

# 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)

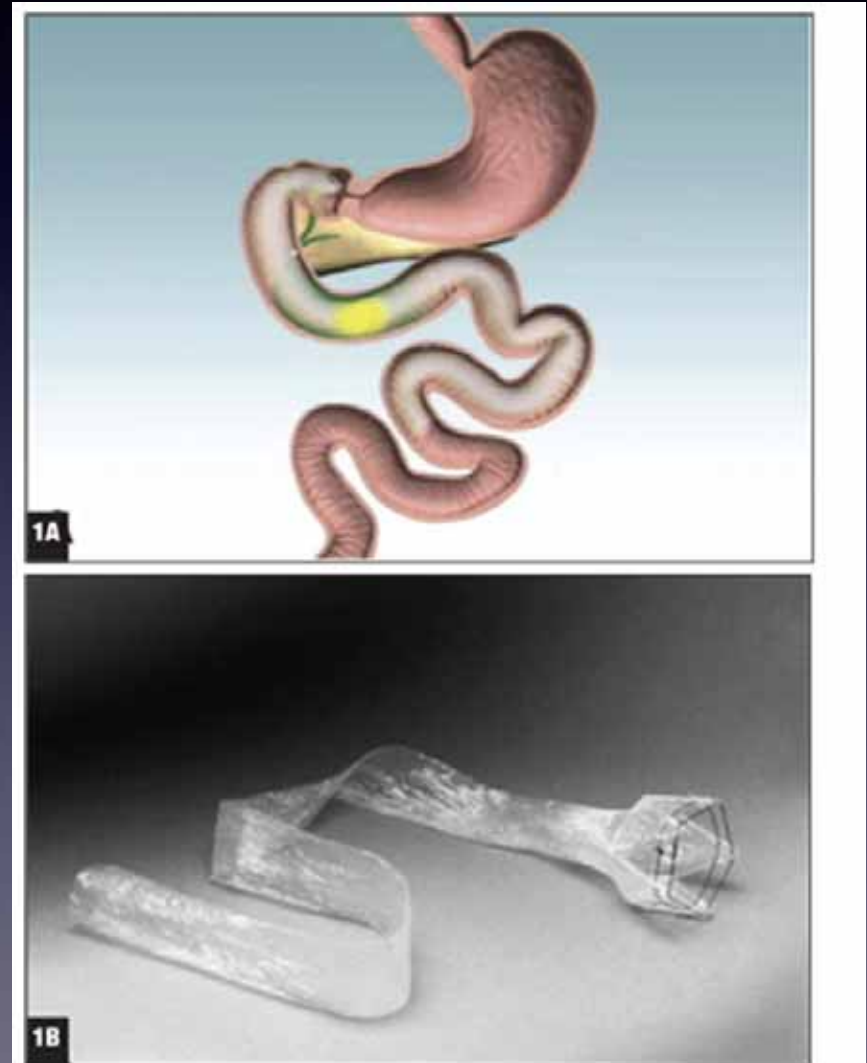
- The first bariatric procedure was performed by Varco in 1953, and it was a jejuna-ileostomy (purely malabsorptive)
- From there on bariatric surgery change from malabsorptive via restrictive to mixed malabsorptive restrictive, from open surgery to laparoscopic to SILS, and also endoluminal procedures
- In the 1990's- with laparoscopic era, most of the procedures were being done lap

# Endoluminal procedures

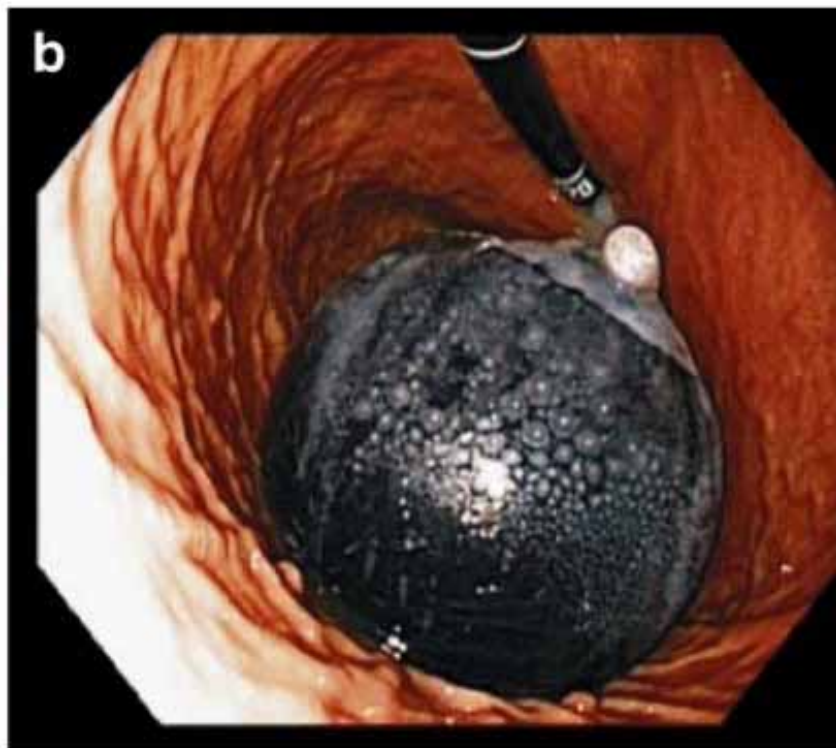
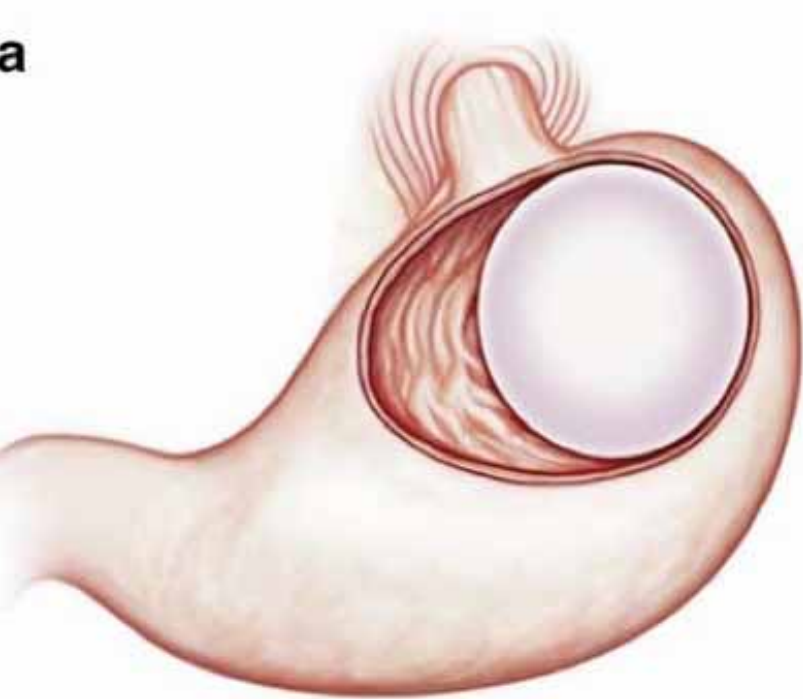
- BIB
- Endoluminal Sleeve

# Endoluminal Sleeve

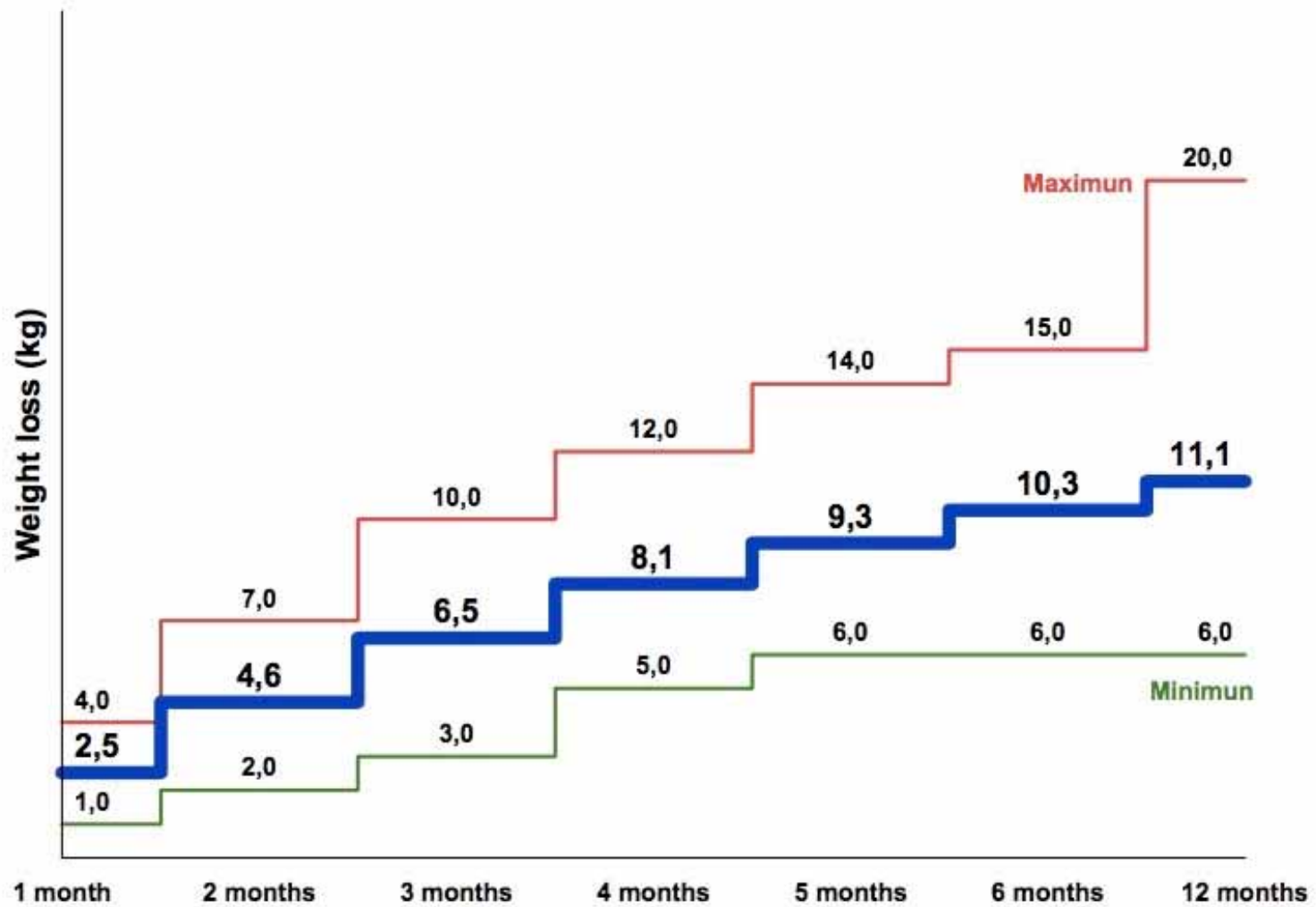
- Still investigational
- Biggest constraint- has to be removed after 6 to 12 month

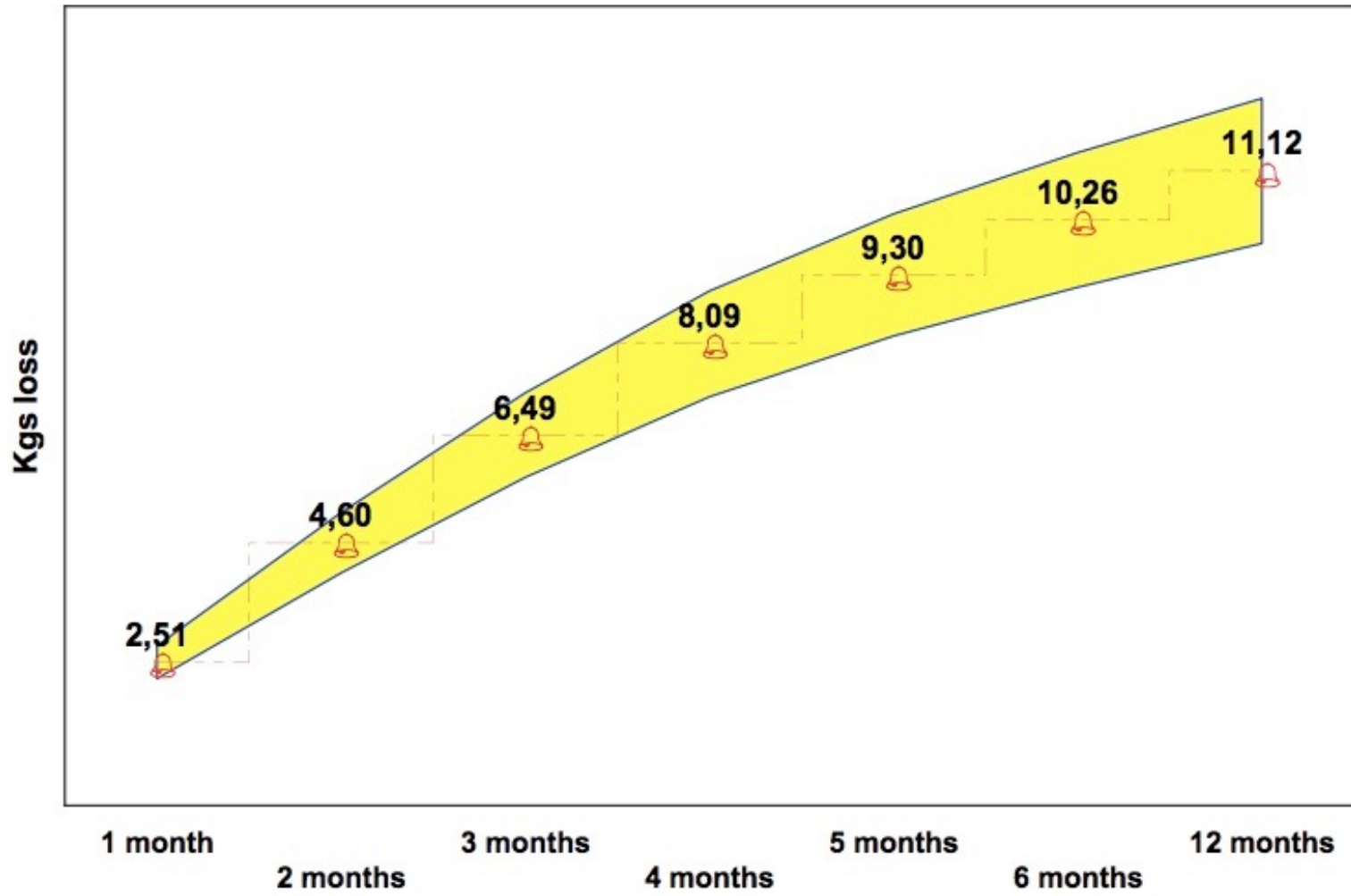


**FIGURE 4.** The Endobarrier duodenojejunal bypass sleeve, as seen deployed in the duodenum and proximal jejunum is a schematic drawing (A), and actual appearance in deployed state (B).



**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.



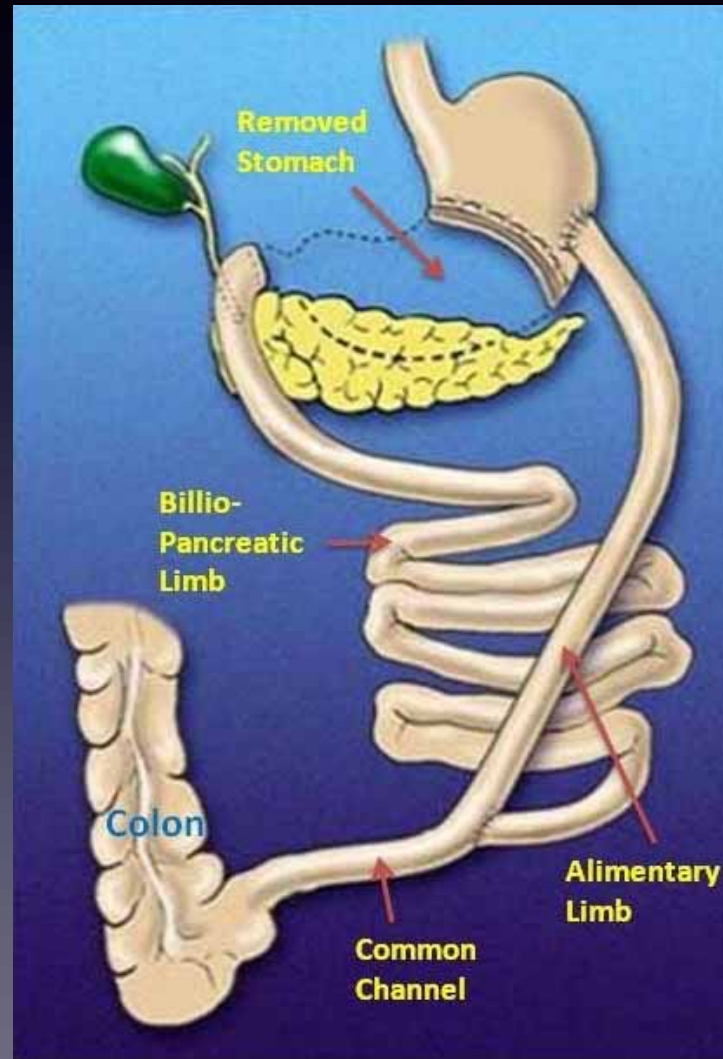




# Laparoscopic Bariatric Surgery

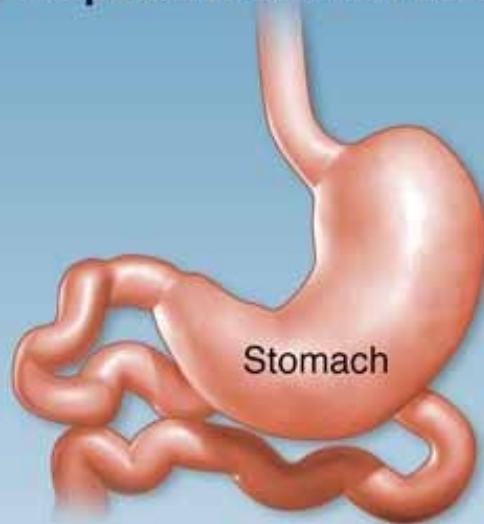
- LAGB
- Laparoscopic Greater curve gastroplication
- Laparoscopic Sleeve gastrectomy
- Laparoscopic Gastric bypass
- Laparoscopic Mini gastric bypass (OAGB)
- Scopinaro procedure
- DS - Duodenal switch, ...etc

# Scopinaro (BPD)

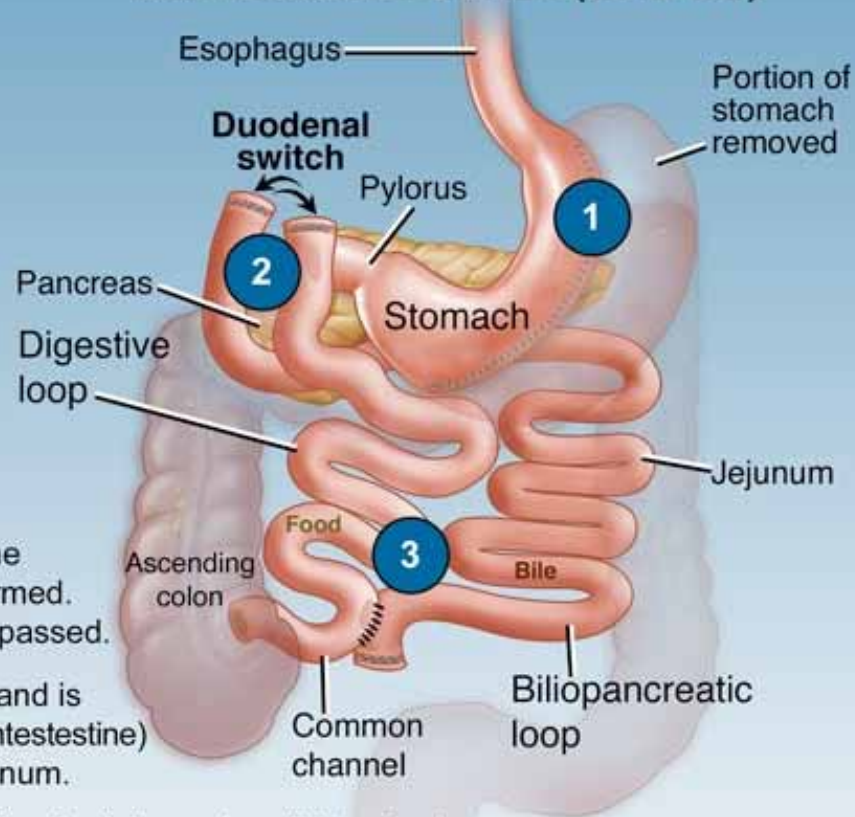


# Duodenal Switch (DS)

Preoperative Normal Stomach



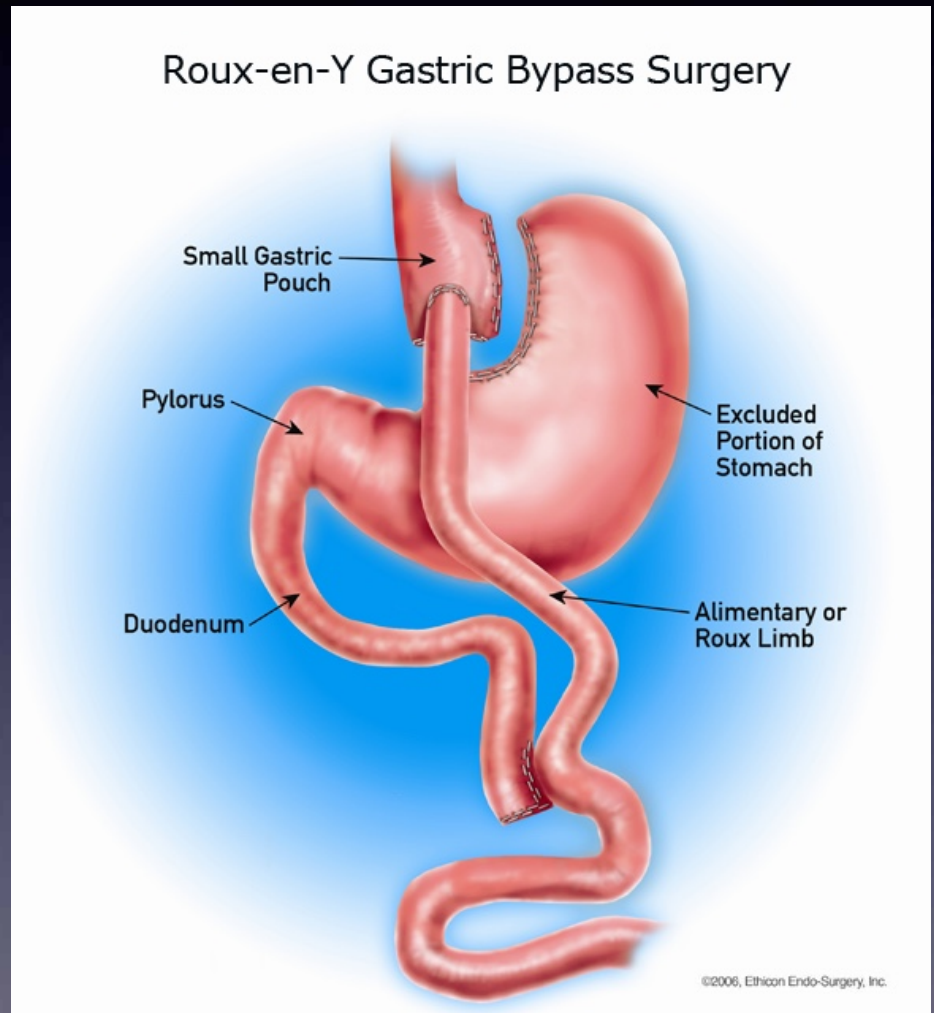
Postoperative Biliopancreatic Diversion with Duodenal Switch (BPD-DS)



- 1 The stomach is divided and a large portion of the stomach is removed, sleeve gastrectomy performed. The pylorus remains intact rather than being bypassed.
- 2 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.
- 3 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 pouch is created by stapling the upper part of the stomach, the small intestine 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

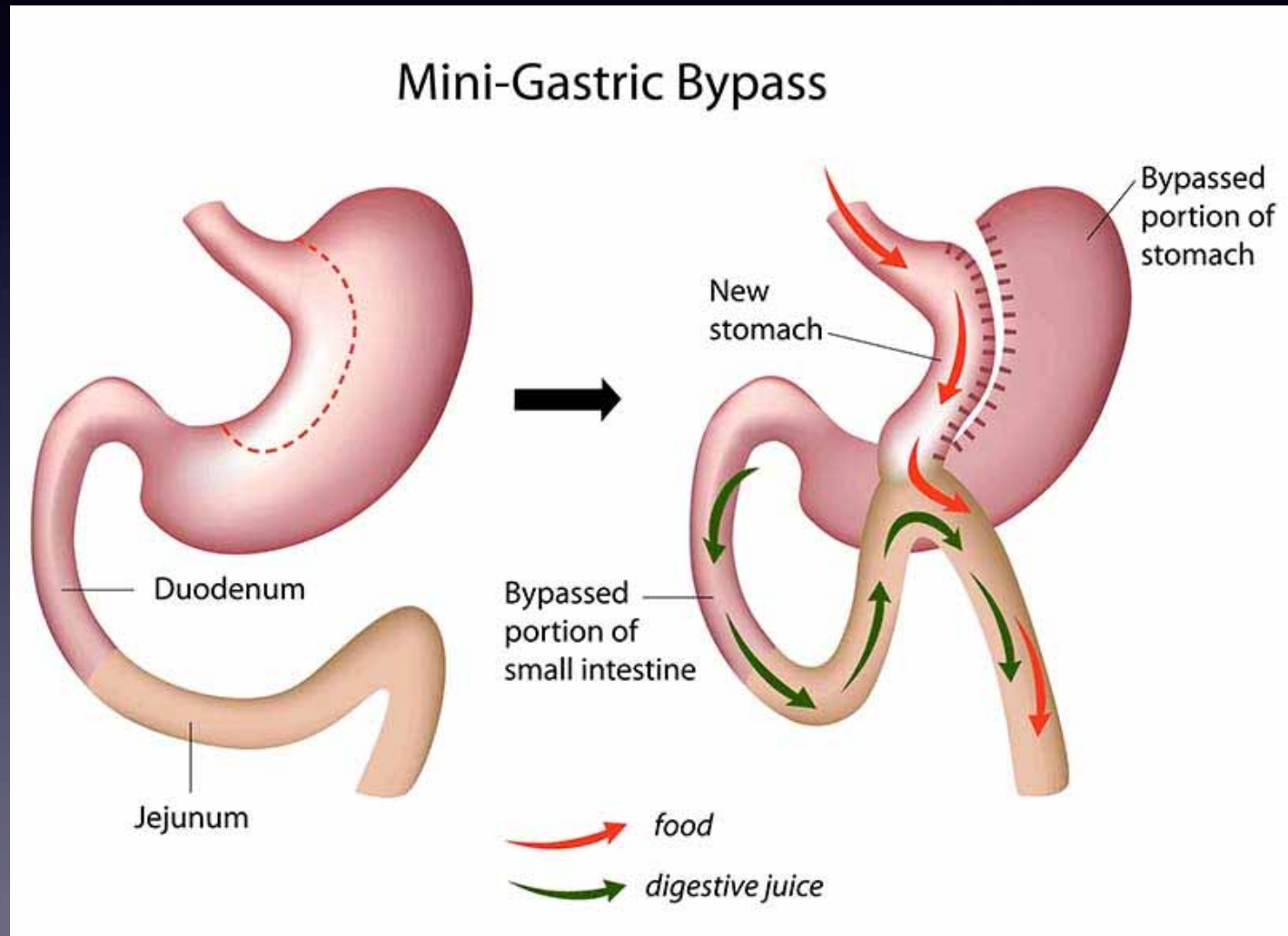
- Advantages
  - Quick and dramatic weight loss
  - Continued weight loss for 18-24 month
  - Most patient maintain weight loss above 70-80% excess at 10years
  - Comorbidities ameliorate
  - Improved quality of life

# 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



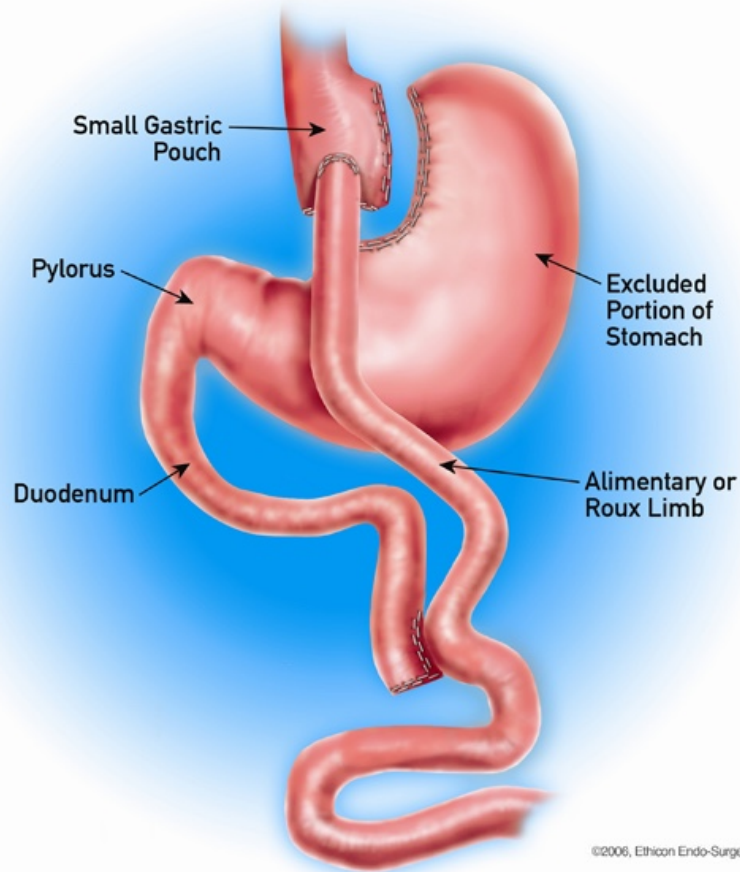
# Mini Gastric bypass



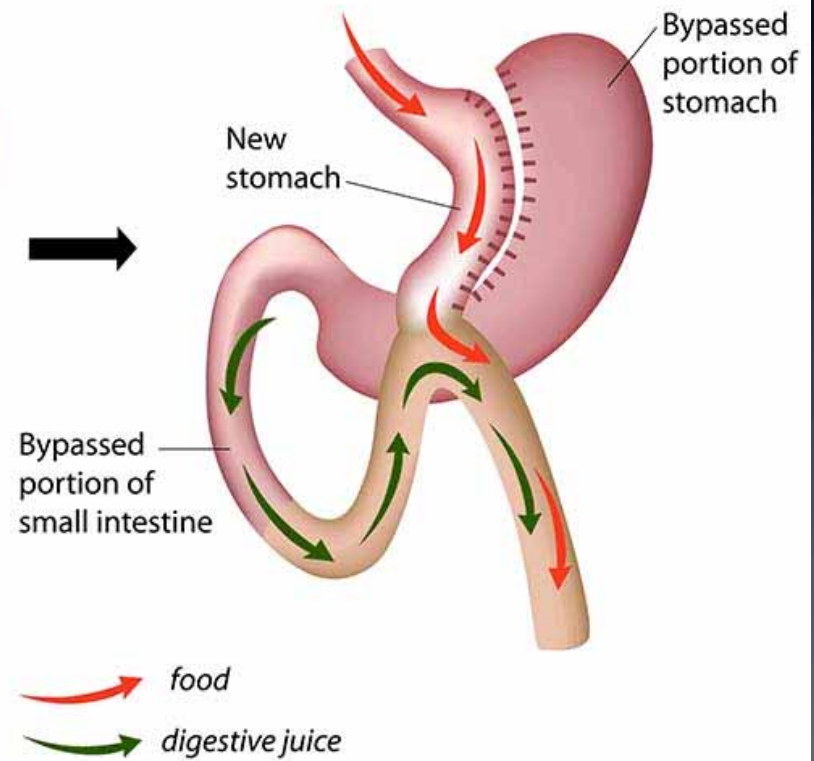
- The expected weight loss is at least comparable to the Roux en Y Gastric Bypass – or even better (range 30-40% Body Weight Loss). The same is true for the resolution of comorbidities, especially Diabetes
- Patients after Single Anastomosis Gastric Bypass need (micronutrient) supplementation comparable 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



## Roux-en-Y Gastric Bypass Surgery

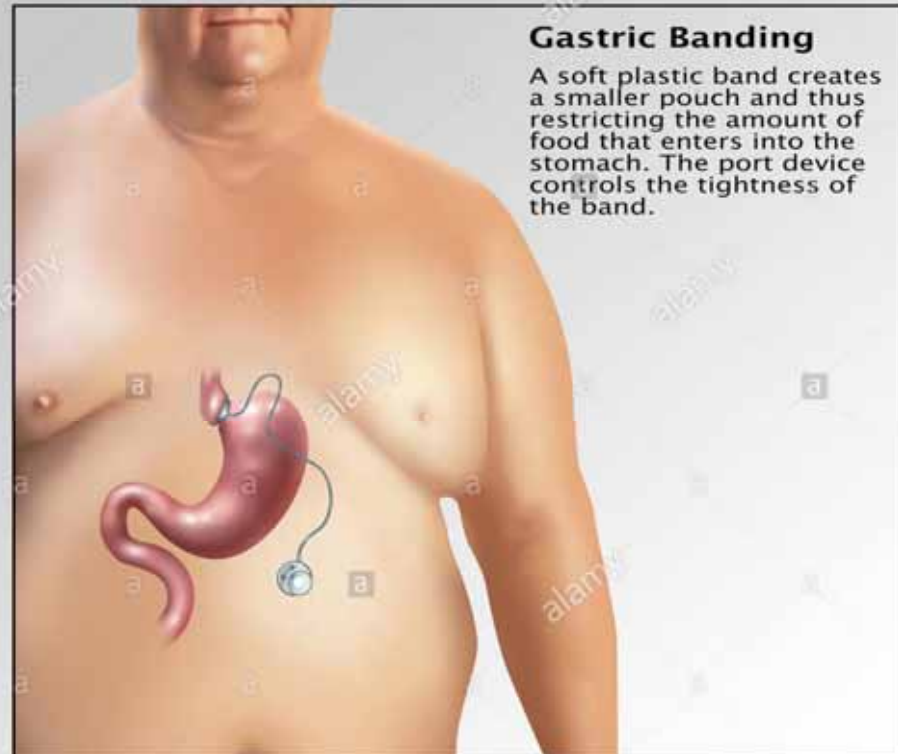
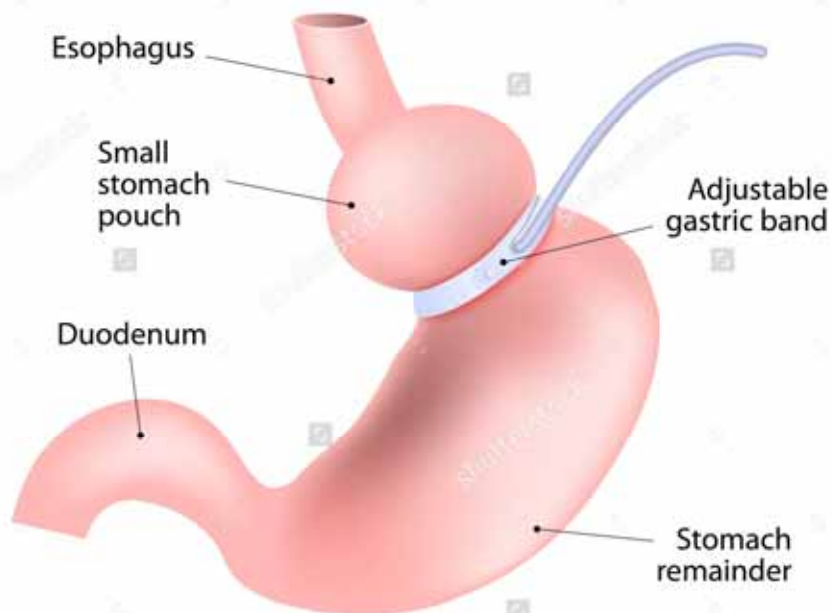


## i-Gastric Bypass



# Laparoscopic Adjustable Gastric Banding (LAGB)

## GASTRIC BAND

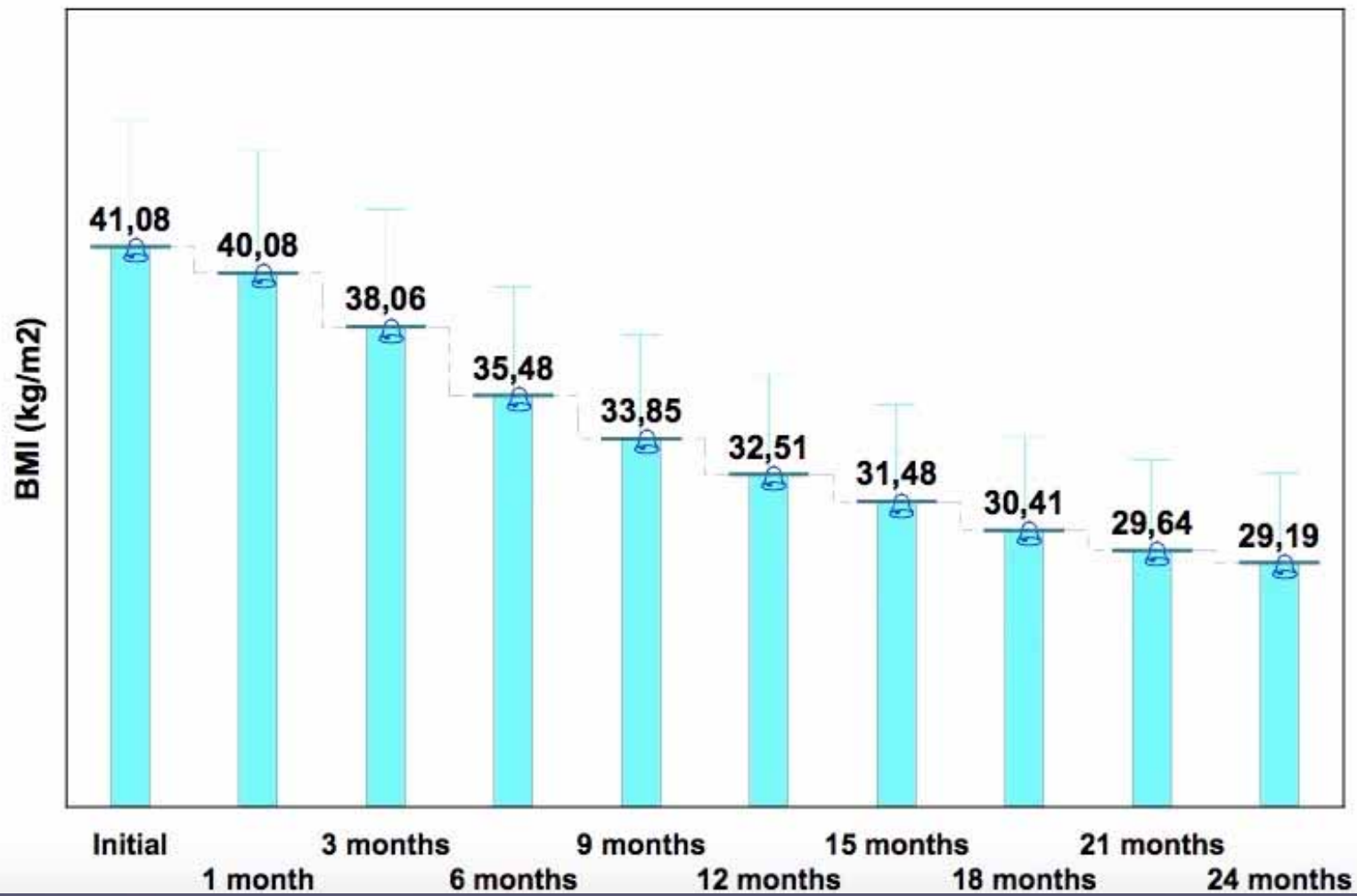


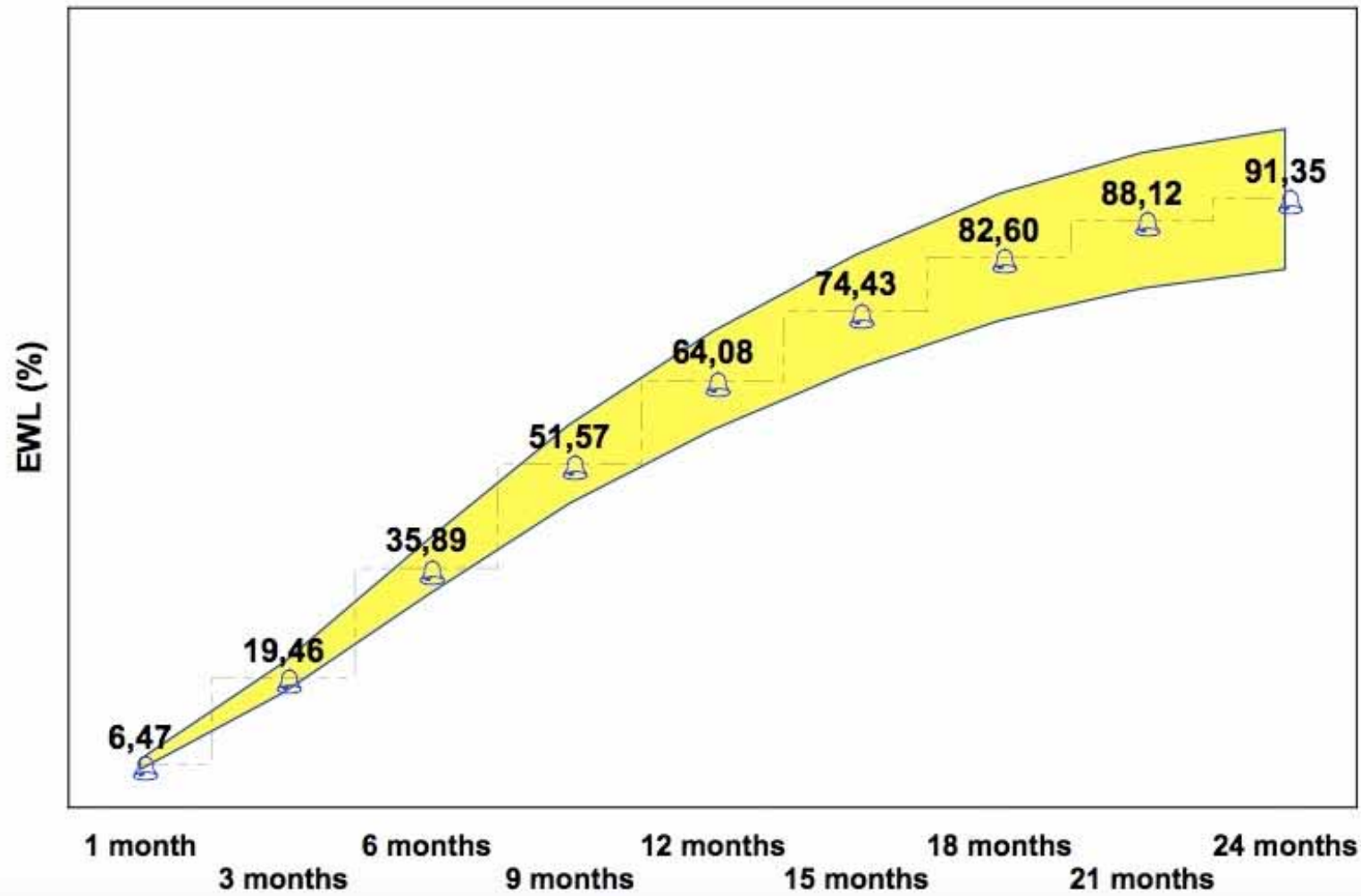
# Advantages of LAGB

- 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

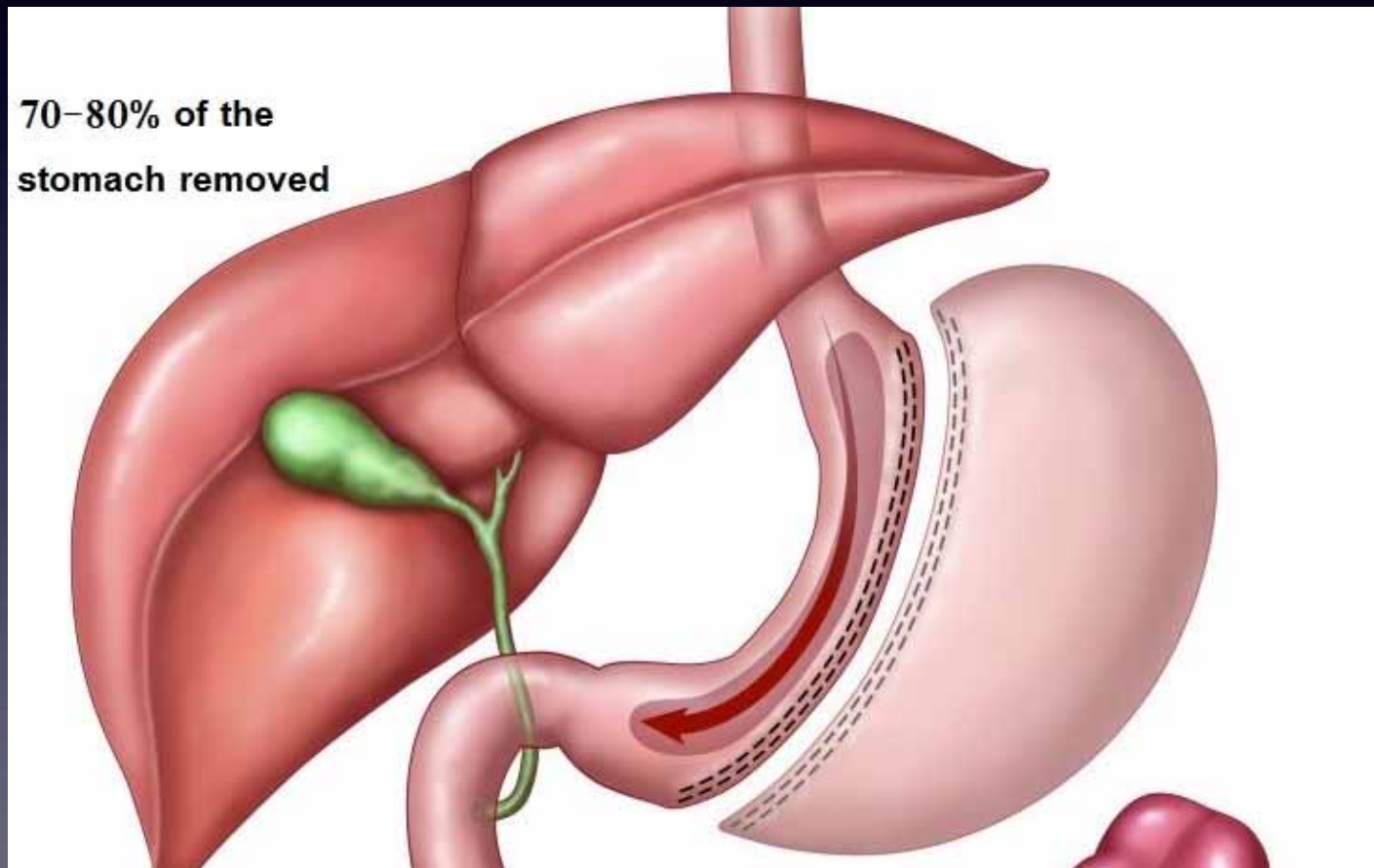
# Disadvantages

- 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



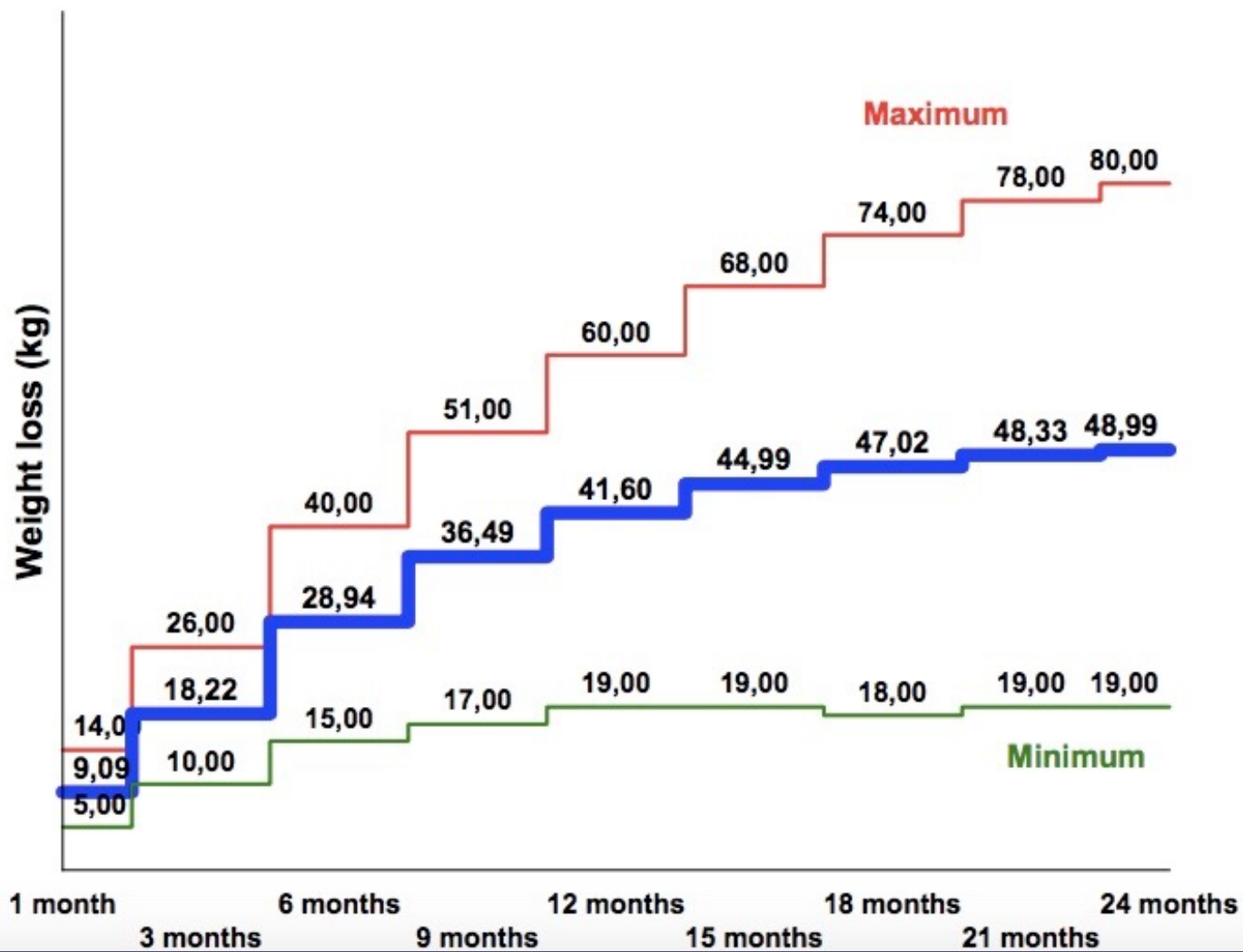
# Lap Sleeve Gastrectomy Advantages

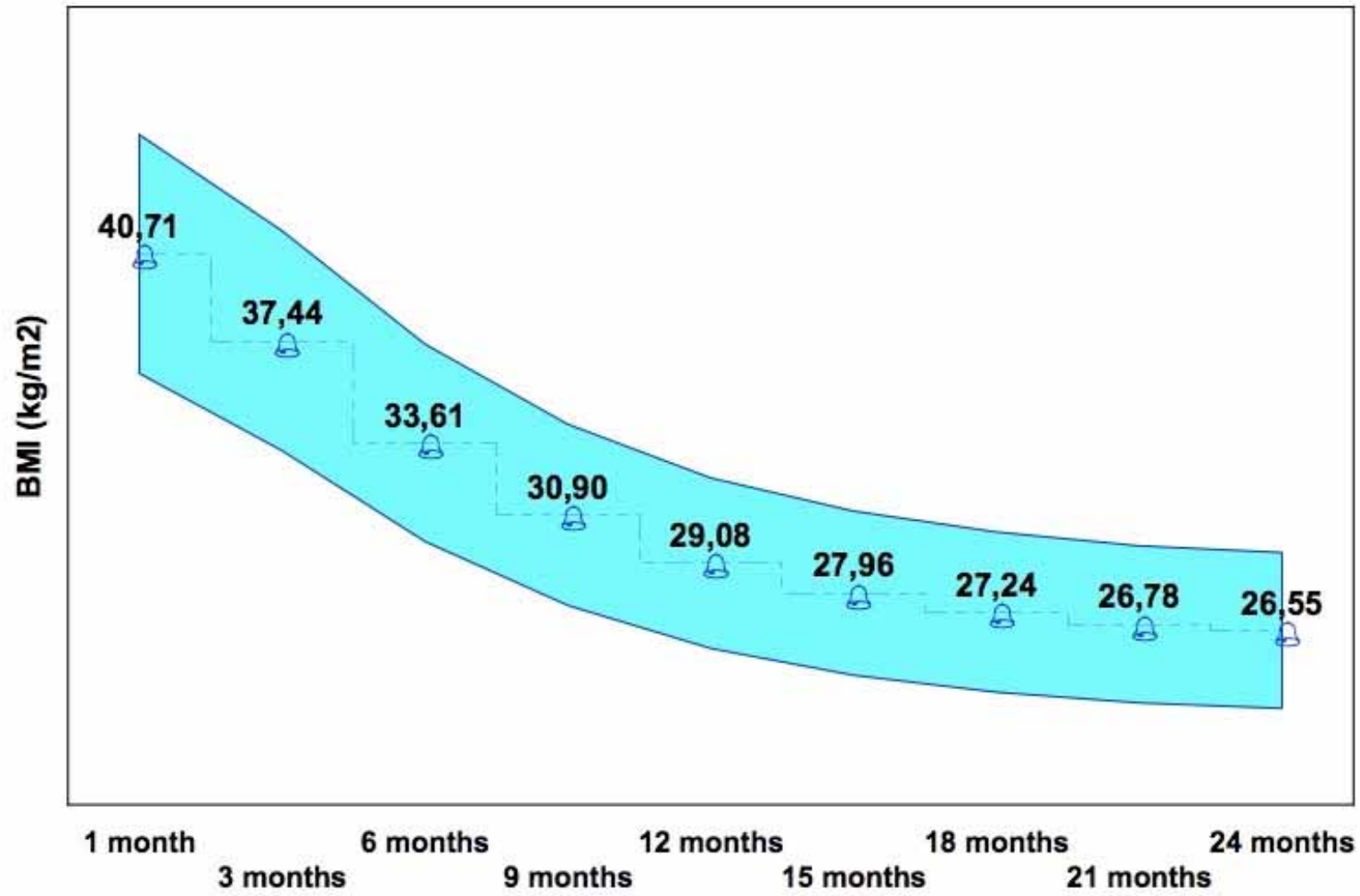
- Reduced stomach volume increases feeling of fullness
- Stomach functions normally allowing most food to be eaten, just smaller amount
- Stomach portion that produces Ghrelin (hunger stimulating hormone) is removed
- No dumping- as pylorus still in place and functional
- No intestine rerouting ( no 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



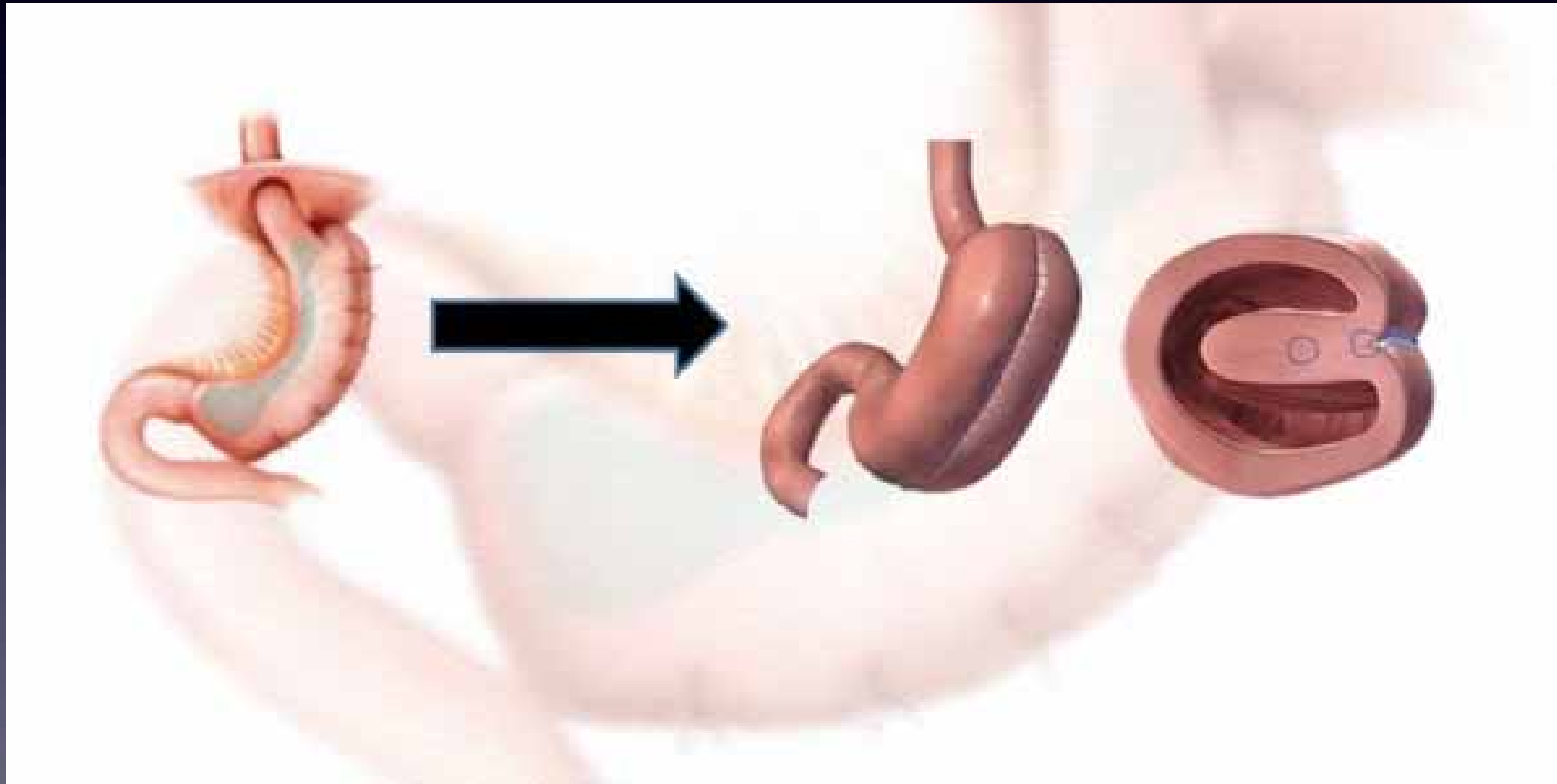
# Disadvantages

- Irreversible
- Potential for dilatation with time and in-adequate weight loss

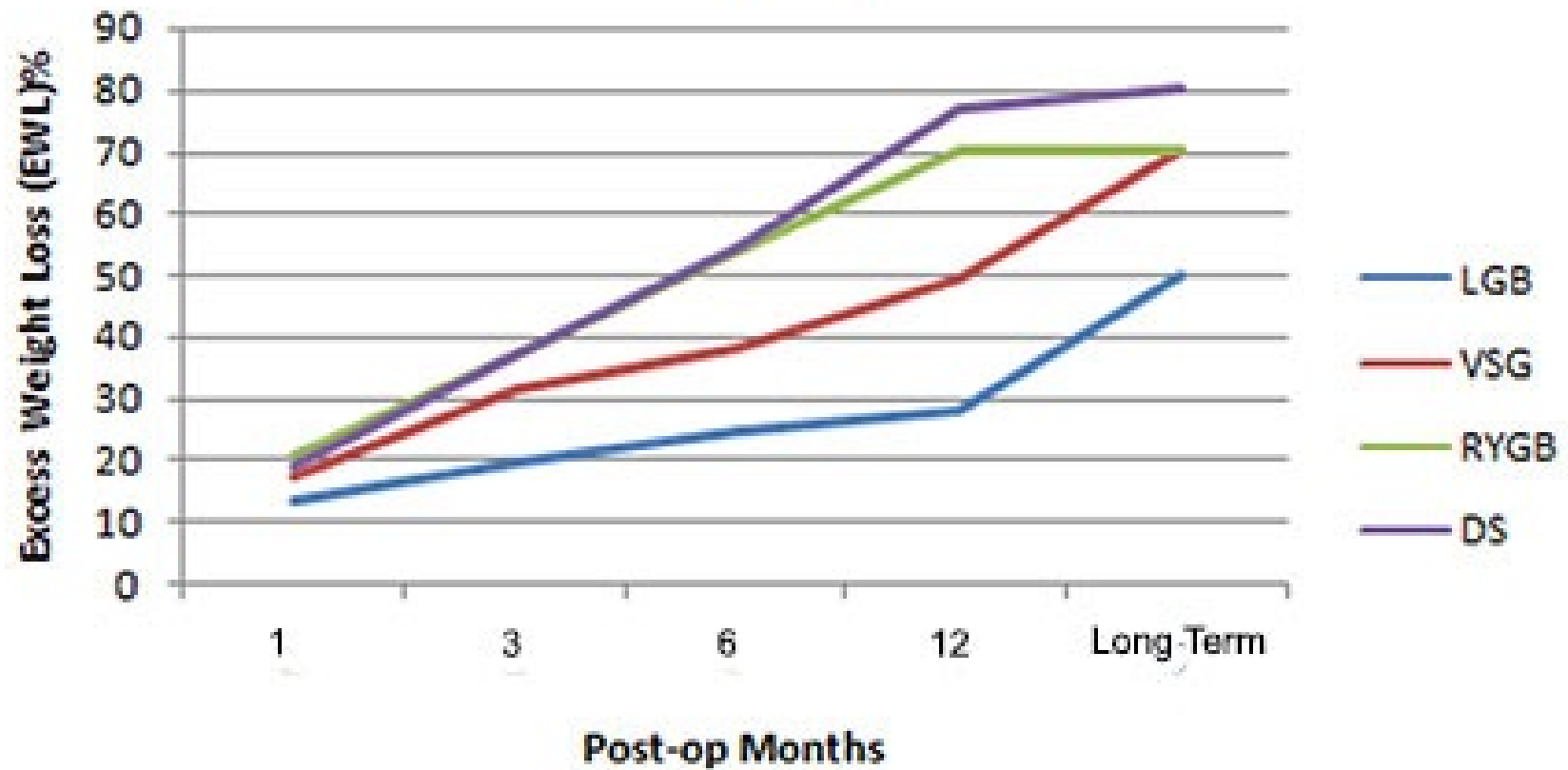




# Laparoscopic greater curve gastroplication



# Bariatric Surgery Outcomes



# Laparoscopic Greater Curve Plication as an Outpatient Weight Loss Procedure

Donald J. Waldrep, MD, Ilvia Pacheco, MPH

- 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
  - Latest studies and survey show 0 to 0.25% death
  - These are mostly in patient with severe comorbidities pre-operative (mainly renal dysfunction)

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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Sang-Uk Han<sup>5</sup> · Yoon-Seok Heo<sup>6</sup> · Kyoung Yul Hur<sup>7</sup> · Eung Kook Kim<sup>8</sup> · Ji Hun Kim<sup>9</sup> ·  
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Yun-Chan Park<sup>13</sup> · Seung Ho Choi<sup>14</sup> · The Information Committee of the Korean Society  
of Bariatric and Metabolic Surgery<sup>14</sup>**

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Clinical Interventions in Aging

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REVIEW

# Bariatric surgery in elderly patients: a systematic review

# Outcomes of laparoscopic sleeve gastrectomy at a bariatric unit in South Africa



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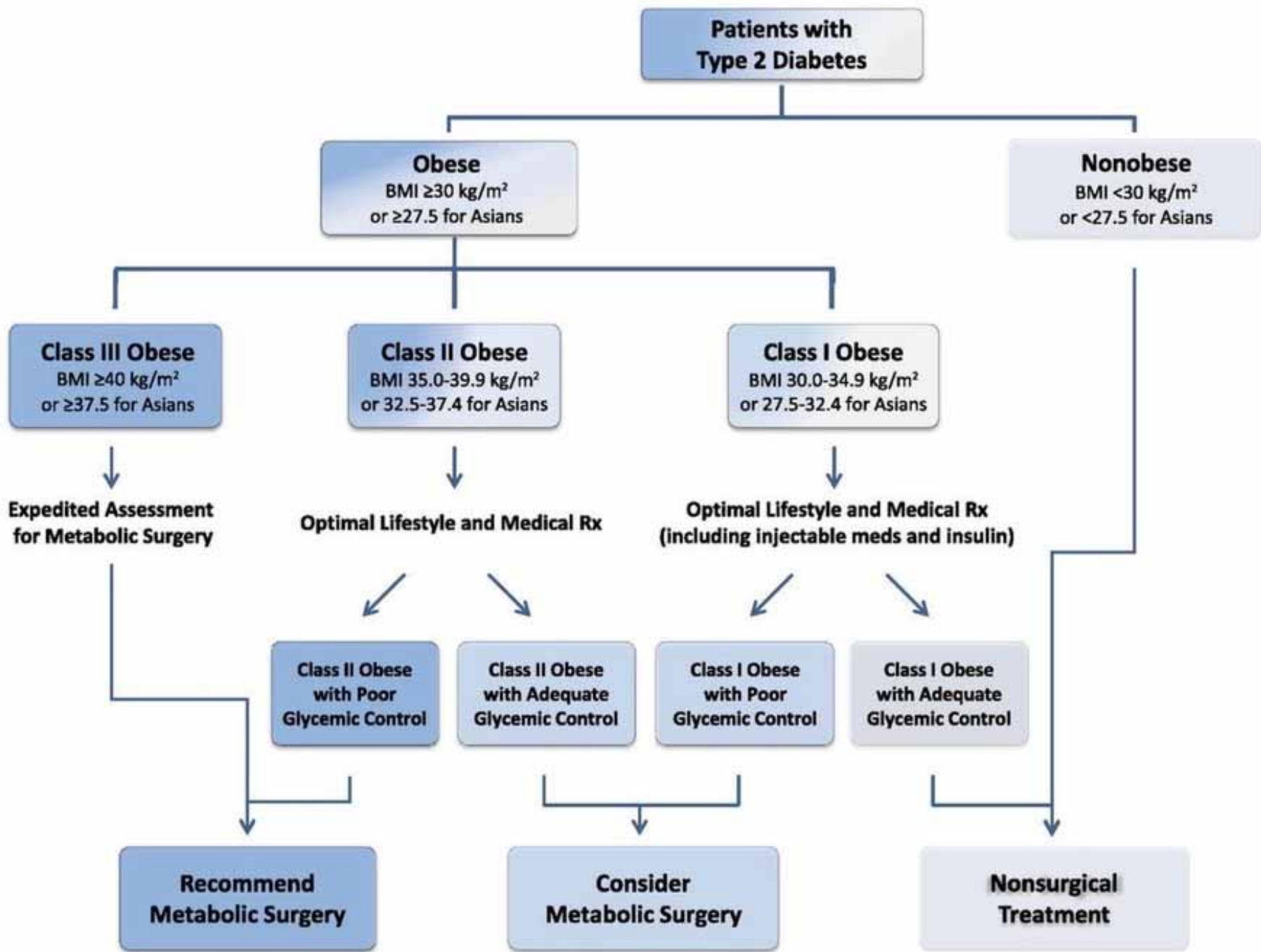
## H I G H L I G H T S

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- 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.
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# 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.



- Thank you for your attention

*Dr Pravish Rai Sookha*