

Preoperative factors associated with long-term weight loss after gastric bypass surgery

August 10 2016

In a study published online by *JAMA Surgery*, Michelle R. Lent, Ph.D., of the Geisinger Clinic, Danville, Pa., and colleagues evaluated the association between preoperative clinical factors and long-term weight loss after Roux-en-Y gastric bypass (RYGB).

Bariatric [surgery](#) patients are expected to lose 30 percent to 40 percent of their body weight and up to 67 percent of the [excess body weight](#), depending on the type of surgery. However, [weight loss](#) trajectories after bariatric surgery are not uniform, and some patients do not achieve or are unable to maintain expected weight losses. Preoperative clinical factors associated with long-term suboptimal outcomes are not well understood.

For this study, the researchers followed up 726 RYGB patients before surgery to 7 to 12 years after surgery and determined percentage weight loss (%WL) and examined preoperative clinical factors (>200) extracted from the electronic medical record, which included medications, comorbidities, laboratory test results, demographics, and others.

Among the study participants, 83 percent were female and 97 percent were of white race, with an average preoperative body mass index (BMI) of 47.5. From the time of surgery to long-term follow-up (median, 9.3 postoperative years), the average %WL was 22.5 percent. The researchers found that preoperative insulin use, history of smoking, and use of 12 or more medications before surgery were associated with greater long-term postoperative %WL (7 percent, 3 percent, and 3

percent, respectively). Preoperative hyperlipidemia, older age, and higher body mass index were associated with poorer long-term postoperative %WL (-3 percent, -9 percent, and -4 percent, respectively).

The authors write that possible explanations for the finding that participants taking the most medications before surgery had better weight loss outcomes are their greater interaction with health care professionals needed to manage multiple conditions or perhaps unintentional weight loss related to health conditions. "Additional studies are needed to evaluate these medications individually in relation to long-term weight loss."

Similarly, regarding the finding that preoperative insulin users had greater %WL, "it is possible that insulin use necessitates greater interaction with the health care system, leading to better adherence and ultimately better weight loss."

"Overall, few preoperative clinical factors were associated with weight change in the long-term postoperative course. Future studies are needed to replicate these findings, particularly surrounding insulin use. Comprehensive investigations of potential preoperative psychosocial and behavioral factors or other modifiable preoperative or early postoperative factors that may influence weight in the long term could also help to identify patients at risk for suboptimal outcomes. These results can help to guide clinical care and improve patient-directed informed consent discussions about bariatric surgery," the researchers conclude.

(*JAMA Surgery*. Published online August 10, 2016. [DOI: 10.1001/jamasurg.2016.2334](https://doi.org/10.1001/jamasurg.2016.2334). This study is available pre-embargo at the For The Media website.)

Editor's Note: Please see the article for additional information, including other authors, author contributions and affiliations, financial disclosures, funding and support, etc.

Commentary: The Difficulty of Predicting Long-term Weight Loss after Gastric Bypass

The results of this study appear to suggest that some of the sickest patients have the best outcomes after surgical procedures, a finding that would be new to the literature, writes Amy Neville, M.D., M.Sc., F.R.C.S.C., of the Ottawa Hospital, Ottawa, Canada, in an accompanying commentary.

"The statistical findings of this study challenge our current understanding and the current literature regarding risk factors for weight regain. As a novel (and contradictory) finding, this must be interpreted with caution until additional studies can further investigate. This study and the preoperative factors it analyzed are of academic interest and may guide patient counseling and expectations, but future work must focus on behavioral predictors and other potentially modifiable risk factors if we are to best serve our patients."

(*JAMA Surgery*. Published online August 10, 2016. [DOI: 10.1001/jamasurg.2016.2302](https://doi.org/10.1001/jamasurg.2016.2302). This commentary is available pre-embargo at the For The Media website.)

Editor's Note: No conflict of interest disclosures were reported.

More information: *JAMA Surgery*. Published online August 10, 2016. [DOI: 10.1001/jamasurg.2016.2334](https://doi.org/10.1001/jamasurg.2016.2334)

Provided by The JAMA Network Journals

Citation: Preoperative factors associated with long-term weight loss after gastric bypass surgery (2016, August 10) retrieved 25 December 2022 from

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