A Bariatric Patient in my Waiting Room: Choosing the Right Patient for the Right Operation: Bariatric Surgery Indications

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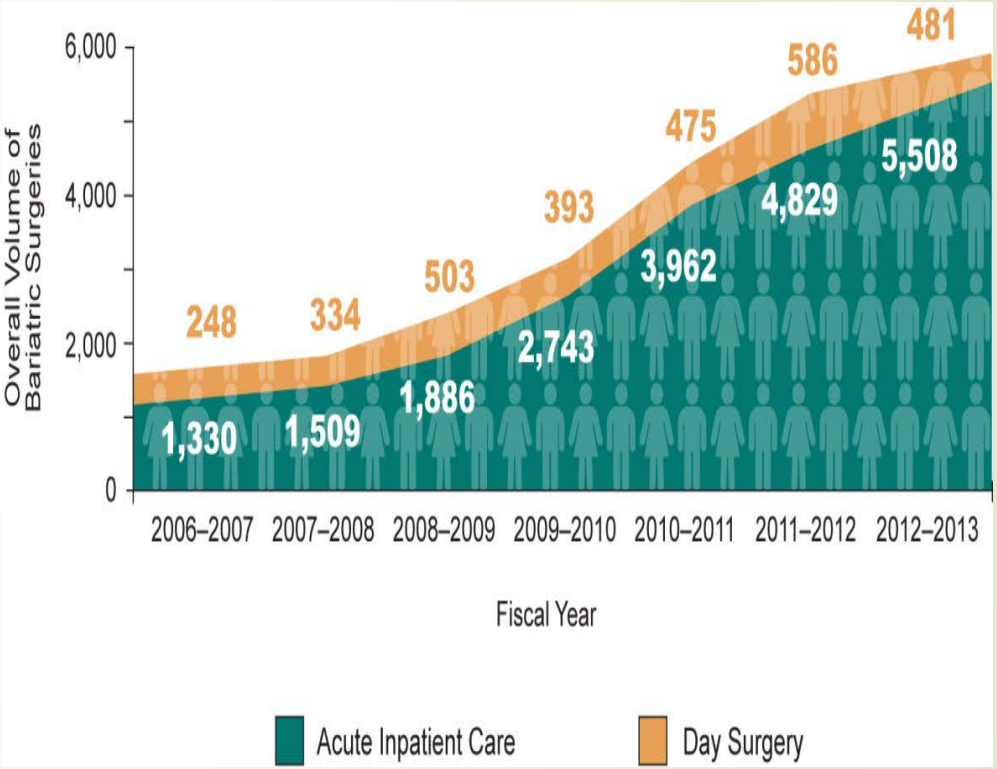
Disclosures

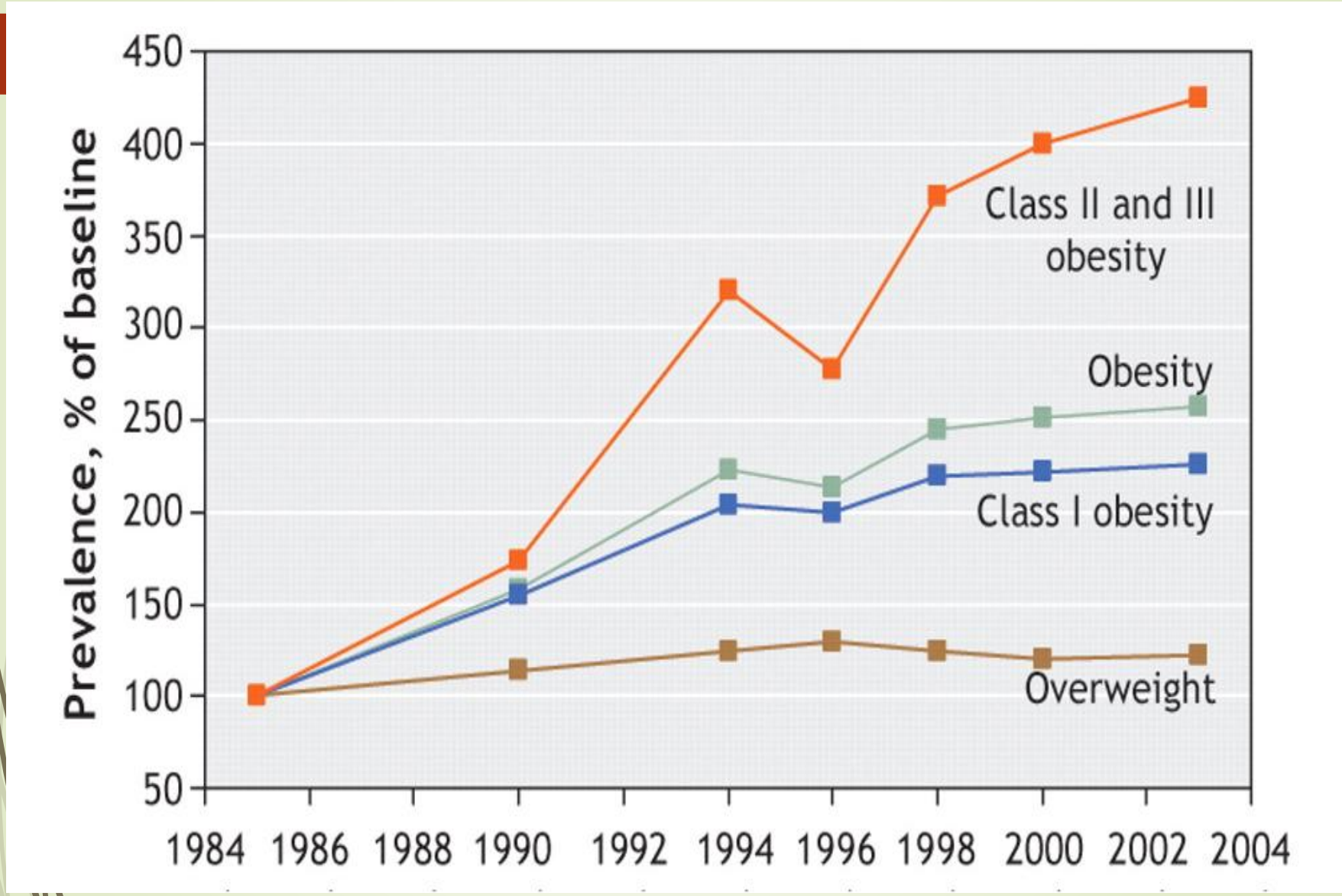
- Consultant for Ethicon And Gore Medical

Bariatric Surgery in Canada

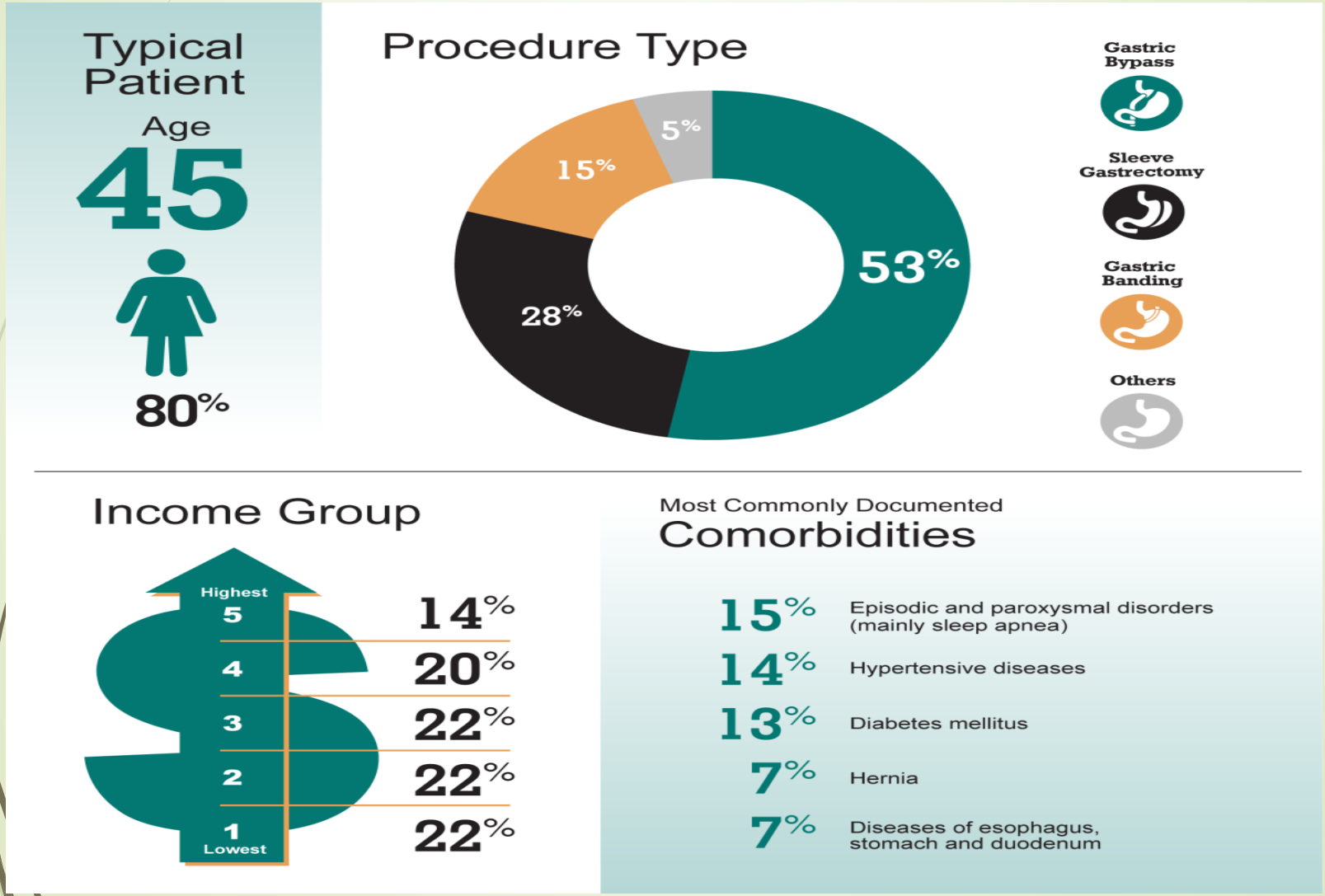
- Nearly 6,000 bariatric surgeries were carried out in Canadian hospitals in 2012–2013 (4X increase c/w 2006)
- In contrast, an initial rise in bariatric surgery rates in the U.S. from the early 2000s levelled off by 2008
- Ontario had some of the biggest growth among the provinces



CIHI report 2014


Prevalence, % of baseline
450
400
350
300
250
200
150
100
50
1984
1986
1988
1990
1992
1994
1996
1998
2000
2002
2004
Class II and III obesity
Obesity
Class I obesity
Overweight

Characteristics of Bariatric Patients Canada 2013

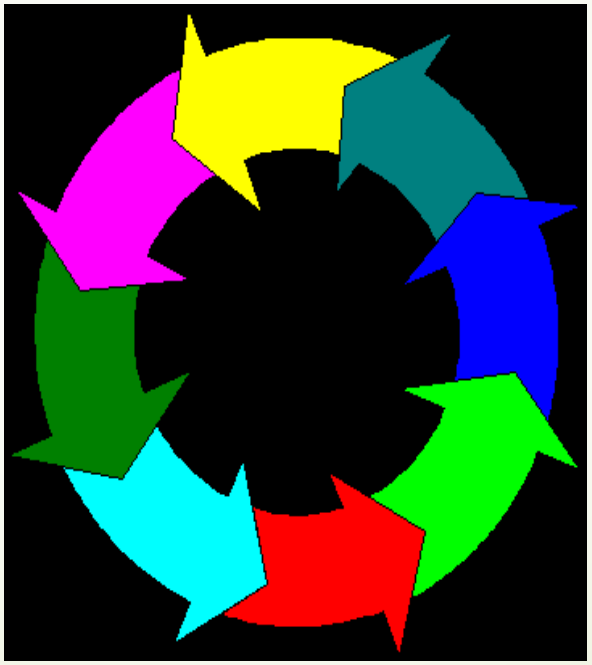


Obesity as a Chronic Disease: Surgery is Not just a Simple ‘Prescription’

- Surgeons and patients must recognize Obesity as a Chronic Disease
- Complex
- Multidisciplinary care
- Long term follow-up and support

The Vicious Cycle

weight gain



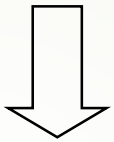
decreased metabolism

sedentary

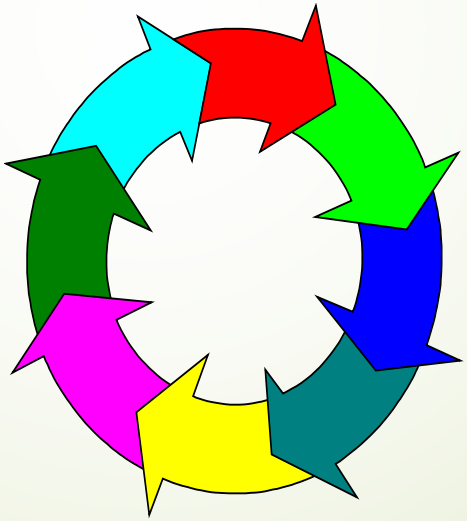
difficult to exercise

Breaking The Cycle

decrease intake



lose weight



increased metabolism

easier to exercise

more active

Weight Loss Methods

- Lifestyle / behavior changes
- Lifestyle + medication
- Lifestyle + Surgery

Every method requires lifestyle changes

Why consider surgery?

- With diet and exercise only 10 kg (22 lbs) loss can be maintained long term
- Usually regain weight in about 6 months (often more than lost)
- Surgical techniques can facilitate a 40-85% EWL, or 20-30% loss of absolute weight long-term

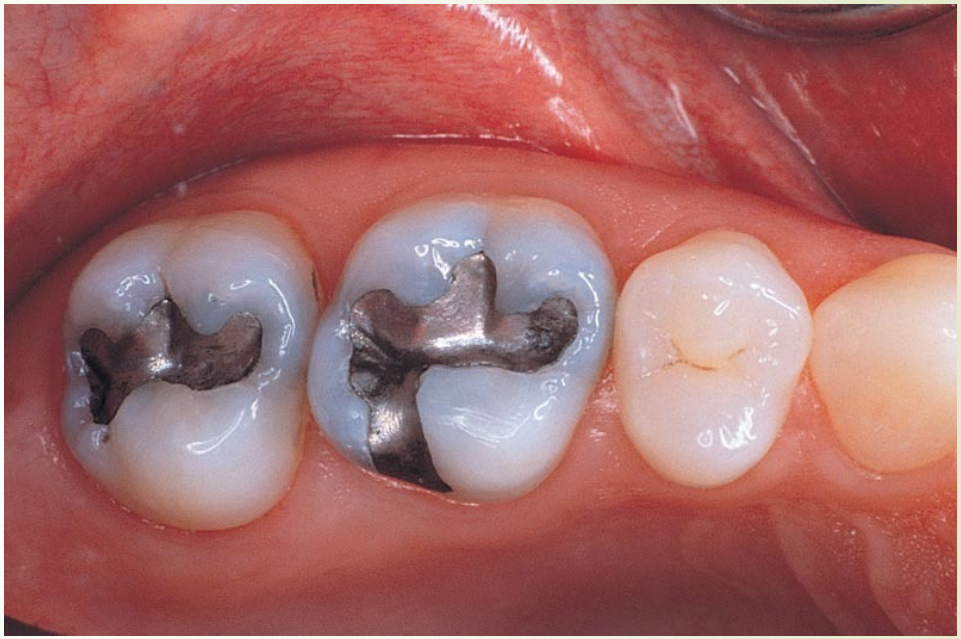
Medical therapy, very low energy diets, behavioral modification is ineffective long-term treatment for morbid obesity.
Council on Scientific Affairs. JAMA 1988; 260: 2547-2551

Surgery acts on more than weight loss

- Resolution of many of the co-morbidities associated with obesity:
  - Type 2 Diabetes
  - Hyperlipidemia
  - Hypertension
  - Obstructive sleep apnea
  - Fertility
  - Depression
  - Osteoarthritis

Surgery is a tool!

- The Cavity and filling analogy



Canadian Clinical Practice Guidelines

- Bariatric surgery indications:
  - A BMI of 40 kg/m2 or higher (class III obesity); or
  - A BMI of 35 kg/m2 or higher (class II obesity) and obesity-related comorbidities
- prospective patients must also
  - Be mentally and emotionally prepared for the surgery
  - Have support systems in place and
  - Be committed to lifelong adherence to the required lifestyle changes and follow-up once the surgery has been completed.

Contraindications

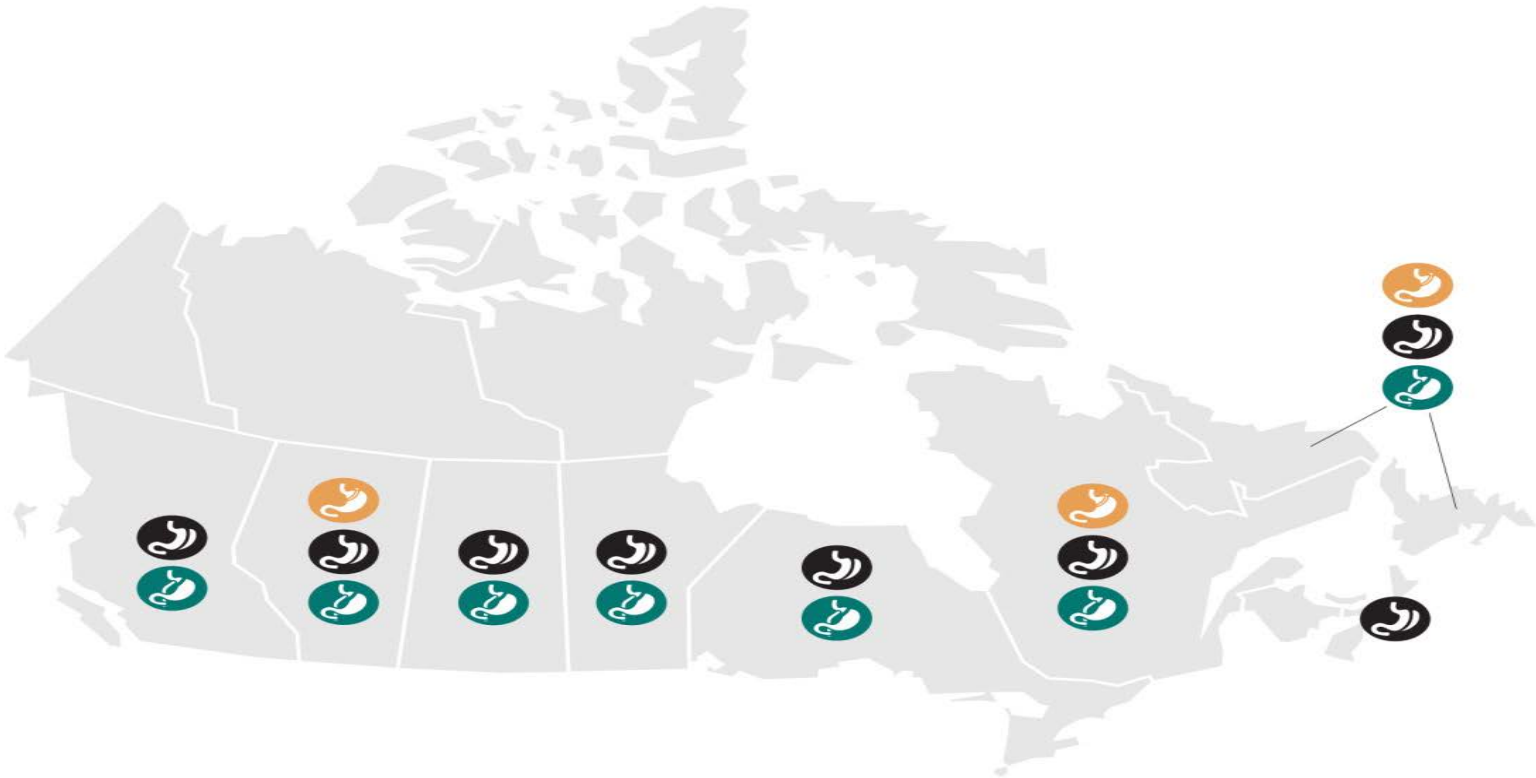
- There are no absolute contraindications
- Relative contraindications
  - severe heart failure
  - unstable coronary artery disease
  - end stage lung disease
  - active cancer diagnosis/treatment
  - cirrhosis with portal hypertension,
  - uncontrolled drug or alcohol dependency,
  - severely impaired intellectual capacity.

Operative Choices

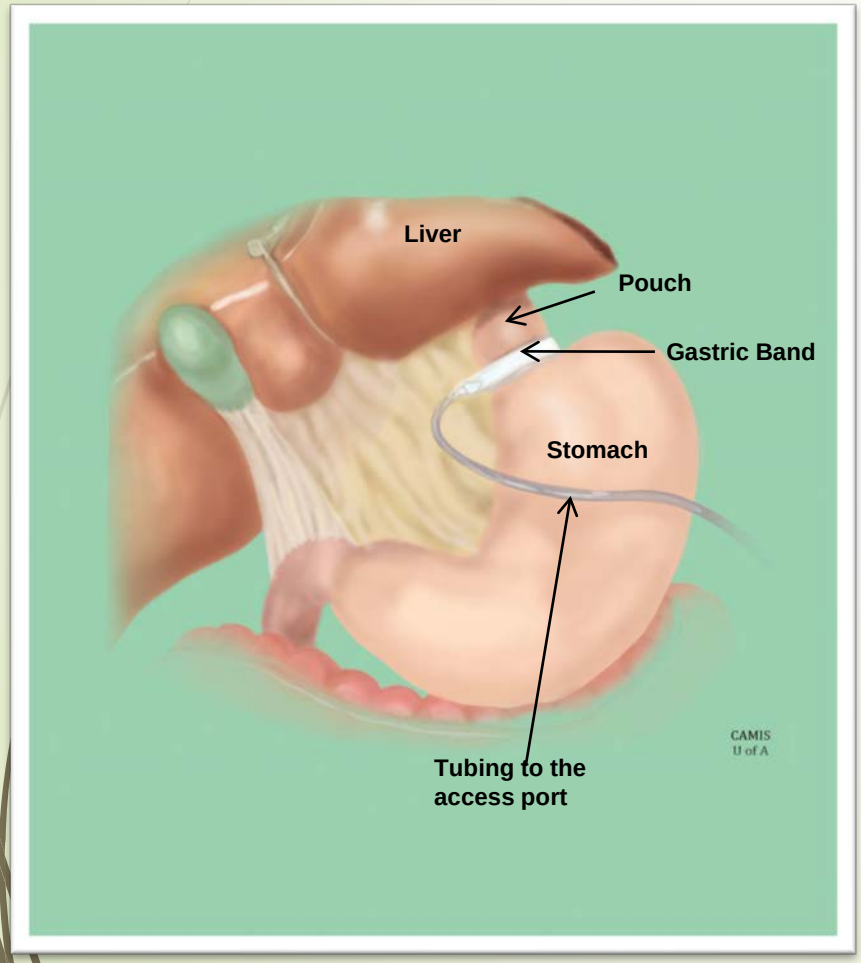
Adjustable Gastric Banding
A procedure in which an adjustable band is placed around the upper portion of the stomach, thus reducing the overall size of the stomach.

Sleeve Gastrectomy
A procedure in which about 80% to 85% of the stomach is removed, thus creating a “sleeve” of the stomach, extending from the esophagus to the duodenum.

Gastric Bypass
A procedure where the size of the stomach is reduced and part of the small intestine is bypassed.



Laparoscopic Adjustable Gastric Band

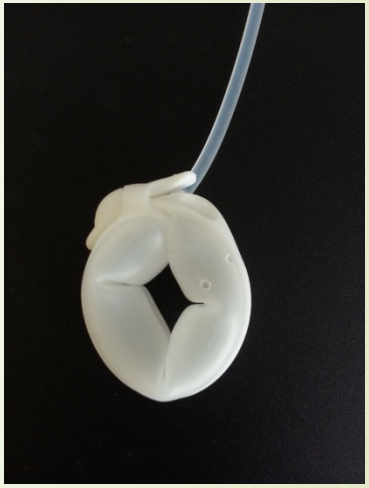


- It is an inflatable silicone device that is placed around the top portion of the stomach, dividing it into ***two parts***: a small upper pouch and a lower stomach.
- The pouch is the size of an egg or golf ball.
- It is a purely restrictive procedure.

Mechanism of Action: LAGB

- The small pouch limits meal portion size
- Narrowing of the opening or stoma delays gastric emptying
- Satiety is prolonged

Deflated

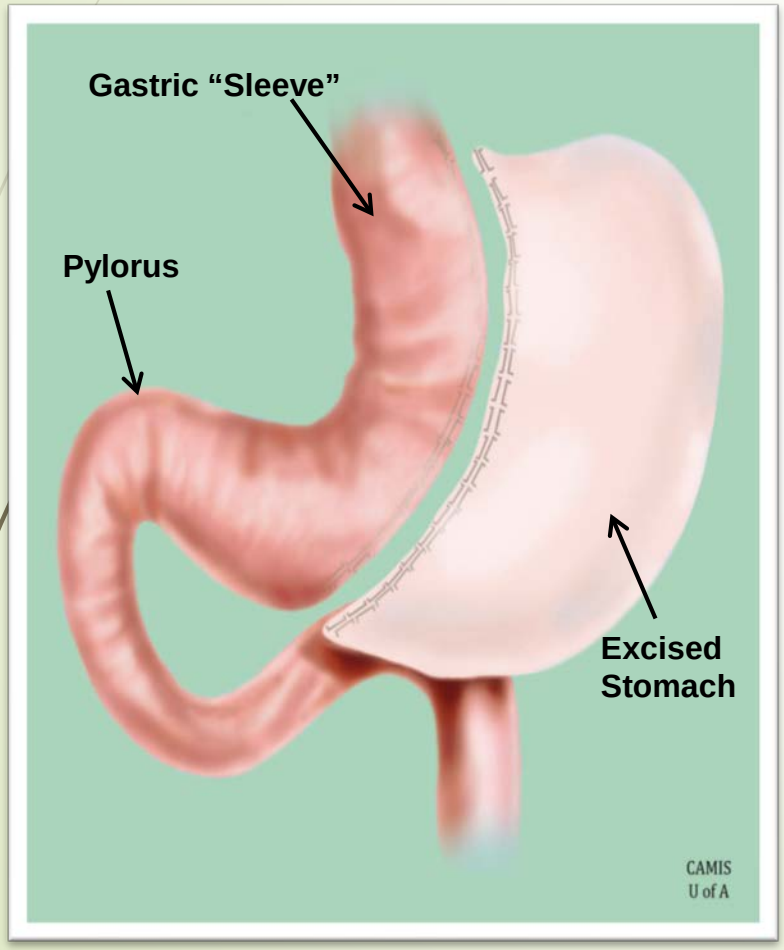


Fluid Filled

Problems with LAGB

- Long-term outcome study of Dr. O'Brien et. al. – the only group of researchers showing good long term weight loss results with banding, but even they have a high revision rate at 10 years after the surgery.
  - Ann Surg. 2013 Jan;257(1):87-94.
  - 3,227 patients/714pts with 10 year followup
  - 47% of excess weight loss at 15 years.
  - A high number of revision procedures were performed-proximal pouch enlargement (26%), erosion (3.4%), and port and tubing problems (21%).
- Himpens et al. long term study showed that laparoscopic band surgery gives at most 50% chance of no complications with at best 48% excess weight lost.
  - Arch Surg. 2011 Jul;146(7):802-7.
  - 151 consecutive patients
  - 22% minor complications
  - 39% experienced major complications (28% experienced band erosion)
  - 17% of patients had their procedure switched to laparoscopic Roux-en-Y gastric bypass.
  - The 36 patients (51.4%) who still had their band, lost 48% of their excess weight.

Laparoscopic Sleeve Gastrectomy

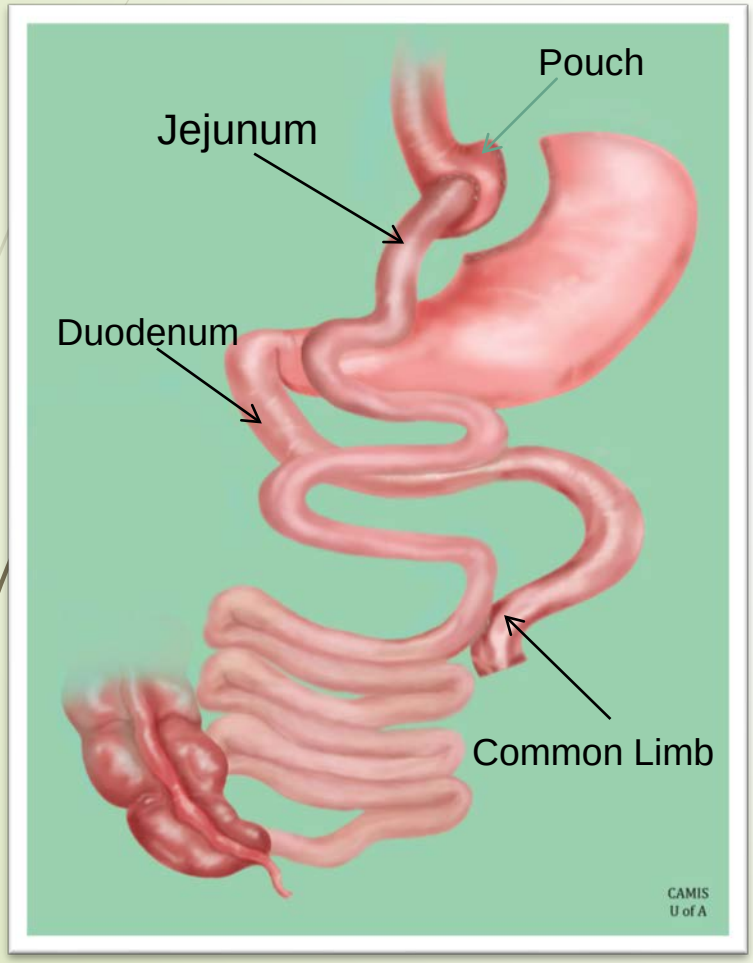


- The surgeon uses surgical staples to create a "sleeve" in the stomach.
- Approximately the size of a banana – 60 to 100 ml.
- No changes to the intestine, mainly restrictive only.

Sleeve and GERD a real concern!

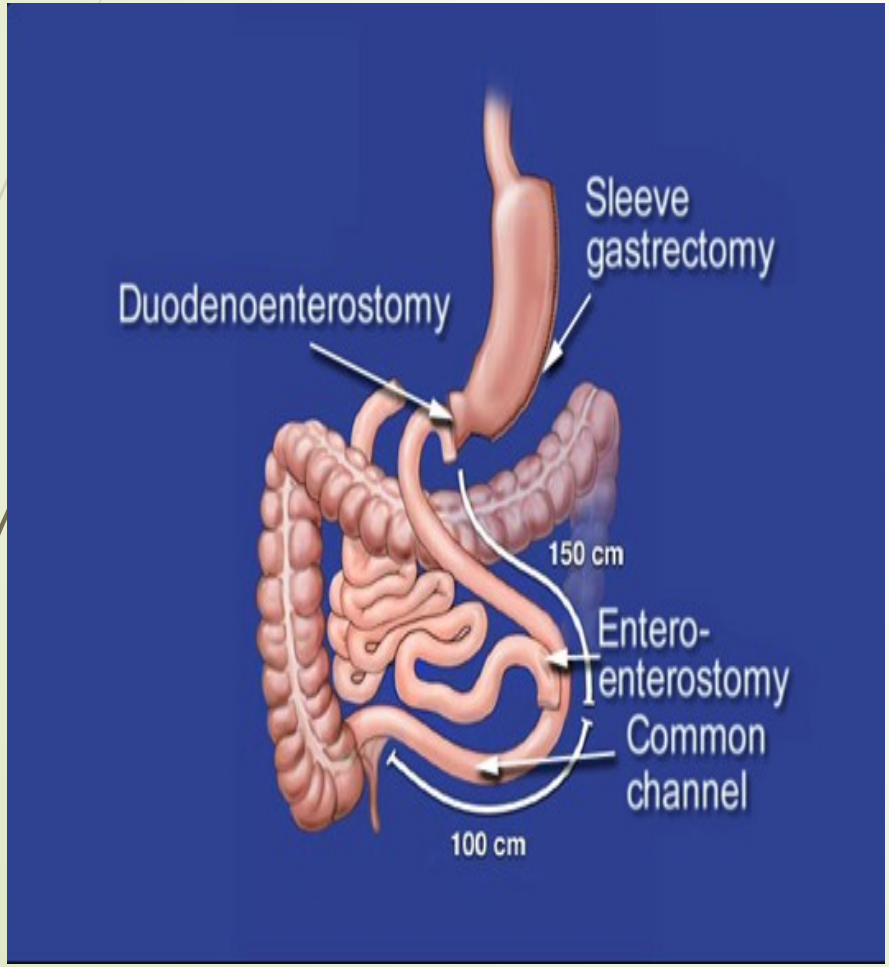
- Himpens et al. (2006)
  - Prospective RCT LSG (40) vs LAGB(40) 1/3 year
  - Denovo GERD 1 yr in 21.8% LSG pts (8.8% LAGB)
  - After 3 years in 3.1% after LSG; 20.5% after LAGB
- Howard et al. (2011)
  - 28 pts pre/post op radiographic studies for GERD
  - 18% new onset GERD GI series; 22% clinical GERD
- Miguel et al. (2011)
  - Prospective study 32 females LSG
  - At baseline 6/32 (18%) had endoscopically visible eso erosions
  - At one year 14/31 (45%) had erosive esophagitis

Laparoscopic Roux-en Y Gastric Bypass (LRYGB)



- Surgical staples are used to create a small pouch (size of an egg or golf ball ~30ml).
- The middle part is then attached to the new pouch.
- The upper part is re-attached further down the intestine.
- Food now empties into the middle intestine completely bypasses the stomach and duodenum.Approximately the size of a banana – 60 to 100 ml.

Biliopancreatic Diversion-Duodenal Switch



- Stomach restricted via sleeve gastrectomy
- Duodenum cut but pylorus remains intact
- Small intestine is transected approximately half way (bottom section connected to top part of duodenum)
- Seperated section is reattached to the ileum approx. 100 cm from ic valve (forming common channel)
- Food bypasses most of the small intestine
- Bile and pancreatic enzymes meet at common channel

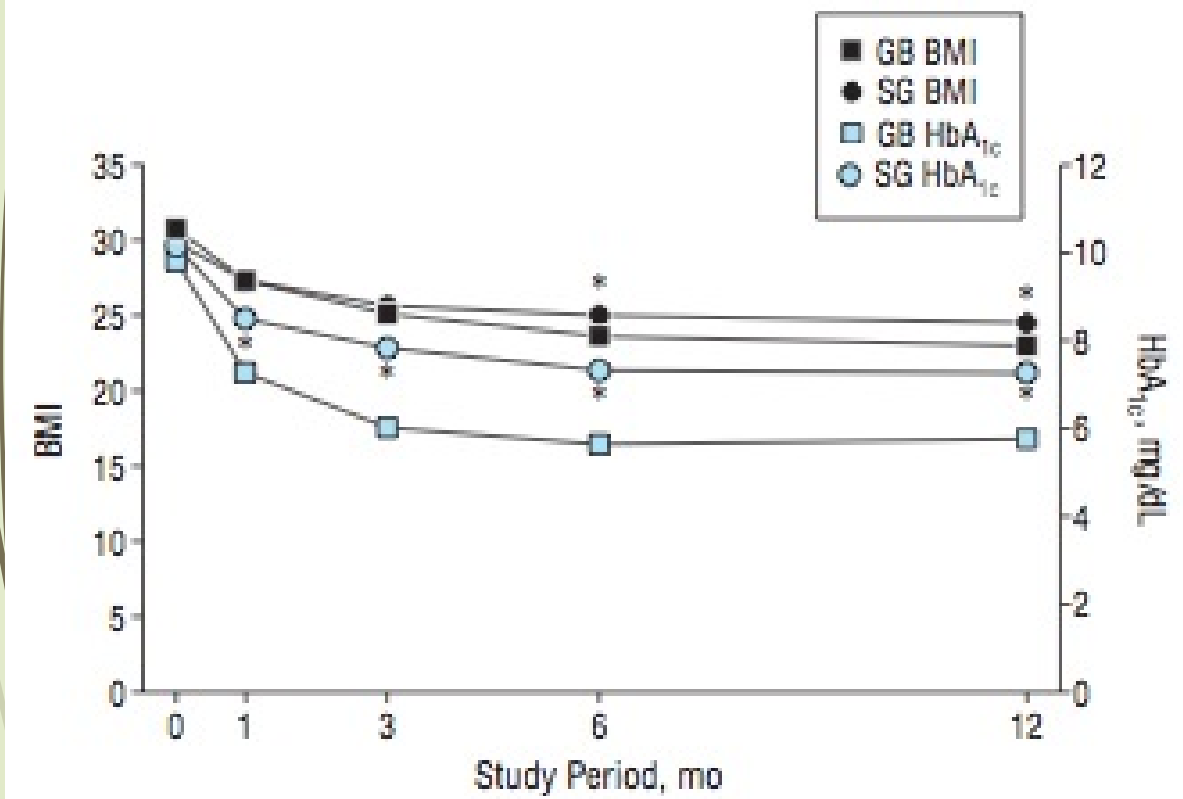
BPD-DS

- Reroutes the Intestinal Tract into long alimentary and biliopancreatic limbs
- Weight loss is generally secondary to malabsorption of nutrients rather than gastric restriction
- Length of common channel appears proportional to risk of nutritional deficiencies
- Greater weight loss but higher operative risk and more long term sequelae c/w RYGB(Calcium, fat soluble vitamin, protein deficiencies)

Bariatric Surgery Efficacy

Procedure	% EWL	T2DM (Resolved)
Gastric Banding	40% (n=1848)	48%
Sleeve Gastrectomy	47 % (n=673)	66.2%
Gastric Bypass	62% (n=4204)	84%
BPD	70% (n=2480)	98%

RCT of RYGB vs. SG in DM2 (n=60)



Weight loss, %

GB	9.2	15.9	20.9	23.3
SG	11.1	16.1	18.5	19.9
P value	.03	.85	.10	.02

93% resolution of DM2 with gastric bypass versus 47% with sleeve gastrectomy. P=0.02

Lee et al. Arch Surg 2011

Key Point

- Overall tough to ‘definitively’ state that a certain operation is best in a given patient because so many factors involved.
- Type 2 diabetes: BPD/DS and gastric bypass favoured.
- History of reflux: sleeve is not optimal
- Re-operative rate of LAGB is high
- Optimally, informed decision is best.

Which Bariatric Procedure

	BAND	SLEEVE	BYPASS	SWITCH
Long Term Data				
Reversibility				
Complexity				
Nutritional Impact				
Foreign Body				
Reflux Impact				
Type 2 Diabetes				
Weight Loss				

Which Bariatric Procedure

	BAND	SLEEVE	BYPASS	SWITCH
Long Term Data				
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Complexity				
Nutritional Impact				
Foreign Body				
Reflux				
Type 2 Diabetes				
Weight Loss				

Questions