MT3: Physical Activity and Reduced Sedentary Behavior*

Framework Component

Changes – Physical Activity and Reduced Sedentary Behavioral Changes

Indicator Description

Two-part indicator measuring behavioral changes to increase physical activity and/or reduce sedentary behavior. Physical activity is defined as any body movement that works muscles and requires more energy than resting. Sedentary behavior is defined as too much sitting or lying down at work, at home, in social settings, and during leisure time. Both increasing physical activity and decreasing sedentary behaviors is important for overall health. *SNAP-Ed Priority Outcome Indicator

Background and Context

Physical activity education and training is an important component of SNAP-Ed. Since the passage of both the Healthy, Hunger Free Kids Act of 2010 and the Agricultural Act of 2014 (the Farm Bill), SNAP-Ed programs are consistently emphasizing physical activity that is appropriate for age and ability levels. Studies indicate that moving more during the day, in addition to getting the daily 30 minutes of moderate activity on a daily basis, is necessary. Both increasing physical activity and reducing sedentary behavior should be considered in obesity prevention programming and evaluation. A lack of physical activity (too little exercise) and too much sedentary behavior change the body in different ways and should be measured separately. For example, programs designed to reduce obesity by increasing physical activity may not be effective if sedentary behavior remains high.
Outcome Measures

This indicator focuses on progress toward meeting the *Physical Activity Guidelines for Americans* (see [Appendix C](#)), which is the physical activity counterpart to the *Dietary Guidelines for Americans*. The following is a list of sample areas for measuring outcomes by age group related to behavior change. **Increased Physical Activity, Fitness, and Leisure Sport.** Increases in duration, intensity, and frequency of exercise, physical activity, or leisure sport appropriate for the population of interest, and types of activities.

- MT3a. Physical activity and leisure sport (general physical activity or leisure sport)
- MT3b. Physical activity when you breathed harder than normal (moderate-vigorous physical activity)
- MT3c. Physical activity to make your muscles stronger ([glossary]muscular strength[/glossary])
- MT3d. Physical education or gym class activities (school PE)
- MT3e. Recess, lunchtime, classroom, before/after school physical activities (school activities—non-PE)
- MT3f. Walking steps during period assessed (e.g., increasing daily goal by ≥2,000 steps)

**Reduced Sedentary Behavior.** Decreases in time spent in sedentary behavior (computers, desk sitting, television watching) during the period assessed.

- MT3g. Television viewing
- MT3h. Computer and video games
- MT3i. Sitting on weekdays while at work, at home, while doing course work, and during leisure time

**Increased Physical Fitness.** Increases in health-related physical fitness levels (aerobic or cardio fitness, [glossary]muscular strength[/glossary], [glossary]muscular endurance[/glossary] and [glossary]flexibility[/glossary]).

- MT3j. Aerobic or cardio fitness, muscular strength, muscular endurance and/or flexibility

What to Measure

Evaluators may choose among data collection methods, including self-reported questionnaires and direct measurement using parent observation, pedometers, or fitness tests. There are tradeoffs for each data collection tool in terms of cost, time, and participant burden. While evaluators are encouraged to triangulate outcomes using multiple data sources, at a minimum, this indicator can be satisfied through self-administered participant questionnaires. Measure SNAP-Ed participants who increase physical activity, fitness, and leisure sport and/or reduce sedentary behavior during the period assessed.

- **Physical activity or leisure sport** assessments should measure the dimensions of the activity performed including intensity (how hard), frequency (how often), and duration (how long) using self-report in minutes, days, etc., using a Likert scale or an observation tool.
- **Sedentary behavior** is assessed using a self-report survey or observational tool to measure the amount of time spent sitting over a set period. This should not be confused with *screen time* which, although is generally sedentary in nature, measures exposure to electronic screens such as phones, televisions, or computers. Sedentary behavior may involve screen time, but should include lying down, sitting, reading books, drawing, writing, and other non-screen-related inactivity (<1.5 METS, or the Metabolic Equivalent...
of Task).

- Physical fitness assessments should measure the dimensions of the fitness of the individual, which may reflect their physical activity levels including muscular strength, muscular endurance, aerobic or cardio fitness, and flexibility.

Possible behavior change measurements for physical activity and reduced sedentary behavior include:

- Increases in frequency (number of days)
- Increases in time (number of minutes)
- Increases in physical fitness (cardiovascular, flexibility, muscular strength)
- Increases in intensity (moderate or vigorous)
- Increases in number of steps
- Decreases in screen time (computer, video games, TV)

Population

Older adults, adults, adolescents, children, preschoolers and toddlers (via parents, teachers, or child care providers)

Surveys and Data Collection Tools

**ADULTS** [collapse title="International Physical Activity Questionnaire (IPAQ)"]
https://sites.google.com/site/theipaq/questionnaire_links Young and middle-aged adults (15-64 years)

- During the last 7 days, on how many days did you do vigorous physical activities like heavy lifting, digging, aerobics, or fast bicycling? [MT3b]
- During the last 7 days, on how many days did you walk for at least 10 minutes at a time? [MT3a]

http://townsendlab.ucdavis.edu/

- Think about the last 7 days at work, at home, and in your spare time. How many hours did you spend sitting on a weekday? [MT3i] Responses: 0, 1, 2, 3, 4, 5, 6+ hours
- Think about the last 7 days. On how many days did you breathe a little harder than normal on one of those days? [MT3b] Responses: 0, 1, 2, 3, 4, 5, 6, 7 days

[collapse title="Michigan Fitness Foundation Physical Activity Screener for Adults (4 items)"]

- During the last 7 days, how much time in total did you usually spend sitting on a week day? [MT3i] Responses: # hours, # minutes
- During the last 7 days, on how many days did you walk for at least 10 minutes at a time? This includes walking at work and at home, walking to travel from place to place, and any other walking that you did solely for recreation, sport, exercise or leisure. [MT3a] Responses: # days per week; hours and minutes
- During the last 7 days, on how many days did you do vigorous physical activities like jogging or running, fast bicycling, heavy shoveling or digging, or heavy lifting? Think about only those physical activities that you did for at least 10 minutes at a time. [MT3b] Responses: # days per week; hours and minutes
- Again, think only about those physical activities that you did for at least 10 minutes at a time. During the last 7 days, on how many days did you moderate physical activities like bicycling, active play with children, and light yard work or housework (for example, gardening, raking, washing windows,
vacuuming, or carrying light loads)? Do not include walking. [MT3b] Responses: # days per week; hours and minutes

[//collapse][//collapse title="Physical Activity Questions Recommended by Multistate Cooperative Extension Workgroup"]
- In the past week, how many days did you exercise when you breathed harder than normal for at least 30 minutes? [MT3b]
- In the past week, how many days did you exercise to make your muscles stronger, such as lifting weights, working with elastic bands, doing push-ups, sit ups, etc.? [MT3c] Responses: 0, 1, 2, 3, 4, 5, 6, 7 days

[//collapse][//collapse title="OLDER ADULTS (Age 60+)"]
- I do activities to increase muscle strength, such as lifting weights or calisthenics, once a week or more. [MT3c] Responses: yes, no

[//collapse] Direct measurements Following are options for direct measurement of MT3 outcome measures.
[//collapse title="Pedometers (Guide to Help Step it Up, University of Nevada Cooperative Extension) Adults or children"]
http://www.unce.unr.edu/publications/files/hn/2008/fs0832.pdf Pedometers are a cost-effective approach for measuring steps taken by SNAP-Ed participants. Lindsay et al. (2014) recommend a time frame of 1–7 days of pedometer use to establish a baseline average of daily total steps. After being trained on proper pedometer placement, participants are encouraged to wear a pedometer for weeks to calculate new daily averages and measure increases in daily number of steps. [MT3f]

[//collapse] [//collapse title="President’s Challenge Adult Fitness Test"]
http://www.adultfitnesstest.org NOTE: This assessment should only be given to people 18 years of age and older who are in good health. In addition, a pre-participation screening questionnaire www.adultfitnesstest.org/riskQuestionaire.php should be administered prior to the administration of the fitness assessment. [MT3j]

[//collapse][//collapse title="CHILDREN & YOUTH"]
http://www2.ag.purdue.edu/programs/hhs/efnep/Pages/Resource-Evaluation.aspx
- I do physical activities… Responses: never or almost never, most days, some days [MT3a]

[//collapse][//collapse title="Michigan Fitness Foundation Physical Activity Screener for Youth (10 items) Grades 4–12"]
- In the last 7 days, during your physical education (PE) or gym classes, how often were you active (playing hard, running, jumping, throwing)? [MT3d] Responses: hardly ever, sometimes, quite often, always, I don’t do PE or gym
- In the last 7 days, what did you normally do at lunch (besides eating lunch)? [MT3e] Responses: sat down (talking, reading, doing schoolwork), stood around or walked around, ran or played a little bit, ran around and played quite a bit, ran and played hard most of the time, this does not apply to me; I am only able to eat during lunch
- On an average school day, how many hours do you watch TV? [MT3g] Responses: I do not watch TV on an average school day, less than 1 hour per day, 1 hour per day, 2 hours per day, 3 hours per day, 4 hours per day, 5 or more hours per day

[//collapse][//collapse title="Physical Activity Questionnaire for Children (10 items) Grades 4–8"]
- Physical activity in your spare time: Have you done any of the following activities (see link above) in the past 7 days (last week)? If yes, how many times? [MT3a] Responses: No, 1, 2, 3, 4, 5, 6, 7 times or more
- In the last 7 days, during your physical education (PE) classes, how often were you very active (playing...
hard, running, jumping, throwing)? [MT3d] Responses: I don’t do PE, hardly ever, sometimes, quite often, always

- In the last 7 days, what did you do most of the time at recess? [MT3e,i] Responses: Sat down (talking, reading, doing schoolwork), stood around or walked around, ran or played a little bit, ran around and played quite a bit, ran and played hard most of the time

[collapse] [collapse title="California Youth Nutrition and Physical Activity Survey Grades 4–8"] condensed version of the School and Physical Activity Nutrition project (SPAN)
http://www.cdph.ca.gov/programs/cpns/Pages/Chapter1RequiredSurveysforImpactOutcomeEvaluation.aspx

- During the week days, about how much time do you spend on a typical or usual school day sitting and watching TV, playing video games, or on a computer? Examples are: playing on a PSP or other handheld game, using an iPad or tablet, using the Internet (not for school), or watching movies or TV shows on a TV, computer, or phone. [MT3g,h,i] Responses: Less than 1 hour per day, 1 hour per day, 2 hours per day, 3 hours per day, 4 hours per day, 5 or more hours per day, I do not watch TV, play video games, or use a computer for something that is not for school work on school days
- Below, check all the days you exercised or took part in physical activity that made your heart beat fast and made you breathe hard for at least 60 minutes? Examples are: basketball, soccer, running or jogging, fast dancing, swimming, bicycling, jumping rope, trampoline, hockey, fast skating, or rollerblading. [MT3b] Responses: Monday, Tuesday, Wednesday, Thursday, Friday, Saturday, Sunday, I didn’t do any exercise last week that made my heart beat fast for 60 minutes

[collapse] [collapse title="EFNEP Nutrition Education Survey (3 items) Grades 6–8; Grades 9–12"]
https://www2.ag.purdue.edu/programs/hhs/efnep/Pages/Resource-Evaluation.aspx

- During the past 7 days, how many days were you physically active for at least 1 hour? [MT3a] Responses: 0 days, 1 day, 2 days, 3 days, 4 days, 5 days, 6 days, 7 days
- During the past 7 days, how often were you so active that your heart beat fast and you breathed hard most of the time? [MT3b] Responses: 2 times last week, 3 times last week, 4 times last week, 5 or more times last week
- How many hours a day do you spend watching TV or movies, playing electronic games, or using a computer for something that is not school work? [MT3g,h,i] Responses: never, 1 hour or less, 2 hours, 3 hours, 4 hours, 5 or more hours

[collapse] [collapse title="Previous Day Physical Activity Recall (PDPAR) (recall log) Grades 7–12"]
http://www.sph.sc.edu/USC_CPARG/pdpar.html

- For each time period write in the number(s) of the main activities you actually did in the boxes on the time scale. [MT3a]
- Then rate how physically hard these activities were. Place an “X” on the rating scale to indicate if the activities for each time period were: [MT3b] Responses: Very Light = Slow breathing, little or no movement, Light = Normal breathing, regular movement, Medium = Increased breathing, moving quickly for short periods of time, Hard = Hard breathing, moving quickly for 20 minutes or more

[collapse] [collapse title="Youth Risk Behavior Surveillance System"]
http://www.cdc.gov/healthyyouth/data/yrbs/index.htm

1. On an average school day, how many hours do you watch TV? [MT3g]
   A. I do not watch TV on an average school day
   B. Less than 1 hour per day
   C. 1 hour per day
2. On an average school day, how many hours do you play video or computer games or use a computer for something that is not school work? (Count time spent on things such as Xbox, PlayStation, an iPod, an iPad or other tablet, a smartphone, YouTube, Facebook or other social networking tools, and the Internet.) [MT3h]
   A. I do not play video or computer games or use a computer for something that is not school work
   B. Less than 1 hour per day
   C. 1 hour per day
   D. 2 hours per day
   E. 3 hours per day
   F. 4 hours per day
   G. 5 or more hours per day

[Direct Measurements] Following are three options for direct measurement of MT3 outcome measures. [collapse title="Parental Report of Outdoor Playtime: Parent observation Preschool-age children"]

- How much time did your child spend playing in the yard or street around your house? [MT3a]
- How much time did your child spend playing at a park, playground, or outdoor recreation area? [MT3a]

[collapse title="Pedometers (Guide to Help Step it Up, University of Nevada Cooperative Extension) Adults or children"]http://www.unce.unr.edu/publications/files/hn/2008/fs0832.pdf Pedometers are a cost-effective approach for measuring steps taken by SNAP-Ed participants. Lindsay et al. (2014) recommend a time frame of 1–7 days of pedometer use to establish a baseline average of daily total steps. After being trained on proper pedometer placement, participants are encouraged to wear a pedometer for weeks to calculate new daily averages and measure increases in daily number of steps. [MT3f] [collapse title="Fitnessgram"]
Fitnessgram http://www.cooperinstitute.org/vault/2440/web/files/662.pdf This is the national health related fitness assessment for school-age children grades 4–12. [MT3j] [collapse] Additional evaluation tools to measure MT3 can be found in the SNAP-Ed Library.

Glossary

[glossary]Aerobic activity[/glossary] [glossary]Duration[/glossary] [glossary]Flexibility[/glossary] [glossary]Frequency[/glossary] [glossary]Intensity[/glossary] [glossary]Muscular endurance[/glossary] [glossary]Muscular strength[/glossary] [glossary]Physical activity[/glossary] [glossary]Sedentary behavior[/glossary] [glossary]Structured physical activity[/glossary] [glossary]Unstructured physical activity[/glossary]

Additional Resources or Supporting Citations