

Weight loss through the use of intestinal barrier sleeves

October 10 2013

Scientists from the Helmholtz Zentrum München in cooperation with the University of Cincinnati, USA, have discovered that the placement of a non-permeable tube in the small intestine leads to reduced nutrient absorption and consequently to reduced obesity and enhanced glucose metabolism. These findings are published in the current issue of the British medical journal *Gut*.

Bariatric surgeries, such as a gastric bypass, are currently the most effective anti-obesity therapies. They also lead to a reduced insulin resistance. However, the pitfall of these surgical interventions is that they are highly invasive and often permanent procedures. An international team of scientists led by Dr. Kirk Habegger, Metabolic Disease Institute, University of Cincinnati, and Prof. Dr. Matthias Tschöp, Scientific Director of the Helmholtz Diabetes Center (HDC) at the Helmholtz Zentrum München (HMGU), Partner of the German Center for Diabetes Research (DZD), have now developed an equally efficient but less invasive surgical method, thus paving the way for the development of novel safe and efficient anti-obesity therapies.

In their study, a flexible tube, called a DES (duodenal-endoluminal sleeve), was placed in the small intestine. Tschöp, Habegger, and colleagues observed that this intervention in an animal model potently corrects obesity while improving [glucose metabolism](#). The metabolic benefits of this novel surgical intervention seem to be mediated via reduced [nutrient absorption](#) in the intestinal lumen and reactive mucous membrane growth in the other intestinal sections, a shift which may lead

to improved nutrient utilization. The intervention carries the great advantage that it is less invasive and removable at any time.

The method is consequently seen as a promising approach to treat obesity and diabetes. Further studies now aim to clarify which influence this novel surgical technique has on the complex neuroendocrine network that controls energy metabolism. The long-term goal based on such better understanding is to optimize devices to the level where they can be used successfully in humans, potentially in combination with hormone based drug therapies. (Also see press release "Enhancing weight loss: Gastric banding with hormone therapy")

The numerous conditions associated with overweight and obesity, such as type 2 diabetes, are among the major widespread diseases in Germany. They are the focus of the research at the Helmholtz Zentrum München.

More information: Habegger, K. et al (2013). Duodenal Nutrient Exclusion Improves Metabolic Syndrome and Stimulates Villus Hyperplasia, *Gut*. DOI: [10.1136/gutjnl-2013-304583](https://doi.org/10.1136/gutjnl-2013-304583)

Provided by Helmholtz Association of German Research Centres

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