

Nearby food stores affect results after weight-loss surgery

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Being able to take a quick walk to a nearby food retail store may be a significant factor in long-term weight loss after bariatric surgery, new research suggests.

That said, researchers found that simply living close to a food store isn't an automatic key to sustained [weight-loss](#)—especially a market that carries mostly highly processed convenience foods.

Overall, the analysis of data from hundreds of [bariatric surgery](#) patients in central Ohio showed an association between [close proximity](#) to food stores and better [weight](#) loss two years after the [surgery](#).

A closer look at store products affected whether that proximity was beneficial, showing that living within a five-minute walk of a store with a low-quality selection of foods was actually linked to less weight loss at the two-year post-operative point.

"Being in closer proximity to lower-quality stores predicted less weight loss, but being in closer proximity to higher-quality stores didn't predict more weight loss," said Keeley Pratt, associate professor of human sciences at The Ohio State University and the lead author of two studies detailing these findings. "So the lower-quality stores were really driving poor outcomes."

The studies were published in *Surgery for Obesity and Related Diseases* and *Obesity Surgery*.

The research team examined neighborhood characteristics and other social determinants of health that may help or hinder continued weight loss in the two years after bariatric surgery.

The analysis included select data from the electronic health records of all patients who received bariatric surgery at The Ohio State University Wexner Medical Center from 2015 to 2019 in Franklin County, Ohio. Data included race, insurance type, procedure and percentage of total weight loss from two to 24 months after surgery.

Researchers combined health records with census and county data, which enabled the team to count not just the number of food stores, parks/recreational areas and fitness facilities in the county, but precisely where they were relative to patients' home addresses.

Bariatric surgery reduces the size of the stomach and leads to rapid weight loss, which requires patients to initially eat a soft diet in small quantities and gradually transition back to a more varied diet, being coached for six months by a dietitian and nurse practitioner.

"What we see then is from six months to a year and after a year, if that volume of food increases because of not maintaining healthy behaviors or returning to previously eaten foods that weren't as healthy, that weight can come back on," said Pratt, who also has a faculty appointment in general surgery.

"That being said, that doesn't mean that what patients can eat is readily available to them where they live—that's the link we're trying to figure out. Our patients know what to eat, so it's not an education or a knowledge issue, but it could be an access issue."

Previous research has shown that living in healthier areas has helped people manage their weight, but very few studies had looked at the social determinants of health that affect patients who have had a significant surgery to achieve their weight loss, she said.

The patient sample consisted of 772 patients who had undergone one of two types of stomach-reduction surgery. Of those, 60% were white and 82% were women.

The initial study found that while Black surgery patients had higher levels of poverty and unemployment than white patients, consistent with previous studies, those variables did not negatively affect weight loss

outcomes. Nor did living near open spaces or fitness and recreation facilities.

Access to a higher number of food stores within a 10-minute walk was linked to a greater percentage of weight loss among all patients. But there was some nuance: Black patients with access to a higher number of food stores within a 10-minute walk experienced greater weight loss over two years. For white patients, the best distance for sustained weight-loss was a five-minute walk from stores.

Researchers later categorized food stores as low-, moderate- or high-diversity based on their product selection, which roughly translated to corner or convenience stores, specialty markets and full-service supermarkets.

For all patients, living within a five- or 10-minute walk from moderate- or high-diversity stores had no effect on weight loss, but having one low-diversity store within a five-minute walk or up to two low-diversity stores 10 minutes away was linked to less sustained weight loss.

The researchers noted that living near these stores was not an indicator that patients actually shopped at the markets closest to their homes—but the nature of the most available food stores could be an indicator of larger economic forces at play.

"The real goal is to figure out how to make linkages from the clinic to the community and the community to the clinic," Pratt said, suggesting Ohio State could partner with stores to upgrade their food selection and with fitness facilities to provide patient discounts.

"This is really a starting point to figuring out how we can aid patients in Franklin County and, eventually, beyond, to make sure post-operative weight loss is equitable, and the resources are equitable, for all patients

following surgery."

More information: Keeley J. Pratt et al, The BARI-hoods Project: neighborhood social determinants of health and postoperative weight loss using integrated electronic health record, census, and county data, *Surgery for Obesity and Related Diseases* (2022). [DOI: 10.1016/j.soard.2022.12.033](https://doi.org/10.1016/j.soard.2022.12.033)

Keeley J. Pratt et al, Proximity to High/Moderate vs Low Diversity Selection Food Stores and Patient Weight loss through 24 Months, *Obesity Surgery* (2023). [DOI: 10.1007/s11695-023-06501-w](https://doi.org/10.1007/s11695-023-06501-w)

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