



HEALTHY LIFESTYLE AND DISEASE PREVENTION: EVIDENCE-BASED STRATEGIES AND THE UZBEKISTAN CONTEXT

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Abstract. Noncommunicable diseases (NCDs) – cardiovascular diseases, cancers, chronic respiratory diseases and diabetes – are the leading cause of death worldwide, and most of them are linked to a small group of modifiable behavioural risk factors. This article reviews the evidence on the contribution of a healthy lifestyle to disease prevention, drawing on World Health Organization (WHO) fact sheets and guidelines, peer-reviewed literature and official Uzbek legislative and policy documents. Global data show that NCDs caused at least 43 million deaths in 2021, including 18 million deaths before the age of 70. Around 31% of adults were insufficiently physically active in 2022; tobacco kills more than 7 million people every year; alcohol was responsible for an estimated 2.6 million deaths in 2019; and about 1.4 billion adults live with hypertension, of whom fewer than one in four have the condition under control. The core elements of primary prevention are balanced nutrition (at least 400 g of fruit and vegetables and less than 5 g of salt per day, and less than 10% of energy from free sugars), regular physical activity (150–300 minutes of moderate-intensity activity per week for adults), abstinence from tobacco, avoidance of harmful alcohol use, maintenance of a healthy body weight, and early detection through screening. The article also summarises the Uzbek legal framework, including the 1996 Law on the Protection of Citizens' Health and presidential decrees and resolutions adopted in 2018–2020, and outlines practical implications for primary care and medical education.



Keywords: healthy lifestyle; disease prevention; noncommunicable diseases; physical activity; balanced nutrition; tobacco control; hypertension; public health; Uzbekistan

Introduction

Health, as defined in the Constitution of the World Health Organization, is a state of complete physical, mental and social well-being and not merely the absence of disease or infirmity. A healthy lifestyle is the set of everyday behaviours – balanced nutrition, regular physical activity, avoidance of tobacco and harmful use of alcohol, adequate rest, management of stress and use of preventive health services – through which people protect and strengthen this state. Disease prevention is conventionally divided into three levels: primary prevention aims to stop disease from occurring (for example, through healthy diet, physical activity, vaccination and tobacco control); secondary prevention aims to detect disease at an early stage through screening and regular check-ups; and tertiary prevention aims to limit complications and disability in people who are already ill. The scale of the problem is considerable. According to WHO, noncommunicable diseases killed at least 43 million people in 2021, equivalent to 75% of all non-pandemic-related deaths globally. In the same year, 18 million people died from an NCD before the age of 70 years, and 82% of these premature deaths occurred in low- and middle-income countries. Cardiovascular diseases account for most NCD deaths (at least 19 million in 2021), followed by cancers (10 million), chronic respiratory diseases (4 million) and diabetes (over 2 million). These four groups of diseases account for 80% of all premature NCD deaths, and tobacco use, physical inactivity, the harmful use of alcohol, unhealthy diets and air pollution all increase the risk of dying from an NCD [1].

Uzbekistan faces the same challenge. In November 2018, at a meeting devoted to the results of health-system reforms, the President of Uzbekistan noted that, as a result of low physical activity and improper nutrition, about half of the country's



population was overweight, 46% of people had above-normal blood cholesterol and 31% had raised blood pressure; prevention through a healthy lifestyle and a culture of healthy eating was described as the least costly and most effective way to prevent disease [2]. Since then, a series of legal acts has placed healthy lifestyle promotion and NCD prevention among the priorities of national health policy [12–16].

The aim of this article is to summarise the most reliable current evidence on the contribution of lifestyle factors to the prevention of chronic diseases, to present the main internationally accepted recommendations, and to show how these are reflected in Uzbek health policy and what they mean for primary care and medical education.

Materials and Methods

This article is a narrative review. Quantitative data were taken from WHO fact sheets and global reports (the most recent editions available in September 2026), from two internationally published sources – a pooled analysis of 507 population-based surveys published in *The Lancet Global Health* (2024) and the WHO 2020 guidelines on physical activity and sedentary behaviour published in the *British Journal of Sports Medicine* – and from official Uzbek legal and policy documents obtained from the National Database of Legislation (Lex.uz) and the official website of the President of Uzbekistan. Only indicators attributed to a named source were used, and the reference year of each indicator is given in the text, because global estimates are periodically revised. The synthesis in Sections 5 and 6 is the author's interpretation of these sources.

Key Components of a Healthy Lifestyle

Most NCDs are the result of a few behaviours – tobacco use, physical inactivity, unhealthy diet and harmful use of alcohol. These behaviours manifest in the body as raised blood pressure, increased blood glucose, elevated blood lipids and overweight or obesity, which in turn drive cardiovascular disease, diabetes and many



cancers [1]. Each behavioural component is discussed below, and the main figures are summarised in Table 1.

Balanced nutrition

WHO describes the basic principles of a healthy diet for adults as follows: eating plenty of fruit, vegetables, legumes, nuts and whole grains; at least 400 g (five portions) of fruit and vegetables per day, not counting potatoes, sweet potatoes, cassava and other starchy roots; less than 10% of total energy intake from free sugars (about 50 g, or 12 level teaspoons, in a 2,000-kilocalorie diet), and ideally less than 5%; less than 30% of energy from total fat, with saturated fats below 10% and trans-fats below 1%; and less than 5 g of salt (about one teaspoon) per day, preferably iodized. Keeping salt intake below 5 g per day helps prevent hypertension and reduces the risk of heart disease and stroke. For infants, WHO advises exclusive breastfeeding during the first six months of life and continued breastfeeding, with adequate complementary foods, up to two years of age and beyond [3]. **Regular**

physical activity

Physical inactivity is one of the most widespread modifiable risk factors. A pooled analysis of 507 population-based surveys estimated that the global age-standardised prevalence of insufficient physical activity among adults rose from 23.4% in 2000 to 26.4% in 2010 and 31.3% in 2022, and that the prevalence was higher among women (33.8%) than among men (28.7%) [5]. WHO reports that nearly one third of adults – about 1.8 billion people – did not meet the recommended activity levels in 2022, and that this share could reach 35% by 2030 if current trends continue. Inactivity increases the risk of cardiovascular diseases such as heart attack and stroke, type 2 diabetes, dementia, and cancers such as breast and colon cancer [4].

According to the WHO 2020 guidelines, adults should undertake at least 150–300 minutes of moderate-intensity aerobic activity, or at least 75–150 minutes of vigorous-intensity activity, or an equivalent combination, per week, and should add



muscle-strengthening activities on two or more days per week. Children and adolescents should average 60 minutes of moderate-to-vigorous physical activity per day. All age groups should limit sedentary time [6].

Avoidance of tobacco

Tobacco kills more than 7 million people each year, including over 1.6 million non-smokers who are exposed to second-hand smoke. All forms of tobacco use are harmful, and there is no safe level of exposure. Tobacco use is a major risk factor for cardiovascular and respiratory diseases and for more than 20 types or subtypes of cancer. The health benefits of quitting are substantial, and counselling and medication can more than double a tobacco user's chance of successful quitting [7]. Comprehensive smoke-free laws protect more than one third of the world's population, living in 79 countries [7].

Limiting alcohol

Worldwide, around 2.6 million deaths were attributable to alcohol consumption in 2019. Of these, 1.6 million were from noncommunicable diseases, about 700,000 from injuries and about 300,000 from communicable diseases; men accounted for 2 million of the deaths and women for 600,000. An estimated 400 million people, or 7% of the world's population aged 15 years and older, were living with alcohol use disorders. WHO stresses that consumption even at low levels can bring health risks, although most alcohol-related harm arises from heavy episodic or heavy continuous drinking [8].

Healthy body weight and blood pressure

In 2022, 2.5 billion adults aged 18 years and older were overweight, including more than 890 million living with obesity; this corresponds to 43% and 16% of adults, respectively, and one in eight people worldwide was living with obesity. Among children and adolescents aged 5–19 years, over 390 million were overweight, including 160 million with obesity. WHO classifies obesity as a chronic, relapsing disease arising from the interaction of genetics, eating behaviours, the food



environment and broader social factors [9]. Hypertension is among the most important preventable causes of premature death. An estimated 1.4 billion adults aged 30–79 years (33% of that age group) had hypertension in 2024. About 600 million of them (44%) were unaware of their condition, and only about 320 million (23%) had it under control [10]. These figures show why regular blood pressure measurement, salt reduction and adherence to treatment are central to prevention.

Mental well-being, sleep, vaccination and preventive care

Adequate sleep, stress management, social connectedness, personal hygiene and vaccination complement the behaviours described above. Although quantitative targets for these components are less standardised than those for diet or physical activity, they are integral to a holistic definition of a healthy lifestyle and are a natural part of counselling in primary care. WHO also emphasises that detection, screening and treatment of NCDs are key components of the response to these diseases [1].

Table 1. Main modifiable risk factors: global indicators and recommendations

Risk factor	Key global indicator (source)	Recommendation
Unhealthy diet and excess weight	2.5 billion adults overweight and over 890 million living with obesity in 2022 [9]	≥ 400 g fruit and vegetables daily; free sugars $< 10\%$ of energy; total fat $< 30\%$; salt < 5 g per day [3]
Physical inactivity	About 31% of adults (1.8 billion) insufficiently active in 2022 [4, 5]	Adults: 150–300 min moderate or 75–150 min vigorous activity weekly; children and adolescents: about 60 min daily [6]



Risk factor	Key global indicator (source)	Recommendation
Tobacco use	More than 7 million deaths per year, including over 1.6 million from second-hand smoke [7]	No tobacco in any form; smoke-free environments; cessation counselling and medication [7]
Harmful alcohol use	About 2.6 million deaths in 2019 [8]	Avoid harmful drinking; risks exist even at low levels of consumption [8]
High blood pressure	1.4 billion adults with hypertension in 2024; 44% unaware, 23% controlled [10]	Regular blood pressure checks; salt reduction; adherence to treatment [3, 10]

Sources: WHO fact sheets and guidelines as cited in the table; compiled by the author.

Population-Level Approaches

Individual behaviour is strongly shaped by the environment in which people live, learn, work and shop. For this reason, prevention cannot rely on personal effort alone. WHO's investment case for noncommunicable diseases argues that measures such as health taxes on tobacco and alcohol, protection of children from harmful marketing, effective management of hypertension and scaling up of cervical cancer screening deliver returns for both health and national economies [11]. Smoke-free legislation, restriction of salt and industrially produced trans-fats in foods, and the creation of safe spaces for walking, cycling and sport are further examples of policies that make the healthy choice the easier choice [1, 3, 4, 7].

Healthy Lifestyle Policy in Uzbekistan

The legal foundation of health protection in Uzbekistan is the Law "On the Protection of Citizens' Health" of 29 August 1996 (No. 265-I, as amended), which,



among other provisions, requires periodic medical examinations of employees in certain industries and occupations in order to prevent infectious and occupational diseases [12]. From 2018 onwards, prevention and healthy lifestyle promotion received particular attention in a sequence of presidential acts, summarised in Table 2.

Table 2. Selected Uzbek legal and policy documents relevant to healthy lifestyle and prevention

Document	Date	Relevance to healthy lifestyle and disease prevention
Law No. 265-I "On the Protection of Citizens' Health" [12]	29 Aug 1996 (as amended)	Basic law of the health sector; provides for preventive medical examinations of workers in defined industries and professions.
Presidential Decree PF-5590 [13]	7 Dec 2018	Comprehensive health-system reform; sets the aim of supporting a healthy lifestyle and preventing diseases through patronage services and effective models of dispensary observation, and of promoting healthy lifestyle and proper nutrition widely.
Presidential Resolution PQ-4063 [14]	18 Dec 2018	Approves the 2019–2022 Concept for NCD prevention, support of a healthy lifestyle and increased physical activity; provides for targeted programmes, campaigns against harmful habits and the "Alpomish" and "Barchinoy" fitness tests.



Document	Date	Relevance to healthy lifestyle and disease prevention
Presidential Resolution PQ-4887 [15]	10 Nov 2020	Additional measures to ensure healthy nutrition of the population; recognises the formation of a healthy lifestyle as an important direction of state policy in health care and sport.
Presidential Resolution PQ-4891 [16]	12 Nov 2020	Strengthens medical prevention; tasks for staff include promoting personal and public hygiene and a healthy lifestyle, identifying NCD risk factors through questionnaires and check-ups, individual counselling, and awareness events on nutrition, physical activity and avoidance of harmful habits.

Note: some provisions have since been amended or have expired; current versions should be checked at Lex.uz.

Taken together, these documents show a shift from a predominantly curative model towards prevention, early detection of risk factors and health education. Their emphasis on questionnaires, check-ups and individual counselling by primary-care staff corresponds closely to the WHO logic that behavioural risk factors and their metabolic consequences should be identified early and addressed at the community level [1, 16]. The President has also stressed that prevention work and medical check-ups should be well organised at the level of the neighbourhood (mahalla), with patients referred to district and regional facilities when necessary [2].

Practical Implications for Primary Care and Medical Education

Medical colleges, nurses and paramedical staff are in daily contact with families and young people and are therefore well placed to translate the evidence



above into practice. On the basis of the sources reviewed, the following measures are suggested:

- Include brief, structured lifestyle counselling (nutrition, physical activity, tobacco and alcohol) in every routine patient contact, using the WHO benchmarks in Table 1 as a common reference.
- Measure blood pressure, body weight and height (body mass index) systematically, and refer people with raised values for further assessment, in line with the risk-factor screening approach outlined in PQ-4891 [10, 16].
- Offer or arrange cessation support for tobacco users, since counselling and medication substantially improve quitting success [7].
- Strengthen health education in colleges, schools and mahallas through skills-based and peer-led activities, and encourage young people to reach the recommended average of 60 minutes of daily moderate-to-vigorous activity [2, 6].
- Teach future health workers to communicate risk clearly and respectfully, to use reliable data sources such as WHO and national statistics, and to update their knowledge regularly, because global estimates are revised periodically.

Conclusion

The evidence reviewed in this article shows that most of the global burden of noncommunicable diseases is linked to a small number of modifiable risk factors: unhealthy diet, physical inactivity, tobacco use and harmful alcohol consumption, together with their metabolic consequences – overweight, raised blood pressure, glucose and cholesterol. These risks can be reduced by well-defined, measurable behaviours: at least 400 g of fruit and vegetables and less than 5 g of salt per day, 150–300 minutes of moderate-intensity physical activity per week, no tobacco, avoidance of harmful drinking, a healthy body weight and regular screening.

At the same time, the data on hypertension, inactivity and obesity show that awareness and control are still insufficient in many countries, and that healthy



choices depend on supportive environments as well as on individual motivation. In Uzbekistan, the legal framework adopted since 2018 has established prevention, healthy nutrition and physical activity as priorities of state policy; its success depends on consistent implementation at the primary-care and community levels, where medical colleges and their graduates play an important part. Investing in lifestyle-based prevention is therefore both a health imperative and a practical strategy for reducing the long-term burden on patients, families and the health system.

References:

1. World Health Organization. Noncommunicable diseases [Internet]. Fact sheet. Geneva: WHO; 2025 Sep 25 [cited 2026 Sep 23]. Available from: <https://www.who.int/news-room/fact-sheets/detail/noncommunicable-diseases>
2. O‘zbekiston Respublikasi Prezidentining rasmiy veb-sayti. Sog‘liqni saqlash tizimidagi islohotlar natijalari tahlil qilinib, yangi ustuvor yo‘nalishlar belgilandi Tashkent; 2018 Nov 9 [cited 2026 Sep 23]. Available from: <https://president.uz/oz/lists/view/2128>
3. World Health Organization. Healthy diet [Internet]. Fact sheet. Geneva: WHO; 2026 [cited 2026 Sep 23]. Available from: <https://www.who.int/news-room/fact-sheets/detail/healthy-diet>
4. World Health Organization. Physical activity [Internet]. Fact sheet. Geneva: WHO; 2024 Jun 26 [cited 2026 Sep 23]. Available from: <https://www.who.int/news-room/fact-sheets/detail/physical-activity>
5. Strain T, Flaxman S, Guthold R, et al. National, regional, and global trends in insufficient physical activity among adults from 2000 to 2022: a pooled analysis of 507 population-based surveys with 5.7 million participants. *Lancet Glob Health*. 2024;12(8):e1232–e1243. Available from: [https://www.thelancet.com/journals/langlo/article/PIIS2214-109X\(24\)00150-5/fulltext](https://www.thelancet.com/journals/langlo/article/PIIS2214-109X(24)00150-5/fulltext)



6. Bull FC, Al-Ansari SS, Biddle S, et al. World Health Organization 2020 guidelines on physical activity and sedentary behaviour. *Br J Sports Med.* 2020;54(24):1451–1462.
7. World Health Organization. Tobacco [Internet]. Fact sheet. Geneva: WHO; 2026 [cited 2026 Sep 23]. Available from: <https://www.who.int/news-room/fact-sheets/detail/tobacco>
8. World Health Organization. Alcohol [Internet]. Fact sheet. Geneva: WHO; 2024 Jun 28 . Available from: <https://www.who.int/news-room/fact-sheets/detail/alcohol>
9. World Health Organization. Obesity and overweight [Internet]. Fact sheet. Geneva: WHO; 2025. Available from: <https://www.who.int/news-room/fact-sheets/detail/obesity-and-overweight>
10. World Health Organization. Hypertension [Internet]. Fact sheet. Geneva: WHO; 2025 Sep 25. Available from: <https://www.who.int/news-room/fact-sheets/detail/hypertension>
11. World Health Organization. Saving lives, spending less: the global investment case for noncommunicable diseases. Geneva: WHO; 2025.
12. O‘zbekiston Respublikasining Qonuni. Fuqarolar sog‘lig‘ini saqlash to‘g‘risida [On the protection of citizens' health] (in Uzbek). No. 265-I, 1996 Aug 29 (as amended). Available from: <https://lex.uz/docs/-26013>
13. O‘zbekiston Respublikasi Prezidentining Farmoni. O‘zbekiston Respublikasi sog‘liqni saqlash tizimini tubdan takomillashtirish bo‘yicha kompleks chora-tadbirlar to‘g‘risida [On comprehensive measures to radically improve the health system of the Republic of Uzbekistan] (in Uzbek). No. PF-5590, 2018 Dec 7. Available from: <https://lex.uz/docs/-4096197>
14. O‘zbekiston Respublikasi Prezidentining Qarori. Yuqumli bo‘lmagan kasalliklar profilaktikasi, sog‘lom turmush tarzini qo‘llab-quvvatlash va aholining jismoniy faolligi darajasini oshirish chora-tadbirlari to‘g‘risida [On



- measures for the prevention of noncommunicable diseases, support of a healthy lifestyle and increase of physical activity of the population] (in Uzbek). No. PQ-4063, 2018 Dec. Available from: <https://lex.uz/docs/-4111365>
15. O‘zbekiston Respublikasi Prezidentining Qarori. Aholining sog‘lom ovqatlanishini ta’minlash bo‘yicha qo‘shimcha chora-tadbirlar to‘g‘risida [On additional measures to ensure healthy nutrition of the population] (in Uzbek). No. PQ-4887, 2020 Nov 10 Available from: <https://www.lex.uz/docs/-5090241>
 16. O‘zbekiston Respublikasi Prezidentining Qarori. Tibbiy profilaktika ishlari samaradorligini yanada oshirish orqali jamoat salomatligini ta’minlashga oid qo‘shimcha chora-tadbirlar to‘g‘risida [On additional measures to ensure public health by further increasing the effectiveness of medical prevention] (in Uzbek). No. PQ-4891, 2020 Nov 12. Available from: <https://lex.uz/uz/docs/-5100663>