World Health Organization
European Region

Commercial foods for infants and young children in Türkiye

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ABSTRACT

While nutrition has always been an essential component of health care, in recent years the effect upon the health of infants and young children of improper nutrition has come under closer scrutiny. Ensuring complementary foods are healthy and nutritious is made increasingly difficult by improper and unregulated marketing. This report examines the availability, marketing and trends of manufacturers, consumers and stores to provide a cross-sectional study of the availability and nutritional composition of foods aimed at infants and young children in Türkiye. It is the first study in Türkiye on the marketing of commercially available foods for infants and young children aged 6–36 months. Adapted from an established WHO method, the study collected data on 224 food products marketed for infants and young children in two districts of Ankara, Türkiye. The products were assessed using the WHO 2022 Nutrient and Promotion Profile Model (NPPM). The findings show that according to the NPPM criteria there is widespread inappropriate promotion of commercial foods for infants and young children in Ankara.

The data contained within this report have implications for all WHO Member States and its results illustrate the need to implement comprehensive regulations on the marketing of commercial foods targeted at infants and young children.

KEYWORDS

INFANT, CHILD, NUTRIENTS, PEDIATRIC OBESITY

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Foreword

Proper nutrition during infancy and childhood has been proven to be of vital importance for health and longevity. Today, 39 million children under the age of five globally are overweight and obese, and as marketing efforts advance, choosing healthy and nutritious complementary foods become more challenging for parents. Since 2009, WHO has concentrated on creating nutrient profile models and tools to limit improper marketing of foods for infants and young children (FIYC).

This study was therefore carried out to investigate the baby food market and whether the products availabile are suitable to be marketed for infants and young children. This information will inform policy development and future studies. This is the first study in Türkiye on the marketing of commercially available FIYC aged 6–36 months, and it's findings will help advocate for policy changes to safeguard the health and well-being of this vulnerable group.

Türkiye has come a long way in the implementation of comprehensive regulations on the provision of healthy complementary foods. It is a challenging task for countries in the WHO European Region to adopt policies and strategies aimed at improving the health, well-being and development of future generations and reducing noncommunicable disease risk in later life.

I hope that this study will contribute to an inter-sectoral and international collaboration to facilitate necessary policies changes in this area.

Let me express my sincere gratitude to the authors of this study; the Turkish Ministry of Health and the WHO Regional office for Europe for their continuous support; and all the colleagues who provided their valuable contribution to the preparation of this report.

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Abbreviations

COSI	WHO European Childhood Obesity Surveillance Initiative
FIYC	foods for infants and young children
FOP	front-of-packet
NCD Office	WHO European Office for the Prevention and Control of Noncommunicable Diseases
NCDs	noncommunicable diseases
WHO NPPM	the 2022 WHO Nutrient and Promotion Profile Model

Executive summary

While nutrition has always been an essential component of health care, in recent years the effect upon the health of young children of improper nutrition has come under closer scrutiny with the observation of overweight and obesity in 39 million children under the age of 5 years. Studies such as the WHO European Childhood Obesity Surveillance Initiative (COSI) study have highlighted the need for decisive action in order not only to communicate positive and usable messages to parents and carers, but to monitor, control and restrict factors leading to unhealthy diets and thereon to the burden of disease.

WHO recommends exclusive breastfeeding for the first 6 months of a child's life, and ideally continuing up to the age of 2, during which time complementary foods are introduced. Ensuring such foods are healthy and nutritious is made increasingly difficult by improper and unregulated marketing. The development of nutrient profile models and regulations to moderate improper marketing of foods for infants and young children (FIYC) has been a focus for WHO since 2009.

This report examines the availability, marketing and trends of manufacturers, consumers and stores to provide a cross-sectional study of the availability and nutritional composition of FIYC aimed at infants and young children in Türkiye.

This is the first study in Türkiye on the marketing of commercially available foods for infants and young children aged 6–36 months. Adapted from an established WHO method, the study collected data on 224 food products marketed for infants and young children in two districts of Ankara, Türkiye. The findings show that according to the WHO Nutrient and Promotion Profile Model (NPPM) 2022 criteria there is widespread inappropriate promotion of commercial foods for infants and young children in Ankara.

The data contained within this report have implications for all WHO Member States and its results illustrate the need to implement comprehensive regulations on the marketing of commercial foods targeted at infants and young children.

1. Introduction and background

The WHO constitution states: "Health is a state of complete physical, mental and social well-being and not merely the absence of disease or infirmity". In this framework, one of the basic elements of being healthy, especially physically, is good nutrition. This is especially important during infancy and childhood. Healthy nutrition of babies and children will contribute to their healthy growth and development *(1)*. Also, malnutrition (undernutrition and obesity), which is an important risk factor in the later period of life, plays a key role in terms of noncommunicable diseases (NCDs) *(2)*.

WHO recommends that infants should be exclusively breastfed for the first 6 months of life and thereafter should receive nutritionally adequate and safe complementary foods while breastfeeding continues until up to 2 years of age or beyond *(3)*.

After feeding exclusively with breast milk for the first 6 months, switching to complementary foods in infancy and overall childhood nutrition are of great importance in the development of nutritional habits in childhood and in later adult life. Today, foods for infants and young children (FIYC) as supplementary foods play a major role in infant and young child nutrition and their introduction can be defined as a turning point.

TODAY, FOODS FOR INFANTS AND YOUNG CHILDREN AS SUPPLEMENTARY FOODS PLAY A MAJOR ROLE IN INFANT AND YOUNG CHILD NUTRITION AND THEIR INTRODUCTION CAN BE DEFINED AS A TURNING POINT

Eating habits are learned through encountering food in early life stages, and increases in rapid weight gain in young children can be explained by learned dietary consumption patterns *(4–6)*. These consumption patterns can lead to rapid weight gain, overweight and dental caries in infancy and childhood *(7)*.

Obesity is a preventable disease. According to WHO, 39 million children under the age of 5 were overweight or obese in 2020, and over 340 million children and adolescents aged 5–19 were overweight or obese in 2016 *(8)*. In 2015–2017, the fourth round of the WHO European Childhood Obesity Surveillance Initiative (COSI) study was conducted in 36 countries. Overweight and obesity in children were identified in this study as an important problem, with 28.7% of children living with the conditions. The lowest frequency was observed in central Asian countries (boys 3.5%, girls 3.2%), while the highest frequency was observed in southern European countries (boys 18.6%, girls 14.2%) *(9)*. Türkiye participated in WHO's COSI research in 2013 and 2016 (COSI-TUR). In COSI-TUR 2013, the prevalence of overweight and obesity among second grade primary school students was 14.2% and 8.2%, respectively, and in COSI-TUR 2016 research, overweight and obesity had increased to 14.6% and 9.9% *(10–12)*.

In 2016 the World Health Assembly adopted resolution 69.9, which extends the scope of the International Code of Marketing of Breast-milk Substitutes and closes an important gap in international nutrition policy. The new resolution protects infants and young children from aggressive and inappropriate marketing of a variety of commercial nutrition products. The legislation protects exclusive breastfeeding for 6 months, continued breastfeeding beyond 2 years of age and supports optimal complementary feeding practices for infants and young children into the early preschool years *(13)*.

AS IN MANY COUNTRIES OF THE WORLD AND IN EUROPE, PROBLEMS IN INFANTS AND YOUNG CHILD NUTRITION CONSTITUTE AN IMPORTANT PUBLIC HEALTH ISSUE IN TÜRKIYE

As in many countries of the world and in Europe, problems in infants and young child nutrition constitute an important public health issue in Türkiye. Population growth is particularly high; the total fertility rate is 1.50 *(14)* in Europe and 1.70 *(15)* in Türkiye. Migration from rural areas to cities is also high, and when combined with increased participation of women in working life, the result is that more ready-to-eat foods are being consumed by infants and young children.

Official legislation on FIYC in Türkiye has been established to comply with European Union regulations *(16)*. However, although the necessary guides and legislation have been prepared on the subject, there remain inconsistencies in the nutritional content (such as sugar, sodium etc.) and promotion of FIYC both in Türkiye and Europe.

2. Study methodology

This is a cross-sectional study of the availability and nutritional composition of FIYC aimed at children aged between 6 and 36 months in Türkiye.

2.1 Aims of the study

The overall aims of the study were as follows:

- to collect data on commercially available food products targeted at infants and young children (6–36 months) in two districts of Ankara, Türkiye;
- to compare the composition of these products (including nutritional content) with WHO guidance *(17)* and national food-based dietary regulations on infants and young children feeding; and
- to compare the methods used to describe and promote these products (labelling, claims, price promotions) with WHO guidance.

Pre-defined methods for recording the data collected have been used: this was an Excel database for manual data collection. The study was conducted in two districts of Ankara, Türkiye, using the Excel database version of the methodology.

2.2 Study protocol

The study was conducted according to a protocol developed by the WHO Regional Office for Europe adapted to the national context (Annex 1). There were four stages:

1. sampling
2. field worker training
3. data collection
4. analysis.

2.2.1 SAMPLING – SELECTION OF PROJECT AREAS AND RETAIL OUTLETS

The study was carried out in two districts in Ankara with different socioeconomic levels (defined using demographic, educational, employment and social security, health, and finance variables): Keciören (a lower socioeconomic level) and Cankaya Districts (a higher socioeconomic level) *(18–20)*. Some demographic characteristics of the two districts, and Ankara and Türkiye as a whole, are shown in Table 1.

Table 1. Demographic characteristics in Keciören, Cankaya, Ankara and Türkiye, 2021

	Keciören	Cankaya	Ankara	Türkiye
Area (km^2)	199	268	24 521	783 562
Population	942 884	949 265	5 747 325	84 680 273
Live births	9 807	6 185	59 972	1 079 842
Under 5 years old	59 434	37 096	349 381	5 913 609
Crude birth rate (per 1000 living people)			10.5	12.8
Total fertility rate			1.34	1.7
Crude death rate (per 1000 people)			4.7	5.3
Infant mortality rate (per 1000 live births)			7.5	9.1
Under-5 mortality rate (per 1000 live births)			9.1	11.2
Exclusive breastfeeding under 6 months (%)				40.7
Child obesity rate under 5 years old				8.1[a]
The prevalence of malnutrition among children under 5 years of age				9.8[a]

Note: All data is from the 2021 Turkstat report (15) excepting [a] which is from the 2018 Demographic and Health Survey (21).

In the study, supermarkets and stores were selected for sampling from the two districts. The most common local supermarkets (BIM, Cagdas, CarrefourSA Grossmarket, Migros and Yunus) and baby stores (Babymall, E-bebek) in these regions were chosen according to the knowledge and expertise of the local research team. These outlets were then visited physically. The websites of these stores were another source where products were identified. Apart from this, data were also collected from widely used stores that only sell online (Hepsiburada, Trendyol, organikgurmem).

2.2.2 FIELD WORKER TRAINING

The field team received remote training from the WHO European Office for the Prevention and Control of Noncommunicable Diseases (NCD Office) and follow-up support by email. Field workers responsible for data collection received training in which the purpose of the study was outlined, and the methodology explained. Field workers were provided with the study protocol and the data recording Excel spreadsheet and product categories translated into Turkish; they then familiarized themselves with the spreadsheet and did a trial collection of data for a given product. This was assessed and approved by the NCD Office ahead of full data collection.

2.2.3 DATA COLLECTION

Two data collectors were provided with a map of the assigned area and Excel spreadsheet. They gathered the following information for the products:

- location information
- product category
- brand and product name
- age the product is targeted at
- nutritional composition
- marketing and promotion details
- other label information (e.g. claims that are made)
- photos of the products.

When data on all FIYC in the stores had been entered to the spreadsheet, the data were submitted to WHO. A description of the data collected by district is shown in Table 2.

Table 2. Data collection by districts

City, country	District	Number of shops	Number of products
Ankara, Türkiye	Keciören	12	117
	Cankaya	14	129
	Online	3	119
	Raw total	29	365
After removing duplicates	**Total**	**29**	**224**

2.2.4 ANALYSIS: CLEANING AND ANALYSIS OF THE DATA

After collecting all the data, 365 complementary food products for infants and young children had been identified. The first round of data cleaning was performed by the study investigators and data collectors to eliminate any duplicates (for example, multiple field workers entering the same product details twice within the same store). Once duplicates were removed, there were 224 products left. The cleaned datasets were then reviewed by the NCD Office to identify any anomalies or values that seemed implausible, and clarification was sought from the country teams if needed.

Data were analysed by the country teams, the NCD Office and the report authors, according to the indicators defined by the NCD Office. These indicators against which results were assessed are defined in the 2022 WHO Nutrient and Promotion Profile Model (NPPM) *(22)* for FIYC up to 36 months of age and, for comparison purposes, against Codex Alimentarius European Union legislation (see NPPM Criteria in Annex 3). Mean, median, first quartile, third quartile and maximum and minimum values were calculated for most variables, with a standard error, so that box plots could be produced where appropriate. Statistical analysis was performed with IBM SPSS Statistics 25.

On the basis of the information on the labels, the nutrient contents of the products were recorded. This included energy (kilocalories [kcal] and kilojoules [kJ]) and total fat, total sugars, total protein (g per 100 g), as well as sodium (mg per 100 g). In addition, percentage of total protein content, percentage of total and dry fruit content in some products, and free sugar addition in all products were recorded.

Where figures were reported as "<" a particular value, that value was recorded without the "<" symbol (e.g. 1 kcal was recorded instead of < 1 kcal), meaning that some very low values may have been overestimated. No products were excluded from the analysis even if they were outliers, although all figures that were unusually high or low were verified and checks were implemented to ensure that products were categorized correctly (outlier values are not shown in the box plots in Figs. 1–6 below).

In addition, the nutrient values in grams per 100 kcal were calculated. This is because some of the products are bought in a dry or powdered form which requires them to be reconstituted with water or milk. The nutrient contents on labels are sometimes given on the basis of dry product, and sometimes for the product on a ready-to-eat basis, and it is problematic to compare these different figures (i.e. dry vs prepared and ready to eat) on a gram-for-gram basis. It is more meaningful to compare the nutrient contents of these products on a gram-per-calorie (or 100 kcal) basis.

For each value, the median, minimum, maximum, first and third quartiles were calculated and are shown on box plots. For energy, the data are displayed in terms of kcal/100 g, while those for protein, total fat, sugars and sodium are shown in terms of g or mg/100 kcal.

The results are compared with national and international guidance, with evaluation by the new WHO NPPM 2022 for FIYC up to 36 months of age (report in preparation for publishing; see Annex 3).

3. Results

In this section, the main results are outlined across three areas:

- overview of products: types of products and target age group;
- nutritional quality of products: amount of energy (calories) and protein, total sugars, total fat and sodium content for all products by age group and product category; and
- promotion of products: findings in relation to promotional aspects of product packaging and use of nutrition and health claims on the label.

3.1 Overview of products

In total, data on 224 commercial foods for infants and young children were sampled. An overview of the numbers and types of products for which data were recorded is shown in Table 3.

Table 3. Number of unique commercial food products for infants and young children analysed, by product category

Code	Food category	No. of products	Percentage of total
1	Dry cereals and starches	82	37%
2	Dairy foods	13	6%
3	Fruit & vegetable purées/smoothies and fruit desserts	56	25%
3.1	Fruit-containing product. Including breakfast/dairy	55	25%
3.2	Vegetable only product	1	0%
4	Savoury meals and meal components	23	10%
4.1	Food without protein or cheese named	17	8%
4.2	Food with cheese named	0	0%
4.3	Food with protein not first named food	6	3%
4.4	Food with protein source named first	0	0%
4.5	Food with only protein source named	0	0%
5	Snacks and finger foods	32	14%
5.1	Dry fruit	3	1%
5.2	Dry or semi-dry snacks and finger food	29	13%
6	Ingredients	8	4%
7	Confectionery	7	3%
8	Drinks	3	1%
TOTAL		224	100%

The most common product type was dry cereals and starches (*n* = 82, 37%), followed by fruit-containing product, including breakfast/dairy (*n* = 55, 25%) and dry or semi-dry snacks and finger food (*n* = 29, 13%).

Food categories that were not found in the Turkish market were: food with cheese named (category 4.2), food with protein source named first (category 4.4) and food with only protein source named (category 4.5).

Several products were found on the market that WHO recommends should not be marketed as suitable for infants and young children. For example, there were seven confectionery and three drink products, which WHO recommends should not be sold for infants and young children up to 3 years of age and should be labelled as not suitable for infants and young children under 36 months *(23)*.

3.1.1 TARGET AGE GROUP FOR PRODUCTS

The youngest age for which each product specified that it could be used was recorded. WHO recommends that infants be exclusively breastfed for the first 6 months of life. In the International Code of Marketing of Breast-milk Substitutes, all products marketed for infants under 6 months of age are considered to be breast-milk substitutes and should not be promoted *(24)*.

Table 4 shows the distribution of products by age group. Except for the categories vegetable only product, ingredients, drinks and confectionery, most of the products are aimed at the 6–8 months age group. Products in the vegetable only product and drinks categories are for the age group below 6 months. Half of the products in the Ingredients category do not specify a target age group. All products in the Confectionery category are aimed at children over 12 months old. In total, most of the products (around 70%) are aimed at the 6–8 months age group. Approximately 15% of the products are for the age group below 6 months.

Table 4. Overview of target age group for products (the youngest age for which the product is indicated) by product category

Code	Food category	No. of products	Youngest age at which food can be consumed (months)				
			< 6 *n* (%)	6–8 *n* (%)	9–11 *n* (%)	> 12 *n* (%)	Unspecified *n* (%)
1	Dry cereals and starches	82	7 (9%)	66 (83%)	0 (0%)	5 (6%)	4 (5%)
2	Dairy foods	13	2 (26%)	10 (77%)	1 (8%)	0 (0%)	0 (0%)
3	Fruit & vegetable purées/ smoothies and fruit desserts	56	15 (27%)	35 (63%)	0 (0%)	6 (11%)	0 (0%)
3.1	Fruit-containing product, including breakfast/dairy	55	14 (27%)	35 (64%)	0 (0%)	6 (11%)	0 (0%)
3.2	Vegetable only product	1	1 (100%)	0 (0%)	0 (0%)	0 (0%)	0 (0%)
4	Savoury meals and meal components	23	5 (22%)	16 (70%)	1 (4%)	1 (4%)	0 (0%)
4.1	Food without protein or cheese named	17	4 (24%)	13 (76%)	0 (0%)	0 (0%)	0 (0%)
4.2	Food with cheese named	0					
4.3	Food with protein not first named food	6	1 (17%)	3 (50%)	1 (17%)	1 (17%)	0 (0%)
4.4	Food with protein source named first	0					
4.5	Food with only protein source named	0					
5	Snacks and finger foods	32	1 (3%)	25 (78%)	1 (3%)	4 (13%)	1 (3%)
5.1	Dry fruit	3	0 (0%)	3 (100%)	0 (0%)	0 (0%)	0 (0%)
5.2	Dry or semi-dry snacks and finger food	29	1 (4%)	22 (76%)	1 (4%)	4 (14%)	1 (4%)
6	Ingredients	8	0 (0%)	3 (38%)	0 (0%)	1 (13%)	4 (50%)
7	Confectionery	7	0 (0%)	0 (0%)	0 (0%)	7 (100%)	0 (0%)
8	Drinks	3	3 (100%)	0 (0%)	0 (0%)	0 (0%)	0 (0%)
TOTAL		224	33	155	3	24	9

3.2 Nutritional quality of products

According to the Turkish Food Codex Regulation on labelling and provision of food information to consumers, energy, protein, fat (saturated and polyunsaturated fat), carbohydrate, sugar, fibre and salt values should be indicated on product labels *(25)*. Nevertheless, 9.8% (*n* = 22) of the products did not specify the total sugar content and 1.8% (*n* = 4) did not specify the salt content.

3.2.1 ENERGY

After 6 months, breast milk alone does not meet all nutritional requirements for infants and young children. Complementary nutrition is needed both to close the energy deficit and to prevent micronutrient deficiency *(26)*. The energy needed in addition to breast milk is about 200 kcal per day in infants 6–8 months old, 300 kcal per day in infants 9–11 months old, and 550 kcal per day in children 12–23 months of age *(26)*. The amount of food required to cover the gap increases as the child gets older, and as the intake of breast milk decreases. As breast milk provides 69 kcal/100 g, the energy density of foods should ideally not be much lower. The new NPPM proposed by the WHO Regional Office for Europe suggests a minimum energy density of at least 60 kcal/100 g for several product categories. Infants and young children need energy- and nutrient-dense food and drink, as they can only eat a limited volume of food at mealtimes. Conversely, foods that are very energy dense, particularly foods that are nutrient poor and those that are consumed as snacks, may contribute to excess energy intake.

Interpretation of energy density values needs to consider that some values are declared for food in its dry or concentrated form; namely, cereal products and some concentrated or powdered drinks to which water or another liquid has to be added. For dry products, Codex recommends that the energy density should be at least 400 kcal per 100 g on a dry weight basis *(27)*.

Table 5, and the box plots in Fig. 1 show that some fruit purées and some savoury meals and meal components (category 4.1) have lower energy density than that recommended for their category (60 kcal/100 g); 31% (*n* = 17) of fruit purées and 70% (*n* = 16) savoury meals contained less than 60 kcal/100 g. Marketing of products in the soft, wet, spoonable categories with a lower energy density should not be permitted, and manufacturers should reformulate their products to provide at least 60 kcal/100 g. Moreover, 10% (*n* = 8) of dry or instant cereals contained less than the recommended 80 kcal/100 g total weight (dry grams + liquid ml).

Snacks and finger foods (category 5), which are high-calorie foods, had a very high energy value; 72% (*n* = 23) of the products contained more than 400 kcal/100 g. The NPPM proposed by the WHO Regional Office for Europe suggests ≤ 50 kcal per portion or serving for these snack products (Annex 3) *(22)*.

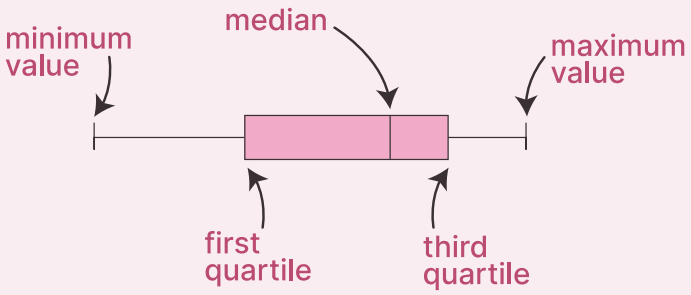
Box 1 gives some information on how to interpret the box plot diagrams and data.

Box 1. Interpreting nutrient data and box plot diagrams

Results are shown for energy, protein, total sugars, total fat, saturated fat and sodium (Figs. 1–6). Energy density results are shown on a kcal/100 g basis. As explained in the methods section, other nutrients are presented on a g or mg/100 kcal basis to allow valid comparisons between dry products that have to be reconstituted with water or milk before consumption and ready-to-eat products.

Each figure shows a series of box plots that illustrate the data for the nutrient concerned. The box plot at the top of each diagram represents the total of all unique products (i.e. excluding duplicates, infant formula/follow-on formula and young child formula/junior milk). The next four box plots show results for products categorized according to the age group for which they are marketed. The box plots for each product category then follow.

For each box plot, the vertical line inside the box represents the median; the left and right sides of the box represent the first and third quartiles, respectively, and the horizontal lines (whiskers) show the minimum and maximum values (excluding outliers).



Outlying values are not shown on the box plots because they distort the scale and make visual interpretation and comparisons difficult. A more complete picture of the total dataset is shown in Tables 5–9 with the mean, SD, min, max and median values.

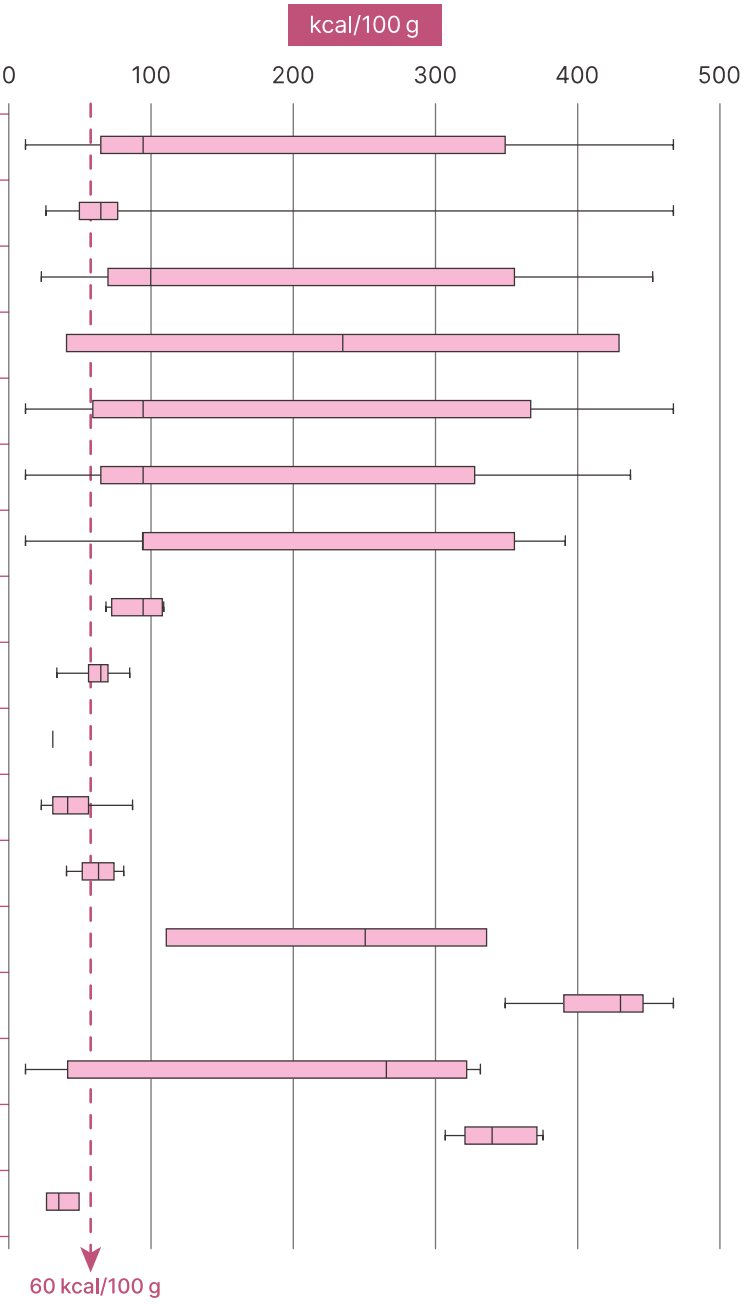
With respect to the box plots, there remains some variation between figures in the scales used on the horizontal axis. It is important, therefore, to pay careful attention to the scale indicated on the horizontal axis of each figure. Although the outliers are not shown, the text refers to some of these high values and clarification is provided in places to help with interpretation. Dotted lines to illustrate some general reference values (for instance, 15% of energy from sugars) are also shown, and these should help with interpretation.

Table 5. Energy density of 224 products, by product category (kcal/100 g/ml)

Code	Food category	No. of products	Mean	SD	Min	Max	Median
1	Dry cereals and starches	82	205.6	128.3	29.3	391	108.3
2	Dairy foods	13	128.5	96.7	68	358.4	89
3	Fruit & vegetable purées/smoothies and fruit desserts	56	68.5	44.2	30.4	381.5	64.5
3.1	Fruit-containing product. including breakfast/dairy	55	69.2	44.2	33	381.5	65
3.2	Vegetable product. puréed	1	30.4		30.4	30.4	30.4
4	Savoury meals and meal components	23	51.1	20.4	23	87	52
4.1	Food without protein or cheese named	17	47.3	21.3	23	87	41
4.2	Food with cheese named	0					
4.3	Food with protein not first named food	6	61.8	13.8	40	80	62.5
4.4	Food with protein source named first	0					
4.5	Food with only protein source named	0					
5	Snacks and finger foods	32	402.6	70.5	110	467	428.6
5.1	Fruit	3	232	114.1	110	336	250
5.2	Dry or semi-dry snacks and finger food	29	420.3	33.6	348	467	429.6
6	Ingredients	8	311.8	228.6	11.4	659	308
7	Confectionery	7	315.4	76.2	152	375	327
8	Drinks	3	36.3	11.7	26	49	34

Fig. 1. Energy density of products, by age group and product category

		Code	No. of products
	Overall		224
	Less than 6 months		33
	6–8 months		155
	9–11 months		3
	12+ months		24
	Unspecified		9
Dry cereals and starches	Dry or powdered cereals/starch to be eaten or cooked with milk or water	1.1	82
Dairy foods	Dairy-based foods, desserts and cereals	2.1	13
Fruit and vegetable purées/smoothies and fruit desserts	Fruit-containing product, including breakfast/dairy	3.1	55
	Vegetable-only product	3.2	1
Savoury meals and meal components	Food without protein or cheese named	4.1	17
	Food with protein not first named food	4.3	6
Snacks and finger foods	Dry fruit	5.1	3
	Dry or semi-dry snacks and finger food	5.2	29
Ingredients	Ingredients	6.1	8
Confectionery	Confectionery	7.1	7
Drinks	Drinks	8.1	3



3.2.2 PROTEIN

Infants and young children require adequate amounts of high-quality protein. Existing Codex standards set minimum protein levels ranging from 3 to 7 g/100 kcal for some food categories (meat, fish, poultry or cheese-based meals or dishes, cereals with added protein and some dairy products). The levels also vary depending on the prominence of a protein source in the product's name (i.e. where a meat, fish or poultry protein source is mentioned first in the name of a product). The new NPPM criteria for foods for infants and young children proposed by the WHO Regional Office for Europe also submit lower limits for protein, which range from 3 to 7 g/100 kcal depending on the food category. WHO proposes an upper protein limit of 5.5 g/100 kcal for dry cereals and starches (if the product contains milk) (category 1). Although few upper limits for protein have been established in dietary recommendations, there is some concern that high protein levels in the diets of infants and young children might contribute later to overweight and obesity *(28)*.

Finding an appropriate balance between encouraging producers to include adequate protein while not leading to excess protein intake may be challenging.

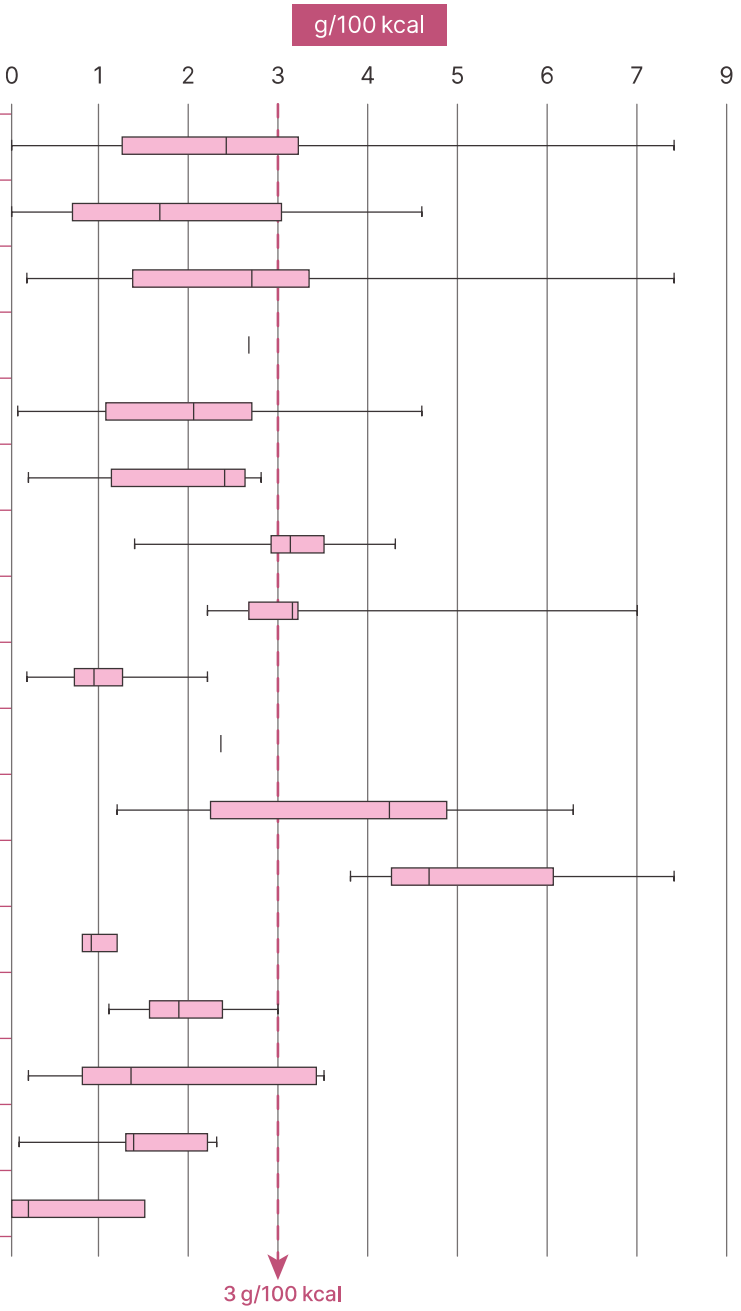
Table 6 and Fig. 2 show differences in protein level by food category. The line at 3 g/100 kcal is an indicative guide. 26% (*n* = 6) of savoury meals contained less than 3 g/100 kcal.

Table 6. Protein content of products, by product category (g/100 kcal)

Code	Food category	No. of products	Mean	SD	Min	Max	Median
1	Dry cereals and starches	82	3.7	2.1	1.4	12.1	3.2
2	Dairy foods	13	2.7	1.5	0.6	7	2.5
3	Fruit & vegetable purées/smoothies and fruit desserts	56	1.1	0.6	0.2	3	1
3.1	Fruit-containing product. including breakfast/dairy	55	1.1	0.5	0.2	3	1
3.2	Vegetable product, puréed	1	2.4		2.4	2.4	2.4
4	Savoury meals and meal components	23	4.4	2.1	1.2	11.3	4.5
4.1	Food without protein or cheese named	17	3.8	1.5	1.2	6.3	4.2
4.2	Food with cheese named	0					
4.3	Food with protein not first named food	6	6.1	2.8	3.8	11.3	4.7
4.4	Food with protein source named first	0					
4.5	Food with only protein source named	0					
5	Snacks and finger foods	32	1.8	0.6	0.8	3	1.6
5.1	Fruit	3	1	0.2	0.8	1.2	1
5.2	Dry or semi-dry snacks and finger food	29	2	0.6	1.1	3	1.9
6	Ingredients	8	5.5	7.5	0.2	21.8	2.4
7	Confectionery	7	1.5	0.8	0.1	2.3	1.4
8	Drinks	3	0.6	0.8	0	1.5	0.2

Fig. 2. Protein content of products, by age group and product category

		Code	No. of products
	Overall		224
	Less than 6 months		33
	6–8 months		155
	9–11 months		3
	12+ months		24
	Unspecified		9
Dry cereals and starches	Dry or powdered cereals/starch to be eaten or cooked with milk or water	1.1	82
Dairy foods	Dairy-based foods, desserts and cereals	2.1	13
Fruit and vegetable purées/ smoothies and fruit desserts	Fruit-containing product, including breakfast/dairy	3.1	55
	Vegetable-only product	3.2	1
Savoury meals and meal components	Food without protein or cheese named	4.1	17
	Food with protein not first named food	4.3	6
Snacks and finger foods	Dry fruit	5.1	3
	Dry or semi-dry snacks and finger food	5.2	29
Ingredients	Ingredients	6.1	8
Confectionery	Confectionery	7.1	7
Drinks	Drinks	8.1	3



3.2.3 SUGAR

The total sugar content of the products, where declared on the label, was recorded. It was not possible to determine the amount of free sugars (which are the basis for WHO guidelines) based on the on-pack nutrient declaration alone. To obtain a better picture of the added or free sugar content, additional information was captured from the label; namely, the presence of sugars or any other sweetening agents on the ingredients list. The sugar content of products by product category is shown in Table 7.

The sugar content in many products is derived from naturally occurring sugars in fruit or vegetable purées. However, more than half (55%) of products listed sugar or another sweetening agent as an ingredient. According to the draft NPPM 2022 criteria and WHO guidance, no food categories that may be marketed to children aged 6–36 months should contain added sugar or sweeteners.

WHO has proposed in the new NPPM that in relation to sugars, products with high sugar levels should not be marketed as suitable for infants and young children. Additionally, it recommends that products with more than 15%, 30% or 40% of calories from total sugars, depending on the category, should carry a front-of-pack flag on the label/packaging to show the proportion of energy from total sugar.

As Fig. 3 shows, the products sampled tended to have relatively high sugar content. Out of the foods that did not meet the limits specified in the WHO NPPM criteria (35% of savoury meals and meal components and 46% of dry or semi-dry snacks and finger foods), more than 15% of energy (calories) was provided from sugars. In addition, 30% of dry cereals and starches, 98% of fruit and vegetable purées and 100% of dried fruits provided more than 30% of energy from sugars, and 15% of "dairy foods" supplied more than 40% of energy from sugars.

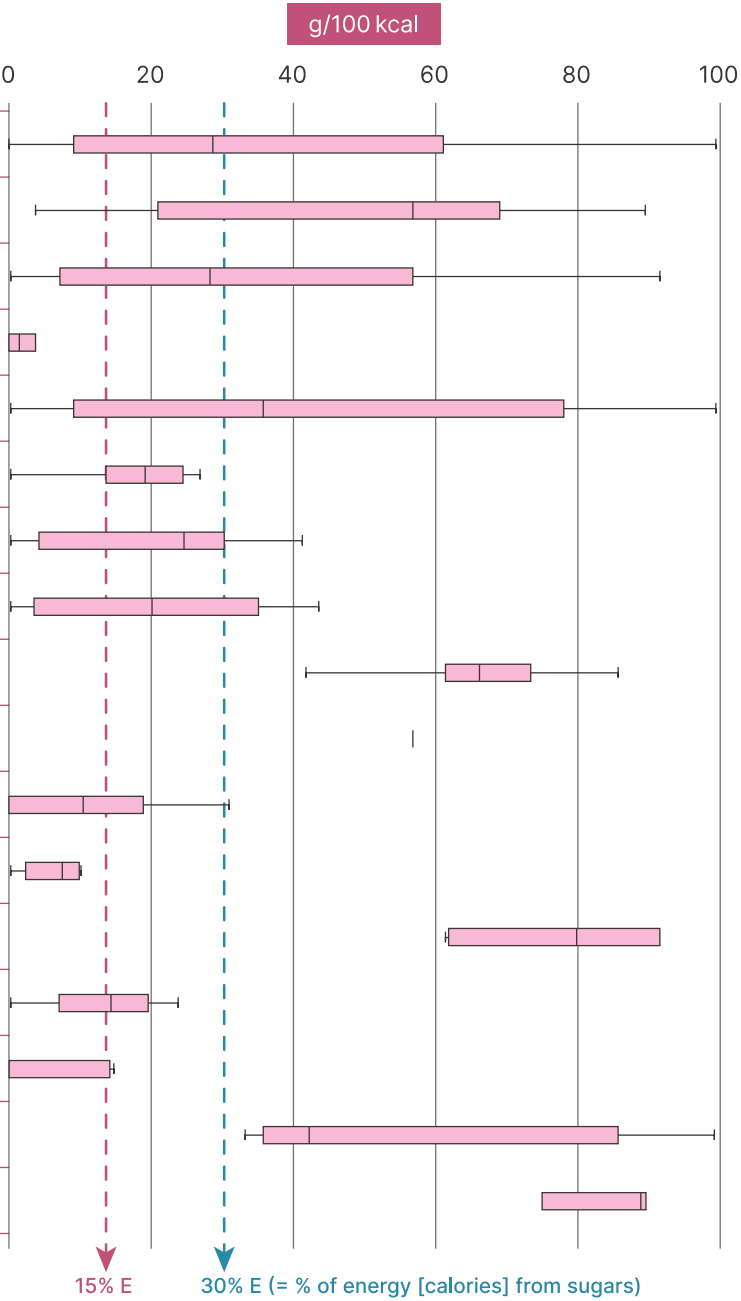
Table 7. Sugar content of products, by product category (g/100 kcal)

Code	Food category	No. of products	Mean	SD	Min	Max	Median
1	Dry cereals and starches	61[a]	19.8	13.2	0	41.3	24.6
2	Dairy foods	13	20.5	16.9	0	43.6	20
3	Fruit & vegetable purées/smoothies and fruit desserts	56	65.9	12.7	11	85.6	65.8
3.1	Fruit-containing product, including breakfast/dairy	55	66.2	12.7	11	85.6	66.1
3.2	Vegetable product, puréed	1	56.8	-	56.8	56.8	56.8
4	Savoury meals and meal components	23	9.9	9.3	0	30.9	9.5
4.1	Food without protein or cheese named	17	10.5	10.2	0	30.9	10.4
4.2	Food with cheese named	0					
4.3	Food with protein not first named food	6	8.5	6.7	0	20	8.4
4.4	Food with protein source named first	0					
4.5	Food with only protein source named	0					
5	Snacks and finger foods	31	19.6	20.9	0	91.7	16.6
5.1	Fruit	3	77.8	15	61.8	91.7	80
5.2	Dry or semi-dry snacks and finger food	28[a]	13.4	7	0	23.8	14.3
6	Ingredients	8	10.9	15.4	0	45	6.7
7	Confectionery	7	54.9	26.5	33.3	99.5	42.4
8	Drinks	3	84.8	8.2	75.3	89.8	89.2

[a] The amount of sugar is not specified in total for 22 products.

Fig. 3. Sugar content of products, by age group and product category

		Code	No. of products
	Overall		224
	Less than 6 months		33
	6–8 months		155
	9–11 months		3
	12+ months		24
	Unspecified		9
Dry cereals and starches	Dry or powdered cereals/starch to be eaten or cooked with milk or water	1.1	82
Dairy foods	Dairy-based foods, desserts and cereals	2.1	13
Fruit and vegetable purées/smoothies and fruit desserts	Fruit-containing product, including breakfast/dairy	3.1	55
	Vegetable-only product	3.2	1
Savoury meals and meal components	Food without protein or cheese named	4.1	17
	Food with protein not first named food	4.3	6
Snacks and finger foods	Dry fruit	5.1	3
	Dry or semi-dry snacks and finger food	5.2	29
Ingredients	Ingredients	6.1	8
Confectionery	Confectionery	7.1	7
Drinks	Drinks	8.1	3



3.2.4 FAT

It is essential that the diets of infants and young children include adequate amounts of fat, which provides essential fatty acids and fat-soluble vitamins, as well as increasing energy density. At the same time, there are concerns that excessive intake of fats may contribute to higher energy intake and increase the risk of childhood obesity and diet-related NCDs later in life *(29)*. It is recommended that, based on the existing evidence, total dietary fat intake should be reduced gradually, depending on the physical activity of the child, from 40–60% of total energy intake around 6 months of age to 30–35% of total energy intake at 24 months, and 25–35% from 2 years onwards throughout childhood *(30)*.

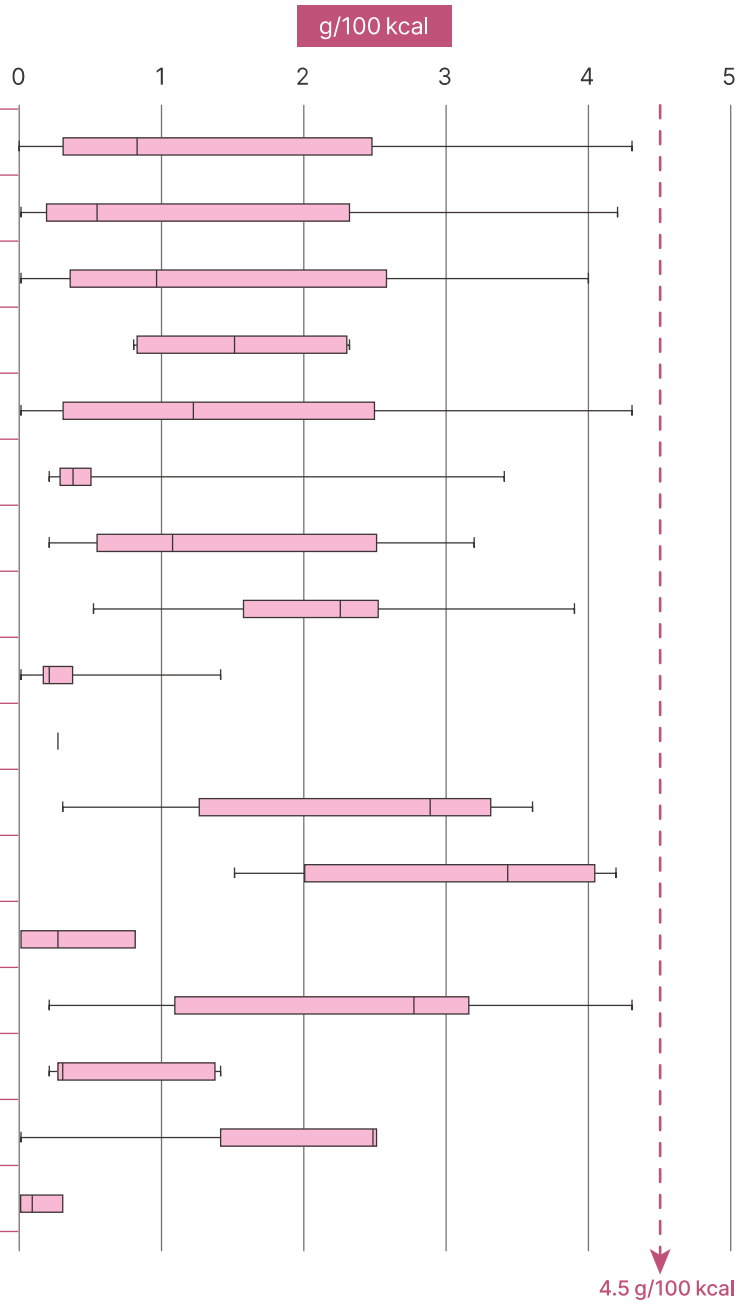
Codex standards and European Union legislation set upper limits for lipids in some food categories. The new NPPM proposed by the WHO Regional Office for Europe also proposes maximum levels for total fat, ranging from 3.3 g/100 kcal to 6 g/100 kcal, depending on the product category. Only one product of fruit purées and one product of snack and finger foods contained > 4.5 g total fat per 100 kcal (Table 8 and Fig. 4).

Table 8. Total fat content of products, by product category (g/100 kcal)

Code	Food category	No. of products	Mean	SD	Min	Max	Median
1	Dry cereals and starches	82	1.5	1	0.2	3.2	1.1
2	Dairy foods	13	2.1	0.9	0.5	3.9	2.3
3	Fruit & vegetable purées/smoothies and fruit desserts	56	0.4	0.8	0	5.7	0.2
3.1	Fruit-containing product. including breakfast/dairy	55	0.4	0.8	0	5.7	0.2
3.2	Vegetable product, puréed	1	0.3		0.3	0.3	0.3
4	Savoury meals and meal components	23	2.5	1.2	0.3	4.2	3
4.1	Food without protein or cheese named	17	2.3	1.2	0.3	3.6	2.9
4.2	Food with cheese named	0					
4.3	Food with protein not first named food	6	3.1	1.1	1.5	4.2	3.4
4.4	Food with protein source named first	0					
4.5	Food with only protein source named	0					
5	Snacks and finger foods	32	2.2	1.4	0	5.6	2.6
5.1	Fruit	3	0.4	0.4	0	0.8	0.3
5.2	Dry or semi-dry snacks and finger food	*29*	2.4	1.4	0.2	5.6	2.9
6	Ingredients	8	4.4	5.9	0.2	16.5	1.4
7	Confectionery	7	1.3	1	0	2.5	1.4
8	Drinks	3	0.1	0.2	0	0.3	0.1

Fig. 4. Fat content of products, by age group and product category

		Code	No. of products
	Overall		224
	Less than 6 months		33
	6–8 months		155
	9–11 months		3
	12+ months		24
	Unspecified		9
Dry cereals and starches	Dry or powdered cereals/starch to be eaten or cooked with milk or water	1.1	82
Dairy foods	Dairy-based foods, desserts and cereals	2.1	13
Fruit and vegetable purées/smoothies and fruit desserts	Fruit-containing product, including breakfast/dairy	3.1	55
	Vegetable-only product	3.2	1
Savoury meals and meal components	Food without protein or cheese named	4.1	17
	Food with protein not first named food	4.3	6
Snacks and finger foods	Dry fruit	5.1	3
	Dry or semi-dry snacks and finger food	5.2	29
Ingredients	Ingredients	6.1	8
Confectionery	Confectionery	7.1	7
Drinks	Drinks	8.1	3



3.2.5 SALT

Data on the sodium and/or salt content indicated on the labels were collected. Salt figures were converted to sodium, and all values were expressed as sodium in mg.

Foods containing added salt should not be given to infants. From 2 years of age, WHO recommends a maximum sodium intake of 2 g per day (equivalent to 5 g of salt per day) but adjusted downward for lower energy intake in younger infants and young children.

Current European Union legislation and Codex standards contain upper limits for sodium content in some food categories. According to the NPPM recommended by the WHO Regional Office for Europe, the upper limit for sodium for many categories is 50 mg/100 kcal (and 50 mg/100 g) and for some—usually when a product contains cheese—100 mg/100 kcal (and 100 mg/100 g) *(22)*. The model also states that the liquid used to reconstitute dried foods should not contain added sodium.

This study identified products with sodium levels higher than those proposed in the NPPM in some categories (Fig. 5, Table 9). Categories that include certain products containing more than 50 mg of sodium per 100 kcal: 11% (*n* = 9) of dry cereals and starches, 8% (*n* = 1) of dairy foods, 4% (*n* = 2) of fruit & vegetable purées/smoothies and fruit desserts, savoury meals and 57% (*n* = 13) of meal components and dry or 24% (*n* = 7) of semi-dry snacks and finger foods.

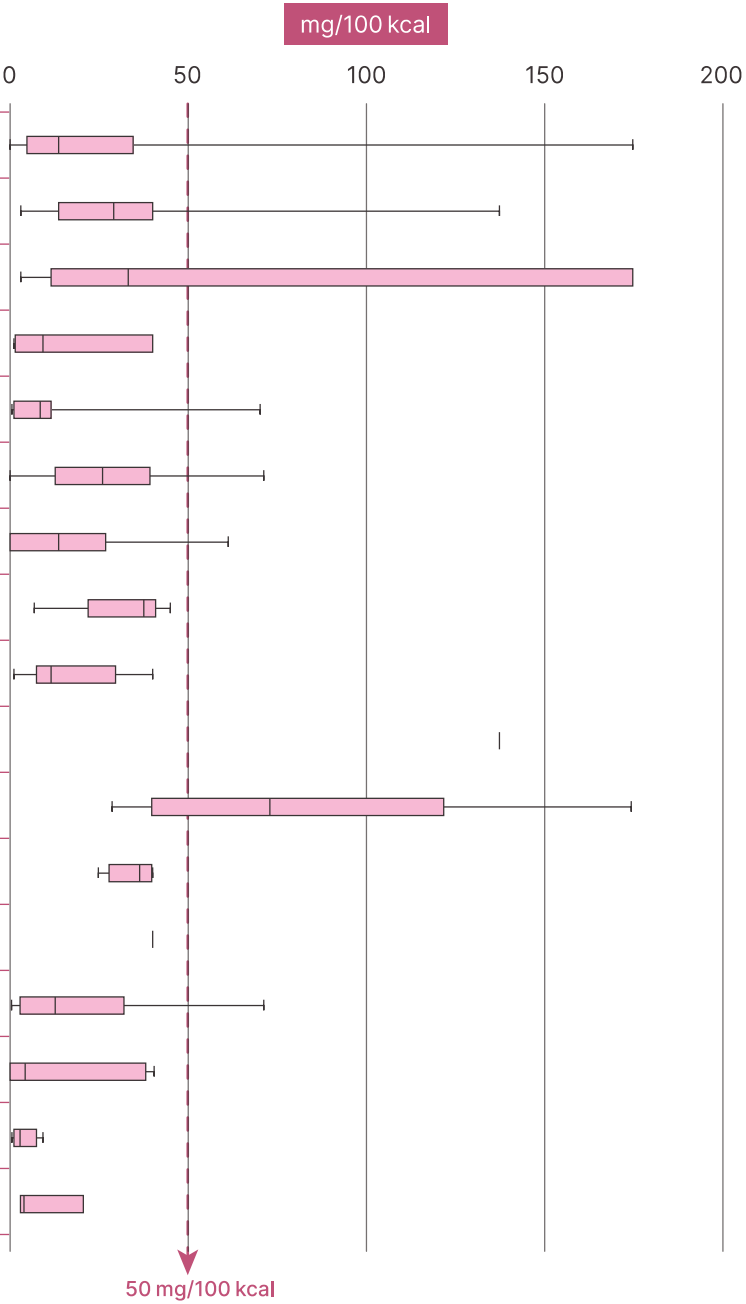
Table 9. Salt content of products, by product category (g/100 kcal)

Code	Food category	No. of products	Mean	SD	Min	Max	Median
1	Dry cereals and starches	82	18.9	19.8	0	72.7	15.3
2	Dairy foods	13	36.2	20.5	6.7	89.9	37.4
3	Fruit & vegetable purées/smoothies and fruit desserts	56	19.7	22.2	1.3	136.8	11.6
3.1	Fruit-containing product. including breakfast/dairy	55	17.5	15.5	1.3	88.9	11.5
3.2	Vegetable product. puréed	1	136.8	-	136.8	136.8	136.8
4	Savoury meals and meal components	23	117.1	123.8	25	444.4	71.3
4.1	Food without protein or cheese named	17	139.1	135.3	28.6	444.4	77.1
4.2	Food with cheese named	0					
4.3	Food with protein not first named food	6	54.8	50.8	25	157.7	37.5
4.4	Food with protein source named first	0					
4.5	Food with only protein source named	0					
5	Snacks and finger foods	30	31.7	33.8	0	102.8	22.1
5.1	Fruit	1[a]	0	0	0	0	0
5.2	Dry or semi-dry snacks and finger food	29	32.7	33.8	0	102.8	25.7
6	Ingredients	7[a]	13.1	17.9	0	39.9	4.3
7	Confectionery	6[a]	7.2	8.6	0	23.5	3.9
8	Drinks	3	9.1	9.8	2.9	20.4	3.9

[a] The amount of salt or sodium was not specified in four products.

Fig. 5. Sodium content of products, by age group and product category

		Code	No. of products
	Overall		224
	Less than 6 months		33
	6–8 months		155
	9–11 months		3
	12+ months		24
	Unspecified		9
Dry cereals and starches	Dry or powdered cereals/starch to be eaten or cooked with milk or water	1.1	82
Dairy foods	Dairy-based foods, desserts and cereals	2.1	13
Fruit and vegetable purées/smoothies and fruit desserts	Fruit-containing product, including breakfast/dairy	3.1	55
	Vegetable-only product	3.2	1
Savoury meals and meal components	Food without protein or cheese named	4.1	17
	Food with protein not first named food	4.3	6
Snacks and finger foods	Dry fruit	5.1	3
	Dry or semi-dry snacks and finger food	5.2	29
Ingredients	Ingredients	6.1	8
Confectionery	Confectionery	7.1	7
Drinks	Drinks	8.1	3



3.3 Promotion of products

Promoting complementary foods for infants and young children in marketing is also essential to ensure optimal infant and young child nutrition. Inappropriate promotion of complementary foods may cause cessation of breastfeeding and contribute to childhood obesity and NCDs *(17)*.

The nutrient profile model proposed by the WHO Regional Office for Europe sets out labelling requirements and promotional restrictions for all foods marketed as suitable for infants and young children up to 36 months *(22)*. These stipulations are based on the global Guidance on ending the inappropriate promotion of foods for infants and young children (Box 2) *(17)*.

Box 2. Summary of recommendations in WHO's Guidance on ending the inappropriate promotion of foods for infants and young children *(10)*

Recommendation 1: optimal infant and young child feeding should be promoted based on the guiding principles for complementary feeding and feeding non-breastfed children 6–24 months of age with an emphasis on nutrient-rich, home-prepared and locally available foods.

Recommendation 2: products that function as breast-milk substitutes should not be promoted.

Recommendation 3: foods for infants and young children that are not products that function as breast-milk substitutes should be promoted only if they meet all the relevant national, regional, and global standards for composition, safety, quality and nutrient levels, and are in line with national dietary guidelines.

Recommendation 4: the messages used to promote foods for infants and young children should support optimal feeding and should not include inappropriate messages.

Recommendation 5: there should be no cross-promotion for breast milk substitutes indirectly via the promotion of foods for infants and young children.

Recommendation 6: companies that market foods for infants and young children should not create conflicts of interest in health facilities or throughout health systems. Health workers, health systems, health professional associations and nongovernmental organizations should likewise avoid such conflicts of interest.

Recommendation 7: the WHO Set of recommendations on the marketing of foods and non-alcoholic beverages to children should be fully implemented, with particular attention given to ensuring that settings where infants and young children gather are free from all forms of marketing of foods high in fats, sugars or salt.

In this study visual on-pack information related to the promotions of the products, the composition of the products, the nutritional properties and health or development claims were all examined according to the new but unpublished as yet NPPM criteria (see Annex 3, Tables 10 and 11).

Table 10. Visual information on product packaging

Aspect of visual information	Number of products where present (*n* = 224)	Percentage of products where present (%)
Use of images of bottles	11	5
Use of images of teats	9	4
Pictures of ingredients	213	95
Use of images of mothers	14	6
Use of images of infants/young children	37	17
Use of cartoon images	69	31
Carrying a claim of endorsement by a professional body	153	68

Nearly all products carried content images, and nearly a third had cartoon images on their labels (31%). Cartoon images are often used specifically to appeal to children. Most (68%) also had a claim of endorsement by a professional body (with the permission of the Ministry of Agriculture).

Guidelines state that FIYC must not carry nutrition or health claims unless particular claims are specifically approved by regulatory authorities *(27)*. In addition, the WHO Regional Office for Europe's proposed NPPM states that no claims (compositional, health or marketing) shall be permitted on packs or on related marketing materials.

The reason for this is that statements about the composition of food or drink products (usually relating to whether one or more ingredients or additives are present or not), their nutritional content, or the supposed health or development benefits associated with them can idealize products, mislead consumers, and/or undermine breastfeeding or complementary feeding with family and local foods.

Data were collected on the presence and type of statements relating to the composition or nutritional properties of products and those related to health or child development.

Statements about composition and/or nutritional properties and health or development claims were present on 97% of the products recorded. The most common messages highlighted the absence of low (or no) salt (57%), low (or no) sugar (55%), low (nor no) artificial preservatives (41%) or advertised organic status (50%) (Table 11).

Table 11. Statements about compositional or nutritional properties and health and/or child development on foods for infants and young children

Statements about compositional or nutritional properties and health and/or child development	Number of products where present (*n* = 224)	Percentage of products where present (%)
Fortified with vitamins/minerals	79	35
Organic	111	50
No artificial colours	61	27
No additives	36	16
No artificial preservatives	91	41
Unsalted/no salt/no added salt	128	57
No added sugar/low in sugar	123	55
Gluten-free	50	22
Strengthens immune system	4	2
Helps/supports growth	9	4

Other examples of statements on the products were as follows:

- does not contain lard and additives
- halal
- vegan
- with prebiotic
- high fibre
- 94% of mothers recommend it
- Türkiye's number 1 choice
- from the field to your baby
- prepared with carefully selected grains.

In addition, under the heading of important information on products, observed were:

- vitamins and minerals play an important role in your baby's nutrition;
- developed in accordance with your baby's needs in growing;
- it is a delicious snack with carefully selected grain content;
- your baby can grasp it so they can learn to hold small objects; and
- with its particulate structure, it helps the baby get used to lumpy feeding, learn to chew and swallow.

The great majority of products carried a statement on composition or nutrition and statements relating to health or development.

4. Discussion

This is the first study in Türkiye on the marketing of commercially available foods for infants and young children aged 6–36 months. Adapted from an established WHO method, the study collected data on 224 food products marketed for infants and young children in two districts of Ankara, Türkiye. The findings show that according to the WHO NPPM 2022 criteria there is widespread inappropriate promotion of commercial foods for infants and young children in Ankara.

This study has found evidence of inappropriate promotion of commercial FIYC, in line with other recent reports (WHO, Investigating inappropriate promotion of commercially available complementary foods for infant and young children aged 6–36 months in the Russian Federation, unpublished data 2022) *(22,31)*. Thus, substantial numbers of commercial FIYC in several WHO European Region Member States are inappropriately targeted at infants < 6 months of age, are not nutritionally appropriate and/or are inappropriately promoted with claims on nutrition and health. The percentage of products passing the earlier *(2017)* version of the NPPM in its entirety ranged from 15% (Hungary) to 42% (Estonia). The criterion with the lowest pass rate in most Member States was the protein content of meals. The minimum protein threshold for meals in this earlier version of the NPPM was raised from the European Commission regulations, and the pass rate was low across all Member States for this nutrient, particularly Hungary (4%) and Malta (6%). The percentage energy from total sugar criterion in finger foods also had a relatively low pass rate, particularly in Hungary and Italy (14%). Salt was generally less of an issue. Hungary also had a lower pass rate (42%) for "no added sugars/sweeteners" than the other countries. It is clear that added sugars are an issue in commercially available complementary foods in all of the countries: if all products did not contain added sugars, the overall NPPM pass rate in the 10 countries would range from 42% (in the United Kingdom) to 66% (in Portugal).

Based on this study, according to new WHO NPPM criteria, less than a third (29%) of products pass compositional requirements (64 out of 224). According to the standards, passing rates for each nutritional category are total sugar (54%), total fat (98%), contains free sugar (55%), energy density (79%), and sodium (85%) (see Annexes 4 and 5).

BASED ON THIS STUDY, ACCORDING TO NEW WHO NPPM CRITERIA, LESS THAN A THIRD (29%) OF PRODUCTS PASS COMPOSITIONAL REQUIREMENTS (64 OUT OF 224)

In recent reports from other European Member States, between 28 and 60% of the products studied were marketed as appropriate for infants < 6 months of age, in violation of the International Code of Marketing of Breast-milk Substitutes and WHO NPPM 2017 guidance *(17,24)*.

Moreover, all products fail the NPPM promotional requirements, although it should be noted that Turkish legislation gives permission to health-related statements/claims on food packaging and this legislation does not specify any age group characteristics *(32)*.

In this study, 14.8% of the products collected were marketed as suitable for infants under 6 months of age. The most common categories for foods labelled as suitable from 4 months of age were fruit & vegetable purées/smoothies/fruit desserts, dry cereals and starches and savoury meals and meal components (Table 4). In Türkiye, there is a regulation regarding the lower limit of the starting age (6 months) for complementary foods *(33)*.

However, there is another regulation with a lower starting age of 4 months for certain categories of complementary foods *(34)*. These categories are some spoonable foods like fruit purées, savoury meals, etc. Exclusive breastfeeding for infants for the first 6 months is recommended by both WHO and the Turkish Ministry of Health. For the best health outcomes in infant and child nutrition, it is important that national policies are aligned with public health recommendations.

Total sugar content in 9.8% (*n* = 22) and salt content in 1.8% (*n* = 4) of the products was not indicated on the labels on the packages, which is not in compliance with the legal regulations in the Turkish Food Codex Regulation on labelling and provision of food information to consumers *(25)*. Also, some fruit purées and some savoury meals and meal components have lower energy density than that recommended for their category (60 kcal/100 g); 31% (*n* = 17) of fruit purées and 70% (*n* = 16) savoury meals contained less than 60 kcal/100 g. Marketing of products in the soft, wet, spoonable categories with a lower energy density should not be permitted, and manufacturers should reformulate their products to provide at least 60 kcal/100 g. Moreover, 10% (*n* = 8) of dry or instant cereals contained less than the recommended 80 kcal/100 g total weight (dry grams + liquid ml).

Türkiye's legal regulation for FIYC complies with the EU regulations on FIYC, and mainly concerns the general compositional and labelling rules on infant and follow-on formulae, processed cereal-based foods, and baby foods *(35)*. Additionally, while Türkiye's legislation complies with all compositional requirements of the WHO NPPM 2022 criteria (energy, sodium, sugar, protein, fat) of the products, the same does not hold for promotional requirements. The WHO NPPM suggests even more restrictive labelling practices, which Türkiye so far fails to satisfy. Türkiye must increase deterrence and surveillance within its markets in order to have all commercial products in accordance with its regulations for FIYC.

TÜRKIYE MUST INCREASE DETERRENCE AND SURVEILLANCE WITHIN ITS MARKETS IN ORDER TO HAVE ALL COMMERCIAL PRODUCTS IN ACCORDANCE WITH ITS REGULATIONS FOR FIYC

In the past decades, obesity has risen in parallel with NCDs, and it is widely acknowledged that it is an important risk factor in NCDs. As a clear health priority, combatting obesity is clearly a priority for Türkiye, and measures applying to FIYC play an important role in this. Such measures do not only rely on individual efforts, but also on long-term political commitments. The results of this study support the idea by showing the need to implement comprehensive regulations on the marketing of commercial foods targeted at infants and young children.

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Annexes

Annex 1. Data collection methodology for food products for infants (under 12 months) and young children (12–36 months)

Included products:

- labelled with the words “baby”, “infant,” “toddler” or “young child”;
- recommended for introduction at an age of less than 3 years;
- have a label with an image of a child who appears to be younger than 3 years of age or who is feeding with a bottle; or
- in any other way are presented as being suitable for children under the age of 3 years.

Excluded products:

- products not marketed for children under 3 years;
- vitamin and mineral food supplements; and
- products that function as breast-milk substitutes.

Sampling strategy:

- decide on a suitable sampling approach before data collection begins to ensure consistency between those collecting data in different locations;
- consider different retailers such as independent, small or large retailers (supermarkets, convenience stores, pharmacies, health food shops) and online retailers;
- consider known product ranges for smaller and larger brands (e.g. website searches) to ensure all data are captured;
- consider data collection in different regions of the country, areas with different economic status, or areas with other different population characteristics;
- decide whether to purchase items, collect data in stores and/or photograph packets (to evaluate later), or use online product data (e.g. on large retailer/brand websites). consider what permissions or letters of introduction about the study might be needed to collect data in store or photograph packets; and
- consider how to communicate data collection progress across different locations to avoid duplication of purchasing/data collection.

Data extraction:

- use the Excel spreadsheet to inform you on the nutrient and packet data that needs to be collected, including brand and product name;
- collect any other relevant data for your work such as place of sale or product price if relevant; and
- check data for product duplication and accuracy/obvious errors.

Annex 2. Product categories and examples

Product group	Code	Sub-category description	Details and examples
Dry cereals and starches	1	Dry or powdered cereal/ starch to be eaten or cooked with milk or water	To be prepared with milk (or equivalent non-sweet liquid) or water (or protein-free liquid) e.g. Instant porridge, muesli, baby rice, dry pasta. Includes plain fresh pasta etc. Excludes crackers/rusks etc. (category 5.2)
Dairy foods	2	Dairy-based foods, desserts and cereals	The largest ingredient is dairy and fruit ≤ 5% e.g. porridge, rice pudding, yogurt, fromage frais, custard. [if fruit content > 5% use category 3.1]
Fruit & vegetable purées/ smoothies and fruit desserts	3.1	Fruit-containing product, including breakfast/dairy	Any product containing > 5% fruit[1] (except dry cereals, low fruit dairy, or snacks) e.g. apple purée, fruit and yogurt, fruit custard, porridge with > 5% fruit
	3.2	Vegetable only product	Single or mixed vegetables or legumes e.g. spinach & pea purée, mashed potato & carrot. Excludes foods containing added starch/fat/dairy (category 4.1)
Savoury meals/meal components: combinations of starches, vegetables, dairy and/or traditional protein[2] Traditional protein sources include any meat, offal, poultry or fish	4.1	Food WITHOUT protein or cheese named	Vegetables/legumes and/or cereals/starches. May contain a protein source, dairy or fats e.g. vegetable rice, lasagne, pesto sauce for pasta
	4.2	Food WITH CHEESE named but no protein	Cheese and no other proteins are in the product name; e.g. cheese pasta, tomato & mozzarella pasta sauce
	4.3	Food with protein source NOT named first	Protein source is not the first named food, e.g. pea & lamb curry, tomato & beef sauce for pasta
	4.4	Food with protein source named FIRST	Examples include: rabbit & potato, beef soup, tasty chicken risotto, chicken & cheese pasta, beef sauce for pasta
	4.5	Protein source is ONLY named food	Puréed cooked meat: may contain a small quantity of grain/starch not in product name e.g. "rabbit" or "lamb" with some added rice flour or corn starch
Snacks and finger foods	5.1	Fruit	Fresh fruit or whole dry fruits or pieces e.g. plain dry apple slices or raisins. Excludes pulverised/puréed dry fruits (category 7)
	5.2	Dry or semi-dry snacks and finger foods	Any grain, starch, pulse, lentil or root vegetable snack such as cracker, bread, biscuit, pastry, cake or pancake, etc. Includes rusks, crackers and biscuits to be eaten dry or pulverised with liquid
Ingredients	6	Ingredients	Ingredients for cooking or adding to food in small quantities e.g. olive oil, stock cubes
Confectionery	7	Confectionery	Chocolates, sweets, liquorice, marzipan, fruit chews[3] etc.
Drinks	8	Drinks	Fruit juice and other sweetened or flavoured drinks.[4] Excludes 100% fruit/vegetable purée, breast-milk substitutes or unsweetened milk/milk alternatives

[1] Notes on fruit: tomatoes, avocadoes and coconut are not classed as fruits for this purpose.

[2] The front-of-pack and legal product names and order of foods may differ. Follow the front-of-pack names for product categorisation where possible.

[3] Fruit chews include any dried and processed fruit products such as fruit gums, bars or fruit strips/leathers/roll-ups (i.e. a dense chewy food made from fruit juice or pulped and dehydrated/dried fruit).

[4] Includes any drinkable product containing crushed, blended, pulped or puréed fruit/vegetable, fruit/vegetable juice and/or water, with or without added free sugar or sweetening agents. Including 100% juices, reconstituted juice from concentrate, smoothies with added juice or water, drinks made from cordials, energy drinks, ices, and soft drinks.

Annex 3. Nutrient and Promotion Profile Model (NPPM) criteria

NPPM Part A: content & front-of-pack labelling (Table A3.1)

Product Group	Code	Sub-category description	Content and labelling requirements[1]									
			Energy density (kcal/100 g)	Sodium (mg/100 kcal)	Total sugar (% E)[2]	Added free sugar or sweetener[3]	Total protein[4] (g/100kcal) & protein weight	Total fat (g/100kcal) (no trans)[5]	Fruit content[6] (% weight)	Age label (months)[7]	FOP8 high-sugar flag (% E)	Labelling and promotional requirements
Dry cereals and starches	1	Dry or powdered cereal[9]/ starch to be eaten or cooked with milk or water	≥ 80 as eaten	≤ 50 as eaten	/	None	≤ 5.5 g (if contains milk)[10,11]	≤ 4.5 g or ≤ 3.3 g (if to be eaten with milk)	≤ 10% dry weight	6–36	≥ 30%	All requirements apply to all categories as detailed in NPPM Part B: Table A3.2
Dairy foods	2	Dairy-based foods, desserts and cereals	≥ 60	≤ 50 (100 if named cheese)	/	None	/	≤ 4.5 g	≤ 5% (max 2% dry)	6–36	≥ 40%	
Fruit & vegetable purées/ smoothies and fruit desserts	3.1	Fruit-containing product, including breakfast/dairy	≥ 60	≤ 50	/	None	/	≤ 4.5 g	/	6–36 (6–12 for purée)	≥ 30%	
	3.2	Vegetable only product	≥ 25% added water	≤ 50	/	None	/	≤ 4.5 g	None	6–36 (6–12 for purée)	≥ 30%	
Savoury meals / meal components: combinations of starches, vegetables, dairy and/ or traditional protein[4,12,13]	4.1	Food WITHOUT protein[4] or cheese named	≥ 60	≤ 50	< 15%	None	≥ 3 g[10,11]	≤ 4.5 g	≤ 5% (max 2% dry)	6–36 (6–12 for purée)	/	
	4.2	Food WITH CHEESE named but no protein[4]	≥ 60	≤ 100	≤ 15%	None	≥ 3 g[10,11]	≤ 6 g	≤ 5% (max 2% dry)	6–36 (6–12 for purée)	/	
	4.3	Food with protein[4] source NOT named first	≥ 60	≤ 50 (100 if named cheese)	≤ 15%	None	≥ 3 g ≥ 8%[10,11]	≤ 4.5 g	≤ 5% (max 2% dry)	6–36 (6–12 for purée)	/	
	4.4	Food with protein[4] source named FIRST	≥ 60	≤ 50 (100 if named cheese)	≤ 15%	None	≥ 4 g ≥ 10%[10,11]	≤ 6 g	≤ 5% (max 2% dry)	6–36 (6–12 for purée)	/	
	4.5	Protein[4] source is ONLY named food	≥ 60	≤ 50	≤ 15%	None	≥ 7 g ≥ 40%[10,11]	≤ 6 g	≤ 5% (max 2% dry)	6–36 (6–12 for purée)	/	
Snacks and finger foods	5.1	Fruit	≤ 50 kcal per serve	≤ 50	/	None	/	≤ 4.5 g	100%	6–36	≥ 30% (dry fruit only)	
	5.2	Dry or semi-dry snacks and finger foods	≤ 50 kcal per serve	≤ 50	≤ 15%	None	≥ 5.5 g (if biscuit and contains milk)[10,11]	≤ 4.5 g	/	6–36	/	
Ingredients	6	Ingredients	/	≤ 50	/	None	/	/	None	6–36	/	
Confectionery	7	Confectionery	Not appropriate for promotion									
Drinks	8	Drinks	Not appropriate for promotion									

[a] Front-of-packet

FOOTNOTES TO TABLE A3.1

1 Products with vitamin, mineral and amino acid additions must adhere to existing European Commission requirements or other local, regional or national guidelines, where applicable.

2 Percentage of total energy derived.

3 Added free sugars and sweeteners include:

i. all mono- and disaccharides (including sugars derived from fruits, sugarcane, palms or root vegetables, etc.);

ii. all syrups, nectars and honey (including molasses, agave, maple, blossom nectar, malted barley syrup, brown rice syrup etc.);

iii. fruit juices or concentrated/powdered fruit juice, excluding lemon or lime juice (e.g. pear juice, concentrated apple juice or powdered mango juice). See footnote 6 on permitted fruit use; and

iv. non-sugar sweeteners (such as saccharin, acesulfame, aspartame, sucralose or stevia, etc.).

4 Note that traditional protein sources include any meat, offal, poultry or fish.

5 No product may contain industrially-produced trans-fatty acids.

6 Notes on fruit:

i. tomatoes, avocadoes and coconut are not classed as fruits for this purpose;

ii. unsweetened whole or chopped fruits, and dry whole or chopped 100% fruits are permitted as in category 5.1; and

iii. blended, pulped, puréed or powdered 100% fruits (i.e. not juice) (including puréed/powdered dried fruit) are only permitted in specified quantities by weight, as they are high in liberated sugars.

7 Notes on recommended age ranges displayed on packs and all related promotional materials:

i. no product should state or imply product suitability for babies under 6 months of age, including through use of images;

ii. products that are blended/puréed should have an upper age limit of 12 months. This applies to puréed and smooth products sold for babies before they are able to chew or accept more textured foods (e.g. puréed fruit/vegetables, processed oatmeal porridge or a blended meal). Naturally smooth and unmacerated foods like yogurt, risotto or porridge are exempt; and

iii. a narrower age range than indicated may be displayed on pack according to product consistency (e.g. 18–36 months for crunchy snacks).

8 A front-of-pack indicator, label or flag is required when the total energy from sugar exceeds specified thresholds (30% total energy = 7.5 g/100 kcal; 40% total energy = 10 g/100 kcal]. The label should conform to pre-specified requirements, e.g. be clearly positioned and with moderate size text.

9 Minimum 25% cereal for rusks, crackers and biscuits.

10 Evaluate total protein adequacy using pack nutrient information (to calculate g/100 kcal) and the ingredient list (percent weight of protein source), where possible. Note that meal components (such as sauces) are exempt from point iii and iv:

i. any dry cereal products (category 1) containing a high protein food (e.g. milk or milk equivalent) must have ≥ 5.5 g/100 kcal total protein;

ii. any biscuits or rusks etc. (category 5.2) made with the addition of a high protein food (e.g. milk or milk equivalent), and presented as such (e.g. in product name, or named/ pictured on packet), must have ≥ 5.5 g/100kcal total protein;

iii. total protein (g/100 kcal) must be ≥ 3 g/100 kcal for all savoury meals, ≥ 4g if the protein source is named first (e.g. chicken risotto), or ≥ 7 g if the product only names a protein source (e.g. rabbit purée); and

iv. total protein weight must be higher than 8, 10 or 40% of the total product weight (in product categories 4.3, 4.4 and 4.5, respectively) (e.g. beef lasagne (category 4.4) must contain 10% beef by weight).

11 Additional mandatory protein requirements to be followed by food producers during manufacturing. Note that it is not necessary to assess these criteria using packet information while applying the NPPM. The following requirements are as stipulated in CODEX Standard CXS 74-1981 (section 3.3) and European Commission Directive 2006/125/EC (Annex II, section 1):

i. any dry cereal products (category 1) made with a high protein food (e.g. milk or milk equivalent) must have ≥ 5.5 g total protein, of which ≤ 2 g/100 kcal may be added protein (e.g. from dairy source);

ii. any biscuits or rusks etc. (category 5.2) made with the addition of a high protein food (e.g. milk or milk equivalent), and presented as such (e.g. in product name, or named/ pictured on packet), must have ≥ 5.5 g/100 kcal total protein, and added protein must not be less than 0.36 g/100 kJ (1.5 g/100 kcal);

iii. each source of protein named in the front-of-pack or legal product name of meals must be ≥ 25% by weight of the total named protein weight. For example, chicken and rabbit risotto (category 4.4) must include at least 25% chicken and 25% rabbit by weight of the total protein weight;

iv. protein from dairy must be ≥ 2.2 g/100 kcal if cheese is mentioned in the product name; and

v. protein from the named source (meat, offal, poultry or fish) must be ≥ 2.2 g/100 kcal in category 4.3, ≥ 4 g in Category 4.4, and ≥7 g in category 4.5.

12 Note that the front-of-pack and legal product names and order of foods may differ. Follow the front-of-pack names for product categorisation where possible

13 For meal components (e.g. pasta sauce): Thresholds apply to foods as eaten, where preparation details are provided.

14 Fruit chews include any dried and processed fruit products such as fruit gums, bars or fruit strips/leathers/roll-ups (i.e. a dense chewy food made from fruit juice or pulped and dehydrated/dried fruit).

15 Includes any drinkable product containing crushed, blended, pulped or puréed fruit/ vegetable, fruit/vegetable juice and/or water, with or without added free sugar or sweetening agents. Including 100% juices, reconstituted juice from concentrate, smoothies with added juice or water, drinks made from cordials, energy drinks, ices, and soft drinks.

NPPM Part B: promotional messages (packets, labelling and marketing) (Table A3.2)

Promotional requirement	Details and examples
	No compositional, nutritional, health or marketing claims are permitted on packs or related marketing materials (promotional communications, websites, etc.). Refer to Table A3.3 for examples of non-permitted claims
No compositional, nutritional, health or marketing claims	Note the following composition statements are permitted: i. statements relating to common allergens (such as containing or being "free from... [gluten, dairy/ lactose, or nuts]" etc.) ii. statements relating to religious or cultural requirements (such as "meat-free", "vegetarian", "contains meat", "Kosher", "Halal", etc.) iii. descriptive words may be used within the ingredient list (such as "organic carrots" and "wholegrain wheat flour")
Product name clarity1	The front-of-pack product name and legal product name must: i. clearly represent or name the main or largest ingredients, where appropriate, except when the largest ingredient is implied in the name (such as milk in porridge or rice in risotto); ii. list ingredients in an appropriate order (to indicate decreasing proportional content); and iii. ndicate when fruit or vegetables (single or in combination) comprise the majority of the product by weight. Note that fruit or vegetables are considered to be the largest ingredient if the sum of all fruits or vegetables is the largest ingredient, and the front-of-pack name must indicate this (see example (iii) in footnote 1) Note that all ingredients do not need to be listed in the product name
Ingredient list clarity	The ingredient list must clearly indicate the proportion (%) of: i. the largest single ingredient (including water/stock, except when used for rehydration of legumes/ grains etc.) ii. the amount of added water/stock (except when used for rehydration of legumes/grains etc.) iii. the total or individual proportions of fresh or dried fruit iv. the amount of fish, poultry, meat or other traditional source of protein
Instructions not to consume soft foods via pack spout	Ready-to-eat puréed foods sold in packs with a spout must include a clear statement to discourage caregivers from allowing infants and young children to suck the food directly via the spout, such as: "Infants and young children should not be allowed to suck directly from the pouch/container"
Suitable preparation instructions	Preparation instructions for dry cereals/starches, ingredients and meal components must state that the liquid used to reconstitute the product, or accompanying foods served, should have no added sodium or free sugar (including fruit juice)
Promotion and protection of breastfeeding	In relation to breast feeding: i. no cross-promotions are permitted between products that function as breastmilk substitutes, and commercially available complementary foods marketed as suitable for infants and young children > 6 months; ii. all products must include a statement on the importance of continued breastfeeding for up to two years or beyond and the importance of not introducing complementary feeding before 6 months of age; iii. no products should include any image, text or other representation that is likely to undermine or discourage breastfeeding, or that makes a comparison to breastmilk or that suggests that the product is nearly equivalent or superior to breastmilk; iv. all products must state the suitable age of introduction (≥ 6 months); v. no products should include any image, text or other representation that might suggest use for infants under the age of 6 months (including references to milestones and stages); and vi. no product should convey an endorsement or anything that may be construed as an endorsement by a professional or other body, unless this has been specifically approved by relevant national, regional, or international regulatory authorities.

FOOTNOTE TO TABLE A3.2

1 Improved product name examples:

i. 30% apple, 20% sweet potato and 10% spinach:

- before: "spinach and sweet potato"; after: "apple, sweet potato and spinach"
- name ingredients in an appropriate order and indicate that apple is the main ingredient.

ii. 35% carrot, 30% parsnip, 20% potato and 15% chicken:

- before: "chicken and vegetable meal"; after: "root vegetable and chicken dinner" or "carrot and potato mash with chicken"
- indicate that vegetables are the largest ingredient.

iii. 30% pear, 20% apple, 20% rice/oats/dairy and 10% strawberry:

- before: "baby rice/porridge/yogurt with strawberry"; after: "pear and apple porridge/rice/yogurt with strawberry" or "fruity rice/porridge/yogurt"
- indicate that fruit is the largest ingredient, strawberry is not the primary fruit and rice/oats/yogurt is not the largest ingredient.

Table A3.3. Examples of prohibited compositional, health and marketing claims on promotional materials (pack labels and other marketing materials)

Composition and nutrition claims	**Statements relating to the presence or absence of ingredients generally perceived to be harmful or beneficial**, for example: • "no...", "no added...", "low in..." [sugar, salt, condiments, artificial flavour/colour, maltodextrin, modified starch, additives/preservatives, GMO, junk, etc.] • "contains only naturally occurring..." [sugars, salt, etc.] **Statements relating to the natural or healthful nature of ingredients**, for example: • "contributes one of your five-a-day [fruit/vegetables]" • "contains three types of vegetables", "contains vegetables" • "organic food", "natural", "fresh", "100% natural", "real fruit/vegetables" **Statements implying nutritional idealism, high nutrient content or presence of nutrients generally not considered in home-prepared foods.** No product should imply that commercial foods are nutritionally superior to home-prepared foods or otherwise undermine important public health recommendations. for example: • "nutritionally balanced", "perfect/unique balance of vitamins/minerals", "ideal nutrients", "provides good nutrition to children" • "contains..." "a source of..." [minerals, vitamins, iron, vitamin B1, a host of nutrients, dietary fibre, omega-3, probiotics, prebiotics, protein, amino acids, phospholipids, DHA, carbohydrate, arachidonic acid, etc.]
Health claims	**Statements relating to beneficial health or development resulting from the food or ingredients**, for example: • "good for...", "supports...", "improves...", "...needed for..." [healthy growth, development, digestion, appetite, learning to chew, learning to hold, constipation, defecation, bones and teeth, enteric flora, the brain, eyes, vision, skin health, thyroxine synthesis, red blood cell synthesis, preventing iron deficiency anaemia, collagen synthesis, metabolism, cognitive development, immune system etc.] **Statements relating to the general healthful nature of ingredients or recipes**, for example: • "healthy" • "goodness of cereals", "extra goodness with wholegrain oats", "infant cereal is the ideal foundation to a healthy and balanced diet", "perfectly balanced to support growth" • "draws inspiration from the Mediterranean approach to health and well-being"

Table A3.3. contd

Marketing claims	Statements relating to ideal taste, for example: • "delight for tiny taste buds/tiny tummies", "tasty/yummy/delicious", "suitable for picky eaters", "in my home the whole family loves them", "my flavours are a new journey for tiny taste buds", "exotic dishes are full of variety and flavour", "simple flavour" Statements relating to high product quality, for example: • "picked at the peak of ripeness", "bursting with goodness and flavour", "individually steam cooked", "we use over 27 different fruits and vegetables", "we only use specially selected ingredients" Statements relating to ideal food texture, for example: • "smooth", "no bits/chunks", "easy-to-swallow texture that is great for helping your little one as they start to explore solid foods", "perfectly smooth texture has been specially developed as an ideal first weaning food" • "I'm textured", "yummy crispy bits will encourage your baby to begin to chew", "ideally suited to promote exposure to textures" Statements relating to convenience or lifestyle, for example: • "convenient", "great for a busy and active life", "ideal for breakfast or meals on the go", "simply to top up between meals" • "great way to make fruit fun" • "closest thing to homemade with all of the goodness and none of the guilt" • "inspired by my favourite home-cooked recipes" Statements conveying ideals on optimum feeding, for example: • "making the right feeding choices for you and your baby" • "helps to build confidence and enjoyment with food" • "we've been pioneering research into infant and toddler nutrition for over 50 years to help you give your baby the best start in life" • "carefully prepared by our baby-food experts" • "grown by farmers we know and trust" • "nothing unnecessary", "no junk", "nothing nasty" • "encourages self-feeding", "perfect for small hands" • "perfect/ideal/optimum... way to feed/introduce foods" • "breakfast is one of the most important meals of the day" • "we guarantee our products provide the best possible start for your baby" Statements encouraging dismissal of public health recommendations, for example: • "the government advises that you don't need to wean your little one until they are 6 months old. Every baby is different!" • "the Department of Health and the World Health Organization recommend exclusive breastfeeding for the first six months. However, if you choose to wean earlier, our ingredients are suitable from 4 months" Statements/labels implying product or brand support from experts and trustworthy or influential individuals, groups or organizations. No product should convey an endorsement or anything that may be construed as an endorsement by a professional or other body, unless this has been specifically approved by relevant national, regional or international regulatory authorities. For example: • "quality approved by Mums" • "approved by nutrition experts/celebrities" • "endorsed by paediatricians/national child's association" Statements conveying other idealistic or charitable attributes of the product or brand, for example: • "committed to giving 10% of profits to help fund food education charities" • B corporation certification, Hain Celestial or other corporate certification implying superior or other ethical or charitable brand attributes and unrelated to product nutrition or content

Annex 4. Report table for compositional requirements among 224 products assessed in Türkiye

Product group	Code	Sub-category description	Products evaluated	Energy density	Large portion size	Sodium	Total sugar	Contains free sugars	Protein content	Total fat	Excessive fruit content	Overall category FAIL rate
Dry cereals and starches	1	Dry or powdered cereal/starch to be eaten or cooked with milk or water	82	Fail: 8/82	/	Fail: 9/82	Fail: 18/61 Missing: 21	Fail: 30/82	Fail: 0/40 (only 40 products contained milk)	Fail: 0/82	Fail: 2/82	39/82
Dairy foods	2	Dairy-based foods, desserts and cereals	13	Fail: 0/13	/	Fail: 1/13	Fail: 2/13	Fail: 9/13	/	Fail: 0/13	Fail: 0/13	03/13/23
Fruit & vegetable purées/smooth-ies and fruit desserts	3.1	Fruit-containing product, including breakfast/dairy	55	Fail: 17/55	/	Fail: 1/55	Fail: 54/55	Fail: 20/55	/	Fail: 1/55	/	55/55
	3.2	Vegetable only product	1	/	/	Fail: 1/1	Fail: 1/1	Fail: 0/1	/	Fail: 0/1	Fail: 0/1	01/01/23
Savoury meals and meal components	4.1	Food WITHOUT protein or cheese named	17	Fail: 14/17	/	Fail: 12/17	Fail: 7/17	Fail: 12/17	Fail: 6/17	Fail: 0/17	Fail: 1/17	17/17
	4.2	Food WITH CHEESE named but no protein	0	–	–	–	–	–	–	–	–	–
	4.3	Food with protein source NOT named first	6	Fail: 2/6	/	Fail: 1/6	Fail: 1/6	Fail: 0/6	Fail: 0/6	Fail: 0/6	Fail: 0/6	04/06/23
	4.4	Food with protein source named FIRST	0	–	–	–	–	–	–	–	–	–
	4.5	Protein source is ONLY named food	0	–	–	–	–	–	–	–	–	–
Snacks and finger foods	5.1	Fruit	3	/	Missing: 3	Fail: 0/1 Missing 2	Fail: 3/3	Fail: 0/3	/	Fail: 0/3	/	03/03/23
	5.2	Dry or semi-dry snacks and finger foods	29	/	Fail: 1/24 Missing: 5	Fail: 7/29	Fail: 13/28 Missing: 1	Fail: 25/29	Fail: 0/16 (only 16 product contained milk)	Fail: 1/29	/	25/29
Ingredients	6	Ingredients	8	/	/	Fail: 0/7 Missing: 1	Fail: 0/8	Fail 0/7 Missing: 1	/	Fail: 3/8	Fail 0/8	03/08/23
Confectionery	7	Confectionery	7	Not appropriate for promotion								07/07/23
Drinks	8	Drinks	3	Not appropriate for promotion								03/03/23
Overall requirement FAIL rate				41/173	01/24/23	32/211	99/192	96/213	6/79	5/214	3/127	160/224

Annex 5. Report table for promotional requirements among 224 products assessed in Türkiye

Product group	Code	Sub-category description	Number of products evaluated	Minimum age under 6 months	Max. age not stated/ greater than 12 months (purées only)	High total sugar indicator needed	Inappropriate composition health or marketing claims	Product name unclear	Ingredient list missing data	Missing instructions not to drink via spout (if has spout)	Missing/ inappropriate preparation instructions (if required)	Missing/ inappropriate statements to protect/promote breastfeeding	Overall category FAIL rate
Dry cereals and starches	1	Dry or powdered cereal/ starch to be eaten or cooked with milk or water	82	7/78 Missing: 4	/	18/62 Missing: 20	71/72	55/82	68/82	/	32/82	71/82	82/82
Dairy foods	2	Dairy-based foods, desserts and cereals	13	02/13/23	/	02/13/23	13/13	03/13/23	13/13	/	/	06/13/23	13/13
Fruit & vege-table purées/ smoothies and fruit desserts	3.1	Fruit-containing product	55	14/55	55/55	54/55	54/55	34/55	27/55	10/10/23	/	50/55	55/55
	3.2	Vegetable only product	1	01/01/23	01/01/23	01/01/23	01/01/23	0/1	01/01/23	/	/	01/01/23	01/01/23
Savoury meals and meal components	4.1	Food WITHOUT protein or cheese named	17	04/17/23	17/17	/	17/17	09/17/23	16/17	–	02/17/23	08/17/23	17/17
	4.2	Food WITH CHEESE named	0	–	–	–	–	–	–	–	–	–	–
	4.3	Food with protein source NOT named first	6	01/06/23	06/06/23	/	06/06/23	05/06/23	06/06/23		03/06/23	04/06/23	06/06/23
	4.4	Food with protein source named FIRST	0	–	–	–	–	–	–	–	–	–	–
	4.5	Protein source is ONLY named food	0	–	–	–	–	–	–	–	–	–	–
Snacks and finger foods	5.1	Fruit	3	0/3	/	03/03/23	03/03/23	0/3	0/3	/	/	03/03/23	03/03/23
	5.2	Dry or semi-dry snacks and finger foods	29	2/28 Missing: 1	/	/	29/29	15/29	19/29	/	/	23/29	29/29
Ingredients	6	Ingredients	8	4/4 Missing:4	/	/	07/08/23	0/8	06/08/23	/	08/08/23	08/08/23	08/08/23
Confectionery	7	Confectionery	7	Not appropriate for promotion									07/07/23
Drinks	8	Drinks	3	Not appropriate for promotion									03/03/23
Overall requirement FAIL rate				35/205	79/79	78/134	208/214	122/214	156/214	10/10/23	45/113	174/214	224/224

The WHO Regional Office for Europe

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

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