INTERNATIONAL MULTI DISCIPLINARY JOURNAL FOR RESEARCH & DEVELOPMENT
eISSN 2394-6334 Impact factor: 8.854 Volume 13, issue 05 (2026)

# CARDIOVASCULAR DISEASES AND THEIR PREVENTION: APPROACHES OF PHYSICAL EDUCATION AND A HEALTHY LIFESTYLE

**Sattarova Sarvinoz,**
**Isroilova O'g'iloy,**
**Isroilov SHohmirzo**
**Abdullayev SHaxzod**
sattarovasarvinoz4@gmail.com
https://orcid.org/0009-0004-4827-370X
https://orcid.org/0009-0009-1380-225X
isroilova66666@gmail.com
isroilovshohmirzo45@gmail.com
abdullayevsh0603@gmail.com
https://orcid.org/0009-0002-4453-8091
**Kamilov D. Y.**, assistant, Department of Histology and Medical Biology №1,
kamilovjamshid3@gmail.com,
https://orcid.org/0009-0007-8477-5346
**Valiyev Y. Y.**, assistant of radiology department №1,
doctorvaliyev@gmail.com ,
https://orcid.org/0009-0004-4238-4951
https://doi.org/10.5281/zenodo.20035152

**Abstract:** Cardiovascular diseases (CVDs) represent one of the most critical challenges in contemporary medicine and global public health, distinguished by their widespread prevalence and their dominant contribution to overall mortality rates worldwide.

The present study provides a comprehensive and systematic examination of the etiological determinants, underlying pathogenetic mechanisms, and epidemiological characteristics of CVDs, alongside an evaluation of current evidence-based preventive strategies. Particular emphasis is placed on the detrimental effects of insufficient physical activity, unhealthy dietary patterns, chronic psycho-emotional stress, and harmful behavioral habits on the structural and functional integrity of the cardiovascular system.

Furthermore, this paper elucidates the fundamental components of a health-promoting lifestyle—including рационал nutrition, consistent physical exercise, maintenance of psycho-emotional stability, and регуляр preventive medical surveillance—and highlights their pivotal role in mitigating the onset and progression of cardiovascular pathology.

The analysis of contemporary research data indicates that a substantial proportion of cardiovascular diseases is attributable to modifiable risk factors. Consequently, the широк implementation of targeted preventive interventions has the potential to significantly reduce both the incidence and the overall burden of these conditions at the population level.

**Keywords:** Cardiovascular diseases, prevention, physical education, healthy lifestyle, stress and cardiovascular health, dietary habits, elderly and pediatric populations.

## Introduction

Cardiovascular diseases (CVDs) constitute one of the most pressing challenges in contemporary medicine, occupying a leading position in global morbidity and mortality statistics. According to data from the World Health Organization, more than 17–18 million individuals die annually because of these conditions. Such figures underscore the necessity of considering CVDs not only as a medical concern but also as a significant socio-economic burden.

Epidemiological trends observed over recent decades indicate a notable shift in the age distribution of cardiovascular pathology. Conditions once predominantly associated with the elderly population are increasingly being diagnosed among younger individuals, including children. This phenomenon is largely attributable to rapid urbanization, unhealthy dietary patterns, reduced levels of physical activity, heightened psycho-emotional stress, and adverse environmental influences.

The etiological factors contributing to the development of CVDs can be broadly classified into two principal categories: non-modifiable factors (such as age, sex, and genetic predisposition) and modifiable factors (including arterial hypertension, dyslipidemia, obesity, smoking, physical inactivity, and poor nutrition). Contemporary scientific evidence emphasizes that effective control of modifiable risk factors plays a decisive role in the prevention of these diseases.

Particular attention should be given to the fact that insufficient physical activity and irrational dietary habits contribute not only to metabolic disturbances but also to the early onset of atherosclerosis, arterial hypertension, and heart failure. Moreover, environmental determinants—such as air pollution, climate change, noise exposure, and chronic stress—impose an additional burden on the cardiovascular system, thereby exacerbating disease progression and outcomes.

Modern research highlights the necessity of a comprehensive and integrative approach to CVD prevention. Such an approach encompasses adherence to a balanced diet, maintenance of adequate physical activity, avoidance of harmful habits, preservation of psychological well-being, and implementation of early diagnostic measures. Preventive strategies are particularly crucial for high-risk groups, including children and the elderly population.

In the context of Uzbekistan, the increasing prevalence of cardiovascular diseases is closely linked to lifestyle patterns, dietary culture, and environmental conditions. Therefore, adapting international best practices to national contexts, promoting healthy lifestyle behaviors, and enhancing preventive healthcare programs represent key public health priorities.

The objective of this study is to conduct a systematic analysis of the principal risk factors associated with cardiovascular diseases, elucidate their pathogenetic mechanisms, and identify effective prevention strategies based on contemporary scientific approaches.

**Main Body**

Cardiovascular diseases (CVDs) are multifactorial in nature, arising from the complex interaction of various endogenous and exogenous determinants. These factors are conventionally classified into non-modifiable and modifiable categories. The former includes age, sex, and genetic predisposition, whereas the latter is largely associated with individual lifestyle patterns. Importantly, it is the modifiable risk factors that provide a substantial opportunity for effective prevention and risk reduction.

A central pathogenic process underlying the development of most cardiovascular diseases is atherosclerosis. This process is initiated by damage to the endothelial lining of the vascular wall, which facilitates the accumulation of circulating lipids within the intima. Over time, these lipid deposits evolve into atherosclerotic plaques, progressively narrowing the vascular lumen, impairing blood flow, and ultimately predisposing individuals to severe clinical outcomes such as myocardial infarction and stroke.

In addition, arterial hypertension represents a major contributor to cardiovascular morbidity. Persistently elevated blood pressure exerts excessive mechanical stress on the vascular walls, leading to structural and functional alterations, including reduced elasticity. Consequently, the myocardium is subjected to increased workload, which over time may culminate in the development of heart failure.

Physical activity serves as a critical protective factor for cardiovascular health. Regular exercise enhances myocardial function, improves hemodynamic efficiency, and contributes to the regulation of metabolic processes. Furthermore, it plays a key role in weight management, thereby reducing the overall risk of cardiovascular pathology.

Equally important is the role of рационал nutrition in prevention. Excessive consumption of saturated fats, sodium, and high-calorie foods is strongly associated with the development of cardiovascular diseases. In contrast, a balanced diet rich in fruits, vegetables, and essential nutrients supports optimal cardiac function and reduces disease risk.

Psychological determinants, particularly chronic stress, also exert a significant adverse impact on cardiovascular health. Persistent psycho-emotional strain is associated with elevated blood pressure, alterations in heart rate variability, and a general decline in physiological resilience. Therefore, effective stress management, adequate rest, and the maintenance of proper sleep hygiene are essential components of cardiovascular disease prevention.

**Conclusion.**

Physical education and a healthy lifestyle constitute integral components of modern living, playing a pivotal role in individual health and societal development. The promotion of physical activity across all population groups, adherence to balanced nutrition, effective stress management, and the elimination of harmful habits represent fundamental strategies for strengthening the cardiovascular system.

Cardiovascular diseases remain highly prevalent and represent a significant health threat among both elderly individuals and pediatric populations. Their development is influenced by multiple factors, including unhealthy dietary patterns, physical inactivity, chronic stress, harmful behaviors, genetic predisposition, and environmental conditions. In elderly individuals, age-related physiological changes contribute substantially to disease progression, whereas in children, incomplete cardiovascular development and increased psychological stress may act as predisposing factors.

Preventive measures must therefore occupy a central role in addressing cardiovascular diseases. рационал nutrition, increased physical activity, stress reduction, регуляр medical examinations, maintenance of optimal body weight, and avoidance of harmful habits are decisive in preserving cardiovascular health.

In addition, complementary therapeutic approaches—such as the use of plant extracts and preventive pharmacological agents—may support cardiac function; however, their application should be strictly guided by qualified healthcare professionals. It is essential for individuals, particularly those in high-risk groups such as the elderly and younger populations, to possess adequate awareness regarding cardiovascular health and to consistently adhere to preventive strategies.

In conclusion, the prevention of cardiovascular diseases extends beyond clinical treatment and requires a comprehensive approach grounded in the adoption of a healthy lifestyle, engagement in physical activity, and the рационал use of natural and medical resources. A healthy heart serves as the foundation of a healthy society and longevity.

**References**

1. Akbarov, R., & Xolmatov, S. Physical activity and the risk of cardiovascular diseases: The experience of Uzbekistan. Medical Journal, 2021; 3(5): 45–52.
2. Global Science Review. Scientific reforms in education and the importance of physical education, Vol. 4, No. 1, 2025.

3. Lee, I-M., Shiroma, E.J., et al. Effect of physical inactivity on major non-communicable diseases worldwide: An analysis of burden of disease and life expectancy. The Lancet, 2012; 380: 219–229.
4. Ministry of Health of the Republic of Uzbekistan. National guideline for the prevention of cardiovascular diseases. Tashkent, 2022.
5. Smith, J., & Brown, L. Physical activity and cardiovascular health: Evidence from epidemiological studies. Global Health Review, 2020; 15(2): 101–115.
6. Tashkent Psychology Center. Stress and mental health: Its impact on the cardiovascular system. Tashkent, 2021.
7. World Health Organization (WHO). Cardiovascular diseases (CVDs) fact sheet. Geneva: WHO, 2023.
8. World Heart Federation. Healthy diet for cardiovascular disease prevention. Geneva: WHF, 2022.
9. Азизова, Ф. Х., Отажонова, А. Н., Ишанжанова, С. Х., Расулов, К. И., & Мадаминова, Ф. А. (2014). Структурные особенности постнатального становления иммунной системы тонкой кишки крыс в условиях внутриутробного воздействия пестицидов. Морфология, 145(3), 11-11.
10. Азимов, Ж. С., Бурикбаева, А. М., Ишанджанова, С. Х., & Камилов, Д. Ю. (2025). Влияние гестационного гипотиреоза на физическое развитие потомства в динамике раннего постнатального онтогенеза. Экономика и социум, (2-1 (129)), 1404-1407.
11. Камилов, Д. Ю. (2026). Ортиқча вазнга эга шахсларда қон томир касалликларининг олдини олишда «schiller» қурилмалари ва «deep learning» алгоритмларининг аҳамияти. Pedagog, 9(4), 89-92.
12. Камилов, Д. Ю., & Азизова, Ф. Л. (2025). Гигиеническая оценка многофакторного питания работников предприятий полимерного производства. Медицинский журнал молодых ученых, (13 (03)), 243-246.