

# **Lower-fat diet key to women's liver health following weight-loss surgery**

May 28 2021

---







Credit: CC0 Public Domain

Research suggests that women who have weight loss surgery need to reduce the amount of fat they eat after surgery to reap the full benefit of the procedure and protect their liver function. The study is published ahead of print in the *American Journal of Physiology-Endocrinology and Metabolism*.

More than 42% of adults living in the U.S. are considered obese and have a higher risk of developing chronic health conditions such as type 2 diabetes, [heart disease](#) or cancer. According to the American Society for Metabolic and Bariatric Surgery, an estimated 256,000 people in the U.S. had [weight loss](#) (bariatric) surgery in 2019. As many as 80% of these cases are women. Benefits of [bariatric surgery](#)—in addition to weight loss—include improved glucose tolerance and [cholesterol levels](#), and better heart health overall. However, studies have found that men and women do not respond the same way to weight loss interventions. "There are indications that [biological] sex impacts the degree of weight loss and improvements in comorbidities," the researchers of a new study in mice wrote.

The researchers studied a mouse model of vertical sleeve gastrectomy, a form of [weight loss surgery](#) in which the stomach is reduced to about 15% of its original size. After the procedure, some of the mice remained on the high-fat diet they were fed before surgery, while others were placed on a lower-calorie diet. The research team found both male and female mice had better glucose tolerance and lost weight and body fat after surgery, even if they stayed on the high-fat diet. However, the males had a larger decrease in liver fat storage (hepatic triglycerides)

than the females. The male mice saw improvements in hepatic triglycerides regardless of their diet, while only the females following a lower-calorie diet showed significant improvement. High levels of hepatic triglycerides are a marker of fatty liver disease, which affects up to one hundred million people in the U.S., according to the Fatty Liver Foundation. Fatty liver disease can lead to liver cancer and liver failure in some cases.

"These data suggest that maintaining females on a [[high-fat diet](#)] diminishes the impact of surgery on reducing hepatic triglycerides," the researchers wrote. The findings "highlight the importance of considering the additive impact of dietary intervention on surgical outcome" in light of the sex differences associated with weight loss surgery, explained Darleen Sandoval, Ph.D., of the University of Colorado-Anschutz Medical Campus, and corresponding author of the study.

"Diet-dependent sex differences in the response to vertical sleeve gastrectomy" is published ahead of print in the *American Journal of Physiology-Endocrinology and Metabolism*.

**More information:** Chelsea R Hutch et al, Diet-Dependent Sex Differences in the Response to Vertical Sleeve Gastrectomy, *American Journal of Physiology-Endocrinology and Metabolism* (2021). [DOI: 10.1152/ajpendo.00060.2021](#)

Provided by American Physiological Society

Citation: Lower-fat diet key to women's liver health following weight-loss surgery (2021, May 28) retrieved 25 April 2024 from <https://medicalxpress.com/news/2021-05-lower-fat-diet-key-women-liver.html>

This document is subject to copyright. Apart from any fair dealing for the purpose of private study or research, no part may be reproduced without the written permission. The content is provided for information purposes only.