Medical Xpress

Researchers determine bariatric surgery lowers health risks for people with common liver disorder

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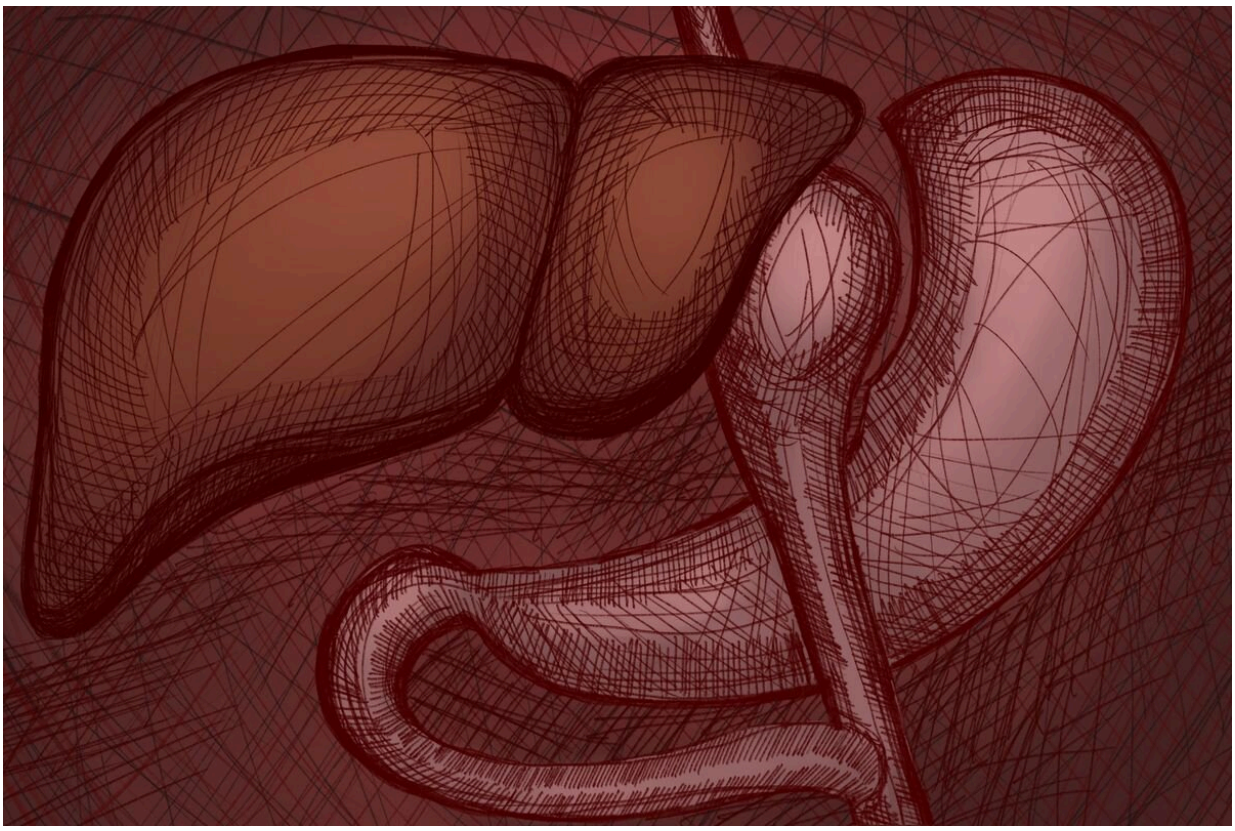

Bariatric surgery—or gastric bypass—as a treatment method for patients with nonalcoholic fatty liver disease has a significant impact on improving clinical outcomes, a West Virginia University study found. In Roux-en-Y, the most common gastric bypass procedure, the stomach is divided into an egg-sized portion to store food and another larger portion that is bypassed. The small intestine is also divided and connected to each new portion of the stomach.

Credit: WVU /Aira Burkhart

Researchers at West Virginia University have uncovered critical data showing bariatric surgery as a treatment method for patients with nonalcoholic fatty liver disease has a significant impact on improving clinical outcomes. The study, led by Dr. Shailendra Singh, included thousands of patients diagnosed with NAFLD, a condition that is seeing an upsurge and contributes to multiple other afflictions.

While bariatric surgery has long been associated with reducing cardiovascular disease and death in patients with obesity, the research team set out to explore whether the same held true for patients with NAFLD. Their study was published in *JAMA Network Open.*

"NAFLD is one of the most common causes of liver disease in the United States," said Singh, associate professor and director of bariatric endoscopy in the WVU School of Medicine. "The global prevalence of NAFLD has reached 25% and is projected to be more than 33% by 2030. NAFLD is closely associated with obesity and metabolic syndrome, and it can lead to various complications, such as liver cirrhosis, cancer and cardiovascular diseases.

"Our study provides critical data about the impact of bariatric surgery on patients with NAFLD and supports its use as a therapeutic modality to improve clinical outcomes."

As the name implies, NAFLD is a buildup of fat in the liver not related to heavy alcohol use. While the cause is unknown, researchers say it is more common in people who are obese, have type 2 diabetes, high blood pressure or high levels of fats such as cholesterol and triglycerides in their blood. People who are middle age or older are at a higher risk,

although children can get the disease.

Currently, no specific medications are approved to treat NAFLD, and lifestyle changes aimed at weight loss remain the main treatment. Singh's new research points to bariatric procedures as a viable option.

"Obesity is a significant risk factor for cardiovascular disease, one of the leading worldwide mortality causes," Singh said. "Bariatric surgery is an effective weight-loss intervention in patients with obesity."

Different types of the minimally invasive procedure are in practice, all which modify the stomach and intestines so the patient has an increased feeling of fullness and therefore takes in less food.

The study included patients who received either Roux-en-Y gastric bypass or sleeve gastrectomy. Patients with a history of gastric banding and other less common bariatric procedures were excluded. Roux-en-Y, referred to as gastric bypass, is the most common procedure and involves dividing the stomach in two—a smaller, egg-sized portion to store food and a larger portion that is bypassed and no longer stores or digests food. The small intestine is also divided and connected to each new portion of the stomach. In sleeve gastrectomy, approximately 80% of the stomach is removed reducing the amount of food, liquid and calories that are consumed.

The study group included 9,374 adult patients with NAFLD and obesity, classified as having a body mass index of 35 or greater. The patients were divided into two groups of 4,687 each—those who underwent bariatric surgery and the nonsurgical control group. Patients in the surgical group were matched with those in the control group according to age, demographics, medication and comorbidities—having two or more chronic or long-term conditions simultaneously.

"We then studied the risk of major cardiovascular events such as heart failure, myocardial infarction, stroke or need for cardiac surgeries and death in both groups," Singh said.

The study found that bariatric surgery was associated with significantly lower risks of major adverse cardiovascular events and death. Specifically, patients in the surgical group had lower risks of new onset heart failure, adverse cardiovascular events, stroke and treatment for blockages in the coronary artery compared with the non-surgical group. These outcomes were consistent at follow-up durations of one, three, five and seven years.

"The multifaceted nature of NAFLD with varying coexisting complications makes its treatment complex," Singh said. "We hope that our study findings will lead to increased awareness of the benefits of bariatric surgery and its role in the management of patients with NAFLD and obesity."

More information: Arunkumar Krishnan et al, Cardiovascular Outcomes and Mortality After Bariatric Surgery in Patients With Nonalcoholic Fatty Liver Disease and Obesity, *JAMA Network Open* (2023). DOI: 10.1001/jamanetworkopen.2023.7188

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