

72-item Semi-Quantitative Food Frequency Questionnaire (72-item SQ-FFQ)

We conduct research on nutrition and health.

The information you provide is confidential and will be used only for scientific purposes.

1. **Code number** (assigned by the researcher): |_|_|_|_|_|_|_|_|
2. **Sex:** (1) Male |_|_| (2) Female |_|_|
3. **Gender you identify with:** (1) The same |_|_| (2) Other |_|_|
4. **Age** at last birthday (in years): |_|_|_|_|
5. **Date of the survey** (dd/mm/yyyy): |_|_|/|_|_|/|_|_|_|_|

Please answer as best you can:

How often did you eat these foods in the last 12 months?

Please take into account all meals and snacks between meals, eaten at home and eaten out.

Standard portion sizes are given for the foods.

If you are unable to answer, please specify approximately.

Such an answer will be better than no answer.

Please select **one** best-fitting **answer** each time.

Food products/dishes (standard portion size)	Consumption frequency (in the last 12 months)					
	Never or almost never (1)	Once a month or less (2)	Several times a month (3)	Several times a week (4)	Daily (5)	Several times a day (6)
Sweets and snacks						
6. Sugar added to beverages (2 level teaspoons)						
7. Honey added to beverages and dishes (1 level teaspoon)						
8. Chocolate , chocolate sweets and bars (1/2 chocolate bar)						
9. Non-chocolate candies , e.g. hard caramels, jelly sweets, boiled sweets, fudge (1/2 handful)						
10. Biscuits and cakes , e.g. shortbread cookies, cream cakes, fruit cakes, sponge cakes, cheesecakes, doughnuts, poppy- seed cakes, muffins, croissants (10 pieces of cookies or 1 medium portion of cake)						
11. Ice creams and custard (2 scoops or 1 medium piece/1 small bowl)						
12. Savoury snacks , e.g. crisps, crackers, pretzels (1/2 medium package)						
Dairy products and eggs						
13. Milk and milk beverages – natural , e.g. milk, milk soup, yoghurt, kefir, buttermilk (1 glass (not a full))						

Food products/dishes (standard portion size)	Consumption frequency (in the last 12 months)					
	Never or almost never (1)	Once a month or less (2)	Several times a month (3)	Several times a week (4)	Daily (5)	Several times a day (6)
14. Milk beverages – sweetened , e.g. fruit yoghurts, yoghurts with chocolate flakes, flavoured buttermilk, hot chocolate (1 glass (not a full) or 1 medium package)						
15. Cheese curds , e.g. cheese curd, natural cottage cheese, mozzarella, soft cheese, cottage cheese with herbs (1/2 medium package)						
16. Flavoured cheese curds , e.g. with fruit, chocolate, vanilla (1 small package)						
17. Cheese , e.g. hard cheese, blue cheese, processed cheese (1 medium slice)						
18. Eggs and egg dishes , e.g. scrambled eggs, omelette, egg salad, cooked eggs (2 medium pieces)						
Cereal products						
19. Wholemeal bread , e.g. wholemeal bread (wheat or rye), graham bread, seeded loafs, pumpernickel, wholemeal cracker bread (2 medium slices)						
20. White bread , e.g. white bread (wheat or rye), wheat-rye bread, toasted bread, white bread rolls, butter rolls, croissants (2 medium slices)						
21. Cereals , e.g. oat flakes, barley flakes, rice flakes, muesli (not 'crunchy') (4 tablespoons)						
22. Ready-to-eat breakfast cereals , e.g. muesli crunchy, cornflakes, other ready-to-eat breakfast cereals (sweetened) (1 glass or 10 tablespoons)						
23. White pasta and white pasta dishes (e.g. spaghetti) (2/3 dinner plate)						
24. Wholemeal pasta and wholemeal pasta dishes (2/3 dinner plate)						
25. Coarse groats , e.g. buckwheat groats, barley groats; brown rice (2/3 dinner plate)						
26. Fine groats , e.g. semolina, milled barley; white rice (2/3 dinner plate)						
27. Sweet dumplings and pancakes , e.g. with fruit, cottage cheese (8 dumplings or 3 pancakes)						
28. Savoury dumplings and pancakes , e.g. with meat, cabbage, mushrooms (8 dumplings or 3 pancakes)						
29. Fast food , e.g. pizza, hamburgers, kebab (1/2 medium pizza or 1 medium portion)						

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	Never or almost never (1)	Once a month or less (2)	Several times a month (3)	Several times a week (4)	Daily (5)	Several times a day (6)
Culinary fats						
30. Vegetable oil , all kinds (1 tablespoon)						
31. Butter (2 level teaspoons)						
32. Margarine (for baking, frying, spreading) (2 level teaspoons)						
33. Cream , e.g. single, double, sour, used as an ingredient of dishes or added to beverages (1 tablespoon)						
34. Other animal fats , e.g. lard, pork fat (2 level teaspoons)						
35. Mayonnaise and salad dressings , e.g. vinaigrette, dressings based on mayonnaise (1 tablespoon)						
Fruit						
36. All kinds of fruit , fresh or frozen (in total) (1 medium piece or 1 glass)						
37. Stone fruit (fresh or frozen), e.g. apricots, cherries, peaches, plums, grapes (e.g. 7 plums or 1 glass)						
38. Kiwi and citrus fruit (fresh), e.g. oranges, mandarins, grapefruits, lemons, pomelos (e.g. 1 medium kiwi)						
39. Other tropical fruit (fresh), e.g. pineapple, watermelon, melon, mangoes, fresh dates and figs (e.g. 5 pineapple slices or 1 glass)						
40. Berries (fresh or frozen), e.g. strawberries, raspberries, blackberries, blueberries, redcurrants, blackcurrants (1 glass)						
41. Bananas (fresh) (1 medium piece)						
42. Apples and pears (fresh) (1 medium piece)						
43. Avocado (1 medium piece)						
44. Olives (10 pieces)						
45. Dried fruit , e.g. raisins, apricots, figs, apples, plums, dates (1 handful)						
46. Fruit preserves and fruit condiments , e.g. compote fruit, jams , dried bananas (1 tablespoon)						
Vegetables and seeds						
47. All kinds of vegetables , fresh or frozen (in total) (1 small bowl or 1 glass)						
48. Cruciferous vegetables , e.g. cabbages, brussel sprouts, cauliflower, broccoli, kale (1 glass)						
49. Yellow-orange vegetables , e.g. carrots, peppers (e.g. 2 medium carrots, 1/2 medium pepper or 1 glass)						
50. Leafy green vegetables , e.g. spinach, chicory, lettuce, rocket, leek, celery, parsley (2 handfuls)						

Food products/dishes (standard portion size)	Consumption frequency (in the last 12 months)					
	Never or almost never (1)	Once a month or less (2)	Several times a month (3)	Several times a week (4)	Daily (5)	Several times a day (6)
51. Tomatoes (1 medium piece)						
52. Fresh cucumber , squash, courgette, pumpkin, aubergines, etc. (1 medium piece or 1 glass)						
53. Root vegetables and others , e.g. parsley root, red beets, parsnips, onions, garlic, celery root, radish, turnips (1 medium piece or 1 glass)						
54. Fresh and tinned legumes , e.g. corn, green peas, green beans (1 small plate or 2/3 glass)						
55. Dry and processed pulses , e.g. broad beans, beans, soya, peas and in dishes , e.g. split pea soup, baked beans, spreads (hummus) (1/4 glass)						
56. Potato chips , potato pancakes, rosti (1 medium portion or 1 small plate)						
57. Potatoes , boiled or baked (without culinary fat) (4 medium pieces)						
58. Other potato dishes , e.g. potato dumplings, gnocchi (1 dinner plate)						
59. Nuts , e.g. peanuts, hazelnuts, walnuts, cashews, coconuts, chestnuts (1 handful)						
60. Nut spreads , e.g. peanut butter, chocolate-nut spread (2 level teaspoons)						
61. Seeds , e.g. pumpkin seeds, sesame seeds, sunflower seeds (1 handful)						
Meat products and fish						
62. Hot-dogs , meat loaf (2 medium pieces)						
63. Sausages , e.g. smoked sausages from pork, salami (1 medium piece)						
64. High quality cured meats , e.g. ham, poultry and pork-beef good quality cold meats (2 medium slices)						
65. Offal products , e.g. liver, blood sausage, pates , bacon (2 medium slices)						
66. Red meat , e.g. pork, beef, veal (1 portion of the size of a deck of cards)						
67. Poultry and rabbit , e.g. poultry meat from chicken, duck, turkey (1 portion of the size of a deck of cards)						
68. Venison , e.g. meat from wild boar, roe deer, quail, wild duck, hare (1 portion of the size of a deck of cards)						
69. Lean fish , e.g. pollock, cod, perch, hake, carp to 1 kg, tuna, panga, trout (1 palm-sized portion)						
70. Oily fish , e.g. salmon, sardines, herring, mackerel, large carp, eel (1 palm-sized portion)						

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Food products/dishes (standard portion size)	Consumption frequency (in the last 12 months)					
	Never or almost never (1)	Once a month or less (2)	Several times a month (3)	Several times a week (4)	Daily (5)	Several times a day (6)
Beverages						
71. Fruit juices and nectars, e.g. mixed fruit juice, orange, apple, blackcurrant (1 glass (not a full))						
72. Vegetable and vegetable-fruit juices, e.g. mixed vegetable juice, tomato, carrot and carrot-fruit juice (1 glass (not a full))						
73. Energy drinks, all kinds (1 glass or 1 can)						
74. Sweetened beverages, e.g. cola type, water with fruit syrup, ice tea (1 glass)						
75. Beer (1 bottle or 1 can)						
76. Wine and cocktails (1 medium glass)						
77. Vodka and other spirits (2 shots)						

We sincerely thank you for your time

Description of a semi-quantitative food frequency questionnaire

72-item SQ-FFQ

The **72-item Semi-Quantitative Food Frequency Questionnaire** with the acronym **72-item SQ-FFQ** is developed by Joanna Kowalkowska a semi-quantitative and extended version of the qualitative questionnaire 62-itemFFQ-6®, authored by Lidia Wadolowska and Ewa Niedzwiedzka ([doi:10.3390/nu11092183](https://doi.org/10.3390/nu11092183)).

The 72-item SQ-FFQ consists of two parts: (i) basic information, including questions about gender, age and date of the survey; (ii) the main part of the questionnaire, concerning the usual frequency of consumption of 72 food items during the last 12 months.

The 72-item SQ-FFQ allows to obtain information on the frequency of consumption of 72 food items representing 8 food groups:

<p>1. Sweets and snacks</p> <ul style="list-style-type: none"> 1.1. Sugar 1.2. Honey 1.3. Chocolate 1.4. Non-chocolate candies 1.5. Biscuits and cakes 1.6. Ice creams and custard 1.7. Savoury snacks <p>2. Dairy products and eggs</p> <ul style="list-style-type: none"> 2.1. Milk and natural milk beverages 2.2. Sweetened milk beverages 2.3. Cheese curds 2.4. Flavoured cheese curds 2.5. Cheese 2.6. Eggs and egg dishes <p>3. Cereal products</p> <ul style="list-style-type: none"> 3.1. Wholemeal bread 3.2. White bread 3.3. Cereals 3.4. Ready-to-eat breakfast cereals 3.5. White pasta and white pasta dishes 3.6. Wholemeal pasta and wholemeal pasta dishes 3.7. Coarse groats, brown rice 3.8. Fine groats, white rice 3.9. Sweet dumplings and pancakes 3.10. Savoury dumplings and pancakes 3.11. Fast food <p>4. Culinary fats</p> <ul style="list-style-type: none"> 4.1st Vegetable oil 4.2nd Butter 4.3rd Margarine 4.4th Cream 4.5th Other animal fats 4.6th Mayonnaise and salad dressings 	<p>5. Fruit</p> <ul style="list-style-type: none"> 5.1. All kinds of fruit (in total) 5.2. Stone fruit 5.3. Kiwi and citrus fruit 5.4. Other tropical fruit 5.5. Berries 5.6. Bananas 5.7. Apples and pears 5.8. Avocado 5.9. Olives 5.10. Dried fruit 5.11. Fruit preserves and fruit condiments <p>6. Vegetables and seeds</p> <ul style="list-style-type: none"> 6.1. All kinds of vegetables (in total) 6.2. Cruciferous vegetables 6.3. Yellow-orange vegetables 6.4. Leafy green vegetables 6.5. Tomatoes 6.6. Cucurbit vegetables (like cucumbers) 6.7. Root vegetables and others 6.8. Fresh and tinned legumes 6.9. Dry and processed pulses 6.10. Potato chips, potato pancakes 6.11. Potato (boiled/baked) 6.12. Other potato dishes 6.13. Nuts 6.14. Nut and chocolate-nut spreads 6.15. Seeds <p>7. Meat products and fish</p> <ul style="list-style-type: none"> 7.1. Hot-dogs, meat loaf 7.2. Sausages 7.3. High quality cured meats 7.4. Offal products 7.5. Red meat 7.6. Poultry and rabbit 7.7. Venison 7.8. Lean fish 7.9. Oily fish
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8. Beverages 8.1. Fruit juices and nectars 8.2. Vegetable and vegetable-fruit juices 8.3. Energy drinks 8.4. Sweetened beverages 8.5. Beer 8.6. Wine and cocktails 8.7. Vodka and other spirits	
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Respondents determine the usual frequency of consumption of food items by selecting one of **6 categories of frequency of food consumption**: (1) never or almost never, (2) once a month or less, (3) several times a month, (4) several times a week, (5) daily, (6) several times a day.

Converting categories of food consumption frequency into daily frequency of food consumption

Frequency of food consumption obtained using the 72-item SQ-FFQ (qualitative data) can be converted to daily frequency of food consumption [times/day] (semi-quantitative data) using the values given below.

Categories of consumption frequency	Ranks assigned to consumption frequency categories	Daily frequency of consumption [times/day]
Never or almost never	1	0
Once a month or less	2	0.025
Several times a month	3	0.1
Several times a week	4	0.571
Daily	5	1
Several times a day	6	2

The 72-item SQ-FFQ contains two questions on the frequency of consumption of **fruit (in total) and vegetables (in total)**, which can be used: (i) as verification questions to correct the frequency of consumption of different types of fruit and vegetables (many respondents tend to overestimate their consumption of fruit and vegetables, especially if the questionnaire contains many detailed questions about this food group) - [Appendix 1](#), (ii) in order to shorten the questionnaire – by excluding questions regarding the frequency of consumption of particular types of fruit and vegetables (15 questions: Q37-44, Q48-54), and instead of detailed questions, including data from the questions on the frequency of consumption of fruit (in total) and vegetables (in total) (Q36 and Q47, respectively).

Based on the collected data, respondents can be ranked according to their food consumption and/or their characteristic **dietary patterns** (DPs) can be identified.

For each of the 72 food items, **standard food portion sizes** are provided (universal for adults of both sexes; [Appendix 2](#)). Then, using tables of food composition and nutritional value, it is possible to obtain quantitative data on the energy and nutritional value of the usual diet of adults. The possibilities of processing data from the semi-quantitative 72-item SQ-FFQ are described in the publication ([Kowalkowska, Wadolowska 2022; doi:10.3390/nu14132696](#)).

The results of the validation of the semi-quantitative 72-item SQ-FFQ are described in the publication:

Kowalkowska J, Wadolowska L. The 72-Item Semi-Quantitative Food Frequency Questionnaire (72-Item SQ-FFQ) for Polish Young Adults: Reproducibility and Relative Validity. *Nutrients* 2022;14(13):2696. <https://doi.org/10.3390/nu14132696>

Appendix 1. A manual for the adjustment of consumption frequency of single items of vegetables and fruits

Step 1.

The consumption frequency collected with the 72-item SQ-FFQ (six categories to choose from) should be converted into the daily frequency of consumption [times/day] as follows:

Categories	Daily frequency of consumption [times/day]
(1) Never or almost never	0
(2) Once a month or less	0.025
(3) Several times a month	0.1
(4) Several times a week	0.571
(5) Daily	1
(6) Several times a day	2

Step 2.

Based on the data on consumption frequency of vegetables and fruits in general (questions Q47 and Q36, respectively), **for each respondent individual correction coefficients** (weights) should be determined to adjust the consumption frequency of single items of vegetables and fruits collected with separate questions (Q48-54 and Q37-44, respectively), according to the formulas:

Correction coefficient for vegetables (weight) = consumption frequency of **vegetables in general** (all kinds) divided by **the sum of the consumption frequency of seven single items** of vegetables

$$(Q47) \text{ [times/day]} / (Q48+Q49+Q50+Q51+Q52+Q53+Q54) \text{ [times/day]}$$

where: All kinds of vegetables, fresh or frozen (in total) [Q47], Cruciferous vegetables [Q48], Yellow-orange vegetables [Q49], Leafy green vegetables [Q50], Tomatoes [Q51], Cucurbit vegetables (like cucumbers) [Q52], Root vegetables and others [Q53], Fresh and tinned legumes [Q54]

Correction coefficient for fruits (weight) = consumption frequency of **fruits in general** (all kinds) divided by **the sum of the consumption frequency of eight single items** of fruits

$$(Q36) \text{ [times/day]} / (Q37+Q38+Q39+Q40+Q41+Q42+Q43+Q44) \text{ [times/day]}$$

where: All kinds of fruit, fresh or frozen (in total) [Q36], Stone fruit [Q37], Kiwi and citrus fruit [Q38], Other tropical fruit [Q39], Berries [Q40], Bananas [Q41], Apples and pears [Q42], Avocado [Q43], Olives [Q44]

Step 3.

Adjusted frequency of consumption for each of seven single items of vegetables (or eight single items of fruits) should be calculated by **multiplying the crude consumption frequency of a single item** of vegetables (or fruits) [times/day] **and the variable with individual correction coefficients** (weights) for vegetables (or fruits) estimated for each respondent.

Note that, for example, the sum of the adjusted frequencies of consumption of seven single items of vegetables [times/day] should equal the consumption frequency of vegetables in general (all kinds) [times/day] for each respondent; the same for fruits.

The example of the above calculations in Statistica software (TIBCO Software Inc.) is available on request sent to the corresponding author: joanna.kowalkowska@uwm.edu.pl

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Appendix 2. 72-item SQ-FFQ – representatives of the food items and standard food portion sizes

This information has been published as supplementary material to the publication on the validation of the 72-item SQ-FFQ (Kowalkowska, Wadolowska 2022; doi:10.3390/nu14132696) and is available at the following link (Table S1): <https://www.mdpi.com/article/10.3390/nu14132696/s1>