



## Current State of the Problem of Rationalization of Schoolchildren's Nutrition

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ABSTRACT

Today, the number of nutrition-related diseases is growing all over the world, especially among children, which requires increased attention to the problem. The article highlights the nutritional problems of school-age children, nutrition-related and social risk factors that affect the health of the child.

**Keywords:**

nutrition, alimentary diseases, school-age children

In the last decade, significant economic and social changes have taken place in the Republic of Uzbekistan, which have affected every inhabitant of the country, especially the health status of school-age children. The somatic health of children cannot be considered in isolation from the state of their actual nutrition, which affects not only the functional state of the child at the moment, but also significantly affects his future existence. [1,2,3,6,7,8,11,35]. "Human health, as defined by WHO (1968), is a state of complete physical, mental and social well-being and not merely the absence of disease or infirmity." The modern level of science has expanded and deepened the concept of "health", which is currently understood as not only the absence of any functional abnormalities of the body, but also a good level of functioning of various systems, resistance to adverse effects and sufficient ability to adapt to various environmental loads, and also the harmony of physical development [11,13,14,15,17].

Education at school, as the most stressful period of life, requires special attention to the health of children and adolescents. The data obtained by the authors indicate a close relationship

between the unfavorable environmental situation and an increase in the frequency of allergies, bronchopulmonary pathology, disorders of neuropsychic and physical development among children and adolescents [2,3,7,8,11,25]. There is evidence in the literature that environmental factors are most often of little intensity, but all in combination are able to create a background for the development of diseases [12,13,15,7,23,30]. The accumulated knowledge testifies to the influence of negative factors on the health of children about the undoubted importance of social and hygienic factors, which include the education and profession of parents, living conditions, material income of the family, the presence of bad habits in parents (alcohol, smoking, family microclimate), sanitary literacy and medical activity of parents, directly the nature of the child's lifestyle [14,15,21,22,23].

A scientifically proven fact is that in children from large and single-parent families, or where at least one parent has bad habits (smoking, alcohol abuse), the incidence is higher [14,16,19,21]. A number of researchers noted that a high level of parental education has a

positive effect on the physical development of their children, and the insufficient level of sanitary and hygienic knowledge of parents on the prevention of children's diseases, rational nutrition, physical culture leads to parents' failure to comply with medical recommendations and prescriptions, etc. [1, 3,7,10,13].

Low social development leads to a deterioration in nutrition, an imbalance in the diet, a lack of vitamins in food, metabolic disorders, a deterioration in indicators of physical development and puberty, a decrease in working capacity and immunity, and an increase in morbidity [15,17,19,20]. Studies have shown that during schooling, overall physical activity drops many times over. The majority of students are not involved in sports sections and circles, and physical education lessons cannot compensate for the lack of movements [8,10,15,17,19,22,24,25]. Schoolchildren spend their free time monotonously, 81.8% of schoolchildren spend on computer games, watching television,

In conditions of defective, inadequate age and health nutrition, schoolchildren are more likely to develop colds and alimentary diseases and have a higher risk for relapses and the chronic course of the disease. This is due to the fact that the body of children during their school years reacts rather sharply to any deficiency and / or imbalance of essential nutrients. In cases of untimely correction of malnutrition, the probability of delaying physical and mental development, weakening of the immune system and disruption of the activity of organs that provide homeostasis in the body increases [17,18,19,20,32,33]. The regularities of the energy balance are well studied. As is known, the basal metabolic rate (BMR) and the daily energy requirement depend on age, sex and body weight. All types of energy costs, including total energy consumption, are expressed as a multiple of basal metabolic rate. The global picture of changes in the energy value of daily food rations in the world indicates that the number of kilocalories consumed per capita per day has decreased. The reduction in the per capita calorie content of diets also affected the

decrease in the energy value of the diets of children and adolescents [9,10,12,13,27].

Increased basal metabolism and energy expenditure in children and adolescents dictate the need for a special approach to organizing their nutrition. It is impossible to allow the consumption of foods that provide the body with energy to be below a certain limit, which provides basal energy metabolism, energy costs for digestion of food, physical and mental activity. The energy expended by the child's body must be constantly compensated with food, otherwise the body is forced to replenish the expended energy at the expense of its internal reserves [1,2,6,10,33,34]. Therefore, it is undeniable that insufficient or excessive caloric content of the diet has an extremely negative impact on the health of school-age children.

Proteins are of particular importance in the nutrition of a growing organism. This is the main plastic material necessary for the formation of tissue and organ cells, the formation of enzyme systems, hormones, and immune bodies. As you know, 10-15% of the energy value of the daily diet should be provided by proteins in children and adolescents. Protein deficiency causes malnutrition, lag in physical development, contributes to the development of beriberi and iron deficiency anemia. There are currently no upper limits for protein intake, but evidence from animal and human studies suggests that excessive protein intake negatively affects kidney function [8,9,13,14,18,29,36]. Fats are essential in nutrition as an energy and structural material. None of the fats, taken separately, can fully meet the needs of the body of children and adolescents in fatty substances. Animal fats, including milk fat, contain significant amounts of saturated fatty acids, one of the risk factors for noncommunicable diseases (NCDs). Vegetable fats contain a lot of polyunsaturated fatty acids (PUFAs) and tocopherols, but do not contain vitamins A and D. However, the diets of children and adolescents should provide no more than 28-30% of energy from fat, with a ratio of 70% animal and 30% vegetable fats. Over the past three decades, per capita consumption of animal fats has increased in developing and developed countries and the prevalence of NCDs has

increased accordingly [16,17,18,19,23,30,32,35].

Carbohydrates are the main sources of energy. These include sugars, oligosaccharides and dietary fiber, which come mainly from plant foods. There is evidence that total sugar intake is generally inversely related to total dietary fat, and moderate sugar content in meals consumed is compatible with the concept of a "diverse and nutritious diet" [3,8,9,10,13,29,34]. Frequent consumption of sugars and other digestible carbohydrates throughout the day increases the risk of tooth decay, especially in the absence of proper oral care. On the other hand, reducing the use of sugars in the diet appears to do little to prevent tooth decay if there is enough fluoride in the diet and dental hygiene is maintained [9,16,18,28]. At the same time, attention is drawn to the fact that unpeeled grains, dairy products, especially cheese, stimulate the outflow of saliva and, thereby, protect teeth from caries [3,4,26,28]. Black tea extract, by increasing the concentration of fluoride in dental plaque, reduces the cariostatic properties of diets high in sugars [19,23,28,30]. The group of dietary fibers includes polysaccharides such as cellulose, hemicellulose, pectins and mucilage, which have different solubility and viscosity characteristics. Fiber favorably affects the metabolism of glucose and cholesterol, as well as intestinal function. The optimal content of dietary fibers (coarse and soft) in the daily diet of children and adolescents should be 15-20 g/day [13,14,16,18].

Vitamins and microelements are among those indispensable biologically active substances, the deficiency of which in the body can be accompanied by a violation of the functions of many physiological systems. It is now recognized that insufficient intake of micronutrients in the body of children is the leading nutritional factor contributing to the aggravation of infectious pathologies and the increase in non-communicable diseases [3,4,6]. Even very small amounts of these nutrients are essential to ensure the normal growth and development of children and maintain health. According to WHO, one third of humanity is at

risk of developing various conditions associated with their deficiency [8,9,10].

Micronutrient deficiency is especially dangerous for a growing organism. Nutrition inadequate in terms of micronutrient content is qualified by the term "hidden hunger" [1,3,4,26,28]. Minerals and trace elements of public health importance include calcium, iron, iodine, zinc, sodium and fluorine. However, depending on the geographical location, environmental factors and national characteristics, copper, selenium and possibly other substances can also be added to them.

Calcium is an important component of the mineral matrix of bones, a regulator of the functioning of the nervous system and muscle cell membranes, and the formation of blood clots. Virtually all calcium (99%) in the human body is in the bones. Its deficiency causes a violation of bone formation - rickets develop in young children, and increased bone fragility and an increase in the risk of dental caries in adolescents. So, from 5 to 16 years old, bone mineral density increases 3 times, therefore, the greatest peak of bone mass growth occurs in adolescence and, accordingly, calcium intake should be higher [15,17,23,28,31]. To level calcium deficiency in nutrition, it is necessary to constantly monitor its content in the diet of schoolchildren. It should be emphasized that the positive effect of eating calcium-rich foods on bone mineralization depends on the content of vitamin C, the inclusion of fruits and vegetables in the diet, the intake of potassium and fibers [3,4,22,31,33]. Since the synergism in metabolism, including calcium, potassium and magnesium, affects the functional and physiological effectiveness of all three elements in ensuring the functions of the nervous tissue and the integrity of the skeleton, a balance between them must always be maintained even if their content in the main products varies greatly [4,30,31].

Iron is a component of hema- and cytochromes and is a cofactor in redox and other key enzymatic reactions. A relatively small decrease in iron stores in the body, for example, corresponding to a blood hemoglobin level of 100 to 120 g/l, can cause cognitive impairment

and mental development in children [10,12,16,19].

Nutritional anemia is a major nutritional problem not only for young children and women of childbearing age, but also from a review of 32 studies performed in developing countries, it follows that anemia occurs in 27% of adolescents. Unlike boys, girls are prone to anemia much more often, which is explained by the peculiarities of the physiology of adolescent girls [1,3,5,8]. The main cause of anemia in children and adolescents is inadequate replenishment of the increased needs of the growing body in iron, mainly due to the low bioavailability of iron from poor diets that include few fruits, vegetables, meat and fish [12,14,15,17]. Vitamins occupy a special place in the development of iron deficiency states, since the presence of ascorbic acid and vitamin B1 affects the absorption and transport of iron, vitamin B6 is involved in heme synthesis, and folic acid and vitamin B12 are involved in erythropoiesis [19,21,22,25,27]. Children and adolescents of school age who suffer from anemia have lower academic performance. A clear illustration of the fact that iron deficiency contributes to a decrease in intellectual abilities can be provided by data indicating an improvement in academic achievement in children and adolescents who received additional iron-containing preparations [2,4,8,29,32].

According to the results of scientific studies of nutrition in our republic, among children aged 12-14 years, 49.4% suffer from iron deficiency anemia. This significantly worsens their health indicators, increases morbidity, reduces working capacity and cognitive activity [25,26,34,35]

Zinc is part of erythrocytes, many enzymes, hormones (including the pancreatic hormone insulin), is involved in the regulation of protein and carbohydrate metabolism, plays an important role in cell reproduction and growth, in the processes of immunogenesis [15,17,23,29]. During puberty, the need for zinc in adolescents is high; if it is insufficient, the processes of growth and puberty are disrupted. At the same time, the activity of the most important digestive enzymes, the function of the

visual analyzer are disrupted, immunity is weakened, sensitivity to infections and colds increases, wounds and scratches heal poorly. With a lack of zinc, taste perceptions are disturbed, the taste of food is poorly felt, and appetite decreases [4,5,19,25,36].

Iodine is a trace element necessary for the synthesis of thyroid hormones, thyroid-stimulating hormones - thyroxine and triiodothyronine, which control the development and functioning of the brain and nervous system, regulate body temperature and energy. According to foreign experts of the International Council for Combating Iodine Deficiency Disorders, the low academic performance of about 20% of children in Central Asian countries is directly related to iodine deficiency. In children with iodine deficiency, there are underestimated motivations for achievements, the implementation of school programs, and general cognitive abilities are reduced [4,19,23,26].

**Conclusions:** Thus, the above material allows us to consider it very promising to study the close relationship between the nature of actual nutrition, nutritional status and alimentary-dependent diseases of children and adolescents.

### Literature

1. Аскарлова Н. К., Рахимова Д. Ж. ФФЕКТИВНОСТЬ СПЕЦИФИЧЕСКОГО ЛЕЧЕНИЯ МЕТАБОЛИЧЕСКИХ НАРУШЕНИЙ ОБУСЛОВЛИВАЮЩИХ СУДОРОГИ В ПЕРИОД НОВОРОЖДЕННОСТИ //Высшая школа: научные исследования. – 2020. – С. 68-71.
2. Боймуродов Х. Т. и др. ВЛИЯНИЕ АБИОТИЧЕСКИХ ФАКТОРОВ НА ЛЁТ ПЧЕЛ И СБОР МЁДА В САМАРКАНДСКОЙ ОБЛАСТИ //INTERNATIONAL RESEARCH FORUM-2022. – 2022. – С. 174-178.
3. Гаппарова Г. Н., Ахмеджанова Н. И. COVID-19 PANDEMIYASI DAVRIDA BOLALARDA PIELONEFRITNING KLINIK-LABORATOR XUSUSIYATI, DIAGNOSTIKASI VA DAVOLASH //ЖУРНАЛ РЕПРОДУКТИВНОГО

- ЗДОРОВЬЯ И УРО-  
НЕФРОЛОГИЧЕСКИХ  
ИССЛЕДОВАНИЙ. – 2022. – Т. 3. – №. 4.
4. Karimov A. A. INSON ORGANIZMINING OG'IR METALLAR BILAN ZARARLANISH YO'LLARI //Academic research in educational sciences. – 2022. – Т. 3. – №. 4. – С. 56-61.
  5. 5.Каримов А. А., Абдумуминова Р. Н. САНИТАРНО-ГЕЛЬМИНТОЛОГИЧЕСКОЕ СОСТОЯНИЕ ОТКРЫТЫХ ВОДНЫХ БАСЕЙНОВ НА ТЕРРИТОРИЯХ НАСЕЛЕНИЯ ВОСТОЧНОГО ЗИРАБУЛАКА //FUNDAMENTAL SCIENCE AND TECHNOLOGY. – 2021. – С. 263-268.
  6. Наимова З. С. и др. Влияние Выбросов Химического Производства На Состояние Здоровья Детей И Подростков //AMALIY VA TIBBIYOT FANLARI ILMIY JURNALI. – 2022. – С. 288-292.
  7. 7.Рахимова Д. Д., Шайхова Г. И. 7-17 YOSHLI MAKTAB OQUVCHILARINING JISMONIY RIVOJLANISHINI VANOLASH //ЖУРНАЛ РЕПРОДУКТИВНОГО ЗДОРОВЬЯ И УРО-НЕФРОЛОГИЧЕСКИХ ИССЛЕДОВАНИЙ. – 2022. – Т. 3. – №. 4.
  8. Рахимова Д. Ж. и др. ОБОСНОВАНИЕ ЛЕЧЕНИЯ ПНЕВМОНИИ КОРОНАВИРУСНОЙ ЭТИОЛОГИИ (COVID-19) КОМБИНАЦИЕЙ ПУЛЬС ТЕРАПИИ С ИММУНОДЕПРЕССАНТАМИ //Re-health journal. – 2020. – №. 4 (8). – С. 59-64.
  9. Рахимова Д. Ж. и др. Изменение состава микроэлементов у детей с хроническим расстройством питания первых двух лет жизни на фоне ОКИ //Научный аспект. – 2020. – Т. 2. – №. 1. – С. 252-258.
  10. Рахимова Д., Аскарлова Н. Гиповитаминозы у военнослужащих //Общество и инновации. – 2021. – Т. 2. – №. 3/S. – С. 90-99.
  11. Raximova D. J., Naimova Z. S., Halimova S. A. 7 YOSHDAN 14 YOSHGACHA BO 'LGAN BOLALARDA OZIQLANISH MUAMMOLARI VA ULARNI OLDINI OLISHDA VITAMIN VA MINERALLARNING O 'RNI //Oriental renaissance: Innovative, educational, natural and social sciences. – 2022. – Т. 2. – №. 4. – С. 380-385.
  12. 12.Раджабов З. Н. РУЗАНИНГ ГИГИЕНИК АХАМИЯТИ //JOURNAL OF INNOVATIONS IN SCIENTIFIC AND EDUCATIONAL RESEARCH. – 2023. – Т. 2. – №. 16. – С. 143-146.
  13. 13.Раджабов З. Н. ЭКОЛОГИЧЕСКИЕ ПРОБЛЕМЫ СОВРЕМЕННОСТИ //O'ZBEKISTONDA FANLARARO INNOVATSIYALAR VA ILMIY TADQIQOTLAR JURNALI. – 2023. – Т. 2. – №. 16. – С. 735-743.
  14. Ризаев Ж. А., Нурмаматова К. Ч., Тухтаров Б. Э. ОРГАНИЗАЦИЯ ЛЕЧЕБНО-ПРОФИЛАКТИЧЕСКОЙ ПОМОЩИ ПРИ АЛЛЕРГИЧЕСКИХ ЗАБОЛЕВАНИЯХ У ДЕТЕЙ //ББК: 51.1 л0я43 С-56 А-95. – С. 113.
  15. 15.Турсунова Д., Раджабов З. ОЦЕНКА РЕПРОДУКТИВНОГО СОСТОЯНИЯ ЖЕНЩИН-РАБОТНИЦ ПРОМЫШЛЕННЫХ ПРЕДПРИЯТИЙ //O'rta Osiyo ta'lim va innovatsiyalar jurnali. – 2022. – Т. 1. – №. 2. – С. 9-11.
  16. 16.Тухтаров Б. Э., Халилов Ш. С., Тангиров А. Л. Оценка статуса фактического питания профессиональных спортсменов //Вестник науки. – 2020. – Т. 1. – №. 1. – С. 32-37.
  17. 17.Тухтаров Б. и др. Оценка статуса гидратации профессиональных спортсменов в условиях жаркого климата //InterConf. – 2020.
  18. 18.Тухтаров Б. Э. Сравнительная оценка биологической ценности среднесуточных рационов питания профессиональных спортсменов Узбекистана //Гигиена и санитария. – 2010. – №. 2. – С. 67-69.
  19. 19.Тухтаров Б. Э. Белковая обеспеченность профессиональных спортсменов, занимающихся борьбой

- кураш //Вопросы питания. – 2008. – Т. 77. – №. 1. – С. 46-47.
20. Тухтаров Б. Э., Абдумуминова Р. Н., Гаппарова Г. Н. ИНСОН САЛОМАТЛИГИГА ТАЪСИР ЭТУВЧИ АГРОФАКТОРЛАРНИНГ ЭКОЛОГО-ГИГИЕНИК ЖИҲАТЛАРИНИ ТАДҚИҚ ЭТИШ //Scientific progress. – 2021. – Т. 2. – №. 4. – С. 80-86.
21. Тухтаров Б., Бегматов Б., Валиева М. Среднесуточные энергетические потребности организма легкоатлетов в зависимости от вида спортивной деятельности, пола и мастерства //Stomatologiya. – 2020. – Т. 1. – №. 3 (80). – С. 84-86.
22. Тухтаров Б. Э. и др. Оценка значимости биологической ценности рационов питания спортсменов тяжелой атлетики в условиях жаркого климата //Журнал" Медицина и инновации". – 2021. – №. 1. – С. 127-130.
23. Тураев Б. Т., Очилов У. У., Икромов П. Х. Частота и структура неврологических нарушений у больных подросткового возраста с психическими расстройствами //VOLGAMEDSCIENCE. – 2021. – С. 462-463.
24. Тураев Б. Т., Икромов П. Х., Жабборов Х. Х. Тревожно-депрессивные расстройства в период беременности //VOLGAMEDSCIENCE. – 2021. – С. 460-461.
25. Умирзаков З. Б., Ризаев Ж. А., Умиров С. Э. ва б. Основы обеспечения адекватной организации профилактики COVID-19/Ж. Биология ва тиббиёт муаммолари //Самарканд. – 2021. – Т. 2. – №. 127. – С. 134-140.
26. Уралов У. Б. БИОЛОГИЧЕСКИЕ РАЗНООБРАЗИЕ И ПУТИ ЕГО СОХРАНЕНИЯ //O'ZBEKISTONDA FANLARARO INNOVATSIYALAR VA ILMIY TADQIQOTLAR JURNALI. – 2022. – Т. 1. – №. 11. – С. 232-236.
27. Уралов У., Баратова Р., Раджабов З. УЛУЧШЕНИЕ САНИТАРИИ ПИТЬЕВОЙ ВОДЫ //Eurasian Journal of Academic Research. – 2023. – Т. 3. – №. 2 Part 2. – С. 176-179.
28. Халманов Н. Т., Элмуродова М. А. Влияние сидерации на плодородие сероземов, рост, развитие и урожайность хлопчатника Зерафшанской долины //Плодородие. – 2019. – №. 2 (107). – С. 33-37.
29. Abdujabbarova Z., qizi Ziyodabegim M., Karimov A. A. WAYS OF HUMAN BODY DAMAGE BY HEAVY METALS //GOLDEN BRAIN. – 2023. – Т. 1. – №. 6. – С. 63-65.
30. Abdumuminova R. N., Sh B. R., Bulyaev Z. K. On The Importance Of The Human Body, Nitrates //The American Journal of Medical Sciences and Pharmaceutical Research. – 2021. – Т. 3. – №. 04. – С. 150-153.
31. Baratova R. S. The Importance Of A Healthy Lifestyle In Maintaining The Health Of The Population //Eurasian Research Bulletin. – 2023. – Т. 17. – С. 236-240.
32. Boysin K. et al. Influence of Xenobiotics on Organisms and Methods of their Detoxification //Web of Scholars: Multidimensional Research Journal. – 2022. – Т. 1. – №. 7. – С. 81-84.
33. Corshanbiyevich X. N., Narmuratovich R. Z., Ergashovich K. I. TOGRI OVATLANISH MEYORLARI //Galaxy International Interdisciplinary Research Journal. – 2022. – Т. 10. – №. 11. – С. 160-163.
34. Chorshanbiyevich K. N., Eshnazarovich T. B. The State of Protein Availability of Professional Athletes Involved in Kurash Wrestling //Eurasian Research Bulletin. – 2023. – Т. 17. – С. 246-250.
35. Eshnazarovich T. B., Norbuvaevna A. R., Nurmuminovna G. G. Research of ecological and hygiene aspects of agrofactors affecting human health //Web of Scientist: International Scientific Research Journal. – 2021. – Т. 2. – №. 08. – С. 7-11.
36. Eshnazarovich T. B., Usmonovna V. M., Chorshanbiyevich K. N. Some Indicators of Protein Security of Professional Athletes-Young Men Engaged in Kurash Wrestling

- //Eurasian Research Bulletin. – 2023. – T. 17. – C. 241-245.
37. Gapparova G. N. Clinical and laboratory diagnosis of uricosuric nephropathy in children //Web of Scientist: International Scientific Research Journal. – 2022. – T. 3. – №. 5. – C. 2064-2070.
  38. Gapparova G., Akhmedjanova N. CLINICAL AND LABORATORY FEATURES, DIAGNOSIS AND TREATMENT OF PYELONEPHRITIS IN CHILDREN DURING THE COVID-19 PANDEMIC //Академические исследования в современной науке. – 2022. – Т. 1. – №. 17. – С. 186-187.
  39. Gapparova G. N. Covid-19 Pandemiyasi Davrida Bollard Pielonefritning Klinikolaborator Xususiyatlari, Diagnostikasi //Texas Journal of Multidisciplinary Studies. – 2022. – Т. 4. – С. 127-129.
  40. Gapparova G., Akhmedjanova N. CLINICAL AND LABORATORY CHARACTERISTICS, DIAGNOSIS OF PYELONEPHRITIS IN CHILDREN UNDER COVID-19 PANDEMIC CONDITIONS //Theoretical aspects in the formation of pedagogical sciences. – 2022. – Т. 1. – №. 6. – С. 114-114.
  41. Islamovna S. G., Jurakulovna R. D., Gulistan K. Current state of the problem of rationalization of schoolchildren's nutrition. – 2022.
  42. Joint F. A. O. et al. Soils Newsletter, Vol. 44, No. 2, January 2022. – 2022.
  43. Jurakulovna R. D. et al. EFFECTIVENESS OF STREPTOKINASE AND PROPOFOL DRUGS IN PATIENTS WITH CORONAVIRUS DELTA STRAW (EXAMPLES FROM PRACTICE). – 2021.
  44. Jurakulovna R. D. Analysis Of Distribution Of Vitamins, Macro And Micro Elements Deficiency Among Children And Adolescents In Samarkand Region, According To Clinical Symptoms //Eurasian Research Bulletin. – 2023. – Т. 17. – С. 229-235.
  45. Karimov A. A. ACCUMULATION OF HEAVY METALS IN PLANTS //GOLDEN BRAIN. – 2023. – Т. 1. – №. 5. – С. 148-157.
  46. Khitaev B. A. et al. Hematological Indicators under the Influence of Zinc Sulfate in the Experiment //Web of Scholars: Multidimensional Research Journal. – 2022. – Т. 1. – №. 7. – С. 77-80.
  47. Kholmonov N., Matluba E. Siderations Improve the Chemical Properties of Gray-Earth Soils in Uzbekistan //Eurasian Journal of Research, Development and Innovation. – 2022. – Т. 7. – С. 70-73.
  48. Matluba E. Improvement Of Ecological Status Of Soil In Organic Agriculture //JournalNX. – Т. 6. – №. 08. – С. 66-69.
  49. Mahramovna M. M., Chorshanbievich K. N., Ergashovich K. I. HIGHER EDUCATION INSTITUTIONS STUDENTS HEALTHY LIFESTYLE DEVELOPMENT //Galaxy International Interdisciplinary Research Journal. – 2023. – Т. 11. – №. 2. – С. 410-413.
  50. Maxramovna M. M. et al. PEDAGOGICAL ESSENCE OF DEVELOPING A CULTURE OF HEALTHY LIFESTYLE FOR YOUNG PEOPLE //Web of Scientist: International Scientific Research Journal. – 2022. – Т. 3. – №. 10. – С. 1234-1238.
  51. Murodulloevna Q. L., Maxramovna M. M., Chorshambievich K. N. STUDYING THE EFFECTS OF HEAVY METALS ON HUMAN HEALTH //Conference Zone. – 2022. – С. 147-149.
  52. Naimova Z. S., Kurbanova X. A., Mallaeva M. M. INFLUENCE OF XENOBIOTICS ON THE FUNCTIONAL STATUS OF THE CARDIORESPIRATORY SYSTEM IN CHILDREN AND ADOLESCENTS //Eurasian Journal of Medical and Natural Sciences. – 2022. – Т. 2. – №. 5. – С. 138-140.
  53. Naimova Z. S. Xenobiotics as a Risk Factor for Kidney and Urinary Diseases in Children and Adolescents in Modern Conditions //Eurasian Research Bulletin. – 2023. – Т. 17. – С. 215-219.
  54. Naimova Z. et al. Hygienic Assessment Of Emission Influence From A Chemical Plant On Population's Household

- Conditions, Well-Being And Health //The American Journal of Medical Sciences and Pharmaceutical Research. – 2021. – T. 3. – №. 01. – C. 76-80.
55. Norbuvaevna A. R. The importance of nitrates in food safety //Conference Zone. – 2022. – C. 148-150.
56. Narbuvaevna A. R., Murodulloyevna Q. L., Abduraxmanovna U. N. Environmentally friendly product is a Pledge of our health! //Web of Scientist: International Scientific Research Journal. – 2022. – T. 3. – №. 02. – C. 254-258.
57. Narbuvaevna A. R., Karimovich B. Z., Mahramovna M. M. Improving Food Safety and Improving the Fundamentals of Reducing the Negative Effects on The Environment //Eurasian Research Bulletin. – 2022. – T. 5. – C. 41-46.
58. Narbuvaevna A. R. et al. Explore Ecological and Hygiene Assignment of Soil Contamination With Heavy Metals //Central Asian Journal of Medical and Natural Science. – 2022. – T. 3. – №. 3. – C. 107-111.
59. Norbuvaevna A. R., Maxramovna M. M., Karimovich B. Z. Studying the influence of agricultural factors on the quality of the fruit of Peach plants //Web of Scientist: International Scientific Research Journal. – 2022. – T. 3. – №. 4. – C. 1353-1357.
60. 60. Norbuvaevna A. R. et al. Ecological and hygienic application of the accumulation of toxic substances in soil and food products under the influence of agricultural factors //ACADEMICIA: An International Multidisciplinary Research Journal. – 2021. – T. 11. – №. 11. – C. 836-840.
61. 61. Normamatovich F. P., Sagatbaevich K. A., Chorshanbievich K. N. A PLACE IN THE NUTRITION OF THE POPULATION OF UZBEKISTAN FROM NATIONAL CONFECTIONERY, "NAVAT" //World Bulletin of Public Health. – 2022. – T. 10. – C. 79-80.
62. Nurmatovich F. P., Jurakulovna R. D. The importance of the international hassp system in the production of quality and safe confectionery products //ACADEMICIA: An International Multidisciplinary Research Journal. – 2021. – T. 11. – №. 10. – C. 1184-1186.
63. Nurmuminovna G. G. In the post period of covid-19 diseasespecific clinical-laboratory properties and diagnosis of pyelonephritis in children //ACADEMICIA: An International Multidisciplinary Research Journal. – 2022. – T. 12. – №. 4. – C. 55-58.
64. 64. Nurmuminovna G. G., Abdurakhmanovna U. N. CLINICAL AND LABORATORY FEATURES OF NEPHROPATHY IN CHILDREN WITH DIABETES MELLITUS //Open Access Repository. – 2023. – T. 9. – №. 2. – C. 116-122.
65. Ra A. et al. INVESTIGATE SOIL CONTAMINATION WITH HEAVY METALS WHILE COMMUNITY HEALTH //Web of Scientist: International Scientific Research Journal. – 2022. – T. 3. – №. 4. – C. 1358-1363.
66. 66. Sh B. R. et al. Environmentally Friendly Product is a Pledge of Our Health //Texas Journal of Multidisciplinary Studies. – 2022. – T. 9. – C. 48-50.
67. 67. Sanayeva S. B. et al. ABOUT PESTS OF GOURDS IN THE SAMARKAND REGION //GOLDEN BRAIN. – 2023. – T. 1. – №. 6. – C. 66-68.
68. 68. Tuxtarov B. E., Elmurodova L. X. Q. O'ZBEKISTONDA TERI LEYSHMANIOZINING TARQALISHI VA UNING OLDINI OLISH CHORATADBIRLARI //Scientific progress. – 2023. – T. 4. – №. 2. – C. 42-48.
69. VITAMIN M. V. A. U. O. O., O'RNI V. A. M. Raximova Durdona Juraqulovna. – 2022.
70. Zhurakulovna R. D., Shomuratovna B. R., Narmuminovna G. G. HYGIENIC RECOMMENDATIONS FOR THE PREVENTION OF SCHOOL MYOPIA AND OTHER VISUAL IMPAIRMENTS IN CHILDREN OF PRIMARY SCHOOL AGE //American Journal of Interdisciplinary Research and Development. – 2022. – T. 6. – C. 29-38.



71. Zhurakulovna R. D. ASSESSMENT OF THE ACTUAL NUTRITION OF CHILDREN AND ADOLESCENTS TAKING INTO ACCOUNT REGIONAL PECULIARITIES //E Conference Zone. – 2022. – С. 41-44.
72. Zhurakulovna R. D. NUTRITION OF CHILDREN AS A FACTOR DETERMINING THE HEALTH OF FUTURE GENERATIONS //Conferencea. – 2022. – С. 41-42.
73. Халманов Н., Элмуродова М. EFFECT OF GREEN MANURE APPLICATION ON SOIL FERTILITY, GROWTH, DEVELOPMENT AND YIELD OF COTTON IN TYPICAL SANDY LOAM SIEROZEM SOIL CONDITIONS OF ZARAFSHAN VALLEY //Наука и мир. – 2019. – Т. 1. – №. 2. – С. 75-77.