

# A Pandemic of the Modern Age of Special Significance – Obesity

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## ABSTRACT

The obesity pandemic is one of the major medical problems. In addition to smoking, obesity is a major factor in the development of chronic non-communicable diseases such as cardiovascular disease and diabetes mellitus. The prevalence of obesity in Europe has a rate of over 15 percent. The fact that in highly developed countries there is an increasing number of obese people from the lower economic class in both adults and children is worrying. This article aims to show the importance of obesity as a pandemic of the modern age, and if this trend continues, we can expect a doubling of the percentage of obese people in the near future, which will result in an increase in chronic non-communicable diseases in the world.

**Keywords:** Pandemic; Obesity; Chronic Non-Communicable Diseases; Modern Times

## Mini Review

A pandemic is the spread of a disease to a large area or to several countries, an entire continent, several continents, or the whole world. During the 20th century, life expectancy was significantly extended. From 50 years, at the beginning of the century, in developed countries, life expectancy increased to 80 years, at the end of the century. Such a significant increase in life expectancy is caused by several factors. Reducing morbidity and mortality from infectious diseases is certainly an important effect. This was due to the improvement of general sanitary and hygienic measures. Then, the development of effective vaccines has significantly diminished the importance of some infectious diseases. Discovering effective antimicrobial agents' successful treatment and some of the deadly infectious diseases. Despite the successes achieved in the control and prevention of infectious diseases, they remain important for humans in the global sense. Even today, as much as 1/3 of deaths occur because of infectious diseases [1].

With regard to mortality in the global sense, today the most important in the world are acute lower respiratory tract infections, tuberculosis, diarrheal diseases, HIV / AIDS, malaria, rash, hepatitis B, pertussis, neonatal tetanus, hemorrhagic fevers and others. As

infectious diseases subside, there is an increase in chronic non-communicable diseases, which in many ways lead to complications as well as to a reduction in the quality of life. Cardiovascular diseases, malignant diseases, diabetes mellitus and others predominate here. Obesity is on a large scale, especially in the terrestrial developed world [2]. The WHO Regional Committee for Europe adopted the document "Health for All in the 21st Century" known as the "21st Goal for the 21st Century" in 1998. This document of the WHO European Region provides a basis for achieving better health, using the best strategies derived from the experiences of the Regional Committee over the past 15 years the arguments contained in this new document for the European Region show the basic link between health, economic and social cohesion, and show the link between health and economic development [1,2]. Capacities for the prevention of obesity and its threats to the health of the population need to be strengthened to prevent complications and improve the quality of life [3].

## Obesity

Eating disorders and physical inactivity are significant factors in the development of mass non-communicable diseases. Metabolic

diseases are extremely common. They can be caused by disorders in the intake of nutrients, their absorption in the digestive tract, that is, disorders at the level of the cellular metabolism itself. Pathological nutrition encompasses two mutually opposite conditions: malnutrition and obesity [4]. Malnutrition, given its etiology, can be primary, which occurs due to insufficient food intake, and secondary, which is the result of digestive disorders, increased food needs, impaired absorption and utilization of nutrients and increased excretion [4,5]. Obesity is defined as excess fat that endangers health. An obese person is considered to have 20% more body weight than the ideal one [5]. Also, obesity can be primary, due to overeating, and secondary, related to dysfunction of some organs. Etiopathogenetic factors of obesity are genetic factors, impaired mechanisms of regulation of hunger and satiety, energy balance, as well as psychological factors, socio-economic status and the state of the endocrine-metabolic system [6]. Obesity is one of the most common risk factors for the development of mass non-communicable diseases, most often linked to the underlying cause of cardiovascular disease. The population of underdeveloped countries is globally facing food shortages and massive health problems related to malnutrition and starvation. Developed countries, but increasingly also developing countries, on the other hand, are threatened by mass non-communicable diseases related to excessive and mostly poor-quality diet with reduced physical activity [7]. Nutrition studies of the student population are most numerous in the United States, which faces major problems with fast food chains, a sedentary lifestyle, and the adoption of bad habits in general, starting from a young age. Data from the 1995 National College Health Risk Behavior Survey, in a sample of 4,609 students, showed that 35% of students were obese [8].

### Body Mass Index

The Body Mass Index (BMI) is a simple index that represents the ratio of body weight to height and is commonly used to classify overweight and obesity. It is defined as the ratio of body weight to the square of body height in meters ( $\text{kg} / \text{m}^2$ ) [9]. Body mass index (BMI) is an anthropometric index of weight and height defined as body weight in kilograms divided by height in meters squared ( $\text{BMI} = \text{weight (kg)} / \text{height}^2 (\text{m}^2)$ ). adults, with BMI values <18.5 indicating malnutrition, 18.5-24.9 indicating normal nutrition, 25.0-29.

### Physical Nutrition

Body nutrition represents the satisfaction of the organism with nutrients and protective substances and depends on the ratio of energy intake and consumption in the human body [7]. Satisfactory nutritional status of the organism or good nutritional status is a necessary condition for optimal health. In the modern age, mass non-communicable diseases represent the most significant socio-medical and economic problem in developed countries, and it is increasingly pronounced in developing countries as well [8].

Pathological nutrition includes two mutually opposite conditions, malnutrition, and obesity [10]. Malnutrition can be divided according to etiology, into primary, which occurs due to insufficient food intake, and secondary, which is the result of digestive disorders, increased food needs, impaired absorption and utilization of food and increased excretion [11]. Obesity is defined as excess fat that endangers health. An obese person is considered to have 20% more body weight than the ideal one [11].

Also, obesity can be primary, caused by overeating, and secondary, due to dysfunction of some organs [10]. Obesity is one of the most common risk factors for mass non-communicable diseases. First of all, he is mostly accused of contributing to the development of cardiovascular diseases and insulin-independent diabetes mellitus type 2 [9]. The fact is that obesity is one of the most important preventable risk factors and actions to reduce obesity and promote the adoption of healthy behaviors and nutrition at both high risk and population levels must be integrated into the national policies of all countries. First of all, it should be based on the education of young people, because they most easily adopt healthy habits that they should maintain for the rest of their lives. Likewise, many people already have comorbidities of varying degrees and numerous irreversible changes that will not be remedied even by radical lifestyle changes. Education of young people in particular is bone-effective and bone-beneficial from the point of view of social medicine and economic analysis [12]. Numerous studies confirm the connection between overeating and obesity with the use of psychoactive substances [13,14] of which obesity is most commonly associated with alcohol use [15]. Many epidemiological and clinical studies have found a negative impact of obesity and the use of psychoactive substances on the physical health and quality of life of young people, and negative psychosocial consequences are known [16,17]. According to a study of obesity monitoring among young people in the last twenty-five years, there has been a trend of increasing obesity from 6% in 1983 to 16% according to the latest data from 2011 [18].

### Physical Activity and Sedentary Lifestyle

Physical activity should be an integral part of growing up young people. During the early years of development, physical activity plays an important role in the physical, social, and mental development of young people. Modern lifestyle, watching television and working on a computer affect the reduction of regular physical activity [19]. Studies have shown that an active lifestyle during childhood and adolescence is associated with a lower amount of total body fat [20]. In the countries of the European Union, different levels of sports have been discovered depending on the region, and it has been shown that the time of physical activity decreases with increasing age [20]. The prevalence of physical activity in the world is 11-24% compared to the World Health Organization (WHO) suppressions, and insufficient physical activity is 31-51%.

Insufficient physical activity in the world kills about 1.9 million people a year [20]. In 2002, two thirds of the adult population (aged 15 and over) in the European Union did not reach the recommended levels of physical activity [1]. WHO data for the European Region as a whole indicate that one in five people do not practice any physical activity and that there are higher levels of physical inactivity in the eastern part of Europe. It is estimated that physical inactivity is the cause of 600,000 deaths per year in the region (5–10% of total mortality, depending on the country) and leads to the loss of 5.3 million years of healthy life per year due to premature mortality and disruption [20]. Physical inactivity threatens to become a global problem, being observed from childhood to across all strata of age and social structure [21]. Physical inactivity is responsible for the development of 15-20% of cardiovascular diseases in the European region, as well as for the occurrence of type 2 diabetes, colon cancer, breast cancer, as well as osteoporosis in the elderly population [21]. The economic consequences caused by physical inactivity are estimated at 910 million euros for a population of 10 million people, half of whom are physically inactive. It has been reported that 3.1 million days are calculated as sick leave, which can be related to physical inactivity in a population of 5.5 million people [20]. ALCOHOL Many studies suggest an association between alcohol use and increased BMI. Alcohol is the most commonly used psychoactive substance among adolescents (21). Research among over 5,000 American adolescents indicates that adolescents whose BMI is higher than 30 consume alcohol more often than adolescents with normal BMI values. [22,23].

### Smoking Cigarettes

The widespread habit of smoking cigarettes is a very serious medical and sociopathological problem in the world, especially in underdeveloped countries [24]. The results of American studies indicate that subjects with a BMI greater than 30 were more likely to smoke than subjects with normal BMI values, but also that subjects who were overweight were more likely to be smokers than those normally fed [22].

### Conclusion

Insufficient physical activity, as well as unhealthy eating habits lead to an increased incidence of youth obesity, which is likely to continue into adulthood. It is a significant health risk factor. The high frequency of these risk factors is a serious problem that requires a quick and complex solution. If adequate measures are not taken, the situation will further worsen, which will result in an even higher incidence of mass non-communicable diseases, increased mortality, and incapacity for work. This will have serious consequences for the family and society. The greatest danger is from further shifting the frequency of these diseases to younger ages. Special prevention and intervention programs for young people must be aimed at preventing these risk factors.

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