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Food-Related Time Use: Changes and Demographic Differences

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Abstract

Food-related time use can influence dietary choices and, in turn, influence health outcomes. Thus, tracking changes in food-related time use is key for understanding consumer decisions that affect diet. This report uses data from the 2004-17 American Time Use Survey (ATUS) to present an overview of food-related time-use patterns over time both for the U.S. population aged 15 years and older and for U.S. subgroups that are defined by educational attainment, household type (singles versus couples), and other demographic factors. Data from the supplemental Eating and Health Module (conducted annually during 2014-16 for a subset of the ATUS sample) are analyzed to provide time-use estimates for subgroups defined by Supplemental Nutrition Assistance Program (SNAP) participation, obesity, and food hardship. On an average day in 2014-17, Americans spent 64.0 minutes on eating and drinking as a "primary," or main, activity, down 4.5 percent from 67.0 minutes in 2004-07. On an average day in 2014-17—counting only those who performed the activity—Americans spent 51.4 minutes on food preparation, 34.1 minutes on food-related cleanup, and 46.0 minutes on grocery shopping.

Keywords: American Time Use Survey, ATUS, Eating and Health Module, EHM, eating patterns, food-related activities, grocery shopping, meal preparation, Supplemental Nutrition Assistance Program, SNAP, time use, time-use survey, time of day

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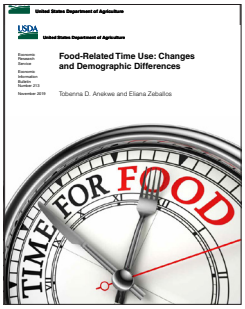

Food-Related Time Use: Changes and Demographic Differences

Tobenna D. Anekwe and Eliana Zeballos

What Is the Issue?

Examining the time-use patterns of the U.S. population can improve our understanding of Americans' nutrition and health because food-related time use can influence diet and nutrition and, thereby, health outcomes. An analysis of the time Americans spend in particular food-related activities, as well as other time demands (for context), may provide insight into why nutrition and health outcomes vary over time and across different segments of the population. This study analyzes food-related time-use patterns among Americans aged 15 and older and among various subgroups and how time use for food-related activities has changed over a decade. (From here on, "Americans" with no qualifying phrases refers to "Americans aged 15 and older.")

What Did the Study Find?

Patterns in food-related time use during 2014 to 2017 and among demographic subgroups reveal significant changes from the 2004 to 2007 period, including the following for an average day in 2014-17:

- Americans spent 64.0 minutes on eating and drinking as a "primary," or main, activity in 2014-17, down 4.5 percent from 67.0 minutes in 2004-07.
- In 2014-17, Americans overall spent 27.5 minutes on food preparation (51.4 minutes among those who actually performed the activity), 7.7 minutes on food-related cleanup (34.1 minutes among those who performed the activity), and 6.3 minutes on grocery shopping (46.0 minutes among those who performed the activity). Time spent on all of these food-related activities (prep, cleanup, and grocery shopping) increased since 2004-07. A few notable trends in food-related time use from 2004-07 to 2014-17.
    - Americans spent 17.5 percent more time preparing food. Almost every subgroup spent more time preparing food in 2014-17: women, men, Americans aged 15 to 17, 25 to 64, and 65 and older, all household types examined in this study, all races/ethnicities, and all levels of educational attainment. Only Americans aged 18 to 24 years spent less time in food prep.

    - Americans spent 36.4 percent more time purchasing non-grocery food (such as from a fast-food restaurant or pizza place). The share of Americans who purchased non-grocery food increased by 19.5 percent and their time spent making those purchases increased by 9.0 percent. By contrast, over the same period, the share of Americans who grocery shopped decreased by 1.4 percent, but their time spent grocery shopping increased by 6.5 percent.

- Americans overall spaced out their primary eating and drinking occasions significantly more in 2014-17 than in 2004-2007. Among individual subgroups, adults aged 25-64, couples without children, non-Hispanic Whites, and adults with a high school education or less also increased time between primary eating and drinking occasions significantly over the period.

- Based on data from the supplemental Eating and Health Module (EHM), which covers a slightly different time period (2014-16):

    - 24.6 percent of Americans had three primary eating and drinking events, corresponding to the traditional "three meals per day." The largest share (38 percent) had two primary eating and drinking events, and 26.7 percent had only one event. Another 5.6 percent of Americans had four or more events, and 4.8 percent had no primary eating and drinking events.

    - Americans with food hardship (i.e., Americans who reported that they "sometimes" or "often" did not have enough to eat) spaced out their food and drink intake longer than did Americans without food hardship (i.e., people who reported that they had enough to eat).

    - When Americans engaged in secondary eating (eating while engaged in another "primary" activity), the primary activity they most commonly engaged in was watching television and movies (for 23.4 percent of respondents), followed by working their main job (22.8 percent).

How Was the Study Conducted?

This study uses data from the nationally representative American Time Use Survey (ATUS) for 2004-07 and 2014-17 and the supplemental EHM for 2014-16. The Bureau of Labor Statistics conducts the ATUS as well as the supplemental EHM, which was developed by USDA, Economic Research Service with funding partner USDA, Food and Nutrition Service, and technical-assistance partner National Cancer Institute. This study focuses primarily on the pooled 2014-17 ATUS to derive the most recent estimates possible, and the analysis is augmented by comparisons of 2014-17 data to 2004-07 data. The analysis is further augmented by using EHM data to examine food-related time use among specific U.S. subgroups defined by Supplemental Nutrition Assistance Program (SNAP) participation status, food hardship, and bodyweight status.

Food-Related Time Use: Changes and Demographic Differences

Introduction

Information on how Americans use their time to meet their dietary needs and preferences can provide insight into nutrition and health issues of the U.S. population. Americans' food-related time use is a basic ingredient in the creation of Americans' diets (Hamermesh, 2007), and indirectly, of health outcomes. For example, choices of food-related time use are integral to choices between food prepared at home v. food prepared away from home (FAFH). FAFH can save time for busy households, and its use continues to trend upward. However, FAFH is also associated with more calories per meal (notable, given increasing prevalence of overweight) and poorer nutritional quality (Guthrie et al., 2002; Todd et al., 2010; Variyam, 2005). Understanding changes in time use and variation across subpopulations can inform the design and targeting of diet-related policies, including nutrition education to improve diet quality, as well as product design and marketing.

Limited prior research has linked food-related time use to health and nutrition outcomes. For example, using American Time Use Survey (ATUS) data, Cawley and Liu (2012) find that maternal employment is associated with less time spent by mothers in activities related to child diet and physical activity (e.g., grocery shopping, food preparation, eating with children, playing with children, supervising children, and caring for children), which might help explain childhood obesity prevalence. Virudachalam et al. (2014) summarize a body of previous work and find some evidence that time spent in food preparation at home is associated with lower body mass index (BMI), though this evidence is not consistent. Courtemanche (2009), although not directly studying food-related time use, finds that longer work hours are associated with higher body mass index and higher probability of obesity; Courtemanche reasons that these associations might be explained by longer work hours leading to less time for meal preparation at home, less time for exercise, or increased sleep deprivation.

This report builds on a body of research that investigates American time-use patterns for food-related behaviors such as eating and grocery shopping. Hamrick and McClelland (2016) examined time spent preparing meals at home. Zeballos and Restrepo (2018) examined primary eating and drinking, secondary eating, and both types together for 2006-08 and 2014-16. In this report, we update and extend prior analyses by incorporating the most recent ATUS data from 2017 to examine changes from 2004-07 to 2014-17 and differences among demographic subgroups for a wide array of food-related time use measures, including updated estimates of activities measured by Hamrick and McClelland and Zeballos and Restrepo. We also examine additional dimensions of food-related time use, including the number of eating occasions per day, the length of time between eating occasions, and the hour-by-hour distribution of food-related activities during the course of an average day.

This report uses the American Time Use Survey (ATUS), a nationally representative survey that provides the best data on how Americans spend their time during the course of a 24-hour period. We also use the Eating and Health Module (EHM), which was a supplemental survey added to the ATUS in specific years (2006-08 and 2014-16), to better capture secondary eating (eating while engaged in another activity), as well as food assistance participation and health characteristics that may be related to time use, such as bodyweight status.

This report takes advantage of ATUS data in order to analyze a wide range of food-related activities (e.g., food-related cleanup, food preparation, and travel for grocery shopping) that go beyond the primary and secondary eating that are the main focus of the work of Zeballos and Restrepo. Using ATUS data that span 14 years (2004-17), we look at the amount of time Americans spent on primary eating and drinking and other food-related activities during an average day in 4-year clusters (2004-07 and 2014-17). Another unique contribution of this report is that we use pooled 2004-07 and 2014-17 ATUS data to look at how time use for these food-related activities has changed over a decade. Our analysis examines food-related activities both for the U.S. population as a whole and for subgroups that are defined according to household type (singles versus couples), standard demographics (e.g., gender, race/ethnicity, income, education), and other factors such as Supplemental Nutrition Assistance Program (SNAP) participation.

Differences between subgroups are interesting not only in their own right but also because they can reflect myriad factors such as: gender and age disparities in the division of labor, and group differences in time allocation for various activities. Large amounts of time spent traveling to grocery shopping may reflect the existence of food deserts,[1] although it can also reflect other dynamics such as people opting to shop at membership-only warehouse clubs. Therefore, the results in this report might lead to future research that seeks to understand questions such as what determines differences in time spent traveling to grocery shopping (is it food deserts, a preference for far-flung membership-only warehouse clubs, or something else?). Finally, other unique contributions that this report makes to the literature include providing analysis for the youngest individuals covered by the ATUS (people aged 15 to 17 years) and other subgroups (both for 2014-17 and for change from 2004-07 from 2014-17).

The economic analysis of decisions made under constraints—in this case, time—can provide insights for nutrition and food assistance policies and programs because how individuals make use of 24 hours in a day has shortrun and longrun implications for income and earnings, health, and well-being generally. This report explores how Americans grapple with the challenge of limited time to meet their daily dietary needs and how that has changed over time.

[1]Food deserts are areas with limited access to affordable and nutritious food (Ploeg et al., 2009).

Methods and Data

To identify various food-related activities and to estimate frequency and time duration, we used data from the pooled 2004-07 and 2014-17 ATUS. These data draw from survey respondents' time diaries of activities, as well as provide extensive demographic and household-member information. This specificity enables researchers to identify different food-related activities in different subgroups and changes over time.

The U.S. Bureau of Labor Statistics' ATUS is a continuous survey that began in 2003. The U.S. Census Bureau conducts survey interviews nearly every day of the year to allow for analysis of weekdays versus weekends and seasonality. One individual aged 15 years or older from each sampled household is interviewed about his or her activities for the 24-hour period from 4 a.m. the day before the interview to 4 a.m. on the interview day. The list of activities that a respondent engaged in during the 24-hour period and the time when each of those activities was performed is called the "time-use diary," or "diary." The present report uses the full ATUS sample, which is made up of Americans aged 15 years and older. Survey respondents are asked to identify their primary activity if they were engaged in more than one activity at a time. They are also asked to report where they were and whom they were with for most diary activities.

The final data set for this analysis consists of pooled 2004-07[2] and 2014-17 ATUS microdata files containing 95,415 completed interviews (52,202 interviews for 2004-07 and 43,213 interviews for 2014-17). Supplemental analysis was done using the 2014-16 waves of the ATUS Eating and Health Module (EHM). The pooled 2014-16 EHM microdata files contain 32,048 completed interviews. We also used the EHM Respondent and Replicate Weights files. Estimation procedures outlined in the EHM User's Guide (Hamrick, 2010) were followed.

Estimation procedures outlined in the ATUS User's Guide (BLS, 2019) were followed.[3] All estimates presented were weighted to be nationally representative; analyses using ATUS data employed the ATUS final weights, and analyses using EHM data employed the EHM final weights. Averages were calculated as the mean. Standard errors were calculated according to Section 7.5 of the ATUS User's Guide, using the balanced repeated replication method and the ATUS Replicate Weights file. A 90-percent level of confidence was constructed around each estimate and used to determine statistical differences. All differences between estimates discussed in the text are statistically different at the 90-percent level[4] or more unless indicated as otherwise. In all of the tables, we use a "*" symbol if the percentage change over time is statistically significantly different from zero ($p<0.10$) and boldface text if an average value for a demographic subgroup is statistically significantly different from the reference group.

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[2]We exclude 2003 from this analysis because there was underreporting of eating events that was remedied starting in 2004 by adding a new prompt about eating. Starting in 2004, respondents who did not report eating or drinking on their diary day were prompted with the question, "Did you do any eating or drinking yesterday as your main activity?" After this prompt was incorporated, the percentage of Americans engaged in primary eating and drinking increased from 91.5 percent to 97.1 percent.

[3]All analyses in this report were guided by BLS standards. For example, BLS determined that 77 observations is the minimum number of respondents who could support an ATUS cell estimate (Hamrick and McClelland, 2016). In this report, all statistics presented are based on at least 77 respondents and 10 or more people who reported doing the activity. When we present the amount of time participants spent in an activity, we verify that either the estimated standard error is less than 5 minutes or that the estimated coefficient of variation is less than 0.3.

[4]The 90-percent confidence level is the standard level of confidence used in analyzing data from the Current Population Survey (CPS) (e.g., BLS, 2006) and ATUS household surveys. BLS (2017b) writes that "BLS analyses are generally conducted at the 90-percent level of confidence," so we also follow this convention in our analysis.

For variables with more than two categories, we perform subgroup comparisons by using the largest subgroup as the reference category (the relative sizes of subgroups are shown in tables 1 and 2). Hence, the reference categories we use are: people aged 25-64 years old, couples with children, non-Hispanic White, high school educational attainment, and income greater than 185 percent of the Federal poverty threshold. Also, we perform most subgroup comparisons by using the most recent available years of ATUS data (2014-17); however, for variables that were collected only in the EHM (i.e., income, SNAP status, and bodyweight status), we use the 2014-16 EHM data.

In this analysis, the variable "household type" is reported as four categories: single adults without children, couples (i.e., two spouses or partners) without children, single adults with children, and couples with children.[5] A fifth category—all other household types—was retained for analysis, but, because it is a very heterogeneous mix of household types, we do not report results for it; this fifth category includes households where two or more roommates or relatives live together and households containing families with children who are aged 18 years or older. The four household categories we focus on in this study comprise 66.9 percent of all households in the weighted sample, and "all other" households comprise the remaining 33.1 percent (table 1).

[5]A household with a child or children refers to a household with at least one person aged 17 years or younger.

Measures and Definitions

We define "primary" eating and drinking as eating and drinking that constitute a main activity. "Secondary" eating occurs while doing something else that is considered primary by the respondent. The distinction is made solely by respondents. This self-report strategy reveals how individuals view their own eating occurrences—for example, are they eating and just happen to be watching television during their meal or are they watching television and also just happen to be eating?

Although this report in general describes Americans aged 15 years and older, there are two exceptions: (1) The estimates by BMI group—underweight, normal weight, overweight, and obese—are calculated only for Americans aged 20 years and older, following the Centers for Disease Control and Prevention (CDC) definitions of adult BMI groups.[6] (2) The estimates by education level—lower than high school, high school diploma or General Equivalency Diploma (GED), some college or associate degree, bachelor's degree, and more than bachelor's degree—are calculated only for Americans aged 25 years and older, following the method used by the U.S. Bureau of Labor Statistics (BLS).

We categorize households into three income groups: below or equal to 130 percent of the Federal poverty threshold (FPT), above 130 percent and less than or equal to 185 percent of the FPT, and above 185 percent of the FPT.[7] The income cutoffs of 130 percent and 185 percent are part of the criteria used to determine eligibility for Federal assistance programs like SNAP and the Special Supplemental Nutrition Program for Women, Infants, and Children (WIC).

We report estimates from the most recent ATUS survey years of 2014-17, as well as comparisons with estimates from 2004-07. For estimates of secondary eating and for subgroup comparisons by SNAP participation status, bodyweight status, and food hardship, we use data from the 2014-16 EHM, the most recent fielding of the module. All time-use estimates are calculated from the ATUS time diaries and self-reported information from the ATUS and EHM questionnaires.

Tables 1 and 2 provide summary statistics for all of the variables used in the 2004-07 and 2014-17 ATUS analysis and in the 2014-16 EHM analysis, respectively. Table 1 shows statistically significant differences between demographic profiles of the sample for the two periods analyzed. The subgroups that were studied in this report are:

- (shown in table 1) men and women; ages 15-17 years, ages 18-24 years, ages 25-64 years, and ages 65 and older; single adults without children, couples without children, single adults with at least one child, couples with at least one child, and other household types; Hispanic people, non-Hispanic White people, non-Hispanic Black people, and non-Hispanic people of "other" races; people whose educational attainment was less than a high school diploma or GED, was a high school diploma or GED, was some college or an associate's degree, was a bachelor's degree, or was more than a bachelor's degree; and

[6]Body mass index for adults aged 20 years and older was calculated as (weight in pounds)/(height in inches)^2 x 703. BMI categories are underweight (BMI < 18.5), normal weight (18.5 ≤ BMI < 25), overweight (25 ≤ BMI < 30), and obese (30 ≥ BMI). For the purposes of interpreting adult BMI, CDC defines adults as those aged 20 years and older. Consequently, we analyze BMI groups for only those aged 20 years and older. See CDC website for more information on adult BMI.

[7]The Federal poverty threshold for a household is determined by income of all members of the household, the number of people living in that household, and, for one- and two-person units, whether those persons are elderly. These thresholds also change over time, as they are revised annually. In 2016, 185 percent of the Federal poverty threshold for a one-person household was $1,900 in monthly income; for a four-person household, it was $3,800 in monthly income (BLS, 2017a).

Table 1

Summary statistics in 2004-07 and 2014-17, age 15 and older

		2004-07 *Percentage*	2014-17 *Percentage*	
Gender	Male	48.4	48.3	*
		(0.02)	(0.02)	
	Female	51.6	51.7	*
		(0.02)	(0.02)	
Age	Age 15-17	6.0	5.2	***
		(0.09)	(0.09)	
	Age 18-24	11.8	11.4	***
		(0.09)	(0.09)	
	Age 25-64	67.0	64.9	***
		(0.01)	(0.00)	
	Age 65+	15.3	18.5	***
		(0.00)	(0.00)	
Household type	Single, no children	13.9	14.8	***
		(0.21)	(0.25)	
	Couple, no children	24.8	25.1	
		(0.19)	(0.23)	
	Single with child/children	4.8	4.4	***
		(0.10)	(0.11)	
	Couple with child/children	25.6	22.6	***
		(0.15)	(0.17)	
	Other Household Type	30.9	33.1	***
		(0.27)	(0.30)	
Ethnicity and race	Hispanic	13.1	16.0	***
		(0.00)	(0.00)	
	Non-Hispanic White	70.5	65.8	***
		(0.14)	(0.16)	
	Non-Hispanic Black	11.5	11.9	***
		0.00	0.00	
	Non-Hispanic other	4.9	6.3	***
		(0.14)	(0.16)	

—continued

Table 1

Summary statistics in 2004-07 and 2014-17, age 15 and older –continued

		2004-07	2014-17	
		Percentage	*Percentage*	
Education level	Lower than high school degree ±	12.9	10.2	***
		(0.18)	(0.18)	
	High school degree or GED ±	32.7	29.6	***
		(0.22)	(0.22)	
	Some college or associate degree ±	24.8	24.5	
		(0.22)	(0.26)	
	Bachelor's degree ±	18.9	22.0	***
		(0.21)	(0.26)	
	More than bachelor's degree ±	10.7	13.7	***
		(0.16)	(0.22)	

Survey weights were used to compute nationally representative estimates. Standard errors in parentheses. If comparisons over time are statistically significantly different from zero (*** = p < 0.01; ** = p < 0.05; * = p < 0.1). Household with child/children refers to a household with at least one person age 17 and younger. ± For participants age 25 and older.

Source: USDA, Economic Research Service, using data from the Bureau of Labor Statistics' 2004-2007 and 2014-17 American Time Use Survey (ATUS).

- (shown in table 2) households with income below or at 130 percent of the FPT, greater than 130 percent and less than or equal to 185 percent of the FPT, and greater than 185 percent of the FPT; SNAP participants and non-SNAP participants; people reporting they had enough food to eat or that they did not have enough food to eat; people who were underweight, normal weight, overweight, or obese.

In this report, unless otherwise specified, the categories "women" and "men" include all females and males, respectively, who are aged 15 years and older, rather than being restricted to legal adults of age 18 years and older. We also use four racial/ethnic groups: Hispanic, non-Hispanic White (i.e., people reporting as only White), non-Hispanic Black (i.e., people reporting as only Black), and non-Hispanic other (everyone else). This "other" group includes American Indians, Alaskan Natives, Asians, Hawaiians, Pacific Islanders, and anyone reporting as mixed race.

Our results are presented in three main sections. The first focuses on time spent on primary and secondary eating events, the second focuses on time spent in other food-related activities, and the third focuses on the hourly distribution of food-related activity over the day.

Table 2

Summary statistics in 2014-16, age 15 and older

		2014-16 Percentage
Income	Income >185%	66.1
		(0.30)
	Income <= 185% & >130%	13.60
		(0.23)
	Income <= 130%	20.3
		(0.28)
SNAP participation	SNAP participant	10.0
		(0.20)
	Non-SNAP participant	90.0
		(0.20)
Food hardship	Enough food to eat	94.5
		(0.15)
	Not enough food to eat	5.5
		(0.15)
Bodyweight category	Underweight ±	1.4
		(0.09)
	Normal ±	32.3
		(0.34)
	Overweight ±	35.7
		(0.36)
	Obesity ±	30.6
		(0.34)

EHM survey weights were used to compute nationally representative estimates. Standard errors in parentheses. SNAP participants: individuals living in households that received benefits under USDA's Supplemental Nutrition Assistance Program (SNAP) in the past month. Income: individuals with household income that was 185 percent or above, between 185 percent and 130 percent, and 130 percent or below of the Federal poverty level. ± For participants aged 20 years and older. For the bodyweight categories, adult body mass index (BMI) is calculated as: (weight in pounds)/(height in inches)2 x 703. The categories are: underweight (BMI < 18.5), normal weight (18.5 ≤ BMI < 25), overweight (25 ≤ BMI < 30), and obese (30 ≥ BMI).

Source: USDA, Economic Research Service using data from the Bureau of Labor Statistics' 2014-16 Eating and Health Module (EHM) of the American Time Use Survey (ATUS).

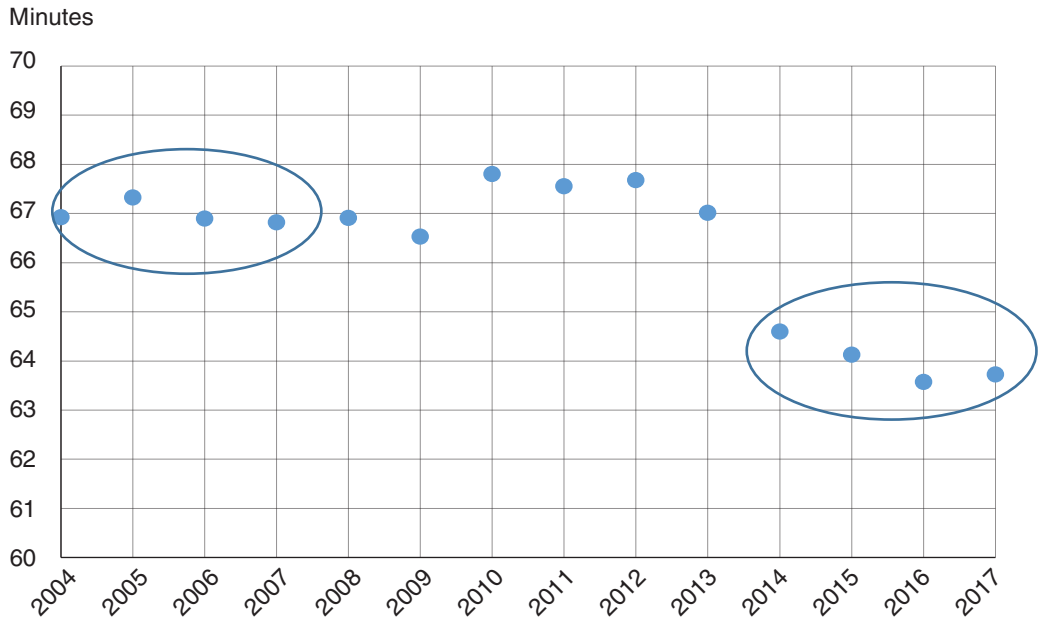
Primary Eating and Drinking v. Secondary Eating[8]

We examined American time use for both primary eating and drinking and secondary eating during 2014-17, as well as changes since 2004-07 and differences among demographic subgroups. For measures that are drawn from the supplemental Eating and Health Module, we report results from 2014-16. We estimated the average time spent in those activities, the amount of time spent between eating events, the number of eating events per day, and what primary activity people were doing while engaged in secondary eating. In addition, we examined where people were located when engaged in primary eating and drinking and secondary eating.

Time Spent in Primary Eating and Drinking

On an average day in 2014-17, Americans aged 15 years and older spent 64.0 minutes on eating and drinking as a primary, or main, activity, down 4.5 percent from 67.0 minutes in 2004-07. Almost everyone (95.1 percent) engaged in primary eating and drinking on an average day in 2014-17. Figure 1 plots the number of minutes Americans engaged in primary eating and drinking on an average day by year, for 2004-17. Circled are the data for the years we focus on in this report: 2004-07 and 2014-17. We focus on 2004-07 and 2014-17 in order to compare across a decade, and we group 4 years together on each end of this decade in order to increase the sample size for small population subgroups and smooth yearly variation.

Figure 1
Time spent in primary eating and drinking on an average day in 2004 to 2017, age 15 and older



Survey sampling weights were used to compute nationally representative estimates.

Source: USDA, Economic Research Service, using data from the Bureau of Labor Statistics' 2004-16 American Time Use Survey (ATUS).

[8]The EHM studied secondary eating, not secondary eating and drinking.

From 2004-07 to 2014-17, the American population as well as most of the American subgroups that were examined decreased their time spent in primary eating and drinking. This decrease was for men and women as well as Americans aged 25 to 64 years, those aged 65 years and older, single people with no children, couples with no children, non-Hispanic White Americans, and all Americans aged 25 years and older at all levels of educational attainment. By contrast, the youngest two age groups (those aged 15 to 17 years and 18 to 24 years) and non-Hispanic Americans of "other" race increased their time spent in primary eating and drinking (table 3).

Table 3

Percentage of Americans engaged and time spent in primary eating and drinking on an average day in 2004-07 and 2014-17, age 15 and older

		Average minutes per day, all			Percentage engaged in primary eating and drinking			Average minutes per day, engaged in activity		
		2004-07 Minutes	2014-17 Minutes		2004-07 Percentage	2014-17 Percentage		2004-07 Minutes	2014-17 Minutes	
	All	67.0 (0.25)	64.0 (0.31)	***	96.4 (0.11)	95.1 (0.13)	***	69.5 (0.25)	67.3 (0.30)	***
Gender	Male	69.1 (0.41)	**65.7** (0.49)	***	96.6 (0.14)	95.1 (0.19)	***	71.5 (0.42)	**69.1** (0.50)	***
Gender	Female	65.0 (0.32)	62.4 (0.40)	***	96.3 (0.16)	95.2 (0.18)	***	67.5 (0.31)	65.5 (0.39)	***
Age	Age 15-17	52.1 (0.79)	**57.5** (1.21)	***	95.3 (0.52)	**96.3** (0.58)		54.6 (0.79)	**59.7** (1.11)	***
Age	Age 18-24	55.3 (1.05)	**58.5** (1.17)	*	93.2 (0.72)	**94.8** (0.46)	**	59.4 (1.04)	**61.7** (1.19)	
Age	Age 25-64	66.6 (0.27)	63.2 (0.36)	***	96.3 (0.13)	94.8 (0.16)	***	69.1 (0.26)	66.6 (0.37)	***
Age	Age 65+	81.3 (0.65)	**74.2** (0.66)	***	98.6 (0.15)	**97.2** (0.21)	***	82.5 (0.67)	**76.3** (0.66)	***
Household type	Single, no children	68.2 (0.57)	**62.5** (0.64)	***	96.1 (0.23)	**94.5** (0.26)	***	71.0 (0.55)	**66.1** (0.66)	***
Household type	Couple, no children	76.9 (0.54)	72.1 (0.61)	***	97.5 (0.17)	96.6 (0.24)	***	78.8 (0.55)	74.6 (0.62)	***
Household type	Single with child/children	52.7 (0.93)	**51.3** (0.97)		93.3 (0.58)	**91.3** (0.73)	**	56.5 (0.94)	**56.2** (1.04)	
Household type	Couple with child/children	65.7 (0.40)	**65.0** (0.51)		97.0 (0.18)	**95.9** (0.23)	***	67.7 (0.40)	**67.7** (0.50)	

—continued

Table 3

Percentage of Americans engaged and time spent in primary eating and drinking on an average day in 2004-07 and 2014-17, age 15 and older – continued

		Average minutes per day, all			Percentage engaged in primary eating and drinking			Average minutes per day, engaged in activity		
		2004-07 Minutes	2014-17 Minutes		2004-07 Percentage	2014-17 Percentage		2004-07 Minutes	2014-17 Minutes	
Ethnicity and race	Hispanic	63.0 (0.68)	**62.8** (0.75)		97.0 (0.30)	95.9 (0.33)	**	64.9 (0.69)	**65.5** (0.76)	
	Non-Hispanic White	70.5 (0.30)	66.3 (0.39)	***	97.0 (0.12)	95.6 (0.15)	***	72.7 (0.31)	69.4 (0.38)	***
	Non-Hispanic Black	47.7 (0.68)	**47.1** (0.70)		92.5 (0.49)	**90.9** (0.47)	**	51.6 (0.70)	**51.8** (0.71)	
	Non-Hispanic other	71.5 (1.43)	**75.1** (1.21)	*	96.1 (0.57)	96.4 (0.50)		74.5 (1.41)	**77.9** (1.14)	*
Education level	Lower than high school ±	62.9 (0.69)	58.2 (0.90)	***	97.0 (0.30)	94.2 (0.46)	***	64.8 (0.72)	61.8 (0.90)	***
	High school degree or GED ±	66.5 (0.54)	61.1 (0.58)	***	96.3 (0.22)	95.0 (0.27)	***	69.0 (0.54)	64.3 (0.59)	***
	Some college or associate's degree ±	67.8 (0.51)	**63.3** (0.63)	***	96.4 (0.21)	94.4 (0.27)	***	70.3 (0.49)	**67.0** (0.62)	***
	Bachelor's degree ±	75.1 (0.61)	**71.6** (0.70)	***	97.1 (0.23)	**96.4** (0.25)	**	77.4 (0.61)	**74.3** (0.70)	***
	More than bachelor's degree ±	78.7 (0.91)	**75.3** (0.88)	***	97.9 (0.23)	**96.8** (0.29)	***	80.4 (0.92)	**77.7** (0.91)	**

Survey weights were used to compute nationally representative estimates. Standard errors in parentheses. If comparisons over time are statistically significantly different from zero (*** = p < 0.01; ** = p < 0.05; * = p < 0.1). In boldface if the difference between the mean of the subgroup and the mean of the reference category in 2014-17 is statistically different from zero (p < 0.1). Reference categories are: female, aged 25-64 years, adult couple without children, non-Hispanic White, and high school degree or GED. Household with child/children refers to a household with at least one person age 17 and younger. ± For participants age 25 and older.

Source: USDA, Economic Research Service, using data from the Bureau of Labor Statistics' 2004-07 and 2014-17 American Time Use Survey (ATUS).

From 2004-07 to 2014-17, all of the American subgroups that were examined decreased their time share engaged in primary eating and drinking, except for the two youngest age groups (those aged 15 to 17 years and 18 to 24 years) and non-Hispanic Americans of "other" race (table 3).

Time Spent in Secondary Eating

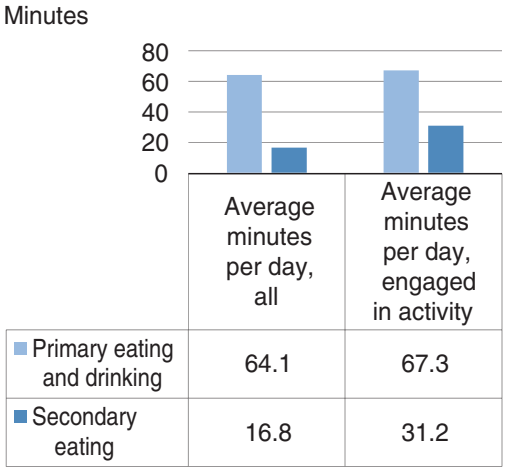
Primary eating and drinking (which is covered in the ATUS) does not capture all of the time people spend eating, as many people eat while engaged in other activities such as watching television or working. Therefore, the supplemental EHM tries to complete our understanding of Americans'

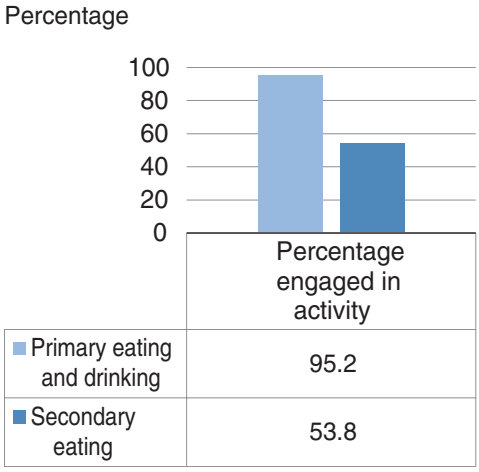
eating patterns by asking respondents about secondary eating—that is, eating while engaged in another activity considered primary by the respondent.

The EHM data show that, on an average day in 2014-16, Americans aged 15 years and older spent 16.8 minutes engaged in secondary eating (table 4). About half of people (53.8 percent) engaged in secondary eating (table 4), but almost everyone (99.1 percent) engaged in either primary eating and drinking or secondary eating or both on an average day in 2014-16 (fig. 4).

Because almost everyone (95.1 percent) engaged in primary eating and drinking, the number of minutes per day among only those who engaged in primary eating and drinking was not much higher than for the overall population (67.4 minutes versus 64.1 minutes, respectively) (table 3). Secondary eating, however, was a different story: For those Americans who engaged in secondary eating, 31.2 minutes a day were spent in secondary eating in 2014-16, compared to 16.8 minutes for the overall population (fig. 2 and table 4).

Figure 2
Time spent in and percentage of Americans engaged in primary eating and drinking and secondary eating on an average day in 2014-16, age 15 and older





ATUS survey sampling weights were used to compute nationally representative estimates for primary eating and drinking. EHM survey sampling weights were used to compute nationally representative estimates for secondary eating.

Source: USDA, Economic Research Service, using data from the Bureau of Labor Statistics' 2014-16 American Time Use Survey (ATUS) and Eating and Health Module (EHM).

Table 4

Percentage of Americans engaged and time spent in secondary eating on an average day in 2014-16, age 15 and older

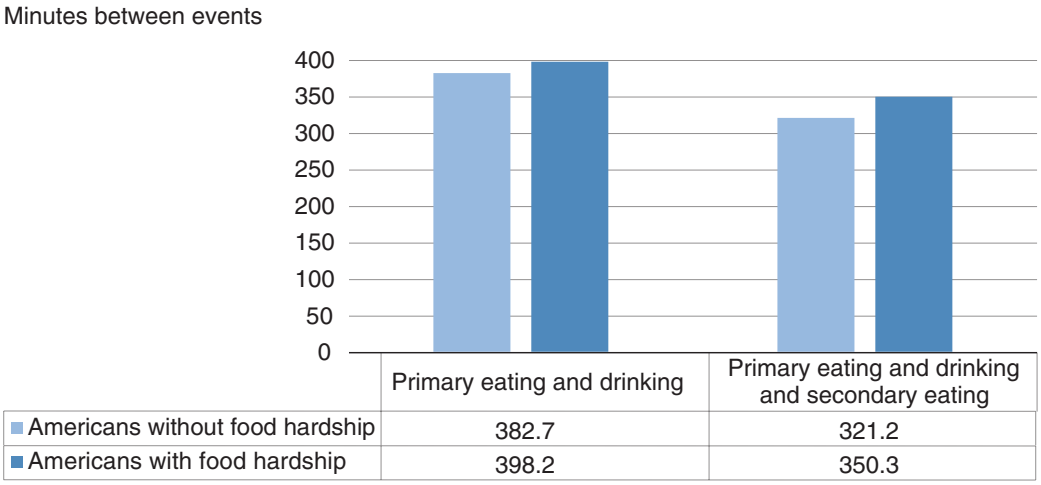
		Average minutes per day, all	Percentage engaged in secondary eating	Average minutes per day, engaged in activity
		Minutes	*Percentage*	*Minutes*
	All	16.8	53.8	31.2
		(0.42)	(0.35)	(0.74)
Income	Income >185%	17.7	58.1	30.4
		(0.48)	(0.46)	(0.78)
	Income <= 185% & >130%	16.4	**48.3**	33.9
		(1.91)	(1.07)	(3.77)
	Income <= 130%	**14.4**	**44.5**	32.3
		(0.76)	(0.82)	(1.57)
SNAP participation	SNAP participant	15.6	46.1	33.7
		(1.17)	(1.16)	(2.41)
	Non-SNAP participant	16.9	**54.7**	30.9
		(0.47)	(0.38)	(0.80)
	Low-Income Non-SNAP participant	13.5	**43.4**	31.2
		(0.91)	(1.12)	(1.94)
Food hardship	Enough food to eat	16.8	54.2	30.9
		(0.45)	(0.37)	(0.79)
	Not enough food to eat	16.5	**48.4**	34.1
		(1.80)	(1.67)	(3.59)
Bodyweight category	Underweight ±	-	55.1	-
			(3.20)	
	Normal ±	18.3	**55.9**	32.7
		(1.09)	(0.69)	(1.85)
	Overweight ±	16.3	52.7	31.0
		(0.70)	(0.66)	(1.25)
	Obesity ±	15.6	51.6	30.2
		(0.68)	(0.68)	(1.27)

EHM survey weights were used to compute nationally representative estimates. Standard errors in parentheses. In boldface if the difference between the mean of the subgroup and the mean of the reference category in 2014-16 is statistically different from zero ($p < 0.1$). Reference categories are: income >185% of the FPL, SNAP participant, enough food to eat, and overweight. - = suppressed due to small cell size SNAP participants: individuals living in households that received benefits under USDA's Supplemental Nutrition Assistance Program (SNAP) in the past month. Low-income, non-SNAP participants: individuals with household income that was 130 percent of the Federal poverty level or below who had not received SNAP benefits in the past month. Income: individuals with household income that was 185 percent or above, between 185 percent and 130 percent, and 130 percent or below of the Federal poverty level. ± For participants aged 20 years and older. For the bodyweight categories, adult body mass index (BMI) is calculated as: (weight in pounds)/(height in inches)2 x 703. The categories are: underweight (BMI < 18.5), normal weight (18.5 ≤ BMI < 25), overweight (25 ≤ BMI < 30), and obese (30 ≥ BMI).

Source: USDA, Economic Research Service, using data from the Bureau of Labor Statistics' 2014-16 Eating and Health Module (EHM) of the American Time Use Survey (ATUS)..

Figure 3

Minutes between primary eating and drinking and secondary eating events on an average day in 2014-16, age 15 and older by self-reported food hardship status

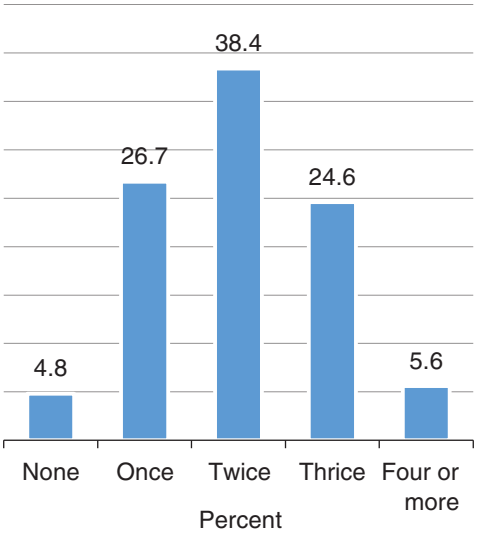


EHM survey sampling weights were used to compute nationally representative estimates.

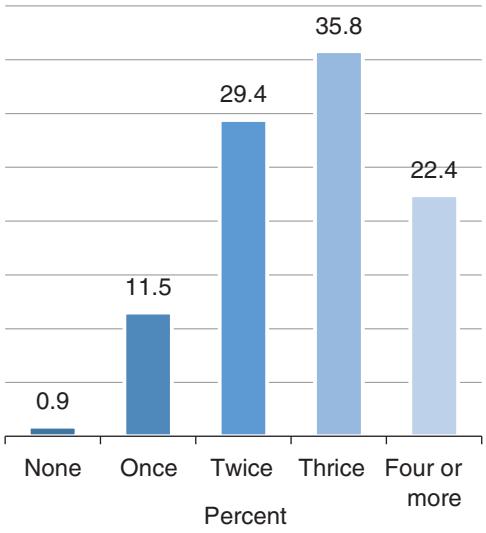
Source: USDA, Economic Research Service, using data from the Bureau of Labor Statistics' 2014-16 American Time Use Survey (ATUS) and Eating and Health Module (EHM).

Figure 4

Percentage of Americans engaged in one, two, three, four or more primary eating and drinking and secondary eating events on an average day in 2014-16, age 15 and older



(a) Primary eating and drinking



(b) Primary eating and drinking and secondary eating

EHM survey sampling weights were used to compute nationally representative estimates.

Source: USDA, Economic Research Service, using data from the Bureau of Labor Statistics' 2014-16 American Time Use Survey (ATUS) and Eating and Health Module (EHM).

A recent report by Zeballos and Restrepo (2018), using the 2006-08 and 2014-16 ATUS and EHM, details how time spent in primary eating and drinking and time spent in secondary eating changed over time and varied among U.S. subgroups such as Americans of different SNAP participation statuses, genders, and BMIs.[9] Zeballos and Restrepo found that, compared to other age groups, "individuals age 25 to 54 spent about 7 percent less time eating and drinking as a primary activity (62.3 in 2014-16 versus 66.9 minutes in 2006-08) and about 15 percent more time eating as a secondary activity (17.9 in 2014-16 versus 15.6 minutes in 2006-08)"—so the group's total time spent eating is lower after accounting for secondary eating.

Amount of Time Between Primary Eating and Drinking Events

The average amount of time Americans spent between primary eating and drinking occasions in 2014-17 was 6 hours and 23.4 minutes (383.4 minutes), and this amount increased by 1.0 percent over a decade (table 5).[10]

In 2014-17, men waited 13.7 minutes longer between primary eating and drinking events than women (390.4 minutes versus 376.7 minutes), and Americans aged 25 to 64 years (who waited 389.2 minutes between primary eating and drinking events) waited anywhere from 3.2 percent to 5.1 percent longer than other age groups.

From 2004-07 to 2014-17, several subgroups increased their amount of time between primary eating and drinking occasions (i.e., men, adults aged 25 to 64 years, couples with no children, non-Hispanic White Americans, and people whose educational attainment was less than a high school diploma or a GED or was a high school diploma or GED), while the only subgroup that decreased their amount of time between primary eating and drinking occasions were non-Hispanic Americans of "other" race (by 4.0 percent) (table 5).

Spacing out one's meals can be a strategy used by people to stretch dollars when their budget is tight. Americans with food hardship (i.e., Americans who responded that they "sometimes" or "often" did not have enough food to eat) waited 15.5 minutes longer than Americans without food hardship (people who responded that they had enough food to eat) between each primary eating and drinking event (i.e., a wait of 398.2 minutes versus 382.7 minutes, respectively). If we consider primary eating and drinking as well as secondary eating, Americans with food hardship waited 29.1 minutes longer than Americans without food hardship before engaging in either activity (i.e., a wait of 350.3 minutes versus 321.2 minutes, respectively) (fig. 3). In addition, SNAP participants waited 6.6 minutes longer between primary eating and drinking events than non-SNAP participants did (i.e., a wait of 389.3 minutes versus 382.7 minutes, respectively) (table 7).

[9]Zeballos and Restrepo (2018) examine time spent in primary eating and drinking, time spent in secondary eating, and time spent in primary eating and drinking and secondary eating and disaggregate those statistics by SNAP participation status and BMI category for 2014-16, so we do not discuss those disaggregated statistics in the main body of this report. We do, however, include those statistics in table 6, for the sake of completeness, since we disaggregate other statistics in this report by those same variables.

[10]Although some statistically significant changes in table 5 appear to be zero, they are actually non-zero but very small (i.e., less than 1 decimal place, so they become "0.0" when rounded to the nearest 10th).

Table 5

Minutes between primary eating and drinking events and number of primary eating and drinking events on an average day in 2004-07 and 2014-17, age 15 and older

		Minutes between events, all			Average number per day, all			Average minutes per day, engaged in activity		
		2004-07 Minutes	2014-17 Minutes		2004-07 Number	2014-17 Number		2004-07 Number	2014-17 Number	
	All	379.5 (1.02)	383.4 (1.29)	**	2.03 (0.01)	1.99 (0.01)	***	2.11 (0.01)	2.09 (0.01)	**
Gender	Male	384.7 (1.62)	**390.4** (1.82)	**	2.07 (0.01)	**2.01** (0.01)	***	2.14 (0.01)	**2.12** (0.01)	**
Gender	Female	374.4 (1.37)	376.7 (1.59)		1.99 (0.01)	1.96 (0.01)	***	2.07 (0.01)	2.06 (0.01)	
Age	Age 15-17	369.8 (4.47)	**369.7** (5.46)		1.92 (0.03)	**2.10** (0.03)	***	2.02 (0.03)	**2.18** (0.03)	***
Age	Age 18-24	383.5 (5.25)	376.9 (4.76)		1.80 (0.03)	**1.81** (0.02)		1.93 (0.02)	**1.91** (0.02)	
Age	Age 25-64	384.7 (1.32)	389.2 (1.59)	**	2.02 (0.01)	1.95 (0.01)	***	2.09 (0.01)	2.06 (0.01)	***
Age	Age 65+	364.5 (2.04)	**369.5** (2.39)		2.31 (0.01)	**2.20** (0.01)	***	2.34 (0.01)	**2.26** (0.01)	***
Household type	Single, no children	378.7 (2.04)	382.7 (2.01)		2.02 (0.01)	**1.95** (0.01)	***	2.10 (0.01)	**2.06** (0.01)	**
Household type	Couple, no children	378.0 (2.08)	384.0 (2.40)	*	2.21 (0.01)	2.13 (0.01)	***	2.27 (0.01)	2.20 (0.01)	***
Household type	Single with child/children	384.6 (5.00)	384.6 (5.10)		1.71 (0.02)	**1.69** (0.03)		1.84 (0.02)	**1.86** (0.03)	
Household type	Couple with child/children	380.9 (1.65)	382.4 (2.36)		2.03 (0.01)	**2.00** (0.01)	*	2.09 (0.01)	**2.09** (0.01)	
Ethnicity and race	Hispanic	378.0 (2.85)	378.0 (2.67)		2.01 (0.01)	**1.95** (0.01)	***	2.07 (0.01)	**2.04** (0.01)	*
Ethnicity and race	Non-Hispanic White	376.2 (1.23)	382.4 (1.64)	***	2.09 (0.01)	2.04 (0.01)	***	2.16 (0.01)	2.13 (0.01)	***
Ethnicity and race	Non-Hispanic Black	404.7 (4.14)	**409.4** (3.69)		1.64 (0.02)	**1.63** (0.02)		1.78 (0.02)	**1.79** (0.02)	
Ethnicity and race	Non-Hispanic other	387.7 (6.15)	**372.3** (4.14)	**	2.08 (0.03)	**2.20** (0.03)	***	2.17 (0.03)	**2.28** (0.03)	***

—continued

Table 5

Minutes between primary eating and drinking events and number of primary eating and drinking events on an average day in 2004-07 and 2014-17, age 15 and older – continued

		Minutes between events, all			Average number per day, all			Average minutes per day, engaged in activity		
		2004-07 Minutes	2014-17 Minutes		2004-07 Number	2014-17 Number		2004-07 Number	2014-17 Number	
Education level	Lower than high school ±	380.6 (3.42)	389.8 (4.18)	*	2.01 (0.02)	**1.87** (0.02)	***	2.07 (0.02)	**1.99** (0.02)	***
	High school degree or GED ±	374.3 (2.08)	383.9 (2.92)	***	2.03 (0.01)	1.94 (0.01)	***	2.11 (0.01)	2.04 (0.01)	***
	Some college or associate's degree ±	383.1 (2.08)	385.1 (2.24)		2.04 (0.01)	**1.95** (0.01)	***	2.12 (0.01)	**2.06** (0.01)	***
	Bachelor's degree ±	382.2 (2.34)	381.7 (2.20)		2.15 (0.01)	**2.10** (0.01)	***	2.21 (0.01)	**2.18** (0.01)	**
	More than bachelor's degree ±	387.8 (3.02)	384.7 (2.88)		2.20 (0.02)	**2.19** (0.02)		2.25 (0.02)	**2.26** (0.02)	

Survey weights were used to compute nationally representative estimates. Standard errors in parentheses. If comparisons over time are statistically significantly different from zero (*** = p < 0.01; ** = p < 0.05; * = p < 0.1). In boldface if the difference between the mean of the subgroup and the mean of the reference category in 2014-17 is statistically different from zero (p < 0.1). Reference categories are: female, aged 25-64 years, adult couple without children, non-Hispanic White, and high school degree or GED. Household with child/children refers to a household with at least one person age 17 and younger. ± For participants age 25 and older.

Source: USDA, Economic Research Service, using data from the Bureau of Labor Statistics' 2004-07 and 2014-17 American Time Use Survey (ATUS).

Number of Eating Events

Number of Primary Eating and Drinking Events

In the overall U.S. population, there was an average of 2.0 primary eating and drinking events per day in both 2004-07 and 2014-17. By contrast, Americans aged 15 to 17 years and non-Hispanic Americans of "other" race did see an increase in their average daily number of primary eating and drinking events during that decade (by 10.5 percent and 4.8 percent, respectively). Meanwhile, a decrease in the number of primary eating and drinking events was observed for men, Americans aged 65 years and older, single adults with no children, couples with no children, non-Hispanic White Americans, and Americans whose educational attainment was less than a high school diploma or GED or was a high school diploma or GED (table 5).

Men (who, as we saw in table 5, increased the amount of time between primary eating and drinking events) decreased their number of primary eating and drinking events. Conversely, non-Hispanic Americans of "other" race, who *decreased* the amount of time between primary eating and drinking events (table 5), increased their number of primary eating and drinking events (table 5).

Table 6

Percentage of Americans engaged and time spent in primary eating and drinking on an average day in 2014-16, age 15 and older

		Average minutes per day, all	Percentage engaged in primary eating and drinking	Average minutes per day, engaged in activity
		Minutes	*Percentage*	*Minutes*
	All	64.1	95.2	67.3
		(0.33)	(0.17)	(0.32)
Income	Income >185%	66.4	95.6	69.4
		(0.42)	(0.19)	(0.40)
	Income <= 185% & >130%	**63.3**	95.5	**66.3**
		(0.84)	(0.43)	(0.87)
	Income <= 130%	**57.0**	**93.9**	**60.7**
		(.69)	(.46)	(.68)
SNAP participation	SNAP participant	53.7	94.4	56.9
		(0.86)	(0.50)	(0.87)
	Non-SNAP participant	**65.4**	**95.3**	**68.6**
		(0.35)	(0.18)	(0.34)
	Low-Income Non-SNAP participant	**59.2**	93.8	**63.0**
		(0.84)	(0.58)	(0.86)
Food hardship	Enough food to eat	64.8	95.3	68.0
		(0.33)	(0.18)	(0.33)
	Not enough food to eat	**53.5**	**93.5**	**57.2**
		(1.36)	(0.79)	(1.38)
Bodyweight category	Underweight ±	**60.1**	92.0	65.3
		(2.82)	(2.29)	(2.76)
	Normal ±	67.5	95.9	70.4
		(0.67)	(0.28)	(0.68)
	Overweight ±	65.9	95.6	68.9
		(0.66)	(0.27)	(0.65)
	Obesity ±	**61.6**	**94.6**	**65.1**
		(0.65)	(0.30)	(0.65)

EHM survey weights were used to compute nationally representative estimates. Standard errors in parentheses. In boldface if the difference between the mean of the subgroup and the mean of the reference category in 2014-16 is statistically different from zero ($p < 0.1$). Reference categories are: income >185% of the FPL, SNAP participant, enough food to eat, and overweight SNAP participants: individuals living in households that received benefits under USDA's Supplemental Nutrition Assistance Program (SNAP) in the past month. Low-income, non-SNAP participants: individuals with household income that was 130 percent of the Federal poverty level or below who had not received SNAP benefits in the past month. Income: individuals with household income that was 185 percent or above, between 185 percent and 130 percent, and 130 percent or below of the Federal poverty level. ± For participants aged 20 years and older. For the bodyweight categories, adult body mass index (BMI) is calculated as: (weight in pounds)/(height in inches)2 x 703. The categories are: underweight (BMI < 18.5), normal weight (18.5 ≤ BMI < 25), overweight (25 ≤ BMI < 30), and obese (30 ≥ BMI).

Source: USDA, Economic Research Service, using data from the Bureau of Labor Statistics' 2014-16 Eating and Health Module (EHM) of the American Time Use Survey (ATUS).

Data from the EHM (2014-16) allow comparisons by SNAP participation status, income group, and bodyweight status, revealing several subgroup differences. SNAP participants had 10.0 percent fewer primary eating and drinking events per day than did non-SNAP participants overall (and 5.3 percent fewer than *low-income* non-SNAP participants). Low-income Americans had 4.8 percent fewer primary eating and drinking events per day than did high-income Americans. Americans with food hardship had fewer primary eating and drinking events per day than Americans without food hardship. Compared to overweight Americans, normal-weight Americans had 5.0 percent more primary eating and drinking events, and obese Americans had 5.0 percent fewer primary eating and drinking events (table 7).

In 2014-16, it was most common for Americans to have two primary eating and drinking events on an average day (38.4 percent of Americans), followed by one primary eating and drinking event per day (26.7 percent), then three (24.6 percent), four or more (5.6 percent), and finally, no primary eating and drinking events per day (4.8 percent) (fig. 4a). The same prevalence ranking was observed a decade earlier, in 2004-07.

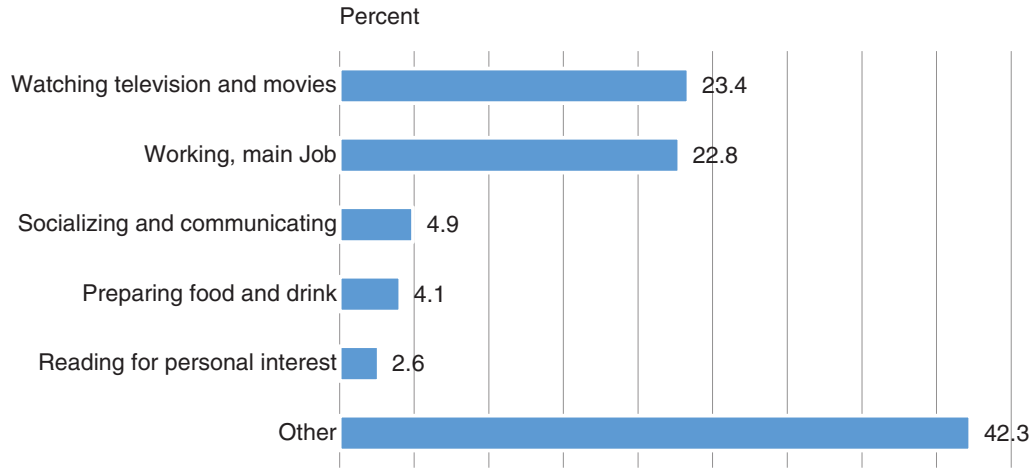
Number of All Eating Events (Primary Eating and Drinking Events + Secondary Eating Events)

When we accounted for not only primary eating and drinking but also secondary eating, there was an overall rightward shift in the distribution of number of eating events. Some key findings that emerged when we included secondary eating events: (1) The modal value for the number of eating events increased from two eating events (fig. 4a) to three eating events (fig. 4b) per average day in 2014-17; (2) the share of people who did not engage in eating on an average day dropped from 4.8 percent to 0.9 percent; and (3) the three most common responses for number of eating events shifted from one, two, and three eating events per day (summing to 89.7 percent of all responses) to two, three, and four or more eating events per day (87.6 percent of all responses).

What People Do While Engaged in Secondary Eating

EHM respondents were asked if they had been eating or drinking while engaged in another—a main, or primary—activity. Respondents who answered "yes" were, by definition, engaging in secondary eating. Among those respondents who had been engaging in secondary eating, the most common primary activity was watching television and movies (for 23.4 percent of respondents), followed by working one's main job (22.8 percent). Three additional categories each accounted for less than 5 percent of responses (listed in descending order of prevalence): socializing and communicating, preparing food and drink, and reading for personal interest. An "Other" category accounted for the remaining 42.3 percent of responses (fig. 5); this category aggregates all the other 282 activities that people reported doing while engaged in secondary eating. The top five primary activities of the Other category, in descending order of prevalence, are as follows: (1) washing, dressing, and grooming oneself; (2) travel related to working; (3) interior cleaning; (4) relaxing, thinking; and (5) playing games).

Figure 5
Primary activity while engaged in secondary eating on an average day in 2014-16, age 15 and older (percentages)



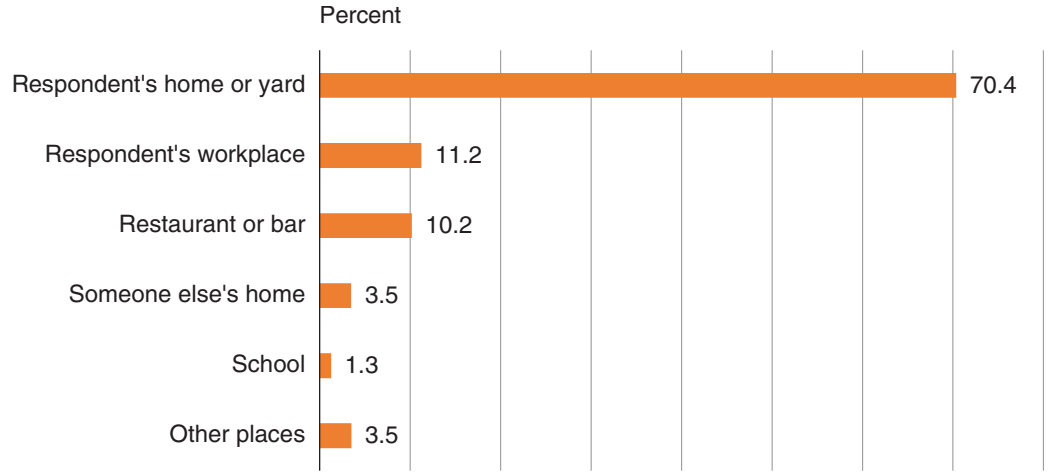
EHM survey sampling weights were used to compute nationally representative estimates.

Source: USDA, Economic Research Service, using data from the Bureau of Labor Statistics' 2014-16 American Time Use Survey (ATUS) and Eating and Health Module (EHM).

Where Are People Engaging in Primary Eating and Drinking and Secondary Eating?

During 2014-17, the bulk (70.4 percent) of the time that Americans spent in primary eating and drinking occurred in their own home or yard, followed by 11.2 percent in their workplace, and 10.2 percent in a restaurant or bar. A similar pattern was observed a decade earlier (fig. 6).[11]

Figure 6
Where Americans engaged in primary eating and drinking on an average day in 2014-17, aged 15 and older



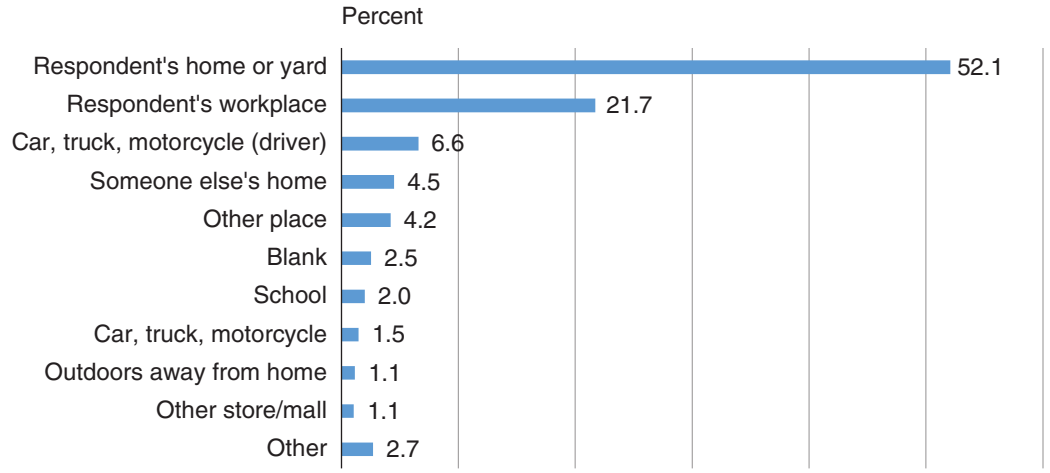
Survey sampling weights were used to compute nationally representative estimates.

Source: USDA, Economic Research Service, using data from the Bureau of Labor Statistics' 2014-17 American Time Use Survey (ATUS).

[11] Over 98 percent of the time that Americans spent in food preparation, food-related cleanup, and food presentation occurred in their own home or yard or in someone else's home. Ninety-eight percent of the time that Americans spent purchasing groceries was in grocery stores or in other stores or a mall, while 91.6 percent of Americans' time spent in *non*-grocery food purchasing occurred in a restaurant or bar, a store or mall that wasn't a grocery store, or their own home or yard.

In 2014-16, Americans engaged in secondary eating mostly in their own home or yard (52.1 percent), followed by in their workplace (21.7 percent); while driving a car, truck, or motorcycle (6.6 percent); and in someone else's home (4.5 percent; fig. 7).

Figure 7
Where Americans engaged in secondary eating on an average day in 2014-16, aged 15 and older



EHM survey sampling weights were used to compute nationally representative estimates.

Source: USDA, Economic Research Service, using data from the Bureau of Labor Statistics' 2014-16 Eating and Health Module (EHM) of the American Time Use Survey (ATUS).

Table 7
Minutes between primary eating and drinking events and number of primary eating and drinking events on an average day in 2014-16, age 15 and older

		Minutes between events, all	Average number per day, all	Average number per day, engaged in activity
		Minutes	Number	Number
	All	383.3	2.01	2.11
		(1.46)	(0.01)	(0.01)
Income	Income >185%	383.9	2.05	2.15
		(1.90)	(0.01)	(0.01)
	Income <= 185% & >130%	380.90	**2.00**	**2.09**
		(3.67)	(0.02)	(0.02)
	Income <= 130%	385.3	**1.86**	**1.98**
		(2.91)	(0.02)	(0.02)
SNAP participation	SNAP participant	389.3	1.83	1.94
		(4.73)	(0.02)	(0.02)
	Non-SNAP participant	382.7	**2.03**	**2.13**
		(1.46)	(0.01)	(0.01)
	Low-Income Non-SNAP participant	385.1	**1.90**	**2.02**
		(3.65)	(0.02)	(0.02)

– continued

Table 7

Minutes between primary eating and drinking events and number of primary eating and drinking events on an average day in 2014-16, age 15 and older – continued

		Minutes between events, all	Average number per day, all	Average number per day, engaged in activity
		Minutes	Number	Number
Food hardship	Enough food to eat	382.7	2.02	2.12
		(1.51)	(0.01)	(0.01)
	Not enough food to eat	**398.2**	**1.74**	**1.86**
		(5.88)	(0.03)	(0.03)
Bodyweight category	Underweight ±	379.6	2.01	2.18
		(11.72)	(0.09)	(0.08)
	Normal ±	384.2	**2.08**	**2.17**
		(2.58)	(0.01)	(0.01)
	Overweight ±	384.4	2.04	2.13
		(2.52)	(0.01)	(0.01)
	Obesity ±	385.9	**1.92**	**2.03**
		(2.64)	(0.01)	(0.01)

EHM survey weights were used to compute nationally representative estimates. Standard errors in parentheses. In boldface if the difference between the mean of the subgroup and the mean of the reference category in 2014-16 is statistically different from zero ($p < 0.1$). Reference categories are: income >185% of the FPL, SNAP participant, enough food to eat, and overweight. SNAP participants: individuals living in households that received benefits under USDA's Supplemental Nutrition Assistance Program (SNAP) in the past month. Low-income, non-SNAP participants: individuals with household income that was 130 percent of the Federal poverty level or below who had not received SNAP benefits in the past month. Income: individuals with household income that was 185 percent or above, between 185 percent and 130 percent, and 130 percent or below of the Federal poverty level. ± For participants aged 20 years and older. For the bodyweight categories, adult body mass index (BMI) is calculated as: (weight in pounds)/(height in inches)2 x 703. The categories are: underweight (BMI < 18.5), normal weight (18.5 ≤ BMI < 25), overweight (25 ≤ BMI < 30), and obese (30 ≥ BMI).

Source: USDA, Economic Research Service, using data from the Bureau of Labor Statistics' 2014-16 Eating and Health Module (EHM) of the American Time Use Survey (ATUS).

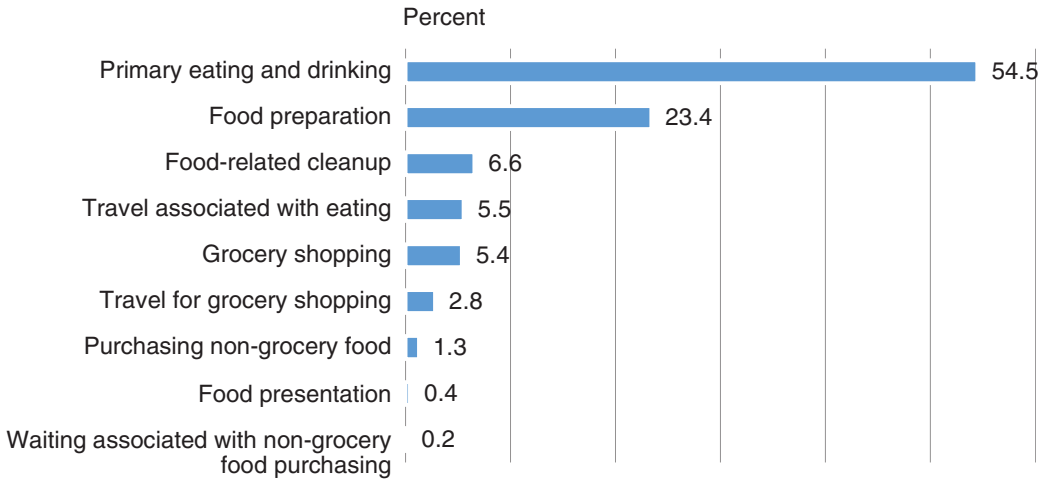
Other Food-Related Activities: Time Spent in Activities and Share of Americans Who Engaged in Them

In addition to time spent in eating events, the production of meals requires other time inputs including travel for grocery shopping, the shopping itself, food preparation, and food-related cleanup. Even consumption of food away from home involves travel associated with eating, waiting associated with non-grocery food purchases, and purchasing non-grocery food. In this chapter, we outline the contribution of these other activities to total food-related time use and present estimates for average time spent, the share of the population reporting the activity, and the time spent by those engaged in the activity. We compare estimates for 2014-17 to 2004-07 to estimate the change over the decade and compare estimates for several population subgroups. For subgroups identified only in the 2014-16 EHM (SNAP participation status, bodyweight status, and food hardship), the subgroup comparisons refer to 2014-16. As in the previous section, only significant differences (at the 10-percent level) are discussed. We close this section with a comparison of total food-related time use to other categories of time use for Americans.

Figure 8 shows the share that each food-related activity contributed to the total time Americans spent on food on an average day in 2014-17. In both 2004-07 and 2014-17, the time ranking of food-related activities is almost the same. That is, in 2014-17, primary eating and drinking occupied over half of Americans' food-related time use, with less time (in descending order of time taken) by food preparation, food-related cleanup, travel associated with eating, grocery shopping, travel for grocery shopping, purchasing non-grocery food, food presentation, and, finally, waiting associated with non-grocery food purchases. In 2004-07, the only difference was that food-related cleanup and travel associated with eating were in the reverse order (i.e., travel took more time than cleanup). Together, primary eating and drinking and food preparation occupied over three quarters of Americans' total food-related time use in both time periods (e.g., 77.9 percent of Americans' total food-related time use in 2014-17).

Figure 8

Percentage each food-related activity contributed to the total time spent on food on an average day in 2014-17, age 15 and older



EHM survey sampling weights were used to compute nationally representative estimates.

Source: USDA, Economic Research Service, using data from the Bureau of Labor Statistics' 2014-17 American Time Use Survey (ATUS) and Eating and Health Module (EHM).

From 2004-07 to 2014-17, the total number of minutes that Americans spent in all food-related activities increased from 116.2 to 117.5 minutes, even as the largest category (time spent in primary eating and drinking) fell by 4.5 percent, or 3.0 minutes. If we exclude primary eating and drinking, the overall number of minutes that Americans spent increased by 8.7 percent, or 4.3 minutes. This increase was driven mainly by food preparation (table 8). The next subchapters detail changes over time in food-related activities.[12]

Table 8
Time spent in food-related activities on an average day in 2004-07 and 2014-17, age 15 and older

	2004-07 Minutes	All 2014-17 Minutes	
Primary eating and drinking	67.0	64.0	***
	(0.25)	(0.31)	
Food preparation	23.4	27.5	***
	(0.21)	(0.24)	
Food-related cleanup	7.4	7.7	**
	(0.09)	(0.15)	
Travel associated with eating	7.4	6.5	***
	(0.15)	(0.13)	
Grocery shopping	6.1	6.3	*
	(0.10)	(0.12)	
Travel for grocery shopping	3.3	3.3	
	(0.06)	(0.06)	
Purchasing non-grocery food	1.1	1.5	***
	(0.03)	(0.03)	
Food presentation	0.3	0.5	***
	(0.02)	(0.03)	
Waiting associated with non-grocery food purchasing	0.2	0.2	**
	(0.01)	(0.01)	
Total	116.2	117.5	**
	(0.42)	(0.53)	

Survey weights were used to compute nationally representative estimates. Standard errors in parentheses.
If comparisons over time are statistically significantly different from zero (*** = p < 0.01; ** = p < 0.05; * = p < 0.1).

Source: USDA, Economic Research Service, using data from the Bureau of Labor Statistics' 2004-07 and 2014-17 American Time Use Survey (ATUS).

[12]In this report, we do not focus on the smallest two food-related categories (i.e., food presentation and waiting associated with non-grocery food purchasing) because together they represent a tiny amount (less than 1 percent) of the total time spent in food-related activities (table 8).

Food Preparation[13]

The amount of time spent on food preparation in an average day increased from 23.4 minutes in 2004-07 to 27.5 minutes in 2014-17. However, if we count only the 53.5 percent of Americans who engaged in food preparation, the average time spent in the activity is much higher (51.4 minutes a day in 2014-17, up from 49.5 minutes a day in 2004-07) (table 9).

This increase from 2004-07 to 2014-17 in the proportion of Americans who engaged in food preparation recalls research findings that, during the 2007-09 Great Recession, Americans started eating food away from home (FAFH) less often and increased both their number of family meals—meals eaten with a majority of household members—and their number of family meals prepared at home (Hamrick and Okrent, 2014; Todd and Morrison, 2014).

Table 9
Percentage of Americans engaged and time spent in preparing food on an average day in 2004-07 and 2014-17, age 15 and older

		Average minutes per day, all			Percentage engaged in preparing food			Average minutes per day, engaged in activity		
		2004-07	2014-17		2004-07	2014-17		2004-07	2014-17	
		Minutes	*Minutes*		*Percentage*	*Percentage*		*Minutes*	*Minutes*	
	All	23.4 (0.21)	27.5 (0.24)	***	47.3 (0.27)	53.5 (0.30)	***	49.5 (0.39)	51.4 (0.38)	***
Gender	Male	13.1 (0.24)	**17.1** (0.28)	***	33.4 (0.41)	**41.1** (0.42)	***	39.4 (0.62)	**41.5** (0.53)	**
	Female	33.0 (0.32)	37.2 (0.45)	***	60.4 (0.33)	65.1 (0.43)	***	54.7 (0.46)	57.2 (0.56)	***
Age	Age 15-17	5.1 (0.33)	**6.6** (0.65)	**	15.4 (0.73)	**21.0** (1.21)	***	32.9 (1.54)	**31.2** (2.60)	
	Age 18-24	16.8 (0.88)	**12.5** (0.59)	***	38.2 (1.24)	**28.7** (0.93)	***	44.1 (1.77)	**43.6** (1.46)	
	Age 25-64	25.4 (0.26)	29.9 (0.31)	***	51.5 (0.33)	57.2 (0.34)	***	49.4 (0.45)	52.2 (0.46)	***
	Age 65+	30.1 (0.57)	**31.7** (0.54)	**	55.7 (0.61)	**59.1** (0.58)	***	54.0 (0.86)	53.7 (0.83)	
Household type	Single, no children	20.2 (0.39)	**23.5** (0.35)	***	51.1 (0.58)	56.1 (0.57)	***	39.6 (0.68)	**41.9** (0.50)	**
	Couple, no children	25.1 (0.42)	28.5 (0.53)	***	49.8 (0.59)	56.0 (0.60)	***	50.4 (0.70)	50.9 (0.77)	
	Single with child/children	31.8 (0.87)	**37.9** (1.23)	***	60.4 (1.18)	**67.7** (1.35)	***	52.7 (1.14)	**56.1** (1.34)	*
	Couple with child/children	30.2 (0.39)	**36.5** (0.54)	***	56.2 (0.48)	**62.6** (0.49)	***	53.8 (0.62)	**58.3** (0.75)	***

—continued

[13]In the ATUS and EHM, this variable also includes drink preparation and is therefore called "food and drink preparation," but in this report, we refer to it as "food preparation" for short.

Table 9

Percentage of Americans engaged and time spent in preparing food on an average day in 2004-07 and 2014-17, age 15 and older – continued

		Average minutes per day, all			Percentage engaged in preparing food			Average minutes per day, engaged in activity		
		2004-07	2014-17		2004-07	2014-17		2004-07	2014-17	
		Minutes	*Minutes*		*Percentage*	*Percentage*		*Minutes*	*Minutes*	
	Hispanic	28.2 (0.61)	**30.7** (0.67)	***	44.3 (0.73)	**49.7** (0.76)	***	63.7 (1.11)	**61.9** (1.06)	
	Non-Hispanic White	22.1 (0.23)	26.0 (0.31)	***	48.4 (0.33)	55.5 (0.38)	***	45.6 (0.41)	46.8 (0.45)	**
	Non-Hispanic Black	24.0 (0.66)	25.8 (0.65)	*	44.5 (0.82)	**46.2** (0.78)		53.9 (1.27)	**55.8** (1.14)	
	Non-Hispanic other	28.2 (1.07)	**38.5** (1.57)	***	45.8 (1.38)	56.3 (1.38)	***	61.5 (1.72)	**68.4** (2.14)	**
Education level	Lower than high school ±	33.6 (0.84)	**37.0** (1.02)	**	52.8 (0.83)	55.0 (0.94)	*	63.7 (1.32)	**67.3** (1.56)	*
Education level	High school de-gree or GED ±	26.8 (0.50)	30.2 (0.56)	***	52.6 (0.54)	56.6 (0.67)	***	51.0 (0.78)	53.4 (0.85)	**
Education level	Some college or associate's degree ±	25.7 (0.43)	**30.5** (0.54)	***	53.0 (0.61)	**59.6** (0.55)	***	48.5 (0.69)	51.2 (0.82)	**
Education level	Bachelor's de-gree ±	23.3 (0.44)	28.1 (0.56)	***	51.2 (0.69)	**57.8** (0.70)	***	45.5 (0.71)	**48.6** (0.80)	***
Education level	More than bache-lor's degree ±	22.8 (0.56)	28.4 (0.63)	***	51.3 (0.89)	**58.0** (0.78)	***	44.5 (0.93)	**49.0** (0.86)	***

Survey weights were used to compute nationally representative estimates. Standard errors in parentheses. If comparisons over time are statistically significantly different from zero (*** = p < 0.01; ** = p < 0.05; * = p < 0.1). In boldface if the difference between the mean of the subgroup and the mean of the reference category in 2014-17 is statistically different from zero (p < 0.1). Reference categories are: female, aged 25-64 years, adult couple without children, non-Hispanic White, and high school degree or GED. Household with child/children refers to a household with at least one person age 17 and younger. ± For participants age 25 and older.

Source: USDA, Economic Research Service, using data from the Bureau of Labor Statistics' 2004-07 and 2014-17 American Time Use Survey (ATUS).

Subgroup Differences in 2014-17

A notable gender disparity appeared in all of the dimensions of time spent in food preparation that we analyzed. On an average day in 2014-17, women spent 117.5 percent more time in food preparation than men (37.2 minutes versus 17.1 minutes), and a higher share of women engaged in food preparation than men (65.1 percent versus 41.1 percent). Counting only those women and men who performed food preparation, women performed food preparation for longer (57.2 minutes versus 41.5 minutes—37.8 percent more time than men).

Aside from gender disparities, many other subgroup differences in time spent in food preparation in 2014-17. Americans aged 25 to 64 years spent more time in food preparation than the two younger age groups but less time than the oldest age group.[14] Single adults without children spent 17.5 percent less time in food preparation than couples without children, while single adults with children and couples with children spent more time in food preparation than couples without children. Non-Hispanic White Americans spent less time in food preparation than did Hispanic Americans and Americans of "other" race/ethnicity. Americans aged 25 years and older whose educational attainment was a high school diploma or GED spent less time in food preparation than Americans with less than a high school diploma or GED but more time in food preparation than those with some college or an associate's degree and those with educational attainment of a bachelor's degree (table 9).

On an average day in 2014-16, non-SNAP participants overall and low-income non-SNAP participants spent less time in food preparation than SNAP participants.[15, 16] Similarly, Americans with an income greater than 185 percent of the FPT spent less time in food preparation on an average day than Americans in the two lower income categories.[17] Americans without food hardship spent 10.9 percent less time in food preparation than Americans with food hardship. Finally, Americans aged 20 years and older with normal weight spent 6.0 percent more time in food preparation than overweight Americans (table 10).

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[14]See Kuhns and Saksena (2017) for additional comparisons of different American age groups' food-related behavior, such as that of Millennials versus Generation Xers versus Baby Boomers.

[15]Throughout this report, we refer to three different SNAP participation categories: SNAP participants (who are low-income, by definition), low-income non-SNAP participants, and all non-SNAP participants (this includes both high-income [income-ineligible] and low-income [income-eligible] non-SNAP participants).

[16]As a caveat, it should be noted that extensive underreporting of SNAP benefits occurs. About one-third of SNAP benefits have been found to not be reported, mostly due to "not reporting at all, rather than reporting too little conditional on reporting" (Meyer et al., 2009).

[17]Meanwhile, as Gregory et al. (2014) show, high-income Americans eat out at fast-food restaurants and full-service restaurants at higher rates than lower income Americans.

Table 10

Percentage of Americans engaged and time spent in preparing food on an average day in 2014-16, age 15 and older

		Average minutes per day, all	Percentage engaged in preparing food	Average minutes per day, engaged in activity
		Minutes	Percentage	Minutes
	All	27.3 (0.26)	53.4 (0.35)	51.1 (0.41)
Income	Income >185%	24.3 (0.35)	52.6 (0.47)	46.2 (0.55)
	Income <= 185% & >130%	**30.8** (0.73)	**55.3** (0.98)	55.8 (1.08)
	Income <= 130%	**34.7** (0.78)	**55.6** (0.90)	**62.4** (1.10)
SNAP participation	SNAP participant	36.5 (0.99)	57.7 (1.13)	63.3 (1.35)
	Non-SNAP participant	**26.4** (0.28)	**53.1** (0.39)	**49.6** (0.43)
	Low-Income Non-SNAP participant	**32.3** (0.99)	**52.9** (1.17)	61.1 (1.50)
Food hardship	Enough food to eat	27.1 (0.28)	53.6 (0.36)	50.6 (0.43)
	Not enough food to eat	**30.4** (1.41)	51.2 (1.44)	**59.4** (2.08)
Bodyweight category	Underweight ±	29.8 (3.14)	56.6 (3.52)	52.7 (3.97)
	Normal ±	**30.1** (0.49)	**58.6** (0.69)	51.4 (0.74)
	Overweight ±	28.4 (0.50)	55.0 (0.64)	51.5 (0.81)
	Obesity ±	27.8 (0.62)	54.1 (0.67)	51.3 (0.88)

EHM survey weights were used to compute nationally representative estimates. Standard errors in parentheses. In boldface if the difference between the mean of the subgroup and the mean of the reference category in 2014-16 is statistically different from zero ($p < 0.1$). Reference categories are: income >185% of the FPL, SNAP participant, enough food to eat, and overweight. SNAP participants: individuals living in households that received benefits under USDA's Supplemental Nutrition Assistance Program (SNAP) in the past month. Low-income, non-SNAP participants: individuals with household income that was 130 percent of the Federal poverty level or below who had not received SNAP benefits in the past month. Income: individuals with household income that was 185 percent or above, between 185 percent and 130 percent, and 130 percent or below of the Federal poverty level. ± For participants aged 20 years and older. For the bodyweight categories, adult body mass index (BMI) is calculated as: (weight in pounds)/(height in inches)2 x 703. The categories are: underweight (BMI < 18.5), normal weight (18.5 ≤ BMI < 25), overweight (25 ≤ BMI < 30), and obese (30 ≥ BMI).

Source: USDA, Economic Research Service, using data from the Bureau of Labor Statistics' 2014-16 Eating and Health Module (EHM) of the American Time Use Survey (ATUS).

Changes Within Subgroups From 2004-07 to 2014-17

All subgroups that we examined experienced an increase in time spent in food preparation except for Americans aged 18 to 24 years, which was also the only subgroup to experience a decrease in time spent in food preparation during the decade (table 9). In terms of percentage increase, the subgroups with the largest increases in time spent in food preparation were men (an increase of 30.5 percent), Americans aged 15 to 17 years (an increase of 29.4 percent), couples with children (an increase of 20.9 percent), Americans with more than a bachelor's degree (an increase of 24.6 percent), and Americans of non-Hispanic "other" race/ethnicity (an increase of 36.5 percent).

Food-Related Cleanup

Americans devoted an average of 7.7 minutes per day to food-related cleanup in 2014-17, up 4.1 percent from 2004-07. However, only 22.6 percent of Americans performed food-related cleanup on an average day (with a noticeable gender disparity, as 32.7 percent of women engaged in the activity on an average day, compared to just 11.8 percent of men). Counting only those Americans who performed food-related cleanup, 34.1 minutes per day were devoted to the activity.

Subgroup Differences in 2014-17

There were significant gender disparities in food-related cleanup in 2014-17, with women cleaning for 210.8 percent more time than men, and, among those who engaged in food-related cleanup, women cleaning for 13.2 percent more time than men (table 11).

Table 11
Percentage of Americans engaged and time spent in food-related cleanup on an average day in 2004-07 and 2014-17, age 15 and older

		Average minutes per day, all			Percentage engaged in food-related cleanup			Average minutes per day, engaged in activity		
		2004-07 Minutes	2014-17 Minutes		2004-07 Percentage	2014-17 Percentage		2004-07 Minutes	2014-17 Minutes	
	All	7.4 (0.09)	7.7 (0.15)	**	21.8 (0.20)	22.6 (0.26)	**	33.8 (0.33)	34.1 (0.45)	
Gender	Male	3.1 (0.09)	**3.7** (0.13)	***	10.3 (0.23)	**11.8** (0.28)	***	30.1 (0.62)	**31.0** (0.79)	
Gender	Female	11.4 (0.16)	11.5 (0.26)		32.7 (0.34)	32.7 (0.44)		34.9 (0.39)	35.1 (0.52)	
Age	Age 15-17	1.7 (0.18)	**2.6** (0.34)	**	6.8 (0.57)	**8.8** (0.83)	*	25.3 (1.65)	**29.3** (2.46)	
Age	Age 18-24	4.2 (0.49)	**2.7** (0.23)	***	10.9 (0.77)	**8.3** (0.50)	***	38.0 (3.11)	32.7 (1.78)	
Age	Age 25-64	7.8 (0.11)	7.9 (0.16)		23.6 (0.25)	23.5 (0.31)		33.0 (0.38)	33.6 (0.41)	
Age	Age 65+	11.5 (0.33)	**10.7** (0.37)		30.6 (0.56)	**30.3** (0.56)		37.5 (0.86)	35.1 (1.03)	*

—continued

Table 11

Percentage of Americans engaged and time spent in food-related cleanup on an average day in 2004-07 and 2014-17, age 15 and older – continued

		Average minutes per day, all			Percentage engaged in food-related cleanup			Average minutes per day, engaged in activity		
		2004-07	2014-17		2004-07	2014-17		2004-07	2014-17	
		Minutes	Minutes		Percentage	Percentage		Minutes	Minutes	
Household type	Single, no children	6.1 (0.20)	**6.1** (0.17)		19.5 (0.40)	**20.2** (0.40)		31.3 (0.79)	**30.0** (0.58)	
	Couple, no children	8.4 (0.25)	8.0 (0.29)		24.6 (0.46)	24.7 (0.56)		34.1 (0.84)	32.3 (0.89)	
	Single with child/ children	7.8 (0.34)	**9.7** (0.58)	***	24.9 (0.96)	**27.9** (1.18)	*	31.3 (0.84)	34.7 (1.23)	**
	Couple with child/children	9.9 (0.20)	**10.7** (0.30)	*	28.9 (0.44)	**29.7** (0.54)		34.4 (0.49)	**35.9** (0.66)	*
Ethnicity and race	Hispanic	8.3 (0.36)	**8.8** (0.40)		19.4 (0.52)	**20.3** (0.67)		42.8 (1.47)	**43.3** (1.45)	
	Non-Hispanic White	7.6 (0.11)	7.9 (0.18)		23.3 (0.24)	24.6 (0.34)	***	32.6 (0.36)	32.2 (0.52)	
	Non-Hispanic Black	5.2 (0.27)	**5.0** (0.29)		16.0 (0.62)	**14.8** (0.59)		32.5 (1.12)	33.4 (1.52)	
	Non-Hispanic other	7.1 (0.39)	7.9 (0.42)		21.1 (0.94)	**22.0** (0.91)		33.7 (1.53)	**35.9** (1.24)	
Education level	Lower than high school ±	10.5 (0.45)	**10.0** (0.53)		24.9 (0.78)	24.0 (0.95)		42.3 (1.27)	**41.9** (1.63)	
	High school degree or GED ±	8.8 (0.20)	9.1 (0.32)		25.3 (0.40)	25.5 (0.54)		34.7 (0.61)	35.8 (0.91)	
	Some college or associate's degree ±	8.4 (0.25)	8.6 (0.27)		25.6 (0.51)	**25.6** (0.56)		33.0 (0.74)	**33.5** (0.75)	
	Bachelor's degree ±	7.4 (0.21)	**7.6** (0.23)		24.2 (0.50)	24.5 (0.54)		30.7 (0.64)	**30.9** (0.61)	
	More than bachelor's degree ±	6.9 (0.33)	**7.4** (0.27)		23.0 (0.76)	24.6 (0.68)		30.2 (1.04)	**30.0** (0.70)	

Survey weights were used to compute nationally representative estimates. Standard errors in parentheses. If comparisons over time are statistically significantly different from zero (*** = p < 0.01; ** = p < 0.05; * = p < 0.1). In boldface if the difference between the mean of the subgroup and the mean of the reference category in 2014-17 is statistically different from zero (p < 0.1). Reference categories are: female, aged 25-64 years, adult couple without children, non-Hispanic White, and high school degree or GED. Household with child/ children refers to a household with at least one person age 17 and younger. ± For participants age 25 and older.

Source: USDA, Economic Research Service, using data from the Bureau of Labor Statistics' 2004-07 and 2014-17 American Time Use Survey (ATUS).

In addition to gender disparities, there were other subgroup differences in time spent in food-related cleanup in 2014-17. Younger Americans (both those aged 15 to 17 years and those aged 18 to 24 years) spent much less time in food-related cleanup than Americans aged 25 to 64 years (67.1 percent less time and 65.8 percent less time per average day, respectively), while older Americans (those aged 65 years and older) spent

35.4 percent more time in food-related cleanup than Americans aged 25 to 64 years. Compared to couples without children, single adults without children spent 23.8 percent less time in food-related cleanup, while single adults with children and couples with children spent more time (21.3 percent and 33.8 percent more, respectively) in food-related cleanup. Compared to non-Hispanic White Americans, Hispanic Americans spent more time in food-related cleanup whereas non-Hispanic Black Americans spent less time. Compared to Americans whose educational attainment was a high school diploma or a GED, Americans with less than a high school diploma or GED spent more time in food-related cleanup while Americans with a bachelor's degree or more than a bachelor's degree spent less time in the activity.

On an average day in 2014-16, non-SNAP participants spent less time in food-related cleanup than SNAP participants (as did low-income non-SNAP participants). Similarly, Americans with incomes over 185 percent of the FPT spent less time in food-related cleanup than both categories of lower income Americans. Finally, Americans with normal weight spent 11.5 percent more time in food-related cleanup than overweight Americans (table 12).

Changes Within Subgroups From 2004-07 to 2014-17

Three subgroups that we examined increased their time spent in food-related cleanup from 2004-07 to 2014-17: Americans aged 15 to 17 years (by 52.9 percent), single adults with children (by 24.4 percent), and couples with children (by 8.1 percent). The only subgroup that decreased its time spent in food-related cleanup was Americans aged 18 to 24 years (by 35.7 percent).

Grocery Shopping

From 2004-07 to 2014-17, the time Americans spent in grocery shopping grew modestly, from 6.1 minutes a day to 6.3 minutes a day. However, the share of Americans who grocery-shopped on an average day stayed about the same, at 13.8 percent. The average length of time for grocery shopping among Americans engaged in the activity on an average day in 2014-17 was 46.0 minutes, up 6.5 percent from a decade earlier.

Subgroup Differences in 2014-17

There was a marked gender disparity in time spent in grocery shopping, with women shopping for groceries for 77.8 percent more time; counting only the people who engaged in grocery shopping, women spent 9.9 percent more time grocery shopping than men (table 13).

Apart from gender disparities, there were other subgroup differences in time spent grocery shopping in 2014-17. Younger Americans (both those aged 15 to 17 years and those aged 18 to 24 years) spent markedly less time grocery shopping (73.8 percent less time and 40.0 percent less time per averageday, respectively) than Americans aged 25 to 64 years, while older Americans (those aged 65 years and older) spent 23.1 percent more time grocery shopping than Americans aged 25 to 64 years. Single adults without children spent 14.1 percent less time grocery shopping than couples without children. Hispanic Americans and Americans of non-Hispanic "other" race/ethnicity spent more time grocery shopping than non-Hispanic White Americans, while non-Hispanic Black Americans spent less time than non-Hispanic White Americans. The three highest educational-attainment categories (people with more than a bachelor's degree, people with a bachelor's degree, and people with some college or an associate's degree) spent more time grocery shopping than Americans with a high school diploma or GED (table 13).

Table 12

Percentage of Americans engaged and time spent in food-related cleanup on an average day in 2014-16, age 15 and older

		Average minutes per day, all	Percentage engaged in food-related cleanup	Average minutes per day, engaged in activity
		Minutes	Percentage	Minutes
	All	7.8	22.8	34.0
		(0.16)	(0.29)	(0.53)
Income	Income >185%	6.9	22.0	31.3
		(0.18)	(0.35)	(0.64)
	Income <= 185% & >130%	**9.1**	**24.4**	**37.5**
		(0.37)	(0.75)	(1.02)
	Income <= 130%	**9.6**	**24.3**	**39.5**
		(0.43)	(0.75)	(1.15)
SNAP participation	SNAP participant	10.8	26.3	40.9
		(0.69)	(1.02)	(1.82)
	Non-SNAP participant	**7.4**	**22.5**	**33.1**
		(0.16)	(0.29)	(0.52)
	Low-Income Non-SNAP participant	**8.5**	**22.5**	37.7
		(0.43)	(0.85)	(1.31)
Food hardship	Enough food to eat	7.7	23.0	33.6
		(0.17)	(0.30)	(0.54)
	Not enough food to eat	8.5	**20.6**	**41.4**
		(0.76)	(1.20)	(2.77)
Bodyweight category	Underweight ±	10.9	**28.0**	-
		(2.67)	(3.02)	
	Normal ±	**8.7**	**26.5**	32.9
		(0.28)	(0.59)	(0.69)
	Overweight ±	7.8	22.7	34.3
		(0.29)	(0.48)	(1.04)
	Obesity ±	7.6	22.2	34.4
		(0.27)	(0.64)	(0.88)

EHM survey weights were used to compute nationally representative estimates. Standard errors in parentheses. In boldface if the difference between the mean of the subgroup and the mean of the reference category in 2014-16 is statistically different from zero ($p < 0.1$). Reference categories are: income >185% of the FPL, SNAP participant, enough food to eat, and overweight. SNAP participants: individuals living in households that received benefits under USDA's Supplemental Nutrition Assistance Program (SNAP) in the past month. Low-income, non-SNAP participants: individuals with household income that was 130 percent of the Federal poverty level or below who had not received SNAP benefits in the past month. Income: individuals with household income that was 185 percent or above, between 185 percent and 130 percent, and 130 percent or below of the Federal poverty level. ± For participants aged 20 years and older. For the bodyweight categories, adult body mass index (BMI) is calculated as: (weight in pounds)/(height in inches)2 x 703. The categories are: underweight (BMI < 18.5), normal weight (18.5 ≤ BMI < 25), overweight (25 ≤ BMI < 30), and obese (30 ≥ BMI).

Source: USDA, Economic Research Service, using data from the Bureau of Labor Statistics' 2014-16 Eating and Health Module (EHM) of the American Time Use Survey (ATUS).

Table 13

Percentage of Americans engaged and time spent in grocery shopping on an average day in 2004-07 and 2014-17, age 15 and older

		Average minutes per day, all			Percentage engaged in food-related cleanup			Average minutes per day, engaged in activity		
		2004-07	2014-17		2004-07	2014-17		2004-07	2014-17	
		Minutes	Minutes		Percentage	Percentage		Minutes	Minutes	
	All	6.1 (0.10)	6.3 (0.12)	*	14.0 (0.19)	13.8 (0.20)		43.2 (0.44)	46.0 (0.58)	***
Gender	Male	4.2 (0.12)	**4.5** (0.14)	*	10.4 (0.25)	**10.4** (0.27)		40.4 (0.75)	**43.3** (0.92)	**
Gender	Female	7.8 (0.14)	8.0 (0.19)		17.5 (0.26)	16.9 (0.32)		44.8 (0.53)	47.6 (0.75)	***
Age	Age 15-17	1.9 (0.26)	**1.7** (0.42)		4.5 (0.47)	**3.6** (0.54)		42.8 (3.84)	-	
Age	Age 18-24	4.7 (0.60)	**3.9** (0.33)		9.8 (0.83)	**8.0** (0.54)	*	47.9 (3.75)	49.1 (2.46)	
Age	Age 25-64	6.4 (0.11)	6.5 (0.14)		15.2 (0.22)	14.4 (0.25)	**	41.9 (0.49)	45.5 (0.59)	***
Age	Age 65+	8.0 (0.28)	**8.0** (0.27)		17.2 (0.49)	**17.0** (0.50)		46.3 (1.11)	46.8 (1.02)	
Household type	Single, no children	6.4 (0.19)	**6.1** (0.18)		15.8 (0.40)	14.8 (0.38)	*	40.2 (0.70)	**41.3** (0.79)	
Household type	Couple, no children	6.4 (0.24)	7.1 (0.24)	**	15.6 (0.46)	15.4 (0.43)		40.9 (0.94)	46.1 (0.94)	***
Household type	Single with child/children	7.8 (0.53)	6.9 (0.46)		16.9 (0.92)	16.2 (0.95)		46.4 (1.66)	**42.8** (1.67)	
Household type	Couple with child/children	7.3 (0.18)	7.5 (0.22)		15.9 (0.32)	15.3 (0.36)		46.1 (0.67)	**48.9** (0.90)	***
Ethnicity and race	Hispanic	6.9 (0.30)	**7.0** (0.36)		13.7 (0.53)	**13.0** (0.53)		50.5 (1.35)	**54.2** (1.62)	*
Ethnicity and race	Non-Hispanic White	6.0 (0.11)	6.4 (0.15)	**	14.4 (0.20)	14.4 (0.25)		41.6 (0.51)	44.3 (0.68)	***
Ethnicity and race	Non-Hispanic Black	5.0 (0.28)	**4.5** (0.25)		11.5 (0.52)	**10.6** (0.49)		44.0 (1.57)	42.4 (1.44)	
Ethnicity and race	Non-Hispanic other	7.3 (0.55)	**7.5** (0.49)		15.3 (0.93)	14.8 (0.86)		47.4 (2.43)	**50.6** (2.30)	

—continued

Table 13

Percentage of Americans engaged and time spent in grocery shopping on an average day in 2004-07 and 2014-17, age 15 and older– continued

		Average minutes per day, all			Percentage engaged in food-related cleanup			Average minutes per day, engaged in activity		
		2004-07	2014-17		2004-07	2014-17		2004-07	2014-17	
		Minutes	Minutes		Percentage	Percentage		Minutes	Minutes	
Education level	Lower than high school ±	7.0 (0.36)	6.5 (0.42)		13.8 (0.61)	12.6 (0.67)		51.0 (1.52)	**51.8** (2.39)	
	High school degree or GED ±	6.7 (0.21)	6.1 (0.24)	*	15.0 (0.35)	13.1 (0.44)	***	44.6 (0.95)	46.8 (1.11)	
	Some college or associate's degree ±	6.6 (0.21)	**7.5** (0.26)	***	15.6 (0.39)	**15.8** (0.46)		42.0 (0.87)	47.7 (1.00)	***
	Bachelor's degree ±	6.7 (0.22)	**7.2** (0.21)		17.0 (0.49)	**16.5** (0.45)		39.4 (0.79)	**43.4** (0.86)	
	More than bachelor's degree ±	6.6 (0.24)	**7.0** (0.29)		17.3 (0.55)	**16.8** (0.59)		38.1 (0.98)	**41.8** (1.04)	**

Survey weights were used to compute nationally representative estimates. Standard errors in parentheses. If comparisons over time are statistically significantly different from zero (*** = p < 0.01; ** = p < 0.05; * = p < 0.1). In boldface if the difference between the mean of the subgroup and the mean of the reference category in 2014-17 is statistically different from zero (p < 0.1). Reference categories are: female, aged 25-64 years, adult couple without children, non-Hispanic White, and high school degree or GED. - = suppressed due to small cell size. Household with child/children refers to a household with at least one person age 17 and younger. ± For participants age 25 and older.

Source: USDA, Economic Research Service, using data from the Bureau of Labor Statistics' 2004-07 and 2014-17 American Time Use Survey (ATUS).

In 2014-16, the EHM data revealed three subgroup differences: (1) Americans with an income greater than 185 percent of the FPT spent 10.1 percent less time grocery shopping than Americans with an income greater than 130 percent of the FPT and less than or equal to 185 percent of the FPT, (2) overweight Americans spent 9.9 percent less time grocery shopping than normal-weight Americans, and (3) Americans with food hardship (people reporting that they "sometimes" or "often" do not have enough food to eat) spent 18.8 percent less time grocery shopping than Americans without food hardship (table 14).

Changes Within Subgroups From 2004-07 to 2014-17

Four subgroups increased their time spent in grocery shopping during the decade: women, couples without children, non-Hispanic White Americans, and Americans with some college or an associate's degree (by 7.1 percent, 10.9 percent, 6.7 percent, and 13.6 percent, respectively). Meanwhile, Americans whose educational attainment was a high school diploma or GED were the only subgroup to decrease their time spent in grocery shopping during the decade, a decrease of 9.0 percent (table 13).

Table 14

Percentage of Americans engaged and time spent in grocery shopping on an average day in 2014-16, age 15 and older

		Average minutes per day, all	Percentage engaged in grocery shopping	Average minutes per day, engaged in activity
		Minutes	Percentage	Minutes
	All	6.3 (0.13)	13.8 (0.24)	45.5 (0.56)
Income	Income >185%	6.2 (0.16)	14.0 (0.32)	44.2 (0.62)
	Income <= 185% & >130%	**6.9** (0.36)	14.5 (0.65)	**47.7** (1.56)
	Income <= 130%	6.3 (0.29)	13.1 (0.49)	**48.2** (1.53)
SNAP participation	SNAP participant	6.3 (0.48)	13.5 (0.75)	47.1 (2.16)
	Non-SNAP participant	6.3 (0.13)	14.0 (0.26)	45.4 (0.55)
	Low-Income Non-SNAP participant	6.1 (0.34)	12.8 (0.66)	47.5 (1.81)
Food hardship	Enough food to eat	6.4 (0.14)	14.0 (0.25)	45.5 (0.59)
	Not enough food to eat	**5.2** (0.50)	**11.2** (0.87)	46.7 (2.37)
Bodyweight category	Underweight ±	5.9 (1.13)	13.5 (2.07)	43.5 (4.75)
	Normal ±	**7.1** (0.27)	**15.9** (0.51)	45.0 (1.00)
	Overweight ±	6.4 (0.21)	14.6 (0.43)	43.8 (0.88)
	Obesity ±	6.5 (0.27)	**13.3** (0.41)	**48.8** (1.27)

EHM survey weights were used to compute nationally representative estimates. Standard errors in parentheses. In boldface if the difference between the mean of the subgroup and the mean of the reference category in 2014-16 is statistically different from zero ($p < 0.1$). Reference categories are: income >185% of the FPL, SNAP participant, enough food to eat, and overweight. SNAP participants: individuals living in households that received benefits under USDA's Supplemental Nutrition Assistance Program (SNAP) in the past month. Low-income, non-SNAP participants: individuals with household income that was 130 percent of the Federal poverty level or below who had not received SNAP benefits in the past month. Income: individuals with household income that was 185 percent or above, between 185 percent and 130 percent, and 130 percent or below of the Federal poverty level. ± For participants aged 20 years and older. For the bodyweight categories, adult body mass index (BMI) is calculated as: (weight in pounds)/(height in inches)2 x 703. The categories are: underweight (BMI < 18.5), normal weight (18.5 ≤ BMI < 25), overweight (25 ≤ BMI < 30), and obese (30 ≥ BMI).

Source: USDA, Economic Research Service, using data from the Bureau of Labor Statistics' 2014-16 Eating and Health Module (EHM) of the American Time Use Survey (ATUS).

Travel for Grocery Shopping

On average, Americans spent 3.3 minutes per day on travel for grocery shopping during 2014-17, a time expenditure that was not statistically different one decade earlier. Only 13.7 percent of Americans engaged in travel for grocery shopping on an average day, and those who did engage in travel for grocery shopping spent an average of 24.4 minutes per day (table 15).

Subgroup Differences in 2014-17

In the overall U.S. population, women traveled for grocery shopping 57.7 percent longer than men, and women were 61.5 percent more likely than men to travel for grocery shopping on an average day (table 15).

Apart from gender disparities, there were other subgroup differences in time spent in travel for grocery shopping in 2014-17. Younger Americans (both those aged 15 to 17 years and those aged 18 to 24 years) spent less time in travel for grocery shopping (80.0 percent less time and 51.4 percent less time per average day, respectively) than Americans aged 25 to 64 years, while older Americans—those aged 65 years and older—spent 20.0 percent more time in travel for grocery shopping than Americans aged 25 to 64 years. Compared to non-Hispanic White Americans, two race/ethnicity groups (Hispanic Americans and non-Hispanic Americans of "other" race) spent more time in travel for grocery shopping, while non-Hispanic Black Americans spent less time in the activity. Compared to Americans whose educational attainment was a high school diploma or GED, all other educational-attainment groups spent more time in travel for grocery shopping.

In the 2014-16 EHM data, there were no subgroup differences regarding time spent in travel for grocery shopping (table 16).

Table 15

Percentage of Americans engaged and time spent in travel for grocery shopping on an average day in 2004-07 and 2014-17, age 15 and older

		Average minutes per day, all			Percentage engaged in travel for grocery shopping			Average minutes per day, engaged in activity		
		2004-07	2014-17		2004-07	2014-17		2004-07	2014-17	
		Minutes	*Minutes*		*Percentage*	*Percentage*		*Minutes*	*Minutes*	
	All	3.3 (0.06)	3.3 (0.06)		14.0 (0.19)	13.7 (0.20)		23.4 (0.30)	24.4 (0.27)	**
Gender	Male	2.5 (0.07)	**2.6** (0.08)		10.4 (0.25)	**10.4** (0.26)		24.1 (0.47)	24.6 (0.42)	
Gender	Female	4.0 (0.09)	4.1 (0.09)		17.4 (0.26)	16.8 (0.32)		23.0 (0.36)	24.3 (0.35)	**
Age	Age 15-17	1.1 (0.19)	**0.7** (0.14)		4.5 (0.48)	**3.6** (0.54)		23.7 (3.49)	**20.5** (2.37)	
Age	Age 18-24	2.3 (0.21)	**1.7** (0.14)	**	9.9 (0.86)	**8.0** (0.53)	*	22.8 (1.32)	21.8 (1.18)	
Age	Age 25-64	3.5 (0.07)	3.5 (0.07)		15.2 (0.22)	14.3 (0.24)	**	23.2 (0.32)	24.6 (0.32)	***
Age	Age 65+	4.3 (0.17)	**4.2** (0.15)		17.2 (0.49)	**16.8** (0.49)		24.9 (0.65)	24.7 (0.56)	
Household type	Single, no children	3.7 (0.13)	3.6 (0.12)		15.8 (0.41)	14.6 (0.38)	**	23.5 (0.52)	24.4 (0.55)	
Household type	Couple, no children	3.8 (0.15)	3.7 (0.13)		15.6 (0.45)	15.2 (0.43)		24.4 (0.62)	24.0 (0.50)	
Household type	Single with child/children	4.0 (0.33)	4.0 (0.31)		16.7 (0.90)	16.0 (0.94)		23.7 (1.41)	25.0 (1.19)	
Household type	Couple with child/children	3.6 (0.10)	3.8 (0.12)		15.9 (0.33)	15.2 (0.36)		22.5 (0.41)	24.9 (0.55)	***
Ethnicity and race	Hispanic	3.6 (0.18)	**3.8** (0.18)		13.7 (0.53)	**13.0** (0.53)		26.5 (0.89)	**29.3** (0.94)	**
Ethnicity and race	Non-Hispanic White	3.2 (0.06)	3.3 (0.07)		14.4 (0.20)	14.4 (0.25)		22.4 (0.34)	22.7 (0.32)	
Ethnicity and race	Non-Hispanic Black	3.0 (0.17)	**2.9** (0.16)		11.4 (0.51)	**10.5** (0.48)		26.1 (1.00)	**27.4** (0.93)	
Ethnicity and race	Non-Hispanic other	4.0 (0.33)	**4.1** (0.28)		15.4 (0.93)	14.8 (0.84)		25.7 (1.28)	**27.5** (1.18)	

—continued

Table 15

Percentage of Americans engaged and time spent in travel for grocery shopping on an average day in 2004-07 and 2014-17, age 15 and older – continued

		Average minutes per day, all			Percentage engaged in travel for grocery shopping			Average minutes per day, engaged in activity		
		2004-07	2014-17		2004-07	2014-17		2004-07	2014-17	
		Minutes	*Minutes*		*Percentage*	*Percentage*		*Minutes*	*Minutes*	
Education level	Lower than high school ±	4.1 (0.22)	**3.7** (0.23)		13.8 (0.61)	12.5 (0.67)		29.8 (1.06)	**29.6** (1.34)	
	High school degree or GED ±	3.5 (0.11)	3.3 (0.13)	*	14.9 (0.35)	13.0 (0.44)	***	23.8 (0.60)	25.1 (0.57)	*
	Some college or associate's degree ±	3.5 (0.11)	**4.0** (0.16)	**	15.6 (0.39)	**15.7** (0.45)		22.4 (0.46)	25.2 (0.60)	***
	Bachelor's degree ±	3.6 (0.13)	**3.7** (0.13)		16.9 (0.49)	**16.4** (0.45)		21.2 (0.52)	**22.7** (0.48)	**
	More than bachelor's degree ±	4.0 (0.21)	**3.8** (0.16)		17.3 (0.56)	**16.6** (0.58)		23.4 (0.95)	**22.9** (0.67)	

Survey weights were used to compute nationally representative estimates. Standard errors in parentheses. If comparisons over time are statistically significantly different from zero (*** = p < 0.01; ** = p < 0.05; * = p < 0.1). In boldface if the difference between the mean of the subgroup and the mean of the reference category in 2014-17 is statistically different from zero (p < 0.1). Reference categories are: female, aged 25-64 years, adult couple without children, non-Hispanic White, and high school degree or GED. Household with child/children refers to a household with at least one person age 17 and younger. ± For participants age 25 and older.

Source: USDA, Economic Research Service, using data from the Bureau of Labor Statistics' 2004-07 and 2014-17 American Time Use Survey (ATUS).

Changes Within Subgroups From 2004-07 to 2014-17

From 2004-07 to 2014-17, three of the subgroups that were examined in this report changed the amount of time they devoted to travel for grocery shopping: Americans whose educational attainment was some college or an associate's degree increased their time spent in travel for grocery shopping by 14.3 percent, while Americans aged 18 to 24 years and Americans whose educational attainment was a high school diploma or GED decreased their time spent in travel for grocery shopping by 26.1 percent and 5.7 percent, respectively (table 15).

Table 16

Percentage of Americans engaged and time spent in travel for grocery shopping on an average day in 2014-16, age 15 and older

		Average minutes per day, all	Percentage engaged in travel for grocery shopping	Average minutes per day, engaged in activity
		Minutes	*Percentage*	*Minutes*
	All	3.3 (0.07)	13.8 (0.23)	24.2 (0.32)
Income	Income >185%	3.3 (0.09)	14.0 (0.31)	23.3 (0.38)
	Income <= 185% & >130%	3.6 (0.20)	14.4 (0.64)	**25.1** (0.91)
	Income <= 130%	3.5 (0.16)	13.1 (0.48)	**26.6** (0.84)
SNAP participation	SNAP participant	3.5 (0.26)	13.4 (0.75)	26.3 (1.19)
	Non-SNAP participant	3.3 (0.07)	13.9 (0.25)	**23.9** (0.33)
	Low-Income Non-SNAP participant	3.3 (0.21)	12.8 (0.65)	26.0 (1.08)
Food hardship	Enough food to eat	3.4 (0.07)	14.0 (0.24)	24.0 (0.33)
	Not enough food to eat	3.0 (0.29)	**11.1** (0.87)	**26.9** (1.68)
Bodyweight category	Underweight ±	3.4 (0.64)	13.5 (2.07)	25.3 (2.70)
	Normal ±	3.6 (0.14)	**15.9** (0.50)	**22.9** (0.54)
	Overweight ±	3.5 (0.13)	14.5 (0.43)	24.4 (0.55)
	Obesity ±	3.3 (0.13)	**13.3** (0.41)	24.9 (0.66)

EHM survey weights were used to compute nationally representative estimates. Standard errors in parentheses. In boldface if the difference between the mean of the subgroup and the mean of the reference category in 2014-16 is statistically different from zero ($p < 0.1$). Reference categories are: income >185% of the FPL, SNAP participant, enough food to eat, and overweight. SNAP participants: individuals living in households that received benefits under USDA's Supplemental Nutrition Assistance Program (SNAP) in the past month. Low-income, non-SNAP participants: individuals with household income that was 130 percent of the Federal poverty level or below who had not received SNAP benefits in the past month. Income: individuals with household income that was 185 percent or above, between 185 percent and 130 percent, and 130 percent or below of the Federal poverty level. ± For participants aged 20 years and older. For the bodyweight categories, adult body mass index (BMI) is calculated as: (weight in pounds)/(height in inches)2 x 703. The categories are: underweight ($BMI < 18.5$), normal weight ($18.5 \leq BMI < 25$), overweight ($25 \leq BMI < 30$), and obese ($30 \geq BMI$).

Source: USDA, Economic Research Service, using data from the Bureau of Labor Statistics' 2014-16 Eating and Health Module (EHM) of the American Time Use Survey (ATUS).

Purchasing Non-Grocery Food

From 2004-07 to 2014-17, the purchasing of non-grocery food (such as from a fast-food restaurant or pizza place) accounted for a small amount of the average American's time: over 1 minute a day, although the amount of time did increase by 36.4 percent during that time period.[18] Only 13.5 percent of Americans engaged in the purchasing of non-grocery food on an average day in 2014-17, spending 10.9 minutes per day in the activity.

Subgroup Differences in 2014-17

The data revealed that, among those who engaged in the purchasing of non-grocery food, women spent 8.7 percent more time on the activity than men did during the average day in 2014-17 (table 17).

Besides gender disparities, other subgroup differences emerged in time spent purchasing non-grocery food in 2014-17. Compared to Americans aged 25 to 64 years, all other age groups (i.e., those aged 15 to 17 years, 18 to 24 years, and 65 years and older) spent less time purchasing non-grocery food on an average day in 2014-17. Single adults with children and couples with children spent more time purchasing non-grocery food than couples without children (by 58.3 percent and 33.3 percent, respectively). Non-Hispanic Black Americans spent 28.6 percent more time purchasing non-grocery food than non-Hispanic White Americans did, while non-Hispanic Americans of "other" race spent 14.3 percent less time than non-Hispanic White Americans did. Americans with less than a high school diploma or GED spent 25.0 percent less time purchasing non-grocery food than did Americans whose educational attainment was a high school diploma or GED, while the three highest educational-attainment categories (i.e., some college or an associate's degree, a bachelor's degree, and more than a bachelor's degree) spent more time purchasing non-grocery food than did Americans whose educational attainment was a high school diploma or GED.

The EHM revealed some subgroup differences during 2014-16: On an average day, (1) the two lower income categories (i.e., Americans with incomes less than or equal to 130 percent of the FPT and Americans with greater than 130 percent of the FPT but less than or equal to 185 percent of the FPT) spent less time purchasing non-grocery food than Americans with incomes greater than 185 percent of the FPT; (2) non-SNAP participants spent 36.4 percent more time purchasing non-grocery food than SNAP participants; and (3) obese Americans spent 23.1 percent more time purchasing non-grocery food than overweight Americans (table 18).

Changes Within Subgroups From 2004-07 to 2014-17

In 2014-17, all subgroups saw an increase in time spent in the purchasing of non-grocery food, except for youth aged 15 to 17 years, who saw no change, and adults aged 18 to 24 years, who saw a decrease (table 17).

[18]It is worth noting that, although the amount of time Americans spend purchasing non-grocery food is small, it may also be underreported. For example, it's quite likely that some respondents simply report that they "drove to McDonald's" and then "ate lunch" rather than separately saying they "drove to McDonald's," "ordered and paid for food," and then "ate lunch." Another example: Someone might fill his or her car with gas and fail to mention that he or she also purchased a sandwich at the gas station. That is, the level of activity detail that respondents report can vary from person to person, and some activities are more salient than others. We do not know of any published research on this topic, however.

Table 17

Percentage of Americans engaged and time spent in non-grocery food purchasing on an average day in 2004-07 and 2014-17, age 15 and older

		Average minutes per day, all			Percentage engaged in non-grocery food purchasing			Average minutes per day, engaged in activity		
		2004-07	2014-17		2004-07	2014-17		2004-07	2014-17	
		Minutes	*Minutes*		*Percentage*	*Percentage*		*Minutes*	*Minutes*	
	All	1.1 (0.03)	1.5 (0.03)	***	11.3 (0.19)	13.5 (0.22)	***	10.0 (0.13)	10.9 (0.17)	***
Gender	Male	1.1 (0.03)	1.4 (0.05)	***	11.2 (0.28)	13.6 (0.34)	***	9.4 (0.18)	**10.4** (0.20)	***
	Female	1.2 (0.03)	1.5 (0.05)	***	11.4 (0.25)	13.4 (0.28)	***	10.5 (0.20)	11.3 (0.26)	**
Age	Age 15-17	1.1 (0.09)	**1.3** (0.14)		10.9 (0.69)	13.0 (1.00)	*	9.9 (0.47)	**9.6** (0.76)	
	Age 18-24	1.8 (0.12)	**1.3** (0.09)	***	17.8 (1.05)	**14.6** (0.83)	**	10.3 (0.44)	8.9 (0.40)	**
	Age 25-64	1.2 (0.03)	1.6 (0.04)	***	12.3 (0.21)	14.5 (0.28)	***	10.0 (0.16)	11.0 (0.20)	***
	Age 65+	0.5 (0.05)	**0.9** (0.05)	***	4.7 (0.34)	7.4 (0.36)	***	11.7 (0.65)	**11.8** (0.45)	
Household type	Single, no children	0.9 (0.04)	1.2 (0.05)	***	9.9 (0.37)	11.9 (0.40)	***	9.6 (0.23)	**10.1** (0.23)	
	Couple, no children	0.8 (0.05)	1.2 (0.06)	***	8.6 (0.36)	11.2 (0.42)	***	9.8 (0.29)	11.1 (0.34)	***
	Single with child/children	1.5 (0.10)	**1.9** (0.14)	**	14.7 (0.66)	**17.4** (0.97)	**	10.2 (0.53)	11.2 (0.51)	
	Couple with child/children	1.3 (0.04)	**1.6** (0.06)	***	13.0 (0.31)	**14.6** (0.39)	***	10.2 (0.21)	11.1 (0.25)	***
Ethnicity and race	Hispanic	1.0 (0.06)	1.4 (0.08)	***	8.9 (0.42)	12.8 (0.56)	***	11.1 (0.49)	**11.3** (0.36)	
	Non-Hispanic White	1.1 (0.03)	1.4 (0.04)	***	11.7 (0.24)	13.8 (0.29)	***	9.7 (0.15)	10.5 (0.19)	***
	Non-Hispanic Black	1.3 (0.08)	**1.8** (0.12)	***	12.3 (0.54)	14.4 (0.60)	***	10.6 (0.46)	**12.4** (0.68)	**
	Non-Hispanic other	0.9 (0.08)	**1.2** (0.11)	**	9.9 (0.74)	**11.0** (0.81)		9.6 (0.50)	11.3 (0.59)	**

—continued

Table 17

Percentage of Americans engaged and time spent in non-grocery food purchasing on an average day in 2004-07 and 2014-17, age 15 and older – continued

		Average minutes per day, all			Percentage engaged in non-grocery food purchasing			Average minutes per day, engaged in activity	
		2004-07	2014-17		2004-07	2014-17		2004-07	2014-17
		Minutes	*Minutes*		*Percentage*	*Percentage*		*Minutes*	*Minutes*
Education level	Lower than high school ±	0.6 (0.05)	**0.9** (0.08)	***	5.8 (0.41)	**7.3** (0.52)	**	11.0 (0.67)	**12.6** (0.74)
	High school degree or GED ±	1.0 (0.04)	1.2 (0.05)	***	10.0 (0.36)	11.5 (0.43)	***	9.6 (0.25)	10.5 (0.30)
	Some college or associate's degree ±	1.3 (0.05)	**1.6** (0.09)	***	12.6 (0.43)	**14.2** (0.44)	**	10.0 (0.25)	11.4 (0.47)
	Bachelor's degree ±	1.4 (0.07)	**1.7** (0.08)	**	13.1 (0.43)	**14.9** (0.54)	**	10.8 (0.39)	11.2 (0.33)
	More than bachelor's degree ±	1.2 (0.08)	**1.6** (0.08)	***	11.8 (0.56)	**15.1** (0.61)	***	10.3 (0.41)	10.7 (0.36)

Survey weights were used to compute nationally representative estimates. Standard errors in parentheses. If comparisons over time are statistically significantly different from zero (*** = p < 0.01; ** = p < 0.05; * = p < 0.1). In boldface if the difference between the mean of the subgroup and the mean of the reference category in 2014-17 is statistically different from zero (p < 0.1). Reference categories are: female, aged 25-64 years, adult couple without children, non-Hispanic White, and high school degree or GED. Household with child/children refers to a household with at least one person age 17 and younger. ± For participants age 25 and older.

Source: USDA, Economic Research Service, using data from the Bureau of Labor Statistics' 2004-07 and 2014-17 American Time Use Survey (ATUS).

Travel Associated With Eating

In 2014-17, Americans spent 6.5 minutes a day in travel associated with eating, down 12.2 percent compared to 2004-07. On an average day in 2014-17, only 22.9 percent of Americans engaged in travel associated with eating, and they did so for an average of 28.3 minutes.

Subgroup Differences in 2014-17

Here, the direction of the gender disparity that we saw for many other variables was reversed, with men spending 14.3 percent more time than women in travel associated with eating.[19] Men were also 12.6 percent more likely than women to engage in travel associated with eating, but counting only Americans who engaged in this activity, there was no gender difference in the amount of time spent per day in the activity (table 19).

[19]This gender disparity may be due to men eating out more often than women because eating out is more convenient than making a meal (e.g., people eat in the middle of their workday—and men are more likely than women to be employed). It could also be because men are more likely to not know how to cook or to have no groceries at home (we observe in this report that women are more likely than men to spend time preparing food and that women also spend more time grocery shopping).

Table 18

Percentage of Americans engaged and time spent in non-grocery food purchasing on an average day in 2014-16, age 15 and older

		Average minutes per day, all	Percentage engaged in non-grocery food purchasing	Average minutes per day, engaged in activity
		Minutes	*Percentage*	*Minutes*
	All	1.5 (0.04)	13.3 (0.24)	10.9 (0.20)
Income	Income >185%	1.6 (0.05)	15.0 (0.31)	10.8 (0.20)
	Income <= 185% & >130%	**1.1** (0.09)	**10.6** (0.69)	10.8 (0.49)
	Income <= 130%	**1.2** (0.10)	**10.0** (0.51)	11.8 (0.81)
SNAP participation	SNAP participant	1.1 (0.09)	10.1 (0.67)	10.6 (0.56)
	Non-SNAP participant	**1.5** (0.04)	**13.7** (0.25)	10.9 (0.21)
	Low-Income Non-SNAP participant	1.3 (0.15)	10.6 (0.67)	12.6 (1.12)
Food hardship	Enough food to eat	1.5 (0.04)	13.3 (0.24)	10.9 (0.21)
	Not enough food to eat	1.4 (0.14)	14.4 (1.40)	9.8 (0.79)
Bodyweight category	Underweight ±	1.4 (0.32)	11.2 (2.01)	12.4 (1.50)
	Normal ±	1.5 (0.09)	13.0 (0.46)	**11.4** (0.51)
	Overweight ±	1.3 (0.06)	13.2 (0.39)	10.2 (0.32)
	Obesity ±	**1.6** (0.07)	13.9 (0.50)	**11.2** (0.31)

EHM survey weights were used to compute nationally representative estimates. Standard errors in parentheses. In boldface if the difference between the mean of the subgroup and the mean of the reference category in 2014-16 is statistically different from zero ($p < 0.1$). Reference categories are: income >185% of the FPL, SNAP participant, enough food to eat, and overweight. SNAP participants: individuals living in households that received benefits under USDA's Supplemental Nutrition Assistance Program (SNAP) in the past month. Low-income, non-SNAP participants: individuals with household income that was 130 percent of the Federal poverty level or below who had not received SNAP benefits in the past month. Income: individuals with household income that was 185 percent or above, between 185 percent and 130 percent, and 130 percent or below of the Federal poverty level. ± For participants aged 20 years and older. For the bodyweight categories, adult body mass index (BMI) is calculated as: (weight in pounds)/(height in inches)2 x 703. The categories are: underweight (BMI < 18.5), normal weight (18.5 ≤ BMI < 25), overweight (25 ≤ BMI < 30), and obese (30 ≥ BMI).

Source: USDA, Economic Research Service, using data from the Bureau of Labor Statistics' 2014-16 Eating and Health Module (EHM) of the American Time Use Survey (ATUS).

Table 19

Percentage of Americans engaged and time spent in travel associated with eating on an average day in 2004-07 and 2014-17, age 15 and older

		Average minutes per day, all			Percentage engaged in travel associated with eating			Average minutes per day, engaged in activity		
		2004-07	2014-17		2004-07	2014-17		2004-07	2014-17	
		Minutes	*Minutes*		*Percentage*	*Percentage*		*Minutes*	*Minutes*	
	All	7.4 (0.15)	6.5 (0.13)	***	26.1 (0.25)	22.9 (0.28)	***	28.5 (0.49)	28.3 (0.45)	*
Gender	Male	8.0 (0.22)	**7.0** (0.19)	***	27.8 (0.39)	**24.7** (0.45)	***	28.9 (0.72)	28.5 (0.59)	
	Female	6.9 (0.17)	5.9 (0.18)	***	24.4 (0.33)	21.2 (0.35)	***	28.2 (0.60)	28.1 (0.69)	*
Age	Age 15-17	6.8 (0.65)	**7.8** (0.75)		24.4 (0.93)	**25.5** (1.35)		27.9 (2.49)	30.5 (2.40)	**
	Age 18-24	6.4 (0.39)	8.1 (0.49)	***	26.0 (1.17)	**32.4** (1.04)	***	24.7 (1.07)	**24.9** (1.30)	
	Age 25-64	7.1 (0.17)	6.3 (0.14)	***	25.6 (0.29)	22.7 (0.29)	***	27.9 (0.57)	27.9 (0.56)	
	Age 65+	8.6 (0.39)	6.6 (0.30)	***	24.1 (0.52)	**21.0** (0.50)	***	35.5 (1.38)	**31.7** (1.30)	
Household type	Single, no children	7.9 (0.25)	7.2 (0.27)	**	28.8 (0.52)	24.5 (0.50)	***	27.6 (0.81)	29.3 (0.86)	
	Couple, no children	8.9 (0.31)	7.2 (0.30)	***	27.9 (0.51)	24.6 (0.53)	***	31.9 (0.94)	29.3 (1.03)	
	Single with child/children	5.1 (0.37)	**4.5** (0.31)		20.7 (0.81)	**18.1** (0.92)	**	24.8 (1.43)	**24.9** (1.22)	
	Couple with child/children	6.4 (0.21)	**6.1** (0.21)		23.8 (0.42)	**22.0** (0.45)	***	26.8 (0.72)	27.6 (0.82)	
Ethnicity and race	Hispanic	6.3 (0.45)	**5.5** (0.26)		20.8 (0.64)	**21.2** (0.66)		30.5 (1.97)	**26.0** (0.91)	***
	Non-Hispanic White	8.1 (0.17)	7.0 (0.17)	***	28.5 (0.29)	24.6 (0.33)	***	28.3 (0.55)	28.5 (0.57)	
	Non-Hispanic Black	4.7 (0.29)	**4.7** (0.33)		17.0 (0.63)	**15.8** (0.66)		27.9 (1.33)	29.8 (1.60)	
	Non-Hispanic other	7.9 (0.59)	6.4 (0.50)	*	26.6 (1.20)	**22.4** (1.17)	**	29.7 (1.85)	28.7 (1.63)	

– continued

Table 19

Percentage of Americans engaged and time spent in travel associated with eating on an average day in 2004-07 and 2014-17, age 15 and older – continued

		Average minutes per day, all			Percentage engaged in non-grocery food purchasing			Average minutes per day, engaged in activity		
		2004-07	2014-17		2004-07	2014-17		2004-07	2014-17	
		Minutes	*Minutes*		*Percentage*	*Percentage*		*Minutes*	*Minutes*	
Education level	Lower than high school ±	4.7 (0.44)	5.1 (0.47)		14.7 (0.53)	**14.8** (0.81)		32.0 (2.76)	**34.6** (2.56)	
	High school degree or GED ±	6.8 (0.26)	5.1 (0.20)	***	23.0 (0.45)	19.0 (0.47)	***	29.4 (0.96)	26.8 (0.92)	**
	Some college or associate's degree ±	7.9 (0.28)	**6.1** (0.22)	***	27.3 (0.49)	**22.7** (0.58)	***	28.9 (0.91)	27.0 (0.75)	
	Bachelor's degree ±	8.5 (0.29)	**8.0** (0.32)		31.3 (0.56)	**27.4** (0.56)	***	27.0 (0.86)	**29.2** (1.01)	
	More than bachelor's degree ±	9.6 (0.56)	**8.2** (0.46)	*	29.9 (0.77)	**26.4** (0.74)	***	32.3 (1.58)	**31.0** (1.57)	

Survey weights were used to compute nationally representative estimates. Standard errors in parentheses. If comparisons over time are statistically significantly different from zero (*** = p < 0.01; ** = p < 0.05; * = p < 0.1). In boldface if the difference between the mean of the subgroup and the mean of the reference category in 2014-17 is statistically different from zero (p < 0.1). Reference categories are: female, aged 25-64 years, adult couple without children, non-Hispanic White, and high school degree or GED. Household with child/children refers to a household with at least one person age 17 and younger. ± For participants age 25 and older.

Source: USDA, Economic Research Service, using data from the Bureau of Labor Statistics' 2004-07 and 2014-17 American Time Use Survey (ATUS).

In addition to the gender disparities, there were other subgroup differences in time spent in travel associated with eating in 2014-17. Americans aged 15 to 17 years spent 23.8 percent more time in travel associated with eating than Americans aged 25 to 64 years on an average day in 2014-17. Single adults with children and couples with children spent less time in travel associated with eating than couples without children (37.5 percent and 15.3 percent less time, respectively). Hispanic Americans and non-Hispanic Black Americans spent less time in travel associated with eating than non-Hispanic White Americans (21.4 percent and 32.9 percent less, respectively). Finally, the three highest educational-attainment categories (i.e., some college or associate's degree, bachelor's degree, and more than a bachelor's degree) spent more time in travel associated with eating than those whose educational attainment was a high school diploma or GED (table 19).

In 2014-16, Americans with incomes less than or equal to 130 percent of the FPT and Americans with incomes greater than 130 percent of the FPT and less than or equal to 185 percent of the FPT spent less time in travel associated with eating than did Americans with incomes greater than 185 percent of the FPT on an average day. Non-SNAP participants overall, as well as low-income non-SNAP participants, spent more time in travel associated with eating than SNAP participants did (by 86.1 percent and 22.2 percent, respectively). Americans with food hardship spent 35.4 percent less time in travel associated with eating than did Americans without food hardship (table 20).

Table 20

Percentage of Americans engaged and time spent in travel associated with eating on an average day in 2014-16, age 15 and older

		Average minutes per day, all	Percentage engaged in travel associated with eating	Average minutes per day, engaged in activity
		Minutes	*Percentage*	*Minutes*
	All	6.4 (0.14)	23.2 (0.30)	27.6 (0.52)
Income	Income >185%	7.4 (0.19)	26.4 (0.40)	28.0 (0.62)
	Income <= 185% & >130%	**5.3** (0.33)	**19.4** (0.74)	27.6 (1.34)
	Income <= 130%	**4.0** (0.22)	**15.8** (0.62)	**25.4** (1.27)
SNAP participation	SNAP participant	3.6 (0.26)	14.2 (0.76)	25.2 (1.39)
	Non-SNAP participant	**6.7** (0.16)	**24.3** (0.33)	**27.8** (0.54)
	Low-Income Non-SNAP participant	**4.4** (0.30)	**17.4** (0.80)	25.4 (1.55)
Food hardship	Enough food to eat	6.5 (0.15)	23.6 (0.31)	27.7 (0.53)
	Not enough food to eat	**4.2** (0.36)	**17.7** (1.25)	**23.6** (1.50)
Bodyweight category	Underweight ±	4.9 (0.93)	**16.9** (2.35)	28.8 (4.00)
	Normal ±	6.5 (0.31)	23.4 (0.60)	27.8 (1.08)
	Overweight ±	6.3 (0.26)	22.7 (0.53)	27.7 (0.92)
	Obesity ±	6.2 (0.25)	22.9 (0.62)	27.3 (0.96)

EHM survey weights were used to compute nationally representative estimates. Standard errors in parentheses. In boldface if the difference between the mean of the subgroup and the mean of the reference category in 2014-16 is statistically different from zero ($p < 0.1$). Reference categories are: income >185% of the FPL, SNAP participant, enough food to eat, and overweight. SNAP participants: individuals living in households that received benefits under USDA's Supplemental Nutrition Assistance Program (SNAP) in the past month. Low-income, non-SNAP participants: individuals with household income that was 130 percent of the Federal poverty level or below who had not received SNAP benefits in the past month. Income: individuals with household income that was 185 percent or above, between 185 percent and 130 percent, and 130 percent or below of the Federal poverty level. ± For participants aged 20 years and older. For the bodyweight categories, adult body mass index (BMI) is calculated as: (weight in pounds)/(height in inches)2 x 703. The categories are: underweight (BMI < 18.5), normal weight (18.5 ≤ BMI < 25), overweight (25 ≤ BMI < 30), and obese (30 ≥ BMI).

Source: USDA, Economic Research Service, using data from the Bureau of Labor Statistics' 2014-16 Eating and Health Module (EHM) of the American Time Use Survey (ATUS).

Changes Within Subgroups From 2004-07 to 2014-17

Men and women saw a decrease during the decade in time spent in travel associated with eating, as did all age groups (except for youth aged 15 to 17 years and Americans aged 18 to 24 years), single adults without children, couples without children, non-Hispanic White Americans, non-Hispanic "other" Americans, and all education categories except for people with less than a high school diploma or GED and people whose educational attainment was a bachelor's degree. The only subgroup that saw an increase in time spent in travel associated with eating was Americans aged 18 to 24 years (table 19).

Time Spent in Food-Related Activities Versus in Other Activities

Because the ATUS includes information on time used in non-food-related activities as well, we can examine food-related time use in relation to these other activities over time. On an average day in 2014-17, food-related activities were the fourth-most common activity for Americans (8.2 percent of the day or 117.5 minutes). Sleep occupied the biggest portion of the day (36.7 percent or 528.3 minutes) followed by paid work (13.7 percent or 197.9 minutes), then watching television (11.6 percent or 166.4 minutes) (fig. 9).[20] This time-share ranking replicated that of a decade earlier, in 2004-07, except that the fourth-most common activity in 2004-07 was leisure[21] instead of food-related activities and food-related activities was in fifth place. Tables 21 and 22 show how much of the average day was occupied by the six largest activities (excluding food-related activities) that, together, made up over three quarters of an average day for Americans in 2014-17 (sleeping, paid work, watching television, leisure, travel [other],[22] and personal care), for each of the U.S. subgroups considered in this report.[23]

[20]Working-aged individuals (aged 25-64 years), on an average weekday, slept for 496.9 minutes, worked for 321.6 minutes, watched television for 135.3 minutes, and engaged in food-related activities for 113.5 minutes.

[21]This report defines leisure as a separate activity from watching television. In this report, leisure includes more than two dozen activity codes, for activities ranging from socializing and community with others to listening to the radio to hobbies to attending performing arts to attending movies. In other words, leisure includes all of the activity codes under the "Socializing, Relaxing, and Leisure" category of ATUS, except for the two activity codes that denote watching television: "Television and movies (not religious)" and "Television (religious)."

[22]"Travel (other)" is the time spent traveling for any non-food-related activity.

[23]We do not examine time use for these non-food-related activities, as these activities are beyond the scope of this report.

Table 21

Time spent in selected activities on an average day in 2014-17, age 15 and older

		Sleeping	Paid work	Watching TV	Leisure	Travel (other)	Personal care
		Minutes	*Minutes*	*Minutes*	*Minutes*	*Minutes*	*Minutes*
	All	528.3 (0.78)	197.9 (1.39)	166.4 (1.04)	114.4 (0.95)	61.1 (0.44)	46.4 (0.31)
Gender	Male	**522.6** (1.19)	**236.7** (2.13)	**179.5** (1.71)	**116.9** (1.34)	**63.5** (0.63)	**37.7** (0.43)
	Female	533.6 (1.01)	161.6 (1.91)	154.2 (1.24)	112.1 (1.21)	58.9 (0.57)	54.5 (0.48)
Age	Age 15-17	**589.5** (3.89)	**29.6** (3.13)	**124.0** (3.84)	**138.7** (4.39)	**59.0** (1.77)	47.2 (1.07)
	Age 18-24	**569.3** (4.08)	-	**134.3** (3.79)	**137.7** (4.41)	64.6 (1.78)	46.8 (0.84)
	Age 25-64	514.0 (0.93)	255.6 (1.70)	150.3 (1.19)	96.0 (0.94)	65.8 (0.50)	45.9 (0.38)
	Age 65+	**536.0** (1.57)	**50.2** (1.65)	**255.3** (2.50)	**158.0** (1.88)	**42.8** (0.74)	**47.6** (0.90)
Household type	Single, no children	**529.6** (1.74)	177.0 (2.78)	**212.1** (2.14)	**132.7** (1.83)	**53.2** (0.68)	**49.8** (0.70)
	Couple, no children	516.5 (1.42)	182.7 (2.95)	191.6 (2.12)	122.9 (1.95)	56.8 (0.83)	46.2 (0.75)
	Single with child/children	**531.0** (3.65)	-	**129.3** (3.55)	**80.0** (2.66)	**71.5** (1.72)	**50.8** (2.46)
	Couple with child/children	**505.6** (1.47)	**259.0** (2.92)	**115.2** (1.39)	**82.1** (1.24)	**69.9** (0.77)	**41.0** (0.48)
Ethnicity and race	Hispanic	**546.2** (2.36)	203.1 (4.17)	**145.1** (2.35)	**97.5** (2.34)	**65.8** (1.18)	**49.6** (0.68)
	Non-Hispanic White	521.0 (0.89)	199.1 (1.73)	166.9 (1.33)	118.7 (1.09)	59.6 (0.56)	43.8 (0.40)
	Non-Hispanic Black	**540.8** (2.93)	**185.4** (4.51)	**212.1** (3.58)	115.0 (2.99)	61.3 (1.25)	**56.5** (1.25)
	Non-Hispanic other	**535.6** (3.73)	-	**129.4** (3.84)	**111.7** (4.06)	**64.4** (1.96)	45.6 (1.24)

– continued

Table 21

Time spent in selected activities on an average day in 2014-17, age 15 and older – continued

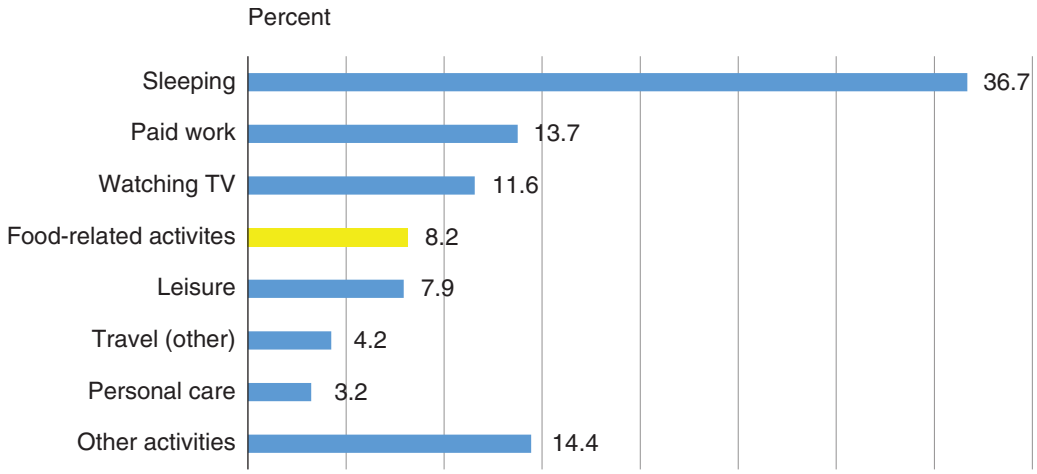
		Sleeping	Paid work	Watching TV	Leisure	Travel (other)	Personal care
		Minutes	*Minutes*	*Minutes*	*Minutes*	*Minutes*	*Minutes*
Education level	Lower than high school ±	**570.9** (2.49)	**101.0** (3.55)	**180.9** (2.93)	127.8 (2.38)	56.2 (1.16)	45.3 (0.81)
	High school degree or GED ±	535.0 (1.75)	188.3 (3.02)	203.3 (2.27)	112.0 (1.69)	54.5 (0.82)	46.6 (0.65)
	Some college or associate's degree ±	**522.5** (1.63)	**205.2** (3.49)	**163.1** (1.73)	115.4 (2.12)	**61.0** (0.85)	**49.4** (0.74)
	Bachelor's degree ±	**508.9** (1.66)	**248.8** (3.12)	**133.9** (2.10)	**107.0** (1.77)	**68.0** (1.04)	**44.5** (0.63)
	More than bachelor's degree ±	**499.7** (1.82)	**250.4** (4.04)	**119.4** (2.00)	112.5 (1.95)	**72.2** (1.32)	**43.9** (0.67)

Survey weights were used to compute nationally representative estimates. Standard errors in parentheses. In boldface if the difference between the mean of the subgroup and the mean of the reference category in 2014-17 is statistically different from zero ($p < 0.1$). Reference categories are: female, aged 25-64 years, adult couple without children, non-Hispanic White, and high school degree or GED. - = suppressed due to small cell size. Household with child/children refers to a household with at least one person age 17 and younger. ± For participants age 25 and older. "Travel (other)" is the time spent traveling for any non-food-related activity.

Source: USDA, Economic Research Service, using data from the Bureau of Labor Statistics' 2014-17 American Time Use Survey (ATUS).

Figure 9

Time spent in food-related activities versus in other activities on an average day in 2014-17, aged 15 and older



Survey sampling weights were used to compute nationally representative estimates. “Travel (other)” is the time spent traveling for any non-food-related activity.

Source: USDA, Economic Research Service, using data from the Bureau of Labor Statistics' 2014-17 American Time Use Survey (ATUS).

Table 22

Time spent in selected activities on an average day in 2014-17, age 15 and older

		Sleeping	Paid work	Watching TV	Leisure	Travel (other)	Personal care
		Minutes	*Minutes*	*Minutes*	*Minutes*	*Minutes*	*Minutes*
	All	527.7 (0.91)	197.9 (1.60)	166.6 (1.17)	113.8 (0.96)	60.4 (0.46)	46.6 (0.36)
Income	Income >185%	516.3 (1.03)	227.3 (2.03)	150.0 (1.35)	111.6 (1.20)	64.4 (0.62)	45.9 (0.40)
	Income <= 185% & >130%	**533.32** (2.77)	**178.95** (4.67)	**183.49** (3.29)	**118.52** (2.92)	**55.74** (1.30)	47.03 (0.83)
	Income <= 130%	**557.1** (2.33)	**132.2** (3.85)	**204.2** (2.93)	114.0 (2.36)	**51.8** (0.98)	**48.6** (1.25)
SNAP participation	SNAP participant	557.6 (3.51)	109.5 (4.96)	209.4 (4.51)	116.6 (3.29)	51.7 (1.28)	53.5 (2.18)
	Non-SNAP participant	**523.8** (0.95)	**207.9** (1.73)	**161.9** (1.20)	113.6 (1.00)	**61.3** (0.48)	**46.0** (0.38)
	Low-Income Non-SNAP participant	555.9 (2.90)	- 0.00	**196.8** (3.85)	115.8 (3.11)	52.4 (1.21)	**45.7** (1.34)
Food hardship	Enough food to eat	526.0 (0.88)	199.7 (1.67)	165.1 (1.17)	113.5 (1.00)	60.4 (0.45)	46.5 (0.36)
	Not enough food to eat	-	-	-	-	58.9 (2.25)	50.7 (2.40)
Bodyweight category	Underweight ±	-	-	-	-	**51.1** (3.46)	**52.2** (3.56)
	Normal ±	**523.8** (1.71)	209.2 (3.26)	**150.4** (2.22)	109.9 (1.64)	61.3 (0.87)	**47.2** (0.64)
	Overweight ±	517.9 (1.72)	215.8 (3.37)	171.0 (2.01)	108.2 (1.80)	60.9 (0.87)	45.2 (0.71)
	Obesity ±	**522.7** (1.83)	207.4 (3.68)	**189.7** (2.20)	**115.8** (2.16)	60.2 (1.04)	47.0 (0.91)

EHM survey weights were used to compute nationally representative estimates. Standard errors in parentheses. In boldface if the difference between the mean of the subgroup and the mean of the reference category in 2014-16 is statistically different from zero ($p < 0.1$). Reference categories are: income >185% of the FPL, SNAP participant, enough food to eat, and overweight. - = suppressed due to small cell size. SNAP participants: individuals living in households that received benefits under USDA's Supplemental Nutrition Assistance Program (SNAP) in the past month. Low-income, non-SNAP participants: individuals with household income that was 130 percent of the Federal poverty level or below who had not received SNAP benefits in the past month. Income: individuals with household income that was 185 percent or above, between 185 percent and 130 percent, and 130 percent or below of the Federal poverty level. ± For participants aged 20 years and older. For the bodyweight categories, adult body mass index (BMI) is calculated as: (weight in pounds)/(height in inches)2 x 703. The categories are: underweight (BMI < 18.5), normal weight (18.5 ≤ BMI < 25), overweight (25 ≤ BMI < 30), and obese (30 ≥ BMI). "Travel (other)" is the time spent traveling for any non-food-related ac-tivity.

Source: USDA, Economic Research Service, using data from the Bureau of Labor Statistics' 2014-16 Eating and Health Module (EHM) of the American Time Use Survey (ATUS).

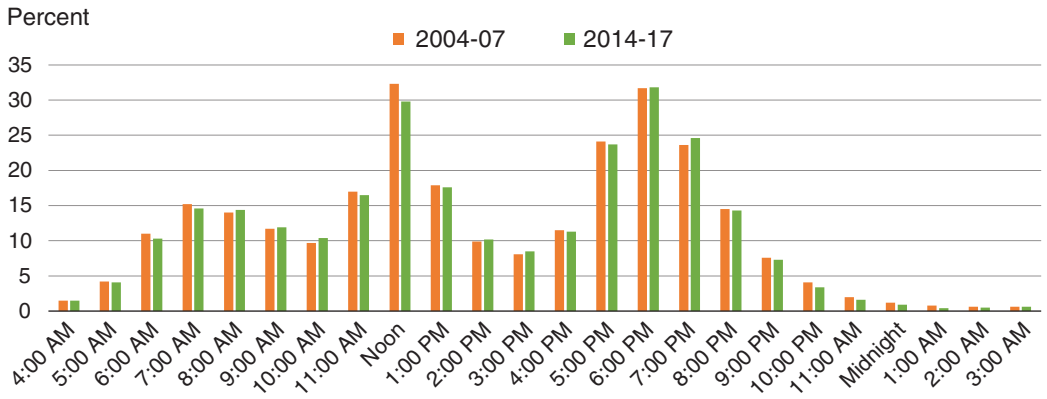
What Times of Day Do People Engage in Food-Related Activities?

Changes in time use for Americans and differences among subgroups are also reflected in the distribution of activities over the day. In this chapter, we examine the hourly distribution of food-related activities, both during the week and on the weekend. The analysis in this chapter differs from the analysis in most of the rest of this report in that it is restricted to the sample of Americans aged 15 years and older who participated in the respective activity on their diary day (rather than the full sample of Americans aged 15 years and older). Differences that are discussed in this chapter do not refer to statistical significance.

Primary Eating and Drinking and Secondary Eating: Hour-by-Hour Distribution

In 2014-17, the pattern for Americans' primary eating and drinking (fig. 10) during the day followed a trimodal, or three-peaked, distribution, with the percentage of people engaging in primary eating and drinking peaking between 7 and 7:59 a.m., then again between noon and 12:59 p.m., and then once more between 6 and 6:59 p.m. The first of these three peaks,[24] however, was markedly smaller than the second and third, with just 14.6 percent of Americans engaging in primary eating and drinking at the 7 a.m. peak, compared to double that amount (29.8 percent) at the noon hour and again (31.8 percent) at the 6 p.m. hour. A similar trimodal pattern was also observed a decade earlier, as well as on weekdays and weekends (fig. 11) and for women and men (fig. 12).

Figure 10
Time of day Americans engaged in primary eating and drinking on an average day in 2004-07 and 2014-17, aged 15 and older



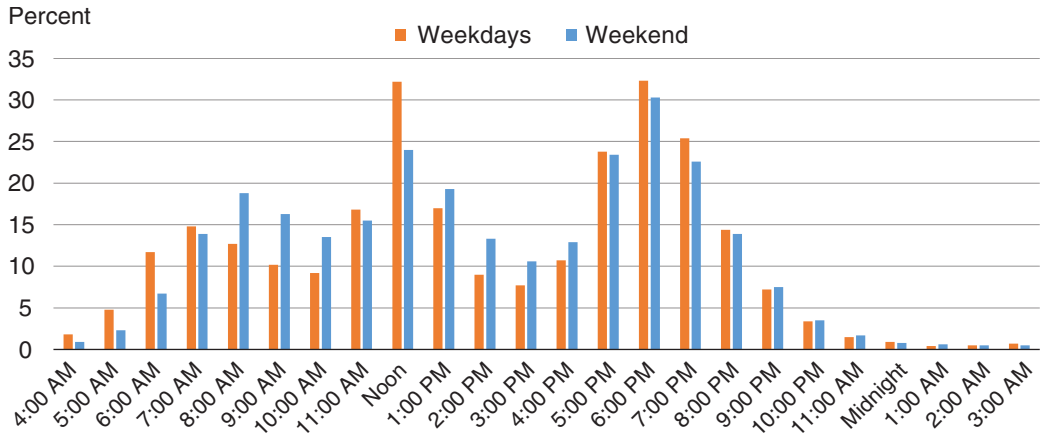
Survey sampling weights were used to compute nationally representative estimates.

Source: USDA, Economic Research Service, using data from the Bureau of Labor Statistics' 2004-07 and 2014-17 American Time Use Survey (ATUS).

[24]In this paper, when we say "peak," we are referring to a "relative mode"—that is, a point in the histogram where the frequency is higher than either frequency on the left or right. This still holds, no matter how large or small the peak is.

Figure 11

Time of day Americans engaged in primary eating and drinking on an average day in 2014-17 by the day of the week, aged 15 and older

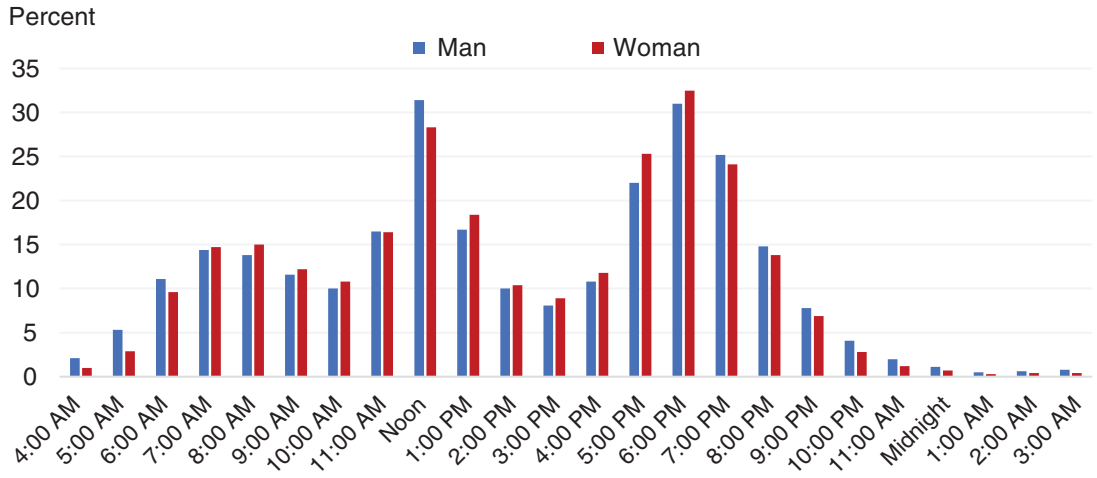


Survey sampling weights were used to compute nationally representative estimates.

Source: USDA, Economic Research Service, using data from the Bureau of Labor Statistics' 2014-17 American Time Use Survey (ATUS).

Figure 12

Time of day Americans engaged in primary eating and drinking on an average day in 2014-17, aged 15 and older by sex



Survey sampling weights were used to compute nationally representative estimates.

Source: USDA, Economic Research Service, using data from the Bureau of Labor Statistics' 2014-17 American Time Use Survey (ATUS).

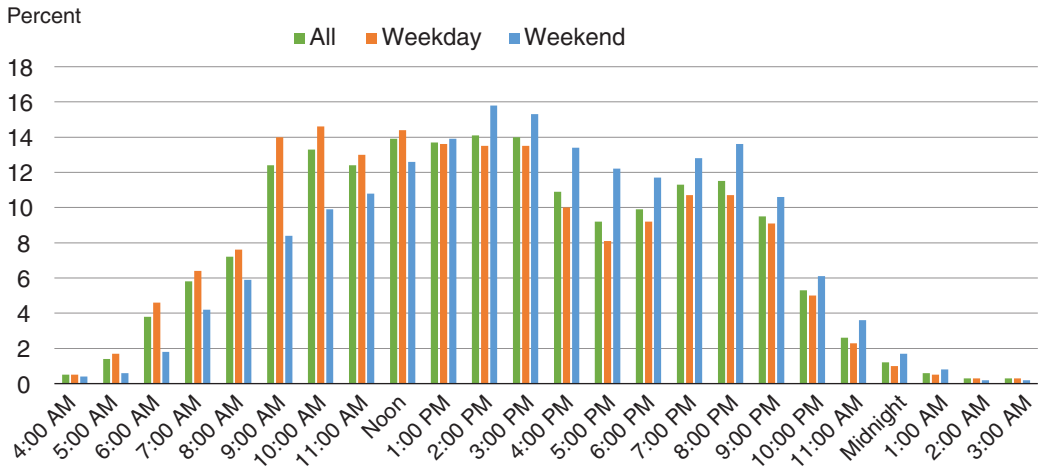
From 2004-07 to 2014-17, the share of Americans engaging in primary eating and drinking decreased in the earlier hours of the day (6-7:59 a.m.), during the noon hour, and during nighttime and early morning hours (10 p.m.-2:59 a.m.). During the same decade, the share of Americans engaging in primary eating and drinking increased during the 10 a.m., 3 p.m., and 7 p.m. hours (fig. 10).

Patterns of primary eating and drinking differed substantially between men and women. There were differences between men and women for every hour of the day except for the hours of 7 a.m., 11 a.m., 2 p.m., and 2 a.m. (fig. 12).

There were also differences between weekend and weekday in primary eating and drinking patterns, which were observed for every hour of the day except for the 5 p.m. and 2 a.m. hours and 8 p.m.-12:59 a.m. (fig. 11).

The EHM data show that secondary eating (during an average day in 2014-16) exhibits a quadrimodal, or four-peaked, distribution. The first peak is at the 10 a.m. hour (13.3 percent of those Americans who engaged in secondary eating during their diary day), followed by a second peak at the noon hour (13.9 percent), a third peak at the 2 p.m. hour (14.1 percent), and a fourth peak at the 8 p.m. hour (11.5 percent). On weekends, this quadrimodal distribution disappears, becoming a bimodal, or two-peaked, distribution with a peak occurring at the 2 p.m. hour (15.8 percent of those Americans who engaged in secondary eating during an average day) and then again at the 8 p.m. hour (13.6 percent) (fig. 13).

Figure 13
Time of day Americans engaged in secondary eating on an average day in 2014-16 by the day of the week, aged 15 and older



EHM survey sampling weights were used to compute nationally representative estimates.

Source: USDA, Economic Research Service, using data from the Bureau of Labor Statistics' 2014-16 Eating and Health Module (EHM) of the American Time Use Survey (ATUS).

Food Preparation: Hour-by-Hour Distribution

As with primary eating and drinking and secondary eating, food preparation among Americans (fig. 14) followed a trimodal distribution during the course of an average day in 2014-17. The first peak of the trimodal distribution occurred at the 7 a.m. hour (14.4 percent of those Americans who engaged in food preparation during their diary day), followed by a smaller peak at the noon hour (11.9 percent) and a much larger peak at the 5 p.m. hour (27.9 percent).

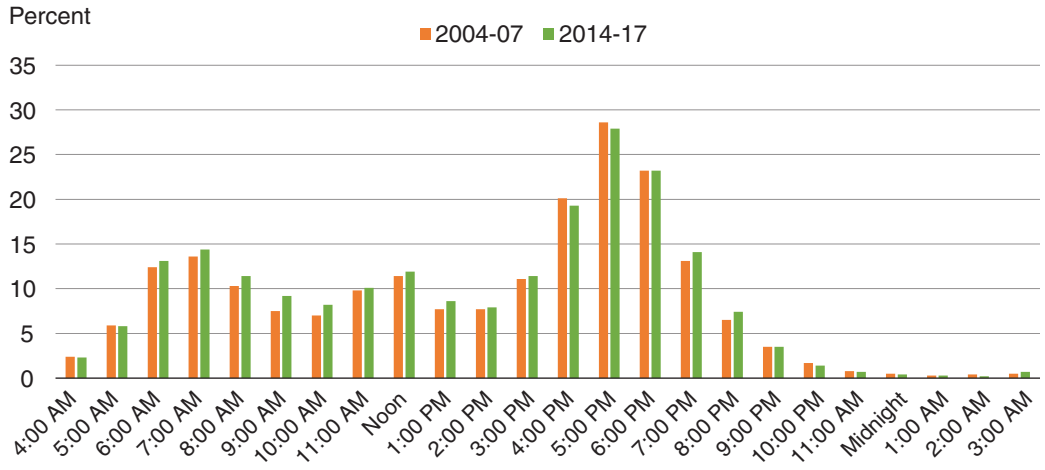
Similarly, a trimodal distribution was observed for Americans' food preparation during the course of an average day a decade earlier during 2004-07, and on weekdays and weekends and for women as well as men (fig. 15).

The percentage of Americans engaged in food preparation increased in 2014-17 (compared to a decade earlier) during the 6-10:59 a.m. time period, the 1 p.m. hour, 7-8:59 p.m., and the 3 a.m. hour, whereas it decreased during the 4 p.m., 10 p.m., and 2 a.m. hours (fig. 14).

Fewer Americans engaged in food preparation during the early-morning hours (4-6:59 a.m.) on weekends than on weekdays. Later in the day, during 8 a.m.-2:59 p.m., this trend reversed, with more Americans engaging in food preparation on the weekends than on the weekdays, but then the trend reversed again, during 4-8:59 p.m., with food preparation being more common on weekdays than on weekends (fig. 15).

Women engaged in food preparation more than men during 7 a.m.-6:59 p.m.. Men engaged in food preparation more than women during midnight to early-morning hours (i.e., 1-5:59 a.m.) (fig. 15).

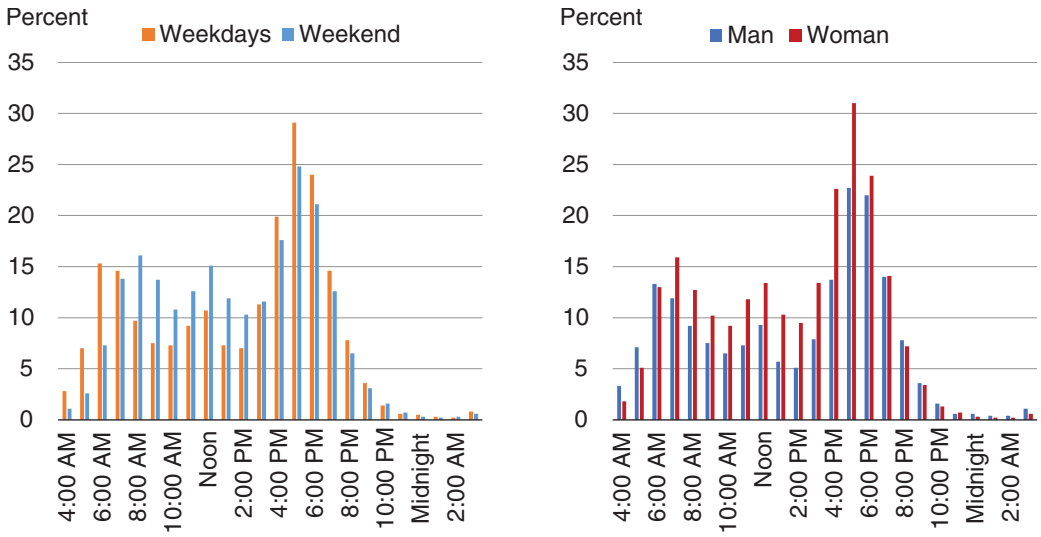
Figure 14
Time of day Americans engaged in food preparation on an average day in 2004-07 and 2014-17, aged 15 and older



Survey sampling weights were used to compute nationally representative estimates.

Source: USDA, Economic Research Service, using data from the Bureau of Labor Statistics' 2004-07 and 2014-17 American Time Use Survey (ATUS).

Figure 15
Time of day Americans engaged in food preparation on an average day in 2014-17, aged 15 and older by sex and day of the week



a) By day of the week in 2014-17

b) By sex in 2014-17

Survey sampling weights were used to compute nationally representative estimates.

Source: USDA, Economic Research Service, using data from the Bureau of Labor Statistics' 2014-17 American Time Use Survey (ATUS)

Food-Related Cleanup: Hour-by-Hour Distribution

As with primary eating and drinking and secondary eating and food preparation, Americans' food-related cleanup (fig. 16) followed a trimodal distribution during the course of an average day in 2014-17. The first peak in Americans' food-related cleanup during 2014-17 occurred during 8-9:59 a.m. (8.7 percent of those Americans who engaged in food-related cleanup during their diary day), followed by a smaller peak during the noon hour (6.6 percent), and then a larger peak at the 6 p.m. hour (24.0 percent). The trimodal pattern was also observed a decade earlier (in 2004-07) for the population overall, as well as for weekdays, women, and men (fig. 17). By contrast, the distribution for weekends shows a small fourth peak during the 2 a.m. hour.

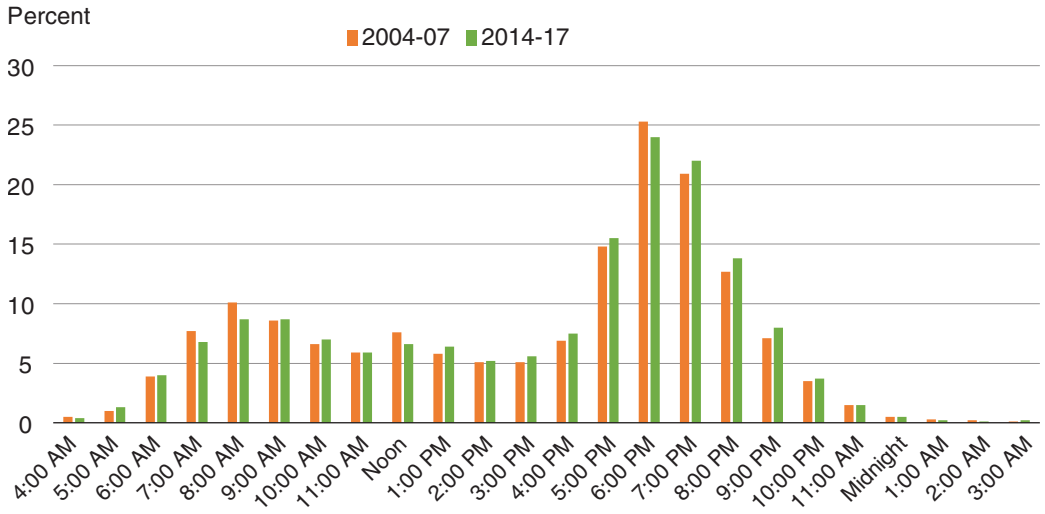
From 2004-07 to 2014-17, there were just a handful of changes in the hourly distribution of food-related cleanup. Specifically, Americans became less likely to engage in food-related cleanup during 7-8:59 a.m. and during the noon and 6 p.m. hours and became more likely to engage in food-related cleanup during 7-9:59 p.m. (fig. 16).

Compared to weekdays, food-related cleanup on weekends in 2014-17 decreased during 5-7:59 a.m. and during 5-7:59 p.m. By contrast, weekends saw more Americans engaging in food-related cleanup during 8:00 -2:59 p.m. and during the 11 p.m. and 2 a.m. hours, compared to weekdays (fig. 17).

Women were more likely than men to be engaged in food-related cleanup from 7-10:59 a.m., 12-2:59 p.m. and 3-5:59 p.m. and were less likely than men to be engaged in the activity during the 8 p.m. hour (fig. 17).

Figure 16

Time of day Americans engaged in food-related cleanup on an average day in 2004-07 and 2014-17, aged 15 and older

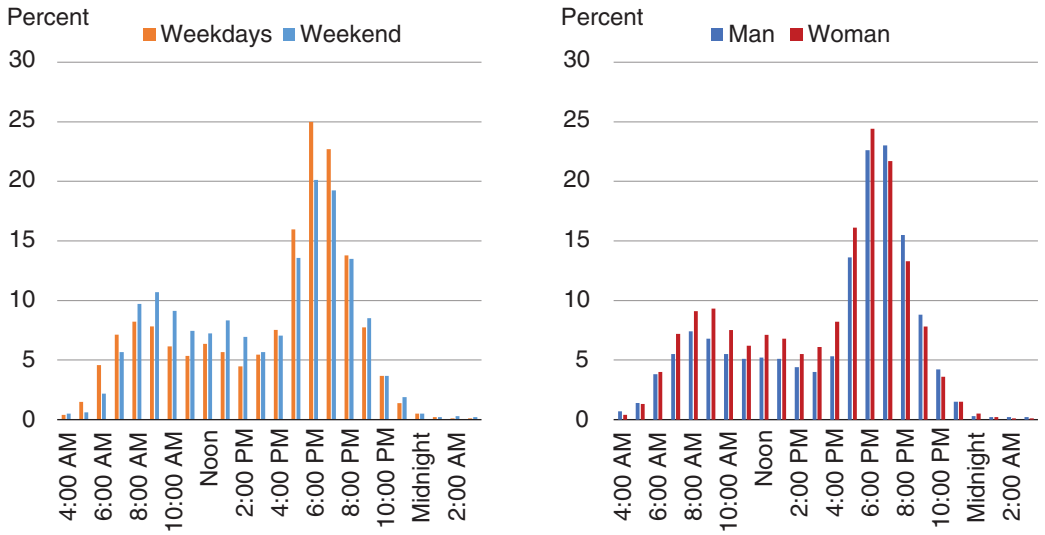


Survey sampling weights were used to compute nationally representative estimates.

Source: USDA, Economic Research Service, using data from the Bureau of Labor Statistics' 2004-07 and 2014-17 American Time Use Survey (ATUS).

Figure 17

Time of day Americans engaged in food-related cleanup on an average day in 2014-17, aged 15 and older by sex and day of the week



a) By day of the week in 2014-17

b) By sex in 2014-17

Survey sampling weights were used to compute nationally representative estimates.

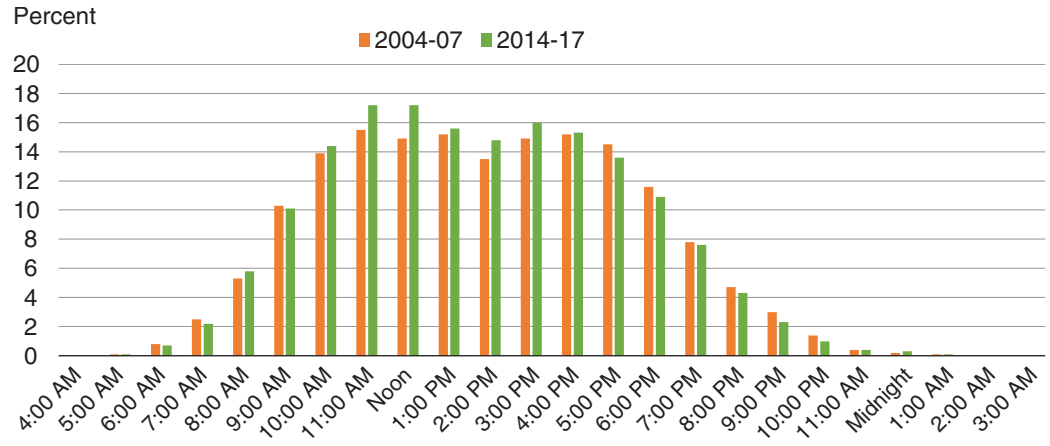
Source: USDA, Economic Research Service, using data from the Bureau of Labor Statistics' 2014-17 American Time Use Survey (ATUS)

Grocery Shopping: Hour-by-Hour Distribution

Americans' grocery shopping during the course of an average day (fig. 18) in 2014-17 followed a bimodal distribution, with the percentage of Americans engaging in grocery shopping peaking during 11 a.m.-12:59 p.m. and the 3 p.m. hour (at 17.2 percent and 16.0 percent, respectively, of those Americans who engaged in grocery shopping during their diary day).

However, a decade earlier, in 2004-07, the distribution of Americans' grocery shopping during the course of a day exhibited a trimodal distribution, due to small fluctuations in the percentage of people engaging in grocery shopping during the midday hours. Grocery shopping peaked during the 11 a.m. hour, decreased slightly during the noon hour, then rose slightly during the 1 p.m. hour, only to dip again, and then rise for a final time during the 4 p.m. hour. These fluctuations were relatively small: The lowest value during this 11 a.m.-4:59 p.m. time period was 13.5 percent during the 2 p.m. hour, and the highest value was 15.5 percent during the 11 a.m. hour (fig. 18).

Figure 18
Time of day Americans engaged in grocery shopping on an average day in 2004-07 and 2014-17, aged 15 and older



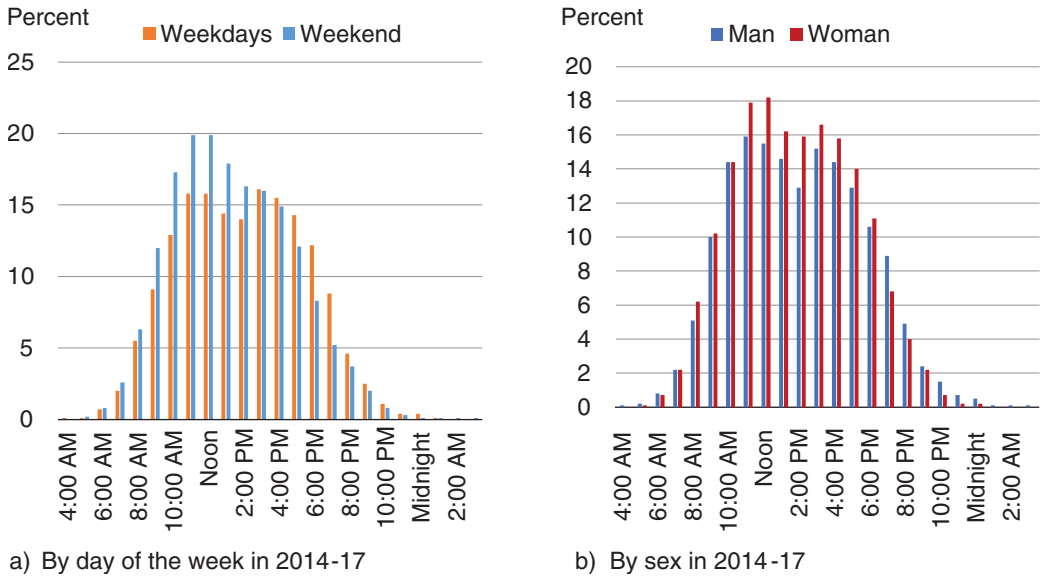
Survey sampling weights were used to compute nationally representative estimates.

Source: USDA, Economic Research Service, using data from the Bureau of Labor Statistics' 2004-07 and 2014-17 American Time Use Survey (ATUS).

The distribution of grocery shopping during the course of an average 2014-17 weekday was bimodal (peaking during 11 a.m.-12:59 p.m. and at the 3 p.m. hour), while on weekends the distribution was unimodal, peaking during 11 a.m.-12:59 p.m., with 19.9 percent of Americans who grocery-shopped on their diary day doing so during these 2 hours. The distribution for both women and men was bimodal: Women's shopping peaked during the noon and 3 p.m. hours (18.2 percent and 16.6 percent, respectively), while men's shopping peaked during the 11 a.m. and 3 p.m. hours (15.9 percent and 15.2 percent, respectively) (fig. 19).

Figure 19

Time of day Americans engaged in grocery shopping on an average day in 2014-17, aged 15 and older by sex and day of the week



a) By day of the week in 2014-17

b) By sex in 2014-17

Survey sampling weights were used to compute nationally representative estimates.

Source: USDA, Economic Research Service, using data from the Bureau of Labor Statistics' 2014-17 American Time Use Survey (ATUS).

From 2004-07 to 2014-17, there were a handful of changes in the hourly distribution of Americans' time spent in grocery shopping: Americans became more likely to shop during 11 a.m.-12:59 p.m. and during the 2 p.m. hour and became less likely to shop during the 9 p.m. hour (fig. 18).

During 2014-17, Americans were more likely to be grocery-shopping on weekends than on weekdays during 9 a.m.-2:59 p.m. and less likely to be doing so during the 5 – 7:59 p.m. (fig. 19).

During the course of an average day in 2014-17, women were more likely to grocery-shop than men were during the 12 p.m. and 2 p.m. hours, and less likely to grocery-shop during the 7 p.m. hour and during 10-11:59 p.m. (fig. 19).

Discussion and Implications for Future Research

This report examines food-related time use on an average day in 2004-07 and 2014-17 for the American population aged 15 and older, as well as for several American subgroups as defined by gender, race/ethnicity, age, USDA, Supplemental Nutrition Assistance Program (SNAP) participation status, educational attainment, income, body mass index (BMI) status, and other demographic characteristics. The findings are useful for thinking about how Americans fit eating and other food-related activities into their lives. While this report provides descriptive statistics, future research can investigate why differences between groups exist and what relationship those differences may have to food and diet-related outcomes such as diet quality and health. We note here that some changes over time (or lack of change over time) may reflect a change in composition of the overall population rather than a change in how sociodemographic groups are allocating time.

Some distinct patterns emerged in the subgroup analyses of this report. For example, gender disparity was a common theme running through many of the variables we examined. In addition, there are a number of activities that younger Americans (aged 15 to 17 years and 18 to 24 years) generally spent less time in and had a smaller share of people engaged in than did older age groups. These activities included food-at-home labor such as grocery shopping, food preparation, and food-related cleanup. In addition, the gender disparity in the shares of women and men engaged in food preparation has shrunk over time by 3.0 percentage-point difference from 2004-07 to 2014-17.

Some of the results in this report are similar to time-use results published in previous work. For example, Zeballos and Restrepo (2018) examine time-use data for Americans aged 18 years and older (as compared to the present report, which studies Americans aged 15 years and older) and find that Americans spent 64.5 minutes in primary eating and drinking on an average day in 2014-17, compared to 64.0 minutes in the present report. Zeballos and Restrepo (2018) found that time spent in primary eating and drinking decreased by 4.9 percent from 2006-2008 to 2014-16, whereas the present report found a decrease of 4.5 percent during a slightly different time period, 2004-07 to 2014-17. Hamrick et al. (2011) showed that Americans aged 15-17 years spent the least amount of time in primary eating and drinking of all age groups, and in the present report, we found that Americans aged 15-17 spent less time in the activity than Americans aged 25-64 years and had the lowest point estimate of all four age groups. This difference may be due to school meals (consumed under tight time constraints), as well as to the higher consumption of fast food among younger age groups; the Centers for Disease Control and Prevention (CDC) has found that the share of people who consume fast food on a given day is negatively associated with age (although their analysis includes only Americans aged 20 years and older) (CDC, 2018).

Previous literature has identified other differences in time use between demographic subgroups. For example, Hamrick et al. (2011) found that, in 2006-08, Americans aged 65 years and older were the age group most likely to grocery shop on an average day; higher income households were more likely to grocery shop on an average day than households with an income less than 185 percent of the poverty threshold; and SNAP participants spent a longer time grocery shopping than did non-SNAP participants, among people who grocery shopped. One of those findings was echoed in the present report, where we find that Americans aged 65 years and older again were the age group most likely to grocery-shop on an average day.

One potential drawback of the American Time Use Survey (ATUS) diary data is that information on only one time-diary day per person was collected. There may be concerns that some activities, such as eating fast food or engaging in sports and exercise, are not daily activities, and, thus, a 1-day

diary does not reflect the true level of intrapersonal variability. However, some activities, such as eating patterns, have a large degree of persistence, meaning that day-to-day variation is minimal. Also, researchers have studied what contributes to habitual exercise (Aarts et al., 1997; Finlay et al., 2002). Indeed, many people's daily activities can be classified as habitual repetition (Neal et al., 2006). Another argument for using the ATUS 1-day time-diary data is that the ATUS is large and nationally representative, and so intrapersonal variability would not be an issue.

Future research using the ATUS and the Eating and Health Module data could be used to improve programs and policies designed to reduce obesity, decrease time pressures faced by Americans, and improve overall nutrition. For example, non-Hispanic Black Americans spent relatively little time in food preparation, but those in this subgroup who did prepare food spent a relatively high amount of time in the activity (19.2 percent more time than non-Hispanic White Americans). Perhaps, non-Hispanic Black Americans overall find it difficult to make time to engage in food preparation (partly because of higher rates of poverty and low income or long work hours), but the ones who do prepare food do so for large amounts of time or cook for a large number of people who, therefore, do not have to prepare food because that has been taken care of by someone else. (This latter hypothesis is related to evidence that low-income single mothers rely more on family and friend support networks than other mothers do (Seefeldt and Sandstrom, 2015; Semuels, 2015).) Understanding the root causes of these subgroup differences may help target those who spend less time preparing food than they would like. Such understanding is relevant to the public's health, as food at home is associated with a more healthful diet (Todd et al., 2010)).

Americans aged 65 years and older spent more time in primary eating and drinking than other age groups, but Zeballos and Restrepo (2018) also find that these older Americans spent less time in secondary eating than other age groups. Are these findings due to older Americans' schedules, as many in this age group are retired, or are they due to a generational perception of eating as meal-based rather than as an incidental activity? Teasing out these generational differences may help us understand to what extent Americans' eating habits are affected by generational attitudes toward eating versus lifecycle-related amounts of leisure time.

Future research might also compare food-related time use for American subgroups that are more granular than the ones in this report. For instance, research can combine gender, race, and income to study time use among low-income non-Hispanic Black women compared to low-income non-Hispanic Black men or high-income non-Hispanic White women.[25]

The 2007-09 Great Recession[26] was a major economic event that occurred in the intervening years between the ATUS years of 2004-07 and 2014-17, and it decreased the standard of living for many Americans. (The number of jobs in the United States recovered to its pre-recession level in April 2014; however, because of population growth during 2007-14, the unemployment rate did not recover to its pre-recession level until July 2017 (Brookings Institution, 2017).) It is beyond the scope of this study to estimate the causal impact of the Great Recession on Americans' food-related time use, but that question might be a fertile area for future research. Such research may contribute to our understanding of how recessions and eating behavior are related. Previous work has found that, during the Great Recession, Americans ate food away from home (FAFH) less often, consumed fewer of

[25]A discussion of how time-use data can be used to inform public policymaking can be found in the National Academies Press (2000).

[26]See NBER (n.d.) for the specific start and end dates of the Great Recession, among other information.

their daily calories from FAFH (Hamrick and Okrent, 2014; Todd, 2014), and reduced their FAFH spending (Hurd and Rohwedder, 2010; Kumcu and Kaufman, 2011; Todd, 2014). Our findings in the present report suggest that the Great Recession was correlated with a change in several food-related behaviors. For example, in 2014-17 (compared to 2004-07), Americans overall and several demographic subgroups spent less of their time in primary eating and drinking (i.e., less time in an activity that may be considered at least partly a form of relaxation or leisure); Americans overall spaced out their primary eating and drinking occasions more, and for most subgroups for which the length of time between primary eating and drinking occasions changed, the spacing between these occasions increased (the increase may be due to Americans' attempts to stretch their budgets); and Americans overall as well as most subgroups were spending more time in food preparation (possibly indicating a shift from FAFH towards food at home (FAH)).

A unique contribution of this report is that it examines many dimensions of time use beyond average number of minutes per day. That is, the report also examines the average number of minutes among only people who engaged in an activity, the percentage of people who engaged in the activity, the number of times people engaged in the activity (overall and only for those who engaged in the activity), and the percentage of people engaging in these activities hour by hour throughout the entire day (out of all Americans who participated in the respective activity on their diary day).

The time-use patterns of SNAP participants and the lowest income group of Americans were different from those of non-SNAP participants and the highest income group of Americans, respectively. As Hamrick and McClelland (2016) note, understanding SNAP participants' shopping preferences and time costs—such as grocery shopping frequency and lengthy meal preparation times—helps to inform food-assistance program policy. Further research can examine in greater detail the relationships between time use and SNAP participation.

References

Aarts, H., T. Paulussen, and H. Schaalma. 1997. "Physical Exercise Habit: On the Conceptualization and Formation of Habitual Health Behaviours," *Health Education Research* 12(3): 363-374.

BLS (U.S. Bureau of Labor Statistics). 2006. *Design and Methodology: Current Population Survey.* Available online.

BLS (U.S. Bureau of Labor Statistics). 2017a. *American Time Use Data Dictionary: 2014-16 Eating & Health Module Data. Variables Collected in ATUS Eating and Health Module.* Available online.

BLS (U.S. Bureau of Labor Statistics). 2017b. American Time Use Survey—2016 Results. Available online.

BLS (U.S. Bureau of Labor Statistics). 2019. *American Time Use Survey User's Guide: Understanding ATUS 2003 to 2017.* Available online.

Brookings Institution. 2017. The Closing of the Jobs Gap: A Decade of Recession and Recovery. Retrieved June 14, 2018. Available online.

Cawley, J., and F. Liu. 2012. "Maternal Employment and Childhood Obesity: A Search for Mechanisms in Time Use Data," *Economics & Human Biology* 10(4): 352-364.

CDC (Centers for Disease Control and Prevention). 2018. Fast Food Consumption among Adults in the United States, 2013-2016. Retrieved July 8, 2019. Available online.

Courtemanche, C. 2009. "Longer Hours and Larger Waistlines? The Relationship between Work Hours and Obesity," *Forum for Health Economics & Policy* 12(2): Article 2.

Finlay, K.A., D. Trafimow, and A. Villarreal. 2002. "Predicting Exercise and Health Behavioral Intentions: Attitudes, Subjective Norms, and Other Behavioral Determinants," *Journal of Applied Social Psychology* 32(2): 342-356.

Gregory, C.A., I. Rahkovsky, and T.D. Anekwe. 2014. *Consumers' Use of Nutrition Information When Eating Out*, EIB-127, U.S. Department of Agriculture, Economic Research Service.

Guthrie, J.F., B.-H. Lin, and E. Frazao. 2002. "Role of Food Prepared Away from Home in the American Diet, 1977-78 Versus 1994-96: Changes and Consequences," *Journal of Nutrition Education and Behavior* 34(3): 140-150.

Hamermesh, D.S. 2007. "Time to Eat: Household Production under Increasing Income Inequality," *American Journal of Agricultural Economics* 89(4): 852-863.

Hamrick, K. 2010. *Eating & Health Module User's Guide (2010 Edition)*, AP-047, U.S. Department of Agriculture, Economic Research Service.

Hamrick, K.S., M. Andrews, J. Guthrie, D. Hopkins, and K. McClelland. 2011. *How Much Time Do Americans Spend on Food*, EIB-86, U.S. Department of Agriculture, Economic Research Service.

Hamrick, K.S., and K. McClelland. 2016. *Americans' Eating Patterns and Time Spent on Food: The 2014 Eating & Health Module Data*. U.S. Department of Agriculture, Economic Research Service.

Hamrick, K.S., and A.M. Okrent. 2014. *The Role of Time in Fast-Food Purchasing Behavior in the United States*, ERR-178, U.S. Department of Agriculture, Economic Research Service.

Hurd, M.D., and S. Rohwedder. 2010. *Effects of the Financial Crisis and Great Recession on American Households.* National Bureau of Economic Research.

Kuhns, A., and M. Saksena. 2017. *Food Purchase Decisions of Millennial Households Compared to Other Generations.* United States Department of Agriculture, Economic Research Service.

Kumcu, A., and P. Kaufman. 2011. "Food Spending Adjustments During Recessionary Times," *Amber Waves* 9(3): 10.

Meyer, B.D., W.K. Mok, and J.X. Sullivan. 2009. *The Under-Reporting of Transfers in Household Surveys: Its Nature and Consequences.* National Bureau of Economic Research.

National Academies Press. 2000. The Importance of Time-Use Data. Retrieved June 28, 2018. Available online.

NBER (National Bureau of Economic Research). n.d. US Business Cycle Expansions and Contractions. Retrieved May 19, 2018. Available online.

Neal, D.T., W. Wood, and J.M. Quinn. 2006. "Habits—a Repeat Performance," *Current Directions in Psychological Science* 15(4): 198-202.

Seefeldt, K.S., and H. Sandstrom. 2015. "When There Is No Welfare: The Income Packaging Strategies of Mothers without Earnings or Cash Assistance Following an Economic Downturn," *RSF: The Russell Sage Foundation Journal of the Social Sciences* 1(1): 139-158.

Semuels, A. (2015). How Poor Single Moms Survive. *The Atlantic*. Retrieved May 8, 2018. Available online.

Todd, J., and R.M. Morrison. 2014. "Less Eating out, Improved Diets, and More Family Meals in the Wake of the Great Recession," *Amber Waves*: 1E.

Todd, J.E. 2014. *Changes in Eating Patterns and Diet Quality among Working-Age Adults, 2005-2010*, ERR-161, U.S. Department of Agriculture, Economic Research Service.

Todd, J.E., L. Mancino, and B.-H. Lin. 2010. *The Impact of Food Away From Home on Adult Diet Quality*, ERR-90, U.S. Department of Agriculture, Economic Research Service.

Variyam, J. 2005. *Nutrition Labeling in the Food-Away-From-Home Sector: An Economic Assessment*, ERR-4, U.S. Department of Agriculture, Economic Research Service.

Virudachalam, S., J.A. Long, M.O. Harhay, D.E. Polsky, and C. Feudtner. 2014. "Prevalence and Patterns of Cooking Dinner at Home in the USA: National Health and Nutrition Examination Survey (Nhanes) 2007-2008," *Public health nutrition* 17(5): 1022-1030.

Zeballos, E., and B. Restrepo. 2018. *Adult Eating and Health Patterns: Evidence From the 2006-08 and 2014-16 Eating & Health Module of the American Time Use Survey*, EIB-198, U.S. Department of Agriculture, Economic Research Service.