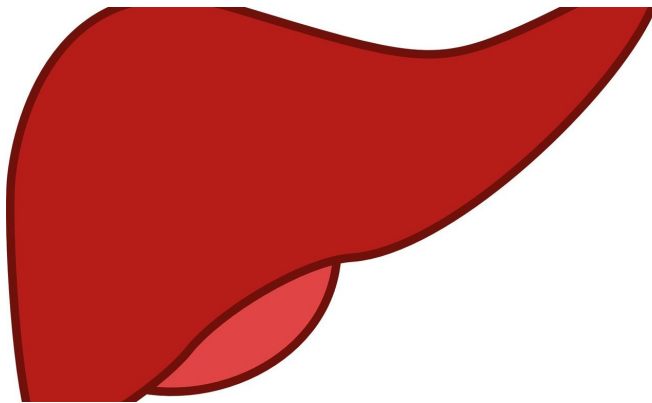


Non-caloric sweetener reduces signs of fatty liver disease in preclinical research study

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There is clear evidence that high sugar consumption leads to obesity and fatty liver disease. Synthetic and natural alternatives to sugar are available, but little is known about the effects of these non-caloric sweeteners on the liver. A new study led by Rohit Kohli, MBBS, MS, shows that stevia extract can reduce markers of fatty liver disease. The results of the pre-clinical research, published in the journal *Scientific Reports* led to a clinical trial, now in progress.

The Centers for Disease Control and Prevention reports that obesity affects nearly 19% of children. An associated condition called non-alcoholic fatty liver disease affects one out of every 10 children. Fatty liver disease can lead to cirrhosis and liver cancer. Consumption of too much sugar can lead to both obesity and fatty liver disease.

"Sugary foods and drinks can cause scarring in the liver," says Dr. Kohli, "but we don't know how non-caloric sweeteners may affect liver disease." In a first-of-its-kind study, Dr. Kohli addressed and answered the question: Can non-caloric

sweeteners improve signs of fatty liver disease?

Using a preclinical model, he tested two non-caloric sweeteners, sucralose and stevia extract. Both are widely available and appear in many sweetened foods and drinks. "We were interested in those two compounds because they are the newest and least studied in the context of liver disease and obesity," says Dr. Kohli.

The results were striking. "We compared these sweeteners head to head with sugar," he says. "Stevia extract lowers glucose levels and improves markers of fatty liver disease." These markers include fibrosis and fat levels in the [liver](#). The study also uncovered some potential mechanisms that could be responsible for reversing these markers of [fatty liver disease](#). "We saw a decrease in signs of cellular stress and some changes in the [gut microbiome](#)," says Dr. Kohli, "but there is more work to do in order for us to understand the clinical relevance."

The preclinical study was funded by the Stanley W. Ekstrom Foundation. The results led Dr. Kohli's team directly into a clinical trial—also funded by the Stanley W. Ekstrom Foundation—to test the effects of stevia in pediatric patients. "The exciting thing is that we have taken a problem that we see in the clinic, studied it preclinically, and now we are back to test the solution—all in under two years." says Dr. Kohli.

More information: Dong Xi et al, Rebaudioside affords hepatoprotection ameliorating sugar sweetened beverage- induced nonalcoholic steatohepatitis, *Scientific Reports* (2020). [DOI: 10.1038/s41598-020-63688-z](https://doi.org/10.1038/s41598-020-63688-z)

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