

Tracey Lynn McLaughlin, MD

Understanding how Gastric Bypass Surgery Reverses Type 2 Diabetes



Focus: Type 2 diabetes

Project Title: *Role of altered nutrient transit and incretin hormones in glucose lowering after Roux-en-Y gastric bypass surgery*

Institution: Stanford University, Palo Alto, CA

Dates of Award: Funded for 3 Years, 1/1/2019 through 12/31/2021

Grant Number: 1-19-ICTS-073

Total Grant Amount: \$599,988; **2019 Funding:** \$199,999

Project description: Gastric bypass surgery is a procedure in which a portion of the stomach and intestine are removed to induce weight loss. Surprisingly, this procedure also has a significant impact on glucose levels. Currently, gastric bypass is the only known way to reverse T2D in a sustainable and durable manner. Persistent remission of T2D occurs in approximately 85% of people who undergo this procedure. We do not understand exactly how gastric bypass surgery causes this diabetes reversal, although it occurs very shortly after surgery and before significant weight loss. Dr. McLauaghlin's project will focus on a particular group of patients that get frequent occurrences of very low blood sugar (hypoglycemia) following surgery and compare them to patients whose blood sugar does not drop below the normal level after surgery. Her goal is to try to figure out why this group of patients, many of whom had T2D before surgery, now have frequent occurrences of low blood sugar after surgery. She will compare physiologic parameters between the two groups of patients including secretion and action of insulin, and of other molecules believed to be involved in the resolution of diabetes after surgery. Additionally, Dr. McLaughlin will attempt to identify novel biological factors that play a role in the resolution of diabetes after surgery.

How this will help people with diabetes: Understanding exactly how gastric bypass surgery can reverse diabetes is critical, especially because this surgery is not appropriate for every patient with T2D. Once we understand exactly how gastric bypass surgery reverses diabetes, it would open the door to the possibility of mimicking the procedure with less invasive treatments or new medications. Ultimately, this could result in the opportunity to improve or even reverse T2D in many more patients.