

Adjustable gastric banding more effective when combined with gastrointestinal hormone GLP-1

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Pharmacological activation of the receptor for glucagon-like peptide 1 (GLP-1) in conjunction with adjustable gastric banding (AGB) surgery may improve weight loss outcomes achieved with this procedure when compared to performing AGB alone, say researchers from the University of Cincinnati (UC) and the Helmholtz Center in Munich, Germany.

These findings, the authors say, "suggest an opportunity to optimize

bariatric surgery with adjunctive pharmacotherapy."

The [laboratory study](#), which appears June 17, 2013, online ahead of print in the journal *Diabetes*, was led by Kirk Habegger, PhD, research assistant professor in the endocrinology, diabetes and metabolism division at UC, and Matthias Tschöp, MD, adjunct professor at UC and director of the Institute for Diabetes and Obesity at the Helmholtz Center.

"To our knowledge, these are the first findings to show that pharmacological therapies can augment and improve [surgical interventions](#) in the treatment of obesity," says Habegger, a researcher with UC's Metabolic Diseases Institute.

GLP-1 is an incretin—a gastrointestinal hormone causing an increased release of insulin after eating to combat the onset of elevated [blood glucose](#). GLP-1 has been used in the development of existing [diabetes medications](#).

A 2011 study led by UC [endocrinologist](#) Marzieh Salehi, MD, linked the immediate improvements in blood sugar in humans following gastric bypass surgery to the increased secretion of GLP-1 that occurs in these patients. Because administration of GLP-1-based drugs alone has been linked to weight loss, scientists believe that GLP-1 secretion post gastric bypass could explain the successful and sustained weight loss experienced by many patients.

Unlike gastric bypass surgery, however, less-invasive adjustable gastric banding does not trigger increased GLP-1 secretion, and has been shown to be less effective in promoting weight loss. (Adjustable gastric banding is performed laparoscopically by placing a silicone band or device around the top of the stomach to limit food intake. As weight loss is achieved, the band is tightened to maintain the effect.)

Habegger, Tschöp and team hypothesized that combining GLP-1-based drugs with adjustable gastric banding could be used to improve the efficacy of this less-invasive obesity intervention.

The team used animal models to test this hypothesis and found that treatment with a GLP-1 receptor agonist increased the weight loss associated with adjustable gastric banding and also reduced the band pressure required to achieve this weight reduction.

"Currently, surgical intervention is the best option out there for sustained weight loss," says Habegger. "One of our long-term goals at the UC [Metabolic Diseases](#) Institute is to find out why these interventions work so well, and figure out ways to recreate their success in less invasive ways."

Provided by University of Cincinnati

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