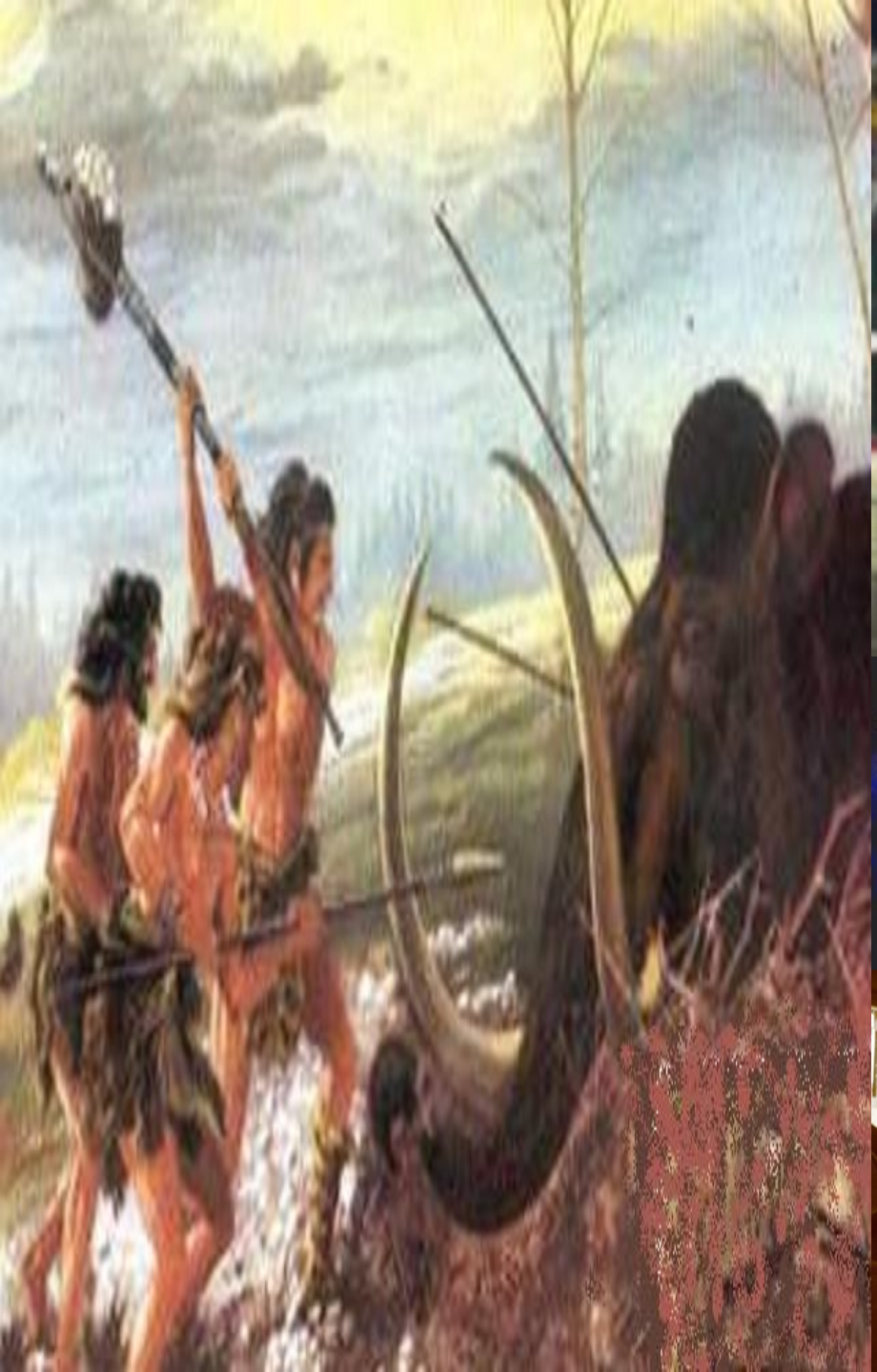
Surgery for obesity in adulthood (BARIATRIC SURGERY)

ד"ר הוארד טנדטר

12/13

מטרות

- לדון על בעיית ההשמנה בימינו
- להציג צורות שונות של טיפול
- לדבר על אינדיקציות לניתוח
- להציג טכניקות כירורגיות קימות



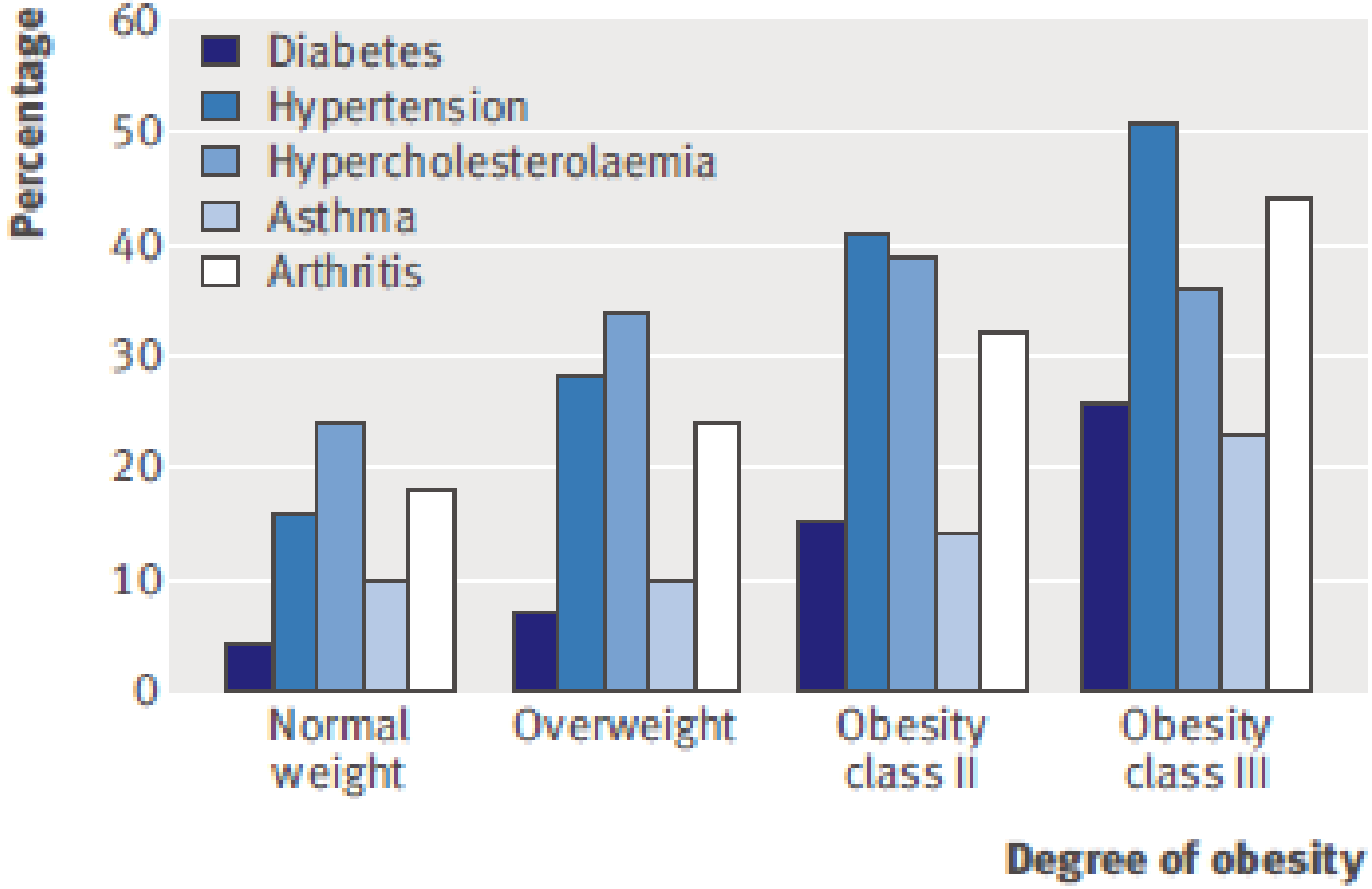
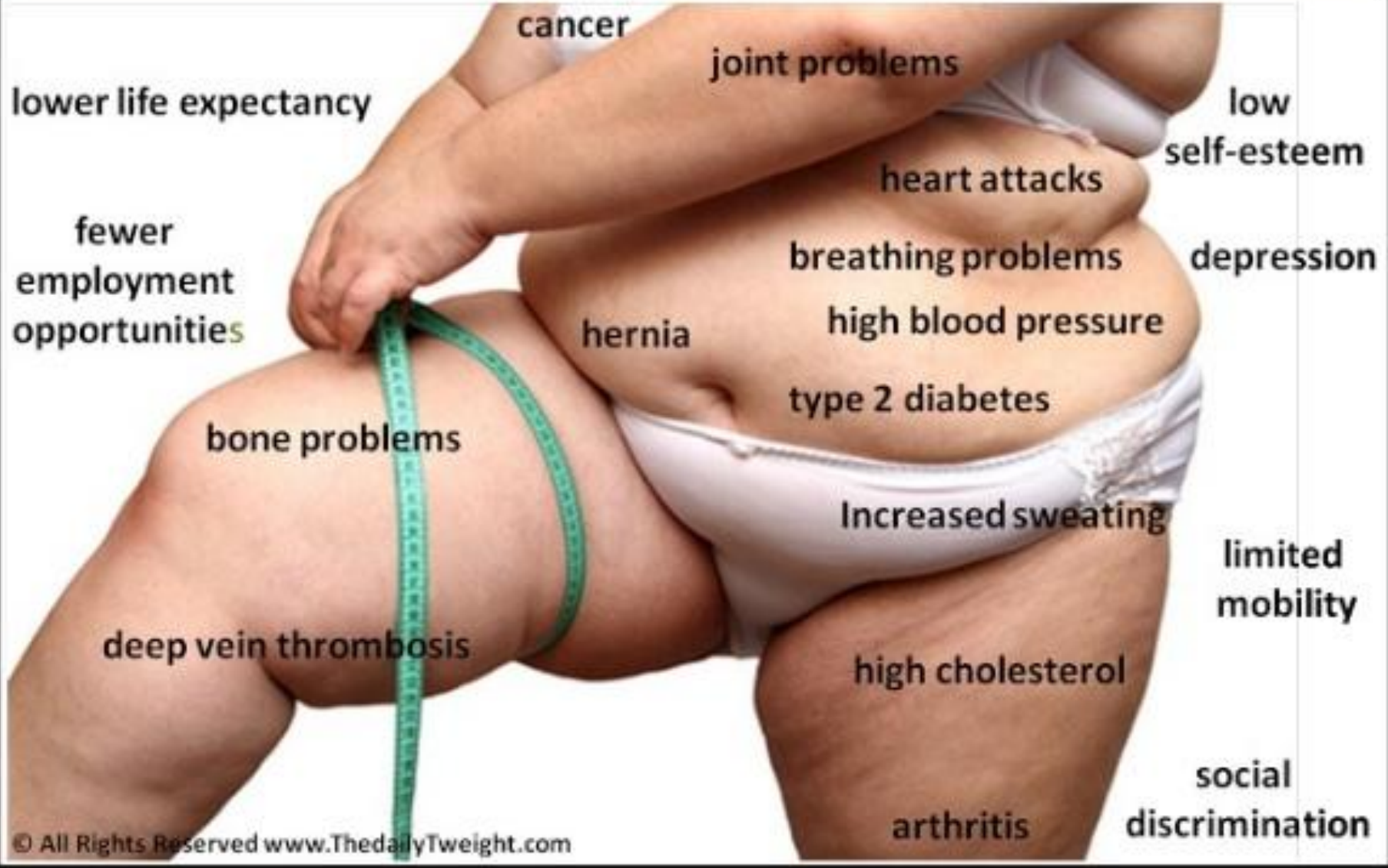


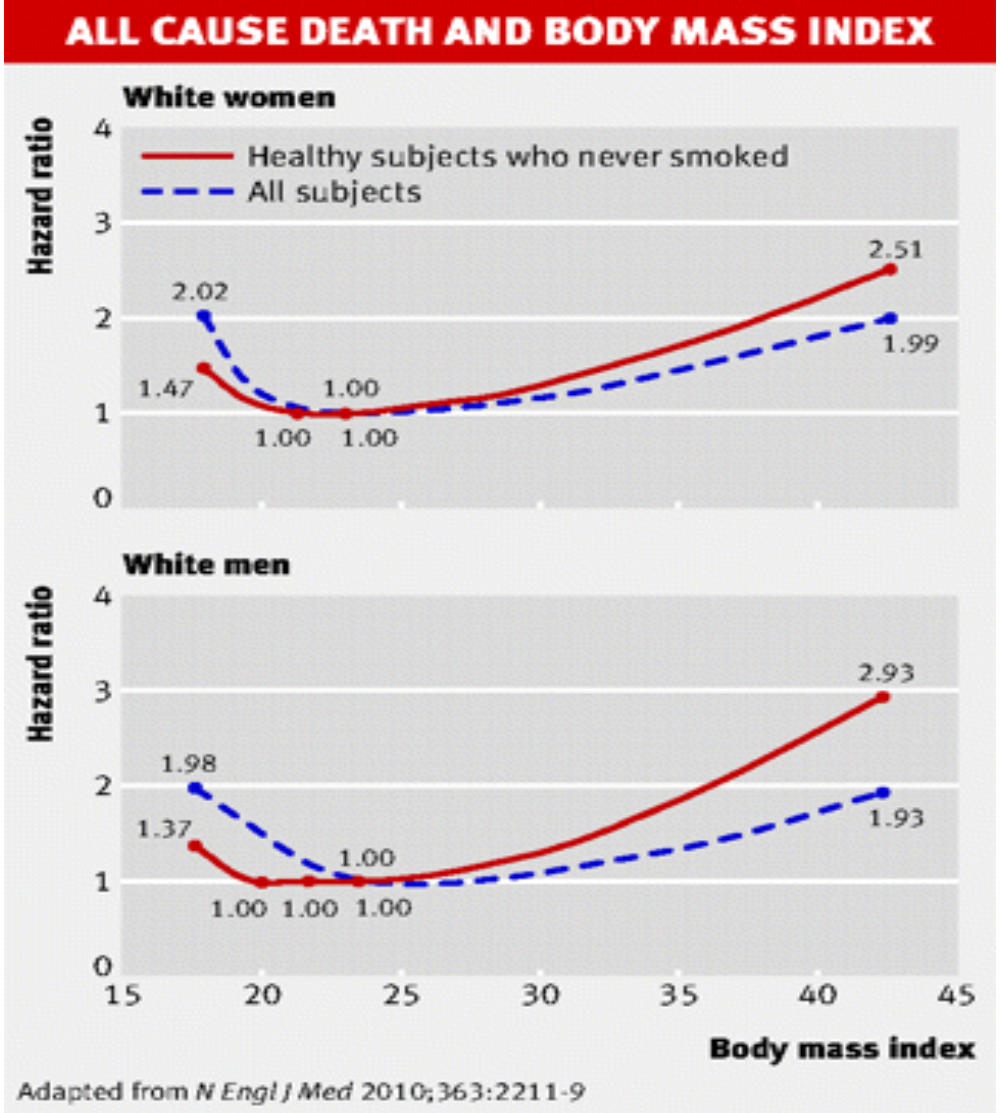
Fig 1 | Proportion of people with a major comorbidity, by degree of obesity. Adapted from Mokdad et al[2]

BMJ 2009

The Negative Effects of Obesity on Your Health and Your life



Higher body mass index, higher mortality NEJM 2010



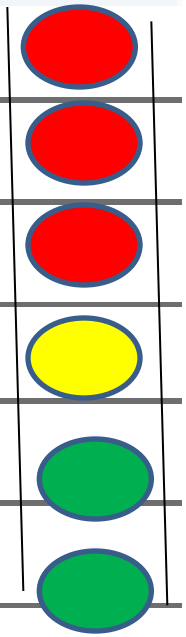
Risk of death rose by around 30% for every 5 unit increase in body mass index over the range 25-49.9.

TREATMENT OF OBESITY:

- Dieting, exercise, and cognitive behavioral therapy) achieve long term weight loss in only a small minority of highly motivated individuals.
- Weight loss drugs such as orlistat and sibutramine produce modest weight loss and can be prescribed only for a short time.
- Bariatric (weight loss) surgery is the only treatment that randomized controlled trials have shown to produce effective long term weight loss

Table 2 | Classification of obesity based on body mass index thresholds

Body mass index (kg/m²)	Classification
18.5-24.9	Normal weight
25.0-29.9	Overweight
30.0-34.9	Obesity type I
35.0-39.9	Obesity type II
≥40.0	Morbid obesity/obesity type III
≥50.0	Super obesity



non-surgical methods should have failed

Whom do we advise Surgery ?

BMI > 40 without comorbidities.

BMI > 35 with 2 comorbidities .

Age – 18 – 60 years(< 12- 65)

Stable obesity for > 5 years

Unsuccessful dietary / drug treatment

Absence of Endocrine disease

Pt. should be sufficiently comprehensive & compliant.

No h/o excessive alcohol or drug abuse

Acceptable Operative Risks


BEFORE
+
=
AFTER

Narratives

Ted-Silvia-Rachel

Effect of surgery

DATE	BMI	WEIGHT	HBA1C	TREATMENT
May 2010	35	105	7.4	Insulin Glucophage
Dec 2010	26	79	6.6	Glucophage

DATE	BMI	WEIGHT	HBA1C	
2003	35		10	
2006	30		8	
2012	18		5.9	

What surgical procedures are available?

Two fundamental mechanisms

- **MALABSORTION**
- RESTRICTION
- COMBINED

Restrictive procedures

- Creation of a small gastric pouch & limiting the gastric volume & continuity is not altered.

- Vertical banded Gastroplasty
- Adjustable Gastric Banding
- Sleeve Gastrectomy
- Gastric Plication
- BIB – Intra Gastric Balloon

Malabsorptive procedures

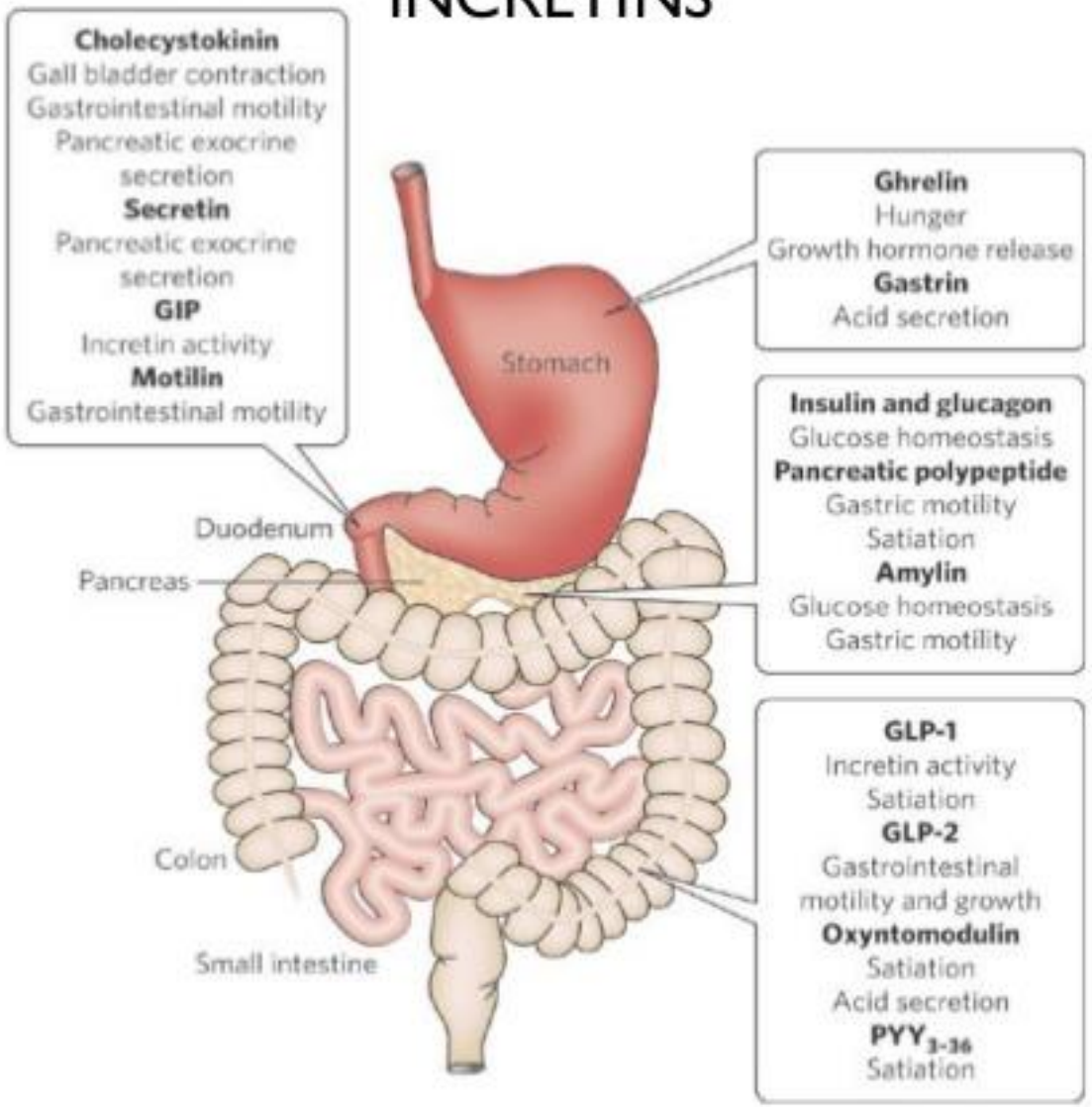
- Malabsorption is achieved by creating a short gut syndrome with distal mixing of bile and pancreatic juice with ingested food.

- Bilio-pancreatic diversion
- Jejunal ileal bypass
- Endoluminal sleeve (Endo-barrier)

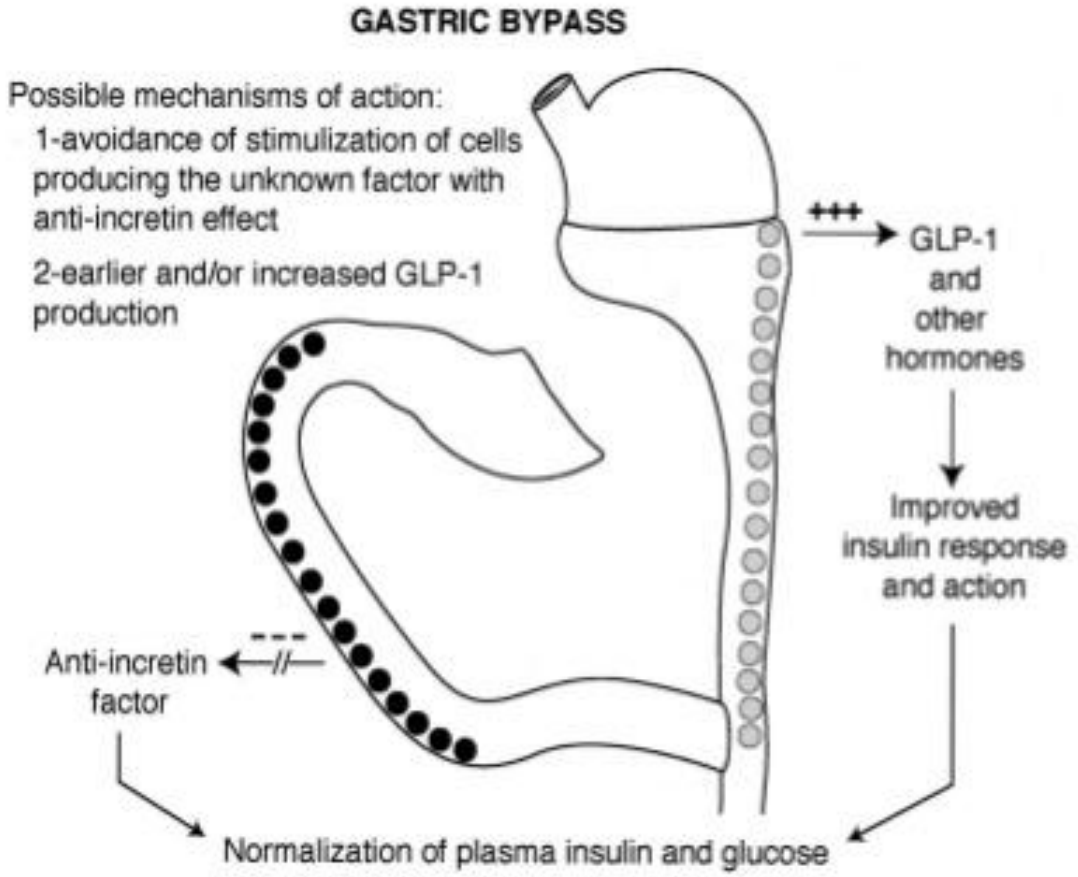
Combination procedures

- Combination of restriction alongwith mal-absorption .
- Small gastric pouch + a bypass.
- Early sense of fullness, combined with a sense of satisfaction that reduces the desire to eat.
- RYGB
- LSG with DS
- MGB

GI HORMONES AS INCRETINS & ANTI INCRETINS



Hypothesis as to the mechanism responsible for the control of diabetes after gastric bypass.



LGB

LAPAROSCOPIC GASTRIC BANDING

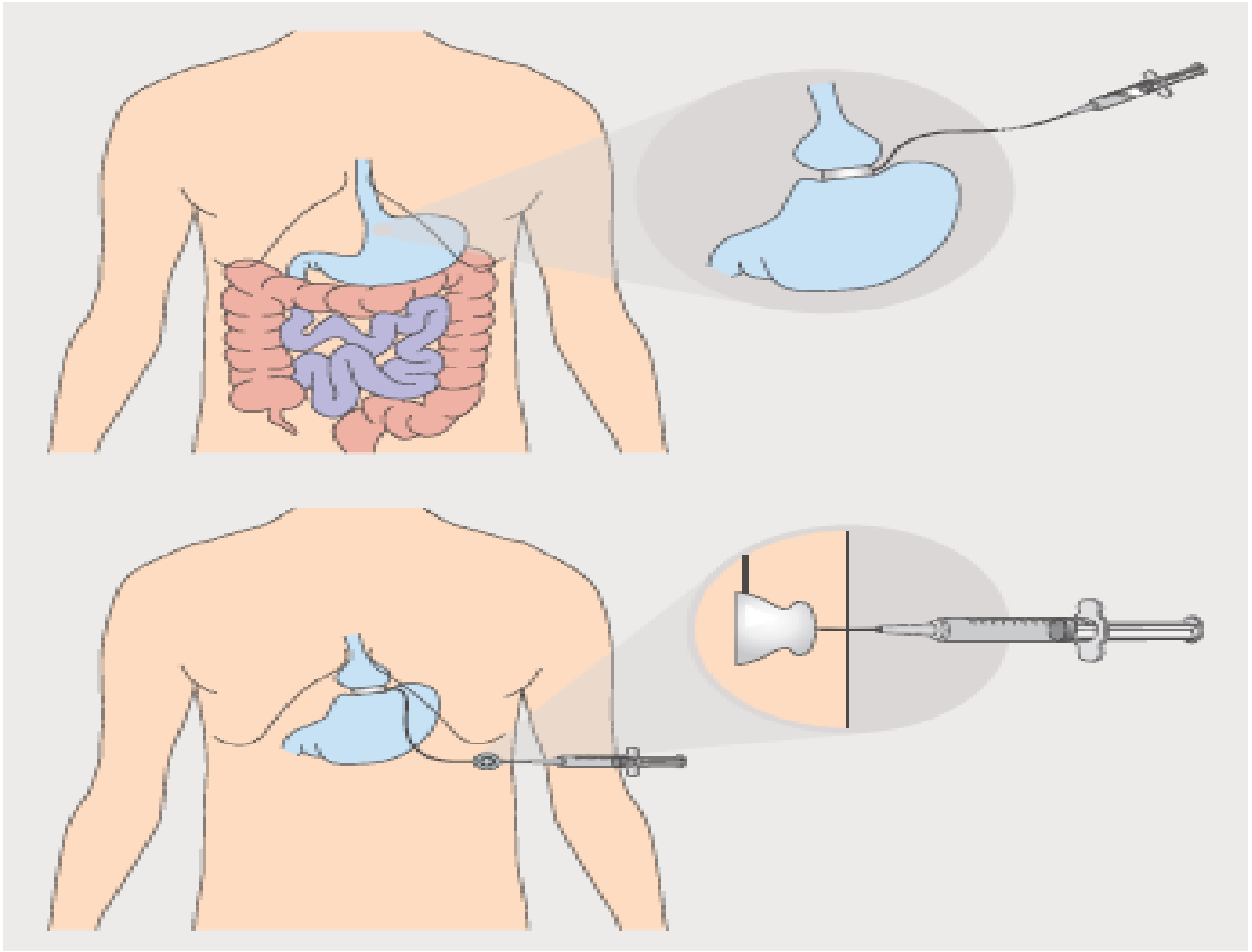
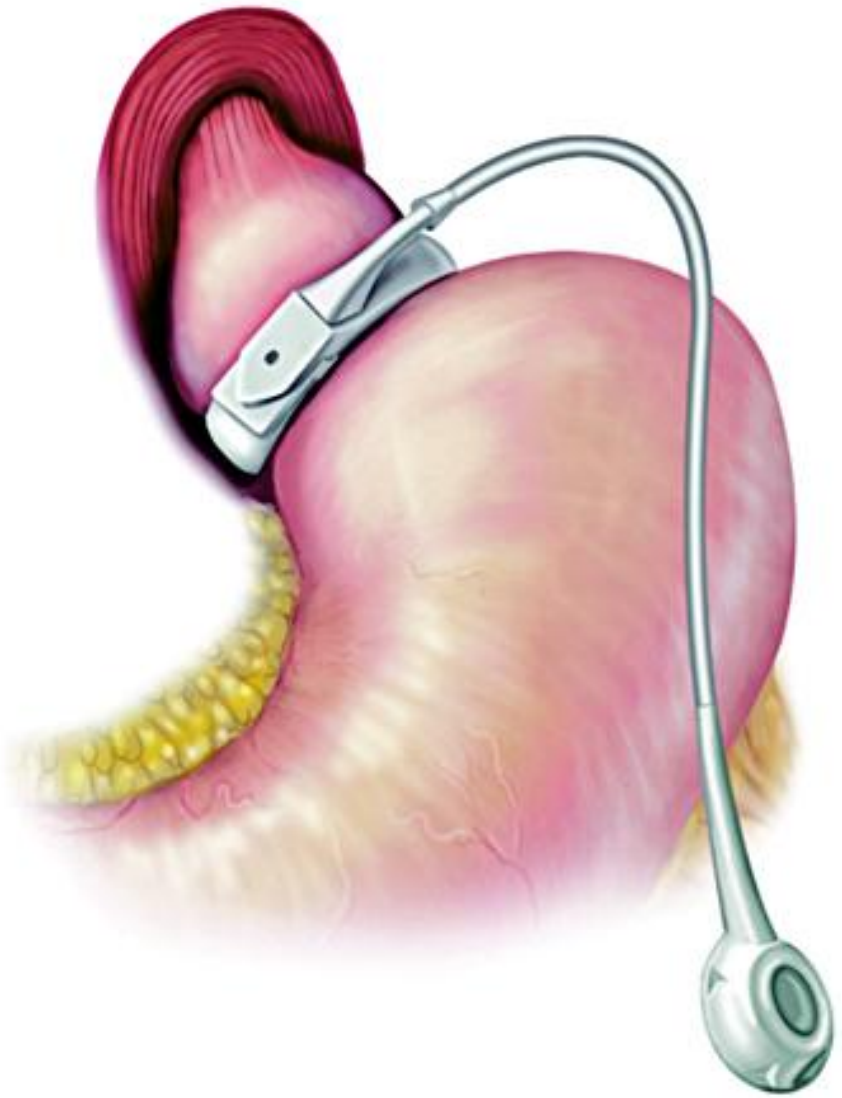
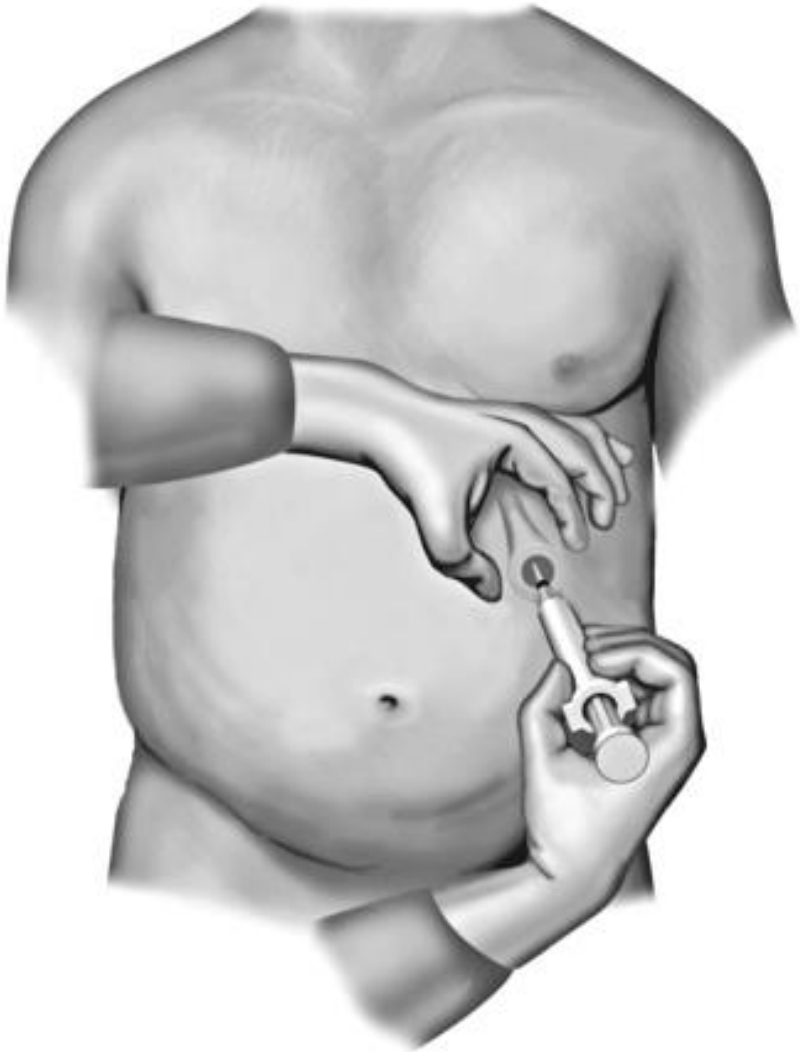


Fig 3 | Gastric banding. Top: Gastric band around the upper stomach. Bottom: The relative positions of the gastric band and port. The port is attached to the anterior abdominal wall and accessed percutaneously with a special (Huber) needle, which has its lumen placed on the side to avoid coring out the silastic seal of the port and thus avoids a leak

Adjustable Gastric Band



Gastric Band Adjustment



In some series, gastric banding is associated with high long term complication and failure rates.

- 34% had their bands removed
- 25% of the remaining patients achieved >50% excess weight loss.

- 33% developed late complications
- 22% required major revision surgery.

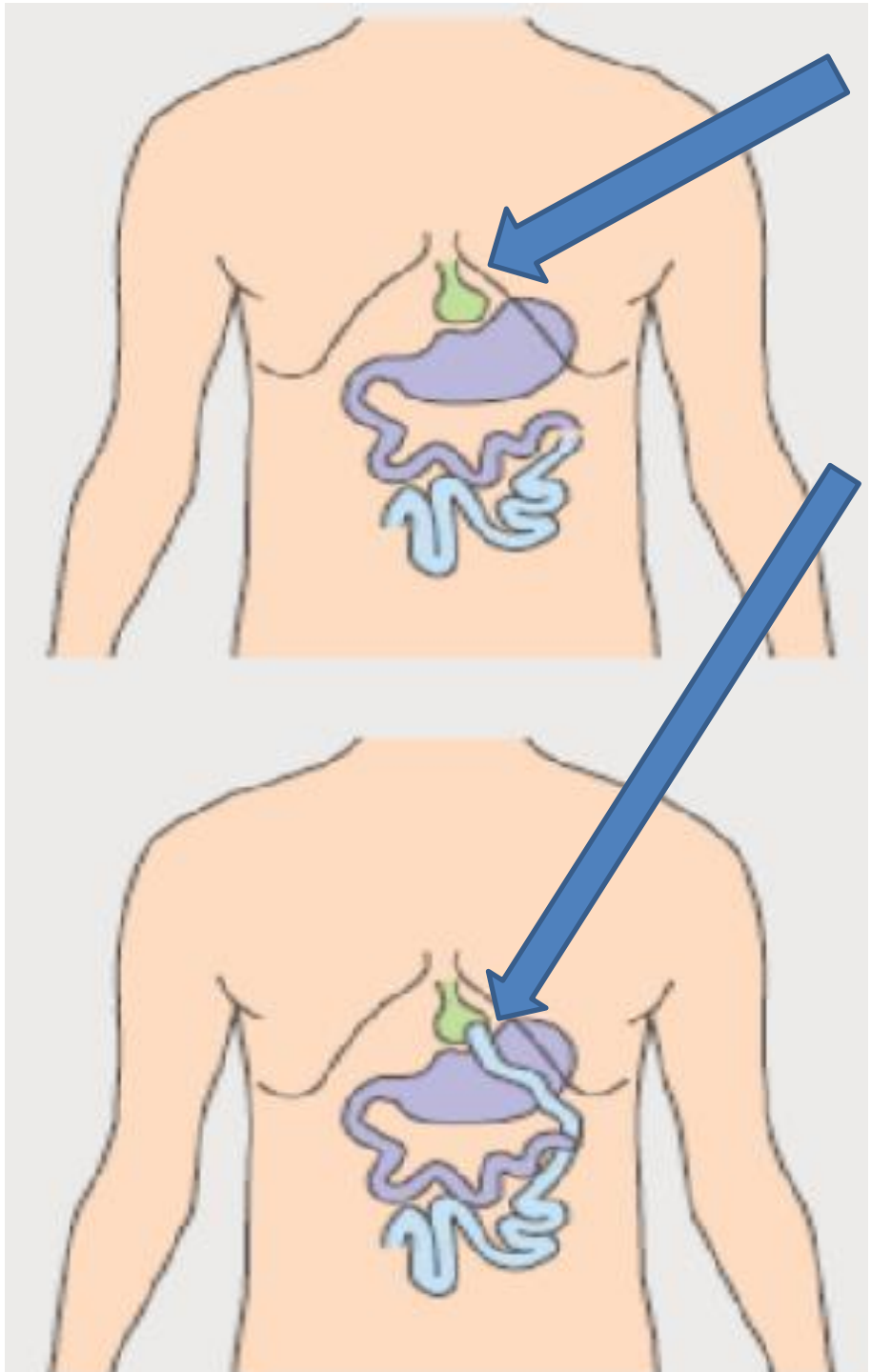
- At seven years the band failure rate was 37%.

Complications in the medium to long term Gastric Banding

- slippage,
- erosion of the band into the stomach,
- symmetrical dilatation of the gastric pouch,
- fracture or disconnection of the tubing or displacement of the port.

- Erosion often presents with a loss of restriction and weight regain but may present with mild to moderate pain.
- Slippage and symmetrical dilatation present with dysphagia or acute, severe dysphagia and pain.

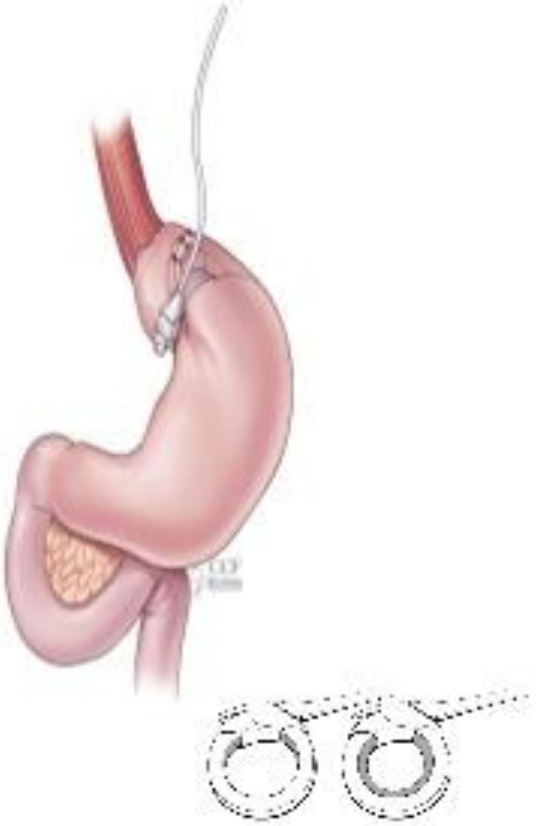
Roux-en-Y gastric bypass

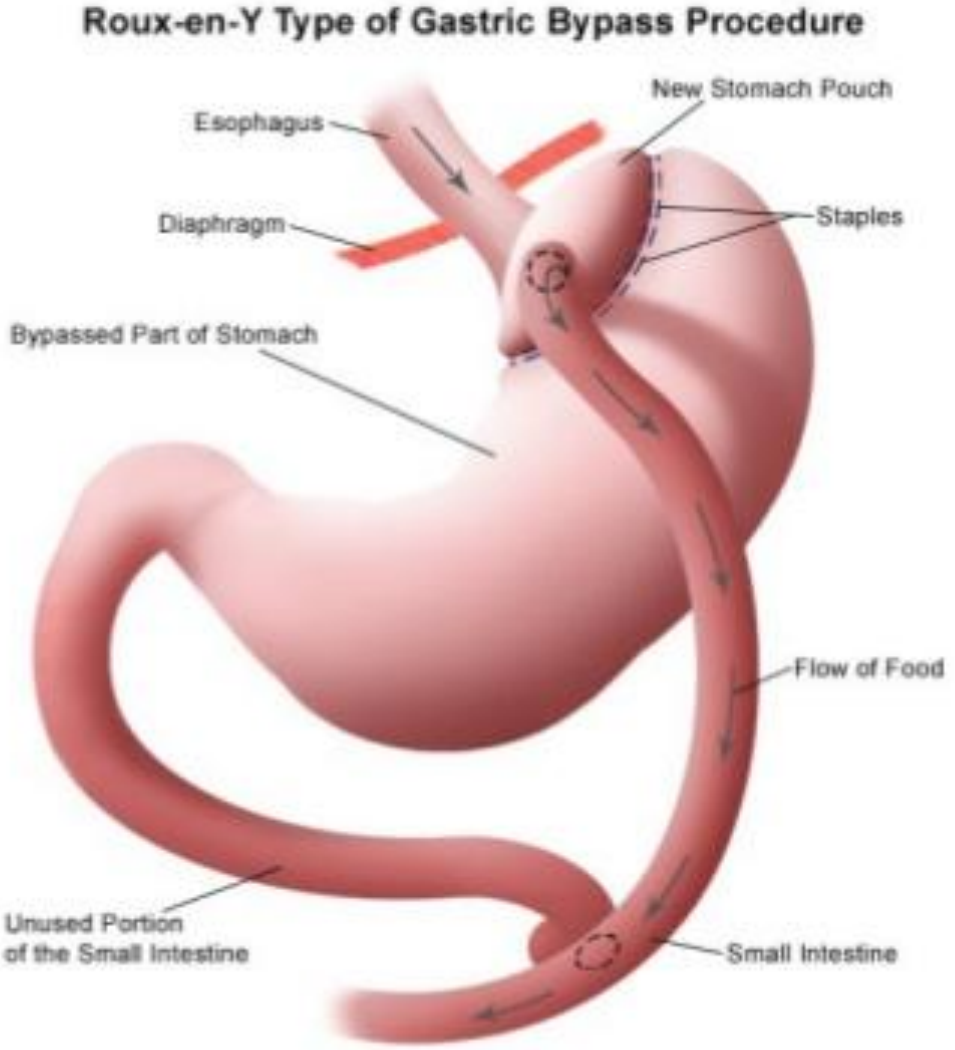


A small gastric pouch is formed by division of the upper stomach, on to which the jejunum is joined, so that food bypasses the stomach and upper small bowel

The small bowel below this (blue) will become the alimentary limb and the small bowel above this will become the biliopancreatic limb (purple)

Bariatric Procedures Performed Today

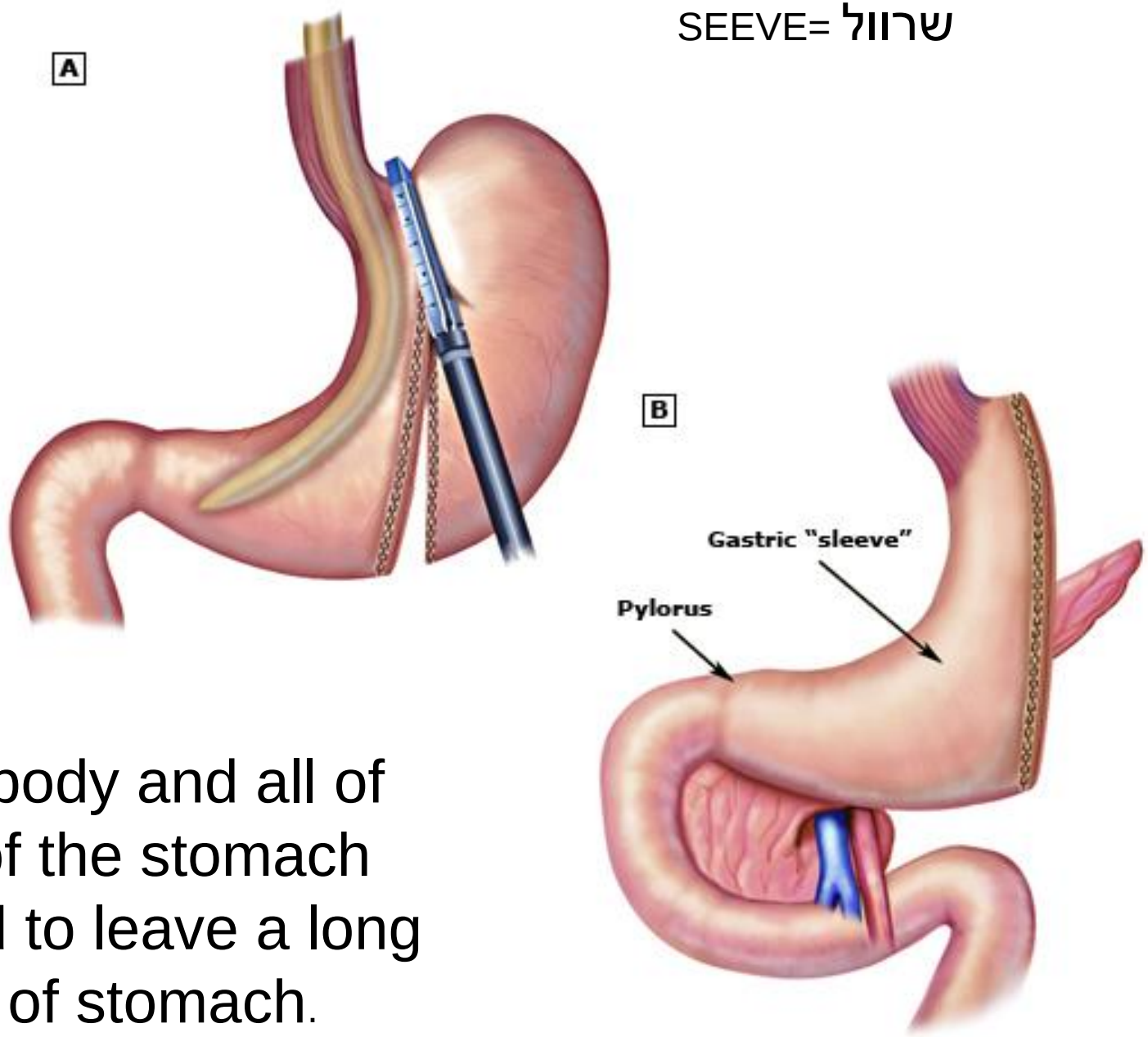




Compared with gastric banding, Roux-en-Y gastric bypass surgery provides greater and more consistent weight loss, and fewer patients require repeat surgery for complications.

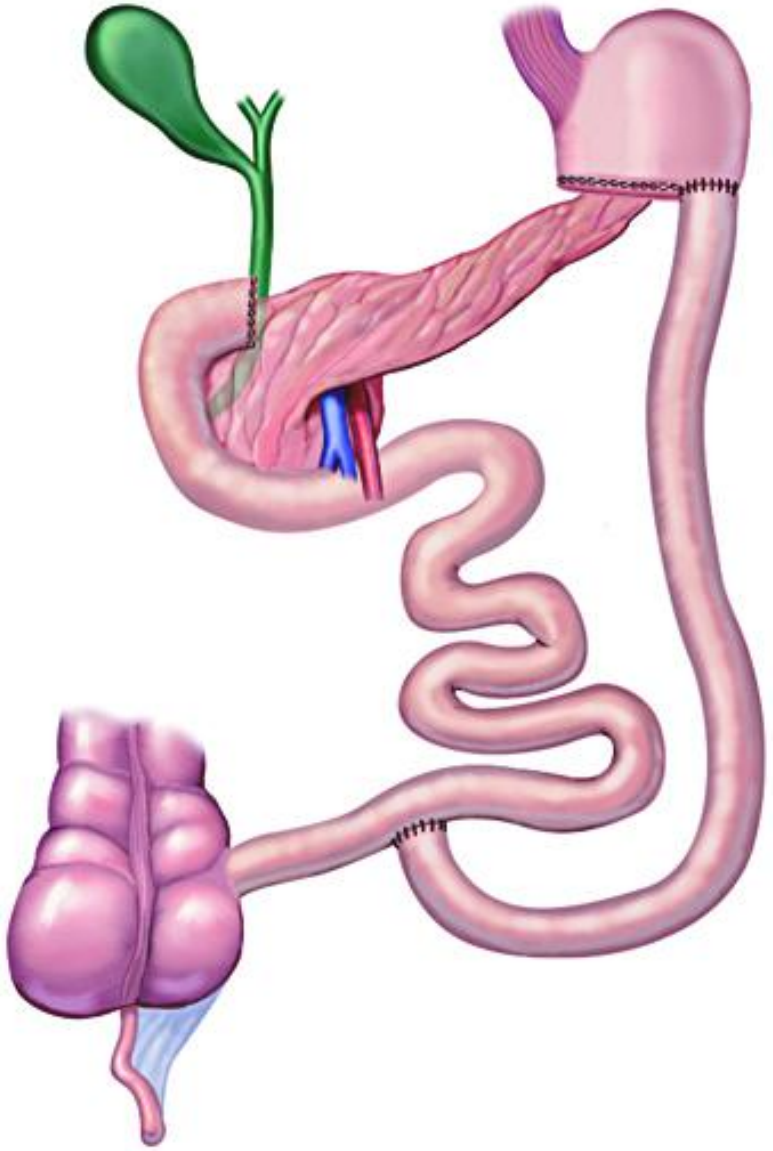
Sleeve Gastrectomy

SEEVE= שרוול



Most of the body and all of the fundus of the stomach are resected to leave a long narrow tube of stomach.

Bilio-Pancreatic Diversion



How effective is weight loss surgery?

- Greater weight loss occurred after gastric surgery
  - –gastric bypass 32%,
  - –vertical banded gastroplasty 25%,
  - –gastric banding 20%
  - –conventional treatment (2%).

Table 3 | Comparisons between the different types of bariatric operations

Category	Sleeve gastrectomy	Laparoscopic adjustable gastric band	Roux-en-Y gastric bypass	Biliary pancreatic diversion with duodenal switch
Technical difficulty	Straightforward	Straightforward	Complex	Complex
Hospital stay	2-3 days	1 day or day case	2-3 days	2-3 days
30 day mortality (%)	0.36 to 1.46	0.05	0.50	0.8
Reversibility	Irreversible	Straightforward	Complex	Complex
Start of weight loss	Immediate	Six weeks	Immediate	Immediate
Excess weight loss at 10 years (%)	Not available	59 (at 8 years)	52	>77
Remission of type 2 diabetes (% of patients)	Immediate in some cases, a few weeks or months in others (81)	Associated with weight loss (60)	Immediate (80)	Immediate (85)
Complications	Weight regain, heart bum	Erosion, slippage, symmetrical dilatation, port related problems; rate of repeat operation >10%	Anastomotic leak, dumping syndrome, vitamin deficiencies	Anastomotic leak, dumping syndrome, vitamin deficiencies, malnutrition

Data for mortality and weight loss for gastric banding and Roux-en-Y gastric bypass were derived from a systematic review on outcomes after bariatric surgery.[8] Mortality and morbidity data for sleeve gastrectomy was obtained from a combination of Spanish[9] and German National Registries.[10]

The relative effectiveness in resolving type 2 diabetes

- Gastric banding, 56.7%
- Sleeve gastroplasty, 79.7%
- Roux-en-Y gastric bypass, 80.3%
- biliopancreatic diversion 95.1%

The resolution of type 2 diabetes occurs immediately after Roux-en-Y gastric bypass and biliopancreatic diversion with duodenal switch, whereas with gastric banding resolution is dependent on weight loss

The risk of death from all types of bariatric surgery is very low:

- **Total 0.28%;**
- **adjustable banding 0.05%,**
- **gastric bypass 0.5%**

SUMMARY POINTS

Morbid obesity is associated with comorbidities and reduced life expectancy

Bariatric surgery is the only treatment for morbid obesity that has been shown to produce long term weight loss

Common procedures used for weight loss include gastric banding, Roux-en-Y gastric bypass, and sleeve gastrectomy

Bariatric surgery has been shown to lead to sustained weight loss, resolution of comorbidities, and improved life expectancy

Bariatric surgery is more cost effective than conservative treatment

תודה