

# Study finds that reducing intake of simple sugars improves GERD

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A reduction in dietary carbohydrates improved both symptoms and objective measurements of gastroesophageal reflux disease (GERD) in a randomized controlled trial.

A team of Vanderbilt researchers recently reported in the *American Journal of Gastroenterology* that reduced consumption of simple sugars improved esophageal acid pH, the number of reflux episodes, and the hallmark symptoms of GERD: heartburn and regurgitation.

"The findings support a recommendation for patients suffering from GERD to reduce their simple sugar intake," said Heidi Silver, RD, MS, Ph.D., research professor of Medicine in the Division of Gastroenterology, Hepatology and Nutrition and senior author of the study.

"My intention is that the study findings will inform routine clinical practice for patients with GERD," Silver said.

Simple sugars are a type of carbohydrate with only one or two saccharide molecules, like glucose and fructose. In contrast, complex carbohydrates have three or more monosaccharide units. Simple sugars are the teaspoons of sugar stirred into your morning coffee as well as the "added sugars" that are used in food manufacturing to sweeten drinks, desserts and many processed foods.

National data shows that Americans consume an average of 28 teaspoons of simple sugars per day. "This is more than double the amount recommended in the Dietary Guidelines," Silver noted.

"Excess simple sugar intake is so prevalent in our society that even if a reduction doesn't improve GERD symptoms, it may have other beneficial effects on [body weight](#) and reducing risk for chronic diseases, which would improve overall health. There's no potential harm," she said.

About 30–40% of Americans experience typical symptoms of GERD: heartburn, reflux or regurgitation, nausea, pain in the throat or chest, and

sleep disturbances.

"Patients are often told to avoid certain foods or ingredients, but very few studies have rigorously examined the relationship between dietary factors and GERD," Silver said.

Silver and her colleagues had made a serendipitous discovery in a previous diet intervention study that provided study participants with a moderately high fat, lower carbohydrate diet for 16 weeks. At the nine-week timepoint, all the participants who had GERD were no longer having symptoms and had discontinued taking their GERD medications.

"The purpose of that study was to investigate the effects of dietary fats on [energy metabolism](#) and [weight loss](#), but we had a very intriguing finding that warranted further exploration," Silver said.

To study the effects of carbohydrates on GERD, Silver and her colleagues conducted a [randomized controlled trial](#) in which 98 veterans with GERD were divided into four dietary intervention groups that varied in the amount and type of carbohydrates (high total/high simple; high total/low simple; low total/high simple; low total/low simple).

The group consuming high total carbohydrates and high simple sugars—which was designed to mimic a typical American diet—was considered the [control group](#).

Menus were developed that met individual energy (calorie) needs for weight maintenance, and foods were prepared in the Metabolic Kitchen Core and provided to participants weekly. The researchers used 24-hour pH monitoring (via intranasal catheter) to measure esophageal acid exposure time and number of reflux episodes at baseline and after nine weeks of diet intervention. Participants also completed two validated questionnaires to assess GERD symptoms.

All the carbohydrate modification groups had improvements in GERD symptoms after nine weeks. In addition, participants reported a significant decrease in the use of over-the-counter medications, which patients often use because prescription GERD medications are not completely effective, Silver said.

For the pH monitoring results, the high total/low simple carb group and the low total/high simple carb group had significant reductions in acid exposure time and total number of reflux episodes during the 24-hour monitoring period. Unexpectedly, the low total/low simple carb group, which the researchers expected to have the largest impact, did not differ significantly from the control group, "most likely due to high variability among the participants in that group and/or lack of compliance with the diet or monitoring equipment," Silver said.

Overall, the study findings support a recommendation that patients with GERD reduce their intake of simple sugars. The two groups with low simple sugars consumed about 15 teaspoons less sugar per day compared to the high simple [sugar](#) groups.

"I hope clinicians will include this information in their discussion with patients on how to manage GERD. If a patient only reduces the number of cans of soda or glasses of sweet tea that are consumed each day, that will make a substantial impact," Silver said. "It's important to understand that a person does not need to completely eliminate all [simple sugars](#), but to reduce them."

**More information:** Cihang Gu et al, The Effects of Modifying Amount and Type of Dietary Carbohydrate on Esophageal Acid Exposure Time and Esophageal Reflux Symptoms: A Randomized Controlled Trial, *American Journal of Gastroenterology* (2022). [DOI: 10.14309/ajg.0000000000001889](https://doi.org/10.14309/ajg.0000000000001889)

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