

**Effects of a High-Intensity Exercise Program on Weight Regain
And Cardio-metabolic Profile after 3 Years of Bariatric Surgery: A Randomized Trial**

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There's no exact answer to what's driving America's weight problem, but it boils down to what most would expect: an unhealthy lifestyle. Overeating and little to no exercise can lead to comorbidities, one or more diseases or conditions occurring simultaneously in a person. In an article entitled *Why Are Americans Obese?* published by Public Health it stated " Today, each American puts away an average of 195lbs of meat every year, compared to just 138lbs in the 1950's. Consumption of added fats also shot up by around two thirds over the same period, and grain consumption rose 45% since 1970." The role of diet and exercise in America's obesity epidemic is not only major, but complicated. Unhealthy food is usually cheap, fast and filling while Americans spend billions yearly on diets and gym memberships.

Over time as the popularity of TV dinners and fast food grew, so did America's waistline. As one of the most obese nations, the perfect solution seems distant as many factors play into one's weight. Some people get weight loss surgery as a solution, but gain the weight back. I used the scientific report, *Effects of a High-Intensity Exercise Program on Weight Regain And Cardio-metabolic Profile after 3 Years of Bariatric Surgery: A Randomized Trial* written by A. Marc-Hernández, J. Ruiz-Tovar, A. Aracil, S. Guillén and M. Moya-Ramón to look through a different lens on America's battle with obesity. Their study was published by Nature, a science journal.

In the study, After a three year follow up 21 random patients were used in total after they underwent bariatric surgery. 11 patients were put in the exercise group and 10 were put in the control group without the exercising program. All 21 patients did undergo a sleeve gastrectomy and patients with previous cardiovascular diseases, history of cancer and functional

limitations in the last 5 years that prevented them from performing the exercise program were excluded from the study. The researchers wanted to know if physical activity played a key factor in the weight regain that they saw in patients, years after their surgery. The researchers “analyse the effects of a supervised and customized exercise program that combined endurance and resistance training, initiated at moderate intensity and progressing to high intensities” (Results section) After the study was conducted, the results stated:

“The Exercise Group obtained its maximum decrease of total fat mass and body fat percentage 7 months after Bariatric Surgery, whereas the Control Group did so 13 months after surgery. Compared to that moment, weight loss, total fat mass, and fat mass percentage, significantly increased by 37 months after Bariatric Surgery in both groups. After the intervention, the Exercise Group had significant reductions in total fat mass and fat mass percentage, showing a tendency to reduce the total weight and waist circumference. In contrast, the Control Group had a significant increase in total weight, fat mass and fat mass percentage. Before and after the intervention (37–42 months after Bariatric Surgery), significant differences were observed between groups in the changes of all body composition and anthropometric measures except in hip circumference. After the exercise program, the Exercise Group showed a significant reduction in blood glucose and total cholesterol. In addition, the Exercise Group showed a small tendency to decrease systolic and diastolic blood pressure. Two months after the end of the exercise program (44 months after surgery), total cholesterol increased and blood glucose in the Exercise Group. Furthermore, at 44 months after Bariatric Surgery increases in waist-to-height ratio and diastolic blood pressure were observed in the Exercise Group.”(Results section)

In the results, we saw that the exercising group lost weight and had healthy levels of cholesterol and blood pressure, while the opposite remained true for the control group. However long-term effects of exercise on cardio-metabolic risk factors and on the quality of life still remain unclear. The researchers’ purpose was to analyze and interpret their study on the effect on exercising on two different groups of people after their bariatric surgery. Their purpose was also to be able to participate in the debate of solutions to America’s weight problem and maybe get to offer a solution from their small research. Even though their study was small, exercising seemed to help keep the exercising group healthy until they weren't in the program no more, so if we can implement their study on a mass scale we would be a step closer to decreasing our obesity

statistics as a nation. The audience was anyone who read the science journal, any patient from the study or any bariatric patient in general. Medical professionals, other researchers, hospitals and universities also could be part of the audience. The genre of this scientific report is science and health. The stance of the article was that if a bariatric patient keeps a healthy lifestyle including exercising after surgery they are less likely to run into comorbidities.

The researchers use statistical analysis and graphs to help convey to their audience their hypothesis of separating the patients into an exercise and control group will lead the exercise group to see healthier results. The researchers used scientific, mathematical and observational strategies to achieve their goal of trying to find an answer to America's obesity problem on a smaller scale. I would include more patients in the study, extend the exercising programs, add a controlled diet plan for them to take, add more exercising control groups to observe from and expand the demographics of your setting and patients, if I had to redesign this experiment so it could hold more value to the conversation of America's weight problem. The results in this study were not shocking, because usually a cleaner diet and exercise usually leads to better levels of things including cholesterol and blood pressure. But reading this study, would debunk some myths regarding a healthy lifestyle due to the results of the study like "I can lose weight without exercising" or "Eating processed foods can't be that bad for me". The researchers used logos, logic and reasoning to help convey their purpose. The text was from a scientific journal and the setting was in two university hospitals from an urban area. The authors were researchers and scientists. The text was published on February 20th, which makes it not only current, but still relevant as America still faces obesity amongst other issues still to this day.

References:

Marc-Hernández, A., Ruiz-Tovar, J., Aracil, A., Guillén, S., & Moya-Ramón, M. (2020, February 20). Effects of a High-Intensity Exercise Program on Weight Regain and Cardio-metabolic Profile after 3 Years of Bariatric Surgery: A Randomized Trial. Retrieved February 21, 2020, from <https://www.nature.com/articles/s41598-020-60044-z>

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