Seven-Day Physical Activity Recall

**Activity component(s) assessed:**
Leisure and occupational

**Time frame of recall:**
Past 7 d

**Original mode of administration:**
Interviewer-administered

**Primary source of information:**
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Department of Psychology
San Diego State University
6263 Alvarado Ct., Suite 103
San Diego, CA 92120

**Primary reference:**

**RELIABILITY AND VALIDITY STUDIES**

**TABLE 39. Reliability studies of the Seven-Day Physical Activity Recall.**

<table>
<thead>
<tr>
<th>Reference</th>
<th>Methods</th>
<th>Sample</th>
<th>Summary Results</th>
</tr>
</thead>
<tbody>
<tr>
<td>Gross et al. (4)</td>
<td>I. Relationship between first test and two-week retest of questionnaire scoring (total kcal) of videotaped interviews (intra-class correlations)</td>
<td>21 interviewers between the ages of 19 and 52 yr: 75% physical education teachers, 30% male</td>
<td>0.99</td>
</tr>
<tr>
<td></td>
<td>II. Relationship between first test and same-day retest with two different interviewers (Pearson correlations)</td>
<td>20 subjects between the ages of 13 and 50 yr</td>
<td>0.86</td>
</tr>
<tr>
<td>Sallis et al. (11)</td>
<td>Relationship between first test and 2-wk retest (Pearson correlations)</td>
<td>53 men and women with mean (±SD) ages of 41 ± 16 and 39 ± 16 yr, respectively</td>
<td></td>
</tr>
<tr>
<td>Dishman and Steinhardt (3)</td>
<td>Relationship between first test and 9-wk retest (correlation coefficients)</td>
<td>163 college students</td>
<td></td>
</tr>
<tr>
<td>Sallis et al. (8)</td>
<td>Relationship between first test and second test within 7 d for overall kcal/d (correlation coefficients)</td>
<td>102 male and female 5th, 8th, and 11th grade students: 69% White, 12% Black, 10% Latino, and 9% Asian</td>
<td></td>
</tr>
<tr>
<td>Jacobs et al. (5)</td>
<td>Relationship between first test and one-month retest for weekly hours or daily MET-min of various activity realms (Pearson correlations adjusted for gender)</td>
<td>74 men and women predominantly Caucasian, between the ages of 21 and 59 yr</td>
<td></td>
</tr>
<tr>
<td>Rauh et al. (7)</td>
<td>Relationship between first test and 2-wk retest (correlation coefficients)</td>
<td>45 Latinos between the ages of 18 and 55 yr</td>
<td></td>
</tr>
<tr>
<td>Sallis et al. (14)</td>
<td>Relationship between first test and same day retest with different interviewers (correlation coefficients)</td>
<td>43 children and adults</td>
<td></td>
</tr>
</tbody>
</table>

*P < 0.05.
†No P value reported.
TABLE 40. Validation studies of the Seven-Day Physical Activity Recall.

<table>
<thead>
<tr>
<th>Reference</th>
<th>Methods</th>
<th>Sample</th>
<th>Summary Results</th>
</tr>
</thead>
<tbody>
<tr>
<td>Taylor et al. (16)</td>
<td>Relationships between 7-Day Recall score and self-report log for weekend (WEND) and weekday (WDAY) (correlation coefficients)</td>
<td>30 men between the ages of 34 and 69 yr</td>
<td>Moderate activity: 0.70* 0.75* 0.69* Hard/very hard activity: 0.39*</td>
</tr>
<tr>
<td>Wallace et al. (18)</td>
<td>Comparison of 7-Day Recall with direct observation (percent accuracy)</td>
<td>11 Caucasian boys between the ages of 11 and 13 yr living at a camp for overweight children</td>
<td>Reported activities: 46% Intensity of activity: 75%</td>
</tr>
<tr>
<td>Sallis et al. (8)</td>
<td>Relationship between hours of recalled very hard activity and heart rate monitoring time periods ≥100 beats/min (correlation coefficients)</td>
<td>93 male and female 5th, 8th, and 11th grade students from a sample of 102 students: 69% White, 12% Black, 10% Latino, and 9% Asian</td>
<td>5th grade: 0.29* 8th grade: 0.45* 11th grade: 0.72*</td>
</tr>
<tr>
<td>Dishman and Steinhardt (3)</td>
<td>Relationship between 7-Day Recall and 7-d activity log (Pearson correlation)</td>
<td>158 college students</td>
<td></td>
</tr>
<tr>
<td>Blair et al. (2)</td>
<td>Relationships between 7-Day Recall and energy intake from diet (Spearman correlations)</td>
<td>495 men and 545 women between the ages of 16 and 74 yr</td>
<td>Men: 0.16* Women: 0.09*</td>
</tr>
<tr>
<td>Jacobs et al. (5)</td>
<td>Relationships between 7-Day Recall indices and maximum oxygen consumption (VO2max), % body fat (BF), Caltrac (CAL; MET-min/day), and total 4-week activity history (FWH; MET-min/day) (Spearman correlations)</td>
<td>41 men participating in an exercise intervention group</td>
<td>VO2max: 0.30* 0.21* 0.23* 0.09* BF: 0.33* 0.33* 0.33* 0.20* Miles run: −0.11 −0.50* −0.11</td>
</tr>
<tr>
<td>Rauh et al. (7)</td>
<td>Relationship between the 7-Day Recall and Caltrac activity monitor counts</td>
<td>45 Latinos between the ages of 18 and 55 yr</td>
<td>Moderate: 0.38* Hard: 0.28* Very hard: 0.43* kcal/kg/wk: 0.57*</td>
</tr>
</tbody>
</table>

* P < 0.05.
| Authors indicated that statistical significance was achieved for coefficients of about 0.20–0.25. |
# The Seven-Day Recall

**PAR#: 1 2 3 4 5 6 7 Participant**

**Interviewer**

**Today is**

**Today's Date**

1. Were you employed in the last seven days?  **0. No (Skip to Q#4)  1. Yes**
2. How many days of the last seven did you work?  **___ days**
3. How many total hours did you work in the last seven days?  **___ hours last week**
4. What two days do you consider your weekend days?  **(mark days below with a squiggle)**

## WORKSHEET

<table>
<thead>
<tr>
<th>DAYS</th>
<th>1</th>
<th>2</th>
<th>3</th>
<th>4</th>
<th>5</th>
<th>6</th>
<th>7</th>
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<tbody>
<tr>
<td>SLEEP</td>
<td>Moderate</td>
<td></td>
<td></td>
<td></td>
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<td></td>
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<tr>
<td></td>
<td>Very Hard</td>
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<tr>
<td>MORNING</td>
<td>Moderate</td>
<td></td>
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<tr>
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<tr>
<td></td>
<td>Very Hard</td>
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<tr>
<td>AFTERNON</td>
<td>Moderate</td>
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<td>Very Hard</td>
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<tr>
<td>EVENING</td>
<td>Moderate</td>
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<tr>
<td></td>
<td>Very Hard</td>
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<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Total Min Per Day</td>
<td>Strength:</td>
<td></td>
<td></td>
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<td></td>
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<td></td>
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<tr>
<td>Flexibility:</td>
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</tbody>
</table>

4a. Compared to your physical activity over the past three months, was last week's physical activity more, less or about the same?  **1. More**  **2. Less**  **3. About the same**

**Worksheet Key:**

- An asterisk (*) denotes a work-related activity.
- A squiggly line through a column (day) denotes a weekend day.
- **Rounding:**
  - 10-22 min. = .25
  - 1:08-1:22 hr/min. = 1:25
  - 23-37 min. = .50
  - 38-52 min. = .75
  - 53-1:07 hr/min. = 1:0
INTERVIEWER:

Please answer questions below and note any comments on interview.

5. Were there any problems with the 7-Day PAR interview? 0. No 1. Yes (If yes, please explain.)

Explain any problems you had with this interview:

______________________________________________________________________________________________

______________________________________________________________________________________________

______________________________________________________________________________________________

6. Do you think this was a valid 7-Day PAR interview? 0. No 1. Yes

7. Please list below any activities reported by the subject which you don't know how to classify.

______________________________________________________________________________________________

______________________________________________________________________________________________

______________________________________________________________________________________________

8. Please provide any other comments you may have in the space below.

______________________________________________________________________________________________

______________________________________________________________________________________________

______________________________________________________________________________________________

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______________________________________________________________________________________________


INSTRUCTIONS

Comprehensive instructions are included below in the Project GRAD Manual, courtesy of Dr. James F. Sallis.

Project GRAD Seven-Day Physical Activity Recall Interviewer’s Manual

Contributors
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HISTORICAL BACKGROUND

The Seven-Day Physical Activity Recall (PAR) interview was originally developed for use in the Stanford Five-City Project in the early 1980s (11). Because it is a general-purpose measure of physical activity that has been evaluated many times over the years, it is widely used in epidemiologic, clinical, and behavior change studies.

The methodology has evolved a great deal over the years, because of accumulated experience, changing needs of studies, and changing concepts of physical activity and health. That process of evolution continues. In the Stanford
Five-City Project interviewers requested subjects to report cumulative sleep and moderate, hard, and very hard activities for the previous 5 weekdays and 2 weekend days. The protocol for this method was published by Blair (1). Blair’s chapter also contains the basic instructions for computing kilocalories per kilogram per day of energy expenditure. Baranowski and colleagues working on the Texas Family Health Project (6) made a major modification by asking subjects to report activities separately for each of the past 7 days. To provide cues to assist memory, activities were recalled for morning, afternoon, and evening of each day. Sallis and colleagues in the San Diego Family Health Project (14) made further modifications. To expand the PAR beyond the assessment of continuous physical activity, a rule was instituted to score activities only if they totaled 15 min or more in a single intensity category for one portion of the day. Work and leisure activities were coded separately. These changes, a revised interviewer protocol, and a procedure for training interviewers, are described in an article by Gross et al. (4). This version was evaluated in children and adolescents (8). The interviewer checklist was added for the San Diego Study of Children’s Activity and Nutrition (SCAN) (13), so supervisors could evaluate the quality of audiotaped interviews and provide feedback and retraining to interviewers.

The next changes in the interviewer protocol occurred in Project PACE, when the PAR was used to evaluate physical activity counseling in primary care. The interview was adapted for telephone administration, and other revisions were made in response to common problems reported by interviewers. The list of example activities for each intensity category was no longer used, and an alternative method of defining intensity levels was needed. A basic guideline was developed that “moderate” intensity activities produce feelings similar to those accompanying brisk or fast walking; “very hard” activities produce feelings similar to those of running or jogging; and “hard” activities produce feelings that are between the feelings that go with moderate and very hard activities. A decision was made not to use symptoms of exertion, such as sweating or breathing hard, to define intensity because symptoms are dependent on fitness levels and environmental conditions.

The current interviewer manual was developed for Project GRAD, a study of physical activity promotion in university students. This study also relies on telephone administration. The principal modification of the protocol for the GRAD study was to add specific questions on participation in strength and flexibility exercises, because these are key outcomes of the study. To increase sensitivity to walking, the guidelines for moderate physical activity were changed to walking at a normal pace. This manual contains instructions on how to deal with a wide range of questions and problems that have been encountered over the years. New materials have been added to make the interview as structured and consistent across interviewers as possible. This manual contains an introduction, an explanation of interview techniques used in training, a suggested script that is used primarily as a guide, a sample data collection form, and the interviewer checklist. The current manual reflects accumulated experience with approximately 75 interviewers in the San Diego studies.

A comparison of the current interviewer protocol and data collection form with the original version published in Blair (1) demonstrates the extent to which the PAR has evolved. We have found the basic format of the PAR to be adaptable to differing needs of the various studies and populations. The current version meets the needs of the GRAD study, but other studies are likely to have different needs. For example, the multi-center Activity Counseling Trial (ACT) used the current PAR manual in developing another version that was customized to suit that study. When using the PAR in studies, investigators are encouraged to report the source of the basic protocol and to describe any changes that were made.

INTRODUCTION

The PAR is a semi-structure interview that estimates an individual’s time spent in physical activity, strength, and flexibility activities for the 7 days prior to the interview. The general interview format is as follows: An interviewer asks the participant to recall time spent sleeping and doing physical activities for the past 7 days. The interviewer guides the participant through the recall process, day-by-day, to determine duration and intensity of the physical activities.

Although the PAR is designed to include a variety of physical activities, such as aerobic exercise, work-related activities, gardening, walking, recreation, and leisure-time physical activities, only physical activities of moderate intensity and greater are counted. From hours spent in moderate, hard, and very hard intensity physical activities, total kilocalories/day can be estimated.

PURPOSE

The purpose of this manual is to standardize the interview process and to increase agreement among interviewers. A standardized interview helps to decrease error by maintaining consistency across interviewers and limiting an interviewer’s bias.
INTERVIEWER’S ROLE

The role of the interviewer is to gather accurate information from the participant. This is not always easy. If a standard format is not followed, an interviewer might gather information that is biased by subjective thoughts and feelings he/she may have about what physical activity a participant actually does or does not perform. Following a standard format will minimize guessing and over- or underestimating a participant’s physical activity.

INTERVIEWER SKILLS

To ensure that the PAR’s data is indicative of a participant’s energy expenditure, it is necessary to develop good interview methods and skills. It is important to ask appropriate open-ended questions, have good timing, prompt often without leading the participant, and provide cues and definitions when necessary. Many people find it difficult to recall the past week’s physical activity because it occurs throughout the day, in different settings, and might not be a discrete event. However, with training and practice, an interviewer develops the skills necessary to facilitate recall of past events.

A good interviewer uses an appropriate amount of prompting and questioning to gather accurate information. For example, some participants find it harder than others to remember what he or she was doing 7 days ago. By asking the appropriate questions, a good interviewer can help “bring the participant back” to that day and setting and help the participant restructure what he or she was doing. Examples of open-ended questions that help a participant recall his or her day might be, “What were you doing Tuesday morning? You said that you got up at 6:00 a.m. Did you go anywhere after that? . . . Did you watch any particular TV show? . . . What did you make for dinner? . . . What did you do that evening?”

A participant does not need to state every day’s details but should think to him or herself what he or she was doing. If a participant is going into excessive detail, remind him or her that he or she does not need to account for every minute. It is appropriate to ask, “How much time in general?”

A good interviewer controls the pace and structure of the interview but does not control the participants’ answers. Be impartial and allow the participant to decide how he or she is going to answer. For example, when a participant is asked to choose the intensity of a physical activity, only the participant should decide how to rate it. Be aware of your own opinions so that you do not manipulate the information. Remember to record what is heard, not what you think it should be.

PHYSICAL ACTIVITY

Measuring daily physical activity accurately is a difficult task because participants do not always define what they are doing as physical activity, they do not always remember exactly what they did, and many daily activities, such as walking, do not have a distinctive start and finish.

When measuring physical activity, it is necessary to consider the frequency, intensity, time, and type of the physical activity. (The F.I.T.T. acronym is a helpful memory tool.) The PAR interview focuses on collecting data on intensity, time or duration, and type of activity. Intensity and time will be discussed in detail later. Although the specific type of activity is not recorded, the PAR differentiates between occupational physical activities, such as stocking shelves, waitressing, and construction work, and leisure activity (i.e., all other physical activities that are not done during paid work hours.)

Most participants spend the majority of their waking hours in light activity. Many tiring household or occupational tasks do not have a very high energy cost. Store clerks may report feeling fatigued from standing all day, but the energy cost is minimal.

With occupational tasks, it is necessary to clarify the time spent in physical activity by asking about breaks. Time spent on lunch, coffee breaks, and standing breaks can be subtracted from physical activity time. For example, a store clerk reports stocking shelves for 8 h and is asked if he or she took any breaks. After recalling time spent on lunch and just “standing around,” the clerk reports spending 6 of the 8th doing moderate physical activity.

DEVELOPING INTERVIEWER SKILLS (PROCEDURES)

The remainder of the manual will explain how to administer the Seven-Day PAR Interview. Read the Interviewer Preparation Guidelines and telephone script and listen to recorded PAR interviews to gain a better understanding of what is involved. After listening to a few interviews, try scoring an interview and practicing with friends and relatives. To determine if you are proficient, tape an actual interview, record the data on the worksheet, and score the Interviewer Checklist by listening to your interview tape. If you miss two or less techniques on the Interviewer Checklist and you have correctly scored your PAR worksheet, then you may begin using the PAR interview. It is highly recommended that
you continue taping and reviewing your own interviews, using the Interviewer Checklist as well as having a second proficient interviewer check your work.

Interviewer Preparation Guidelines

Before starting the interview, record the participant’s name, social security or I.D. number, the interviewer’s name, and the date. Also, write the day in the appropriate space and circle the number that corresponds to how many times the PAR has been administered to that participant. Usually, the PAR is administered more than once to a participant. For example, 2 wk of physical activity could be sampled at baseline and at post-intervention to better define physical activity levels at each measurement point. Also, interobserver or test-retest reliabilities require more than one administration. It is important for researchers and data entry to know if it is the first, second, or third time the participant has been interviewed.

Establishing the days of the week for the recall. Label the worksheet with the appropriate days of the week. It has been found that recalling events is easier when working backwards from the present day to 1 wk ago from today. Record yesterday above column 7 [7]. Work backwards so that column 1 [1] reads 1 wk ago from today.

Example: Today is Tuesday, yesterday was Monday, so Monday would appear over column 7. Sunday would appear over column 6 and so on. Tuesday, 1 wk ago today, would appear over column 1.

Inform the participant that you will begin asking questions about yesterday and work backwards through the previous 7 d.

Explain to the participant. Before starting the interview, the interviewer needs to briefly explain to the participant what is involved in the interview process.

1. He or she is to think of the physical activities done during the past 7 d. Stress that this is a recall of actual activities for the past week, not a history of what he or she usually does.
2. What physical activities we are not considering. We are not considering light activities, such as desk work, standing, light housework, softball, bowling, strolling, and stop-and-go walking such as grocery or window shopping. Clarify that we are interested in occupational, household, and sports activities that make you feel similar to how you feel when you are walking at a normal pace.
3. He or she will be asked to categorize the intensity of the activity into one of three groups: moderate, hard, or very hard. Explain that the moderate category is similar to how you feel when you are walking at a normal pace, walking as if you were going somewhere, that the very hard category is similar to how you feel when you are running, and the hard category just falls in between moderate and very hard. In other words, if the activity in question seems harder than walking but not as strenuous as running, place it in the hard category. (Note that walking at a normal pace is relevant to the subject doing the recall.)

Interview Questions

Start the interview by asking the questions on the top of the PAR Worksheet.

Employment information. Start the interview by asking the participant the employment question(s) on the 7-day PAR Worksheet.

1. Were you employed in the last 7 d?
2. How many days of the last 7 did you work?
3. How many total hours did you work in the last 7 d?

Weekend days. Determine the participant’s weekend days by asking what 2 d of the week he or she considers to be his weekend days. Most people consider Saturday and Sunday to be their weekend days, but they may be different for some participants. Some participants state that they do not have weekend days because they work all week or never have 2 d off; in this case, ask what 2 d are most like weekend days. If only 1 d is given as a weekend day, then ask what other day is most like a weekend day.

Record the weekend days on the lines provided on the worksheet (question 4). Draw squiggly lines through the 2 d the participant reports as his or her weekend days.

Sleep. Determine the hours spent “sleeping” for the week.

Define sleep. It is defined as from the time you get in bed to the time you get out of bed. The participant may not have been sleeping the entire time. They might have been reading, watching TV, or doing paperwork. The goal is to estimate an individual’s hours spent in bed/night. The participant does not need to be asleep the entire time, because lying down and sleeping burn approximately the same number of kilocalories. Time spent in sexual activity is not counted.

How to collect sleep information. Start with yesterday and work backward through the previous 7 days.
1. Last night, what time did you go to bed?
2. What time did you get out of bed this morning?

**Record sleep.**

1. Record the times he or she went to bed and got up in the morning, i.e., 10 p.m.—6 a.m.
2. Determine hours spent in bed to the nearest ¼ h.
3. If you were giving the interview on Tuesday, the first night of sleep recorded would be Monday night’s. The participant goes to sleep Monday night and wakes up Tuesday morning. The total hours slept in this time frame would be recorded for Monday.

**Recording physical activity.** Begin by explaining that we are going to record physical activities performed during three segments of each day. Dividing the day into segments provides a frame of reference that may improve the subject’s recall. Also, some researchers are interested in when physical activity is performed.

Define the segments of the day: “Morning is considered from the time you wake up in the morning to the time you have lunch, afternoon is from lunch to dinner, and evening is from dinner until the time you go to bed.” If a meal is skipped, it is appropriate to define morning from the time a person wakes up to 12:00 p.m., afternoon from 12:00 p.m. to 6:00 p.m., and evening from 6:00 p.m. to bed.

Ask about each day, starting with yesterday and working backward.

To help recall significantly, “set the stage” for each day. Begin by asking, “What did you do and where did you go Tuesday morning?” (See Section G for more on this topic.)

**Intensity:** Ask only about activities that are at least the intensity of walking, but include walking.

1. Explain that the moderate category is similar to how you feel when you are walking at a normal pace, walking as if you were going somewhere; that the very hard category is similar to how you feel when you are running; and that the hard category just falls in between moderate and very hard. (Note that walking at a normal pace is relevant to the participant doing the recall.)
2. Ask what the intensity was for each and every activity. The exception is running, and only running. If a person states that he or she jogged or ran, then that activity goes in the very hard category. It is not necessary to give the intensity guidelines. If a person categorizes running of jogging as moderate or hard, it is placed in the very hard category. This does not apply for walking because it is difficult to know if it was a stroll, normal, or brisk walk. For all other activities, baseball, swimming, surfing, painting, digging, etc., provide the intensity guidelines for comparison.
3. **Walking and running provide good frames of reference for classifying activities:** Everyone should be familiar with the relative intensity of walking and running and, therefore, should be able to compare subjectively the physical activity he or she did to running or walking. If an activity seems to be about as strenuous to that individual as walking at a normal pace, then the activity should be coded as moderate. Running falls into the very hard category. If some activity seems about as strenuous to the individual as running, classify the activity as very hard. If the activity in question seems harder than walking but not as strenuous as running, place it in the hard category.
4. For most activities, the rate at which it is performed can make a significant difference in the energy cost. For example, it is possible to play singles tennis without moving around very much, therefore, not spending much energy. Use comparisons to walking and running so the participant can rate how hard he did the activity.
5. **Walking:** The interview needs to be sensitive to walking. Although people walk many times during the day, not all walks are counted. For example, we do not want to add up each time a person walks to the refrigerator. The specific rule for walking is that only walks of 5 min or longer are considered; count, then, only walks of a 5-min duration. However, that 5-min bout of walking can only be counted if another 5-min bout occurs in the same segment of the day in the same intensity category. For any activity to be counted, it must add up to at least 10 min in one intensity category for one segment of the day. (See 5a.)

**Duration**

1. Scoring: As with walking, a minimum duration has to be met for a physical activity to be recorded. The general rule is that a participant must do 15 min in a given intensity category in a given segment of the day. However, if the individual does at least 10 min of activity for that portion of the day, this amount is recorded and rounded to 15 min.
2. **Rounding Rules:** A rounding table is provided on the PAR worksheet. This may be used for a quick reference. Examples of how rounding is used are shown below:

   10 min and 20 min are rounded to 15 min = .25
   25 min and 35 min are rounded to 30 min = .50
1. Were there any problems with this survey? Yes or No. If yes, please explain.

2. Do you think this was a valid interview? Yes or No. If no, please explain.
3. Please list any activities reported by the subject that you do not know how to classify. Be detailed. Ask the name of the activity, the duration (not including breaks), and how the activity compares to walking and running.

Using the worksheet

1. Make sure to label the worksheet with the appropriate days of the week.
2. Record time of sleep in spaces provided on worksheet. Time segments should be recorded in 15-min (.25), 30-min (.50), 45-min (.75), or 1-h (1.0) time blocks.
3. Record time of activity in spaces provided on worksheet for morning, afternoon, and evening at the various levels of intensity.
4. Differentiate work-related activities with an asterisk or star. The asterisk should be placed to the right of the number for data entry purposes. If both a work- and a non-work-related activity occurred in the same intensity and same segment of the day, split the worksheet cell into two by drawing a diagonal line through it.
5. Draw a squiggly line down the column of the individual’s weekend days. A yellow highlighter can be used in addition to or in place of the squiggly line to help aid data entry. (Note that any other highlighter color may not photocopy well.) Remember that weekend days are not always Saturday and Sunday.

Summarizing the worksheet (optional)

1. Tally weekdays and weekend hours of sleep separately. Record the separate totals of weekday and weekend hours of sleep under the appropriate column on the worksheet.
2. Tally weekday, weekend, and work-related activity hours by row. On the worksheet differentiate weekday, weekend, and work-related activities by totaling them in the appropriate column.
3. Make sure to add the totals of each row at various intensities of activities continuing to take care to separate weekday, weekend, and work hours.
4. Record totals on the Summary Recall sheet. Record “non-work” activity totals under “leisure” and record “work” and “weekend” activity totals under the appropriate columns. Record sleep totals for weekdays and weekends.
5. Recheck to ensure that no mathematical or other errors have been made.

How to gather accurate information on physical activity

Clarify. For example, a participant reports that he ran for an hour on the weekend. Did he run 1 h on Saturday or did he run on Saturday and Sunday for a total of an hour? Always clarify, if it is not clear, what the interviewee is reporting. To clarify, it is helpful to restate what the participant reported.

Cue and prompt. Some people have trouble recalling or pinpointing the moderate-to-very hard activities that they have engaged in over the past 7 d. In such cases, try to cue them by asking them general questions. For example, “How about any housework that made you feel similar to brisk walking?”, “Did you take any walks?”, “How do you get to and from work?”, “Did you participate in any sports or any vigorous family activities?”, “Did you do any vigorous home repair or gardening?”

Use cues as much as possible to aid in the subject’s recall of the past week. For example, “Did you want to add any other household, occupational, or sports activities that you participated in the past week and that you may have overlooked?”, “Did you take any walks you did not tell me about?”, “Are there any activities that you are unsure about?”.

Review. Take a retrospective look back at each day by asking the respondent whether there is any activity he or she may have forgotten to mention. Provide a moment of silence to allow the participant to search his or her memory.

Remain neutral to any comments made by the interviewee. Do not reply or, if you do, use a neutral word such as “OK.” Do not encourage or praise the interviewee. It is a natural response to praise someone who does a lot of exercise. If an interviewer accidentally says “good,” it is possible to correct the mistake by adding, “You remembered really well.”

Special cases. If the last week was totally atypical—for example, the subject was in the hospital or in bed, involved in a family or work crisis, or traveling—it is permissible to go to the previous week for the survey. Do not take this action lightly; use it only in unusual circumstances. Using this option compromises consistency across interviews and interviewers. For example, one interviewer may resort to this option if the participant was sick for the weekend, whereas another interviewer may resort to it if the participant was sick for 4 d. In both cases, the interviews should be completed to maintain consistency and eliminate bias.

If a participant has weekdays instead of weekends off from work—for example, Tuesday and Wednesday, instead of Saturday and Sunday—ask the participant which days he or she considered most like weekend days. If the participant considers only one day a weekend, ask the participant which other day of the week is most like a weekend day. If the participant works 7 d/wk and insists that he or she does not have any weekends, again, ask him or her to choose the days most similar to weekend days. Allow the participant to decide which is the most appropriate day to consider his or her weekend day.
Important procedures the interviewer often overlooks

1. Ask about each day in turn, starting with yesterday and working backwards. “OK. Today is Tuesday, yesterday was Monday.” Also make sure to label the worksheet with the appropriate days of the week. This makes logging the subject’s activities much easier. Also, connecting activities to specific days of the week aids the subject in recall of events.

2. Before asking about activities, in general ask what he or she did that day. “Where did you go and what did you do on that day?” Thinking about the day’s activities or unusual events helps recall activities specific to that day.

3. Ask separately about each segment of the day. “What activities did you do in the morning? in the afternoon? in the evening?” Again, this helps the participant remember more clearly.

4. Several times during the interview, remind participants to think about work, household, and leisure/sport activities.

5. For walking, count only walks of 5-min in duration. However, that 5-min bout of walking can only be counted if another 5-min bout occurs in the same segment of the day in the same intensity category. For any activity to be counted, it must add up to at least 10 min in one intensity category for one segment of the day.

6. At the end of the interview, ask the participant if he or she forgot any activities.

7. **The interviewer should not guess what intensity an activity is.** The subject is responsible for classifying his or her physical activities into intensity categories. The interviewer is responsible for providing the definitions of the intensity categories so that the subject can rate the intensity. Use the rule: running is “very hard”; brisk walking is “moderate”; and “hard” is in between.

8. The purpose of the PAR is to estimate energy expenditure, so an activity does not have to be continuous to be coded. Activities are counted if they add up to at least 10 min in one intensity category (e.g., hard) for one segment of the day (e.g., Wednesday afternoon). If 10 min of activity is spread out over two or more segments of the day, it is not counted. This rule allows the interviewer to code sporadic activities, but it does not force one to code every single minute of activity during the day, which would be too time consuming.

9. Weekend days should be marked with a squiggly line down the column.

10. If a work-related activity occurs in the same worksheet cell as a leisure activity, the cell should be split with a diagonal line. Asterisks should always be placed to the right of work-related activities, e.g., “(.75*)”.

11. For accuracy and data entry purposes, it is useful for someone else to check the interviewer’s arithmetic, spelling of the participant’s name, and identification number.

*(Instructions for the interview were adapted from Blair (1) and Taylor et al. (17).)*

**PHONE SCRIPT FOR SEVEN-DAY PHYSICAL ACTIVITY RECALL (PAR)**

**Introduction**

The next set of questions that I will be asking you refers to the physical activities you’ve engaged in during the past week.

**Work**

I am going to start by asking you a few questions about your employment. *(Ask employment questions on top of PAR worksheet.)*

**Weekend Days**

What 2 d of the week do you consider to be your weekend days? Most people consider Sat. and Sun. to be their weekend days, but it may be different for you.

Record the 2 weekend days in the space provided on the worksheet and draw squiggly lines through the 2 weekend days.

**Sleep**

Now I’d like to look at the time you spent sleeping in the past week. By sleeping, I mean the time you went to bed one night and the time that you got out of bed the next morning. You may not necessarily have been asleep the entire time you were in bed. You may have been reading or watching television.

Today is (i.e., Monday), so yesterday was (i.e., Sunday).

What time did you go to bed *(Sunday) night* and get up *(Monday) morning?
Do this for each day of the 7-d recall. Write down days of week and sleep times reported by the participant in the space provided on the top of the worksheet. Calculate total time spent sleeping after completing the interview.

Physical Activity

I am going to ask you about the physical activities you engaged in during the past 7 d, starting with yesterday and going back 7 d. In doing so, please remember, this is a recall of actual activities for the past week, not a history of what you usually do.

We are not considering light activities, such as desk work, standing, light housework, softball, and bowling. We are considering occupational, household, recreational, and sports activities that make you feel similar to how you feel when you are walking at a normal pace. For example, slow stop-and-go walking such as window shopping, is not included; however, walking at a normal pace to do an errand is included.

Intensity Guidelines

I will ask you to categorize the intensity of each physical activity you do into one of three groups, moderate, hard, or very hard:

- The moderate category is similar to how you feel when you’re walking at a normal pace.
- The very hard category is similar to how you feel when you are running.
- The hard category just falls in between.
- In other words, if the activity seems harder than walking but not as strenuous as running, it should go in the hard category.

Segments of the Day

I am going to ask you about the physical activities you engaged in during three segments of the day, which includes morning, afternoon, and evening. Morning is considered from the time you get up in the morning to the time you have lunch; afternoon is from lunch to dinner; and evening is from dinner until the time you go to bed.

Setting the Stage

Getting people to think about their day in general will help them remember all of their activities. Always spend some time “setting the stage” for each day.

Today is (i.e., Monday), so yesterday was (i.e., Sunday). Think about what you did (Sunday) morning. Where were you? Think about what you usually do. Did you do anything unusual? Did you do any physical activity (Sunday morning)?

Duration

The activity in question should be performed for a total of 10 min, intermittently or continuously, during one segment of the day, morning, afternoon, or evening (except for strength and flexibility, in which the total amount of minutes is recorded)

How long did you do that activity?

Make sure that the activity excludes the time that they stood still or took breaks.

How much of that time was spent standing still or taking breaks?

Intensity

Always refer to intensity guidelines: “Did that activity feel similar to how you feel when you are walking or running or is it somewhere in between?”

Did that activity make you feel similar to how you feel when you are walking or running, or is it somewhere in between? (How would you rate the intensity of that activity? Did it feel similar to how you feel when you walk or run or somewhere in between? Keep in mind that a moderate intensity feels similar to walking at a normal-to-brisk pace, and very hard feels similar to running.) Think about what you did in general (Sun) afternoon. Did you do any physical activity?
Strength and Flexibility

Record the total number of minutes spent doing strength activities and the total minutes spent doing flexibility activities separately for each day. Make sure that the activity excludes the time during which the participant or stood still or took breaks.

Now I am going to ask you about activities you might do for building strength or improving flexibility. Strength activities include push-ups, pull-ups, sit-ups, lifting free weights, and using weight machines. Flexibility activities include holding stretches for several seconds and yoga. Did you do any strength or flexibility activities? How many minutes did you spend on each? (Record separately at the bottom of the worksheet.)

At the End of Each Day Ask

Are there any physical activities that you might have forgotten? Did you do any physical activity at work? any other recreational or sport activities? housework or gardening? Were there any other walks that you might have taken?

On the Last Day of Recall Ask

Take a moment to think back over the course of the week and think of any activities that you may have forgotten.

Last Question

The last question I am going to ask you is, “Compared to your physical activity over the past 3 mo, was last week’s physical activity more, less, or about the same?”

Record answer on bottom of worksheet.

Summary

- Ask about the subject’s physical activity during each segment of the day for each of the 7 d of the recall.
- Start with the previous day and go backwards. Record each day’s recall in turn.
  a. Set the stage by having participants recall what they did in general.
  b. Record separately for the morning, the afternoon, and the evening.
  c. Ask if they missed any activities.
- After each day be sure to ask about strength and flexibility and about any activities that may have been forgotten.
- Record everything on the worksheet.
- Record on the worksheet the time and the intensity of the activity. Make sure to record the activity on the worksheet in the correct segment of the day.
- Complete the 7-Day PAR interview by asking the question at the bottom of the worksheet regarding physical activity over the past 3 mo.
- On the back of the worksheet, answer the questions and note anything the participant stated that might be helpful in interpreting the data.
- It is OK for the subject to add or change a previous report later in the interview.

Par Review Checklist

Interviewer: __________
Reviewer: __________
Date: __________

Interviewer Techniques
Yes or No
Comments

1. Ask questions about work schedule. __________
2. Defines “sleep” correctly. __________
3. Reviews sleep habits, beginning with previous night. __________
4. Explains intensity guidelines (Walk = moderate, run = very hard.) __________
5. Explains that stop-and-go walking is not included if intensity is not at least moderate.
6. Asks in general what subject was doing each day, using context cues for better recall.
7. Asks about activities that may have been forgotten for each day. __________
8. Asks about strength and flexibility activities for each day. __________
9. Asks which days are considered weekends.
10. Asks separately about morning, afternoon, and evening activities.
11. Clarifies which activities are job-related.
12. Prompts subject to define intensity level by referring “zero intensity” guidelines.
13. Makes clear the length of activities.
15. Asks about any activities for the week that may have been forgotten.

Scoring
1. Puts times in correct places on worksheet.
2. Records activities that add up to at least 10 min in one intensity category during one segment of day (i.e., three 5-min “bouts” of activity = 15 min)
3. Marks weekend days.
4. Marks job-related activities.
5. Uses correct arithmetic.
6. Uses correct rules for rounding of values.
7. Compare scoring of interviewer and reviewer. (Note reasons for discrepancies.)

Reviewers Comments
Strengths:

Needs improvement:

The authors gratefully acknowledge Neville Owen and Steve Blair for their helpful comments.

CALCULATIONS

The number of hours spent in sleep and different activity levels are obtained. Time spent in sleep (1 MET), light (1.5 METs), moderate (4 METs), hard (6 METs), and very hard (10 METs) activities for the past 7 d are multiplied by their respective MET values and then summed (9). An estimate of total kilocalories of energy expenditure per day is calculated, as in the following example.

EXAMPLE

Data from the 7-Day Recall:
Sleep: 60.0 h × 1 MET = 60 kcal/kg
Light: 99.5 h × 1.5 METs = 149 kcal/kg
Moderate: 3.5 h × 4 METs = 14 kcal/kg
Hard: 2.5 h × 6 METs = 15 kcal/kg
Very Hard: 2.5 h × 10 METs = 25 kcal/kg

Total weekly energy expenditure = 263 kcal/kg/wk
Total daily energy expenditure = 263 kcal/kg/wk ÷ 7 d/wk = 37.8 kcal/kg/d

For a 70-kg individual: 37.8 kcal/kg/d × 70 kg = 2646 kcal/d

OTHER STUDIES USING THE QUESTIONNAIRE

In addition to the references cited above, other studies have used the Seven-Day Physical Activity Recall Questionnaire (12,15,19).

REFERENCES


