# Exercise 7:  Estimates of Time Spent in Physical Activity in ATUS Well-being Module

With time use data, physical activity can be defined in several ways. We will create different measures of physical activity and see how sensitive the measurement is to the patterns we observe in the data. Your objective in this exercise is to create time use variables from the ATUS activity-level data, to consider different ways to measure physical activity in the ATUS, and to explore associations between BMI, health, and physical activity.

The **first step** in the process is to create a dataset that contains only the respondents who participated in the Eating and Health Module of the ATUS (***hint***: use the module selection on the samples page to identify the years (6) in which the module was fielded). Make sure to include in your extract the BMI and general health status variables along with the appropriate weight to use when analyzing Eating and Health Module data (EHWT). Because we're going to create time use variables from the activity-level data, make sure your extract is hierarchical and you choose the necessary variables to construct time use variables based on mode of transportation, activity, and MET values associated with activities. The time use variables you should create are:

1. Time spent in exercise (ACTIVITY=130100)
2. Time spent walking or biking as a mode of transportation (WHERE=232 or 235)
3. Time spent in walking or biking as exercise
4. Time spent in moderate activities (METVALUE>=3 & METVALUE<6)
5. Time spent in vigorous activities (METVALUE>=6 & METVALUE<999)
6. Time spent in moderate or vigorous activities

The **second step** is to create a person-level file. First, recode the BMI and general health status variables. BMI should be coded into five categories (underweight [low-18], normal [19-24], overweight [25-29], obese [30-39], extreme obesity [40+]) and don't forget to set the missing data to missing. For general health status, set the missing data to missing. Second, create the time use variables and merge the time use variables from the activity-level file with the person-level data.

The **third step** is to generate mean minutes of each type of physical activity by BMI and general health status and populate Table 14. Don't forget to use EHWT rather than WT06 since you're using variables collected as part of the Eating and Health Module.