Bariatric surgery
**Bariatric surgery** (weight loss surgery) includes a variety of procedures performed on people who have **obesity**. Weight loss is achieved by reducing the size of the **stomach** with a **gastric band** or through removal of a portion of the stomach (sleeve gastrectomy or biliopancreatic diversion with duodenal switch) or by resecting and re-routing the **small intestine** to a small stomach pouch (**gastric bypass surgery**). (WIKIPEDIA)
• The first bariatric procedure was performed by Varco in 1953, and it was a jejuna-ileostomy (purely malabsorptive)
• From there on bariatric surgery change from malabsorptive via restrictive to mixed malabsortive restrictive, from open surgery to laparoscopic to SILS, and also endoluminal procedures
• In the 1990’s- with laparoscopic era, most of the procedures were being done lap
Endoluminal procedures

- BIB
- Endoluminal Sleeve
Endoluminal Sleeve

- Still investigational
- Biggest constraint- has to be removed after 6 to 12 month
Figure 8. A. A schematic drawing of the Similed gastric balloon positioned in the proximal stomach. B. The balloon is filled with a methylene blue painted saline solution and Iopamiron contrast.
Laparoscopic Bariatric Surgery

- LAGB
- Laparoscopic Greater curve gastroplication
- Laparoscopic Sleeve gastrectomy
- Laparoscopic Gastric bypass
- Laparoscopic Mini gastric bypass (OAGB)
- Scopinaro procedure
- DS - Duodenal switch, …etc
Scopinaro (BPD)
Duodenal Switch (DS)

The stomach is divided and a large portion of the stomach is removed, sleeve gastrectomy performed. The pylorus remains intact rather than being bypassed.

The small intestine is divided at the duodenum and is rerouted so that the ileum (bottom 3rd of small intestine) now connects to the pylorus, bypassing the jejunum.

Food is rerouted into the digestive loop, bypassing the jejunum (small intestine). The biliopancreatic loop joins the digestive loop forming a common channel which flows into the colon. This procedure reduces the amount of calories and nutrients that can be absorbed, resulting in weight loss.
Gastric bypass

- A small punch is created by stapling the upper part of the stomach, the small intestines is cut in two sections. The distal part is connected to the pouch and the distal part rejoined to small intestine 1 meter after the cut.
Gastric bypass

- Advantages
  - Quick and dramatic weight loss
  - Continued weight loss for 18-24 month
  - Most patient maintain weight loss above 70-80% excess at 10 years
  - Comorbidities ameliorate
  - Improved quality of life
Gastric bypass

- Disadvantages
  - major surgery with serious risk
  - Malnourishment and anemia may occur, requiring life long supplements
  - Requires lifelong changes in diet and lifestyle
  - Increased risk of gallstone due to dramatic weight loss
  - Dumping syndrome: nausea, reflux, diarrhea may occur after food high in sugar
  - hospital stay 3 -5 days
  - risk of hair loss
Mini Gastric bypass

![Diagram of Mini-Gastric Bypass](image)
• The expected weight loss is at least comparable to the Roux en Y Gastric Bypass – or even better (range 30-40% Body Weight Loss). The same is true for the resolution of comorbidities, especially Diabetes
• Patients after Single Anastomosis Gastric Bypass need (micronutrient) supplementation comparable to that after RYGB, additionally there is a higher risk for iron deficiency and deficiency for fat soluble vitamins.
• Fat malabsorption may limit the quality of life in few patients especially after a high-fat diet due to bloating and steatorrhea

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Laparoscopic Ajustable Gastric Banding (LAGB)
Advantages of LAGB

- Least invasive bariatric surgery
- No stomach stapling, cutting, intestinal rerouting
- Procedure is reversible
- Adjustable treatment customized to patient
- Adjustable for nutritional needs in pregnancy
- Lowest operative complication rate
- Low malnutrition risk/low gallstone risk
- Surgery takes less than 1 hour
- Low nutritional supplements
- Overnight admission, return to work in 1 week
Disadvantages

- Slower initial weight loss
- Less effective compared to sleeve or gastric bypass
- Physician followup is critical for weight loss
- Up to one third bands from initial studies had to be removed for several late complications - slippage, erosion and infection
Sleeve Gastrectomy

70-80% of the stomach removed
Lap Sleeve Gastrectomy

Advantages

- Reduced stomach volume increases feeling of fullness
- Stomach functions normally allowing most food to be eaten, just smaller amount
- Stomach portion that produces Ghrelin (hunger stimulating hormone) is removed
- No dumping- as pylorus still in place and functional
- No intestine rerouting (no malabsorption)
- Simpler surgery than gastric bypass, less surgery time, less admission days
- Simple first stage procedure for super obese patients
- No foreign bodies like in bands
Disadvantages

• Irreversible

• Potential for dilatation with time and inadequate weight loss
Laparoscopic greater curve gastroplication
Laparoscopic greater curve plication is emerging as a weight loss procedure that avoids many of the complications of other surgeries that require gastrointestinal division, amputation, or use of a foreign body. Cost savings and affordability have also been promoted, as plication does not require the use of stapling devices, adjustable gastric bands, or prolonged hospitalization.

The ability to reliably perform greater curve plication as an outpatient surgery may further define its role as an additional weight loss surgery technique.
Complications

- Are related to
  - Patient
  - Surgeon
  - Procedure
• Routine surgery complications (skin infection, haematoma, DVT, Chest infection, …)

• Specific complications
  • Leaks
  • Death
• Leaks - most common in sleeve gastrectomy - should be detected early and treated accordingly

• Death in bariatric surgery - ? how much , ? who
  • Lastest studies and survey show 0 to 0.25% death
  • These are mostly in patient with severe commodities pre-operative (mainly renal disfunction)
RESEARCH ARTICLE

Bariatric Surgery in the United Kingdom: A Cohort Study of Weight Loss and Clinical Outcomes in Routine Clinical Care

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Nationwide Survey on Bariatric and Metabolic Surgery in Korea: 2003–2013 Results

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Bariatric surgery in elderly patients: a systematic review
Outcomes of laparoscopic sleeve gastrectomy at a bariatric unit in South Africa

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HIGHLIGHTS

- First study of laparoscopic sleeve gastrectomy performed in South Africa.
- Laparoscopic sleeve gastrectomy produces an adequate percentage excess BMI loss at 6 months.
- A significant improvement in the quality of life was observed.
- Results of this research are comparable to other studies of LSGs.
- Low complication rate supports the use of the procedure.
Who to send for Surgery

The Second Diabetes Surgery Summit (DSS-II), an international consensus conference of clinicians and scholars (75% non-surgeons) held in 2015, issued a Joint Statement endorsed by 45 international organizations, including ADA, IDF, IFSO and ASMBS, that for the first time incorporates metabolic surgery in the treatment algorithm for type 2 diabetes mellitus.
Patients with Type 2 Diabetes

Obese
BMI ≥30 kg/m² or ≥27.5 for Asians

- Class III Obese
  BMI ≥40 kg/m² or ≥37.5 for Asians
  Expedited Assessment for Metabolic Surgery
  - Recommend Metabolic Surgery

- Class II Obese
  BMI 35.0-39.9 kg/m² or 32.5-37.4 for Asians
  Optimal Lifestyle and Medical Rx
  - Class II Obese with Poor Glycemic Control
    - Consider Metabolic Surgery
  - Class II Obese with Adequate Glycemic Control

- Class I Obese
  BMI 30.0-34.9 kg/m² or 27.5-32.4 for Asians
  Optimal Lifestyle and Medical Rx (including injectable meds and insulin)
  - Class I Obese with Poor Glycemic Control
  - Class I Obese with Adequate Glycemic Control

Nonobese
BMI <30 kg/m² or <27.5 for Asians

Nonsurgical Treatment
• Thank you for your attention

Dr Pravish Rai Sookha