

Gut taste mechanisms are abnormal in diabetes sufferers

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(Medical Xpress)—Researchers at the University of Adelaide have discovered that the way the gut "tastes" sweet food may be defective in sufferers of type 2 diabetes, leading to problems with glucose uptake.

This is the first time that abnormal control of so-called "sweet taste receptors" in the human intestine has been described by researchers. The work could have implications for a range of health and [nutrition problems](#) experienced by [diabetes patients](#).

Dr Richard Young, Senior Postdoctoral Researcher in the University of Adelaide's Nerve-Gut Research Laboratory, says [taste buds](#) aren't the only way the body detects sweetness.

"When we talk about 'sweet taste', most people think of tasting sweet food on our tongue, but scientists have discovered that sweet taste receptors are present in a number of sites in the human body. We're now just beginning to understand the importance of the sweet taste receptors in the human intestine and what this means for sufferers of [type 2 diabetes](#)," Dr Young says.

In his study, Dr Young compared healthy adults with type 2 diabetic adults. He found that the control of sweet taste receptors in the intestine of the healthy adults enabled their bodies to effectively regulate glucose intake 30 minutes after exposure to glucose. However, abnormalities in the [diabetic adults](#) resulted in more rapid [glucose uptake](#).

"When sweet taste receptors in the intestine detect glucose, they trigger a response that may regulate the way glucose is absorbed by the intestine. Our studies show that in diabetes patients, the glucose is absorbed more rapidly and in greater quantities than in healthy adults," Dr Young says.

"This shows that diabetes is not just a disorder of the [pancreas](#) and of insulin - the gut plays a bigger role than researchers have previously considered. This is because the body's own management of glucose uptake may rely on the actions of sweet taste receptors, and these appear to be abnormally controlled in people with type 2 diabetes."

Dr Young says more research is needed to better understand these mechanisms in the gut.

"So far, we've seen what happens in people 30 minutes after glucose is delivered to the intestine, but we also need to study what happens over the entire period of digestion. There are also questions about whether or not the body responds differently to artificial sweeteners compared with natural glucose," he says.

"By gaining a better understanding of how these mechanisms in the gut work, we hope that eventually this will assist to better manage or treat diabetes in the future."

This study has been funded by the National Health and Medical Research Council (NHMRC) and Diabetes Australia. The results have been published online ahead of print in the international journal *Diabetes*.

More information: [diabetes.diabetesjournals.org/ ...
3/db13-0581.abstract](https://diabetes.diabetesjournals.org/.../3/db13-0581.abstract)

Provided by University of Adelaide

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