

A NEW CONCEPT OF EDUCATION TO HEALTHY EATING HABITS IN PRIMARY SCHOOL

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Abstract: *The paper is focused on the role of schools in shaping the nutritional behaviour of children of primary school age and the current educational reality in health education in primary schools. It presents the results of research studies dealt with at the health education department at Charles University in Prague - Faculty of Education, which surveyed nutritional preferences of primary school pupils and their knowledge about nutrition and healthy lifestyle. In response to detected problems (unhealthy eating habits leading to obesity, risk of eating disorders) it makes recommendations on how primary school teachers can improve their work in promoting healthy nutrition habits through school education programmes. The research pays attention to the need to modify the content of health education module in the primary school teaching programme at pedagogical faculties.*

Key words: *healthy nutrition, school curriculum, health education, teacher training*

1. Nutrition habits in childhood

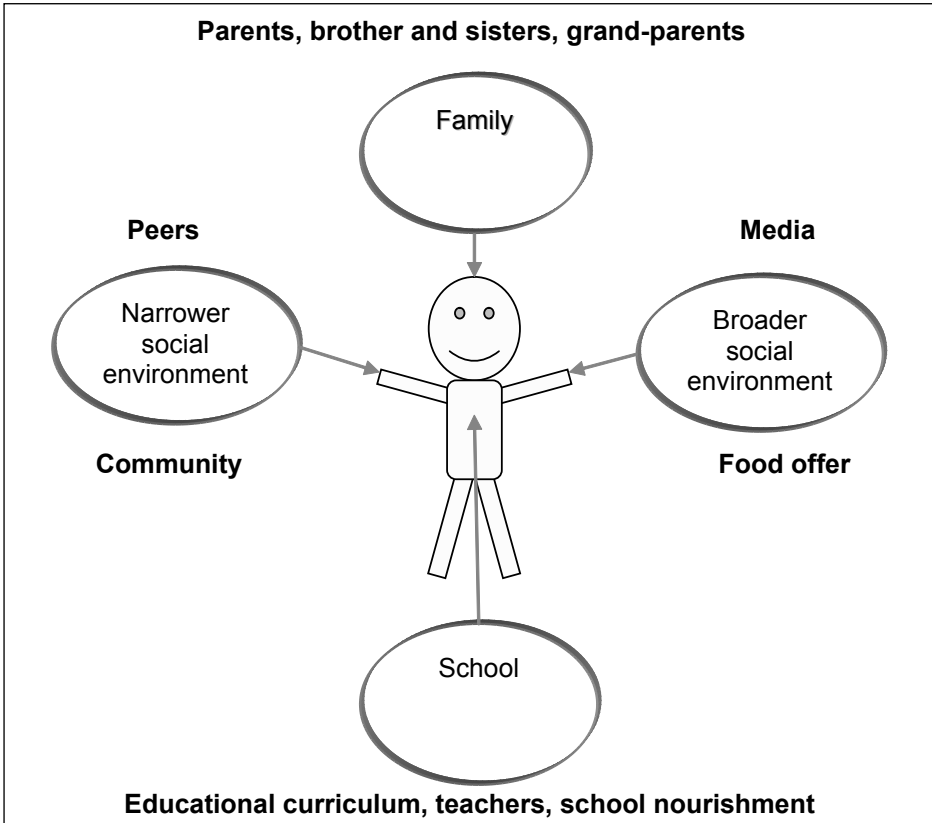
Attitudes to food and nutrition behaviour are formed from early childhood. Family background is an irreplaceable influence, i.e. the lifestyle of the family in which children grow up. Influence of family on the child's attitude to food and nutritional habits is based on multiple sources. It includes genetic factors, personality characteristics of parents, their interests, parents' educational methods, the influence of siblings, family economic situation, its cultural and social backgrounds.

Adults can influence children's relationship to food in different ways:

- a) verbally at the time of meals or other times,
- b) non-verbally presenting offered dishes to taste or allowing to observe food preparation,
- c) through their own nutritional behaviour
- d) using food for other than nutritional reasons (food as a reward).

Other social factors are beginning to apply in this regard as early as in preschool age. Influence of peers and other persons whom the child encounters is also considerable. Also food products offered on the market and particularly the much-discussed pressure advertising campaigns aimed at the children are an issue. The wide variety of influences extends to intentional learning topically focused on the acquisition of proper nutrition and healthy eating habits when children begin with school attendance.

Factors affecting nutrition behaviour of a child



Children come to school with eating habits that have developed in the family and kindergarten. They are used to a daily food and drink regime. Their eating preferences and aversions are already fairly settled. They are mostly accustomed to not being forced eat and having free access to drinks or sweets. If they attended kindergarten, their parents did not have to worry about when and what the children will eat or drink during the day, until this time. With the entry into primary school, children are receiving knowledge about proper nutrition. The school regime and meals in the school cafeteria bring new experiences associated with food. In any case, the formation of proper nutritional habits at school is demanding and cannot happen without close cooperation between the school and family.

2. Nutritional disorders in childhood

Lack of certain nutrients or their significant surplus can adversely affect the child's long-term health and physical and mental development. Health-supporting nutrition for primary school children should be based on the following recommendations:

- Regular diet (5 to 6 meals a day, energetically adequate),
- Adequate intake of fluids (milk, fruit teas, juices)
- Adequate intake of protein (meat 3–4 times a week, eggs 2 to 3 pieces per week, milk in quantities of 1/3 litre of milk per day)
- Daily consumption of vegetables and fruits (3x daily),
- Inclusion of wholemeal bread, cereals, legumes, incl. soybean,
- Composition of fats in favour of unsaturated fats,
- Reducing the consumption of sausages, canned foods, fatty, salty, spicy dishes and sweets, incl. sweet drinks,
- Developing desirable eating habits.

Knowledge about proper nutrition allows children to evaluate their own current diet compared with the views and recommendations of experts and to assess the risks of inappropriate eating. The older children are, the more often and especially more precisely they are able to influence and control their food intake. They distinguish the taste aspects of food much more. They associate food with new adventures and experiences that can be positive but also negative. Based on this linking, a child begins to create their own menu, learns how to behave when eating, masters basic hygiene habits associated with food. Nevertheless, at this stage of life the child is still dependent on its surroundings (especially family), i.e. on what the family provides and what is available to the family.

In recent years, paediatricians have been warning about the trend of increasing overweight and obesity incidence in childhood. For example, surveys carried out in 2000 revealed 7 % of overweight children and obesity in 6 % of children of school age. Current representative data on the prevalence of overweight and obesity in the Czech Republic in the adult and paediatric population is contained in a study, "Lifestyle and obesity 2005". According to published results, every fifth child in the Czech Republic aged 6 to 12 years suffered from excessive weight at the time of the survey, specifically 10 % of children were overweight and 10 % obese. These numbers are certainly alarming. A finding that the highest proportion of children with obesity is found among children aged seven years, a period of fundamental changes in their lifestyle related to entering elementary school certainly calls for consideration.

It appears that the proportion of individuals with excessive weight decreases with age (for adolescents aged 13 to 17 years it is approximately 11 %). In terms of the health of children and adolescents, however, this trend can not be assessed as positive, because the opposite extreme often occurs at this age - the rising number of children underweight. For girls, underweight reaches even 10 % and is associated with increasing incidence of anorexia nervosa and bulimia.

The main cause of overweight and obesity among children is their declining lifestyle, which is accompanied by an imbalance between energy intake and output, usually

a superfluous carbohydrate intake with lack of exercise. A great role is played by the occurrence of excessive weight in the family, caused partly by genetic factors, particularly however by the composition of the diet and overall lifestyle. Overweight parents significantly increase the risk of overweight children. It is proven that in families where both parents are obese, it is more than twice as likely that a child aged 6 to 12 years will also be obese. This fact should be reflected in preventive measures. Obese parents should pay close attention to healthy lifestyle of their children due to an increased risk of their overweight and obesity. They should realize that excessive body weight of children is not just a “cosmetic” issue, but has serious negative effects on the metabolism, burdens the bone, joint and vascular systems. Unfortunately, these families often (approx. 13 %) hold the view that their pupil has normal weight, although in fact he / she falls into the category of children with excessive weight.

Long-term clinical studies have shown that regular sporting activity reduces morbidity in children, maintains body weight in norm and has a positive impact on the psyche of the child. The recommended duration of physical activities for school children is 7 hours per week. It was found that school age children engaged in more demanding physical activities for 6 hours and 20 minutes on average in their free time during the week. For older pupils of school age, the average time devoted to challenging physical activities decreased to less than 5 hours a week. Children spend the vast majority of their free time in front of a computer or television. Passive leisure activities and lack of exercise together with a supply of energy dense foods reflects negatively on the health of the child population.

3. Schools’ influence on children’s nutrition behaviour

The requirement to implement systematic education to a healthy lifestyle and health in schools is based on long-term strategy of the European health promotion programme and is embedded in the existing school documents. Promoting a healthy lifestyle in school education means not only to provide students with information about the principles of good nutrition, but also educate them so that everyone could choose such a way of eating that is good for their health. A new concept of education to healthy eating habits in primary school should systematically address all children, throughout their school education, appropriately to their age, interests and needs.

Education in primary school (according to the Framework Programme for Basic Education) under the heading “Man and Health” leads students to become aware of what is appropriate and inappropriate for humans in terms of daily routine, hygiene and nutrition, and motivates to children’s active involvement in health-enhancing activities.

In direct relation to the content of educational curricula, the educational programme should influence nutritional behaviour of children by ensuring their meals and drinks during the time which students spend in school. A key role is played by the school cafeteria, or an offer of other catering services.

We can discuss a number of fundamental questions in this context: To what extent the current school education fulfils its educational and training goals of health promotion? How does it influence pupils’ nutritional habits? Can it also contribute to preventing childhood obesity?

4. Monitoring the nutritional habits of primary school children

In 2007, Charles University in Prague - Faculty of Education, carried out a survey intended to get a picture of primary school children's orientation in healthy eating and of their current eating habits.

The **aim** of the survey was to monitor eating habits and attitudes to food among children aged 10-12:

- food and drink,
- preferences in selecting food and drinks,
- use of school meals and satisfaction with this service,
- children's knowledge of good nutrition.

Research questions also concerned parents and teachers:

- What importance parents attach to their children's nutrition?
- How parents assess the quality of food in the family and school?
- How do teachers pay attention to primary school education to healthy eating habits?
- What is the primary school teachers' level of knowledge in the area?

Research used a questionnaire survey method. The survey involved a eight primary schools. Schools were approached randomly and selected based on their interest, in order to collect and summarise information on the nutritional habits of children from different backgrounds (city, small town, village). The schools willing to cooperate also included 3 schools participating in the "Health Promoting Schools" programme.

Number of respondents:

Primary school pupils (aged 10 to 12)	624
Pupils' parents	294
Primary school teachers	46

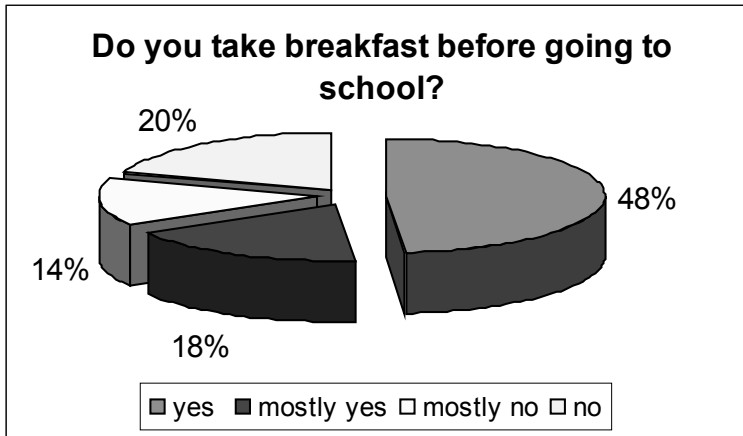
Each group of respondents had a special version of the questionnaire prepared for them. Pupils were asked to complete questionnaires during school hours. Through them, a questionnaire was distributed to parents. As is evident from the list above, returnability from the parents was only 47 %. Teachers' questionnaire was filled out by teachers of those pupils who participated in the survey.

5. Selected results of the survey

Due to the extent of the survey, the following summary describes just some interesting results.

a) Do you eat breakfast before going to school?

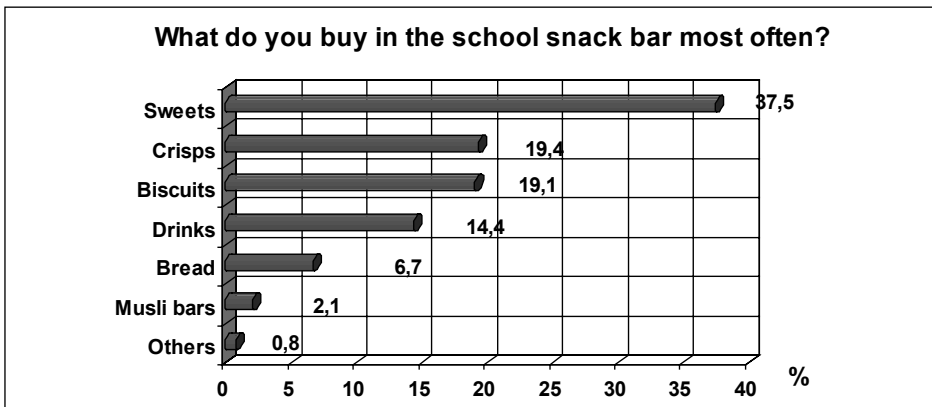
Irregular meals are discussed in connection with the prevention of obesity, especially skipping breakfast.



The graph shows that only 66 % of surveyed children eat breakfast at home. Children who do not eat at home before going to school, reported reluctance to eat in the morning or the lack of time as the reasons. Comparisons revealed that 14 children from the monitored file even did not eat any snack in the morning. It also showed that boys eat breakfast at home more often than girls.

b) What do you buy in the school snack bar (vending machine) most often?

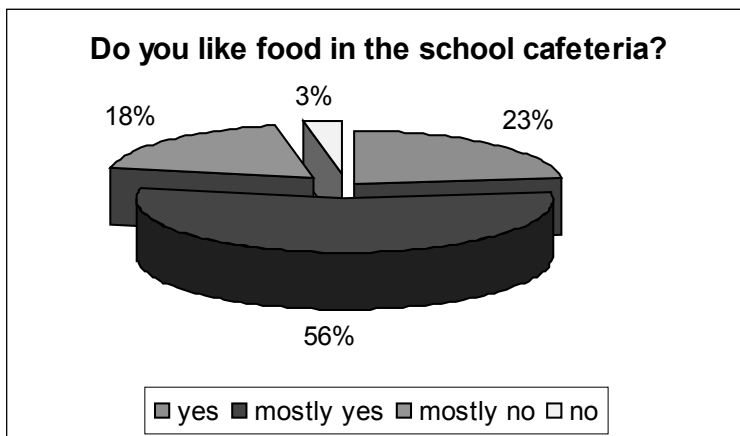
All the surveyed schools had a school snack bar. To illustrate the nutritional preferences of primary school children, which can be directly related to the issue of childhood obesity, a presented summary shows answers to the question what children usually buy in the school snack bar.



The answers show not only that primary school children mostly eat sweets, biscuits or salty crisps at school in the morning, but also the fact, how the children spend snack money from their parents. The chart also indicates what range of products is offered in school snack bars in those schools where research was conducted. To what extent can school influence this reality through education to proper nutritional habits?

c) Do you eat in the school cafeteria and, if so, how satisfied are you?

Several questions followed the use of school catering and measured respondents' views on its quality. Of the total number of respondents, 88 % of children eat in the school cafeteria. The question, how satisfied they were with the quality of food is evaluated and shown in the following graph.



It is gratifying that children mostly liked the meals in the school cafeteria. 87 % of children expressed full satisfaction with the school cafeteria setting. Children are able to form free answers indicate what they believed was in boarding school improvement. Interestingly, there are the most frequent responses were evaluated in order of decreasing frequency as follows:

Children were able to add comments indicating what they believed should be improved in the school catering. The most frequent responses which were evaluated in the order of decreasing frequency are shown as follows:

- Extend the range of served meals,
- Wash dishes better, especially trays,
- Give larger portions,
- Offer more fruits and vegetables,
- Prepare less fatty food
- Serve cold drinks for lunch,
- Replace cooks (they scream and communicate inappropriately with children),
- Not to prepare mashed potatoes out of stock.

d) How often do you eat the selected types of food?

The results of monitoring dietary composition are shown in the following table:

How often do you eat the selected types of food (dishes) (shown in %)?

	daily	3 times a week	once a week	very scarcely	never
meat	36,9	36,9	16,5	9,7	0
smoked goods	19,3	32,5	21,0	27,2	0
fish	0	11,4	19,3	51,8	17,5
fast-food	7,0	33,3	25,4	27,3	7,0
fruit	57,9	25,4	7,0	9,7	0
vegetables	36,9	33,3	11,4	16,8	1,6

The table shows that for example eating **fruits** generally outweighs the consumption of vegetables. It is pleasing that more than half of the respondents consume fruit daily. Children identified apple as the most popular type of fruit (probably because they are readily available to us), then oranges, tangerines, bananas, strawberries, grapes and more.

As for **vegetables**, we can say that about 70 % of children eat vegetables at least 3 times a week. Compared with nutritional advice, this is a condition we can not be satisfied with. Regarding popularity, the children reported mostly carrots, cucumbers, tomatoes, peppers, lettuce.

The results also show that most respondents consume **meat** daily or 3 times a week. The answer “never” was not checked by anyone, which means that there was no child vegetarian among the respondents.

Fish consumption is traditionally low. The diet of an absolute majority of children includes fish less frequently than once a week, many children even chose the answer “never”. This finding is certainly a challenge for educators in the classroom to motivate children to include fish in their diet.

Unfortunately, the consumption of **smoked goods** was found almost at the opposite extreme. A fifth of respondents ticked the answer of consuming sausages every day. This condition is also a major problem in the eating habits of children.

e) Other nutrition preferences

The image of nutritional preferences of school age children is completed by the following findings: 68 % of respondents get sweets whenever they ask for them. Children are mainly attracted by their sweet taste (95 %). Only 13 % of children decide based on the product packaging. 91 % of children said that they buy sweets themselves. When asked what the children would buy to eat if they were given money, they replied: chocolate (32 %), biscuits (18 %), sweets (18 %).

f) From the parents' observations

Parents were asked, among other things, whether they thought their child had enough knowledge of proper nutrition. Almost three quarters of parents were convinced of sufficient awareness of their children (74 %), conveyed to them by themselves. The fact that only half of them mentioned school as the source of the instruction, suggests that many parents do not care too much about the current contents of school education.

Interesting findings were brought by the question: **Are you a good role model**

for your child in eating habits? Only 58 % of parents thought themselves a good example for their children in terms of nutrition. All others (less than half of respondents) admitted that they do not follow the principles of proper diet in life and are not a good role model for their children. This may of course complicate teachers' efforts to lead pupils to correct nutritional habits.

g) From the teachers' statements

One questionnaire was designed for primary school teachers. Research survey was attended only by women. They were also asked a similar question: ***Are you a good role model to your students in eating habits?*** The evaluated responses are alarming. Only 18 teachers (40 %) believe that their nutritional behaviour is an example for their students. The same number admits quite opposite reality, i.e. the full 40 % of respondents admitted that with their attitude to nutrition, they are not good role model for their pupils and the remaining 20 % failed to assess.

Educating children to healthy eating habits should be a systematic process, with awareness of the importance of health protection, and especially by own example. Teachers of primary school children are important as an authority and role model. They have a great opportunity to influence pupils also in the field of nutrition and obesity prevention. Just a small example: If the teacher consumes fruit, vegetables, dairy products, etc. (in front of his pupils), it is a powerful and positive example for children (they feel like eating just the food they see in someone else). If the teacher succeeds to encourage healthy lifestyle (healthy eating and active leisure) with primary school children, it will be easier for them to resist the negative influences of consumer society in adolescence, which can damage their health.

6. Recommendations for the creation of school curriculum

It turns out that if the teacher has an overview of pupils' obtained knowledge and their eating habits during the preparation and implementation of the programme focused on nutrition, he / she is able to effectively develop these skills and also possibly change the forming attitudes of children to food and manners of its presentation.

The results of the survey findings may help primary school teachers in raising children to eat in a healthy way. If similar investigations are performed by teachers at their school, they will get valuable information that will enable them to positively influence the eating habits of their pupils.

Based on the research described above, it is possible to formulate basic recommendations for the implementation of educating for correct nutrition in the school curriculum:

- **Education on proper eating habits** should take place spontaneously, naturally and as part of everyday life.
- **Curriculum on healthy eating** should be included in topical programmes in all grades of primary school as part of health education.
- **Education on proper eating habits** should be implemented through interactive methods, strengthening pupils' confidence and social competences.

- Ensure the conditions for effective physical education targeted at the **development of health oriented fitness**.
- **Monitor nutritional habits of children** – ensure maintenance of eating and drinking regime (organisation of breaks).
- **Secure pupils’ drinking regime** - ‘school milk’ events, range of quality drinks, watch the products provided in vending machines.
- **Motivate** parents and pupils **to make use of** nutritionally balanced **school meals**.
- Create a **calm and cultured environment** for dining in the school cafeteria (“school restaurant”).
- Promote a positive social climate during lunch distribution through good organization.
- Offer students engaging **physical activities for leisure time**.
- Work with parents of children at risk of obesity, sensitively and with erudition.
- Provide support to children in coping with **problems associated with eating disorders**.
- Implement **long-term school projects** aimed at promoting health and healthy eating together with family and community.
- Ensure the **promotion** of everything that a school does for healthy nutrition and the education for right eating habits.

The effectiveness of fulfilling the objectives of school education on correct nutrition is undoubtedly in the hands of educators. It is a challenging educational activity, it is therefore necessary to allow primary school teachers to be systematically educated in promoting health. The issue of healthy lifestyles, including formation of nutritional behaviour, should be implemented in full-time study programmes and combined studies at all faculties of education.

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K NOVÉMU POJETÍ VÝCHOVY KE ZDRAVÝM STRAVOVACÍM NÁVYKŮM V PRIMÁRNÍ ŠKOLE

Abstrakt: Příspěvek je zaměřen na úlohu školy při formování nutričního chování dětí mladšího školního věku a současnou edukační realitu v oblasti výchovy ke zdraví v primární škole. Předkládá výsledky výzkumných studií řešených oddělením výchovy ke zdraví na Univerzitě Karlově v Praze – Pedagogické fakultě, v nichž byly sledovány nutriční preference žáků 1. st. ZŠ a jejich znalosti o výživě a zdravém životním stylu. V návaznosti na odhalené problémy (nezdravé stravovací návyky vedoucí k obezitě, ohrožení poruchami příjmu potravy) obsahuje doporučení, jak mohou učitelé primární školy prostřednictvím školních vzdělávacích programů zkvalitnit své působení v oblasti podpory zdravých nutričních návyků. Věnuje se pozornost nutné úpravě obsahové náplně modulu výchovy ke zdraví ve studijním programu učitelství pro 1. st. ZŠ na pedagogických fakultách.

Klíčová slova: zdravá výživa, školní vzdělávací program, výchova ke zdraví, vzdělávání učitelů.