

Food quality and safety control as an important factor of physical development

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Abstract. Rational nutrition is one of the most important components of a healthy lifestyle, since it ensures optimal performance, resistance to adverse factors and the normal course of growth and development processes. The study of actual nutrition allows not only to evaluate it as a factor in maintaining health, but also to establish the presence of risk factors associated with dietary deficiencies, bad eating habits that increase the likelihood of disturbances in the activity of organs and systems. Based on the foregoing, this article discusses the impact of observing the optimal diet as an important factor in the proper physical development of children.

1 Relevance

Nutrition is one of the key factors that determine not only mental and physical development, performance, but also the state of health, as well as the duration and quality of human life. A balanced diet is one of the main components of health at any age, it is of particular importance in children. The structure of nutrition determines the level of health and physical development of children and adolescents by 70% (WHO data). At the same time, the younger the child, the more significant the influence of nutrition on his present and subsequent development and health. The first three years are a critical period when nutrition and other external factors determine the way to implement the genetic program and program the future health of the child [5].

Strict adherence to the regimen is of great importance in raising a child. It is necessary to develop agreed requirements for children from parents and other family members to comply with the regime. Often these requirements do not match. The efforts of the mother very often come to naught if what the mother does not allow is allowed by the grandmother.

Nutrition is a critical factor for appropriate child and adolescent development. Appropriate nutrition changes according to age. Nutrition is an important element for prevention of disease development, especially for chronic diseases. Many children and adolescents live in environments that do not promote optimum nutrition [4].

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2 The purpose of the study

The child needs to develop the habit of going to bed, getting up, eating, preparing for school, playing, exercising at the same time. This contributes to the formation of conditioned reflexes, the development of a calm and balanced character. When the regime becomes the norm for a child, it is not a burden either for parents or for their children. Therefore, the regime has educational value only if it is constantly observed.

3 Research methods

To study the state of optimal nutrition, a fairly complete methodological base has been created that allows research under any conditions of life of a particular group of the population, as well as the state of family and individual nutrition. The main thing when planning a study is the choice of an adequate method for studying actual nutrition for this observed population group, the methodological base of which is represented by a set of methods:

- 1) balance method;
- 2) budget method;
- 3) sociological method;
- 4) questioning-weight method;
- 5) weight method (method of weighing consumed food);
- 6) studying the state of actual nutrition according to menu layouts;
- 7) study of the state of actual nutrition by the receipt and consumption of food products;
- 8) study of actual nutrition with the help of a food diary;
- 9) method of food history (nutrition history);
- 10) method for analyzing the frequency of food intake;
- 11) 24-hour power reproduction method;
- 12) laboratory method. [3]

4 Results of the study and discussion

Compliance with the optimal diet is an important factor in the proper physical development of children. Often, a frivolous attitude to the nutrition of children is the cause of their overweight. Wrong are those parents who constantly complain that their children do not eat enough. It is important that children eat right.

The nature of children's nutrition is somewhat different from that of adults, which is explained, on the one hand, by the fact that a growing organism needs a lot of energy, and on the other hand, by the peculiarities of the gastrointestinal tract of children, since the digestive power of digestive juices in children is inferior to adults, as a result of which their body easier to be affected by bacteria that enter the body with food, and other harmful substances.

In children, therefore, disorders of the gastrointestinal tract are more often observed. In the daily regimen, children should be approximately (Table 1).

Table 1. Children daily regimen, g

	7-10 years	11-14 years	15-17 years
proteins	80	93	106
fats	80	95	100
carbohydrates	50-60	60-70	75-70

The rationality of nutrition is determined not only by the quantity and composition of food, but also by its calorie content and normal physical development, corresponding to the age of the student.

Here are the approximate calorie norms for schoolchildren:

7-10 years - 2400 calories

11-13 years old —2800

14-17 years old - 3200

Most calories (50% of the daily volume) are consumed during lunch, 30% of the daily volume during two breakfasts and 20% during dinner. It is very important to clearly distribute the time of eating during the day (table 2).

Table 2. Distribution of meal times during the day

	For 1 st shift workers	For 2 nd shift workers
1-st breakfast	7.30	7.30
2-nd breakfast	11.00	13.00
Lunch	15.00	16.30
Afternoon Snack	-	16.30
Dinner	19.40	20.00

Approximately how many calories does a student take at different times of the day when using traditional dishes (table 3).

Table 3. Calories that a schoolchild eats at different times of the day when eating traditional dishes

	Dish	Calorie content
Breakfast	Porridge with butter or milk	350-400 calories
Lunch	Soups (about 500 g) Meat dishes and side dishes Compotes	200-300 500-600 100-150
Dinner	Meat dishes with side dishes or vegetables	400-500

During breakfast, lunch or dinner, in addition to these dishes, bread, fruits, vegetables, eggs, fish, cottage cheese, cookies, buns, sweets, etc. are consumed, due to which you can fully realize the daily calorie intake.

Fats, carbohydrates and proteins should be consumed in rational combinations. The predominant and frequent use of either proteins, or fats or carbohydrates is not advisable. Some parents, wanting to have an increase in the weight of their children, feed them mainly flour products (bread, rolls, cookies, cereals), fried potatoes, i.e. foods in which

carbohydrates predominate. Such nutrition leads to improper physical development of children, primarily to the appearance of excess weight due to the appearance of fat in the abdomen, under the shoulder blade, and other parts of the body. Overweight children become less mobile, less enduring, dexterous, compared to their peers, which negatively affects their performance.

Fats should not be consumed either, since excess fat interferes with the production of gastric juice, the absorption of proteins, and delays the digestion of food in the stomach for up to 6 hours (normal emptying occurs in 3-4 hours).

Therefore, parents need to know what foods and in what quantities contain proteins, fats, carbohydrates and vitamins.

Proteins are found in meat, fish, cottage cheese, eggs, milk, flour products, potatoes, pasta, legumes - beans, peas,

Proteins are the main building material of a growing organism, so they must be present in the diet of children.

Moreover, it is advisable to correctly combine animal proteins (meat, fish, dairy products, etc.) and vegetable proteins (potatoes, rye bread, wheat products, pasta, peas, etc.) in the diet of children.

It is useful to feed children with buckwheat porridge with milk, which contributes to the rational assimilation of the protein components (amino acids) contained in the porridge, and the amino acids of milk, which are not enough in the porridge. Complete animal fats, essential for the body of children, are found in butter, fish oil, egg yolk. These fats must be present in the daily diet of children. It is impossible not to include in the daily diet and vegetable fats (no more than 20-25%), margarine, etc.

It is believed that fats are also a building material for the nervous tissue of the brain. The absence of fat reduces the body's resistance to external and internal factors, weakens the body's defenses. There are violations of the normal development of the body of children, metabolism.

Carbohydrates are found in sugar, complex carbohydrates (polysaccharides) - in bread, flour, potatoes, porridge, vegetables, fruits. Food should be selected so that half of the carbohydrates in the daily diet of food are contained in sugar, and half in potatoes, flour products, fruits or vegetables. You can not eat carbohydrates more than normal, because this can lead to obesity very quickly. Carbohydrates are the body's main source of energy. When exercising, energy expenditure increases, so the amount of carbohydrates in the diet of young athletes should increase.

In the daily diet, the volume of fats and proteins is approximately the same, and there are more carbohydrates than fats and proteins, about 4 times. It is very important that the food contains vitamins (in Latin, "vita" means life), because without them the normal functioning of the body is impossible. Currently, more than 20 vitamins are isolated, the most important of which are vitamins A, B and C.

What foods contain vitamins?

Vitamin A - fish liver oil (halibut, cod, tuna, flounder, sea bass, etc.); eggs, cheese, milk, carrots, vegetables, etc.

Vitamin B1 and B2 - in flour products, egg yolks, yeast, meat, milk.

Vitamin C - in greens (headed cabbage, green onions, sorrel, lettuce, nettles, etc.), berries and fruits (rose hips, black currants, strawberries, oranges, tangerines, northern varieties of apples), vegetables (potatoes, turnips, rutabaga, tomatoes, radishes, radishes).

Vitamin PP-liver, yeast, lean meat, peanuts.

The daily need for vitamins is satisfied when up to 200 g of fruits and 300 g of vegetables are consumed per day. "Vitamin hunger" is especially felt in winter and spring. It is advisable to use vitamin preparations during this period, which can be purchased at any pharmacy.

Children also need minerals (calcium, phosphorus, iron, sodium, iodine, chlorine, fluorine, cobalt, etc.), which are contained in sufficient quantities in vegetables, milk, fruits, cereals. As for salt, it is added to food at the rate of 0.05 g per 1 kg of the child's body weight.

5 Conclusion

Nutrition of children is the main foundation for the development of the child, his mood and well-being in general. Modern parents need to remember that one of the factors in the state of health and proper development, the body's resistance to environmental conditions, the development of the intellect, the central nervous system, is nutrition. Thus, the main principles of healthy nutrition of adolescents are the usefulness and balance of the diet, its maximum diversity, adherence to the correct regimen, sufficient intake of nutrients and energy, adequate to the needs of the growing body, necessary for normal development and maintaining health.

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