MODERN MEDICINE AND PRACTICE
https://inovatus.es/index.php/ejmmp
EUROPEAN JOURNAL OF MODERN MEDICINE AND PRACTICE
Vol. 3 No. 12 (Dec - 2023) EJMMP ISSN: 2795-921X

# THE STATE OF THE PROBLEM OF IODINE DEFICIENCY ZONES, THE VIEW OF AN ENDOCRINOLOGIST

***Ahmedov Nodir Ilxomovich***
*Bukhara State Medical Institute, Bukhara, Republic of Uzbekistan*

**Abstract:** Prevention of iodine-deficient diseases is one of the priority areas of public health in most countries of the world. About 2 billion people live in conditions of natural iodine deficiency. It is known that the greatest danger is an insufficient intake of iodine in the body at the stage of intrauterine development and in early childhood. Changes caused by iodine deficiency during these periods of life are manifested by irreversible defects in the intellectual and physical development of children. However, the entire spectrum of iodine deficiency pathology is wide and extends from reproductive disorders to specific thyroid diseases. According to WHO, in 96 countries, the problem of iodine deficiency in the diet has already been resolved thanks to the action of legislative and regulatory acts on mandatory salt iodization. Only 13 countries that do not have such laws, including Russia, continue to live in conditions of uncompensated iodine deficiency. In this regard, the problem of iodine deficiency is extremely relevant for many countries. It is necessary to conduct mass and individual iodine prophylaxis with the use of drugs containing a physiological dose of iodine (such as, for example, Iodomarin) in high-risk groups on a legislative basis.

**Key words:** iodine deficiency, goiter, mental development, iodine deficiency diseases, cretinism, iodine prevention.

**Introduction**. Iodine is an essential structural component of thyroid hormones, which in turn ensure the full development and functioning of the human body. The main natural sources of iodine for humans are products of plant and animal origin, drinking water, and air. The lack of iodine in the soil leads to a decrease in the content of this trace element in the food produced in this area, and people who consume them suffer from iodine deficiency (YD). Iodine deficiency has numerous negative consequences for the development and formation of the human body. Disorders caused by iodine deficiency are combined by the term “iodine deficiency diseases "(IDD). 1) and are an extremely urgent medical and social problem [1, 2]. It is known that the greatest danger is an insufficient intake of iodine in the body at the stage of intrauterine development and in early childhood. Changes caused by YD during these periods of life are manifested by irreversible defects in the intellectual and physical development of children. However, the entire spectrum of iodine deficiency pathology is wide and extends from reproductive disorders to specific thyroid diseases, including functional autonomy and iodine-induced thyrotoxicosis as one of the most severe manifestations of IDD in regions with different levels of iodine deficiency in the diet. Prevention of iodine-deficient diseases is one of the priority areas of public health in most countries of the world. About 2 billion people live in conditions of natural iodine deficiency. It is known that the greatest danger is an insufficient intake of iodine in the body at the stage of intrauterine development and in early childhood. Changes caused by

iodine deficiency during these periods of life, irreversible defects in the intellectual and physical development of children are manifested. However, the entire spectrum of iodine deficiency pathology is wide and extends from reproductive disorders to specific thyroid diseases. According to WHO, in 96 countries, the problem of iodine deficiency in the diet has already been resolved thanks to the action of legislative and regulatory acts on mandatory salt iodization. Only 13 countries that do not have such laws, including Russia, continue to live in conditions of uncompensated iodine deficiency. In this regard, the problem of iodine deficiency is extremely relevant for many countries. It is necessary to conduct mass and individual iodine prophylaxis with the use of drugs containing a physiological dose of iodine (such as, for example, Iodomarin) in high-risk groups on a legislative basis. [3, 4]. IDD is based on inadequate production of thyroid hormones due to insufficient intake of iodine in the body.For more than 25 years, universal salt iodization (UIC) has been carried out in many countries in order to prevent diseases caused by iodine deficiency [20,22]. Despite the obvious success in eliminating IDD, WHO experts emphasize that this problem is still far from being solved. According to WHO, more than a third of the world's inhabitants live in conditions of natural iodine. Of these, about 31% of school-age children are not protected from YD, including Europe, where their number is significantly higher than 52% [25,26]. In the Republic of Uzbekistan, iodine deficiency (of varying severity) was detected almost throughout the country, and an increase in the frequency of cretinism cases associated with intrauterine iodine deficiency was again registered [6].Assessment of iodine intake The daily requirement for iodine depends on the age and physiological state of a person and is [7] 90 mcg - for children under 5 years of age; 120 mcg - forchildren from 5 to 12 years of age; 150 mcg - for children from 12 years of age and adults; 250 mcg-for pregnant and lactating women. The assessment of iodine consumption by the population is based on the median concentration of iodine in the urine (median of ioduria, MIU) of schoolchildren aged 8-10 years. This indicator is determined to assess the epidemiological situation (Table 1). 2) and monitoring programs for the prevention of diseases caused by iodine deficiency [8]. Spectrum of iodine deficiency pathology (WHO, 2007) Intrauterine period Abortions Stillbirth Congenital anomalies Increased perinatal and child mortality Endemic cretinism (mental retardation, deaf-mute, strabismus, hypothyroidism, dwarfism) Psychomotor disorders Newborns Neonatal hypothyroidism Mental retardation Increased uptake of radioactive iodine in nuclear disasters Children and adolescents Goiter (Subclinical) hypo- and hyperthyroidism Mental and physical development disorders Increased uptake of radioactive iodine in nuclear disasters Adults Goiter and its complications Hypothyroidism Spontaneous hyperthyroidism elderly Iodine-induced thyrotoxicosis . The intake of iodine in the thyroid gland depends on its concentration in the blood. The concentration of iodine in the blood plasma with normal intake of iodine in the body is about 10-15 mcg/l. About 2/3 of the iodine that enters the body is excreted by the kidneys (iodine can also be excreted by the mammary, salivary and sweat glands), the rest is transferred to the thyroid gland with blood. Iodine enters the thyroid gland only in an inorganic form. Although data on the concentration of iodine in the thyroid gland vary widely, the real value for a person can be considered 0.6 mg/g, i.e. the total content of iodine is 12 mg in a normal thyroid weighing 20 g [12].Iodine is not only a component of thyroid hormones, but also a regulator of hormone production and proliferation of thyrocytes. If sufficient iodine supply is provided, the thyroid gland captures 60-80 micrograms of iodine daily, which allows maintaining a sufficient level of hormone synthesis and compensating for the iodine consumed on them [13, 14]. With a lower intake of this trace element, its content in the thyroid gland decreases, which in most people is accompanied by the development of goiter [14]. In addition, with prolonged and severe iodine deficiency, thyroid function gradually decreases, hypothyroidism and its complications develop. Criteria for assessing the iodine supply of the population [8, 9] Median

Consumption of ioduria, iodine Epidemiological situation in the region mcg/l Schoolchildren <20 Insufficient Severe iodine deficiency 20-49 Insufficient moderate iodine deficiency 50-99 Insufficient mild iodine deficiency 100-199 Adequate Normal iodine supply 200-299 More than adequate Risk of developing iodine -induced thyrotoxicosis within 5-10 years after introduction of universal salt iodization in susceptible groups >300 Excessive risk of adverse health effects (iodine-induced hypothyroidism, autoimmune thyroid diseases) Pregnant women <150 Insufficient 150-249 Adequate 250-499 More than adequate >500 Over-feeding women <100 Insufficient >100 Adequate Children under 2 years of age <100 Insufficient >100 Adequate Excessive iodine intake means consumption in excess of what is necessary for предупреж the prevention and control of iodinedeficiency.During pregnancy, the need for iodine increases by more than 50%. This is due to: 1) increased activity of the mother's thyroid gland to supply her with fetal hormones in the first trimester (while the fetal thyroid gland is not functioning); 2) the need to supply iodine to the fetal thyroid gland that is already functioning in the second and third trimesters; 3) increased renal clearance of iodine during pregnancy [15, 16]. If a woman living for a long time in conditions of severe iodine deficiency becomes pregnant, then its insignificant reserves in the body are quickly depleted and the woman develops hypothyroidism, which has an extremely negative impact not only on her health, but also on the health of the unborn child. This explains why endemic goiter and many other conditions associated with insufficient iodine intake are relevant for modern healthcare. Iodine deficiency diseases in the world and Russia: epidemiology and effectiveness of preventive measures The experience of many countries around the world shows that the most effective way to solve the problem of iodine deficiency is to conduct adequate mass and individual prevention of iodine deficiency (with iodized salt and iodine medications, respectively) [17]. In those countries that have managed to eliminate iodine deficiency, universal mandatory salt iodization is enshrined in law [18]. Over the past decade, the number of countries with uncompensated iodine deficiency in the world has decreased from 54 to 30, and the number of countries with adequate dietary iodine in take has increased from 67 to 112. The quality of iodized salt has been improved: the average level of salt iodization has been increased from 23 to 40 mg of iodine per 1 kg of salt, and instead of for unstable potassium iodide, only stable potassium iodate was used. In this regard, it was possible to expect a decrease in the prevalence of goiter among students of all groups and a normal consumption of iodine by the population. However, a comparative analysis of data from epidemiological studies conducted in the 1990s with the results of monitoring in 2003-2010 did not reveal a significant positive trend [26]. In all the surveyed subjects of the Russian Federation, with the exception of several regions, the population's provision with iodized salt did not correspond to the normal level (Table 4). When analyzing the frequency distribution of iodine concentration in urine samples, it was found that only every fourth schoolchild (25.2%) from the surveyed regions has an ioduria levelex ceeding 100 micrograms/l, approximately equal to 1/3 of children have mild to moderate iodine deficiency (Figure) [26, 27]. The state program of mass salt iodization, launched in Russia in 2000, did not produce the desired results. The use of iodized salt is voluntary (the proportion of families who consume iodized salt does not exceed 30-40%). Iodine medications are not fully used in groups at increased risk of developing IDD. Current population

**References**

1. Ilxomovich A. N. Semirish Va Gipoterioz Kasalliklarining O’zaro Bog’liqlik Sabablari //AMALIY VA TIBBIYOT FANLARI ILMIY JURNALI. – 2023. – Т. 2. – №. 12. – С. 101-106.
2. Ilkhomovich A. N. Pancreas in a Patient with Diabetes Mellitus the Current State of the Issue //American Journal of Pediatric Medicine and Health Sciences (2993-2149). – 2023. – Т. 1. – №. 9. – С. 501-506.

3. Rakhmatova D. B., Rakhmatova D. B. " Main" Symptoms and leading clinical options for the flow of acute coronary syndromes in women //Asian Journal of Multidimensional Research (AJMR). – 2019. – Т. 8. – №. 11. – С. 69-74.
4. Rakhmatova D. B. Analysis of the risk factors of Chd in persons over 60 years among the population of the city of Bukhara //Asian studies. Индия. – 2019. – Т. 1. – С. 33-38.
5. Rakhmatova D. B., Zikrillaev F. A. DETERMINE THE VALUE OF RISK FACTORS FOR MYOCARDIAL INFARCTION //FAN, TA'LIM, MADANIYAT VA INNOVATSIYA. – 2022. – Т. 1. – №. 4. – С. 23-28.
6. Рахматова Д. Б., Аслонова М. Р. Современные методы медицинской реабилитации пациентов с артериальной гипертензией //Биология и интегративная медицина. – 2018. – №. 3. – С. 110-117.
7. Рахматова Д. Б. и др. ОЦЕНКА ФАКТОРОВ РИСКА ИБС У ЛИЦ СТАРШЕ 60 ЛЕТ СРЕДИ НАСЕЛЕНИЯ ГОРОДА БУХАРЫ //Теория и практика современной науки. – 2018. – №. 5 (35). – С. 704-708.
8. Рахматова Д. Б., Раджабова Г. Х. Анализ факторов риска ИБС у лиц старше 60 лет среди населения города Бухары //Биология и интегративная медицина. – 2019. – №. 3 (31). – С. 37-42.
9. Рахматова Д. Б. Гранат как лечебное средство в народной и древней медицине //Биология и интегративная медицина. – 2022. – №. 1 (54). – С. 157-168.
10. Rakhmatova D. B., Rakhmatova D. B. " Main" Symptoms and leading clinical options for the flow of acute coronary syndromes in women //Asian Journal of Multidimensional Research (AJMR). – 2019. – Т. 8. – №. 11. – С. 69-74.
11. Rakhmatova D. B. Scientific and practical significance of acute myocardial infarction among the population of elderly and old age //Globalization, the State and the Individual. – 2022. – Т. 29. – №. 1. – С. 84-89.
12. Sultonova N. A. THE PROBLEM OF ADDICTED MISSING OF PREGNANCYIN EARLY STAGES OF PREGNANCY //Oriental Journal of Academic and Multidisciplinary Research. – 2023. – Т. 1. – №. 1. – С. 94-101.
13. Sultonova N. A. Dopplerometric Features of Blood Flow Changes in the Utero-Placental System in Women With Related Pregnancy Mission //Miasto Przyszłości. – 2023. – Т. 34. – С. 268-273.
14. Sultonova N. A. Evaluation of Clinical and Instrumental Results of Patients with a Risk of Development of Recurrent Mission //Central Asian Journal of Medical and Natural Science. – 2023. – Т. 4. – №. 2. – С. 536-542.
15. Султонова Н. А., Негматуллаева М. Н. Значимость Применения Витамина И Минеральной Комплексной Терапии В Профилактике Невынашивания Беременности //Central Asian Journal of Medical and Natural Science. – 2021. – С. 388-392.
16. Тиллоева Ш. Ш., Давлатов С. С. Эффективность и переносимость локсидола в лечение ревматоидного артрита у пациентов старших возрастных групп //Central Asian Journal of Medical and Natural Science. – 2021. – С. 432-436.
17. Тиллоева Ш. Ш. и др. Estimation of the condition of the cardiorespiratory system of patients with the concilation of bronchial asthma and arterial hypertension, effects of complex therapy //Новый день в медицине. – 2020. – №. 2. – С. 227-230.

18. Tillaeva S. S. et al. Currency and diagnostic criteria of rheumatoid arthritis in patients of senior age groups //Asian Journal of Multidimensional Research (AJMR). – 2018. – Т. 7. – №. 11. – С. 184-188.
19. Ilkhomovna K. D. Morphological Features of Tumor in Different Treatment Options for Patients with Locally Advanced Breast Cancer //International Journal of Innovative Analyses and Emerging Technology. – 2021. – Т. 1. – №. 2. – С. 4-5.
20. Khodzhaeva D. I. Changes in the Vertebral Column and Thoracic Spinecells after Postponement of Mastoectomy //International Journal of Innovative Analyses and Emerging Technology. – 2021. – Т. 1. – №. 4. – С. 109-113.
21. Khodjayeva D. I. MORPHOLOGY OF IDIOPATHIC SCOLIOSIS BASED ON SEGMENT BY SEGMENT ASSESSMENT OF SPINAL COLUMN DEFORMITY //Scientific progress. – 2022. – Т. 3. – №. 1. – С. 208-215.
22. Ilkhomovna K. D. Modern Look of Facial Skin Cancer //BARQARORLIK VA YETAKCHI TADQIQOTLAR ONLAYN ILMIY JURNALI. – 2021. – Т. 1. – №. 1. – С. 85-89.
23. Idiyevna S. G. Discussion of results of personal studies in the use ofmil therapy in the treatment of trauma to the oral mucosA //European Journal of Molecular medicineVolume. – Т. 2.
24. Idiyevna S. G. THE EFFECTIVENESS OF THE USE OF MAGNETIC-INFRARED-LASER THERAPY IN TRAUMATIC INJURIES OF ORAL TISSUES IN PRESCHOOL CHILDREN //Academic leadership. ISSN. – Т. 15337812.
25. Sharipova G. I. Light and laser radiation in medicine //European journal of modern medicine and practice. – 2022. – Т. 2. – №. 1. – С. 36-41.
26. Idievna S. G. THE EFFECT OF DENTAL TREATMENT-PROFILACTICS ON THE CONDITION OF ORAL CAVITY ORGANS IN CHILDREN WITH TRAUMATIC STOMATITIS //Tibbiyotdayangikun» scientific-abstract, cultural and educational journal.-Bukhara. – 2022. – Т. 5. – №. 43. – С. 103-106.
27. Idievna S. G. CHANGES IN THE CONTENT OF TRACE ELEMENTS IN THE SALIVA OF PATIENTS IN THE TREATMENT OF PATIENTS WITH TRAUMATIC STOMATITIS WITH FLAVONOID-BASED DRUGS //Journal of research in health science. – Т. 6. – С. 23-26.
28. Ikromovna I. F., Jumatovich J. U., Elmuradovich I. G. Influence of the harmful factors of manufacture of synthetic detergents and cleaners on the clinical-functional parameters of the oral cavities in the workers //European science review. – 2014. – №. 9-10. – С. 31-32.
29. Ибрагимова Ф. И., Жумаева А. А., Ражабова Д. Б. Влияние неблагоприятных факторов условий труда в производстве синтетических моющих и чистящих средств на состояние тканей паро-донта у рабочих //Наука молодых–Eruditio Juvenium. – 2015. – №. 1. – С. 31-34.
30. Ikromovna I. F. Prevalence and character of the oral cavity mucosa in the workers of the manufacture of the synthetic detergents //European science review. – 2016. – №. 3-4. – С. 178-179.
31. Ибрагимова Ф. И., Замонова Г. Ш. Влияние вредных факторов производства на клинико-функциональные показатели полости рта рабочих //Символ науки. – 2016. – №. 8-1. – С. 181-182.
32. Ibragimova F. I., Idiev G. E. The state of health of workers in the production of synthetic detergents and cleaning products." Problems of Biology and Medicine //International Scientific Journal.-Samarkand. – 2012. – №. 1. – С. 68.

33. Ибрагимова Ф. И., Жуматов У. Ж. Поражения слизистой оболочки полости рта у работающих в производстве синтетических моющих и чистящих средств //Молодежный инновационный вестник. – 2016. – Т. 5. – №. 1. – С. 165-166.
34. Ибрагимова Ф. И., Замонова Г. Ш. ОЦЕНКА НЕКОТОРЫХ ФУНКЦИОНАЛЬНЫХ ПОКАЗАТЕЛЕЙ ПОЛОСТИ РТА У РАБОЧИХ ПРОИЗВОДСТВА СЫРЬЕВЫХ КОМПОНЕНТОВ ДЛЯ СИНТЕТИЧЕСКИХ МОЮЩИХ СРЕДСТВ //Молодежный инновационный вестник. – 2016. – Т. 5. – №. 1. – С. 163-165.
35. Ибрагимова Ф. И., Замонова Г. Ш. Влияние вредных факторов производства на клинико-функциональные показатели полости рта рабочих //Символ науки. – 2016. – №. 8-1. – С. 181-182.
36. Ибрагимова Ф. И., Идиев Г. Э. Действие гипохлорита натрия (ингредиента синтетических моющих средств) на активность окислительно-восстановительных ферментов, и её коррекция введением растительных препаратов в эксперименте //Проблемы биологии и медицины–Самарканд. – 2017. – Т. 4. – С. 98.
37. Urinbaevna Y. R. Features of Prediction of the Severity of Iron Deficiency in Helicobacter Pylori Infection //Scholastic: Journal of Natural and Medical Education. – 2023. – Т. 2. – №. 4. – С. 93-99.
38. Юлдашова Р. У. ЭПИДЕМИОЛОГИЧЕСКАЯ ХАРАКТЕРИСТИКА ЖЕЛЕЗОДЕФИЦИТНОЙ АНЕМИИ У ДЕТЕЙ И ПОДРОСТКОВ В РЕСПУБЛИКЕ УЗБЕКИСТАН ЗА 2007-2019 ГОДЫ //Новый день в медицине. – 2020. – №. 4. – С. 742-747.
39. Юлдашова Р. У., Жарылкасынова Г. Ж., Сафоев Б. Б. МОДЕРНИЗАЦИЯ КУРСА ДОВРАЧЕБНОЙ НЕОТЛОЖНОЙ ПОМОЩИ В БУХАРСКОМ ГОСУДАРСТВЕННОМ МЕДИЦИНСКОМ ИНСТИТУТЕ КАК ОДИН ИЗ УСОВЕРШЕНСТВОВАННЫХ МЕТОДОВ ОБУЧЕНИЯ (в рамках проекта ModeHEd) //Оптимизация высшего медицинского и фармацевтического О-62 образования: менеджмент качества и инновации: материалы IX внутривузовской научно-практической конференции.—Челя-бинск: Издательство Южно-Уральского государственного меди-цинского университета, 2018.—153,[1] с. – 2018. – С. 150.
40. Юлдашова Р. У. и др. ИСПОЛЬЗОВАНИЕ СИСТЕМЫ ДИСТАНЦИОННОГО ОБУЧЕНИЯ MOODLE ПРИ ПОВЫШЕНИИ КВАЛИФИКАЦИИ ВРАЧЕЙ //Оптимизация высшего медицинского и фармацевтического об-О-62 разования: менеджмент качества и инновации: материалы VIII внутривузовской научно-практической конференции.—Челя-бинск: Издательство Южно-Уральского государственного меди-цинского университета, 2017.—136 с. – 2017. – С. 135.
41. Юлдашова Р. У., Халилова Ф. А., Тошева Х. Б. ОТНОШЕНИЕ СТУДЕНТОВ И ПРЕПОДАВАТЕЛЕЙ К ИСПОЛЬЗОВАНИЮ СОЦИАЛЬНЫХ СЕТЕЙ В ОБУЧЕНИИ //Педагогический профессионализм в образовании. – 2015. – С. 218-219.
42. Ziyolloevich A. M. Etiotropic Therapy of Viral Hepatitis //EUROPEAN JOURNAL OF INNOVATION IN NONFORMAL EDUCATION. – 2022. – Т. 2. – №. 11. – С. 52-56.
43. Abdulloev M. Z. EFFECTIVENESS OF ANTIVIRAL THERAPY IN VIRAL HEPATITIS //Journal of new century innovations. – 2022. – Т. 11. – №. 3. – С. 132-136.
44. Абдуллоев М. З., Облокулов А. Р. АНАЛИЗ РЕЗУЛЬТАТОВ ИССЛЕДОВАНИЯ ПО ОПРЕДЕЛЕНИЮ ЦИТОКИНОВ У БОЛЬНЫХ ХРОНИЧЕСКОГО ГЕПАТИТА С В ЗАВИСИМОСТИ ОТ НАЛИЧИЯ КРИГЛОБУЛИНЕМИИ //" XALQ TABOBATI VA

ZAMONAVIY TIBBIYOT, YANGI YONDASHUVLAR VA DOLZARB TADQIQOTLAR". – 2023. – T. 6. – C. 8-9.

45. Abdulloev M. Z. EFFECTIVENESS OF ANTIVIRAL THERAPY IN VIRAL HEPATITIS //Journal of new century innovations. – 2022. – T. 11. – №. 3. – C. 132-136.
46. Ziyodulloevich A. M. EFFICIENCY OF ETIOTROPIC TREATMENT IN CHRONIC VIRAL HEPATITIS //Galaxy International Interdisciplinary Research Journal. – 2023. – T. 11. – №. 4. – C. 450-454.
47. Oblokulov R. A., Abdulloev M. Z. To Study the Effectiveness of Direct-Antiviral Drug in the Treatment of Chronic Viral Hepatitis C, Your Act //Web of Scholars: Multidimensional Research Journal. – 2022. – T. 1. – №. 5. – C. 201-206.
48. Облокулов А. Р. и др. ВИРУСОЛОГИЧЕСКИЙ ОТВЕТ ПРИ ЛЕЧЕНИИ ВИЧ-ИНФЕКЦИИ АНТИВИРУСНЫМИ ПРЕПАРАТАМИ //Новый день в медицине. – 2020. – №. 1. – С. 306-308.
49. Ахмедова С. М. Морфологическая характеристика развития стенок сердца крысят //Наука и мир. – 2015. – №. 1-2. – С. 85-87.
50. Каримов Х., Ахмедова С., Тен С. Морфологическая характеристика развития стенок сердца и их изменения при воздействии пестицидов //Журнал вестник врача. – 2011. – Т. 1. – №. 03. – С. 51-54.
51. Ахмедова С., Нортоева Н., Нортоев А. Morphological changes in the teeth of adolescent children with hypotireosis : дис. – Тошкент тиббиёт академияси, 2022.
52. Ахмедова С. М. Возрастные особенности анатомии сердца крысят в раннем постнатальном онтогенезе //International medical scientific journal. – 2015. – С. 40.
53. Ахмедова С. М. Гистотопография стенок сердца крысы в постнатальном онтогенезе //Врач-аспирант. – 2011. – Т. 46. – №. 3.2. – С. 283-288.
54. Ахмедова С. М., Айтжанова А. Е., Сагдуллаева М. К. К МОРФОЛОГИИ ИЗМЕНЕНИЙ ПОЧЕК ПРИ ЭКСПЕРИМЕНТАЛЬНОМ АЛКОГОЛИЗМЕ //Journal of new century innovations. – 2022. – Т. 16. – №. 2. – С. 166-168.
55. Ахмедова С. М., Якубова Ф. ПОКАЗАТЕЛИ ФИЗИЧЕСКОГО РАЗВИТИЯ У СЛЕПЫХ И СЛАБОВИДЯЩИХ ДЕТЕЙ //Conferencea. – 2022. – С. 103-105.
56. Миршарапов У. М. и др. СОСТОЯНИЕ СОСУДОВ ПРИ ЭКСПЕРИМЕНТАЛЬНОМ САХАРНОМ ДИАБЕТЕ //Проблемы и достижения современной науки. – 2017. – №. 1. – С. 13-15.
57. Ахмедова С. М., Хатамов А. И., Худайберганов Б. Э. МОРФОФУНКЦИОНАЛЬНЫЕ ОСОБЕННОСТИ УЛЬТРАСТРУКТУРНОГО СТРОЕНИЯ МИОКАРДА ПРИ ВЛИЯНИИ ПЕСТИЦИДА //Проблемы и достижения современной науки. – 2017. – №. 1. – С. 11-13.
58. Ахмедова С., Эрматов Н. Характер морфофункциональных изменений сердца при воздействии пестицидов //Журнал проблемы биологии и медицины. – 2016. – №. 3 (89). – С. 135-137.
59. Ilxomovich A. N. Semirish Va Gipoterioz Kasalliklarining O'zaro Bog'liqlik Sabablari //AMALIY VA TIBBIYOT FANLARI ILMIY JURNALI. – 2023. – Т. 2. – №. 12. – С. 101-106.
60. Ilkhomovich A. N. Pancreas in a Patient with Diabetes Mellitus the Current State of the Issue //American Journal of Pediatric Medicine and Health Sciences (2993-2149). – 2023. – Т. 1. – №. 9. – С. 501-506.

61. Nasirova S. Z. Polypharmacy As An Actual Problem Of Pharmacotherapy //The American Journal of Medical Sciences and Pharmaceutical Research. – 2021. – Т. 3. – №. 01. – С. 1-5.
62. Nasirova S. Z. MORPHOMETRIC PARAMETERS OF THE LIMPHOID TISSUE OF THE SMALL INTESTINE WHEN USING ANTI-INFLAMMATORY DRUGS //Asian journal of pharmaceutical and biological research. – 2022. – Т. 11. – №. 2.
63. Zaurovna N. S. EFFECTS AND ACTIONS OF SILYBUM MARIANUM PHYTOPREPARATION //Научный Фокус. – 2023. – Т. 1. – №. 3. – С. 300-308.
64. Nasirova S. Z. Effect of anti-inflammatory medicines on the morphometric structure of the peyer's patches on the small intestine //Modern views and research. International scientific and practical Conference Egham.-England. – 2021. – С. 85-86.
65. Nasirova S. Z., Samadov A. T. Changes in morphometric parameters of the smoll intestine in the conditions of polypragmasy //Тиббиётда янги кун. – 2021. – Т. 2. – №. 34/1. – С. 28-32.
66. Nasirova S. Z. Changes in morphometric parameters of the lymphoid tissue of the small intestine in the conditions of polypragmasia //American Journal of Medicine and Medical Sciences.-America N. – 2021. – Т. 11. – С. 673-677.
67. Zaurovna N. S. MAIN EFFECTS OF SÍLYBUM MARIÁNUM //Asian journal of pharmaceutical and biological research. – 2023. – Т. 12. – №. 1.