Global Physical Activity Questionnaire
(GPAQ)

Department of Chronic Diseases and Health Promotion
Surveillance and Population-Based Prevention
World Health Organization
20 Avenue Appia, 1211 Geneva 27, Switzerland
For further information: www.who.int/chp/steps

Global Physical Activity Questionnaire (GPAQ)

Overview

Introduction

The Global Physical Activity Questionnaire was developed by WHO for physical activity surveillance in countries. It collects information on physical activity participation in three settings (or domains) and sedentary behaviour. These domains are:

- Activity at work
- Travel to and from places
- Recreational activities

Using GPAQ

All the questions must be asked if you are using GPAQ, skipping questions or removing any of the domains will restrict the results that you are able to calculate.

Prior to using GPAQ you should review the question by question section. This section, which follows the actual questions, will guide the interviewer in asking the questions and recording responses.

GPAQ version 1

This document provides information on version 2 of the Global Physical Activity Questionnaire. It is advised that you use version 2 of GPAQ.

If you have already used GPAQ 1 and need advise on analyzing this information please refer to GPAQ version 1 section of this document.

Calculating and cleaning physical activity data

There is an analysis section at the end of this document which describes how to clean and analyze the physical activity data. This section uses the coding column as a reference for all the calculations

METs

METs are commonly used in the analysis of physical activity.

MET (Metabolic Equivalent): The ratio of the work metabolic rate to the resting metabolic rate. One MET is defined as 1 kcal/kg/hour and is equivalent to the energy cost of sitting quietly.
A MET is also defined as oxygen uptake in ml/kg/min with one MET equal to the oxygen cost of sitting quietly, around 3.5 ml/kg/min.

Coding column for questionnaire

The coding column is used as a guide for analysis of the physical activity data. If you insert this questionnaire into another questionnaire, you may change the question numbers, but do not change the coding column.

Physical Activity

Next I am going to ask you about the time you spend doing different types of physical activity in a typical week. Please answer these questions even if you do not consider yourself to be a physically active person.

Think first about the time you spend doing work. Think of work as the things that you have to do such as paid or unpaid work, study/training, household chores, harvesting food/crops, fishing or hunting for food, seeking employment. *[Insert other examples if needed].* In answering the following questions 'vigorous-intensity activities' are activities that require hard physical effort and cause large increases in breathing or heart rate, 'moderate-intensity activities' are activities that require moderate physical effort and cause small increases in breathing or heart rate.

Questions		Response	Code
Activity at work			
1	Does your work involve vigorous-intensity activity that causes large increases in breathing or heart rate like *[carrying or lifting heavy loads, digging or construction work*] for at least 10 minutes continuously? *[INSERT EXAMPLES] (USE SHOWCARD)*	Yes 1 No 2 *If No, go to P 4*	P1
2	In a typical week, on how many days do you do vigorous-intensity activities as part of your work?	Number of days ⌊__⌋	P2
3	How much time do you spend doing vigorous-intensity activities at work on a typical day?	Hours : minutes ⌊__⌋⌊__⌋ : ⌊__⌋⌊__⌋ hrs mins	P3 (a-b)
4	Does your work involve moderate-intensity activity that causes small increases in breathing or heart rate such as brisk walking *[or carrying light loads*] for at least 10 minutes continuously? *[INSERT EXAMPLES] (USE SHOWCARD)*	Yes 1 No 2 *If No, go to P 7*	P4
5	In a typical week, on how many days do you do moderate-intensity activities as part of your work?	Number of days ⌊__⌋	P5
6	How much time do you spend doing moderate-intensity activities at work on a typical day?	Hours : minutes ⌊__⌋⌊__⌋ : ⌊__⌋⌊__⌋ hrs mins	P6 (a-b)
Travel to and from places			
The next questions exclude the physical activities at work that you have already mentioned. Now I would like to ask you about the usual way you travel to and from places. For example to work, for shopping, to market, to place of worship. [insert other examples if needed]			
7	Do you walk or use a bicycle (*pedal cycle*) for at least 10 minutes continuously to get to and from places?	Yes 1 No 2 *If No, go to P 10*	P7
8	In a typical week, on how many days do you walk or bicycle for at least 10 minutes continuously to get to and from places?	Number of days ⌊__⌋	P8
9	How much time do you spend walking or bicycling for travel on a typical day?	Hours : minutes ⌊__⌋⌊__⌋ : ⌊__⌋⌊__⌋ hrs mins	P9 (a-b)
Recreational activities			
The next questions exclude the work and transport activities that you have already mentioned. Now I would like to ask you about sports, fitness and recreational activities (leisure), [insert relevant terms].			
10	Do you do any vigorous-intensity sports, fitness or recreational (*leisure*) activities that cause large increases in breathing or heart rate like [*running or football,]* for at least 10 minutes continuously? *[INSERT EXAMPLES] (USE SHOWCARD)*	Yes 1 No 2 *If No, go to P 13*	P10
11	In a typical week, on how many days do you do vigorous-intensity sports, fitness or recreational (*leisure*) activities?	Number of days ⌊__⌋	P11
12	How much time do you spend doing vigorous-intensity sports, fitness or recreational activities on a typical day?	Hours : minutes ⌊__⌋⌊__⌋ : ⌊__⌋⌊__⌋ hrs mins	P12 (a-b)

Physical Activity (recreational activities) contd.			
Questions		**Response**	**Code**
13	Do you do any moderate-intensity sports, fitness or recreational *(leisure*) activities that causes a small increase in breathing or heart rate such as brisk walking,(*cycling, swimming, volleyball)*for at least 10 minutes continuously? *[INSERT EXAMPLES] (USE SHOWCARD)*	Yes 1 No 2 *If No, go to P16*	P13
14	In a typical week, on how many days do you do moderate-intensity sports, fitness or recreational (*leisure*) activities?	Number of days ⌊__⌋	P14
15	How much time do you spend doing moderate-intensity sports, fitness or recreational (*leisure*) activities on a typical day?	Hours : minutes ⌊__⌋ : ⌊__⌋ hrs mins	P15 (a-b)
Sedentary behaviour			
The following question is about sitting or reclining at work, at home, getting to and from places, or with friends including time spent [sitting at a desk, sitting with friends, travelling in car, bus, train, reading, playing cards or watching television], but do not include time spent sleeping. *[INSERT EXAMPLES] (USE SHOWCARD)*			
16	How much time do you usually spend sitting or reclining on a typical day?	Hours : minutes ⌊__⌋ : ⌊__⌋ hrs min s	P16 (a-b)

GPAQ Question by Question Guide

CORE: Physical Activity

Next I am going to ask you about the time you spend doing different types of physical activity in a typical week. Please answer these questions even if you do not consider yourself to be a physically active person. There are various domains of activity which need to be included; work, activities in and around the home and garden, to get from place-to-place (transport-related) and recreation (discretionary or leisure-time) exercise or sports activities. This opening statement **should not** be omitted.

The respondent will have to think first about the time she/he spends doing work. Work includes things that he/she has to do such as paid or unpaid work, household chores, harvesting food, fishing or hunting for food, seeking employment. [Insert other examples if needed]

In answering the following questions 'vigorous-intensity activities' are activities that require hard physical effort and cause large increases in breathing or heart rate, 'moderate-intensity activities' are activities that require moderate physical effort and cause small increases in breathing or heart rate.

	Questions	Response	Code
Activity at work			
1	Does your work involve vigorous-intensity activity that causes large increases in breathing or heart rate like *[carrying or lifting heavy loads, digging or construction work*] for at least 10 minutes continuously? *Activities are regarded as vigorous intensity if they cause a large increase in breathing and/or heart rate.* *[INSERT EXAMPLES] (USE SHOWCARD)*	Yes 1 No 2 *If No, go to P 4*	P1
2	In a typical week, on how many days do you do vigorous-intensity activities as part of your work? *"Typical week" means a week when a person is doing vigorous intensity activities and not an average over a period* *Valid responses range from 1-7.*	Number of days ⌊__⌋	P2
3	How much time do you spend doing vigorous-intensity activities at work on a typical day? *Think of one day you can recall easily. Consider only those activities undertaken continuously for 10 minutes or more. Probe very high responses (over 4 hrs) to verify*	Hours : minutes ⌊__⌋⌊__⌋ : ⌊__⌋⌊__⌋ hrs mins	P3 (a-b)
4	Does your work involve moderate-intensity activity, that causes small increases in breathing or heart rate such as brisk walking *[or carrying light loads*] for at least 10 minutes continuously? *Activities are regarded as moderate intensity if they cause a small increase in breathing and/or heart rate.* *[INSERT EXAMPLES] (USE SHOWCARD)*	Yes 1 No 2 *If No, go to P 7*	P4
5	In a typical week, on how many days do you do moderate-intensity activities as part of your work? *Valid responses range from 1-7*	Number of days ⌊__⌋	P5
6	How much time do you spend doing moderate-intensity activities at work on a typical day? *Think of one day you can recall easily. Consider only those activities undertaken continuously for 10 minutes or more. Probe very high responses (over 4 hrs) to verify*	Hours : minutes ⌊__⌋⌊__⌋ : ⌊__⌋⌊__⌋ hrs mins	P6 (a-b)
Travel to and from places			
	The next questions exclude the physical activities at work that you have already mentioned. Now I would like to ask you about the usual way you travel to and from places. For example to work, for shopping, to market, to place of worship. [insert other examples if needed] *The introductory statement to the following questions on transport-related physical activity is very important. It asks and helps the participant to now think about how they travel around getting from place-to-place. This statement **should not** be omitted.*		
7	Do you walk or use a bicycle (*pedal cycle*) for at least 10 minutes continuously to get to and from places? *Circle the appropriate response*	Yes 1 No 2 *If No, go to P 10*	P7
8	In a typical week, on how many days do you walk or bicycle for at least 10 minutes continuously to get to and from places? *Valid responses range from 1-7*	Number of days ⌊__⌋	P8

9	How much time do you spend walking or bicycling for travel on a typical day? *Think of one day you can recall easily. Consider the total amount of time walking or bicycling for trips of 10 minutes or more. Probe very high responses (over 4 hrs) to verify.*	Hours : minutes ⌊_⌊_⌋ : ⌊_⌊_⌋ hrs mins	P9 (a-b)
Recreational activities			
The next questions exclude the work and transport activities that you have already mentioned. Now I would like to ask you about sports, fitness and recreational activities (leisure),[insert relevant terms]. *This introductory statement directs the participant to think about recreational activities. This can also be called discretionary or leisure time. It includes sports and exercise but is not limited to participation competitions. Activities reported should be done regularly and not just occasionally. It is important to focus on only recreational activities and not to include any activities already mentioned. This statement* ***should not*** *be omitted.*			
10	Do you do any vigorous-intensity sports, fitness or recreational (*leisure*) activities that cause large increases in breathing or heart rate like [*running or football,*] for at least 10 minutes continuously? *[INSERT EXAMPLES] (USE SHOWCARD)* ? *Activities are regarded as vigorous intensity if they cause a large increase in breathing and/or heart rate.*	Yes 1 No 2 *If No, go to P 13*	P10
11	In a typical week, on how many days do you do vigorous-intensity sports, fitness or recreational (*leisure*) activities? *Valid responses range from 1-7*	Number of days ⌊_⌋	P11
12	How much time do you spend doing vigorous-intensity sports, fitness or recreational activities on a typical day? *Think of one day you can recall easily. Consider the total amount of time doing vigorous recreational activities for periods of 10 minutes or more. Probe very high responses (over 4 hrs).*	Hours : minutes ⌊_⌊_⌋ : ⌊_⌊_⌋ hrs mins	P12 (a-b)
13	Do you do any moderate-intensity sports, fitness or recreational *(leisure*) activities that causes a small increase in breathing or heart rate such as brisk walking,(*cycling, swimming, volleyball*)for at least 10 minutes continuously? *Activities are regarded as moderate intensity if they cause a small increase in breathing and/or heart rate.* *[INSERT EXAMPLES] (USE SHOWCARD)*	Yes 1 No 2 *If No, go to P16*	P13
14	In a typical week, on how many days do you do moderate-intensity sports, fitness or recreational (*leisure*) activities? *Valid responses range from 1-7*	Number of days ⌊_⌋	P14
15	How much time do you spend doing moderate-intensity sports, fitness or recreational (*leisure*) activities on a typical day? *Think of one day you can recall easily. Consider the total amount of time doing moderate recreational activities for periods of 10 minutes or more. Probe very high responses (over 4 hrs).*	Hours : minutes ⌊_⌊_⌋ : ⌊_⌊_⌋ hrs mins	P15 (a-b)
Sedentary behaviour			
The following question is about sitting or reclining at work, at home, getting to and from places, or with friends including time spent [sitting at a desk, sitting with friends, travelling in car, bus, train, reading, playing cards or watching television], but do not include time spent sleeping. *[INSERT EXAMPLES] (USE SHOWCARD)*			
16	How much time do you usually spend sitting or reclining on a typical day? *Consider total time spent at work sitting, in an office, reading, watching television, using a computer, doing hand craft like knitting, resting etc. Do not include time spent sleeping.*	Hours : minutes ⌊_⌊_⌋ : ⌊_⌊_⌋ hrs min s	P16 (a-b)

Cleaning GPAQ data

Introduction

It is important to standardize the way in which the data collected in cleaned and analyzed. Use the guidelines below when cleaning and analyzing your data.

The cleaning and analysis guidelines use the coding column in the questionnaire as an identifier.

Cleaning

You should clean each domain independently. Some of the calculations use all the domains and others use only one of the domains. If a participant does not respond to one of the domains it does not mean that rest of the domains are invalid.

Check for the following for all the domains.

If…	Then…
Days per week or time per day variables are missing	Case should not be included in the denominator of the domain variable
Hour values are 15, 30, 45, or 60	Move them into the corresponding minute variable, if the corresponding minute variable is empty or zero (most likely a data recording error).

Note: Cleaning each domain independently may result in a floating denominator.

Maximum values

There are no restrictions within the time variables. The only requirement is that the values are plausible.

If the sum of P3, P6, P9, P12, and P15 is greater than 24 hours or 1440 minutes then remove the respondent from all the physical activity analysis.

Note: For information on how to create P3, P6, P9, P12, and P15 see the Cleaning GPAQ with Epi Info

Detailed cleaning instructions

There are detailed cleaning instructions on how to clean each variable in the Cleaning GPAQ with Epi Info section of this document. This section includes details on how to clean the variables and the associated Epi Info code.

GPAQ 1

Introduction

GPAQ 1 is the first version of the Global Physical Activity Questionnaire. A reliability and validity study was conducted on GPAQ1 and the questionnaire was modified according to the results.

GPAQ 1 can be analyzed in the same manner as GPAQ 2. Prior to using the analysis guidelines or the STEPS generic analysis syntax, some of the variables in GPAQ 1 need to be recoded.

Changes from GPAQ 2

GPAQ 2 has removed three questions from GPAQ 1. Two of the questions are filtering questions and one looks at the length of workdays. These three questions are:

- GPAQ1P1: Does your work involve mostly sitting or standing, with walking for no more than 10 minutes at a time?
- GPAQ1P6: How long is your typical work day?
- GPAQ1P9: Does your [*recreation, sport or leisure time*] involve mostly sitting, reclining, or standing, with no physical activity lasting more than 10 minutes at a time?

GPAQ1P1

Follow the instructions in the table below to recode GPAQ1P1

<table>
<tr><th>Step</th><th>Action</th></tr>
<tr><td>1</td><td>Rename the variable for the question " Does your work involve mostly sitting or standing, with walking for no more than 10 minutes at a time?" to GPAQ1P1</td></tr>
<tr><td>2</td><td>Create variables:
• P1orig
• P4orig</td></tr>
<tr><td>3</td><td>Make P1orig and P4orig equal to the original P1 and P4 in your dataset (P1orig=P1 , P4orig=P4)</td></tr>
<tr><td>4</td><td>Recode P1 and P4 with the following rule.

<table>
<tr><th>P1 Recode</th><th>P4 Recode</th></tr>
<tr><td>If GPAQ1P1=2 (no) then P1=2(no), otherwise P1 remains P1</td><td>If GPAQ1P1=2 (no) then P4=2(no), otherwise P4 remains P1</td></tr>
<tr><td>In Epi Info:

If GPAQ1P1=2 THEN
P1=2
ELSE
P1=P1
END</td><td>In Epi Info:

If GPAQ1P1=2 THEN
P4=2
ELSE
P4=P4
END</td></tr>
</table>
</td></tr>
</table>

Continued on next page

GPAQ1P6

The variable for the question " How long is your typical work day?", does not need to be coded into the dataset for the analysis of the GPAQ data.

Recode the variable to GPAQ1P6 and keep it in the original dataset.

GPAQ1P9

Follow the instructions in the table below to recode GPAQ1P9.

<table>
<tr><th>Step</th><th>Action</th></tr>
<tr><td>1</td><td>Rename the variable for the question " Does your [recreation, sport or leisure time] involve mostly sitting, reclining, or standing, with no physical activity lasting more than 10 minutes at a time?" to GPAQ1P9</td></tr>
<tr><td>2</td><td>Create variables:
• P10orig
• P13orig</td></tr>
<tr><td>3</td><td>Make P10orig and P13orig equal to the original P10 and P13 in your dataset (P10orig=P10 , P13orig=P13)</td></tr>
<tr><td>4</td><td>Recode P10 and P13 with the following rule.
<table>
<tr><th>P10 Recode</th><th>P13 Recode</th></tr>
<tr><td>If GPAQ1P9=2 (no) then P10=2(no), otherwise P10 remains P10</td><td>If GPAQ1P9=2 (no) then P13=2(no), otherwise P13 remains P13</td></tr>
<tr><td>In Epi Info:

If GPAQ1P9=2 THEN
P10=2
ELSE
P10=P10
END</td><td>In Epi Info:

If GPAQ1P9=2 THEN
P13=2
ELSE
P13=P13
END</td></tr>
</table></td></tr>
</table>

Producing tables

Once you have completed the GPAQ 1 recode and saved the results to your dataset you will be able to produce all the results in the analysis section. Follow the instructions provided for each table to produce the results.

Analysis Guidelines and Calculations

Introduction

Analysis physical activity data can be very complicated and the result confusing. The following guidelines will help clarify the results of the physical activity and will also provide valuable information on the classifications. Make sure you use some of these guidelines when you report physical activity data.

- MET values are applied to vigorous and moderate intensity variables in the work and recreation settings. These have been calculated using an average of the typical types of activity undertaken. Different types of activities have been grouped together and given an MET value based on the intensity of the activity. Applying MET values to activity levels allows us to calculate total physical activity.

- The calculations below use multiple questions in the physical activity section. To simplify this a bit the questions have been clustered into four groups (as they appear in the Instrument). In the Instrument questions section of the table, only the group label appears. The specific questions for each groups is presented below.

  – Activity at work:
    - Does your work involve vigorous-intensity activity that causes large increases in breathing or heart rate like [examples] for at least 10 minutes continuously?
    - In a typical week, on how many days do you do vigorous-intensity activities as part of your work?
    - How much time do you spend doing vigorous-intensity activities at work on a typical day?
    - Does your work involve moderate-intensity activity, that causes small increases in breathing or heart rate such as brisk walking for at least 10 minutes continuously?
    - In a typical week, on how many days do you do moderate-intensity activities as part of your work?
    - How much time do you spend doing moderate-intensity activities at work on a typical day?

  – Travel to and from places:
    - Do you walk or use a bicycle for at least 10 minutes continuously to get to and from places?
    - In a typical week, on how many days do you walk or bicycle for at least 10 minutes continuously to get to and from places?

Continued on next page

Analysis Guidelines and Calculations, Continued

Introduction (continued)

- How much time do you spend walking or bicycling for travel on a typical day?

– Recreational activities:

- Do you do any involve vigorous-intensity sports, fitness or recreational activities that cause large increases in breathing or heart rate like [examples] for at least 10 minutes continuously?
- In a typical week, on how many days do you do vigorous-intensity sports, fitness or recreational activities?
- How much time do you spend doing vigorous-intensity sports, fitness or recreational activities on a typical day?
- Do you do any involve moderate-intensity sports, fitness or recreational activities that cause large increases in breathing or heart rate like [examples] for at least 10 minutes continuously?
- In a typical week, on how many days do you do moderate--intensity sports, fitness or recreational activities?
- How much time do you spend doing moderate--intensity sports, fitness or recreational activities on a typical day?

– Sedentary behaviour :

- How much time do you usually spend sitting or reclining on a typical day?

MET values

For the calculation of physical activity the following MET values are used:

Domain	METS value
Work	• Moderate MET value = 4.0 • Vigorous MET value = 8.0
Transport	Cycling and walking MET value = 4.0
Recreation	• Moderate MET value = 4.0 • Vigorous MET value = 8.0

Levels of total physical activity

Description: percentage of participants classified into three categories of total physical activity

Instrument questions:

- activity at work
- travel to and from places
- recreational activities

Age Group	**Men** (N=)			**Women** (N=)			**Both Sexes** (N=)		
	Percent Low level of activity	Percent Moderate levels of activity	Percent High level of activity	Percent Low level of activity	Percent Moderate levels of activity	Percent High level of activity	Percent Low level of activity	Percent Moderate levels of activity	Percent High level of activity
	% 95% CI	% 95% CI	% 95% CI	% 95% CI	% 95% CI	% 95% CI	% 95% CI	% 95% CI	% 95% CI
25-34 years									
35-44 years									
45-54 years									
55-64 years									
25-64 years									

Analysis Information:

- Questions used (uses coding column as identifier):
  - Work: P1; P2; P3; P4; P5; P6
  - Transport: P7; P8; P9
  - Recreation: P10; P11; P12; P13; P14; P15
- Calculation: see table on next page

Continued on next page

Analysis Guidelines and Calculations, Continued

Levels of total physical activity (continued)

Total physical activity MET-minutes/week (= the sum of the total MET minutes of activity computed for each setting)

Equation: Total Physical Activity = [(P2 * P3 * 8) + (P5 * P6 * 4) + (P8 * P9 * 4) + (P11 * P12 * 8) + (P14 * P15* 4)]

Level of total physical activity	Physical activity cutoff value
High	• IF:(P2 + P11) >= 3 days AND Total physical activity MET minutes per week is >= 1500 **OR** • IF: (P2 + P5 + P8 + P11 + P14) >= 7 days AND total physical activity MET minutes per week is >= 3000
Moderate	• IF: (P2 + P11) >= 3 days AND ((P2 * P3) + (P11 * P12)) >= 60 minutes **OR** • IF: (P5 + P8 + P14) >= 5 days AND ((P5 * P6) + (P8 * P9) + (P14 * P15)>= 150 minutes **OR** • IF: (P2 + P5 + P8 + P11 + P14)>= 5 days AND Total physical activity MET minutes per week >= 600
Low	F: the value does not reach the criteria for either high or moderate levels of physical activity

Total physical activity

Description: median time of total physical activity per day.

Instrument questions

- activity at work
- travel to and from places
- recreational activities

Age Group	Men	Women	Both
	N=	N=	N=
	Median (inter-quartile range) 95% CI	Median (inter-quartile range) 95% CI	Median (inter-quartile range) 95% CI
25-34 years			
35-44 years			
45-54 years			
55-64 years			
25-64 years			

Analysis Information:

- Questions used (uses coding column as identifier):
  - Work: P1; P2; P3; P4; P5; P6
  - Transport: P7; P8; P9
  - Recreation: P10; P11; P12; P13; P14; P15
- Calculation: Total physical activity MET-minutes/week
  - Total Physical Activity in minutes per week = [(P2 * P3] + (P5 * P6) + (P8 * P9) + (P11 * P12) + (P14 * (P15)]
  - (Total physical activity in minutes per week / 7) = Average total physical activity in minutes per day

Setting-specific physical activity

Description: median time spent per day in minutes, in work-, transport- and recreation-related physical activity

Instrument questions:

- activity at work
- travel to and from places
- recreational activities

Age Group	**Men** (N=)				**Women** (N=)				**Both Sexes** (N=)		
	Work	Transport	Recreation		Work	Transport	Recreation		Work	Transport	Recreation
	Median (inter-quartile range) 95% CI	Median (inter-quartile range) 95% CI	Median (inter-quartile range) 95% CI		Median (inter-quartile range) 95% CI	Median (inter-quartile range) 95% CI	Median (inter-quartile range) 95% CI		Median (inter-quartile range) 95% CI	Median (inter-quartile range) 95% CI	Median (inter-quartile range) 95% CI
25-34 years											
35-44 years											
45-54 years											
55-64 years											
25-64 years											

Analysis Information:

- Questions used (uses coding column as identifier):
  - Work: P1; P2; P3; P4; P5; P6
  - Transport: P7; P8; P9
  - Recreation: P10; P11; P12; P13; P14; P15
- Calculation: Setting specific physical activity- see table on next page

<table>
<tr><th>Setting</th><th>Recode</th><th>Equation</th></tr>
<tr><td>Work</td><td><table><tr><th>If…</th><th>Then…</th></tr><tr><td>P1=2 (No)</td><td>Recode P2 and P3 = 0</td></tr><tr><td>P4=2 (No)</td><td>Recode P5 and P6 = 0</td></tr></table></td><td>• Total work related physical activity in minutes per week= [(P2 * P3) + (P5 * P6)]
• Average total physical activity in minutes per day = (total work related physical activity in minutes per week/ 7)</td></tr>
<tr><td>Transport</td><td><table><tr><th>If…</th><th>Then…</th></tr><tr><td>P7=2 (No)</td><td>Recode P8 and P9 = 0</td></tr></table></td><td>• Total transport related physical activity in minutes per week = (P8 * P9)
• Average total transport activity in minutes per day = (total transport related physical activity in minutes per week/ 7)</td></tr>
<tr><td>Recreation</td><td><table><tr><th>If…</th><th>Then…</th></tr><tr><td>P10=2 (No)</td><td>Recode P11 and P12 = 0</td></tr><tr><td>P13=2 (No)</td><td>Recode P14 and P15 = 0</td></tr></table></td><td>• Total recreational related physical activity in minutes per week = [(P11 * P12) + (P14 * P15)]
• Average total recreational activity in minutes per day = (total recreational related physical activity in minutes per week/ 7)</td></tr>
</table>

Note: The recode is only used during the analysis of this table. Make sure you do not use the recoded values for other calculations.

No physical activity by setting

Description: percentage of participants classified as doing no work-transport- or recreational-related physical activity.

Instrument questions:

- activity at work
- travel to and from places
- recreational activities

Age Group	**Men** (N=)				**Women** (N=)				**Both Sexes** (N=)		
	Work	Transport	Recreation		Work	Transport	Recreation		Work	Transport	Recreation
	N=	N=	N=		N=	N=	N=		N=	N=	N=
	% 95% CI	% 95% CI	% 95% CI		% 95% CI	% 95% CI	% 95% CI		% 95% CI	% 95% CI	% 95% CI
25-34 years											
35-44 years											
45-54 years											
55-64 years											
25-64 years											

Analysis Information:

- Questions used (uses coding column as identifier):
  - Work: P1; P4
  - Transport: P7
  - Recreation: P10; P13
- Calculation: no physical activity by setting - see table below

Setting	Equation
Work	= (P1=2 and P4=2) / ((P1=1) + (P1=2) + (P4=1) + (P4=2))
Transport	= (P7=2) / ((P7=1) + (P7=2))

Recreation	= (P10=2 and P13=2) / ((P10=1) + (P10=2) + (P13=1) + (P13=2))

Sedentary Description: total time spent in sedentary activities per day.

Instrument question:
- sedentary behaviour

Age Group	**Men** (N=)			**Women** (N=)			**Both** (N=)	
	mean	median		mean	median		mean	median
	mean 95% CI	median (inter-quartile range) 95% CI		mean 95% CI	median (inter-quartile range) 95% CI		mean 95% CI	median (inter-quartile range) 95% CI
25-34 years 35-44 years 45-54 years 55-64 years								
25-64 years								

Analysis Information:
- Questions used (uses coding column as identifier): P16
- Calculation: Total sedentary activity per day = P16

Work related physical activity

Description: median time of work-related moderate- and vigorous-intensity physical activity per day.

Instrument questions:

- activity at work

Age Group	**Men** (N=)			**Women** (N=)			**Both** (N=)	
	Moderate	Vigorous		Moderate	Vigorous		Moderate	Vigorous
	median (inter-quartile range) 95% CI	median (inter-quartile range) 95% CI		median (inter-quartile range) 95% CI	median (inter-quartile range) 95% CI		median (inter-quartile range) 95% CI	median (inter-quartile range) 95% CI
25-34 years 35-44 years 45-54 years 55-64 years								
25-64 years								

Analysis Information:

- Questions used (uses coding column as identifier): P1; P2; P3; P4; P5; P6
- Calculation:

Setting	Recode	Equation
Moderate work related physical activity	**If…** / **Then…**: P4=2 (No) → Recode P5 and P6 = 0	Total moderate-intensity minutes per week= (P5 * P6)
Vigorous work related physical activity	**If…** / **Then…**: P1=2 (No) → Recode P2 and P3 = 0	Total vigorous-intensity minutes per week= (P2 * P3)

Recreational physical activity

Description: median time of recreational moderate- and vigorous-intensity physical activity.

Instrument question:

- recreational activities

Age Group	**Men** (N=)			**Women** (N=)			**Both** (N=)	
	Moderate	Vigorous		Moderate	Vigorous		Moderate	Vigorous
	median (inter-quartile range) 95% CI	median (inter-quartile range) 95% CI		median (inter-quartile range) 95% CI	median (inter-quartile range) 95% CI		median (inter-quartile range) 95% CI	median (inter-quartile range) 95% CI
25-34 years 35-44 years 45-54 years 55-64 years								
25-64 years								

Analysis Information:

- Questions used (uses coding column as identifier): P10; P11; P12; P13; P14; P15
- Calculation:

Setting	Recode	Equation
Moderate recreational related physical activity	**If…** / **Then…**: P13=2 (No) → Recode P14 and P15 = 0	Total moderate-intensity minutes per week= (P14 * P15)
Vigorous recreational related physical activity	**If…** / **Then..-**: P10=2 (No) → Recode P11 and P12 = 0	Total vigorous-intensity minutes per week= (P11 *P12)

Cleaning GPAQ With Epi Info

Introduction

GPAQ collects information on three domains. These domains are:
- Activity at work
- Travel to and from places
- Recreational activities.

For analysis purposes these domains can be further broken down into six different groups. These groups are:
- Work vigorous (codes P1-P3)
- Work moderate (codes P4-P6)
- Travel (codes P7-P9)
- Recreational vigorous (codes P10-P12)
- Recreational moderate (codes P13-P15)
- Sitting (code P16)

Note: You will need to use the questionnaire in order to understand the cleaning information.

Grouping the GPAQ sections

The GPAQ questionnaire can be cleaned for each domain independently. If a participant responded to questions P1-P3 and did not answer questions P4-P6, then they would qualify for inclusion for work vigorous (P1-P3) and they would not qualify for work moderate (P4-)6). This will result in a floating denominator during analysis.

Continued on next page

Cleaning GPAQ With Epi Info, Continued

Work vigorous P1-P3

- If P3a = 15, 30, 45, 60 and P3b is missing or empty then put the value from P3a into P3b. It is assumed that value was recorded in the hour column instead of the minute column.
- Create a new variable P3 and combine the hour and minute columns into one variable. P3 should be minutes. P3=[(P3a*60) + P3b]

Cleaning variable	CLN=1 (variable is clean/valid)	CLN=2 (variable is clean/valid)
P1CLN	P1=1 or P1=2	P1= missing
P2CLN	P1=1 AND P2=1-7	- P1=1 AND P2= missing - P1=2 AND P2=1-7
P3CLN	If P2CLN=1 AND (P3 >9 AND <1441)	If P2CLN=1 AND (P3>1440 or P3<10)

Work moderate P4-P6

- If P6a = 15, 30, 45, 60 and P6b is missing or empty then put the value from P6a into P6b. It is assumed that value was recorded in the hour column instead of the minute column.
- Create a new variable P6 and combine the hour and minute columns into one variable. P6 should be minutes. P6=[(P6a*60) + P6b]

Cleaning variable	CLN=1 (variable is clean/valid)	CLN=2 (variable is clean/valid)
P4CLN	P4=1 or P4=2	P4= missing
P5CLN	P4=1 and P5=1-7	- P4=1 and P5= missing - P4=2 and P5=1-7
P6CLN	If P5CLN=1 and (P6 >9 AND <1441)	If P5CLN=1 and (P6>1440 or P6<10)

Continued on next page

Cleaning GPAQ With Epi Info, Continued

Travel P7-P9

- If P9a = 15, 30, 45, 60 and P9b is missing or empty then put the value from P9a into P9b. It is assumed that value was recorded in the hour column instead of the minute column.
- Create a new variable P9 and combine the hour and minute columns into one variable. P9 should be minutes. P9=[(P9a*60) + P9b]

Cleaning variable	CLN=1 (variable is clean/valid)	CLN=2 (variable is clean/valid)
P7CLN	P7=1 or P7=2	P7= missing
P8CLN	P7=1 and P8=1-7	- P7=1 and P8= missing - P7=2 and P8=1-7
P9CLN	If P8CLN=1 and (P9 >9 AND <1441)	If P8CLN=1 and (P9>1440 or P9<10)

Recreational vigorous P10-P12

- If P12a = 15, 30, 45, 60 and P12b is missing or empty then put the value from P12a into P12b. It is assumed that value was recorded in the hour column instead of the minute column.
- Create a new variable P12 and combine the hour and minute columns into one variable. P12 should be minutes. P12=[(P12a*60) + P12b]

Cleaning variable	CLN=1 (variable is clean/valid)	CLN=2 (variable is clean/valid)
P10CLN	P10=1 or P10=2	P10= missing
P11CLN	P10=1 and P11=1-7	- P10=1 and P11= missing - P10=2 and P11=1-7
P12CLN	If P11CLN=1 and (P12 >9 AND <1441)	If P11CLN=1 and (P12>1440 or P12<10)

Continued on next page

Cleaning GPAQ With Epi Info, Continued

Recreational moderate P13-P15

- If P15a = 15, 30, 45, 60 and P15b is missing or empty then put the value from P15a into P15b. It is assumed that value was recorded in the hour column instead of the minute column.
- Create a new variable P15 and combine the hour and minute columns into one variable. P15 should be minutes. P15=[(P15a*60) + P15b]

Cleaning variable	CLN=1 (variable is clean/valid)	CLN=2 (variable is clean/valid)
P13CLN	P13=1 or P13=2	P13= missing
P14CLN	P13=1 and P14=1-7	- P13=1 and P14= missing - P13=2 and P14=1-7
P15CLN	If P14CLN=1 and (P15 >9 AND <1441)	If P14CLN=1 and (P15>1440 or P15<10)

Sitting P16

- If P16a = 15, 30, 45, 60 and P16b is missing or empty then put the value from P16a into P16b. It is assumed that value was recorded in the hour column instead of the minute column.
- Create a new variable P16 and combine the hour and minute columns into one variable. P16 should be minutes. P16=[(P16a*60) + P16b]

Cleaning variable	CLN=1 (variable is clean/valid)	CLN=2 (variable is clean/valid)
P16CLN	P16 <1441	P16>1440