**Obesity problem**

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**Introduction**

Obesity is one of civilization diseases. The fact is that the number of overweight people in our society is constantly increasing and we can see it with our eye. I enclose data from the WHO that speak clearly.

* Worldwide obesity has nearly tripled since 1975.
* In 2016, more than 1.9 billion adults, 18 years and older, were overweight. Of these over 650 million were obese.
* 39% of adults aged 18 years and over were overweight in 2016, and 13% were obese.
* Most of the world's population live in countries where overweight and obesity kills more people than underweight.
* 39 million children under the age of 5 were overweight or obese in 2020.
* Over 340 million children and adolescents aged 5-19 were overweight or obese in 2016. (1)

"According to the current definition of malnutrition (obesity, malnutrition), obesity falls into the area of ​​malnutrition. It is an accumulation of adipose tissue that arises from a positive energy balance. The percentage of overweight and obesity is high in our population. 37% of women are overweight and 31% are obese, so overall, overweight and obesity occur in 68% of Czech women. For men, the situation is even more serious. 51% are overweight, 21% are obese, and 72% of Czech men are overweight overall. ”(2)

It is a disease that people causes oneself. Our energy intake from food is higher than energy expenditure in any activity. We can do something with being overweight and smoking - they are two factors that lead to diseases of civilization and often death, and that can be prevented by prevention and a healthy lifestyle. Today, obesity is prevented by medical care with recommendations for a healthier diet, more exercise. It is also possible to proceed with treatment with the help of medications or even with surgical procedures, such as gastric banding. This method mechanically prevents the intake of more food, but if the patient is not mentally prepared, he can get back to his original weight through a stomach bandage.

However, if the patient is not sufficiently disciplined after gastric surgery and does not follow the doctor's instructions, it comes the moment that psychological help should come in this case. If a person does not realize that he is threatening himself and does not get to the stage that he wants to correct his condition or is even dependent on food, surgery may not help him. Here we come to the question of the doctor-patient relationship. There is a problem that the doctor rarely explains to the patient why he will operate, how the operation will take place and what the patient should do in the coming days. However, I do not claim that such a pattern of behavior applies every time and in all medical facilities. Here, it would be appropriate for the doctor to talk to the patient and not address "only" the consequences, but also the cause of the overweight disease. In order to make the patient more responsible, he might be able to be sanctioned in part for non-compliance, for example by having to reimburse a part of the operation that was essentially unnecessary.

A very similar discussion can be held for people addicted to nicotine, alcohol and drugs. Their follow-up care is covered by public health insurance and many citizens can oppose it. Shouldn't people who voluntarily destroy their health contribute more to public health? It is also possible to argue with high excise taxes on alcohol and nicotine products. The question is whether these funds are directed back to those who pay for alcohol and cigarettes. But there is still the question of how moral it is to consume such substances.

**Text of the essay**

## Cause of obesity

Obesity is caused by the interaction of genetic and external factors. Of course, there are certain periods that are very important for the development of obesity - in women, especially the period of pregnancy and the period after it, then the transition period, in girls the period of adolescence, generally stress factors and certain periods when physical activity decreases - starting employment, starting a family, family or work problems, termination of sports activities, retirement, etc.

**The disparity between energy intake and expenditure**

The disparity between energy intake and expenditure is in all cases and can be caused by:

Excessive energy intake - mainly increased fat intake. They have twice as much energy as carbohydrates and proteins. In developed countries, where we are constantly bombarded with advertisements for all kinds of food, there is a real surplus of food. So it's no wonder we're still gaining weight.

Insufficient energy expenditure, which is mostly due to lack of physical activity and sedentary lifestyle. Unfortunately, a complete lack of food goes hand in hand with a complete lack of exercise. The human body is very well adapted to movement and if for this purpose it almost begins to weaken muscle and increase adipose tissue. And this gives rise to a lot of problems - reduced performance and physical condition, higher fatigue, back pain, poor posture, etc.

It is usually a combination of both factors.

**Genetic predispositions**

We know that at least 50% of obesity is genetically determined. If both parents are obese, their kid is 80% more likely to have the same problem. However, this disadvantage can be changed by increased efforts while maintaining proper eating habits and sufficient physical activity.

**Hormonal effects**

Despite the widespread view that when someone is obese, it is due to an illness, they only occur in about 1% of cases of obesity. It is mainly reduced thyroid function (hypothyroidism) and increased levels of adrenal cortex hormones (Cushing's syndrome).

**Metabolic effects**

The energy requirements of the organism are determined by its body weight, sex and degree of physical activity. Nevertheless, there are various individual, mostly genetically coded factors (but also individual experiences with diets and the level of basic metabolism) that affect energy balance. This means that obesity can occur in a person who does not really consume more than other people. However, he probably moves less and due to his innate dispositions he has to pay more attention to the composition of the menu.

**Medicines**

Some medicines can increase your appetite and contribute to the development of overweight. These are mainly some antidepressants, neuroleptics (psychotropic drugs), tranquulizers (sedatives), glucocorticoids (hormonal therapy - adrenal cortex hormones that affect metabolism), gestagens (hormonal therapy in women).

**Psychogenic factors and eating habits**

In obese people, food intake is increased depending on external signals and emotional situation (reactions to loneliness, depression, frustration, tension, long time or stress). Body weight depends to a large extent on eating habits. In the family, one learns inappropriate habits, thanks to which one then struggles with extra pounds.

## Health effects (6)

People with obesity, are at increased risk for many serious diseases and health conditions, including:

* All-causes of death (mortality)
* High blood pressure (hypertension)
* High LDL cholesterol, low HDL cholesterol, or high levels of triglycerides (Dyslipidemia)
* Type 2 diabetes
* Coronary heart disease
* Stroke
* Gallbladder disease
* Osteoarthritis (a breakdown of cartilage and bone within a joint)
* Sleep apnea and breathing problems
* Many type sof cancer (7)
* Low quality of life
* Mental illness such as clinical depression, anxiety, and other mental disorders (8)
* Body pain and difficulty with physical functioning
* Recently also complications of COVID (9)

## Obesity economics

Being overweight is associated with a variety of chronic diseases, including diabetes, cardiovascular disease and cancer. As a result of these diseases, the average life expectancy of people in OECD countries is falling by an average of 2.7 years. more often and for more complicated and expensive treatment. This number is the highest in the USA (14%). OECD member countries spend $ 311 billion annually on the treatment of overweight and related conditions. According to the survey, obesity reduces the number of job opportunities and productivity of workers. The impact can be quantified as the equivalent of a reduction of 54 million people per year in the OECD, EU, G20 and selected partner countries, says the OECD report. According to researchers, there are simply more unemployed people with chronic diseases and fewer working days will be worked because of them. The OECD goes so far as to dare say that the macroeconomic effect of obesity is that overweight reduces gross domestic product in OECD and EU member states by an average of 3.3%. (4)

Obesity is also associated with indirect costs, such as the environmental burden of higher food consumption. Or, for example, a well-known fact with cows greenhouse gas emissions. In order for goods to reach supermarkets, more plastic packaging and increased use of transport are needed. (5)

Speaking of transport, the OECD mentions other consequences of obesity. Transporting heavier passengers from point A to point B and back requires more fuel, says the OECD. A previous study by the organization calculated that an average reduction in people's weight across nations would mean that about 10 million tonnes of CO2 would not be released each year.

With these numbers, let's also look at how much the basic treatment of obesity in the Czech Republic costs. The cost of laparoscopic gastric banding in plastic surgery facilities ranges from 55,000 to 130,000 CZK per operation. (3) Chirirgical trhreathment of obesity like gastric banding is a treatment method for high-grade obesity (BMI values around 40 and higher), where all previous conservative treatments have completely failed and the complications associated with this extreme obesity are already seriously endangering the patient's health. Laparoscopic gastric bands performed on the indication of a team of specialists are covered by public health insurance. The price of such surgical treatment for obesity is around CZK 75,000. On the other hand, a healthy lifestyle is free.

## Obesity ethics

With obesity, the question of the morale and cost of treatment is obvious. Given that our health care system is one of the most solid, it is probably appropriate to ask whether it would not be appropriate for an obese patient not to pay for such interventions, at least in part. An extreme opinion could sound like the patient brought about his poor health himself, through his irresponsible behavior, like overeating and lack of exercise. On the other hand, it is not possible to generalize the view of all overweight patients in this way. These may include people who have limited mobility or are taking medication they need due to other ailments and these have the side effect of gaining weight.

So should smokers, alcoholics and obese people contribute more to health insurance, as these aspects are taken into account by private insurance companies? When concluding an insurance policy that is intended to financially compensate for an accident, illness or death of a person, a medical questionnaire is normally filled in before concluding the contract. This questionnaire should be filled in truthfully and one should also, in one's own interest, report changes in one's health to the insurance company. Failure to do so exposes them to the risk that the insurance contract will not be partially paid or will not receive any financial compensation.

In the treatment of the patient, we must proceed from the following principles.

Autonomy - the patient is independent and can decide for himself. There are three criteria that define the state of autonomy: intentionality, understanding and non-control, like the absence of undue influence or coercion.

Charity - worldwide is the issue of access to health care, we do not have to deal with this issue, because we have a social system where we do not let anyone die. However, the situation is different in the world, and the availability of bariatric operations is not so high, thanks to the price.

Harmlessness - Adherence to the "primum non nocere" principle actually means trying to ensure that the potential benefits of the intervention outweigh the potential harms.

The last principle of medical ethics is justice, which reflects the need for a fair and equitable distribution and allocation of health care resources in society. The concept of ethical justice has three areas. First, there is recognition that all resources are limited. Secondly, the rights of individuals must be respected and, thirdly, morally established and recognized laws must be respected. The most common and rational approach is to consider the clinical effectiveness of the intervention in relation to its costs as well as its potential harm. This is the basis for today's health economy and cost-effectiveness and cost-effectiveness measures such as quality of life per year. (10)

Notwithstanding these considerations, the current lack of bariatric surgical care for patients in some jurisdictions violates each of the four principles of current biomedical ethics. Because patients have the right to access this treatment, they benefit from it. Relying on other strategies, such as public health enforcement, can be ineffective or even detrimental and because it is cost-effective and good value for money.

**Conclusion**

From all this, it is clear that obesity costs a lot of money and if it is treated even more. The cheapest treatment option for obesity is prevention. It is necessary to bring enlightenment to society. Unfortunately, in today's hectic times, there is no indication that it is the will of obese people to do anything. In today's society, the emphasis is that everyone can be whatever they want and there is no standard, which is wrong. Then we have non-binary fat people who think it's okay.

On the other hand, according to Darwin's theory of natural selection - who wants where to help him there. The country is overcrowded and people should take care of themselves. I would stop paying for the costs of obesity and people would take more care of themselves.

**References**

1. <https://www.who.int/news-room/fact-sheets/detail/obesity-and-overweight>
2. Zuzana Grofová, Nutriční podpora: Praktický rádce pro sestry, Grada Publishing 2006, ISBN: 978-80-247-1868-2
3. <https://www.estheticon.cz/ceniky/laparoskopicka-bandaz-zaludku>
4. <https://www.oecd.org/health/health-systems/Heavy-burden-of-obesity-Policy-Brief-2019.pdf>
5. Johnson KA, Johnson DE. Methane emissions from cattle. J Anim Sci. 1995 Aug;73(8):2483-92. doi: 10.2527/1995.7382483x. PMID: 8567486.
6. The Journal of Clinical Endocrinology & Metabolism, Volume 89, Issue 6, 1 June 2004, Pages 2583–2589, <https://doi.org/10.1210/jc.2004-0535>
7. <https://www.cancer.gov/about-cancer/causes-prevention/risk/obesity/obesity-fact-sheet#what-is-known-about-the-relationship-between-obesity-and-cancer->
8. Kasen, Stephanie, et al. “Obesity and psychopathology in women: a three decade prospective study.” International Journal of Obesity 32.3 (2008): 558-566.
9. <https://www.ncbi.nlm.nih.gov/pmc/articles/PMC7460880/>
10. https://www.ncbi.nlm.nih.gov/pmc/articles/PMC6018590/

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