

Selection of Bariatric Procedure and Why SADS/SIPS.

The choice to have bariatric surgery often is time consuming and difficult. It can be an intense emotional experience. Most that actually have surgery have wrestled with the decision for several years. Paradoxically, the decision of which procedure is often based on local influences. The procedure selected is determined by the outcomes of a friend or relative and the preference of the surgical practice consulted. Unfortunately, the operative choice and the patients' outcome objectives are often not in sync. Patients with the highest BMI's often select procedures, that on average offer the lowest weight loss. This leads to disappointment and a greater sense of failure.

All bariatric procedures are not created equally. Unfortunately, there is also no perfect procedure. Those that alter the body most, provide the highest weight loss. Logically, they also have an increased risk of nutritional issues. I have heard individuals say, "I am having the bariatric". Such statements indicate little understanding about how their anatomy will be altered. Furthermore, they do not realize that the majority of surgical patients lose substantial weight, but are still obese. Our patients range in size, the degree of obesity, and the presence or absence of medical problems. A single procedure will not be ideal for all. Understanding the subtle differences and expressing your true ambitions are paramount for proper selection and achieving results that best match your expectations.

Bariatric surgery can alter the stomach or the intestine. The stomach is most involved in hunger, and the intestine with satiety or fullness, and energy regulation. It is fair to state that procedures that involve the intestine such as Roux en Y gastric bypass (RYGB), one anastomosis gastric bypass (OAGB), Duodenal Switch (DS) or Single Anastomosis Duodenal Switch (SADS) will have greater weight loss, and less weight regain. Unfortunately, this comes at the expense of a higher requirement for vitamin and mineral supplementation. There is a higher risk of anemia and bone loss. Vertical Sleeve Gastrectomy (VSG) offers competitive weight loss with RYGB without manipulating the intestine. As a result, it has become the most common international procedure. However, with its popularity and increased prevalence, its limitations are becoming more apparent. It can be stated, "the stomach gets weight off, but the intestine helps keep it off."

The majority of patients that have a BMI > 45 will still be obese several years following VSG. To make the operation effective, the spherical stomach is converted to a narrow tube. The consequences are increasing reports of heartburn and gastro esophageal reflux disease (GERD). As a result, there will be a return to procedures that utilize the intestine. Another issue runs counter to popular thought. Many believe that if they are ideal patients then they will achieve their goal. Although, we can never estimate the results of an individual, we can relay the average or mean results. Obesity is based on impaired energy regulation by the brain. Similarly, weight loss metrics are centrally determined and may be limited by things outside personal control. Stated succinctly, all patients should concentrate on wellness with proper eating and activity. However, even with this effort, many will still not reach their goal and some

will require procedures that alter the body to a greater magnitude to achieve lasting weight loss.

With more than 25 years of experience in bariatric surgery and recognized as an international thought leader, I wanted to take this opportunity to explain in simple language the thought process that went into the creation of the single anastomosis duodenal switch(SADS). The American version of this procedure which has also called SIPS was popularized by myself and Daniel Cottam. In truth, no one really invents a new procedure. All are very similar and modifications of things that have been shown to be effective.

Commonly, when educated patients or physicians hear the words duodenal switch, they think of a robust operation that is very effective for weight loss, but causes frequent bowel movements and poor nutrition. Our motivation for SADS/SIPS was to develop a procedure that would offer normal regulation of blood sugar with lasting weight loss and a high quality of life. Until recently, RYGB was the most common stapling procedure in the United States. Many considered a gold standard. For Dr Cottam and I, this made little sense. Between the two of us we had performed more than 5000 gastric bypass procedures and it led to a dilemma.

To control our weight , we would avoid foods that would make our glucose rise rapidly, Additionally, all current weight loss regimens whether Atkins, Paleo, Intermittent Fasting, are based on eating foods or eating on a schedule that lowers blood glucose and thus reduces insulin release. The principal is to keep your blood sugar low, so less insulin is required. The relationship to bariatric surgery is as follows. RYGB makes glucose go up rapidly, and then decline fast. This is the exact opposite of what we want to achieve to promote weight loss. A myth was created that our research has questioned. Symptoms caused by your sugar declining, called dumping, would deter sweet consumption. The truth is the opposite. When your sugar declines, you get hungry and eat.

For many reasons, immediately following surgery, RYGB patients lose weight. However, we are encountering more and more that report they are as hungry as they were before their surgical procedure. It is our belief that this occurs because of these exaggerated glucose variations.

The purpose of the development of the SADS/SIPS was to create a procedure that could offer weight loss without the fluctuations of blood glucose caused by RYGB. Several studies that continuously monitored glucose have shown that RYGB patients spend a significant amount time with both high and low blood sugar. The average is normal, but a significant proportion of their time is spent with an abnormal blood glucose. In comparison, SADS/SIPS patients spend most time in the normal range. We believe that this is most advantageous. SADS/SIPS reduces glucose variability.

There are several reasons that this happens. With SADS/SIPS we make a slightly larger sleeve and preserve the pyloric valve at the end of the stomach. The combination allows food to empty into the intestine in more controlled and less rapid manner. We then attach the intestine to the small bowel around 10 feet from the end of the bowel. To explain, food takes

a detour, and we utilize only the bottom half of the intestine for digestion. This should give adequate length to allow for proper absorption of protein, minerals, and vitamins. In comparison, to RYGB we believe that there are several other advantages. Complications such as marginal ulcer, anastomotic stricture, and small bowel obstruction seem to be significantly reduced. Additionally, a recently completed US clinical registry demonstrated a 1 year weight loss of approximately 21 BMI units. In comparison, VSG average in VSG is 13 BMI units, and RYGB 14 to 16.

There is never going to be a perfect bariatric procedure. All are controlled abnormalities. SADS/SIPS is a larger sleeve that is attached to the intestine half way down the small bowel with a single attachment. Recently, the national society endorsed this procedure and our response was Hallelujah! We have been surprised by the controversy, as the procedure is really not novel, but utilizes the exact techniques and manipulates the same areas of the GI tract as other stapling procedures. The modifications we believe offer physiology that is closer to normal, and seems to enhance weight loss.

Returning to procedure selection, which patients do I believe should consider SADS/SIPS? Patients with BMI's that are greater than 45 and certainly 50 whose goal is to reach a threshold that is no longer obese or a BMI of < 30. Additionally, those with severe insulin resistance, significant metabolic syndrome, and coronary artery disease. Another group are those that have failed or have had weight regain from a stomach only procedure such as VSG or Lap Band. To place in perspective, this is a procedure for those that need the most weight loss or those that have the greatest desire to not regain weight. It should be thought of as a sleeve plus, and targeted for patients that for weight or metabolic reasons require a more robust procedure.

To summarize, SADS/SIPS is the stomach/ intestinal procedure of preference in my practice. With years of experience with RYGB, both Dr Cottam and I believe that it offers better weight loss, less fluctuations of blood sugar, and lower chance of small bowel obstruction and marginal ulcer. It is not perfect and supplements must be taken for life with blood levels measured. Additionally, use of the intestine can lead to increased bowel movements, anemia, and bone hunger. In my practice, I utilize RYGB for patients that have severe GERD. For most others, I believe that SADS/SIPS is a more effective alternative that will become increasingly popular especially as more become familiar and barriers removed.