

Pill could provide alternative to weight loss surgery

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Credit: Rany Tuunainen/Pixabay

A new pill that appears to mimic the effects of gastric bypass surgery is

providing fresh hope for people living with type 2 diabetes and obesity.

University of Adelaide researchers were selected by US biotechnology company Glyscend Therapeutics to carry out the first phase of testing the medication in healthy volunteers.

"The short (five day) study indicates that the pill works in healthy volunteers. It reduced the rise in blood glucose after a meal substantially and also resulted in a small amount of weight loss. Importantly, it was well tolerated by the volunteers," said Professor Michael Horowitz AO from the University of Adelaide's Center of Research Excellence in Translating Nutritional Science to Good Health.

"This is an exciting development. For most people with type 2 [diabetes](#), weight loss and improvements in blood glucose control are extremely important, but often difficult to achieve."

The pill works by enhancing the barrier function of mucus in the upper gastrointestinal tract and it's thought this will mirror the benefits of gastric bypass surgery, which is effective for weight loss in people with type 2 diabetes and obesity but can have serious short- and longer-term complications.

"We have a potential treatment that's non-invasive and appears to mimic the positive effects of metabolic surgery without the risks, high cost or adverse effects," said Professor Horowitz.

The data from the phase one study have been published in *Diabetes, Obesity and Metabolism*.

The University of Adelaide's industry partner Glyscend carried out an additional 14-day study in the US in people with type 2 diabetes which produced similar results.

"We are highly encouraged to see the acute clinical benefits of our orally administered first-in-class drug. The totality of the data on GLY-200 suggest it has the potential to replicate the mechanism of surgery and provide a non-invasive alternative to today's invasive approaches," said Dr. Mark Fineman, Glyscend's Chief Development Officer and first author on the Phase 1 publication.

Almost 1.3 million Australians are living with type 2 diabetes and this number is increasing each year. Some 60 percent of Australian adults are either overweight or obese.

For people who have type 2 diabetes and are overweight, [weight loss](#) reduces elevated [blood glucose](#) levels and normalizes blood pressure.

"The early results suggest that this drug could be a game changer. Now what's required is an improved understanding of the mechanisms responsible for the beneficial effects and proof that these effects are sustained," said Professor Horowitz.

With other University of Adelaide researchers (Professor Chris Rayner and Professor Karen Jones), Professor Horowitz plans to initiate another clinical trial related to these mechanisms in Adelaide within the next six months.

More information: Mark S. Fineman et al, First-in-human study of a pharmacological duodenal exclusion therapy shows reduced postprandial glucose and insulin and increased bile acid and gut hormone concentrations, *Diabetes, Obesity and Metabolism* (2023). [DOI: 10.1111/dom.15066](#)

Provided by University of Adelaide

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