Gastric bypass surgery affects gut microbes independent of weight loss

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Keywords: Roux-en-Y gastric bypass, RYGB, gastric bypass, weight loss, surgery, microbiome, bacteria, intestine, flora, Microbiome

Posted Date: April 24th, 2020

DOI: <https://doi.org/10.21203/rs.2.24020/v2>

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Abstract

When weight loss attempts fail, people sometimes turn to surgery. Roux-en-Y gastric bypass is a last-resort treatment that alters gut architecture to cause substantial and sustained weight loss. The surgery alters the intestinal microbiota in the patient, which affects nutrient absorption. Unfortunately, it can be difficult to separate the effects from the surgery from those of the weight loss it causes. In a recent study, researchers used a rat model of gastric bypass to measure the changes in the resident gut microbes. They compared rats after surgery to weight-matched partners that didn't receive surgery. 16S rRNA gene sequencing and metaproteomics revealed that the overall diversity of microbes decreased following surgery. Interestingly, changes varied by location, and the proportion of certain bacteria increased while others decreased. Metabolism-related changes were also seen in the gut microbes, including changes in amino acid and bile acid metabolism. The results provide insight into the changes that occur during Roux-en-Y gastric bypass and how they might affect metabolism long-term. Contributing to the discovery of future therapies for those struggling with obesity, especially after weight loss surgery.