Work Group.

USDA recently made significant changes in the FDPIR food package in accordance with key recommendations in the *Dietary Guidelines*. Before additional changes to the package are considered, USDA will assess the impact of recent changes including the acceptability of these changes by FDPIR participants.

The joint conference committee report that accompanied the establishment of FDPIR noted that the conferees did not intend that "the commodity package will necessarily . . . constitute a nutritionally adequate diet." This language is somewhat ambiguous regarding the role of the FDPIR food package in the total diets of program participants. Congress may want to consider whether it would be appropriate to clarify or alter the intended role of FDPIR in meeting the dietary requirements of participating households. If FDPIR recipients are regularly acquiring food from sources other than FDPIR, some consideration could be given to adjusting the number of calories in the food package in light of the prevalence of overweight and obesity among Native Americans. Any review of the FDPIR package should, of course, be made in the context of the particular nutritional needs and health challenges of the American Indian and Alaska Native populations and in consultation with tribal organizations.

V. FDPIR Food Package Analysis

In the preparation of this report, FNS estimated the nutrient content of the FDPIR package as offered and as delivered to participants at FDPIR sites. The package as offered reflects the full variety of food options available to FDPIR administering agencies. It is constructed from the complete list of FDPIR foods, and assumes equal selection of all available options.[48] The package as delivered is based on the volume of food actually shipped by FNS to distribution sites designated by the administering agencies. The package as delivered reflects typical participant preferences for the most popular FDPIR options. Both sets of analyses estimate the nutrient profile of the packages using product specifications current as of mid-2008.

[48] FNS Handbook 501: The Food Distribution Program on Indian Reservations, Exhibit O, "Food Distribution Program on Indian Reservations: Monthly Distribution Guide Rates by Household Size", effective date February 1, 2008. The FDPIR Monthly Distribution Guide is reprinted as Appendix B.

Much of the analysis presented below focuses on the household basis of the FDPIR benefit, and some of the calculations assess the content of the FDPIR package on a per-1000 calorie or per-2000 calorie basis, i.e., based on nutrient density. The main analysis adopts the concept from SNAP of a *reference household* whose members have different energy and nutrient needs. The reference household used here is the one referred to in the Food and Nutrition Act of 2008.[49] It is used in this analysis to facilitate comparison with the TFP, the model on which SNAP benefit levels are set. SNAP benefits are based on the average cost of the TFP for the reference household.

In the detailed analysis for each reference household member (presented in Appendix A), the FDPIR package is sometimes shown to exceed the nutrient needs of one household member, while not meeting the needs of another. In practice, each household decides how to share its food among household members, and an excess of calories or other nutrients for one household member should help meet the needs of the rest of the household. The reference household analyses developed here refer to the average per-person level. For nutrients where sufficiency (rather than excess) is of concern, one or more household members will necessarily receive less than recommended if the quantity of food or nutrient is not sufficient to meet this reference household average per-person level unless food from other sources is consumed. Similarly, for nutrients where excess is of concern, one or more household members will receive more than recommended if the quantity exceeds the reference household average per-person level unless there is excessive waste, or, for nutrients assessed as a percent of calories (e.g., total fat), additional foods low in this nutrient are consumed.

A 1990 study of the FDPIR population found that older individuals are overrepresented in participant households relative to American households generally.[50] The reference household used in this analysis, however, does not include older individuals. Although the nutrient needs of older individuals are comparable to those of the general adult population, there are some differences. In particular, vitamins D and B12 are identified as nutrients of concern in the *Dietary Guidelines* for individuals 50 and older. As discussed below, FNS did not estimate the levels of vitamin D in the FDPIR food package. However, the levels of vitamin B12 in the package as offered and as delivered are sufficient to meet the requirements of individuals age 50 and older.

The nutrient analysis that follows provides detailed results for 25 micro- and macronutrients. One important nutrient not represented in this analysis is vitamin D. Vitamin D values are available for relatively few foods. As a result, FNS did not attempt to estimate the vitamin D content of the FDPIR package.[51] Good sources of vitamin D that are included in the FDPIR food package include cheese, fortified milk, and fortified cereals. In addition, *trans* fat was not included in this report as it was not available for the majority of foods.

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[49] The reference household used in this report is the family of four referred to in the legislation. That family consists of "a man and a woman twenty through fifty, a child six through eight, and a child nine through eleven years of age." See 7 USC 2012(u). This definition is not new to the Food and Nutrition Act of 2008; it is the same definition previously found in the Food Stamp Act of 1977.

[50] Usher, et al, 1990

[51] In general, individuals over age 50 need slightly higher amounts of vitamin D than younger individuals, and older individuals may be overrepresented in the FDPIR population. (See Usher, et al, 1990.) Vitamin D is manufactured by the body as well as obtained through the diet.

Throughout this analysis, FNS relies on nutrient information retrieved from the USDA National Nutrition Database for Standard Reference, Release 20 (SR20.)[52] FNS obtained other nutrition information from USDA food labels, fact sheets, and the product specifications prepared by the USDA for the food manufacturers and distributors who supply the Federal food programs.

Selection of Reference Standards

Rather than compare the FDPIR food packages to a single external reference, the analysis compares the results with four authoritative reference standards:

- **The Dietary Reference Intakes** (DRIs) were developed by the National Academies' Institute of Medicine and Health Canada to serve as a shared U.S.-Canadian source for reference points for the assessment and planning of the dietary intake of individuals and groups. [53] The DRIs evolved from, incorporate and expand upon the Recommended Dietary Allowances, which for the U.S. have been the major reference set for nutrition standards since the 1940's.

- **The Thrifty Food Plan** (TFP) is one of four food plans maintained by the USDA Center for Nutrition Policy and Promotion. It is the lowest cost of the four USDA food plans and serves as the nutritional basis for establishing SNAP benefit levels. The TFP nutrient standards reflect the fact the certain DRI and *Dietary Guidelines* recommended intake levels could not be met within reasonable adjustment of typical American eating patterns, and provides an adjusted set of standards that define a more achievable, highly nutritious diet.

- **The USDA Food Guide** is contained in the 2005 edition of *the Dietary Guidelines for Americans*. The USDA Food Guide, developed by CNPP for the *Dietary Guidelines* Advisory Committee provides calorie-specific recommendations for the quantity of foods to consume from specific food groups and subgroups to achieve a diet consistent with the *Dietary Guidelines*. Use of the USDA Food Guide allows for a food level (rather than nutrient-level) analysis.

[52] The USDA's Food and Nutrient Database for Dietary Studies provides some data not found in the SR20. It also served to validate and check the data retrieved from the SR20. See USDA Food and Nutrient Database for Dietary Studies, 1.0. 2004. Beltsville, MD: Agricultural Research Service, Food Surveys Research Group.

[53] Institute of Medicine, Food and Nutrition Board. *Dietary Reference Intakes for Calcium, Phosphorus, Magnesium, Vitamin D, and Fluoride.*
Dietary Reference Intakes for Thiamin, Riboflavin, Niacin, Vitamin B6, Folate, Vitamin B12, Pantothenic Acid, Biotin, and Choline.
Dietary Reference Intakes for Vitamin C, Vitamin E, Selenium, and Carotenoids.
Dietary Reference Intakes for Vitamin A, Vitamin K, Arsenic, Boron, Chromium, Copper, Iodine, Iron, Manganese, Molybdenum, Nickel, Silicon, Vanadium, and Zinc.
Dietary Reference Intakes for Energy, Carbohydrate, Fiber, Fatty Acids, Cholesterol, Protein, and Amino Acids.
Dietary Reference Intakes for Water, Potassium, Sodium, Chloride, and Sulfate.
Washington, DC: The National Academies Press, 1997, 1998, 2000a, 2000b, 2002/2005, 2004

- **The Healthy Eating Index 2005** (HEI-2005), developed by the USDA's Center for Nutrition Policy and Promotion, offers another way to measure compliance with the recommendations of the *Dietary Guidelines*. The HEI-2005 is a numeric index that ranges from 0 to 100. The top score is given to dietary patterns that are in full compliance with *Dietary Guidelines* recommendations. The HEI-2005 is comprised of twelve component scores. These are based on food intake recommendations for nine MyPyramid food groups and subgroups, and recommended intakes of saturated fat, sodium, and discretionary calories from solid fats, alcohol, and added sugar (SoFAAS.) Because the HEI-2005 is unit independent, scores can be compared directly across population subgroups, whatever their calorie needs or actual calorie intakes. In this way it offers a convenient method of assessing the relative diet content of different populations. For the purposes of this analysis, the HEI offers a way to compare the dietary content of the FDPIR food package to the average diets of Americans generally, and to the diets of SNAP participants.

Taken together, the results of the following analysis against this set of external standards enables a more reliable and balanced assessment of the FDPIR food package compared to science-based consensus and the actual consumption achieved by comparison populations – SNAP recipients and the general U.S. population. This analysis is mindful of the legislative authority for the program, echoed in regulation, to "improve the variety and quantity of commodities supplied to Indians in order to provide them an opportunity to obtain a more nutritious diet." Unlike the National School Lunch and School Breakfast Programs, there is no legislative link to a specific target percent of the DRIs. The legislative phrase "more nutritious" is relative and requires comparison to diets obtained by comparison groups or actual intake by the target population. This is accomplished by using recent findings on the HEI-2005 from an analysis of the National Health and Nutrition Examination Survey (NHANES). Furthermore, analysis of the nutritional quality of the food package should be considered in the context of the nutritional contribution of the food package to total diet.

Methodology for FDPIR Food Package as Offered and as Delivered

This section describes the important concepts of defined by the terms "as offered" and "as delivered" FDPIR food packages. Additional information on the methodology used in this report is included in the Appendices.

1. Methodology for FDPIR Food Package as Offered

The FDPIR food package is designed to help participants maintain a nutritious diet. FDPIR offers foods from each of the primary MyPyramid food groups: grains, vegetables, fruits, milk, meat and beans, and oils. Within each of these categories, FDPIR participants have the opportunity to select items consistent with their preferences.[54] For example, participants may choose up to nine cans of vegetables per household member from a list that includes more than ten varieties, or they may choose seasonally available fresh vegetables. The *Dietary Guidelines* emphasize the importance of several food subgroups that tend to be underrepresented in the American diet. These include whole grains, whole fruit, dark green

[54] Selections may be limited by seasonal availability or other market factors.

and orange vegetables, and legumes. Each of these subgroups is also represented in the food choices offered to FDPIR participants. Although the foods offered to FDPIR participants are, as a group, broadly consistent with the *Dietary Guidelines*, individual food packages ultimately reflect participant choice and do vary in nutrient content.

In order to assess the usual nutrient content of the food package offered to FDPIR State agencies and ITOs, FNS constructed a food package that assumes equal selection of all FDPIR food options. This "as offered" package contains a mix of foods in exact proportion to the selection and substitution rates outlined in the FDPIR program's Monthly Distribution Guide.[55] For example, within the grains group, a single participant is permitted to select up to two pounds of egg noodles or dehydrated potatoes per month. The FDPIR package as offered to participants assumes the selection of one pound of each. However, given the discrete nature of some choices (for example, a participant must decide between a jar of peanut butter and a can of peanuts) it is not possible to select the package as offered in any given month. Instead, this package is an average that would be selected over many months, by an individual with equal preference across all options within each FDPIR food category.

FNS computed relative weights for each of the food items offered to participating agencies consistent with these hypothetical preferences. In the case of peanut butter or peanuts, the food package as offered contains a half container of each, and each item is given a weight of 0.5. Within the cereal subgroup, participants may choose one box from six varieties. The as offered package assigns a weight of 1/6, or 0.167, to each variety.

FNS multiplied these relative weights by the products' container sizes to give a gross weight for each food item. Because the edible weight of some FDPIR foods is less than the weight as packaged, additional adjustments were often required.[56]

Also note that FNS reports the net nutrient content of foods as cooked, where cooking is required or customary before serving. Because FDPIR foods may gain or lose moisture in cooking, FNS adjusted these foods' relative weights before applying them to the nutrient records for the foods in cooked form.[57]

Finally, the food package analyses presented here assume that five percent of all edible FDPIR food received by participant households is lost to waste and spoilage. This is the same assumption that guided the development of the TFP.[58] As a result, all nutrient values shown for the FDPIR package as offered and as delivered to participants are five percent lower than the unadjusted values on the SR20.

[55] See Appendix B (reproduced from FNS Handbook 501)
[56] This edible weight adjustment method is consistent with standard analysis practice in the nutrition literature. For additional methodological detail see Appendix G.
[57] FNS multiplied the SR20 micro and macronutrient values, expressed in units per 100 grams of edible cooked food, by the weights described here. Select nutrient values for the package on a monthly and daily per participant basis are presented in Appendix C and Appendix D.
[58] See Carlson, et al 2007.

2. Methodology for FDPIR Food Package as Delivered to Participant Households

FNS collects monthly data on the gross weight and unit volume of foods delivered to FDPIR State agencies and ITOs. These data form the basis for the typical food package actually selected by FDPIR participants. For the "as delivered" analysis, FNS totaled the weights and volumes of FDPIR foods distributed during the twelve months ending in May 2008.

The USDA removed some items from the list of available FDPIR foods in early 2008 and added more nutritious foods.[59] For other foods, the USDA modified its product specifications.[60] To the extent possible, this analysis adjusts the quantity and nutrient profiles of the foods distributed over the past twelve months to account for these changes. The goal is to analyze the nutrient profile of the foods being acquired by the USDA in mid-2008 for current and future distribution to FDPIR recipients. As such, the analysis provides a sound reference point for consideration of future improvements.

FNS divided the total volume of FDPIR food distributed to State agencies and ITOs from June 2007 through May 2008 by 12 to get a monthly average volume, and then divided this monthly average volume by the average monthly number of FDPIR participants over the same period. This result defines the average monthly FDPIR food package per person as delivered.[61]

Comparison of the FDPIR Food Package to the Dietary Reference Intakes (DRIs)

Table 1 compares the nutrient content of the FDPIR food packages, as offered and as delivered, to the DRIs for the average per-person reference household.[62] The DRIs are comprised of the following:

- **Estimated Average Requirement** (EAR) - expected to satisfy the needs of 50 percent of the healthy people in the referenced age and gender group.
- **Recommended Dietary Allowance** (RDA) - the daily dietary intake level of a nutrient considered sufficient to meet the requirements of nearly all (97–98 percent) healthy individuals in a given age and gender group.
- **Adequate Intake** (AI) - where no RDA has been established, the daily nutrient intake level believed to be adequate for all healthy individuals in a defined group.
- **Tolerable Upper Intake Level** (UL) - to caution against excessive intake of nutrients (like vitamin A) that can be harmful in large amounts.

[59] In spring 2008, shortening and butter were removed from the food package as substitutes for vegetable oil. Note, however, that the total amount of food available to FDPIR participants from the oil category was unchanged. The following additional new products were also added to the package: low-fat bakery mix (as a substitute for regular bakery mix), UHT 1% milk, frozen turkey hams and beef roasts, and fresh tomatoes.

[60] The USDA recently reduced the amount of sodium permitted in canned beans, canned tomato sauce and spaghetti sauce distributed through the Federal commodity programs. In addition, canned chicken was reintroduced with an improved nutrition profile.

[61] FNS adjusted the per person delivered weights, as appropriate, for the refuse and cooking factors discussed briefly above, and in more detail in Appendix G.

[62] Nineteen-year-old males and females were assigned the respective market baskets of the 20 to 50-year-old age groups because of a similarity in nutritional needs.

- **Acceptable Macronutrient Distribution Range** (AMDR) - a range of intakes for macronutrients (protein, fat, and carbohydrates) that are associated with reduced risk of chronic disease, and are sufficient to deliver the recommended intake of other macro- and micronutrients.

For the reference household members, *Dietary Guidelines* energy recommendations range from 1,400 to 2,800 kilocalories[63] per day at the moderately active level,[64] and from 1,200 to 2,200 at the sedentary level.[65] The DRIs provide a set of energy recommendations;[66] however for this analysis, FNS uses the energy needs of moderately active individuals of median weight and height by age-gender group based on NHANES data,[67] in order to be consistent with the TFP.

All six of the nutrients not fully met by the delivered food package—vitamin A, vitamin E, calcium, magnesium, potassium, and dietary fiber—are recognized as being consumed at low levels by many Americans. For this reason, the *Dietary Guidelines* have labeled these as among the "nutrients for concern". For these six nutrients, Table 2 compares the amounts provided by the FDPIR food package to the mean intake of the U.S. population.

Overall, for other nutrients examined, the FDPIR food package as offered meets the average per-person reference value (RDA, AI or AMDR) for 22 of the 27 nutrient reference values. As delivered, the corresponding count is 21 of 27. The results of this analysis are summarized below. Detailed results are presented in Table 1 and Appendix A.

Energy

- **The FDPIR food package does not meet the energy need for the average per-person reference household.** [68]

  For this household, the FDPIR package requires obtaining some additional foods from other sources to meet energy requirements. The FDPIR food packages as offered and as delivered provide 2,096 and 1,824 kilocalories per participant per day, respectively.

  As offered, the package provides nearly enough calories (97 percent) for the reference household. The average per-person calorie need of the reference household is 2,150. As delivered, the FDPIR package provides 85 percent of the reference household's average daily energy need. *Therefore, for FDPIR households of moderate activity level, it is unlikely that the FDPIR food package on its own is contributing to overweight or obesity*.

[63] Kilocalories and calories are used interchangeably in this report

[64] Sedentary means a lifestyle that includes only the light physical activity associated with typical day to day life.

[65] Moderately active means a lifestyle that includes physical activity equivalent to walking about 1.5 to 3 miles per day at 3 to 4 miles per hour, in addition to the light physical activity associated with typical day to day life.

[66] The DRI energy requirements vary by age, gender, activity level, height, and weight.

[67] Food Pattern Assignment for Age-gender group, based on median weight and height, NHANES 2001-2002 (See Appendix A)

[68] Throughout this analysis FNS assumes that five percent of edible calories in the FDPIR package are lost to waste and spoilage after receipt by program participants (rate of waste and spoilage as defined by the TFP). The calorie levels shown here are net of this waste factor.

Macronutrients

- **The FDPIR food package, as offered and as delivered, satisfies the recommended AMDR ranges for each age-gender group for protein, carbohydrate, and total fat.**

- **The dietary fiber provided by the FDPIR package is slightly below the average per person AI of the reference household.**

  On an average per-person basis, the reference household's AI is 29.75 grams; the FDPIR package as offered is 29.2 grams, nearly meeting the average AI. The package as delivered provides 20.6 grams of dietary fiber, 69 percent of the reference household's AI. However, the level offered and delivered by FDPIR is considerably greater than the mean intake of the U.S. population, and as delivered approaches the 75th percentile for intake by men and the 90th percentile of intake for women.[69]

Vitamins

- **The FDPIR food package meets or exceeds 100 percent of the reference household's average per-person RDA for thiamin, riboflavin, niacin, folate, vitamin B_6, and vitamin B_{12}.**[70]

- **The FDPIR food package does not meet vitamin A and vitamin E recommendations for the reference household.**

  On an average per-person basis, the vitamin A RDA of the household cannot be met with the FDPIR package. It provides 90 percent of this level as offered and 71 percent of this level as delivered. The vitamin A intake level for the U.S. population as a whole is known to be low, with 44 percent having inadequate usual intake. The levels of vitamin A in the FDPIR food package as offered is close to the mean intake of the U.S. population, and the level as delivered is below this population mean intake level.

  The vitamin E content of the FDPIR package is below recommended levels. The vitamin E intake level for the U.S. population as a whole is known to be quite low compared to the DRI standards, with over 90 percent having inadequate usual intake. The level of vitamin E in the FDPIR food package as offered is close to the mean intake of the U.S. population, and the level as delivered is below this population mean intake level.

[69] What We Eat in America, 2001-2002. Available on the web at: http://www.ars.usda.gov/SP2UserFiles/Place/12355000/pdf/usualintaketables2001-02.pdf

[70] Although level of preformed niacin in the food package offered to participants slightly exceeds the UL for the reference household on an average per-person basis (see Appendix A), the UL for niacin applies only to synthetic forms of the vitamin. A significant share of the preformed niacin in the FDPIR package occurs naturally (particularly in the package's meat group.) The niacin added to FDPIR foods during processing is well under the UL at the reference household's average per-person level.

Minerals

- **The FDPIR food package, as offered and as delivered, meets or exceeds 100 percent of the reference household's average per-person RDA for copper, iron, phosphorus, and zinc.**

- **The FDPIR package does not meet the AI for either calcium or potassium for the reference household.**

  Compared to the average per person for the reference household, the FDPIR package as offered provides 70 percent of the calcium AI, and as delivered provides 61 percent of the calcium AI. Similarly for potassium, the FDPIR food package as offered provides 58 percent of the AI and as delivered provides 46 percent of the AI. The levels of calcium offered and delivered by FDPIR are lower than the mean intake of the U.S. population, as is the level of potassium delivered. The level of potassium offered is about the same as the U.S. Population mean intake.

- **The FDPIR food package as offered meets the DRI level for magnesium, but does not meet this level as delivered.** For the reference household average per-person, FDPIR offers over 100 percent (125 percent) of the RDA for magnesium, while the food package as delivered provides 89 percent of the RDA. This difference reflects product selection by participating agencies and recipient households.

- **The FDPIR food package, as offered and as delivered provides sufficient sodium to meet the reference household per-person AI without exceeding the UL**. This finding is notable, as intake levels from food for the U.S. population are known to be high, with a mean intake of 3,292 mg compared to the UL of 2,300 mg for adults, and 86 percent of the population having intakes above the UL. Note that the *Dietary Guidelines* recommendations for sodium are the same as the UL for adults and children over age 14.

Table 1
Nutrient Content of FDPIR Food Package
Compared to Average Recommended Per-Person Nutrient Needs of Reference Household

Nutrient / Macronutrient	Average per person Calorie Assignment and Average per person DRI Recommendations for Reference Household	FDPIR Food Package			
		Offered		Delivered	
		Amount Measured	% met	Amount Measured	% met
Calories	2,150	2,096	97%	1,824	85%
Protein, g	38.75	79.6	205%	68.7	177%
Protein, % kcal	10-32.5	15.2	within AMDR	15.1	within AMDR
Carbohydrate, g	130	319.3	246%	262.0	202%
Carbohydrate, % kcal	45-65	60.9	within AMDR	57.4	within AMDR
Total fat, g	N/A	58.9	N/A	57.3	N/A
Total fat, % kcal	22.5-35	25.3	within AMDR	28.3	within AMDR
Saturated fat, g	N/A	16.9	N/A	17.3	N/A
Saturated fat, % kcal	as low as possible	7.3	N/A	8.5	N/A
Linoleic acid, g	12.8	16.3	128%	15.5	121%
Linoleic acid, % kcal	5-10	7.0	within AMDR	7.6	within AMDR
Alpha-linolenic acid, g[1]	1.2	1.4	118%	1.4	119%
Alpha-linolenic acid, % kcal[1]	0.6-1.2	0.6	within AMDR	0.7	within AMDR
Cholesterol, mg	as low as possible	234.5	N/A	180.4	N/A
Total dietary fiber, g	29.75	29.2	98%	20.6	69%
MINERALS					
Calcium, mg	1,025	720.9	70%	629.9	61%
Copper, mg	0.74	1.4	190%	1.1	145%
Iron, mg	11	24.0	219%	20.6	187%
Magnesium, mg	278	346.0	125%	247.7	89%
Phosphorus, mg	788	1,584.0	201%	1,263.0	160%
Potassium, mg	4,425	2,585.9	58%	2,055.7	46%
Sodium, mg	≤ 2,175	1,764.1	meets standard	1,741.0	meets standard
Zinc, mg	8	13.3	167%	10.7	133%
VITAMINS					
Vitamin A, µg (RAE)	650	583.4	90%	460.8	71%
Vitamin C, mg	59	97.6	166%	74.9	128%
Vitamin E, mg	12	6.6	55%	5.7	47%
Thiamin, mg	1.0	2.7	282%	2.3	245%
Riboflavin, mg	1.0	2.4	244%	2.0	209%
Niacin, mg[2]	12.5	27.3	218%	23.6	188%
Vitamin B6, mg	1.1	1.8	174%	1.5	140%
Vitamin B12, µg	2.0	3.8	196%	3.4	176%
Folate, µg (DFE)	325	1,015.2	312%	924.8	285%

Table Notes:

[1] Alpha-linolenic acid nutrient levels were not available for all foods in this analysis; however amounts were provided for the primary sources of the nutrient. Also note that amounts measured are displayed rounded to the nearest tenth of a gram; % met is computed from unrounded amounts measured.

[2] The values for niacin are for preformed niacin only and do not include the niacin contributed by tryptophan, a niacin precursor.

Table 2
Comparison on FDPIR Food Package Nutrients Not Meeting DRI Recommendations with U.S. Population Mean Intake Levels

Nutrient	US Population Ages 2 years and over (Mean, 2004-05)[1]	FDPIR Food Package			
		Offered		Delivered	
		Amount Measured	FDPIR as Percent of US Population	Amount Measured	FDPIR as Percent of US Population Average
Total dietary fiber, g	15.1	29.5	195%	21.1	140%
Vitamin A, mcg (RAE)	620	583	94%	461	74%
Vitamin E, mg	7.1	6.6	93%	5.7	80%
Calcium, mg	970	722	74%	631	65%
Magnesium, mg	286	345	121%	247	86%
Potassium. mg	2617	2584	99%	2054	78%

1 *What We Eat in America, 2005-2006* . Available on the web at: http://www.ars.usda.gov/SP2UserFiles/Place/12355000/pdf/0506/Table_1_NIF_05.pdf

Comparison of the FDPIR Food Package to the Thrifty Food Plan (TFP) Dietary Standards

The TFP serves as a national standard for a nutritious diet at minimal cost and has been used since 1975 as the basis for setting maximum SNAP benefit levels. The TFP market baskets specify the types and quantities of foods that people could purchase, for consumption at home, to obtain a nutritious diet with their SNAP benefits. The TFP is periodically updated to reflect new information on food consumption, food composition, food prices and dietary requirements and guidelines.

The TFP nutrient standards largely overlap with the AMDRs, RDAs and AIs of the DRIs.[71] For three nutrients—vitamin E, potassium,and sodium—the TFP standard is relaxed relative to the DRI. TFP standards are relaxed for nutrients where DRI and *Dietary Guidelines* recommendations are difficult to meet through an ordinary American diet. The TFP sets standards for these nutrients that are as close as possible to the DRIs, and that may be met by a diet that does not deviate drastically from the norm.

Table 3 compares the FDPIR Food package as offered and as delivered to the TFP nutrient standards. Again, the analysis compares the nutrients provided by the FDPIR package to the needs (in this case, the TFP nutrient standards) of the SNAP reference household of four. Because the TFP standards largely overlap with the DRIs and those findings are presented above, the summary discussion presented below focuses on nutrients with relaxed TFP standards, and on nutrients whose average per-person DRI for the reference household is met by the TFP market baskets but not met by the FDPIR package.

[71] The TFP nutrient standards are a subset of the TFP dietary standards. The food group component of the TFP dietary standards is taken form the MyPyramid food group standards and is the same as the major food groups of the USDA Food Guide. Section V.E., below, addresses food group results.

Nutrients Where TFP Meets the DRI Level, but FDPIR Does Not

The TFP standards were set at the DRI level, and the TFP meets this level but the FDPIR food package does not, for the following nutrients: for both the offered and delivered levels, vitamin A, calcium and dietary fiber; for the delivered level only, magnesium. In the FDPIR food package as offered, vitamin A (at 90 percent) and dietary fiber (at 97 percent) come close to meeting the TFP standard, but lower levels are found in the food package as delivered. As noted above, intake of these nutrients by Americans in general are low enough for the *Dietary Guidelines* to have classified them as "nutrients of concern" for most Americans.[72]

Nutrients Where TFP Relaxed the DRI Standard (vitamin E, potassium and sodium)

As a group, these are nutrients where current consumption in the U.S. is almost always low (for vitamin E and potassium) or excessive (sodium). *What We Eat in America* shows that over 90 percent of Americans do not consume sufficient vitamin E, almost all Americans consume potassium below the AI level, and 86 percent consume sodium above the UL.[73]

- **The FDPIR food package, as offered and as delivered to participant households, does not meet the relaxed TFP standard for vitamin E.**

  The TFP standard for vitamin E is relaxed, relative to the DRIs, for the reference household's adult members. Although lower than the DRI, the TFP's vitamin E standard exceeds the American public's usual intake.[74] The FDPIR food package does not meet either the DRI or the reduced TFP standard. On an average per-person basis the FDPIR package provides 54 to 67 percent of the TFP standard.

- **The FDPIR food package does not meet the TFP's relaxed standard for potassium.**

  The TFP standard for potassium is defined as age-specific ranges relative to the AI. For the reference household as a whole, the average per person range for the TFP standard is 3,403 to 4,041 mg. The FDPIR package as offered provides 2,586 mg potassium, which is 76 percent of the lower end of the TFP range and 64 percent of the upper end of the range. The FDPIR food package as delivered provides 2,056 mg potassium, which is 60 percent of the lower end of the TFP range and 51 percent of the upper end of this range.

- **The FDPIR food package meets the TFP standard for sodium. In addition, the FDPIR package does not exceed the UL for sodium for any reference household member.**

  Sodium is the one nutrient where the FDPIR food package clearly outperforms the TFP. The TFP standard for sodium in 10 of 15 TFP age-gender specific market baskets is set to the median consumption for the age-gender group rather than to the more restrictive UL. The FDPIR package provides less than the average per-person UL for sodium for the reference

[72] Note, however, that vitamin A has not been identified as a nutrient of concern for children. See pages 7-8 of the 2005 *Dietary Guidelines*

[73] *What We Eat in America*, 2001-2002, op cit.

[74] Moshfegh, et al, 2005

household.[75] Product specifications for some FDPIR canned foods were revised effective in 2008 to reduce their sodium content, and this analysis reflects those product improvements.

Table 3
Nutrient Content of FDPIR Food Package
Compared to Average TFP Standard for Reference Household

Nutrient / Macronutrient	Average per person TFP Standards for Reference Household	FDPIR Food Package			
		Offered		Delivered	
		Amount Measured	% met	Amount Measured	% met
Protein, g	N/A	79.6	N/A	68.7	N/A
Protein, % kcal	10 - 32.5	15.2	within AMDR	15.1	within AMDR
Carbohydrate, g	N/A	319.3	N/A	262.0	N/A
Carbohydrate, % kcal	45-65	60.9	within AMDR	57.4	within AMDR
Total fat, g	N/A	58.9	N/A	57.3	N/A
Total fat, % kcal	22.5-35	25.3	within AMDR	28.3	within AMDR
Saturated fat, g	N/A	16.9	N/A	17.3	N/A
Saturated fat, % kcal	less than 10%	7.3	within AMDR	8.5	within AMDR
Linoleic acid, g	N/A	16.3	N/A	15.5	N/A
Linoleic acid, % kcal	5-10	7.0	within AMDR	7.6	within AMDR
Alpha-linolenic acid, g[1]	N/A	1.4	N/A	1.4	N/A
Alpha-linolenic acid, % kcal[1]	0.6-1.2	0.6	within AMDR	0.7	within AMDR
Cholesterol, mg	300 mg or less/day	234.5	meets standard	180.4	meets standard
Total dietary fiber, g	30.1	29.2	97%	20.6	69%
MINERALS					
Calcium, mg	1,025	720.9	70%	629.9	61%
Copper, mg	0.74	1.4	190%	1.1	145%
Iron, mg	11	24.0	219%	20.6	187%
Magnesium, mg	278	346.0	125%	247.7	89%
Phosphorus, mg	788	1,584.0	201%	1,263.0	160%
Potassium, mg	3,403 - 4,041	2,585.9	64%-76%	2,055.7	51%-60%
Sodium, mg	≤ higher of 2,175 or median consumption	1,764.1	meets standard	1,741.0	meets standard
Zinc, mg	8	13.3	167%	10.7	133%
VITAMINS					
Vitamin A, µg (RAE)	650	583.4	90%	460.8	71%
Vitamin C, mg	59	97.6	166%	74.9	128%
Vitamin E, mg	9.8 - 10.5	6.6	63%-67%	5.7	54%-58%
Thiamin, mg	1.0	2.7	282%	2.3	245%
Riboflavin, mg	1.0	2.4	244%	2.0	209%
Niacin, mg[2]	12.5	27.3	218%	23.6	188%
Vitamin B6, mg	1.1	1.8	174%	1.5	140%
Vitamin B12, µg	2.0	3.8	196%	3.4	176%
Folate, µg (DFE)	325	1,015.2	312%	924.8	285%

Table Notes:

[1] Alpha-linolenic acid nutrient levels were not available for all foods in this analysis; however amounts were provided for the primary sources of the nutrient. Also note that amounts measured are displayed rounded to the nearest tenth of a gram; % of kcal is computed from unrounded amounts measured.

[2] The values for niacin are for preformed niacin only and do not include the niacin contributed by tryptophan, a niacin precursor.

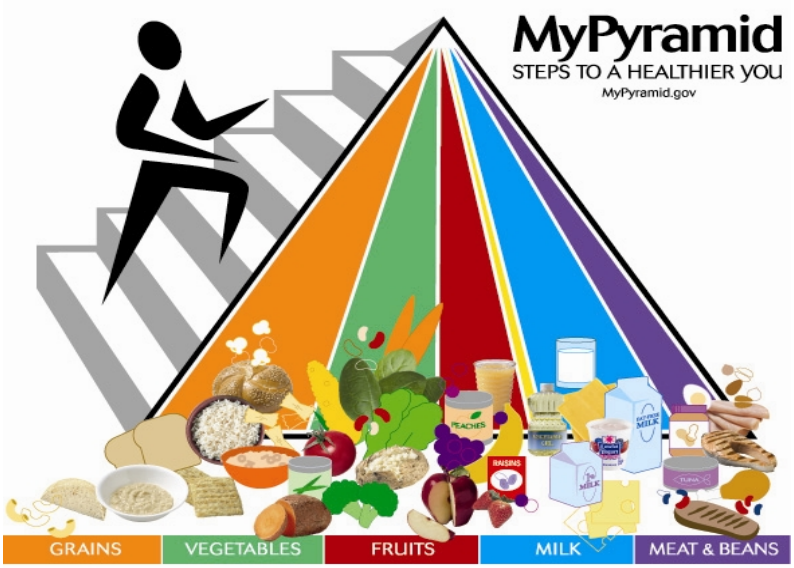
[75] Assuming a constant sodium density, the sodium content of the FDPIR package as offered is 1,809.9 mg when adjusted to a 2,150 calorie basis (the daily calorie basis for *Dietary Guidelines* recommendations for the average SNAP reference family household member.) The sodium content of the FDPIR package as delivered is 2,051.8 mg when adjusted to the same 2,150 calorie basis. Both the FDPIR packages as offered and as delivered meet the DRI standards on this adjusted calorie basis.

Food Group Assessment of the FDPIR Food Package

Computation of MyPyramid Equivalents

The *Dietary Guidelines* recommend consumption of foods from a variety of food groups and subgroups, consistent with calorie needs, for a healthy diet. For most foods, the *Dietary Guidelines* recommendations are expressed in terms of "ounce equivalents" or "cup equivalents." These are the same units of measurement used in the MyPyramid Food Guidance System. The MyPyramid Equivalents Database for USDA Food Codes, Version 1.0 (MPED) provides MyPyramid Equivalents for several thousand commonly consumed foods. For prepared foods with multiple ingredients, the MPED generates MyPyramid Equivalents based on the weight of each ingredient.

FNS retrieved MyPyramid Equivalents from the MPED for all of the foods available in the FDPIR program. FNS performed separate MyPyramid analyses for the FDPIR food packages as offered and as delivered to program participants. The food weights developed for the nutrient profile analyses, discussed above, were applied to the values retrieved from the MPED.[76] MyPyramid Equivalents for the FDPIR food packages as offered and as delivered to program participants are presented in Appendix E and Appendix F.



2005 *Dietary Guidelines for Americans* and the USDA Food Guide

In order to determine how well the FDPIR food package conforms to the *Dietary Guidelines*, this section compares the package, both as offered and as delivered, to the USDA Food Guide.[77] The USDA Food Guide is an eating pattern based on the *Dietary Guidelines* recommendations. The

[76] See Appendix G for a more detailed methodological discussion.
[77] The USDA Food Guide appears in the *Dietary Guidelines for Americans, 2005* as appendix A-2, p. 53.

USDA Food Guide recommends consumption of foods from the major food groups at levels consistent with one's energy needs. Table 4 presents a direct comparison of the food package, as offered and as delivered, to the average per-person level recommended for the SNAP reference household. Table 5 presents values standardized to 2,000 calories. In both Tables 4 and 5, whole grains are shown as a separate row, but are also included in the ounce equivalents for total grains.

Table 4
Food Group Totals in FDPIR Food Package
Compared to *Dietary Guidelines* Recommendations for Average SNAP Reference Household Member

Food Group	Units of Measure	DGA Recommendations Per Average TFP Reference Household Member (2,150 kcal)	FDPIR As Offered (2,096 kcal)	% Met, As Offered	FDPIR As Delivered (1,824 kcal)	% Met, As Delivered
Total Fruit	MP cup equivalents	2.00	1.21	60%	0.99	50%
Total Vegetables	MP cup equivalents	2.75	1.53	55%	1.19	43%
Total Grains	MP oz equivalents	7.00	13.34	191%	11.30	161%
Whole Grains	MP oz equivalents	3.63	4.04	111%	1.23	34%
Milk	MP cup equivalents	3.00	1.52	51%	1.36	45%
Meat and Beans	MP oz equivalents	5.88	5.10	87%	4.56	78%
Oils	grams	28.50	25.15	88%	25.31	89%

Note: MP is MyPyramid.

Examination of Table 4 yields the following findings:

- **The FDPIR food package does not fulfill the USDA Food Guide recommendations for the SNAP reference household for the total fruit, total vegetables, or milk groups.**

- **The FDPIR food package provides nearly the recommended level of oils to the reference household.**

- **As offered, the FDPIR package provides close to the *Dietary Guidelines* recommended amount of food from the meat and beans group, but less as delivered.**

- **The FDPIR provides the reference household with more than the recommended amount of food from the totals grains group.**

- **As offered the package also provides the recommended amount of whole grains, but as delivered provides less than half of this level.**

Table 5 takes into account the calorie differences between the *Dietary Guidelines* recommended quantities and the quantities offered and delivered by standardizing these on a per 2,000 calorie basis. The result is a "food group density" analysis, a counterpart to a nutrient density analyses. The 2,000 calorie level is used for four reasons: 1) it is close to the average for the reference

household; 2) it is the common reference point used on the Nutrition Facts panel of food labels; 3) it is the recommended intake level for sedentary women age 19 to 30 and for moderately active women age 31-50; and 4) it can readily be converted to a per 1,000 calorie basis by those who prefer to consider food groups at this level[78].

Table 5
Food Groups Represented in FDPIR Food Package
on a per 2,000 Calorie Basis: Compared to *Dietary Guidelines* Recommendations[79]

Food Group	Units of Measure	2005 DGA (Per 2,000 kcal)	FDPIR As Offered (Per 2,000 kcal)	% Met, As Offered	FDPIR As Delivered (Per 2,000 kcal)	% Met, As Delivered
Total Fruit	MP cup equiv. per 2,000 kcal	2.00	1.15	58%	1.09	54%
Total Vegetables	MP cup equiv. per 2,000 kcal	2.50	1.46	58%	1.31	52%
Total Grains	MP oz equiv. per 2,000 kcal	6.00	12.73	212%	12.39	207%
Whole Grains	MP oz equiv. per 2,000 kcal	3.00	3.86	129%	1.34	45%
Milk	MP cup equiv. per 2,000 kcal	3.00	1.45	48%	1.49	50%
Meat and Beans	MP oz equiv. per 2,000 kcal	5.50	4.87	89%	5.00	91%
Oils	grams per 2,000 kcal	27.00	24.00	89%	27.75	103%

Note: MP is MyPyramid.

Consideration of Table 5 reveals the following food group density results:

- **The FDPIR package, standardized to 2,000 calories, both as offered and as delivered, provides twice the *Dietary Guidelines* recommended density for total grains; the package as offered also meets the recommended density for whole grains.**

  The FDPIR food package provides more than twice the amount of total grains recommended per 2,000 calories. Ample whole grains are offered, but less than half of that quantity is requested for delivery to the distribution sites. This likely reflects low acceptance of the whole grain products available.

- **The FDPIR package, as offered and as delivered, meets a little more than half of the *Dietary Guidelines* recommended density from the fruit and vegetable food groups.**

  Per 2,000 calories as offered, the FDPIR food package provides 58 percent of the fruit and 58 percent of the vegetables recommended. Per 2,000 calories as delivered, the food package provides 54 percent of the fruit and 52 percent of the vegetables. In this analysis, following standard procedure in the nutrition literature, FNS counts all legumes in the meat and beans group.[80] If, instead, legumes were counted in the vegetable group, the FDPIR package as

[78] As will be seen in the next section, the HEI-2005 makes use of the per 1,000 calorie level.
[79] In this table, the quantities offered and delivered have been adjusted to represent the levels per 2,000 calories.
[80] This assignment of legumes to the meat and beans group follows the suggested method for computing Healthy Eating Index scores. It places legumes in the meat and beans group (at a rate of one quarter cup equivalent of legumes per ounce equivalent of meat) until the recommended 2.5 oz equivalent of meat per 1,000 kcal is satisfied. Once the 2.5 oz equivalent standard is met, remaining legumes are counted in the vegetable group. See P. Guenther, J. Reedy, S. Krebs-Smith, B. Reeve, and P. Basiotis, *Development and Evaluation of the Healthy Eating Index-2005: Technical Report. Center for Nutrition Policy and Promotion*, U.S. Department of Agriculture, 2007. http://www.cnpp.usda.gov/Publications/HEI/HEI-2005/HEI-2005TechnicalReport.pdf

offered would meet 73 percent of the *Dietary Guidelines* recommendation per 2,000 calories. The FDPIR package as delivered would meet 69 percent of that standard.

- **The package provides half of the *Dietary Guidelines* recommended density from the milk group.**

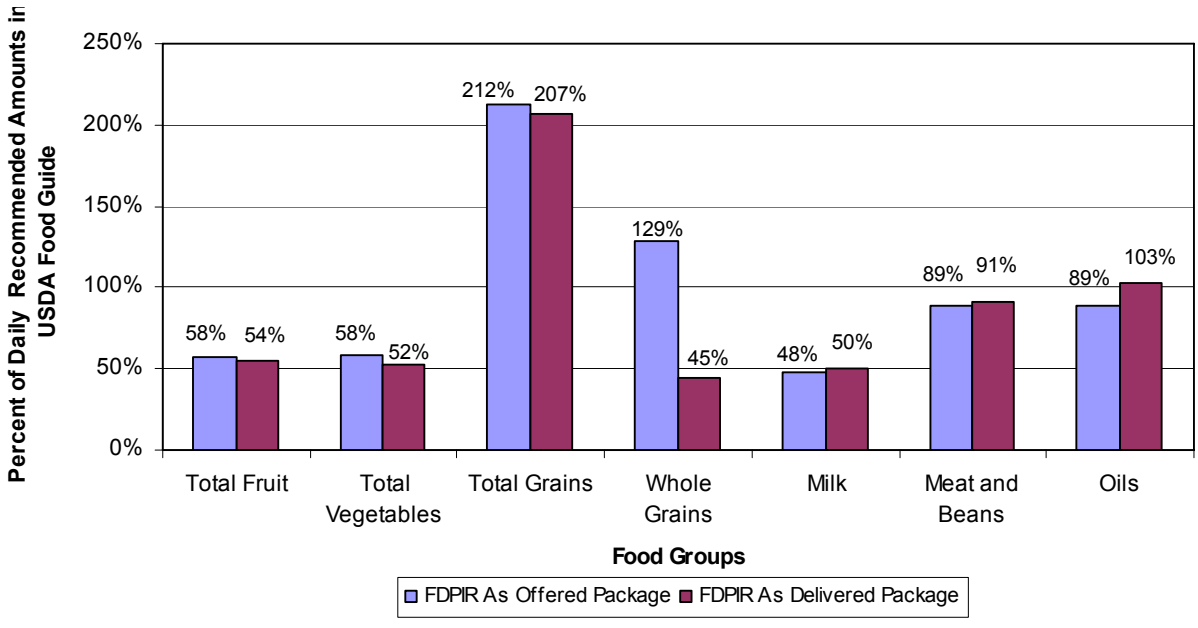
  For individuals age nine years and older, the *Dietary Guidelines* recommends consumption of low-fat dairy products equal to three cups of fluid milk. As shown in Tables 4 and 5, the FDPIR food package provides about half of this amount. Fortified low-fat fluid milk and fortified low-fat dairy products are rich sources of some of the nutrients that did not meet the DRI and TFP standards in this analysis, including vitamin A, calcium, and potassium.

- **The FDPIR package is slightly below the recommended food group density of foods from the meat and beans group.**

  As noted above, legumes are counted in the meat and beans group for purposes of this analysis. With this contribution, the FDPIR food package as offered and as delivered provide about 90 percent of the meat and beans recommended per 2,000 calories. The package would fall further from *Dietary Guidelines* recommendations for the meat and beans group if legumes were instead included in the total vegetables group.

- **The package as delivered is slightly below the recommended density for oils, while the package as offered comes close to meeting the recommendation.**

Figure 1
Percent of USDA Food Guide/*Dietary Guidelines* Recommendations Met by FDPIR Packages as Offered and as Delivered Per 2,000 Calories



However measured, the FDPIR package does not meet the USDA Food Guide recommendations in full for the SNAP reference household. On some measures, particularly the amount of whole grains contained in the food package, the FDPIR program offers participating agencies a more nutritious package than the one they make available to participants at the local distribution sites. On other measures, particularly the quantity of food from the milk, fruit and vegetables groups, the FDPIR package as offered and as delivered makes available about half of the reference household's food recommendation.

The preceding analyses compare the nutrient content of the FDPIR food package to the DRIs, TFP standards, and the USDA Food Guide. These objective standards provide a sound reference point for assessing the absolute nutritional quality of FDPIR benefits. However, a comparison of the relative nutritional value of FDPIR and SNAP benefits must take into account the difference in benefit delivery. FDPIR provides actual foods. SNAP provides purchasing power, leaving the ultimate decision over food selection to SNAP beneficiaries. The foods purchased and consumed by SNAP recipient households, from a combination of SNAP benefits and cash, have a nutrient profile considerably different than the TFP nutrient standards.[81,82] For this reason, the preceding analyses do not, by themselves, adequately compare the nutritional benefits of the FDPIR and SNAP programs. The following section presents an alternate method of comparing these benefits.

Healthy Eating Index (HEI) Score for the FDPIR Food Package

The FDPIR food package is compared in this section to the diets of SNAP participants by means of the Healthy Eating Index 2005 (HEI-2005). This analysis compares the nutritional value of the actual food choices of SNAP participants to the content of the FDPIR package. Because food intake survey data specific to FDPIR recipients are not available, the analysis treats the FDPIR package as if it comprised the participants' entire diets.

The HEI-2005 components and maximum point values are shown in Table 6.

[81] Cohen, Barbara, James Ohls, Margaret Andrews, Michael Ponza, Lorenzo Moreno, Amy Zambrowski, and Rhoda Cohen. *Food Stamp Participants' Food Security and Nutrient Availability*. U.S. Department of Agriculture, Food and Nutrition Service, July 1999.
http://www.fns.usda.gov/oane/MENU/Published/NutritionEducation/Files/nutrient.pdf

[82] Cole, Nancy and Mary Kay Fox. *Diet Quality of Americans by Food Stamp Participation Status: Data from the National Health and Nutrition Examination Survey, 1999-2004*. U.S. Department of Agriculture, Food and Nutrition Service, July 2008. http://www.fns.usda.gov/OANE/menu/published/SNAP/FILES/Participation/NHANES-FSP.pdf

Table 6
Healthy Eating Index 2005 Scoring System

HEI Component		Maximum Component Score
1	Total Fruit	5
2	Whole Fruit	5
3	Total Vegetables	5
4	Dark Green and Orange Vegetables and Legumes	5
5	Total Grains	5
6	Whole Grains	5
7	Milk	10
8	Meat and Beans	10
9	Oils	10
10	Saturated Fat	10
11	Sodium	10
12	Calories from SoFAAS	20
Total HEI Score		**100**

Note: SoFAAS are solid fats, alcohol, and added sugar.

FNS computed HEI-2005 component scores for the FDPIR food package using results of the MyPyramid Equivalents and nutrient profile analyses presented above. The first eight HEI-2005 component scores are based on intakes in MyPyramid Equivalent units per 1,000 calories consumed. The scores for the HEI's oils and sodium components are based on gram intakes per 1,000 calories, and the saturated fat and SoFAAS scores are based on percentages of total calories consumed.[83] Note that scores for the first nine HEI-2005 components increase as consumption of food from those food groups increases. Scores for the last three components are computed differently; maximum scores are assigned to intakes that fall below given thresholds.

The estimated HEI-2005 score for the overall American population is 58.2.[84] The total HEI-2005 score for Americans changed very little between the 1994-1996 Continuing Survey of Food Intakes by Individuals (CSFII) and the 2001-2002 National Health and Nutrition Examination Survey (NHANES) dietary intake surveys.[85] CNPP researchers conclude:

> *To improve HEI-2005 scores, Americans need to increase their intake of fruits, vegetables, whole grains, and fat-free or low-fat milk; choose more nutrient-dense forms*

[83] More detailed instructions on HEI scoring can be found in Guenther, et al, 2007.
[84] Guenther, Patricia M, WenYen Juan, Jill Reedy, Patricia Britten, Mark Lino, Andrea Carlson, Hazel H. Hiza, and Susan M. Krebs-Smith. *Diet Quality of Americans in 1994-96 and 2001-02 as Measured by the Healthy Eating Index-2005*. Insight 37, U.S. Department of Agriculture, Center of Nutrition Policy and Promotion, December 2007. http://www.cnpp.usda.gov/Publications/NutritionInsights/Insight37.pdf
[85] The CSFII is a project of the Agricultural Research Service, U.S. Department of Agriculture (USDA/ARS.) NHANES is a joint project of the National Center for Health Statistics, Centers for Disease Control and Prevention, U.S. Department of Health and Human Services, and USDA/ARS.

of foods, that is, foods low in solid fats and free of added sugars; and lower their intake of sodium and saturated fats. These changes, if made, would provide substantial health benefits for many Americans.[86]

CNPP's HEI analysis found American diets lacking in some of the same food groups that are underrepresented in the FDPIR package: fruits, vegetables, whole grains, and milk products.[87] In 1999, CNPP evaluated the diets of a small, but nationally representative sample of American Indians from data collected in the 1994-96 CSFII. CNPP found no statistically significant difference between the diet quality of American Indians, and the U.S. population as a whole.[88]

Earlier in section V of this report, FNS compares the nutrient profile of the FDPIR package to the standards adopted for development of the TFP. The TFP is used to set the dollar benefit level for the Supplemental Nutrition Assistance Program. However, the actual diet quality of SNAP participants depends on individual food choices. A 2008 study estimates an average HEI-2005 score for all SNAP participants of 51.9.[89] This is somewhat lower than the 57.5 score estimated for all Americans in the same study. Significantly, for this analysis, the HEI-2005 scores for SNAP participants, and Americans generally, fall far short of the scores estimated here for the FDPIR food package.[90]

Table 7 displays the HEI-2005 component and overall scores for the FDPIR food package, the average American diet, and the average diet of SNAP participants. Measured both as offered (HEI-2005 score of 86.6) and as delivered (HEI-2005 score of 81.4), the FDPIR package compares favorably to these broader population scores. For some perspective, note that an HEI-2005 score of 69.3 would place one's one-day intake at the 90th percentile for all Americans.[91]

[86] Guenther, Patricia M, WenYen Juan, Jill Reedy, Patricia Britten, Mark Lino, Andrea Carlson, Hazel H. Hiza, and Susan M. Krebs-Smith. *Diet Quality of Americans in 1994-96 and 2001-02 as Measured by the Healthy Eating Index-2005*. Insight 37, U.S. Department of Agriculture, Center of Nutrition Policy and Promotion, December 2007. http://www.cnpp.usda.gov/Publications/NutritionInsights/Insight37.pdf

[87] Ibid.

[88] Basiotis, P. Peter, Mark Lino, and Rajen Anand. *The Diet Quality of American Indians: Evidence From the Continuing Survey of Food Intakes by Individuals*. Insight 12, U.S. Department of Agriculture, Center of Nutrition Policy and Promotion, March 1999. http://www.cnpp.usda.gov/Publications/NutritionInsights/insight12.pdf

[89] Cole and Fox, 2008

[90] These are the scores for a diet that consists solely of the foods contained in the FDPIR package. HEI-2005 scores for FDPIR participants' overall diets will differ, perhaps substantially, from the HEI-2005 scores for the FDPIR package.

[91] Scores for American diets based on 2001-2002 NHANES data. See Guenther, at al, November 2007.

Figure 2
Healthy Eating Index 2005 Overall Scores for the Average American Diet, the Average Diet of SNAP Participants, and the FDPIR Food Package

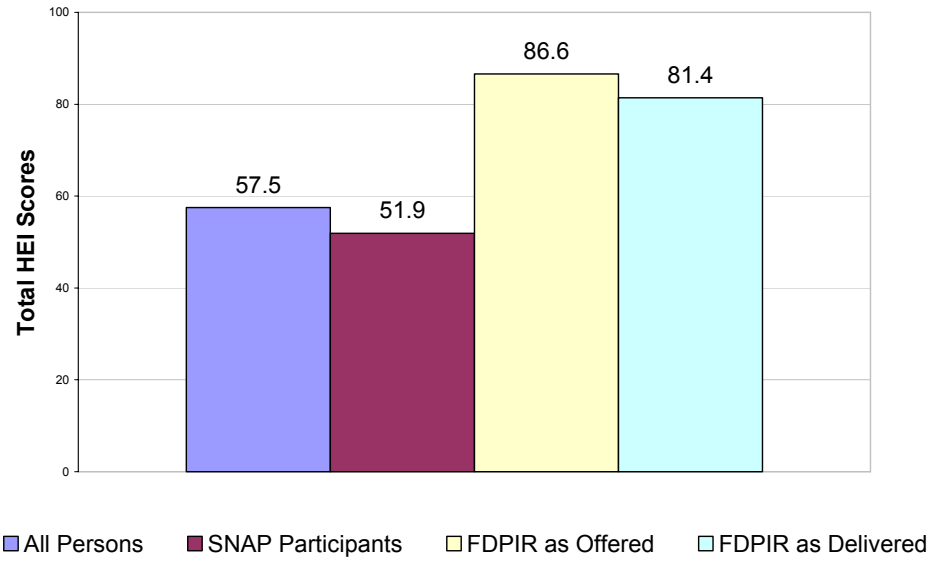


Table 7
Healthy Eating Index 2005 Scores for the FDPIR Food Package, the Average American Diet, and the Average Diet of SNAP Participants

HEI Component		Maximum Component Score	FDPIR Food Package Scores		Population Scores	
			as offered	as delivered	All Persons (1999-2004)	SNAP Participants (1999-2004)
1	Total Fruit	5	3.6	3.4	3.1	2.8
2	Whole Fruit	5	4.4	3.7	3.5	2.5
3	Total Vegetables	5	3.3	3.0	3.2	2.9
4	Dark Green and Orange Vegetables and Legumes	5	0.9	0.7	1.4	1.3
5	Total Grains	5	5.0	5.0	5.0	5.0
6	Whole Grains	5	5.0	2.2	1.0	0.7
7	Milk	10	5.6	5.7	6.3	5.6
8	Meat and Beans	10	9.7	10.0	10.0	10.0
9	Oils	10	10.0	10.0	6.3	4.7
10	Saturated Fat	10	9.8	9.0	3.9	3.8
11	Sodium	10	9.3	8.7	6.2	6.3
12	Calories from SoFAAS	20	20.0	20.0	7.2	5.7
Total HEI Score		**100**	**86.6**	**81.4**	**57.5**	**51.9**

Note: SoFAAS are solid fats, alcohol, and added sugar.

The FDPIR food package scores about the same as the diets of the U.S. population and SNAP participants on five HEI-2005 components: total fruit, total vegetables, total grains, milk and meat and beans. The FDPIR food package total score is well above the comparison populations because the package achieves considerably higher scores on five HEI-2005 components: whole grains, oils, saturated fat, sodium, and calories from SoFAAs, and is lower on only one component—dark green/orange vegetables & legumes. These component scores are displayed graphically in figures 3a and 3b, below.

Figure 3a
Healthy Eating Index 2005 Component Scores 1 – 6 for the Average American Diet, the Average Diet of SNAP Participants, and the FDPIR Food Package

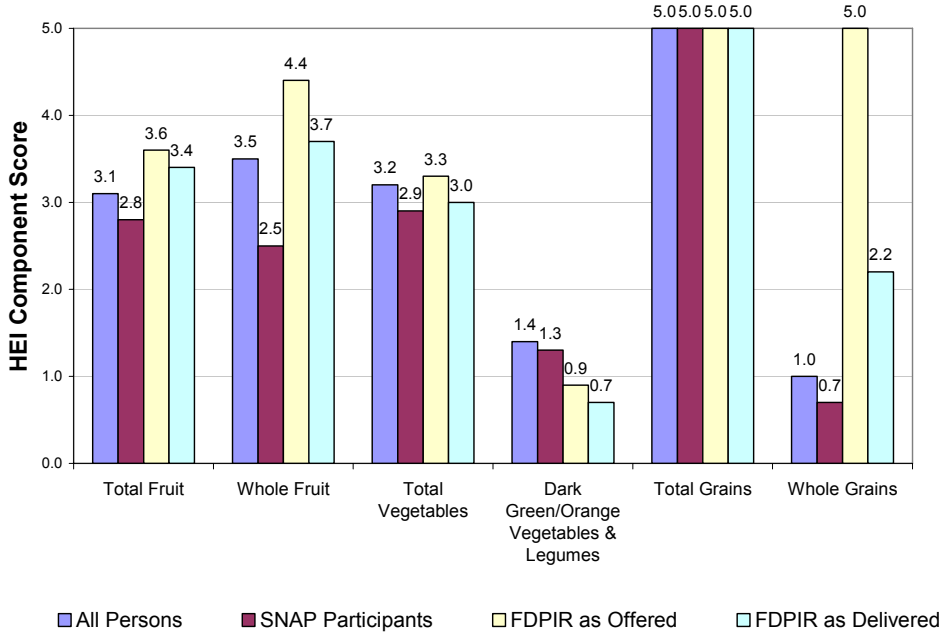
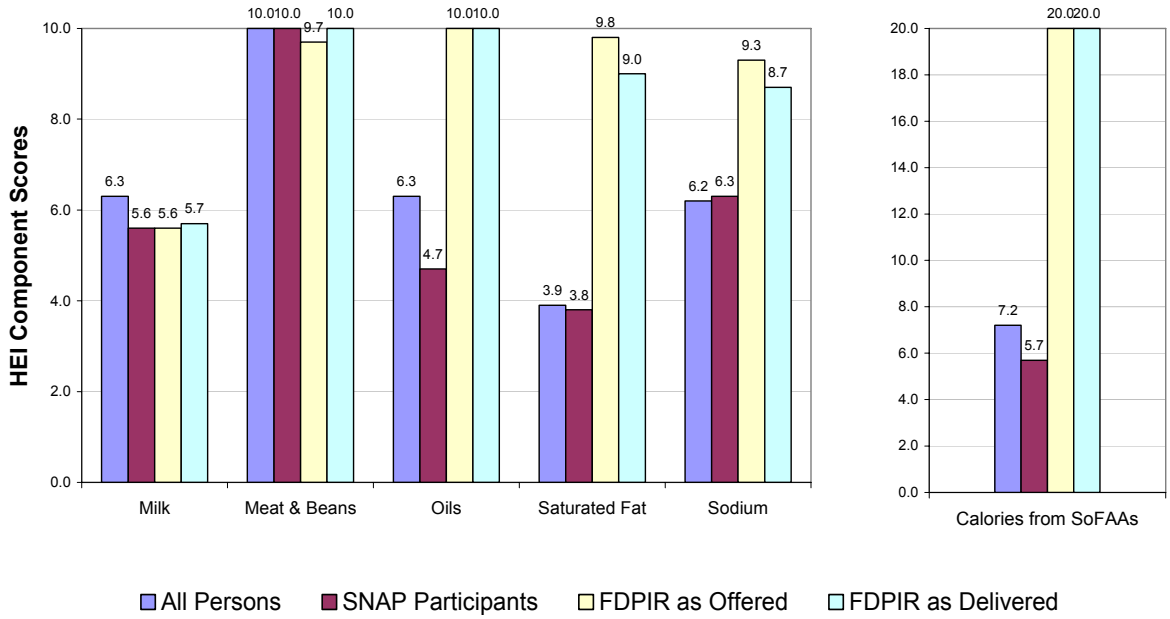


Figure 3b
Healthy Eating Index 2005 Component Scores 7 - 12 for the Average American Diet, the Average Diet of SNAP Participants, and the FDPIR Food Package



Limitations

There are a number of limitations to the analysis presented in this report that should be considered; this section describes the most significant limitations.

To the extent that a participating household differs from the reference household in activity level and composition, including age, gender, height, and weight, the average FDPIR food package could provide either more or fewer calories than required to meet food energy needs. Households select food from what is available at the local FDPIR distribution site; they may select more or less food than the average participant household. In addition, the specific selection they make directly affect the nutrients available to their households. As described in the methodology section, the analyses in this report reflect averages for the food package as offered and as delivered. If a household consistently selects only one type of item from a category of food (for example, always selecting green beans and never selecting any other vegetable), the nutrient profile of their FDPIR food package as selected could differ substantially from the values presented in this report. Also, intra-household distributions of food (and nutrients) vary and can result in individuals receiving more or less than both the averages presented above and the average for the foods selected by their household.

In addition, largely due to package sizes, the quantities of food provided to FDPIR households are not always simple multiples of the food package for one-person households. For some food categories, the quantities for a household of three have been rounded up and are the same as the quantity provided to a family of four. Therefore, the FDPIR food package average per-person nutrient values for the three-person household would be greater than those shown in this report.

VI. Discussion of Food and Nutrition Analyses

American Indians and Alaska Natives disproportionately experience poverty, have high rates of overweight, obesity and diabetes, and are almost three times as likely to die from a diabetes-related cause compared to the U.S population in general. Eligible American Indians and Alaska Natives can choose to participate in either the FDPIR or SNAP programs; however, individuals may not participate in both programs in the same month. Nationwide, 88,000 individuals per month participated in FDPIR in FY 2008, while approximately 426,000 American Indians participate in SNAP in FY 2006,[92] but it is not known how many of the SNAP participants live in areas served by FDPIR.

Both programs offer participants a significant nutrition assistance benefit. The key difference between the programs, perhaps, is the level of choice extended to program participants. The SNAP structure maximizes the food choices available to participants by increasing household food purchasing power within the retail food distribution system. In contrast, FDPIR operates in areas that may not have a well-developed retail food distribution system, and offers its participants a well-defined package of foods, leaving less room for participant choice. Modern supermarkets may have tens of thousands of food items available for purchase with SNAP benefits; FDPIR sites may have fewer than 100 different food items. Choice is further constrained by a pre-determined per-person maximum for each of six categories of food products.

Comparison to Dietary Reference Intakes (DRIs) of Reference Household Members

The FDPIR average food package offered to ITOs and State agencies provides approximately 2,100 calories, and the average food package delivered provides about 1,825 calories. This delivered level is about 85 percent of the calories required at the moderate activity level for the average reference household member of median height and weight. The distribution of calories falls within the DRI's Acceptable (AMDR) Distribution Range for protein, fat, carbohydrate, linoleic acid, and alpha-linolenic acid, and provides greater than the total household Recommended Dietary Allowance (RDA) or Adequate Intake (AI) level for the following 12 minerals and vitamins: copper, iron, phosphorus, sodium, zinc, thiamin, riboflavin, niacin, folate, vitamins B6, B12, and C. It provides less than the total household RDA or AI for the following five nutrients: calcium, potassium, dietary fiber, and vitamins A and E. The average household magnesium RDA is met by the packages offered, but not by those delivered. Both offered and delivered packages provide on average less than nine percent of calories from saturated fat and less than 235 mg of cholesterol. The DRIs recommend that intake of these two food components be kept as low as possible. All nutrients, including sodium, are provided at levels less than the DRIs Tolerable Upper Intake Level (UL) at the household level.[93] At the individual level, the

[92] Wolkwitz, Kari. *Characteristics of Food Stamp Households: Fiscal Year 2006*, FSP-07-CHAR, Project Officer Jenny Genser. U.S. Department of Agriculture, Food and Nutrition Service, Office of Analysis, Nutrition and Evaluation, 2007.
http://www.fns.usda.gov/oane/MENU/Published/SNAP/FILES/Participation/2006Characteristics.pdf

[93] Although total level of preformed niacin in the food package offered to participants slightly exceeds the UL for the reference household on an average per-person basis (see Appendix A), the UL for niacin applies only to

nutrients do not exceed the UL except for folate for children. However, no adverse effects have been associated with excess consumption of the amounts of folate normally found in foods.[94]

The list of nutrients in short supply in the FDPIR food package is similar to the list of nutrients identified as potential problems for most age and gender groups in the U.S. USDA's *What We Eat in America* based on 2001-2002 data from the National Health and Nutrition Examination Survey (NHANES) reported concerns regarding potentially low intake for vitamins A, E, C and K, and calcium, magnesium, potassium, and dietary fiber.

To the extent that FDPIR-participating households augment their FDPIR foods with other foods to meet calorie requirements, they can further improve their intake of these nutrients of concern, but if wise choices are not made, may also increase intake of saturated fat, cholesterol and sodium to undesirable levels.

Comparison to the Thrifty Food Plan (TFP) Dietary Standards

Of the 25 nutrient standards established for the latest version of the TFP and assessed in this analysis, the FDPIR food package for the reference household meets 19 and does not meet the following five standards: calcium, potassium, dietary fiber, vitamins A and E. Magnesium is met by the packages offered, but not by those delivered. Because the TFP nutrient standards draw heavily upon the DRIs, it is not surprising that there are great similarities in the results to the DRI analysis.

Table 8 summarizes the findings from the comparison of energy levels, nutrient levels, and food groups of the as offered and as delivered FDPIR food package to the DRI and the TFP nutrient standards.

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synthetic forms of the vitamin. A significant share of the preformed niacin in the FDPIR package occurs naturally (particularly in the package's meat group.) The niacin added to FDPIR foods during processing is well under the UL at the reference household's average per-person level.

[94] Institute of Medicine. *Dietary DRI reference intakes: the essential guide to nutrient requirements.* Washington (DC): The National Academies Press; 2006.

Table 8
Food Energy, Nutrient Content, Food Group Checklist for the FDPIR Food Package
✓ = *Reference Household Average Per-Person Quantity Meets the Applicable DRI or TFP Standard*

Nutrient / Macronutrient	FDPIR Food Package			
	Met Reference Family Calorie Assignment and DRI Recommendations[1]		Met Average TFP Standard for SNAP Reference Household	
	Offered	Delivered	Offered	Delivered
Calories			N/A	N/A
Protein, g	✓	✓	N/A	N/A
Protein, % kcal	✓	✓	✓	✓
Carbohydrate, g	✓	✓	N/A	N/A
Carbohydrate, % kcal	✓	✓	✓	✓
Total fat, g	N/A	N/A	N/A	N/A
Total fat, % kcal	✓	✓	✓	✓
Saturated fat, g	N/A	N/A	N/A	N/A
Saturated fat, % kcal	N/A	N/A	✓	✓
Linoleic acid, g	✓	✓	N/A	N/A
Linoleic acid, % kcal	✓	✓	✓	✓
Alpha-linolenic acid, g	✓	✓	N/A	N/A
Alpha-linolenic acid, % kcal	✓	✓	✓	✓
Cholesterol, mg	N/A	N/A	✓	✓
Total dietary fiber, g				
MINERALS				
Calcium, mg				
Copper, mg	✓	✓	✓	✓
Iron, mg	✓	✓	✓	✓
Magnesium, mg	✓		✓	
Phosphorus, mg	✓	✓	✓	✓
Potassium, mg				
Sodium, mg	✓	✓	✓	✓
Zinc, mg	✓	✓	✓	✓
VITAMINS				
Vitamin A, µg (RAE)				
Vitamin C, mg	✓	✓	✓	✓
Vitamin E, mg				
Thiamin, mg	✓	✓	✓	✓
Riboflavin, mg	✓	✓	✓	✓
Niacin equivalents, mg	✓	✓	✓	✓
Vitamin B6, mg	✓	✓	✓	✓
Vitamin B12, µg	✓	✓	✓	✓
Folate, µg (DFE)	✓*	✓*	✓*	✓*
FOOD GROUPS				
Total Fruit	N/A	N/A		
Total Vegetables	N/A	N/A		
Total Grains	N/A	N/A	✓	✓
Whole Grains	N/A	N/A	✓	
Milk	N/A	N/A		
Meat and Beans	N/A	N/A		
Oils	N/A	N/A		

Table notes:

1 Food pattern assignment for Age-gender group, based on moderate activity level and median weight and height (NHANES 2001-2002)

* At the individual level, the nutrients do not exceed the UL except for folate for children. However, no adverse effects have been associated with excess consumption of the amounts of folate normally found in foods.

Comparison to the *Dietary Guidelines* and the USDA Food Plan

Although meeting most of the DRIs and TFP nutrient standards, the FDPIR food package does not fare as well when displayed along side food group recommendations. Compared to the major food group and whole grain recommendations for a reference household, and on a per 2,000 calorie basis, the average FDIPR food package provides two times the required total grains, and about 45 to 60 percent of the recommended quantities of fruits (offered 58 percent; delivered 54 percent), vegetables (offered 58 percent; delivered 52 percent), and milk/dairy (offered 48 percent; delivered 50 percent). Meat/beans (offered 89 percent; delivered 91 percent) and oils (offered 89 percent; delivered 103 percent) are provided at closer to the recommended level. Ample whole grains are offered (129 percent), but the quantity in the packages requested by and delivered to ITOs and State agencies is less than half of the recommendation (45 percent).

For the reference household on an average per-person basis, the FDPIR food package as delivered provides 1,824 calories per day, 326 calories below the level required at moderate activity. However, these FDPIR foods would need to be augmented with all of the following foods to meet the *Dietary Guidelines* food group recommendations: one cup equivalent from the fruit group, 1-1/2 cup equivalents from the vegetables group, 1-2/3 cup equivalents from the milk group, 1.3 ounce equivalents from the meat and beans group and 3 grams of oil. Even with careful selection and preparation, it would be difficult for a moderately active FDPIR participant to consume these additional foods and remain within the recommended calorie guidelines.[95]

This comparison highlights two possible avenues for future improvements in the FDPIR food packages, specifically 1) reducing refined grains while increasing the maximum quantities of fruits, vegetables and fat-free or low-fat dairy (or as a dairy alternate, calcium fortified soy-beverage), and 2) improving the acceptability of the whole grain offerings. The first steps in this direction have already been taken with the planned introduction of whole grain rotini later in 2008.

Healthy Eating Index-2005 (HEI-2005) Score and Comparison to Other Groups

USDA developed the Healthy Eating Index in the mid-1990's and refined it in 2005 to provide a single numeric score with a maximum of 100 to represent the overall quality of dietary intake based on the *Dietary Guidelines*. For this analysis, HEI-2005 scores were developed as if the average food package comprised all of the food eaten by a FDPIR participant. The average FDPIR food package as offered achieves a score of 87, and the package as delivered scores 81 out of 100. These levels are considerably above the age-adjusted levels achieved in 1999-2004 by Americans on average (58 out of 100) and by SNAP participants (52 out of 100). Individuals eating the FDPIR food package would have HEI-2005 scores in the top 10 percent of the U.S. population.

[95] 1 cup equivalent from the fruit group, 1-1/2 cup equivalents from the vegetables group, 1-2/3 cup equivalents from the milk group, 1.3 ounce equivalents from the meat and beans group (all in the leanest lowest-fat form) and 3 grams of oil equals approximately 442 kcals.

Without actual intake data, one cannot conclude that FDPIR participants eat a more nutritious diet than SNAP participants. For example, if a reference household of individuals at median height and weight augments its FDPIR foods with calories from saturated fats and added sugars to meet its energy requirements, the average HEI-2005 for household members would drop considerably. Individual food preferences may also result in allocation of foods among the household members in a manner that produces unbalanced intakes and lower than optimum individual scores. But the FDPIR food package clearly provides a nutritious supplement that, properly allocated among the household members, either alone or augmented with similarly nutritious foods would result in overall dietary scores among the best in the nation.

Overall Summary of the Analysis

The analysis finds that FDPIR provides a nutritious variety of foods. Similar to American diets in general, there is room for improvement in the quantities of fruits, vegetables, fat-free or low-fat dairy products (or as a dairy alternate, calcium fortified soy-beverage), and whole grains of modest saturated fat, added sugar, and sodium content. Actual dietary intake survey data specific to FDPIR participants are not available. However, if participants' diets consisted solely of FDPIR foods in the quantities and balance provided, they would achieve a HEI-2005 score of 81 out of 100, considerably better than Americans in general (58 out of 100) and Food Stamp Program participants (52 out of 100).

References

American Diabetes Association. *Using the Diabetes Food Pyramid.* Accessed September 2008. http://www.diabetes.org/nutrition-and-recipes/nutrition/foodpyramid.jsp

Basiotis, P. Peter, Mark Lino, and Rajen Anand. *The Diet Quality of American Indians: Evidence From the Continuing Survey of Food Intakes by Individuals.* Insight 12, U.S. Department of Agriculture, Center of Nutrition Policy and Promotion, March 1999. http://www.cnpp.usda.gov/Publications/NutritionInsights/insight12.pdf

Carlson, Andrea, Mark Lino, WenYen Juan, Kenneth Hanson, and P. Peter Basiotis. *Thrifty Food Plan, 2006.* U.S. Department of Agriculture, Center of Nutrition Policy and Promotion, April 2007. http://www.cnpp.usda.gov/Publications/FoodPlans/MiscPubs/TFP2006Report.pdf

Charles-Azure, Jean, Elizabeth Warren-Boulton, and Brenda Broussard. *IHS Report to Congress: Obesity Prevention and Control for American Indians and Alaska Natives.* U.S. Department of Health and Human Services, Indian Health Service, April 2001. http://www.ihs.gov/hpdp/documents/obesitypreventionreport.doc

Cohen, Barbara, James Ohls, Margaret Andrews, Michael Ponza, Lorenzo Moreno, Amy Zambrowski, and Rhoda Cohen. *Food Stamp Participants' Food Security and Nutrient Availability*. U.S. Department of Agriculture, Food and Nutrition Service, July 1999. http://www.fns.usda.gov/oane/MENU/Published/NutritionEducation/Files/nutrient.pdf

Cole, Nancy and Mary Kay Fox. *Diet Quality of Americans by Food Stamp Participation Status: Data from the National Health and Nutrition Examination Survey, 1999-2004.* U.S. Department of Agriculture, Food and Nutrition Service, July 2008. http://www.fns.usda.gov/OANE/menu/published/SNAP/FILES/Participation/NHANES-FSP.pdf

Finegold, Kenneth, Nancy Pindus, Laura Wherry, Sandi Nelson, Timothy Triplett, and Randy Capps. *Background Report on the Use and Impact of Food Assistance Programs on Indian Reservations*. U.S. Department of Agriculture, Economic Research Service, January 2005. http://www.ers.usda.gov/publications/CCR4/CCR4.pdf

Fox, Mary, K., William Hamilton, and Biing-Hwan Lin. *Effects of Food Assistance and Nutrition Programs on Nutrition and Health: Volume III, Literature Review.* Food Assistance and Nutrition Research Report No. 19-3. U.S. Department of Agriculture, Economic Research Service, December 2004. http://www.ers.usda.gov/publications/fanrr19-3/fanrr19-3.pdf

Guenther, Patricia M., Jill Reedy, Susan M. Krebs-Smith, Bryce B. Reeve, and P. Peter Basiotis. *Development and Evaluation of the Healthy Eating Index-2005: Technical Report.* U.S. Department of Agriculture, Center for Nutrition Policy and Promotion, November 2007. http://www.cnpp.usda.gov/Publications/HEI/HEI-2005/HEI-2005TechnicalReport.pdf

Guenther, Patricia M, WenYen Juan, Jill Reedy, Patricia Britten, Mark Lino, Andrea Carlson, Hazel H. Hiza, and Susan M. Krebs-Smith. *Diet Quality of Americans in 1994-96 and 2001-02 as Measured by the Healthy Eating Index-2005*. Insight 37, U.S. Department of Agriculture, Center of Nutrition Policy and Promotion, December 2007. http://www.cnpp.usda.gov/Publications/NutritionInsights/Insight37.pdf

Halpern, Peggy. *Obesity and American Indians/Alaska Natives*. U.S. Department of Health and Human Services, Office of the Assistant Secretary for Planning and Evaluation, April 2007. http://www.fns.usda.gov/fdd/programs/fdpir/DHHS_obesityreport.htm

House of Representatives. *Food Stamp Act of 1977 Report Together with Supplemental Views, Dissenting Views, Minority Views, Additional Views and Including the Congressional Budget Office Estimates.* H.R. 7940, Report 95-464, 1977.

Institute of Medicine, Food and Nutrition Board. *Dietary DRI Reference Intakes: The Essential Guide to Nutrient Requirements.* Washington, DC: The National Academies Press, 2006.

Institute of Medicine, Food and Nutrition Board. *Dietary Reference Intakes for Calcium, Phosphorus, Magnesium, Vitamin D, and Fluoride.* Washington, DC: The National Academies Press, 1997.

Institute of Medicine, Food and Nutrition Board. *Dietary Reference Intakes for Thiamin, Riboflavin, Niacin, Vitamin B6, Folate, Vitamin B12, Pantothenic Acid, Biotin, and Choline.* Washington, DC: The National Academies Press, 1998.

Institute of Medicine, Food and Nutrition Board. *Dietary Reference Intakes for Vitamin C, Vitamin E, Selenium, and Carotenoids.* Washington, DC: The National Academies Press, 2000a.

Institute of Medicine, Food and Nutrition Board. *Dietary Reference Intakes for Vitamin A, Vitamin K, Arsenic, Boron, Chromium, Copper, Iodine, Iron, Manganese, Molybdenum, Nickel, Silicon, Vanadium, and Zinc.* Washington, DC: The National Academies Press, 2000b.

Institute of Medicine, Food and Nutrition Board. *Dietary Reference Intakes for Energy, Carbohydrate, Fiber, Fatty Acids, Cholesterol, Protein, and Amino Acids.* Washington, DC: The National Academies Press, 2002/2005.

Institute of Medicine, Food and Nutrition Board. *Dietary Reference Intakes for Water, Potassium, Sodium, Chloride, and Sulfate.* Washington, DC: The National Academies Press, 2004.

Institute of Medicine, Food and Nutrition Board. *Recommended Dietary Allowances*, 8th rev. ed. Washington, DC: The National Academies Press, 1974.

Kant, Ashima K., Barry I. Graubard, and Arthur Schatzkin. *Dietary Patterns Predict Mortality in a National Cohort: The National Health Interview Surveys, 1987 and 1992*. Journal of Nutrition, 134:1793-1799, July 2004.

Matthews, Ruth H. and Young J. Garrison. *Food Yields: Summarized by Different Stages of Preparation.* Agriculture Handbook No. 102. U.S. Department of Agriculture, Agricultural Research Service, Consumer and Food Economics Institute, Northeastern Region, September 1975. http://www.nal.usda.gov/fnic/foodcomp/Data/Classics/ah102.pdf

Moshfegh, Alanna, Joseph Goldman, and Linda Cleveland. *What We Eat in America*, *NHANES 2001-2002: Usual Nutrient Intakes from Food Compared to Dietary Reference Intakes.* U.S. Department of Agriculture, Agricultural Research Service, September 2005. http://www.ars.usda.gov/SP2UserFiles/Place/12355000/pdf/usualintaketables2001-02.pdf

Pearce, J. *Dietary Changes in a Northern Minnesota Indian Community in the Last Fifty Years*. In The Indian Health Service Primary Care Provider 1990; 15:127-31. U.S. Department of Health and Human Services, Indian Health Service.

Porter, J. *Native Americans: Nutrition and Diet-Related Diseases.* Washington, D.C.: Congressional Research Service Report for Congress, July, 1987.

Story, M., K. F. Strauss, T. J. Gilbert and B. A. Broussard. *2000 Nutritional Health and Diet-Related Conditions.* In *American Indian Health: Innovations in Health Care, Promotion & Policy*, edited by E. R. Rhoads, pp. 201-220. John Hopkins University Press, Baltimore, 2000.

Story M., M. Evans, R.R. Fabsitz, T.E. Clay, B. Holy Rock, B. Broussard. *The Epidemic of Obesity in American Indian Communities and the Need for Childhood Obesity Prevention Programs.* American Journal of Clinical Nutrition, 69 (4 suppl), 747S-754S, April 1999. Abstract: http://www.ncbi.nlm.nih.gov/pubmed/10195597

U.S. Department of Agriculture, Food and Nutrition Service. *Food Distribution Program on Indian Reservations.* Food Distribution Fact Sheet, July 2008. http://www.fns.usda.gov/fdd/programs/fdpir/pfs-fdpir.pdf

U.S. Department of Agriculture, Food and Nutrition Service, Food Distribution Programs. *Department of Defense Fresh Fruit and Vegetable Program.* Accessed September 2008. http://www.fns.usda.gov/FDD/programs/dod/DoD_FreshFruitandVegetableProgram.pdf

U.S. Department of Agriculture, Food and Nutrition Service, Food Distribution National Policy Memorandum. *Adjusted Guide Rates for Fresh Fruits and Vegetables.* Policy No. FD-022, June 9, 2003. *http://www.fns.usda.gov/fdd/PolicyMemo/pmfd022_FDPIR-AdjRates-FV.pdf*

U.S. Department of Agriculture, Food and Nutrition Service, *FNS Handbook 501: The Food Distribution Program on Indian Reservations*, Exhibit O, *Food Distribution Program on Indian Reservations: Monthly Distribution Guide Rates by Household Size.* Effective date February 1,

2008. http://www.fns.usda.gov/fdd/hdbks-instruct/FNS501-Changes/Chg09_501_ExhibitO_2008.pdf

U.S. Department of Health and Human Services and U.S. Department of Agriculture. *Dietary Guidelines for Americans, 2005*. 6th Edition, January 2005. http://www.health.gov/dietaryguidelines/

U.S. Department of Health and Human Services, Public Health Service, Office of the Surgeon General, *The Surgeon General's Call to Action to Prevent and Decrease Overweight and Obesity.* 2001. http://www.surgeongeneral.gov/topics/obesity/calltoaction/CalltoAction.pdf

U.S. Department of Health and Human Services, Centers for Disease Control and Prevention. *National Diabetes Fact Sheet: General Information and National Estimates on Diabetes in the United States, 2007.* Published 2008. http://www.cdc.gov/diabetes/pubs/pdf/ndfs_2007.pdf

U.S. Department of Health and Human Services, Centers for Disease Control and Prevention and National Institutes of Health. *Healthy People 2010 Midcourse Review*. Chapter 5: Diabetes, accessed September 2008. http://www.healthypeople.gov/data/midcourse/pdf/FA05.pdf

U.S. Department of Health and Human Services, Indian Health Service. *Indian Health Disparities*. IHS Fact Sheet, June 2008. http://info.ihs.gov/Disparities.asp

U.S. Department of Health and Human Services, National Institutes of Health, Osteoporosis and Related Bone Diseases ~ National Resource Center. *What People With Lactose Intolerance Need to Know About Osteoporosis*. Accessed September 2008. http://www.niams.nih.gov/Health_Info/Bone/Osteoporosis/Conditions_Behaviors/lactose_intolerance.pdf

Usher, Charles L., David S. Shanklin, and Judith B. Wildfire. *Evaluation of the Food Distribution Program on Indian Reservations*. U.S. Department of Agriculture, Food and Nutrition Service, June 1990.
Executive Summary and Chapter 1:
http://www.fns.usda.gov/oane/menu/Published/CNP/FILES/FDPIREval-1.pdf
Chapter 2: http://www.fns.usda.gov/oane/menu/Published/CNP/FILES/FDPIREval-2.pdf
Chapter 3: http://www.fns.usda.gov/oane/menu/Published/CNP/FILES/FDPIREval-3.pdf
Chapter 4: http://www.fns.usda.gov/oane/menu/Published/CNP/FILES/FDPIREval-4.pdf

Wolkwitz, Kari. *Characteristics of Food Stamp Households: Fiscal Year 2006*, FSP-07-CHAR, Project Officer Jenny Genser. U.S. Department of Agriculture, Food and Nutrition Service, Office of Analysis, Nutrition and Evaluation, 2007. http://www.fns.usda.gov/oane/MENU/Published/SNAP/FILES/Participation/2006Characteristics.pdf

Appendix A

Individual Level Tables for Reference Household

Table A-1
Calorie Level Assignments for Reference Household Members

Food Pattern Assignment for Age-gender group, based on median weight and height NHANES 2001-2002

Age	Gender	Calorie level
1 year	Male/Female	1000
2-3 years	Male/Female	1200
4-5 years	Male/Female	1400
6-8 years	Male/Female	1600
9-11 years	Male/Female	2000
12-13 years, F 2,200	Female	2200
12-13 years, M 2,400	Male	2400
14-18 years, F 2,200	Female	2200
14-18 years, M 3,000	Male	3000
19-50 years	Female	2200
19-50 years	Male	2800
51-70 years	Female	2200
51-70 years	Male	2600
71+ years	Female	1800
71+ years	Male	2200

Source: Calorie standards used for Thrifty food Plan market baskets, 2006

Table A-2
Nutrient Content of FDPIR Food Package
Compared to Recommended Nutrient Needs of Reference Household

Nutrient / Macronutrient	Reference Family Calorie Assignment and DRI Recommendations for Age / Gender Group				FDPIR Food Package	
	Females 19-50	Males 19-50	Male / Female 9-11[1]	Male / Female 6-8	Offered	Delivered
Calories	2,200	2,800	2,000	1,600	2,096	1,824
Protein, g	RDA: 46	RDA: 56	RDA: 34	RDA: 19	79.6	68.7
Protein, % kcal	AMDR: 10-35	AMDR: 10-35	AMDR: 10-30	AMDR: 10-30	15.2	15.1
Carbohydrate, g	RDA: 130	RDA: 130	RDA: 130	RDA: 130	319.3	262.0
Carbohydrate, % kcal	AMDR: 45-65	AMDR: 45-65	AMDR: 45-65	AMDR: 45-65	60.9	57.4
Total fat, g	N/A	N/A	N/A	N/A	58.9	57.3
Total fat, % kcal	AMDR: 20-35	AMDR: 20-35	AMDR: 25-35	AMDR: 25-35	25.3	28.3
Saturated fat, g	N/A	N/A	N/A	N/A	16.9	17.3
Saturated fat, % kcal	as low as possible	as low as possible	as low as possible	as low as possible	7.3	8.5
Linoleic acid, g	AI: 12	AI: 17	AI: 12	AI: 10	16.3	15.5
Linoleic acid, % kcal	AMDR: 5-10	AMDR: 5-10	AMDR: 5-10	AMDR: 5-10	7.0	7.6
Alpha-linolenic acid, g[2]	AI:1.1	AI: 1.6	AI: 1.2	AI: 0.9	1.4	1.4
Alpha-linolenic acid, % kcal[2]	AMDR: 0.6-1.2	AMDR: 0.6-1.2	AMDR: 0.6-1.2	AMDR: 0.6-1.2	0.6	0.7
Cholesterol, mg	as low as possible	as low as possible	as low as possible	as low as possible	234.5	180.4
Total dietary fiber, g	AI: 25	AI: 38	AI: 31	AI: 25	29.2	20.6
Calcium, mg	AI: 1,000	AI: 1,000	AI: 1,300	AI: 800	720.9	629.9
Copper, mg	RDA: 0.9	RDA: 0.9	RDA: 0.7	RDA: 0.44	1.4	1.1
Iron, mg	RDA: 18	RDA: 8	RDA: 8	RDA: 10	24.0	20.6
Magnesium, mg	RDA: 320[3]	RDA: 420[3]	RDA: 240	RDA: 130	346.0	247.7
Phosphorus, mg	RDA: 700	RDA: 700	RDA: 1,250	RDA: 500	1,584.0	1,263.0
Potassium, mg	AI: 4,700	AI: 4,700	AI: 4,500	AI: 3,800	2,585.9	2,055.7
Sodium, mg	AI: 1,500, UL: < 2,300	AI: 1,500, UL: < 2,300	AI: 1,500, UL: < 2,200	AI: 1,200, UL: < 1,900	1,764.1	1,741.0
Zinc, mg	RDA: 8	RDA: 11	RDA: 8	RDA: 5	13.3	10.7
Vitamin A, µg (RAE)	RDA: 700	RDA: 900	RDA: 600	RDA: 400	583.4	460.8
Vitamin C, mg	RDA: 75	RDA: 90	RDA: 45	RDA: 25	97.6	74.9
Vitamin E, mg	RDA: 15	RDA: 15	RDA: 11	RDA: 7	6.6	5.7
Thiamin, mg	RDA: 1.1	RDA: 1.2	RDA: 0.9	RDA: 0.6	2.7	2.3
Riboflavin, mg	RDA: 1.1	RDA: 1.3	RDA: 0.9	RDA: 0.6	2.4	2.0
Niacin, mg	RDA: 14	RDA: 16	RDA: 12	RDA: 8	27.3	23.6
Vitamin B6, mg	RDA: 1.3	RDA: 1.3	RDA: 1.0	RDA: 0.6	1.8	1.5
Vitamin B12, µg	RDA: 2.4	RDA: 2.4	RDA: 1.8	RDA: 1.2	3.8	3.4
Folate, µg (DFE)	RDA: 400[4]	RDA: 400	RDA: 300	RDA: 200	1,015.2	924.8

Table notes:

1 DRI values shown are those recommended for males and/or females age 9-13. For most nutrients the DRI for males and females age 9-13 are the same. Where the recommendations differ, the higher DRI is shown.

2 Alpha-linolenic acid nutrient levels were not available for all foods in this analysis; however amounts were provided for the primary sources of the nutrient. Also note that amounts offered and delivered are displayed rounded to the nearest tenth of a gram; % kcal is computed from unrounded amounts measured.

3 Females and males age 30-50 are used for reference because they have a higher nutrient need. The RDA for magnesium for females age 19-30 is 310; for males age 19-30 it is 400.

4 It is recommended that all women capable of becoming pregnant consume 400 mcg of folate from supplements or fortified foods in addition to the intake of food folate from a varied diet.

Table A-3
Nutrient Content of FDPIR Food Package
Compared to Thrifty Food Plan Dietary Standards

Nutrient / Macronutrient	TFP Dietary Standards for Age / Gender Group				FDPIR Food Package	
	Females 19-50	Males 19-50	Male / Female 9-11[1]	Male / Female 6-8	Offered	Delivered
Protein, g	N/A	N/A	N/A	N/A	79.6	68.7
Protein, % kcal	AMDR: 10-35	AMDR: 10-35	AMDR: 10-30	AMDR: 10-30	15.2	15.1
Carbohydrate, g	N/A	N/A	N/A	N/A	319.3	262.0
Carbohydrate, % kcal	AMDR: 45-65	AMDR: 45-65	AMDR: 45-65	AMDR: 45-65	60.9	57.4
Total fat, g	N/A	N/A	N/A	N/A	58.9	57.3
Total fat, % kcal	AMDR: 20-35	AMDR: 20-35	AMDR: 25-35	AMDR: 25-35	25.3	28.3
Saturated fat, g	N/A	N/A	N/A	N/A	16.9	17.3
Saturated fat, % kcal	less than 10%	less than 10%	less than 10%	less than 10%	7.3	8.5
Linoleic acid, g	N/A	N/A	N/A	N/A	16.3	15.5
Linoleic acid, % kcal	AMDR: 5-10	AMDR: 5-10	AMDR: 5-10	AMDR: 5-10	7.0	7.6
Alpha-linolenic acid, g[2]	N/A	N/A	N/A	N/A	1.4	1.4
Alpha-linolenic acid, % kcal[2]	AMDR: 0.6-1.2	AMDR: 0.6-1.2	AMDR: 0.6-1.2	AMDR: 0.6-1.2	0.6	0.7
Cholesterol, mg	300 mg or less/day	300 mg or less/day	300 mg or less/day	300 mg or less/day	234.5	180.4
Total dietary fiber, g	30.8[3]	39.2[3]	28.0[3]	22.4[3]	29.2	20.6
Calcium, mg	AI: 1,000	AI: 1,000	AI: 1,300	AI: 800	720.9	629.9
Copper, mg	RDA: 0.9	RDA: 0.9	RDA: 0.7	RDA: 0.44	1.4	1.1
Iron, mg	RDA: 18	RDA: 8	RDA: 8	RDA: 10	24.0	20.6
Magnesium, mg	RDA: 320[4]	RDA: 420[4]	RDA: 240	RDA: 130	346.0	247.7
Phosphorus, mg	RDA: 700	RDA: 700	RDA: 1,250	RDA: 500	1,584.0	1,263.0
Potassium, mg	78-87% of AI (3,666-4,089)	88-98% of AI (4,136-4,606)	70-90% of AI (3,150-4,050)	70-90% of AI (2,660-3,420)	2,585.9	2,055.7
Sodium, mg	≤ higher of UL (2,300) or median consumption	≤ higher of UL (2,300) or median consumption	≤ higher of UL (2,200) or median consumption	≤ higher of UL (1,900) or median consumption	1,764.1	1,741.0
Zinc, mg	RDA: 8	RDA: 11	RDA: 8	RDA: 5	13.3	10.7
Vitamin A, µg (RAE)	RDA: 700	RDA: 900	RDA: 600	RDA: 400	583.4	460.8
Vitamin C, mg	RDA: 75	RDA: 90	RDA: 45	RDA: 25	97.6	74.9
Vitamin E, mg	70-78% of RDA (10.5-11.7)	70-83% of RDA (10.5-12.45)	RDA: 11	RDA: 7	6.6	5.7
Thiamin, mg	RDA: 1.1	RDA: 1.2	RDA: 0.9	RDA: 0.6	2.7	2.3
Riboflavin, mg	RDA: 1.1	RDA: 1.3	RDA: 0.9	RDA: 0.6	2.4	2.0
Niacin, mg	RDA: 14	RDA: 16	RDA: 12	RDA: 8	27.3	23.6
Vitamin B6, mg	RDA: 1.3	RDA: 1.3	RDA: 1.0	RDA: 0.6	1.8	1.5
Vitamin B12, µg	RDA: 2.4	RDA: 2.4	RDA: 1.8	RDA: 1.2	3.8	3.4
Folate, µg (DFE)	RDA: 400[5]	RDA: 400	RDA: 300	RDA: 200	1,015.2	924.8

Table notes:

1 TFP standards shown are based on the DRIs for males and/or females age 9-13. For most nutrients the DRI for males and females age 9-13 are the same. Where the recommendations differ, the higher value is shown.

2 Alpha-linolenic acid nutrient levels were not available for all foods in this analysis; however amounts were provided for the primary sources of the nutrient. Also note that amounts offered and delivered are displayed rounded to the nearest tenth of a gram; % kcal is computed from unrounded amounts measured.

3 The TFP standard is 14g per 1,000 kcal. Calorie levels used here are those shown at the top of table 1.

4 Females and males age 30-50 are used for reference because they have a higher nutrient need. The RDA for magnesium for females age 19-30 is 310; for males age 19-30 it is 400.

5 It is recommended that all women capable of becoming pregnant consume 400 mcg of folate from supplements or fortified foods in addition to the intake of food folate from a varied diet.

Table A-4
Nutrient Content of FDPIR Food Package
Compared to Tolerable Upper Limit Levels (UL)

Nutrient	Tolerable Upper Intake Levels (UL)				Average per person Tolerable Upper Intake Level (UL) for Reference Household	FDPIR Food Package	
	Females 19-50	Males 19-50	Male / Female 9-11	Male / Female 6-8		Offered	Delivered
Calcium, mg	2,500	2,500	2,500	2,500	2,500	720.9	629.9
Copper, µg	10,000	10,000	5,000	3,000	7,000	1,398.4	1,068.3
Iron, mg	45	45	40	40	43	24.0	20.6
Magnesium, mg[1]	N/A	N/A	N/A	N/A	N/A	346.0	247.7
Phosphorus, mg	4,000	4,000	4,000	3,000	3,750	1,584.0	1,263.0
Potassium, mg	ND	ND[2]	ND	ND	ND	2,585.9	2,055.7
Sodium, mg	2,300	2,300	2,200	1,900	2,175	1,764.1	1,741.0
Zinc, mg	40	40	23	12	29	13.3	10.7
Vitamin A, mcg (RAE)	3,000	3,000	1,700	900	2,150	583.4	460.8
Vitamin C, mg	2,000	2,000	1,200	650	1,463	97.6	74.9
Vitamin E, mg[3]	1,000	1,000	600	300	725	6.6	5.7
Thiamin, mg	ND	ND	ND	ND	ND	2.7	2.3
Riboflavin, mg	ND	ND	ND	ND	ND	2.4	2.0
Niacin, mg[3]	35	35	20	15	26	27.3	23.6
Vitamin B6, mg	100	100	60	40	75	1.8	1.5
Vitamin B12, mcg	ND	ND	ND	ND	ND	3.8	3.4
Folate, mcg (DFE)[3,4]	1,000	1,000	600	400	750	745.0	692.0

Table Notes:

1 Although there is a UL for magnesium it does not include intake from food and water. The UL represents intake from a pharmacological agent only.

2 ND = Not determinable due to lack of data of adverse effects in this age group and concern with regard to lack of ability to handle excess amounts.

3 The ULs for vitamin E, niacin, and folate apply only to synthetic forms obtained from supplements, fortified foods, or a combination of the two. Here, folate values have been reduced (from those displayed in Tables 1 and 3) to show only the amounts added to fortified FDPIR foods. Niacin (preformed only) and vitamin E values have not been adjusted. These figures include amounts added to fortified FDPIR foods.

4 It is recommended that all women capable of becoming pregnant consume 400 mcg of folate from supplements or fortified foods in addition to the intake of food folate from a varied diet.

Table A-5
Food Group Totals in FDPIR Food Package
Compared to *Dietary Guidelines* Recommendations for SNAP Reference Household

Food Group	Units of Measure	Dietary Standards per Age/Gender Group				FDPIR as Offered (2,096 kcal)	FDPIR as Delivered (1,824 kcal)
		Females Age 19-50 (2,200 kcal)	Males Age 19-50 (2,800 kcal)	Male/ Female Age 9-11 (2,000 kcal)	Male/ Female Age 6-8 (1,600 kcal)		
Total Fruit	MP cup equivalents	2.00	2.50	2.00	1.50	1.21	0.99
Total Vegetables	MP cup equivalents	3.00	3.50	2.50	2.00	1.53	1.19
Total Grains	MP oz equivalents	7.00	10.00	6.00	5.00	13.34	11.30
Whole Grains	MP oz equivalents	3.50	5.00	3.00	3.00	4.04	1.23
Milk	MP cup equivalents	3.00	3.00	3.00	3.00	1.52	1.36
Meat and Beans	MP oz equivalents	6.00	7.00	5.50	5.00	5.10	4.56
Oils	grams	29.00	36.00	27.00	22.00	25.15	25.31

Note: MP is MyPyramid.

Appendix B

FNS HANDBOOK 501
EXHIBIT O

FOOD DISTRIBUTION PROGRAM ON INDIAN RESERVATIONS
MONTHLY DISTRIBUTION GUIDE RATES BY HOUSEHOLD SIZE
Effective: February 1, 2008

NOTE: The availability of individual products is subject to market conditions.

Household Size	1	2	3	4	5	6	7	8	
Commodity	Number of Items Per Month								Choices
GRAINS, CEREAL, RICE and PASTA									
Cereal, Dry (all sizes)	1	2	3	4	5	6	7	8	Corn, Oat, Rice, Bran
Quick Oats (42 oz. package)	1 per 2 mos.	1	2	2	3	3	4	4	
Farina (14 oz. box)	1 per 2 mos.	1	2	2	3	3	4	4	
Macaroni & Cheese (7.25 oz. box) plus any combination of 3 lbs. per person of rice, spaghetti, or macaroni	3	6	9	12	15	18	21	24	Three 7.25 oz. boxes of macaroni & cheese are treated as 1 lb.; one 26 oz. box of macaroni & cheese is treated as 1 lb.; limit of 1 lb. of macaroni & cheese per person. Other items may be substituted on a pound-for-pound basis. Any combination cannot exceed 4 lbs. per person.
or Macaroni (1 lb. box)	4	8	12	16	20	24	28	32	
or Spaghetti (2 lb. box)	2	4	6	8	10	12	14	16	
or Rice (2 lb. package)	2	4	6	8	10	12	14	16	
Egg Noodles (1 lb. package)	2	4	6	8	10	12	14	16	May be substituted on a pound-for-pound basis. Any combination cannot exceed 2 pounds per person.
or Dehydrated Potatoes (1 lb. package)	2	4	6	8	10	12	14	16	
Cornmeal or All Purpose Flour or Whole Wheat Flour (5 lb. bag)	2	4	6	8	10	12	14	16	
Bakery Mix (5 lb. bag)	1 per 4 mos.	1 per 2 mos.	1	1	2	2	2	2	
Saltine Crackers (1 lb. box)	1 per 2 mos.	1	2	2	3	3	4	4	

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Household Size	1	2	3	4	5	6	7	8	
Commodity	**Number of Items Per Month**								**Choices**
VEGETABLES and SOUP									
Canned Vegetables (#300 can)	9	18	27	36	45	54	63	72	Carrots, Corn Kernel, Corn Cream, Green Beans, Peas, Potatoes, Spinach, Mixed Vegetables, Sweet Potatoes, Diced Tomatoes, Tomato Sauce, Pumpkin (seasonal: October-December)
Spaghetti Sauce (#300 can)	1	2	3	4	5	6	7	8	
Canned Soups (#1 can)	2	4	6	8	10	12	14	16	Tomato, Vegetarian Vegetable
FRUIT and JUICE									
Canned Fruit (#300 can)	9	18	27	36	45	54	63	72	Applesauce, Apricots, Peaches, Pears, Mixed Fruit
Dried Fruit (15-16 oz. package)	1	2	3	4	5	6	7	8	Dried Plums, Raisins
Canned Juice (46 oz. can)	3	6	9	12	15	18	21	24	Apple, Grape, Grapefruit, Orange, Pineapple, Tomato, Cranberry-based
NOTE: May substitute 1 can of vegetable for 1 can of fruit, up to 4 cans of fruit per person.									
MILK and CHEESE									
Block Process American Cheese or Sliced Reduced-fat Cheese Blend (5 lb. loaf)	1 per 2 mos.	1	2	2	3	3	4	4	
Evaporated Milk (12 oz. can)	4	8	12	16	20	24	28	32	
Instant Nonfat Dry Milk (25.6 oz. box) **or** 1% Ultra High Temperature (UHT) Milk (32 fl. oz. carton)	1 per 2 mos. 4	1 8	2 12	2 16	3 20	3 24	4 28	4 32	No substitutions with evaporated milk.
OIL									
Vegetable Oil (48 fl. oz.)	1 per 2 mos.	1	2	2	3	3	4	4	

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Household Size	1	2	3	4	5	6	7	8	
Commodity	**Number of Items Per Month**								**Choices**
MEAT, POULTRY, FISH, BEANS, EGGS, AND NUTS									
Canned Meat/ Poultry/Fish (12-24 oz. can) **or**	3	6	9	12	15	18	21	24	Beef, Chunky Beef Stew, Canned Chicken, Tuna, Luncheon Meat
Frozen Ground Beef * (1 lb. package) **or**	6	12	18	24	30	36	42	48	*Frozen meats are available only to approved ITOs and SAs determined eligible to receive these products.
Frozen Cut-up Chicken* (approx. 2.50-3.75 lb. package) **or**	3	6	9	12	15	18	21	24	Substitution Rates: 1 equivalent can of meat/poultry/fish = 2 frozen ground beef = 1 frozen beef roast = 1 frozen cut up chicken = 1 frozen turkey ham (Canned products 15.5 oz. or smaller are issued on a 2 for 1 basis.)
Frozen Beef Roast* (2 lb.) **or**	3	6	9	12	15	18	21	24	
Frozen Turkey Ham* (2 lb.) available January through October									
NOTE: Frozen Pork Ham (water added; 3 lb.) available November and December (one per person per month)									
Dry Beans (2 lb. bag)	1	2	3	4	5	6	7	8	Pinto, Great Northern, Baby Lima
Canned Vegetarian Beans (#300 can) **or** Canned Lowfat Refried Beans (#300 can) **or** Canned Kidney Beans (#300 can)	2	4	6	8	10	12	14	16	
All Purpose Egg Mix (6 oz. package)	2	4	6	8	10	12	14	16	
Smooth Peanut Butter (18 oz. package) **or** Roasted Peanuts (12 oz. can)	1 1	2 2	3 3	4 4	5 5	6 6	7 7	8 8	

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Food Distribution Program on Indian Reservations
Fresh Fruit and Vegetable Guide Rates

Guide Rates:

Participating FDPIR households may substitute 1 pound of fresh produce for 1 canned item, up to a total of 9 cans of fruit and 9 cans of vegetables per person.

Substitution Rate:

Participating households may substitute 1 pound of vegetable for 1 pound of fruit up to 4 pounds of fruit per person.

Fresh Produce Shopping List:

Vegetables

Carrots
Baby Carrots
Yellow Onions
Red Onions
Russet Potatoes
Red Potatoes
Winter Squash
Summer Squash
Sweet Potatoes
Turnips
Cabbage
Celery
Green Pepper
Cucumbers
Mixed Vegetables
Tomatoes

Seasonal:

Corn

Fruits

Apples
Grapefruit
Oranges
Pears
Mixed Fruit

Seasonal:

Peaches

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Appendix C

Nutrient Content of FDPIR Food Package as Offered

Nutrient content of 2008 FDPIR food package per person, per month (based on package offered for a single person household)

Commodity	Food Energy (kcal)	Protein (g)	Fat (g)	Choles-terol (mg)	Vitamin A (RAE)	Vitamin C (mg)	Vitamin E (α-tocoph-erol)	Vitamin B6 (mg)	Vitamin B12 (µg)	Thiamin (mg)	Ribo-flavin (mg)	Niacin (mg)	Calcium (mg)	Phos-phorus (mg)	Mag-nesium (mg)	Iron (mg)	Folate (µg DFE)	Zinc (mg)	Copper (mg)	Potas-sium (mg)	Total dietary fiber (g)	Carbo-hydrate (g)	Satur-ated fat (g)	Sodium (mg)	Total sugar (g)	Linoleic acid (g)	Aplpha-linolenic acid (g)
Cereal, dry																											
oat circles	282.1	8.0	4.2	0.0	363.6	10.6	0.3	1.6	3.8	1.2	1.3	17.0	253.0	370.7	87.2	21.3	793.8	10.2	0.2	217.6	7.6	52.6	0.7	604.6	3.3	1.3	n.a.
bran flakes	259.9	8.2	1.6	0.0	1,057.7	169.2	9.8	5.7	16.9	4.4	4.8	56.4	43.3	441.4	114.4	50.7	1,920.9	42.9	0.4	482.3	14.3	64.6	0.3	584.4	13.9	0.8	n.a.
corn squares	242.8	4.4	1.1	0.0	301.0	13.2	0.2	1.1	3.3	0.8	0.9	11.0	220.3	47.6	33.1	19.8	740.9	8.3	0.1	99.2	2.6	56.3	0.3	617.2	6.6	0.4	n.a.
corn flakes	307.0	5.6	0.5	0.0	387.8	18.7	0.1	2.9	8.1	1.8	2.2	20.8	3.4	31.5	7.7	24.7	673.6	0.2	0.1	67.2	2.1	74.1	0.2	614.9	8.9	0.3	n.a.
corn & rice squares	213.8	3.5	0.7	0.0	513.1	17.3	0.1	1.9	4.1	2.5	2.4	16.6	7.4	55.6	13.6	18.8	657.7	4.5	0.1	65.2	0.7	49.3	0.1	433.2	6.5	0.2	n.a.
rice crisp	246.9	4.4	0.6	0.0	361.7	17.7	0.1	1.9	6.0	1.2	1.4	13.6	4.5	80.4	16.6	21.9	582.4	0.8	0.1	70.8	0.5	54.4	0.1	578.5	6.0	0.2	0.0
Quick oats	2,443.2	87.4	52.3	0.0	0.0	0.0	2.8	0.2	0.0	2.6	0.6	7.7	309.7	2,649.6	929.1	31.0	206.5	34.4	2.5	2,408.7	58.5	412.9	10.7	137.6	9.3	18.6	0.6
Farina	701.4	21.0	1.0	0.0	0.0	0.0	0.1	0.1	0.0	0.9	0.7	10.7	55.0	178.8	41.3	65.0	508.8	1.4	0.2	192.5	5.5	154.9	0.1	41.3	0.3	0.3	n.a.
Macaroni & cheese	570.4	25.0	5.7	21.6	0.0	0.8	0.1	0.2	0.0	1.5	0.9	10.0	203.5	582.7	61.3	5.6	452.0	1.6	0.3	652.1	3.2	104.7	2.8	1,236.3	15.4	0.6	0.0
Macaroni	2,571.1	94.4	15.1	0.0	0.0	0.0	1.0	0.8	0.0	4.5	2.2	27.5	113.9	943.8	292.9	20.8	1,936.4	8.3	1.6	716.0	29.3	502.2	2.9	16.3	9.1	4.8	0.4
Spaghetti	2,642.7	97.0	15.6	0.0	0.0	0.0	1.0	0.8	0.0	4.6	2.3	28.3	117.1	970.1	301.1	21.4	1,990.4	8.5	1.7	736.0	30.1	516.2	2.9	16.7	9.4	4.9	0.4
Rice	2,270.2	47.0	4.9	0.0	0.0	0.0	0.7	1.6	0.0	2.8	0.2	25.8	174.6	750.9	209.6	21.0	1,693.9	8.6	1.2	611.2	7.0	491.9	1.3	17.5	0.9	1.1	n.a.
Egg noodles	1,527.3	50.2	22.9	321.0	66.4	0.0	1.9	0.5	1.0	3.2	1.5	23.0	132.8	841.1	232.4	16.3	1,527.3	7.2	1.1	420.6	13.3	278.5	4.6	55.3	4.4	5.8	n.a.
Dehydrated potatoes	1,605.7	37.8	1.9	0.0	4.5	367.4	0.1	3.4	0.0	4.5	0.5	28.4	122.5	707.6	299.4	5.5	208.7	3.2	0.7	4,980.4	29.9	368.2	0.8	471.7	15.2	0.4	0.1
Cornmeal	5,579.2	109.6	27.1	0.0	166.3	0.0	2.4	3.0	0.0	9.3	6.3	80.3	45.4	1,587.6	529.2	65.3	5,216.3	10.7	1.1	2,298.2	60.5	1,196.7	2.9	105.8	25.1	10.8	n.a.
All purpose flour	5,503.6	156.2	14.8	0.0	0.0	0.0	0.9	0.7	0.0	11.9	7.5	89.3	226.8	1,632.9	332.6	70.2	4,399.8	10.6	2.2	1,617.8	40.8	1,153.8	2.3	30.2	4.1	5.9	n.a.
Whole wheat flour	5,125.6	207.1	28.3	0.0	0.0	0.0	12.4	5.2	0.0	6.8	3.3	96.2	514.1	5,231.4	2,086.5	58.7	665.3	44.3	5.8	6,123.5	184.5	1,097.2	4.9	75.6	6.2	11.2	n.a.
Bakery mix lowfat	2,046.8	51.4	26.6	0.0	11.3	0.0	0.7	0.5	2.2	3.7	2.4	33.5	1,026.3	3,589.0	158.8	23.3	1,649.9	3.9	0.8	799.5	19.8	400.2	4.8	7,711.1	66.1	3.5	n.a.
Saltine crackers	984.3	20.9	26.8	0.0	0.0	0.0	0.3	0.1	0.0	1.3	1.0	11.9	269.9	238.1	61.2	12.2	428.6	1.7	0.5	290.3	6.8	162.2	6.6	1,737.3	0.9	3.6	n.a.
Canned vegetables																											
carrots	22.0	0.6	0.2	0.0	490.5	2.4	0.7	0.1	0.0	0.0	0.0	0.5	22.0	21.1	7.0	0.6	7.9	0.2	0.1	157.4	1.3	4.9	0.0	36.9	2.2	0.1	n.a.
corn, kernel	74.7	2.4	0.9	0.0	1.8	0.6	0.1	0.1	0.0	0.0	0.0	0.3	4.6	44.3	13.8	0.7	39.7	0.3	0.0	124.5	1.8	17.3	0.2	274.9	2.8	0.4	0.0
corn, cream	107.4	2.6	0.6	0.0	6.0	6.9	0.1	0.1	0.0	0.0	0.1	1.4	4.5	76.1	25.4	0.6	67.1	0.8	0.1	199.9	1.8	27.0	0.1	425.2	4.8	0.3	n.a.
green beans	18.7	1.0	0.1	0.0	14.6	3.5	0.0	0.0	0.0	0.0	0.0	0.2	22.7	16.2	10.5	0.7	26.0	0.2	0.0	90.0	1.9	3.6	0.0	212.5	0.6	0.0	n.a.
peas	66.8	4.3	0.3	0.0	26.2	9.3	0.0	0.1	0.0	0.1	0.1	0.7	19.4	64.9	16.5	0.9	42.6	0.7	0.1	167.6	4.0	12.2	0.1	244.1	4.0	0.1	n.a.
potatoes	61.5	1.4	0.2	0.0	0.0	5.2	0.1	0.2	0.0	0.1	0.0	0.9	5.1	28.7	14.4	1.3	6.2	0.3	0.1	234.9	2.4	14.0	0.1	224.7	0.6	0.1	n.a.
spinach	28.1	3.4	0.6	0.0	597.6	17.4	2.4	0.1	0.0	0.0	0.2	0.5	154.9	53.7	92.7	2.8	119.5	0.6	0.2	422.0	2.9	4.1	0.1	32.9	0.5	0.0	n.a.
vegetables, mixed	45.5	2.4	0.2	0.0	541.6	4.6	0.3	0.1	0.0	0.0	0.0	0.5	25.1	39.0	14.9	1.0	22.3	0.4	0.1	270.3	2.8	8.6	0.0	138.4	2.2	0.1	n.a.
sweet potatoes	115.6	1.3	0.3	0.0	489.9	13.6	1.2	0.1	0.0	0.0	0.1	0.6	19.5	35.1	16.9	1.0	9.1	0.2	0.2	240.4	3.2	27.2	0.1	57.2	20.0	0.1	n.a.
tomatoes, diced	23.3	1.1	0.2	0.0	8.2	12.7	0.9	0.2	0.0	0.1	0.1	1.0	42.4	26.0	15.0	1.3	10.9	0.2	0.1	257.1	1.4	5.5	0.0	195.6	3.3	0.1	n.a.
tomato sauce	33.5	1.8	0.3	0.0	23.7	9.8	2.0	0.1	0.0	0.0	0.1	1.4	18.2	36.3	22.3	1.4	15.4	0.3	0.2	462.2	2.1	7.5	0.0	159.6	5.9	0.1	n.a.
pumpkin	11.5	0.4	0.1	0.0	264.0	1.4	0.4	0.0	0.0	0.0	0.0	0.1	8.8	11.9	7.8	0.5	4.1	0.1	0.0	69.9	1.0	2.7	0.0	1.7	1.1	0.0	n.a.
Fresh vegetables																											
carrots raw	14.2	0.3	0.1	0.0	289.0	2.0	0.2	0.0	0.0	0.0	0.0	0.3	11.4	12.1	4.2	0.1	6.6	0.1	0.0	110.8	1.0	3.3	0.0	23.9	1.6	0.0	n.a.
carrots boiled	11.1	0.2	0.1	0.0	271.3	1.1	0.3	0.0	0.0	0.0	0.0	0.2	9.6	9.6	3.2	0.1	4.5	0.1	0.0	74.8	1.0	2.6	0.0	18.5	1.1	0.0	n.a.
baby carrots raw	15.9	0.4	0.1	0.0	324.7	2.3	0.3	0.1	0.0	0.0	0.0	0.4	12.8	13.6	4.7	0.1	7.4	0.1	0.0	124.4	1.1	3.7	0.0	26.8	1.8	0.0	n.a.
baby carrots boiled	12.5	0.3	0.1	0.0	304.8	1.3	0.4	0.1	0.0	0.0	0.0	0.2	10.7	10.7	3.6	0.1	5.0	0.1	0.0	84.1	1.1	2.9	0.0	20.8	1.2	0.0	n.a.
onions raw	14.0	0.4	0.0	0.0	0.0	2.6	0.0	0.0	0.0	0.0	0.0	0.0	8.1	10.2	3.5	0.1	6.7	0.1	0.0	51.1	0.6	3.3	0.0	1.4	1.5	0.0	n.a.
onions boiled	13.1	0.4	0.1	0.0	0.0	1.5	0.0	0.0	0.0	0.0	0.0	0.0	6.5	10.4	3.3	0.1	4.5	0.1	0.0	49.4	0.4	3.0	0.0	0.9	1.4	0.0	n.a.
onions (red) raw	14.0	0.4	0.0	0.0	0.0	2.6	0.0	0.0	0.0	0.0	0.0	0.0	8.1	10.2	3.5	0.1	6.7	0.1	0.0	51.1	0.6	3.3	0.0	1.4	1.5	0.0	n.a.
onions (red) boiled	13.1	0.4	0.1	0.0	0.0	1.5	0.0	0.0	0.0	0.0	0.0	0.0	6.5	10.4	3.3	0.1	4.5	0.1	0.0	49.4	0.4	3.0	0.0	0.9	1.4	0.0	n.a.
potatoes (rus) baked (with skin)	118.4	2.6	0.2	0.0	1.3	15.9	0.1	0.3	0.0	0.1	0.1	1.9	12.6	94.5	34.0	0.8	47.9	0.4	0.2	685.5	2.6	26.6	0.0	8.8	1.8	0.0	n.a.
potatoes (red) baked (with skin)	112.1	2.9	0.2	0.0	1.3	15.9	0.1	0.3	0.0	0.1	0.1	2.0	11.3	90.7	35.3	0.9	34.0	0.5	0.2	686.7	2.3	24.7	0.0	15.1	1.8	0.0	n.a.
squash, winter, baked	40.0	1.0	0.4	0.0	282.5	10.4	0.1	0.2	0.0	0.0	0.1	0.5	23.8	20.6	14.1	0.5	21.6	0.2	0.1	260.9	3.0	9.6	0.1	1.1	3.6	0.1	n.a.
squash, yellow, boiled	23.9	1.1	0.4	0.0	13.2	6.6	0.2	0.1	0.0	0.1	0.0	0.6	32.3	46.7	28.7	0.4	23.9	0.5	0.1	229.8	1.7	5.2	0.1	1.2	3.1	0.1	n.a.
sweet potatoes baked in skin	109.2	2.4	0.2	0.0	1,166.0	23.8	0.9	0.3	0.0	0.1	0.1	1.8	46.1	65.5	32.8	0.8	7.3	0.4	0.2	576.3	4.0	25.1	0.0	43.7	7.9	0.1	n.a.
turnips boiled	26.3	0.8	0.1	0.0	0.0	13.9	0.0	0.1	0.0	0.0	0.0	0.4	39.5	31.1	10.8	0.2	10.8	0.1	0.0	211.9	2.4	6.1	0.0	19.2	3.6	0.0	n.a.
cabbage raw	15.6	0.8	0.1	0.0	3.1	22.8	0.1	0.1	0.0	0.0	0.0	0.1	24.9	16.2	7.5	0.3	26.8	0.1	0.0	105.8	1.6	3.6	0.0	11.2	2.0	0.0	n.a.
cabbage boiled	13.7	0.8	0.0	0.0	2.4	22.4	0.1	0.1	0.0	0.0	0.0	0.1	28.7	19.7	9.0	0.1	17.9	0.1	0.0	117.1	1.1	3.3	0.0	4.8	1.7	0.0	n.a.
peppers (green) raw	12.8	0.5	0.1	0.0	11.5	51.3	0.2	0.1	0.0	0.0	0.0	0.3	6.4	12.8	6.4	0.2	6.4	0.1	0.0	111.6	1.1	3.0	0.0	1.9	1.5	0.0	n.a.
peppers (green) boiled	17.1	0.6	0.1	0.0	14.1	45.6	0.3	0.1	0.0	0.0	0.0	0.3	5.5	11.0	6.1	0.3	9.8	0.1	0.0	101.6	0.7	4.1	0.0	1.2	2.0	0.1	n.a.

Nutrient content of 2008 FDPIR food package per person, per month (based on package offered for a single person household)

Commodity	Food Energy (kcal)	Protein (g)	Fat (g)	Choles-terol (mg)	Vitamin A (RAE)	Vitamin C (mg)	Vitamin E (α-tocoph-erol)	Vitamin B6 (mg)	Vitamin B12 (µg)	Thiamin (mg)	Ribo-flavin (mg)	Niacin (mg)	Calcium (mg)	Phos-phorus (mg)	Mag-nesium (mg)	Iron (mg)	Folate (µg DFE)	Zinc (mg)	Copper (mg)	Potas-sium (mg)	Total dietary fiber (g)	Carbo-hydrate (g)	Satur-ated fat (g)	Sodium (mg)	Total sugar (g)	Linoleic acid (g)	Aplpha-linolenic acid (g)
peppers (red) raw	19.8	0.6	0.2	0.0	100.1	81.4	1.0	0.2	0.0	0.0	0.1	0.6	4.5	16.6	7.7	0.3	29.3	0.2	0.0	134.6	1.3	3.8	0.0	2.6	2.7	0.0	n.a.
peppers (red) boiled	17.1	0.6	0.1	0.0	90.0	104.7	1.0	0.1	0.0	0.0	0.0	0.3	5.5	11.0	6.1	0.3	9.8	0.1	0.0	101.6	0.7	4.1	0.0	1.2	2.7	0.1	n.a.
celery raw	11.1	0.5	0.1	0.0	15.2	2.1	0.2	0.1	0.0	0.0	0.0	0.2	27.7	16.6	7.6	0.1	24.9	0.1	0.0	180.0	1.1	2.1	0.0	55.4	1.3	0.1	n.a.
celery boiled	11.3	0.5	0.1	0.0	16.4	3.8	0.2	0.1	0.0	0.0	0.0	0.2	26.5	15.7	7.6	0.3	13.9	0.1	0.0	178.9	1.0	2.5	0.0	57.3	1.5	0.0	n.a.
cucumbers raw	22.6	1.0	0.2	0.0	7.5	4.2	0.0	0.1	0.0	0.0	0.0	0.1	24.1	36.2	19.6	0.4	10.6	0.3	0.1	221.8	0.8	5.5	0.1	3.0	2.5	0.0	n.a.
corn boiled	61.1	1.9	0.7	0.0	7.4	3.5	0.1	0.0	0.0	0.1	0.0	0.9	1.7	42.4	14.7	0.2	26.0	0.3	0.0	119.9	1.6	14.2	0.1	0.0	1.8	0.3	n.a.
tomatoes raw	12.7	0.6	0.1	0.0	29.7	9.0	0.4	0.1	0.0	0.0	0.0	0.4	7.1	17.0	7.8	0.2	10.6	0.1	0.0	167.7	0.8	2.8	0.0	3.5	1.9	0.1	n.a.
tomatoes cooked	12.7	0.7	0.1	0.0	17.0	16.1	0.4	0.1	0.0	0.0	0.0	0.4	7.8	19.8	6.4	0.5	9.2	0.1	0.1	154.3	0.5	2.8	0.0	7.8	1.8	0.0	n.a.
Spaghetti sauce	371.6	7.6	11.5	8.5	98.2	8.5	10.2	0.7	0.0	0.1	0.3	16.7	94.0	153.7	89.7	3.1	55.5	2.3	0.8	1,349.6	11.1	58.8	3.0	467.1	37.8	4.9	n.a.
Canned soup																											
tomato (consensed)	181.8	4.9	1.7	0.0	60.6	39.1	1.0	0.3	0.0	0.1	0.2	3.1	39.4	87.9	42.4	3.4	0.0	0.8	0.5	693.9	3.6	40.6	0.5	1,669.5	24.6	0.4	n.a.
vegetarian vegetable (condensed)	175.8	5.1	4.7	0.0	423.2	3.6	3.5	0.1	0.0	0.1	0.1	2.2	50.7	83.4	17.9	2.6	26.8	1.1	0.3	509.6	1.5	29.1	0.7	2,002.6	9.3	1.6	n.a.
Canned fruit																											
applesauce	156.9	0.6	0.2	0.0	3.6	4.4	0.8	0.1	0.0	0.0	0.1	0.7	10.9	25.5	10.9	0.4	3.6	0.1	0.1	273.7	4.4	41.2	0.0	7.3	36.8	0.0	n.a.
apricots	238.4	2.0	0.2	0.0	249.7	10.2	2.3	0.2	0.0	0.1	0.1	1.2	41.6	49.2	30.3	1.5	7.6	0.4	0.3	522.2	6.1	62.4	0.0	15.1	56.3	0.0	n.a.
peaches	202.7	1.7	0.1	0.0	67.6	9.0	1.8	0.1	0.0	0.0	0.1	2.2	11.3	41.3	18.8	1.4	11.3	0.3	0.2	364.1	4.9	54.6	0.0	18.8	49.7	0.1	n.a.
pears	214.0	0.7	0.1	0.0	0.0	2.6	0.3	0.1	0.0	0.0	0.1	0.6	18.8	26.3	15.0	1.1	3.8	0.3	0.2	247.8	6.0	56.9	0.0	18.8	45.4	0.0	n.a.
mixed fruit	199.1	1.5	0.3	0.0	36.2	11.2	0.0	0.1	0.0	0.0	0.1	1.4	18.1	47.1	18.1	1.0	7.2	0.3	0.3	307.6	4.3	51.8	0.0	21.7	41.5	0.0	n.a.
Fresh fruit																											
peaches	152.8	3.6	1.0	0.0	62.7	25.9	2.9	0.1	0.0	0.1	0.1	3.2	23.5	78.4	35.3	1.0	15.7	0.7	0.3	744.6	5.9	37.4	0.1	0.0	32.9	0.3	n.a.
apples	191.1	1.0	0.6	0.0	11.0	16.9	0.7	0.2	0.0	0.1	0.1	0.3	22.0	40.4	18.4	0.4	11.0	0.1	0.1	393.1	8.8	50.7	0.1	3.7	38.2	0.2	n.a.
grapefruit	65.3	1.3	0.2	0.0	93.9	70.2	0.3	0.1	0.0	0.1	0.0	0.5	24.5	16.3	16.3	0.2	20.4	0.1	0.1	283.7	2.2	16.5	0.0	0.0	14.2	0.0	n.a.
oranges	140.1	2.8	0.4	0.0	32.8	158.5	0.5	0.2	0.0	0.3	0.1	0.8	119.2	41.7	29.8	0.3	89.4	0.2	0.1	539.4	7.2	35.0	0.0	0.0	27.9	0.1	n.a.
pears	213.1	1.4	0.4	0.0	3.7	15.4	0.4	0.1	0.0	0.0	0.1	0.6	33.1	40.4	25.7	0.6	25.7	0.4	0.3	437.2	11.4	56.8	0.0	3.7	36.0	0.1	n.a.
Dried fruit																											
dried plums	473.6	4.3	0.7	0.0	77.0	1.2	0.8	0.4	0.0	0.1	0.4	3.7	84.8	136.1	80.9	1.8	7.9	0.9	0.6	1,444.3	14.0	126.0	0.2	3.9	75.2	0.1	n.a.
dried raisins	635.7	6.5	1.0	0.0	0.0	4.9	0.3	0.4	0.0	0.2	0.3	1.6	106.3	214.7	68.0	4.0	10.6	0.5	0.7	1,592.5	7.9	168.4	0.1	23.4	125.9	0.1	n.a.
Canned juice																											
apple	287.2	0.4	0.7	0.0	0.0	254.2	0.1	0.2	0.0	0.1	0.1	0.6	42.8	42.8	18.3	2.3	0.0	0.2	0.1	727.3	0.6	71.4	0.1	18.3	66.6	0.2	n.a.
cranberry-apple	293.3	0.0	0.0	0.0	0.0	208.3	0.1	0.2	0.0	0.1	0.1	0.6	0.0	42.8	18.3	0.0	0.0	0.2	0.1	727.3	0.0	73.3	0.0	24.4	73.3	0.2	n.a.
grape	380.0	3.5	0.5	0.0	0.0	198.0	0.0	0.4	0.0	0.2	0.2	1.6	56.1	68.5	62.3	1.5	18.7	0.3	0.2	822.3	0.6	93.2	0.2	18.7	92.6	0.1	n.a.
pineapple	327.0	2.2	0.7	0.0	0.0	270.3	0.1	0.6	0.0	0.4	0.1	1.2	80.2	49.4	74.0	1.9	111.1	0.7	0.4	802.2	1.2	79.4	0.0	12.3	61.6	0.1	n.a.
tomato	101.7	4.5	0.3	0.0	137.5	109.4	1.9	0.7	0.0	0.3	0.2	4.0	59.8	107.6	65.8	2.6	119.6	0.9	0.4	1,369.4	2.4	25.4	0.0	1,608.6	21.3	0.1	n.a.
orange	257.5	3.6	0.9	0.0	55.2	210.9	1.2	0.5	0.0	0.4	0.2	1.9	49.0	85.8	67.4	2.7	110.4	0.4	0.3	1,073.0	1.2	60.4	0.1	12.3	51.5	0.2	n.a.
grapefruit	231.5	3.2	0.6	0.0	0.0	198.4	0.2	0.1	0.0	0.3	0.1	1.4	42.6	67.0	60.9	1.2	60.9	0.5	0.2	932.0	0.6	54.6	0.1	6.1	54.0	0.1	n.a.
Cheese																											
American processed	2,126.2	125.6	177.2	533.0	1,440.2	0.0	1.5	0.4	4.0	0.2	2.0	0.4	3,129.8	2,908.7	153.1	1.1	45.4	16.1	0.1	958.2	0.0	9.1	111.7	8,442.5	2.9	3.4	n.a.
reduced fat processed	1,360.8	99.8	79.9	300.5	1,440.2	0.0	1.5	0.5	6.3	0.4	2.7	1.0	2,999.4	4,700.4	187.1	1.1	102.1	13.4	0.2	1,871.1	0.0	60.1	50.2	8,998.1	45.5	1.5	n.a.
Evaporated milk	2,026.1	103.0	114.3	438.5	982.8	28.7	2.1	0.8	2.4	0.7	4.8	2.9	3,946.3	3,069.4	362.9	2.9	121.0	11.6	0.2	4,581.4	0.0	151.8	69.4	1,602.7	151.8	2.5	n.a.
Milk																											
instant nonfat dry	649.5	63.7	1.3	32.7	1,286.4	10.2	0.0	0.6	7.2	0.7	3.2	1.6	2,233.5	1,787.2	212.3	0.6	90.7	8.0	0.1	3,093.5	0.0	94.7	0.8	996.1	94.7	0.0	n.a.
fluid milk, 1% fat, UHT	819.8	65.8	18.9	97.6	1,132.2	0.0	0.2	0.7	8.6	0.4	3.6	1.8	2,322.9	1,854.4	214.7	0.6	97.6	8.2	0.2	2,928.0	0.0	97.4	12.4	858.9	101.5	0.6	0.1
Vegetable oil	5,781.4	0.0	654.0	0.0	0.0	0.0	53.5	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.1	0.0	0.0	0.0	0.0	0.0	0.0	99.7	0.0	0.0	329.0	42.8
Meat, poultry, fish																											
Canned meat, poultry, fish																											
canned beef	270.0	22.5	18.0	78.8	0.0	0.0	0.4	0.5	1.5	0.1	0.1	6.2	15.0	167.1	17.7	1.6	7.1	4.0	0.1	272.3	0.0	0.0	6.7	337.5	0.0	0.3	0.0
beef stew	97.0	5.0	5.5	16.3	89.8	4.5	0.1	0.1	0.4	0.1	0.1	1.3	12.2	56.1	14.3	0.7	11.2	0.8	0.1	177.6	1.5	6.9	2.3	416.4	1.0	0.2	n.a.
canned chicken	153.1	26.0	5.4	78.4	11.3	0.0	0.3	0.3	0.2	0.0	0.2	6.1	11.3	147.4	20.8	1.1	5.7	1.8	0.1	178.6	0.0	0.0	1.5	256.1	0.0	1.0	n.a.
tuna	105.2	23.1	0.7	27.2	15.4	0.0	0.3	0.3	2.7	0.0	0.1	12.0	10.0	147.9	24.5	1.4	3.6	0.7	0.0	215.0	0.0	0.0	0.2	306.6	0.0	0.0	n.a.
Frozen ground beef	1,057.3	106.4	66.7	363.3	49.0	0.0	1.8	0.5	12.5	0.3	0.5	13.8	36.7	902.2	98.0	12.3	36.7	25.6	0.6	1,359.4	0.0	0.0	23.4	387.8	0.0	1.8	n.a.
Frozen cut-up chicken	520.1	79.2	20.3	243.6	43.8	0.0	0.7	1.3	0.9	0.2	0.5	25.1	41.1	533.8	68.4	3.3	16.4	5.7	0.2	665.2	0.0	0.0	5.6	235.4	0.0	3.8	n.a.

Nutrient content of 2008 FDPIR food package per person, per month (based on package offered for a single person household)

Commodity	Food Energy (kcal)	Protein (g)	Fat (g)	Choles-terol (mg)	Vitamin A (RAE)	Vitamin C (mg)	Vitamin E (α-tocoph-erol)	Vitamin B6 (mg)	Vitamin B12 (µg)	Thiamin (mg)	Ribo-flavin (mg)	Niacin (mg)	Calcium (mg)	Phos-phorus (mg)	Mag-nesium (mg)	Iron (mg)	Folate (µg DFE)	Zinc (mg)	Copper (mg)	Potas-sium (mg)	Total dietary fiber (g)	Carbo-hydrate (g)	Satur-ated fat (g)	Sodium (mg)	Total sugar (g)	Linoleic acid (g)	Aplpha-linolenic acid (g)
Frozen beef roast	834.4	109.4	41.1	310.0	0.0	0.0	1.1	1.4	8.2	0.3	0.7	18.1	33.1	763.6	83.2	9.4	32.1	19.1	0.4	1,153.8	0.0	0.0	15.3	184.3	0.0	1.1	n.a.
Frozen ham options																											
frozen turkey ham	535.2	73.9	18.1	290.3	72.6	0.0	2.9	0.3	3.6	1.0	1.2	18.7	31.8	1,310.9	72.6	4.5	0.0	9.5	1.1	1,147.6	0.0	14.1	5.4	4,123.2	5.4	3.8	n.a.
frozen pork ham	49.3	7.1	1.9	18.0	0.0	0.0	0.1	0.1	0.2	0.3	0.1	1.4	2.7	66.7	4.8	0.5	1.0	1.0	0.0	97.6	0.0	0.5	0.6	409.3	0.0	0.2	n.a.
Dry beans																											
pinto	1,016.2	64.0	4.6	0.0	0.0	5.7	6.7	1.6	0.0	1.4	0.4	2.3	326.9	1,044.6	355.3	14.9	1,222.3	7.0	1.6	3,098.3	64.0	186.3	1.0	7.1	2.4	0.7	n.a.
great northern	884.9	62.5	3.4	0.0	0.0	9.7	7.0	0.9	0.0	1.2	0.4	5.1	510.0	1,237.4	375.0	16.0	764.9	6.6	1.9	2,932.3	52.5	158.2	1.0	15.0	2.5	0.8	n.a.
baby lima	845.0	57.3	2.8	0.0	0.0	0.0	1.3	1.2	0.0	1.2	0.4	3.1	124.9	815.6	316.0	17.6	609.9	7.0	1.7	3,732.9	51.4	153.4	0.7	14.7	21.3	0.9	n.a.
Canned beans																											
vegetarian	264.5	13.4	1.0	0.0	14.1	0.0	0.4	0.2	0.0	0.3	0.1	1.2	95.7	208.2	76.0	3.3	33.8	6.4	0.4	630.3	11.5	59.5	0.2	310.2	22.4	0.2	0.1
low fat refried	262.4	15.3	3.5	22.3	0.0	16.8	0.0	0.4	0.0	0.1	0.0	0.9	97.7	240.1	92.1	4.6	30.7	3.3	0.5	745.4	14.8	43.4	1.3	834.7	0.6	0.4	n.a.
kidney	238.2	14.8	1.7	0.0	0.0	3.4	0.1	0.2	0.0	0.3	0.1	1.2	96.4	255.2	76.6	3.3	102.1	1.3	0.4	672.2	15.0	41.1	0.4	310.2	5.2	0.3	0.2
All purpose egg mix	1,801.0	120.1	120.1	4,202.4	1,765.0	0.0	12.2	1.8	16.3	0.9	6.0	0.9	800.4	2,408.0	151.3	21.6	592.5	14.0	1.3	1,689.4	0.0	80.0	30.0	2,101.2	20.0	14.5	0.0
Peanut products																											
smooth peanut butter	1,500.3	64.0	128.6	0.0	0.0	0.0	22.9	1.4	0.0	0.2	0.3	34.2	109.7	913.4	392.9	4.8	188.8	7.4	1.2	1,655.9	15.3	49.9	26.8	1,171.1	23.5	35.9	n.a.
roasted peanuts	988.3	44.8	83.9	0.0	0.0	0.0	11.8	0.4	0.0	0.4	0.2	24.3	149.7	879.4	314.7	3.1	214.3	11.3	2.2	1,160.1	11.7	32.2	11.6	10.2	7.1	26.5	n.a.
Total FDPIR package (per month):	**66,175.0**	**2,513.7**	**1,859.2**	**7,404.0**	**18,421.6**	**3,081.1**	**207.9**	**57.6**	**120.4**	**84.5**	**75.0**	**862.5**	**22,766.1**	**50,019.6**	**10,924.9**	**759.2**	**32,057.7**	**421.5**	**44.2**	**81,659.1**	**921.9**	**10,082.0**	**534.7**	**55,708.4**	**1,896.7**	**515.4**	**44.8**
Total FDPIR package (per day):	**2,205.8**	**83.8**	**62.0**	**246.8**	**614.1**	**102.7**	**6.9**	**1.9**	**4.0**	**2.8**	**2.5**	**28.7**	**758.9**	**1,667.3**	**364.2**	**25.3**	**1,068.6**	**14.0**	**1.5**	**2,722.0**	**30.7**	**336.1**	**17.8**	**1,856.9**	**63.2**	**17.2**	**1.5**
Assume 5% of edible food is wasted:	**2,095.5**	**79.6**	**58.9**	**234.5**	**583.4**	**97.6**	**6.6**	**1.8**	**3.8**	**2.7**	**2.4**	**27.3**	**720.9**	**1,584.0**	**346.0**	**24.0**	**1,015.2**	**13.3**	**1.4**	**2,585.9**	**29.2**	**319.3**	**16.9**	**1,764.1**	**60.1**	**16.3**	**1.4**

Appendix D

Nutrient Content of FDPIR Food Package as Delivered

Nutrient content of 2008 FDPIR food package per person, per month (based on food delivered to FDPIR recipients, June 2007 - May 2008)

Commodity	Food Energy (kcal)	Protein (g)	Fat (g)	Choles-terol (mg)	Vitamin A (RAE)	Vitamin C (mg)	Vitamin E (α-tocoph-erol)	Vitamin B6 (mg)	Vitamin B12 (µg)	Thiamin (mg)	Ribo-flavin (mg)	Niacin (mg)	Calcium (mg)	Phos-phorus (mg)	Mag-nesium (mg)	Iron (mg)	Folate (µg DFE)	Zinc (mg)	Copper (mg)	Potas-sium (mg)	Total dietary fiber (g)	Carbo-hydrate (g)	Satur-ated fat (g)	Sodium (mg)	Total sugar (g)	Linoleic acid (g)	Aplpha-linolenic acid (g)
Cereal, dry																											
oat circles	242.1	6.9	3.6	0.0	312.1	9.1	0.3	1.4	3.2	1.0	1.2	14.6	217.2	318.2	74.8	18.3	681.3	8.7	0.2	186.8	6.5	45.2	0.6	518.9	2.8	1.1	n.a.
bran flakes	222.0	7.0	1.4	0.0	903.5	144.5	8.3	4.9	14.5	3.8	4.1	48.2	37.0	377.0	97.7	43.3	1,640.7	36.7	0.3	411.9	12.2	55.2	0.3	499.2	11.9	0.7	n.a.
corn squares	141.6	2.6	0.6	0.0	175.5	7.7	0.1	0.6	1.9	0.5	0.5	6.4	128.4	27.8	19.3	11.6	432.0	4.8	0.0	57.9	1.5	32.8	0.1	359.9	3.9	0.2	n.a.
corn flakes	362.1	6.6	0.6	0.0	457.4	22.1	0.1	3.5	9.5	2.1	2.6	24.5	4.0	37.1	9.0	29.1	794.5	0.2	0.1	79.2	2.5	87.4	0.2	725.2	10.5	0.3	n.a.
corn & rice squares	156.7	2.6	0.5	0.0	376.1	12.7	0.1	1.4	3.0	1.8	1.8	12.1	5.4	40.7	10.0	13.8	482.0	3.3	0.1	47.8	0.5	36.1	0.1	317.5	4.8	0.1	n.a.
rice crisp	324.3	5.7	0.8	0.0	475.1	23.3	0.1	2.5	7.9	1.5	1.9	17.9	5.9	105.6	21.8	28.8	765.0	1.1	0.1	93.0	0.7	71.4	0.2	760.0	7.9	0.2	0.0
Quick oats	2,085.6	74.6	44.6	0.0	0.0	0.0	2.3	0.1	0.0	2.2	0.5	6.6	264.4	2,261.8	793.1	26.4	176.2	29.4	2.2	2,056.2	49.9	352.5	9.1	117.5	7.9	15.9	0.5
Farina	504.2	15.1	0.7	0.0	0.0	0.0	0.1	0.1	0.0	0.7	0.5	7.7	39.5	128.5	29.7	46.8	365.8	1.0	0.1	138.4	4.0	111.3	0.1	29.7	0.2	0.2	n.a.
Macaroni & cheese	997.6	43.7	10.0	37.7	0.0	1.3	0.2	0.3	0.0	2.6	1.6	17.5	355.9	1,019.2	107.2	9.9	790.7	2.9	0.6	1,140.5	5.7	183.1	4.9	2,162.3	27.0	1.1	0.0
Macaroni	2,015.7	74.0	11.9	0.0	0.0	0.0	0.8	0.6	0.0	3.5	1.7	21.5	89.3	739.9	229.6	16.3	1,518.1	6.5	1.3	561.3	23.0	393.7	2.2	12.8	7.1	3.8	0.3
Spaghetti	2,303.0	84.5	13.6	0.0	0.0	0.0	0.9	0.7	0.0	4.0	2.0	24.6	102.0	845.4	262.4	18.7	1,734.5	7.4	1.5	641.3	26.2	449.8	2.6	14.6	8.2	4.3	0.3
Rice	1,847.0	38.2	4.0	0.0	0.0	0.0	0.6	1.3	0.0	2.3	0.2	21.0	142.1	610.9	170.5	17.0	1,378.1	7.0	1.0	497.3	5.7	400.2	1.1	14.2	0.7	0.9	n.a.
Egg noodles	1,195.1	39.3	17.9	251.1	52.0	0.0	1.5	0.4	0.8	2.5	1.2	18.0	103.9	658.2	181.9	12.7	1,195.1	5.6	0.8	329.1	10.4	217.9	3.6	43.3	3.5	4.5	n.a.
Dehydrated potatoes	652.2	15.4	0.8	0.0	1.8	149.2	0.1	1.4	0.0	1.8	0.2	11.5	49.7	287.4	121.6	2.2	84.8	1.3	0.3	2,023.0	12.2	149.6	0.3	191.6	6.2	0.2	0.0
Cornmeal	1,946.9	38.3	9.4	0.0	58.0	0.0	0.8	1.0	0.0	3.2	2.2	28.0	15.8	554.0	184.7	22.8	1,820.3	3.7	0.4	802.0	21.1	417.6	1.0	36.9	8.8	3.8	n.a.
All purpose flour	9,686.7	274.9	26.1	0.0	0.0	0.0	1.6	1.2	0.0	20.9	13.1	157.1	399.2	2,874.1	585.5	123.5	7,744.0	18.6	3.8	2,847.5	71.9	2,030.7	4.1	53.2	7.2	10.4	n.a.
Whole wheat flour	564.6	22.8	3.1	0.0	0.0	0.0	1.4	0.6	0.0	0.7	0.4	10.6	56.6	576.2	229.8	6.5	73.3	4.9	0.6	674.5	20.3	120.9	0.5	8.3	0.7	1.2	n.a.
Bakery mix lowfat	2,104.9	52.9	27.4	0.0	11.7	0.0	0.8	0.5	2.3	3.8	2.5	34.4	1,055.4	3,690.8	163.3	24.0	1,696.7	4.0	0.8	822.1	20.4	411.6	5.0	7,929.8	67.9	3.6	n.a.
Saltine crackers	960.1	20.4	26.1	0.0	0.0	0.0	0.3	0.1	0.0	1.2	1.0	11.6	263.3	232.3	59.7	11.9	418.1	1.7	0.4	283.2	6.6	158.2	6.5	1,694.5	0.8	3.5	n.a.
Canned vegetables																											
carrots	22.4	0.6	0.2	0.0	499.7	2.4	0.7	0.1	0.0	0.0	0.0	0.5	22.4	21.5	7.2	0.6	8.1	0.2	0.1	160.3	1.3	5.0	0.0	37.6	2.2	0.1	n.a.
corn, kernel	262.5	8.6	3.0	0.0	6.5	2.3	0.2	0.2	0.0	0.1	0.2	1.2	16.2	155.6	48.6	2.3	139.4	1.2	0.2	437.5	6.2	60.9	0.6	965.8	9.9	1.4	0.1
corn, cream	123.8	3.0	0.7	0.0	6.9	7.9	0.1	0.1	0.0	0.0	0.1	1.7	5.2	87.7	29.2	0.7	77.4	0.9	0.1	230.4	2.1	31.2	0.1	490.0	5.6	0.3	n.a.
green beans	57.0	2.9	0.3	0.0	44.6	10.6	0.1	0.1	0.0	0.0	0.1	0.5	69.3	49.5	32.2	2.2	79.3	0.7	0.1	274.9	5.7	10.9	0.1	648.9	1.9	0.1	n.a.
peas	105.8	6.8	0.5	0.0	41.4	14.7	0.0	0.1	0.0	0.2	0.1	1.1	30.7	102.7	26.1	1.5	67.5	1.1	0.1	265.2	6.3	19.3	0.1	386.3	6.4	0.2	n.a.
potatoes	73.9	1.7	0.3	0.0	0.0	6.3	0.1	0.2	0.0	0.1	0.0	1.1	6.2	34.5	17.2	1.6	7.4	0.3	0.1	281.9	2.8	16.8	0.1	269.6	0.7	0.1	n.a.
spinach	23.2	2.8	0.5	0.0	495.3	14.5	2.0	0.1	0.0	0.0	0.1	0.4	128.4	44.5	76.8	2.3	99.1	0.5	0.2	349.7	2.4	3.4	0.1	27.3	0.4	0.0	n.a.
vegetables, mixed	60.8	3.2	0.3	0.0	723.8	6.2	0.4	0.1	0.0	0.1	0.1	0.7	33.5	52.1	19.9	1.3	29.8	0.5	0.1	361.3	3.7	11.5	0.1	185.0	3.0	0.1	n.a.
sweet potatoes	60.5	0.7	0.1	0.0	256.5	7.1	0.6	0.0	0.0	0.0	0.0	0.3	10.2	18.4	8.8	0.5	4.8	0.1	0.1	125.9	1.7	14.2	0.0	29.9	10.5	0.0	n.a.
tomatoes, diced	52.1	2.4	0.4	0.0	18.4	28.5	2.1	0.3	0.0	0.1	0.2	2.2	95.0	58.2	33.7	3.0	24.5	0.4	0.2	575.8	3.1	12.3	0.1	438.0	7.3	0.2	n.a.
tomato sauce	78.1	4.3	0.6	0.0	55.3	22.8	4.6	0.3	0.0	0.1	0.2	3.2	42.3	84.6	52.1	3.3	35.8	0.7	0.4	1,077.3	4.9	17.5	0.1	372.0	13.8	0.2	n.a.
pumpkin	16.0	0.5	0.1	0.0	365.4	2.0	0.5	0.0	0.0	0.0	0.0	0.2	12.2	16.4	10.8	0.7	5.6	0.1	0.1	96.8	1.4	3.8	0.1	2.3	1.6	0.0	n.a.
Fresh vegetables																											
carrots raw	10.8	0.2	0.1	0.0	220.0	1.6	0.2	0.0	0.0	0.0	0.0	0.3	8.7	9.2	3.2	0.1	5.0	0.1	0.0	84.3	0.7	2.5	0.0	18.2	1.2	0.0	n.a.
carrots cooked	8.5	0.2	0.0	0.0	206.5	0.9	0.2	0.0	0.0	0.0	0.0	0.2	7.3	7.3	2.4	0.1	3.4	0.0	0.0	57.0	0.7	2.0	0.0	14.1	0.8	0.0	n.a.
baby carrots raw	8.1	0.2	0.0	0.0	164.4	1.2	0.1	0.0	0.0	0.0	0.0	0.2	6.5	6.9	2.4	0.1	3.7	0.0	0.0	63.0	0.6	1.9	0.0	13.6	0.9	0.0	n.a.
baby carrots cooked	6.3	0.1	0.0	0.0	154.3	0.7	0.2	0.0	0.0	0.0	0.0	0.1	5.4	5.4	1.8	0.1	2.5	0.0	0.0	42.6	0.5	1.5	0.0	10.5	0.6	0.0	n.a.
onions raw	63.9	1.8	0.2	0.0	0.0	11.8	0.0	0.2	0.0	0.1	0.0	0.2	36.7	46.3	16.0	0.3	30.3	0.3	0.1	233.1	2.7	14.9	0.1	6.4	6.8	0.0	n.a.
onions cooked	59.7	1.8	0.3	0.0	0.0	7.1	0.0	0.2	0.0	0.1	0.0	0.2	29.9	47.5	14.9	0.3	20.4	0.3	0.1	225.3	1.9	13.8	0.0	4.1	6.4	0.1	n.a.
onions (red) raw	5.0	0.1	0.0	0.0	0.0	0.9	0.0	0.0	0.0	0.0	0.0	0.0	2.9	3.6	1.3	0.0	2.4	0.0	0.0	18.3	0.2	1.2	0.0	0.5	0.5	0.0	n.a.
onions (red) cooked	4.7	0.1	0.0	0.0	0.0	0.6	0.0	0.0	0.0	0.0	0.0	0.0	2.3	3.7	1.2	0.0	1.6	0.0	0.0	17.7	0.1	1.1	0.0	0.3	0.5	0.0	n.a.
potatoes (rus) baked (with skin)	407.6	9.1	0.7	0.0	4.3	54.6	0.2	0.9	0.0	0.2	0.2	6.6	43.4	325.2	117.1	2.8	164.8	1.5	0.6	2,358.8	9.1	91.4	0.1	30.4	6.0	0.1	n.a.
potatoes (red) baked (with skin)	313.4	8.1	0.5	0.0	3.5	44.4	0.1	0.7	0.0	0.3	0.2	5.6	31.7	253.5	98.6	2.5	95.1	1.4	0.6	1,918.9	6.3	69.0	0.1	42.3	5.0	0.1	n.a.
squash, winter, baked	1.1	0.0	0.0	0.0	8.0	0.3	0.0	0.0	0.0	0.0	0.0	0.0	0.7	0.6	0.4	0.0	0.6	0.0	0.0	7.4	0.1	0.3	0.0	0.0	0.1	0.0	n.a.
squash, yellow, boiled	1.0	0.0	0.0	0.0	0.5	0.3	0.0	0.0	0.0	0.0	0.0	0.0	1.3	1.9	1.2	0.0	1.0	0.0	0.0	9.3	0.1	0.2	0.0	0.0	0.1	0.0	n.a.
sweet potatoes baked in skin	2.6	0.1	0.0	0.0	27.6	0.6	0.0	0.0	0.0	0.0	0.0	0.0	1.1	1.6	0.8	0.0	0.2	0.0	0.0	13.7	0.1	0.6	0.0	1.0	0.2	0.0	n.a.
turnips boiled	0.9	0.0	0.0	0.0	0.0	0.5	0.0	0.0	0.0	0.0	0.0	0.0	1.4	1.1	0.4	0.0	0.4	0.0	0.0	7.4	0.1	0.2	0.0	0.7	0.1	0.0	n.a.
cabbage raw	2.3	0.1	0.0	0.0	0.5	3.4	0.0	0.0	0.0	0.0	0.0	0.0	3.7	2.4	1.1	0.0	4.0	0.0	0.0	15.9	0.2	0.5	0.0	1.7	0.3	0.0	n.a.
cabbage boiled	2.1	0.1	0.0	0.0	0.4	3.4	0.0	0.0	0.0	0.0	0.0	0.0	4.3	3.0	1.3	0.0	2.7	0.0	0.0	17.6	0.2	0.5	0.0	0.7	0.3	0.0	n.a.
peppers (green) raw	2.6	0.1	0.0	0.0	2.3	10.3	0.0	0.0	0.0	0.0	0.0	0.1	1.3	2.6	1.3	0.0	1.3	0.0	0.0	22.4	0.2	0.6	0.0	0.4	0.3	0.0	n.a.
peppers (green) boiled	3.4	0.1	0.0	0.0	2.8	9.2	0.1	0.0	0.0	0.0	0.0	0.1	1.1	2.2	1.2	0.1	2.0	0.0	0.0	20.4	0.1	0.8	0.0	0.2	0.4	0.0	n.a.

Nutrient content of 2008 FDPIR food package per person, per month (based on food delivered to FDPIR recipients, June 2007 - May 2008)

Commodity	Food Energy (kcal)	Protein (g)	Fat (g)	Choles-terol (mg)	Vitamin A (RAE)	Vitamin C (mg)	Vitamin E (α-tocoph-erol)	Vitamin B6 (mg)	Vitamin B12 (µg)	Thiamin (mg)	Ribo-flavin (mg)	Niacin (mg)	Calcium (mg)	Phos-phorus (mg)	Mag-nesium (mg)	Iron (mg)	Folate (µg DFE)	Zinc (mg)	Copper (mg)	Potas-sium (mg)	Total dietary fiber (g)	Carbo-hydrate (g)	Satur-ated fat (g)	Sodium (mg)	Total sugar (g)	Linoleic acid (g)	Aplpha-linolenic acid (g)
peppers (red) raw	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	n.a.
peppers (red) boiled	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	n.a.
celery raw	2.7	0.1	0.0	0.0	3.7	0.5	0.0	0.0	0.0	0.0	0.0	0.1	6.7	4.0	1.8	0.0	6.0	0.0	0.0	43.3	0.3	0.5	0.0	13.3	0.3	0.0	n.a.
celery boiled	2.7	0.1	0.0	0.0	3.9	0.9	0.1	0.0	0.0	0.0	0.0	0.0	6.4	3.8	1.8	0.1	3.3	0.0	0.0	43.0	0.2	0.6	0.0	13.8	0.4	0.0	n.a.
cucumbers raw	2.6	0.1	0.0	0.0	0.9	0.5	0.0	0.0	0.0	0.0	0.0	0.0	2.8	4.2	2.3	0.0	1.2	0.0	0.0	25.8	0.1	0.6	0.0	0.4	0.3	0.0	n.a.
corn boiled	17.8	0.5	0.2	0.0	2.1	1.0	0.0	0.0	0.0	0.0	0.0	0.3	0.5	12.3	4.3	0.1	7.6	0.1	0.0	34.9	0.5	4.1	0.0	0.0	0.5	0.1	n.a.
tomatoes raw	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.2	0.0	0.0	0.0	0.0	0.0	0.0	n.a.
tomatoes cooked	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.2	0.0	0.0	0.0	0.0	0.0	0.0	n.a.
Spaghetti sauce	332.6	6.8	10.3	7.6	87.9	7.6	9.2	0.7	0.0	0.1	0.2	15.0	84.1	137.6	80.3	2.8	49.7	2.1	0.7	1,208.0	9.9	52.6	2.7	418.1	33.8	4.4	n.a.
Canned soup																											
tomato (consensed)	141.1	3.8	1.3	0.0	47.0	30.3	0.8	0.2	0.0	0.1	0.1	2.4	30.6	68.2	32.9	2.6	0.0	0.6	0.4	538.6	2.8	31.5	0.4	1,295.9	19.1	0.3	n.a.
vegetarian vegetable (condensed)	138.4	4.0	3.7	0.0	333.1	2.8	2.7	0.1	0.0	0.1	0.1	1.8	39.9	65.7	14.1	2.1	21.1	0.9	0.2	401.1	1.2	22.9	0.6	1,576.3	7.3	1.3	n.a.
Canned fruit																											
applesauce	152.6	0.6	0.2	0.0	3.5	4.3	0.7	0.1	0.0	0.0	0.1	0.7	10.6	24.8	10.6	0.4	3.5	0.1	0.1	266.2	4.3	40.1	0.0	7.1	35.8	0.0	n.a.
apricots	214.2	1.8	0.2	0.0	224.4	9.2	2.0	0.2	0.0	0.1	0.1	1.0	37.4	44.2	27.2	1.3	6.8	0.4	0.3	469.1	5.4	56.1	0.0	13.6	50.6	0.0	n.a.
peaches	306.0	2.6	0.2	0.0	102.0	13.6	2.8	0.1	0.0	0.1	0.1	3.4	17.0	62.3	28.3	2.0	17.0	0.5	0.3	549.7	7.4	82.5	0.0	28.3	75.1	0.1	n.a.
pears	276.8	0.9	0.1	0.0	0.0	3.4	0.4	0.1	0.0	0.0	0.1	0.7	24.3	34.0	19.4	1.4	4.9	0.4	0.2	320.5	7.8	73.7	0.0	24.3	58.8	0.0	n.a.
mixed fruit	226.2	1.7	0.3	0.0	41.1	12.7	0.0	0.1	0.0	0.1	0.2	1.6	20.6	53.5	20.6	1.2	8.2	0.3	0.3	349.5	4.9	58.8	0.0	24.7	47.1	0.0	n.a.
Fresh fruit																											
peaches	7.8	0.2	0.0	0.0	3.2	1.3	0.1	0.0	0.0	0.0	0.0	0.2	1.2	4.0	1.8	0.0	0.8	0.0	0.0	37.9	0.3	1.9	0.0	0.0	1.7	0.0	n.a.
apples	143.1	0.7	0.5	0.0	8.3	12.7	0.5	0.1	0.0	0.0	0.1	0.3	16.5	30.3	13.8	0.3	8.3	0.1	0.1	294.5	6.6	38.0	0.1	2.8	28.6	0.1	n.a.
grapefruit	16.3	0.3	0.1	0.0	23.4	17.5	0.1	0.0	0.0	0.0	0.0	0.1	6.1	4.1	4.1	0.0	5.1	0.0	0.0	70.8	0.6	4.1	0.0	0.0	3.6	0.0	n.a.
oranges	121.8	2.4	0.3	0.0	28.5	137.9	0.5	0.2	0.0	0.2	0.1	0.7	103.7	36.3	25.9	0.3	77.8	0.2	0.1	469.1	6.2	30.5	0.0	0.0	24.2	0.0	n.a.
pears	36.3	0.2	0.1	0.0	0.6	2.6	0.1	0.0	0.0	0.0	0.0	0.1	5.6	6.9	4.4	0.1	4.4	0.1	0.1	74.6	1.9	9.7	0.0	0.6	6.1	0.0	n.a.
Dried fruit																											
dried plums	186.7	1.7	0.3	0.0	30.3	0.5	0.3	0.2	0.0	0.0	0.1	1.5	33.5	53.7	31.9	0.7	3.1	0.3	0.2	569.5	5.5	49.7	0.1	1.6	29.7	0.0	n.a.
dried raisins	573.0	5.9	0.9	0.0	0.0	4.4	0.2	0.3	0.0	0.2	0.2	1.5	95.8	193.6	61.3	3.6	9.6	0.4	0.6	1,435.4	7.1	151.7	0.1	21.1	113.4	0.1	n.a.
Canned juice																											
apple	407.7	0.5	1.0	0.0	0.0	360.8	0.1	0.3	0.0	0.2	0.1	0.9	60.7	60.7	26.0	3.2	0.0	0.3	0.2	1,032.2	0.9	101.3	0.2	26.0	94.5	0.2	n.a.
cranberry-apple	242.5	0.0	0.0	0.0	0.0	172.2	0.1	0.2	0.0	0.1	0.1	0.5	0.0	35.4	15.2	0.0	0.0	0.2	0.1	601.1	0.0	60.6	0.0	20.2	60.6	0.1	n.a.
grape	347.2	3.2	0.5	0.0	0.0	180.9	0.0	0.4	0.0	0.1	0.2	1.5	51.2	62.6	56.9	1.4	17.1	0.3	0.2	751.3	0.6	85.1	0.1	17.1	84.6	0.1	n.a.
pineapple	189.1	1.3	0.4	0.0	0.0	156.2	0.1	0.4	0.0	0.2	0.1	0.7	46.4	28.5	42.8	1.1	64.2	0.4	0.2	463.7	0.7	45.9	0.0	7.1	35.6	0.1	n.a.
tomato	67.6	3.0	0.2	0.0	91.5	72.8	1.3	0.4	0.0	0.2	0.1	2.7	39.8	71.6	43.8	1.7	79.6	0.6	0.2	911.3	1.6	16.9	0.0	1,070.5	14.2	0.1	n.a.
orange	469.0	6.6	1.6	0.0	100.5	384.1	2.2	1.0	0.0	0.7	0.3	3.5	89.3	156.3	122.8	4.9	201.0	0.8	0.6	1,954.1	2.2	110.0	0.2	22.3	93.8	0.3	n.a.
grapefruit	60.2	0.8	0.2	0.0	0.0	51.6	0.1	0.0	0.0	0.1	0.0	0.4	11.1	17.4	15.8	0.3	15.8	0.1	0.1	242.3	0.2	14.2	0.0	1.6	14.0	0.0	n.a.
Cheese																											
American processed	3,480.2	205.6	290.0	872.4	2,357.3	0.0	2.5	0.7	6.5	0.3	3.3	0.6	5,122.9	4,760.9	250.6	1.8	74.2	26.4	0.1	1,568.4	0.0	14.8	182.8	13,818.8	4.7	5.6	n.a.
reduced fat processed	725.9	53.2	42.6	160.3	768.3	0.0	0.8	0.2	3.4	0.2	1.5	0.5	1,600.1	2,507.5	99.8	0.6	54.4	7.1	0.1	998.2	0.0	32.1	26.8	4,800.3	24.3	0.8	n.a.
Evaporated milk	1,609.1	81.8	90.8	348.2	780.5	22.8	1.7	0.6	1.9	0.6	3.8	2.3	3,134.1	2,437.7	288.2	2.3	96.1	9.2	0.2	3,638.5	0.0	120.6	55.1	1,272.9	120.6	2.0	n.a.
Milk																											
instant nonfat dry	933.3	91.5	1.9	46.9	1,848.3	14.6	0.0	0.9	10.4	1.1	4.5	2.3	3,209.2	2,567.9	305.0	0.8	130.3	11.5	0.1	4,444.9	0.0	136.1	1.2	1,431.2	136.1	0.0	n.a.
fluid milk, 1% fat, UHT	7.8	0.6	0.2	0.9	10.8	0.0	0.0	0.0	0.1	0.0	0.0	0.0	22.1	17.6	2.0	0.0	0.9	0.1	0.0	27.8	0.0	0.9	0.1	8.2	1.0	0.0	0.0
Vegetable oil	5,894.5	0.0	666.8	0.0	0.0	0.0	54.5	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.1	0.0	0.0	0.0	0.0	0.0	0.0	101.7	0.0	0.0	335.4	43.6
Meat, poultry, fish																											
Canned meat, poultry, fish																											
canned beef	728.2	60.7	48.6	212.4	0.0	0.0	1.0	1.2	4.0	0.2	0.3	16.6	40.5	450.5	47.7	4.4	19.1	10.8	0.2	734.2	0.0	0.0	18.2	910.2	0.0	0.7	0.0
beef stew	226.4	11.8	12.8	38.1	209.7	10.5	0.3	0.3	0.9	0.2	0.1	2.9	28.6	131.1	33.4	1.7	26.2	2.0	0.2	414.7	3.6	16.1	5.3	972.3	2.3	0.4	n.a.
canned chicken	260.2	44.2	9.2	133.3	19.3	0.0	0.4	0.4	0.4	0.1	0.3	10.4	19.3	250.5	35.3	1.9	9.6	3.1	0.1	303.5	0.0	0.0	2.5	435.2	0.0	1.7	n.a.
tuna	296.0	65.1	2.1	76.5	43.4	0.0	0.8	0.9	7.6	0.1	0.2	33.9	28.1	415.9	68.9	3.9	10.2	2.0	0.1	604.7	0.0	0.0	0.6	862.4	0.0	0.0	n.a.
Frozen ground beef	1,547.9	155.7	97.7	531.9	71.7	0.0	2.7	0.8	18.3	0.4	0.7	20.2	53.8	1,320.8	143.4	18.0	53.8	37.5	0.8	1,990.1	0.0	0.0	34.3	567.7	0.0	2.6	n.a.
Frozen cut-up chicken	475.5	72.4	18.5	222.8	40.0	0.0	0.7	1.2	0.8	0.2	0.4	23.0	37.5	488.1	62.6	3.0	15.0	5.3	0.2	608.2	0.0	0.0	5.1	215.2	0.0	3.4	n.a.

Nutrient content of 2008 FDPIR food package per person, per month (based on food delivered to FDPIR recipients, June 2007 - May 2008)

Commodity	Food Energy (kcal)	Protein (g)	Fat (g)	Choles-terol (mg)	Vitamin A (RAE)	Vitamin C (mg)	Vitamin E (α-tocoph-erol)	Vitamin B6 (mg)	Vitamin B12 (µg)	Thiamin (mg)	Ribo-flavin (mg)	Niacin (mg)	Calcium (mg)	Phos-phorus (mg)	Mag-nesium (mg)	Iron (mg)	Folate (µg DFE)	Zinc (mg)	Copper (mg)	Potas-sium (mg)	Total dietary fiber (g)	Carbo-hydrate (g)	Satur-ated fat (g)	Sodium (mg)	Total sugar (g)	Linoleic acid (g)	Aplpha-linolenic acid (g)
Frozen beef roast	2.1	0.1	0.0	0.0	1.9	1.6	0.1	0.0	0.0	0.0	0.0	0.1	1.8	2.5	1.3	0.1	1.4	0.0	0.0	26.5	0.1	0.5	0.0	14.7	0.3	0.0	n.a.
Frozen ham options																											
frozen turkey ham	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	n.a.
frozen pork ham	204.1	29.5	7.8	74.6	0.0	0.0	0.4	0.6	0.9	1.1	0.3	5.7	11.3	275.9	19.7	2.1	4.2	4.1	0.1	404.0	0.0	2.1	2.5	1,693.6	0.0	0.7	n.a.
Dry beans																											
pinto	1,646.8	103.8	7.5	0.0	0.0	9.2	10.8	2.6	0.0	2.2	0.7	3.7	529.7	1,692.8	575.8	24.1	1,980.7	11.3	2.5	5,020.9	103.6	301.9	1.6	11.5	3.9	1.1	n.a.
great northern	399.1	28.2	1.5	0.0	0.0	4.4	3.1	0.4	0.0	0.5	0.2	2.3	230.0	558.1	169.1	7.2	345.0	3.0	0.8	1,322.5	23.7	71.3	0.5	6.8	1.1	0.3	n.a.
baby lima	310.6	21.1	1.0	0.0	0.0	0.0	0.5	0.4	0.0	0.4	0.1	1.1	45.9	299.8	116.1	6.5	224.2	2.6	0.6	1,372.1	18.9	56.4	0.2	5.4	7.8	0.3	n.a.
Canned beans																											
vegetarian	246.0	12.4	1.0	0.0	13.1	0.0	0.4	0.2	0.0	0.3	0.1	1.1	89.0	193.7	70.7	3.1	31.4	6.0	0.4	586.3	10.7	55.3	0.2	288.5	20.8	0.1	0.1
low fat refried	189.5	11.1	2.5	16.1	0.0	12.1	0.0	0.3	0.0	0.1	0.0	0.6	70.5	173.3	66.5	3.3	22.2	2.4	0.3	538.1	10.7	31.3	1.0	602.6	0.4	0.3	n.a.
kidney	163.1	10.1	1.2	0.0	0.0	2.3	0.0	0.1	0.0	0.2	0.1	0.8	66.0	174.7	52.4	2.3	69.9	0.9	0.3	460.1	10.3	28.1	0.3	212.3	3.6	0.2	0.1
All purpose egg mix	1,142.4	76.1	76.1	2,665.5	1,119.5	0.0	7.8	1.1	10.3	0.6	3.8	0.6	507.7	1,527.4	96.0	13.7	375.8	8.9	0.8	1,071.5	0.0	50.8	19.0	1,332.8	12.7	9.2	0.0
Peanut products																											
smooth peanut butter	1,816.3	77.5	155.6	0.0	0.0	0.0	27.8	1.7	0.0	0.2	0.3	41.4	132.8	1,105.8	475.7	5.8	228.6	9.0	1.5	2,004.7	18.5	60.4	32.5	1,417.8	28.5	43.5	n.a.
roasted peanuts	472.9	21.4	40.1	0.0	0.0	0.0	5.6	0.2	0.0	0.2	0.1	11.6	71.6	420.9	150.6	1.5	102.6	5.4	1.1	555.2	5.6	15.4	5.6	4.9	3.4	12.7	n.a.
Total FDPIR package (per month):	**57,611.8**	**2,169.3**	**1,810.2**	**5,696.6**	**14,552.0**	**2,366.7**	**179.2**	**46.5**	**108.6**	**73.4**	**64.4**	**743.8**	**19,890.4**	**39,884.2**	**7,821.4**	**649.6**	**29,203.1**	**336.7**	**33.7**	**64,915.7**	**651.8**	**8,272.6**	**545.9**	**54,979.2**	**1,587.1**	**488.1**	**45.2**
Total FDPIR package (per day):	**1,920.4**	**72.3**	**60.3**	**189.9**	**485.1**	**78.9**	**6.0**	**1.6**	**3.6**	**2.4**	**2.1**	**24.8**	**663.0**	**1,329.5**	**260.7**	**21.7**	**973.4**	**11.2**	**1.1**	**2,163.9**	**21.7**	**275.8**	**18.2**	**1,832.6**	**52.9**	**16.3**	**1.5**
Assume 5% of edible food is wasted:	**1,824.4**	**68.7**	**57.3**	**180.4**	**460.8**	**74.9**	**5.7**	**1.5**	**3.4**	**2.3**	**2.0**	**23.6**	**629.9**	**1,263.0**	**247.7**	**20.6**	**924.8**	**10.7**	**1.1**	**2,055.7**	**20.6**	**262.0**	**17.3**	**1,741.0**	**50.3**	**15.5**	**1.4**

Appendix E

MyPyramid Equivalents, FDPIR Package as Offered

MyPyramid Equivalents per Person per Month - FDPIR Package "As Offered"

Commodity	Total number of grain ounce equivalents	Number of whole grain ounce equivalents	Total number of vegetable cup equivalents, excl legumes	Number of dark-green vegetable cup equivalents	Number of orange vegetable cup equivalents	Total number of fruit cup equivalents	Total number of milk group (milk, yogurt & cheese) cup equivalents	Number of milk cup equivalents	Oz cooked lean meat from meat, poultry, fish	Oz equivalents of lean meat from eggs	Oz equivalents of lean meat from nuts and seeds	Number of cooked dry beans and peas cup equivalents	Grams of discre-tionary oil	Grams of discre-tionary Solid fat	Teaspoon equivalents of added sugars
Cereal, Dry															
oat circles	2.403	1.784	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.006	0.671
bran flakes	2.320	1.912	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	3.252
corn squares	2.240	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	1.477
corn flakes	2.727	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	1.204
corn & rice squares	1.787	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	1.225
rice crisp	2.116	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	1.283
Quick oats	29.421	29.421	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
Farina	10.961	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	1.664	0.000	0.000
Macaroni & cheese	4.672	0.000	0.000	0.000	0.000	0.000	0.145	0.000	0.000	0.000	0.000	0.000	0.009	5.128	0.000
Macaroni	23.254	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
Spaghetti	23.902	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
Rice	22.109	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
Egg noodles	13.835	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	4.925	0.000
Dehydrated potatoes	0.000	0.000	13.562	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
Cornmeal	49.751	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
All purpose flour	94.498	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
Whole wheat flour	94.498	94.498	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
Bakery mix lowfat	26.290	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	30.501	0.000
Saltine crackers	13.052	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.009	24.775	0.000
Canned vegetables															
carrots	0.000	0.000	0.602	0.000	0.602	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
corn, kernel	0.000	0.000	0.563	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
corn, cream	0.058	0.000	0.571	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.841
green beans	0.000	0.000	0.601	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
peas	0.000	0.000	0.570	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
potatoes	0.000	0.000	0.570	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
spinach	0.000	0.000	0.570	0.570	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
vegetables, mixed	0.000	0.000	0.511	0.000	0.328	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
sweet potatoes	0.000	0.000	0.663	0.000	0.663	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	2.934
tomatoes, diced	0.000	0.000	0.570	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
tomato sauce	0.000	0.000	0.570	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
pumpkin	0.000	0.000	0.138	0.000	0.138	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
Fresh vegetables (lbs)															
carrots raw	0.000	0.000	0.270	0.000	0.270	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
carrots cooked	0.000	0.000	0.204	0.000	0.204	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
baby carrots raw	0.000	0.000	0.304	0.000	0.304	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
baby carrots cooked	0.000	0.000	0.229	0.000	0.229	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
onions raw	0.000	0.000	0.219	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
onions cooked	0.000	0.000	0.142	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
onions (red) raw	0.000	0.000	0.219	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
onions (red) cooked	0.000	0.000	0.142	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
potatoes (rus) baked (with skin)	0.000	0.000	1.033	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
potatoes (red) baked (with skin)	0.000	0.000	1.033	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
squash, winter, baked	0.000	0.000	0.528	0.000	0.528	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
squash, yellow, boiled	0.000	0.000	0.666	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
sweet potatoes baked in skin	0.000	0.000	0.607	0.000	0.607	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
turnips boiled	0.000	0.000	0.772	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
cabbage raw	0.000	0.000	0.699	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
cabbage boiled	0.000	0.000	0.398	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
peppers (green) raw	0.000	0.000	0.428	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
peppers (green) boiled	0.000	0.000	0.450	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000

MyPyramid Equivalents per Person per Month - FDPIR Package "As Offered" (continued)

Commodity	Total number of grain ounce equivalents	Number of whole grain ounce equivalents	Total number of vegetable cup equivalents, excl legumes	Number of dark-green vegetable cup equivalents	Number of orange vegetable cup equivalents	Total number of fruit cup equivalents	Total number of milk group (milk, yogurt & cheese) cup equivalents	Number of milk cup equivalents	Oz cooked lean meat from meat, poultry, fish	Oz equivalents of lean meat from eggs	Oz equivalents of lean meat from nuts and seeds	Number of cooked dry beans and peas cup equivalents	Grams of discre-tionary oil	Grams of discre-tionary Solid fat	Teaspoon equivalents of added sugars
peppers (red) raw	0.000	0.000	0.428	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
peppers (red) boiled	0.000	0.000	0.450	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
celery raw	0.000	0.000	0.577	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
celery boiled	0.000	0.000	0.420	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
cucumbers raw	0.000	0.000	1.135	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
corn boiled	0.000	0.000	0.345	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
tomatoes raw	0.000	0.000	0.394	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
tomatoes cooked	0.000	0.000	0.295	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
Spaghetti sauce	0.000	0.000	3.293	0.000	0.000	0.000	0.017	0.000	0.000	0.000	0.000	0.000	0.427	7.504	0.764
Canned soup															
tomato (consensed)	0.930	0.000	2.245	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.615
vegetarian vegetable (condensed)	0.250	0.000	1.794	0.000	0.238	0.000	0.000	0.000	0.000	0.000	0.000	0.027	0.000	0.000	0.471
Canned fruit															
applesauce	0.000	0.000	0.000	0.000	0.000	1.496	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
apricots	0.000	0.000	0.000	0.000	0.000	1.495	0.000	0.000	0.000	0.000	0.000	0.000	0.011	0.000	9.596
peaches	0.000	0.000	0.000	0.000	0.000	1.494	0.000	0.000	0.000	0.000	0.000	0.000	0.015	0.000	7.951
pears	0.000	0.000	0.000	0.000	0.000	1.509	0.000	0.000	0.000	0.000	0.000	0.000	0.023	0.000	6.277
mixed fruit	0.000	0.000	0.000	0.000	0.000	1.495	0.000	0.000	0.000	0.000	0.000	0.000	0.029	0.000	5.903
Fresh fruit															
peaches	0.000	0.000	0.000	0.000	0.000	2.496	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
apples	0.000	0.000	0.000	0.000	0.000	3.465	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
grapefruit	0.000	0.000	0.000	0.000	0.000	0.888	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
oranges	0.000	0.000	0.000	0.000	0.000	1.621	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
pears	0.000	0.000	0.000	0.000	0.000	2.227	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
Dried fruit															
dried plums	0.000	0.000	0.000	0.000	0.000	2.322	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
dried raisins	0.000	0.000	0.000	0.000	0.000	2.932	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
Canned juice															
apple	0.000	0.000	0.000	0.000	0.000	2.463	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
cranberry-apple	0.000	0.000	0.000	0.000	0.000	2.420	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
grape	0.000	0.000	0.000	0.000	0.000	2.467	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
pineapple	0.000	0.000	0.000	0.000	0.000	2.474	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
tomato	0.000	0.000	2.458	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
orange	0.000	0.000	0.000	0.000	0.000	2.465	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
grapefruit	0.000	0.000	0.000	0.000	0.000	2.467	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
Cheese															
American processed	0.000	0.000	0.000	0.000	0.000	0.000	10.002	0.000	0.000	0.000	0.000	0.000	0.000	174.790	0.000
reduced fat processed	0.000	0.000	0.000	0.000	0.000	0.000	10.002	0.000	0.000	0.000	0.000	0.000	0.000	77.944	0.000
Evaporated milk	0.000	0.000	0.000	0.000	0.000	0.000	12.005	12.005	0.000	0.000	0.000	0.000	0.000	111.903	0.000
Milk															
instant nonfat dry	0.000	0.000	0.000	0.000	0.000	0.000	7.889	7.889	0.000	0.000	0.000	0.000	0.000	0.000	0.000
fluid milk, 1% fat, UHT	0.000	0.000	0.000	0.000	0.000	0.000	8.003	8.003	0.000	0.000	0.000	0.000	0.000	17.334	0.000
Vegetable oil	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	654.000	0.000	0.000
Meat, poultry, fish															
Canned meat, poultry, fish															
canned beef	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	4.035	0.000	0.000	0.000	0.000	9.373	0.000
beef stew	0.098	0.000	0.575	0.000	0.076	0.000	0.000	0.000	0.712	0.000	0.000	0.000	0.909	0.000	0.000
canned chicken	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	3.333	0.000	0.000	0.000	0.000	0.000	0.000
tuna	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	3.200	0.000	0.000	0.000	0.000	0.000	0.000
Frozen ground beef	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	13.141	0.000	0.000	0.000	0.000	35.986	0.000
Frozen cut-up chicken	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	9.655	0.000	0.000	0.000	0.000	0.000	0.000

MyPyramid Equivalents per Person per Month - FDPIR Package "As Offered" (continued)

Commodity	Total number of grain ounce equivalents	Number of whole grain ounce equivalents	Total number of vegetable cup equivalents, excl legumes	Number of dark-green vegetable cup equivalents	Number of orange vegetable cup equivalents	Total number of fruit cup equivalents	Total number of milk group (milk, yogurt & cheese) cup equivalents	Number of milk cup equivalents	Oz cooked lean meat from meat, poultry, fish	Oz equivalents of lean meat from eggs	Oz equivalents of lean meat from nuts and seeds	Number of cooked dry beans and peas cup equivalents	Grams of discre-tionary oil	Grams of discre-tionary Solid fat	Teaspoon equivalents of added sugars
Frozen beef roast	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	12.750	0.000	0.000	0.000	0.000	16.496	0.000
Frozen ham options															
frozen turkey ham	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	15.998	0.000	0.000	0.000	0.000	0.000	1.297
frozen pork ham	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	1.200	0.000	0.000	0.000	0.000	0.000	0.000
Dry beans															
pinto	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	4.107	0.000	0.000	0.000
great northern	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	4.282	0.000	0.000	0.000
baby lima	0.000	0.000	4.710	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
Canned beans															
vegetarian	0.174	0.000	0.507	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.712	0.000	0.000	4.072
low fat refried	0.000	0.000	0.165	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	1.500	0.000	0.000	0.000
kidney	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	1.648	0.000	0.000	0.000
All purpose egg mix	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	20.000	0.000	0.000	0.015	46.458	0.000
Peanut products															
smooth peanut butter	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	15.947	0.000	86.242	2.712	1.855
roasted peanuts	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	12.000	0.000	50.808	1.837	0.000
Total MyPyramid Equivalents per Person per Month:	421.346	127.615	48.193	0.570	4.187	38.196	48.062	27.897	64.024	20.000	27.947	12.276	794.162	567.673	51.690
Total MyPyramid Equivalents per Person per Day:	14.045	4.254	1.606	0.019	0.140	1.273	1.602	0.930	2.134	0.667	0.932	0.409	26.472	18.922	1.723
Assume 5% of edible food is wasted:	13.343	4.041	1.526	0.018	0.133	1.210	1.522	0.883	2.027	0.633	0.885	0.389	25.148	17.976	1.637

Appendix F

MyPyramid Equivalents, FDPIR Package as Delivered

MyPyramid Equivalents per Person per Month - FDPIR Package "As Delivered"

Commodity	Total number of grain ounce equivalents	Number of whole grain ounce equivalents	Total number of vegetable cup equivalents, excl legumes	Number of dark-green vegetable cup equivalents	Number of orange vegetable cup equivalents	Total number of fruit cup equivalents	Total number of milk group (milk, yogurt & cheese) cup equivalents	Number of milk cup equivalents	Oz cooked lean meat from meat, poultry, fish	Oz equivalents of lean meat from eggs	Oz equivalents of lean meat from nuts and seeds	Number of cooked dry beans and peas cup equivalents	Grams of discre-tionary oil	Grams of discre-tionary Solid fat	Teaspoon equivalents of added sugars
Cereal, Dry															
oat circles	2.063	1.531	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.005	0.576
bran flakes	1.981	1.633	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	2.778
corn squares	1.306	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.861
corn flakes	3.216	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	1.420
corn & rice squares	1.310	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.898
rice crisp	2.779	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	1.686
Quick oats	25.115	25.115	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
Farina	7.880	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	1.196	0.000	0.000
Macaroni & cheese	8.172	0.000	0.000	0.000	0.000	0.000	0.253	0.000	0.000	0.000	0.000	0.000	0.017	8.969	0.000
Macaroni	18.230	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
Spaghetti	20.829	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
Rice	17.987	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
Egg noodles	10.825	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	3.854	0.000
Dehydrated potatoes	0.000	0.000	5.509	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
Cornmeal	17.361	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
All purpose flour	166.323	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
Whole wheat flour	10.409	10.409	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
Bakery mix lowfat	27.036	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	31.366	0.000
Saltine crackers	12.731	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.009	24.166	0.000
Canned vegetables															
carrots	0.000	0.000	0.613	0.000	0.613	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
corn, kernel	0.000	0.000	1.977	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
corn, cream	0.067	0.000	0.659	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.970
green beans	0.000	0.000	1.835	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
peas	0.000	0.000	0.901	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
potatoes	0.000	0.000	0.684	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
spinach	0.000	0.000	0.472	0.472	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
vegetables, mixed	0.000	0.000	0.683	0.000	0.438	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
sweet potatoes	0.000	0.000	0.347	0.000	0.347	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	1.536
tomatoes, diced	0.000	0.000	1.277	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
tomato sauce	0.000	0.000	1.328	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
pumpkin	0.000	0.000	0.192	0.000	0.192	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
Fresh vegetables															
carrots raw	0.000	0.000	0.206	0.000	0.206	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
carrots cooked	0.000	0.000	0.155	0.000	0.155	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
baby carrots raw	0.000	0.000	0.154	0.000	0.154	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
baby carrots cooked	0.000	0.000	0.116	0.000	0.116	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
onions raw	0.000	0.000	0.998	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
onions cooked	0.000	0.000	0.646	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
onions (red) raw	0.000	0.000	0.078	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
onions (red) cooked	0.000	0.000	0.051	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
potatoes (rus) baked (with skin)	0.000	0.000	3.556	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
potatoes (red) baked (with skin)	0.000	0.000	2.887	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
squash, winter, baked	0.000	0.000	0.015	0.000	0.015	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
squash, yellow, boiled	0.000	0.000	0.027	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
sweet potatoes baked in skin	0.000	0.000	0.014	0.000	0.014	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
turnips boiled	0.000	0.000	0.027	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
cabbage raw	0.000	0.000	0.105	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
cabbage boiled	0.000	0.000	0.060	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
peppers (green) raw	0.000	0.000	0.086	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
peppers (green) boiled	0.000	0.000	0.091	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000

MyPyramid Equivalents per Person per Month - FDPIR Package "As Delivered" (continued)

Commodity	Total number of grain ounce equivalents	Number of whole grain ounce equivalents	Total number of vegetable cup equivalents, excl legumes	Number of dark-green vegetable cup equivalents	Number of orange vegetable cup equivalents	Total number of fruit cup equivalents	Total number of milk group (milk, yogurt & cheese) cup equivalents	Number of milk cup equivalents	Oz cooked lean meat from meat, poultry, fish	Oz equivalents of lean meat from eggs	Oz equivalents of lean meat from nuts and seeds	Number of cooked dry beans and peas cup equivalents	Grams of discre-tionary oil	Grams of discre-tionary Solid fat	Teaspoon equivalents of added sugars
peppers (red) raw	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
peppers (red) boiled	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
celery raw	0.000	0.000	0.139	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
celery boiled	0.000	0.000	0.101	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
cucumbers raw	0.000	0.000	0.132	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
corn boiled	0.000	0.000	0.100	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
tomatoes raw	0.000	0.000	0.0004	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
tomatoes cooked	0.000	0.000	0.0003	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
Spaghetti sauce	0.000	0.000	2.947	0.000	0.000	0.000	0.015	0.000	0.000	0.000	0.000	0.000	0.382	6.717	0.684
Canned soup															
tomato (consensed)	0.722	0.000	1.743	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.477
vegetarian vegetable (condensed)	0.197	0.000	1.412	0.000	0.188	0.000	0.000	0.000	0.000	0.000	0.000	0.021	0.000	0.000	0.371
Canned fruit															
applesauce	0.000	0.000	0.000	0.000	0.000	1.455	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
apricots	0.000	0.000	0.000	0.000	0.000	1.343	0.000	0.000	0.000	0.000	0.000	0.000	0.010	0.000	8.621
peaches	0.000	0.000	0.000	0.000	0.000	2.255	0.000	0.000	0.000	0.000	0.000	0.000	0.023	0.000	12.002
pears	0.000	0.000	0.000	0.000	0.000	1.952	0.000	0.000	0.000	0.000	0.000	0.000	0.029	0.000	8.119
mixed fruit	0.000	0.000	0.000	0.000	0.000	1.698	0.000	0.000	0.000	0.000	0.000	0.000	0.033	0.000	6.707
Fresh fruit															
peaches	0.000	0.000	0.000	0.000	0.000	0.127	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
apples	0.000	0.000	0.000	0.000	0.000	2.595	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
grapefruit	0.000	0.000	0.000	0.000	0.000	0.221	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
oranges	0.000	0.000	0.000	0.000	0.000	1.410	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
pears	0.000	0.000	0.000	0.000	0.000	0.380	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
Dried fruit															
dried plums	0.000	0.000	0.000	0.000	0.000	0.916	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
dried raisins	0.000	0.000	0.000	0.000	0.000	2.643	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
Canned juice															
apple	0.000	0.000	0.000	0.000	0.000	3.496	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
cranberry-apple	0.000	0.000	0.000	0.000	0.000	2.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
grape	0.000	0.000	0.000	0.000	0.000	2.254	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
pineapple	0.000	0.000	0.000	0.000	0.000	1.430	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
tomato	0.000	0.000	1.636	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
orange	0.000	0.000	0.000	0.000	0.000	4.489	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
grapefruit	0.000	0.000	0.000	0.000	0.000	0.641	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
Cheese															
American processed	0.000	0.000	0.000	0.000	0.000	0.000	16.371	0.000	0.000	0.000	0.000	0.000	0.000	286.099	0.000
reduced fat processed	0.000	0.000	0.000	0.000	0.000	0.000	5.336	0.000	0.000	0.000	0.000	0.000	0.000	41.581	0.000
Evaporated milk	0.000	0.000	0.000	0.000	0.000	0.000	9.534	9.534	0.000	0.000	0.000	0.000	0.000	88.872	0.000
Milk															
instant nonfat dry	0.000	0.000	0.000	0.000	0.000	0.000	11.335	11.335	0.000	0.000	0.000	0.000	0.000	0.000	0.000
fluid milk, 1% fat, UHT	0.000	0.000	0.000	0.000	0.000	0.000	0.076	0.076	0.000	0.000	0.000	0.000	0.000	0.165	0.000
Vegetable oil	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	666.794	0.000	0.000
Meat, poultry, fish															
Canned meat, poultry, fish															
canned beef	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	10.881	0.000	0.000	0.000	0.000	25.277	0.000
beef stew	0.229	0.000	1.342	0.000	0.176	0.000	0.000	0.000	1.663	0.000	0.000	0.000	2.123	0.000	0.000
canned chicken	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	5.664	0.000	0.000	0.000	0.000	0.000	0.000
tuna	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	8.999	0.000	0.000	0.000	0.000	0.000	0.000
Frozen ground beef	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	19.238	0.000	0.000	0.000	0.000	52.681	0.000
Frozen cut-up chicken	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	8.828	0.000	0.000	0.000	0.000	0.000	0.000

MyPyramid Equivalents per Person per Month - FDPIR Package "As Delivered" (continued)

Commodity	Total number of grain ounce equivalents	Number of whole grain ounce equivalents	Total number of vegetable cup equivalents, excl legumes	Number of dark-green vegetable cup equivalents	Number of orange vegetable cup equivalents	Total number of fruit cup equivalents	Total number of milk group (milk, yogurt & cheese) cup equivalents	Number of milk cup equivalents	Oz cooked lean meat from meat, poultry, fish	Oz equivalents of lean meat from eggs	Oz equivalents of lean meat from nuts and seeds	Number of cooked dry beans and peas cup equivalents	Grams of discre-tionary oil	Grams of discre-tionary Solid fat	Teaspoon equivalents of added sugars
Frozen beef roast	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.370	0.000	0.000	0.000	0.000	0.479	0.000
Frozen ham options															
frozen turkey ham	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
frozen pork ham	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	4.965	0.000	0.000	0.000	0.000	0.000	0.000
Dry beans															
pinto	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	6.656	0.000	0.000	0.000
great northern	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	1.931	0.000	0.000	0.000
baby lima	0.000	0.000	1.731	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
Canned beans															
vegetarian	0.162	0.000	0.471	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.662	0.000	0.000	3.787
low fat refried	0.000	0.000	0.119	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	1.083	0.000	0.000	0.000
kidney	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	1.128	0.000	0.000	0.000
All purpose egg mix	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	12.686	0.000	0.000	0.010	29.468	0.000
Peanut products															
smooth peanut butter	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	19.305	0.000	104.407	3.283	2.246
roasted peanuts	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	5.743	0.000	24.315	0.879	0.000
Total MyPyramid Equivalents per Person per Month:	356.930	38.688	37.622	0.472	2.615	31.306	42.920	20.946	60.608	12.686	25.048	11.481	799.347	603.862	53.739
Total MyPyramid Equivalents per Person per Day:	11.898	1.290	1.254	0.016	0.087	1.044	1.431	0.698	2.020	0.423	0.835	0.383	26.645	20.129	1.791
Assume 5% of edible food is wasted:	11.303	1.225	1.191	0.015	0.083	0.991	1.359	0.663	1.919	0.402	0.793	0.364	25.313	19.122	1.702

Appendix G

Methodology details

Nutrient analysis of FDPIR food packages as offered and as delivered

a. Selection of nutrient records from the USDA National Nutrition Database for Standard Reference, Release 20 (SR20)

FNS matched each of the FDPIR foods to entries on the SR20. In some cases, matches were inexact. For these foods, FNS adjusted the SR20 values to match the FDPIR product specifications, USDA commodity food fact sheets, or food labels provided by FDPIR suppliers. In this way, the SR20 was tailored to meet the needs of a FDPIR food package analysis. These changes are summarized below:

- FNS increased the vitamin C content of the grapefruit and grape juices found in the SR20 to match the 34mg per 100ml standard required by the FDPIR program.

- Sodium values on SR20 records for tomato sauce, spaghetti sauce, vegetarian baked beans, and canned kidney beans were replaced with values that meet the 140 mg per serving FDPIR specifications.

- A few FDPIR foods do not match well with any SR20 record. One of those foods is cranberry-apple juice. For that product, FNS took values from the nutrition label for a product that meets cranberry-apple juice specifications for FDPIR. For nutrients not on that label, FNS substituted the nutrient values for apple juice. Another example is FDPIR's dry egg mix. FNS used values from the USDA Commodity Fact Sheet for dry egg mix. For nutrients not on the fact sheet FNS substituted nutrient values for fresh whole eggs. The fact sheet for FDPIR's egg mix indicates that 17 grams of the product is equivalent to one large whole egg (which is roughly 63 grams.) After verifying that the nutrient values on the egg mix fact sheet are, in fact, comparable to the nutrient values in fresh eggs (at a 63g to 17g substitution rate), the remaining nutrients from the SR20 for whole eggs were multiplied by 63/17 and used to construct a complete nutrient record for egg mix.

- For other FDPIR foods, a match was found on the SR20 but one or more nutrient values were missing from the database record. In almost all of those cases the nutrient value for an identical or nearly identical food from the USDA's Food and Nutrient Database for Dietary Studies (FNDDS) was substituted for the missing SR20 value. For example, a small number of SR20 records for FDPIR foods do not contain values for vitamin E; others lacked values for sugar or vitamin B12. Values for those missing nutrients were taken from FNDDS records for foods with identical or nearly identical SR20 and FNDDS values for all non-missing nutrients.

- For a few SR20 records, a missing nutrient value was replaced with the value on an SR20 record for a similar food. For example, at the time of this analysis, the SR20 did not

contain a record for enriched egg noodles cooked without added salt. For all nutrients other than sodium, FNS used values from the SR20 record for enriched egg noodles cooked with added salt. FNS replaced the sodium value on this record, however, with the sodium value on the SR20 record for unenriched egg noodles cooked without salt.

b. Refuse factors

The SR20 database gives the nutrient content of food per 100 grams. For this reason FNS converted the unit weights of each food in the FDPIR package into 100 gram equivalents. In the case of foods whose entire weight as delivered to program participants can be consumed (dry cereal, spaghetti, and raisins, for example) no further adjustment is required beyond converting shipping weights into 100 gram equivalents. However, the weights of other foods as delivered cannot be consumed in full. For these foods, FNS applied refuse factors to the weights delivered to participants.[96]

- For canned vegetables other than sweet potatoes and cream corn, FNS assumes that the liquid is drained before consumption. The drained weights of canned vegetables are given on the SR20. In some cases the values are given per cup; in other cases, drained weights are given for an entire can. FNS adjusted these unit weights to reflect the particular can sizes distributed in the FDPIR program.[97]

- FNS assumes that FDPIR's cut-up chicken is consumed without skin. (It is also consumed, of course, without bones.)[98]

- Fat is assumed trimmed from FDPIR's beef roast before consumption.

- FNS adjusted the gross weights of most of FDPIR's fresh fruits and vegetables to account for discarded stems, peels, and seeds. FNS obtained fresh produce refuse factors from Agriculture Handbook No. 102.[99]

- For canned fruit, FNS assumes that both fruit and syrup are consumed. For these items, the refuse factor is 0.

c. Changes in food weight from cooking

Because this analysis measures the nutrient content of FDPIR foods as consumed, FNS adjusted the weights of some items for moisture lost or gained in cooking.[100] For example, a pound of

[96] Note that refuse factors refer to the inedible portion of FDPIR foods as distributed to participants. Throughout this analysis FNS assumes that an additional five percent of edible food (that is, after taking into consideration the refuse factor) is wasted rather than consumed.
[97] Where the SR20 provides drained can weights, the can size is typically #303. For FDPIR vegetables distributed in other can sizes (often a slightly smaller #300 can) FNS adjusted the SR20 weight to account for the difference.
[98] For some foods, such as cut-up chicken and beef roasts, the refuse factors used in this analysis are combined with the weight lost in cooking. FNS uses SR20 weight conversion factors for these foods to account for the total difference in the weight of food delivered to FDPIR participants, and the weight of the edible cooked product.
[99] Mathews and Garrison, 1975.
[100] Cooked yields for most foods were taken from Agriculture Handbook 102. See ibid.

long or medium grain uncooked white rice yields 3.08 lbs of cooked rice. The nutrient content of 100 grams of cooked rice represents the nutrients available to FDPIR recipients in (100/3.08) grams of uncooked rice.

- Many other FDPIR foods gain weight through water absorption in cooking. These include oats, farina, macaroni, spaghetti, egg noodles, and dry beans.[101]

- Other foods lose weight in cooking. These include ground beef, cut-up chicken, beef roasts, pork ham, and many of FDPIR's fresh vegetables.

d. Changes in nutrient content in cooking

An appropriate measure of the nutrient content of the FDPIR food package must also take into account the nutrients lost in cooking. The nutrient content of some foods as shipped, and as delivered to program participants, exceeds the nutrient content of the foods as consumed. For this reason, FNS selected the SR20 records for cooked food, where appropriate. In all cases, however, FNS reports only the nutrient content of FDPIR foods cooked without added ingredients.

- FNS used the nutrient values for cooked forms of most dry foods. These foods include oats, farina, macaroni, spaghetti, rice, egg noodles, and dry beans.[102]

- FNS used the nutrient values for the cooked forms of meat distributed in uncooked form to FDPIR participants. Frozen cut-up chicken and frozen ground beef fall into that category.

- For foods that are already cooked when delivered to participants, FNS did not attempt to make an additional adjustment for nutrients lost in reheating. These foods include canned vegetables and canned meat.

- In the case of fresh vegetables, FNS recognized that some varieties are almost always consumed cooked, such as potatoes, corn, turnips, and squash. For these vegetables, FNS selected the SR20 records for the foods in their cooked forms. In other cases, FNS assumed that half of the amount distributed to participants is consumed cooked, and half consumed raw; this assumption applied to tomatoes, carrots, onions, cabbage, celery, and peppers.[103]

e. Adjustment for foods no longer available in the FDPIR program

[101] Although dehydrated potatoes also gain weight in cooking, the SR20 does not give nutrient values for cooked dehydrated potatoes without added ingredients. The SR20 does, however, give the nutrient content of dehydrated potatoes before preparation. These nutrient values were used in the analysis. For this particular product, then, no loss in nutrient content from cooking is taken into account.
[102] For dehydrated potatoes, see previous footnote.
[103] Cucumbers are the only fresh vegetables distributed to FDPIR participants that FNS assumes are always consumed raw.

FNS data on food distributed to administering State agencies and ITOs includes some discontinued items purchased before the most recent changes to the FDPIR package became effective in mid-2008. These stocks of discontinued FDPIR items will be distributed until gone. As discussed above, however, this analysis is focused on the nutrient profile of the foods being acquired by the USDA in mid-2008 for current and future distribution to FDPIR recipients. For this reason, this analysis replaces discontinued items, where possible, with the appropriate quantity of foods that serve as their substitutes in the 2008 FDPIR package.

For example, shortening and butter were discontinued in 2008 but were still being distributed to administering agencies as of mid-year. Prior to 2008, FDPIR's "oils" food category included shortening, butter, and cooking oil. Participants could choose from these options at given substitution rates. This analysis replaces all of the shortening and butter distributed over the twelve month period ending in mid-2008 with cooking oil. This replacement uses the butter-to-oil and shortening-to-oil substitution rates in effect prior to 2008.[104]

Food group analysis using MyPyramid Equivalent values

a. FDPIR foods not found on the MyPyramid Equivalents Database (MPED)

The MPED was developed to support the analysis of food intake data collected through national surveys conducted from 1994 to 2002.[105] As a result, not all of the FDPIR foods match items in the MPED. For those foods, FNS modified existing MPED records for similar items in order to reflect the slightly different nutrient profile of the FDPIR foods.

For example:

- FNS increased the existing MPED value for grams of discretionary solid fat and reduced the ounce equivalents of lean meat to match a slightly different protein-to-fat ratio in the canned beef available in FDPIR.

- For FDPIR's reduced fat bakery mix, FNS adjusted the MPED values for non-reduced fat biscuit mix. FNS reduced the MPED value for discretionary solid fat, and increased the MPED value for total grains.

- The other FDPIR foods that required adjustment of MPED values for similar but non-identical foods are: American cheese, canned chicken, turkey ham, refried beans, macaroni and cheese, cornmeal, and egg mix.

[104] Low fat bakery mix was introduced in Spring 2008 as a replacement for non-reduced fat mix. FNS made a simple pound for pound substitution of low fat mix for non-reduced fat mix distributed over the 12 months of this analysis period.
[105] The USDA Continuing Survey of Food Intakes by Individuals, 1994-96 and 1998, and the National Health and Nutrition Examination Survey, 1999-2000, and 2001-2002.

b. Applying weights to MPED records

The same food item weights developed for the nutrient analysis, discussed at the beginning of Appendix G, were used in the analysis of data from the MPED.