How do SNAP participation, food access and food prices affect nutritional quality of food purchases? An analysis of FoodAPS data

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Selected Paper prepared for presentation at the 2016 Agricultural & Applied Economics Association Meeting, Boston, Massachusetts, July 31-August 2

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Introduction:

The average American diet is out of sync with Federal dietary guidelines and evidences suggests that, overtime, unhealthy dietary patterns can lead to adverse health outcomes, such as obesity, chronic heart disease and certain cancers. To assess potential policy options to promote the purchase of healthier foods, it is important to understand how economic and environmental factors, such as food access, food prices, household income and participation in food and nutrition assistance programs correlate with the nutritional quality of foods acquired. This research provides a broad overview of the food purchase and acquisition patterns of U.S. households, answering key questions, such as where do people shop, what is the nutrient profile of the foods acquired and how do program participation, food store access and local food prices correlate with nutritional quality of these acquisitions. Understanding if and how shopping patterns vary for different subsets of consumers has implications for increasing the effectiveness of nutrition education and other efforts to help Americans improve their diets and health.

We use the National Household Food Acquisition and Purchase Survey (FoodAPS) data, which is the first survey to collect comprehensive data about food purchases and acquisitions, both from grocery stores and other food retailers and from eating places. With its over sampling of households that participate in Federal food and nutrition assistance programs and other low-income households, FoodAPS data allow researchers to construct a more detailed picture of the food shopping habits of low-income Americans and those receiving food assistance. Data include detailed information about purchases and acquisitions of individual food items at home and away from home, as well as foods acquired through food and nutrition assistance programs or for free through food pantries or from friends and relatives. FoodAPS also incorporated extant data on the local food environment--food store access, food prices, and characteristics of sample member neighborhoods--to enhance the survey data.

In terms of program participation, we focus on the Supplemental Nutrition Assistance Program (SNAP). With the goal of assisting Americans to purchase an adequate diet, it is the largest of the Federal food and nutrition assistance programs and served more than 47 million Americans each month in fiscal 2013. Evidence shows that SNAP benefits help alleviate poverty and food insecurity among participating households. However, like most Americans, the dietary patterns of participating

households show room for improvement, with adult participants typically under-consuming fruits, whole grains, and other healthy foods while consuming too many empty calories.

Lack of access to food retailers that sell a wide range of healthy and affordable foods has also been hypothesized to result in poorer diet and diet-related health. Understanding how food store proximity is related to food shopping and expenditures can shed light on the role of store access on diet. To that end, we examine how both individual and neighborhood level measures of food store access are related to the type of stores visited and the nutritional quality of foods acquired. Another aspect of access to healthy foods relates to the affordability of healthy foods. As such, we also examine how market level prices correlate with nutritional quality of foods acquired.

Consumption of food away from home (FAFH), especially fast food, has been frequently investigated as a contributor to obesity trends among children. This may be partially attributable to the fact that obesity rates have increased as consumers increased their reliance on FAFH. As a share of total food expenditures, households increased spending on FAFH from roughly 32% in 1980 to just over 43% in 2012 [Source 9]. FAFH, and FF in particular, is often served in larger portions [Source 11-13] and tends to be of lower nutritional quality compared to foods prepared at home [Source 14].

Data and Methods

The National Household Food Acquisition and Purchase Survey (FoodAPS) is a comprehensive, nationally representative survey of food purchases and acquisitions and shopping behaviors of U.S. households (Economic Research Service, 2015). The survey collected detailed information on purchases and acquisitions for 1 week, along with information about the sociodemographic characteristics, food shopping patterns, diet/health knowledge, and economic well-being of sampled households. The survey was designed to provide information for key policy-relevant questions regarding food spending and shopping decisions. For example, how do the food choices of households that receive Supplemental Nutrition Assistance Program (SNAP) benefits compare with food choices of other low-income households? And what is the role of food store access and affordability on food shopping behavior and food choices? This report uses interview data along with event level data on the types of food outlets visited during the survey week, the distances to food stores from the respondents' homes, the nutrient content of food items acquired and the food prices at stores near each household.

Household level data: FoodAPS data are unique in that they are designed to be representative of SNAP households and nonparticipant households in three income groups: those with incomes below 100 percent of Federal poverty thresholds (FPL), 100 percent of FPL but less than 185 percent of FPL, and at or above 185 percent of FPL. The SNAP and low-income nonparticipant groups are oversampled to allow analysis of food spending and shopping patterns specifically for these groups, which is not possible with other surveys or data collection efforts. A total of 4,826 households completed the survey. The primary respondent (PR) for each household—the main food shopper or meal planner—provided information about the household and individuals in the household through two in-person interviews. These interviews collected demographic and other information about the household related to food purchases, intake, and diet/health.

For this study, we first divide the sample into subgroups based on income and SNAP participation status. SNAP participation status in the prior 30 days is determined by both survey responses and matches to administrative records. For respondents who consented to have SNAP administrative records matched to their survey responses (97.5 percent of the sample), the administrative record was used to determine participation status in the case of any discrepancy.[1] For the 122 households who did not consent, the survey response is used to determine participation status. Nonparticipants are then divided into two groups based on their monthly household income relative to Federal poverty thresholds. We modified the classification of non-SNAP households into income groups by including households with income equal to 185 percent of FPL in the lower income non-participant group.

During the interview, the PR reported the typical mode of transportation used to get to their primary grocery store. Respondents were also asked if they used an additional, alternate store regularly for grocery shopping. Primary and alternate stores are classified into three categories of food retailers: supercenters and other mass merchandisers, such as Wal-Mart or Super-Target, which we refer to as

[1] Over 80 percent of the 1,461 households that reported being current SNAP participants were confirmed to be participants through the administrative match. Of the remaining 19.2 percent that were not confirmed as SNAP participants, 16.4 percent did not match to any administrative data, 1.1 percent were found to be not current participants through the match, and 1.8 percent did not give consent for the match. Over 93 percent of the 3,361 households that reported not being current SNAP participants were either not matched at all to administrative data (89.6 percent) or were confirmed to be nonparticipants at the time of the survey (3.6 percent). The rest of the households that reported not receiving SNAP were either confirmed to be participants through the match (4.0 percent) or did not given consent to administrative matching (2.9 percent).

supercenters[2] and club stores such as Costco's or BJ's; supermarkets, commissaries, and other large grocery stores; and smaller grocery stores, specialty retailers (for example, farmers' markets, bakeries, and ethnic food stores), and other food retailers including convenience stores, pharmacies, and dollar stores. A fourth category includes stores that we are unable to identify, locate or classify.

Although there can be substantial variety in the range of products offered at stores within each of these types, these classifications differentiate stores by both the assortment (depth and breadth) of food products available in each store and the range of nonfood items commonly sold in each store grouping. For example, supercenters are typically stores that carry a full range of groceries found at supermarkets, but also have large mass merchandise sections. Supermarkets, commissaries, and large groceries carry a full range of groceries and may carry a limited selection of mass merchandise. Stores in the "other" category are a variety of types ranging from pharmacies to convenience stores to seafood shops. These stores typically do not sell a full range of grocery items. Since the difference in offerings often influence food purchase behavior, we use the classifications to help determine whether any of the subgroups of interest differ in their use of these store types.

Geocoded data: FoodAPS was designed in part to support research on how access to food stores with a wide variety of healthy food offerings is related to food choices and measures of food security, health, and obesity. In order to do so, a list of SNAP-authorized food retailers in the primary sampling units (PSUs) was obtained from the USDA's Food and Nutrition Service's Store Tracking and Redemption System. The addresses of these retailers were geocoded so that distance to the nearest SNAP-authorized store (of different types) from the household could be calculated. Locations of restaurants within 0.5 and 1 mile radii of the secondary sampling units (SSUs) were also obtained from InfoUSA, a proprietary directory of eating places. From these data, distances to the nearest full service and limited service restaurant from the household were calculated. Households were also asked the usual way they traveled to get to the stores where they do their primary food shopping.

Additional data on the food retail environment were also collected and attached to the main FoodAPS file through the FoodAPS Geography Component study. This part of the FoodAPS study was conducted

[2] Not all mass merchandisers are supercenters. However, we are unable to differentiate supercenters from all other mass merchandisers in FoodAPS.

through a cooperative agreement with researchers at Tufts University and the University of Illinois Urbana-Champaign. Data on the local food environment in the 50 primary sampling units (PSUs) in the survey was compiled and created. Information collected through the FoodAPS-GC includes the location of different types of retailers, measures of access to these retailers, measures of food prices and prices of food categories by retailers, as well as information about socio-demographic of the areas and food-related policies. Data for all 50 FoodAPS PSUs are provided at different geographic levels—census block groups and census tracts, and counties—depending upon the availability of data.

This study uses two measures of food store access to study the relationship between access and food shopping and spending. The first access measure is a neighborhood based measure and uses the low-income and low-access vehicle (LILA-vehicle) measure from ERS' Food Access Research Atlas. For this measure, low-income census tracts are defined as tracts where at least 20 percent of the population has income before the federal poverty threshold or where the tract-level median income is at or below 80% of the larger Metropolitan Statistical Area's median income if in an MSA or at or below 80% of the state-level median income for non-metro areas. Low-access tracts are those where at least 100 households do not have a vehicle and are more than 0.5 miles from a store, or tracts where at least 500 people of one-third of the tract population is more than 20 miles from a store.

The second access measure is a household level measure based on the usual mode of transportation for food shopping trips: own vehicle, someone else's vehicle, and a third catch-all category for those who walk, bike, take public transit or another form of transportation. Those who own their own vehicles are likely to have the easiest access to stores. Those who ride with someone else or borrow someone else's car may have similar levels of access, but are also likely to be subject to the preferences of the person giving them a ride or the availability of the vehicle to be borrowed. Finally, those who take other transportation modes may be a mix of those who live in very dense places where stores are fairly close and easy to walk to and those who have more severe access burdens because they have to walk farther or rely on public transit. We consider individuals that walk, bike, or bus to their nearest SNAP authorized supermarket or super store and live more than a mile from that store as having low access.

Market price data: To better understand the relationship between market prices and dietary patterns, additional data on the retail food prices were also collected and attached to the main FoodAPS file

through the FoodAPS Geography Component study. This part of the FoodAPS study was conducted through a cooperative agreement with researchers at University of Florida and the University of Illinois Urbana-Champaign. The main objective of this project was to estimate store-level costs of a balanced diet that approximates the costs consumers might pay in food retail stores for the FoodAPS PSUs and adjacent counties.

To do this, the contractors used the food groupings and quantities of foods per person from the USDA's Thrifty Food Plan (TFP) to characterize the amount of food within a range of groups that could be purchased for a low cost diet. The TFP is constructed by the USDA's Center for Nutrition Policy and Promotion (CNPP, 2007) and specifies the quantities of groups of foods that people could purchase and consume at home to obtain a nutritious diet following the Dietary Guidelines for Americans at a minimal cost for 15 different age-gender groups. The cost of the TFP for a family of four serves as the basis for calculating Supplemental Nutrition Assistance Program (SNAP) benefit allotments. The TFP should not be considered a specific shopping list , but rather a guide about how much of each food group to purchase given the household's size, age and gender composition. The TFP recommends weekly quantities (in pounds), of food from 29 categories grouped under six broad food types: grains, vegetables, fruits, milk products, meat and beans, and other foods.

For each week of data reported by each store, researchers first calculated the price per pound for each TFP category, then multiplied the category price with recommended pounds for each individual of the family and lastly sum the cost of the TFP basket of goods for a family of four, consistent with the calculation for SNAP benefits as described above. The basket cost is the sum of the cost of goods for a female age 19 to 50, a male age 19 to 50, a child age 6 to 8 and a child age 9 to 11.

These price data and cost calculations are based on each store's sales of all food items in each category and include goods that would not necessarily be purchased by low-income or SNAP households – for example, high-quality cuts of meat or high-end cheeses. Also, note that the mix of items within a category, and hence the category price, may vary from store to store. The TFP food groups and quantities are used as a model for categorizing and weighting grocery purchases to compose similar baskets across stores. These proxy basket costs do not represent the TFP or the lowest-cost baskets and are not intended to reflect purchases made by typical SNAP recipients.

In this study, we focus on the low cost TFP market basket and we calculate the average cost of purchasing this basket over the past four weeks. We take the average four-week[3] cost of all food retailers located within 20 miles of each household's block-group centroid, where each store is weighted by the share of TFP categories sold at that store. For example, as store that offered all 29 TFP categories would count more than a store that only offered 10. When there we no stores within 20 miles of a block group centroid, we took the average block group price within secondary sampling unit. When there was no match to the secondary sampling unit, we then took the average block group over the primary sampling unit. We then identified households in the lowest quartile basket group, where the 4-week average of the low-cost basket was $142 or lower. We also identified households in the highest quartile basket group, where the 4-week average of the low-cost basket was more than $160.

Nutrient level data: The FoodAPS survey appended information on the nutrient content and Food Pattern Equivalent (FPE) values to each identifiable item reported in the FoodAPS survey. With this, we can use a summary measure of nutritional quality of food acquisitions based on the USDA's 2010 Healthy Eating Index (HEI), summarized at the household level. The HEI measures nutritional quality in terms of conformance with federal dietary guidance. The HEI score ranges from 0 to 100 and is based on 12 components, including 9 adequacy components (e.g. whole fruit, whole grains and dark green and orange vegetables) and 3 moderation components (e.g. empty calories, sodium and refined grains). Components are measured using a density approach to set standards, such as per 1000 calories or as a percent of calories. The 2010 HEI captures the key recommendations of the 2010 Dietary Guidelines and has been used to assess the diet quality of the U.S. population and subpopulations, in evaluating interventions, in dietary patterns research, and to evaluate various aspects of the food environment. We also use the 12 components that underlie the HEI score as outcome measures. We also look at total calories acquired, per person over the week.

Results

Note—FoodAPS data is still preliminary so we will not be posting results until final data are available.

[3] While the market price data only used 2012 IRI data, some FoodAPS respondents were surveyed in the first month of 2013. For those households, we used the average price of the last 4-weeks in 2012.

Table 1 shows simple summary statistics for our key categorical variables—SNAP participation and income; food store access; retail market prices and store type. Chart 1 summarizes HEI scores and component densities for the acquisitions of the overall FoodAPS population and also shows how these measures compare to the 24-hour dietary intake of respondents from the National Health and Nutrition Examination Survey.

To test for differences in nutrition quality by demographic subgroups, we first divide households into three separate categories based on SNAP participation and household income. Before moving on, however, we would like to note that there are some significant differences between SNAP participating households and non-participants in terms of socio-demographic characteristics. Using the same FoodAPS data, Ver Ploeg et al, 2015 find that, compared to higher income households, the primary respondents in SNAP households are younger, on average, than those in non-SNAP households in all income groups by about 5 years or more. They are also more likely to be non-White, and have less education, on average, than respondents in non-SNAP households. SNAP households are also larger than non-SNAP households. SNAP households are significantly less likely to have access to a vehicle than non-SNAP households with incomes above poverty.[4] Compared with nonparticipants, a greater share of SNAP households also report being WIC households. SNAP participating households are also more likely to be food insecure than the overall population. As income, education and ethnicity can play a critical role in food choices and diet quality, it important to remember that all comparisons in this study simply suggest correlation and none of the findings in this *rough rough draft using preliminary data* should be interpreted as indicative of causal relationship between program participation and diet quality.

Conclusion

TBD

Looking at differences by SNAP participation and income, we find that SNAP households spend more of their food dollars at large grocery stores and less at restaurants compared to higher income non-participants. However, while SNAP households spend a greater share of their food dollars at large grocery stores compared to higher income non-SNAP households, they spend significantly less per-

[4] Lower rates of vehicle ownership among SNAP participants is likely due to lower resource levels in these households and not SNAP vehicle asset rules. By 2010, all but two States excluded the value of at least one vehicle in counting household resources (USDA, Economic Research Service, 2014).

person and acquire significantly fewer calories --about 1000 fewer calories per person per week. The foods they acquire also seem to be of lower nutritional quality--over a week, their HEI scores about 15 percent lower than higher income households. Similarly, while restaurants and fast food options make up a smaller share of SNAP household food expenditures compared to higher income households, the foods they acquire score about 10% lower in nutritional quality.

We find that among the overall population, acquisitions at large grocery stores make up the bulk of weekly expenditures as well as calories. Purchases from these stores are also of significantly higher nutritional quality compared to all other food at home options, such as small grocers or convenience stores. In terms of food away from home options, there are no significant differences in nutritional quality across food sources for the overall population.

This study should generate quite a bit of discussion. People have strong opinions about how to balance the goal of encouraging healthier diets against being overly prescriptive or paternalistic. This is especially true when it comes to low income populations. Our preliminary findings suggest that, in order to stay within tight budget constraints, SNAP households may be trying to stretch their food dollars by choosing supermarkets and large grocery stores over other retailers, but many may still have difficulties choosing nutritious foods. Focusing efforts on encouraging healthier, economical choices at grocery stores may be one way to have a significant impact on improving dietary patterns among SNAP households. The more detailed analysis on HEI components, such as whole fruits, whole grains and sodium, combined with analysis of the impact of food access and food prices, will hopefully spark additional discussion on other promising areas on which to focus nutrition outreach efforts.

References:

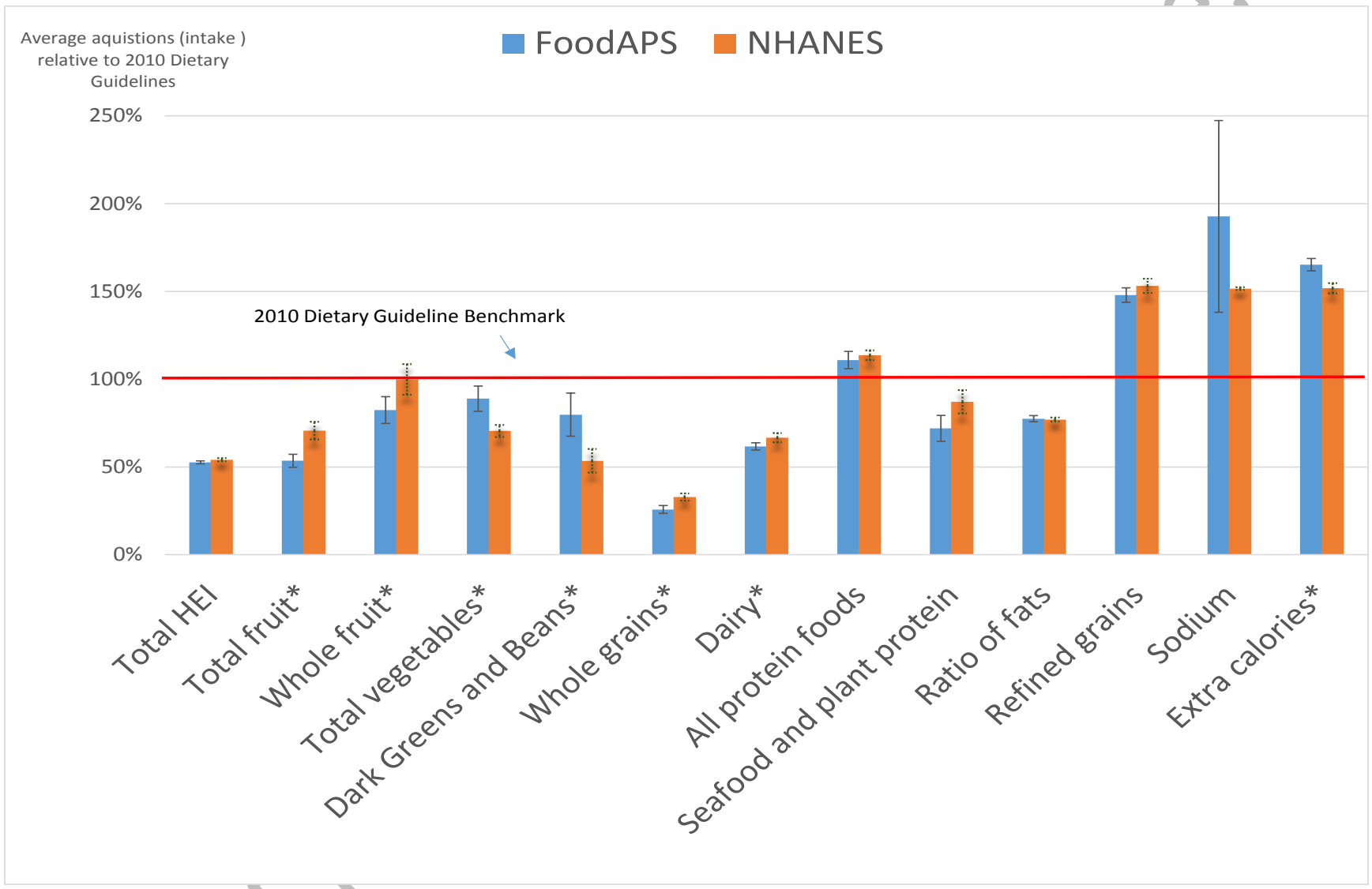
To be added

Tables and Figures

Table 1: Summary Statistics for Study Sample

Category	Variable Name	Variable Definition	Sample size	Weighted share of observations
Income and Program Participation	SNAP Households	Household currently participates in SNAP	1,581	13.6%
	Lower income Non SNAP household	Non SNAP household, income less than or equal to 185 % of poverty	1,197	17.5%
	Higher income Non SNAP household	Non SNAP household, income above 185 % of poverty	2,048	68.8%
Access	Low Access, neighborhood measure	at least 100 households do not have a vehicle and are more than 0.5 miles from a store, or tracts where at least 500 people or one-third of the tract population is more than 20 miles from a store.	860	13.9%
	Low Access, individual measure	Household is more than a mile from nearest grocery store and primary mode of transportation to grocery store is walking, busing, or public transportation or primary mode of transportation for grocery shopping is to borrow someone's car or get a ride.	483	6.8%
Price	Lowest quartile price basket	households in neighborhoods where the 4-week average of the low-cost basket was $142 or lower	1,265	30.9%
	Mid range price basket	households in neighborhoods where the 4-week average of the low-cost basket was $142-$160	2,441	48.8%
	Highest quartile price basket	households in neighborhoods where the 4-week average of the low-cost basket was more than $160	1,120	20.4%
Venue	Food at Home (FAH)--Big grocery	Acquistion from a large grocery store, super store, supermarkets, club stores, wholesaler, or military commissary	4,120	27.8%
	FAH--Other grocery	Acquisition from a medium grocery store, small grocery store, grocery store NFS, specialty specialty store, delivery route, direct marketing farmer, farmers market, or food buying co-op	765	5.8%
	FAH--all other FAH stores	Acquistion from a combination grocery/other store, conveniene store, dollar store, gas station/market, liquor store, pharmacy	2,187	13.5%
	FAH--own production	Acquistion from fishing / hunting, home garden, or other garden	216	1.9%
	other assistance*	Acquistion from a food bank/pantry or meals on wheels	104	0.5%
	Food Away From Home (FAFH)--eating places	Any restaurant you can think of, coffee shop, vending machine	3,967	27.1%
	FAFH--schools	Includes any event reported at school	1,041	4.6%
	FAFH--family, friends, etc	Includes events reported as family, friend, cookout, party, place of worship	1,684	11.8%
	FAFH--work	Includes any event reported at work	944	7.1%

Chart 1: Nutritional Profile of 2-day Dietary Intake in the National Health and Nutrition Examination Survey (NHANES) compared to 1-week acquisitions in FoodAPS



ERS calculations of 2012-2 FoodAPS and 2009-10 NHANES Data.
'*' Denotes mean differences are significant with p<.05.

Table 2: Mean differences by SNAP participation and household income

	Mean (Standard Error)					
	SNAP Households	**Non SNAP, income 100-185 % of poverty guideline**		**Non SNAP, income above 185 % of poverty guideline**		
Total HEI	47.48	51.10	***	54.26	***	
	(0.437)	(0.608)		(0.538)		
Total vegetables	0.71	1.02	**	0.94	***	
	(0.033)	(0.137)		(0.033)		
Dark Greens and Beans	0.09	0.15	**	0.17	***	
	(0.010)	(0.021)		(0.015)		
Total fruit	0.35	0.43		0.45	***	
	(0.021)	(0.036)		(0.016)		
Whole fruit	0.25	0.33	**	0.35	***	
	(0.019)	(0.034)		(0.016)		
Whole grains	0.27	0.35		0.44	***	
	(0.024)	(0.025)		(0.023)		
Dairy	0.78	0.75		0.81		
	(0.031)	(0.027)		(0.016)		
All protein foods	2.82	3.06		2.76		
	(0.073)	(0.206)		(0.058)		
Seafood and plant protein	0.44	0.60	**	0.65	***	
	(0.039)	(0.060)		(0.033)		
Ratio of fats	1.93	2.01		1.94		
	(0.032)	(0.050)		(0.021)		
Sodium	1.66	1.97		2.25		
	(0.041)	(0.173)		(0.423)		
Refined grains	2.82	2.71		2.61		
	(0.094)	(0.102)		(0.043)		
Extra calories	32.87	31.06	***	30.92	***	
	(0.403)	(0.613)		(0.390)		
Calories per person, including zeros	21,429.73	19,805.67		23,029.32		
	(903.641)	(945.719)		(1,130.900)		
Calories per person, excluding zeros	22,341.36	20,198.94		23,181.75		
	(864.076)	(899.040)		(1,127.019)		
Non-zero observations	1,527	1,178		2,034		
Total observations	1,581	1,197		2,048		

ERS calculations of FoodAPS Data.
, * Denotes mean differences from SNAP households are significant with p<.01, .05.

Table 3: Mean differences by access to food stores

	Mean (Standard Error)					
	Neighborhood Access			Personal Access		
	Low Access	Not Low Acess		Low Access	Not Low Access	
Total HEI	50.87	53.18	**	48.00	53.22	***
	(0.941)	(0.478)		(0.846)	(0.476)	
Total vegetables	0.77	0.95	***	0.85	0.93	
	(0.030)	(0.041)		(0.078)	(0.038)	
Dark Greens and Beans	0.11	0.16	**	0.11	0.16	***
	(0.015)	(0.013)		(0.015)	(0.012)	
Total fruit	0.42	0.44		0.39	0.44	
	(0.027)	(0.017)		(0.054)	(0.014)	
Whole fruit	0.32	0.34		0.28	0.34	
	(0.025)	(0.017)		(0.055)	(0.014)	
Whole grains	0.38	0.40		0.25	0.41	***
	(0.041)	(0.018)		(0.030)	(0.018)	
Dairy	0.73	0.81		0.65	0.81	***
	(0.036)	(0.014)		(0.045)	(0.014)	
All protein foods	2.75	2.77		2.70	2.77	
	(0.143)	(0.061)		(0.133)	(0.058)	
Seafood and plant protein	0.56	0.63		0.50	0.63	**
	(0.074)	(0.028)		(0.060)	(0.031)	
Ratio of fats	2.03	1.94		1.95	1.96	
	(0.054)	(0.022)		(0.072)	(0.022)	
Sodium	3.03	1.91		1.70	2.09	
	(1.026)	(0.233)		(0.100)	(0.272)	
Refined grains	2.75	2.66		3.00	2.64	
	(0.095)	(0.039)		(0.174)	(0.035)	
Extra calories	31.53	31.13		32.06	31.12	
	(0.680)	(0.382)		(0.811)	(0.370)	
Calories per person, including zeros	21,393.39	21,768.02		21,441.95	21,735.83	
	(1,578.901)	(655.827)		(1,093.393)	(614.588)	
Calories per person, excluding zeros	22,196.34	21,984.26		22,033.26	22,011.68	
	(1,513.039)	(632.254)		(1,053.406)	(596.864)	
Non-zero observations	837	3,902		471	4,268	
Total observations	860	3,966		483	4,343	

ERS calculations of FoodAPS Data.

, * Denotes mean differences from low access households are significant with p<.01, .05.

Table 4: Mean differences by access, within SNAP and income groupings

	Mean (Standard Error)											
	SNAP Households				Non SNAP, income 100-185 % of poverty guideline				Non SNAP, income > 185 % of poverty guideline			
	Neighborhood Access		Personal Access		Neighborhood Access		Personal Access		Neighborhood Access		Personal Access	
	Low Access	Not Low Access	Low Access	Not Low Access	Low Access	ot Low Access	Low Access	Not Low Access	Low Access	Not Low Access	Low Access	Not Low Access
Total HEI	45.25	48.13 ***	46.31	47.79	50.20	51.37	46.99	51.72	53.73	54.41	52.44	54.38
	(0.744)	(0.577)	(1.034)	(0.509)	(1.771)	(0.692)	(1.635)	(0.739)	(1.366)	(0.565)	(2.550)	(0.568)
Total vegetables	0.71	0.72	0.80	0.70	0.77	1.10	0.81	1.07	0.80	0.96 ***	1.02	0.94
	(0.086)	(0.031)	(0.107)	(0.028)	(0.071)	(0.170)	(0.080)	(0.155)	(0.042)	(0.032)	(0.195)	(0.029)
Dark Greens and Beans	0.09	0.10	0.11	0.09	0.12	0.16	0.11	0.16	0.12	0.18	0.11	0.17
	(0.021)	(0.011)	(0.027)	(0.009)	(0.019)	(0.028)	(0.022)	(0.026)	(0.024)	(0.016)	(0.036)	(0.015)
Total fruit	0.39	0.34	0.29	0.37	0.42	0.44	0.36	0.44	0.43	0.46	0.62	0.45
	(0.065)	(0.025)	(0.040)	(0.026)	(0.046)	(0.045)	(0.077)	(0.042)	(0.039)	(0.017)	(0.179)	(0.017)
Whole fruit	0.30	0.24	0.20	0.27	0.34	0.34	0.26	0.35	0.32	0.36	0.45	0.35
	(0.060)	(0.022)	(0.032)	(0.022)	(0.042)	(0.043)	(0.058)	(0.040)	(0.040)	(0.016)	(0.205)	(0.015)
Whole grains	0.19	0.30 ***	0.25	0.28	0.28	0.37	0.28	0.36	0.51	0.43	0.22	0.44 ***
	(0.028)	(0.028)	(0.048)	(0.027)	(0.052)	(0.031)	(0.065)	(0.031)	(0.069)	(0.024)	(0.052)	(0.024)
Dairy	0.74	0.80	0.68	0.82	0.73	0.76	0.58	0.78	0.73	0.82	0.68	0.81
	(0.044)	(0.038)	(0.059)	(0.035)	(0.065)	(0.030)	(0.101)	(0.029)	(0.043)	(0.016)	(0.126)	(0.016)
All protein foods	2.85	2.75	2.78	2.77	2.94	2.99	2.82	3.00	2.61	2.73	2.40	2.72
	(0.186)	(0.071)	(0.173)	(0.070)	(0.184)	(0.240)	(0.281)	(0.227)	(0.218)	(0.052)	(0.336)	(0.053)
Seafood and plant protein	0.39	0.45	0.37	0.46	0.69	0.59	0.67	0.61	0.57	0.67	0.51	0.66 **
	(0.088)	(0.034)	(0.042)	(0.047)	(0.166)	(0.057)	(0.184)	(0.069)	(0.091)	(0.034)	(0.061)	(0.034)
Ratio of fats	1.92	1.92	1.97	1.90	2.04	2.00	1.96	2.01	2.08	1.94	1.91	1.95
	(0.053)	(0.038)	(0.050)	(0.037)	(0.107)	(0.055)	(0.144)	(0.051)	(0.071)	(0.023)	(0.120)	(0.022)
Sodium	1.68	1.66	1.63	1.67	2.28	1.90	1.97	1.98	4.03	1.95	1.46	2.17
	(0.111)	(0.048)	(0.099)	(0.053)	(0.544)	(0.138)	(0.269)	(0.182)	(1.931)	(0.320)	(0.159)	(0.370)
Refined grains	3.12	2.77	3.15	2.76	2.65	2.75	2.97	2.69	2.63	2.62	2.78	2.62
	(0.300)	(0.068)	(0.337)	(0.072)	(0.195)	(0.115)	(0.274)	(0.097)	(0.116)	(0.039)	(0.237)	(0.038)
Extra calories	31.76	33.18	31.33	33.28	32.02	30.84	34.46	30.60	31.18	30.86	30.06	30.91
	(0.792)	(0.437)	(1.282)	(0.431)	(1.079)	(0.689)	(1.960)	(0.627)	(0.944)	(0.456)	(2.396)	(0.449)
Calories per person, including zeros	18,616.43	22,189.32	24,301.03	20,501.40	19,723.29	19,473.80	20,515.53	19,381.10	23,577.71	22,211.45	17,354.08	22,467.20
	(1,386.057)	(1,064.515)	(2,530.093)	(672.426)	(1,710.554)	(944.664)	(2,267.152)	(861.291)	(2,423.656)	(806.475)	(1,547.198)	(786.546)
Calories per person, excluding zeros	20,199.48	22,851.10	25,305.84	21,380.40	20,015.50	19,886.78	21,119.53	19,738.98	24,252.09	22,304.70	17,354.08	22,619.43 ***
	(1,183.187)	(1,070.772)	(2,520.972)	(654.995)	(1,694.224)	(894.660)	(2,100.206)	(846.407)	(2,414.885)	(793.133)	(1,547.198)	(777.814)
Non-zero observations	367	1,160	297	1,230	236	942	118	1,060	234	1,800	56	1,978
Total observations	383	1,198	307	1,274	240	957	120	1,077	237	1,811	56	1,992

ERS calculations of FoodAPS Data.

, * Denotes mean differences from SNAP households are significant with p<.01, .05.

Table 5: Mean differences by food costs

	Mean (Standard Error)					
	Lowest quartile price basket	Mid range price basket		Highest quartile price basket		
Total HEI	51.05	53.62	**	53.55		
	(0.928)	(0.508)		(0.971)		
Total vegetables	0.88	0.97		0.89		
	(0.049)	(0.065)		(0.053)		
Dark Greens and Beans	0.12	0.17	**	0.18	**	
	(0.013)	(0.017)		(0.021)		
Total fruit	0.36	0.45	**	0.49	**	
	(0.039)	(0.016)		(0.026)		
Whole fruit	0.29	0.34		0.38		
	(0.040)	(0.015)		(0.027)		
Whole grains	0.40	0.40		0.41		
	(0.034)	(0.020)		(0.043)		
Dairy	0.79	0.80		0.78		
	(0.011)	(0.019)		(0.039)		
All protein foods	2.73	2.88		2.80		
	(0.102)	(0.098)		(0.090)		
Seafood and plant protein	0.54	0.63		0.69	***	
	(0.036)	(0.046)		(0.055)		
Ratio of fats	1.92	1.97		1.95		
	(0.035)	(0.026)		(0.037)		
Sodium	1.60	2.11		2.94		
	(0.054)	(0.414)		(1.079)		
Refined grains	2.69	2.65		2.62		
	(0.072)	(0.056)		(0.075)		
Extra calories	32.55	30.60	**	30.60		
	(0.689)	(0.301)		(0.775)		
Calories per person, including zeros	22,117.62	21,839.17		23,413.23		
	(871.892)	(1,363.819)		(2,267.927)		
Calories per person, excluding zeros	22,473.20	22,141.23		23,641.73		
	(859.703)	(1,369.742)		(2,191.292)		
Non-zero observations	1,237	2,395		1,107		
Total observations	1,265	2,441		1,120		

ERS calculations of FoodAPS Data.

, * Denotes mean differences from households in low price areas are significant with p<.01, .05.

Table 6: Mean differences by food costs, within SNAP and income groupings

	Mean (Standard Error)								
	SNAP Households			Non SNAP, income 100-185 % of poverty guideline			Non SNAP, income > 185 % of poverty guideline		
	Lowest quartile price basket	Mid range price basket	Highest quartile price basket	Lowest quartile price basket	Mid range price basket	Highest quartile price basket	Lowest quartile price basket	Mid range price basket	Highest quartile price basket
Total HEI	46.75	47.36	49.01	49.26	52.09	51.60	52.37	55.15 **	54.95
	(0.682)	(0.742)	(0.982)	(1.201)	(0.919)	(1.678)	(1.187)	(0.648)	(1.136)
Total vegetables	0.75	0.68	0.75	0.90	1.18	0.85	0.90	0.98	0.93
	(0.072)	(0.034)	(0.058)	(0.060)	(0.290)	(0.124)	(0.060)	(0.053)	(0.053)
Dark Greens and Beans	0.08	0.09	0.11	0.17	0.13	0.15	0.12	0.19 ***	0.21 ***
	(0.019)	(0.010)	(0.022)	(0.058)	(0.013)	(0.039)	(0.010)	(0.024)	(0.022)
Total fruit	0.36	0.33	0.38	0.40	0.40	0.52	0.35	0.49 ***	0.50 **
	(0.054)	(0.037)	(0.046)	(0.108)	(0.032)	(0.042)	(0.038)	(0.016)	(0.035)
Whole fruit	0.26	0.23	0.29	0.31	0.31	0.41	0.29	0.37	0.39
	(0.056)	(0.031)	(0.041)	(0.105)	(0.028)	(0.039)	(0.037)	(0.016)	(0.040)
Whole grains	0.28	0.26	0.29	0.30	0.39	0.33	0.45	0.42	0.46
	(0.041)	(0.030)	(0.056)	(0.047)	(0.046)	(0.033)	(0.042)	(0.028)	(0.067)
Dairy	0.77	0.75	0.84	0.81	0.75	0.69	0.79	0.82	0.80
	(0.050)	(0.030)	(0.075)	(0.065)	(0.039)	(0.041)	(0.021)	(0.023)	(0.048)
All protein foods	2.83	2.75	2.97	2.86	3.24	2.97	2.68	2.82	2.72
	(0.099)	(0.112)	(0.176)	(0.168)	(0.401)	(0.267)	(0.121)	(0.093)	(0.117)
Seafood and plant protein	0.42	0.42	0.51	0.62	0.54	0.71	0.54	0.70	0.71 **
	(0.084)	(0.032)	(0.096)	(0.097)	(0.078)	(0.137)	(0.053)	(0.055)	(0.065)
Ratio of fats	1.93	1.92	1.93	1.94	2.08	1.98	1.92	1.95	1.94
	(0.049)	(0.036)	(0.102)	(0.087)	(0.060)	(0.082)	(0.036)	(0.031)	(0.045)
Sodium	1.66	1.67	1.65	2.02	1.79	2.25	1.49	2.26	3.37
	(0.053)	(0.057)	(0.081)	(0.290)	(0.133)	(0.558)	(0.037)	(0.592)	(1.561)
Refined grains	2.84	2.85	2.74	2.74	2.68	2.72	2.65	2.60	2.57
	(0.227)	(0.087)	(0.140)	(0.164)	(0.126)	(0.228)	(0.091)	(0.062)	(0.081)
Extra calories	33.14	33.65	30.45	32.39	29.74	31.93	32.47	30.23 **	30.25
	(0.929)	(0.501)	(1.316)	(0.982)	(1.011)	(0.906)	(0.916)	(0.422)	(0.993)
Calories per person, including zeros	24,358.04	20,290.75	19,476.62 **	19,119.83	19,027.18	22,287.32	22,429.69	22,812.16	24,488.58
	(1,747.031)	-1,027.70	(1,563.604)	(1,679.637)	(1,115.107)	-2,024.91	(1,065.618)	(1,899.663)	(3,162.310)
Calories per person, excluding zeros	25,253.96	21,339.32	20,041.70	19,590.33	19,361.84	22,689.23	22,648.68	22,944.74	24,581.89
	(1,654.537)	(957.250)	(1,648.055)	(1,558.673)	(1,111.056)	(2,063.233)	(1,054.774)	(1,897.328)	(3,120.539)
Non-zero observations	417	751	359	325	576	277	495	1,068	471
Total observations	435	780	366	331	585	281	499	1,076	473

ERS calculations of FoodAPS Data.

, * Denotes mean differences from SNAP households are significant with p<.01, .05.

Table 7: Mean differences by food store outlet

	Mean (Standard Error)																					
	Food at Home (FAH)--Big grocery		FAH--Other grocery			FAH--all other FAH stores			FAH--own production			Other assistance*			Food Away From Home (FAFH)--eating places			FAFH--schools			FAFH--family, friends, etc			FAFH--work		
Total HEI	51.996		42.423	***		36.242	***		49.766			46.595			42.228	***		46.214	***		41.891	***		38.006	***	
	(0.445)		(0.807)			(0.803)			(2.190)			(3.373)			(0.263)			(0.864)			(0.498)			(0.905)		
Total vegetables	0.842		4.224	***		0.584	***		24.151			2.148			0.960	***		0.649	***		1.364	***		0.670	**	
	(0.027)		(0.573)			(0.067)			(2.350)			(0.864)			(0.035)			(0.046)			(0.159)			(0.080)		
Dark Greens and Beans	0.149		0.598	***		0.072	***		4.531			0.132			0.211	**		0.032	***		0.207			0.166		
	(0.021)		(0.151)			(0.016)			(1.053)			(0.029)			(0.017)			(0.004)			(0.037)			(0.046)		
Total fruit	0.588		1.395	***		0.367	***		1.620	***		0.249	***		0.112	***		0.778			0.477			0.311	***	
	(0.024)		(0.215)			(0.057)			(0.625)			(0.055)			(0.007)			(0.088)			(0.061)			(0.052)		
Whole fruit	0.461		1.358	***		0.269	***		1.620	***		0.218	***		0.064	***		0.597			0.381			0.253	***	
	(0.026)		(0.217)			(0.054)			(0.625)			(0.054)			(0.005)			(0.078)			(0.060)			(0.048)		
Whole grains	0.527		0.239	***		0.274	***		0.002			0.662			0.084	***		0.408	**		0.138	***		0.252	***	
	(0.026)		(0.040)			(0.061)			(0.002)			(0.134)			(0.011)			(0.042)			(0.016)			(0.037)		
Dairy	0.841		0.385	***		0.928			0.019	***		0.414	***		0.706	***		1.432	***		0.451	***		0.485	***	
	(0.019)		(0.051)			(0.164)			(0.009)			(0.071)			(0.015)			(0.063)			(0.023)			(0.031)		
All protein foods	2.598		2.180			1.328	***		2.160			2.464			3.217	***		1.977	***		3.100	***		2.061	***	
	(0.066)		(0.227)			(0.082)			(0.734)			(0.425)			(0.052)			(0.056)			(0.071)			(0.138)		
Seafood and plant protein	0.627		0.546			0.537			1.289			0.504			0.502	**		0.238	***		0.472	**		0.400	***	
	(0.036)		(0.125)			(0.058)			(0.619)			(0.104)			(0.032)			(0.022)			(0.056)			(0.064)		
Ratio of fats	2.009		2.523			2.038			2.893	***		2.069			1.994			1.710	***		2.215	***		2.492	***	
	(0.025)		(0.108)			(0.080)			(0.232)			(0.153)			(0.023)			(0.031)			(0.065)			(0.073)		
Sodium	2.158		1.152	**		1.952			0.765	***		1.642			1.764			1.642			1.677			1.721		
	(0.359)		(0.129)			(0.476)			(0.205)			(0.390)			(0.017)			(0.026)			(0.034)			(0.061)		
Refined grains	2.384		1.819	***		1.778	***		0.295	***		3.388			3.259	***		3.252	***		2.918	***		3.094	***	
	(0.037)		(0.127)			(0.090)			(0.240)			(0.554)			(0.040)			(0.091)			(0.077)			(0.226)		
Extra calories	31.571		22.851	***		39.941	***		1.773	***		14.580	***		30.179	***		31.300			28.664	***		31.150		
	(0.402)		(1.975)			(0.872)			(0.561)			(1.569)			(0.335)			(0.844)			(0.835)			(0.956)		
Calories per person, including zeros	14,463.595		627.215	***		1,420.383	***		50.830	***		89.947	***		3,697.463	***		497.914	***		840.621	***		325.161	***	
	(587.803)		(123.261)			(123.098)			(13.378)			(24.097)			(91.239)			(46.969)			(53.440)			(22.083)		
Calories per person, excluding zeros	16,439.449		3,438.718	***		3,329.756	***		824.071	***		6,075.753	***		4,301.386	***		3,410.032	***		2,257.291	***		1,455.480	***	
	(629.734)		(508.126)			(240.851)			(175.630)			(815.261)			(98.397)			(190.604)			(100.389)			(79.224)		
Sample size	4120		765			2,187			216			104			3,967			1,041			1,684			944		

ERS calculations of FoodAPS Data.

, * Denotes mean differences from FAH—big grocery are significant with p<.01, .05.

Table 8: Mean differences by food store outlet, within SNAP and income category (sorry, not readable but will fix)

	Food at Home (FAH)--Big grocery			FAH--Other grocery			FAH--all other FAH stores			FAH--own production			other assistance*			Food Away From Home (FAFH)--eating places			FAFH--schools			FAFH--family, friends, etc			FAFH--work		
	SNAP Households	Lower income Non SNAP household	Higher income Non SNAP household	SNAP Households	Lower income Non SNAP household	Higher income Non SNAP household	SNAP Households	Lower income Non SNAP household	Higher income Non SNAP household	SNAP Households	Lower income Non SNAP household	Higher income Non SNAP household	SNAP Households	Lower income Non SNAP household	Higher income Non SNAP household	SNAP Households	Lower income Non SNAP household	Higher income Non SNAP household	SNAP Households	Lower income Non SNAP household	Higher income Non SNAP household	SNAP Households	Lower income Non SNAP household	Higher income Non SNAP household	SNAP Households	Lower income Non SNAP household	Higher income Non SNAP household
Total HEI	45.513	49.802 ***	53.731 ***	35.888	40.932	43.614 ***	34.566	35.032	36.944	40.312	53.275	49.895	49.619	42.317	46.132	39.325	39.756	43.248 ***	46.386	42.862	46.316	39.419	42.038	42.362 **	36.718	37.259	38.230
	(0.696)	(0.880)	(0.628)	(2.169)	(1.983)	(1.004)	(1.073)	(1.199)	(0.968)	(6.694)	(1.544)	(2.888)	(3.116)	(5.367)	(9.280)	(0.539)	(0.598)	(0.335)	(0.944)	(2.038)	(1.028)	(1.275)	(1.564)	(0.565)	(1.699)	(2.427)	(1.016)
Total vegetables	0.622	0.954 **	0.855 ***	2.684	4.798	4.326	0.460	0.742	0.577	22.196	21.209	25.220	3.336	0.723	1.468	0.819	0.835	1.010 **	0.557	0.604	0.684	0.803	2.332 **	1.256 **	0.735	0.570	0.676
	(0.042)	(0.121)	(0.025)	(0.754)	(1.295)	(0.609)	(0.070)	(0.146)	(0.092)	(4.038)	(2.304)	(3.024)	(1.622)	(0.153)	(0.518)	(0.072)	(0.032)	(0.046)	(0.044)	(0.044)	(0.071)	(0.066)	(0.685)	(0.183)	(0.168)	(0.064)	(0.099)
Dark Greens and Beans	0.084	0.241	0.138 ***	0.147	0.665	0.648 ***	0.024	0.184	0.057	0.702	5.431 **	4.731 **	0.126	0.110	0.195	0.145	0.133	0.239 **	0.046	0.031	0.028	0.132	0.440	0.169	0.098	0.070	0.185
	(0.011)	(0.114)	(0.010)	(0.073)	(0.357)	(0.184)	(0.011)	(0.094)	(0.012)	(0.429)	(1.932)	(1.576)	(0.031)	(0.064)	(0.076)	(0.042)	(0.012)	(0.021)	(0.008)	(0.011)	(0.005)	(0.024)	(0.233)	(0.018)	(0.019)	(0.015)	(0.055)
Total fruit	0.473	0.596	0.607 **	1.281	1.179	1.452	0.176	0.467	0.391 ***	0.951	1.404	1.761	0.249	0.273	0.199	0.105	0.111	0.113	0.782	0.613	0.812	0.400	0.447	0.500	0.142	0.503 **	0.304 **
	(0.052)	(0.079)	(0.027)	(0.530)	(0.272)	(0.286)	(0.022)	(0.147)	(0.069)	(0.540)	(0.676)	(0.767)	(0.094)	(0.082)	(0.075)	(0.013)	(0.011)	(0.009)	(0.091)	(0.044)	(0.123)	(0.091)	(0.143)	(0.088)	(0.032)	(0.135)	(0.059)
Whole fruit	0.343	0.493	0.475 **	1.174	1.137	1.426	0.094	0.376	0.287 ***	0.951	1.404	1.761	0.220	0.263	0.127	0.065	0.058	0.065	0.542	0.410	0.653	0.264	0.365	0.408	0.089	0.369 **	0.255 ***
	(0.046)	(0.081)	(0.028)	(0.531)	(0.276)	(0.287)	(0.020)	(0.148)	(0.068)	(0.540)	(0.676)	(0.767)	(0.092)	(0.083)	(0.060)	(0.010)	(0.008)	(0.007)	(0.066)	(0.046)	(0.106)	(0.086)	(0.135)	(0.082)	(0.028)	(0.124)	(0.053)
Whole grains	0.312	0.447	0.586 ***	0.279	0.320	0.218	0.260	0.184	0.299	0.000	0.000	0.003	0.693	0.582	0.725	0.044	0.062	0.096 ***	0.415	0.316 ***	0.425	0.159	0.139	0.133	0.207	0.186	0.265
	(0.032)	(0.038)	(0.036)	(0.138)	(0.131)	(0.046)	(0.070)	(0.038)	(0.086)	(0.000)	(0.000)	(0.003)	(0.181)	(0.290)	(0.268)	(0.007)	(0.017)	(0.015)	(0.027)	(0.017)	(0.059)	(0.026)	(0.051)	(0.022)	(0.099)	(0.083)	(0.043)
Dairy	0.793	0.811	0.857	0.650	0.460	0.333	0.540	0.868	1.038 ***	0.017	0.012	0.021	0.302	0.448	0.673	0.715	0.661	0.714	1.625	1.340 ***	1.397 ***	0.461	0.487	0.441	0.575	0.547	0.468
	(0.033)	(0.048)	(0.023)	(0.270)	(0.132)	(0.054)	(0.062)	(0.297)	(0.169)	(0.012)	(0.011)	(0.012)	(0.078)	(0.119)	(0.257)	(0.029)	(0.032)	(0.019)	(0.055)	(0.100)	(0.078)	(0.032)	(0.053)	(0.028)	(0.073)	(0.087)	(0.038)
All protein foods	2.682	2.790	2.536	2.025	2.079	2.221	1.478	1.268	1.305	0.205	3.309	2.065 **	2.215	3.268	1.621	3.029	3.120	3.269	2.211	2.173	1.869 **	3.379	3.383	2.979 **	2.281	1.928	2.056
	(0.102)	(0.239)	(0.068)	(0.416)	(0.345)	(0.282)	(0.166)	(0.165)	(0.115)	(0.158)	(1.674)	(0.862)	(0.441)	(1.574)	(0.483)	(0.132)	(0.107)	(0.068)	(0.076)	(0.159)	(0.088)	(0.130)	(0.246)	(0.100)	(0.277)	(0.201)	(0.156)
Seafood and plant protein	0.473	0.587	0.666 **	0.273	0.650	0.564	0.389	0.518	0.578	0.126	1.841	1.270	0.518	0.447	0.575	0.334	0.426	0.546 ***	0.243	0.217	0.241	0.270	0.679	0.466 **	0.288	0.339	0.419
	(0.054)	(0.074)	(0.040)	(0.110)	(0.285)	(0.147)	(0.064)	(0.099)	(0.090)	(0.129)	(1.103)	(0.767)	(0.125)	(0.159)	(0.282)	(0.042)	(0.071)	(0.041)	(0.029)	(0.033)	(0.029)	(0.053)	(0.189)	(0.063)	(0.093)	(0.114)	(0.074)
Ratio of fats	1.910	2.043	2.019 **	1.661	1.973	2.749 ***	2.094	2.250	1.974	2.556	3.130	2.865	2.104	2.168	1.771	1.988	1.987	1.996	1.634	1.631	1.748	2.023	2.126	2.274 **	2.240	2.128	2.563
	(0.046)	(0.053)	(0.029)	(0.127)	(0.211)	(0.147)	(0.105)	(0.135)	(0.100)	(0.498)	(0.332)	(0.312)	(0.193)	(0.262)	(0.355)	(0.033)	(0.056)	(0.029)	(0.029)	(0.066)	(0.048)	(0.062)	(0.102)	(0.093)	(0.221)	(0.176)	(0.087)
Sodium	1.642	1.962	2.301	1.123	1.075	1.171	2.041	4.248	1.379	0.297	0.608	0.866 **	1.805	1.604	1.240	1.634	1.713	1.796 ***	1.733	1.631	1.618 **	1.701	1.718	1.663	1.620	1.654	1.739
	(0.057)	(0.241)	(0.514)	(0.261)	(0.083)	(0.167)	(0.854)	(2.497)	(0.094)	(0.058)	(0.139)	(0.255)	(0.678)	(0.422)	(0.316)	(0.039)	(0.048)	(0.019)	(0.032)	(0.083)	(0.040)	(0.052)	(0.063)	(0.046)	(0.127)	(0.141)	(0.067)
Refined grains	2.563	2.502	2.323	1.739	1.939	1.806	1.872	1.976	1.707	0.086	0.081	0.381	3.259	3.720	3.118	3.118	3.113	3.314 **	3.488	3.095 **	3.218	3.122	2.789	2.905	2.873	2.880	3.144
	(0.145)	(0.132)	(0.051)	(0.301)	(0.378)	(0.181)	(0.101)	(0.188)	(0.136)	(0.060)	(0.054)	(0.336)	(0.593)	(0.900)	(1.093)	(0.075)	(0.101)	(0.057)	(0.106)	(0.126)	(0.142)	(0.160)	(0.196)	(0.089)	(0.243)	(0.292)	(0.262)
Extra calories	33.637	30.671 ***	31.403 **	22.514	26.848	22.126	43.272	38.140 **	39.556	0.879	2.843	1.576	14.746	14.264	14.715	31.025	30.727	29.921	29.382	28.247	32.500	27.687	27.388	29.157	36.188	30.025	30.790
	(0.739)	(0.752)	(0.533)	(3.548)	(4.142)	(2.303)	(1.665)	(1.506)	(1.173)	(0.668)	(1.334)	(0.704)	(2.114)	(2.166)	(4.986)	(0.849)	(0.680)	(0.435)	(0.715)	(1.230)	(1.272)	(1.348)	(1.600)	(1.339)	(3.199)	(2.000)	(1.121)
Calories per person, including zeros	13,835.849	13,432.364	14,843.190	437.325	652.791	657.110	2,382.000	1,362.754 **	1,250.900 ***	23.226	150.928	30.924	357.137	171.859	18.215 ***	2,733.844	2,720.938	4,127.553 ***	975.521	425.319 ***	424.802 ***	1,199.514	789.587 **	784.797 **	295.967	207.431	360.372
	(568.215)	(945.403)	(808.038)	(134.172)	(286.069)	(123.746)	(400.256)	(154.266)	(111.006)	(15.531)	(74.383)	(4.652)	(98.851)	(81.586)	(9.638)	(119.597)	(162.224)	(119.434)	(101.285)	(44.295)	(55.673)	(168.242)	(87.632)	(59.960)	(58.477)	(51.078)	(32.853)
Calories per person, excluding zeros	15,982.973	15,796.838	16,678.906	3,060.795	4,302.135	3,324.209	4,478.265	3,446.352	3,019.607 **	588.286	2,105.854	487.636	6,438.716	6,084.610	5,000.931	3,622.177	3,423.983	4,606.667 ***	4,669.650	3,549.898 ***	3,021.889 ***	2,994.004	2,314.750	2,093.493 **	2,156.158	1,569.315	1,371.064 **
	(645.573)	(962.532)	(855.766)	(957.668)	(1,494.668)	(515.685)	(696.294)	(338.742)	(232.287)	(319.505)	(997.662)	(63.578)	(661.881)	(2,083.787)	(2,125.594)	(118.298)	(184.920)	(130.329)	(327.728)	(258.914)	(212.973)	(354.934)	(244.774)	(109.439)	(351.275)	(267.436)	(85.192)
Sample size	1,325	1,006	1,789	220	176	369	811	507	869	45	62	109	45	46	13	1,181	961	1,825	439	254	348	547	420	717	209	190	545

ERS calculations of FoodAPS Data.

, * Denotes mean differences from SNAP households are significant with p<.01, .05.