

Type 2 diabetes and obesity could be treated by new, less invasive procedure

October 11 2019



Credit: CC0 Public Domain

New research from King's College London published in *EBioMedicine*, has found that a newly tested medical device, called Sleeveballoon, mimics the effects of traditional bariatric surgery in rodents and

produces impressive results on body weight, fatty liver and diabetes control.

Sleeveballoon is a device that combines a balloon with a connected sleeve, which covers the initial parts of the small intestine. It is inserted into the stomach and bowel during minimally invasive surgery under general anaesthetic.

In this study, researchers compared the effects of the Sleeveballoon and traditional bariatric surgery on 30 rodents fed with a [high-fat diet](#), achieving very similar results. Results were also compared to sham-operated rats, with the new device reducing [food intake](#) by 60% and resulting in a 57% reduction in fat mass. The effect on diabetes was similarly impressive with blood glucose levels dropping by 65%.

"Gastric bypass surgery is a highly effective treatment of obesity and type 2 diabetes. However, very few eligible patients, only around 1%, are offered surgery and some also prefer less invasive approaches," said lead author Professor Geltrude Mingrone from King's College London.

"We found that the metabolic effects of the Sleeveballoon device are similar to those of the [gastric bypass](#) but have distinct advantages over the traditional method. In both, insulin sensitivity and heart functions improved. However, while gastric bypass causes a rapid rise in post food [blood glucose levels](#) which can cause hypoglycaemia, the Sleeveballoon induces a slowing down of digestion which has a steadying effect on blood sugar levels. This helps control appetite and hunger, keeping the person fuller for longer and substantially reduces weight."

The device should be removed after 6 to 12 months, and the team are eager to test the device in say more research is needed to manage this process and avoid reversal of the positive effects on obesity and diabetes.

"About two billion adults, or 30% of the world's population, live with overweight or obesity according to the World Health Organisation," said Professor Mingrone.

"At present, 500 million people suffer from type 2 diabetes and about two billion people have fatty liver disease. We hope that our discovery will be tested in humans soon and revolutionise the way we tackle this epidemic."

More information: James Casella-Mariolo et al. Simulation of gastric bypass effects on glucose metabolism and non-alcoholic fatty liver disease with the Sleeveballoon device, *EBioMedicine* (2019). [DOI: 10.1016/j.ebiom.2019.07.069](https://doi.org/10.1016/j.ebiom.2019.07.069)

Provided by King's College London

Citation: Type 2 diabetes and obesity could be treated by new, less invasive procedure (2019, October 11) retrieved 25 April 2024 from <https://medicalxpress.com/news/2019-10-diabetes-obesity-invasive-procedure.html>

This document is subject to copyright. Apart from any fair dealing for the purpose of private study or research, no part may be reproduced without the written permission. The content is provided for information purposes only.