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2014-16 Eating & Health Module User's Guide

(2016 Edition)

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This User's Guide is a supplement to the ATUS User's Guide, which is available from BLS at: http://www.bls.gov/tus/atususersguide.pdf

It is designed to be used with the EH Module Data Dictionary, which is available from BLS at: http://www.bls.gov/tus/ehmintcodebk1416.pdf

The 2014 EH Module microdata files are downloadable from BLS at: http://www.bls.gov/tus/ehdatafiles.htm

A PDF version of the 2014-16 EH Module questionnaire is available at: http://www.bls.gov/tus/ehmquestionnaire1416.pdf

For information on both the 2014-16 and 2006-08 EH Modules, see: http://www.ers.usda.gov/data-products/eating-and-health-module-(atus).aspx

Recommended citations:

For the EH Module User's Guide:

Hamrick, Karen. *2014-16 Eating & Health Module User's Guide*, AP-070, U.S. Department of Agriculture, Economic Research Service, May 2016.

For the 2014 EH Module data:

U.S. Department of Agriculture (USDA), Economic Research Service (ERS). 2014 Eating & Health Module: Machine-readable microdata files, supplement to the Bureau of Labor Statistics (BLS) 2014 American Time Use Survey, May 2016: http://www.bls.gov/tus/ehdatafiles.htm

For 2006-08 EH Module data:

U.S. Department of Agriculture (USDA), Economic Research Service (ERS). 2006-08 Eating & Health Module: Machine-readable microdata files, supplement to the Bureau of Labor Statistics (BLS) 2006-08 American Time Use Survey, released May 2008 (2006 data), February 2009 (2007 data), and April 2010 (2008 data).

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SURVEY OBJECTIVES

The objective of the EH Module in ATUS is to collect data to analyze the relationships among time use patterns and eating patterns, nutrition, and obesity; food and nutrition assistance programs; food safety; and grocery shopping and meal preparation.

One of the missions of ERS is to enhance the understanding of economic issues related to the nutrition and health of the U.S. population. Data collection and research on eating patterns, Body Mass Index (BMI), food and nutrition assistance program participation, income eligibility for program participation, food safety, grocery shopping, and meal preparation all contribute to this goal. Specifically, the economic analysis of decisions made under constraints—in this case, time—provides insight for both policies and programs because the decisions individuals make on how to use their 24 hours in a day have short- and long-term implications for income and earnings, health, and other aspects of well-being.

ERS's partners in this project are FNS and NCI.

FNS works to end hunger and obesity through the administration of 15 federal nutrition assistance programs including Women, Infants, and Children (WIC), Supplemental Nutrition Assistance Program (SNAP), and child nutrition program such as school meals. In partnership with State and tribal governments, FNS programs serve one in four Americans during the course of a year. Working with public, private, and nonprofit partners, FNS's mission is to increase food security and reduce hunger by providing children and low-income people access to food, a healthful diet, and nutrition education in a way that supports American agriculture and inspires public confidence. For more information on FNS see: http://www.fns.usda.gov/

The Division of Cancer Control and Population Sciences of NCI has a long history of research and surveillance activities concerning health behaviors, such as diet, weight, and physical activity, that are linked to multiple health outcomes, including cardiovascular disease, diabetes, hypertension, and stroke. Recent evidence indicates that obesity and sedentary behavior are also risk factors for cancer.

Much of NCI's research has been based on data obtained from standardized health surveys such as the National Health Interview Survey (NHIS) and the National Health and Nutrition Examination Survey (NHANES). This data, however, cannot be used to explore the social and environmental context of various health behaviors or to explore tradeoffs associated with time limitations that might influence adopting healthful diets or adding physical activity. Time use survey data, however, enable researchers to investigate these and other issues. NCI's objective in providing support for the EH Module of ATUS is to obtain further information on the temporal, economic, social, and environmental correlates of selected health behaviors. This information will help inform efforts to design effective interventions to improve health behaviors at the individual and population levels. For more information on NCI's Physical Activity Assessment Research, see: http://epi.grants.cancer.gov/physical/research-resources.html

DEVELOPMENTAL PHASES

2001-04

In 2001, ERS and BLS first discussed the possibility of adding questions to the ATUS. Over 2003-04, ERS prepared a request package for the ATUS Oversight Board, including detailed descriptions of the proposed survey questions, analytical objectives for each question, and a research outline.

After receiving approval from the ATUS Oversight Board, BLS requested and was given approval from the Office of Management and Budget (OMB) to field the EH Module with the ATUS. At that time, the EH was referred to as the "Food & Eating" Module. ERS did extensive outreach during 2004 in support of the EH Module, presenting on it at various conferences and also at Federal agencies. In July 2004, ERS and Farm Foundation sponsored "The Food and Eating Consequences of Time-Use Decisions," a conference held in Washington, DC. Selected abstracts from the conference are available, and conference presentations are available at: http://www.farmfoundation.org/webcontent/Food-Eating-Consequences-of-Time-Use-Decisions-Presentations-978.aspx

2005

Four rounds of cognitive pre-testing were conducted in 2005. This pre-testing helped ensure that respondents' understanding of the survey questions was consistent with ERS intentions. In addition to testing respondents' interpretations of the survey questions, pre-testers sought to determine whether respondents were more reluctant to answer certain questions. Based on these results, ERS and BLS placed the most sensitive questions at the end of the EH Module. The most sensitive questions were determined to be those asking for height, weight, and household income. After testing, BLS and ERS finalized the EH Module questionnaire and developed the data collection instrument. Also at this time, the Census Bureau developed the interview software for the EH Module questionnaire.

From October through December 2005, the EH Module was pre-fielded. This process allowed ERS to refine the data-collection procedures by adding additional prompts to the survey questions and providing additional guidance to the interviewers. The data collected during pre-fielding were used for quality control purposes only and will not be released.

Federal Register announcement for comment, 2006-08 Module:
https://www.federalregister.gov/articles/2005/03/29/05-6120/proposed-collection-comment-request

2006

In January 2006, the EH Module was fielded as a full-production survey supplement to the ATUS. All respondents who completed the ATUS interview (or whose interview was considered sufficiently complete) were asked to complete the EH Module survey questions. The EH Module was fielded from January 2006 to December 2008.

OMB clearance, 2006-08 EH Module:

http://www.reginfo.gov/public/do/PRAViewICR?ref_nbr=200511-1220-002
http://www.reginfo.gov/public/do/PRAViewICR?ref_nbr=200711-1220-002

See 2006-08 EH Module for more information: http://www.ers.usda.gov/data-products/eating-and-health-module-(atus).aspx

2006-08 microdata files are at:
http://www.bls.gov/tus/ehdatafiles.htm

2013
Preparation to field the 2014-16 EH Module included re-examining the 2006-08 questionnaire, with most of these questions remaining, and new questions added. Cognitive pretesting was completed, and BLS requested and was given approval from OMB to field the EH Module with the ATUS over 2014-15.
The Federal Register announcement for comment is at:
http://webapps.dol.gov/FederalRegister//HtmlDisplay.aspx?DocId=26977&Month=7&Year=2013
The OMB clearance package is at:
http://www.reginfo.gov/public/do/PRAViewICR?ref_nbr=201307-1220-005
http://www.reginfo.gov/public/do/PRAViewDocument?ref_nbr=201307-1220-005

2014
The EH Module was fielded, with the Census Bureau conducting the interviews. ERS staff performed regular monitoring of the interviews for quality control purposes.

2015
The EH Module was fielded, with regular monitoring of the interviews by ERS staff. Funding from FNS allowed for fielding the EH Module over 2016.
The Federal Register announcement for comment is at:
http://webapps.dol.gov/FederalRegister//HtmlDisplay.aspx?DocId=28646&Month=1&Year=2016

USING THE 2014 EH MODULE DATA

The 2014 EH Module data are contained in three files:

EH Respondent file
The EH Respondent file contains information about EH respondents, including variables about primary and secondary eating (summary variables); grocery shopping and meal preparation; food assistance participation; general health, height, and weight; and household income.

EH Activity file
The EH Activity file contains detailed information on respondents' secondary eating—when and for how long. This file contains observations only for those who engaged in secondary eating.

EH Replicate Weights file
The EH Replicate Weights file contains the 160 replicate final weights that can be used to calculate standard errors and variances for EH Module estimates. Note that the EH Replicate Weights file contains records only for those cases that completed EH Module interviews. See the ATUS User's Guide (http://www.bls.gov/tus/atususersguide.pdf) for details on calculating standard errors.

See the 2014-16 EH Data Dictionary, http://www.bls.gov/tus/ehmintcodebk1416.pdf, for instructions on merging the EH Module files with the ATUS files.

Over 96 percent of the ATUS respondents completed the EH Module questionnaire in 2014. Incomplete EH Module interviews resulted from respondents who ended the ATUS interview before reaching the EH Module questions and respondents who ended the interview during the EH Module questions. A few incomplete interviews were due to the transition between the ATUS Wellbeing Module in December 2013 and the EH Module in January 2014.

The EH Module data files were compiled from completed EH Module interviews only. Because incomplete interviews for the EH Module (but complete for the ATUS) were excluded, along with an additional 6 respondents with suspect diaries, a separate set of sample weights accounts for the difference in completed responses. The EH Module weight variable is EUFINLWGT.

EUFINLWGT is related to the ATUS weighting variable TUFINLWGT, corrected for the small amount of nonresponse to the EH Module. EUFINLWGT weights the sample so that weighted total days for selected population groups correspond to the number of person-days spent by those groups for each calendar quarter. (Weighted total person-days correspond to population person-days both for weekdays and for weekends.) Estimates of time use and of numbers of persons are produced by using EUFINLWGT according to procedures in Section 7.4 of the ATUS User's Guide, available from BLS at:
http://www.bls.gov/tus/atususersguide.pdf

The ATUS Respondent file has a variable indicating whether EH Module data are available for each respondent: TREMODR = 1 for completed EH Module interviews, and TREMODR = 0 for incomplete interviews, and TREMODR= -1 for years when the EH Module was not conducted. Researchers can use this variable to select only the ATUS cases with completed EH Module interviews. Respondents with incomplete EH Module interviews (TREMODR=0) are not included in the EH Module microdata files. Note that there are 6 fewer respondents in the EH Module Respondent file than the number of respondents with TREMODR=1 in the ATUS Respondent file because 6 respondents with suspect diaries were removed from the EH Module microdata files. [1]

The Current Population Survey has both a stratified and clustered sampling procedure and thus is nonrandom; the ATUS follows the same sampling procedure. The replicate weights method is a treatment for stratified and/or clustered sampling. Both SAS and Stata now have procedures for calculating estimates using replicate weights, and the SAS SURVEY has procedures for calculating standard errors. (Note that calculating an estimate without using replicate weights and without using a Fay coefficient will generate the correct estimates, but an incorrect standard error.) Use SAS version 9.2 (and higher) and the replicate weights as follows:

```
PROC SURVEYMEANS varmethod=BRR (FAY=0.5);
  var VAR1 VAR2 VAR3 VAR4;
  weight WGT;
  repweights WGT1-WGT160;
run;
```

The method chosen is BRR (balanced repeated replication). WGT is the final weight, and WGT1-WGT160 are the replicate weights. The output is N, Mean, Standard Error of Mean, and 95-percent Confidence interval for Mean.

If SURVEYMEANS is used with FAY=0.5, then the correct standard error will be generated. For more information on calculating the variance with ATUS data, see the ATUS *User's Guide* (http://www.bls.gov/tus/atususersguide.pdf) and CPS technical paper 66 (https://www.census.gov/prod/2006pubs/tp-66.pdf) chapter 14.

[1] These cases are TUCASEID= 20140111132464, 20140403142339, 20140201140125, 20140403140788, 20140807142094, and 20141110140577.

DATA PROCESSING, EDITING, IMPUTATION, and OTHER TECHNICAL NOTES

Data Processing

The goal of the EH Module data processing—as with the processing of basic ATUS data—is to turn the raw data into microdata files that can be used to produce estimates. Data processing is done at the Census Bureau. Several data files are created from the main input file during data processing.

Editing, Imputation, and Other Technical Notes

Once the data files are created, the editing and imputation processes occur. The following section contains a discussion of the editing, imputation, and other technical notes for each question or subset of EH Module survey questions.

Estimation

Cell suppression—The ERS standard is to suppress estimates for cells with unweighted counts fewer than 77 ($N < 77$). 77 observations was determined by BLS as the minimum number of respondents who could support an ATUS cell estimate. In addition, some subgroup estimates were suppressed due to small cell sizes, even if there were more than 77 respondents. BLS cell suppression rules for ATUS estimates were followed in these cases. When 2015 and 2016 EH Module data are available, the years of data can be pooled to produce small subpopulation estimates that meet quality standards.

Confidence intervals—The ERS standard is to use 90-percent confidence intervals to determine if two estimates are statistically different.

Estimate validation—Independently calculated estimates were considered to be a match, and consequently validated, if they were ±0.01 minute or ±0.01 percent.

This section discusses the EH Module variables grouping them by topic. The data dictionary lists the variables in alphabetical order. To analyze the data in survey questionnaire order, list the variables in the following order:

EUEAT ERTSEAT EUDRINK EUSODA EUDIETSODA
EUGROSHP EUSTORES EUSTREASON
EUFASTFD EUFASTFDFRQ EUFFYDAY
EUPRPMEL EUMEAT EUTHERM EUMILK
EUFDSIT EUSNAP EUWIC
EUGENHTH EUEXERCISE EUEXFREQ EUHGT EUWGT
EEINCOME1 EUINCOME2

Note that ERTSEAT is a summary variable derived from the ATUS time diary and EH Activity file.

Secondary eating and drinking

ERTPREAT	Total amount of time spent in primary eating and drinking (in minutes).
EUEAT	Were there any times you were eating any meals or snacks yesterday, for example, while you were doing something else?
EUEATSUM	Were you eating during this activity?
EUEDUR	Amount of time spent in secondary eating during a given activity in minutes (last activity not truncated at 24 hours). (EH Activity file)
EUEDUR24	Amount of time spent in secondary eating during a given activity in minutes (last activity truncated at 24 hours). (EH Activity file)
ERTSEAT	Total amount of time spent in secondary eating (in minutes).
EUDRINK	Not including plain water, were there any other times yesterday when you were drinking any beverages?
EUSODA	Were any of the beverages soft drinks such as cola, root beer, or ginger ale?
EUDIETSODA	Was the soft drink diet, regular or did you have both kinds?

Motivation:
ATUS asks respondents to identify only their primary (or main) activities, with questions about secondary child care being the only exception. Many Americans, however, eat while doing other things, such as driving or working. Asking respondents to report eating as a secondary activity provides information for understanding eating patterns. USDA has considerable research interest in eating behavior, as ERS conducts research to monitor and evaluate food consumption from several different perspectives—what we eat, where we buy our food, how much we pay for our food, and how our food consumption choices relate to diet quality and nutrition. In addition, ERS research analyzes the degree to which food and eating choices influence the type of crops that America's farmers grow, the prices farmers receive for those crops, and how those crops are transformed into finished products.

Technical notes:
The respondent is asked:

Yesterday, you reported eating or drinking between [Fill: times from diary]. Were there any other times you were eating any meals or snacks yesterday, for example, while you were doing something else?

If the respondent answers "Yes," then the interviewer asks, *During which activities?* and *Were you eating the entire time you were [fill: ACTIVITY]?*

If the respondent does not report eating during the entire activity, then the respondent is asked, *About how long would you say you were eating while you were [fill: ACTIVITY]?*

For respondents who responded "Yes" to the first question (EUEAT=1), and identified one or more secondary eating occurrences, but also responded "Don't know" (DK) or "Refused" (R) in response to other activities or how long they had engaged in secondary eating for those occurrences (EUEATSUM = (-2,-3) or EUEDUR24 = (-2,-3)) are assumed to have EUEDUR24 = 0 for those activities in calculating total time spent in secondary eating (ERTSEAT).

However, if respondents responded "Don't know" (DK) or "Refused" (R) to the EUEAT question (EUEAT=-2 or EUEAT=-3), then ERTSEAT is also coded as -2 or -3 in the Respondent file. There are 63 of these cases. For generating estimates, ERS recoded the missing value for ERTSEAT as ERTSEAT=0. Researchers can decide whether to include these cases (by recoding as 0) or exclude them in their analysis (by leaving them as missing values).

Note that if the respondent reports "Yes" to the secondary eating question but cannot remember how long he/she was engaged in the secondary activity, then the value of EUEDUR and EUEDUR24 is -2 for "Don't Know" in the EH Activity file. In the summary variable ERTSEAT, these -2 occurrences along with any -3 for "Refused" are assigned the value of zero minutes. Researchers may want to assign values greater than zero to these activities with DK/R time durations if a larger number of secondary eating occurrences is desired.

Note also that secondary eating cannot occur during the following activities: sleeping (010101), primary eating and drinking (110101), primary eating and drinking, not elsewhere classified (110199 and 119999), or eating and drinking as part of job (050202). (Note that the categories "not elsewhere classified" are very small.)

Time spent in primary eating and drinking and secondary eating both have skewed, or asymmetric, distributions. A symmetric distribution has a skewness measure of 0, whereas the skewness measure is 1.5 for primary eating and drinking and 8.3 for secondary eating in 2014. For a comparison, the skewness of the distribution of time spent in sleep is 0.6. The positive values of the skewness measures mean that the distributions are skewed right—that is, that the right tail (high values) is longer than the left tail. In such a distribution, there are a small number of observations with high values (as also found in the U.S. household income distribution). With skewed distributions, the median may be the preferred summary indicator.

The variable ERTPREAT is the total time spent on actual eating and drinking as a primary activity. It is the sum of eating and drinking activities from the ATUS Activity file. Note however, that official ATUS estimates from the annual BLS news releases of total time spent on eating and drinking are calculated using all activity categories in the major category 11 (Eating and Drinking). Some estimates include travel time associated with eating, such as driving to a restaurant. The major category also includes waiting activities associated with eating, such as waiting for food to be served or waiting for a table at a restaurant.

The variable ERTPREAT on the EH Module Respondent file is more restrictive, being the sum of 110101, 110199, 119999, and 050202.[2] The activity 050202 (eating and drinking as part of job) is included in the EH Module definition of total time spent on eating and drinking. (On the annual ATUS news release, 050202 is included in estimates of Working and Work-related Activities.) Examples of 050202 from the ATUS Activity Lexicon (http://www.bls.gov/tus/lexicons.htm) are:

- eating/drinking with clients (part of job)

[2] Note that for 2014, no respondents reported activities coded as 110199 or 119999 (both activities described as Eating and drinking, not elsewhere classified). Since there were no non-zero values for these two variables, BLS does not include them in their 2014 microdata files.

- eating/drinking with customers (part of job)
- eating/drinking with co-workers (part of job)
- eating/drinking with bosses (part of job)
- eating lunch/dinner with clients (part of job)

Because the BLS estimates of total time spent in eating and drinking as a primary activity have a different definition and different final weights than the EH Module estimates, the BLS estimates will differ slightly from the EH Module estimates.

Differences between BLS estimates and ERS estimates of time spent in primary eating and drinking activities are as follows:

- BLS estimates include 1101xx, 1102xx, 119999, and sometimes 1811xx.
- ERS estimates include 1101xx, 119999, and 050202.
- BLS estimates use the ATUS final weight TUFINLWGT.
- ERS estimates use only completed EH interviews (TREMODR = 1) and the EH final weight EUFINLWGT.

Time-of-day estimates: Included in the current findings are time-of-day estimates. ERS calculated estimates for secondary eating by aligning the mid-point of primary activity duration with the mid-point of the duration of the secondary eating activity in order to estimate when the secondary eating occurred. Our experience is that these estimates are sensitive to the specific SAS functions used, and the order in which the calculations are done. As a consequence, others' estimates may not match exactly due to rounding.

General health, height, and weight

EUGENHTH	In general, would you say that your physical health was excellent, very good, good, fair, or poor?
EUHGT	How tall are you without shoes? (in inches)
ETHGT	Topcode flag for height (EUHGT)
EUWGT	How much do you weigh without shoes? (in pounds)
ETWGT	Topcode flag for weight (EUWGT)
ERBMI	Body mass index

Motivation:
Obesity is the most common food- and nutrition-related health problem in America. Health professionals and economists have been conducting research to discover whether excess caloric intake or insufficient exercise is to blame for America's growing obesity problem. The EH Module, used with the ATUS data, could reveal the types of activities and eating patterns that are associated with obesity.

Body Mass Index (BMI), a widely used measure of weight status, can be analyzed in conjunction with the time diary information. Data on time spent in sedentary versus active pursuits, along with eating patterns, demographic characteristics, and labor force information, will allow researchers to analyze time use for various subgroups by BMI. Self-rated health status is an inexpensive measure that has been found to provide meaningful information on health and well-being. Self-reported general health status has been found to predict mortality and morbidity and is used in other Federal surveys to assess overall well-being. (See Hennessy, C.H., D.G. Moriarty, M.M. Zack, P.A. Scherr, R. Brackbill, "Measuring Health-Related Quality of Life for Public Health Surveillance," *Public Health Report 1994*; 109: 665-72).

Body Mass Index is calculated as: **weight (lb) / [height (in)]^2 x 703**
See Centers for Disease Control and Prevention for more information:
http://www.cdc.gov/healthyweight/assessing/bmi/adult_bmi/index.html

Note that the definitions of overweight and obesity are different for adults (age 20 and over) than for children and teens. For the definition of BMI groups for adults see:
http://www.cdc.gov/nccdphp/dnpa/obesity/defining.htm
For children and teens see:
http://www.cdc.gov/nccdphp/dnpa/healthyweight/assessing/bmi/childrens_BMI/about_childrens_BMI.htm

Technical notes:
Both height and weight are top coded and bottom coded for confidentiality. In the 2014 data, the topcoded value for height is 77 inches and the bottom coded value is 56 inches. The top coded value for weight is 340 pounds and the bottom coded value is 98 pounds. The flag variables ETHGT and ETWGT indicate if the height or weight value has been top coded or bottom coded.

Female respondents ages 18-50 were told by the interviewers, "*Since pregnancy affects weight, please let me know if you are currently pregnant.*" If the respondent was pregnant when

interviewed, then weight was not collected and BMI was not calculated. Thus, pregnant respondents have EUWGT equal to -5 and ERBMI equal to -1.

The height variable, EUHGT, is given in whole inches. If the respondent reported height in meters and centimeters and the conversion resulted with a half inch, height was rounded up to the nearest whole inch. For example, a conversion from metric to US customary units that resulted in 5’ 7-1/2” would be recorded as 5’ 8”.

The weight variable, EUWGT, is given in pounds. Respondents could also report their weight in kilograms, and these measurements were converted to pounds during data processing. A weight converted from metric that resulted an extra fraction of one-half or greater was rounded up to the nearest pound.

Note that height and weight are self-reported. Because there are likely to be errors in self-reported values, researchers may want to adjust the values of EUHGT and EUWGT, depending on the research question and methodology.

Cawley and Burkhauser found that while the difference between mean self-reported BMI and mean measured BMI is small, the difference can affect estimates of obesity across a population. (See John Cawley and Richard V. Burkhauser, “Beyond BMI: The Value of More Accurate Measures of Fatness and Obesity in Social Science Research,” *National Bureau of Economic Research Working Paper 12291*, June 2006, http://www.nber.org/papers/w12291). So, self-reported BMI would not be appropriate data to use to determine the percentage of Americans who are obese.

However, Kuczmarski et al. found that self-reported weights are acceptable to use for nonelderly adults. (See Kuczmarski, M.F., R.J. Kuczmarski, and M. Najjar, “Effects of Age on Validity of Self-Reported Height, Weight, and Body Mass Index: Findings from the Third National Health and Nutrition Examination Survey, 1988-1994.” *Journal of The American Dietetic Association*, 2001. 101(1): p. 28-34).

Pinkston and Stewart analyzed the EH Module BMIs and compared them with the National Health and Nutrition Examination Survey (NHANES) BMIs. They found that the underreporting of EH Module BMIs does not appear to be large. In BMI distributions of NHANES actuals and EH Module BMIs, the EH BMIs have a 3 percentage-point greater share of more normal weight persons, 2 percentage points more overweight persons, and 5 percentage points fewer obese persons. (Josh Pinkston and Jay Stewart, “How Does Time Use Affect the Probability of Becoming Obese?” paper presented at the American Time Use Research Conference, College Park, MD, June 22-24, 2009, http://www.popcenter.umd.edu/research/sponsored-events/atus-conf-workshop-2009)

Food Sufficiency and Food Assistance participation

EUFDSIT	Which of the following statements best describes the amount of food eaten in your household in the last 30 days--enough food to eat, sometimes not enough to eat, or often not enough to eat?
EUSNAP	In the past 30 days, did you or anyone in your household receive SNAP or food stamp benefits?
EUWIC	In the last 30 days, did you or any member of your household receive benefits from the WIC program, that is, Women, Infants, and Children program?

Motivation:
The Supplemental Nutrition Assistance Program (SNAP) (formerly the Food Stamp Program) is the Nation's largest food and nutrition assistance program and is administered by USDA. Understanding the time constraints that low-income households face, both those with and without SNAP recipients, is of particular interest to policymakers and program administrators. Asking the food sufficiency question (enough to eat, sometimes not enough to eat, or often not enough to eat) allows examination of time poverty and/or income poverty with food sufficiency, and also helps to understand how time use patterns, particularly around food preparation and eating, differ by food sufficiency status.

Technical notes:
The SNAP question included the name of the State food assistance program if different from "SNAP" or "food stamps" both for the English and Spanish versions of the questionnaire. In some cases, the State has a different name in Spanish for the food assistance program than in English.

The SNAP question is asked of all respondents. The WIC question is asked of respondents in households that have at least one woman between the ages of 15-50 years old, or at least one child age 0-5 years old.

For SNAP eligibility requirements, see http://www.fns.usda.gov/snap/eligibility

Using EUFINLWGT creates an estimate of the number of person-days for the civilian population age 15 and older. For example, the estimates for a SNAP household would be the number of person-days for the civilian population age 15 and older in a two-adult household with children receiving SNAP benefits. Since nearly half of all SNAP recipients are children (persons under age 18), and the ATUS and EH Module are surveying a population age 15 and older, these data cannot be used to estimate the total number of SNAP recipients.

The purpose of collecting SNAP and WIC information in the EH Module is to initiate research on time use patterns by food assistance recipiency. Therefore, the SNAP and WIC participation data are useful as a household characteristic of the respondent, but should not be used to estimate the number of persons or of households participating in these programs.

Program participation is underreported in household surveys for a variety of reasons. (See "Differences in Estimates of Food Stamp Program Participation Between Surveys and Administrative Records," a joint project of the U.S. Census Bureau, Jacob France Institute,

University of Baltimore, USDA Economic Research Service, and Maryland Department of Human Resources, June 2004, http://www.census.gov/acs/www/Downloads/ACS/FoodStampFinalReport.pdf).
ERS investigated the extent of underreporting of food stamp participation in the 2006-08 EH Module and found that estimates using the ATUS and EH Module are roughly one-third less than estimates from administrative data. Although this difference appears to reflect a large amount of underreporting, it is smaller than the differences between estimates of administrative data and estimates of most other household surveys.

Income

EEINCOME1	Last month, was your total household income before taxes more than, less than, or equal to (amount) per month? Note: (amount) approximates 185 percent of poverty threshold.
EXINCOME1	Allocation flag.
ERHHCH	Change in household composition between CPS and ATUS.
ERSPEMCH	Change in spouse or unmarried partner's labor force status or full-time or part-time employment status between CPS and ATUS.
EUINCOME2	Last month, was your total household income before taxes more than, less than, or equal to (amount) per month? Note: (amount) approximates 130 percent of poverty threshold.
EUINCLVL	Identifies which income values were asked in EEINCOME1 and EUINCOME2.
ERINCOME	Income recode.

Motivation:
This information identifies which respondents are in households that have income levels under the income-eligibility thresholds for food and nutrition assistance programs. As a result, the time use patterns of food assistance participants and of income-eligible nonparticipants can be analyzed.

Technical notes:
Two questions are asked in order to collect information about income. The first (EEINCOME1) asks if the respondent's current monthly household income is more than, less than, or equal to a specified amount, an amount that depends on the number of people in the household and approximates 185 percent of the poverty threshold, rounded up to the next $100. The interviewer may also convert the monthly amount to an annual income to make the question clearer to the respondent. If the respondent reports that household income is equal to or below the amount specified in EEINCOME1, or doesn't know or refuses to answer, a second question (EUINCOME2) asks if the household's monthly income is more than, less than, or equal to a different amount, which again depends on the number of people in the household, and is approximately 130 percent of the poverty threshold, rounded up to the next $100.

These amounts—185 percent and 130 percent of the poverty threshold—are asked because they are the income-eligibility thresholds for food and nutrition assistance programs. (See USDA, Food and Nutrition Service for more information on food and nutrition assistance programs, http://www.fns.usda.gov/programs-and-services) The income-eligibility threshold for reduced-price school meals and for the Special Supplemental Nutrition Program for Women, Infants, and Children (WIC) is 185 percent of the poverty threshold. The Federal income-eligibility threshold for most SNAP households and for free school meals is 130 percent of the poverty threshold.

There was minimal editing of the income variable EEINCOME1. When EEINCOME1 was missing and EUINCOME2 = 2 (less than 130 percent of the poverty threshold) or EUINCOME2=3 (equal to 130 percent of the poverty threshold), then EEINCOME1 was set equal to 2 (less than 185 percent of the poverty threshold).

In some cases, a respondent answered "don't know" or refused to answer EEINCOME1 but did answer EUINCOME2. Likewise, a number of respondents said "don't know" or refused to answer EUINCOME2 but had already answered EEINCOME1. As a consequence, there is more income information available than first appears by looking at the -2 and -3 values for the two variables. The recode variable ERINCOME summarizes the combinations of the two income variables.

In addition to editing, EEINCOME1 was subject to an imputation process. Prior to imputation, about 9 percent of the original EEINCOME1 values were "don't know" or refused. Although this share may seem high, it is a lower nonresponse rate than in some other household surveys. Imputations were done to reduce the number of missing values. EUINCOME2 was used to impute some values of EEINCOME1, as described above. In other cases, household earnings were used to impute values of EEINCOME1. Because earnings are an important source of income, if household earnings were greater than 185 percent of the poverty threshold, then total income was likely to be greater as well. (The likelihood that financial or business losses might reduce income below the level of 185 percent of the poverty threshold in such cases was thought to be small.) However, if a household has little or no earnings, it is not known what its income is, as the household may have unearned income. As a consequence, imputations based on earnings can only be done for income greater than 185 percent of the poverty threshold.

For the imputation, total household earnings of all household members were summed using two sources: the ATUS Respondent file (for respondent's and spouse's earnings) and the CPS-ATUS file[3] (for other household members' earnings). If the total household earnings were greater than 185 percent of the poverty threshold, then EEINCOME1 = 1. In certain rare cases, earnings for some household members were unavailable, usually because a household member moved into the household after the earnings information in the ATUS-CPS file was collected. (Information in the ATUS-CPS was collected 2 to 5 months prior to the ATUS and EH Module interviews.)

There was concern about the asymmetry of the income imputations. ERS noted that analysis of missing income observations in the Current Population Survey Food Security Supplement found that the prevalence of food insecurity of the unknown income group is about the same as for households with income 185 percent of the poverty threshold. (*Household Food Security in the United States, 2006*, http://www.ers.usda.gov/publications/err49/) Indeed, for other measures of food security in the report, the estimates of the missing income group were similar to those for households with income 185 percent of the poverty threshold. ERS concluded that the households with missing income were disproportionately households with income above 185 percent of the poverty threshold. This, in turn, suggested that imputing income for ATUS households with earnings more than 185 percent of the poverty threshold would lead to little or no bias.

Researchers who do not want to use the imputed values may use the variable EXINCOME1 to

[3] All ATUS respondents were previously in a Current Population Survey (CPS) panel. The ATUS-CPS file contains information from the last CPS interview about each household member of all individuals selected to participate in ATUS. The information on the ATUS-CPS file was collected 2 to 5 months before the ATUS interview. See http://www.bls.gov/tus/data.htm for more information.

identify the values that were imputed. For researchers who may want to use some—but not all—imputed values, the variables ERSPEMCH and ERHHCH can be used to identify changes in the household membership and changes in household members' labor force status between the final CPS interview and the ATUS interview.

For researchers who would like to further reduce the number of missing values, a possible additional imputation would involve EUSNAP, EUWIC, and the income variables. If EEINCOME1 and EUINCOME2 values are missing, yet EUSNAP=1 (indicating SNAP participation), then researchers may wish to set EEINCOME1=2 and EUINCOME2=2. The rationale would be that if a household is receiving SNAP benefits, then the household income is likely to be less than 130 percent of the poverty threshold, the income-eligibility threshold for SNAP. If EEINCOME1 and EUINCOME2 are missing, and EUWIC=1, then researchers may wish to set EEINCOME1=2 as the household income is likely to be less than 185 percent of the poverty threshold. The researcher would have to weigh the possible measurement error of misclassifying the household income, as some States have waivers that allow participants to have higher incomes and still be eligible for benefits, against the benefit of additional low-income observations.

Grocery shopping and meal preparation

EUGROSHP	Are you the person who usually does the grocery shopping in your household?
EUSTORES	Where do you get the majority of your groceries?
EUSTREASON	What is the primary reason you shop there?
EUFASTFD	Over the last seven days, did you purchase any prepared food from a deli, carry-out, delivery food, or fast food?
EUFASTFDFRQ	How many times in the last seven days did you purchase fast food?
EUFFYDAY	Did you purchase any prepared food yesterday?
EUPRPMEL	Are you the person who usually prepares the meals in your household?
EUMEAT	In the last 7 days, did you prepare any meals with meat, poultry, or seafood?
EUTHERM	Did you use a food or meat thermometer when preparing those meals?
EUMILK	In the last 7 days, did you drink or serve unpasteurized or raw milk?

Research motivation:
By determining if the respondent is the person in the household who is responsible for grocery shopping and meal preparation, the respondent's time diary can be analyzed for research questions involving grocery shopping and meal preparation. This step will eliminate the many zero observations of respondents who are not the usual grocery shopper and meal preparer in their households. Asking questions about grocery shopping preferences provides data on time use patterns and grocery store preference. Information on fast food purchase allows for analysis of the time diaries of fast food purchasers. ERS research found that fast food purchasers have different time use patterns than others. (Hamrick, Karen S., and Abigail M. Okrent. *The Role of Time in Fast-Food Purchasing Behavior in the United States*, ERR-178, U.S. Department of Agriculture, Economic Research Service, November 2014, http://www.ers.usda.gov/publications/err-economic-research-report/err178.aspx) Collecting information on meat thermometer use and raw milk consumption provides data for research on food safety and household practices.

Technical notes:
The grocery store questions (EUSTORES and EUSTREASON) are asked only of respondents who reported that they are the usual grocery shopper in their household, or that they split shopping equally with someone else in the household.

The meat thermometer and raw milk questions (EUMEAT, EUTHERM, and EUMILK) are asked only of respondents who reported that they are the usual meal preparer in their household, or that they split meal preparation equally with someone else in the household. Also note that the EUTHERM question was asked only of respondents who reported that they did prepare meals with meat, poultry, or seafood in the last 7 days.

The only editing that was done with these variables was with the small number of cases where respondents living in a single-person household reported that they split the grocery shopping and meal preparation tasks equally with another household member. These cases were recoded as EUGROSHP=1 and EUPRPMEL=1—that is, the respondent was identified as the household member who usually performed these tasks.

Standard errors and 90 percent confidence intervals for table, Time spent in eating and drinking, 2014
Age 15 and older

	Average minutes per day, civilian population ("with zeros")				Average minutes per day, for persons who engaged in the activity ("without zeros")			
	Mean	Standard Error	Lower bound, 90% confidence interval	Upper bound, 90% confidence interval	Mean	Standard Error	Lower bound, 90% confidence interval	Upper bound, 90% confidence interval
Total time in primary eating & drinking	64.33	0.54	63.44	65.23	67.18	0.52	66.32	68.04
Total time in associated activities	6.10	0.21	5.75	6.45	26.69	0.81	25.36	28.03
Secondary Eating	16.16	0.65	15.09	17.24	30.27	1.13	28.41	32.13
Total time in primary eating/drinking plus secondary eating	86.60	0.83	85.23	87.97	87.17	0.83	85.79	88.56
Men								
Total time in primary eating & drinking	66.24	0.87	64.79	67.68	69.29	0.85	67.88	70.71
Total time in associated activities	6.57	0.31	6.06	7.08	26.87	0.94	25.33	28.42
Secondary Eating	16.27	1.18	14.33	18.22	33.22	2.27	29.46	36.98
Total time in primary eating/drinking plus secondary eating	89.08	1.43	86.71	91.45	89.59	1.44	87.21	91.97
Women								
Total time in primary eating & drinking	62.55	0.73	61.35	63.76	65.21	0.70	64.04	66.37
Total time in associated activities	5.66	0.32	5.13	6.19	26.50	1.36	24.26	28.74
Secondary Eating	16.06	0.62	15.04	17.08	27.92	1.02	26.23	29.61
Total time in primary eating/drinking plus secondary eating	84.28	1.07	82.51	86.04	84.91	1.07	83.14	86.68

Note: Cell size for estimates age 15 and older is 11,212 respondents. A primary activity refers to an individual's main activity. Primary eating & drinking includes Eating and drinking (110101) and Eating and drinking as part of job (050202). Travel times not included except in associated activities. Associated activities are Waiting associated with eating & drinking (110201 and 110299) and Travel related to eating & drinking (181101).
Source: ERS, 2014 Bureau of Labor Statistics American Time Use Survey and ERS Eating & Health Module.

Unweighted Counts, 2014 data

Variable	File	Value=1	Value=2	Value=3	Value=4	Value=5	Value=6	Value=-1	Value=-2	Value=-3	Total
EUEAT	EH_RESP	6,112	5,037	na	na	na	na	0	61	2	11,212
EUDRINK	EH_RESP	7,517	3,685	na	na	na	na	0	9	1	11,212
EUSODA	EH_RESP	3,043	4,470	na	na	na	na	3,695	4	0	11,212
EUDIETSODA	EH_RESP	1,181	1,780	76	na	na	na	8,169	4	2	11,212
EUEDUR, EUEDUR24	EH_ACT	8,429 (value>0)	na	na	na	na	na	112,205	85	0	120,719
EUGROSHP	EH_RESP	6,914	2,940	1,355	na	na	na	0	2	1	11,212
EUSTORES	EH_RESP	5,549	2,058	358	37	206	na	2,941	58	5	11,212
EUSTREASON	EH_RESP	2,648	3,047	1,094	710	172	460	3,008	65	8	11,212
EUFASTFD	EH_RESP	6,470	4,699	na	na	na	na	6	26	11	11,212
EUFASTFDFRQ	EH_RESP	6,440 (value>0)	na	na	na	na	na	4,742	30	0	11,212
EUFFYDAY	EH_RESP	2,362	4,101	na	na	na	na	4,745	2	2	11,212
EUPRPMEL	EH_RESP	7,011	3,061	1,114	na	na	na	10	4	12	11,212
EUMEAT	EH_RESP	7,182	931	na	na	na	na	3,089	10	0	11,212
EUTHERM	EH_RESP	846	6,330	na	na	na	na	4,030	5	1	11,212
EUMILK	EH_RESP	158	7,961	na	na	na	na	3,090	1	2	11,212
EUFDSIT	EH_RESP	10,477	548	136	na	na	na	18	12	21	11,212
EUSNAP	EH_RESP	1,164	9,971	na	na	na	na	18	38	21	11,212
EUWIC	EH_RESP	412	5,393	na	na	na	na	5,370	25	12	11,212
EUGENHTH	EH_RESP	2,017	3,757	3,491	1,367	496	na	19	36	29	11,212
EUEXERCISE	EH_RESP	7,014	4,141	na	na	na	na	19	8	30	11,212
EUEXFREQ	EH_RESP	6,993 (value>0)	na	na	na	na	na	4,198	18	3	11,212
EUHGT	EH_RESP	11,051 (value>0)	na	na	na	na	na	21	92	48	11,212
EUWGT	EH_RESP	10,712 (value>0)	85 (value=-5)	na	na	na	na	21	155	239	11,212
EEINCOME1	EH_RESP	6,990	3,454	452	na	na	na	21	155	140	11,212
EUINCOME2	EH_RESP	1,116	2,038	359	na	na	na	6,818	599	282	11,212

Unweighted Counts, 2014 con't

Variable	File					Total
ETHGT	EH_RESP	10968 (Value=0)	40 (Value=1)	43 (Value=2)	161 (Value=-1)	11,212
ETWGT	EH_RESP	10610 (Value=0)	53 (Value=1)	49 (Value=2)	500 (Value=-1)	11,212

Total number, EH_RESP	11,212
Total number, EH_ACT	120,719
Total number, EH_Weights	11,212