IPUMS Time Use Workshop
MPRC 2019

Sandra Hofferth, Maryland Population Research Center (MPRC)
Liana Sayer, Maryland Time Use Lab & Maryland Population Research Center (MPRC)
Objectives

Sections of the Presentation:

1. Develop familiarity with the breadth and depth of data available through IPUMS Time Use

2. Assess the appropriateness of the American Time Use survey (ATUS), the American Heritage Time Use surveys (AHTUS), and Multinational Time Use surveys (MTUS) for specific research topics

3. Learn how to navigate the IPUMS Time Use web-based extract system and create custom extracts that include user-defined time use variables
Part 1: Learn about the IPUMS Time Use Archives

ATUS, AHTUS, MTUS
IPUMS

• Acronym for Integrated Public Use Microdata Series. Now just “IPUMS”
• Developed by the University of Minnesota and archived there
• Originally concentrated on census data for the U.S. and other nations
• Now includes time use data in a similar web-based system
IPUMS provides census and survey data from around the world integrated across time and space. IPUMS integration and documentation makes it easy to study change, conduct comparative research, merge information across data types, and analyze individuals within family and community context. Data and services available free of charge.

http://www.ipums.org/
THREE RESOURCES TO STUDY TIME USE.

These projects provide free individual-level time use data for research purposes. The data extract systems make it easy to create data sets containing time use and other variables a user needs.

**ATUS**
American Time Use Survey Extract Builder

Annual American Time Use Survey (ATUS) data from 2003 forward.

**AHTUS**
American Heritage Time Use Study Extract Builder

Historical American time use data since 1965 harmonized for comparison over time, including the ATUS samples.

**MTUS**
Multinational Time Use Study Extract Builder

MTUS is a project dedicated to making it easy for researchers to use data from around the world.
AMERICAN TIME USE SURVEY EXTRACT BUILDER

The ATUS is a nationally representative U.S. time diary survey for period since 2003. IPUMS Time Use harmonizes these data and provides a data extract builder that allows users to create custom time use variables and data extracts for analysis. ATUS-X is a collaboration of the Minnesota Population Center and the Maryland Population Research Center.

TIME IS OUR SCARCEST RESOURCE... USE IT WISELY!

CREATE AN EXTRACT

WHAT IS IPUMS?

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NEW USERS

CREATE AN ATUS-X ACCOUNT | NAVIGATING THE SITE

TIME USE NEWS
IPUMS Time Use Registration

- **https://www.ipums.org/timeuse.shtml**
- Select “Get Data” Under ATUS
- Click on “Registration”
  - Log in with your IPUMS account information
  - Or
  - Apply for access: fill out form to register for access
- Can explore data archive without an account but cannot save variables or an extract
IPUMS Time Use Team

University of Maryland & Maryland Population Research Center
Sandra Hofferth

University of Oxford & Centre for Time Use Research
Ewa Jarosz

University of Minnesota & Minnesota Population Center
Sarah Flood

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Margarita Vega Rapun

Dan Backman
Web-Based Data Access System

• Why use IPUMS Time Use archive (ATUS-X, AHTUS-X, MTUS-X)?
  • Lowers barriers to access – much is done for the user behind the scenes so you don’t have to
  • Lowers learning time – everything in one place
  • Simplifies use of complex time diary data

• What does it deliver? Customized data set with
  • Years of data and countries you want
  • Data harmonized across time and countries
  • Variables you care about and defined the way you want
  • User-defined measures of time in specific activity aggregations
  • Dataset and variable-level documentation in one place and connected to your variables, plus variable-level frequencies
  • Data in multiple formats (SAS, STATA, SPSS)

• Email helpline: ipums@umn.edu
AMERICAN TIME USE SURVEY EXTRACT BUILDER

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TIME IS OUR SCARCEST RESOURCE...USE IT WISELY!

CREATE AN EXTRACT

Get Data

OTHER TIME USE EXTRACT BUILDERS

AHTUS  MTUS

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ATUS - X

• Data from the American Time Use Survey from 2003 to the present
• Survey of persons age 15 and older interviewed with a 20-minute computer-assisted interview conducted by telephone by the U.S. Census Bureau for the Bureau of Labor Statistics
• Annual data released in summer each year
• Occasional supplements with focused items:
  • Eating and Health, Well-Being, Leave, Elder Care
**Example: Diary**

So let's begin. Yesterday, Monday, at 4:00 AM, what were you doing?

- Use the slash key (/) for recording separate/simultaneous activities.
- Do not use precodes for secondary activities.

<table>
<thead>
<tr>
<th>Activity</th>
<th>TIME</th>
<th>Hrs</th>
<th>Mins</th>
<th>Stop</th>
<th>Who</th>
<th>Who_2</th>
<th>Where</th>
<th>Where specify</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. Sleeping</td>
<td>2</td>
<td>8</td>
<td>0</td>
<td>12:00PM</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>2. Preparing meals and snacks</td>
<td>1</td>
<td>1</td>
<td>0</td>
<td>1:00PM</td>
<td>0</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>3. Playing with kids</td>
<td>1</td>
<td>1</td>
<td>0</td>
<td>1:01PM</td>
<td>2</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>4. Grooming</td>
<td>1</td>
<td>2</td>
<td>0</td>
<td>3:01PM</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>5. Eating and drinking</td>
<td>1</td>
<td>2</td>
<td>0</td>
<td>3:01PM</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>6. Cleaning kitchen</td>
<td>8</td>
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<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>7. Laundry</td>
<td>9</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>8. Grocery shopping</td>
<td>10</td>
<td></td>
<td></td>
<td></td>
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<td></td>
<td></td>
</tr>
<tr>
<td>9. Attending religious service</td>
<td>11</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>10. Paying household bills</td>
<td>12</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>11. Caring for animals and pets</td>
<td>13</td>
<td></td>
<td></td>
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<td></td>
<td></td>
<td></td>
<td></td>
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<tr>
<td>30. Don't know/Can't remember</td>
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<td></td>
<td></td>
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<tr>
<td>31. Refusal/None of your business</td>
<td></td>
<td></td>
<td></td>
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<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
ATUS Sampling Frame

- People are selected from households that recently completed the monthly labor force survey—the Current Population Survey (CPS)

2 to 5 months after the end of the CPS survey, selected individuals are interviewed for the ATUS survey.
The ATUS sample is split evenly between weekdays and weekend days:

- 10 percent of designated persons are asked about a weekday
- 25 percent of designated persons in the sample are asked about a Saturday, and 25 percent are asked about a Sunday

<table>
<thead>
<tr>
<th>Sunday</th>
<th>Monday</th>
<th>Tuesday</th>
<th>Wednesday</th>
<th>Thursday</th>
<th>Friday</th>
<th>Saturday</th>
</tr>
</thead>
<tbody>
<tr>
<td>25%</td>
<td>10%</td>
<td>10%</td>
<td>10%</td>
<td>10%</td>
<td>10%</td>
<td>25%</td>
</tr>
</tbody>
</table>
AMERICAN HERITAGE TIME USE STUDY EXTRACT BUILDER

The AHTUS is a harmonized collection of time diary data from the U.S. for the period 1965 to 2012. AHTUS-X is a data extract builder that allows users to create custom time use variables and data extracts for analysis. This project is a collaboration of the Minnesota Population Center, the Maryland Population Research Center and the Centre for Time Use Research.

TIME IS OUR SCARCEST RESOURCE...USE IT WISELY!

CREATE AN EXTRACT

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NEW USERS

CREATE AN AHTUS-X ACCOUNT | NAVIGATING THE SITE

TIME USE NEWS
SAMPLE-LEVEL INFORMATION

View sample-level information by sample or by type of information.

BY SAMPLE

- 1965-66
- 1975
- 1985
- 1992-1994
- 1994-1995
- 1998-2001
- 2003
- 2004
- 2005
- 2006
- 2007
- 2008
- 2009
- 2010
- 2011
- 2012

BY TYPE OF INFORMATION

- Description
- Questionnaire/Codebook
- Harmonization syntax
1965-1966 the Multinational Comparative Time-Budget Research Project

- Sample Description
- User guide/codebook
- Harmonization syntax

1975 American's Use of Time: Time Use in Economic and Social Accounts

- Sample Description
- User guide/codebook
- Harmonization syntax
  - Part 1
  - Part 2
  - Part 3
  - Part 4

1985 American's Use of Time Project

- Sample Description
- User guide/codebook
- Harmonization syntax

1992-1994 National Human Activity Pattern Survey

- Sample Description
- User guide/codebook (not available)
- Harmonization syntax

1994-1995 National Time-Diary Study

- Sample Description
- User guide/codebook
- Harmonization syntax


- Sample Description
- User guide/codebook
- Harmonization syntax

2003+ American Time Use Survey
MULTINATIONAL TIME USE STUDY EXTRACT BUILDER

MTUS is a collection of time diary data from a growing number of countries that are harmonized for compatibility across time and space. MTUS-X is a data extract builder that allows users to create custom time use variables and data extracts for analysis. This project is a collaboration of the Minnesota Population Center, the Maryland Population Research Center and the Centre for Time Use Research.

TIME IS OUR SCARCEST RESOURCE...USE IT WISELY!

CREATE AN EXTRACT

- OTHER TIME USE EXTRACT BUILDERS

What is IPUMS?

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Centre for Time Use Research, Oxford & UCL

- Identifies time use data sets
- Acquires data
- Harmonizes data
- Disseminates data in MTUS on the CTUR web site and via MTUS-X

CTUR: https://www.timeuse.org/
Currently Available via MTUS - X
(Multiple waves)

- Austria
- Bulgaria
- Canada
- Finland
- France
- Hungary
- Israel
- Italy
- Netherlands
- Spain
- United Kingdom
- United States
Harmonization

From Businessdictionary.com:

• Adjustment of differences and inconsistencies among different measurements, methods, procedures, schedules, specifications, or systems to make them uniform or mutually compatible.
### CORE DEMOGRAPHIC VARIABLES -- PERSON

| Variable | Variable Label | Type | Austria | Bulgaria | Canada | Finland | Finland | France | France | Hungary | Hungary | Israel | Italy | Nether | Nether | Nether | Nether | Nether | Nether | Nether | Spain | Spain | UK | UK | UK | UK | UK |
|----------|----------------|------|---------|----------|--------|---------|---------|---------|---------|---------|---------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-----|-----|----|----|----|
| AGE      | Age            | P    | X       | X        | X      | X       | X       | X       | X       | X       | X      | X     | X     | X     | X     | X     | X     | X     | X     | X     | X     | X   | X   | X  | X  | X  |
| SEX      | Sex            | P    | X       | X        | X      | X       | X       | X       | X       | X       | X      | X     | X     | X     | X     | X     | X     | X     | X     | X     | X     | X   | X   | X  | X  | X  |
| CITIZEN  | Citizen is citizen/native of country | P    | X       | X        | X      | X       | X       | X       | X       | X       | X      | X     | X     | X     | X     | X     | X     | X     | X     | X     | X     | X   | X   | X  | X  | X  |
| CIVSTAT  | Citizen is in a couple | P    | X       | X        | X      | X       | X       | X       | X       | X       | X      | X     | X     | X     | X     | X     | X     | X     | X     | X     | X     | X   | X   | X  | X  | X  |
| COHAB   | Cohabiting     | P    | X       | X        | X      | X       | X       | X       | X       | X       | X      | X     | X     | X     | X     | X     | X     | X     | X     | X     | X     | X   | X   | X  | X  | X  |
| ENTRY    | Hardest highest level of education | P    | X       | X        | X      | X       | X       | X       | X       | X       | X      | X     | X     | X     | X     | X     | X     | X     | X     | X     | X     | X   | X   | X  | X  | X  |
| EDUCA    | Education-original study codes | P    | X       | X        | X      | X       | X       | X       | X       | X       | X      | X     | X     | X     | X     | X     | X     | X     | X     | X     | X     | X   | X   | X  | X  | X  |
| CARER    | Adult provide adult care | P    | X       |          | X      |         |         |         |         |         |         |         |         |         |         |         |         |         |         |         |         |         |     |     |     |     |     |
| WHEREBORN| Born in country | P    | -       | -        | X      | -       | -       | -       | -       | -       | -      | -     | -     | -     | -     | -     | -     | -     | -     | -     | -     | -   | -   | -  | -  | -  |
| YRMM     | Year of immigration (born abroad) | P    | -       | -        | -      | -       | -       | -       | -       | -       | -      | -     | -     | -     | -     | -     | -     | -     | -     | -     | -     | -   | -   | -  | -  | -  |
| BTHPL    | Country of birth | P    | -       | -        | -      | -       | -       | -       | -       | -       | -      | -     | -     | -     | -     | -     | -     | -     | -     | -     | -     | -   | -   | -  | -  | -  |
| PASTHPL  | Father's country of birth | P    | -       | -        | -      | -       | -       | -       | -       | -       | -      | -     | -     | -     | -     | -     | -     | -     | -     | -     | -     | -   | -   | -  | -  | -  |

AN "X" INDICATES THE VARIABLE IS AVAILABLE IN THAT DATASET.
**EDTRY**

Harmonized highest level of education

Group: Core Demographic — PERSON

<table>
<thead>
<tr>
<th>CODES</th>
<th>DESCRIPTION</th>
<th>COMPARABILITY</th>
<th>UNIVERSE</th>
<th>AVAILABILITY</th>
</tr>
</thead>
</table>

**Codes and Frequencies**

- Category availability view
- Case-count view

An 'X' indicates the category is available for that sample

<table>
<thead>
<tr>
<th>Code</th>
<th>Label</th>
<th>austria</th>
<th>bulgaria</th>
<th>canada</th>
<th>finland</th>
<th>finland</th>
<th>france</th>
<th>france</th>
<th>hungar</th>
<th>hungar</th>
<th>israel</th>
<th>italy</th>
<th>nether</th>
<th>nether</th>
<th>nether</th>
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<th>nether</th>
<th>nether</th>
<th>nether</th>
<th>nether</th>
<th>Code</th>
</tr>
</thead>
<tbody>
<tr>
<td>01</td>
<td>Uncompleted secondary or less</td>
<td>X</td>
<td>X</td>
<td>X</td>
<td>X</td>
<td>X</td>
<td>X</td>
<td>X</td>
<td>X</td>
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<td>X</td>
<td>X</td>
<td>X</td>
<td>01</td>
<td></td>
</tr>
<tr>
<td>02</td>
<td>Completed secondary</td>
<td>X</td>
<td>X</td>
<td>X</td>
<td>X</td>
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<td>X</td>
<td>X</td>
<td>X</td>
<td>02</td>
<td></td>
</tr>
<tr>
<td>03</td>
<td>Above secondary education</td>
<td>X</td>
<td>X</td>
<td>X</td>
<td>X</td>
<td>X</td>
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<td>X</td>
<td>X</td>
<td>X</td>
<td>03</td>
<td></td>
</tr>
<tr>
<td>-7</td>
<td>Not Applicable/not asked</td>
<td>-</td>
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<td>-9</td>
<td>Could not be created</td>
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<td>-9</td>
<td></td>
</tr>
</tbody>
</table>
EDTRY

Harmonized highest level of education
Group: Core Demographic — PERSON

<table>
<thead>
<tr>
<th>CODES</th>
<th>DESCRIPTION</th>
<th>COMPARABILITY</th>
<th>UNIVERSE</th>
<th>AVAILABILITY</th>
</tr>
</thead>
</table>

**Description**

EDTRY indicates the respondent’s highest level of education based on the [International Classification of Education (ISCED)](https://www.uis.unesco.org/education.jsp?lang=en). Users may also be interested in [EDUCA](https://www.uis.unesco.org/education.jsp?lang=en) which is unharmonized and indicates the highest level of education attained. A cross tabulation of EDTRY and EDUCA shows how EDTRY was constructed for each sample.
EDTRY

Harmonized highest level of education

Group: Core Demographic — PERSON

<table>
<thead>
<tr>
<th>CODES</th>
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</tr>
</thead>
</table>

Comparability — Index

GENERAL

Italy

Comparability

EDTRY is comparable across all samples. See EDUCA for further information about the source data on education.

Comparability — Italy [top]

In 2002, respondents aged 10 or less do not have data for this variable.
## EDUCA

**Education-original study codes**

*Group: [Core Demographic — PERSON](#)*

<table>
<thead>
<tr>
<th>CODES</th>
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<th>UNIVERSE</th>
<th>AVAILABILITY</th>
</tr>
</thead>
</table>

**Austria 1992**

1. Elementary school  
3. Neduyn vocational  
4. Higher general  
5. Higher vocational  
6. University  
7. Child aged 10-14

**Canada 2010**

1. Doctorate/masters/some graduate  
2. Bachelor's degree  
3. Diploma/certificate from community college  
4. Diploma/certificate from trade/technical  
5. Some university  
6. Some community college/CEGEP/nursing  
7. Some trade/technical  
8. High school diploma  
9. Some secondary/high school  
10. Elementary school/no schooling

**Spain 2002**
Spain 2009
1 No formal education, not able to read or write
2 Did not complete primary school
3 Completed primary school
4 Completed secondary school
5 Post-secondary qualification
6 Teaching qualification
7 Professional qualification
8 University degree
9 Higher university degree

France 1985
0 No diploma
1 CEP, DFEO
2 BEPC
3 BE BEPS
4 Baccalauréat 1re partie CFES
5 Baccalauréat série 2ème
6 Diplôme universitaire du 1er cycle - DUEL DUES
7 Diplôme universitaire du 2ème cycle - licence, maîtrise
8 Diplôme universitaire du 3ème cycle - DES DEA doctorat
9 Autre préciser

France 1990
0 Without a diploma or not declared
1 CEP, DFEO
2 BEPC
3 CAP, BEP
4 Bac technique
5 Bac general
6 Bac + 2
7 Superieur a Bac + 2

Finland 1979
1 Matriculation
2 Middle / Comprehensive
3 Primary / Middle
Planned Additions to MTUS - X

- Brazil
- Germany
- India
- Mexico
- South Africa (2)- 2019
- South Korea (3)- 2019
- Turkey
Acknowledgements

- This project was made possible through funding from the Eunice Kennedy Shriver National Institute of Child Health and Human Development, Grant No. R01-HD053654-12
QUESTIONS?
Part 2: Select a Topic and Archive for Your Research

ATUS-X, AHTUS-X, MTUS-X
Assumptions of Time Diary Research

• Daily behavior the “sociological atom” of social research (Jonathan Gershuny, CTUR)
• All activities by all groups of people are worthy topics of research
• Comprehensive behavioral data essential to understand complex social issues
• Comprehensive behavioral data essential to understand policy influences on social change
Policy Applications of Time Use Research

- Full economic activity
- Satellite accounts
- Valuation
- Volunteering

- Unpaid work
- Care
- Data collection

- Methods
- Modes

- Adult care
- Child care
- Fathers
- Growing up
- Juggle work
- Valuation
- Pet care

- Travel

- Environment
- Energy use
- Carbon footprint

- Education

- Role constraints
- Use of places
- Women’s contributions
- Work distribution

- Populations
- Quality of Life
- Patterns & modes

- Access to resources
- Consumption
- Culture
- Leisure as work
- Media use
- Sports
- Time with others

- Planning

- Paid work
- Leisure

- Health

- Exposure
- Food
- Physical activity
- Sleep

- Hours of work, Intensity of work,
  Opening hours, Safety at work,
  Unemployment, Work-life balance
Selected Research Topics

- Leisure (trends, physical activity, quality)
- Sleep (hours per week, deprivation, trends)
- Health (associations with activities)
- Subjective well-being
- Eating
- Work-life Balance
- Paid work (hours of work, scheduling)
- Unpaid work (women’s total economic contribution, hours, trends, sharing in households)
- Adult care (valuation, time cost, who performs care but does not identify as a carer)
- Child care (valuation, trends, participation of fathers, balance of physical/interactive care)
- Volunteering / civic engagement (valuation, trends)
- Education (homework, parental involvement)
- Environment (transport modes, time at home/inside)
What is a time use variable?

- Number of minutes per day (0-1440) in specific activities
- Summarize time across the day based on
  - Primary and secondary activities
  - Location
  - Time of day
  - With others
- More restrictions = fewer people who will have done the activity given the constraints
Creating Time Use Variables

- Researchers
  - Custom time use variables
  - Low barrier to creating with complex activity-based variables
- System
  - Background manipulation of diary data to construct time use variables
  - Outputs either rectangular or hierarchical data files
  - Saves custom variables & extracts
Archive Differences

- Activity classification system
  - 400+ codes in ATUS
  - 98 codes in AHTUS
  - 69 codes in MTUS

- Sampling frames
  - ATUS
    - One diary day from one individual age 15 or older selected from CPS household in ATUS
  - AHTUS
    - One diary day from one individual aged 18 and older in AHTUS
    - Subsample of 1975 data have diaries from spouses
  - MTUS
    - Weekend and weekday diaries in some countries
    - Diaries from all household members in some countries
    - See [here](#)
Health Related Variable Differences

- **ATUS**
  - Self-Reported Health
  - Physical Activity
  - Life Satisfaction & Momentary Affect
  - MET Value
- **AHTUS**
  - Disability
  - No measure of general health
- **MTUS**
  - General Health
  - Rushed
  - Disability
Time Diary Archive Differences

• Secondary data
  • ATUS
    • Secondary Child Care
    • Secondary Eldercare
    • Secondary Eating & Drinking
  • AHTUS
    • SEC
  • MTUS
    • SEC
Time Diary Archive Differences

• With Whom
  • ATUS
    • WHO_ASK
    • Technical Who Variables (hierarchical)
    • Create Own Time Use Variable (rectangular)
  • AHTUS
    • Who else is present during activity
    • Who Variable Availability Grid
  • MTUS
    • https://www.mtusdata.org/mtus-action/samples
    • Who else is present during activity
Acknowledgements

• This project was made possible through funding from the Eunice Kennedy Shriver National Institute of Child Health and Human Development, Grant No. R01-HD053654-12
QUESTIONS?
Part 3: Create a Custom Extract:
Time Spent in Physical Activity and Health

Exercise 7 in handout
Online Demo

✓ Logged in or finished registration
✓ Selected topic and the archive to use
✓ Viewed documentation
  • Create a time use variable
  • Add demographic variables
  • Make an extract
  • Download data
  • Create an analysis file
  • Get help
Health-Related Activity Measures

- Physical Activity time
  - Specific Activity selected by a belief in its healthfulness (130100)
  - Mode of Transportation – self propelled or riding
  - An aspect of Paid & Unpaid work
  - According to MET values (ratio of metabolic rate per time unit during activity to resting rate), categorized as moderate or vigorous
    - [https://www.atusdata.org/atus-action/variables/group?id=a-tech](https://www.atusdata.org/atus-action/variables/group?id=a-tech)
    - [https://www.atusdata.org/atus-action/variables/METVALUE#description_section](https://www.atusdata.org/atus-action/variables/METVALUE#description_section)
    - [https://epi.grants.cancer.gov/physical/MET/](https://epi.grants.cancer.gov/physical/MET/)
- Sedentary time (e.g., Relaxing, TV viewing) (120300)
  - Specific Activity selected by belief in its nonhealthfulness
  - Context
  - MET value (e.g., low MET)
- Sleep time (010100)
  - Night time
  - Naps
  - Disturbed & disrupted sleep episodes
Health Measures

- Self-reported health – five category self-reported health (excellent, very good, good, fair, poor)
- BMI – Body mass index, computed from height & weight
Exercise 7

• Go to Exercise 7, “Estimates of Time spent in Physical Activity in ATUS Well-being Module,” to follow along.
AMERICAN TIME USE SURVEY EXTRACT BUILDER

The ATUS is a nationally representative U.S. time diary survey for period since 2003. IPUMS Time Use harmonizes these data and provides a data extract builder that allows users to create custom time use variables and data extracts for analysis. ATUS-X is a collaboration of the Minnesota Population Center and the Maryland Population Research Center.

TIME IS OUR SCARCEST RESOURCE...USE IT WISELY!

CREATE AN EXTRACT

WHAT IS IPUMS?

IPUMS provides census and survey data from around the world integrated across time and space. IPUMS integration and documentation makes it easy to study change, conduct comparative research, merge information across data types, and analyze individuals within family and community context. Data and services available free of charge.

NEW USERS
SELECT SAMPLES

Variable documentation on the web site can be filtered to display only material corresponding to chosen datasets (more information on this feature).

- Select / Unselect All Module Topics
  - Eating and Health
  - Leave
  - Well Being

- Select All Samples
  - 2003
  - 2004
  - 2005
  - 2006
  - 2007
  - 2008
  - 2009
  - 2010
  - 2011
  - 2012
  - 2013
  - 2014
  - 2015
  - 2016
  - 2017

Sample Members

- Respondents [2]
- Respondents and Household Members [2]
- Respondents and Non-respondents [2]
- Respondents and Non-respondents plus Household Members [2]
Caution

• Will need to go back to the Select variables page after each selection (slide 28). That step is not included here to avoid duplication.
<table>
<thead>
<tr>
<th>Add to cart</th>
<th>Variable</th>
<th>Variable Label</th>
<th>Type 06 07 08 14 15 16</th>
</tr>
</thead>
<tbody>
<tr>
<td>✔</td>
<td>AGE</td>
<td>Age</td>
<td>P X X X X X X</td>
</tr>
<tr>
<td>✔</td>
<td>SEX</td>
<td>Sex</td>
<td>P X X X X X X</td>
</tr>
<tr>
<td>✔</td>
<td>RACE</td>
<td>Race</td>
<td>P X X X X X X</td>
</tr>
<tr>
<td>✔</td>
<td>HISPAN</td>
<td>Hispanic origin</td>
<td>P X X X X X X</td>
</tr>
<tr>
<td>✔</td>
<td>ASIAN</td>
<td>Asian origin</td>
<td>P . . . X X</td>
</tr>
<tr>
<td>✔</td>
<td>MARST</td>
<td>Marital status</td>
<td>P X X X X X X</td>
</tr>
<tr>
<td>✔</td>
<td>YRIMMIG</td>
<td>Year of immigration</td>
<td>P X X X X X X</td>
</tr>
<tr>
<td>✔</td>
<td>CITIZEN</td>
<td>Citizenship status</td>
<td>P X X X X X X</td>
</tr>
<tr>
<td>✔</td>
<td>BPL</td>
<td>Birthplace</td>
<td>P X X X X X X</td>
</tr>
<tr>
<td>✔</td>
<td>MBPL</td>
<td>Mother’s birthplace</td>
<td>P X X X X X X</td>
</tr>
<tr>
<td>✔</td>
<td>FBPL</td>
<td>Father’s birthplace</td>
<td>P X X X X X X</td>
</tr>
<tr>
<td>✔</td>
<td>RELATE</td>
<td>Relationship to ATUS respondent</td>
<td>P X X X X X X</td>
</tr>
<tr>
<td>✔</td>
<td>AGE_CPS8</td>
<td>Age (CPS)</td>
<td>P X X X X X X</td>
</tr>
<tr>
<td>✔</td>
<td>SEX_CPS8</td>
<td>Sex (CPS)</td>
<td>P X X X X X X</td>
</tr>
<tr>
<td>✔</td>
<td>RELATE_CPS8</td>
<td>Relationship to CPS respondent</td>
<td>P X X X X X X</td>
</tr>
<tr>
<td>✔</td>
<td>POPSTAT</td>
<td>Adult civilian, armed forces, or child (CPS)</td>
<td>P X X X X X X</td>
</tr>
<tr>
<td>✔</td>
<td>GENHEALTH</td>
<td>General health</td>
<td>P X X X X X X</td>
</tr>
<tr>
<td>✔</td>
<td>HEIGHT</td>
<td>Height (in inches)</td>
<td>P X X X X X X</td>
</tr>
<tr>
<td>✔</td>
<td>WEIGHT</td>
<td>Weight (in pounds)</td>
<td>P X X X X X X</td>
</tr>
<tr>
<td>✔</td>
<td>BMI</td>
<td>Body Mass Index</td>
<td>P X X X X X X</td>
</tr>
<tr>
<td>Add to cart</td>
<td>Variable</td>
<td>Variable Label</td>
<td>Type</td>
</tr>
<tr>
<td>-------------</td>
<td>----------</td>
<td>----------------</td>
<td>-------</td>
</tr>
<tr>
<td></td>
<td>WT06</td>
<td>Person weight, 2006 methodology [preselected]</td>
<td>P</td>
</tr>
<tr>
<td></td>
<td>RWWT06</td>
<td>Replicate weight, 2006 methodology [multiple variables]</td>
<td>P</td>
</tr>
<tr>
<td></td>
<td>BWT</td>
<td>Base weight</td>
<td>P</td>
</tr>
<tr>
<td></td>
<td>RBWT</td>
<td>Replicate weight, base weight [multiple variables]</td>
<td>P</td>
</tr>
<tr>
<td></td>
<td>EHWT</td>
<td>Eating and Health Module weight</td>
<td>P</td>
</tr>
<tr>
<td></td>
<td>REHWT</td>
<td>Replicate weight, eating and health module weight [multiple variables]</td>
<td>P</td>
</tr>
</tbody>
</table>
AN "X" INDICATES THE VARIABLE IS AVAILABLE IN THAT DATASET.

<table>
<thead>
<tr>
<th>Add to cart</th>
<th>Variable</th>
<th>Variable Label</th>
<th>Type</th>
<th>06</th>
<th>07</th>
<th>08</th>
<th>14</th>
<th>15</th>
<th>16</th>
</tr>
</thead>
<tbody>
<tr>
<td>✅</td>
<td>ACTLINE</td>
<td>Activity line number [preselected]</td>
<td>A</td>
<td>X</td>
<td>X</td>
<td>X</td>
<td>X</td>
<td>X</td>
<td>X</td>
</tr>
<tr>
<td>✅</td>
<td>ACTIVITY</td>
<td>Activity</td>
<td>A</td>
<td>X</td>
<td>X</td>
<td>X</td>
<td>X</td>
<td>X</td>
<td>X</td>
</tr>
<tr>
<td>✅</td>
<td>WHERE</td>
<td>Location of activity</td>
<td>A</td>
<td>X</td>
<td>X</td>
<td>X</td>
<td>X</td>
<td>X</td>
<td>X</td>
</tr>
<tr>
<td>✅</td>
<td>DURATION_EXT</td>
<td>Duration of activity (extended version)</td>
<td>A</td>
<td>X</td>
<td>X</td>
<td>X</td>
<td>X</td>
<td>X</td>
<td>X</td>
</tr>
<tr>
<td>✅</td>
<td>DURATION</td>
<td>Duration of activity</td>
<td>A</td>
<td>X</td>
<td>X</td>
<td>X</td>
<td>X</td>
<td>X</td>
<td>X</td>
</tr>
<tr>
<td>✅</td>
<td>METVALUE</td>
<td>Metabolic equivalent (MET) value for activity codes</td>
<td>A</td>
<td>X</td>
<td>X</td>
<td>X</td>
<td>X</td>
<td>X</td>
<td>X</td>
</tr>
<tr>
<td></td>
<td>WHO_ASK</td>
<td>Who asked for activity</td>
<td>A</td>
<td>X</td>
<td>X</td>
<td>X</td>
<td>X</td>
<td>X</td>
<td>X</td>
</tr>
<tr>
<td></td>
<td>START</td>
<td>Activity start time</td>
<td>A</td>
<td>X</td>
<td>X</td>
<td>X</td>
<td>X</td>
<td>X</td>
<td>X</td>
</tr>
<tr>
<td></td>
<td>STOP</td>
<td>Activity stop time</td>
<td>A</td>
<td>X</td>
<td>X</td>
<td>X</td>
<td>X</td>
<td>X</td>
<td>X</td>
</tr>
</tbody>
</table>
Caution

• You cannot select technical activity variables for your file unless you select the rectangular (activity) or the hierarchical option for the file structure. You will be reminded and get the option of changing your structure.

• If you wish to use a rectangular (person) file structure you will have to create all your time variables within the archive. This will probably be sufficient for most research projects.
Variable documentation on the web site can be filtered to display only material corresponding to chosen datasets [more information on this feature].

### Create Variable from Scratch

### Quit Making Time Use Variable

<table>
<thead>
<tr>
<th>MY TIME USE VARIABLES</th>
<th>Create</th>
<th>Name</th>
<th>Label</th>
</tr>
</thead>
<tbody>
<tr>
<td>Load</td>
<td>HOMEWORK</td>
<td>homework at home</td>
<td></td>
</tr>
<tr>
<td>Load</td>
<td>SPORTS</td>
<td>sports after school</td>
<td></td>
</tr>
<tr>
<td>Load</td>
<td>SPORTS_PART</td>
<td>sports participation</td>
<td></td>
</tr>
<tr>
<td>Load</td>
<td>CHILDCARE_TIME</td>
<td>child care time</td>
<td></td>
</tr>
<tr>
<td>Load</td>
<td>work</td>
<td>all work related activities</td>
<td></td>
</tr>
<tr>
<td>Load</td>
<td>Housework</td>
<td>Household activities plus travel time</td>
<td></td>
</tr>
<tr>
<td>Load</td>
<td>employment</td>
<td>work plus travel time</td>
<td></td>
</tr>
<tr>
<td>Load</td>
<td>carelhmember</td>
<td>care for household member plus travel</td>
<td></td>
</tr>
<tr>
<td>Load</td>
<td>carenonlhmember</td>
<td>care for non household member plus travel</td>
<td></td>
</tr>
<tr>
<td>Load</td>
<td>school</td>
<td>school plus travel to school</td>
<td></td>
</tr>
<tr>
<td>Load</td>
<td>homework</td>
<td>homework plus travel</td>
<td></td>
</tr>
<tr>
<td>Load</td>
<td>sport</td>
<td>sports plus travel</td>
<td></td>
</tr>
<tr>
<td>Load</td>
<td>school</td>
<td>school plus travel to school</td>
<td></td>
</tr>
<tr>
<td>Load</td>
<td>CarSHchildren</td>
<td>care for household children plus travel</td>
<td></td>
</tr>
<tr>
<td>Load</td>
<td>CarnonHchildren</td>
<td>care for non household children plus travel</td>
<td></td>
</tr>
<tr>
<td>Load</td>
<td>examornalone</td>
<td>ACT: exercise morning alone</td>
<td></td>
</tr>
<tr>
<td>Load</td>
<td>examornaftr</td>
<td>ACT: exercise, afternoon, alone</td>
<td></td>
</tr>
<tr>
<td>Load</td>
<td>examornnight</td>
<td>ACT: exercise, night, alone</td>
<td></td>
</tr>
<tr>
<td>Load</td>
<td>exatotal</td>
<td>ACT: exercise total</td>
<td></td>
</tr>
<tr>
<td>Load</td>
<td>exaln</td>
<td>ACT: exercise alone</td>
<td></td>
</tr>
<tr>
<td>Load</td>
<td>examorn</td>
<td>ACT: exercise, morning, with others</td>
<td></td>
</tr>
<tr>
<td>Load</td>
<td>examornaftr</td>
<td>exercise, afternoon, with others</td>
<td></td>
</tr>
<tr>
<td>Load</td>
<td>examornother</td>
<td>exercise, any time, with others</td>
<td></td>
</tr>
<tr>
<td>Load</td>
<td>examornight</td>
<td>exercise, night 4-6 am, with others</td>
<td></td>
</tr>
<tr>
<td>Load</td>
<td>examornight2</td>
<td>exercise, at night 4-6 am, alone</td>
<td></td>
</tr>
<tr>
<td>Load</td>
<td>exatnight</td>
<td>exercise, night 12-4 am, with others</td>
<td></td>
</tr>
<tr>
<td>Load</td>
<td>exatnight2</td>
<td>exercise, night 12-4am, with others</td>
<td></td>
</tr>
<tr>
<td>Load</td>
<td>exatnightf</td>
<td>exercise, afternoon, with others</td>
<td></td>
</tr>
<tr>
<td>Load</td>
<td>examornightf</td>
<td>ACT: exercise, morning, with others</td>
<td></td>
</tr>
</tbody>
</table>
Respondent activities are recorded as six-digit numbers (ACTIVITY). The first two digits correspond to a broad category, the middle two to a more detailed subcategory, and the final two to a specific activity within those categories. Users may select any combination of activities from the activity hierarchy to create time use variables.

![expanded activity hierarchy]

**expand all | collapse all**
### Create Time Use Variable

**Name** indicates what your variable will be called in your data file. **Label** is the label associated with the variable you created. **Description** is not delivered with your data file; it is an optional field that you may use to describe the variable in greater detail and to store relevant notes.

<table>
<thead>
<tr>
<th>Activity</th>
<th>Time of Day</th>
<th>Secondary Activity</th>
<th>Location</th>
<th>With Whom</th>
<th>Name and Label</th>
<th>Summary</th>
</tr>
</thead>
</table>

Name

Label

Description

- SAVE TIME USE VARIABLE
- QUIT MAKING TIME USE VARIABLE
Participating in Sports, Exercise, or Recreation (130100)

- Doing aerobics (130101)
- Playing baseball (130102)
- Playing basketball (130103)
- Biking (130104)
- Playing billiards (130105)
- Boating (130106)
- Bowling (130107)
- Climbing, spelunking, caving (130108)
- Dancing (130109)
- Participating in equestrian sports (130110)
- Fencing (130111)
- Fishing (130112)
- Playing football (130113)
- Golfing (130114)
- Doing gymnastics (130115)
- Hiking (130116)
- Playing hockey (130117)
- Hunting (130118)
- Participating in martial arts (130119)
- Playing racquet sports (130120)
- Participating in rodeo competitions (130121)
- Rollerblading (130122)
- Playing rugby (130123)
- Running (130124)
- Skiing, ice skating, snowboarding (130125)
- Playing soccer (130126)
- Playing softball (130127)
- Using cardiovascular equipment (130128)
- Vehicle touring or racing (130129)
- Playing volleyball (130130)
- Walking (130131)
- Participating in water sports (130132)
- Weightlifting or strength training (130133)
- Working out, unspecified (130134)
- Wrestling (130135)
- Doing yoga (130136)
- Playing sports, n.e.c. (130199)
Respondent activities are recorded as six-digit numbers (ACTIVITY). The first two digits correspond to a broad category, the middle two to a more detailed subcategory, and the final two to a specific activity within those categories. Users may select any combination of activities from the activity hierarchy to create time use variables.

[more info]

expand all | collapse all

- Personal Care (010000)
- Household Activities (020000)
- Caring for and Helping Household Members (030000)
- Caring for and Helping Non-Household Members (040000)
- Work and Work-Related Activities (050000)
- Education (060000)
- Consumer Purchases (070000)
- Professional and Personal Care Services (080000)
- Household Services (090000)
- Government Services and Civic Obligations (100000)
- Eating and Drinking (110000)
- Socializing, Relaxing, and Leisure (120000)
- Sports, Exercise, and Recreation (130000)
- Religious and Spiritual Activities (140000)
- Volunteer Activities (150000)
- Telephone Calls (160000)
- Traveling (180000)
- Data Codes (500000)
The location filter (WHERE) allows users to restrict the time use variable currently being created to a particular set of places or modes of transportation. The default selection is all locations, meaning that the times spent in each of the selected activities (given other filter selections) are added together regardless of where the activities occurred. When a location filter is applied, only times spent in the activities (given other filter selections) and locations specified are added together.

[more info]

Location Filter
- All Locations
- Specified Locations

Locations
- All
- Place (0100)
- Mode of Transportation (0200)
- Car, truck or motorcycle (driver) (0230)
- Car, truck or motorcycle (passenger) (0231)
- Walking (0232)
- Bus (0233)
- Subway, train (0234)
- Bicycle (0235)
- Boat, ferry (0236)
- Taxi, limousine service (0237)
- Airplane (0238)
- Other mode of transportation (0239)
- Unspecified mode of transportation (0240)
- Don't know (9997)
- Refused (9998)
- NIU (Not in universe) (9999)
### Clear Data Cart

<table>
<thead>
<tr>
<th>In cart</th>
<th>Variable</th>
<th>Variable Label</th>
<th>Type</th>
<th>06</th>
<th>07</th>
<th>08</th>
<th>14</th>
<th>15</th>
<th>16</th>
</tr>
</thead>
<tbody>
<tr>
<td>✔️</td>
<td>YEAR</td>
<td>Survey year [preselected]</td>
<td>H</td>
<td>X</td>
<td>X</td>
<td>X</td>
<td>X</td>
<td>X</td>
<td>X</td>
</tr>
<tr>
<td>✔️</td>
<td>CASEID</td>
<td>ATUS Case ID [preselected]</td>
<td>H</td>
<td>X</td>
<td>X</td>
<td>X</td>
<td>X</td>
<td>X</td>
<td>X</td>
</tr>
<tr>
<td>✔️</td>
<td>PERNUM</td>
<td>Person number (general) [preselected]</td>
<td>P</td>
<td>X</td>
<td>X</td>
<td>X</td>
<td>X</td>
<td>X</td>
<td>X</td>
</tr>
<tr>
<td>✔️</td>
<td>LINENO</td>
<td>Person line number [preselected]</td>
<td>P</td>
<td>X</td>
<td>X</td>
<td>X</td>
<td>X</td>
<td>X</td>
<td>X</td>
</tr>
<tr>
<td>✔️</td>
<td>WTI06</td>
<td>Person weight, 2005 methodology [preselected]</td>
<td>P</td>
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DATA FORMAT AND STRUCTURE (HELP)

Data Format

- Fixed-width text (.dat)
- Stata (.dta)
- SPSS (.sav)
- SAS (.sas7bdat; does not include value labels)
- Comma delimited (.csv)

Data conversion supplied by StatTransfer

Data Structure

- Rectangular
  - person (recommended)
  - activity
- Hierarchical
  - include eldercare

Sample Members

- Respondents
- Respondents and Household Members
- Respondents and Non-respondents
- Respondents and Non-respondents plus Household Members
## Extract Request

| Samples: | 6 | Change |
| Variables: | 17 | Change |
| Time Use Variables: | 3 | Change |
| Data Format: | .dat (fixed-width text) | Change |
| Structure: | Hierarchical | Change |
| Sample Members: | Respondents | Change |

### Options

- **Select Data Quality Flags**
  - Include data quality flags for selected variables.

- **Attach Characteristics**
  - Attach data from mother, father, spouse or household head as a new variable (for example, education of mother).

Describe your extract:

Revision of (extract for exercise 14: time in physical activity)

[Submit Extract]
### VARIABLES

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<td>Survey year</td>
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### TIME USE VARIABLES

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<td>walkbike travel</td>
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### OPTIONS

- **SELECT DATA QUALITY FLA**: Include data quality flags for selected variables.
- **ATTACH CHARACTERISTICS**: Attach data from mother, father, spouse or household head as a new variable (for example, education of mother).

**Describe your extract**

Revision of (extract for exercise 14: time in physical activity)
### Download or Revise Extracts

Use the links provided below to download a data extract (right-click the links for the data, command files, and codebook) or to revise an extract (that is, use a previous extract as the base for a new extract). For instructions on downloading and opening an extract on your computer go [here](#). Note: data files will be available for 72 hours, after which they are subject to deletion.

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**Legend:**
- **Download DAT:** Download the data file.
- **SPSS, SAS, STATA, R:** Download the text files with SPSS, SAS, STATA, or R syntax.
- **Basic, DDI:** Download the codebook files with Basic or DDI syntax.

---

**Notes:**
- Data files will be available for 72 hours, after which they are subject to deletion.
- Instructions on downloading and opening extracts can be found [here](#).
- Extracts with a checkmark can be selected for revision.
Download and Analyze Data
Next Steps

• Download data in text format and command files in your specific software package (SPSS, SAS, Stata, R)

• Download and copy codebook into Word (landscape)
Create Analytic File

• Must first extract your data from its GZ compressed format using zip software such as 7 Zip (free).
• Then change the command file program to show where the data file is located and where to deposit the analysis file after it is created.
• Instructions are on the IPUMS web site:
  • https://www.atusdata.org/atus/extract_instructions.shtml
Analysis Strategy

• Use SAS, Stata, or SPSS to recode and analyze data

• Guides for using SAS, Stata, SPSS to create time diary variables are available at bottom of page: https://www.atusdata.org/atus/training_materials.shtml

• For specific SAS and STATA codes for this exercise, see workshop answers for exercise 7.

• We will be happy to spend time showing how to run specific analyses for exercise 7 in another session or one-on-one sessions
Types of Data

• Rectangular (default)
  • Preferred by most researchers
  • Ready to analyze
  • Person records ONLY
  • Activity and Who record information is used to create time use variables—you never actually see them
  • RECTYPE Record Type
    • 1 H
    • 2 P
    • 3 A
    • 4 W
    • 5 R

• Hierarchical
  • Five record types
    • Household, Person, Activity, Who, Elder care recipient
  • Select variables for each record type if you want them to be included
  • More difficult to work with, but better for creating LOTS of time use variables that are only slightly different or are too complicated to do in the system
  • Necessary for analyzing activity sequences
Hierarchical Data:
What they Look Like
Basic Person Record for all Household Persons

Reading each record (order of main vars will vary depending upon your statistical package)

- Record type 1
- Year 2-6
- CaseID 7-20 (last 4 digits are year)
- Person number 21-22
- Line number 23-25
- Weight 26-42
Hierarchical File

Strategy:
1. Divide the hierarchical file into two:
   – the person records and
   – All activity records.
2. Create new time diary variables that summarize daily time for each person that meet specific MET criteria.
3. Merge the now person-specific time diary variables with the person record for each person.
4. Recode the demographic and health variables and conduct means (weighted by EHWT) of exercise and physical activity time by categories of self-reported health and BMI to summarize data.
### Rectangular Data:
What they Look Like

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</table>
Rectangular/Activity file

1. Create new time diary variables that meet specific MET criteria to summarize daily moderate/vigorous time for each person over all their daily activities. Retain demographic and health variables.

2. Retain one record per person.

3. Recode the demographic and health variables and conduct means (weighted) of exercise and activity time by categories of self-reported health and BMI to summarize data.
Exercise 7. Minutes Per Day Spent in Physical Activity by BMI and Health, 2006-08, 2014-16

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<th>Total Exercise</th>
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<th>Transportation: Walking, Biking</th>
<th>Moderate Activities</th>
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<th>Moderate or Vigorous Activities</th>
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General Health Status

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Acknowledgements

• This project was made possible through funding from the Eunice Kennedy Shriver National Institute of Child Health and Human Development, Grant No. R01-HD053654-12
Want More?
https://www.atusdata.org/atus/training_materials.shtml

Thanks for your participation!

Questions can be sent to Hofferth@umd.edu, Lsayer@umd.edu or IPUMS@umn.edu