

Childhood Obesity Surveillance Initiative (COSI)



Data collection procedures

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**Data collection procedures
October 2016**

Abstract

The WHO Regional Office for Europe has established the Childhood Obesity Surveillance Initiative in more than half the countries in the Region for routine monitoring of the policy response to the emerging obesity epidemic. The aim of the system is to measure trends in overweight and obesity in children aged 6.0–9.9 years for accurate understanding of the epidemic and to allow inter-country comparisons. This document outlines the data collection procedures agreed for use in the Initiative.

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1. Mandatory child's record form

The following variables are collected on the mandatory child's record form: child's identification code, sex, date of birth, urbanization grade of residence, breakfast taken on the day of measurement, date of measurement, time of measurement, clothes worn when measured, weight and height. The child is asked for permission before the measurements are taken.

The voluntary questions are given a number followed by a letter (e.g. 1a, 3a, 4a, 4b). These are: name, age in months, place of residence, postal code, population size, region or municipality, time of measurement in hour and minutes, reason given by a child who does not give permission to be measured, and waist and hip circumferences.

Country			Year		School			Gr	Cl	Child's code			

 World Health Organization <small>REGIONAL OFFICE FOR</small> Europe	CHILD'S RECORD FORM European Childhood Obesity Surveillance Initiative	COUNTRY NAME/LOGO
IDENTIFICATION, CHILD		
<p>(1a) What is your name? First name Surname</p>		
<p>(2) Child's sex <input type="checkbox"/> Boy <input type="checkbox"/> Girl</p>		
<p>(3) Child's date of birth <input type="text"/> <input type="text"/> / <input type="text"/> <input type="text"/> / <input type="text"/> <input type="text"/> <input type="text"/> <input type="text"/> Day / Month / Year</p>		
<p>(3a) Child's age in months <input type="text"/> <input type="text"/> <input type="text"/></p>		
<p>(4) Categorize the child's place of residence according to the country's urbanization grade <input type="checkbox"/> Urban <input type="checkbox"/> Semi-urban <input type="checkbox"/> Rural</p>		
<p>(4a) Child's place of residence</p>		
<p>(4b) Child's postal code</p>		
<p>(4c) Population size</p>		
<p>(4d) Child region/municipality</p>		
<p>(5) Did you have breakfast this morning (except just water, milk or juice)? <input type="checkbox"/> Yes <input type="checkbox"/> No</p>		

Country			Year		School			Gr	Cl	Child's code		



World Health Organization

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**CHILD'S RECORD FORM
European Childhood Obesity
Surveillance Initiative**

**COUNTRY
NAME/LOGO**

ANTHROPOMETRIC EXAMINATION

(6) **Date of measurement**

/ /

Day / Month / Year

(7) **Time of measurement**

Before lunch After lunch

(7a) **Hour / Minute**

/

Hour / Minute

(8) **Now I would like to weigh you, measure your height and take your waist and hip circumferences. I will explain to you how I am going to do this. May I take these measurements?**

Yes, child agrees to be measured (take the measurements and continue with question 9)

No, child does not agree to be measured (complete question 8a, enter your (14) code and sign the form)

(8a) **Can you tell me why you don't want to be measured?**

Child is not feeling well or is in pain

Child is anxious/nervous

Child has a physical disability

Other reason (please specify)

(9) **Body weight**

kg .

(10) **Body height**

cm .

(10a) **Second height measure**

cm .

(10b) **Body height average**

cm .

(11a) **Waist circumference**

cm .

(12a) **Hip circumference**

cm .

Country			Year		School			Gr	Cl	Child's code		

 World Health Organization <small>REGIONAL OFFICE FOR</small> Europe	CHILD'S RECORD FORM European Childhood Obesity Surveillance Initiative	COUNTRY NAME/LOGO
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ANTHROPOMETRIC EXAMINATION (continued)

(13) **Describe the clothes the child is wearing when measured (select one option only).**

(Please remember to take off any kind of shoes, socks or stockings as well as any heavy objects (phone, wallet, belt, etc.).

- Underwear only
- Gym clothes (e.g. shorts and t-shirt only)
- Light clothing (e.g. t-shirt, cotton trousers or skirt)
- Heavy clothing (e.g. sweater and jeans)
- Other (please specify)

(14) **Examiner's code**

Signature.....

OBSERVATIONS BY EXAMINER

1.1 Guidance for completing the child's record form

1.1.1 Identification, child

Child identification code. This information should be pre-entered before data collection.

Country	Year	School	Gr	Cl	Child's code							

Country code. The country code must be entered into the designated boxes on all pages of the examiner's record form. The three-letter country codes of Member States of the WHO European Region are listed in section 1.2.

Year of data collection. The year is designated by the last two digits.

School code. This is the numerical code assigned to each school when it is sampled. The code is composed of four digits and must be entered into the designated boxes on all pages of the examiner's record form. For example, school code 1 is entered as "0001", school code 10 is entered as "0010", school code 100 is entered as "0100", school code number 1000 is entered as "1000", and so on.

Grade. The grade should be obtained from the school register and be entered numerically.

Class. Classes should be coded numerically with one digit, starting with 1, even though, in some schools, classes are designated by letters.

Child code. A two-digit code is assigned to each child. The format may differ by country.

- (1a) **Child's name.** Voluntary item. Ask the child for her or his first name and surname. *This information will not be entered into the national online database system.*
- (2) **Child's sex.** Tick either "Boy" or "Girl".
- (3) **Child's date of birth.** This information should be obtained from the school register as month and year or day, month and year. When only the month and year of birth can be provided, the dataset should include the field "Age", which is calculated as: Date of measurement – Child's date of birth / 365.25.
- (3a) **Child's age in months.** This is a voluntary item. The response should be obtained from the school register.
- (4) **Urbanization grade of place of residence.** The child's place of residence should be categorized according to level of urbanization, as defined by the country. The three categories can be adjusted to the country situation. For instance "Urban" may be defined as a "Town or city with at least 10 000 inhabitants", "Semi-urban" as a "Suburb of a town or city with at least 10 000 inhabitants or a village with at least 1000 inhabitants" and "Rural" as a "Village or area with fewer than 1000 inhabitants".
- (4a) **Child's place of residence.** Voluntary item. This information should be obtained from the school register.
- (4b) **Child's postal code.** Voluntary item. This information should be obtained from the school register. Its format may differ by country.
- (4c) **Population size of place of residence.** Voluntary item. This information should be obtained from census data.
- (4d) **Region or municipality.** Voluntary item. This information should be obtained from the school register.
- (5) **Breakfast.** The child is asked whether he or she had anything for breakfast apart from water, milk or juice.

1.1.2 Anthropometric examination

Important: The supervisor should impress upon the examiners the importance of recording measurements precisely. A certain variation is to be expected and does not reflect failure.

In case of doubt or uncertainty about one or more measurements, they should be taken again. The examiner should draw a line next to the designated boxes and record the second measurement(s) on this line. *The examiner should not erase the first recorded measurement(s).*

- (6) **Date of measurement.** Enter the date on which the anthropometric measurements were taken in the designated boxes (Day/Month/Year).
- (7) **Rough indication of time of measurement.** Tick the box “Before lunch” or “After lunch”.
- (7a) **Precise time of measurement.** Voluntary item. Enter the time at which the anthropometric measurements were taken in the designated boxes (hour/minutes) using the *24-h clock*. Minutes can be entered to the nearest quarter of an hour; for example, if the measurement was taken at 09:09, enter 09:15.
- (8) **Child’s assent.** Tick only one answer option.
 If the answer is “Yes” (child agrees to be measured), leave question (8a) blank, and continue to question (9).
 If the answer is “No” (child does not agree to be measured), voluntary question (8a) can be completed and questions 9–13 left blank. **Important:** This answer should be recorded only if the child does not agree to be measured *at all*. If the child, for instance, agrees to measurement of her or his weight or height, code “Yes”.
- (8a) **Child’s reason for refusal.** Ask the child why she or he does not agree to be measured. Let the child talk, and tick the most appropriate answer option.

Measurement items

Before weighing children, ask them to take off their shoes and socks, all heavy clothing (e.g. coat, pullover, jacket), wallets, mobile phones, key chains, belts and other objects. Also, undo any hair ornaments or braids.

Perform the anthropometric examination according to the techniques described below. The order in which the measurements are presented is that in which it is suggested they be taken.

- (9) **Weight** should be measured in kilograms and recorded to the nearest 100-g (0.1-kg) unit.
 For instance, 22.5 kg is entered in the designated boxes as follows: . A display reading of 108.7 is entered as .
- (10) **Height** should be measured in centimetres and the reading taken to the last completed 1 mm (0.1 cm).
 For instance, if the height is between 111.4 and 111.5, the figure 111.4 is entered in the designated boxes as .
- (10a) **Second height measure.** Voluntary item. Height should be measured a second time in the same way as in item 10.
- (10b) **Average height.** If a second height measurement was performed, the average height should be entered.
- (11a) **Waist circumference.** Voluntary item. Waist circumference should be measured in centimetres and recorded to the last completed 1 mm (0.1 cm).
- (12a) **Hip circumference.** Voluntary item. Hip circumference should be measured in centimetres and recorded to the last completed 1 mm (0.1 cm).
- (13) **Clothes worn when measured.** Tick only one answer option. In case of doubt, select the option “Other”, and specify the clothes the child wore when measured.
Important: The child should wear normal, light indoor clothing (preferably underwear only). If this is not the case, ask the child to take off shoes, socks, all heavy clothing (e.g. coat, pullover, jacket), wallet, mobile phone, key chain, belt and any other objects. Also, undo any hair ornaments or braids.
- (14) **Examiner’s code.** Enter your examiner’s code in the designated boxes. Then, sign the form.

Examiner’s observations

This space can be used to write any remarks that the examiner considers important or relevant for the examination of a particular child, such as poor cooperation by the child. It can also be used to record observations on the anthropometric examinations, such as why some measurements were not taken or when there was uncertainty about the first measurement taken and a second measurement was done.

1.2 Country codes of Member States of the WHO European Region

Country name	Country code	Country name	Country code
Albania	ALB	Lithuania	LTU
Andorra	AND	Luxembourg	LUX
Armenia	ARM	Malta	MAT
Austria	AUT	Monaco	MON
Azerbaijan	AZE	Montenegro	MNE
Belarus	BLR	Netherlands	NET
Belgium	BEL	Norway	NOR
Bosnia and Herzegovina	BIH	Poland	POL
Bulgaria	BUL	Portugal	POR
Croatia	CRO	Republic of Moldova	MDA
Cyprus	CYP	Romania	ROM
Czech Republic	CZH	Russian Federation	RUS
Denmark	DEN	San Marino	SMR
Estonia	EST	Serbia	SRB
Finland	FIN	Slovakia	SVK
France	FRA	Slovenia	SVN
Georgia	GEO	Spain	SPA
Germany	GER	Sweden	SWE
Greece	GRE	Switzerland	SWI
Hungary	HUN	Tajikistan	TJK
Iceland	ICE	The former Yugoslav Republic of Macedonia	MKD
Ireland	IRE	Turkey	TUR
Israel	ISR	Turkmenistan	TKM
Italy	ITA	Ukraine	UKR
Kazakhstan	KAZ	United Kingdom of Great Britain and Northern Ireland	UNK
Kyrgyzstan	KGZ	Uzbekistan	UZB
Latvia	LVA		

1.3 School codes (mandatory)

The Principal Investigator should prepare a list of all schools in the country, from which a sample will be taken, and number them, starting with "0001". This number will be the school code.

The Principal Investigator should provide the WHO Regional Office for Europe with a list of the sampled schools, with their **numerical codes**, **names** and **addresses**. It is important that the list indicate which of the schools were **finally included** in or **excluded** from (e.g. because of refusal) the data collection round.

1.4 Class codes (mandatory)

The Principal Investigator should prepare a list of all classes with children of the targeted age group(s) from which the sample will be taken, and number them, starting with “1”. This number will be the class code.

The Principal Investigator should provide the Regional Office with a list of the sampled classes, their **numerical codes** and the corresponding **school codes**. It is important that the list indicate which of the classes sampled were **finally included** in or **excluded** from (e.g. because of refusal) the data collection round.

1.5 Child’s codes

The Principal Investigator should prepare a list of codes for all children registered in the sampled classes. There are no requirements for definition of this code.

A child who refuses to participate in the surveillance system will retain her or his assigned codes, which should not be assigned to another child.

The Principal Investigator may provide the Regional Office with the list of child codes for each school and class sampled.

1.6 Examiner codes

The Principal Investigator should prepare a list of the examiners who are to measure the children and complete the forms with their assigned codes.

Should an examiner no longer be involved in surveillance, he or she will retain his or her assigned code, which should not be assigned to another (new) examiner.

The Principal Investigator may provide the Regional Office with the list of examiner codes, with their names (first name and surname).

1.7 Weight units for clothes (mandatory)

The Principal Investigator should prepare a list of weight units for the options of clothes to be worn by the children when measured (underwear only, gym clothes, light clothing, heavy clothing), so that body weight can be adjusted accordingly during data processing.

The Principal Investigator should provide the Regional Office with a list of these weight units.

1.8 Individual sampling weights and survey design variables (mandatory)

The country dataset should include individual sampling weights to adjust for the sampling design used. The weighting factor is set to 1.00 for countries that include the entire population of interest.

The Principal Investigator should provide the Regional Office with a description of the method used for calculating sampling weights. He or she should also provide information on the sampling design used, including the primary sampling unit, the secondary sampling unit (if applicable), the strata chosen (when stratification was applied) and the final sample size.

2. Mandatory school record form

The school record form is completed by the school principal (headmaster or headmistress), by the teachers of the sampled classes or by another person who can document and report the location of the school, the number of children registered and measured per sampled class, those who refused to be measured and those who were absent on the measuring day.

A few school (environmental) characteristics are included, such as the frequency of physical education lessons, the availability of playgrounds, access to a number of listed food items and beverages on the school premises, and current initiatives to promote a healthy lifestyle (healthy eating, physical activity).

Country		Year		School			

 World Health Organization <small>REGIONAL OFFICE FOR Europe</small>	SCHOOL RECORD FORM European Childhood Growth Surveillance Initiative	COUNTRY NAME/LOGO
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IDENTIFICATION

- (1a) **School name**
- (2a) **Postal code**
- (3a) **City/ town/ suburban area/ village**
- (4) **What is your function at the school?**
- Headmaster/Headmistress/Principal
- Teacher
- Other (*Please specify*)

INFORMATION ON PARTICIPATING CLASSES

- (5a) **What is the number of classes per grade selected in your school to participate?**
- 1st 2nd 3rd 4th 5th 6th
- (5) **For each participating class, please complete the columns below: (*Please complete this question together with the examiner.*)**

Class No.	Grade/level of class	No. of pupils registered	No. of pupils examined	No. of pupils absent	No. of pupils who themselves declined to be examined	No. of pupils whose parents did not give consent
1.	<input type="text"/> <input type="text"/>	<input type="text"/> <input type="text"/> Girls	<input type="text"/> <input type="text"/> Girls	<input type="text"/> <input type="text"/> Girls	<input type="text"/> <input type="text"/> Girls	<input type="text"/> <input type="text"/> Girls
		<input type="text"/> <input type="text"/> Boys	<input type="text"/> <input type="text"/> Boys	<input type="text"/> <input type="text"/> Boys	<input type="text"/> <input type="text"/> Boys	<input type="text"/> <input type="text"/> Boys
2.	<input type="text"/> <input type="text"/>	<input type="text"/> <input type="text"/> Girls	<input type="text"/> <input type="text"/> Girls	<input type="text"/> <input type="text"/> Girls	<input type="text"/> <input type="text"/> Girls	<input type="text"/> <input type="text"/> Girls
		<input type="text"/> <input type="text"/> Boys	<input type="text"/> <input type="text"/> Boys	<input type="text"/> <input type="text"/> Boys	<input type="text"/> <input type="text"/> Boys	<input type="text"/> <input type="text"/> Boys
3.	<input type="text"/> <input type="text"/>	<input type="text"/> <input type="text"/> Girls	<input type="text"/> <input type="text"/> Girls	<input type="text"/> <input type="text"/> Girls	<input type="text"/> <input type="text"/> Girls	<input type="text"/> <input type="text"/> Girls
		<input type="text"/> <input type="text"/> Boys	<input type="text"/> <input type="text"/> Boys	<input type="text"/> <input type="text"/> Boys	<input type="text"/> <input type="text"/> Boys	<input type="text"/> <input type="text"/> Boys
4.	<input type="text"/> <input type="text"/>	<input type="text"/> <input type="text"/> Girls	<input type="text"/> <input type="text"/> Girls	<input type="text"/> <input type="text"/> Girls	<input type="text"/> <input type="text"/> Girls	<input type="text"/> <input type="text"/> Girls
		<input type="text"/> <input type="text"/> Boys	<input type="text"/> <input type="text"/> Boys	<input type="text"/> <input type="text"/> Boys	<input type="text"/> <input type="text"/> Boys	<input type="text"/> <input type="text"/> Boys

Country		Year		School			



World Health Organization
REGIONAL OFFICE FOR Europe

SCHOOL RECORD FORM
European Childhood Growth Surveillance Initiative

COUNTRY NAME/LOGO

INFORMATION ON THE SCHOOL ENVIRONMENT

(6) **Does your school have outdoor playground area(s)?**

Yes No

(7) **Does your school have an indoor gym?**

Yes No

(8) **Does your school curriculum include physical education lessons?**

Yes, for all grade levels

Only for some grade levels (*Please specify the grade*):

No (If no, please proceed to question (10a))

(9) **In this current school year, for how much time each week does your school provide physical education lessons to the pupils of each class participating in this project?**
(Please complete this question with the examiner)

Participating Class No.

1. Minutes per week

2. Minutes per week

3. Minutes per week

4. Minutes per week

(10a) **Are the children allowed to actively play in extreme weather conditions (rain, snow, windy, hot) in outdoor playing areas?**

Yes No

(10b) **Are the children allowed to use outdoor playground areas outside school hours?**

Yes No

(10c) **Are the children allowed to use the indoor gym outside school hours?**

Yes No

(10d) **Does your school organize any sport/physical activities at least once a week for primary school children outside school hours?**

Yes, for all grade levels

Only to some grade levels (*please specify the grade*):

No (*If you answered 'No', please proceed to question 11a*)

Country			Year			School		



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SCHOOL RECORD FORM
European Childhood Growth Surveillance Initiative

COUNTRY NAME/LOGO

INFORMATION ON SCHOOL ENVIRONMENT (continued)

(10e) **Do children attend these organized sport/ physical activities:**

- Yes, more than half of the children
- Yes, half or less than half of the children
- No or mostly not (less than a quarter of the children)

(11a) **Is school bus transport available to or provided by your school?**

- Yes, to all pupils
- Only to some grade levels (*please specify grade*):
- Only to pupils from rural areas
- Only to pupils living far away (*Please specify distance*):
- No

(11b) **In your opinion, how safe are the routes to and from school for most pupils to walk or ride a bicycle? (*Please circle the appropriate number*)**

Extremely safe Extremely unsafe
 1 2 3 4 5 6 7 8 9 10

(12) **Does your school curriculum include nutrition education, either given as a separate lesson or integrated into other lessons?**

- Yes No

(13) **In this current school year, have any initiatives/projects been organized (or will be) in each class participating to promote a healthy lifestyle (e.g. to promote physical activity and/or healthy eating)? (*Please complete this question with the examiner*)**

Class No.

- | | | | |
|----|--|------------------------------|-----------------------------|
| 1. | | <input type="checkbox"/> Yes | <input type="checkbox"/> No |
| 2. | | <input type="checkbox"/> Yes | <input type="checkbox"/> No |
| 3. | | <input type="checkbox"/> Yes | <input type="checkbox"/> No |
| 4. | | <input type="checkbox"/> Yes | <input type="checkbox"/> No |

Country			Year			School		



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SCHOOL RECORD FORM
European Childhood Growth Surveillance Initiative

COUNTRY NAME/LOGO

INFORMATION ON SCHOOL ENVIRONMENT (continued)

(14) **Which of the following kinds of foods or beverages can pupils obtain on the school premises? Please tick all items that apply.**

Beverages		Free	Paid	Not available	Foods		Free	Paid	Not available
Without or no added sugar	Water	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	Fresh fruit	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
	Tea	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	Vegetables	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
	100% fruit Juices with no added sugar	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	Sweet snacks (e.g. chocolate, sugar confectionery, cakes, breakfast and/or cereal bars, sweet biscuits and/or pastries)	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
					Ice-cream	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
With added sugar	Fruit juices or other non-carbonated drinks containing added sugar	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	Savoury snacks (e.g. potato crisps, salted popcorn, salted nuts, savoury biscuits and/or pretzels)	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
	Carbonated (soft) drinks containing added sugar	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>					
	Flavoured milk with added sugar	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>					
	Hot drinks (cocoa, tea, latte)	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>					
Dairy	Milk, yo-ghurt, ayran	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>					
Other drinks with non-sugar sweeteners	Soft drinks (including fruit juice drinks and flavoured milks)	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>					
Energy drinks		<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>					
Other (please specify)		<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>					

Country			Year			School		



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Surveillance Initiative**

**COUNTRY
NAME/LOGO**

INFORMATION ON SCHOOL ENVIRONMENT (continued)

(15) **Does your school have a canteen?**

Yes No

(15a) **Does your school have a shop or cafeteria where foods or beverages can be purchased?**

Yes No

(16) **Does your school have vending machines where children are allowed to purchase foods or beverages (other than water, fruits and vegetables)?**

Yes No

(17) **Is your school free from advertising and marketing (e.g. posters, billboards or banners with food company names or products featured, food company imagery or names on vending machines, and/or branded school materials such as books, sports equipment) of any energy-dense and nutrient-poor foods (e.g. cakes, pastries, sweets) and beverages that could undermine the promotion of a healthy, balanced diet?)**

Yes No

Date Signature

REMARKS

Write any remarks in this box:

*****END OF QUESTIONNAIRE*****
THANK YOU VERY MUCH FOR COMPLETING THIS QUESTIONNAIRE.
PLEASE RETURN IT TO THE PROJECT COORDINATOR.

2.1 Guidance for completing the mandatory school record form

Important: The examiner should fill in the identification code of the school, including country and year, before giving the form to the headmaster or headmistress.

The supervisor or examiner should advise the person who will complete the school record form that she or he can ask for assistance in the case of any uncertainty, for further clarification or for other queries about completion of the form.

The school record form includes mandatory and voluntary items; voluntary items are identified with a letter next to the number (e.g. 1a, 2a).

2.1.1 Identification

- (1a) **School name.** Voluntary item.
- (2a) **School postal address.** Voluntary item.
- (3a) **City, town or village.** Voluntary item.
- (4) **Function at school.** Tick the answer that gives the primary function of the person who fills in the form.

2.1.2 Participating classes

- (5a) **Number of classes selected per grade.** Voluntary item. Enter the number of all the classes selected (sampled) to participate in the project. If only one class has been selected, enter the number 1.
- (5) **Information on the grade or level of each participating class.** Enter the class or level of each of the participating classes in your school. The grade of class No. 1 should be entered in the designated boxes on the first row, that of class No. 2 in the boxes on the second row and so on.

Number of pupils registered. Enter the numbers of girls and boys registered in each participating class in your school. The numbers of girls and boys registered in class No. 1 should be entered in the designated boxes on the first row, those in class No. 2 in the boxes on the second row, and so on.

Number of pupils examined (measured). For each participating class, enter the number of girls and boys for whom anthropometric measurements such as weight and height were taken. The numbers of girls and boys in class No. 1 who were examined should be entered in the designated boxes on the first row, those in class No. 2 in the boxes on the second row and so on.

Number of pupils absent. For each participating class, enter the numbers of girls and boys who were absent on the day of measurements. The numbers of absent girls and boys in class No. 1 should be entered in the boxes on the first row, those in class No. 2 in the boxes on the second row and so on. If none of the registered pupils in a class were absent and all children could be measured, enter “0” for girls and “0” for boys.

Pupils who refused. For each participating class, enter the numbers of girls and boys who refused to be examined (measured).

Parents who refused consent. For each participating class, enter the numbers of girls and boys whose parents did not give consent for them to be examined (measured).

2.1.3 Information on the school environment

- (6) **Outdoor playground area(s).** Tick either “Yes” or “No”.
- (7) **Indoor gym.** Tick either “Yes” or “No”.
- (8) **Physical education lessons in the curriculum.** Tick “Yes”, “Only for some grade levels” or “No”. If the answer is “No”, proceed to voluntary question 10a, if used by the country.
- (9) **Minutes per week of physical education.** (*Please complete this question with the examiner.*) Write the length of time (in minutes) that physical education is provided each week for pupils in each of the classes participating in the project. The number of minutes of physical education provided each week to class No. 1 should be entered in

the designated box(es) on the first row, that provided to class No. 2 on the second row and so on. Physical education provided during school hours include gym classes, dance lessons and swimming lessons.

Example 1: If a swimming class of 45 min and a gym class of 50 min are provided once a week to class No. 1, enter “095” in the designated boxes on the first row.

Example 2: If a gym class of 60 min and a dance class of 30 min are provided twice a week to class No. 2, enter “180” in the designated boxes on the second row.

Example 3: If no physical education is provided during school hours to class No. 3, enter “000” in the designated boxes on the third row.

- (10a) **Active play in extreme conditions during school time.** Voluntary item. Tick either “Yes” or “No”.
- (10b) **Outdoor playground gym outside school hours.** Voluntary item. Tick either “Yes” or “No”.
- (10c) **Indoor gym outside school hours.** Voluntary item. Tick either “Yes” or “No”.
- (10d) **Sports or physical activities at least once a week outside school hours.** Voluntary item. Tick either “Yes”, “Only to some grades” (if so, specify grades) or “No”.
- (10e) **Attendance at sports and physical activities.** Voluntary item. Tick the designated box: “Yes, more than half the children”, “Yes, half or less than half the children” or “No or mostly not”
- (11a) **Availability of school bus transport.** Voluntary item. Tick the appropriate box.
- (11b) **Safety of routes for walking or riding a bicycle to and from school.** Voluntary item. Circle the appropriate number on the scale.
- (12) **Nutrition education in school curriculum.** Tick either “Yes” or “No”.
- (13) **School projects and initiatives.** Tick either “Yes” or “No” for each participating class. *Answer this question with the examiner.*
- (14) **Foods and beverages available on school premises.** Tick all the foods and beverages that pupils can obtain on the school premises (for free, to purchase or not available).
Please list, on the lines provided, any foods or beverages, other than those listed, that children can obtain at school.
- (15) **School canteen.** Tick either “Yes” or “No”.
- (15a) **Shop or cafeteria in which foods or beverages can be purchased.** Voluntary item. Tick either “Yes” or “No”.
- (16) **Vending machines at schools from which children can purchase foods and beverages other than water, fruit and vegetables.** Tick either “Yes” or “No”.
- (17) **Advertising or marketing of energy-dense and nutrient-poor foods and beverages.** Tick either “Yes” or “No”.

3. Voluntary family’s record form

The objectives to combating the obesity epidemic are optimizing the diet and increasing physical activity. In addition to anthropometric measurements, it is thus important to obtain data on simple indicators of children’s dietary intake and physical activity and inactivity patterns. These data are collected on the family’s record form, which is completed by parents or caregivers, possibly with their child.

The family’s record form can also provide families’ socioeconomic characteristics and co-morbid conditions associated with obesity.

Completion of the family’s record form is voluntary, and countries may include all or only some of the questions. If countries decide to include only some of the voluntary items, the numbering of the questions should be adjusted accordingly.

Countries that decide to administer the family’s record form may attach it to a letter to parents informing them about the initiative and asking for their consent. The family form can also be completed online, in the LimeSurvey programme, in the country’s national language or families can choose a preferred language for multilingual countries. In either case, countries should provide a translation of the family questionnaire into the national and/or other language(s).

The child’s identification code should be pre-entered on the form; if the parents choose to fill in the family’s record form online, the country may use this code or add pre-printed stickers with a code sent by the developer to be used by the parent or caregiver to log-in to the LimeSurvey. This code corresponds to the code generated in Open Clinica and will allow linkage of the family’s record form to the corresponding child’s record form.

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THIS PART CAN BE ADAPTED BY COUNTRY DEPENDING ON COUNTRY NEEDS

Dear Parent/Guardianparent or guardian,

This questionnaire has been sent to you from theinsert coordinating institute..... which is working with the World Health Organization Regional Office for Europe in the “European Childhood Surveillance Initiative”. This initiative aims to promote health and well-being of primary schoolchildren and is taking place in several countries in Europe.

We would like to ask you, as the parent or child’s main caregiver or guardian, to complete this form online or on paper, possibly together with your child. The information will be used to develop better health programmes for children like yours. This questionnaire is about your child’s health and things that he or she does that may influence his or her health.

If you chose to complete the online version of the questionnaire, the information you provide will automatically be saved when you have completed the survey. If you complete the paper version of the survey, you or your child can return it to his or her teacher in the enclosed envelope, which can be sealed, or you can post it directly to the coordinating institute. The information you provide is confidential and will not be disclosed to anyone at the school. It will be made anonymous and will be used only for research and monitoring.

Your participation is voluntary, and you are free to refuse to answer any question in the survey. If you have any questions about the survey, you may contactinsert coordinating institution and contact details..... or name Principal Investigator.....

We thank you very much in advance for your kind cooperation.

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GENERAL IDENTIFICATION OF THE CHILD

(1) **What is your relationship to the child?**

I am the mother I am the father

Other (please specify), I am

(2) **What is your child's name?**

First name Surname

(3) **What is your child's date of birth?**

/ /

Day / Month / Year

(4) **What is the sex of your child?**

Boy Girl

(5) **How much did your child weight when they were born?** kg g

(6) **Was your child born at full term (at or after 37 weeks of pregnancy)?**

Yes No Don't know

(7) **Was your child ever breastfed?**

No (if not, please proceed to question 9)

Yes, for.....months

Don't know

(8) **How many months was your child exclusively breastfed? (Exclusive breastfeeding means that the infant receives only breast milk. No other liquids or solids are given – not even water – with the exception of oral rehydration solution, or drops/syrups of vitamins, minerals or medicines)**

.....months

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CHILD BEHAVIOUR CHARACTERISTICS

The next questions ask about some behaviour characteristics of your child:

(9) **How far is your child's school from your home?**

Less than 1 km
 1–2 km
 3–4 km
 5–6 km
 More than 6 km

(10) **How does your child usually get to and from school? Please tick one option that he or she uses the most.**

Walking or cycling
 Motorized vehicles
 Combination of walking and cycling and motorized vehicles

(11) **In your opinion, how safe are the routes to and from school for your child to walk or ride a bicycle? (Circle the number that best represents your opinion.)**

Extremely safe Extremely unsafe
1 2 3 4 5 6 7 8 9 10

(12) **Is your child a member of one or more sport clubs or dancing courses (e.g. football, soccer, running, hockey, swimming, tennis, basketball, gymnastics, ballet, fitness, ballroom dancing, et cetera)?**

Yes (please continue to the next question)
 No (please continue to question 14)

(13) **Over a typical week (including weekends), how many hours does your child spend on sports and physical activities with these sport clubs or dancing courses?**

None
 1 h/week
 2 h/week
 3 h/week
 4 h/week
 5 h/week
 6 h/week
 7 h/week
 8 h/week
 9 h/week
 10 h/week
 11 h/week or more

(14) **At what time does your child usually go to bed on school days (weekdays)?**

/
Hour / Minute

(15) **At what time does your child usually wake up on school days (weekdays)?**

/
Hour / Minute

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CHILD BEHAVIOUR (continued)

(16) *In his/her free time, about how many hours per day is your child usually playing actively/vigorously (e.g. running, jumping outside or moving and fitness games inside)? Please tick one box for weekdays and one box for weekend.*

Weekdays

- Never at all
- Less than 1 hour per day
- About 1 hour per day
- About 2 hours per day
- About 3 or more hours per day

Weekend

- Never at all
- Less than 1 hour per day
- About 1 hour per day
- About 2 hours per day
- About 3 or more hours per day

(17) *How much time, outside school, does your child usually spend doing homework or reading a book, either at home or somewhere else? Please tick one box for weekdays and one box for weekend.*

Weekdays

- Never at all
- Less than 1 hour per day
- About 1 hour per day
- About 2 hours per day
- About 3 or more hours per day

Weekend

- Never at all
- Less than 1 hour per day
- About 1 hour per day
- About 2 hours per day
- About 3 or more hours per day

(18) *Outside school lessons, how much time does your child usually spend watching TV or using electronic devices such as computer, tablet, smartphone or other electronic device (not including moving or fitness games), either at home or outside home (e.g. Internet cafes, game centres etc.)? Please tick one for the weekdays and one for the weekend.*

Weekdays

- Not at all
- Number of hours per day

Weekend

- Not at all
- Number of hours per day

(19) *Over a typical or usual week, how often does your child have breakfast? Please tick one box.*

- Never
- Some days (1-3 days)
- Most days (4-6 days)
- Every day

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CHILD BEHAVIOUR (continued)

(20) *Over a typical or usual week, how often does your child eat or drink the following kinds of foods or beverages? Please tick one box for each line.*

	Never	Less than once a week	Some days (1-3 days)	Most days (4-6 days)	Every day
Fresh fruit	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Vegetables (excluding potatoes)	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
100% fruit juice	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Soft drinks containing sugar	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Flavoured milk	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Diet or "light" soft drinks	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Low fat/ semi-skimmed milk	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Whole fat milk	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Cheese	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Yoghurt, milk pudding, cream cheese/quark or other dairy products	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Meat	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Fish	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Savoury snacks like potato crisps, corn chips, popcorn or peanuts	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Sweet treats like candy bar or chocolate	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Foods like biscuits, cakes, doughnuts or pies	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Foods like pizza, French fries, fried potatoes, hamburgers, sausages or meat pies	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

(21) *In your opinion, is your child:*

Underweight
 Normal weight
 A little overweight
 Extremely overweight

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HOUSEHOLD HEALTH CHARACTERISTICS

The next questions ask about some health characteristics of yourself and your household:

(22) **Have you or anyone else in your household ever been diagnosed or treated for high blood pressure (hypertension) by a doctor or other health worker?**

Yes No Don't know

(23) **Have you or anyone else in your household ever been diagnosed or treated for diabetes by a doctor or other health worker?**

Yes No Don't know

(24) **Have you or anyone else in your household ever been diagnosed or treated for high cholesterol level by a doctor or other health worker?**

Yes No Don't know

(25) **We would also like to ask about your or your spouse's/partner's weight and height:**

You	Spouse/ partner
-----	-----------------

Weight (in kg)
----------------	-------	-------

Height (in cm)
----------------	-------	-------

HOUSEHOLD GENERAL CHARACTERISTICS

The last set of questions asks about some general characteristics of yourself and your household:

(26) **How many people aged 18 years or older, including yourself, live in your household?**

(27) **How many people younger than 18 years live in your household?**

(28) **What is the highest level of education that you or your spouse or partner has completed? Please select only one answer for each of you.**

You

- Primary school or less
- Secondary or high school
- Vocational school
- Undergraduate or Bachelor degree
- Masters degree or higher

Spouse/ partner

- Primary school or less
- Secondary or high school
- Vocational school
- Undergraduate or Bachelor degree
- Masters degree or higher

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GENERAL HOUSEHOLD CHARACTERISTICS (continued)

(29) ***Tick the box which best represents your household situation? Please tick one box.***

- We easily pass the month with our earnings
- We pass the month without serious problems with our earnings
- We have trouble meeting the ends the month with our earnings
- We barely meet the ends in the month with our earnings

(30) ***Which of the following best describes your and/or your spouse's/partner's main work over the last 12 months? Please select one answer only for each of you.***

You

Spouse/ partner

- | | |
|---|---|
| <input type="checkbox"/> Government employed | <input type="checkbox"/> Government employed |
| <input type="checkbox"/> Non-government employed | <input type="checkbox"/> Non-government employed |
| <input type="checkbox"/> Self-employed | <input type="checkbox"/> Self-employed |
| <input type="checkbox"/> Student | <input type="checkbox"/> Student |
| <input type="checkbox"/> Homemaker | <input type="checkbox"/> Homemaker |
| <input type="checkbox"/> Unemployed, able to work | <input type="checkbox"/> Unemployed, able to work |
| <input type="checkbox"/> Unemployed, unable to work | <input type="checkbox"/> Unemployed, unable to work |
| <input type="checkbox"/> Retired | <input type="checkbox"/> Retired |

(31) ***In what type of housing do you currently live? This is country-specific question, and items will be added as needed***

- | | |
|--|---|
| <input type="checkbox"/> House/bungalow detached | <input type="checkbox"/> House - semi-detached/terraced |
| <input type="checkbox"/> Apartment | <input type="checkbox"/> Shared house |
| <input type="checkbox"/> Shared apartment | <input type="checkbox"/> Other (please specify) |

(32) ***Is this accommodation... This is country specific question, and items will be added as needed***

- | | |
|---|---|
| <input type="checkbox"/> Owned by you? | <input type="checkbox"/> Rented by you? |
| <input type="checkbox"/> Other (please specify) | |

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Date of completion of this form / /

Signature.....

REMARKS

You may write down any remarks you would like to make in this box:

*****END OF QUESTIONNAIRE*****

THANK YOU VERY MUCH FOR COMPLETING THIS QUESTIONNAIRE.

The following text is country-specific and will be changed to reflect the country's choice (online, paper or both).

The following sentence would not appear on the online form:

PLEASE PUT IT IN THE ATTACHED ENVELOPE AND SEAL IT.

YOUR CHILD CAN THEN RETURN IT TO HIS OR HER TEACHER

4. Informed consent

4.1 Example of a parents' informed consent form (passive approach)

Important: The parents' informed consent letter should not mention the term "childhood obesity" or give any indication that the data collected reflect assessment of the prevalence of overweight and obesity in schoolchildren.

Important: The passive approach should be chosen if it would result in a higher response rate than the active approach.

Important: This example of an informed consent letter for parents can be adapted to each country's situation as necessary, applicable and appropriate. For instance, it may depend on the issues for which informed consent is sought (anthropometric measurements, data management or transfer) or on the addition of anthropometric measurements other than weight and height. The letter may mention whether the measurements are to be taken during a gym class. Moreover, if the voluntary family's record form is to be attached to this letter, it should also be explained.

Subject: Childhood Growth Surveillance Initiative

Dear Madam or Sir [*or insert name(s) of parent(s)*]

The [*coordinating institute*] is collaborating with the World Health Organization Regional Office for Europe in routinely measuring the growth of primary-school children in [*name of country*], the objective being to promote health and well-being. This will require examiners visiting children aged 6–9 years in their school and measuring their body dimensions.

The measures include weight and height [*waist circumference and hip circumference*]. All measures will be done by trained staff. They will be extremely careful to make the measurements in a sensitive way; for example, children will not be weighed or measured in front of their classmates, and boys and girls will be measured separately. The children will not have to undress, although they will be asked to wear normal, light, indoor clothing on the measurement day and to take off their shoes and socks. [*For measurement of waist and hip circumference, the children will be asked to lower their trousers to the tops of their thighs.*]

The primary school that your child attends is one of the [*number*] schools throughout the country in which these measurements will be done. Further, your child's class has been selected to participate. The [*name of coordinating institute*] hopes that all the children in your child's class will be weighed and measured. We are seeking your permission to measure the weight and height [*waist circumference and hip circumference*] of your child and to ask her or him some questions listed in the attached questionnaire.

This project is also taking place in other European countries. The [*name of coordinating institute*], jointly with the World Health Organization Regional Office for Europe, will analyse the data collected in all [*insert number*] participating schools. We are seeking your permission to transfer the data on your child to the national database of [*name of coordinating institute*] and the international database of the World Health Organization for this purpose.

We assure you that any information that you and your child provide will be treated with strict confidentiality. The Principal Investigator, [*insert name*], will be available to listen to any concern you may have.

Much as we hope that you decide to participate, you are free to withdraw from the project at any time.

If your child is absent from school on the appointed day or if you return this letter to the school stating that you do not wish your child to be weighed or measured, the [*name of coordinating institute*] will not measure your child.

If you do not wish your child to participate in the project and do not wish her or his data to be used for further analysis, please indicate this on the following page and sign the form. Your child can then return it to her or his teacher.

If we have not received a signed letter from you by [*date*], we will assume that you have given consent for your child to participate in the measurements and for both the [*name of coordinating institute*] and the World Health Organization Regional Office for Europe to use the collected data for further analysis at both national and European levels.

Childhood Growth Surveillance Initiative

I, Miss/Ms/Mrs/Mr/Dr , having read and understood the objectives and measurement procedures, do not wish my child to participate in this project or for her or his data to be used for further analysis by the [*name of coordinating institute*] and the World Health Organization Regional Office for Europe. I do not give consent because (*please give the reason*)

.....

.....

.....

.....

.....

Signature

Child's name

Child's date of birth

Child's class grade

4.2 Example of a parents' informed consent form (active approach)

Important: The parents' informed consent letter should not mention the term "childhood obesity" or give any indication that the data collected reflect assessment of the prevalence of overweight and obesity in schoolchildren.

Important: The active approach should be chosen if the country's legislation requires it.

Important: This example of an informed consent letter for parents can be adapted to each country's situation as necessary, applicable and appropriate. For instance, it may depend on the issues for which informed consent is sought (anthropometric measurements, data management or transfer) or on the addition of anthropometric measurements other than weight and height. The letter may mention whether the measurements are to be taken during a gym class. Moreover, if the voluntary family's record form is to be attached to this letter, it should also be explained.

Subject: Childhood Growth Surveillance Initiative

Dear Madam or Sir [*or name(s) of parents(s)*],

The [*coordinating institute*] is collaborating with the World Health Organization Regional Office for Europe in routinely measuring the growth of primary-school children in [*name of country*], the objective being to promote health and well-being. This will require examiners visiting children aged 6–9 years in their school and measuring their body dimensions.

The measures include weight and height [*waist circumference and hip circumference*]. All measures will be done by trained staff. They will be extremely careful to make the measurements in a sensitive way; for example, children will not be weighed or measured in front of their classmates, and boys and girls will be measured separately. The children will not have to undress, although they will be asked to wear normal, light, indoor clothing on the measurement day and to

take off their shoes and socks. [For measurement of waist and hip circumference, the children will be asked to lower their trousers to the tops of their thighs.]

The primary school that your child attends is one of the [number] schools throughout the country in which these measurements will be taken. Further, your child's class has been selected to participate. The [name of coordinating institute] hopes that all the children in your child's class will be weighed and measured. We are seeking your permission to measure the weight and height [waist circumference and hip circumference] of your child and to ask her or him some questions listed in the attached questionnaire.

This project is also taking place in other European countries. The [name of coordinating institute], jointly with the World Health Organization Regional Office for Europe, will analyse the data collected in all [number] participating schools. We are seeking your permission to transfer the data on your child to the national database of [name of coordinating institute] and the international database of the World Health Organization for this purpose.

We assure you that any information you and your child provide will be treated with strict confidentiality. The Principal Investigator, [name], will be available to listen to any concern you may have.

Much as we hope that you decide to participate, you are also free to withdraw from the project at any time.

If your child is absent from school on the appointed day or if you return this letter to the school stating that you do not wish your child to be weighed or measured, the [name of coordinating institute] will not measure your child.

If you wish your child to participate in the project and agree to use of her or his data for further analysis, please indicate this on the following page and sign the form [and fill in the family questionnaire]. Your child can then return it to her or his teacher.

If we have not received a signed letter from you by [date], we will assume that you have not given consent for your child to participate in the measurements, and the [name of coordinating institute] will not measure your child.

European Childhood Growth Surveillance Initiative

I, Miss/Ms/Mrs/Mr/Dr _____, having read and understood the objectives and measurement procedures, give my consent for my child to participate in this project and for her or his data to be used for further analysis by the [name of coordinating institute] and the World Health Organization Regional Office for Europe.

Signature _____

Child's name _____

Child's date of birth _____

Child's class grade _____

Alternatively, parents could use the following option.

European Childhood Growth Surveillance Initiative

Please tick one of the two options, complete the details at the end of the form, sign it, and return it to the school.

I, Miss/Ms/Mrs/Mr/Dr _____, having read and understood the objectives and measurement procedures, give my consent for my child to participate in this project and for her or his data to be used for further analysis by the [name of coordinating institute] and the World Health Organization Regional Office for Europe.

I, Miss/Ms/Mrs/Mr/Dr....., having read and understood the objectives and measurement procedures, do not wish my child to participate in this project and for her or his data to be used for further analysis by the [name of coordinating institute] and the World Health Organization Regional Office for Europe. I do not give consent because (please insert the reason)

.....

.....

.....

.....

.....

Signature

Child's name

Child's date of birth

Child's class grade

5. Standardization of conditions

5.1 Examiners

Before each data collection round, all examiners should be trained in taking standardized measurements as accurately and precisely as possible according to the techniques and instructions given below.

Examiners should ensure the basic principles of confidentiality, privacy and objectivity throughout the process. Children can be very sensitive about their own size and that of the children around them. Measuring body height and weight could accentuate this sensitivity and increase the risk for stigmatization and bullying. Examiners should take measurements in such a way as to minimize any potential for harm. They should not mention the words “childhood obesity” or give any indication that the data are being collected for assessment of the prevalence of overweight and obesity in schoolchildren.

Examiners should not calculate the child's body mass index at the place of measurement.

Children have the right to know their height and weight. Although examiners should not give these data routinely, they should give them if they are requested to do so.

5.2 Children

Children should wear normal, light, indoor clothing without shoes or socks. Before the measurements, they should be asked to take off their shoes and socks, all heavy clothing (e.g. coats, pullovers, jackets), wallets, mobile phones, key chains, belts and any other objects. Further, any hair ornaments or braids should be undone.

Children should never be told the measurements of other children.

5.3 Instruments

The same anthropometric instruments should be used at all the selected schools in a country.

The weighing scales and height board should be checked and calibrated frequently, ideally early in the morning before measurements begin, on each day that measurements are taken (if calibration features are available and the instruments can be calibrated by the user). All instruments must be highly accurate and precise.

5.4 Forms

The original data collection forms and instructions for their administration are in English and should be translated into local languages and back-translated to English to check for discrepancies with the original English version. The forms should be back-translated independently from the initial translation from English, preferably by a professional translator.

None of the translated data collection forms and the instructions for their administration should indicate that the data are being collected for assessment of the prevalence of overweight and obesity in schoolchildren.

5.5 Timing

The anthropometric measurements should:

- be taken over as short a period as possible, preferably within four weeks and no longer than ten weeks;
- not be taken during the first two weeks of a new school term or immediately after a major holiday; and
- preferably be taken in the morning before lunch, although this may not always be feasible.

5.6 Location

Children should be measured in a private room and not in front of their classmates.

6. Anthropometric techniques

The order in which the measurements are presented is that in which it is suggested they be taken (1–5).

It is envisaged that one examiner will be able to measure the weights and heights of a class of 25 pupils and complete the examiner's record form in approximately 2–3 h.

6.1 Weight

To measure weight, portable electronic (digital) scales calibrated to 0.1 kg (100 g) and measuring up to 150 kg should be used. These are easy to use and transport and reduce observer measurement error, as the weight is displayed electronically. The scales may have a solar on-switch, thus requiring adequate lighting to function.

Weight should be measured in kilograms and recorded to the nearest 100 g (0.1 kg).

Procedure

1. Place the scales on a perfectly flat, hard horizontal surface in such a way that the display is clearly visible. The surface of the scales should be clean. The indoor temperature should not exceed 45 °C, and there should be enough light in the room to operate solar-powered scales. Measurements taken with the scales on thick-pile carpets or rugs are not reliable.

2. The child should wear normal, light, indoor clothing. If this is not the case, ask the child to take off his or her shoes and socks, all heavy clothing (e.g. coat, pullover, jacket), wallet, mobile phone, key chain, belt and other objects before weighing. Further, undo any hair ornaments or braids.
3. Communicate with the child in a sensitive, reassuring way.
4. Explain the weighing procedures to the child.
5. To turn on solar-powered scales, cover the solar panel for a second. When the number 0.0 appears, the scales are ready.
6. Ask the child to stand in the middle of the scales with his or her feet slightly apart and to remain still until the weight appears on the display. Ask the child to stand completely still until the weight is registered.
7. Record the child's body weight to the nearest 100 g (0.1 kg).
8. In case of doubt or uncertainty about the measurement, repeat the procedure in points 5–7. Draw a line next to the boxes giving the first body weight measurement, and record the second measurement on this line. *Do not erase the first recorded measurement.*

6.2 Height

To measure standing height, a height board mounted at a right angle between a level floor and a straight, vertical surface (if possible with a digital counter) should be used; its reliability is well established. The height board should be made of smooth, moisture-resistant (varnished or polished) wood. The horizontal and vertical pieces should be firmly joined at right angles. A moveable piece serves as the headboard.

Height should be measured in centimetres and the reading taken to the last completed millimetre (0.1 cm).

Procedure

1. Ensure that the height board is on level ground against a wall, pillar or staircase. Make sure that the board is stable.
2. Check that shoes, socks, hair ornaments and braids have been removed. The child should wear normal, light, indoor clothing.
3. Communicate with the child in a sensitive, reassuring way.
4. Explain the height-measuring procedure to the child.
5. Height is measured with the child standing upright. Help the child to stand on the baseboard with his or her feet slightly apart and against the vertical backboard. Make sure that the child's shoulders are level and his or her hands at the sides. The back of the head, shoulder blades, buttocks, calves and heels should all touch the vertical backboard. The legs should be straight and the feet flat.
6. Position the child's head so that a horizontal line from the ear canal to the lower border of the eye socket runs parallel to the baseboard. To keep the child's head in this position, hold her or his chin in the bridge between your thumb and forefinger.
7. Ask the child to look straight ahead.
8. If necessary, push gently on the child's stomach to help him or her stand to full height.
9. Keeping the head in position, pull the headboard down with your other hand so that it rests firmly on the top of the head and compresses the hair.
10. Read the measurement, and record the child's height in centimetres to the last completed millimetre (0.1 cm). This is the last line you can actually see. For example, if the height is between 145.7 and 145.8 cm, the figure 145.7 cm is recorded.
11. In case of doubt or uncertainty about the measurement, repeat the procedure in points 5–10. Draw a line next to the boxes giving the first height measurement, and record the second measurement on this line. *Do not erase the first recorded measurement.*

6.3 Waist circumference

A non-elastic tape with a blank lead-in should be used for measuring waist circumference.

Waist circumference should be measured in centimetres and recorded to the last completed millimetre (0.1 cm).

Procedure

1. The child should wear normal, light, indoor clothing. If not already done, ask the child to remove his or her wallet, mobile phone, key chain, belt and any other object.
2. Communicate with the child in a sensitive, reassuring way.
3. Explain the waist-circumference measurement procedure to the child.
4. Ask the child whether she or he agrees to lower his or her trousers and underclothing slightly. She or he does not need to undress but can, for example, undo the trousers and lower them to the tops of the thighs.
5. Ask the child to stand straight with the abdomen relaxed, arms at the sides and feet pointing forwards and together.
6. To define the level at which the waist circumference is measured, palpate the hip area to locate the right ilium. Draw a horizontal line with a marker pen just above the uppermost lateral border of the right ilium (iliac crest) on the skin surface.
7. Feel for the subject's lower rib margin, and make a mark at the exact level of the lowest rib margin.
8. Measure the distance between the two marks (rib cage and iliac crest), and make a distinct mark between them. Ensure that this mark is easily distinguished from the other two.
9. Facing the child, place the tape around the trunk in a horizontal plane at the level marked on the right side of the trunk. A mirror on the wall or an assistant may be used to ensure correct horizontal alignment of the measuring tape.
10. The measurement should be taken at the end of a normal gentle expiration; the tape must not compress the skin. Waist circumference is measured in centimetres to the last completed millimetre (0.1 cm). This is the last line you can actually see. For example, if the waist circumference is between 40.5 and 40.6 cm, the figure 40.5 cm is recorded.
11. In case of doubt or uncertainty about the measurement, repeat the procedure in points 5–10. Draw a line next to the boxes giving the first waist circumference measurement, and record the second measurement on this line. *Do not erase the first recorded measurement.*

6.4 Hip circumference

A non-elastic tape with a blank lead-in should be used for measuring hip circumference.

Hip circumference should be measured in centimetres and recorded to the last completed millimetre (0.1 cm).

Procedure

1. The child should wear normal, light, indoor clothing. If not already done, ask the child to remove his or her wallet, mobile phone, key chain, belt and any other object.
2. Communicate with the child in a sensitive, reassuring way.
3. Explain the hip-circumference measurement procedure to the child.
4. Ask the child whether she or he agrees to lower his or her trousers and underclothing slightly. She or he does not need to undress but can, for example, undo the trousers and lower them to the tops of the thighs.
5. Ask the child to stand straight with the abdomen relaxed, the arms at the sides and the feet pointing forwards and together.
6. Take the measurement at the point of maximum circumference over the buttocks. As for waist circumference, the tape should sit horizontally around the body.
7. The measurement should be taken at the end of a normal gentle expiration; the tape must not compress the skin.

Hip circumference is measured in centimetres to the last completed millimetre (0.1 cm). This is the last line you can actually see. For example, if the hip circumference is between 53.1 and 53.2 cm, the figure 53.1 cm is recorded.

8. In case of doubt or uncertainty about the measurement, repeat the procedure in points 5–7. Draw a line next to the boxes giving the first hip circumference measurement, and record the second measurement on this line. *Do not erase the first recorded measurement.*

7. Anthropometric instruments

The comparability of data among countries will be improved if all countries use the same set of anthropometric instruments, although this is not mandatory.

If countries have to purchase new equipment, it is recommended that they choose the instruments already being used in other countries. In the past, for example, we recommended that countries use the following weighing scales: SECA 872, SECA 862, SECA Bella 840, Bellissima 841, Tanita UM–072, Beurer PS07; and the following portable height boards: SECA 214, TB I Hyssna 4205, SECA 206 and Leicester. Most of the SECA instruments have, however, been replaced by new models. Now, SECA 874 scales and SECA 217 height boards meet the requirements.

7.1 Calibration procedures

The weighing scales and height boards should be checked and calibrated frequently, ideally early in the morning before measurements begin on each of the days that measurements are taken (if calibration features are available and the instruments can be calibrated by the user). All checks should be marked on a calibration form with the date. The measuring tape does not need to be calibrated (2, 3).

7.1.1 Weighing scale

The weighing scale should be checked over the full range of standard metal (brass) weights (e.g. 5, 10 and 20 kg) or calibrated containers of water of known weight to make sure that the scales are accurate at both low and high values.

First, use the calibrating procedure, recommended by the manufacturer. .

Weigh test weights of 5, 10, 20 and 35 kg successively, and mark the results on the calibration form.

Check whether all the recorded weights correspond to the test weights. In case of disagreement, repeat the check to determine whether it is due to a recording error. If there is still disagreement, check another set of scales. If that set functions correctly, use it on that day, and advise the Principal Investigator or supervisor of the problem.

7.1.2 Height board

The height board should be checked to ensure that the minimum value indicated corresponds exactly to the counter reading when the footboard or headboard is moved to the minimum.

The general indication of de-calibration of height equipment is a 3-mm deviation from the mark. If the counter on the height board gives a clearly inaccurate reading, unfasten the screws that hold it in position (a magnetic screwdriver works best), and slide it out of its case. Then, hold a rod of known length in an upright position and bring the headboard to rest over it. Adjust the reading on the counter manually to the length of the rod, slide the counter showing the correct reading back into its case, and screw it back firmly.

Polyvinyl chloride (PVC) or metal rods of known length (100 and 150 cm) should be used. Note that metal calibration rods may vary slightly in response to changes in ambient temperature (3).

Move the headboard of the height board to the minimum (ensure that no small objects are lying on the board).

Check the minimum value on the counter reading against the minimum value indicated on the board. If they agree, mark the minimum value on the calibration form. If they disagree, mark the counter reading on the calibration form, check and use another height board, and advise the Principal Investigator or supervisor of the problem.

Check whether the counter displays 100 cm and 150 cm when metal or PVC rods of these lengths are placed between the footboard and the headboard. Mark the counter reading on the calibration form. If there is disagreement, check and use another height board, and advise the Principal Investigator or supervisor of the problem.

7.1.3 Sample calibration form

Instrument	Date						
Weighing scale							
Zero value							
5 kg							
10 kg							
20 kg							
35 kg							
Height board							
Minimum value							
100 cm							
150 cm							

7.2 Maintenance, storage and transport

Maintenance is important for ensuring the accuracy of equipment and extending its life. Good equipment is expensive, and examiners should understand this fact. All equipment should be handled with care during storage, transport and use. It should be kept clean, and all parts should be stored and transported in their correct places. Cool, dry storage is a standard requirement for anthropometric equipment (2, 3).

Different instruments and parts require different materials for cleaning and regular care. For example, a height board may be unstable because the metal guide along which the counter wheel runs is bent. Moving the headboard quickly can cause the gears to skid and give an inaccurate reading. It is important that some replacement parts for each piece of equipment are at hand, e.g. screws for the height board.

Portable height boards are robust if they are handled with care. They should always be transported with the moveable footboard and headboard well locked.

Weighing scales will not function correctly if they become too warm or if there is too little light. Thus, they should be used indoors or in the shade, while ensuring sufficient light. They should be stored at normal indoor temperature and protected against humidity and damp. If they have been transported in hot conditions, they should be put in a cool place for 15 min before use. Scales should be handled with care under all circumstances.

Tape measures are accurate in virtually all circumstances. Spare tape measures should nevertheless be available in case of damage.

8. References

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The WHO Regional Office for Europe

The World Health Organization (WHO) is a specialized agency of the United Nations created in 1948 with the primary responsibility for international health matters and public health. The WHO Regional Office for Europe is one of six regional offices throughout the world, each with its own programme geared to the particular health conditions of the countries it serves.

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