©Copyright by Croatian Cardiac Society. This is an Open Access article distributed under the terms of the Creative Commons Attribution License (https://creativecommons.org/licenses/by/4.0/) which permits users to read, download, copy, distribute, print, search, or link to the full texts of these articles in any medium or format and to remix, transform and build upon the material, provided the original work is properly cited and any changes properly indicated.

Outcomes of a Three-Month Rehabilitation Program for Overweight and Obesity, With and Without Pharmacotherapy

Livija Sušić[1,2]*, Dunja Igrec[2], Aleksandar Včev[2], Mateja Ćosić[1], Anita Matić[2], Kristina Kralik[3]

[1]Health Center of Osijek-Baranja County, Osijek, Croatia
[2]J. J. Strossmayer University of Osijek, Faculty of Dental Medicine and Health Osijek, Osijek, Croatia
[3]J. J. Strossmayer University of Osijek, Faculty of Medicine Osijek, Osijek, Croatia

KEYWORDS: obesity, overweight, rehabilitation, exercise test, glucagon-like-peptid-1 receptor agonists.

CITATION: Cardiol Croat. 2026;21(11-12):317. | https://doi.org/10.15836/ccar2026.317

***ADDRESS FOR CORRESPONDENCE:** Livija Sušić, Dom zdravlja Osječko-baranjske županije, Park kralja Petra Krešimira IV, HR-31000 Osijek, Croatia. / Phone: +385-98-9621-078 / E-mail: livija.susic@gmail.com

ORCID: Livija Sušić, https://orcid.org/0000-0001-7271-4449 • Dunja Igrec, https://orcid.org/0009-0006-6442-8729
Aleksandar Včev, https://orcid.org/0000-0003-0512-462X • Mateja Ćosić, https://orcid.org/0000-0003-2444-7029
Anita Matić, https://orcid.org/0000-0002-3374-8512 • Kristina Kralik, https://orcid.org/0000-0002-4481-6365

Introduction: The global rise of overweight and obesity is contributing to the increasing burden of cardiovascular disease, as well as type 2 diabetes, liver and kidney disease, and several cancers[1]. An integrated rehabilitation approach encompasses body weight management and the improvement of functional capacity[2]. The aim of this study was to evaluate changes in body weight and functional capacity following a three-month rehabilitation program, to examine the relationship between these changes, and to compare rehabilitation outcomes based on the use of pharmacotherapy for obesity.

Patients and Methods: A prospective study was conducted involving 41 participants who were overweight or obese; 38 of these completed the three-month rehabilitation program and were included in the final analysis. All participants took part in an identical rehabilitation program, which included nutritional counseling, physical activity planning, and education on body weight management. Pharmacotherapy for obesity was administered based on medical recommendation and patient decision. Functional capacity was assessed via treadmill exercise testing at the beginning of the program and again after three months, with results expressed in metabolic equivalents (METs). Changes in body weight and functional capacity, as well as the relationship between these changes, were analyzed.

Results: Thirty-eight participants (18 men and 20 women) completed the three-month follow-up period. The mean reduction in body mass was 3.74 ± 4.40 kg, or 3.59 ± 4.26% of the initial body mass ($p < 0.001$). Functional capacity increased by 0.65 ± 1.26 METs ($p = 0.003$). A greater relative loss in body mass was associated with a greater increase in functional capacity (Spearman's $\rho = 0.494$; $p = 0.002$). Participants who received pharmacotherapy showed a more pronounced reduction in body mass and a greater improvement in functional capacity; however, the differences compared to participants who did not receive pharmacotherapy did not reach statistical significance.

Conclusion: Integrated rehabilitation for individuals with overweight and obesity requires a comprehensive and individualized approach, in which treatment success is evaluated by monitoring anthropometric and functional outcomes. Such an approach provides a broader insight into the effects of rehabilitation, extending beyond mere body mass reduction. Further research involving a larger number of participants is required to more reliably assess the added value of pharmacotherapy within a rehabilitation program.

RECEIVED:
October 19, 2026
UPDATED:
November 4, 2026

LITERATURE

1. GBD 2023 Disease and Injury and Risk Factor Collaborators. Burden of 375 diseases and injuries, risk-attributable burden of 88 risk factors, and healthy life expectancy in 204 countries and territories, including 660 subnational locations, 1990-2023: a systematic analysis for the Global Burden of Disease Study 2023. Lancet. 2025 Oct 18;406(10513):1873-1922. https://doi.org/10.1016/S0140-6736(25)01637-X
2. Gruchała-Niedoszytko M, Niedoszytko P, Kaczkan M, Pieszko M, Gierat-Haponiuk K, Śliwińska A, et al. Cardiopulmonary exercise test and bioimpedance as prediction tools to predict the outcomes of obesity treatment. Pol Arch Intern Med. 2019 Apr 30;129(4):225-233. https://doi.org/10.20452/pamw.4480