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Foods and Beverages Obtained at Worksites in the United States

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Abstract

Background—Nutrition interventions are a common component of worksite wellness programs and have been recognized as an effective strategy to change employee dietary behaviors. However, little is known about worksite food behaviors or the foods that are obtained at workplaces at the national level.

Objective—The aims were to examine the frequency of obtaining foods at work among employed US adults and the amount of money spent obtaining them, determine the foods most commonly obtained at work, and assess the dietary quality of these foods.

Design—This is a cross-sectional analysis of data from the USDA Food Acquisition and Purchasing Survey (FoodAPS), a nationally representative household survey conducted from April 2012 through January 2013 on food purchases and acquisitions during a seven-day study period.

Participants—The study included 5222 employed adult Americans.

Main outcome measures—The study assessed the prevalence of obtaining any foods at work overall and according to sociodemographic subgroups, number of acquisitions and calories obtained, most commonly obtained foods and leading food sources of calories, and HEI-2010 scores that represent dietary quality.

Statistical analyses performed—Prevalence estimates of obtaining ≥1 foods at work were compared according to sociodemographic characteristic using chi-square tests.

Results—Nearly a quarter (23.4%) of working adults obtained foods at work during the week and the foods they obtained averaged 1292 kcal per person/week. The leading food types obtained included foods typically high in solid fat, added sugars, or sodium, such as pizza, soft drinks, cookies/brownies, cakes and pies, and candy. HEI scores suggest that work foods are high in empty calories, sodium, and refined grains and low in whole grains and fruit.

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Conclusions—Working adults commonly obtain foods at work and the foods they obtain have limited dietary quality. Future research should examine the role worksites can play to help ensure access to and promote healthier options.

Keywords

worksite; wellness; adults; obesity; nutrition

Introduction

Chronic diseases, such as heart disease, type 2 diabetes, and cancer, account for seven of the top ten leading causes of death in the United States [1] and people with chronic disease account for 84% of health care costs.[2] With approximately 150 million working adults,[3] worksite wellness efforts to prevent chronic disease have the potential to reach a large portion of the American public. Comprehensive worksite wellness programs include both individual and employer level components to address physical and mental health and feature programs for employees to improve health behaviors such as nutrition counseling, organizational policies such as smoke free policies, benefits such as health insurance coverage, and workplace environmental supports such the provision of healthy food options in cafeterias.[4] Worksite wellness programs have also been shown to be effective at changing health behaviors among employees, reducing employee absenteeism, and reducing healthcare costs.[5] Previous research suggests the American workforce does not have good health behaviors. For example, in 2010, nearly three in ten employed adults in the United States had obesity and employed adults with obesity reported lower consumption of fruits and vegetables and less frequent leisure time physical activity than normal weight adults [6]. Because obesity and low dietary quality are important risk factors for chronic diseases,[7,8] improving the nutritional quality of foods consumed at work can be a key component in worksite wellness efforts. This can include improving the healthfulness of foods offered in cafeterias and vending machines as well as foods served during meetings and events.[9] These efforts have the potential to be far-reaching because around half of working adults have food or beverage vending machines at work and 30% have a cafeteria.[10] Furthermore, over half of employed Americans report that cafeterias and vending machines were important sources of lunch purchases during work.[11]

Despite the recognized effectiveness of worksite nutrition and physical activity interventions to prevent obesity,[12] little is known about recent worksite food behaviors or the foods that are obtained at workplaces. One recent study found employees reported that, although they may have access to cafeterias and vending machines at work, healthy options were limited.[10] Most other studies of the healthfulness of foods in cafeterias were limited to the school environment,[13] which is governed by United States Department of Agriculture (USDA) nutrition standards for school meals and not easily comparable to workplace cafeterias that service adults.[14] Furthermore, existing studies of workplace nutrition are limited to interventions in small or non-representative workplaces.[15,16] Knowledge of how often foods are obtained at worksites, the people who obtain them, and nutritional information on the foods that are obtained could help guide efforts to improve nutritional intake of employees at work. Therefore, the purposes of this study are to examine how frequently employed U.S.

adults obtain foods (including beverages) at work, determine how much they spend on these foods, identify the most common foods obtained, and measure the dietary quality of these foods.

Materials and Methods

Design and Sample

This cross-sectional study used data from the Food Acquisition and Purchasing Survey (FoodAPS), a nationally representative survey of American households to examine household food purchases and acquisitions conducted by the USDA Economic Research Service.[17] FoodAPS was contracted by USDA to Mathematica Policy Research, whose Institutional Review Board approved the study protocol.[18] All participants provided written informed consent. Data were collected from April 2012 and January 2013 and included information such as amount acquired and price paid on all foods obtained (purchased or acquired for free) by members of the household during a seven-day period, including foods consumed at home and away from home. Each household member recorded information on food acquisitions in a food book, scanned barcodes of acquired food products, and saved store and restaurant receipts. Other data, such as demographics, were obtained through household visit interviews. The survey had a response rate of 41.5%. The final sample includes 14,317 individuals from 4826 households. Further information on subject eligibility, recruitment procedures, and assessment of nonresponse is available online.[17]

Because the focus of the present study was foods obtained at work, analyses were restricted to currently working adults 18 years of age and older (n=5311); participants were considered to be currently working if they did any work at a job or business in the week prior to the interview, including unpaid work in a family farm or business. Participants (1.7%) were also excluded if they had missing data for covariates including race/ethnicity (n=4), marital status (n=5), and body mass index (n=80), leaving a final sample of 5222 working adults. FoodAPS collected data on all food-away-from-home purchases and acquisitions made by study households during the seven-day period, including the place where the food was obtained. The present study focused on the 3016 food acquisition occasions and corresponding 6682 foods obtained by working adults during the 7-day study period where the place obtained was reported as “work” and the 103 occasions and 167 foods where the place obtained was reported as “vending” and the place name specified that the vending machine was located at work. These foods may include those obtained in worksite vending machines, cafeterias and snack bars, common breakroom areas, brought in and shared by other employees, or obtained during worksite meetings and events. For all results presented in this study, “foods” also include beverages.

Measures

The study examined prevalence and associated 95% confidence intervals of obtaining at least one food at the workplace (acquired for free, purchased, and overall combined free or purchased) during the one-week study period overall and by participant characteristics. Characteristics included sex, age (18–39, 40–59, or ≥60 years), race/ethnicity (Non-Hispanic [NH] white, NH black, Hispanic, or NH other), education level (<high school, high school

diploma or GED, some college, or college graduate), marital status (married, never married, or divorced/separated/widowed), self-reported weight status (Body Mass Index [BMI]<25.0 kg/m^2 = underweight/normal weight, 25.0≤BMI<30.0 kg/m2 = overweight, or BMI≥30.0 kg/m^2 = obesity), and household income/Supplemental Nutrition Assistance Program (SNAP) status. Income/SNAP status was categorized into 4 groups: non-SNAP recipient and income <100% Federal Poverty Level (FPL), non-SNAP and income ≥100% and <185% FPL, non-SNAP and income ≥185% FPL, and SNAP recipient household.[19]

The study used USDA 4-digit food categories to determine which foods and beverage types were most frequently obtained at work and which were the leading sources of energy (kcal). Because they are similar foods and both were leading food categories, chicken/turkey sandwiches and sandwiches (other) were combined into one sandwich category.

Dietary quality of foods obtained from work was assessed using the 2010 Healthy Eating Index (HEI-2010) [20] developed by the USDA and the National Cancer Institute and reflective of current dietary guidance at the time of the FoodAPS study. The HEI-2010 measures conformance with the *2010 Dietary Guidelines for Americans* [8] by assessing the nutrient density of each of 12 dietary constituents to that of some other. For the majority of the components, intakes are quantified in terms of calorie-density (such as oz. equivalents per 1000 calories for whole grains and total protein foods or 'percent of energy' from empty calories). An exception is the fatty acids component that is measured as the ratio of unsaturated fats to saturated fats. These measures correspond with 12 separate HEI-2010 subscores. Subscores have minimum scores of 0 and maximum scores of either 5, 10 or 20, depending on the component. Subscores were summed together to get the total HEI-2010 score; the maximum total HEI-2010 score is 100. Higher total HEI-2010 scores and subscores indicate greater adherence to dietary guidance. There are nine adequacy components where higher scores correspond with greater density per caloric content of the corresponding nutrients or food groups: Total Fruit, Whole Fruit, Total Vegetables, Greens and Beans, Whole Grains, Dairy, Total Protein Foods, Seafood and Plant Proteins, and Fatty Acids (higher score indicates greater ratio of unsaturated fats to saturated fats). There are three moderation components where higher scores correspond with lower density of the dietary component per caloric content: Refined Grains, Empty Calories (added sugar, solid fats, and excess alcohol), and Sodium.

Analyses

Differences in prevalence of obtaining worksite foods according to participant characteristics was assessed using chi-square tests with $p<0.05$ being considered significant. The study also examined the number of food acquisitions made at work during the week, the mean amount of money spent on work food purchases, and the meal occasion reported for each workplace food acquisition (breakfast, lunch, dinner, or snack/drink).

The top 10 leading food categories obtained from work (acquired for free, purchased, and overall) were determined according to the number of times they were obtained. The top 10 leading food category sources of energy from work were also determined and expressed as kcal per capita among those who obtained foods from work. All analyses were performed

using SAS 9.4 Survey procedures[21] accounting for the complex survey design and sample weights.

The population ratio method was used to calculate HEI-2010 subscores.[20] First, the weighted total food pattern equivalents relevant to each subscore and total energy (kcal) for all foods obtained from work were calculated. Then, the ratios of these weighted totals were used to calculate HEI-2010 subscores according to published formulas.[20]

Of the 6,849 individual foods that were obtained at work by the study population, 108 foods were missing data on food type and nutrition information. These 108 foods were thus excluded from analysis of most frequently consumed food categories, leading food sources of energy at work, and calculation of HEI-2010 scores. For analysis of meal occasions, 71 occasions were excluded where meal occasion data were missing.

Results

During the seven-day study period, 23.4% of working adults had at least one free or purchased food acquisition from work with 16.8% having at least one free acquisition and 9.2% having at least one purchased acquisition (Table 1). Educational level was significantly associated with the prevalence of obtaining workplace foods overall and for free foods with prevalence highest among college graduates. Compared with men, women were significantly more likely to have free work food acquisitions (19.4% among women vs. 14.5% among men). Overall (free or purchased) food acquisition prevalence and free food acquisition prevalence also differed by race/ethnicity with highest prevalence seen among NH white and NH other persons.

Among the study population of working adults, 7.8% obtained foods at work on only one occasion during the study week, 4.5% obtained them on 2 occasions, 11.0% obtained them ≥3 times during the week and 5.4% obtained them ≥5 times (figure 1). For 99.8% of occasions where foods were obtained at work, the person reporting the occasion consumed the obtained food (data not shown). Snack/drink (48.0%) and lunch (28.9%) were the most common meal occasions cited for free or purchased work food acquisitions followed by breakfast (16.7%) and dinner (6.4%) (data not shown). Among those who purchased foods at work, the mean per capita amount spent on foods at work during the week was $7.52 (95% CI: 7.01–8.03; median: $4.38) and the mean amount spent per purchase occasion was $3.12 (95% CI: 2.50–3.75; median: $2.81) (data not shown).

The 10 most commonly obtained foods were coffee, regular soft drinks, sandwiches, tap water, tea, diet soft drinks, cookies/brownies, lettuce salad, French fries, and potato chips (Table 2). These 10 foods accounted for 44% of the foods obtained at work. Additional foods also included among the most commonly purchased foods were tortilla and other chips, candy containing chocolate, and crackers. The most common foods acquired for free also included chicken.

Among those who obtained foods at work, the overall per capita caloric value of all foods from work was 1292 kcal per week (Table 3) and 430 kcal per acquisition event (data not shown). Per capita caloric content of purchased foods (1080 kcal per week [95% CI: 861–

1300]) and free foods (1206 kcal per week [95%CI: 1039–1373]) were similar among consumers of each food type. However, due to the greater frequency of free food acquisitions, free foods accounted for 68.5% of all calories obtained from work (data not shown). The leading 10 food category sources of calories obtained from work were pizza, sandwiches, regular soft drinks, cookies/brownies, burgers, egg/breakfast sandwiches, doughnuts/pastries, burritos/tacos, chicken, and potato chips (Table 3). These food categories collectively accounted for approximately half (52%) of all calories obtained at work. Leading food sources of calories were generally similar for purchased and free foods, although pizza was a larger source of free food calories compared to paid food calories and regular soft drinks were a larger source of paid food calories compared to free food calories.

Overall HEI-2010 score for foods obtained at work was 48.2 out of a maximum score of 100 (Table 4). HEI component scores that reflected lowest adherence to dietary guidelines were Whole Grains (2.6 out of a maximum of 10), Refined Grains (3.2 out of 10), Sodium (3.5 out of 10), Total Fruit (1.8 out of 5), Empty Calories (7.4 out of 20), Seafood and Plant Proteins (2.4 out of 5), and Whole Fruit (2.5 out of 5). Components that reflected greater conformance to dietary guidelines were Total Protein Foods (5.0 out of 5), Fatty Acids (7.7 out of 10), Total Vegetables (3.5 out of 5), Greens and Beans (3.4 out of 5), and Dairy (5.2 out of 10).

Discussion

This study found that nearly a quarter of working adults in the study population obtained foods at work during a one-week period and that, on average the foods they obtained totaled 1292 kcal per week. HEI-2010 scores also suggest that the foods obtained at work are high in empty calories, sodium, and refined grains and low in whole grains and fruit. This is reflected in the leading food types obtained at work, which include many calorically dense foods that are typically high in solid fat, added sugars, or sodium such as pizza, regular soft drinks, cookies/brownies, cakes and pies, and candy. Similarly, the existing food away from home (FAFH) literature finds that FAFH tend to be higher in empty calories, sodium, and added sugars, but lower in fruits, vegetables, and whole grains.[22,23] While not as important a source of calories as foods from home and restaurants,[22] foods obtained from work may represent an important contribution to caloric intake at worksites among those who obtain them frequently. For example, the results suggest that approximately 11% of working adults (16.5 million people) obtained foods at work at least three times per week and over 5% obtained them 5 or more times per week. Improving the nutritional quality of foods obtained at work could have a large impact on the overall diet quality among those employees who frequently obtain foods at work and worksites present an important opportunity to improve the nutritional quality of FAFH.

Results suggest that there are demographic differences in who obtains food from work. Educational level was by far the strongest predictor of obtaining food at work, with college graduates approximately 2 times more likely to obtain foods at work during the week than those without a high school diploma. Although data on occupation was not available, this difference may reflect the differing types of jobs and corresponding work places experienced by people with different educational attainment.[24] Previous research suggests that college-

educated adults are more likely to work for large employers and that large employers are more likely to have places for employees to purchase food such as cafeterias and vending machines.[10] Therefore, people with higher education may have greater opportunity to obtain foods at work. Furthermore, less dramatic differences were found according to sex and race/ethnicity, suggesting more women and fewer Black and Hispanic Americans obtained foods at work. Despite these differences, a nontrivial percentage of all demographic groups still obtained foods at work, suggesting that efforts to improve these foods could reach a wide swath of working Americans.

One of the most important findings was that foods obtained at work generally do not align with dietary guidance, with low HEI-2010 scores indicating lower dietary quality seen for several dietary components, particularly whole grains, refined grains, sodium, fruit, and empty calories. These results were generally similar to those found in an analysis of the nutritional quality of menu offerings in major fast food restaurant chains.[25] On the other hand, HEI scores suggest that foods obtained at work did provide vegetables, protein, and a relatively high ratio of unsaturated compared to saturated fatty acids. There is evidence that healthy dietary patterns, such as those that include adequate amounts of vegetables, fruits, and whole grains, may reduce the risk of many chronic diseases and certain types of cancers.[8] In light of these findings, employers have many opportunities to improve the dietary quality of foods they sell or serve and in helping to improve the health of their workforce. Research suggests that many employees support such efforts. A recent study found that about half of employees supported accessible free water, affordable healthy food/drinks, and available healthy options at work.[26] One opportunity is the adoption of food service guidelines (FSG),[27] which provide minimum nutritional standards for foods sold or served and which also promote the selection of healthier food choices by employees. FSG provide an opportunity to systematically improve available food service venues from cafeterias and vending machines to meetings and events. Several science-based FSG have been developed, removing the need for employers to develop guidelines themselves.[27,28] As the study found that free foods are acquired more frequently than purchased foods and contribute nearly 70% of calories obtained at work, employers may also need to address the healthfulness of these foods. This may require different strategies than for purchased foods. For example, employers may consider improving the healthfulness of foods provided for free at meetings, in common areas, and during workplace social events.[9] Given the high proportion of foods at work that are acquired for free, efforts to improve the dietary quality of foods provided by employers and coworkers free to employees represent a potentially far reaching and low cost means of improving the dietary intake of employees and promoting a workplace culture of health. In addition, employers can also utilize behavioral design strategies to reduce intake of less healthy snacks offered for free or purchase by placing them out of view or offering smaller serving sizes.[29] Shifting dietary patterns requires complementary strategies to improve food environments and diet; however, worksites where the average employee spends eight hours per week day can play a pivotal role in helping to normalize healthier dietary patterns. While foods from work represent a comparatively small share of calories consumed by Americans, the Institute of Medicine has recognized that encouraging active living and healthy eating at worksites is an important strategy as part of a multi-pronged approach to address the obesity epidemic.[30] Furthermore, comprehensive worksite wellness

programs may also reduce absenteeism, improve worker productivity, and decrease costs associated with chronic diseases.[30]

There are limitations to this study. First, information was unavailable on the type of work or industry in which study participants were employed, the shift they work, or the food amenities (cafeterias, etc.) available at their worksite. Such information would have been valuable for better understanding the results and targeting efforts to improve the worksite food environment. Nonetheless, this study was performed using a nationally representative sample making the results more generalizable to the US working population. Second, while the data showed that nearly all of the foods acquired at work were eaten by the person reporting the food acquisition, how much was eaten by that person was not known. Thus the calories of foods acquired may not reflect the amount and calories actually consumed. Third, there is also the possibility that the sources of foods were misclassified by study participants, particularly when the source could realistically be classified into more than one source type. For example, participants who work in schools, food service, or food retail may have classified their food acquisitions while working as coming from these other types of sources rather than from work. It is also possible that some foods acquired from outside restaurants or other sources during working hours were incorrectly classified as coming from work and that some foods obtained from vending machines at work were not specified as being obtained at work. Furthermore, the study had a relatively low response rate (41.5%) and was designed to be representative of US Households, not the population of US working adults. These factors may impact the generalizability of the study findings.

Conclusions

This study found that nearly a quarter of working adults in the study population obtained foods at work during a one-week period and the foods they obtained had limited dietary quality. Those obtaining foods at work obtained an average of 1292 kcal during the week and were more likely to be non-Hispanic white and have a college degree. There is a need to better align the foods obtained at work with dietary guidance and future research might address the effect of worksite food and nutrition interventions on the dietary quality of foods obtained from work.

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Research Snapshot

Research Question:

What proportion of US adults obtain food at work, what foods do they obtain, and what is the dietary quality of these foods?

Key Findings:

A population-based survey of food acquisitions of 5222 adults over 7 days revealed that 23.4% of employed adults obtained foods from work and consumers averaged 1292 kcal/week. Leading sources of calories included pizza (146 kcal per capita among consumers) and regular soft drinks (99 kcal per capita among consumers). Healthy Eating Index 2010 scores suggest work foods were high in empty calories, sodium, and refined grains and low in whole grains and fruit

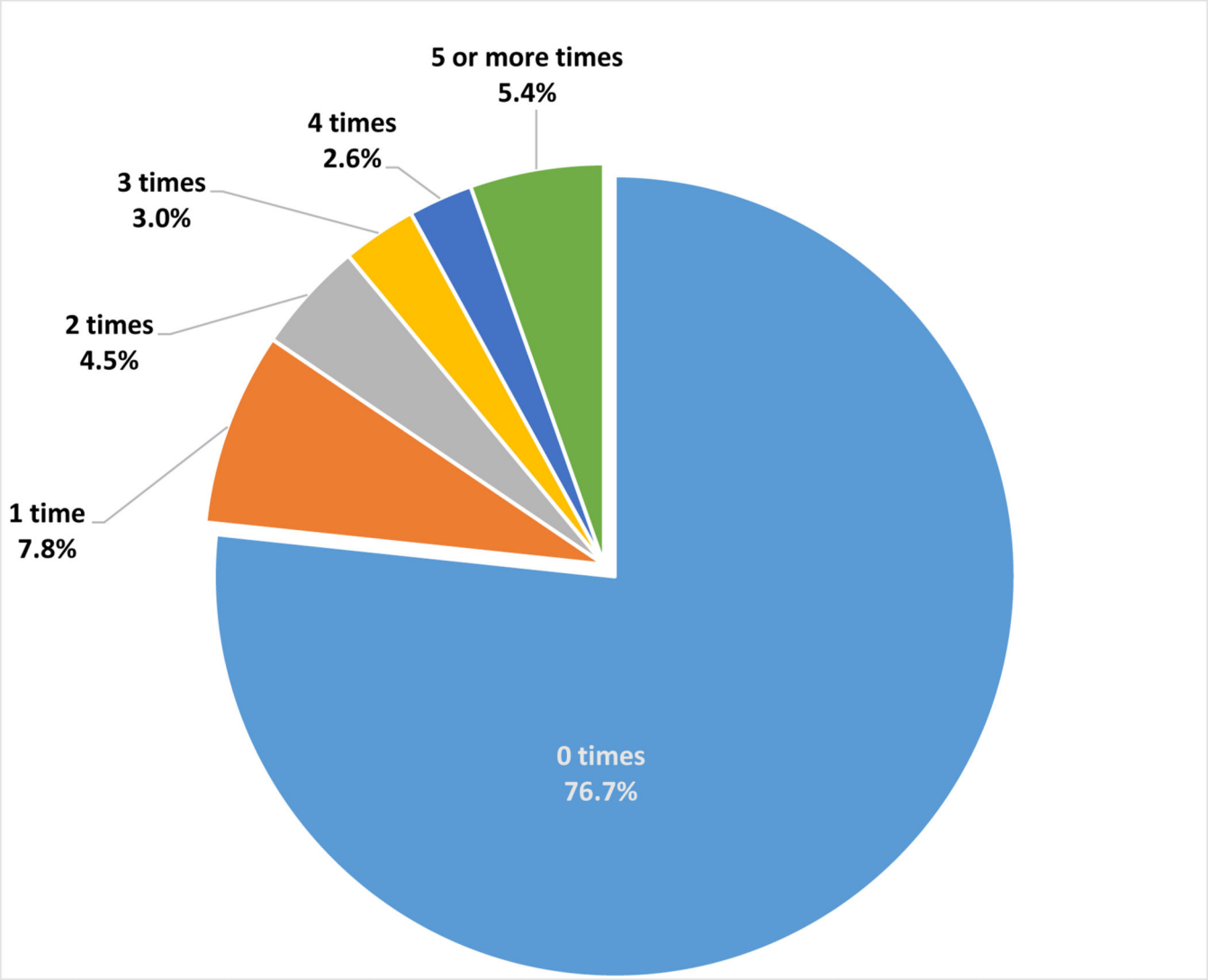

Figure.

Number of Free Food or Beverage Acquisitions or Purchases from Work Reported among Working Adults (N=5222) During the 7 Day Study Period. FoodAPS study, 2012–2013.

Table 1.

Percent of Working Adults Who Obtained Foods or Beverages at Their Worksite during the One-Week Study Period, Overall and According to Selected Demographics, USDA Food Acquisition and Purchase Survey, 2012–2013

	All Foods and Beverages Obtained at Work [a]		Foods and Beverages Purchased at Work		Free Foods and Beverages Acquired at Work	
Characteristic	**% Purchased or Acquired Free Food or Beverages (95% CI)**	**% Did Not Purchase or Acquire Free Food or Beverages (95% CI)**	**% Purchased Food or Beverages (95% CI)**	**% Did Not Purchase Food or Beverages (95% CI)**	**% Acquired Free Food or Beverages (95% CI)**	**% Did Not Acquire Free Food or Beverages (95% CI)**
Overall (n=5222)	23.4 (21.4–25.4)	76.6 (74.6–78.6)	9.2 (7.5–10.8)	90.8 (89.2–92.5)	16.8 (14.8–18.9)	83.2 (81.1–85.2)
Sex						
Male (n=2672)	21.8 (19.3–24.2)	78.2 (75.8–80.7)	9.5 (7.1–11.8)	90.5 (88.2–92.9)	14.5** (12.1–16.9)	85.5** (83.1–87.9)
Female (n=2550)	25.2 (22.2–28.2)	74.8 (71.8–77.8)	8.8 (7.2–10.5)	91.2 (89.5–92.8)	19.4** (16.7–22.0)	80.6** (78.0–83.3)
Age (years)						
18–39 (n=2779)	22.5 (19.2–25.8)	77.5 (74.2–80.8)	8.3 (5.9–10.6)	91.7 (89.4–94.1)	16.2 (13.6–18.8)	83.8 (81.2–86.4)
40–59 (n=2034)	26.0 (21.7–30.3)	74.0 (69.7–78.3)	10.9 (7.6–14.2)	89.1 (85.8 −92.4)	18.2 (15.2–21.1)	81.8 (73.9–84.8)
≥60 (n=409)	17.0 (11.8–22.3)	83.0 (77.7–88.2)	5.8 (3.3–8.3)	94.2 (91.7–96.7)	14.2 (9.0–19.4)	85.8 (80.6–91.0)
Race/ethnicity						
NH [b] White (n=2895)	25.1** (22.6–27.6)	**74.9 (72.4–77.4)	9.9 (7.7–12.1)	90.1 (87.9–92.3)	18.3* (15.5–21.0)	81.7* (79.0–84.5)
NH [b] Black (n=660)	20.9** (15.8–25.9)	**79.1 (74.1–84.2)	9.9 (7.1–12.6)	90.1 (87.4–92.9)	13.6* (9.6–17.5)	86.4* (82.5–92.4)
Hispanic (n=1259)	17.7** (13.7–21.7)	**82.3 (78.3–86.3)	6.5 (4.5–8.6)	93.5 (91.4–95.6)	12.4* (8.6–16.2)	87.6* (83.8–91.4)
NH [b] Other (n=408)	23.5** (18.9–28.0)	**76.5 (72.0–81.1)	7.2 (2.1–12.3)	91.8 (87.7–97.9)	17.9* (13.3–22.5)	82.1* (77.5–86.7)
Education						
<High School (n=761)	14.6** (8.6–20.6)	**85.4 (79.4–91.4)	8.6 (2.4–14.7)	91.4 (85.3–97.6)	7.2** (4.8–9.5)	92.8** (90.5–95.2)
High School Diploma (n=1599)	20.2** (17.4–24.8)	**78.8 (75.2–82.2)	9.1 (6.1–12.2)	90.9 (87.8–93.9)	14.2** (12.2–16.2)	85.8** (83.8–87.8)
Some College (n=1667)	21.9** (18.9–25.0)	**78.1 (75.0–81.2)	8.4 (6.4–10.5)	91.6 (89.5–93.6)	15.9** (13.0–18.8)	84.1** (81.2–87.0)
College Graduate (n=1195)	28.2** (24.4–32.0)	**71.8 (68.0–75.6)	10.0 (7.4–12.6)	90.0 (87.4–92.6)	21.7** (18.0–25.5)	78.3** (74.5–82.0)
Household Income/SNAP [c] Status						
NonSNAP [c], income <100% FPL [d] (n=245)	13.3 (6.0–20.6)	86.7 (79.4–94.0)	3.0 (0.4–5.7)	97.0 (94.3–99.6)	10.3 (3.8–16.7)	89.7 (83.3–96.2)

	All Foods and Beverages Obtained at Work [a]		Foods and Beverages Purchased at Work		Free Foods and Beverages Acquired at Work	
Characteristic	**% Purchased or Acquired Free Food or Beverages (95% CI)**	**% Did Not Purchase or Acquire Free Food or Beverages (95% CI)**	**% Purchased Food or Beverages (95% CI)**	**% Did Not Purchase Food or Beverages (95% CI)**	**% Acquired Free Food or Beverages (95% CI)**	**% Did Not Acquire Free Food or Beverages (95% CI)**
NonSNAP [c], income >=100% and <185% FPL [d] (n=834)	22.4 (15.9–28.9)	77.6 (71.1–84.1)	7.0 (3.7–10.2)	93.0 (89.8–96.3)	17.0 (12.3–21.7)	83.0 (78.3–87.7)
NonSNAP [c], income >=185% FPL [d] (n=2834)	24.2 (21.6–26.9)	75.8 (73.1–78.4)	9.7 (7.7–11.8)	90.3 (88.2–92.3)	17.4 (14.7–20.1)	82.6 (79.9–85.3)
SNAP [c] household (n=1309)	19.4 (16.0–22.9)	80.6 (77.1–84.0)	7.5 (5.1–9.9)	92.5 (90.1–94.9)	13.2 (9.7–16.8)	86.8 (83.2–93.3)
Marital Status						
Married (n=2523)	23.3 (20.9–25.7)	76.7 (74.3–79.1)	9.3 (7.4–11.3)	90.7 (88.7–92.6)	16.3 (14.0–18.5)	83.7 (81.5–86.0)
Never married (1764)	22.8 (20.9–25.7)	77.2 (73.5–80.9)	8.6 (6.8–10.4)	91.4 (89.6–93.2)	17.1 (13.8–20.4)	82.9 (79.6–86.2)
Divorced/ Separated/ Widowed (n=935)	24.6 (19.2–30.0)	75.4 (70.0–80.8)	9.5 (4.4–14.7)	90.5 (85.3–95.6)	18.1 (13.8–22.5)	81.9 (77.5–86.2)
Weight Status [e]						
Normal or Underweight (n=1844)	25.0 (20.7–28.4)	75.0 (71.6–78.5)	8.7 (6.3–11.1)	91.3 (88.9–93.7)	19.1 (15.9–22.2)	80.9 (77.8–84.1)
Overweight (n=1792)	21.1 (18.0–24.2)	78.9 (75.8–82.0)	9.0 (6.5–11.4)	91.0 (88.6–93.5)	14.6 (10.9–18.3)	85.4 (81.7–89.1)
Obese (n=1586)	24.1 (21.0–27.2)	75.9 (72.8–79.0)	10.0 (7.1–12.9)	90.0 (87.1–92.9)	16.6 (12.9–20.3)	83.4 (79.7–87.1)

*p<0.05 for chi-squared test comparing percent according to demographic groups

**p<0.01 for chi-squared comparing percent according to demographic groups

[a]During the study week, some individuals had both free and paid food acquisitions. Therefore, column 1 percentages are not the simple totals of columns 2 and 3.

[b]NH = non-Hispanic

[c]SNAP = Supplemental Nutrition Assistance Program

[d]FPL=Federal Poverty Level

[e]Body mass index (BMI) < 25 kg/m^2 = normal or underweight, 30 > BMI ≥ 25 kg/m^2 = overweight; BMI ≥ 30 kg/m^2 = obesity

Table 2.

Most Commonly Obtained Food and Beverage Categories Acquired from Work, USDA Food Acquisition and Purchase Survey, 2012–2013

	Number of Occasions This Food or Beverage Category Was Purchased or Acquired for Free at Work (Per Capita Kcal per Week from Category Among Those Purchasing or Acquiring Foods or Beverages at Work)		
Rank	**All Foods and Beverages Obtained from Work (Free and Purchased)** [a]	**Foods and Beverages Purchased at Work** [b]	**Foods and Beverages Acquired for Free from Work** [c]
1	Coffee 849 occasions (10 kcal)	Regular Soft Drinks 267 occasions (153 kcal)	Coffee 684 occasions (11 kcal)
2	Regular Soft Drinks 511 occasions (99 kcal)	Coffee 165 occasions (4 kcal)	Tap Water 244 occasions (0 kcal)
3	Sandwiches 317 occasions (137 kcal)	Diet Soft Drinks 135 occasions (3 kcal)	Regular Soft Drinks 244 occasions (57 kcal)
4	Tap Water 274 occasions (0 kcal)	Sandwiches 107 occasions (107 kcal)	Sandwiches 209 occasions (133 kcal)
5	Tea 258 occasions (24 kcal)	Potato Chips 69 occasions (48 kcal)	Tea 211 occasions (22 kcal)
6	Diet Soft Drinks 258 occasions (2 kcal)	Cookies/Brownies 54 occasions (35 kcal)	Diet Soft Drinks 123 occasions (1 kcal)
7	Cookies/Brownies 150 occasions (49 kcal)	Tortilla and Other Chips 62 occasions (50 kcal)	Lettuce Salad 104 occasions (3 kcal)
8	Lettuce Salad 143 occasions (3 kcal)	French Fries 46 occasions (19 kcal)	Cookies/Brownies 96 occasions (48 kcal)
9	French Fries 120 occasions (21 kcal)	Candy Containing Chocolate 56 occasions (38 kcal)	Pizza 94 occasions (178 kcal)
10	Potato Chips 118 occasions (34 kcal)	Crackers 50 occasions (31 kcal)	Chicken 87 occasions (41 kcal)
Total Number of Foods and Beverages Obtained at Work Represented by Top 10 Categories	2998	999	1741
Total Number of Foods and Beverages Obtained at Work	6849	1997	4852

[a] These top 10 food categories account for approximately 44% of the 6849 foods and beverages reported in 3119 acquisition occasions at work

[b] These top 10 food and beverage categories account for approximately 50% of the 1997 foods and beverages reported in 976 purchase occasions at work

[c] These top 10 food and beverage categories account for approximately 36% of the 4852 foods and beverages reported in 2143 free acquisition occasions at work

Table 3.

Total Per Capita Calories of Foods and Beverages per Week Obtained at Work and Leading Food and Beverage Sources of Calories obtained from Work, USDA Food Acquisition and Purchase Survey, 2012–2013

	Per Capita Kcal per Week Among Those Purchasing or Acquiring Foods or Beverages at Work		
Rank	**All Foods and Beverages Obtained from Work (Free and Purchased)** [a]	**Purchased Foods and Beverages from Work** [b]	**Foods and Beverages Acquired for Free from Work** [c]
1	Pizza 146 kcal	Regular Soft Drinks 153 kcal	Pizza 178 kcal
2	Sandwiches 137 kcal	Sandwiches 104 kcal	Sandwiches 132 kcal
3	Regular Soft Drinks 99 kcal	Tortilla and Other Chips 50 kcal	Regular Soft Drinks 57 kcal
4	Cookies/Brownies 49 kcal	Donuts/Pastries 48 kcal	Cookies/Brownies 48 kcal
5	Burgers 48 kcal	Potato Chips 48 kcal	Burgers 46 kcal
6	Egg/Breakfast Sandwiches 43 kcal	Egg/Breakfast Sandwiches 43 kcal	Chicken 41 kcal
7	Doughnuts/Pastries 40 kcal	Pizza 42 kcal	Egg/Breakfast Sandwiches 36 kcal
8	Burritos/Tacos 38 kcal	Burgers 38 kcal	Burritos/Tacos 32 kcal
9	Chicken 37 kcal	Candy Containing Chocolate 38 kcal	Cakes/Pies 32 kcal
10	Potato Chips 34 kcal	Burritos/Tacos 38 kcal	Donuts/Pastries 30 kcal
Sum of per capita kcal from top 10 food and beverage category sources at work	671 kcal	564 kcal	633 kcal
Total per capita kcal among consumers from all foods and beverages obtained from work (including those not in table)	1292 kcal (95% CI: 1160–1424)	1080 kcal (95% CI: 861–1300)	1206 kcal (95% CI: 1039–1373)

[a] These food and beverage categories collectively account for approximately 52% of worksite overall acquisition calories

[b] These food and beverage categories collectively account for approximately 52% of worksite purchase calories

[c] These food and beverage categories collectively account for approximately 52% of worksite free acquisition calories

Table 4.

Dietary Quality of Foods and Beverages Obtained at Work

HEI 2010 [a] Component	Maximum Possible Score	FoodAPS Worksite Foods Score
Adequacy Components [b]		
Total Fruit	5	1.8
Whole Fruit	5	2.5
Total Vegetables	5	3.5
Greens and Beans	5	3.4
Whole Grains	10	2.6
Dairy	10	5.2
Total Protein Foods	5	5.0
Seafood and Plant Proteins	5	2.4
Fatty Acids	10	7.7
Moderation Components [b]		
Refined Grains	10	3.2
Empty Calories	20	7.4
Sodium	10	3.5
Total HEI 2010 Score	100	48.2

[a] Healthy Eating Index 2010

[b] For adequacy components, higher scores indicate greater intake (for fatty acids, higher score indicates greater ratio of unsaturated fats to saturated fats); for moderation components, higher scores indicate lower intake