

Eating & Health Module User's Guide
May 2008



The American Time Use Survey's Eating & Health Module is sponsored by USDA's Economic Research Service and the National Institutes of Health's National Cancer Institute, and conducted by the U. S. Census Bureau for the Bureau of Labor Statistics

This User's Guide is a supplement to the American Time Use Survey User's Guide, which is available from the Bureau of Labor Statistics at: <http://www.bls.gov/tus/atususersguide.pdf>

It is designed to be used with the Eating & Health Module Data Dictionary, which is available from the Bureau of Labor Statistics at: <http://www.bls.gov/tus/ehmintcodebk.pdf>

The Eating & Health Module data files are downloadable from the Bureau of Labor Statistics at: http://www.bls.gov/tus/ehdatafiles_2006.htm

A PDF version of the Eating & Health Module questionnaire is available at <http://www.bls.gov/tus/ehmquestionnaire.pdf>

For more information, see www.ers.usda.gov/Data/ATUS/

SURVEY OBJECTIVES

The objective of the Eating & Health (EH) Module in the American Time Use Survey (ATUS) is to collect data to analyze the relationships among time use patterns and eating patterns, nutrition, and obesity; food and nutrition assistance programs; and grocery shopping and meal preparation.

One of the missions of USDA's Economic Research Service (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, program income eligibility, 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-run implications for income and earnings, health, and other aspects of well-being.

The Division of Cancer Control and Population Sciences of the National Cancer Institute (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). It is difficult or impossible to use this data 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 areas. NCI's objective in providing support for the Eating and Health Module of the American Time Use Survey 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.

DEVELOPMENTAL PHASES

2001-04

In 2001, ERS first discussed with the Bureau of Labor Statistics (BLS) 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 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. Presentations were made 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/news/templates/template.aspx?articleid=133&zoneid=27>

2005

Four rounds of cognitive pre-testing were conducted in 2005. This pre-testing helped ensure that respondents understood the survey questions in a manner 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 the testing, BLS and ERS finalized the EH Module questionnaire and developed the data collection instrument.

From October through December 2005, the EH Module was pre-fielded. This 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 was used for quality control purposes only and will not be released.

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 Module has been fielded since January 2006 and is scheduled through December 2008.

USING THE EH MODULE DATA

The EH Module data are contained in four files:

2006 EH Respondent file

The EH Respondent file contains information about EH respondents, including variables about grocery shopping and meal preparation; food stamp participation; general health, height, and weight; and household income.

2006 EH Activity file

The EH Activity file contains information on respondents' secondary eating and secondary drinking of beverages.

2006 EH Child file

The EH Child file contains information on children (under age 19) in respondent households who ate a breakfast or lunch in the previous week that was prepared and served at a school, day care, Head Start center, or summer day program.

2006 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 EH Data Dictionary (<http://www.bls.gov/tus/ehmintcodebk.pdf>) for instructions on merging the EH Module files with the ATUS files.

Over 99 percent of the ATUS respondents completed the EH Module questionnaire. The EH Module data files were compiled from completed EH Module interviews only. Because a few of the interviews were incomplete for the EH Module (but complete for the ATUS), a separate set of sample weights accounts for the difference in completed responses. The EH Module weight variable is EUFINLWGT.

EUFINLWGT is derived from the time-use weighting variable TUFINLWGT, corrected for the small amount of nonresponses 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 = -1 for incomplete interviews. Researchers can use this variable to select only the ATUS cases with completed EH Module interviews.

**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 micro data 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 less than 80 ($N < 80$).

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

Secondary eating and secondary 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)
EUEDUR24	Amount of time spent in secondary eating during a given activity in minutes (last activity truncated at 24 hours)
ERTSEAT	Total amount of time spent in secondary eating (in minutes)
EUDRINK	Did you do any secondary drinking yesterday?
EUDRKSUM	Were you drinking anything other than plain water during this activity?
EUDDUR	Amount of time spent in secondary drinking during a given activity in minutes (last activity not truncated at 24 hours)
EUDDUR24	Amount of time spent in secondary drinking during a given activity in minutes (last activity truncated at 24 hours)
ERTSDRK	Total amount of time spent in secondary drinking (in minutes)

Motivation:

With the sole exception of asking about secondary child care, the ATUS asks respondents to identify only their primary (or main) activities; however, many Americans eat while doing other things, such as driving or working. Asking respondents to report eating and drinking beverages as a secondary activity provides information both for estimating the total time spent eating and drinking and also 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 how food and eating choices influence the type of crops that America's farmers grow, the prices they 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]?*

The respondent is then asked:

Not including plain water, were there any other times yesterday when you were drinking any beverages?

*[*If necessary, the interviewer reads: I'm asking about any type of beverage, other than plain water, including things like coffee, tea, juice, milk, and soda, as well as alcoholic beverages.]*

During which activities?

Were you drinking the entire time you were [fill: ACTIVITY]? If the respondent does not report drinking during the entire activity, then the respondent is asked:

About how long would you say you were drinking while you were [fill: ACTIVITY]?

Note that if the respondent reports "Yes" to either the secondary eating or secondary drinking question but cannot remember how long he/she was engaged in the secondary activity, then the value of EUEDUR and EUEDUR24 or EUDDUR and EUDDUR24 is -2 for "Don't Know" in the EH Activity file. (In 2006, there were no cases of "Refused," which would have a value of -3.) In the summary variables ERTSEAT and ERTSDRK, these occurrences are assigned the value of zero minutes. Researchers may want to assign values greater than zero to these activities if a larger number of secondary eating and secondary drinking occurrences is desired.

Note also that secondary eating or secondary drinking 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.)

IMPORTANT NOTE

Secondary eating and secondary drinking cannot be added as a simple sum with primary eating to get total time eating and drinking.

The respondent is asked to report the amount of time spent in secondary eating and in secondary drinking activities; however, if the respondent reports both activities, it is not known if they happened at the same time. For example, a respondent reports having spent 5 minutes engaged in secondary eating (EUEDUR24) and 15 minutes engaged in secondary drinking (EUDDUR24) while doing paid work from 1 p.m. to 5 p.m. (4 hours). It is not known if the 5 minutes of eating overlapped with the 15 minutes of drinking, only that both happened between 1 pm and 5 pm. From 8 p.m. to 5 p.m., the respondent spent 2 hours watching television and reported engaging in secondary eating and secondary drinking the entire time.

EUEDUR24 (amount of time spent on secondary eating) and EUDDUR24 (amount of time spent on secondary drinking) cannot be totaled into a simple sum because first, it is not known if there is overlap, and second, adding the two time durations will result in more than 24 hours in a day for some of the respondents.

ERS suggests estimating a range for total time spent in secondary eating and secondary drinking activities. The minimum of the range would assume all overlap, and the maximum would assume no overlap. In the example above, the minimum would be 15 minutes and the maximum would be 20 minutes, as the respondent engaged in secondary eating and secondary drinking during paid work.

The duration of the primary activity must be taken into account. In the example above, the respondent watched television from 8 p.m. until 10 p.m. and engaged in secondary eating and secondary drinking the entire time. For the primary activity of watching television, the duration is 120 minutes, so the minimum total time in secondary eating and drinking is 120 minutes and the maximum time is 120 minutes. For more information on the methodology used by ERS to estimate total eating times, see Documentation—Estimation of Total Time Spent in Eating and Drinking: <http://www.ers.usda.gov/data/ATUS/documentation>.

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

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 (TREMOCR = 1) and the EH final weight EUFINLWGT.

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 in conjunction with the core ATUS, could reveal the types of activities and eating patterns that lead to obesity and those that help to maintain healthy weight, overall health, and well-being.

Body Mass Index, a widely used measure of weight status, can be analyzed in conjunction with the time diary information. Data on time spent in sedentary and active pursuits, along with eating patterns (secondary eating and secondary drinking), demographic characteristics, and labor force information, will provide researchers the ability 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 for more information:

http://www.cdc.gov/nccdphp/dnpa/bmi/adult_BMI/about_adult_BMI.htm#Interpreted.

Technical notes:

Both height and weight are top coded and bottom coded for confidentiality. In the 2006 data, the topcoded value for height is 77 inches and the bottom coded value is 56 inches. The top coded value for weight is 330 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 a missing value for ERBMI.

The height variable, EUHGT, is given in whole inches. If the respondent reported height with a half inch, height was rounded down to the nearest whole inch. For example, 5' 7-1/2" would be recorded as 5' 7". Respondents could also report their height in meters and centimeters, but these measurements were converted to feet and inches during data processing.

The weight variable, EUWGT, is given in pounds. Respondents could also report their weight in kilograms, but these measurements were converted to pounds during data processing.

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 have an impact on 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>).

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).

Food Stamp participation

EUFSP In the past 30 days, did you or anyone in your household get food stamp benefits?

Motivation:

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 food stamp recipients, is of particular interest to policymakers and program administrators.

Technical notes:

For food stamp eligibility requirements, see http://www.fns.usda.gov/fsp/applicant_recipients/eligibility.htm#Resources.

Using EUFINLWGT creates an estimate of the number of person-days for the civilian population age 15 and older. In analyzing food stamp households, the estimates would be, for example, the number of person-days for the civilian population age 15 and older in a two-adult household with children that receives food stamps. Estimates made using EUFINLWGT will not be of the total population (all ages), households, or of food stamp recipients. Since about half of all food stamp 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 number of food stamp recipients.

The purpose of collecting food stamp information in the EH Module is to initiate research on time use patterns by food stamp reciprocity. Therefore, the food stamp 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 receiving food stamps.

Meals Obtained at School, Day Care, or Summer Camp

EESCLBRK	In the past week, did any of your household children under the age of 19 eat a breakfast that was prepared and served at a school, a paid day care provider, a Head Start center, or a summer day program?
EXSCLBRK	Allocation flag for EESCLBRK
EEBRK	Ate a breakfast prepared and served at school, day care, Head Start center, or summer day program
EXBRK	Allocation flag for EEBRK
ERPWC	Proportion of household children < 19 that ate breakfast at a school, day care, Head Start center, or summer day program
EESCLLCH	In the past week, did any of your household children under the age of 19 eat a lunch that was prepared and served at a school, a paid day care provider, a Head Start center, or a summer day program?
EXSCLLCH	Allocation flag for EESCLLCH
EELCH	Ate a lunch prepared and served at school, day care, Head Start center, or summer day program
EXLCH	Allocation flag for EELCH
ERPLWC	Proportion of household children who ate lunch at a school, day care, Head Start center, or summer day program
ERC19NUM	Number of household children < 19 years old

Motivation:

All respondents who live in households that have at least one child under age 19 are asked if any household child ate a breakfast or lunch that was prepared and served at a school, a paid day care provider, a Head Start center, or a summer day program. These questions are asked about all such meals and not just those provided through USDA's National School Lunch Program (NSLP), School Breakfast Program (SBP), or Child and Adult Care Food Program (CACFP). This differs from most Federal surveys, which ask only about lunches and breakfasts provided through these programs, or, even more restrictively, about free or reduced-price meals provided through these programs to low-income students.

Asking these questions of all households with children allows for the examination of any time benefits provided by obtaining meals at school, day care, Head Start, and summer programs. This information will enable researchers to learn more about the types of households that value those benefits. This effort will complement previous research efforts examining the economic and nutritional benefits of meals provided by USDA Child Nutrition Programs.

Technical Notes:

For more information on the USDA Child Nutrition Programs, see <http://www.fns.usda.gov/cnd/>.

Respondents in households with children (under age 19) are asked:

Please think back over the past week starting last [fill: interview day of week] up to today, [fill: interview day of week]. In the past week, did [fill: you / names of household children under the

age of 19 / you or names of household children under the age of 19] eat a BREAKFAST that was prepared and served at a school, a paid day care, a Head Start center, or a summer day program? This question refers ONLY to BREAKFASTS prepared at the school or center—not meals brought from home.

If yes, *Which children?*

If the respondent reports either “Yes” or “No,” then the same question is asked about LUNCH. If the respondent reports that the household child/children did not attend school, day care, Head Start, or a summer day program in the previous week (EESCLBRK=3), then the LUNCH question is not asked. Note that the respondent may be one of the children receiving a school breakfast or lunch.

If the respondent reports “Yes” for any household child for either breakfast or lunch, all household children under age 19 will be in the EH Child file. Respondents in households with no children obtaining breakfast or lunch are not included in the file.

Some minor editing was done on the school meals variables. In particular, if a school meals variable was reported as “Yes” for a 17- or 18-year-old who was enrolled in college or had a high school diploma, then the value was changed to “No.” The intent was to collect information on school meals in schools from kindergarten through high school and in day care centers.

As a result of a programming error that occurred over October 2006 through April 2007, school meals information was not collected for 18-year-olds. Consequently, school meals information was imputed using probabilistic methods (developed using research findings about determinants of school meals), and the EH Module data for 18-year-olds collected during January through May 2006. (See Constance Newman, and Ralston, Katherine, *Profiles of Participants in the National School Lunch Program: Data from Two National Surveys*, USDA, Economic Research Service, Economic Information Bulletin No. 17, August 2006, <http://www.ers.usda.gov/publications/eib17/>).

The fact that many 18-year olds have a high school diploma greatly reduced the number of imputations that had to be made. The variables EXBRK, EXSCLBRK, EXLCH, and EXSCLLCH indicate which observations were imputed. Note that in the cases where EESCLBRK and EESCLLCH were imputed as equal to 1 (Yes), then EEBRK and EELCH were imputed as well. ERPBWC and ERPLWC are thus based in some cases on imputed information. Removing the imputed values is not recommended as it would lead to bias—school meals information for 18-year olds would be available for only part of 2006 and 2007.

Note that the Current Population Survey variables PESCHENR and the ATUS variable TESCHENR are asking the respondent about school enrollment at the time of the interview, so for summer months many children will be coded as being not enrolled in school. The CPS records students on short breaks, such as Christmas or spring break, as being enrolled, but those on summer break as not enrolled. Also note that the CPS interview takes places 2 to 5 months before the ATUS interview, so TESCHENR is the more current and preferred variable to use. However, in some cases only PESCHENR is available. With either variable, researchers will want to be mindful of the month of the ATUS interview, TUMONTH.

The ATUS Roster file includes "Own non-household child <18" (TERRP=40), however the EH Child file and ERC19NUM includes only household children. In addition, the Child file and ERC19NUM include persons age 18.

Using EUFINLWGT creates an estimate of the number of person-days for the civilian population age 15 and older. In analyzing meals obtained at school households, the estimates would be, for example, the number of person-days for the civilian population age 15 and older in a two-adult household with children where the children obtain meals at school. Estimates made using EUFINLWGT will not be of total population (all ages), households, or of children obtaining meals at school as the population surveyed for the ATUS and EH Module is persons age 15 and older.

The purpose of collecting meals at school information in the EH Module is to allow for research on time use patterns by whether children in the respondent's household obtained meals at school, not for estimating the number of children obtaining meals at school. Therefore, the meals obtained at school data are useful as a household characteristic of the respondent but should not be used for estimation of children or of households obtaining meals at school.

Income

EEINCOME1	Last month, was your total household income before taxes more or less than (amount) per month? Note: (amount) approximates 185 percent of poverty threshold.
EXINCOME1	EEINCOME1: 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 or less than (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 or less than a specified amount, an amount that depends on the number of people in the household and approximates 185 percent of the poverty threshold. The interviewer may also convert the monthly amount to an annual income in order to make the question clearer to the respondent. If the respondent reports that household income is below the amount specified in EEINCOME1, or doesn't know or refuses, a second question (EUINCOME2) asks if the household's monthly income is more or less than a different amount, which again depends on the number of people in the household, and is approximately 130 percent of the poverty threshold.

Note that if respondents reported household monthly income equal to the specified amount in EEINCOME1, then EEINCOME1 was set equal to 2 (less than 185 percent of poverty threshold); similarly, for income reported to be equal to the amount specified in EUINCOME2, EUINCOME2 was set equal to 2 (less than 130 percent of poverty threshold).

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 and eligibility, <http://www.fns.usda.gov/fns/default.htm>.) 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 income-eligibility threshold for food stamps and for free school meals is 130 percent of the poverty threshold.

The first set of income values, EUINCLVL = 1, includes the income-eligibility thresholds for FY 2006, based on the poverty thresholds released in August 2005. (See

<http://www.census.gov/hhes/www/poverty/threshld.html> for poverty thresholds.) In March 2006, interviewers were given the guidance to round up the thresholds to the next \$100 for ease of understanding. The second set of income values, EUINCLVL = 2, includes the income-eligibility thresholds that went into effect October 1, 2006, for FY 2007. The third set, EUINCLVL = 3, includes income-eligibility thresholds for FY2008 effective October 1, 2007.

There was minimal editing of the income variable EEINCOME1. When EEINCOME1 was missing and EUINCOME2 = 2 (less than 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.

Prior to imputation, about 10 percent of the original EEINCOME1 values were “don’t know” or refused. Although this may seem high, it is a lower nonresponse rate than in some other household surveys. Be that as it may, imputations were done to reduce the number of missing values. Earnings were used to impute values of EEINCOME1. Because earnings are an important source of income, if 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 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 (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, 2005, <http://www.ers.usda.gov/Briefing/FoodSecurity/readings.htm#statistical>) 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 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 EUFSP and the income variables. If EEINCOME1 and EUINCOME2 values are missing, yet EUFSP=1 (indicating food stamp participation), then researchers may wish to set EEINCOME1=2 and EUINCOME2=2. The rationale would be that if a household is receiving food stamps, then the household income is likely to be less than 130 percent of the poverty threshold, the income-eligibility threshold for the Food Stamp Program. The researcher would have to weigh the possible measurement error of misclassifying the household income 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?
EUPRPMEL Are you the person who usually prepares the meals in your household?

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 will eliminate the many zero observations of respondents who are not the usual grocery shopper and meal preparer in their households.

Technical notes:

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.

Food Stamp Program participation by household characteristics Age 15 and over

Persons in Food Stamp households
as percentage of population age 15 and older 6.39

Persons in Food Stamp household by household type (percent)

Single person	13.87
Multiple adults, no children	19.70
One adult plus children	19.24
2 or more adults plus children	47.11
Other household type	0.08
Total	100.00

With elderly (age 60 and older) 20.31

General health status of persons in Food Stamp (FS) households versus rest of population

<i>Percent</i>	FS population	Non-FS population
Excellent	11.32	19.54
Very good	19.91	34.85
Good	33.31	29.78
Fair	21.18	12.06
Poor	14.58	3.77

BMI of persons in Food Stamp household versus rest of population

<i>Percent</i>	FS population	Non-FS population
Underweight	3.10	2.05
Normal Weight	34.20	38.64
Overweight	29.47	34.96
Obese	33.23	24.35

NOTE: These estimates are provided as characteristics of the Eating & Health Module data and are not intended as estimates of Food Stamp Program participants.

See User's Guide for more information.

Household type was determined by ATUS Respondent variables TRCHILDNUM and TRNUMHOU.

Children are under age 18.

BMI under 18.5 is underweight, 18.5 to 25.0 is normal weight, 25.0 to 30.0 is overweight, and

BMI greater than 30.0 is obese. Pregnant women are not included in BMI statistics.

Data refer to persons age 15 and older.

Source: Bureau of Labor Statistics American Time Use Survey and ERS Eating & Health Module.

General Health, Height, and Weight
Age 15 and over

	Total civilian population	Men	Women
General Health (percent)			
Excellent	19.09	20.54	17.72
Very Good	33.81	32.74	34.82
Good	30.06	29.46	30.62
Fair	12.62	13.00	12.26
Poor	4.43	4.26	4.58
Height (inches)	66.90	69.78	64.17
Weight (pounds)	173.27	191.82	154.92
BMI average	27.08	27.66	26.50
Underweight (percent)	7.06	3.51	10.40
Normal weight(percent)	35.38	28.77	41.59
Overweight (percent)	33.36	40.58	26.56
Obese (percent)	24.20	27.13	21.44

Note: Data refer to persons 15 years or older.

BMI under 18.5 is underweight, 18.5 to 25.0 is normal weight, 25.0 to 30.0 is overweight, and BMI greater than 30.0 is obese. Pregnant women are not included in BMI statistics.

Data refer to persons age 15 and older.

Source: Bureau of Labor Statistics American Time Use Survey and ERS Eating & Health Module.

**Standard errors and 90% confidence intervals, Time spent in eating and drinking, 2006
Age 15 and over**

	Average minutes per day, civilian population ("with zeros")						Average minutes per day, of those who engaged in the activity ("without zeros")					
	Total		Men		Women		Total		Men		Women	
	SE	90% CI +/-	SE	90% CI +/-	SE	90% CI +/-	SE	90% CI +/-	SE	90% CI +/-	SE	90% CI +/-
Total time in primary eating & drinking	0.4754	0.7820	0.8010	1.3176	0.7572	1.2456	0.4865	0.8003	0.8387	1.3796	0.7206	1.1854
Total time is associated activities (waiting, travel)	0.2971	0.4887	0.4138	0.6806	0.4381	0.7206	0.9519	1.5659	1.2653	2.0814	1.4733	2.4236
Secondary Eating	0.6340	1.0430	1.0518	1.7302	0.7075	1.1638	1.1830	1.9461	2.0308	3.3407	1.2478	2.0526
Secondary Drinking	1.5501	2.5500	2.3278	3.8292	2.1335	3.5097	3.9863	6.5575	6.6376	10.9188	5.1244	8.4296
Secondary Eating & Drinking (min) (assumes all overlap)	1.6202	2.6652	2.3901	3.9318	2.1527	3.5412	2.7850	4.5813	4.5129	7.4237	3.4504	5.6759
Secondary Eating & Drinking (max) (assumes no overlap)	1.6203	2.6653	2.4010	3.9497	2.1561	3.5468	2.7725	4.5600	4.5239	7.4419	3.4360	5.6522
Mid-point of min and max	1.6199	2.6647	2.3951	3.9399	2.1537	3.5428	2.7781	4.5699	4.5174	7.4311	3.4420	5.6620

Note: A primary activity refers to an individual's main activity.
 Primary eating & drinking includes Eating and drinking (110101 and 110199), Eating and drinking n.e.c. (119999) 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 and 181199).
 Secondary Eating & Drinking minimum assumes all overlap of secondary eating & drinking if both occur during a primary activity.
 Secondary Eating & Drinking maximum assumes no overlap of secondary eating & drinking if both occur during a primary activity.
 Data refer to persons age 15 and older.
 Source: Bureau of Labor Statistics American Time Use Survey and ERS Eating & Health Module.

Unweighted Counts

Variable	Description	File	Value=1	Value=2	Value=3	Value=-1	Value=-2	Value=-3	Total
EUEAT	Eating meals/snacks while doing something else	EH_RESP	6,734	6,026	na	0	43	88	12,891
EUDRINK	Drinking beverages while doing something else	EH_RESP	4,484	8,251	na	0	61	95	12,891
EUGROSH	Usual person who does grocery shopping in hh	EH_RESP	7,601	3,740	1,443	0	3	104	12,891
EUPRPMEL	Usual person who does meal preparation in hh	EH_RESP	7,560	3,825	1,396	0	6	104	12,891
EUFSP	HH received food stamps in last 30 days	EH_RESP	900	11,839	na	0	44	108	12,891
EESCLBRK	HH children ate a brk at school, day care	EH_RESP	1,442	4,870	203	6,212	99	65	12,891
EESCLLCH	HH children ate lunch at school, day care	EH_RESP	3,721	2,597	221	6,212	75	65	12,891
EEINCOME1	Above/below 185% poverty threshold	EH_RESP	8,645	3,663	na	0	411	172	12,891
EUINCOME2	Above/below 130% poverty threshold	EH_RESP	1,418	2,308	na	7,987	875	303	12,891

Variable	Description	File	Value=0	Value=1	Value=2	Value=-1	Value=-2	Value=-3	Total
ETWGT	Topcode flag for height (EUHGT)	EH_RESP	12,532	41	55	263	0	0	12,891
ETWGT	Topcode flag for weight (EUWGT)	EH_RESP	12,173	58	57	0	0	603	12,891

Variable	Description	File	Value>0	Value=-1	Value=-2	Value=-3	Value=-5	Total
EUHGT	Respondent's height (in inches)	EH_RESP	12,628	0	140	123	na	12,891
EUWGT	Respondent's weight (in pounds)	EH_RESP	12,288	0	165	311	127	12,891
EUEDUR	Amt of time doing secondary eating	EH_ACT	9,633	136,735	58	0	na	146,426
EUDDUR	Amt of time doing secondary drinking	EH_ACT	9,347	137,008	71	0	na	146,426

Variable	Description	File	Value=1	Value=2	Value=3	Value=4	Value=5	Value=-1	Value=-2	Value=-3
EUGENH	Respondent's general health	EH_RESP	2,442	4,280	3,814	1,622	601	0	16	116

Variable	Description	File	Value=1	Value=2	Total
EEBRK	Ate a brk at school, day care	EH_CHILD	2,263	5,456	7,719
EELCH	Ate a lunch at school, day care	EH_CHILD	6,098	1,621	7,719

File	Number of Observations
EH_RESP	12,891
EH_CHILD	7,719
EH_ACT	146,426
EH_Weights	25,304