



# Diabetes Surgery

Laparoscopic Banded Roux-en-Y  
Gastric Bypass

## BRYGB

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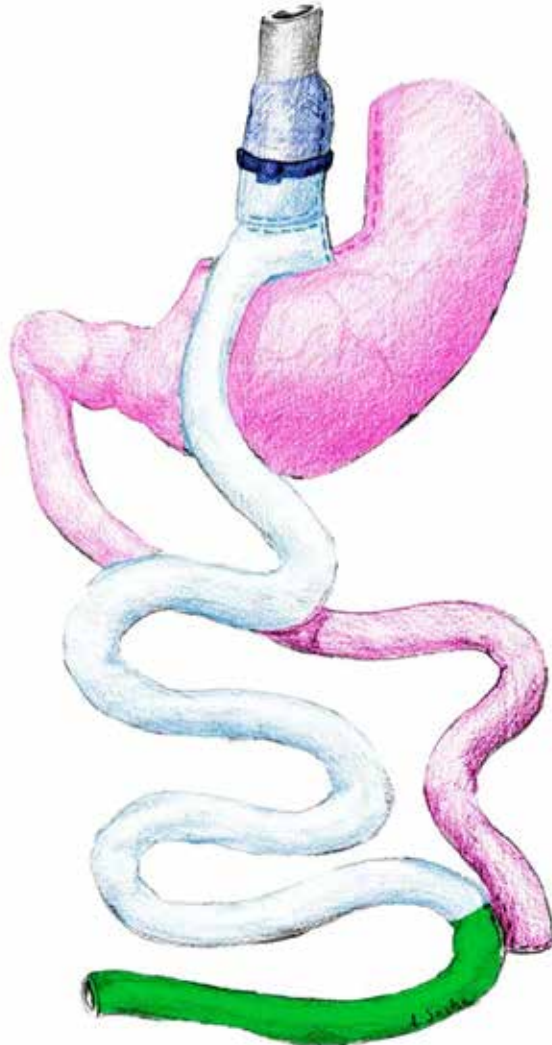
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# Diabetes Surgery

## 1. General information



## General information

Banded Roux-en-Y Gastric Bypass (BRYGB) is a surgical procedure that can be performed using the miniinvasive surgical technology. The procedure reduces food intake and diminishes the absorption of nutrients from the food. Absorption of nourishment elements is limited because part of the intestines is bypassed and not used. The volume of the stomach pouch by LBRYGB usually has between 15 and 25 ml. The junction between the stomach pouch and small bowel is calibrated by a silastic ring (f.i. GaBP Ring). The alimentary Limb (AL, green in the image) in LBRYGB is 120–150 cm long, the biliopancreatic Limb (BPL, pink in the image) consists of 50–100 cm of small intestines.

## Facts

### Duration of surgery

- between 45 and 90 minutes

### Anaesthesia

- general anaesthesia

### Hospitalisation

- 4-7 days

## Typical patient

- patients with BMI between 40 and 55
- accepts the intake of obligatory vitamin and mineral supplementation
- sweet eaters
- patients with heartburn



# Diabetes Surgery

## 2. Before Surgery

### Indication for BRYGB

- BMI 45 to 55
- treatment of:
  - diabetes mellitus type 2
  - arterial hypertension
  - hyperlipoproteinemia
  - other related diseases
- redo surgery after other metabolic operations in patients with high
- compliance
- accepts obligatory supplementation of vitamins and minerals
- sweet eaters
- patients with heartburn after LSG

### Advantages

- very successful (70-90% of excess weight loss)
- operation for patients where restrictive procedures like Balloon, Banding and Sleeve Gastrectomies have failed
- operation for volume eaters
- operation for patients with heartburn
- no dumping syndrome

### Disadvantages

- irreversible change in the anatomy
- lifetime vitamins and minerals supplement after surgery
- ring related complications
- conventional upper gastroscopy of duodenum and remnant stomach is not possible





# Diabetes Surgery

## 3. The Surgery

### Technical description

Laparoscopic Banded Roux-en-Y Gastric Bypass reduces the size of the stomach through surgical stapling. This type of weight loss surgery cuts the stomach and leaves a reservoir approximately the size of a walnut. The pouch is created vertically and a small silastic ring between 19 and 23 mm in diameter placed on its end. Afterwards the biliopancreatic limb is measured (50-100 cm) The distal intestines are connected to the stomach pouch (Gastro-Enteroanastomosis GEA). This causes the food to be directed immediately from the stomach to the jejunum. The small intestine junction called Jejunum-Jejunal Anastomosis (JJA) is created 100-150 cm from the GEA.

### Functions of the ring

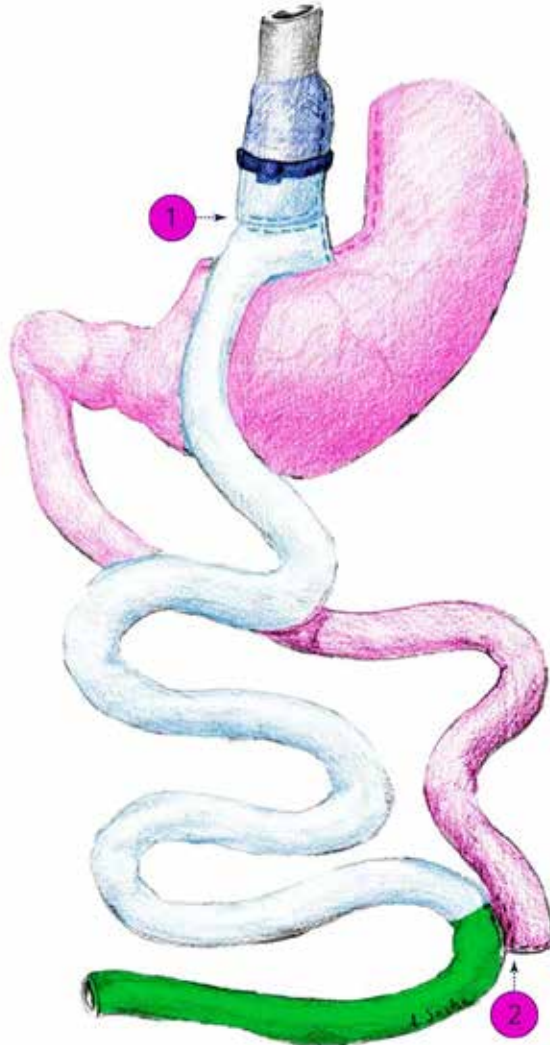
Besides its restrictive role, the ring contributes to the reduction of undesirable side effects like dumping syndrome, and foul flatulence. The Banded Bypass causes satiety and reduces caloric intake through retarding gastric emptying and inducing the satiation sensation even with low food intake. The silicone ring controls the diameter of the gastroenterostomy.





# Diabetes Surgery

## 3. The Surgery



Stomach-Pouch Vol.: a. 20 ml

Fobi-Ring Circ.: 6,5-7 cm

Alimentary Limb (AL) length: a. 150 cm

Biliopancreatic Limb (BPL) length: a. 50 cm

Common Channel (CC) length: rest of small bowel

1 Gastro-ileal Anastomosis (GIA)

2 Jejununo-jejunal Anastomosis (JIA)



# Diabetes Surgery

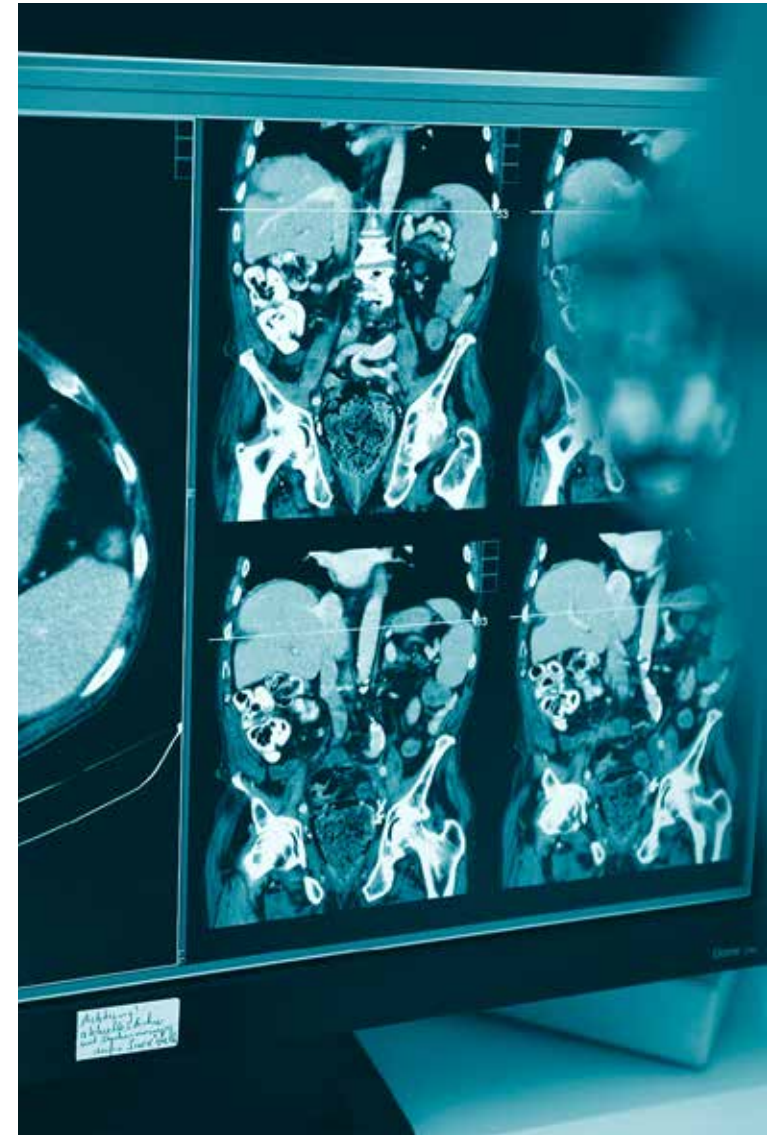
## 4. After Hospitalization

### Lab tests

- Morphology
  - Electrolytes
  - Ferrum
  - Creatinin
  - Liver ferments
  - Vitamins B1, B12-level
  - HDL, LDL, VLDL, Chol
  - Ferritin
  - Transferrin
  - Zinc
  - Magnesium
  - 1,25-Dihydroxy-Vitamin D3, Vitamin A
  - Haemoglobin A1c
  - Parathormon
  - Parathormon – Related Protein
- \* after three and six months, then annually

### Supplementation

- Calcium with Vitamin D3 2000 mg (with 130ug) per day
- Multivitamin + Minerals 1 tab. per day
- Fe+2 Iron 1 tab per day 30 mg – one week long in a month, (3 weeks without the Ferrum)
- Protein 50 g per day
- Vitamin B12 every 3 months i.m. (1000ug) or 25000 I.U. sublingual 2 times a week
- Vitamin B1 when needed
- Zinc tab. 15 mg per day
- Biotin, Selenium, Vitamin B9 (B11) daily for 3 months





# Diabetes Surgery

## 4. After Hospitalization

### Standard Medication after Operation

PPI 20 mg, 0-0-1 (3 months)

### Sport and physical activity

- 3 weeks after operation – rest
- more than 3 hours of physical activity per week – sport medical supervision and medical advice required

### Weight loss differences

The influence of the silastic ring on the percentage of excess weight loss within the first year was between 81.3 and 73.5%. After two years, the percentage ranged around 80%, and at 5-year follow-up an EWL of about 75% could be found.

Only a slight weight regain of 2.5% or 5% is observed between the second and fifth postoperative year, whereas a weight regain of over 10% in the same period is reported in LCRYGB.

The EWL after conventional GB reached 58.2% after five years in the best series. Bessler performed the first prospective study that directly compared the two operation methods.

After the second or third postoperative year, the patient seems to adapt to the surgery and suffers side-effects in lower intensity, which brings a tendency for a slight weight gain.. The weight gain is very slight compared to the conventional Gastric Bypass.





# Diabetes Surgery

## 4. After Hospitalization

### Important tips

A team of experts must approve the surgery before BRYGB operation.

Because we promote safe practice and your safety is of paramount high importance to us and to you, the disadvantages and advantages of the different procedures will be carefully explained to you in detail on consultation. In the preoperative period, you are provided with care from physicians, psychologists and nutritionists. This team of experts will give you accurate advice on all aspects of the postoperative period: What you can eat and drink, when and how often; what kind of exercises to perform; which individual therapy is necessary for specific issues related to your obesity.

You will have every opportunity to reduce your weight and improve your health. Just imagine the moment when you can wear size L clothes again. Discover your potential and improve your lifestyle. After surgery, you will normally lose approximately 50 kg in first 6 months, provided that you follow the nutrition plan, take exercise therapy and participate in scheduled group discussions.

Only if you are willing to change yourself you will achieve your goal, i.e. healthy weight loss. You must be aware that this will not always be easy. However, with every pound lost, you will win more quality of life, health and a longer life expectancy.

