

# ATUS Eating & Health Module

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Time Use Data Access System Workshop

University of Maryland

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# TIME USE—How does this relate to food and nutrition research?

Decisions individuals make on how they use their 24 hours a day have short-run and long-run implications for income and earnings, health, and other aspects of well-being.

- Food procurement and prep - major category of home production
  - Nutrition issues, food safety issues
- Food assistance and time conflicts
- Time spent eating, exercising or doing other activities has implications for obesity risk



# The American Time Use Survey

- Bureau of Labor Statistics survey, conducted by Census
- Continuously collected survey, began 2003
- One designated respondent per household, 15+ years old
- **24-hour recall diary** – core of ATUS (American Time Use Survey)
- 4:00am of previous day to 4:00am interview day
- Primary activity only (self-reported) except for childcare
- Where each activity took place, whom respondent was with
- Demographic, labor participation, and household info; limited geographical info
- Time diary method considered “neutral” method of collecting activity information



# 2006-08 Eating & Health Module

ERS developed a module of questions to accompany the American Time Use Survey

- 4-minute Module fielded 2006-08
- Module funded by ERS and NIH-NCI

Data collected included:

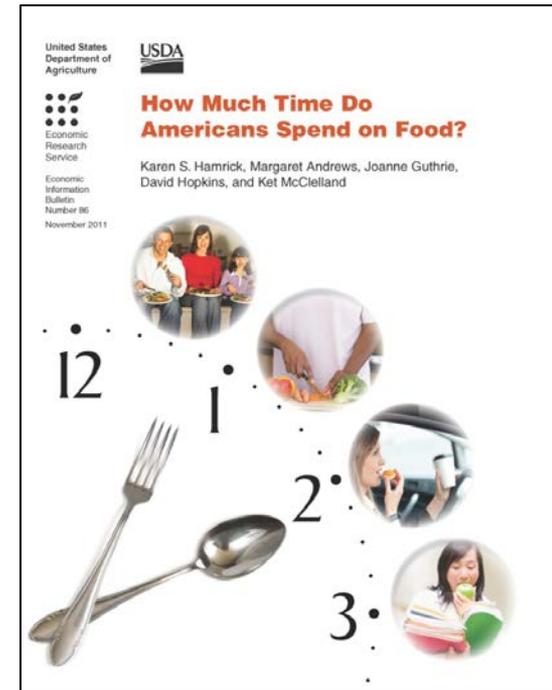
- Secondary eating and drinking
- Usual grocery shopper, meal preparer
- SNAP participation, income
- School meals for children in household
- General health, BMI

[http://www.ers.usda.gov/data-products/eating-and-health-module-\(atus\).aspx](http://www.ers.usda.gov/data-products/eating-and-health-module-(atus).aspx)



# ERS Report—How Much Time Do Americans Spend on Food?

- ERS EIB-86, Nov. 2011
- Charts and graphs available for downloading



<http://www.ers.usda.gov/publications/eib-economic-information-bulletin/eib86.aspx>



# Eating Patterns, Nutrition, Obesity

## Motivation:

Are certain patterns of eating and of time use associated with obesity?



# Eating Patterns, Nutrition, Obesity

## Eating as a secondary activity

*“We’re interested in finding out more about how people fit meals and snacks into their schedules. Yesterday, you reported eating or drinking between [fill times]. Were there any other times you were eating yesterday—for example while you were doing something else? About how long would you say you were eating while you were [fill activity]?”*

*Not including plain water, were there any other times yesterday when you were drinking any beverages? About how long would you say you were drinking while you were [fill activity]?”*



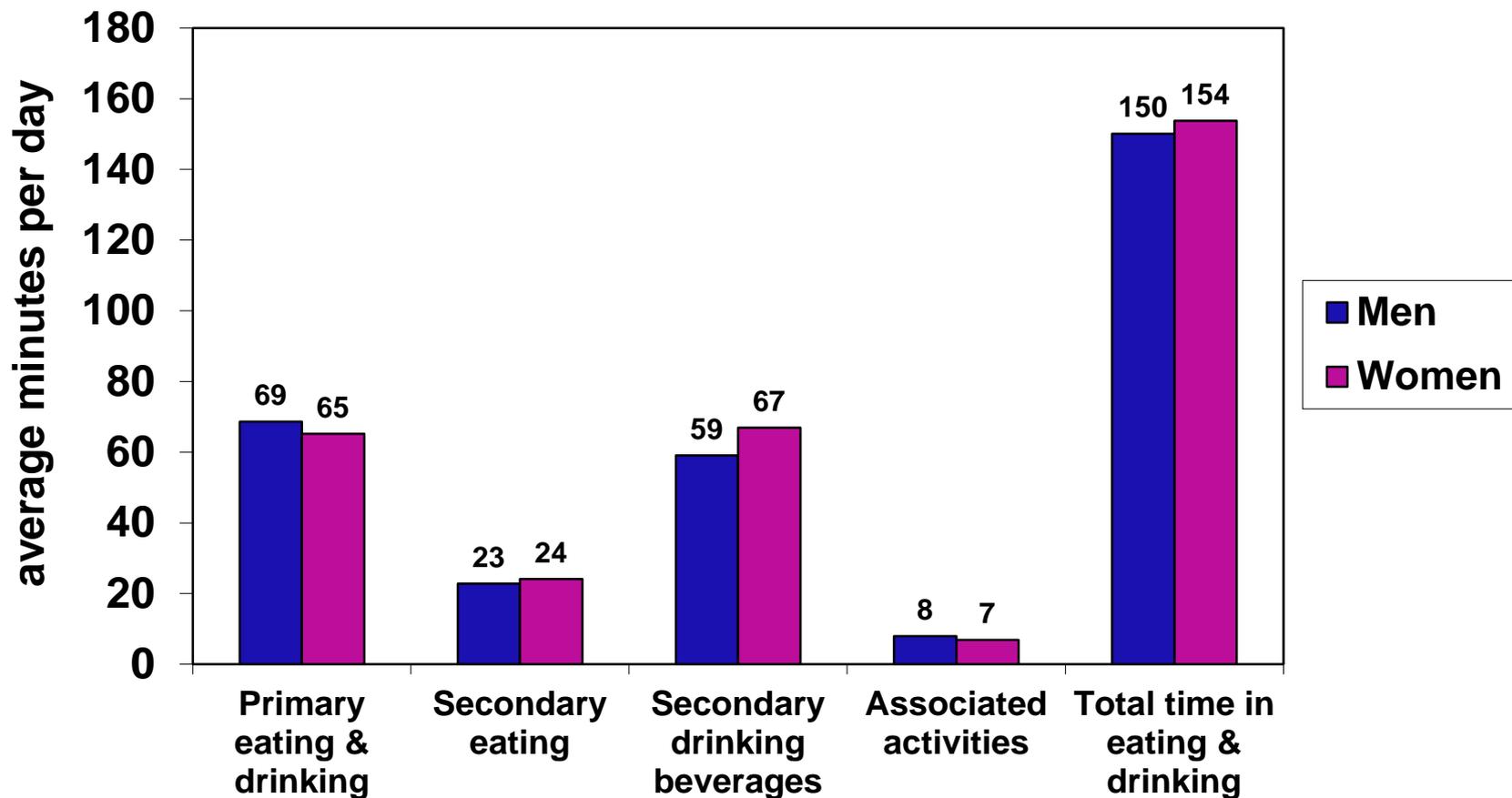
# Eating Patterns, Nutrition, Obesity

Example of secondary eating in diary:

<b>start time</b>	<b>end time</b>	<b>primary activitiy</b>	<b>secondary eating?</b>	<b>how long?</b>	<b>secondary drinking?</b>	<b>how long?</b>
<b>8:00pm</b>	<b>10:00pm</b>	<b>watching TV</b>	<b>Yes</b>	<b>15 min.</b>	<b>Yes</b>	<b>45 min.</b>



## On an average day 2006-08, men and women spent about the same amount of time in eating and drinking activities.

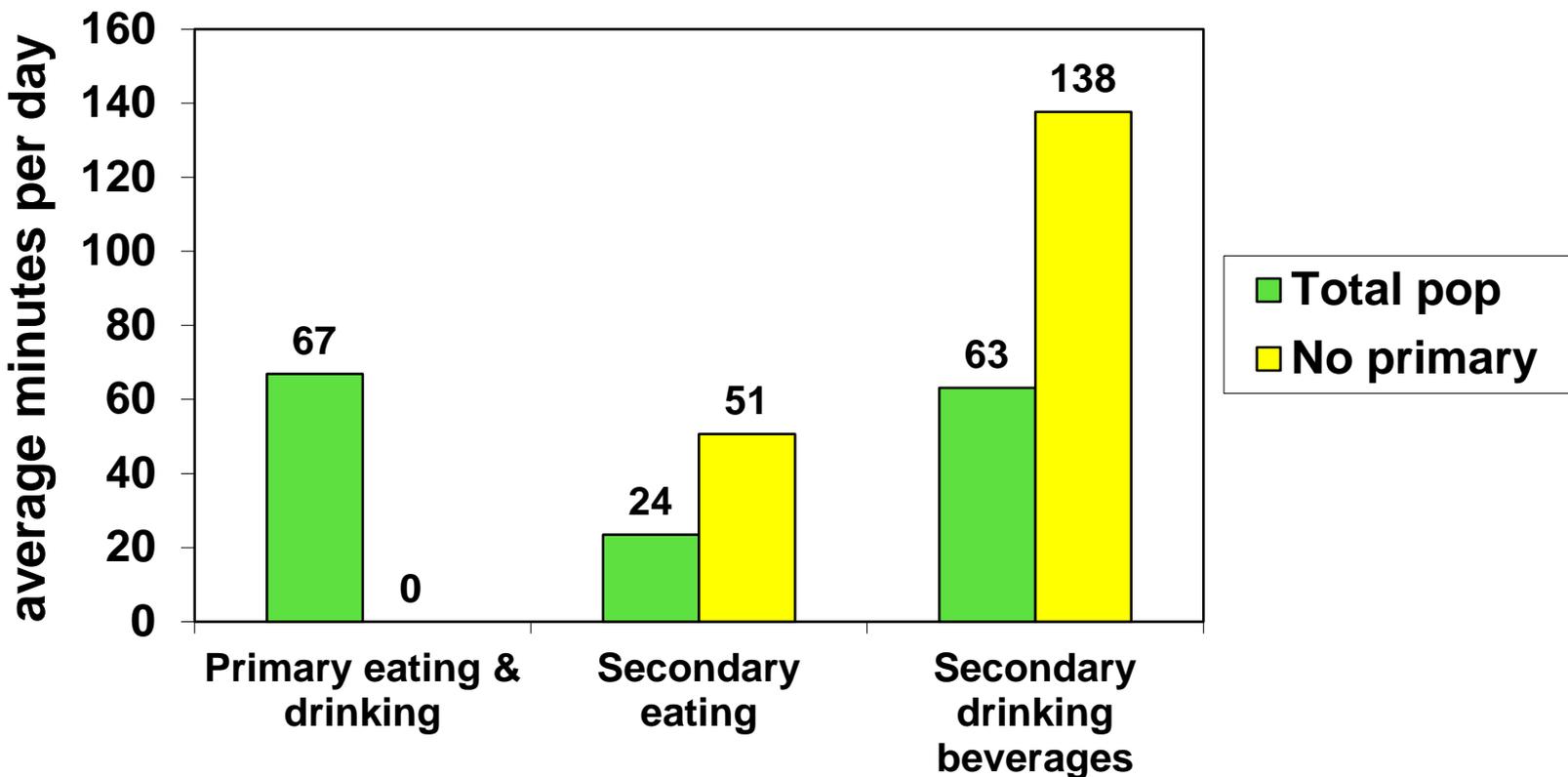


Age 15 and over.

Source: 2006-08 ATUS and EHM data.



Those who report no primary eating and drinking (4% of the population) spent more time in secondary eating and drinking, 2006-08.

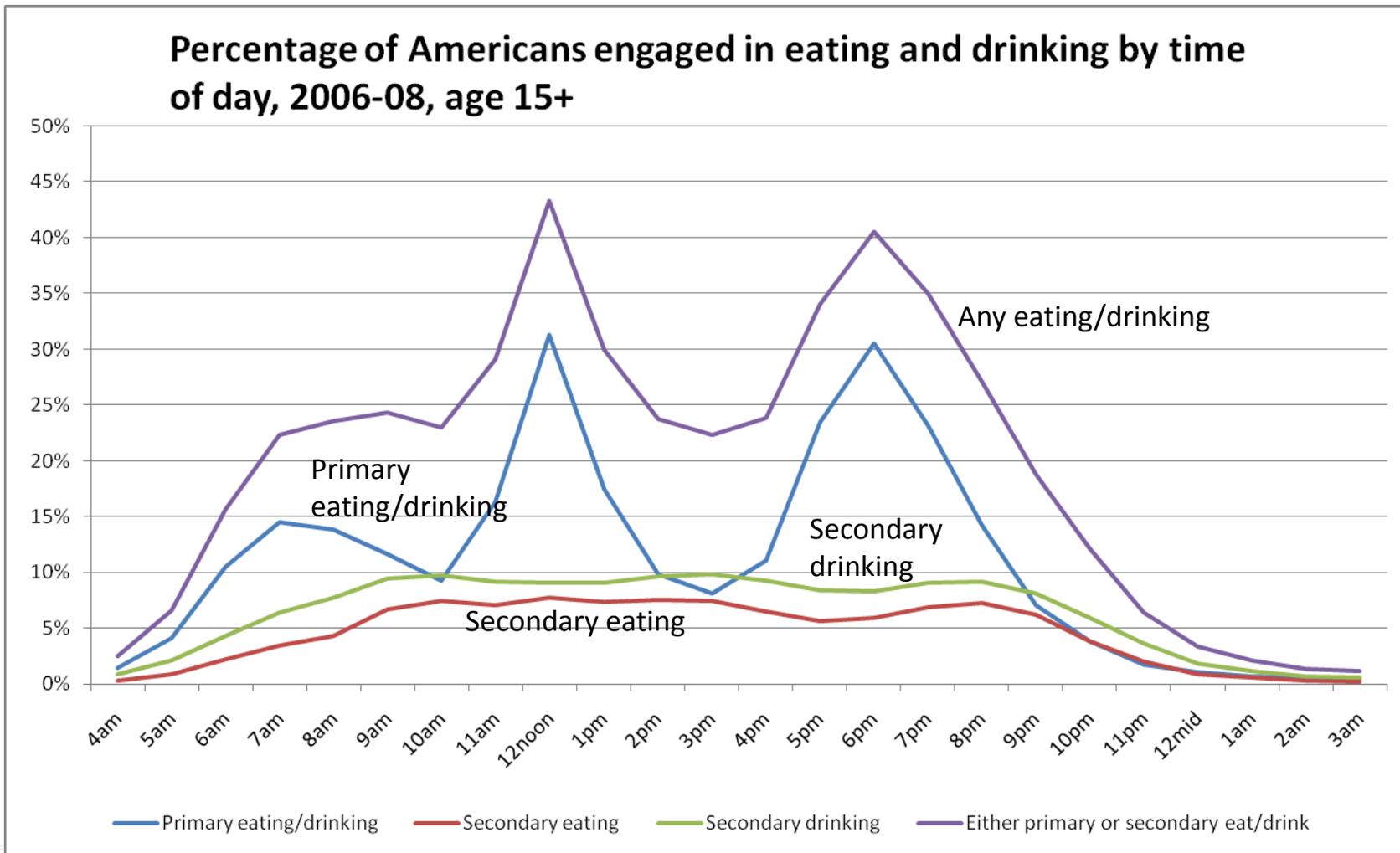


Age 15 and over.

Source: 2006-08 ATUS and EHM data.



# 43% of Americans were eating or drinking between noon and 1pm on an average day, 2006-08.



Source: 2006-08 ATUS and EHM data.



# Eating Patterns, Nutrition, Obesity variables in the ATUS-X

<b>ATUS-X name</b>	<b>description</b>	<b>EH Module name</b>
SED_EAT	Total time in secondary eating (minutes)	ERTSEAT
SED_DRINK	Total time in secondary drinking (minutes)	EUDRKSUM
PED	Total time in primary eating and drinking (minutes) (ERS definition)	ERTPREAT
SED_EAT_LN	Time spent during activity on secondary eating (minutes)	EUEDUR24
SED_DRINK_LN	Time spent during activity on secondary drinking (minutes)	EUDDUR24
SED_ALL_LN	Duration of time spent during activity on secondary eating and drinking, adjusting for possible overlap	--



# Eating Patterns, Nutrition, Obesity variables in the ATUS-X Usage Notes

- “All day” option added to survey instrument in October 2006  
➔ secondary drinking times increased
- ERS definition of primary eating/drinking is different from BLS definition
  - ERS includes 050202, eating/drinking as part of job
  - ERS does not include 1102xx (waiting) or 1811xx (travel)
  - ERS estimates use Module final weight (EHWT in ATUS-X, EUFINLWGT in microdata files), and only respondents who completed Module interview
- Total secondary eating and drinking—adjusting for possible overlap



# Eating Patterns, Nutrition, Obesity—gaining insight into context of eating

**On an average day in 2008...**

**The top 3 places for primary eating and drinking were:**

- Own home or yard 68.3 percent
- Workplace 12.1 percent
- Restaurant or bar 10.9 percent

**The top 3 places for secondary eating or drinking were:**

- Own home or yard 50.1 percent
- Workplace 14.6 percent
- Driving a vehicle 14.2 percent

**The top 5 activities that accompanied secondary eating or drinking were:**

- Relaxing and leisure\* 23.8 percent
- Paid work 14.0 percent
- Food and drink preparation and cleanup 5.9 percent
- Personal care, such as grooming 5.7 percent
- Socializing and communicating 4.6 percent

\*Watching television accounted for about two-thirds of this category



Source: 2006-08 ATUS and EHM data.



# Eating Patterns, Nutrition, Obesity

## General Health, height and weight

Allows for calculation of  
body mass index (BMI)



*“I’m going to switch topics and ask you a few final questions about your physical health that might affect how you use your time. In general, would you say your physical health is excellent, very good, good, fair, or poor?”*

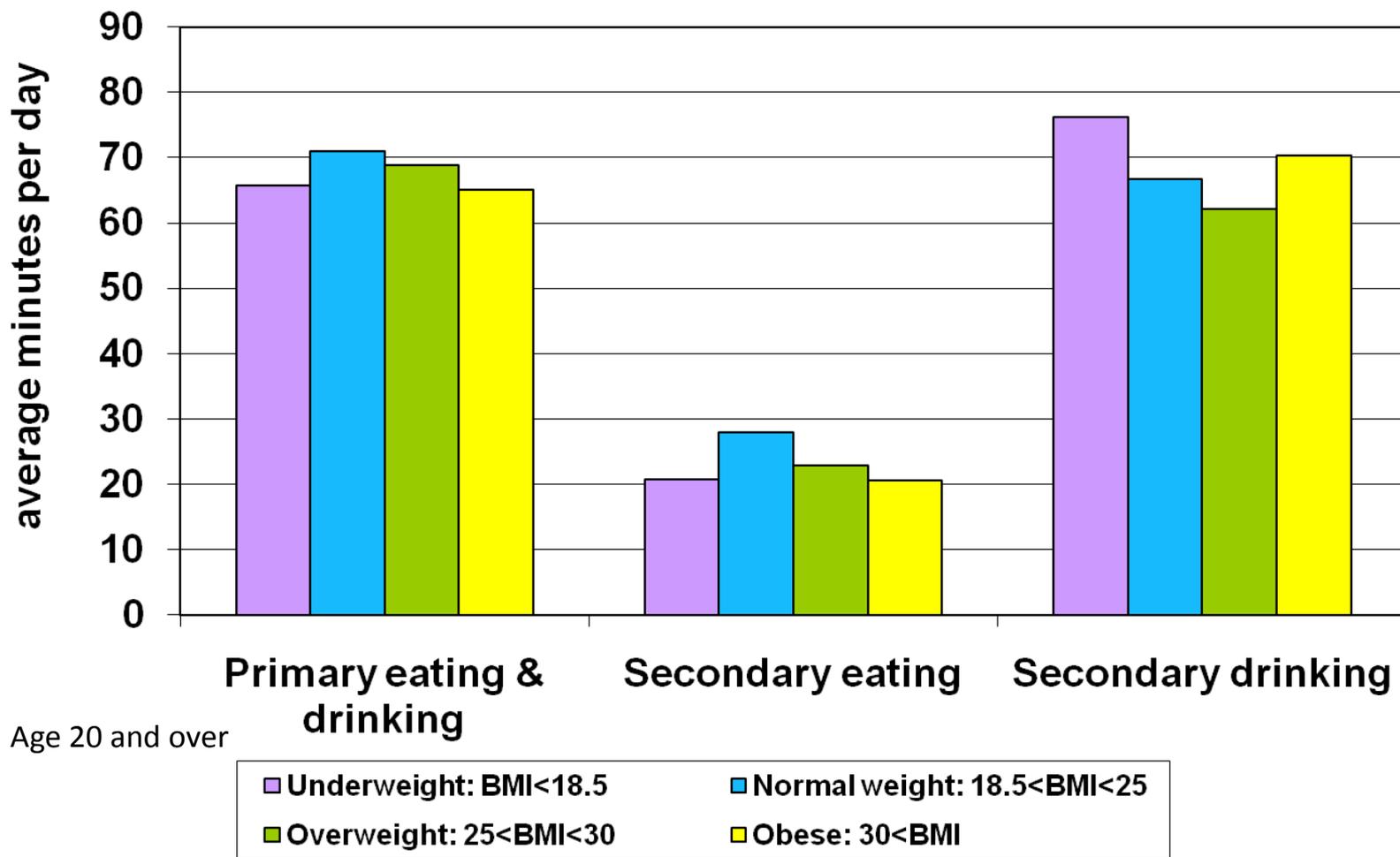
*How tall are you without shoes?*

*How much do you weigh without shoes?”*

*Note: Pregnancy screen for women age 18-50.*



## About the same amount of time is spent in eating activities among the BMI groups, 2006-08.

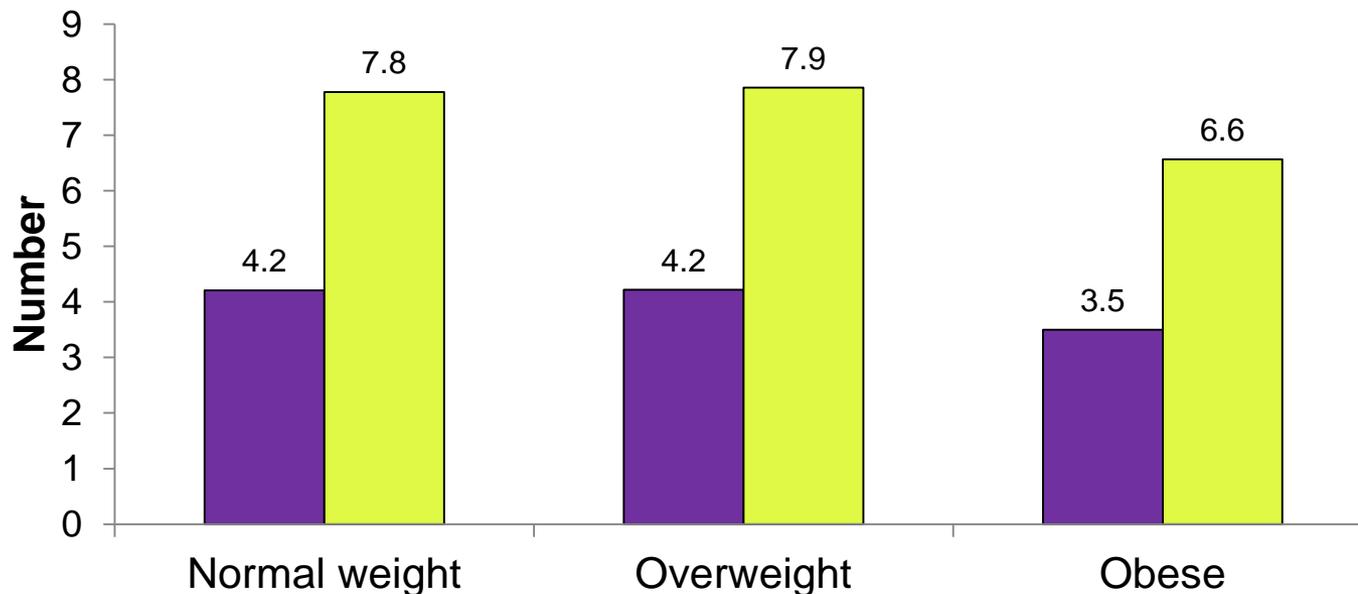


Source: 2006-08 ATUS and EHM data.



# Obese spent relatively less time in meals and more in snacking than others.

Ratio of time spent in primary and secondary eating and drinking on an average day over 2006-08, age 20+

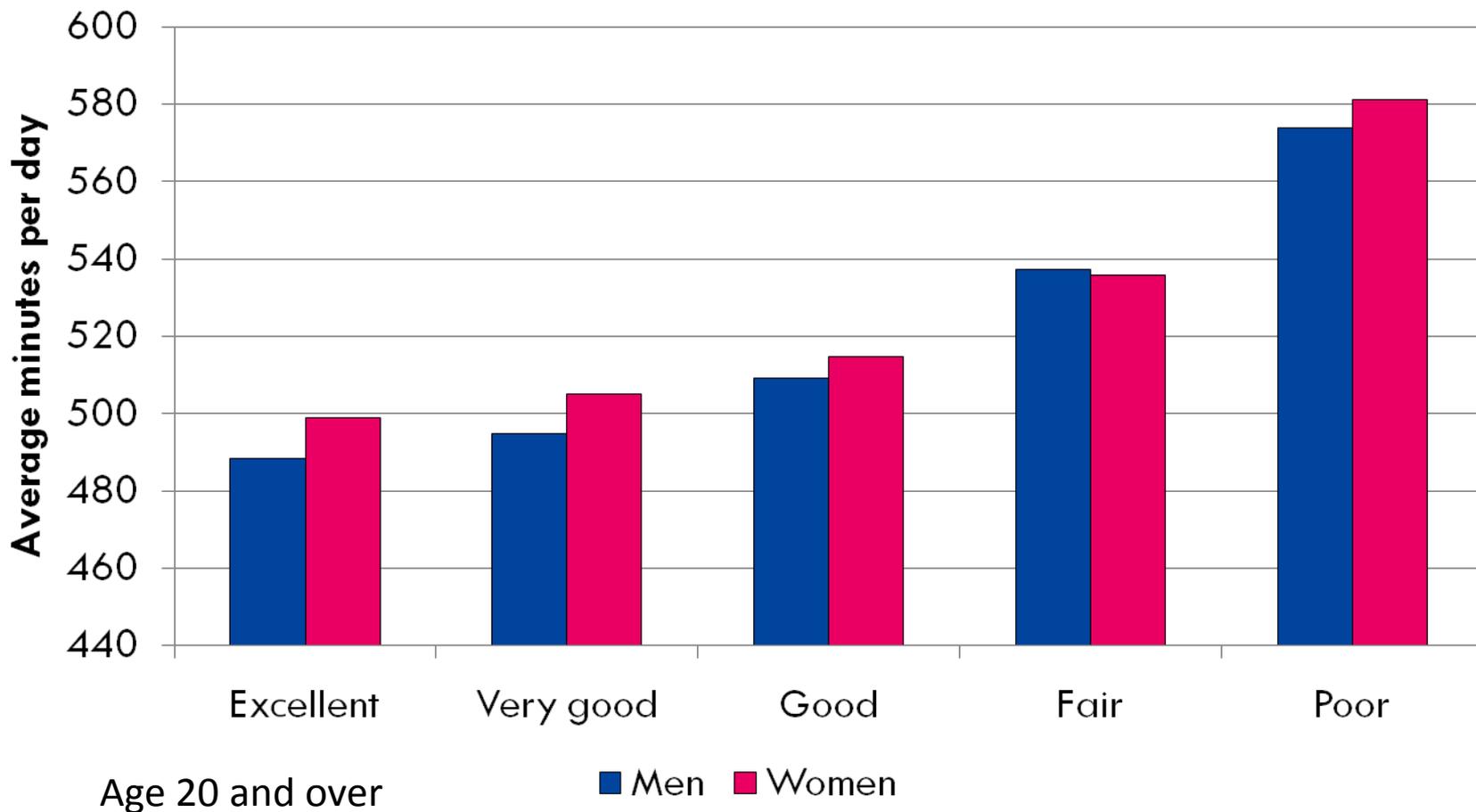


- Ratio primary eating/drinking to secondary eating and drinking
- Ratio of primary eating/drinking to secondary eating

Source: 2006-08 ATUS and EHM data.



# Time spent in sleep by general health status, 2006-08



Source: 2006-08 ATUS and EHM data.



# Eating Patterns, Nutrition, Obesity variables in the ATUS-X

<b>ATUS-X name</b>	<b>description</b>	<b>EH Module name</b>
GENHEALTH	General health	EUGENHHTH
HEIGHT	Height (inches)	EUHGT
WEIGHT	Weight (pounds)	EUWGT
BMI	Body mass index	ERBMI



# Eating Patterns, Nutrition, Obesity variables in the ATUS-X Usage Notes

- Both height and weight are top coded and bottom coded for confidentiality

height

top code=77"

bottom code=56"

weight

top code=98 lb.

bottom code=330 lb.

- Note that the definitions of overweight and obesity are different for adults (age 20+) than for children/teens
- Pregnant women not asked weight → BMI missing
- Very good cooperation with these questions—only 5.5% missing, of which 1-percentage-point is pregnant women



# ERS report—Nonresponse Bias Analysis of BMI Data in the Eating and Health Module

- Finding—any nonresponse bias associated with missing BMI appears to be small and would not affect analyses of BMIs and time-use pattern correlations.
- Missing BMI respondents had higher indicators of being reluctant or uncooperative survey participants.
- <http://www.ers.usda.gov/publication/s/tb-technical-bulletin/tb1934.aspx>

United States  
Department of  
Agriculture



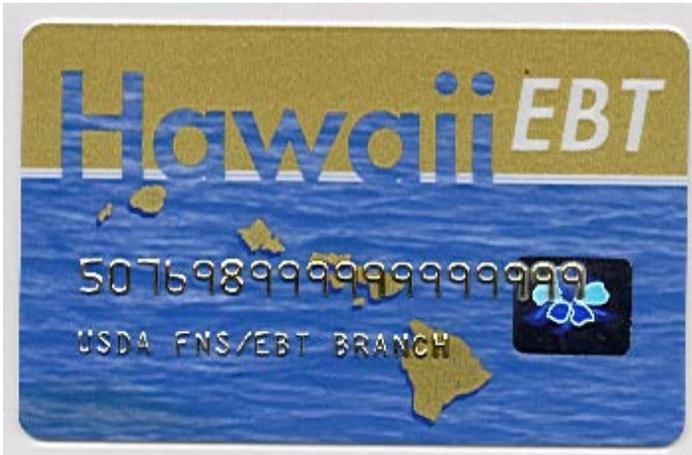
Technical  
Bulletin  
Number 1934  
August 2012

## Nonresponse Bias Analysis of Body Mass Index Data in the Eating and Health Module

Karen S. Hamrick



# Food Assistance

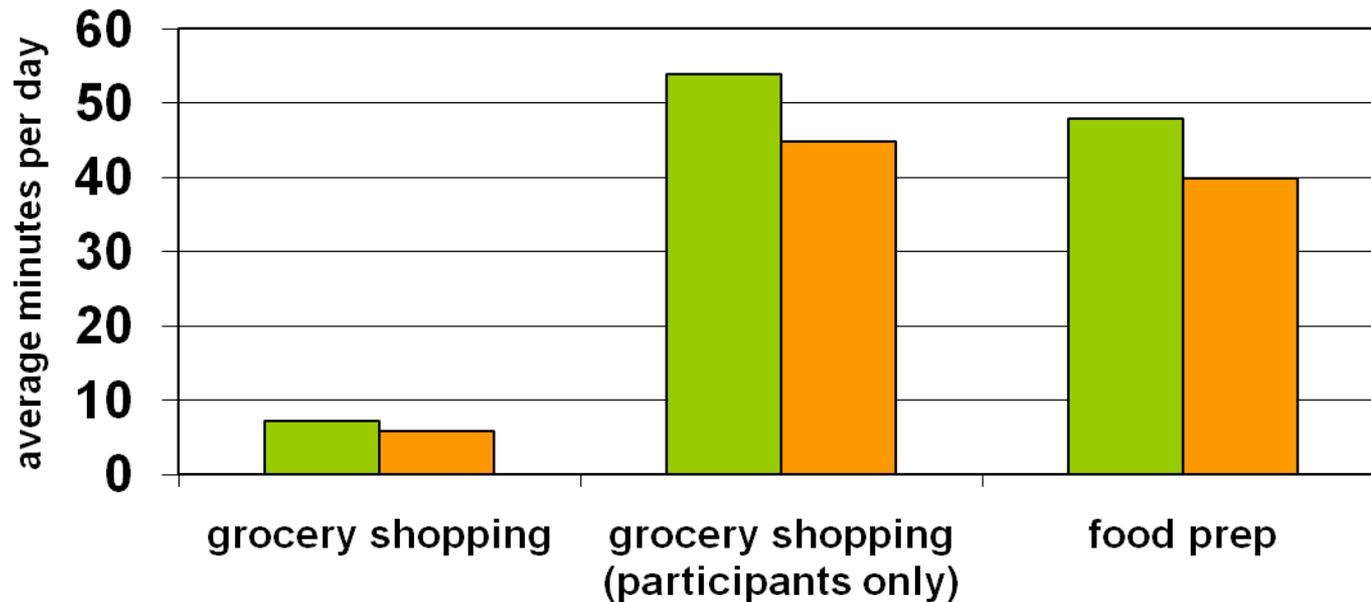


- SNAP/Food stamps
- Our research questions:
  - Are food assistance recipients' time patterns different from those of non-participants?
  - What are the time constraints that low-income households face?
  - Does household composition matter?

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



## Persons in SNAP/food stamp households spent more time in grocery shopping and food preparation than income-eligible non-participants, 2006-08.



Age 18 and over.



Source: 2006-08 ATUS and EHM data.



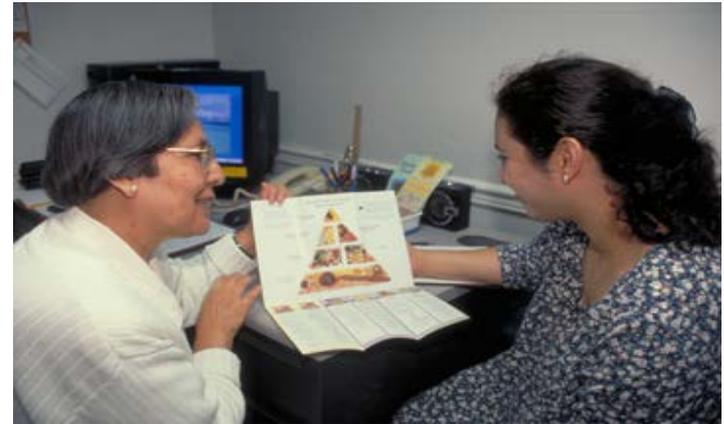
# Food Assistance

## Household income

*Last month, was your total household income before taxes more or less than [fill] per month? [fill is 185% of poverty threshold]*

*If less, then*

*Was it more or less than [fill] per month? [fill is 130% of poverty threshold]*



- Below **185%** poverty threshold is income eligibility for **WIC** and for **reduced-price school meals**.
- Below **130%** poverty threshold is income eligibility for **food stamps (SNAP)** and for **free school meals**.



# Food Assistance variables in the ATUS-X

<b>ATUS-X name</b>	<b>description</b>	<b>EH Module name</b>
FOODSTAMP	Household received food stamps in past 30 days	EUFSP
POVERTY130	HH income greater or less than 130% of poverty level	EEINCOME1
POVERTY185	HH income greater or less than 185% of poverty level	EUINCOME2
POVERTYLEVEL	Income thresholds used in POVERTY130 and POVERTY185	EUINCLVL



# Food Assistance variables in the ATUS-X

## Usage notes

- The Food Assistance Program was renamed the Supplemental Nutrition Assistance Program (SNAP) as of October 1, 2008.
- Time use estimates using FOODSTAMP (EUFSP) are: the number of person-days for the civilian population age 15 and older in a household that receives food stamps.
  - NOT the total population receiving food stamps or caseloads
  - NOT the number of households receiving food stampsThis variable is a household **characteristic** of the respondent.
- EHM estimates of households participating in SNAP are about one-third less than estimates from administrative data—this is less underreporting than in most other household surveys.



# Food Assistance variables in the ATUS-X

## Usage notes

- Income amounts asked (185% and 130% of the poverty threshold) are asked because they are the income-eligibility thresholds for food and nutrition assistance programs.
- Food assistance income-eligibility thresholds change at the start of the fiscal year, October 1. POVERTYLEVEL (EUINCLVL) will identify the set of thresholds used for the respondent's interview.
- Very good cooperation to income questions—the original data have about 10% missing, and imputations using household members' earnings lower the number missing to 4.5% of POVERTY185 (EEINCOME1)



# Food Acquisition: Grocery Shopping & Meal Preparation

Motivation—Are grocery shopping and meal preparation times different across different types of households?

Do the usual grocery shoppers and usual meal preparers have different time use patterns than others?

*“I’d like to ask you a couple questions about food preparation.*

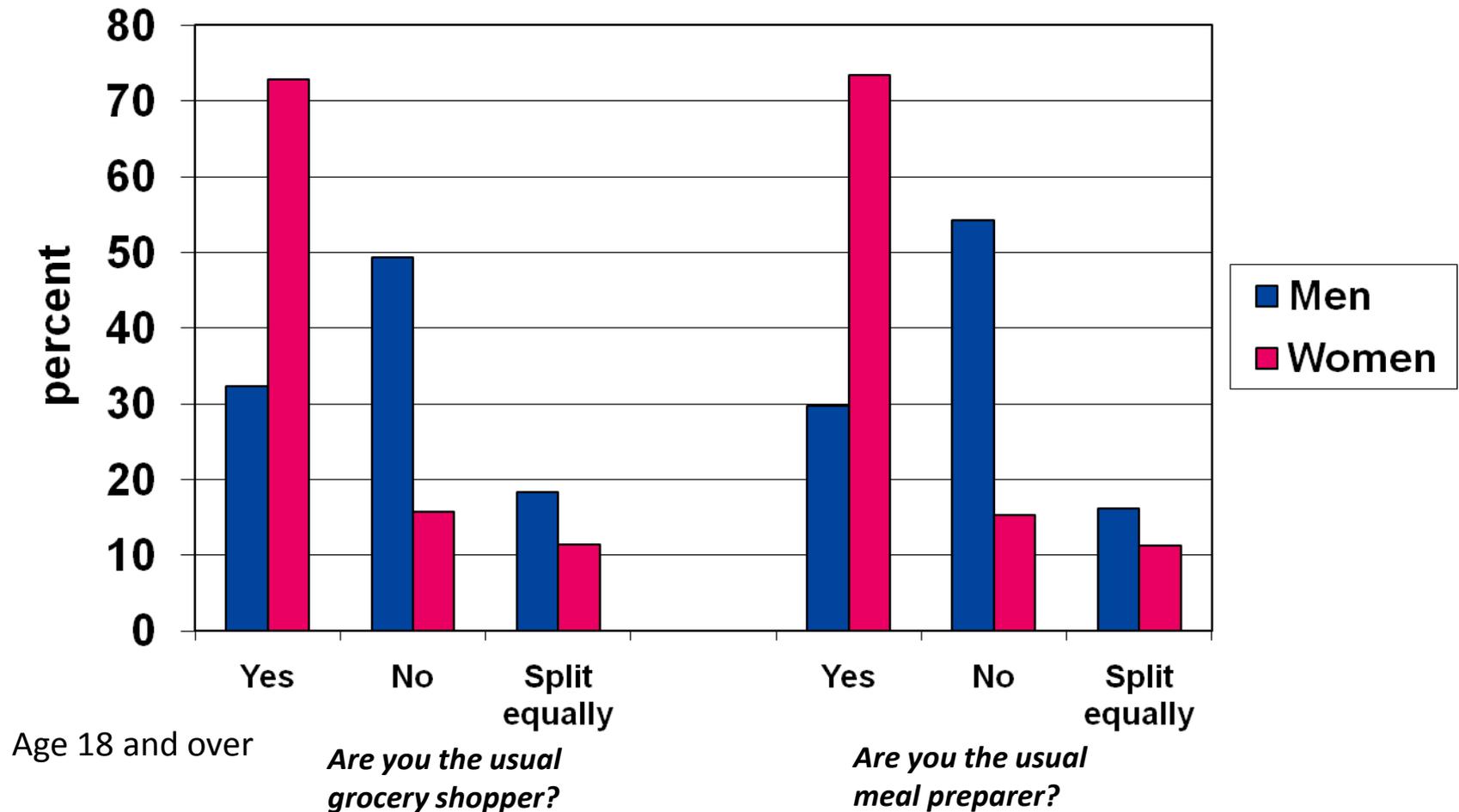
*“Are you the person who usually does the grocery shopping in your household?”*

*“Are you the person who usually prepares the meals in your household?”*

Responses:      Yes  
                             No  
                             Split equally



## 2006-08, women are more likely to report that they do the grocery shopping and meal prep in the household.



Source: 2006-08 ATUS and EHM data.



# Grocery Shopping & Meal Preparation in the ATUS-X

<b>ATUS-X name</b>	<b>description</b>	<b>EH Module name</b>
FOODSHOP	Respondent usually does the grocery shopping for the household	EUGROSHHP
MEALPREP	Respondent usually does the meal preparation for the household	EUPRPMEL



# Food Acquisition: Meals Obtained at School

- Meals Obtained at School—our research questions:
  - What are the time benefits of school meals?
  - What are the time use patterns of parents whose children participate in school meal programs versus others?



# Food Acquisition: Meals Obtained at School

## School meals—breakfast

*“Please think back over the past week starting last Monday up to today, Monday. In the past week, did [Fill names of children] eat a BREAKFAST that was prepared and served at a school, a paid day care or 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.”*

*“Which children?”*



Note: All households with children asked; no income screen.



# Food Acquisition: Meals Obtained at School

## School meals—lunch

*“What about lunch? Please think back over the past week starting last Monday up to today, Monday. In the past week, did [Fill names of children] eat a LUNCH that was prepared and served at a school, a paid day care or Head Start center, or a summer day program? This question refers ONLY to LUNCHES prepared at the school or center—not meals brought from home.”*

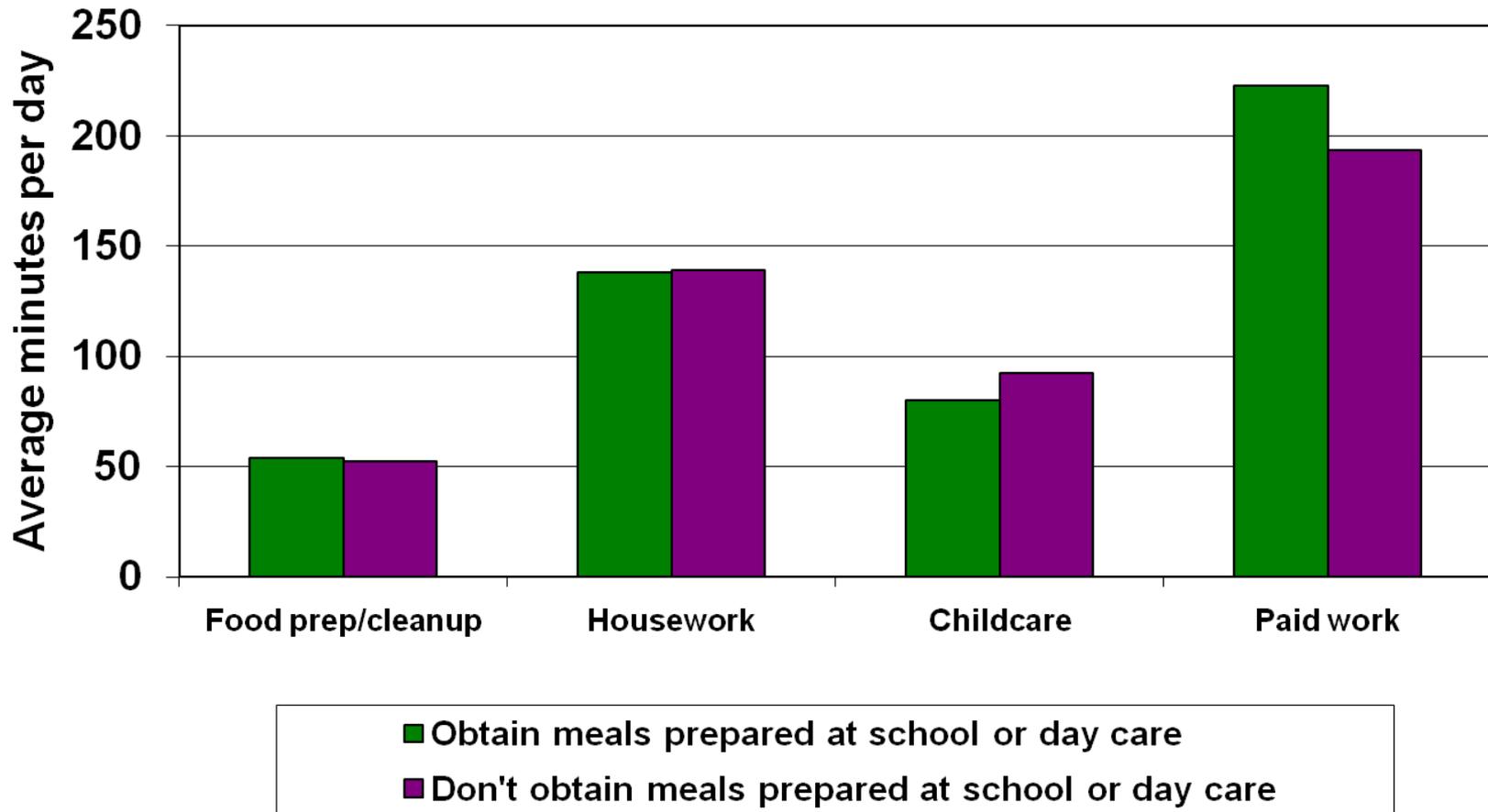


*“Which children?”*

Note: All households with children asked; no income screen.



## Obtaining children's meals from school/day care is associated with more time spent in paid work, 2007.



Persons age 19 and over with children in the household

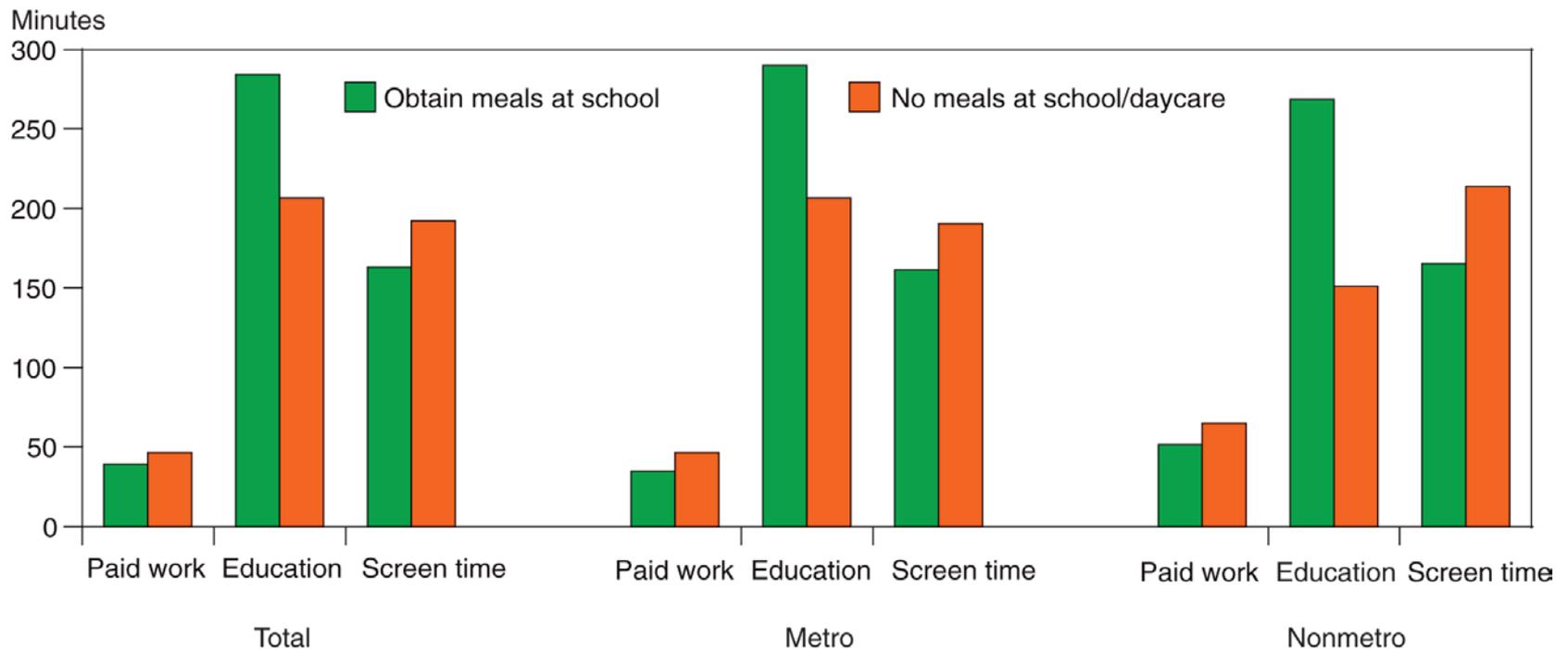
Source: 2006-08 ATUS and EHM data.



# Teens who obtain meals at school spend more time in educational activities and less in screen time.

Figure 19

Time spent in selected activities, teenagers age 15-18 and in school, on an average day 2006-08



Source: 2006-08 Bureau of Labor Statistics American Time Use Survey and ERS Eating & Health Module data.



# Food Acquisition: Meals Obtained at School variables in the ATUS-X

ATUS-X name	description	EH Module name
ANYBRK	HH children ate a breakfast prepared at school	EESCLBRK
SCHLBRK	Ate breakfast prepared at school	EEBRK
ANYLNCH	HH children ate a lunch prepared at school	EESCLLCH
SCHLLNCH	Ate a lunch prepared at school	EELCH



# Module variables in the ATUS-X

## General Usage notes

- When using EH Module variables, need to use sample weights EHWT (EUFINLWGT) and the corresponding replicate weights, REHWT (EUFINLWGT001-EUFINLWGT160)
- Research note: With EH Module variables, have 3 outcomes—general health, BMI, and income—to analyze with time use patterns.



# [http://www.ers.usda.gov/data-products/eating-and-health-module-\(atus\).aspx](http://www.ers.usda.gov/data-products/eating-and-health-module-(atus).aspx)

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### Eating and Health Module (ATUS)

**Overview**

Background  
Documentation  
Quick Facts  
Summary Findings  
Readings  
Module Questions

**Related Topics**

- Child Nutrition Programs
- Diet Quality & Nutrition
- Education, Information & Labeling
- Food & Nutrition Assistance Research
- Food Consumption & Demand
- Obesity

**Overview**

Individual decisions about how to use the 24 hours in a day have short- and long-term implications for income and earnings, health, and other aspects of well-being. Understanding time use patterns can provide insight into economic behaviors associated with eating patterns as well as the diet and health status of individuals. See [Quick Facts](#). Knowing more about eating patterns, grocery shopping, and meal preparation, as well as understanding whether participants in food and nutrition assistance programs face different time constraints than nonparticipants can inform the design of food assistance and nutrition policies and programs.

**Data**

The Eating and Health Module (EH Module) of the American Time Use Survey (ATUS) includes statistics on time spent in eating and drinking activities, grocery shopping, and meal preparation for the population age 15 and older and for participants in the Supplemental Nutrition Assistance Program, or SNAP (formerly the Food Stamp Program). Data are also presented on measures of the health status (such as Body Mass Index, or BMI) of the population by time spent in various activities. See [User's Guide and Documentation](#).

Understanding time use patterns can provide insight into economic behaviors associated with eating patterns as well as the diet and health status of individuals. Knowing more about eating patterns, grocery shopping, and meal preparation, as well as understanding whether participants in food and nutrition assistance programs face different time constraints than nonparticipants can inform the design of food assistance and nutrition policies and programs.

- 2008
- 2007
- 2006

**Data Set**

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2008 Back to top

Table 1—Time spent in eating and drinking activities and percent of civilian population age 15 and older engaged in each activity, averages per day, 2008 annual averages	4/2/2010
Table 2—Time spent in eating and drinking activities and percent of civilian population engaged in each activity, by various subgroups, averages per day, 2008 annual averages	4/2/2010
Table 3—Usual grocery shopper and usual meal preparer in household for the population age 18 and older, 2008 annual averages	4/2/2010
Table 4—Time spent in various activities for the civilian population age 18 and older by usual grocery shopper/usual meal preparer status, 2008 annual averages	4/2/2010



# 2014-15 Eating & Health Module

- Funded by ERS-Food Economics Division
- Technical assistance partners:  
NIH-NCI & USDA-FNS
- Fielded Jan. 2014-Dec. 2015
- Research areas of interest:
  - diet and health
  - food safety
  - food markets
  - food assistance programs



# 2014-15 EHM: Eating Behavior

## Eating as a secondary activity

*“We’re interested in finding out more about how people fit meals and snacks into their schedules. Yesterday, you reported eating or drinking between [fill times]. Were there any other times you were eating yesterday—for example while you were doing something else? About how long would you say you were eating while you were [fill activity]?”*



# 2014-15 EHM: Eating Behavior

## Secondary drinking—soft drinks

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

- Were any of the beverages soft drinks such as cola, root beer, or ginger ale?*
- Was the soft drink diet, regular or did you have both kinds?*



# 2014-15 EHM: Food acquisition

*Are you the person who usually does the grocery shopping in your household? If so:*

*Where do you get the majority of your groceries?*

grocery store, supercenter,  
warehouse club, convenience store,  
other?

*What is the primary reason you shop there?*

price, location, quality, variety,  
customer service, other?



# 2014-15 EHM: Food acquisition

*Thinking back over the last seven days, did you purchase any: prepared food from a deli, carry-out, delivery food, or fast food?*

- *How many times?*
- *Did you purchase prepared food yesterday?*



# 2014-15 EHM: Meal preparation

*Are you the person who usually prepares the meals in your household? If so:*

- In the last 7 days, did you prepare any meals with meat, poultry or seafood? Did you use a food or meat thermometer?*
- In the last 7 days, did you drink or serve unpasteurized or raw milk?*



# 2014-15 EHM:

## Food sufficiency and food assistance

*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?*



# 2014-15 EHM:

## Food sufficiency and food assistance

- Supplemental Nutrition Assistance Program participation (SNAP)
- Women, Infants, and Children (WIC) participation
- Household income:
  - Above/below 185% poverty threshold?
  - Above/below 130% poverty threshold?

Note: all respondents asked.



# 2014-15 EHM: Health

- General health:  
    excellent, very good,  
    good, fair, poor
- Height & weight
- Exercise:



*During the past seven days, did you participate in any physical activities or exercises for fitness and health such as running, bicycling, working out in a gym, walking for exercise, or playing sports? How many times?*



# 2014-15 EHM: Data release

2014 Eating & Health Module data and estimates expected to be released Winter 2015/16.

2015 Eating & Health Module data and estimates expected to be released Winter 2016/17.



# Contact Information

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UK WWI war poster

