

## EDITORIAL

# New Paradigm in Diabetes Management: “Treating Obesity to Treat Diabetes”

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## INTRODUCTION

For century, resolution of diabetes has been the top aspirational goals for researchers. Researchers have been looking for a cure for diabetes ever since insulin was discovered and used in 1922 (1). However, it was then concluded that diabetes is an incurable chronic non-communicable disease (1). The main aims of diabetes management are to slow down the disease progression and the complications.

## METABOLIC and BARIATRIC SURGERY

Over the past century, case studies and observational studies have shown that short term pharmacotherapy, diet and lifestyle interventions, or bariatric surgery can all briefly cure type 2 diabetes (T2D) (2-17). Newly diagnosed T2D patients can experience short term remission with lifestyle changes, consuming a very low-calorie diet and even with short-term intense insulin therapy.

Up to date, long term diabetes remission is rarely achieved with lifestyle intervention or medications. The effectiveness in glycemic control with newer medications such as glucagon-like peptide-1 agonists and sodium-glucose co-transporter 2 (SGLT2) inhibitors is observed but the long-term efficacy is still questionable.

Bariatric surgery has evolved since the 1950s (3) and has proven to be the most sustainable intervention in obesity management worldwide (18). It initially was recommended as weight loss surgery for obese population based on the patient’s body mass index (BMI) (19). Due to its effectiveness to resolve or significantly improve many of the metabolic disorders especially T2D, bariatric surgery is now recognized as metabolic surgery (20, 21).

Metabolic surgery has proven to have sustainable weight loss, resolution of diabetes and improvement in glycemic control as compared to lifestyle modification and pharmacotherapy in T2D patients (22, 23). Both long term observational and randomized control trials have documented diabetes remission of 20 to 70%

following metabolic surgery (depending on the type of the procedures) (18, 23-34). In recognition of that, in 2016, majority of significant worldwide diabetes organizations has included metabolic surgery as the treatment algorithm for T2D patients especially for those patients with poor glycemic control despite on pharmacotherapy (20).

In 2022, almost 90% of the metabolic surgical procedures performed worldwide were sleeve gastrectomy (figure 1) and Roux-en-Y gastric bypass (RYGB, figure 2) (35). The first laparoscopic metabolic surgery (Roux-en-Y gastric bypass) was introduced in early 1990s (36), and over the years with the advancement of minimally invasive laparoscopic techniques, its safety profile has steadily improved. The laparoscopic approach significantly reduces the perioperative morbidity (5%) and mortality (0.03-0.2%) rates of metabolic surgery (36, 37). Currently, almost 95% of these metabolic procedures are performed laparoscopically (36).

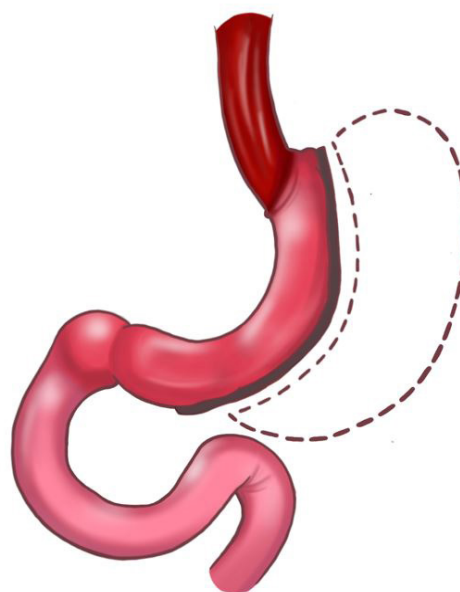
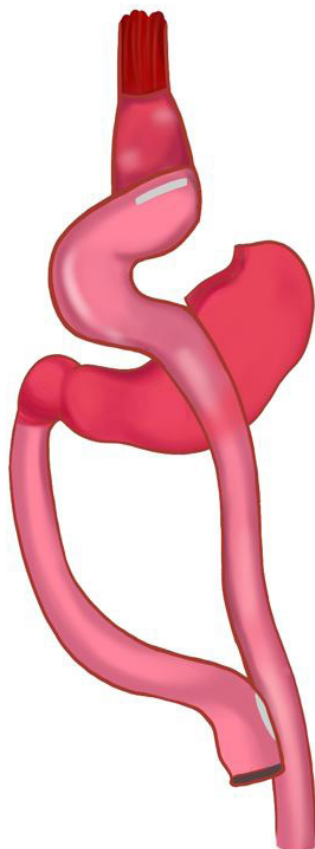


Figure 1: Sleeve Gastrectomy



**Figure 2: Roux-en-Y Gastric bypass**

## CONCLUSION

Given the current epidemiologic trends of diabetes patients with obesity, and advancement in laparoscopic techniques, metabolic surgery has proven to be safe, efficient, and durable treatment for weight loss and diabetes resolution. Soon, metabolic surgery is likely to play a more important role in the management of T2D patients with obesity.

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