Fern Greenwell
Draft 22 September 2014
Revised 3 Oct 2014

Risk Factors:
Physical Activity Module

Rationale

The physical activity module constitutes part of a broader module comprising several risk factors including Tobacco use, Alcohol use, Fruit and Vegetable intake, and Hypertension.

Lack of physical activity defines a sedentary lifestyle. Over time, a sedentary lifestyle leads to chronic conditions (e.g., obesity, diabetes) that are detrimental to the individual's well-being and pose a public health burden on the community. The World Health Organization (WHO) promotes the development and implementation of an operational policy, with strategic action plans, for combatting insufficient physical activity; countries report on this in the WHO NCD Country Capacity Surveys.[1]

In order to systematically monitor levels of physical activity, a standard questionnaire with reliable questions is necessary to obtain comparable measurements in a variety of settings. Researchers have developed a wide range of methods to measure physical activity and sedentary behaviour.[2] A review of existing collection tools reveals more than a dozen separate instruments.[3] While objective measurement devices are likely to improve the measurement of physical activity, the most common approach for data collection with survey instruments, despite its disadvantages (e.g., subjectivity, recall, reliability, validity), is still self-reported information on time spent in different activities, and at what intensity.[4]

This module reviews four of the survey instruments administered widely at the population level.

Experience and evidence

Experience

The four instruments are similar in content and length. The IPAQ and GPAQ produce measures in standard units called, 'metabolic equivalents' (MET) (I have been yet unable to verify for EHIS and BFRSS).[5] The GPAQ and EHIS incorporate the use of showcards for each activity type to help respondents understand the types of activities related to each question. The generic showcards need to be adapted to the local context.[6] The BFRSS incorporates a list of specific activities.

1) *IPAQ.* The International Physical Activity Questionnaire (IPAQ) was "developed starting in Geneva in 1998 and was followed by extensive reliability and validity testing undertaken across 12 countries (14 sites) during

[1] Assessing national capacity for the prevention and control of NCDs.
http://www.who.int/chp/ncd_capacity/en/
[2] Kowalski et al. 2012. Direct and indirect measurement of physical activity in older adults: a systematic review of the literature. International Journal of Behavioural Nutrition and Physical Activity 2012, 9:148 doi:10.1186/1479-5868-9-148
[3] Hillsdon et al. 2009. Tools to measure physical activity in local level weight management interventions: a rapid review.
[4] Sallis and Saelens. 2000. Assessment of physical activity by self-report: status, limitations, and future directions. Res Q Exerc Sport. 2000 Jun;71(2 Suppl):S1-14.
[5] One MET is defined as the energy it takes to sit quietly, for a healthy adult. MET is the ratio of the person's working metabolic rate relative to the resting metabolic rate. See, for example,
http://www.hsph.harvard.edu/nutritionsource/mets-activity-table/
[6] See, for example, GPAQ generic showcards, http://www.who.int/chp/steps/GPAQ/en/

2000. The final results [regarding the short form questionnaire with 4 questions, 2000/01] suggest that these measures have acceptable measurement properties for use in many settings and in different languages, and are suitable for national population-based prevalence studies of participation in physical activity to collect standard measures for cross-national comparisons and monitoring."[7] It has for instance been used in the World Health Surveys (51 countries), International Prevalence Study on Physical Activity (20 countries), European Physical Activity Surveillance Systems (8 countries), and Eurobarometer (15 countries Wave 1, and 27 countries Wave 2).[8]

The IPAQ questionnaires consist of a short (IPAQ-SF) and a long version, with the short form having nine items (seven items on the telephone version) appropriate for national monitoring and the long form for more detailed research. Domain questions are not asked on the short version. [9]

The most current (and relevant version for purposes of cross-national monitoring) of the IPAQ is the 9-item form revised on Nov 22, 2010. It is part of the Rapid Risk Factor Surveillance System (RRFSS).[10] The main indicator measured is:

% of adults (18 - 69) whose level of physical activity is high, moderate, or low.

Concerning validity and reliability testing, each question in the IPAQ RRFSS module states: "This question is taken from the International Physical Activity Questionnaire (IPAQ): Short Last 7 Days Telephone Format. The results of a reliability and validity study carried out in 2000/2001 indicate that this questionnaire can be used with confidence in developed countries and in urban areas of developing countries for physical activity surveillance."

Other IPAQ validation results:

"The IPAQ instruments have acceptable measurement properties, at least as good as other established self-reports. Considering the diverse samples in this study, IPAQ has reasonable measurement properties for monitoring population levels of physical activity among 18- to 65-yr-old adults in diverse settings. The short IPAQ form "last 7 d recall" is recommended for national monitoring and the long form for research requiring more detailed assessment." [11]

"The correlation between the IPAQ-SF and objective measures of activity or fitness in the large majority of studies was lower than the acceptable standard. Furthermore, the IPAQ-SF typically overestimated physical activity as measured by objective criterion by an average of 84 percent. Hence, the evidence to support the use of the IPAQ-SF as an indicator of relative or absolute physical activity is weak."[12]

[7] English Short format and Long format (Nov 2002) http://www.ipaq.ki.se/downloads.htm
[8] WHO. 2010. Report of the Workshop on integration of data on physical activity patterns. Report No. 4. http://www.euro.who.int/__data/assets/pdf_file/0004/87430/E93705.pdf
[9] http://www.ipaq.ki.se/scoring.pdf
[10] http://www.rrfss.ca/resources/datadictionaries/IPAQ,%20final%20Nov%202010.doc
[11] Craig et al. 2003. International physical activity questionnaire: 12-country reliability and validity. Med Sci Sports Exerc. 2003 Aug;35(8):1381-95.
[12] Lee et al. International Journal of Behavioral Nutrition and Physical Activity 2011, 8:115
http://www.ijbnpa.org/content/pdf/1479-5868-8-115.pdf

"Our results indicate that the short, last 7-days version of the IPAQ has acceptable criterion validity for use in Swedish adults. However, the IPAQ instrument significantly overestimated self-reported time spent in PA. The specificity to correctly classify people achieving current PA guidelines was acceptable, whereas the sensitivity was low."[13]

"Although these statistics are not dissimilar to those reported on other self-report physical activity questionnaires, suggesting the IPAQ-C is adequately reliable and valid for the measurement of total physical activity in a Chinese population, care needs to be taken, especially as the sub-components of total activity were markedly less valid and reliable."[14]

"There was limited evidence for agreement between the instruments when classifying participants as meeting physical activity recommendations."[15]

2) *GPAQ.* The WHO uses the Global Physical Activity Questionnaire (GPAQ) in the STEPS survey program to monitor population levels and trends of NCD-related indicators.[16] GPAQ was developed from the long version of IPAQ. "The development of the GPAQ came from over 15 years of intense research in PA measurement by scientists in the field and has been validated in LMICs and is currently used in over 100 countries in national and in more in sub national sample. (communication with NCD expert)." Version 2 of the GPAQ questionnaire (apparently the current version, but no date available) contains 16 items (questions).

Some GPAQ validation results:

"The modifications made when designing GPAQ improved its reliability for persons with stable work patterns, but at the expense of poorer reliability for persons with more variable PA. GPAQ did not have superior validity to IPAQ."[17]

"Overall GPAQ provides reproducible data and showed a moderate-strong positive correlation with IPAQ, a previously validated and accepted measure of physical activity. Validation of GPAQ produced poor results although the magnitude was similar to the range reported in other studies. Overall, these results indicate that GPAQ is a suitable and acceptable instrument for monitoring physical activity in population health surveillance systems, although further replication of this work in other countries is warranted."[18]

3) *EHIS*. The European Health Interview Survey (EHIS)[19], developed since 2003, collects data on physical activity in the European Health Determinants Module (EHDM). With this information the European Commission's Eurostat monitors[20]:

[13] Ekelund et al. 2006. Criterion-related validity of the last 7-day, short form of the International Physical Activity Questionnaire in Swedish adults. Public Health Nutr. 2006 Apr;9(2):258-65.
[14] McFarlane et al. 2007. Reliability and validity of the Chinese version of IPAQ (short, last 7 days). J Sci Med Sport. 2007 Feb;10(1):45-51. Epub 2006 Jun 30.
[15] Wolin et al. 2008. Validation of the International Physical Activity Questionnaire-Short Among Blacks. J Phys Act Health. Sep 2008; 5(5): 746–760.
[16] GPAQ Analysis Guide. http://www.who.int/chp/steps/resources/GPAQ_Analysis_Guide.pdf
[17] Au et al., 2010. Reliability and validity of the global physical activity questionnaire in Vietnam. J Phys Act Health. 2010 May;7(3):410-8.
[18] Bull et al. 2009. Global physical activity questionnaire (GPAQ): nine country reliability and validity study. J Phys Act Health. 2009 Nov;6(6):790-804.
[19] European Health Interview Survey (EHIS wave 2) Methodological manual (2013 edition)

Practice of daily physical activity by sex, age and educational attainment level (%)

The original 6 questions were also adapted from the IPAQ instrument (EHIS indicator guidelines: List of indicators to be computed with EHIS; European Community Health Indicators Monitoring 2008)[21]. The EHIS questions as of 2008 had not been validated.

The most recent instrument (2013 version) includes 8 questions and detailed guidelines for each one. The questions pertain to:

- Work-related physical activity
- Number of days in a typical week walking to get to and from places at least 10 minutes continuously
- Time spent on walking to get to and from places on a typical day
- Number of days in a typical week bicycling to get to and from places at least 10 minutes continuously
- Time spent on bicycling to get to and from places on a typical day
- Number of days in a typical week doing sports, fitness or recreational (leisure) physical activities that cause at least a small increase in breathing or heart rate for at least 10 minutes continuously
- Time spent on doing sports, fitness or recreational (leisure) physical activities in a typical week
- Number of days in a typical week doing muscle-strengthening activities

Although no validation results were found for the EHIS physical activity questions, there is evidence of broad discussions by RVIM (National Institute for Public Health and the Environment) and other working groups feeding into the revisions of the EHIS physical activity questions. These developments are documented, as well as an associated list of references.[22]

4) *BRFSS*. The Behavioural Risk Factor Surveillance System (BRFSS) is designed by a working group of BRFSS state coordinators and Centers for Disease Control and Prevention (CDC) staff. It has been conducted since 1984 in numerous US states, and became a nationwide measurement method in 1993. About a dozen other countries around the world have requested technical assistance to develop similar surveillance of risk factors.[23] The 2013 BRFSS Questionnaire (updated December 28, 2012) contains a section on Exercise/Physical Activity (Section 12).

Validation studies were not searched for because the approach did not appear to be largely comparable internationally for the following reasons: 1) it does not capture occupational activity, and 2) the special weighting method ('raking') and inclusion of mobile phone data are complex to replicate on an international scale.

http://epp.eurostat.ec.europa.eu/cache/ITY_OFFPUB/KS-RA-13-018/EN/KS-RA-13-018-EN.PDF

[20] Eurostat metadata http://epp.eurostat.ec.europa.eu/portal/page/portal/statistics/search_database

[21] https://circabc.europa.eu/d/d/workspace/SpacesStore/d4c9d574-8658-4c21-9cf2-04768b38afe8/EHIS%20indicators%20guidelines%20-%20final%20version.pdf; http://www.echim.org/docs/ECHIM_final_report.pdf

[22] Consequences of the revision EHIS questionnaire for the ECHI shortlist indicators; compilation of working and discussion documents. June 2012. Pp 21-26
http://www.echim.org/docs/EHIS_revision_consequences.pdf

[23] http://www.cdc.gov/brfss/about/index.htm

Key similarities and differences related to the four measurement instruments				
ITEM	**GPAQ**	**IPAQ**	**EHIS**	**BRFSS**
Data collection method	Face-to-face interviews conducted by trained interviewers	The 2010 set of 9 RRFSS items were adapted from the 7-item telephone/self-administered format (Nov 2005), but the RRFSS does not state specifically the mode of employment	Face to face is the preferred mode, but there are guidelines that allow for other modes of data collection	Telephone interview
Recommended age groups	Validated for ages 16-84[24]	Validated for adults age 15-69, but the RRFSS indicator uses adults age 18-69, with those aged 18-64 commonly identified as the age range of young and middle aged adults and 65+ identified as seniors	Adult age 15+ and living in private households (2013 EHIS methodological manual)	Adults age 18+
Area of application	Designed primarily for use in developing (low and middle-income) countries (Hillsdon et al. 2009). As of 2010, STEPS (58 countries), WHO Study on Global Ageing and Adult Health (6 countries).	World Health Surveys (51 countries), International Prevalence Study on Physical Activity (20 countries), European Physical Activity Surveillance Systems (8 countries), and Eurobarometer (15 countries Wave 1, and 27 countries Wave 2)A list of published studies in the mid-2000s using the IPAQ instrument can be found on the IPAQ website: http://www.ipaq.ki.se/publications.htm	European Union Member States, and some other European countries (e.g. Switzerland, Iceland, Norway)	States in the USA and requests from about a dozen other countries wishing to implement the surveillance system
Questionnaires	16 items (doman specific)	RRFSS 9 items; short form 7 items; long form 31 items. The RRFSS or short form is recommended for population surveillance	8 items (domain specific)	8 items (activity code specific, not occupational activity)
MET quantities	Walking & cycling=4.0 Moderate PA=4.0 Vigorous PA=8.0	Walking = 3.3 Moderate PA=4.0 Vigorous PA=8.0	Does not appear to use METs	Does not appear to use METs
Domains	3 domains (work,	Long form: 4 domains (work,	3 domains (work,	Groups activities

[24] Armstrong T, Bull F. Development of the World Health Organization Global Physical Activity Questionnaire (GPAQ) (2006). Journal of Public Health. Volume 14, Number 2.

	transport, recreation)	transport, leisure, domestic & gardening) Short form: does not have domains	transport, recreational/leisure)	as all those 'other than your regular job' (does not appear to capture information on activities associated with a regular job) There is a Physical Activity Coding List, with about 75 activities, rather than separate domains.
Recall period	"Typical week"	Last 7 days	"Typical week"	In the past month

Evidence

- Asking more details questions about physical activity will likely produce higher prevalence estimates than the short form.
- The reference periods and target ages need to be standardized for comparability
- A conclusive evaluation of the four instruments was difficult due to the following:
    - Different versions of the questionnaire and guidelines which did not always have dates associated
    - Target age group varied depending on the source of information
    - Different domains and MET levels differed depending on the source of information
    - Reported approach—self-administered, by telephone, by face-to-face-- also differed depending on source
- The GPAQ and the EHIS questions asks 'In a typical week…', rather than a (preferred for population measurement) concrete recall period, 'In the last 7 days…'. The IPAQ respects a concrete time period within a reasonable period i.e., last 7 days.
- Since 2011 the BFRSS includes data received from cell phone users and entails a special weighting method, raking, which takes into account multiple sample frames. The estimates are not comparable with those produced from other sample designs. The BFRSS also does not capture on occupational activity.
- EHIS spreads data collection across the year, thus avoiding seasonal fluctuations in activity. For example, in many countries, a survey conducted in June would probably show substantially different activity levels than one conducted in January.

Core modules

Main indicator

The Global Reference List (GRL), draft for partner review (12 August 2014) proposes one indicator (an 'additional', not 'core', indicator):

- **Prevalence of insufficiently physical active people**

This is also an indicator in the 'Health Indicators Warehouse' in the National Center for Health Statistics.[25] The key is whether the full GPAQ module is needed to obtain data for the core indicator.

Additional indicators

The GPAQ Analysis Guidelines and Calculations document proposes the following indicators that can be computed from the same GPAQ core module using standardized measurements of physical activity (MET units):

1) WHO recommendation on physical activity for health met / not met
2) Total physical activity
3) Setting-specific physical activity
4) Composition of total physical activity
5) No vigorous physical activity
6) Sedentary

Core modules

The GPAQ survey module was selected as the recommended standard by default because 1) the IPAQ short form module found on the website was for telephone or self-administered interviews, and 2) the EHIS might be an equally fine module, and the most current version was the most updated of the three, but further investigation on exactly how the information is used is needed (I only found reference to the one indicator monitored on the Eurostat website).

I. GPAQ instrument as part of the WHO STEPwise approach to noncommunicable disease risk factor surveillance

[25] http://www.healthindicators.gov/Indicators/No-exercise-adults-percent-Source-BRFSS_120/Profile

QUESTIONS ON PHYSICAL ACTIVITY

Next I am going to ask you about the time you spend doing different types of physical activity in a typical week. Plea se 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.

READ THIS OPENING STATEMENT OUT LOUD. IT SHOULD NOT BE OMITTED. THE RESPONDENT WILL HAVE TO THINK FIRST ABOUT THE TIME HE/SHE SPENDS DOING WORK (PAID OR UNPAID WORK, HOUSEHOLD CHORES, HARVESTING FOOD, FISHING OR HUNTING FOR FOOD, SEEKING EMPLOYMENT [INSERT OTHER EXAMPLES IF NEEDED]), THEN ABOUT THE TIME HE/SHE TRAVELS FROM PLACE TO PLACE, AND FINALLY ABOUT THE TIME SPENT IN VIGOROUS AS WELL AS MODERATE PHYSICAL ACTIVITY DURING LEISURE TIME.
REMIND THE RESPONDENT WHEN HE/SHE ANSWERS THE FOLLOWING QUESTIONS THAT '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. DON'T FORGET TO USE THE SHOW CARD WHICH WILL HELP THE RESPONDENT WHEN ANSWERING TO THE QUESTIONS.

NO.	QUESTION	CODING CATEGORIES	SKIP
	WORK		
P1	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) ASK THE PARTICIPANT TO THINK ABOUT VIGOROUS-INTENSITY ACTIVITIES AT WORK ONLY. ACTIVITIES ARE REGARDED AS VIGOROUS- INTENSITY IF THEY CAUSE LARGE INCREASES IN BREATHING AND/OR HEART RATE.	YES…… 1 NO…… 2	→P4
P2	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 THE PARTICIPANT IS ENGAGED IN HIS/HER USUAL ACTIVITIES. VALID RESPONSES RANGE FROM 1 TO 7.	NUMBER OF DAYS…….. ……..____	
P3	How much time do you spend doing vigorous-intensity activities at work on a typical day? ASK THE PARTICIPANT TO THINK OF A TYPICAL DAY HE/SHE CAN RECALL EASILY IN WHICH HE/SHE ENGAGED IN VIGOROUS-INTENSITY ACTIVITIES AT WORK. THE PARTICIPANT SHOULD ONLY CONSIDER THOSE ACTIVITIES UNDERTAKEN CONTINUOUSLY FOR 10 MINUTES OR MORE. PROBE VERY HIGH RESPONSES (OVER 4 HOURS) TO VERIFY.	NUMBER OF HOURS……..____ ____ NUMBER OF MINUTES……..____ ____	
P4	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) ASK THE PARTICIPANT TO THINK ABOUT MODERATE-INTENSITY ACTIVITIES AT WORK ONLY. ACTIVITIES ARE REGARDED AS MODERATE INTENSITY IF THEY CAUSE SMALL INCREASES IN BREATHING AND/OR HEART RATE.	YES…… 1 NO…… 2	→P7
P5	In a typical week, on how many days do you do moderate-intensity activities as part of your work? 'TYPICAL WEEK' MEANS A WEEK WHEN THE PARTICIPANT IS ENGAGED IN HIS/HER USUAL ACTIVITIES. VALID RESPONSES RANGE FROM 1-7.	NUMBER OF DAYS…….. ……..____	

P6	How much time do you spend doing moderate-intensity activities at work on a typical day? ASK THE PARTICIPANT TO THINK OF A TYPICAL DAY HE/SHE CAN RECALL EASILY IN WHICH HE/SHE ENGAGED IN MODERATE-INTENSITY ACTIVITIES AT WORK. THE PARTICIPANT SHOULD ONLY CONSIDER THOSE ACTIVITIES UNDERTAKEN CONTINUOUSLY FOR 10 MINUTES OR MORE. PROBE VERY HIGH RESPONSES (OVER 4 HOURS) TO VERIFY.	NUMBER OF HOURS……..____ _____ NUMBER OF MINUTES……..____ _____	

NO.	QUESTION	CODING CATEGORIES	SKIP
	TRAVEL TO AND FROM PLACES		
P7	THE FOLLOWING INTRODUCTORY STATEMENT TO THE QUESTIONS ON TRANSPORT-RELATED PHYSICAL ACTIVITY IS VERY IMPORTANT. IT ASKS AND HELPS THE PARTICIPANT TO NOW THINK ABOUT HOW HE/SHE TRAVELS AROUND GETTING FROM PLACE--TO-PLACE. THIS STATEMENT SHOULD NOT BE OMITTED. 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]		
P7A	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	→P10
P8	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? 'TYPICAL WEEK' MEANS A WEEK WHEN THE PARTICIPANT IS ENGAGED IN HIS/HER USUAL ACTIVITIES.VALID RESPONSES RANGE FROM 1-7.	NUMBER OF DAYS…….. ……..._____	
P9	How much time do you spend walking or bicycling for travel on a typical day? ASK THE PARTICIPANT TO THINK OF A TYPICAL DAY HE/SHE CAN RECALL EASILY IN WHICH HE/SHE ENGAGED IN TRANSPORT-RELATED ACTIVITIES. THE PARTICIPANT SHOULD ONLY CONSIDER THOSE ACTIVITIES UNDERTAKEN CONTINUOUSLY FOR 10 MINUTES OR MORE. PROBE VERY HIGH RESPONSES (OVER 4 HOURS) TO VERIFY.	NUMBER OF HOURS……..____ _____ NUMBER OF MINUTES……..____ _____	

NO.	QUESTION	CODING CATEGORIES	SKIP
	RECREATIONAL ACTIVITIES		
P10	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 IN 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. 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].		

P10A	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] (U SE SHOWCARD) ASK THE PARTICIPANT TO THINK ABOUT RECREATIONAL VIGOROUS-INTENSITY ACTIVITIES ONLY. ACTIVITIES ARE REGARDED AS VIGOROUS INTENSITY IF THEY CAUSE LARGE INCREASES IN BREATHING AND/OR HEART RATE.	YES…… 1 NO…… 2	 →P13
P11	In a typical week, on how many days do you do vigorous-intensity sports, fitness or recreational (leisure) activities? 'TYPICAL WEEK' MEANS A WEEK WHEN THE PARTICIPANT IS ENGAGED IN HIS/HER USUAL ACTIVITIES. VALID RESPONSES RANGE FROM 1 TO 7.	NUMBER OF DAYS…… ……._____	
P12	How much time do you spend doing vigorous-intensity sports, fitness or recreational activities on a typical day? ASK THE PARTICIPANT TO THINK OF A TYPICAL DAY HE/SHE CAN RECALL EASILY IN WHICH HE/SHE ENGAGED IN RECREATIONAL VIGOROUS-INTENSITY ACTIVITIES. THE PARTICIPANT SHOULD ONLY CONSIDER THOSE ACTIVITIES UNDERTAKEN CONTINUOUSLY FOR 10 MINUTES OR MORE. PROBE VERY HIGH RESPONSES (OVER 4 HOURS) TO VERIFY.	NUMBER OF HOURS……____ _____ NUMBER OF MINUTES……____ _____	

NO.	QUESTION	CODING CATEGORIES	SKIP
P13	Do you do any moderate-intensity sports, fitness or recreational (leisure) activities that cause 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) ASK THE PARTICIPANT TO THINK ABOUT RECREATIONAL MODERATE-INTENSITY ACTIVITIES ONLY. ACTIVITIES ARE REGARDED AS MODERATE INTENSITY IF THEY CAUSE SMALL INCREASES IN BREATHING AND/OR HEART RATE.	YES…… 1 NO…… 2	 →P16
P14	In a typical week, on how many days do you do moderate-intensity sport, fitness or recreational [leisure] activities? 'TYPICAL WEEK' MEANS A WEEK WHEN THE PARTICIPANT IS ENGAGED IN HIS/HER USUAL ACTIVITIES. VALID RESPONSES RANGE FROM 1-7.	NUMBER OF DAYS…… ……._____	
P15	How much time do you spend doing moderate-intensity sport, fitness or recreational [leisure] activities on a typical day? ASK THE PARTICIPANT TO THINK OF A TYPICAL DAY HE/SHE CAN RECALL EASILY IN WHICH HE/SHE ENGAGED IN RECREATIONAL MODERATE-INTENSITY ACTIVITIES AT WORK. THE PARTICIPANT SHOULD ONLY CONSIDER THOSE ACTIVITIES UNDERTAKEN CONTINUOUSLY FOR 10 MINUTES OR MORE. PROBE VERY HIGH RESPONSES (OVER 4 HOURS) TO VERIFY.	NUMBER OF HOURS……_____ _____ NUMBER OF MINUTES……_____ _____	
	SEDENTARY BEHAVIOR		
P16	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, traveling in car, bus, train, reading, playing cards or watching television, but do not include time spent sleeping. [INSERT EXAMPLES] (USE SHOWCARD)		

P16A	How much time do you usually spend sitting or reclining on a typical day? ASK THE PARTICIPANT TO CONSIDER TOTAL TIME SPENT SITTING AT WORK, IN AN OFFICE, READING, WATCHING TELEVISION, USING A COMPUTER, DOING HAND CRAFT LIKE KNITTING, RESTING ETC. THE PARTICIPANT SHOULD NOT INCLUDE TIME SPENT SLEEPING.	NUMBER OF HOURS……____ _____ NUMBER OF MINUTES……____ _____	

Source: http://www.who.int/chp/steps/instrument/Q-by-Q_STEPS_Instrument_V3.0.pdf?ua=1

2. IPAQ instrument as part of the Rapid Risk Factor Surveillance System (RRFSS) module
**Note, the GRL indicator cannot be measured using this module*

IPAQ MODULE QUESTIONS

1 MODULE QUESTION:

Now think about the physical activities you did at work, as part of your house and yard work, to get from place to place, and in your spare time for recreation, exercise or sport in the last seven days.

First, think about all the vigorous activities which take hard physical effort that you did in the last 7 days. Vigorous activities make you breathe much harder than normal and may include heavy lifting, digging, aerobics, or fast bicycling.

Think about only 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 do vigorous physical activities?

Interviewer instruction: If needed: Think about only those physical activities that you do for at least 10 minutes at a time. Include all jobs.

Response Options

0	None
1-7	Enter number of days per week
8	Don't know
9	Refused

2 MODULE QUESTION:

How much time did you usually spend doing vigorous physical activities on one of those days?

Interviewer instruction: If needed: Think about only those physical activities that you do for at least 10 minutes at a time.

Response Options

ipq1b_hr

0, 1-12	Enter number of hours (default=0)
97	Varies widely from day to day
98	Don't know
99	Refused

ipq1b_mn

0, 1-90	Enter number of minutes (default=0)

3 MODULE QUESTION:

What is the total amount of time you spent over the last 7 days doing vigorous physical activities?

Response Options

ipq1c_hr

0, 1-90	Enter number of hours (default=0)
98	Don't know
99	Refused

ipq1c_mn

0, 1-90	Enter number of minutes (default=0)

RRFSS – Rapid Risk Factor Surveillance System

4 MODULE QUESTION:

Now think about other activities which take moderate physical effort that you did in the last 7 days. Moderate physical activities make you breathe somewhat harder than normal and may include carrying light loads, bicycling at a regular pace, or doubles tennis. Do not include walking.

Again, think about only 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 do moderate physical activities?

Interview instruction: If needed: Think about only those physical activities that you do for at least 10 minutes at a time. Include all jobs.

Response Options

0	None
1-7	Enter number of days per week
8	Don't know
9	Refused

5 MODULE QUESTION:

How much time did you usually spend doing moderate physical activities on one of those days?

Interviewer instruction: If needed: Think about only those physical activities that you do for at least 10 minutes at a time.

Response Options

ipq2b_hr

0, 1-12	Enter number of hours (default=0)
97	Varies widely from day to day
98	Don't know
99	Refused

ipq2b_mn

0, 1-90	Enter number of minutes (default=0)

6 MODULE QUESTION:

What is the total amount of time you spent over the last 7 days doing moderate physical activities?

Response Options

ipq2c_hr

0, 1-90	Enter number of hours (default=0)
98	Don't know
99	Refused

ipq2c_mn

0, 1-90	Enter number of minutes (default=0)

7 MODULE QUESTION:

Now think about the time you spent walking in the last 7 days. 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.

During the last 7 days, on how many days did you walk for at least 10 minutes at a time?

Interviewer instruction: If needed: Think about only the walking that you do for at least 10 minutes at a time. Include all jobs.

Response Options

0	None
1-7	Enter number of days per week
8	Don't know
9	Refused

8 MODULE QUESTION:

How much time did you usually spend walking on one of those days?

Response Options

ipq3b_hr

0, 1-12	Enter number of hours (default=0)
97	Varies widely from day to day
98	Don't know
99	Refused

ipq3b_mn

0, 1-90	Enter number of minutes (default=0)

9 MODULE QUESTION:

What is the total amount of time you spent walking over the last 7 days?

Response Options

ipq2c_hr

0, 1-90	Enter number of hours (default=0)
98	Don't know
99	Refused

ipq2c_mn

0, 1-90	Enter number of minutes (default=0)

http://www.rrfss.ca/resources/datadictionaries/IPAQ,%20final%20Nov%202010.doc

For comparison purposes, see also:
- EHIS module PE 1.4.2,
http://epp.eurostat.ec.europa.eu/cache/ITY_OFFPUB/KS-RA-13-018/EN/KS-RA-13-018-EN.PDF
- BRFSS module, section 12,
http://www.cdc.gov/brfss/questionnaires/pdf-ques/2013%20BRFSS_English.pdf

Indicator definitions

The detailed syntax of all indicators below is presented in the Global Physical Activity Questionnaire Analysis Guide pp. 14- 22 (see footnote 15 for link).

Main indicator

Prevalence of insufficiently physical active people:
(1) Proportion of adults age 18+ not meeting any of the following:

- 150 minutes of moderate-intensity physical activity per week
- 75 minutes of vigorous-intensity physical activity per week
- an equivalent combination of moderate- and vigorous-intensity physical activity accumulating at least 600 MET-minutes* per week

Note: For adolescents: the indicator is defined as less than 60 minutes of moderate to vigorous intensity activity daily

Additional indicators

WHO recommendation on physical activity for health:
(1a) Percentage of adults who, during a typical week, do 150 min of moderate-intensity physical activity OR 75 minutes of vigorous-intensity physical activity OR an equivalent combination of moderate- and vigorous-intensity physical activity achieving at least 600 MET-minutes.
**note, this indicator is the inverse of the main GRL indicator above.*

Not meeting WHO recommendations on physical activity for health:
(1b) Percentage of the population that is 'inactive' or 'insufficiently active', per WHO recommendations on physical activity for health (less than 150 minutes of moderate-intensity physical activity per week, or equivalent, *see above*)

Total physical activity:
(2) Mean/median time of physical activity on average per day

Setting-specific physical activity:
(3a) Mean/median number of minutes spent on average day, in work-, transport-, and recreation-related physical activity

No physical activity by setting:
(3b) Percentage of respondents classified as doing no work-, transport-, or recreation-related physical activity.

Composition of total physical activity:
(4) Percentage of total physical activity on average per day that comes from each of the 3 types of activity: work-, transport-, or recreation-related.

No vigorous physical activity:
(5) Percentage of respondents no engaging in vigorous physical activity

Sedentary:
(6) Minutes spent in sedentary activities on average per day.