

Abstract

Introduction: Obesity is characterized as an excessive accumulation of fat that can impair health. Nowadays, obesity is considered to be a very serious problem that is becoming increasingly important as the number of obese people increases. One of the options for treating severe obesity is surgical treatment or performing bariatric surgery. These allow significant weight loss with a long-lasting effect, so they are a very good solution for highly obese people.

Aim: The aim of this interventional study is to compare changes in fitness and body composition before and after bariatric surgery in patients in the bariatric patient register of the 3rd Internal Clinic of the General Faculty Hospital in Prague who underwent bariatric surgery in 2022. The aim is also to introduce in detail readers with obesity issues, especially with bariatric obesity treatment.

Methodology: The monitored group consisted of 11 respondents from the register of bariatric patients of the 3rd internal clinic of the General University Hospital in Prague. For these 11 respondents, changes in fitness based on walking tests and changes in body composition using InBody measurements were evaluated before bariatric surgery and 3 months after surgery. Subsequently, from these 11 respondents, 5 respondents were selected, in whom it was possible to monitor these changes even 6 months after the operation. These were obese individuals with a BMI ≥ 35 kg/m² who underwent bariatric surgery in 2022. The obtained data were subsequently compared and evaluated.

Results: The average distance covered in the walking test increased by 28.6 ± 57.0 meters in the observed group 3 months after bariatric surgery. After 6 months from the operation, the average distance traveled increased by even 47.6 ± 44.8 meters. The average weight loss 3 months after bariatric surgery was 22.0 ± 12.1 kg in the research group, while the weight loss 6 months after surgery was 30.9 ± 18.1 kg. The decrease in body fat after 3 months after surgery averaged 10.5 ± 10.6 kg and 6 months after surgery 13.1 ± 14.8 kg. The values of the average percentage of body fat decreased by $2.7 \pm 4.2\%$ in the observed group after 3 months from bariatric surgery. After 6 months, the mean decrease in body fat percentage was $5.1 \pm 5.4\%$. The amount of muscle mass decreased on average by 2.7 ± 3.3 kg after 3 months from the operation. After 6 months, there was an average reduction in muscle mass of 1.9 ± 2.8 kg. 3 months after the operation, the observed group had a decrease in average BMI of 4.6 ± 3.7 kg/m². The average decrease in BMI after 6 months from surgery was 4.8 ± 4.5 kg/m².

Conclusion: On the basis of this research, it can be said that in the studied group of obese patients everything suggests that after bariatric surgery there is an increase in the distance covered (as assessed by the walking test), which has a positive effect on physical fitness, and also that bariatric surgery leads to positive changes in body composition.

Keywords: obesity, bariatric surgery, physical activity, weight reduction, fitness