

# The value of nutrition rationalization and its impact on ensuring the quality of life of the population

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**Abstract.** Under negative environmental impact conditions, with an increase of environmental risk, it is necessary to consider poor nutrition as a factor influencing the decrease in immunity and the cause of the various diseases threat. It is necessary to properly create a healthy nutrition culture for the population, including adequate consumption of fruits and vegetables, improving the quality and safety of food products. The issues of organizing nutrition for certain consumer groups, researching consumer trends and studying health and a healthy lifestyle remain relevant. The purpose of this study is to systematize existing scientific developments in the field of ecology and food hygiene. The results of the study can be used in Russian practice when carrying out measures to improve the population nutrition, when building a balanced food consumption model for various consumer groups, as well as in the public catering field.

## 1 Introduction

The global COVID-19 pandemic has pushed consumers around the world to become more aware of food safety and availability and to reduce their negative impact on the environment. The development of society in the post-Covid period is characterized by the decrease in physical stress and the increase in psychological stress, and a change in the general rhythm of life. As a result, there is a need to rethink the population diet towards its rationalization.

Environmental friendliness of food and food hygiene play one of the leading roles in ensuring and maintaining public health. Malnutrition, lack of nutrients in the diet, and poor-quality products often become the causes of many chronic diseases and disorders. The works of many Russian and foreign authors are dedicated to the problems of food products being environmentally safe. As a result of previous studies, the authors established both dietary disturbances and insufficiency in the diet of plant and animal protein, dietary fibre, vitamins and minerals.

The purpose of this study is to systematize existing scientific developments in the field of ecology and food hygiene. The results of the study can be used in Russian practice when carrying out activities to organize and improve the population nutrition, when building a balanced food consumption model for various consumer groups, as well as in the field of public catering.

## 2 Materials and methods

The work uses numerous scientific studies to study the problems of the adult population's nutrition, including certain groups of people employed in industrial production, as well as students, children and adolescents.

In the process of preparation, the scientific data and research published in the international databases WoS, Scopus, ResearchGate, Elibrary.ru for the period from 2010 to 2023 was carried out. The work used structural-logistical and analytical research methods.

## 3 Results and discussion

According to the Federal State Statistics Service Office of the Russian Federation, deviations from the population's nutritional norms are increasing, and the protein, fats and carbohydrates consumption imbalance can be traced. (Table 1) [1,2]

**Table 1.** Average per capita main food groups consumption by the population of the Russian Federation, kg/year

Food	2018	2019	2020	2021	2022	Recommended rate
Meat and meat products in terms of meat	75	76	76	78	78	73
Milk and dairy products in terms of milk	229	234	240	241	241	325
Eggs and egg products - pieces	284	285	283	281	288	260
Fish and fish products in live weight (raw weight)	20,2	21,1	20,0	21,2	19,2	22
Sugar	39	39	39	39	39	24
Vegetable oil	14,0	14,0	13,9	13,6	13,8	12
Potato	89	89	86	84	84	90
Vegetables and melons	107	108	107	103	104	140
Fruit and berries	61	62	61	63	63	100
Bread products (bread and pasta in terms of flour, flour, cereals and legumes)	116	116	116	114	113	96

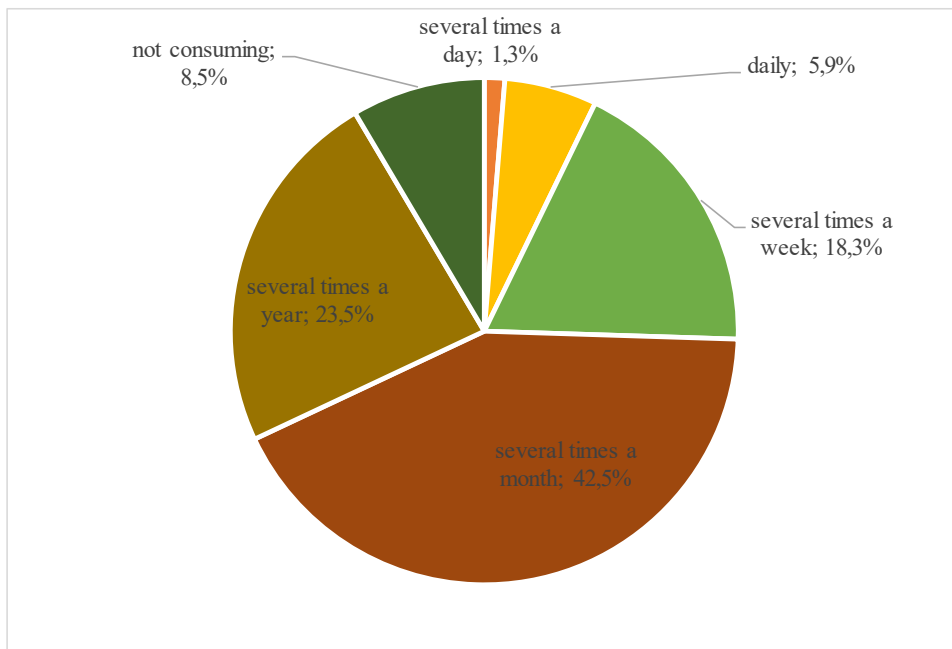
Currently, the trend towards the increase in the number of diseases among children and adolescents, for example, dyslipidaemia, arterial hypertension, and varying degrees of obesity, is particularly concerning. One of the possible reasons for their development may be an eating disorder.

In the study conducted by Filimonova S.N., Tapeshekina N.V., Koskina E.V. et al. (2020) the authors identified existing problems in organizing child nutrition. The main cause of imbalance in nutrition among schoolchildren is excessive consumption of sugar-containing foods, as well as a lack of protein foods in the diet. [3]

The medical study by Guzman-Limon, Samuels (2018), dedicated to studying the causes of childhood hypertension, addresses the problem of child nutrition. The authors recommend assessing dietary history for foods that are associated with increased blood pressure, such as foods high in salt; caffeine; low potassium content. [4]

During the study, Shkolnikova M.N. et al. (2023) identified the main problems of students' eating behaviour: irregular meals, lack of breakfasts and hot meals, insufficient sources of protein, fibre and micronutrients. Based on the results of the survey among university students, frequent consumption of fast food was revealed: 5,9% of respondents

have products of this category in their daily diet, 18.3% of respondents consume fast food several times a week (Fig. 1) [5]



**Fig. 1.** Frequency of fast food consumption by university students, % [3]

It has been scientifically proven that regular consumption of fast food products contributes to the development of gastrointestinal diseases, weight gain, obesity, etc. [6]

As part of the study on the influence of the Mediterranean diet and physical activity (2023) on the anthropometric parameters and biochemical parameters of the subjects' blood, it was found that with the integrated use of diet and physical activity, most of the indicators return to normal (total cholesterol, low- and high-density lipoproteins) [7]

The formation of a balanced food consumption model is influenced not only by the human environmental factors, but also by harmful production conditions. The issues of nutrition and the prevention of diseases associated with difficult, harmful working conditions are currently receiving more and more attention. The introduction of preventive nutrition at enterprises makes it possible to reduce the risk of disease and reduce the degree of unfavourable production influence and environmental factors on the human body. One of the most effective ways is to develop and consume functional foods that are fortified with nutrients.

In the study by authors E.A. Rubashanova, V.I. Bakaitis et al. proposed and scientifically substantiated the formulation of a therapeutic and prophylactic drink enriched with honeysuckle-based pectin for workers in enterprises with hazardous working conditions. The composition of the drink helps preserve the health and maintain the performance of those employed in industrial enterprises with hazardous working conditions.[8]

Professor Dobrovolsky V.F. in one of his scientific works analyses the prospects for developing and providing food for astronauts (2016). In the diet for which all the requirements were taken into account and which was developed specifically for participants in space programs, the ratio of proteins and fats is balanced. However, there is a deficiency of carbohydrates, which is replenished by an additional part of the diet. [9]

Many domestic and foreign scientists are studying the influence of nutritional factors on the functional state of athletes' bodies.

Latkova N. Yu. in her study (2018) proposed to make changes to the nutrition of biathletes during the general preparatory period. The effectiveness of using dietary supplements has been scientifically proven. The observation results of the control and experimental groups indicate an expansion of the functional capabilities of athletes. [10]

Mazhaeva T.V. in the course of studying the purchasing power influencing the population on the nutritional structure and morbidity (2018) notes that the population forms an unbalanced diet regardless of the income level and costs incurred for the purchase of food. Thus, in the diet of the population of the Ural region, an excess of fats and insufficient consumption of plant fibre were revealed.[11]

## 4 Conclusion

The topic of organizing a proper balanced diet is relevant in the field of healthcare, the study of health, for a healthy lifestyle, and within the framework of consumer behaviour research as well as for predicting their preferences. Eco-friendly nutrition and healthy eating products are currently very popular and in demand in the global food market.

The public policy of many countries is aimed at maintaining the health of their nation and the country's population. State programs, which take into account existing research on identifying deficiencies in the diet of children, are being developed to optimize the nutrition of preschool children and schoolchildren. To increase the effectiveness of these programs, it is necessary to regularly conduct educational events on nutrition at home, as well as for preschool education organizations and schools.

The introduction of special, functional foods into the diet for systematic use by certain groups of the population has a beneficial effect on reducing the risk of the diseases occurring and developing. It also maintains and improves health indicators.

State policy in the field of nutrition influences society, promotes the formation of the ecology and food hygiene significance, which will allow to improve the population's quality of life, increase life expectancy, and improve the demographic situation in the country.

## References

1. Official website of the Federal State Statistics Service (Rosstat), Statistical data on the Russian Federation (2023), <https://rosstat.gov.ru/compendium/document/13278>
2. Recommendations on rational norms of food consumption that meet modern requirements of healthy nutrition, approved by Order of the Ministry of Health of the Russian Federation No. 614 of August 19, 2016
3. S. N. Filimonov, N. V. Tapeschkina, E. V. Koskina, O. P. Vlasova, E. M. Sitnikova, O. A. Sviridenko, State of actual nutrition for children and teenagers of school age. Hygiene and Sanitation, Russian journal, **99(7)**, 719-724 (2020)
4. M. Guzman-Limon, J. Samuels, Pediatric Hypertension: Diagnosis, Evaluation, and Treatment. Pediatric Clinics of North America, **66**, 45-57 (2019)
5. M. N. Shkolnikova, V. N. Abbazova, E. D. Rozhnov, Research of students' food ration as a prerequisite for the development of a drink from pumpkin pulp, XXI century: results of the past and problems of the present plus, **12(1(61))**, 66-71 (2023)
6. H. A. Alfawaz, The relationship between fast food consumption and BMI among university female students, Pakistan Journal of Nutrition, **11(5)**, 406 (2012)

7. N. V. Barsukova, S. A. Eliseeva, Yu. V. Fedoseeva, The combined influence of the Mediterranean diet and physical activity on the formation of nutritional status, *Food industry*, **8(2)**, 42-52 (2023)
8. E. A. Rubashanova, V. I. Bakaitis, M. K. Alimardanov, V. M. Poznyakovskiy, Preventive Medical Drink with Pectin and Vitamins for Employees Working in Harmful Labor Conditions, *Food Industry*, **3(4)**, 45–51 (2018)
9. V. F. Dobrovolsky, The use of modern technologies for the development and provision of nutrition for astronauts, *Food Industry*, **1(1)** (2016)
10. N. Yu., Latkov, Investigation of the influence of the food factor on the metabolic processes of the body of athletes experiencing ultra-high loads, *Food Industry*, **3(1)**, 20-25 (2018)
11. T. V. Mozhaeva, The influence of the purchasing power of the population on the structure of nutrition and morbidity, *Food Industry*, **3(1)**, 56-68 (2018)