REMOVABLE AND NON-REMOVABLE STRUCTURES MADE OF THERMOPLASTIC MATERIALS, THEIR ADVANTAGES AND DISADVANTAGES

Kuzieva Madina Abdusalimovna
Asian International University
kuzievamadina84@gmail.com

https://doi.org/10.5281/zenodo.14840179

Abstract. *In recent years, dentistry has been developing by leaps and bounds - this includes implantology, gnathology, and digital dentistry. By mastering these serious, necessary, correct directions and implementing them in our practice, we raise the status of our clinics and our level of professional proficiency to the proper height. Despite this, removable dentures are still relevant. The most popular are removable structures made of thermoplastics.*

Key words*: removable denture, flexibility, elasticity and strength, advantages and disadvantages.*

СЪЕМНЫЕ И НЕСЪЕМНЫЕ КОНСТРУКЦИИ ИЗ ТЕРМОПЛАСТИЧНЫХ МАТЕРИАЛОВ, ИХ ПРЕИМУЩЕСТВА И НЕДОСТАТКИ

Аннотация. *В последние годы стоматология развивается семимильными шагами — это и имплантология, и гнатология, и цифровая стоматология. Осваивая эти серьезные, нужные, правильные направления и внедряя их в свою практику, мы поднимаем статус наших клиник и уровень своего профессионального мастерства на должную высоту. Несмотря на это, съемные зубные протезы по-прежнему актуальны. Наибольшей популярностью пользуются съемные конструкции из термопластичных материалов.*

Ключевые слова: *съемные зубные протезы, гибкость, эластичность и прочность, преимущества и недостатки.*

The general characteristics of thermoplastics are determined by the name itself - "material that is plastic when heated", that is, these materials acquire the necessary shape when heated without the use of monomers. Back in the 50s of the last century, the search for non-toxic and hypoallergenic materials for the manufacture of removable dentures began in the USA. As a result of research work, such materials were identified - thermoplastics. They had a biologically neutral reaction, that is, they did not have a toxic or allergic effect on the body. In addition, a high degree of plasticity, the ability to remember the shape, precision in manufacturing, the presence of a wide range of light allow to expand the possibilities of partial and full prosthetics, splinting, the manufacture of immediate dentures, gingival dentures, splints-prostheses and improve their aesthetic qualities.

The starting material is caprolactam, a substance with short monomer molecules, which is

melted at high temperature and converted into a polymer with long molecules. The resulting threads are stretched in such a way that their length increases fivefold, and the monomer molecules line up, like a ruler, along the fiber, which gives the thread additional strength and lightness. These qualities of nylon are advantageous in the manufacture of removable structures.

Nylon dentures are more flexible and elastic, but at the same time they can boast increased durability. Flexible dentures have a precise fit and reliable fixation. They are held on the gums by means of dentoalveolar nylon clasps, which are also made of silicone, which makes them invisible in the oral cavity. When they are installed, grinding of teeth is not carried out, and during the use of the denture, the teeth do not loosen.

Another undoubted advantage of nylon is its inability to absorb moisture. This means that microorganisms simply cannot settle in it. While acrylic is simply a paradise for bacteria. Nylon dentures are indistinguishable from real teeth. The material contains a dye that gives the dentures a natural look. In addition, the absence of metal fasteners does not reveal the absence of natural teeth.

Despite all their advantages, nylon dentures have a number of disadvantages. Thus, with a low bite, deposits form between acrylic teeth and nylon. This occurs due to the lack of a chemical connection between the teeth and gums. It is this feature that is associated with the need to take the denture for professional cleaning every two months. Flexible nylon dentures belong to the category of removable dentures of the immersion type, i.e. the transfer of chewing pressure is carried out on the mucous membrane of the denture bed with the inclusion of the gingivomuscular reflex to regulate the chewing process, which is designed to protect the mucous membrane from overload and, accordingly, allows you to develop the necessary tone of the chewing muscles. Not the best reflex, because it disrupts the true physiology of chewing. A normal physiological reflex is a periodontal-muscular reflex, in which the force of contraction of the masticatory muscles is regulated by the degree of sensitivity of the periodontal receptors of the teeth involved in the act of chewing food. The inclusion of this reflex can only be provided by dentures of the supporting type, i.e. clasps, in which attachments together with interlocks; as well as various clasp systems of the support-retaining type, transmit chewing pressure to the remaining teeth within 70-80%. For comparison, for plate dentures of the immersion type this figure is 15-20%.

Another negative factor of flexible dentures is the tight coverage of the alveolar processes and the denture bed, which is further enhanced by the transmission of chewing pressure to the mucous membrane and leads to ischemia (bleeding) of the denture bed tissues, which activates osteoclastization processes (bone resorption), in simple terms: "The bone is eaten away, it sits down", and this sharply worsens the anatomical conditions for subsequent complete removable dentures. Flexible nylon systems are attached to the supporting teeth. If all teeth are missing, the

system has to be fixed with adhesives, and this brings a constant feeling of discomfort to the patient. Constant loads on the jaw lead to its subsidence. Every year it decreases by about 1 mm. As a result, after 2 years the structure becomes unsuitable for use, it has to be replaced. Repair and rebasing are almost impossible due to the complexity and high cost of its implementation. Relining a nylon or polypropylene denture is comparable in cost to making a new denture, and the quality of the denture after relining leaves much to be desired. When relining, the denture base becomes thicker. And the thicker the base, the less elastic it is!

Dental prosthetics with nylon dentures is used both for partial and complete loss of teeth and is one of the most modern methods of removable dental prosthetics in modern dentistry. Today, there are many analogues of the Valplast material on the dental materials market, but we use only the branded one, the quality of which has been tested by time. The patented type of nylon, Valplast, was introduced in 1953 in the USA as a plastic for the manufacture of denture bases, possessing special properties of flexibility. It was supposed to replace metal alloys and acrylic combinations used in conventional partial removable dentures. Installation of orthodontic systems made of nylon is recommended: - in case of loss of one or more teeth;

- in case of allergic reactions to various types of metals; - in case of allergic reactions to dentures made from acrylic plastic;

- when the patient has a disease such as periodontitis, which becomes a contraindication to the production of other types of prosthetics; - in cases where the patient does not want to carry out the preparation of supporting teeth; - in cases where the profession is associated with a high risk of facial injury.

Nylon dentures also have their own contraindications for use. Installation is not allowed if:

- when the alveolar ridge overhangs;

- with severe atrophy of the alveolar processes;

- in case of serious defects of the dental arches; - in case of severe stage of periodontosis;

- in the presence of gingivitis or periodontitis, when the roots have become exposed; incorrect crowns that may prevent the installation of the structure; if the gingival margin of the supporting teeth differs in level; in case of gum atrophy with the formation of a low level.

Conclusions: Thus, in this article we have described both the advantages and disadvantages of thermoplastic removable dentures. One of the main disadvantages of this type of prosthetics is that the manufacture of a thermoplastic prosthesis when worn by patients leads to atrophy of the alveolar process due to the tight grip of the mucous membrane of the prosthetic bed, which after a certain period of time leads to ischemia, i.e., to bloodlessness and disruption of the nutrition of the oral mucosa due to constantly falling pressure.

REFERENCES

1. Kuzieva, M. A. (2023). Clinical and Morphological Criteria of the Oral Cavity Organs in the Use of Fixed Orthopedic Structures. Research Journal of Trauma and Disability Studies, 2(12), 318-324. Abdusalimovna, K. M. (2024). THE USE OF CERAMIC MATERIALS IN ORTHOPEDIC DENTISTRY. (Literature review). TADQIQOTLAR, 31(3), 75-85.
2. Abdusalimovna, K. M. (2024). CLINICAL AND MORPHOLOGICAL FEATURES OF THE USE OF METAL-FREE CERAMIC STRUCTURES. TA'LIM VA INNOVATSION TADQIQOTLAR, 13, 45-48
3. Abdusalimovna, K. M. (2024). THE ADVANTAGE OF USING ALL-CERAMIC STRUCTURES. TA'LIM VA INNOVATSION TADQIQOTLAR, 13, 49-53.
4. Abdusalimovna, K. M. (2024). MORPHO-FUNCTIONAL FEATURES OF THE METHOD OF PREPARATION OF DEPULPATED TEETH FOR PROSTHETICS. SCIENTIFIC JOURNAL OF APPLIED AND MEDICAL SCIENCES, 3(4), 301-307
5. Abdusalimovna, K. M. (2024). Clinical and Morphological Features of the Use of Non-Removable Orthopedic Structures. JOURNAL OF HEALTHCARE AND LIFE-SCIENCE RESEARCH, 3(5), 73-78.
6. Kuzieva, M. A. (2024). CARIOUS INFLAMMATION IN ADOLESCENTS: CAUSES, FEATURES AND PREVENTION. European Journal of Modern Medicine and Practice, 4(11), 564-570.
7. Kuzieva, M. A. (2024). Malocclusion–Modern Views, Types and Treatment. American Journal of Bioscience and Clinical Integrity, 1(10), 103-109.
8. KUZIEVA, M. A. (2024). MODERN ASPECTS OF MORPHO-FUNCTIONAL DATA AND TREATMENT OF AGE-RELATED CHANGES IN THE MAXILLOFACIAL REGION. Valeology: International Journal of Medical Anthropology and Bioethics, 2(09), 126-131.
9. Qilichovna, A. M., Nematilloyevna, X. M., & Ergashevich, II (2024). THE ROLE OF CARIOGENIC AND PROTECTIVE FACTORS IN THE PREVENTION OF CARIES. EDUCATION, SCIENCE AND INNOVATIVE IDEAS IN THE WORLD, 43(8), 45- 51.
10. Qilichovna, A. M., Nematilloyevna, X. M., & Ergashevich, II (2024). KARIYESNING OLDINI OLISHDA KARIOGEN VA HIMOYA OMILLARNING ROLI. EDUCATION, SCIENCE AND INNOVATION IDEAS IN THE WORLD, 43(8), 52-59.

11. Qilichovna, A. M. (2024). FACTORS CAUSING THE WIDE SPREAD OF DENTAL CARIES. EUROPEAN JOURNAL OF MODERN MEDICINE AND PRACTICE, 4(4), 154-160.
12. Nematilloyevna, X. M., & Qilichovna, A. M. (2024). MORPHO-FUNCTIONAL CHANGES IN ACUTE FORMS OF APHTHOUS STOMATITIS: Yangi O'zbekiston taraqqiyotida tadqiqotlarni o'rni va rivojlanish omillari. Yangi O'zbekiston taraqqiyotida tadqiqotlarni o'rni va rivojlanish omillari, 6(4), 177-186
13. Qilichovna, A. M., & Nematilloyevna, X. M. (2024). METABOLIK SINDROMI VA QON BOSIMI BOR BEMORLARDA O'ZGARISH XUSUSIYATLARI BAHOLASH: Yangi 317 ResearchBib IF - 11.01, ISSN: 3030-3753, Volume 2 Issue 1 O'zbekiston taraqqiyotida tadqiqotlarni o'rni va rivojlanish omillari. Yangi O'zbekiston taraqqiyotida tadqiqotlarni o'rni va rivojlanish omillari, 6(4), 187-196
14. Qilichovna, A. M., & Nematilloyevna, X. M. (2024). TIBBIYOT TILI HISOBLANMISH LOTIN TILINI SAMARALI O'RGANISH OMILLARI: Yangi O'zbekiston taraqqiyotida tadqiqotlarni o'rni va rivojlanish omillari. Yangi O'zbekiston taraqqiyotida tadqiqotlarni o'rni va rivojlanish omillari, 6(4), 197-206
15. Qilichovna, A. M., & Vahidovna, K. N. (2024). FACTORS CAUSING DISEASES OF PERIODONTAL TISSUES. JOURNAL OF HEALTHCARE AND LIFE-SCIENCE RESEARCH, 3(5), 196-201.
16. Qilichovna, A. M., & Abdumutalib o'g'li, U. A. (2024). KARIES PROFILAKTIKASI NAZARIYASI VA AMALIYOTI. JOURNAL OF HEALTHCARE AND LIFE-SCIENCE RESEARCH, 3(5), 202-209.
17. Vahidovna, K. N., & Kilichovna, A. M. (2024). FACTORS CAUSING PERIODONTAL TISSUE DISEASES. JOURNAL OF HEALTHCARE AND LIFE-SCIENCE RESEARCH, 3(5), 185-195.
18. Qilichovna, A. M. (2024). THEORETICAL FUNDAMENTALS OF CARIES PREVENTION. Journal of Science in Medicine and Life, 2(5), 222-226.
19. Qilichovna, A. M., & Safarboy o'g'li, T. S. (2024). 4-AVLOD ADGEZIV SYSTEMA. JOURNAL OF HEALTHCARE AND LIFE-SCIENCE RESEARCH, 3(5), 307-313.
20. Axmedova, M. (2024). CONDITION OF THE ALVEOLAR PROCESS AND PERIOSTE WHEN USING REMOVABLE DENTURES. EUROPEAN JOURNAL OF MODERN MEDICINEAND PRACTICE, 4(11), 528-538.
21. Qilichevna, A. M. (2024). COMPARATIVE ANALYSIS OF NUTRITIONAL DISPARITIES AMONG PEDIATRIC POPULATIONS: A STUDY OF CHILDREN

WITH DENTAL CAVITIES VERSUS THOSE IN OPTIMAL HEALTH. Central Asian Journal of Multidisciplinary Research and Management Studies, 1(2), 30-34

22. Qilichovna, A. M. (2024). CLINIC FOR PATIENTS WITH DENTURES COMPARATIVE DIAGNOSIS AND PATHOGENESIS. TADQIQOTLAR, 30(3), 127-135.
23. Ahmedova, M. (2023). COMPARATIVE ANALYSIS OF NUTRITIONAL DISPARITIES AMONG PEDIATRIC POPULATIONS: A STUDY OF CHILDREN WITH DENTAL CAVITIES VERSUS THOSE IN OPTIMAL HEALTH. International Bulletin of Medical Sciences and Clinical Research, 3(12), 68-72
24. Ahmedova, M. (2023). DIFFERENCES IN NUTRITION OF CHILDREN WITH DENTAL CARIES AND HEALTHY CHILDREN. International Bulletin of Medical Sciences and Clinical Research, 3(12), 42-46.
25. Axmedova, M. (2023). TISH KARIESINING KENG TARQALISHIGA SABAB BO'LUVCHI OMILLAR. Central Asian Journal of Education and Innovation, 2(12), 200-205.
26. Akhmedova, M. (2023). USE OF COMPUTER TECHNOLOGIES AT THE STAGES OF DIAGNOSTICS AND PLANNING OF ORTHOPEDIC TREATMENT BASED ON ENDOSSAL IMPLANTS. Central Asian Journal of Education and Innovation, 2(11 Part 2), 167-173.
27. Axmedova, M. (2023). USE OF COMPUTER TECHNOLOGY AT THE STAGES OF DIAGNOSIS AND PLANNING ORTHOPEDIC TREATMENT BASED ON ENDOSSEAL IMPLANTS. International Bulletin of Medical Sciences and Clinical Research, 3(11), 54-58.
28. Akhmedova, M. (2020). ENDOTHELIAL FUNCTION DISORDERS IN THE DEVELOPMENT OF APHTHOUS STOMATITIS. Achievements of Science and Education, (18 (72)), 65-69.
29. Axmedova, M. (2023). THE IMPACT OF SOCIOCULTURAL FACTORS ON THE PERVASIVENESS OF DENTAL CARIES AS A COMPLEX HEALTH CONDITION IN CONTEMPORARY SOCIETY. International Bulletin of Medical Sciences and Clinical Research, 3(9), 24-28.
30. Akhmedova, M.K. (2024). COMMON CAUSES OF DENTAL CARIES. Best Intellectual Research, 14(4), 77-85.
31. Qilichovna, A. M. (2024). CLINICAL SIGNS WHEN ACCOMPANIED BY DENTAL DISEASES AND METABOLIC SYNDROME. EDUCATION, SCIENCE AND INNOVATIVE IDEAS IN THE WORLD, 39(5), 116-24.

32. Akhmedova, M. K. (2024). Prevention of Dental Diseases in Pregnant Women. Research Journal of Trauma and Disability Studies, 3(3), 66-72
33. Akhmedova, M.K. (2024). MAIN PREVENTIVE METHODS OF PERIODONTAL TISSUES IN CHILDREN AND ADOLESCENTS. EDUCATION SCIENCE AND INNOVATIVE IDEAS IN THE WORLD, 41(5), 254-260.
34. Qilichovna, A. M. (2024). PREVENTION OF PERIODONTAL DISEASES IN CHILDREN AND TEENAGERS. EDUCATION, SCIENCE AND INNOVATIVE IDEAS IN THE WORLD, 41(5), 234-239.
35. Qilichovna, A. M. (2024). PREVENTION OF PERIODONTAL AND GUM DISEASES IN PREGNANT WOMEN. EDUCATION, SCIENCE AND INNOVATIVE IDEAS IN THE WORLD, 41(5), 240-245.
36. Qilichovna, A. M. (2024). HOMILADOR AYOLLARDA TISH VA PARADONT KASALLIKLARINING OLDINI OLISH. EDUCATION, SCIENCE AND INNOVATION IDEAS IN THE WORLD, 41(5), 246-253.
37. Akhmedova, M. K. (2024). STUDY OF CAUSAL FACTORS OF PERIODONTITIS. Journal of new century innovations, 49(3), 47-53.
38. Qilichovna, A. M. (2024). TO STUDY THE FACTORS THAT CAUSE PERIODONTITIS. Journal of new century innovations, 49(3), 40-46.
39. Qilichovna, A. M. (2024). THE ROLE OF PATHOGENESIS IN THE GROWTH FACTORS OF PERIODONTITIS DISEASE. Journal of new century innovations, 49(3), 25-32.
40. Qilichovna, A. M. (2024). TISH KARIYESI BO'LGAN BOLALAR VA SOG'LOM BOLALARNING OVQATLANISHIDAGI FARQLAR. Ta'limning zamonaviy transformatsiyasi, 6(2), 213-223.
41. Akhmedova, M. K. (2024). DIFFERENCES IN NUTRITION OF CHILDREN WITH DENTAL CARIES AND HEALTHY CHILDREN. Ta'limning zamonaviy transformatsiyasi, 6(2), 224-234.
42. Ergashevich, II, Bahronovich, B. F., & Qilichevna, A. M. (2024). ASTMATIK STATUSDAN BEMORLARNI CHIQARISHNING ZAMONAVIY TAMOYILLARI. EDUCATION, SCIENCE AND INNOVATION IDEAS IN THE WORLD, 43(8), 36-44.
43. Narzulaeva, U. (2024). PATHOGENETIC MODELS OF CHRONIC HEART FAILURE. In CENTRAL ASIAN JOURNAL OF EDUCATION AND INNOVATION (Vol. 3, Issue 12, pp. 154–157). Zenodo.https://doi.org/10.5281/zenodo.14557952

44. Farida Farkhodovna, K. ., Umida Rakhmatulloevna, N. ., & Mokhigul Abdurasulovna, B. (2022). ETIOLOGY OF CHRONIC RHINOSINUSITIS AND EFFECTIVENESS OF ETIOTROPIC TREATMENT METHODS (LITERATURE REVIEW). Education News: Research in the 21st Century, 1(4), 377–381. retrieved fromhttps://nauchniyimpuls.ru/index.php/noiv/article/view/1367

45. Numonova, A., & Narzulayeva, U. (2023). EPIDEMIOLOGY AND ETIOPATHOGENESIS OF CHF. Science and Innovation, 1(15), 115-119.

46. Oripova Ozoda Olimovna, Samiev Gulnoza Utkurovna, Khamidova Farida Muinovna, & Narzulaeva Umida Rakhmatullaevna (2020). The state of the distribution density of lymphoid cells of the laryngeal mucosa and manifestations of 320 ResearchBib IF - 11.01, ISSN: 3030-3753, Volume 2 Issue 1 local immunity in chronic laryngitis (analysis of sectional material). Academy, (4 (55)), 83-86.

47. Umida Rakhmatulloevna Narzulaeva, & Xamrayeva Muxlisa Farmon qizi. (2023). ETIOPATHOGENESIS OF HEMOLYTIC ANEMIA. Web of Medicine: Journal of Medicine, Practice and Nursing, 1(1), 1–4. Retrieved fromhttps://webofjournals.com/index.php/5/article/view/26

48. Narzulaeva, U., Samyeva, G., & Nasirova, Sh. (2023). Hemorheological disorders in the early stages of hypertension in a hot climate. Journal of Biomedicine and Practice, 1(1), 221–225.https://doi.org/10.26739/2181-9300-2021-1-31

49. Umida Rakhmatulloevna Narzulaeva. (2023). Important Aspects of Etiology And Pathogenesis of Hemolytic Anemias. American Journal of Pediatric Medicine and Health Sciences (2993-2149), 1(7), 179–182. Retrieved from https://grnjournal.us/index.php/AJPMHS/article/view/817

50. Narzulaeva, U. R., Samieva, G. U., & Nasirova, Sh. Sh. (2021). ISSIK IKLIMDA KECHUCHI HYPERTENSION CASALLIGINING BOSHLANGICH BOSKICHLARIDA GEMORAHEOLOGIK BUZILISHLAR. JOURNAL OF BIOMEDICINE AND PRACTICE, 6(1).

51. Narzulaeva, U., Samyeva, G., Lapasova, Z., & Tairova, S. (2023). The Importance of Diet in the Treatment of Arterial Hypertension. Journal of Biomedicine and Practice, 1(3/2), 111– 116.https://doi.org/10.26739/2181-9300-2021-3-98

52. Narzulaeva Umida Rakhmatulloevna, Samieva Gulnoza Utkurovna, & Ismatova Marguba Shaukatovna (2020). SPECIFICITY OF THE CLINICAL COURSE OF THE INITIAL STAGES OF HYPERTENSION IN ARID ZONES OF UZBEKISTAN AND NON-DRUG APPROACHES TO TREATMENT. Kronos, (4 (43)), 15-17.

53. Umida Raxmatulloevna Narzulaeva, & Mohigul Abdurasulovna Bekkulova (2023). Arterial gipertenziya etiologiyasida dislipidemiyaning xavf omili sifatidagi roli. Science and Education, 4(2), 415-419.

54. Narzulaeva, U. R., & Samieva, G. U. (2021). Nasirova ShSh. Hemorological Disorders in The Early Stages of Hypertension in Hot Climates. Journal of Biomedicine and Practice, 6(1), 221-225.

55. Dilsora Nuriddinovna Juraeva, Umida Rakhmatulloevna Narzulaeva, & Kurbonova Gulbahor Aslamovna. (2022). GENDER DIFFERENCES IN THE PARACLINICAL FEATURES OF THE COURSE OF TRIGEMINAL NEURALGIA. World Bulletin of Public Health, 8, 186-190. Retrieved fromhttps://www.scholarexpress.net/index.php/wbph/article/view/751

56. Narzullaeva, U. R., Samieva, G. U., & Pardaeva, Z. S. (2020). Pathogenetic aspects of verified risk factors such as arterial hypertension and dyslipidemia in the development of chronic heart failure. American Journal of Medicine and Medical Sciences, 10(10), 776-779.

57. Zhuraeva, D. N., & Narzulaeva, U. R. (2020). How to improve the neuralgia of the nervous system. JOURNAL OF NEUROLOGY AND NEUROSURGERY RESEARCH, 1(1). 58. Narzulyeva, U., & Ismoilova, N. (2023). DETECTION OF EATING BEHAVIOR DISORDERS IN STUDENTS BEFORE THE EXAM USING THE DEBQ QUESTIONNAIRE. Science and Innovation, 1(15), 112-114.

58. Narzulaeva, U. (2023). PATHOGENETIC MECHANISMS OF MICROCIRCULATION DISORDERS. International Bulletin of Medical Sciences and Clinical Research, 3(10), 60–65. Retrieved fromhttps://researchcitations.com/index.php/ibmscr/article/view/2811

59. Narzulaeva Umida Rakhmatulloevna and Rakhmatova Fotima Ulugbekovna, “PATHOGENETIC MECHANISMS OF DISORDERS IN THE HEMOSTASIS SYSTEM OBSERVED IN PATIENTS INFECTED WITH COVID-19”, IEJRD - International Multidisciplinary Journal, vol. 7, no. ICMEI, p. 3, Feb. 2023.

60. Narzulaeva, U. (2023). PATHOGENETIC SIGNIFICANCE OF HYPERLIPIDEMIA IN THE CLINICAL COURSE OF ARTERIAL HYPERTENSION. International Bulletin of Medical Sciences and Clinical Research, 3(11), 86-91.

61. Narzulaeva, U. (2023). PATHOGENETIC SIGNIFICANCE OF HYPERLIPIDEMIA IN THE CLINICAL COURSE OF ARTERIAL HYPERTENSION. International Bulletin of Medical Sciences and Clinical Research, 3(11), 86-91.

62. Narzullaeva, U., Samyeva, G., & Pardaeva, Z. (2022). PATHOPHYSIOLOGY OF MYOCARDIAL REPERFUSION INJURY. Journal Vestnik Vrachei, 1(2), 155–158.https://doi.org/10.38095/2181-466X-2020942-154-157

63. Samyeva, G., Narzulaeva, U., & Samiev, U. (2023). The course of arterial hypertension in residents of an arid region. Catalog of monographs, 1(1), 1–108. retrieved fromhttps://inlibrary.uz/index.php/monographs/article/view/27456

64. Oripova, O. O., Samieva, G. U., Khamidova, F. M., & Narzulaeva, R. U. (2020). The state of the laryngeal lymphoid cell distribution plot and local immunity manifestations in chronic laryngitis (sectional material). Akademiya, (4 (55)), 83-86.

65. Rakhmatulloevna, N. U., & Abdurasulovna, B. M. (2022). GEMOREOLOGIK BUZILISHLAR VA ERITROTSITLAR AGREGATSION XOSSALARI O'ZGARISHINING PATOGENETIK MEXANIZMLARI. JOURNAL OF BIOMEDICINE AND PRACTICE, 7(6)