

# Behavioral Modification: A Preventive Approach towards Reducing the Prevalence of Cardiovascular Disease

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## Abstract

Cardiovascular disease is the leading cause of death worldwide. Behavioral risk factors such as poor dietary choices and substance abuse play a significant role in the development of cardiovascular disease. This brief review focuses on behavioral modification as an approach to prevent cardiovascular disease risk factors and reduce the overall prevalence of cardiovascular disease.

**Keywords:** cSardiovascular disease, cardiovascular disease risk factors, behavioral modification.

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## 1. Introduction

Cardiovascular disease, encompassing a spectrum of conditions that impact the heart and its blood vessels, stands as the most lethal ailment globally (WHO, 2021). The Centers for Disease Control and Prevention highlights a rising prevalence of cardiovascular disease, contributing to heightened mortality rates among both genders aged mid-forties and above in the U.S. (CDC, 2023). Managing cardiovascular disease incurs substantial expenses, with an annual cost to the U.S. totaling \$219 billion (CDC, 2021). This article explores a preventive strategy through behavioral modification to alleviate the financial burden on individuals and the government.

## 2. Risk Factors

According to the OECD, risk factors refer to elements or factors that contribute to the susceptibility or likelihood of developing a disease. In the context of cardiovascular disease, these risk factors are those predisposing factors or elements that increase the likelihood of individuals developing such conditions. Major behavioral risk factors for cardiovascular disease include poor dietary choices (coupled with a lack of physical activity or exercise), and the misuse or abuse of substances, encompassing alcohol and drugs. Addressing and modifying these behavioral risk factors holds the potential to decrease the prevalence of cardiovascular disease.

## 3. Diets

Over time, poor dietary habits can manifest as high blood pressure, diabetes, obesity, hyperlipidemia among others (WHO, 2021). There is a proven direct correlation between obesity and cardiovascular disease (Wartella et al. 2010). Additionally, an elevated intake of sodium exceeding the recommended daily limit of 2,300 mg has been linked to high blood pressure (CDC, 2022). The increase in obesity rates has been attributed to multiple factors, with dietary habits/ choices playing a significant role. Notably, a typical Western diet is characterized by a substantial inclusion of refined sugars and unhealthy fats (Rakhra et al. 2020). It has been found that adopting enhanced dietary habits, including increased consumption of fruits and vegetables while reducing sugar and fat intake, can significantly lower the risk factors associated with cardiovascular disease, ultimately serving as a preventive measure. It is the American Heart Association recommendation that 6 teaspoons (or less) of sugar for women and 9 teaspoons (or less) of sugar for men, is the required daily intake (Wartella et al. 2010). Additionally, it is noteworthy to emphasize that integrating regular physical activities into one's routine, in conjunction with a healthy diet, is a valuable approach to reducing susceptibility to cardiovascular disease (WHO, 2021).

## 4. Substance Abuse

Substance abuse is an epidemic in the United States, exerting deleterious effects on cardiovascular health. Studies indicate that alcohol and other substances may play a role in the progression of diseases, particularly in patients with heart failure (Havakuk et al. 2017; Mirijillo et al. 2017). Moreover, a strong association between substance abuse and heart failure has been established, as evidenced by increased visit to the emergency department, hospital admissions, and readmissions, as reported in a 2020 study (Nishimura et al. 2020). The intake of illegal substances carries the risk of addiction, defined as a chronic condition marked by compulsive drug seeking habit that proves difficult to control, despite harmful consequences (NIDA, 2018). In other essence, addiction involves a dependence on drugs and alcohol, either psychologically or physically (APA, 2022). Various substances, including alcohol, nicotine, caffeine, opioids, steroids, cocaine, heroin, and cannabis, can lead to addiction. Taking affirmative steps, such as discontinuing the use of illegal substances and moderating

alcohol consumption, can contribute significantly to mitigating the risk of developing cardiovascular disease.

## 5. Conclusion.

Risk factors for cardiovascular disease are both preventable and modifiable, presenting a cost-effective approach to reducing its prevalence. The imperative lies in modifying typical Western diets to align with health objectives, aiming to prevent conditions such as overweight, obesity, high blood pressure, diabetes, and ultimately cardiovascular disease. Simultaneously, addressing substance use and abuse as additional behavioral risk factors holds the potential to significantly improve cardiovascular health and contribute to the reduction of cardiovascular disease prevalence.

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