

Bariatric surgery appears to cut risks for serious asthma-related events

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Children with asthma use inhalers to relieve some of their symptoms, which include coughing, wheezing, chest tightness and shortness of breath. Credit: Tradimus / Wikimedia commons / [CC BY-SA 3.0](#)

A study led by Massachusetts General Hospital (MGH) investigators suggests that bariatric surgery can significantly reduce the risk of asthma attacks - also called exacerbations - in obese patients with asthma. Their report, published online in the *Journal of Allergy and Clinical Immunology*, is the first to find that significant weight reduction can

reduce serious asthma-associated events.

"We found that, in [obese patients](#) with asthma, the risk of emergency department visits and hospitalizations for [asthma exacerbations](#) decreased by half in the two years after bariatric [surgery](#)," says Kohei Hasegawa, MD, MPH, MGH Department of Emergency Medicine, the lead author of the study. "Although previous studies of non-surgical [weight loss](#) interventions failed to show consistent results regarding asthma risks, our result strongly suggests that the kind of significant weight loss that often results from bariatric surgery can reduce adverse asthma events."

Both obesity and asthma are serious public health problems at historically high levels in the U.S., the authors note, and many researchers have associated obesity with the development of asthma and with an increased risk for asthma exacerbations. While previous studies investigating whether weight loss could reduce asthma risks showed little or no benefit, participants in those studies lost only modest amounts of weight. The current study was designed to investigate whether bariatric surgery - regarded as the most effective option for morbidly obese patients - might have a greater effect on asthma-associated risks.

Using available databases reflecting the utilization of health services in California, Florida and Nebraska - all three of which give access to deidentified information on individual patients - the research team identified 2,261 obese patients with asthma who underwent bariatric surgery from 2007 to 2009 and for whom information covering the two years before and after their surgery was available. This design, in which participants essentially act as their own controls, reduces the need to control for additional factors - such as age, gender, genetic background and physical activity - that might bias the results.

The analysis showed that, during the two years prior to surgery, around

22 percent of the studied patients had at least one emergency department (ED) visit or hospitalization in each one-year period. In the two years after surgery, only 11 percent needed an ED visit or hospital admission in each year. Looking at hospitalization alone showed an even greater risk reduction, from around 7 percent per year to less than 3 percent. A comparison with patients who had other types of abdominal surgery showed that non-bariatric procedures had no impact on asthma exacerbation risk.

While the mechanism by which a significant weight loss can reduce asthma-associated risks is unknown, studies have linked obesity to increased inflammation, higher prevalence of gastroesophageal reflux disease, and physical changes in the airway - all of which could contribute to asthma severity. Hasegawa notes that a reduction or reversal of these mechanisms by bariatric surgery is plausible.

"The databases we had access to did not include the actual amount of weight lost by these patients, but it is well documented that [bariatric surgery](#) results in substantial weight loss, averaging around 35 percent of presurgical weight," he says. "While we can't currently say how much weight loss would be needed to reduce asthma risks, previous studies of non-surgical interventions indicate that modest weight loss is not enough."

"Bariatric surgery is a costly procedure that carries its own risks, factors that may offset the benefits regarding the risk of asthma exacerbation for some patients," Hasegawa adds. "To decrease asthma-related adverse events in the millions of obese individuals with [asthma](#), we probably will need to develop safe, effective non-surgical approaches to achieve major weight loss."

Provided by Massachusetts General Hospital

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