

**BASED ON THE HACCP SYSTEM, STUDY THE CAUSES OF IRON DEFICIENCY IN SCHOOLCHILDREN**

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**Abstract:** The symptoms of iron deficiency in children are different, precisely, the development of iron deficiency anemia, headaches, dizziness, decreased concentration and memory, slowing mental and physical development, extremely high levels of excitability, and poor cognitive activity. These symptoms lead to a lag in psychomotor development, an increase in overall morbidity, and a higher risk of developing a malignant tumor. According to data collected in recent years, about 1.7 billion people suffer from anemia.

**Keywords:** iron deficiency anemia, school-age children, consumption, diet, hygienic assessment.

**НА ОСНОВЕ СИСТЕМЫ НАССР ИЗУЧИТЬ ПРИЧИНЫ ДЕФИЦИТА ЖЕЛЕЗА У ШКОЛЬНИКОВ**

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**Аннотация:** Симптомы дефицита железа у детей различны, точнее это развитие железодефицитной анемии, головные боли и головокружение, снижение концентрации внимания и памяти, замедление умственного и физического развития, чрезвычайно высокий уровень возбудимости и плохая когнитивная активность. Эти симптомы приводят к отставанию в психомоторном развитии, увеличению общей заболеваемости и более высокому риску развития злокачественной опухоли. Согласно данным, собранные за последние годы, около 1,7 миллиарда человек страдают от анемии.

**Ключевые слова:** железодефицитная анемия, дети школьного возраста, потребление, рацион, гигиеническая оценка.

**Relevance of the topic:** In the current era of new development, it is extremely important to improve the health status of the population of all age groups, prevent nutrition-related diseases, as well as malnutrition leading to iron deficiency, gastrointestinal diseases, obesity and diabetes. These problems are largely associated with impaired micronutrition status in clients. According to the World Health Organization (WHO), more than 28-32% of the world's population suffers from iron deficiency (ID), and most of them are children and women. The incidence of anemia largely depends on lifestyle, diet and the quality of available medical care.

According to WHO, about 3.7 billion people suffer from latent iron deficiency, and 1.7 billion from overt anemia. According to recent data, about 1.7 billion people suffer from anemia, which is present in all countries, but its prevalence depends on socio-economic conditions, income levels and dietary habits.

Risk groups include newborns, young children, adolescents, women of childbearing age, and pregnant and nursing mothers.

Assessing the nutrition and macro- and micronutrient status of schoolchildren, as well as the prevention of related diseases, are important problems in the field of preventive medicine. Research is being conducted around the world to optimize the effective treatment of students with iron deficiency through a healthy diet and the use of local plant foods.

In our country, with the correct implementation of the international HACCP system, the development of the medical field based on world standards, including the diagnosis and treatment of nutrition-related diseases, as well as the prevention of consequences, becomes a priority. Based on these objectives, providing the population with high-quality food and compliance with healthy eating standards, as well as optimizing the treatment of students with iron deficiency using local food and vegetables remain relevant.

**Goal:** The goal is to properly implement and optimize the treatment of iron deficiency anemia among schoolchildren through the consumption of food, fruits and herbal products using the international HACCP system. It is also planned to develop comprehensive hygiene measures to prevent iron deficiency.

**Object of study:** Pupils of the 12th school living in rural conditions of the Samarkand region were selected as the object of study for a hygienic assessment of the daily diet in different seasons of the year.

**Results of the study:** During the study of the health status of schoolchildren, their physical development and morbidity levels, all students who underwent a medical examination were monitored using the international HACCP system. The results obtained showed the presence of various changes in the diet of schoolchildren, which is associated with a disordered eating pattern.

About 22-26% of monitored students skip breakfast, and 30-38% eat only sweet tea, bread with butter or margarine and simple confectionery for breakfast. Approximately 23-26% of students eat milk porridge, sweet tea, bread with butter or margarine for breakfast, and 14-20% eat home-cooked meals with sweet tea and bread for dinner.

Students' breakfast does not meet hygienic requirements, since dairy products (milk, milk porridge, cream, cottage cheese, cheese) are consumed in insufficient quantities, which can lead to the development of diseases. This negatively affects schoolchildren's performance during the day and their learning of educational material.

Approximately 75-80% of students receive a second breakfast at school, which includes buns or a variety of baked goods. On some days they may also eat samosas with pumpkin, potatoes or meat, as well as curd and nut buns. Coca-Cola, Fanta and other carbonated drinks are often consumed as drinks, which does not meet hygienic requirements.

During lunch, students often eat fast food, which also does not meet sanitary standards. Second-shift students eat lunch at home, and often have tea, biscuits or carbonated drinks at school. First-shift students also sometimes have lunch at home without eating time.

It is important to note that the discrepancy between the diet established at home and the norms and hygienic requirements can negatively affect not only the cellular composition of the diet, but also the functional state, including the formation of teeth, and also contribute to the development of iron and iodine deficiency.

The conclusion can be drawn that in order to prevent anemia among children of preschool and school age, as well as in future segments of the population, it is

necessary to fully satisfy the nutritional needs of schoolchildren both at home and at school. This includes ensuring there is enough variety of food throughout the day.

In our country, the development of the medical field must meet international standards, which includes the diagnosis, treatment and prevention of diseases associated with poor nutrition and impaired nutritional status.

#### **References:**

1. Файзибоев Пирмамат Нормаматович, Ибрагимова Файруза Собировна, Махмараймов Фузаил Ильхомович, Абдурахмонова Шахноза Сокиевич, & Файзибоев Бекзод Пирмаматович. (2024). ГИГИЕНИЧЕСКАЯ ОЦЕНКА КРИТЕРИЕВ БЕЗОПАСНОСТИ И ПИЩЕВОЙ ЦЕННОСТИ ПЛОДООВОЩНОЙ ПРОДУКЦИИ. INTERNATIONAL JOURNAL OF RECENTLY SCIENTIFIC RESEARCHER'S THEORY, 2(1), 71–76.
2. Файзибоев П. Н. ИНСОН ОБҚАТЛАНИШИДА ҚАНДОЛАТ МАҲСУЛОТЛАРИНИНГ АҲАМИЯТИ //GOLDEN BRAIN. – 2023. – Т. 1. – №. 6. – С. 47-51.
3. Файзибоев П. Н. и др. АҲОЛИНИНГ ТЎҒРИ ОБҚАТЛАНИШИДА МАҲСУЛОТЛАРИНИНГ БИОЛОГИК ҚИЙМАТИНИНГ ТУТГАН ЎРНИ //INTERNATIONAL JOURNAL OF RECENTLY SCIENTIFIC RESEARCHER'S THEORY. – 2023. – Т. 1. – №. 7. – С. 215-220.
4. Файзибоев П. Н. и др. ОЗИҚ-ОБҚАТМАҲСУЛОТЛАРИДАН БАКТЕРИАЛ ЗАҲАРЛАНИШНИ ОЛДИНИ ОЛИШДА НАССР ХАЛҚАРО ТИЗИМИНИ ТУТГАН ЎРНИ //INTERNATIONAL JOURNAL OF RECENTLY SCIENTIFIC RESEARCHER'S THEORY. – 2023. – Т. 1. – №. 7. – С. 226-229.
5. Файзибоев П. Н. и др. САБЗАВОТ, ПОЛИЗ МАҲСУЛОТЛАРИНИ ЕТИШТИРИШ ЖАРАЁНЛАРИНИ ГИГИЕНИК БАҲОЛАШ //INTERNATIONAL JOURNAL OF RECENTLY SCIENTIFIC RESEARCHER'S THEORY. – 2023. – Т. 1. – №. 7. – С. 221-225.
6. Файзибоев П. Н. и др. ЎЗБЕКИСТОН ШАРОИТИДА ЭХИНОКОККОЗ КАСАЛЛИГИ БИЛАН КАСАЛЛАНИШНИНГ ЭПИДЕМИОЛОГИК ТАҲЛИЛИ //INTERNATIONAL JOURNAL OF RECENTLY SCIENTIFIC RESEARCHER'S THEORY. – 2023. – Т. 1. – №. 7. – С. 230-233.
7. Файзибоев П. Н. ЎЗБЕКИСТОН АҲОЛИСИНИНГ МИЛЛИЙ ҚАНДОЛАТ МАҲСУЛОТЛАРИ БИЛАН ОЗИҚЛАНИШИДА “НОВВОТ” НИНГ

ТУТГАН ЎРИН //Журнал гуманитарных и естественных наук. – 2023. – №. 3 [2]. – С. 167-170.

8. Файзибоев П. Н. и др. ТЕХНОЛОГИЯ ПРИГОТОВЛЕНИЯ ИЗ НАЦИОНАЛЬНЫХ КОНДИТЕРСКИХ ИЗДЕЛИЙ НАВВАТА //INTERNATIONAL JOURNAL OF RECENTLY SCIENTIFIC RESEARCHER'S THEORY. – 2023. – Т. 1. – №. 6. – С. 149-153.
9. Файзибоев П. Н. ҚАНДОЛАТ МАҲСУЛОТЛАРИНИНГ ЗАМОНАВИЙ ТЕХНОЛОГИЯЛАРДА ИШЛАБ ЧИҚАРИШНИ ТАШКИЛЛАШТИРИШ //INTERNATIONAL JOURNAL OF RECENTLY SCIENTIFIC RESEARCHER'S THEORY. – 2023. – Т. 1. – №. 3. – С. 290-295.
10. Файзибоев П. Н. и др. ЗНАЧЕНИЕ КОНДИТЕРСКОЙ ПРОДУКЦИИ В ПИТАНИИ ЧЕЛОВЕКА //INTERNATIONAL JOURNAL OF RECENTLY SCIENTIFIC RESEARCHER'S THEORY. – 2023. – Т. 1. – №. 3. – С. 282-289.
11. Файзибоев П. Н., Ахророва М. Ш. TISH KARIESI BILAN KASALLANGAN VA SOG 'LOM BOLALARNING OVQATLANISHINI VAHOLASH //ЖУРНАЛ СТОМАТОЛОГИИ И КРАНИОФАЦИАЛЬНЫХ ИССЛЕДОВАНИЙ.– 2023–Т. 4. – №.1.
12. Normamatovich F. P. PRODUCTION TECHNOLOGY OF NATIONAL CONFECTIONERY" NOVOT" //Academia Science Repository. – 2023. – Т. 4. – №. 04. – С. 794-798.
13. Faiziboev Pirmamat Normamatovich, & Ochilov Sardor Abduganievich. (2023). METHOD OF PREPARING NOVOT FROM NATIONAL CONFECTIONERY PRODUCTS IN UZBEKISTAN. *INTERNATIONAL JOURNAL OF RECENTLY SCIENTIFIC RESEARCHER'S THEORY*, 1(6), 160–164. Retrieved from <https://uzresearchers.com/index.php/ijrs/article/view/830>
14. Fayziboev Pirmamat Normamatovich. (2023). PRODUCTION TECHNOLOGY OF NATIONAL CONFECTIONERY "NOVOT". *Academia Science Repository*, 4(04), 794–798. Retrieved from <https://academiascience.com/index.php/repo/article/view/131>
15. Soatov , M. M. o'g'li, & Elmurodova , L. X. qizi. (2023). SUVNI KOAGULYATSIYA QILISHNING GIGIYENIK AHAMIYATI. *GOLDEN*

*BRAIN*, 1(30), 67–71. Retrieved from <https://researchedu.org/index.php/goldenbrain/article/view/5194>

16. Soatov , M. M. o‘g‘li. (2023). BOLALAR VA O‘SMIRLARDA TEMIR TANQISLIGI ANEMIYASI. *GOLDEN BRAIN*, 1(10), 139–145. Retrieved from <https://researchedu.org/index.php/goldenbrain/article/view/3019>
17. Faiziboev Pirmamat Normamatovich, Ibragimova Fairuza Sobirovna, Makhmaraimov Fuzail Ilkhomovich, Abdurakhmonova Shakhnoza Sokievich, & Fayziboev Bekzod Pirmamatovich. (2024). HYGIENIC ASSESSMENT OF CRITERIA FOR SAFETY AND NUTRITIONAL VALUE OF FRUITS AND VEGETABLES. *INTERNATIONAL JOURNAL OF RECENTLY SCIENTIFIC RESEARCHER’S THEORY*, 2(1), 77–81.
18. Faiziboev Pirmamat Normamatovich, Fakhritdinov Shokhrukh Fakhritdinovitch, Roziklov Dilshod Allayorovich, Obloberdiev Okhunjon O'tkirovich, & Fayziboev Bekzod Pirmamatovich. (2024). ESTIMATES OF CONSUMPTION OF CONFECTIONERY PRODUCTS IN THE AVERAGE DAILY DIETS OF THE POPULATION IN THE SUMMERAUTUMN SEASON. *INTERNATIONAL JOURNAL OF RECENTLY SCIENTIFIC RESEARCHER’S THEORY*, 2(1), 142–149.
19. Файзибоев Пирмамат Нормаматович, Нарзуллаева Гулмира Тоштемир кизи, Фахритдинов Шохрух Фахритдин ўғли, & Файзибоев Бекзод Пирмамат ўғли. (2024). САБЗАВОТ ВА ПОЛИЗ МАҲСУЛОТЛАРИНИНГ ХАВФСИЗЛИК МЕЗОНЛАРИ ВА ОЗУҚАВИЙ ҚИЙМАТЛИЛИГИНИ ГИГИЕНИК БАҲОЛАШ. *INTERNATIONAL JOURNAL OF RECENTLY SCIENTIFIC RESEARCHER’S THEORY*, 2(1), 136–141.
20. Файзибоев Пирмамат Нормаматович, Ибрагимова Файруза Собировна, Махмараймов Фузаил Ильхомович, Абдурахмонова Шахноза Сокиевич, & Файзибоев Бекзод Пирмаматович. (2024). ГИГИЕНИЧЕСКАЯ ОЦЕНКА КРИТЕРИЕВ БЕЗОПАСНОСТИ И ПИЩЕВОЙ ЦЕННОСТИ ПЛОДООВОЩНОЙ ПРОДУКЦИИ. *INTERNATIONAL JOURNAL OF RECENTLY SCIENTIFIC RESEARCHER’S THEORY*, 2(1), 71–76.