

Selected Excerpts from:

Report to Feeding America: Evaluation of the Nutritional Quality of BackPack Program Menus

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Evaluation of the Nutritional Quality of Backpack Program Menus

Abstract

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Purpose

To evaluate the nutritional quality of food provided through the Backpack program in nine food banks across the country; this analysis will provide baseline data and identify areas of strength as well as opportunities to improve the nutritional content of food provided through the BP program.

Methods

Feeding America worked with the University of Minnesota's School of Public Health to complete a small survey and analysis with nine (9) food banks. Participating food banks were asked to provide all the menu items in a typical backpack along with a full description of the food item (e.g. brand name, package size, and number of packages provided per pack, etc.). This menu information was analyzed by the University Staff using Nutrition Data System for Research (NDRS), a dietary analysis software application that allows for calculating the nutrient composition of food items and menus. Based on the nutrient and food group estimates generated by the software, the nutritional adequacy of the Backpack menus were evaluated using the USDA Health Eating Index 2005 scoring system (HEI-2005). The HEI2005 scoring system is based on twelve dietary components that reflect key aspects of diet quality including fruits, vegetables, grains, milk/dairy, meat/protein, oils, saturated fat, sodium and calories from solid fats and added sugars. Using this index a diet/menu is scored. Total possible points range from 0-100. The higher the score the greater the consistency of the diet/menu with the Dietary Guidelines for Americans.

Findings

The total scores at the food banks participating in the survey ranged from 55 to 78, with scores across the food banks averaging 67.4. The average score across the food banks is well above that of American school-age children (mean score of 55) and the American food supply as a whole (score of less than 60). Keeping in mind that an optimal total score is 100, each food bank participating in the Backpack program evaluation appears to have room for improving the nutritional quality of their Backpack menus. Overall the study found that most food banks scored highly in the following areas: Total Fruits and Whole Fruits, Total Grains and Whole Grains, Meat/Protein, Oils, Saturated Fat. In considering the types of menu modifications needed, it appears that most food banks likely need to lower the sodium content of their menus and increase offering of milk/dairy and dark green and orange vegetables and legumes. Increasing fruit, vegetable, and meat/protein offerings are likely needed menu modifications at some of the food banks as well.

Conclusions

Our food banks performed well! While none achieved a perfect score of 100 (highest score was 78), consideration must be given to consumer acceptance and availability of foods in the marketplace in planning Backpack menus. It's important to note that most packaged foods contain high amounts of sodium which poses a challenge to planning menus that meet sodium standards. There is also limited availability of palatable and affordable packaged food products containing dark green and orange vegetables and legumes.

Food Bank's Backpack Program Menus with Corresponding Program Costs

*In order from highest to lowest nutritional quality scores

Location C (78/100 points)

Program Costs per Pack: \$7.52 – Includes costs incurred through administrative, food warehousing, food purchase, and delivery. The food in each pack costs between \$4.29 and \$4.54. All food is purchased. Total program cost = \$3,537,292 for FY12.

Chicken with rice soup (1 7.2 ounce can)
Beef ravioli in tomato and meat sauce (1 7.5 ounce can)
Cut green beans (1 8 ounce can)
Peach pieces, light syrup (1 4 ounce cup)
Crispix cereal (1 0.75 ounce box)
Toasted oats (1 0.75 ounce box)
Wheat cracker (2 count package)
Grape fruit strip (1 0.91 ounce package)
Tropical adventure fruit snack mix (1 1 ounce package)
1% white milk (2 8 ounce boxes)
Orange (1 each)
Sun butter (1 1.5 ounce package)

Dumplings & chicken soup (1 7.25 ounce can)
Whole grain Beefaroni (1 15 ounce can)
Sweet peas (1 8 ounce can)
Peach pieces, light syrup (1 4 ounce cup)
Rice Krispies (1 0.63 ounce box)
Honey nut toasted oats cereal (1 0.75 ounce box)
Wheat crackers (1 2 count package)
Grape fruit strips (1 0.91 ounce package)
Apricot blend fruit snacks (1 1 ounce package)
1% milk (2 8 ounce cartons)

Chili with beans (1 7.375 ounce cans)
Spaghettios (1 15 ounce can)
Sliced carrots (1 8 ounce can)
Peach pieces, light syrup (1 4 ounce cup)
Crispix cereal (1 0.75 ounce box)
Raisin bran cereal (1 1.25 ounce box)
Wheat cracker (1 2 count package)
Apple fruit strip (1 0.91 ounce package)
Apricot blend fruit snacks (1 1 ounce package)
1% low fat milk (2 8 ounces)

Low sodium chicken noodle soup (1 7.25 ounce can)
Spaghetti & meatballs (1 7.5 ounce can)
Mixed vegetables (1 8 ounce can)
Peach pieces, light syrup (1 4 ounce cup)
Apple Jacks cereal (1 0.7 ounce box)
Corn Flakes (1 0.75 ounce box)
Wheat crackers (1 2 count package)
Apple fruit strips (1 0.91 ounce package)
Tropical blend fruit snacks (1 1 ounce package)
1% milk (2 8 ounce cartons)
Sunflower seed butter (1 1.5 ounce package)
Apple (1 each)

Location D (76/100 points)

Program Costs per Pack: \$5 – All food is purchased. Total program cost = approximately \$500,000 per year.

Peach slices (1 15 ounce can)
Sliced carrots (1 14.5 ounce cans)
Beef stew (1 15 ounce can)
Instant mashed potatoes (1 8.3 ounce box)
2% milk, shelf stable (1 32 ounce box)
Special K Red Berries cereal (1 16.7 ounce)
 pudding cups (2 3.5 ounce cups)
Macaroni and cheese (1 7.25 ounce box)
Chicken breast chunks (1 142 gram can)
100% fruit juice (2 200 ml boxes)
Beef ravioli (1 15 ounce can)
Oyster crackers (2 14 gram packages)
Creamy peanut butter (1 12 ounce jar)
Strawberry gelatin (2 3 ounce packages)
Whole wheat rotini (1 12 ounce packages)
Spaghetti sauce (1 15 ounce can)
Oatmeal (4 1 cup packages)
Chicken noodle soup (1 10.5 ounce can)

Location B (72/100 points)

Program Costs per Pack: \$3.68 – 95% purchased and 5% donated. Total program cost = approximately \$67,000 per school year.

2% milk (1 8 ounce box)
100% juice (2 4.23 ounce boxes)
Tostitos whole grain oat cereal (1 0.69 ounce box)
Frosted Flakes (1 1.0 ounce box)
Diced fruit cup in fruit juice (1 4 ounce cup)
Fruity snacks (1 09 ounce package)
Beans & wieners in tomato sauce (1 7.5 ounce can)
Smoked beef stick (1 1.0 ounce stick)
Snack pack pudding (2 3.5 ounce packs)
Nutri Grain strawberry cereal bar (1 1.3 ounce bar)
Yoo-hoo chocolate drink (1 6.5 ounce box)
Salted cashews (1 20 ounce packet)
Toast & peanut butter sandwich (1 1.38 ounce packet)
Cheez-it baked snack crackers (1 1.5 ounce package)
Chef Boyardee mini beef ravioli (1 15 ounce can)
Apples (2 each)

Location G (71/100 points)

Program Costs per Pack: varies between \$3.74 and \$4 depending on the mix of products – 90% purchased and 10% donated. Total program cost = estimated at \$360,000.

Toasted oat cereal (1 0.75 ounce box)
Raisin bran cereal (1 1.25 ounce box)
2% milk (2 8 fluid ounce cartons)
Beef stew (2 7.5 ounce cans)
Juice bowl (2 6.75 ounce bowls)
Unsweetened applesauce (1 4 ounce cup)
Mixed fruit in light syrup (1 4 ounce cup)

Location A (69/100 points)

Program Costs per Pack: \$3 – Food costs average out to be about \$2.12. 60% purchased and 40% donated. Total program cost = was projected to be approximately \$180,000 for 2011-2012 school year.

Creamy peanut butter (1 18 ounce jar)
Spaghetti rings in tomato sauce (1 15 ounce can)
100% apple juice (1 6.75 fluid ounce box)
Applesauce (1 4 oz. cup)
Vanilla pudding cup (2 99 g cups)
Instant oatmeal packet, various flavors (3 43 gram packets)

Chunk light tuna (1 5 oz. can)
Pasta rings in tomato and cheese sauce (1 15 ounce can)
100% apple juice box (1 6.75 fluid ounce box)
Whole kernel corn (1 8.75 ounce can)
Vanilla pudding cup (2 99 gram cup)
Instant oatmeal packet (3 43 gram packets)

Macaroni and Cheese with real cheddar cheese (1 7.25 box)
Condensed chicken noodle soup (1 10.5 ounce can)
100% apple juice box (1 6.76 fluid ounce box)
Peach in pear juice from concentrate (1 8.25 ounce can)
Vanilla pudding cup (2 99 gram cups)
Instant oatmeal packet (3 43 gram packets)

Location E (64/100)

Program Costs per Pack: \$4.25 per week – 50% purchased and 50% donated. Total program cost not available.

Kellogg's cereal variety pack (1 0.81 ounce box)
Honey grahams (1 4.8 ounce package)
Beef ravioli in meat sauce (1 15 ounce can)
Macaroni and cheese supreme dinner (1 7.25 ounce package)
Creamy peanut butter (1 16.3 ounce jar)
Squeeze strawberry spread (1 20 ounce jar)
Chili with beans (1 15 ounce can)
Whole wheat bread (1 24 ounce loaf)
1% milk (1 8 fluid ounce carton)
1% chocolate milk (1 8 fluid ounce carton)
Fruit rhapsody snack (2 8.45 ounce packages)
Baby carrots (1 16 ounce bag)
Apples (2 apples)
Kettle corn popcorn (2 1.25 ounce packages)
7 layer bars (2 1.77 ounce bars)

Location H (64/100)

Program Costs per Pack: \$6.47 – 25-40% purchased and balance with donated. Total program cost = \$313,768.

Snack bar cereal (2 1.3 ounce bars)
Lasagna (1 7.5 ounce box)
Rice with veggie mini bites (1 7.5 ounce can)
100% apple juice (2 6.75 ounce boxes)
Mandarin oranges in syrup (1 11 ounce can)
Fruit & Nut trail mix bar (1 1.24 ounce bar)
Tomato soup (1 10.7 ounce can)
Chicken noodle soup (1 10.5 ounce can)

Location F (58/100)

Program Costs per Pack: \$5.88 – All food is purchased. Total program cost = \$750,000 per year to operate.

Cheesy tuna skillet dinner (1 6.5 ounce box)
Pancake mix (1 16 ounce box)
Quick oats (1 16 ounce bag)
Macaroni and cheese (2 7.25 ounce boxes)
Pears, light sauce (1 14.5 ounce can)
Spaghetti sauce (1 26.5 ounce can)
Green beans (1 15 ounce can)
Mandarin oranges, light syrup (1 11 ounce can)
Ramen noodles (4 3 ounce packages)
Cinnamon Toasters cereal (1 12 ounce box)
Tootie Fruities cereal (1 12 ounce box)
Honey Graham Squares cereal (1 12.5 ounce box)
Chicken noodle soup (1 10.7 ounce can)
Tomato soup (1 10.7 ounce can)
Peanut butter (1 18 ounce jar)
Jelly (1 20 ounce bottle)
Pancake syrup (1 24 ounce bottle)
Pudding cups (4 3.5 ounce cups)
Pop tarts (1 6.5 ounce box)
Pasta shells, white (1 16 ounce bag)
Rice, brown (1 16 ounce bag)
Canned tuna, water packed (2 5 ounce cans)
Canned chicken (2 5 ounce cans)
Juice concentrate (1 11.5 ounce can)

Location I (55/100)

Program Costs per Pack: \$5 – 95% purchased and 5% donated. Total program cost = \$88,393.

Cornflakes (1 18 ounce box)
Macaroni and cheese (2 7.5 ounce boxes)
Chicken salad mix (1 3.25 ounce box)
Peaches, light syrup (1 15 ounce can)
Fruit cocktail (1 15 ounce can)
Chicken noodle soup (1 10.5 ounce can)
100% juice (2 6.5 ounce boxes)

Identifying Promising Practices to Improve Nutritional Quality

Total Fruits and Whole Fruits

Those food banks that achieved perfect scores for both the total amount of fruits offered and whole fruits (Location B, Location G, Location H, and Location I) tended to include several fruit items on their menu. Also, the amounts provided were generally larger than food banks that achieved a lower score (e.g. can of fruit provided as opposed to a single serve cup).

Menu items used or suggested:

- canned peaches
- canned fruit cocktail
- 100% fruit juice
- fresh apples
- fresh oranges

Total Vegetables and Dark Green and Orange Vegetables and Legumes

Three food banks achieved perfect scores with regard to the amount of vegetables (any type) provided. These food banks (Location C, Location G, and Location H) appeared to have achieved this by providing canned vegetables (e.g. canned green beans) and/or including vegetable-rich mixed dishes (e.g. Chef Boyardee rice with chicken and vegetable mini bites) and soups (e.g. tomato soup) None of the food banks served adequate quantities of dark green and orange vegetables and legumes. Three food banks achieved a score of 2 out of 5 possible points (Location C, Location D, and Location E). At these food banks carrots (either canned or fresh baby carrots) were included on the menu.

Dark green and orange vegetables and legume menu items used or suggested:

- Carrots, canned or fresh baby carrots
- Fresh broccoli
- Baked beans
- Refried beans

Total Grains and Whole Grains

Most of the food banks scored highly with regard to both the total amount of grains provided and provision of whole grains. A variety of grains were provided including pasta dishes and noodle soups; crackers; ready to eat breakfast cereals; and oatmeal. Whole grain sources included ready to eat breakfast cereals (e.g. Toasty O's whole grain oat cereal), oatmeal, whole wheat pasta, whole wheat bread, and even whole grain containing mixed dishes (e.g. Chef Boyardee Whole Grain Beefaroni).

Whole Grain menu items used or suggested:

- Whole wheat pasta
- Whole grain bread
- Oatmeal
- Whole grain-rich ready-to-eat breakfast cereals

Meat/Protein

The three food banks that received a perfect score for meat/protein (Location A, Location D, and Location E) appeared to meet this guideline by including on their menu peanut butter plus at least one meat (e.g. tuna, chicken breast chunks) or meat based mixed dish (e.g. beef ravioli).

Meat/protein menu items used or suggested:

- Peanut or sun flower seed butter
- Tuna
- Chicken breast chunks

Milk/Dairy

Only three food banks achieved a perfect or near perfect score for milk/dairy (Location B, Location C, and Location G). All three of these food banks included milk on their menus. Food banks that scored poorly (score of 1 or 2 out of 10 possible points) relied on other sources of dairy exclusively (e.g. macaroni and cheese, pudding cups, lasagna).

Milk/dairy menu items used or suggested:

- Shelf stable milk, skim or 1%
- Pudding cup, reduced fat or fat free

Oils

Nearly all of the food banks scored highly on oils. Sources of oils on the menus included peanut butter, mixed dishes, and grains.

Saturated Fat

All of the food banks received a favorable score on the saturated fat content of their menus. Because it can be difficult to meet both meat/protein and saturated fat guidelines, it is informative to take note of the Location D food bank where perfect scores were achieved for both of these dietary components. It appears this food bank was able to meet both guidelines by including protein sources that are low or moderate in saturated fat (chicken breast chunks and peanut butter).

Sodium

Sodium was a universal problem, with none of the food bank menus approaching the recommended level for this dietary component. Mixed dishes and soups appear to be the biggest contributors to the high sodium content of the menus.

Calories from Solid Fats, Alcohol, and Added Sugars (SoFAAS)

Most food banks received a high to moderately high score with respect to this dietary component. The two food banks that received a notably lower score in comparison to the other food banks (Location E and Location F) appeared to score less well because a few food items high in added sugars were included on the menu (e.g. squeeze strawberry spread and 7 layer bars at the Location E food bank and jelly, pancake syrup, and Pop Tarts at the Location F food bank).

FAQ's

What is the USDA Health Eating Index 2005 scoring system (HEI-2005)?

The HEI-2005 is a tool developed to evaluate how closely one's diet or a menu is consistent with the 2005 Dietary Guidelines for Americans. The HEI-2005 scoring system is based on twelve dietary components that reflect key aspects of diet quality including fruits, vegetables, grains, milk/dairy, meat/protein, oils, saturated fat, sodium and calories from solid fats and added sugars. Using this index a diet/menu is scored. Total possible points range from 0-100. The higher the score the greater the consistency of the diet/menu with the Dietary Guidelines for Americans. USDA's primary use of the HEI is to monitor the diet quality of the U.S. population and the low-income subpopulation. For this purpose the Center for Nutrition Policy and Promotion (CNPP) uses the data collected via 24-hour recalls of dietary intake in national surveys such as NHANES.

How do I get my backpack menu scored?

Getting individual menus analyzed beyond the nine food banks in this project is not possible at this time. The HEI is not designed to be a public tool and actually requires special software to be used. The University of Minnesota would require a specific contract for service for every food bank requesting this service. The findings of this report alone may be enough for your food bank to draw upon without conducting a detailed analysis yourself—this is the great thing about pilot projects!

There are many other, user-friendly tools that food banks should consider in planning their BP menus. The University of Minnesota recommends keeping it simple with guidelines from the MyPlate website (<http://www.choosemyplate.gov/food-groups/>). One could use MyPlate as a visual guide in planning menus (e.g. half the plate is supposed to be filled with fruits and vegetables, so likewise about one-half the food on the menu should be fruits and vegetables). Ideas are provided for each food group, including different types of vegetables. The type of analysis and tool you select will depend on the goal of your program.

I'm interested in building a high scoring backpack menu, what should I do?

In the appendix of this report are all of the menus from the nine food banks that participated in the study. We suggest you review the two highest scoring menus, which scored 78 and 76, and look to build your BackPacks as close to these menus as possible. With a couple of small modifications to each of the high scoring menus you will be able to bring the scores closer to 100—if you so choose. But remember, there is no such thing as a “perfect” menu or pack.

What does a score of 100 represent?

In simple terms, the higher the score the greater the consistency of the diet/menu with the 2005 Dietary Guidelines for Americans. A score of 100 reflects perfect compliance/consistency with the Dietary Guidelines for Americans whereas a score of 0 indicates lack of compliance/consistency with any components of the Guidelines. Again, the menus were evaluated using the USDA Health Eating Index 2005 scoring system which was developed to evaluate how closely one's diet or a menu is consistent with the 2005 Dietary Guidelines for Americans.

I noticed the Healthy Eating Index-2005 is included as Table 1 in the final report. Is there any way that we could use this table to score our food bank menu?

Unfortunately, the table is not a useable tool in itself. The key issue is the amounts (e.g. amount of fruit) must be per 1,000 kcals which requires nutrient analysis (summing calories from all food items on the menu; summing fruit in 1 cup equivalents from the menu) and calculations in addition to that.

Can the national office help me leverage my purchase power for the items we include in our backpack?

Coordinated network purchasing for Backpack programs represents a sizable opportunity for the network to reduce its costs in that there is predictable demand for the same type of products continuously throughout the year. That said, the biggest hurdle to leveraging our purchasing power is network agreement on the following:

- Product Specifications
- Volume
- Frequency
- How freight will be handled and allocated among participating members

If you and some of your neighboring food banks or cluster members can reach agreement on the above, there is a good chance we can assist in helping reduce the cost of items you are purchasing for your Backpack program. For more information on purchasing opportunities, please visit the Purchasing Portal on HungerNet

<https://www.hungernet.org/fgpurch/grocery/Pages/PurchasingPortal.aspx>

The philosophy of our Backpack program is built on supplemental foods rather than complete meal solutions. Is this wrong?

Of course not! It's up to each member to determine its operating philosophy around product placement in Backpacks. What this study points out is that our membership, by in large, has done a good job in balancing the nutritional quality of the items its placing in Backpacks while allowing for operating models that are both supplemental and a complete meal solution. This study provides a platform for all members that are operating Backpack programs, regardless of philosophy, to review the nutritional quality of their menu offerings and learn from their peers on how to make incremental improvements, if interested.

What tools are available to assist us in evaluating our BP menus but also helping us look at our overall Backpack Program?

This report will be posted on HungerNet and will include the scored menus from the nine participating food banks. Comparing your current menu to the participating menus will be an excellent starting point to see how your menu stacks up. Food banks should consider using the MyPlate website as a resource (<http://www.choosemyplate.gov/food-groups/>). As previously mentioned, you could use MyPlate as a visual guide in planning menus. In addition, the Feeding America Programs team has assembled a tremendous amount of resources on HungerNet to assist you with the overall evaluation of your backpack program. Click on the following link to view the Backpack section of HungerNet <https://www.hungernet.org/child/bp/Pages/home.aspx>

Click on the following link to view the Nutrition and Health section of HungerNet

<https://www.hungernet.org/nutrition/Pages/home.aspx>

Click on the following link to view the Backpack Nutrition Evaluation Project section of HungerNet which includes links and resources to analyze your menu items or menu using other standards and guidelines such as WIC, Healthy School Challenge, Competitive Foods Calculator and More!

<https://www.hungernet.org/nutrition/Pages/BackPackNutritionEvaluation.aspx>

I noticed the names of the participating food banks were not included in the final report, why is that?

The nine food banks agreed to participate in the study under the agreement that the findings would be published anonymously. That said, if you would like to contact one of the participating food banks, reach out to Michelle Berger-Marshall at mbergermarshall@feedingamerica.org and she will facilitate an introduction for you.