

Junk food causes similar high blood sugar levels as type 2 diabetes

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Credit: Maliz Ong/public domain

A junk food diet can cause as much damage to the kidney as diabetes, according to a study published in *Experimental Physiology*.

Type 2 diabetes is often associated with obesity and the number of cases are rising worldwide at an alarming rate. In type 2 diabetes, the body doesn't produce enough insulin or doesn't react to it. This causes an accumulation of sugar (glucose) in the blood, which can have severe long-term consequences for organs, including the kidneys, where it can lead to [diabetic kidney disease](#). Hence, finding a way to block glucose reabsorption in the kidneys could offer a potential treatment for lowering [blood sugar levels](#).

In their study, researchers used animal models of diabetes and models of diet-induced obesity and insulin resistance to see how [insulin resistance](#) and too much sugar or fat affect glucose transporters in the kidney. The rats were fed junk food consisting of cheese, [chocolate bars](#), biscuits and marshmallows for 8 weeks, or a rodent chow high in fat (containing 60%) for 5 weeks. The researchers then tested the effect of these diets on

blood sugar levels and the different glucose transporters in the kidneys. The effect of the diets on these transporters was compared with the changes also seen in rat models of type 1 and type 2 diabetes.

They found that certain types of glucose transporters (GLUT and SGLT) as well as their regulatory proteins were present in a higher number in type 2 diabetic rats. But a high fat diet and junk food diet caused a similar increase in those receptors.

Dr Havovi Chichger, Senior Lecturer in Biomedical Science at the Anglia Ruskin University, UK and lead author of the study, explained, "The Western diet contains more and more processed junk food and fat, and there is a well-established link between excessive consumption of this type of food and recent increases in the prevalence of obesity and type 2 diabetes. In our study, type 1 and type 2 diabetes both induce changes in glucose transport in the kidney, but junk food or a diet high in fat causes changes that are very similar to those found in type 2 [diabetes](#)."

She added, "A new treatment for diabetic patients constitutes blocking the glucose transporter in the kidney to reduce blood glucose levels. Understanding how diet can affect sugar handling in the kidneys and whether the inhibitors can reverse these changes could help to protect the kidneys from further damage."

More information: Type II diabetes and related models of impaired glucose metabolism differentially regulate glucose transporters at the proximal tubule brush border membrane , [DOI: 10.1113/EP085670](#)

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