

## Analysis of Development Factors of Arterial Hypertension

*Soliev Alisher Urokovich*

*Head of the Department of teaching clinical skills on simulators of the Bukhara Medical University, PhD,  
Bukhara, Uzbekistan*

*Uroкова Dilshoda Alisher kizi*

*Student of 502 group of the Faculty of Medical Prevention and Public Health, Ecology and Environmental  
Protection, and Chemistry, Tashkent Medical Academy*

In Uzbekistan, like in other nations, non-communicable diseases (NCDs) constitute the majority of deaths (91.4%). The primary causes of mortality are diseases of the circulatory system (60.9%), encompassing coronary heart disease (CHD), arterial hypertension (AH), and associated complications (such as myocardial infarction, stroke, etc.). To decrease mortality rates, it's imperative to implement primary prevention measures, particularly through early identification of risk factors (RFs) and mitigating their impact on cardiovascular disease and related complications.

An examination of risk factor prevalence revealed that only 11% of individuals examined were devoid of risk factors, primarily among the younger demographic. 66.4% of the populace had 1–2 risk factors for NCDs, while 22.6% had 3–5 risk factors for NCDs.

Among the identified risk factors, it was observed that 67.2% of individuals consume inadequate amounts of vegetables and fruits, with only 32.8% adhering to WHO's recommendation of consuming 5 or more servings daily. 96.1% of the population utilize vegetable oil for cooking.

In terms of physical activity, 16.4% of the population falls short of WHO recommendations, 22.3% have low activity levels, and 60.9% do not engage in vigorous physical activity.

36.1% of adults frequently use salty condiments, sauces, or gravies, 31.5% consume high-salt foods more than three times a week, and 15.6% often add salt to food before meals. However, 91.3% of respondents acknowledge that excessive salt intake can lead to health issues, and 46.8% recognize the importance of reducing salt in their diet.

Tobacco smoking is predominantly prevalent among males (30.7%), although more than half of smokers (52.7%) reported receiving advice from healthcare providers to quit. 61% of residents acquired knowledge about the hazards of smoking from newspapers and magazines, 82% from television, and 54.1% from the radio. Despite health warnings on cigarette packs being noticed by 84.3% of smokers, and 80% contemplating quitting, 9.6% of respondents noticed tobacco product advertising in stores and kiosks.

Two-thirds of the adult population (66.6%) abstain from alcohol consumption throughout their lives, with 7.0% refraining for over a year, with medical reasons cited by a third of them. Over the past 12 months, 26.4% of respondents reported consuming various alcoholic beverages, with men outnumbering women fourfold.

Half of the population (50.1%) was found to be overweight, with 20.2% classified as obese, with a higher prevalence among women statistically. Notably, the incidence of obesity rises with age: among individuals aged 18–29, obesity stands at 7.3%, while in the 30–44 age group, it rises to 22.9%, and in the 45–64 age group, it reaches 38.7%.

**Conclusion:** Primary healthcare personnel must promptly identify risk factors and implement preventive measures systematically to mitigate their impact on health. Regular monitoring of non-communicable disease (NCD) risk factors, early detection of elevated blood pressure, and timely treatment initiation are crucial for effective prevention.

Cardiovascular diseases have become the primary cause of illness and mortality among adults globally in recent decades. These conditions carry significant medical and social implications in modern society, necessitating comprehensive research, including social factor analysis and the development of strategies to address them. The most prevalent cardiovascular diseases include coronary heart disease, cerebrovascular disease, and hypertension.

According to the National Statistical Institute, diseases of the circulatory system, including hypertension, accounted for 67% of all deaths in Bulgaria in 2018. The prevalence of these diseases varies among different populations: high arterial hypertension predominates in Finland, moderate hypertension in Germany and Sweden, and mild hypertension in Spain.

Arterial hypertension is categorized into primary (essential) and secondary (symptomatic) hypertension. Primary hypertension involves prolonged elevated blood pressure without an identifiable cause, while secondary hypertension results from underlying conditions such as renal, endocrine, vascular, cerebral, or neoplastic disorders.

Risk factors contributing to cardiovascular disease development include excessive salt intake, genetic predisposition, obesity, psychological stress, alcohol consumption, physical inactivity, and age.

Modern nursing programs aim to empower nurses to make independent decisions within their professional scope. During patient hospitalization, nurses provide personalized counseling to motivate behavior change and encourage healthy self-care practices. They educate patients on identifying modifiable risk factors, setting individualized goals for weight, diet, and physical activity improvement, and developing strategies to achieve these goals.

Effective prevention strategies should prioritize aspects such as promoting a healthy lifestyle, smoking cessation, balanced nutrition, physical activity promotion, weight management, alcohol consumption moderation, and stress reduction.

In recent years, there has been a rise in hypertension cases among young individuals. Among those aged 18 to 50, men exhibit a higher prevalence of hypertension, while in individuals over 50, women surpass men in this regard. Studies indicate that hypertension is increasingly affecting younger populations, including children and adolescents, with the youngest hypertension patients being as young as 20 years old. The highest percentage of patients falls within the 60 to 70 age group. While hypertension rates among the youth are lower compared to adults, recent years have witnessed a concerning uptick in hypertension cases among young individuals, including adolescents, with over 3% of teenagers and around 3% of asymptomatic children and adolescents suffering from prehypertension, which poses a long-term health risk.

Moreover, there has been a rise in cardiovascular disease-related mortality among women in recent times. According to the Bulgarian Cardiology Association, approximately 60-65 thousand deaths annually result from these diseases. Many cardiovascular ailments have a hereditary component, with predisposing genes potentially contributing to the development of risk factors. Hypertension, in particular, has a hereditary aspect, with 60% of respondents reporting familial knowledge of cardiovascular diseases, while 32% either lacked information or were unaware of such conditions in their families, and only 8% stated the absence of cardiovascular or vascular diseases in their families.

A significant proportion of respondents (34%) regularly monitor their blood pressure, while the remainder (66%) do so only in response to severe headaches, palpitations, or shortness of breath. High blood pressure can cause damage to blood vessels, thereby increasing the risk of strokes, kidney failure, heart disease, and heart attacks. The peril of hypertension lies in its often asymptomatic nature, earning it the moniker "silent killer," as it can go unnoticed by patients for years. Elevated blood pressure stands as a primary risk factor for serious cardiovascular diseases, with 69% of respondents having experienced a hypertensive crisis, reporting symptoms such as palpitations, pallor, mild headaches, dizziness, anxiety, and tension prior to the crisis.

Prolonged high blood sugar levels accelerate the progression of atherosclerosis, affecting major blood vessels with atherosclerotic plaques, particularly noticeable in the coronary arteries, brain vessels, and lower extremities. A significant portion of respondents (73%) reported having diabetes mellitus as a comorbid condition. Diabetes mellitus carries social significance due to its widespread prevalence, affecting around 190 million people worldwide, with projections indicating an increase to 300 million by 2025. The disease is prevalent in both developed and developing nations, with nearly 25% of individuals over 50 exhibiting reduced glucose tolerance, leading to diabetes development in 5-8% annually.

An examination of risk factors among hypertensive patients reveals that a considerable percentage consume alcohol daily (74%), with over half (55%) exceeding the recommended limit of 2 alcoholic units (AU). Poor dietary choices and behavioral habits, such as excessive salt intake, unhealthy cooking methods, and diets high in certain foods, indicate prevalent unhealthy habits among respondents. Nearly half (45%) prefer meat and sausages, with 54% predominantly using frying as their cooking method, and 65% adding salt. Only a small minority (2-9%) opt for fresh fruits and vegetables. The majority (62%) follow an unhealthy eating pattern, with 13% consuming just one meal per day. Effective weight loss necessitates a combination of dietary adjustments and regular physical activity.

The significance of dietary adjustments in managing hypertension finds support in the DASH (Dietary Approach to Stop Hypertension) study, which advocates for a diet abundant in fruits, vegetables, and low-fat dairy products while maintaining consistent levels of salt and calories. Research demonstrates that individuals adhering to the DASH diet experience a notable reduction in blood pressure compared to those following a standard diet. Similarly, the Mediterranean diet, characterized by ample consumption of fruits, vegetables, and olive oil, aligns with these principles. Studies affirm the correlation between salt intake and hypertension, highlighting that excessive consumption of salt can lead to persistent hypertension, whereas restricting salt intake to 5-6 g per day results in a significant decrease in blood pressure. In many regions, the average daily salt intake ranges from 9-12 g.

Being overweight increases susceptibility to conditions like arterial hypertension, atherosclerosis, heart failure, and metabolic disorders. Enhancing the functional health status of patients is imperative for mitigating the risk of cardiovascular diseases. The assessment of overweight and obesity typically employs the body mass index (BMI), which considers both height and weight.

Smokers face a substantially elevated risk of heart disease, with the likelihood being 30 times higher compared to non-smokers. Consumption of one or more packs of cigarettes per day doubles the mortality rate from coronary heart disease (CHD), underscoring the importance of smoking cessation in reducing this risk. Smoking not only heightens both morbidity and mortality from coronary artery disease but also stands as a major risk factor for atherosclerotic cardiovascular disease. The risk of heart disease correlates with the quantity and duration of cigarette consumption, with cigarettes containing low nicotine content posing similar hazards, and exposure to second-hand smoke also presenting dangers.

Stress triggers the release of large quantities of hormones that impact the cardiovascular system, resulting in elevated blood pressure and heightened risk of heart attack and other cardiovascular ailments. Over the past year, 46% of respondents experienced stress due to bereavement or divorce, 25% due to employment changes, 18% due to other stressful circumstances, and 11% due to relocation, all of which significantly affect their health and blood pressure.

The research underscores the significant impact of overweight, obesity, smoking, and stress as risk factors closely linked to hypertension. The coexistence of multiple risk factors in patients substantially heightens the probability of cardiovascular disease (CVD), as evidenced by major epidemiological studies conducted in the United States. Among the participants in our study, a considerable number were overweight or obese, with impaired glucose tolerance. Being overweight (with a BMI of 25-28.9) increases the risk of coronary heart disease by 50% compared to individuals with a normal BMI (<25).

Hypertension is particularly prevalent among overweight individuals, elevating the risk of the condition by 40-60%.

The dietary choices of patients are characterized by a preference for fatty foods such as meat and sausages, salty items, and insufficient consumption of fruits and vegetables. Diet, smoking, excessive alcohol intake, and physical inactivity are modifiable factors associated with hypertension. Measures for reducing risk in the secondary prevention of hypertension include blood pressure management, increased physical activity, and dietary modifications.

International studies reveal that approximately 25% of adults in developed nations suffer from hypertension, with projections indicating a rise to 29% by 2025. In Europe, there is a notable increase in hypertension prevalence among older adults, ranging from 30 to 45%. While Western European countries show a trend towards decreasing hypertension burden, the opposite is observed in Eastern European nations. For instance, in Portugal, hypertension incidence rose from 2 to 5%. In Bulgaria, the number of hypertensive individuals exceeds 1,750,000, with an estimated 500,000 cases yet to be diagnosed.

A Bulgarian study reported a hypertension prevalence of 13.6% among individuals aged 17 to 70 years and 2.7% among children aged 7 to 17 years. In a two-year study conducted in the United States from July 2017 to December 2019, out of 199,513 children aged 3 to 17 years, 12.7% had prehypertension, and 5.4% had hypertension. Among children with prehypertension, 3.8% progressed to hypertension.

Smoking emerges as a pivotal risk factor for atherosclerotic cardiovascular disease, leading to an elevated heart rate. The risk of cardiovascular disease in smokers is associated with the quantity and duration of cigarette consumption. Low-nicotine cigarettes pose similar risks, and exposure to second-hand smoke is also hazardous. According to the World Health Organization (WHO), quitting smoking leads to a 50% reduction in cardiovascular disease risk after just one year, reaching the level of non-smokers after 15 years.

The acute onset of emotional stress can elevate blood pressure due to a sudden surge in serum epinephrine and norepinephrine, while chronic stress can lead to sustained hypertension. Nurses instruct hypertensive patients to engage in moderate aerobic activities like walking, swimming, or cycling for at least 30 minutes daily, 5 to 7 days a week.

Research affirms that hypertension is more prevalent among men aged 18 to 50, shifting to higher prevalence among women after 50. The youngest hypertension patient identified in the study was 20 years old, with the highest proportion in their 60s and 70s. Familial predisposition plays a significant role, with most patients aware of their parents' cardiovascular history. Being overweight strongly correlates with hypertension, elevating the risk by 40-60% in overweight individuals.

The dietary factors contributing to obesity are multifaceted and not entirely understood. These encompass various nutrients (such as fats, carbohydrates), food and beverage choices (including sugary drinks), and dietary habits (such as meal frequency and portion size). Patients typically exhibit a preference for fatty foods like meat and sausages, along with salty items, coupled with low fruit and vegetable intake. Poor dietary habits, smoking, excessive alcohol consumption, and physical inactivity are modifiable risk factors.

Patients hold the reins to their own healthy lifestyle and heart health maintenance. Each risk factor's significance lies not in isolation but in combination with others. Often, the collective impact of multiple risk factors outweighs that of a single one. Lifestyle adjustments can effectively address "reversible risk factors" like body weight, diet, physical activity, smoking, alcohol intake, and stress. As part of nursing care, hypertensive patients acquire essential knowledge and behavioral skills during hospitalization. Nurses devise tailored diets and provide guidance on preparing healthy meals based on individual needs.

Lifestyle modifications are crucial for both preventing and treating cardiovascular diseases. Regular blood pressure monitoring, weight management, smoking cessation, alcohol intake moderation, and

increased physical activity are imperative for positive outcomes. Decreasing saturated fat and cholesterol consumption significantly enhances heart health.

## REFERENCES

1. Нармухамедова Н.А., Цой Е.С., Шукуров Ш.У., Юлдашев Р.М. /Анализ факторов риска по результатам исследования «steps» Проект «Здоровье-3», г.Ташкент. Узбекистан.
2. Перусанова Л.В., Петрова Н.П. /Анализ факторов риска у больных артериальной гипертонией. / Здоровье человека, теория и методика физической культуры и спорта • 2022. №28(4), с. 82-93, ISSN 2414–0244
3. Солиев А. У., Шохрух С. Клинические эффекты и механизмы действия гепарина-(обзор литературы) //Биология и интегративная медицина. – 2017. – №. 4. – С. 152-162.
4. Солиев А. У. СОСТОЯНИЕ КОМОРБИДНОСТИ ПРИ ПЕРВОЙ И ВТОРОЙ СТАДИЯХ АРТЕРИАЛЬНОЙ ГИПЕРТЕНЗИИ //BOSHQARUV VA ETIKA QOIDALARI ONLAYN ILMIY JURNALI. – 2023. – Т. 3. – №. 7. – С. 8-11.
5. Солиев А. У., Наврузова Ш. И. ПОКАЗАТЕЛИ ФАКТОРОВ РОСТА И ПОВРЕЖДЕНИЯ ПРИ АРТЕРИАЛЬНОЙ ГИПЕРТЕНЗИИ У МУЖЧИН //PEDAGOGICAL SCIENCES AND TEACHING METHODS. – 2022. – С. 308.
6. Солиев А. У., Наврузова Ш. И. БИОХИМИЧЕСКИЙ СПЕКТР КРОВИ У МУЖЧИН, СТРАДАЮЩИХ АРТЕРИАЛЬНОЙ ГИПЕРТОНИЕЙ //" XALQ TAVOVATI VA ZAMONAVIY TIBBIYOT, YANGI YONDASHUVLAR VA DOLZARB TADQIQOTLAR". – 2022. – С. 17-18.
7. Солиев А. У., Жарылкасынова Г. Ж. ФАКТОР РОСТА ФИБРОБЛАСТОВ //Journal of cardiorespiratory research. – 2022. – Т. 1. – №. 2. – С. 16-18.
8. Солиев А. У. Комбинированная терапия гиперреактивности бронхов //Состояние здоровья: медицинские, социальные и психолого-педагогические аспекты. – 2016. – С. 405-412.
9. Солиев А. У., Жарылкасынова Г. Ж. FIBROBLASTLARNING OSISH OMILI //Журнал кардиореспираторных исследований. – 2022. – Т. 3. – №. 2.
10. Солиев А. У. Лечение хронического кашля и бронхиальной астмы //Биология и интегративная медицина. – 2017. – №. 5. – С. 47-56.
11. Soliev A. U., Rajabova G. X., Djumaev K. S. Risk factors for arterial hypertension in elderly patients //Asian Journal of Multidimensional Research (AJMR). – 2019. – Т. 8. – №. 11. – С. 75-80.
12. Soliev A. U., Navruzova S. I. CORRELATION RELATIONSHIPS OF IMMUN-BIOCHEMICAL INDICATORS OF BLOOD OF PATIENTS WITH ARTERIAL HYPERTENSION, CONSIDERING GENDER //British Medical Journal. – 2022. – Т. 2. – №. 5.
13. Soliev A. U. CHANGES IN BODY MASS DEPENDING ON GENDER IN PATIENTS WITH ARTERIAL HYPERTENSION.
14. Soliev A. U. Immuno-Inflammatory and Hormonal Status with Arterial Hypertension //INTERNATIONAL JOURNAL OF HEALTH SYSTEMS AND MEDICAL SCIENCES. – 2022. – Т. 1. – №. 6. – С. 229-232.
15. Soliev A. U. Gender Features of the State of Comorbidity in Arterial Hypertension of 1 and 2 Degrees //INTERNATIONAL JOURNAL OF HEALTH SYSTEMS AND MEDICAL SCIENCES. – 2022. – Т. 1. – №. 6. – С. 135-137.
16. Soliev A. U. Insulin-like growth factor and hypertension //Modern journal of social sciences and humanities,-Portugal. – 2022. – Т. 5. – С. 708-714.

17. Soliev A. U. Navruzova Sh //I. Growth factors and damage in arterial hypertension in men.//ISOC international scientific online conference,-Germany. – 2022. – T. 11. – №. 1. – C. 305-307.
18. Soliev A. U. Navruzova Sh. I. Biochemical spectrum of blood in men suffering from arterial hypertension //Folk medicine and modern medicine, new approaches and current research scientific practical online conference,-Tashkent,-2022. – C. 17-18.
19. Soliev A. U., Sh S. Clinical Effects And Mechanisms Of Action Heparina //Electronic scientific journal" Biology and integrative medicine. – 2017. – №. 4. – C. 152-162.
20. Soliev A. U., Sh D. K., Radjabova G. X. Treatment of bronchial asthma by physiotherapeutic methods //Theory and practice of modern science. – 2018. – №. 5. – C. 783-787.
21. Soliev A. U. Prevalence of arterial hypertension and occurrence of risk factors in the elderly //Journal of Biomedicine and Practice. B. – C. 435-441.
22. Soliev A. U. Combination therapy of the bronchial hyperresponsiveness-Biology and integrative medicine, 2018. № 2.
23. Soliev A. U., Mardonova Z. O., Shirinov A. K. INTRODUCTION OF THE NEW METHOD OF TREATMENT OF THE ISCHEMIC HEART DISEASE WITH APPLICATION OF HEPARIN INHALATION //Здравоохранение: образование, наука, инновации. – 2013. – С. 200-201.
24. Urakovich S. A. CHANGES IN BODY MASS DEPENDING ON GENDER IN PATIENTS WITH ARTERIAL HYPERTENSION //European research. – 2023. – №. 1 (79). – C. 55-57.