Sugary soda consumption linked to reduced kidney blood flow

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Regular consumption of sugary soda sweetened with high-fructose corn syrup (HFCS) reduces kidney blood flow, which could be linked to a greater risk of developing chronic kidney disease (CKD), according to a recently published paper in the *American Journal of Physiology-Renal Physiology.* The study, chosen as an APSselect article for May, was conducted in two parts on a total of 25 men and women.

Vascular resistance occurs when blood vessels constrict to impede the flow of blood in the kidneys. This can lead to increased blood pressure and reduced kidney function, among other complications.

Approximately 37 million people in the U.S. suffer from CKD, according to the National Kidney Foundation. The Foundation estimates CKD kills more people than breast cancer or prostate cancer. It is considered an under-recognized public health crisis.

"Consumption of 500 mL of a commercially available soft drink sweetened with HFCS increased vascular resistance in the kidneys within 30 minutes," the researchers wrote. "We also found that increases in segmental artery vascular resistance were exacerbated during the CPT (cold pressor test) compared with water consumption."

In a follow-up study, the researchers also found changes in arterial blood flow inside the kidneys were brought on by HFCS, not due to the caffeine content or osmolality of the beverage. Increases in resistance in arteries inside the kidneys "were likely due to simultaneous increases in serum uric acid and copeptin. Collectively, our findings indicate that

HFCS-sweetened soft drink consumption increased renal vasoconstrictor tone at rest and during sympathetic activation."

More information: Christopher L. Chapman et al. High-fructose corn syrup-sweetened soft drink consumption increases vascular resistance in the kidneys at rest and during sympathetic activation, *American Journal of Physiology-Renal Physiology* (2020). DOI: 10.1152/ajprenal.00374.2019

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