Modern American Journal of Medical and Health Sciences
ISSN (E): 3067-803X
Volume 01, Issue 08, November, 2025
Website: usajournals.org

ELECTROCARDIOGRAPHY METHOD FOR DETECTING SIGNS OF CARDIOVASCULAR DISEASE

Qobiljonova Shaxnoza Rustam qizi,
Tog'ayeva Gulchiroy Oybek qizi,
Soataliyeva Ruxshonabonu Sherzod qizi,
Salimova Shahina Farmon qizi
Tashkent State Medical University, Tashkent, Uzbekistan

Abstract

Cardiovascular diseases (CVD) remain one of the leading causes of death worldwide. Effective diagnosis and early detection of cardiac pathologies are key factors in reducing the risk of complications and improving patients' quality of life. One of the most common, accessible, and informative methods of cardiac examination is electrocardiography (ECG). This method records the electrical activity of the heart and can detect a wide range of conditions, from arrhythmias to ischemic processes.

The essence of electrocardiography. Electrocardiography is based on recording the electrical potentials generated by the contraction and relaxation of the heart muscle. Electrodes placed on the skin's surface record the bioelectrical impulses, which are then converted into a graphical waveform—an electrocardiogram. The ECG reflects the sequence of depolarization and repolarization processes in the atrial and ventricular myocardium.

In the structure of population disability, diseases of the circulatory system also occupy the first place (21%), among which ischemic heart disease (9%), hypertension (4.5%), and cerebrovascular diseases (3%). The high mortality rate is caused by the geographic location of the Altai Krai (proximity to the Semipalatinsk test site), the dietary characteristics of the population (deficit of fruits and vegetables in the diet), seasonal fluctuations in blood counts (sharply continental climate), and other factors, as well as the lack of comprehensive laboratory diagnostics, which leads to the inadequacy of preventive and therapeutic measures.

Modern American Journal of Medical and Health Sciences
ISSN (E): 3067-803X
Volume 01, Issue 08, November, 2025
Website: usajournals.org

Given recent advances in understanding the pathogenesis of cardiovascular diseases and establishing the key role of lipid metabolism disorders in the development of vascular pathology, identifying the preclinical stages of these diseases and their complications, primarily based on laboratory risk factors, has acquired particular importance. The establishment of a clear system for identifying preclinical lipid metabolism disorders in many countries of Western Europe, America, and Japan, and the development of primary and secondary prevention methods for vascular disorders on this basis, has led to the progressive decline in cardiovascular disease observed in developed countries in recent years, resulting in overall mortality and an increase in life expectancy. Undoubtedly, the persistent increase in cardiovascular disease in Russia, with this indicator growing by 19.8% from 2013 to 2018, is due to our country's lag behind the civilized level of organization of systems for the prevention of these diseases and their complications [8].

It should be emphasized that the initial stages of hypertension and coronary heart disease are not accompanied by any clinical manifestations, due to the fact that many individuals are unaware of the advanced pathology. One in five patients with arterial hypertension, even after diagnosis, does not consider it necessary to receive appropriate medical advice. Consequently, the widespread use of specialized devices and techniques for identifying diagnostic signs of circulatory disorders and cardiac electrical activity is necessary in medical and outpatient facilities [9]. On the other hand, most physicians, focusing on the treatment of clinical forms of cardiovascular pathology, are poorly informed about modern methods for identifying and managing patients with preclinical stages of these diseases [7]. Therefore, a targeted search for informative indicators of the preclinical stage of cardiovascular disease is necessary.

The aim of the work is to develop new and expand existing methods of pattern recognition based on ANN technology to solve problems of automated diagnostics of cardiovascular diseases .

The research methods used included methods of processing information using artificial neural networks (ANN), pattern recognition methods (potential function method, iterative self-organizing method of data analysis - ISMAD),

Modern American Journal of Medical and Health Sciences
ISSN (E): 3067-803X
Volume 01, Issue 08, November, 2025
Website: usajournals.org

mathematical methods of function approximation, error theory and statistical methods of processing experimental data.

To achieve this goal, the following **main tasks were solved:**

1. Research of existing methods of classification of multidimensional data and development of a new method based on ANN training;
2. Research of direct and indirect methods for constructing membership functions of fuzzy sets and development of a modification of the indirect Osgood method based on perceptron learning;

Research results: At the regional level, conducting such research requires cost-effective and rational use of healthcare resources [3,5]. A pressing issue is the creation of regional specialized centers that develop and implement modern methods of diagnosis, prevention, treatment, and rehabilitation of specialized patients; and analyze morbidity and the effectiveness of its control. Taking this information into account, the importance of establishing specialized lipidology centers equipped with modern clinical and laboratory research methods becomes clear [1,8].

In connection with the above-mentioned prerequisites, in the city of Barnaul, where cardiovascular diseases are a major healthcare problem, the City Lipidology Center was opened in 2017. Its task is to conduct modern laboratory and non-invasive methods of studying cardiovascular diseases in order to prevent their occurrence.

In diagnosing atherosclerosis, the first manifestations of which can also be the last, resulting in sudden death, three levels of testing can be roughly distinguished. The first level involves assessing the overall health of the body, the positive and negative factors affecting health, and performing a blood serum analysis. The results are used to predict the risk of developing cardiovascular disease and guide risk factor correction. The second level identifies the general presence of vascular circulatory pathologies. The third level involves differential diagnosis of the disease.

Thus, for a comprehensive analysis of cardiovascular diseases, it is necessary to consider methods at all levels. Therefore, in this paper, to study the application of modern computer technologies in medical practice, widely used methods of

Modern American Journal of Medical and Health Sciences
ISSN (E): 3067-803X
Volume 01, Issue 08, November, 2025
Website: usajournals.org

each level were selected, namely, clinical laboratory studies of dyslipoproteinemia (DLP) [4,5], rheography (RG) [7], and electrocardiography (ECG) [14].

The mathematical and algorithmic methods used in the aforementioned areas do not provide a high-quality representation of a number of emerging problems. Thus, in the task of laboratory diagnostics of identifying intermediate types of DLP, standard methods of cluster analysis do not allow for a clear identification of classes due to the blurring of their boundaries. The parametric approach to identifying circulatory pathologies in rheography does not take into account the general shape of the curve. Existing methods for recognizing the type of rheographic curves, such as structural and correlation methods [2,6], do not provide the required accuracy due to the relatively small number of adjustable parameters in the case of a wide variety of rheographic curves . For solving these problems, a promising method is the backpropagation of error for training an artificial neural network (ANN), which has not previously been used in clinical laboratory diagnostics of DLP and rheography [3,6].

In automated ECG diagnostics, the development of a method capable of ensuring high-quality diagnostics using parameters from all 12 ECG leads remains a pressing issue, as standard recognition methods, such as the potential function method, lead to solution instability in the high-dimensionality of this problem. The use of ANNs in electrocardiography has been limited to the development of diagnostic systems for recognizing a narrow class of pathologies with high reliability [2]. However, to solve differential diagnostic problems during mass population screening, it is necessary to expand the class of recognizable diseases. This approach leverages the advantages of ANNs, which are associated with their ability to process large volumes of fuzzy information and ensure a high percentage of pathology detection. However, the system may be inferior in the accuracy of identifying a specific type of disease compared to highly specialized systems.

Thus, the development of existing and new methods for processing clinical laboratory, rheographic and electrocardiographic data make it possible to solve

Modern American Journal of Medical and Health Sciences
ISSN (E): 3067-803X
Volume 01, Issue 08, November, 2025
Website: usajournals.org

the important problem of timely diagnosis and prevention of cardiovascular diseases at the early stages of their detection.

Conclusions. A method for detecting dyslipoproteinemias based on neural network technology, generalizing the standard Fredrickson scheme , and subsequent description of the biochemical profiles of dyslipoproteinemias based on the construction of membership functions of fuzzy sets, allows clinical laboratory diagnosticians to more flexibly implement primary and secondary prevention of vascular diseases and qualitatively improve drug and non-drug therapy for the correction of dyslipoproteinemias . This method for automatically identifying the main types of circulatory disorders based on training artificial neural networks using the entire rheographic curve allows for a significant increase in the reliability of recognizing blood flow disorders compared to the method of pre-calculating a list of rheogram indices and parameters .

List of references:

1. Axmedova, P. B. (2025). ADENOTOMY IN CHILDREN WITH ALLERGIC RHINITIS AND BRONCHIAL ASTHMA. *Web of Medicine: Journal of Medicine, Practice and Nursing*, *3*(3), 459-466.
2. Durdona, Q. S. R. O. T. (2024). THE CURRENT STATE OF THE PROBLEM OF SEVERE ACUTE PANCREATITIS.
3. ERMATOV, N., KASSYMOVA, G., TAJIYEVA, K., KHASANOVA, M., ALIMUKHAMEDOVA, M., & AZIMOVA, S. (2020). Expression of tissue-specific genes in mice with hepatocarcinogenesis. *International Journal of Pharmaceutical Research (09752366)*, *12*(3).
4. Inakov, S. A., Mamatkulov, B. B., Kosimova, K., Saidalikhujaeva, S., & Shoyusupova, K. B. (2020). Social and demographic characteristics of elderly and their lifestyle in developing countries: on the example of Uzbekistan. *Indian Journal of Forensic Medicine & Toxicology*, *14*(4), 7418-7425.
5. Kamilova DN, Saydalikhujaeva SK, Abdashimov ZB, Rakhmatullaeva DM, Tadjieva XS. Employment relations and responsibilities of medical institutions workers in a pandemic in Uzbekistan. Journal of Medicine and Innovations. 2021;2(13-1).

Modern American Journal of Medical and Health Sciences
ISSN (E): 3067-803X
Volume 01, Issue 08, November, 2025
Website: usajournals.org

6. Kamilova, D. N., Saydalikhujaeva, S. K., Rakhmatullaeva, D. M., Makhmudova, M. K., & Tadjieva, K. S. (2021). Professional image of a teacher and a doctor. *British Medical Journal*, *1*(4), 4-14.
7. Kasimova, K. T. (2024). The Role Of Ecology In The Development Of Cardiovascular Diseases.
8. Khakimova, D. S., Kobiljonova, S. R., & Salomova, F. I. (2023, June). Results of hygiene assessment of food of school students. //International Scientific-Practical Conference "Only English: Advances in Medical Research and Practice Conference" 23.05. 2023.-P. 78-79.
9. Khilola, T. K. (2024). Assessment of environmental conditions in tashkent and relationship with the population suffering from cardiovascular diseases.
10. Khudoyberganov, M., Rakhmatkarieva, F., Abdurakhmonov, E., Tojiboeva, I., & Tadjieva, K. (2022, June). Thermodynamics of water adsorption on local kaolin modified microporous sorbents. In *American Institute of Physics Conference Series* (Vol. 2432, No. 1, p. 050001).
11. Kobiljonova SR, Jalolov NN, Sharipova SA, Mirsagatova MR. SPECTRUM OF CAUSE-SIGNIFICANT ALLERGENS CAUSING POLYNOSIS IN CHILDREN.
12. Kosimova, K. T., Jalolov, N. N., & Ikramova, N. A. (2025, April). THE RELATIONSHIP BETWEEN AIR POLLUTION AND ARTERIAL HYPERTENSION. International Conference on Advance Research in Humanities, Applied Sciences and Education.
13. Makhsudova, S. O. (2025). QUALITY OF LIFE OF PATIENTS WITH BRONCHIAL ASTHMA. *EduVision: Journal of Innovations in Pedagogy and Educational Advancements*, *1*(6), 567-595.
14. Masharipova, R. Y., & Khasanova, G. M. (2020). Improvement of motor fitness of dental students in the process of physical education classes. *Bulletin of Science*, *5*(3), 101-104.
15. Masharipova, R., Togaynazarov, S., Pakhrudinova, N., Khasanova, G., & Abdurahimov, B. (2020). The main factors of formation and physical culture in society. *Systematic Reviews in Pharmacy*, *11*(12), 612-621.

Modern American Journal of Medical and Health Sciences
ISSN (E): 3067-803X
Volume 01, Issue 08, November, 2025
Website: usajournals.org

16. Mirrahimova, M. X., Kohiljonova, S. R., & Sadullayevna, X. A. (2022). PREVALENCE AND RISK FACTORS OF ALLERGIC DISEASE IN CHILDREN.
17. Mirzayev, M. M., & Malikov, S. G. (2025). CORONARY HEART DISEASE AND CANCER. *Web of Medicine: Journal of Medicine, Practice and Nursing*, *3*(3), 215-224.
18. Mirzayev, M. M., & Malikov, S. G. (2025). DISEASES OF THE POPULATION FROM THE LEVEL OF AIR POLLUTION IN REGIONAL CONDITIONS. *Web of Scientists and Scholars: Journal of Multidisciplinary Research*, *3*(3), 104-111.
19. Qosimova, X. T., Ikramova, N. A., Juraboyeva, D. N., & Mukhtorova, D. A. (2025, March). THE ADVERSE EFFECTS OF SMARTPHONES ON COGNITIVE ACTIVITY IN THE EDUCATIONAL PROCESS AND WAYS TO MITIGATE THEM. In *The Conference Hub* (pp. 76-79).
20. Sadullayeva, X. A., Salomova, F. I., Mirsagatova, M. R., & Kobiljonova Sh, R. (2023). Problems of Pollution of Reservoirs in the Conditions of Uzbekistan.
21. Salomova, F. I. (2024, February). STIMULATION OF THE IMMUNE RESPONSE BY CYTOKINE PREPARATIONS AND THEIR STANDARDIZATION. Europen youth innovation society conference volume 1№.
22. Salomova, F. I., & Kim, E. S. (2025). METABOLIC DISORDERS IN CHILDREN WITH GASTROENTEROLOGICAL DISEASES AND FOOD ALLERGIES. *EduVision: Journal of Innovations in Pedagogy and Educational Advancements*, *1*(6), 495-503.
23. Salomova, F. I., & Kosimova, H. T. (2017). RELEVANCE OF STUDYING INFLUENCE OF THE BONDS OF NITROGEN POLLUTING THE ENVIRONMENT ON HEALTH OF THE POPULATION SUFFERING CARDIOVASCULAR ILLNESSES (REPUBLIC OF UZBEKISTAN). In *INTERNATIONAL SCIENTIFIC REVIEW OF THE PROBLEMS AND PROSPECTS OF MODERN SCIENCE AND EDUCATION* (pp. 81-83).

Modern American Journal of Medical and Health Sciences
ISSN (E): 3067-803X
Volume 01, Issue 08, November, 2025
Website: usajournals.org

24. Salomova, F. I., Mirrahimova, M. X., Sadullayeva, X. A., & Kobiljonova, S. R. (2022, November). Prediction and prevention of food allergies in children. Uzbekistan-Japan International Conference «Energy-Earth-Environment-Engineering», November 17-18, 2022, Uzbek-Japan Innovation Center of Youth, Tashkent, Uzbekistan Uzbekistan-Japan International Conference «Energy-Earth-Environment-Engineering», November 17-18, 2022, Uzbek-Japan Innovation Center of Youth, Tashkent, Uzbekistan tezis Bet 81.
25. Salomova, F. I., Sadullaeva, H. A., Abdullaeva, D. G., & Kobilzhonova Sh, R. (2022). PREVALENCE AND RISK FACTORS OF ALLERGIC DISEASES IN CHILDREN IN HOT CLIMATIC CONDITIONS.
26. Salomova, F. I., Sherkuziyeva, G. F., Sharipova, S. A., & Qobiljonova Sh, R. (2025). INFLUENCE OF ENVIRONMENTAL FACTORS ON THE PREVALENCE OF ALLERGIC DISEASES DISEASES. *EduVision: Journal of Innovations in Pedagogy and Educational Advancements*, *1*(6), 451-460.
27. Saydalikhujayeva, S. K., Kosimova, K. T., Mamadzhanov, N. A., & Ibragimova, S. R. (2020). The role of modern pedagogical technologies in improving the system of higher medical education in the republic of Uzbekistan. *New Day in Medicine*, *1*(29), 85.
28. ShR, K., Mirrakhimova, M. H., & Sadullaeva, H. A. (2022). Prevalence and risk factors of bronchial asthma in children. *Journal of Theoretical and Clinical Medicine*, *2*, 51-56.
29. Tadjieva, K. S. (2024). USING SITUATIONAL TASKS TO INCREASE THE EFFECTIVENESS OF TEACHING MEDICAL CHEMISTRY. *Web of Teachers: Inderscience Research*, *2*(1), 64-68.
30. Tadjieva, K. S., Kosimova, K. T., & Niyazova, O. A. (2025). THE ROLE OF AIR POLLUTION IN THE DEVELOPMENT OF CARDIOVASCULAR DISEASES.
31. Tolipova, A. F. (2025). ARRHYTHMIC SYNDROME IN CHILDREN AND ADOLESCENTS WITH MINOR CARDIAC ANOMALIES. *Web of Medicine: Journal of Medicine, Practice and Nursing*, *3*(3), 440-447.

Modern American Journal of Medical and Health Sciences
ISSN (E): 3067-803X
Volume 01, Issue 08, November, 2025
Website: usajournals.org

32. Tursunov, D., Sabiorva, R., Kasimova, X., Azizova, N., & Najmiddinova, N. (2016). Status of oxidant and antioxidant systems in alloxan diabetes and ways its correction. In *Science and practice: a new level of integration in the modern world* (pp. 188-190).
33. Zakirova, M. R. (2024). INTRANASAL IMMUNOTHERAPY OF ALLERGIC RHINITIS.
34. Zakirova, M. R. (2024). SOLUBLE FORMS OF MEMBRANE PROTEINS OF IMMUNE SYSTEM CELLS IN BRONCHIAL ASTHMA IN CHILDREN.
35. АБДУЛЛАЕВА, М., & ТАДЖИЕВА, Х. (2023). ИЗУЧЕНИЕ РАСТВОРИМОСТИ СИСТЕМ: КАЛИЕВАЯ СОЛЬ-ОДНОЗАМЕЩЕННЫЙ УКСУСНОКИСЛЫЙ МОНОЭТАНОЛАММОНИЙ-ВОДА. Международный центр научного партнерства «Новая Наука»(ИП Ивановская ИИ) КОНФЕРЕНЦИЯ: НАУЧНЫЙ ДЕБЮТ 2023 Петрозаводск, 03 декабря 2023 года Организаторы: Международный центр научного партнерства «Новая Наука»(ИП Ивановская ИИ).
36. Акромов, Д. А., & Касимова, Х. Т. (2017). Результаты изучения токсикологических свойств фунгицида" Вербактин". *Молодой ученый*, (1-2), 2-3.
37. Ахмадалиева, С. У., & Машарипова, Р. Ю. ОСНОВЫ ЗДОРОВОГО ОБРАЗА ЖИЗНИ СТУДЕНТА МЕДИКА. *ББК: 51.1 л0я43 С-56 А-95*, 228.
38. Балтабаев, У. А., Джураев, А. Д., & Таджиева, Х. С. (2008). Реакции фенилизотиоцианата с α-аминокислотами. *Жур. Химия и химическая технология*, *1*, 39-42.
39. Денисова, У. Ж., & Машарипова, Р. Ю. (2022). ПОВЫШЕНИЕ ПОКАЗАТЕЛЕЙ ЭФФЕКТИВНОСТИ ОБМАННЫХ ДЕЙСТВИЙ В СОРЕВНОВАТЕЛЬНОЙ ДЕЯТЕЛЬНОСТИ СТУДЕНТОВ БАСКЕТБОЛИСТОВ 1-КУРСА НА ОСНОВЕ ПОДВИЖНЫХ ИГР. *Вестник науки*, *4*(1 (46)), 18-24.

Modern American Journal of Medical and Health Sciences
ISSN (E): 3067-803X
Volume 01, Issue 08, November, 2025
Website: usajournals.org

40. КАМИЛОВА, Д., САЙДАЛИХУЖАЕВА, Ш., МАХМУДОВА, М., РАХМАТУЛЛАЕВА, Д., & ТАДЖИЕВА, Х. (2022). ИНСОН САЛОМАТЛИГИ ВА ТИББИЙ КЎРИКНИНГ АҲАМИЯТИ. *Журнал" Медицина и инновации"*, (3), 143-162.
41. Каримов, В. В., & Машарипова, Р. Ю. (2021). Метод «Джит Кун До» в учебном процессе на занятиях по физической культуре для студентов-стоматологов. *Вестник науки*, *4*(12 (45)), 32-36.
42. Кобилжонова ШР, Садуллаева ХА. IMPACTS OF THE ENVIRONM ENT ON HUMAN HEALTH.
43. Кобилжонова, Ш. Р. (2024). CLINICAL AND MORPHOLOGICAL FEATURES OF GASTRODUODENITIS IN CHILDREN WITH SALINE DIATHESIS.
44. КОБИЛЖОНОВА, Ш., ТОШЕВА, Ш., & ЗОКИРЖОНОВА, Г. (2023). Modern approaches to diet therapy for food allergies in children.
45. Косимова, Х. Т., & Садирова, М. К. (2018). Нормативная база для проведения мониторинга по изучению влияния соединений азота на здоровье населения. In *INTERNATIONAL SCIENTIFIC REVIEW OF THE PROBLEMS OF NATURAL SCIENCES AND MEDICINE* (pp. 30-32).
46. Косимова, Х. Т., Мамаджанов, Н. А., & Ибрагимова, Ш. Р. (2020). РОЛЬ СОВРЕМЕННЫХ ПЕДАГОГИЧЕСКИХ ТЕХНОЛОГИЙ В ДАЛЬНЕЙШЕМ СОВЕРШЕНСТВОВАНИИ СИСТЕМЫ ВЫСШЕГО МЕДИЦИНСКОГО ОБРАЗОВАНИЯ В РЕСПУБЛИКЕ УЗБЕКИСТАН. *Новый день в медицине*, (1), 88-90.
47. Машарипова РЮ, Рожкова АС. Использование нетрадиционных видов гимнастики для оптимизации занятий физической культурой в вузе. InСборник научных трудов I-Международная научно-практической онлайн-конференция «Актуальные вопросы медицинской науки в XXI веке». УДК 2019 (Vol. 6, pp. 613-615).
48. Машарипова, Р. Ю. (2020). Повышение специальной двигательной активности студентов-стоматологов. *Наука, образование и культура*, (8 (52)), 51-53.

Modern American Journal of Medical and Health Sciences
ISSN (E): 3067-803X
Volume 01, Issue 08, November, 2025
Website: usajournals.org

49. Машарипова, Р. Ю. (2022). АНАЛИЗ ФИЗИЧЕСКОЙ ПОДГОТОВЛЕННОСТИ СПЕЦИАЛЬНЫХ АТЛЕТОВ-ГИМНАСТОВ. *Central Asian Research Journal for Interdisciplinary Studies (CARJIS)*, *2*(5), 730-737.
50. Машарипова, Р. Ю., & Хасанова, Г. М. (2020). Повышение двигательной подготовленности студентов-стоматологов в процессе учебных занятий физической культурой. *Вестник науки*, *5*(3 (24)), 101-104.
51. Машарипова, Р. Ю., Тангиров, А. Л., & Мирзарахимова, К. Р. (2022). Пути повышения эффективности решения социальных проблем детей с ограниченными возможностями в условиях первичного медико-санитарной помощи. *Scientific approach to the modern education system*, *1*(10), 124-127.
52. Миррахимова, М. Х., Садуллаева, Х. А., & Кобилжонова, Ш. Р. (2022). *Значение экологических факторов при бронхиальной астме у детей* (Doctoral dissertation, Россия).
53. Пахрудинова, Н. Ю., Хасанова, Г. М., & Машарипова, Р. Ю. Хореография и здоровый образ жизни. *ББК: 51.1 л0я43 С-56 А-95*, 278.
54. Саломова ФИ, Ахмадалиева НО, Кобилжонова ШР. Избыточный вес и ожирение у детей: ключевые факторы.
55. Саломова ФИ, Кобилжонова ШР. Оценка эффективности диетотерапии при пищевой аллергии у детей в различные возрастные периоды. Вестник ТМА SPECIAL ISSUE Dedicated to The 10th International Symposium On Important Problems of the Environmental Protection and Human Health.
56. Саломова, Ф. И., & Кобилжонова, Ш. Р. (2024). Факторы риска аллергических заболеваний у детей дошкольного возраста.
57. Саломова, Ф. И., & Кобилжонова, Ш. Р. (2024, March). РАЗРАБОТКА СИСТЕМНЫХ АЛГОРИТМОВ СНИЖЕНИЯ АЛЛЕРГИЧЕСКИХ ЗАБОЛЕВАНИЙ. Международный форум «ANaMed Forum–New Generation 2025» Алматы: КазНМУ, 2025..
58. Саломова, Ф. И., & Кобилжонова, Ш. Р. (2024, May). ФАКТОРЫ РИСКА РАЗВИТИЯ АЛЛЕРГИИ У ДЕТЕЙ. Международный форум

Modern American Journal of Medical and Health Sciences
ISSN (E): 3067-803X
Volume 01, Issue 08, November, 2025
Website: usajournals.org

«ANaMed Forum–New Generation 2025» Алматы: КазНМУ, 2025.-С. 1154-1155.

59. Таджиева, Х. С. (2022). ИСПОЛЬЗОВАНИЕ МЕТОДА ПРОБЛЕМНЫХ СИТУАЦИЙ НА ЗАНЯТИЯХ МЕДИЦИНСКОЙ ХИМИИ. In *Kimyo va tibbiyot: nazariyadan amaliyotgacha* (pp. 205-208).
60. Таджиева, Х. С. (2023). МОДЕЛИРОВАНИЕ ПРОБЛЕМНОГО ОБУЧЕНИЯ В МЕДИЦИНСКОМ ВУЗЕ. *West Kazakhstan Medical Journal*, (3 (65)), 170-175.
61. Таджиева, Х., & Юсупходжаева, Х. (2023). Особенности преподавания медицинской химии в современных условиях на лечебном и педиатрическом факультетах медицинских вузов. *Современные аспекты развития фундаментальных наук и вопросы их преподавания*, *1*(1), 119-124.
62. Шеркузиева, Г. Ф., & Касимова, Х. Т. (2017). Токсичность биологически активной добавки" Laktonorm-H (K Kaliy)" в условиях хронического эксперимента. Молодой ученый, (1-2), 10-12.