14. EATING HABITS OF POLES
14A. EATING HABITS OF CHILDREN AND YOUTH IN POLAND

Anna Dzielska, Anna Liber, Anna Fijałkowska

Proper nutrition is fundamental to the health of a child and affects the risk of developing diseases in later stages of life. The eating habits and nutrition of children are closely related to the processes of growth and maturation, and an improper diet may lead to long-term health consequences. Nutrition is particularly important during the first years of life, when the child's psychomotor development is intensive and the immune system matures. The period from conception until the age of 2, known as "the first 1,000 days", is the time when the body is particularly sensitive to environmental factors, including nutrition. That period is the so-called "opportunity window" for metabolic programming, and inappropriate nutrition may lead to metabolic disorders and an increased risk of cardiovascular diseases at a later age.[1] The first years of a child's life are also critical for the development of the gut microbiome, which plays an important role in the maturation of the immune system and influences the child's overall health. The gut microbiota is subject to dynamic changes during that stage, depending on, e.g., the diet. Disturbances of its balance in early life may lead to long-term health consequences, including the development of autoimmune diseases, allergies and neurodevelopmental disorders.[2]

The importance of proper nutrition does not diminish with the age of a child and consecutive stages of development – from preschool age, through early school period, to adolescence – also require adequate coverage of the demand for

[1] Williams TC, Drake AJ. What a general paediatrician needs to know about early life programming. Arch Dis Child. 2015 Nov;100(11):1058-63. doi: 10.1136/archdischild-2014-307958. Epub 2015 May 19. PMID: 25990501.

[2] Cukrowska B, Znaczenie programowania mikrobiotycznego w rozwoju przewlekłych chorób nieinfekcyjnych—Standardy Medyczne. (n.d.). Znaczenie programowania mikrobiotycznego w rozwoju przewlekłych chorób nieinfekcyjnych – Standardy medyczne. https://www.standardy.pl/artykuly/id/1203

energy and nutrients. In that context, the nutritional status of children and adolescents becomes an important indicator of population health. Regular anthropometric measurements, including calculation of body mass index (BMI) taking into account percentile charts, allow monitoring of physical development, identifying malnutrition, overweight and obesity, as well as assessing the risk of future metabolic disorders.[3]

The increasing prevalence of overweight and obesity in children and youth is currently one of the greatest public health challenges.[4] Child obesity is associated with a range of serious metabolic, cardiovascular, orthopaedic and psychosocial consequences. Overweight children are at greater risk of depression, social stigma, self-esteem issues and eating disorders later on. Moreover, a high percentage of obese children maintain excess body weight in adulthood, as confirmed by the results of long-term studies.[5]

In nutritional recommendations for children and adolescents, both national and international, the need for a balanced diet while limiting the intake of simple sugars and trans fats is clearly emphasised.[6] Meal regularity, especially not skipping breakfast, is important in the prevention of overweight and obesity.

The purpose of this chapter is to comprehensively analyse the eating habits and nutritional status of children and youth in Poland – from infants, through young children and pupils in the lower grades of primary school, to students of older school age – based on available population data, research findings and national and international guidelines. Special attention is given to identifying current nutrition-related health problems and opportunities for their prevention.

[3] Świąder-Leśniak, A., Majcher, A., Pyrżak, B., Dziechciarz, P., & Department of Paediatrics, Medical University of Warsaw, Warsaw, Poland. (2020). Consensus on the principles of physical development monitoring in children, possible or not? Pediatria i Medycyna Rodzinna, 16(3), 268–274. https://doi.org/10.15557/PiMR.2020.0049

[4] Buoncristiano, M., Spinelli, A., Williams, J., Nardone, P., Rito, A. I., García-Solano, M., Grøholt, E. K., Gutiérrez-González, E., Klepp, K. I., Starc, G., Petrauskienė, A., Kunešová, M., Hassapidou, M., Pérez-Farinós, N., Pudule, I., Kelleher, C. C., Duleva, V., Rakovac, I., Chatterjee, S., & Breda, J. (2021). Childhood overweight and obesity in Europe: Changes from 2007 to 2017. Obesity Reviews: An Official Journal of the International Association for the Study of Obesity, 22 Suppl 6, e13226. https://doi.org/10.1111/obr.13226

[5] Simmonds, M., Llewellyn, A., Owen, C. G., & Woolacott, N. (2016). Predicting adult obesity from childhood obesity: A systematic review and meta-analysis. Obesity Reviews: An Official Journal of the International Association for the Study of Obesity, 17(2), 95–107. https://doi.org/10.1111/obr.12334

[6] https://www.who.int/news-room/fact-sheets/detail/healthy-diet?

Neonatal Nutrition

Based on the Nationwide Polish Hospital Morbidity Study (Polish: OBChSO), detailed in Chapter 4, 'Hospitalised Morbidity in Poland', data were collected on neonatal feeding practices during childbirth-related hospitalisations. Three neonatal feeding methods were identified:

- Exclusive breastfeeding or feeding with expressed breast milk,
- Mixed feeding,
- Formula feeding.

The data were further classified according to the mode of delivery (as recorded on the MZ/Szp-11 form, a national hospital birth reporting form) using the relevant ICD-10 codes. Three types of delivery were identified:

- Vaginal delivery – code O80 (singleton births) and O84.0 (multiple pregnancies),
- Caesarean section – code O82 (singleton births) and O84.2 (multiple pregnancies),
- Other delivery methods (e.g. assisted with forceps or vacuum extraction) – remaining codes from the O80-O84 group.

Vaginal and caesarean deliveries collectively accounted for more than 98% of all deliveries in each year analysed.

The analysis included infants for whom complete information on gestational age at birth, feeding method and mode of delivery was available. The proportion of missing data between 2020 and 2023 was similar, ranging from 10.8% in 2022 to 13.6% in 2023. Ultimately, 87.7% of neonates recorded in the OBChSO were included in the analysis.

In all years analysed, the proportion of infants exclusively breastfed was lower following caesarean delivery compared with vaginal delivery. This trend was observed both in preterm infants (e.g. in 2023: 45.2% vs. 60.4%) and term infants (55.3% vs. 70.6%).

A gradual decline in the proportion of infants exclusively breastfed was observed in both preterm and term groups. The decline was more pronounced among term infants, particularly following vaginal delivery (from 76.7% in 2020 to 70.6% in 2023).

Between 2021 and 2023, a gradual increase was observed in the proportion of infants receiving mixed feeding. Among term neonates delivered vaginally, this proportion rose from 23.3% in 2021 to 27.1% in 2023 and among those delivered by caesarean section from 37.3% to 41.1%. A similar trend was noted in preterm infants: in vaginal deliveries, mixed feeding increased from 29.4% to 34.9% and in caesarean deliveries from 42.9% to 48.2%.

The proportion of infants receiving formula feeding between 2021 and 2023 remained relatively low and fairly stable. In 2023, among term neonates, formula feeding was recorded in 2.3% of those delivered vaginally and in 3.6% of those delivered by caesarean section. Among preterm infants, 4.7% delivered vaginally and 6.6% delivered by caesarean section were formula-fed.

Table 14a.1 presents the number of neonates included in the analyses in 2020-2023, stratified by gestational age at birth (term and preterm), mode of delivery (vaginal delivery, caesarean section, other) and feeding method (exclusive breastfeeding or feeding with expressed breast milk, mixed feeding, formula feeding).

Table 14a.1. Number of neonates included in the analyses, by gestational age at birth, mode of delivery and feeding method, 2020-2023

	Year			
	2020	2021	2022	2023
Number of neonates included in the analyses	274 645	284 489	249 708	223 788
Gestational age at birth				
Term infant	254 432	262 135	229 407	206 414
Preterm infant	20 213	22 354	20 301	17 374
Mode of delivery				
Vaginal delivery	144 189	145 046	126 199	110 859
Caesarean section	126 084	134 996	119 369	109 241
Other	4 372	4 447	4 140	3 688
Feeding methods				
Exclusive breastfeeding or feeding with expressed breast milk	186 952	190 021	160 173	139 195
Mixed feeding	80 737	86 945	82 205	77 527
Formula feeding	6 956	7 523	7 330	7 066

Source: Calculations based on the OBChSO study

Table 14a.2 presents the proportion of neonates who were exclusively breastfed or fed expressed breast milk, received mixed feeding or were formula-fed, according to mode of delivery (vaginal delivery, caesarean section, other delivery methods) and gestational age at birth (term and preterm infants) between 2020 and 2023.

Data from 2020 to 2023 indicate a gradual decline in the proportion of neonates exclusively breastfed, particularly among term infants delivered vaginally. At the same time, the prevalence of mixed feeding increased in both preterm and term infants, especially following caesarean section. The proportion of formula-fed infants remained low and relatively stable across all groups analysed.

Table 14a.2. Proportion of neonates exclusively breastfed or fed expressed breast milk, receiving mixed feeding or formula-fed, by mode of delivery between 2020 and 2023

Year/ Mode of delivery/ Feeding method	Exclusive breastfeeding or feeding with expressed breast milk			Mixed feeding			Formula feeding		
	Vaginal delivery	Caesarean section	Other	Vaginal delivery	Caesarean section	Other	Vaginal delivery	Caesarean section	Other
Preterm infants									
2020	66.1	48.5	63.2	29.5	44.8	31.0	4.5	6.7	5.9
2021	66.5	50.0	63.2	29.4	42.9	35.7	4.2	7.1	1.2
2022	65.6	47.1	64.3	30.5	46.1	34.7	3.9	6.8	1.0
2023	60.4	45.2	63.0	34.9	48.2	31.5	4.7	6.6	5.4
Term infants									
2020	76.7	60.1	66.0	21.7	36.9	32.2	1.6	3.1	1.8
2021	75.1	59.6	62.3	23.3	37.3	36.1	1.7	3.2	1.6
2022	72.6	56.8	62.6	25.5	39.7	35.5	2.0	3.5	1.9
2023	70.6	55.3	61.9	27.1	41.1	35.7	2.3	3.6	2.4

Source: Own calculations based on the OBChSO study

Enhancing prenatal education on the benefits of breastfeeding for both mother and child is strongly recommended. It is equally important to strengthen lactation support in maternity wards, particularly for mothers of preterm infants and those who have undergone caesarean section. Education on the advantages of breastfeeding should begin during pregnancy through midwife-led prenatal classes and continue during postnatal home visits, during which the midwife encourages breastfeeding, provides lactation counselling and assists in resolving breastfeeding-related challenges. Midwives should provide ongoing maternal care, encompassing breastfeeding support and lactation counselling, for as long as the mother requires it.

Children aged 5-36 months

In 2006, in the Institute of Mother and Child in Warsaw, under the supervision of prof. dr hab. Halina Weker, the PITNUTS 2016 study was conducted to comprehensively assess the diet and nutritional status of children aged 5 to

36 months.[7] 450 infants (5-12 months) and 600 young children (13-36 months) were included in the study. The selection of participants ensured that the results were representative of the population of children in Poland. Only healthy children, not on elimination diets, were qualified for the study, and the respondents were parents or carers. Diet was assessed using a food frequency questionnaire (FFQ) and a 3-day food diary. The diet analysis was conducted using the Diet 5.0 programme, with portion sizes determined using the Food and Nutrition Photo Album. The results were compared with the nutritional standards for children.[8]

The nutritional status was assessed based on the child's weight and length or height, using the weight-for-height z-score according to the WHO standards (2006). The classification of nutritional status was based on the following ranges: severe underweight (<-3 SD), underweight (-3 to -2 SD), normal weight (-2 to +1 SD), at risk of overweight (+1 to +2 SD), overweight (>+2 SD), obese (>+3 SD).

Infant nutrition

Breastfeeding is considered the gold standard for infant nutrition in the first six months of life. The World Health Organisation recommends exclusive breastfeeding during the first six months of a baby's life, and then continuing it alongside the introduction of complementary foods – for as long as the mother and baby need it. Breastfeeding has numerous benefits for both baby and mother. For the baby, it is the best source of nutrients, it supports the development of the immune system and reduces the risk of many infectious diseases of childhood – especially respiratory and gastrointestinal disorders. For mothers, breastfeeding contributes to a reduction in the risk of postpartum bleeding as well as breast and ovarian cancers, and also helps to return to a healthy body weight after the delivery.[9]

[7] Weker H (ed.). (2017). STUDY REPORT. COMPREHENSIVE EVALUATION OF FEEDING PRACTICES IN CHILDREN AGED 5 TO 36 MONTHS, POLISH NATIONWIDE STUDY 2016. PITNUTS 2016, Fundacja Nutricia, Instytut Matki I Dziecka. QZPYyktd2kh7JJW6yjHm.pdf.
[8] Jarosz, M., & Jarosz, M. (2012). Normy żywienia dla populacji polskiej—Nowelizacja. Instytut Żywności i Żywienia.
[9] Szajewska H., Horvath A., Rybak A., Socha P.: Karmienie piersią. Stanowisko Polskiego Towarzystwa Gastroenterologii, Hepatologii i Żywienia Dzieci. Standardy Medyczne. Pediatria 2016; 13: 9-24

Retrospective data obtained from a survey conducted among the parents/carers of children participating in the 2016 PITNUTS study showed that 54.1% of infants were breastfed for at least 6 months, but only 5.9% were exclusively breastfed. Breastfeeding for less than 6 months was declared in the case of 39.7% of infants, while 6.2% of newborns were never breastfed.

The above data underline the need to promote breastfeeding as the most beneficial way of feeding infants and small children, with emphasis on the health benefits not only for children but also for mothers.

Introducing complementary foods is another important element of infant nutrition. Sadly, almost 61.1 % of infants received such food too early, i.e. before the 5th month of life. Only 30.2 % of infants received their first complementary food as recommended, i.e. between 17 and 26 weeks of life. Approximately 30 % of infants aged 4 months received fruit or vegetable puree, 24.8 % gluten-free gruel and porridge, 21 % fruit juice and 11.4 % porridge with gluten.

The presence of biscuits and sponge cakes in the diet of the youngest children is noteworthy. They were fed to 6.7% of infants in their 4th month of life, 53.1% of children in their 7th-8th month of life and as many as 86.7% of babies aged 10-12 months. Such a diet favours the development of a preference for sweet tastes, which at a later stage of life can make it difficult to accept foods with a less attractive taste, such as vegetables, meat, fish or eggs.

The lack of fish in the diet of infants is also worrying, which is a valuable food being a source of high-quality, easily digestible protein, long-chain omega-3 fatty acids (EPA and DHA), iodine, selenium, B vitamins (especially B12) and vitamin D.

Analysis of the implementation of dietary standards in non-breastfed infants showed too low fat supply, which was the case in as many as 95% of babies aged 5–12 months. In 34% of infants, adequate energy coverage from the diet was also not provided. Such deficiencies may lead to impaired growth.

The infant diets were also deficient in iodine – insufficient intake of that element was found in 82% of babies.

Vitamin D deficiency in the diet was found in 75% of children, but the difficulty of meeting the demand for that nutrient solely from food is well known, which is why routine vitamin D supplementation is recommended throughout the first year of life.

The diet of every fourth non-breastfed infant was deficient in iron – the key element for the proper formation of red blood cells and the functioning of the

nervous system. Iron deficiency may lead to the development of anaemia and may also adversely affect the pace of the child's development.

Nutrition of children aged 13-36 months

Among the children included in the study, 10% were still breastfed. However, in this group, there was an insufficient consumption of basic product groups: milk and fermented milk drinks in 88% of children, vegetables in 87.9%, fruit in 74.3% and fish in 77.5%, vegetable oil in 71.7%. Such deficiencies may result in incomplete coverage of the demand for nutrients necessary for proper development.

The diets of children aged 13-36 months, similar to infants, were characterised by a deficiency in fat – 58.7% of the study participants, including in particular long-chain polyunsaturated fatty acids (LCPUFA), the deficiency of which was noted in as many as 99% of children. At the same time, excessive protein consumption was demonstrated – the median daily intake was 40 g, which significantly exceeds the nutritional standards for that age group, i.e. 12 g. Excessive protein supply in early childhood may increase the risk of developing overweight and obesity later in life.

Calcium deficiency was reported in 42.3% of the children, which was mainly due to insufficient consumption of dairy products. Iodine deficiency was found in 27% of the children, which was associated with low fish consumption. In 59% of the children, too low intake of vitamin E was observed, and in 20.8% – folate, which was a consequence of insufficient amounts of vegetables in the diet.

As many as 90% of the children consumed too much salt, and 80% had too much sugar in their diet. Such a dietary pattern may favour the formation of poor eating habits and increase the risk of metabolic disorders and hypertension.

Nutritional status assessment

A proper nutritional status was the case in 67.6% of infants, while in the group of children aged 13-36 months, the share was 67.8%. The results indicate that approximately two-thirds of children aged 5 to 36 months received proper nutrition. Among the infants, weight deficiency was found in 9.4%, while severe weight deficiency was reported in 5.1% of children in this group. Overall, weight deficiency

was the case in 14.5% of infants aged 5-12 months. In the group of children aged 13-36 months, reduced body weight was observed in 2.3% of the study subjects and severe deficiency in 1.8%. In total, weight deficiency was observed in 4.1% of children in this age category. In the infant group, excessive weight was noticed in 2.9% of the study subjects, while obesity was reported in 1.3%. Possible risk of becoming overweight was observed in 13.7% of the infants, which means that 17.9% of the children aged 5-12 months were overweight or at such risk. Among children aged 13-36 months, the risk of becoming overweight was observed in 18.4% of the study subjects. 6.9% of the children were overweight and obesity was the issue in 2.8% of the infants under study, meaning that the problem of excess body weight or such a risk concerned 28.1% of children in this age group. The problem of inadequate weight gain was more common among infants aged 5-12 months, while excessive nutrition was the case in children aged 2-3 years.

It is worth emphasising that poor nutritional status was found in one-third of the children participating in the study. Both under- and over-nutrition can lead to serious health consequences, such as reduced immunity, increased susceptibility to infections, impaired cognitive function and delayed psychomotor development. Nutritional disorders in early childhood can have long-term health consequences that manifest later in life, including adulthood. These include an increased risk of obesity, type 2 diabetes, cardiovascular diseases and osteoporosis, inter alia. The study results highlight the need for early nutrition standards implementation, individualisation of recommendations in children with poor nutritional status and systematic monitoring of nutritional status, especially in the youngest child population.

Early school-age children

The data on children aged 7-9 is obtained from the European Childhood Obesity Surveillance Initiative (COSI WHO) programme, implemented in the school year 2022/2023 as part of the 2021-2025 National Health Programme.[10] The study included 6,464 pupils in grades I-III from 127 randomly selected primary schools; data concerning 6,383 children with a complete set of anthropometric measurements and the data necessary to assess nutritional status was analysed.

[10] Fijałkowska, A., & Dzielska, A. (2024). ZDROWIE DZIECI WE WCZESNYM WIEKU SZKOLNYM. Instytut Matki i Dziecka, Warszawa.

Nutritional status was assessed based on BMI (according to WHO 2007) [11,12] and waist and hip circumference (OLAF standards).[13] Overweight was diagnosed at BMI ≥+1 SD, obesity at >+2 SD and underweight at <-1 SD. A waist circumference of ≥90th percentile was considered to increase the risk of cardiovascular disease.[14]

The frequency of consumption of selected foods (fruit, vegetables, dairy, meat, processed foods, sweetened beverages) was assessed, as well as the habit of breakfast consumption, shared meals and eating while using screen devices - based on parents' responses.

Fruit and vegetable consumption

The analysis of the frequency of fruit consumption shows that children at the age of 7-9 reach for fruit with fairly high regularity, although there are significant gender- and age-dependent differences. Girls are more likely than boys to eat fruit every day or more often. Among 7-year-old girls, 49.1% declared daily fruit consumption (total responses of "once a day" and "more often than once a day"), while in the case of boys of the same age, it was 43.1%. Among 9-year-olds, the difference is also noticed, 45.8% of girls vs 41.8% of boys. It is noteworthy that the percentage of boys consuming fruit daily decreases with age, while for girls it remains at a similar level. This may indicate differences in developing eating habits and the potential influence of environmental factors, e.g. family dietary patterns, which are more stable in girls.

In the case of vegetables, the findings were similar, though slightly more varied. Girls of all ages are more likely to report daily consumption of vegetables

[11] Childhood Obesity Surveillance Initiative (COSI), Protocol, October 2016, World Health Organisation 2017. Childhood Obesity Surveillance Initiative (COSI), Protocol, October 2016, World Health Organisation 2017, http://www.euro.who.int/data/assets/pdf_file/0018/333900/COSI-protocol-en.pdf.

[12] Blössner M et al. WHO Anthro Plus for personal computers manual: software for assessing growth of the world's children and adolescents. Geneva, World Health Organisation 2009 (http://www.who.int/entity/growthref/tools/who_anthroplus_manual.pdf).

[13] Świąder-Leśniak A, Kułaga Z, Grajda A, Gurzkowska B, Góźdź M, Wojtyło M, Różdżyńska-Świątkowska A, Litwin M, Wartości referencyjne obwodu talii i bioder polskich dzieci i młodzieży w wieku 3-18 lat, Standardy Medyczne/Pediatria 2015, vol. 12: 137-150.

[14] The IDF consensus definition of the Metabolic Syndrome in children and adolescents, International Diabetes Federation 2007.

(once a day or more often), and the gender differences are more noticeable than for fruit. Among 9-year-old girls, 38.3% of the respondents declared daily vegetable consumption, compared to 35.9% of boys. Vegetable consumption at the "most days of the week" level (4–6 days) increases with age in both boys and girls, which may indicate the development of more regular dietary patterns with adolescence. However, it is worth noting that in each age group, the share of children who do not eat vegetables at all or very rarely (less often than once a week), although low, still exists, ranging from 6% to 9%, with it being slightly higher among boys.

Table 14a.1. Frequency of fruit and vegetable consumption by gender and age

	Gender	boys						girls					
	Age	7 years of age		8 years of age		9 years of age		7 years of age		8 years of age		9 years of age	
		N	%	N	%	N	%	N	%	N	%	N	%
Fruit	Never	6	1.4	19	1.6	14	1.5	4	0.8	15	1.2	12	1.2
	Less often than once a week	15	3.6	50	4.3	41	4.5	11	2.3	36	2.8	34	3.5
	Several times a week (1-3 days)	100	24.0	268	22.9	218	23.9	101	21.2	277	21.3	207	21.5
	Most days of the week (4-6 days)	116	27.8	301	25.7	259	28.3	127	26.6	382	29.4	269	27.9
	Once a day	89	21.3	284	24.2	227	24.8	113	23.7	299	23.0	253	26.2
	More often than once a day	91	21.8	250	21.3	155	17.0	121	25.4	291	22.4	189	19.6
Vegetables	Never	5	1.2	25	2.1	20	2.2	8	1.7	9	0.7	16	1.7
	Less often than once a week	26	6.3	71	6.1	64	7.1	32	6.7	55	4.2	42	4.4
	Several times a week (1-3 days)	126	30.3	297	25.4	229	25.3	119	25.0	331	25.5	232	24.3
	Most days of the week (4-6 days)	102	24.5	327	28.0	266	29.4	130	27.3	401	30.9	299	31.3
	Once a day	92	22.1	276	23.7	199	22.0	106	22.3	298	23.0	213	22.3
	More often than once a day	65	15.6	171	14.7	126	13.9	81	17.0	204	15.7	153	16.0

Protein products: meat, fish, eggs and pulses

Meat is the most regularly consumed group of protein products among all the considered groups. More than 75% of children, irrespective of gender and age, report consuming meat at least several times a week. In boys, the pattern of frequent meat consumption is dominant, with as many as 78% of 7-year-olds

consuming meat at least four times a week, and in 8- and 9-year-olds, the share is 75.8% and 74.8%, respectively. In girls, the values are lower, which may indicate a more varied diet or a lower preference for meat products. At the same time, however, a small percentage of children declare a complete lack of meat consumption – the values do not exceed 1.3% in the groups under study.

Fish, unlike meat, is consumed much less frequently. More than half of the children (approximately 55-60%) declared eating them less often than once a week, which suggests a low presence of fish in the diet of children in Poland. As regards fish, the answer "several times a week" was selected by approximately 26-29% of parents. Daily fish consumption was declared by less than 3% of the respondents. Small discrepancies between boys and girls confirm that low fish consumption is population-wide rather than selective. This may reflect barriers such as taste, availability or family preference.

Egg consumption also varies, with the dominant pattern being several times a week. The highest values are observed among girls - as many as 57.2% of 7-year-old girls and 53.9% of 9-year-old girls consume egg dishes 1-3 times a week. However, daily egg consumption remains low (approximately 5%), suggesting that although the presence of eggs in the diet is common, it is not the main product.

Legume consumption is significantly lower than that of other products being sources of protein. As many as 70-80% of children consume them very rarely (less often than once a week) or never. The highest percentage of complete lack of consumption is observed among boys, especially at the age of 7 (41.3%). As children get older, there is no clear change in the consumption of that group of products, which may indicate a persistent lack of legumes in the daily diet of children.

Consumption of milk and milk products

Semi-skimmed or skimmed milk is consumed more often than full-fat milk, with girls more likely than boys to choose such milk. 51.8% of girls at the age of 8 declared that they consumed semi-skimmed milk at least several times a week, while in the case of boys, it was 45%. Consumption of full-fat milk is lower and decreases with age, with 34.9% of 9-year-old boys not consuming it at all. A similar share is observed in girls (32.4%). It can be assumed that children switch from full-fat to semi-skimmed milk as they grow up, which may be due to dietary recommendations or changes in taste preferences.

Table 14a.2. Frequency of consumption of animal and vegetable products as sources of protein by gender and age

	Gender	boys						girls					
	Age	7 years of age		8 years of age		9 years of age		7 years of age		8 years of age		9 years of age	
		N	%	N	%	N	%	N	%	N	%	N	%
Meat	Never	1	0.2	15	1.3	10	1.1	3	0.6	9	0.7	8	0.8
	Less often than once a week	11	2.7	30	2.6	19	2.1	12	2.5	51	4.0	30	3.1
	Several times a week (1-3 days)	153	37.1	437	37.5	349	38.5	225	47.5	530	41.1	417	43.5
	Most days of the week (4-6 days)	163	39.6	442	37.9	348	38.4	155	32.7	471	36.5	339	35.4
	Once a day	74	18.0	168	14.4	130	14.3	55	11.6	169	13.1	131	13.7
	More often than once a day	10	2.4	74	6.3	51	5.6	24	5.1	59	4.6	33	3.4
Fish	Never	57	14.1	135	11.8	110	12.3	45	9.8	152	11.9	116	12.3
	Less often than once a week	217	53.6	646	56.4	492	55.0	278	60.3	743	58.4	527	56.1
	Several times a week (1-3 days)	104	25.7	319	27.9	258	28.8	123	26.7	325	25.6	254	27.0
	Most days of the week (4-6 days)	13	3.2	24	2.1	14	1.6	6	1.3	26	2.0	20	2.1
	Once a day	14	3.5	14	1.2	16	1.8	7	1.5	19	1.5	18	1.9
	More often than once a day	0	0.0	7	0.6	5	0.6	2	0.4	6	0.5	5	0.5
Egg dishes	Never	20	4.9	77	6.7	57	6.4	14	3.0	54	4.3	26	2.8
	Less often than once a week	104	25.3	249	21.7	192	21.5	102	22.0	304	24.1	238	25.4
	Several times a week (1-3 days)	205	49.9	614	53.6	473	52.9	265	57.2	657	52.0	505	53.9
	Most days of the week (4-6 days)	63	15.3	158	13.8	119	13.3	63	13.6	177	14.0	123	13.1
	Once a day	15	3.6	34	3.0	40	4.5	18	3.9	59	4.7	41	4.4
	More often than once a day	4	1.0	13	1.1	13	1.5	1	0.2	13	1.0	4	0.4
Legumes (e.g. beans, lentils)	Never	171	41.3	434	37.5	345	38.5	160	34.0	437	34.1	323	33.9
	Less often than once a week	183	44.2	553	47.8	409	45.7	233	49.5	641	50.0	444	46.5
	Several times a week (1-3 days)	49	11.8	139	12.0	109	12.2	60	12.7	158	12.3	152	15.9
	Most days of the week (4-6 days)	7	1.7	25	2.2	23	2.6	15	3.2	29	2.3	25	2.6
	Once a day	3	0.7	3	0.3	4	0.4	3	0.6	9	0.7	5	0.5
	More often than once a day	1	0.2	3	0.3	5	0.6	0	0.0	9	0.7	5	0.5

Consumption of milk products such as cheese remains stable. It is most often consumed "several times a week" – this was the response of approximately 39-41% of the parents of the children from all the groups. Daily consumption of cheese does not exceed 10%, and a total lack of consumption was declared by 7-10% of the children.

Milk desserts, yoghurts and other fermented products are much less popular, with as many as 65-72% of the children declaring that they do not consume them at all. Since they can be a valuable source of calcium and probiotics, their low share in the diet indicates the need for nutritional education of both children and their parents/carers.

Table 14a.3. Frequency of consumption of milk and milk products by gender and age

	Gender	boys						girls					
	Age	7 years of age		8 years of age		9 years of age		7 years of age		8 years of age		9 years of age	
		N	%	N	%	N	%	N	%	N	%	N	%
Semi-skimmed or skimmed milk	Never	59	14.8	173	15.1	137	15.7	63	13.8	147	11.8	107	11.6
	Less often than once a week	43	10.8	157	13.7	122	13.9	67	14.6	164	13.1	147	15.9
	Several times a week (1-3 days)	108	27.0	295	25.7	224	25.6	135	29.5	359	28.7	272	29.4
	Most days of the week (4-6 days)	91	22.8	219	19.1	182	20.8	73	15.9	286	22.9	202	21.8
	Once a day	72	18.0	221	19.3	159	18.2	95	20.7	215	17.2	152	16.4
	More often than once a day	27	6.8	82	7.1	51	5.8	25	5.5	78	6.2	45	4.9
Whole milk	Never	130	34.2	368	33.8	295	34.9	148	32.8	410	34.5	292	32.4
	Less often than once a week	83	21.8	234	21.5	186	22.0	112	24.8	305	25.7	216	24.0
	Several times a week (1-3 days)	65	17.1	209	19.2	165	19.5	83	18.4	195	16.4	173	19.2
	Most days of the week (4-6 days)	50	13.2	113	10.4	68	8.0	51	11.3	127	10.7	102	11.3
	Once a day	34	8.9	108	9.9	90	10.6	48	10.6	108	9.1	92	10.2
	More often than once a day	18	4.7	57	5.2	42	5.0	9	2.0	43	3.6	25	2.8
Cheese	Never	35	8.6	126	10.9	85	9.4	42	9.2	97	7.7	73	7.7
	Less often than once a week	86	21.2	219	19.0	147	16.3	94	20.5	232	18.4	175	18.5
	Several times a week (1-3 days)	155	38.3	401	34.7	356	39.5	179	39.1	523	41.6	372	39.4
	Most days of the week (4-6 days)	86	21.2	239	20.7	201	22.3	93	20.3	266	21.1	206	21.8
	Once a day	31	7.7	118	10.2	74	8.2	35	7.6	99	7.9	85	9.0
	More often than once a day	12	3.0	51	4.4	39	4.3	15	3.3	41	3.3	33	3.5

	Gender	boys						girls					
	Age	7 years of age		8 years of age		9 years of age		7 years of age		8 years of age		9 years of age	
		N	%	N	%	N	%	N	%	N	%	N	%
Flavoured milk	Never	12	2.9	60	5.2	45	5.0	13	2.8	34	2.7	26	2.7
	Less often than once a week	46	11.2	147	12.7	126	14.0	51	10.9	137	10.8	132	13.8
	Several times a week (1-3 days)	142	34.5	410	35.3	337	37.3	178	38.0	535	42.0	372	39.0
	Most days of the week (4-6 days)	118	28.7	310	26.7	224	24.8	124	26.5	343	26.9	240	25.1
	Once a day	70	17.0	173	14.9	133	14.7	77	16.5	180	14.1	155	16.2
	More often than once a day	23	5.6	60	5.2	38	4.2	25	5.3	44	3.5	30	3.1
Yoghurt, milk pudding, cream cheese, cottage cheese or other milk products	Never	255	65.1	750	67.3	600	68.7	327	71.9	846	68.6	629	67.9
	Less often than once a week	90	23.0	250	22.4	176	20.2	95	20.9	262	21.2	210	22.7
	Several times a week (1-3 days)	30	7.7	73	6.5	52	6.0	20	4.4	76	6.2	49	5.3
	Most days of the week (4-6 days)	7	1.8	20	1.8	19	2.2	7	1.5	27	2.2	22	2.4
	Once a day	7	1.8	12	1.1	15	1.7	5	1.1	15	1.2	12	1.3
	More often than once a day	3	0.8	10	0.9	11	1.3	1	0.2	7	0.6	4	0.4

Consumption of beverages other than water

Consumption of sweetened beverages is common among early school-aged children. More than 60% of the surveyed children reach for such products at least several times a week, and approximately 10% – every day. Boys are more likely than girls to drink beverages containing sugar daily or more often. 10.1% of boys at the age of 9 drink them more often than once a day, compared to 7.5% of girls. Parents of girls more often declare complete resignation of their children from such beverages – for example, in the group of 7-year-olds, it was as much as 10.9% vs 4.9% in the group of boys.

"Light" and diet drinks are rarely consumed. Over 60% of children do not drink them at all, and only 1-2% declare daily consumption. This is fairly good news from the point of view of children's nutrition, considering the controversy over the safety and negative health effects of sugar substitutes.

"100% juices", in turn, are more popular than sweetened or diet drinks. Approximately 35% of children reach for them several times a week, and 15-20% daily. Girls show more regularity in their consumption, especially the 9-year-old group, with daily consumption (once a day or more often) in the group at the level of 17.4% (vs 15.6% in boys).

Table 14a.4. Frequency of consumption of beverages other than water by gender and age

	Gender	boys						girls					
	Age	7 years of age		8 years of age		9 years of age		7 years of age		8 years of age		9 years of age	
		N	%	N	%	N	%	N	%	N	%	N	%
Beverages containing sugar	Never	20	4.9	73	6.3	52	5.8	51	10.9	78	6.0	66	6.9
	Less often than once a week	119	28.9	340	29.4	270	29.9	150	31.9	380	29.4	313	32.9
	Several times a week (1-3 days)	131	31.8	379	32.8	280	31.0	141	30.0	414	32.1	283	29.7
	Most days of the week (4-6 days)	54	13.1	122	10.5	105	11.6	41	8.7	149	11.5	97	10.2
	Once a day	51	12.4	135	11.7	104	11.5	55	11.7	154	11.9	122	12.8
	More often than once a day	37	9.0	108	9.3	91	10.1	32	6.8	116	9.0	71	7.5
Diet or "light" carbonated beverages	Never	250	60.5	700	60.4	519	58.1	318	67.4	833	65.3	601	62.9
	Less often than once a week	108	26.2	347	29.9	276	30.9	113	23.9	315	24.7	269	28.1
	Several times a week (1-3 days)	37	9.0	75	6.5	68	7.6	34	7.2	85	6.7	65	6.8
	Most days of the week (4-6 days)	8	1.9	14	1.2	14	1.6	6	1.3	18	1.4	11	1.2
	Once a day	6	1.5	17	1.5	10	1.1	1	0.2	16	1.3	5	0.5
	More often than once a day	4	1.0	6	0.5	6	0.7	0	0.0	8	0.6	5	0.5
100% fruit juice	Never	16	3.9	56	4.8	45	4.9	27	5.7	57	4.4	53	5.5
	Less often than once a week	118	28.4	339	29.0	241	26.3	157	33.1	380	29.4	266	27.8
	Several times a week (1-3 days)	132	31.8	406	34.7	329	36.0	152	32.1	451	34.9	335	35.0
	Most days of the week (4-6 days)	70	16.9	198	16.9	157	17.2	61	12.9	206	16.0	144	15.1
	Once a day	43	10.4	108	9.2	89	9.7	46	9.7	120	9.3	109	11.4
		36	8.7	63	5.4	54	5.9	31	6.5	77	6.0	49	5.1

Snack consumption

In terms of consumption of salty snacks such as crisps, popcorn or nuts, a relatively high share of moderate consumption is observed – more than half of children eat them once a week or less often. Daily consumption (once a day or more often) is low – approximately 2-3%, with no significant gender differences. This may be indicative of the existence of certain "reward" habits (e.g. consumption of snacks at weekends), but without the dominant presence of such products in the daily diet.

Sweet snacks are even more popular among children. Nearly half of the children in each age group consume them several times a week, and another

15-20% consume them daily. Girls are slightly more likely than boys to declare daily consumption (e.g. at age of 9: 10.6% of girls vs 6.8% of boys), which may indicate a greater attachment to sweet tastes. A very small proportion of children declare a complete lack of consumption of sweets – less than 3%.

Table 14a.5. Frequency of snack consumption by gender and age

	Gender	boys						girls					
	Age	7 years of age		8 years of age		9 years of age		7 years of age		8 years of age		9 years of age	
		N	%	N	%	N	%	N	%	N	%	N	%
Salty snacks (e.g. crisps, corn chips, popcorn, peanuts)	Never	27	6.5	65	5.6	54	6.0	31	6.5	74	5.8	62	6.5
	Less often than once a week	237	57.4	683	59.0	521	58.0	279	58.9	771	60.2	586	61.4
	Several times a week (1-3 days)	116	28.1	334	28.8	264	29.4	138	29.1	357	27.9	249	26.1
	Most days of the week (4-6 days)	16	3.9	43	3.7	40	4.5	17	3.6	45	3.5	34	3.6
	Once a day	12	2.9	21	1.8	10	1.1	8	1.7	25	2.0	16	1.7
	More often than once a day	5	1.2	12	1.0	9	1.0	1	0.2	9	0.7	7	0.7
Sweet snacks (e.g. cakes, biscuits, sweet desserts)	Never	4	1.0	18	1.5	29	3.2	11	2.3	22	1.7	21	2.2
	Less often than once a week	98	23.7	312	26.8	266	29.5	110	23.2	344	26.7	275	28.6
	Several times a week (1-3 days)	190	45.9	533	45.8	391	43.3	216	45.6	608	47.3	430	44.7
	Most days of the week (4-6 days)	65	15.7	165	14.2	127	14.1	73	15.4	167	13.0	134	13.9
	Once a day	48	11.6	101	8.7	61	6.8	52	11.0	115	8.9	85	8.8
	More often than once a day	9	2.2	36	3.1	28	3.1	12	2.5	30	2.3	17	1.8

Meal eating habits

The habit of having breakfast

Eating breakfast regularly, including meals eaten at school, is recognised as one of the key factors supporting children's normal physical and cognitive development. The data collected among early school-age children shows that most of them eat breakfast daily. Nevertheless, some differences are observed, both between age groups and genders. Among boys, the highest percentage of daily breakfast consumption was observed in the group of 8-year-olds – as many as 83.9% of them declared that they ate breakfast every day. In the other age groups, the share was slightly lower, but still very high - 81.0% of the 7- and 9-year-olds. It should be noted that despite the overall dominance of the habit of eating breakfast

every day, approximately 18-19% of boys in each age group declared less regular patterns of eating that first meal. Particular attention should be paid to the fact that the highest number of boys skipping breakfast was among those at the age of 7 (1.9%), while among 8-year-olds, this share dropped by almost half (0.9%). For girls, the habit of daily breakfast consumption also remains high, ranging from 79.3% among 7-year-olds to 82.4% among 8-year-olds. It is noteworthy that 7-year-old girls are most likely not to eat breakfast compared to the other groups (1.0%), and are also more likely than their male peers to report eating breakfast only "a few days a week" (7.1%). This may indicate a slightly greater variation in dietary patterns among younger girls. Although gender differences are not significant, the data suggest that boys aged 8 are most likely to maintain the habit of eating breakfast daily, while girls aged 7 are slightly less likely than their peers in the other age groups to have that meal regularly. In both groups, a stable level of daily breakfast consumption can be observed among those at the age of 9 (81.0%).

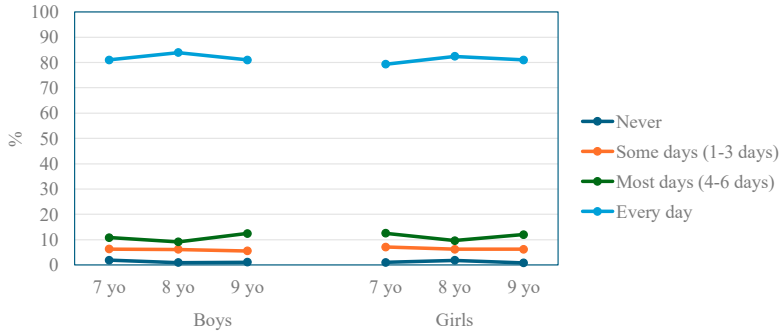

Fig. 14a.1. The habit of breakfast consumption by children, per week, by age and gender

Having meals together as a family

Having breakfast together with a child is not a daily practice for most families, although it is not uncommon either. Only approximately 20-22% of parents declared that they had breakfast together with their child every day. These values are similar across all age groups and both genders – slightly higher shares are observed among parents of 7-year-old girls (21.7%) and 8-year-old boys (21.6%). The dominant pattern is the "1-2 days a week" response – selected by 42-48% of the respondents. Such a high share of this category suggests that family breakfasts are most often an occasional ritual, associated with, e.g., weekends or days off from work. Rare (less often than once a week) or complete

avoidance of shared breakfasts was declared by approximately 10-14% of the parents - the highest score in the group of 9-year-old boys (13.8%). This may indicate time limitations related to the morning schedule and differences in the organisation of family life.

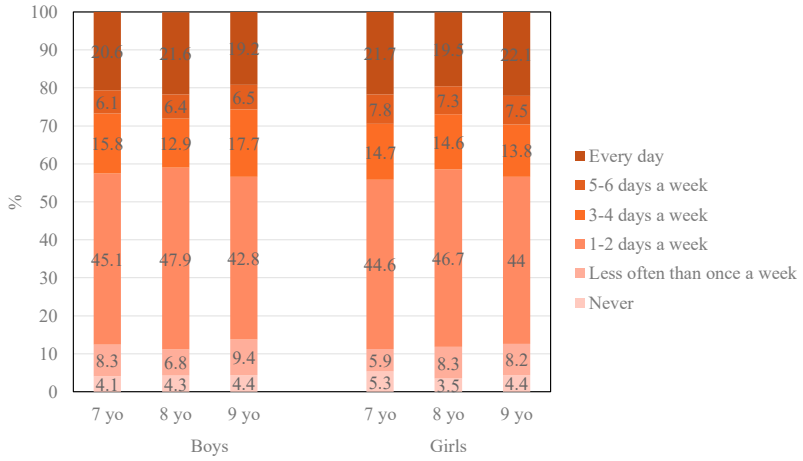

Fig. 14a.2. The habit of having breakfast together as a family, by age and gender of children (%)

Lunch is the meal eaten together most often. Over 40% of parents in each gender and age group declared eating lunch with their children every day. The highest score was obtained for 7-year-old boys (44.1%) and 8-year-old boys (43.9%). Girls aged 9 years also often eat lunch with a parent, 41.2% of the "every day" responses. Importantly, the "never" and "less often than once a week" responses were very rare (less than 2% in each group), which confirms the habit of eating lunch by parents together with children of younger school age in Polish families. The consumption of lunch "3-4 days a week" and "1-2 days a week" was equally frequent (16-22%), which may reflect differences in parents' daily routine, e.g. shift work, presence at home only on certain days of the week or work duties to be performed during lunch time.

Dinner is the second most common meal eaten together as a family, after lunch. Approximately half of the parents (50-54%) declared having dinner together with their children every day, and the values are relatively stable regardless of the child's gender and age. The highest response scores were noticed for 7-year-old boys (54.3%) and 9-year-old girls (52.0%). At the same time, it was noticed that with the child's age, the share of the "1–2 days a week" answer

increases slightly – especially in the 9-year-old boys group (10.1%), which may suggest greater independence of children or changing household habits in the families with older children. The high values of the "5-6 days a week" category (approximately 15-19%) may be indicative of the great importance of dinner as an evening family gathering moment, even though it does not always happen every day. In contrast to breakfast, having dinner together with a child may be easier to organise as this is at the end of the working and studying day.

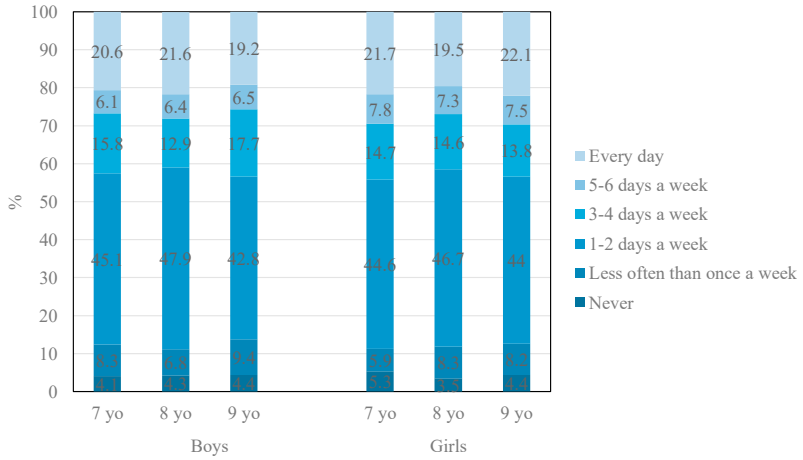

Fig. 14a.3. The habit of having lunch together as a family, by age and gender of children (%)

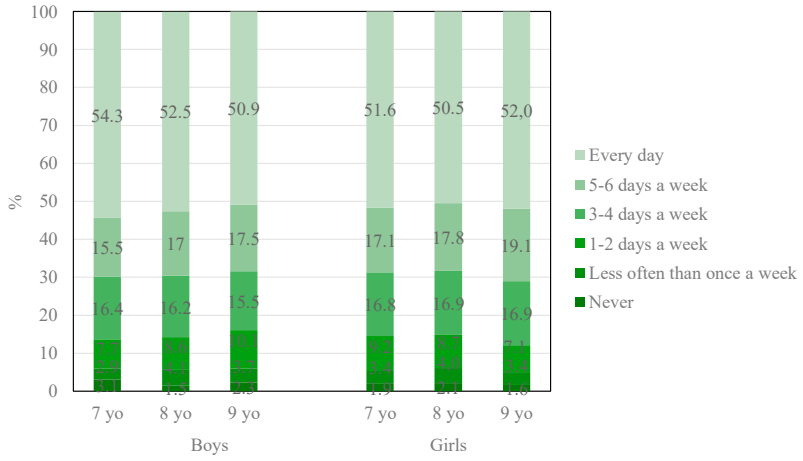

Fig. 14a.4. The habit of having dinner together as a family, by age and gender of children (%)

Children's eating habits in the context of electronic media use

Watching TV seems to be one of the most common occasions to reach for snacks. As many as around 70% of children, regardless of age and gender, consume snacks while watching TV at least once a week. The most common responses are: "less often than once a week" and "1-2 days a week", which account for more than 65% of indications, in total. This habit is slightly more common among boys, with 37.0% of 9-year-old boys having a snack while watching TV less often than once a week, compared to 37.9% of girls of the same age. However, the differences are insignificant. Interestingly, the fewest children indicate that they do so every day - the percentage of "every day" responses is only 4-5% and does not differ significantly between the groups. It is worth noting that the number of children never reaching for a snack while watching TV decreases with age in the case of boys, from 8.2% (7 years old) to 6.9% (9 years old). In the case of girls, the values are more varied, and in the age group of 9-year-olds, the score is 6.5%, confirming the general trend of avoidance of such practices with age.

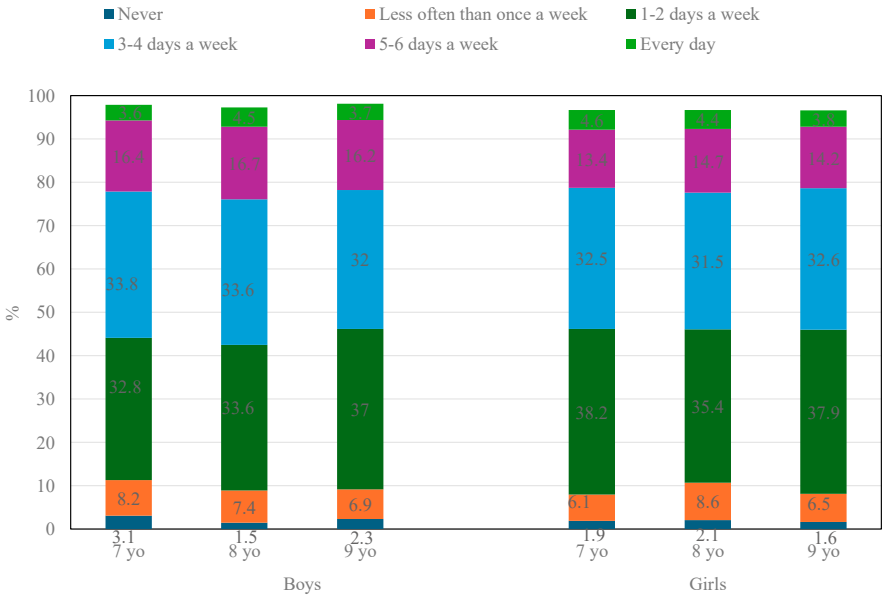

Fig. 14a.5. Snack consumption while watching TV, by age and gender of children (%)

Having a snack while using the computer is much less popular than when watching TV, but cannot be ignored – especially in the case of boys. As many as 60.8% of 9-year-old boys declare that they sometimes have a snack while at the

computer (i.e. all answers except "never"). To compare, 55% of 9-year-old girls. The most frequently selected answer in that category is "never", which may suggest greater parental control over computer use or a lower frequency of that habit in younger children.

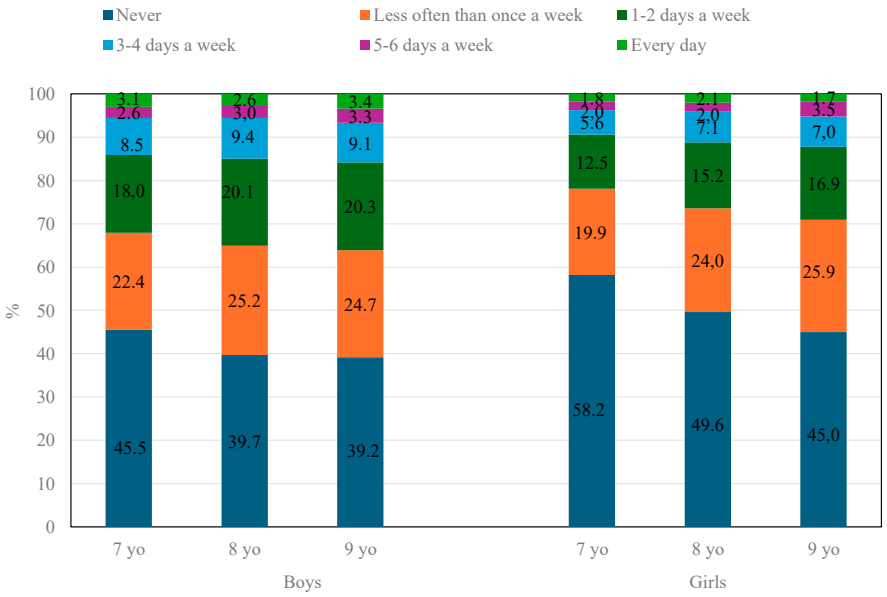

Fig. 14a.6. Snack consumption while using the computer, by age and gender of children (%)

It is worth noting, however, that the number of children eating snacks every day while using the computer does not exceed 3-4%, meaning that the habit is rather occasional. In boys, there is a slightly upward trend in the frequency of such a habit with age. For example, the number of responses "1-2 days a week" increases from 18.0% (7 years old) to 20.3% (9 years old), while a similar increase in the group of girls (from 12.5% to 16.9%) indicates a slow formation of a habit of eating while in front of a computer in that group as well.

The last situation analysed was **having meals while watching TV, cartoons or films**. This phenomenon is common and occurs regularly in a significant number of children. The most frequently indicated answer is "1-2 days a week" (approximately 20-22%) and "3-4 days a week" (approximately 19-23%), which may indicate that such a habit is becoming part of a weekly ritual - e.g. dinners while watching cartoons or weekend breakfasts with a film. The "every day" option was indicated by 13-18% of the children – the highest score among 8-year-old boys

(17.9%) and 8-year-old girls (16.0%). This means that up to one in five children of that age combine eating a meal with watching TV every day. Interestingly, the share of children who **never** watch TV during meals increases with age, from 11.1% (7-year-old boys) to 15.2% (9-year-old boys) and 15.6% (9-year-old girls). This may indicate a growing health awareness among parents or changing household rules in families with older children.

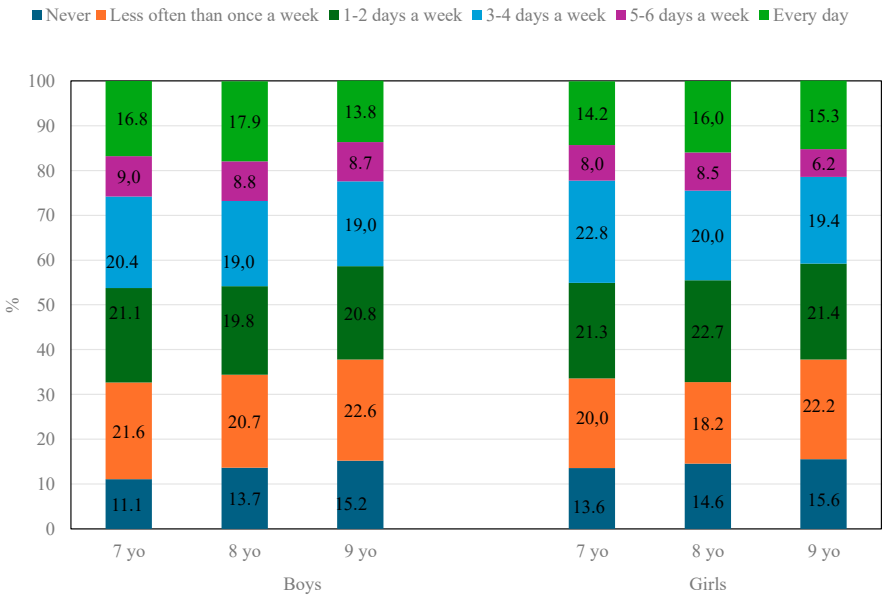

Fig. 14a.7. Having meals while watching TV, cartoons or films, by age and gender of children (%)

Nutritional status of children aged 7-9 in Poland

Analysis of the nutritional status of children aged 7-9 years, carried out based on the WHO BMI classification, shows clear differences depending on age and gender of the study subjects. A phenomenon worth highlighting is the increase in obesity with age. While among 7-year-olds, obesity was the case in 10.3% of the children, in the group of 9-year-olds, the score increased to 15.9%. Among boys, the dynamics of this increase is exceptionally strong: from 13.2% in the group of 7-year-olds to 19.3% for 9 9-year-olds. To compare, among girls, obesity in the same age range increases from 7.8% to 12.6%. This means that boys are more

likely to be overweight, but also that this issue increases with age. Overweight also remains high and is recorded in approximately 17-19% of children in each age group, but unlike obesity, the increase rate is less rapid. It is also interesting to note that the proportion of overweight children is almost identical in boys and girls at the age of 9 (18.9% in each group).

Underweight concerns a small percentage of children in all analysed groups – from 3.1% to 3.6%, and the share of underweight children is similar in both gender groups and in each age group, which may suggest a relatively constant nature of that phenomenon in the population of early school children.

Table 14a.6. BMI categories according to the WHO classification among children aged 7-9 in Poland (%)

Age	Gender	BMI category			
		Underweight	Normal weight	Overweight	Obesity
7 years of age	Boys	2.6	67.6	16.6	13.2
	Girls	3.6	70.7	17.9	7.8
	Total	3.1	69.3	17.3	10.3
8 years of age	Boys	3.2	60.4	18.2	18.3
	Girls	3.2	68.1	17.8	10.9
	Total	3.2	64.4	18.0	14.5
9 years of age	Boys	3.1	58.7	18.9	19.3
	Girls	3.8	64.7	18.9	12.6
	Total	3.5	61.7	18.9	15.9

Increased waist and hip circumference values

The percentage of children with waist circumference exceeding the 90th percentile increases systematically with age, which highlights the growing problem of excess body weight and abdominal obesity. Among 7-year-olds, that threshold is exceeded in 23.5% of children, among 8-year-olds, it is already 26.2%, and among 9-year-olds - 29.2%. Although boys in all age groups are more likely to have a waist circumference >90th percentile than girls (e.g. 9-year-olds: 27.9% vs 30.6%), the differences are not statistically significant. A similar trend is observed for hip circumference. The percentage of children with a score above the 90th percentile increased from 18.7% in 7-year-olds to 21.4% in 8-year-olds, and 23.6% in the case of 9-year-olds. Also in this case, the results for boys and girls differ slightly, but the differences are not statistically significant.

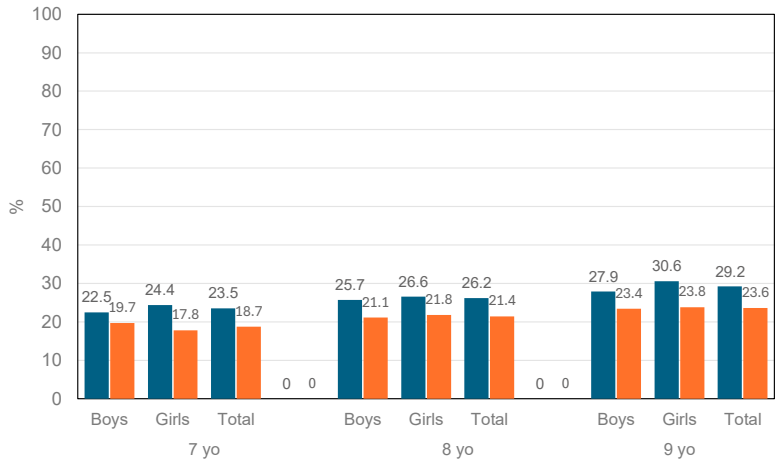

Fig. 14a.8. Percentage of children with waist and hip circumferences above the 90th percentile, by age and gender of children (%)

Children and youth aged 11-17

For school children aged 11, 13, 15 and 17, the data from the 2021/2022 Health Behaviour in School-aged Children (HBSC) survey, conducted according to an international protocol, was used[15]. 7,111 school children were included in the study.

The nutritional status was determined based on self-assessed body weight and height, which, despite potential errors, is in line with international standards and allows for monitoring trends in the population, taking into account the tendency of girls to underestimate body weight and boys to overestimate body weight and height[16]. Classification criteria in accordance with the 2007 WHO standards were adopted, analogous to those for early school-age children.

In the assessment of dietary habits, the frequency of consumption of fruit, vegetables, sweetened and "light" beverages, as well as the regularity of breakfast

[15] Gudelj Rakić, J., Hamrik, Z., Dzielska, A., Felder-Puig, R., Oja, L., Bakalár, P., Nardone, P., Ciardullo, S., Abdrakhmanova, S., Adayeva, A., Kelly, C., Fismen, A.-S., Wilson, M., Brown, J., Inchley, J., & Ng, K. (2024). A focus on adolescent physical activity, eating behaviours, weight status and body image in Europe, central Asia and Canada,WHO Regional Office for Europe. https://hbsc.org/publications/reports/a-focus-on-adolescent-physical-activity-eating-behaviours-weight-status-and-body-image-in-europe-central-asia-and-canada/

[16] Kopcáková, J., Dzúrová, D., & Klein, D. (2014). Self-reported height and weight and their validity: the case of Slovak adolescents. Central European Journal of Public Health, 22(4), 282-287.

consumption during the week (summary index of breakfast consumption on school days and weekends) were analysed.

Breakfast consumption

The frequency of breakfast consumption throughout the week decreases with age. Analysis of gender differences reveals less favourable dietary patterns among girls, especially in older age groups.

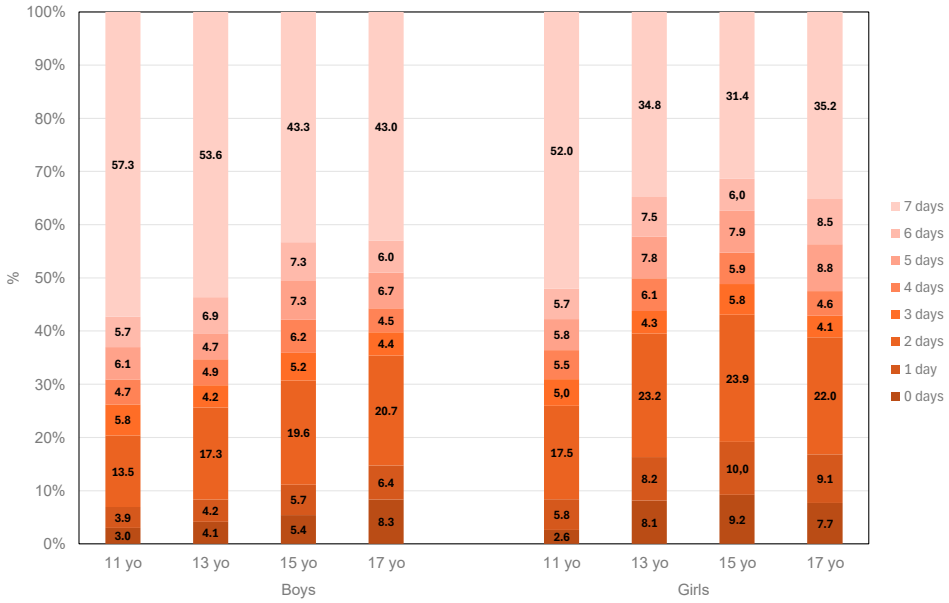

Fig. 14a.9. Frequency of breakfast consumption (number of days per week: 0-7) by children and youth aged 11-17 years, by gender and age (%)

52% of girls at the age of 11 report having breakfast daily, but from the age of 13 onwards, it is already approximately one-third of girls, which remains the case at the age of 15 (31.4%) and 17 (35.2%). Importantly, skipping breakfast (0 days) is declared by 2.6% of girls aged 11 and as many as 9.2% of those aged 15. In the case of boys, there is also a decrease in regularity with age, but it is less rapid. In the group of 11-year-old boys, 57.3% have breakfast daily, and more than half of the 13-year-olds also have breakfast every day. In the group of 15- and 17-year-olds, approximately 43% do so. At the same time, the percentage of boys who do not have breakfast at all increases from 3.0% (11-year-olds) to 8.3% (17-year-olds), indicating a deterioration in the consumption pattern at an older age. The number of teenagers who do not have

breakfast regularly, once or twice a week, also increases with age. In the 13-15 age group, the share is 30% in girls and approximately 26% in boys. This may indicate a lack of time, organisational difficulties or deliberate skipping of the meal.

Fruit and vegetable consumption

Based on the HBSC survey data, there is a noticeable decrease in the frequency of fruit consumption with the age of children. In the group of 11-year-olds, almost one in four (23.8 %) declare daily consumption of fruits more often than once a day, but in the 17-year-old group, the score drops by almost half to 11.5 %. The highest percentage of regular fruit consumers is noticed in 11-year-old girls (25.9%) and the lowest in 17-year-old boys (9.4%). With age, the proportion of youth who reach for fruit only once a week or less often increases. For example, in the group of 17-year-old boys, 14.2% consume fruit only once a week, and as many as 9.7% consume fruit less often than once a week. In the case of girls, these values are lower (12.9% and 6.9%, respectively), confirming that girls have better eating habits in this respect.

Although vegetables are consumed slightly more often than fruit, there is also a worrying downward trend with age, especially for boys. Daily consumption of vegetables, more often than once a day, is declared by 18.8% of 11-year-olds (20.4% of girls and 17.3% of boys), and in the group of 17-year-olds, 16.9% (19.5% of girls, 13.4% of boys). Moreover, the number of children and teenagers consuming vegetables 2-4 times a week increases with age, from 25.0% for 11-year-olds to 34.5% in the case of 17-year-olds.

Consumption of sweets

Unlike fruit and vegetables, sweets are consumed frequently and regularly across all age groups. The largest proportion of school children – approximately 30-36% – reach for them 2-4 times a week, with no clear gender or age-related differences. For example, in the 15-year-olds group, 35.9% of boys and 35.5% of girls eat sweets 2-4 days a week. Daily consumption of sweets (once or more often a day) is also common: in the group of 15-year-old girls, 30.5% of the respondents (14.7% – once a day, 15.8% – more often than once) indicate such a habit, and in the case of boys – 22.8%. Significantly, only a small percentage of youth declare that they never eat sweets, from 1.3% to 3.9%, which indicates their constant presence in the diets.

Beverages with added sugar

Consumption of drinks with added sugar is still popular, although slightly more moderate than the consumption of sweets. Approximately 10-13% of boys

and 7-10% of girls reach for such drinks daily (once or more often). In the group of 15-year-olds, almost twice as many boys as girls (8.8% vs 4.7%) drink sweetened drinks more often than once a day. In contrast, more than 20% of youth report consuming such drinks 2-4 times a week - boys dominate. Girls are more likely than boys to avoid sweetened drinks, with as many as 20.3% of 17-year-old girls declaring that they never drink such beverages, compared to 13.3% of boys.

"Light" drinks

"Light" drinks are chosen less frequently than their classic substitutes. The majority of school-aged children (approximately 30-37%) declare that they do not drink them at all. Daily consumption (once or more often per day) is the case in approximately 6-8% of school children, with no significant gender differences. As regards daily consumption of "light" drinks (more often than once a day), the greatest score was achieved by 11-year-old boys (7.3%) and the lowest by 17-year-old girls (5.0%).

Table 14a.7. Frequency of consumption of selected products by school children and youth aged 11-17, by gender and age (%)

	Gender	boys				girls				Total			
	Age	11 years of age	13 years of age	15 years of age	17 years of age	11 years of age	13 years of age	15 years of age	17 years of age	11 years of age	13 years of age	15 years of age	17 years of age
Fruit	Never	2.5	2.8	3.8	3.5	1.2	1.8	1.7	1.3	1.9	2.3	2.7	2.3
	Less often than once a week	4.6	6.3	6.1	9.7	4.1	4.9	5.8	6.9	4.3	5.6	5.9	8.1
	Once a week	6.0	7.9	10.1	14.2	7.5	8.7	10.8	12.9	6.7	8.3	10.5	13.4
	2-4 days per week	32.1	34.9	40.7	40.6	26.8	31.7	39.2	38.1	29.4	33.4	39.9	39.2
	5-6 days per week	16.9	14.0	13.0	11.3	17.6	17.5	14.1	14.5	17.2	15.7	13.6	13.2
	Daily, once	16.4	14.9	13.5	11.3	17.0	16.1	14.6	13.2	16.7	15.5	14.1	12.4
	Daily, more often than once	21.6	19.2	12.7	9.4	25.9	19.3	13.9	13.1	23.8	19.2	13.4	11.5
Vegetables	Never	5.8	4.7	4.4	2.6	2.2	2.7	3.6	1.3	4.0	3.7	4.0	1.9
	Less often than once a week	5.5	6.4	5.1	5.6	6.3	5.8	3.8	3.1	5.9	6.1	4.4	4.2
	Once a week	11.9	11.0	8.8	9.3	10.6	9.5	6.9	5.9	11.2	10.3	7.8	7.3
	2-4 days per week	26.0	27.5	34.5	37.0	24.1	26.6	33.1	32.6	25.0	27.1	33.7	34.5
	5-6 days per week	20.1	18.5	17.5	18.0	19.3	18.3	19.7	19.9	19.7	18.4	18.7	19.1
	Daily, once	13.4	16.6	15.2	14.2	17.2	18.3	16.2	17.7	15.3	17.5	15.8	16.2
	Daily, more often than once	17.3	15.3	14.4	13.4	20.4	18.8	16.7	19.5	18.8	17.0	15.7	16.9

	Gender	boys				girls				Total			
	Age	11 years of age	13 years of age	15 years of age	17 years of age	11 years of age	13 years of age	15 years of age	17 years of age	11 years of age	13 years of age	15 years of age	17 years of age
Sweets	Never	3.9	3.3	3.5	3.8	2.2	2.3	1.8	1.3	3.0	2.8	2.6	2.4
	Less often than once a week	12.7	13.0	9.8	12.0	8.5	9.4	6.9	9.0	10.6	11.2	8.2	10.3
	Once a week	17.0	15.5	13.1	18.6	15.6	12.2	10.4	12.1	16.3	13.9	11.6	14.9
	2-4 days per week	30.1	30.1	35.9	35.2	30.7	32.9	35.5	35.9	30.4	31.5	35.7	35.6
	5-6 days per week	14.0	12.5	14.9	9.3	13.6	14.7	14.8	12.8	13.8	13.6	14.9	11.3
	Daily, once	10.3	12.7	11.4	8.6	14.1	12.9	14.7	15.7	12.2	12.8	13.2	12.7
	Daily, more often than once	12.0	12.9	11.4	12.4	15.3	15.6	15.8	13.1	13.7	14.2	13.9	12.8
Beverages with added sugar	Never	15.2	11.9	9.5	13.3	17.7	16.2	15.8	20.3	16.4	14.0	13.0	17.3
	Less often than once a week	28.9	25.9	24.1	25.3	33.4	33.2	30.3	31.1	31.2	29.5	27.5	28.6
	Once a week	20.2	19.3	16.2	17.9	20.9	17.1	18.2	15.0	20.6	18.2	17.3	16.2
	2-4 days per week	17.9	22.3	26.5	24.7	14.6	17.2	21.8	20.4	16.2	19.8	23.9	22.2
	5-6 days per week	6.1	8.8	9.2	7.7	6.4	5.3	5.6	4.8	6.2	7.1	7.2	6.0
	Daily, once	5.3	5.3	5.6	4.2	2.2	5.1	3.7	4.2	3.8	5.2	4.6	4.2
	Daily, more often than once	6.3	6.6	8.8	7.0	4.9	5.8	4.7	4.2	5.6	6.2	6.5	5.4
"Light" drinks	Never	32.8	30.4	35.0	37.9	33.1	29.5	32.2	34.9	33.0	29.9	33.5	36.2
	Less often than once a week	24.1	24.0	21.8	24.6	25.5	30.2	25.6	26.0	24.8	27.1	23.9	25.4
	Once a week	15.4	12.0	10.9	9.8	13.6	11.1	11.8	12.4	14.5	11.5	11.4	11.3
	2-4 days per week	9.8	14.8	16.3	13.5	11.0	11.3	15.8	13.1	10.4	13.1	16.0	13.3
	5-6 days per week	6.7	8.4	5.8	4.9	6.7	6.4	5.2	4.7	6.7	7.5	5.5	4.8
	Daily, once	3.9	4.2	2.9	3.4	2.7	4.0	3.6	3.8	3.3	4.1	3.3	3.6
	Daily, more often than once	7.3	6.3	7.4	5.9	7.2	7.5	5.8	5.0	7.3	6.9	6.5	5.4

Nutritional status of children and youth aged 11-17 in Poland

Assessment of the nutritional status of youth based on body mass index (BMI) provides important information about the scale of malnutrition, overweight or obesity in the population of school-age children. In the group of 11-year-olds, overweight and obesity are observed in more than 40% of boys - 29.2% and 11.6%, respectively, which means that almost every second boy at that age has a body weight exceeding the WHO standards. In comparison, in the same age group,

the problem is noticeable in 19% of girls (15.2% overweight, 3.7% obese). Among younger girls, there is also a higher rate of underweight (7.3%) than in boys (5.5%). In the seventh grade (13 years old), the proportions change slightly, but obesity is still noticed in 13% of the study subjects – the highest score among all age groups. Girls at this age present a more favourable picture, with only 2.8% meeting the obesity criteria. 22.7% of boys and 14.9% of girls are overweight, which means that there is a continuing prevalence of the issue of excess body weight among boys. In the first year of high school (15 years), a further improvement in the indicators for girls is apparent. The lowest values for overweight (10.0%) and obesity (3.0%) are recorded. In boys, the scores are also improving, although more than a quarter of them are overweight (19.2%) or obese (8.1%). In the oldest age group (17-year-olds), the favourable nutritional status profile is maintained in girls, with 4.0% and 9.2% obese and overweight, respectively. In boys, the situation remains less optimistic. The percentage of overweight boys (23.6%) is on the rise again, and obesity is noticed in 7.5% of 17-year-old boys.

Throughout adolescence, there is a noticeable and persistent predominance of more favourable nutritional status indicators in girls. In every age group, there are lower rates of overweight and obesity observed compared to boys. Boys are more likely to be overweight, and that indicator is less likely to improve with age.

Table 14a.8. BMI categories according to the WHO classification among children aged 11-19 in Poland (%)

Age	Gender	BMI category			
		Underweight	Normal weight	Overweight	Obesity
11 years of age	Boys	5.5	53.6	29.2	11.6
	Girls	7.3	73.8	15.2	3.7
	Total	6.4	64.0	22.0	7.6
13 years of age	Boys	3.5	60.7	22.7	13.0
	Girls	4.7	77.6	14.9	2.8
	Total	4.1	69.0	18.9	8.0
15 years of age	Boys	3.0	69.8	19.2	8.1
	Girls	3.3	83.7	10.0	3.0
	Total	3.2	77.3	14.2	5.4
17 years of age	Boys	2.0	66.9	23.6	7.5
	Girls	2.3	84.5	9.2	4.0
	Total	2.2	76.8	15.5	5.5