

## 14. EATING HABITS OF POLES

### 14B. FOOD CONSUMPTION IN HOUSEHOLDS AND EATING HABITS OF ADULTS

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Adherence to a healthy lifestyle, including proper nutrition and physical activity, is essential for maintaining good health. A healthy diet throughout life reduces the risk of health disorders, including malnutrition, overweight and obesity, as well as other chronic non-communicable diseases such as diabetes, cardiovascular disease and some cancers. Increased production of processed foods, rapid urbanisation and changing lifestyles have led to changes in dietary patterns. In recent years, consumption of foods high in energy, fats, free sugars and salt/sodium has been observed, and many people do not consume enough vegetables, fruits or other fibre-rich foods such as whole-grain cereals.<sup>1</sup>

Monitoring of the diet is an important element of assessing the population's health status, especially when it is performed at regular intervals and involves a nationally representative group of people. Data from the annual household budget surveys conducted by Statistics Poland, covering a representative group of households, is useful for that purpose.<sup>2</sup> Budget surveys are a source of information on food consumption in the country. They are also used to analyse trends in the consumption of various product groups and possible changes in the population's dietary pattern.

Assessing diets at the individual level enables a more accurate analysis of the eating habits of different population groups. One of the methods for an individual assessment of the quality of diet is the examination of the frequency of consumption of selected food groups.

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<sup>1</sup> WHO. Healthy diet. <https://www.who.int/news-room/fact-sheets/detail/healthy-diet> (access: 10 April 2025)

<sup>2</sup> Statistics Poland Household budgets 2023. Warsaw 2024, p. 116

This chapter presents the results of the analysis of food consumption and energy and nutrient intake in the years 2019-2023, based on household budget surveys in Poland. Additionally, the results of research on the frequency of consumption of selected food product groups, some eating habits and other parameters related to the diet of Poles in 2025 are described.

## **Analysis of food product consumption and energy and nutrient intake by Poles in the years 2019-2023, based on household budget surveys**

The assessment of food consumption in Poland was made based on the data acquired by the – NIPH NIH – NRI from the household budget surveys conducted 2019-2023 by Statistics Poland. These surveys covered from 28,089 (in 2023) to 35,923 (in 2019) households each year, selected using a two-stage, stratified sampling scheme with different selection probabilities at the first stage. The first stage sampling units were statistical areas (up to several census tracts) or clusters of areas, while flats were selected at the second stage<sup>2</sup>. The number of persons living in the selected households was 93,674 in 2019, and it dropped to 68,329 in 2023.

The household budget survey method involved the registration by a selected household of the amount of food purchased in a given month for cash, using a payment card, on credit or using funds obtained by the household in another way (from their own farm or employee plot, home garden, own enterprise, received as a gift, etc.). The advantage of the study is that it is conducted annually on a representative sample of households in Poland. In turn, the disadvantage is that it involves a random person in a given household and not all individuals in that dwelling. Moreover, the study does not take into account food consumed in catering facilities and such products as: pizza and other flour dishes, other ready-made meals, potato flour, popcorn, porridge, diet food, canned fish, milk drinks (e.g. kefir and buttermilk), sauces and spices.

The energy value of the diet and its nutrient content were calculated based on data in the „Tables of composition and nutritional value of food”.<sup>3</sup> When linking the data on the consumption of food products with that from the above tables conversion factors developed at NIPH NIH – NRI were used, which enabled the appropriate assignment of individual items from the tables to the assortment groups from the Statistics Poland data.

<sup>3</sup> Kunachowicz H., Nadolna I., Przygoda B., Iwanow K., Tabele składu i wartości odżywczej żywności, PZWL Wydawnictwo Lekarskie, Warszawa, 2018.

Food consumption data show that the consumption of cereals varied in 2019-2023 (Table 14b.1). Among the products from this group, the most common was bread, the consumption of which decreased from almost 3 kg/person/month in 2019 to 2.6 kg/person/month in 2023.

As in previous years, there was a decline in the consumption of potatoes and processed potatoes, by 0.4 kg/person/month in the period from 2019 to 2023.

The consumption of vegetables and processed foods increased slightly in 2019-2020, but declined in the following 3 years. Particularly low consumption of these products was recorded in 2023. The consumption of fruit and preserves varied. The lowest was in 2022, and did not change much in the following year. The insufficient consumption of fruit and vegetables in Poland should be emphasised. In 2019-2023, it ranged from 298-325 g/person/day and was lower than the WHO recommendations, according to which the intake of vegetables and fruits, excluding potatoes and other starchy vegetables, should be at least 400 g per day.<sup>4</sup>

In 2022-2023, the consumption of products from the meat, offal and processed products group was slightly lower than in 2019-2021. Meat consumption remained at a similar level with slight fluctuations over the period. No change was observed in the consumption of pork, and a persistently low share of beef and veal was noticed, as well as fluctuations in the consumption of poultry. For processed meat, a slight downward trend was observed with varied consumption of red meat products.

According to the National Institute of Public Health NIH – National Research Institute recommendations, the consumption of red meat and meat products should not exceed 0.5 kg per week<sup>5</sup>. Taking into account the results of household budget surveys, the consumption of pork, beef, veal and all meat products/processed meat was in the range of 773-817 g/person/week in 2019-2023, which significantly exceeded the experts' recommendations.

As in previous years, there was a low consumption of fish and processed fish, with slight fluctuations.

In terms of fats, both of animal and plant origin, the consumption was at a level of approximately 1 kg/person/month. The diet of Poles contained more than half as much vegetable fat as animal fat. Butter was the main source of animal fat.

<sup>4</sup> WHO, A healthy diet sustainably produced: information sheet, 2018, <https://www.who.int/publications/i/item/WHO-NMH-NHD-18.12> (dostęp z dnia 09 04 2025)

<sup>5</sup> NIZP PZH – PIB, Zalecenia zdrowego żywienia, 2020, <https://ncez.pzh.gov.pl/abc-zywienia/talerz-zdrowego-zywienia/> (access: 9 April 2025)

In 2020, milk consumption increased compared to the previous year, followed by a decline. The consumption of other dairy products varied. No change was observed in the number of eggs consumed, which remained at the level of approximately 11 pcs/person/month.

Sugar consumption showed a slight downward trend, with variations from year to year. There was no clear change in the consumption of confectionery products.

The consumption of salt varied from 0.15 to 0.16 kg/person/month, i.e. 5-5.3 g per day. It should be noted that this is only table salt added to products and dishes; the amount does not include salt already contained in the consumed products. These figures also exclude consumption in catering facilities and purchased ready meals.

In the group of non-alcoholic beverages, there were fluctuations in the consumption of mineral and spring water and a decrease in the consumption of other non-alcoholic beverages in the analysed period.

Based on food consumption data the energy and nutrient intake in households was estimated. After a slight increase in 2020 compared to 2019 (by 2.4%), the energy value of the Poles' diet decreased by over 100 kcal (by 6.6%) in the years 2020-2023 (Table 14b.2). During that period, there was a decrease in the content of all macronutrients in the diet. The digestible carbohydrates intake decreased to the greatest extent (by 9%), while there was a smaller decline in the intake of protein (by 4.3%) and fat (by 4.6%). In the case of fat, the main decrease was observed in the content of vegetable fat in the diet (by 6.6%), the decrease in the content of animal fat was less significant (by 2.9%). The reduction in fat intake was due to a decrease in the intake of all types of fatty acids, but the largest decrease was observed for polyunsaturated fatty acids (by 7.4%).

The share of energy from individual macronutrients also changed; the percent of energy from fat, including saturated fatty acids, increased, and the percent of energy from digestible carbohydrates decreased.

In 2020, the fibre content in the diet was similar to the previous year, but a significant decrease was recorded (by 8.1%) in 2020-2023.

In 2020, the content of most of the analysed minerals and vitamins in the diet was higher compared to 2019. However, in 2020-2023, the reduction in the energy value of the diet was combined with a decrease in the content of almost all minerals and vitamins. There was no change in copper intake. In contrast, there was a significant decline in the intake of manganese (by 7.1%), vitamin B<sub>1</sub> (by 9.8%), B<sub>2</sub> (by 7.8%), B<sub>6</sub> (by 9.7%), C (by 7.3%) and folate (by 7.7%). It should be noted that the content of most minerals and vitamins in the diet in 2023 was also lower than that recorded in 2019. This particularly concerned vitamins: E, D, B<sub>1</sub>, B<sub>2</sub>, B<sub>6</sub> and folate.

The observed changes in the nutritional value of the Poles' diet were not beneficial. The decrease in fat intake in 2020-2023 was primarily due to the decrease in the consumption of plant products that are a source of that ingredient. In the period from 2019 to 2023, the percentage of energy from fat, which was already relatively high, increased. This was largely associated with an increase in energy from saturated fatty acids, which should be as low as possible.

The fibre content in the diet of Poles was too low based on the dietary reference values.<sup>6</sup> In the case of minerals and vitamins, a low intake of calcium and vitamin D was noted. The reduction in their content in the diet in 2020-2023 was all the more unfavourable.

A beneficial change, however, was the reduction in sodium content in the diet of Poles, which in 2023 was lower than in 2019. Nevertheless, despite the decrease, it was well above the dietary reference values for that nutrient. While converting the sodium content into salt consumption, it was found that it was 8.8 g/person/day in 2020, and 8.3 g in 2023. These values indicate the total amount of table and cooking salt, as well as salt already found in the consumed products. During the analysed period, the value was well above the maximum amount of 5 g recommended by the World Health Organisation.<sup>7</sup>

**Table 14b.1.** Total average monthly consumption<sup>a/</sup> of food in the households in the years 2019-2023; per person

Food products	Unit of measurement	2019	2020	2021	2022	2023
Bread	kg	2.98	2.75	2.67	2.58	2.61
Other bakery products	kg	0.98	0.99	1.05	1.08	1.04
Wheat flour and other flours	kg	0.59	0.70	0.63	0.61	0.58
Groats and cereals, rice	kg	0.42	0.45	0.41	0.42	0.38
Pasta and pasta products	kg	0.40	0.42	0.41	0.42	0.39
Potatoes and potato products <sup>b/</sup>	kg	3.02	2.96	2.77	2.72	2.60
Vegetables and vegetable products	kg	4.77	4.91	4.83	4.57	4.39
Fruit and fruit products	kg	4.75	4.92	5.05	4.62	4.68
Meat, offal, and their products	kg	5.08	5.09	4.96	4.8	4.86
of which: meat	kg	2.87	2.90	2.82	2.67	2.79
pork	kg	1.22	1.24	1.26	1.22	1.20

<sup>6</sup> Rychlik E., Stoś K., Woźniak A., Mojska H., Normy żywienia dla ludności Polski. National Institute of Public Health NIH – National Research Institute. Warszawa 2024

<sup>7</sup> World Health Organisation. Guideline: Sodium intake for adults and children, World Health Organisation, 2012.

Food products	Unit of measurement	2019	2020	2021	2022	2023
beef and veal	kg	0.12	0.11	0.1	0.08	0.09
poultry	kg	1.53	1.55	1.45	1.36	1.49
Meat products	kg	2.21	2.19	2.14	2.13	2.07
of which: cold cuts excluding poultry <sup>c/</sup>	kg	1.44	1.42	1.38	1.38	1.40
Fish and fish products <sup>d/</sup>	kg	0.27	0.27	0.28	0.24	0.24
Fat: total	kg	1.04	1.08	1.02	1.01	1.01
animal (excluding butter)	kg	0.07	0.07	0.07	0.07	0.06
vegetable	kg	0.69	0.69	0.63	0.66	0.63
butter	kg	0.28	0.32	0.32	0.28	0.32
Milk and milk-based drinks <sup>e/</sup>	l	3.38	3.61	3.47	3.41	3.36
Cheese	kg	0.90	0.95	0.97	0.94	1.00
Cream	kg	0.35	0.36	0.35	0.34	0.35
Eggs	pc.	10.99	11.04	10.8	10.5	10.60
Sugar	kg	0.80	0.84	0.75	0.76	0.70
Confectionery products	kg	0.49	0.52	0.54	0.54	0.52
Table salt:	kg	0.15	0.16	0.16	0.16	0.15
Mineral and spring water	l	5.78	5.83	5.93	5.78	5.95
Other non-alcoholic beverages	l	3.86	3.89	3.43	3.54	3.13

a/ – excluding the consumption in catering facilities; b/ – with crisps; c/ – premium meat: sirloin, ham, gammon and dry sausages; other cured meat; d/ – excluding canned fish, salted herring and other fish and seafood products; e/ – excluding dairy desserts and dairy drinks such as: kefir, buttermilk, yoghurt.

**Table 14b.2.** Total average energy and selected nutrients intake in the households in the years 2019-2023; per person

Energy and nutrients	Unit	2019	2020	2021	2022	2023
Total energy	kcal	1674	1715	1663	1637	1601
	kJ	7009	7180	6965	6856	6705
Energy from animal products	kcal	526	546	540	518	530
Energy from vegetable products	kcal	1148	1168	1123	1119	1071
<b>Macronutrients:</b>						
Protein: total	g	61.7	62.6	61.5	60.0	59.9
animal	g	41.1	41.8	41.2	40.1	40.7
vegetable	g	20.6	20.9	20.3	19.9	19.2
Fat: total	g	69.0	71.4	69.7	68.7	68.1
animal	g	36.2	38.0	37.6	35.7	36.9
vegetable	g	32.7	33.4	32.1	33.0	31.2

Energy and nutrients	Unit	2019	2020	2021	2022	2023
Carbohydrates	g	195	199	191	189	181
<b>Percent of energy derived from:</b>						
Proteins	%	15.0	14.8	15.0	14.9	15.2
Fat	%	36.5	36.8	37.0	37.1	37.6
Carbohydrates	%	47.4	47.2	46.8	46.9	46.0
<b>Fatty acids:</b>						
Saturated acids:	g	25.1	26.2	25.9	25.1	25.4
Monounsaturated	g	27.6	28.5	27.8	27.7	27.1
Polyunsaturated	g	12.0	12.2	11.6	11.7	11.3
Percent of energy from saturated fatty acids	%	13.5	13.7	14.0	13.8	14.3
Ratio of polyunsaturated to saturated acids (P:S)		0.5	0.5	0.4	0.5	0.4
Cholesterol	mg	228	234	230	222	227
Fibre	g	13.4	13.5	13.2	12.7	12.4
<b>Minerals:</b>						
Sodium	mg	3395	3516	3487	3463	3332
Potassium	mg	2939	3015	2972	2902	2864
Calcium	mg	529	553	550	539	539
Phosphorous	mg	957	978	962	939	936
Magnesium	mg	288	296	293	287	282
Iron	mg	9.0	9.1	9.0	8.7	8.6
Zinc	mg	7.8	7.9	7.8	7.6	7.5
Copper	mg	1.3	1.3	1.3	1.3	1.3
Manganese	mg	2.7	2.8	2.7	2.6	2.6
Iodine	µg	141	150	149	148	141
<b>Vitamins:</b>						
Vitamin A	µg	929	943	929	884	891
Beta-carotene	µg	2229	2320	2288	2138	2059
Vitamin D	µg	2.86	2.85	2.8	2.7	2.7
Vitamin E	mg	10.0	10.1	9.7	9.8	9.4
Vitamin B1	mg	1.20	1.22	1.2	1.2	1.1
Vitamin B2	mg	1.37	1.41	1.4	1.4	1.3
Niacin	mg	18.0	18.3	18.0	17.6	17.6
Vitamin B6	mg	1.52	1.55	1.5	1.5	1.4
Folate	µg	189	194	190	183	179
Vitamin B12	µg	3.06	3.10	3.1	3.0	3.0
Vitamin C	mg	77.0	79.5	79.8	75.1	73.7

A study assessing the dietary habits of the adult population in Poland, conducted between 2017 and 2020 by the Medical University of Warsaw (WUM) as part of the National Health Programme, revealed numerous nutritional inadequacies. The study was representative of the Polish population and included two age groups: 19-64 years<sup>8</sup> and 65 years and older<sup>9</sup>.

Consistent with findings from household budget surveys, a high proportion of energy from saturated fatty acids was observed, exceeding 10% of total energy intake in 78% of individuals aged 19-64 years and 80% of those aged 65 years and older. Excessive intake of saturated fats was also associated with high dietary cholesterol consumption.

Dietary fibre intake was low. Only 14% of adults aged 19-64 years consumed fibre in amounts meeting recommended levels. Among those aged 65 years and older, 23% met the recommended intake, although it should be noted that the recommended amount for older adults is lower.

Analysis of vitamin intake indicated that insufficient vitamin D intake was the most prevalent issue. The proportion of individuals with vitamin D intake below the recommended adequate intake was 98% in the 19-64 age group and 96% in those aged 65 years and older. Folate intake was also inadequate in a substantial proportion of participants: 79% in the younger group and 85% in the older group. Diets of Polish adults were frequently low in vitamin C, with inadequate intake observed in 46% and 49% of individuals in the younger and older age groups, respectively.

Among minerals, inadequate calcium intake was most commonly observed: 80% of adults aged 19-64 years and 96% of those aged 65 years and older consumed less than the recommended amount. A substantial proportion of Polish adults also had insufficient dietary potassium (65% of the younger group and 81% of the older group). Magnesium intake was below recommended levels in 53% and 70% of individuals in the younger and older age groups, respectively.

The study also found that the adult Polish population was characterised by excessive sodium intake, with intake above the amount recommended by the World Health Organisation (WHO) observed in 94% of individuals in both age groups.

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<sup>8</sup> Traczyk I. [ed.], Project: Conducting comprehensive epidemiological studies on dietary habits and nutritional status of the Polish population, with particular focus on adults, including identification of risk factors for eating disorders, assessment of physical activity levels, nutritional knowledge and health inequalities, Final Report, 2020.

<sup>9</sup> Szostak-Węgierek D. [ed.], Project: Conducting comprehensive epidemiological studies on dietary habits and nutritional status of the Polish population, with particular focus on older adults, including identification of risk factors for eating disorders, assessment of physical activity levels, nutritional knowledge and health inequalities, Final Report, 2020.

## Eating habits of Poles

The study of dietary habits was conducted in 2025, among 3,000 people at the age of  $\geq 20$  from all over Poland. The sampling method, characteristics and description of the study are presented in chapter 12 „Subjective assessment of health and the level of satisfaction of health needs”.

The data on the dietary habits of Poles was collected using the „Basic health and risk factor survey for adults (20 years of age and older)” – section „Diet”. The survey included questions on the number of portions of fruit and vegetables consumed, frequency of consumption of red meat, sea fish, whole grain products, milk and dairy products, pulses, fast food, sweetened drinks, sweets and energy drinks. Questions were also asked about selected eating habits, e.g., the type of fat used as bread spread, for frying, baking and stewing. The respondents also had to state whether they were on a diet or not, and if so, what kind of diet it was and what factors hindered their healthy eating. The data on dietary habits was analysed for the general population, by gender, age (2 age groups: 20-49 and 50+ years) and place of residence (urban, rural).

The differences in the number of servings of fruit and vegetables consumed, the frequency of consumption of particular groups of products and the type of fat used for bread spreading, for frying, baking and stewing by gender, age and place of residence were analysed using the *Chi*-square test ( $\alpha=0.05$ ).

The analysis of the dietary habits of the Polish adult population revealed many irregularities. The habits often differed depending on gender, age and place of residence.

According to the WHO recommendations<sup>4</sup>, at least 2-3 portions of vegetables and at least 2-3 portions of fruit should be consumed per day. In the adult Polish population, however, their consumption turned out to be too low. Two or more portions of vegetables (not including potatoes) per day were consumed by only 52% of Poles, even less in the case of fruit - 46.6%. More women than men ate two or more portions of vegetables per day. In the case of fruit, slightly more women than men consumed 2 or more portions per day, while more men than women did not eat fruit every day. Between the age groups: 20-49 and  $\geq 50$  years, as well as between urban and rural residents, small differences were observed in the number of daily portions of vegetables and fruit consumed (Table 14b.3).

**Table 14b.3.** Number of portions of fruit and vegetables consumed by the Polish population

Number of portions/day		1	2	3	4	≥5	I do not eat every day
<b>Vegetables</b>							
<b>Parameters</b>		<b>% of respondents</b>					
	Total	40.6	29.7	16.6	4.0	1.8	7.4
Gender	Men	43.4	28.1	16.1	3.2	1.4	7.8
	Women	38.1	31.1	17.0	4.7	2.1	7.0
Age	20-49 years	40.5	29.5	16.6	4.8	1.7	6.9
	≥50 years	40.7	29.9	16.5	3.1	1.9	7.9
Place of residence	Urban area	42.1	29.4	17.5	3.6	1.9	5.6
	Rural area	39.4	30.0	15.8	4.3	1.6	8.9
<b>Fruit</b>							
<b>Parameters</b>		<b>% of respondents</b>					
	Total	43.4	28.0	13.2	4.0	1.3	10.1
Gender	Men	43.3	27.0	14.0	3.4	1.0	11.3
	Women	43.5	28.9	12.5	4.6	1.5	9.0
Age	20-49 years	42.7	26.3	15.1	5.2	1.4	9.2
	≥50 years	44.1	29.8	11.2	2.8	1.2	11.0
Place of residence	Urban area	46.5	26.8	12.4	3.6	1.4	9.4
	Rural area	40.8	29.0	13.9	4.4	1.2	10.7

Concerning cereal products, whole grain products should be the main choice.<sup>4</sup> It is recommended to include them in every meal.<sup>5</sup> However, it was observed that only 8.4% of adult Poles consumed whole grain products, such as wholemeal bread, wholemeal pasta, coarse groats, brown rice, oatmeal, 3 times a day or more often. Most people (26.1%) consumed such products 1-2 times a day, slightly fewer ate them 3-6 times a week or 1-2 times a week. In the case of men and women, the frequency of consumption of whole grain products was similar. Small differences in the consumption of these types of products were observed between the two groups of respondents – aged 20-49 and ≥ 50 years. More respondents in the older age group than younger consumed whole grain products 1-2 times a day, while fewer consumed them 3 times a day, 1-2 times a week and less than once a week. It was also observed that more adult Poles living in rural areas than those living in cities/towns consumed whole grain products 3 times a day or more often, while fewer people consumed them 1-2 times a week (Table 14b.4).

**Table 14b.4.** Frequency of consumption of whole grain products by the Polish population

Consumption frequency	3 times a day or more often	1-2 times a day	3-6 times a week	1-2 times a week	Less often than once a week	I don't eat	
Parameters	% of respondents						
Total	8.4	26.1	22.1	20.0	13.5	10.0	
Gender	Men	8.7	24.7	24.0	20.3	11.4	10.9
	Women	8.0	27.3	20.4	19.7	15.4	9.3
Age	20-49 years	9.4	24.3	22.1	20.7	14.6	8.9
	≥50 years	7.2	28.0	22.1	19.2	12.3	11.2
Place of residence	Urban area	6.7	26.1	22.0	22.3	13.1	9.8
	Rural area	9.7	26.0	22.2	18.0	13.8	10.2

It is recommended to consume 2 glasses of milk per day. Milk can be replaced by an appropriate amount of dairy products such as yoghurt, kefir, buttermilk and cottage cheese.<sup>5</sup> However, the consumption of such products in the Polish population is insufficient. Only 12.4% of adult Poles consume milk and milk products twice a day or more often. Most people (27.3%) declared consuming these products 3-6 times a week, followed by once a day (25.1%). Small differences in the frequency of consumption of milk and dairy products were observed between the respondents aged 20-49 and those aged ≥ 50 years, as well as between the residents of urban and rural areas. In turn, no such differences were observed between men and women (Table 14b.5).

**Table 14b.5.** Frequency of consumption of milk and dairy products by the Polish population

Consumption frequency	Twice a day or more often	Once a day	3-6 times a week	Twice a week	Once a week	Less often than once a week	I don't eat	
Parameters	% of respondents							
Total	12.4	25.1	27.3	17.8	7.5	6.0	3.9	
Gender	Men	10.7	22.8	27.2	18.9	8.7	7.0	4.7
	Women	13.8	27.2	27.5	16.8	6.4	5.1	3.2
Age	20-49 years	12.4	23.8	25.4	19.2	8.6	6.2	4.5
	≥50 years	12.3	26.6	29.4	16.2	6.3	5.9	3.3
Place of residence	Urban area	13.7	23.7	28.1	17.1	7.9	6.4	3.2
	Countryside	11.3	26.3	26.7	18.3	7.2	5.7	4.5

Experts recommend limiting the consumption of red meat and processed meat products. No more than 500 g of such products should be consumed per week.<sup>4,5</sup> Most Poles (29.5%) ate red meat (pork, beef, sheep) and meat products (cold cuts, sausages, tinned food, pate and other offal products, etc.) 3-6 times a week, and a similar number of people (27.5%) ate such products twice a week. Red meat and processed meat products were consumed slightly more often by men, the respondents at the age of  $\geq 50$ , those living in the city, compared to: women, the respondents at the age of 20-49 years, the residents living in the countryside, respectively (Table 14b.6).

**Table 14b.6.** Frequency of consumption of red meat and processed meat products by the Polish population

Consumption frequency		Every day	3-6 times a week	Twice a week	Once a week	Less often than once a week	I do not eat
Parameters		% of respondents					
	Total	10.9	29.5	27.5	15.7	10.8	5.7
Gender	Men	12.3	31.9	26.4	14.7	9.7	5.1
	Women	9.7	27.4	28.4	16.6	11.8	6.2
Age	20-49 years	10.9	26.8	27.6	16.4	12.4	5.9
	$\geq 50$ years	11.0	32.2	27.3	14.9	9.2	5.4
Place of residence	Urban area	11.5	33.4	25.5	14.5	10.5	4.7
	Rural area	10.5	26.2	29.1	16.7	11.1	6.5

A good alternative to meat is dishes made from pulses, such as soya, beans, peas, lentils.<sup>4,5</sup> A quarter of Poles consumed such dishes several times a week, and a similar number of the respondents once a week. Most people consumed pulses less often than once a week. It was observed that those aged 20-49 ate them more often than the residents at the age of  $\geq 50$  years, as did those living in urban areas compared to those from the countryside. In contrast, no such differences were observed between men and women (Table 14b.7).

Consuming fish, especially sea fish, is recommended twice a week.<sup>4,5</sup> However, in the Polish population, sea fish such as e.g. herring, tuna, mackerel, salmon, sardines were most often consumed less frequently than once a week (41.2% of the respondents), and almost one-fifth of adult Poles did not eat them at all. Only one in ten respondents consumed fish as recommended. No difference in the frequency of fish consumption was observed between men and women. More

respondents aged 20-49 than those aged  $\geq 50$  years ate sea fish once a week, while fewer consumed it less often. The frequency of sea fish consumption also depended on the place of residence. It was slightly higher among those living in the countryside compared to the residents of urban areas (Table 14b.8).

**Table 14b.7.** Frequency of consumption of dishes made from pulses by the Polish population

Consumption frequency	A few times a day	Once a day	Several times a week	Once a week	Less often than once a week	I do not eat	
Parameters	% of respondents						
Total	2.3	3.6	24.6	27.1	35.6	6.8	
Gender	Men	2.8	3.9	26.1	27.7	32.2	7.3
	Women	1.9	3.3	23.2	26.6	38.6	6.4
Age	20-49 years	3.9	4.8	27.7	24.6	30.2	8.8
	$\geq 50$ years	0.7	2.3	21.3	29.9	41.3	4.6
Place of residence	Urban area	2.0	4.3	24.1	32.2	32.0	5.4
	Rural area	2.6	3.0	25.0	23.0	38.5	7.9

**Table 14b.8.** Frequency of sea fish consumption by the Polish population

Consumption frequency	At least twice a week	Once a week	Less often than once a week	I do not eat	
Parameters	% of respondents				
Total	9.8	30.8	41.2	18.2	
Gender	Men	10.5	30.1	40.7	18.7
	Women	9.1	31.3	41.7	17.8
Age	20-49 years	9.3	32.5	39.2	18.9
	$\geq 50$ years	10.3	28.9	43.4	17.5
Place of residence	Urban area	8.6	28.6	46.1	16.8
	Rural area	10.8	32.5	37.3	19.4

It is harmful to health to consume products that contain large amounts of fat, salt and sugar. Fast food, sweetened beverages and sweets, etc., should therefore be avoided.<sup>4,5</sup> Fast food products (e.g. pizza, hamburgers, hot-dogs, chips, toasties, kebabs) were consumed by 39.4% of Poles once a week or more often. One-third of the residents consumed such types of products less often than once a week. Men were more likely than women to consume the products in question. Those aged 20-49 were also more likely to consume fast food products than the respondents aged  $\geq 50$  years.

Urban residents were slightly more likely to consume such products compared to those living in rural areas (Table 14b.9). One in five Poles consumed sweetened non-carbonated or carbonated drinks such as Coke, orangeade, lemonade, nectars and fruit drinks 3-6 times a week or even daily. In contrast, a similar number of people did not consume such drinks at all. Most people (26.9%) consumed them less often than once a week. No differences in the frequency of consumption of sweetened beverages were observed between men and women. People at the age of 20-49 consumed drinks of that type more frequently than those aged  $\geq 50$  years. More respondents living in cities than in rural areas drank sweetened beverages twice or once a week, while more people living in rural areas than in cities consumed such products every day or did not consume them at all (Table 14b.9). It was noted that 31.2% of Poles consumed sweets (e.g. candies, chocolate, chocolate bars, cakes, wafers, etc.) 3-6 times a week, or even daily. One in four Poles consumed such products twice a week. It was noted that women, people aged 20-49, those living in the countryside reached for sweets more often than men, the respondents aged  $\geq 50$  years or city residents, respectively (Table 14b.9).

**Table 14b.9.** Frequency of consumption of fast food, sweetened non-carbonated and carbonated drinks and sweets by the Polish population

Consumption frequency		Every day	3-6 times a week	Twice a week	Once a week	Less often than once a week	I do not eat/drink
<b>Fast food</b>							
<b>Parameters</b>		<b>% of respondents</b>					
	Total	2.0	5.8	13.9	17.7	33.1	27.5
Gender	Men	1.8	8.4	17.0	20.4	28.8	23.5
	Women	2.1	3.5	11.2	15.3	36.9	31.1
Age	20-49 years	3.0	9.3	21.3	24.9	32.0	9.5
	$\geq 50$ years	0.9	2.0	6.0	10.0	34.3	46.8
Place of residence	Urban area	1.1	6.4	15.6	18.3	31.2	27.4
	Rural area	2.7	5.3	12.5	17.2	34.7	27.6
<b>Sweetened non-carbonated and carbonated drinks</b>							
<b>Parameters</b>		<b>% of respondents</b>					
	Total	8.5	12.2	18.6	14.1	26.9	19.7
Gender	Men	10.4	13.6	21.8	15.7	22.5	16.1
	Women	6.8	11.0	15.7	12.8	30.8	22.9
Age	20-49 years	10.7	16.1	23.3	17.9	19.7	12.3
	$\geq 50$ years	6.1	8.1	13.5	10.1	34.5	27.6

Consumption frequency		Every day	3-6 times a week	Twice a week	Once a week	Less often than once a week	I do not eat/drink
Place of residence	Urban area	6.4	12.7	20.7	16.1	27.1	17.0
	Rural area	10.2	11.9	16.9	12.5	26.6	21.9
<b>Sweets</b>							
Parameters		% of respondents					
	Total	12.1	19.1	23.8	20.6	19.3	5.1
Gender	Men	10.0	18.8	24.4	19.7	21.6	5.6
	Women	14.0	19.3	23.3	21.5	17.3	4.7
Age	20-49 years	12.6	20.1	24.0	21.0	17.1	5.3
	≥50 years	11.6	18.1	23.6	20.2	21.7	4.8
Place of residence	Urban area	9.4	17.5	23.9	22.6	22.0	4.6
	Rural area	14.4	20.4	23.6	19.1	17.1	5.5

Energy drinks should not be consumed frequently. Most Poles have never drunk them, and among those declaring to consume them, it was the case of 1-3 times a month (Table 14b.10). Non-consumption of energy drinks was more often declared by women, although the percentage of people consuming them once or several times a day was similar among women and men. Consumption of such drinks differed depending on age. Among the respondents aged 20-29, more than twice as many people declared consuming them as in the group of those aged ≥ 50 years. The proportion of people consuming energy drinks at least once a day was also higher in the younger age group. However, the differences in the frequency of consumption of such beverages depending on the place of residence were small.

**Table 14b.10.** Frequency of consumption of energy drinks by the Polish population

Consumption frequency		A few times a day	Once a day	Several times a week	Once a week	1-3 times a month	Never
Parameters		% of respondents					
	Total	3.9	3.3	9.1	12.2	16.8	54.8
Gender	Men	3.6	3.6	12.0	15.9	19.7	45.1
	Women	4.1	3.0	6.5	9.0	14.2	63.3
Age	20-49 years	3.9	5.2	15.0	19.0	22.4	34.5
	≥50 years	3.9	1.3	2.6	4.9	10.8	76.5
Place of residence	Urban area	3.6	2.4	10.0	12.3	18.0	53.7
	Rural area	4.2	4.0	8.3	12.2	15.8	55.6

It is recommended to limit the consumption of animal fats and replace them with vegetable fats such as rapeseed oil or olive oil.<sup>4,5</sup> It was observed that three-quarters of Poles used butter as bread spread. Other fats used for that purpose were margarine, mixed fats and lard. In contrast, 11.1% of Poles did not use fat as bread spread at all. More men than women used margarine and lard. More people aged  $\geq 50$  years than those in the younger age group used butter or mixed fats as bread spreads. In contrast, more residents in the 20-49 age group than in the older age group did not use bread spread at all. No differences were observed in using fat as bread spread between people living in the city and in the countryside (Table 14b.11).

**Table 14b.11.** Type of bread spread used by the Polish population (1 or 2 answers possible)

Type of fat	Butter	Margarine	Mixed fats	Lard	Other	I do not use	
Parameters	% of respondents						
Gender	Men	74.3	30	15.1	7.1	0	11.8
	Women	75.8	24	14.6	5.1	0	10.4
Age	20-49 years	73.2	27	13.6	6.1	0	13.9
	$\geq 50$ years	77.2	27	16.2	6.0	0	8.0
Place of residence	Urban area	76.0	28	13.8	5.8	0	10.8
	Rural area	74.4	26	15.7	6.2	0	11.3

For frying, baking and stewing, however, most Poles used oil or olive oil. These were followed by butter, lard, margarine or mixed fats and other fats (e.g. coconut oil). For frying, baking and stewing, more men than women used butter, margarine or mixed fats. In contrast, more women than men used oil or olive oil for that purpose. More Poles aged  $\geq 50$  years than in the younger age group used lard for frying, baking and stewing, while more younger respondents used butter and other fats (e.g. coconut oil). Compared to the rural population, fewer urban dwellers used oil and olive oil for frying, while more of them used margarine or mixed fats and lard (Table 14b.12).

Poles were also asked whether they followed a special diet. The vast majority of the respondents did not follow any diet. The most frequently indicated diets were: low-fat or low-cholesterol (8.6% of the respondents), food allergy-related diets (e.g. allergy to nuts, milk, shellfish) (8%) and low-salt diet (7.6%). More people aged  $\geq 50$  than those at the age of 20-49 years followed special diets, particularly low-fat or low-cholesterol diets or diets associated with food allergies (e.g. allergy to nuts, milk, shellfish), low salt and diabetic diets. The use of special diets also

depended on gender. More women than men followed diets, while there were small differences between urban and rural residents (Table 14b.13).

**Table 14b.12.** Type of fat for frying, baking and stewing used by the Polish population (1 or 2 answers possible)

Type of fat	Oil or olive oil	Butter	Margarine or mixed fats	Lard	Other	I do not use	
Parameters	% of respondents						
Total	70.6	26.5	13.8	18.6	2.2	3.6	
Gender	Men	64.9	28.6	16.7	20.4	2.6	3.9
	Women	75.7	24.6	11.3	17.0	1.8	3.3
Age	20-49 years	68.1	31.7	15.8	13.7	3.4	3.9
	≥50 years	73.4	20.8	11.8	23.8	0.8	3.3
Place of residence	Urban area	68.5	24.0	15.8	23.8	2.1	3.4
	Rural area	72.4	28.5	12.2	14.3	2.2	3.8

**Table 14b.13.** Special diets of Poles

Type of diet	Total	Gender		Age		Place of residence	
		Men	Women	20-49 years	≥50 years	Urban area	Rural area
% of respondents							
Slimming	4.1	3.0	5.2	5.3	2.9	3.6	4.6
Vegetarian	2.2	2.6	1.8	3.4	0.8	2.1	2.2
Diabetic	6.2	6.2	6.3	4.7	7.9	5.3	7.0
Low-fat or low-cholesterol	8.6	7.7	9.5	4.6	13.0	9.5	7.9
Gluten-free	4.7	5.3	4.1	4.8	4.5	5.8	3.8
With low salt content	7.6	8.6	6.8	6.2	9.2	7.9	7.4
Related to food allergies (e.g. nuts, milk, shellfish)	8.0	7.6	8.4	6.4	9.7	6.8	9.0
Lactose-free (dairy products)	3.4	2.9	3.9	2.1	4.8	3.0	3.8
Vegan	0.1	0.0	0.1	0.2	0.0	0.1	0.0
Other	2.4	1.3	3.4	3.8	1.0	1.6	3.1
I do not follow any diet	67.0	70.0	64.3	73.4	60.1	67.2	66.9

Regarding the factors that make healthy eating difficult, the largest number of Poles indicated high prices of healthy food (29.3% of people). A significant

number of people felt that preparing a healthy meal takes too much time (14.7%). However, almost one-fifth of Poles stated that they had no need to eat healthily. In contrast, 25.6% felt that they ate healthily and did not see any difficulties. More women than men noticed factors that made it difficult to eat healthily, e.g. high prices of healthy food, the time it took to prepare a healthy meal or the small selection of healthy food in the store where they most often did their grocery shopping. In contrast, more men than women felt that there was no need to eat healthily. Compared to the younger age group, more people aged  $\geq 50$  years indicated high prices of healthy food as a factor hindering healthy eating and also admitted that there was no need to eat healthily. In contrast, more people aged 20-49 chose the answer: „I have never been taught how to eat healthily” or „no information about healthy meals in restaurants/canteens”. Slight differences were observed between residents of urban and rural areas. More people living in the city felt that they ate healthily and did not see any difficulties. In contrast, more people living in rural areas identified the following as factors that made it difficult to eat healthily: high prices of healthy food and the small selection of healthy food in the store where they most often did their shopping (Table 14b.14).

**Table 14b.14.** Factors hindering healthy eating indicated by Poles (1, 2 or 3 answers possible)

Factors	Total	Gender		Age		Place of residence	
		Men	Women	20-49 years	$\geq 50$ years	Urban area	Rural area
% of respondents							
I eat healthy, I don't see any difficulties	25.8	26.5	25.2	25.5	26.1	28.2	23.8
High prices of healthy food	29.3	25.9	32.3	27.0	31.8	27.2	31.0
Small selection of healthy food in the places where I shop most often	9.2	7.7	10.5	9.5	8.9	7.4	10.7
It takes too long to prepare a healthy meal	14.7	13.1	16.1	15.7	13.6	14.3	15.0
Small selection of healthy food in restaurants, canteens, food vending machines	6.4	6.6	6.3	8.2	4.6	6.6	6.3
Lack of information about healthy meals in restaurants, canteens	5.7	6.2	5.2	7.0	4.2	5.2	6.0
I don't know how to prepare healthy food	7.8	8.0	7.7	8.5	7.1	7.3	8.3

Factors	Total	Gender		Age		Place of residence	
		Men	Women	20-49 years	≥50 years	Urban area	Rural area
% of respondents							
I have never been taught how to eat healthily	9.2	9.7	8.7	11.1	7.1	9.0	9.3
I don't like healthy food	10.7	10.5	10.8	11.5	9.8	10.9	10.5
Other people encourage me	3.0	3.4	2.7	4.1	1.9	2.9	3.2
I have no need (no desire)	19.4	21.5	17.5	16.9	22.0	19.8	19.0
Other reasons	0.0	0.0	0.0	0.0	0.0	0	0

Similar results concerning dietary habits were observed in epidemiological studies conducted between 2017 and 2020 by the Medical University of Warsaw (WUM) within the framework of the National Health Program (NPZ) (Traczyk, 2020; Szostak-Węgierek, 2020). Among individuals aged 19–64, numerous irregularities were found in the frequency of consumption of food groups, classified into those with potentially beneficial and adverse effects on the body, with more dietary mistakes observed in men than in women. Fruits and vegetables, milk and fermented dairy beverages, wholemeal bread, fish, and legumes were consumed too infrequently, whereas butter, white bread, highly processed cereal products such as white rice, sweets, red meat and canned meat products, as well as fried dishes, were consumed too often (Traczyk, 2020).

Individuals aged 65 and over also consumed less frequently than recommended such products as vegetables and fruits, whole-grain bread, dairy products, legumes, and fish, while too often they consumed butter, cold cuts, white bread, fried foods, lard, and sweets (Szostak-Węgierek, 2020).