

Bariatric surgery may reduce life-threatening heart failure exacerbation in obese patients

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A new study led by Massachusetts General Hospital (MGH) investigators finds that heart failure patients who underwent bariatric surgery to treat morbid obesity had a significant reduction in the incidence of heart failure exacerbation - a dangerous, sudden worsening of symptoms - in the two years following surgery. The report appears in the March *Journal of the American College of Cardiology*.

"We found that bariatric [surgery](#) - the most effective way to achieve substantial and sustained weight loss - was associated with a 40 percent reduction in emergency department visits and hospitalizations for [heart failure](#) exacerbation," says Yuichi Shimada, MD, MPH, of the MGH Cardiology Division, the lead and corresponding author of the report. "These findings are important because, while both obesity and heart failure are major public [health problems](#) in the U.S., little has been known about whether substantial weight loss would decrease the risk of heart-failure-related adverse events."

A weakening of the heart muscle that prevents the organ's efficient operation, heart failure affects around 5.7 million adults in the U.S., and about 40 percent of those hospitalized for heart failure exacerbation are obese, the authors note. Exacerbation includes symptoms such as shortness of breath, swollen legs and abdomen, and sometimes chest pain and dizziness. It is caused when fluids accumulate in the lungs and other organs - compromising circulation to the kidneys and brain - and if not successfully treated can be life threatening.

Previous studies have found an increase in heart-failure-related death among obese patients and also have reported that increased body fat can cause unfavorable changes in the shape and performance of the heart. The current study was designed to investigate whether the kind of significant weight loss that usually results from bariatric surgery reduces the risk of heart failure exacerbation.

The MGH team utilized information from large, statewide databases reflecting [emergency department](#) treatment and hospitalizations in California, Florida and Nebraska to identify patients with heart failure who also underwent bariatric surgery from 2007 through 2009. These databases use encrypted patient identifiers that allow tracking the experiences of individual patients over time without revealing their identities. The investigators analyzed data covering the two years before and after each patient's surgery. Comparing the presurgical and postsurgical periods essentially allowed patients to serve as their own controls, reducing the possibility that confounding factors could affect the study's results.

Analysis of the results for the entire group of 1,664 patients found a significant and rapid reduction in the incidence of emergency treatment or hospitalization for heart failure exacerbation in the two years after surgery. To address the possibility that some exacerbations might have been missed because participants either moved out of state or died without coming to a hospital, the team focused on a group of 524 patients for whom some sort of emergency room visit or hospitalization was recorded in the databases during the third year after surgery. In that group, exacerbation-related events were somewhat reduced in the first year and were significantly lower in the second. While information on patients' actual postsurgical weight loss was not available in the analyzed data, the drop in exacerbations paralleled the weight loss reported in previous studies of [bariatric surgery](#) results.

"These results imply that clinicians treating patients with both heart failure and [morbid obesity](#) should consider surgical weight reduction to help patients control the risk of heart-failure-related events; but it's also true that some patients have other health problems that make the risks of surgery higher," says Shimada. "In those cases, accurate assessment of the risks and benefits of surgery becomes critically important, and this study provides indispensable information for patients and treating physicians. It also will be essential to develop effective nonsurgical options to help such [patients](#) achieve substantial and sustained [weight loss](#)."

More information: Yuichi J. Shimada et al. Bariatric Surgery and Emergency Department Visits and Hospitalizations for Heart Failure Exacerbation, *Journal of the American College of Cardiology* (2016). [DOI: 10.1016/j.jacc.2015.12.016](https://doi.org/10.1016/j.jacc.2015.12.016)

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