

DEVELOPMENT OF CARDIOVASCULAR RISK FACTORS IN YOUNG PEOPLE

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Abstract:

This article delves into the development of cardiovascular risk factors in young people, shedding light on the shifting landscape of cardiovascular diseases (CVDs) towards affecting younger populations. As sedentary lifestyles, poor dietary habits, and rising obesity rates become increasingly prevalent among the youth, the burden of CVD risk factors such as hypertension, dyslipidemia, and metabolic syndrome is on the rise. Moreover, the pervasive influence of tobacco and substance use, coupled with psychosocial stressors, further compounds the cardiovascular risk profile of young individuals. Early prevention strategies, including education, behavioral modification, and targeted interventions, are highlighted as essential components in mitigating the development and progression of CVD risk factors in young populations. By addressing these risk factors during formative years, public health initiatives can effectively curb the trajectory of CVDs and promote heart health across the lifespan.

Keywords: lifestyle, tobacco use, substance abuse, psychosocial factors, prevention, education, behavioral modification, public health initiatives.

Cardiovascular diseases (CVDs) remain a leading cause of mortality worldwide, with a significant portion of cases originating from the accumulation of cardiovascular risk factors early in life. While traditionally viewed as conditions of older age, CVDs are increasingly affecting younger populations due to lifestyle factors and changing demographics. Understanding the development of cardiovascular risk factors in young people is crucial for implementing effective preventive strategies and reducing the burden of CVDs in later life.

Changing Lifestyle Patterns, In recent decades, sedentary lifestyles, poor dietary habits, and increased prevalence of obesity have become common among young people. These lifestyle factors contribute significantly to the development of cardiovascular risk factors such as hypertension, dyslipidemia, and insulin



resistance. Modern lifestyles often involve prolonged periods of sitting or inactivity, driven by factors such as increased screen time, reliance on technology, and desk-bound occupations. Sedentary behaviors have been linked to obesity, hypertension, and dyslipidemia, all of which are established risk factors for CVDs. The consumption of processed foods high in sugar, salt, and saturated fats has become increasingly prevalent among young people. Fast food, sugary beverages, and snacks high in calories but low in nutritional value contribute to weight gain, insulin resistance, and metabolic abnormalities, further increasing the risk of CVDs. The combination of sedentary behaviors and unhealthy dietary habits has profound implications for cardiovascular health. Lack of physical activity leads to reduced cardiovascular fitness, impaired glucose metabolism, and dyslipidemia, while poor dietary choices contribute to obesity, hypertension, and inflammation, all of which are key drivers of CVD development.

Rise in Obesity and Metabolic Syndrome, Obesity, often accompanied by metabolic syndrome, has emerged as a major risk factor for CVDs in young individuals. The clustering of abdominal obesity, dyslipidemia, hypertension, and impaired glucose metabolism in metabolic syndrome accelerates the atherosclerotic process and increases the risk of premature cardiovascular events. Metabolic syndrome is characterized by a constellation of risk factors, including central obesity, dyslipidemia, hypertension, and insulin resistance. These metabolic abnormalities often occur together and increase the risk of developing type 2 diabetes, coronary artery disease, and stroke. Several factors contribute to the rise in obesity and metabolic syndrome among young people. These include changes in dietary patterns, sedentary lifestyles, genetic predisposition, socioeconomic factors, and environmental influences such as the availability of unhealthy food options and limited access to physical activity.

Impact of Tobacco and Substance Use, Smoking, vaping, and substance abuse are prevalent behaviors among young people, further exacerbating their cardiovascular risk. Tobacco use, in particular, is strongly associated with the development of atherosclerosis, hypertension, and coronary artery disease, even in young adults. Substance abuse, including the use of illicit drugs such as cocaine, methamphetamine, and opioids, poses significant risks to cardiovascular health. These substances can cause vasoconstriction, arrhythmias, hypertension, and myocardial infarction, leading to acute cardiovascular emergencies and long-term complications. Young people who engage in tobacco and substance use are



at heightened risk of developing CVDs at an earlier age. The effects of these behaviors on cardiovascular health can be particularly detrimental during critical periods of growth and development, setting the stage for lifelong cardiovascular complications.

Psychosocial Factors, Psychosocial stressors, such as socioeconomic disparities, academic pressure, and social isolation, can also contribute to the development of cardiovascular risk factors in young individuals. Chronic stress activates the sympathetic nervous system and hypothalamic-pituitary-adrenal axis, leading to increased blood pressure, dyslipidemia, and insulin resistance.

Role of Early Prevention, Early identification and management of cardiovascular risk factors in young people are paramount for preventing the onset and progression of CVDs later in life. Public health initiatives focusing on promoting healthy lifestyles, screening for risk factors, and providing targeted interventions are essential components of preventive strategies.

Importance of Education and Behavioral Modification, Educating young individuals about the impact of lifestyle choices on cardiovascular health and empowering them to adopt healthier behaviors are critical steps in reducing the burden of CVDs. Behavioral modification interventions targeting diet, physical activity, smoking cessation, and stress management can significantly mitigate cardiovascular risk factors in young populations. Behavioral modification interventions focus on promoting healthy behaviors and lifestyle habits that support cardiovascular health. These may include encouraging regular physical activity, adopting a balanced and nutritious diet, maintaining a healthy weight, avoiding tobacco and substance use, and managing stress effectively. Empowering individuals to take ownership of their health and well-being is a fundamental aspect of education and behavioral modification. By providing individuals with the knowledge, skills, and resources they need to make positive changes, they can become active participants in their own cardiovascular health management.

In conclusion, the development of cardiovascular risk factors in young people is a multifaceted process influenced by lifestyle factors, socioeconomic determinants, and psychosocial stressors. Addressing these risk factors early in life through targeted interventions and preventive measures is essential for curbing the rising tide of CVDs and promoting heart health across the lifespan.

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