Kombucha Shows Potential Diabetes Benefit in Small Trial

— Diabetes patients saw glucose levels drop after drinking fermented tea

by Kristen Monaco, Senior Staff Writer, MedPage Today August 1, 2023

Drinking kombucha helped improve blood glucose levels in people with type 2 diabetes, according to a randomized, controlled pilot trial.

After drinking the fermented tea for a month, participants saw a significant reduction in average fasting blood glucose levels (164 vs 116 mg/dL, *P*=0.035) not seen in those in the placebo group (162 vs 141 mg/dL, *P*=0.078), Robert Hutkins, PhD, MS, of the University of Nebraska in Lincoln, and colleagues found.

Despite the significant reduction seen for kombucha drinkers, glucose levels weren't significantly different between the two groups at the end of the 4-week period, the researchers detailed in *Frontiers in Nutrition*.

That being said, two participants with diabetes had "normal" fasting glucose levels at the start of the trial (under 110 mg/dL). When they were excluded from the analysis --

leaving only those with elevated baseline glucose levels at baseline -- there was a much larger improvement seen after drinking kombucha. In this subset of participants, there was a 74.3 mg/dL drop in fasting glucose levels after 4 weeks and levels were significantly lower than the placebo group.

Most participants also said their diabetes symptoms were average or better at all time points while drinking kombucha. Only one participant reported feeling bloated, but no other adverse events were reported.

"If this outcome was obtained in a well-powered study, kombucha could have the potential to greatly affect diabetic care," the researchers wrote.

"As a physician caring for patients with diabetes, it is challenging to find healthy substitutes for 'sugary' habits," co-author Chagai Mendelson, MD, of MedStar Georgetown University Hospital, explained to *MedPage Today*. "It would be very helpful to be able to tell my patient 'lay off of the sugary sodas, but if you need a fizzy drink -- here's one that may be good for you!'"

"We could not figure out why [this study] hasn't been done yet," he added. "It needed to be done."

The researchers referenced several prior studies performed in rats with diabetes who experienced the same anti-hyperglycemic effects. Some of these studies even found significant reductions in HbA1c levels, as well as regeneration of pancreatic beta cells associated with drinking kombucha.

Mendelson added that in addition to the animal data on kombucha, other human research on drinking apple cider vinegar -- another fermented beverage -- also showed benefits on blood sugar. The real-world drink market is much larger for kombucha though, Mendelson noted.

His group's 12-person trial had participants consume 8 oz of the study drink with dinner every day for 4 weeks, followed by an 8-week washout period, followed by a crossover period where participants spent another 4 weeks in the other study arm. To allow for a double-blind comparison with kombucha, the control group consumed an unfermented sparkling drink made specifically to match the kombucha in flavor and appearance.

Most of the study participants were female, all were over 40, and 75% were on insulin. Participants were not instructed to follow any specific dietary guidelines for the study.

Despite the sugar used during the kombucha's fermentation process, daily consumption didn't increase glucose levels in this diabetes population. "I was surprised to see that a drink that contains sugar -- at least initially -- did not cause hyperglycemia," said Mendelson. "That is counterintuitive if you are not aware of previous data."

The kombucha microbes may be the underlying source of this metabolic improvement, the group speculated. The kombucha used in this study was generated by fermenting sweetened tea with bacteria (mostly lactic acid and acetic acid bacteria) and yeast (most abundantly Dekkera yeast).

Both the kombucha and placebo drinks were sweetened with sucrose (10%) and flavored with the same freeze-dried ginger powder. Ethanol was present at 1.5%. Fecal samples were not obtained from participants, and therefore kombucha's effect on the gut microbiome couldn't be assessed.

The researchers posited that the nature of a carbonated drink might subsequently lead to appetite suppression and reduced meal size or that kombucha replaced carbonated beverages that were far higher in sugar content.

"More research is needed in this topic, this was just a pilot study to prove the concept and shine a light on the advances in this field," Mendelson said. "Hopefully more studies will follow, as there is a lot of clinical utility."

Kristen Monaco is a senior staff writer, focusing on endocrinology, psychiatry, and nephrology news. Based out of the New York City office, she's worked at the company since 2015.

Disclosures

Hutkins is a co-founder of Synbiotic Health. Co-author Merenstein is president of the International Scientific Association for Probiotics and Prebiotics board, a non-paid position.

All kombucha and placebo drinks were donated by Craft Kombucha. There were no author reported financial ties with Craft Kombucha.

Primary Source

Frontiers in Nutrition

Source Reference: *Mendelson C, et al "Kombucha tea as an anti-hyperglycemic agent in humans with diabetes - a randomized controlled pilot investigation" Front Nutr 2023.*

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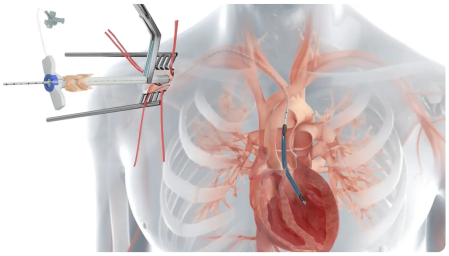

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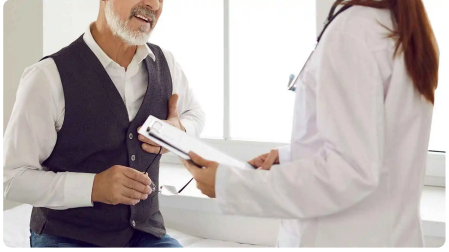

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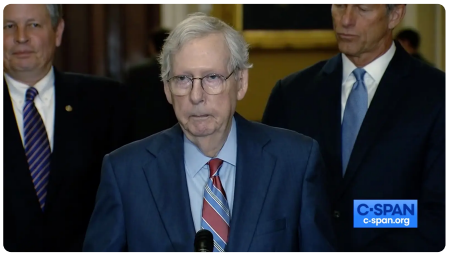

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