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“Food for infants and young children in relation to current medical standards”

Summary

One of the most important aspects of care is to provide food that will cover a child's need for energy and nutrients, and at the same time be safe for its health and life. Formulas replacing breastmilk and ready-made foods are safe for use for infants and young children. Safety is assured by:

- the use of specific raw products, additives and auxiliaries for the production of food intended for infants and young children,
- the standardized nutritional value that reduces the risk of food shortages or excesses,
- compliance with the criteria for maximum levels of pollutants, including pesticide residues,
- the control of the production process, implementation of systems ensuring the appropriate quality and safety of the final product.

The preliminary stage of this work was to analyze the current state of knowledge on nutrition of infants and young children. The collected literature has been analyzed in terms of the latest recommendations on nutrition for infants and young children. The standpoints of expert groups and scientific societies, both Polish and global, were taken into account. The food for infants and young children available on the Polish market was catalogued and evaluated with reference to the current medical standards regarding nutrition and applicable legal regulations. The created catalogue of products can be used by specialists - doctors and dieticians to plan the optimal way of feeding infants and young children. An important added value of the products' catalogue is also the possibility of using it in specialized computer programs used to calculate the energy and nutritional value of the diet. The extended database module of food intended for infants and young children will allow to objectify the results of research on the structure of food intake and nutrient profile in children's diets.

The auctorial products' catalogue includes 29 infant formulas and 25 infant formulas available on the market in Poland at the beginning of 2016. Infant formula is used in the

nutrition of 61% of infants aged 5-12 months (including 58% daily) and in 45% of children aged 13-36 months (including 38% daily).

Ready-made food (this term includes categories such as: processed cereal-based food and baby food and clearly states that it does not include natural, fresh and/or low-processed food) is widely used in the nutrition of infants and young children. 84% of infants receive ready-made food at least 2-4 times a week (including 65% every day). Among children in the second and third year of life 55% receive ready-food at least 2-4 times a week (including 33% everyday). 534 products for infants and small children were included in the auctorial catalogue created for the needs of the thesis, including: 102 processed cereal-based food and 432 products from the baby food category, including: vegetable and vegetable-meat dishes (175 products), desserts (176 products) and drinks (81 products). 69% of the ready-made food was intended for infants over 6 months (36% of products were intended for babies over months).

The highest average energy content per 100 g of ready-to-eat product was observed in the category of rusks and biscuits (on average 403 kcal/100 g), while the lowest in vegetable and vegetable-meat dishes (average of 58.63 kcal/100 g). Compared to the other product categories, vegetable and vegetable-meat dishes have the highest average protein content (4.25 g/100 kcal), fat (2.94 g/100 kcal), fiber (2.97 g/100 kcal) and the lowest average carbohydrate content (12.66 g/100 kcal). Products from the desserts category contained protein in the average amount of 1.46 g/100 kcal, which was the lowest average value among all categories and the highest sugar content, amounting to an average of 15.66 g/100 kcal. Simple cereals compared to the other product categories were characterized by the lowest average fat content (0.51 g/100 kcal) and sugars (3.12 g/100 kcal) with the highest average carbohydrate content (21.12 g/100 kcal). Cereals with an added high protein food contained on average the lowest amount of fiber (0.49 g/100 kcal) from all analyzed categories.

Despite the necessary compliance with legal regulations, there are areas where it is possible to match the ready-made food for infants and young children with the recommendations of experts regarding nutrition of this particular group to a greater extent. A significant part of the ready-made food intended for infants and children up to the age of 3 contained in its composition sugar - an ingredient whose consumption by infants and young children should be as limited as possible. Meanwhile, porridge and gruel, which are consumed at least 2-4 times a week by 66% of infants and 44% of children up to the age of 3, mostly contained sugar. This concerned 58% of cereals with an added high protein food and 42% of simple cereal products. Porridges and gruel - products most often served to infants and young children, are also the

most sweetened ready-made products intended for infants and young children – sugar was an ingredient in 53% of these products.

During the transitional period - until the delegated acts to Regulation (EU) No 609/2013 of the European Parliament and of the Council become applicable - it is possible to apply national or Community regulations. This period will amount to 4 years for modified milk (until 21 February 2020), with the exception of infant formulas and follow-on formulas manufactured from protein hydrolysates for which the Community Regulation applies after 5 years from the publication dates in the Official Journal of the European Union (until February 21, 2021). For processed cereal products and food for children, this period equals 3 years, however due to the fact that the delegated act has not been published - the transitional period has not yet begun.