

Rol van bariatrische chirurgie bij obesitas

F. Nuytens



Vooroordelen tov bariatric



'gemakkelijke oplossing'

'niets dan complicaties!'

'iedereen komt terug bij in gewicht'

'geen karakter'

'plastische chirurgie'

'te groot risico voor wat het waard is'

Vooroordelen tov bariatric

- Vergelijking met oncologische pathologie

INTERNATIONAL JOURNAL OF
SURGERY ONCOLOGY

Review Article

OPEN

The rising prevalence of obesity: part A: impact on public health

Maliha Agha, BSc(Hons), MSc, MPH^a, Riaz Agha, MBBS, MSc, Oxf, MRCSEng, FRSPH^{b*}

Diseases	2007	2015	2025	2050
Diabetes	2.00	2.20	2.60	3.50
Coronary heart disease	3.90	4.70	5.50	6.10
Stroke	4.70	5.20	5.60	5.50
Colorectal cancer	0.45	0.50	0.53	0.50
Breast cancer	0.27	0.29	0.32	0.31
NHS cost (all related diseases)	17.40	19.50	21.50	22.90

Estimated future NHS costs of diseases related to body mass index, 2007–2050 (£billion/y).

Perceptie van 1^{ste} lijn tov bariatric

Factors Influencing Primary Care Physicians' Referral for Bariatric Surgery

Shahryar Tork, MD, Katherine M. Meister, MD, Anna L. Uebele, MD,
Lala R. Hussain, MSc, Scott R. Kelley, MD, George M. Kerlakian, MD,
Kevin M. Tymitz, MD

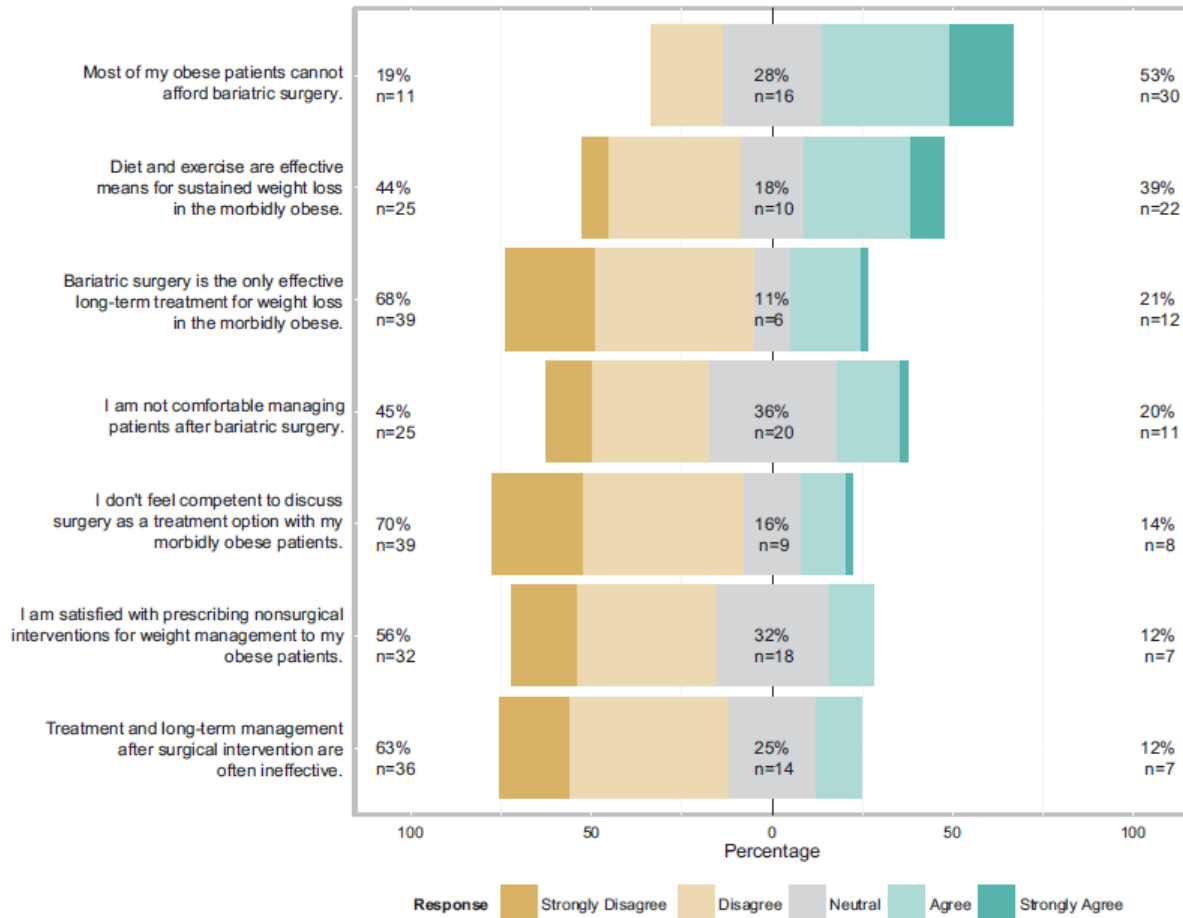


Figure 1. Factors influencing referral for bariatric surgery.

Statement	Total responses N	Strongly Disagree n (%)	Disagree n (%)	Neutral n (%)	Agree n (%)	Strongly Agree n (%)
Vitamin deficiencies from bariatric surgery are difficult to correct.	57	10 (18)	35 (61)	5 (9)	6 (11)	1 (2)
Providing educational pamphlets and/or seminars to PCPs on the topic of treatment and management for morbidly obese patients will increase referral rates for a consultation with a bariatric surgeon.	57	1 (2)	4 (7)	16 (28)	28 (49)	8 (14)
Malnutrition after bariatric surgery cannot be reversed.	52	15 (29)	29 (56)	7 (13)	1 (2)	0
I do not believe the benefits of bariatric surgery are worth the risk of the surgery.	56	7 (12)	28 (50)	16 (29)	5 (9)	0
I am not familiar with the risks and benefits of bariatric surgery.	55	20 (36)	26 (47)	6 (11)	2 (4)	1 (2)
I am not familiar with the indications for bariatric surgery.	57	11 (19)	26 (46)	16 (28)	4 (7)	0
BMI ≥ 35 and comorbidities related to obesity are an indication to refer patient for consultation with a bariatric surgeon.	57	0	5 (9)	4 (7)	38 (67)	10 (18)

Plaats van bariatrische chirurgie in behandelingsalgoritme

*Selectie
*Voorbereiding
*Educatie



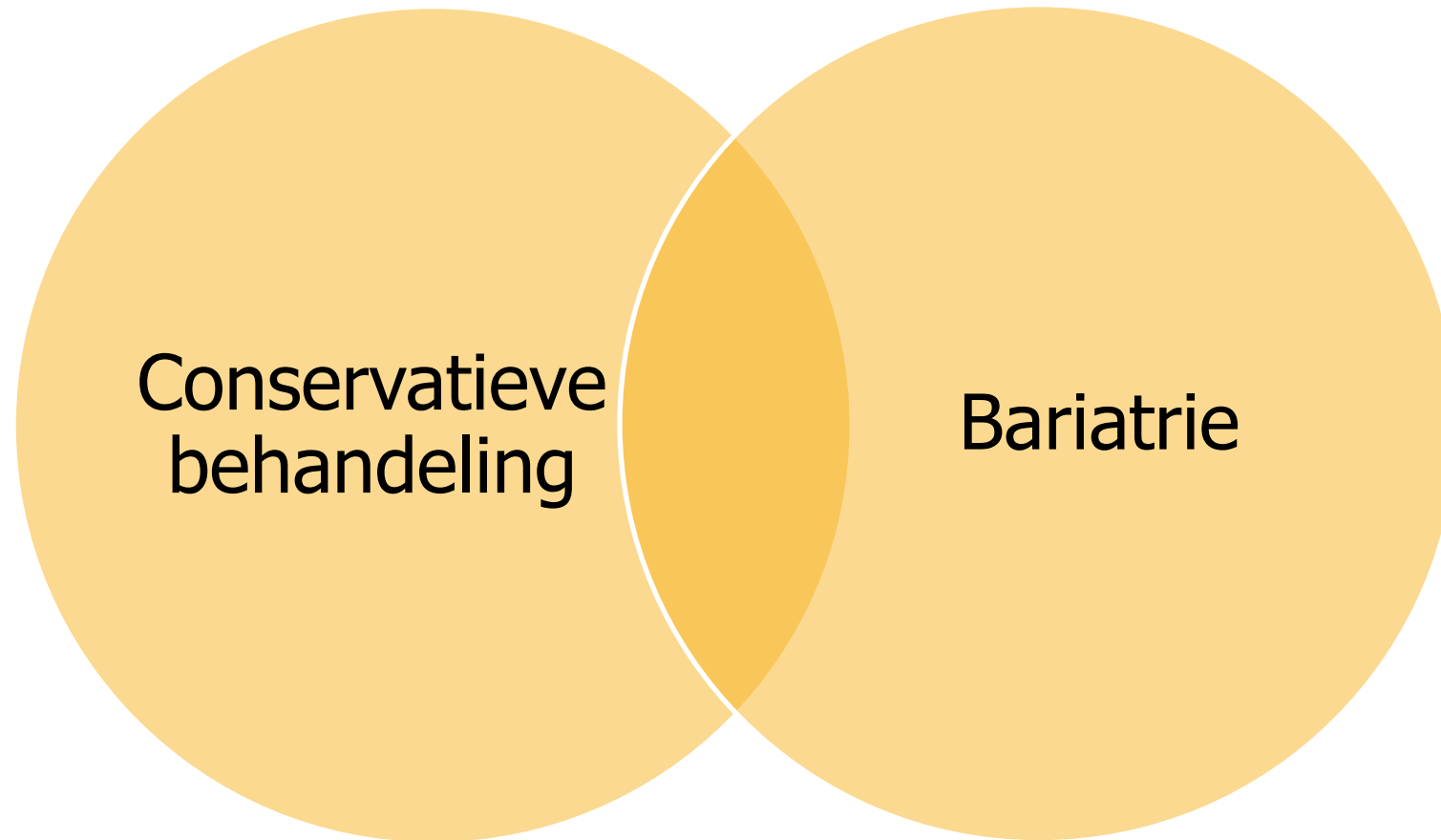
Bariatric



Follow-up!!

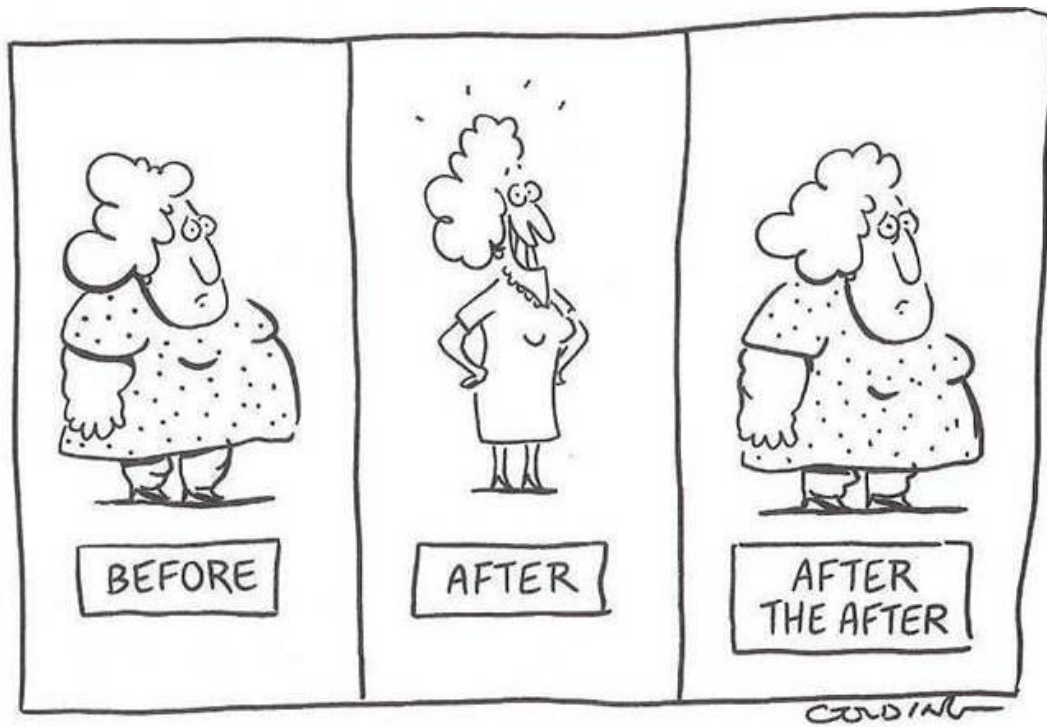


Plaats van bariatrische chirurgie in behandelingsalgoritme

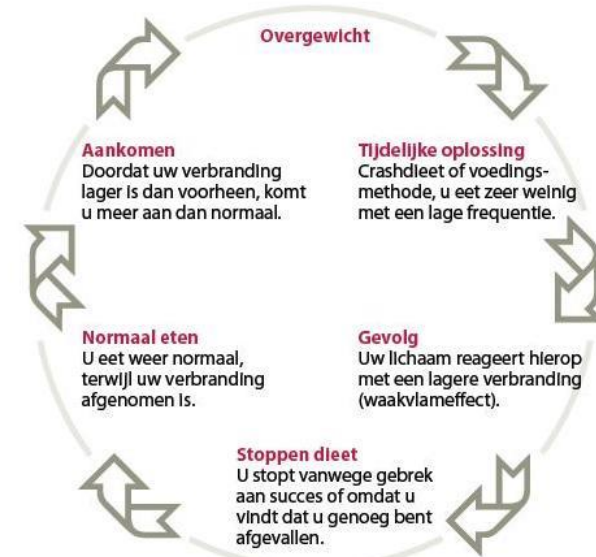


Waarom bariatrie?

- Bij hogere BMI's: resultaten van conservatieve behandeling vaak teleurstellend en frustrerend.



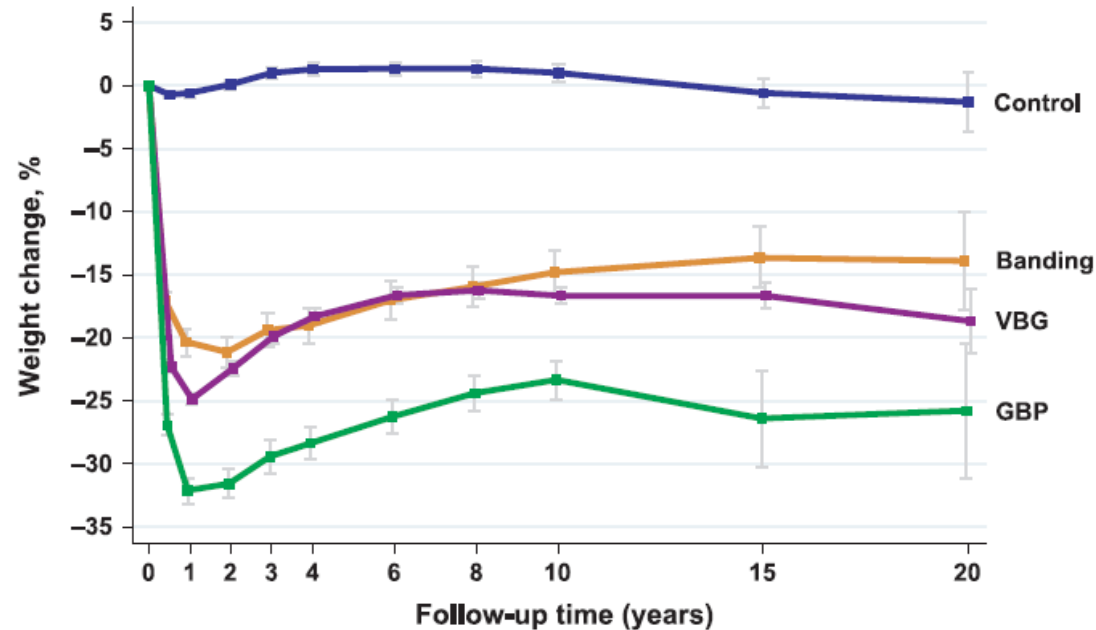
Het jojo-effect: een vicieuze cirkel



Waarom bariatric?

- Effect op gewicht

Fig. 1 Mean percentage weight change from baseline amongst patients in the control and the three surgery groups during 20 years of follow-up in the Swedish Obese Subjects study. Data shown for controls receiving usual care and for surgery patients undergoing banding, vertical banded gastroplasty (VBG) or gastric bypass (GBP) at baseline. Percentage weight changes from the baseline examination are based on data available on 1 July 2011. Error bars represent 95% confidence intervals. From Sjöström L et al., JAMA 2012 with permission [37].



No. examined	0	1	2	3	4	6	8	10	15	20
Control	2037	1490	1242	1267	556	176				
Banding	376	333	284	284	150	50				
VBG	1369	1086	987	1007	489	82				
GBP	265	209	184	180	37	13				

Waarom bariatric?

• Effect op gewicht

Review

Journal of INTERNAL MEDICINE

doi: 10.1111/joim.12012

Review of the key results from the Swedish Obese Subjects (SOS) trial – a prospective controlled intervention study of bariatric surgery

■ L. Sjöström

From the The SOS secretariat, Department of Molecular and Clinical Medicine, Institute of Medicine, The Sahlgrenska Academy, The University of Gothenburg, Gothenburg, Sweden

- 2010 patiënten
- Matched prospective randomised trial

Treatment with currently available antiobesity drugs typically results in 7%–10% weight reduction over 2 to 4 years as compared to 4%–6% in placebo groups or those treated with lifestyle modification.

This is encouraging, but more efficient drugs are clearly needed. Results from the SOS study have demonstrated that maintained effects on risk factors over 10 years require 10%–30% maintained weight loss.

Obese patients with prediabetes and type 2 diabetes require extra care. It is more difficult to achieve conventional or pharmacologically induced weight loss in diabetic obese patients. Even when weight loss is achieved, almost all patients relapse within a few years. Moreover, treatment with sulphonylureas or insulin causes weight gain. Thus, obesity not only causes diabetes but obesity is also a complication of diabetes treatment with some medications; this circle must be broken.

Surgery is the only treatment for obesity resulting in an average of more than 15% documented weight loss over 10 years. This treatment has

Waarom bariatric?

- Effect op mortaliteit

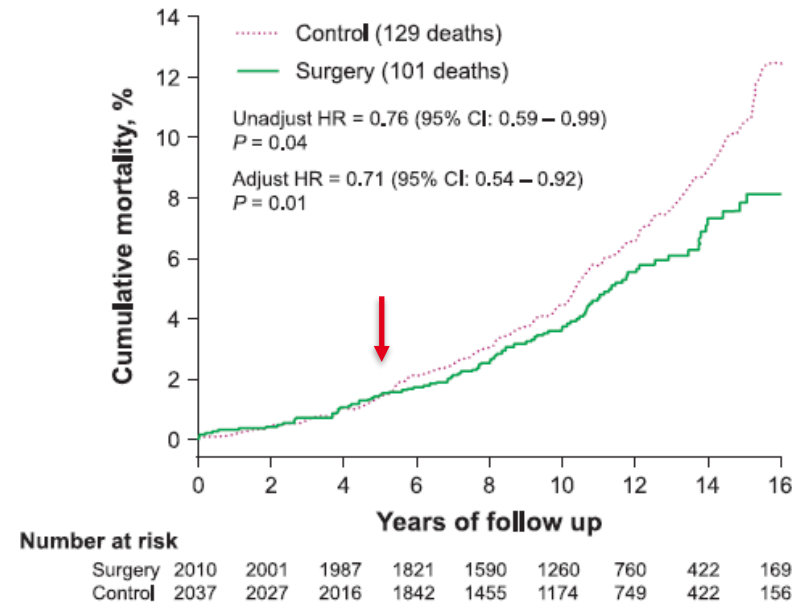


Fig. 2 Unadjusted cumulative mortality amongst patients in the control and the surgery groups during 16 years of follow-up in the Swedish Obese Subjects study. Unadjusted and adjusted hazard ratios (HRs) are shown.

Waarom bariatric?

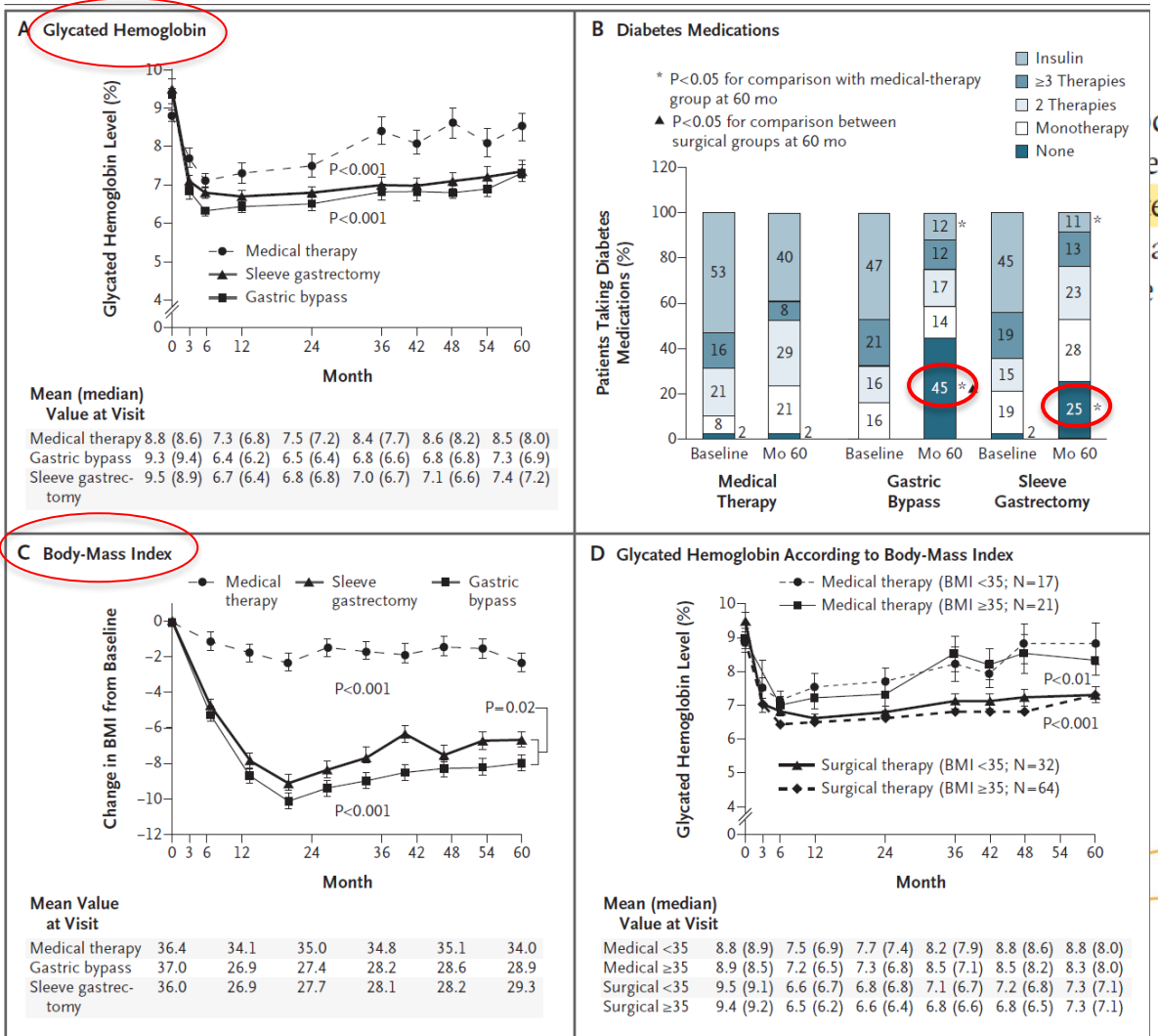
• Effect op diabetes type II

The NEW ENGLAND JOURNAL of MEDICINE

ORIGINAL ARTICLE

Bariatric Surgery versus Intensive Medical Therapy for Diabetes — 5-Year Outcomes

Philip R. Schauer, M.D., Deepak L. Bhatt, M.D., M.P.H., John P. Kirwan, Ph.D.,
Kathy Wolski, M.P.H., Ali Aminian, M.D., Stacy A. Brethauer, M.D.,
Sankar D. Navaneethan, M.D., M.P.H., Rishi P. Singh, M.D., Claire E. Pothier, M.P.H.,
Steven E. Nissen, M.D., and Sangeeta R. Kashyap, M.D.,
for the STAMPEDE Investigators*



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Waarom bariatric?

- Preventie van diabetes type II



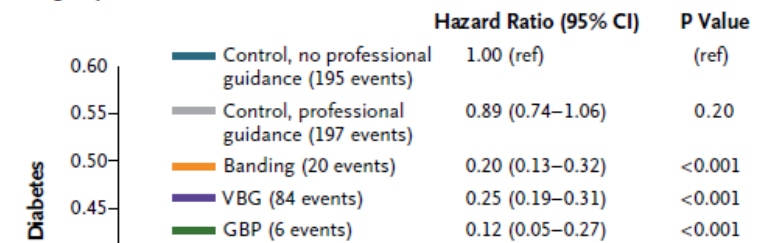
Bariatric Surgery and Prevention of Type 2 Diabetes in Swedish Obese Subjects

Lena M.S. Carlsson, M.D., Ph.D., Markku Peltonen, Ph.D., Sofie Ahlin, M.D., Åsa Anveden, M.D., Claude Bouchard, Ph.D., Björn Carlsson, M.D., Ph.D., Peter Jacobson, M.D., Ph.D., Hans Lönroth, M.D., Ph.D., Cristina Maglio, M.D., Ingmar Näslund, M.D., Ph.D., Carlo Pirazzi, M.D., Stefano Romeo, M.D., Ph.D., Kajsa Sjöholm, Ph.D., Elisabeth Sjöström, M.D., Hans Wedel, Ph.D., Per-Arne Svensson, Ph.D., and Lars Sjöström, M.D., Ph.D.

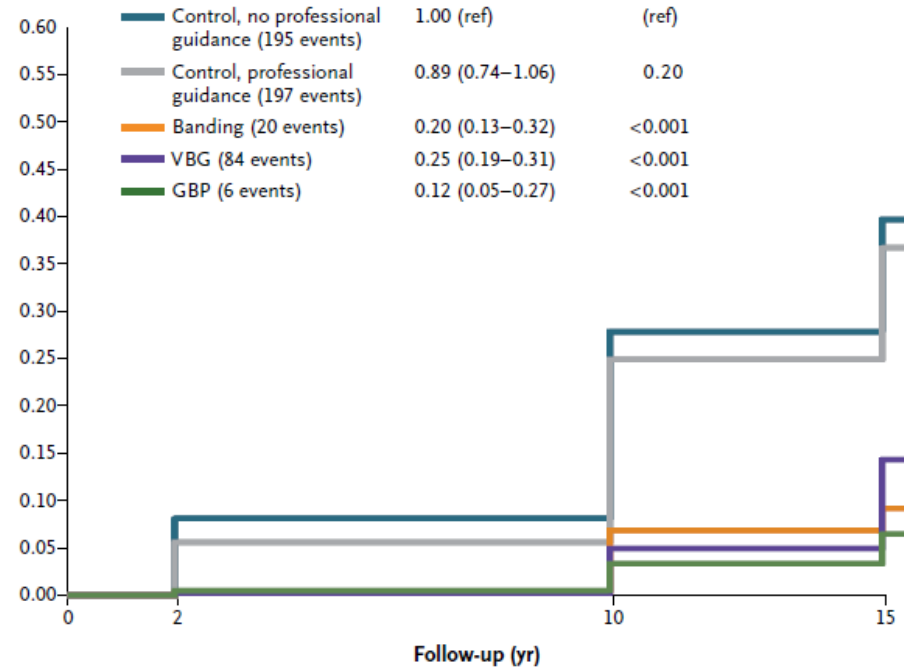
METHODS

In this analysis, we included 1658 patients who underwent bariatric surgery and 1771 obese matched controls (with matching performed on a group, rather than individual, level). None of the participants had diabetes at baseline. Patients in the bariatric-surgery cohort underwent banding (19%), vertical banded gastroplasty (69%), or gastric bypass (12%); nonrandomized, matched, prospective controls received usual care. Participants were 37 to 60 years of age, and the body-mass index (BMI; the weight in kilograms divided by the square of the height in meters) was 34 or more in men and 38 or more in women. This analysis focused on the rate of incident type 2 diabetes, which was a prespecified secondary end point in the main study. At the time of this analysis (January 1, 2012), participants had been followed for up to 15 years.

B Surgery and Control Subgroups



Cumulative Incidence of Type 2 Diabetes



No. at Risk

	0	2	10	15
Control, no professional guidance	871	691	489	207
Control, professional guidance	900	822	587	197
Banding	311	302	244	121
VBG	1140	1064	841	424
GBP	207	195	140	31

Waarom bariatric?

- Effect op cardiovasculaire events

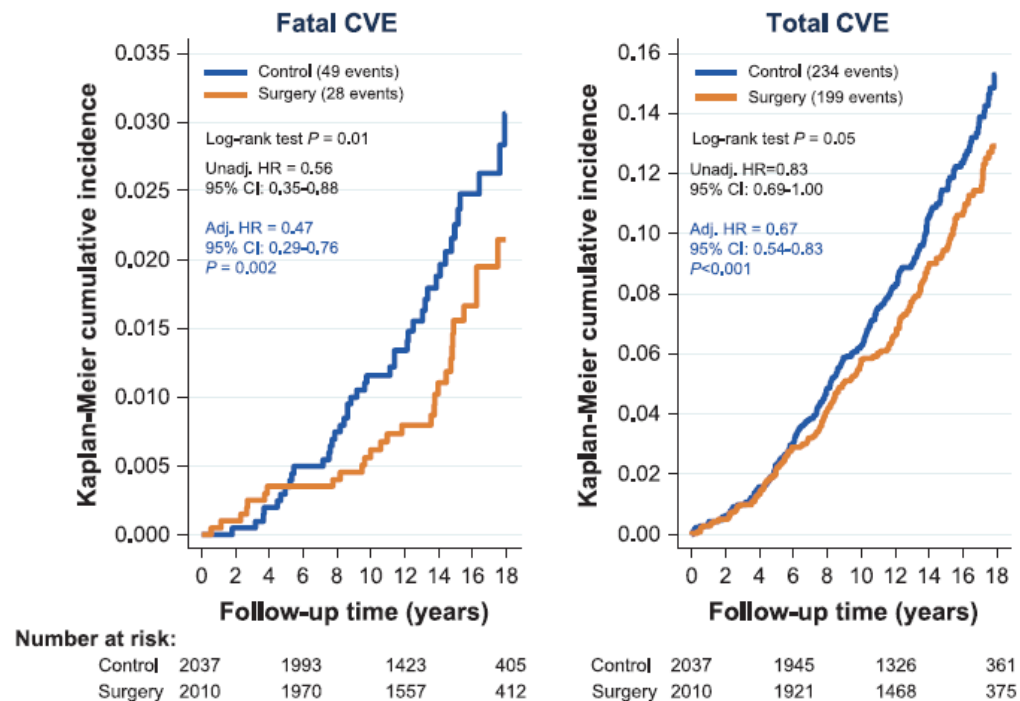


Fig. 5 Cumulative incidence of fatal and total cardiovascular events (myocardial infarction + stroke) in the control and surgery groups of the Swedish Obese Subjects study. Left panel: Fatal cardiovascular events (myocardial infarction + stroke) in control subjects and patients undergoing surgery during follow-up for up to 18 years. Right panel: Total cardiovascular events, i.e. fatal or nonfatal events, in control and surgery patients for up to 18 years. Calculations are based on data available on 1 July 2011. From Sjöström L et al., JAMA 2012 with permission [37].

Waarom bariatrie?

JAMA Surgery | Original Investigation

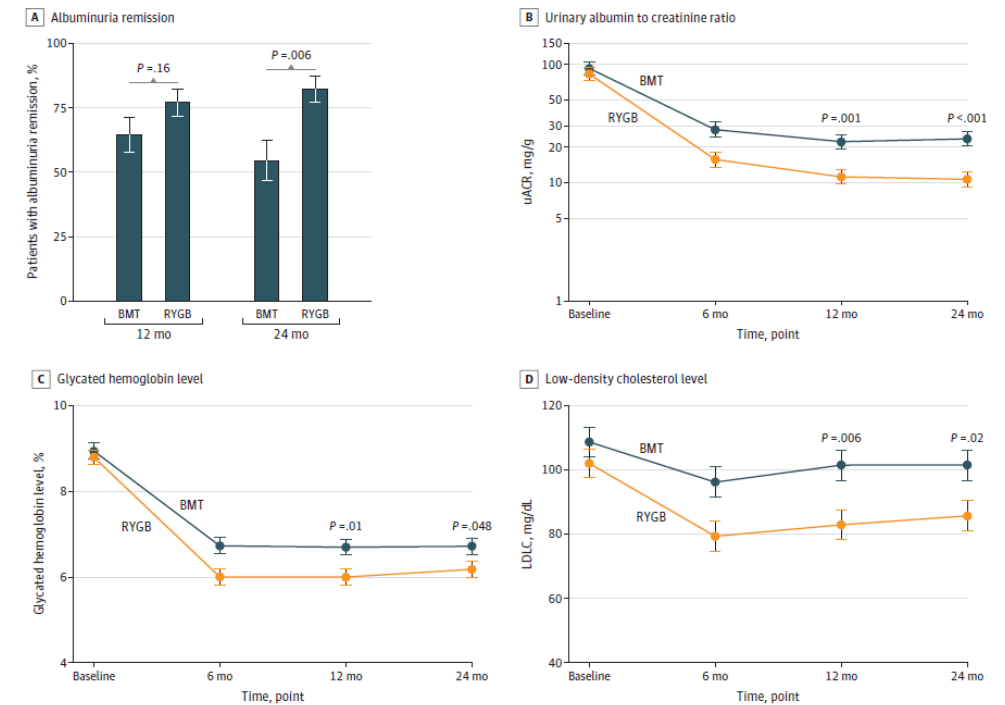
Effect of Gastric Bypass vs Best Medical Treatment on Early-Stage Chronic Kidney Disease in Patients With Type 2 Diabetes and Obesity

A Randomized Clinical Trial

RESULTS A total of 100 patients (mean [SD] age, 51.4 [7.6] years; 55 [55%] male) were randomized: 51 to RYGB and 49 to best medical care. Remission of albuminuria occurred in 55% of patients (95% CI, 39%-70%) after best medical treatment and 82% of patients (95% CI, 72%-93%) after RYGB ($P = .006$), resulting in CKD remission rates of 48% (95% CI, 32%-64%) after best medical treatment and 82% (95% CI, 72%-92%) after RYGB ($P = .002$). The geometric mean uACRs were 55% lower after RYGB (10.7 mg/g of creatinine) than after best medical treatment (23.6 mg/g of creatinine) ($P < .001$). No difference in the rate of serious adverse events was observed.

CONCLUSIONS AND RELEVANCE After 24 months, RYGB was more effective than best medical treatment for achieving remission of albuminuria and stage G1 to G3 and A2 to A3 CKD in patients with type 2 diabetes and obesity.

Figure 2. Albuminuria Remission Rates at 12 and 24 Months of Follow-up and Longitudinal Biochemical Measures of Urinary Albumin-Creatinine Ratio (uACR) and Metabolic Control



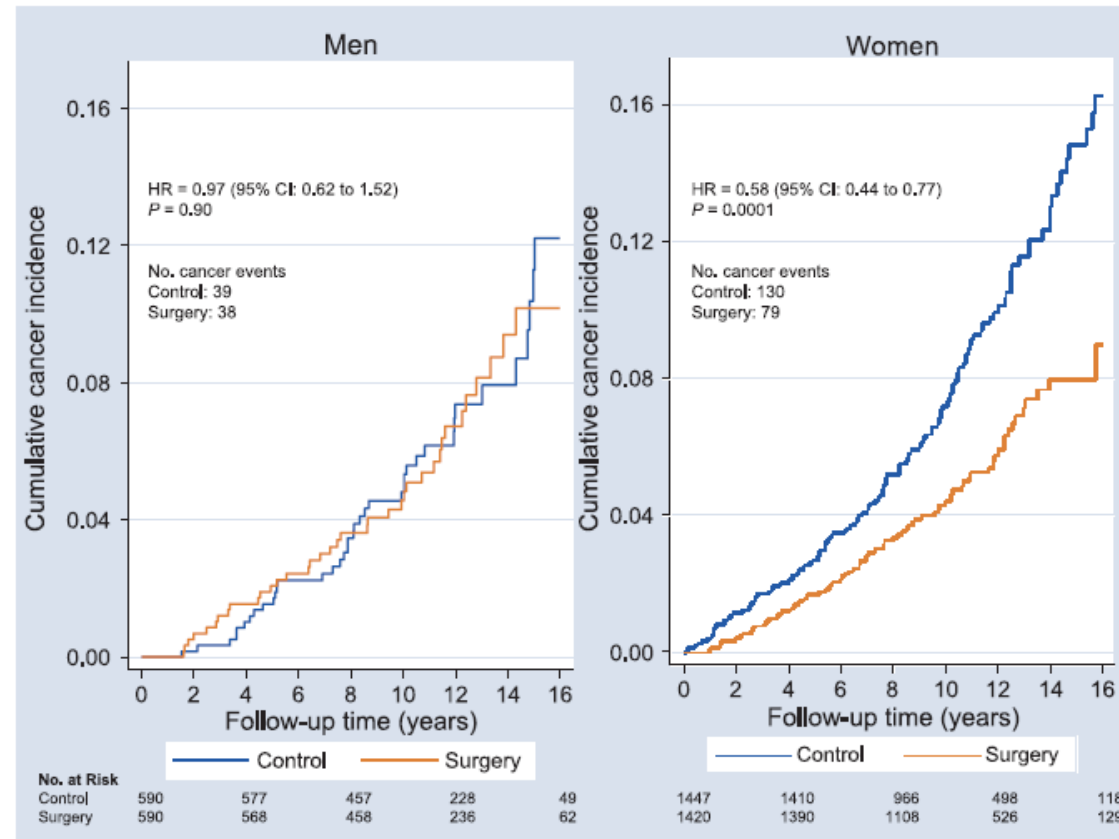
A, Rates of albuminuria remission (uACR <30 mg/g) at 12- and 24-month follow-up. B-D, Longitudinal trajectories of uACR (B), glycated hemoglobin (to convert to proportion of total hemoglobin, multiply by 0.01) (C), and low-density lipoprotein cholesterol (LDL-C) (to convert to millimoles per liter,

multiply by 0.0259) (D) from baseline to 24-month follow-up. Error bars indicated SEs. BMT indicates best medical treatment; RYGB, Roux-en-Y gastric bypass.

Waarom bariatric?

- Effect op maligniteit

Fig. 6 Unadjusted cumulative fatal plus nonfatal cancer incidence by gender during 16 years of follow-up in surgically treated obese individuals and in obese control individuals in the Swedish Obese Subjects study. Calculations are based on data available on 31 December 2005. From Sjöström L et al., *Lancet Oncol* 2009 with permission [36].



Voorwaarden

- Ten minste 18 jaar
- BMI \geq 40
- Vanaf BMI \geq 35 in combinatie met:
 - *Obstructief slaapapnoe syndroom (bevestigd op polysomnografie)*
 - *Hypertensie (>140/90 mmHg) niet onder controle met 3 antihypertensiva gedurende 1 jaar*
 - *Diabetes type II*
 - *Heringreep na complicatie of onvoldoende resultaat vorige bariatrische ingreep*
- Screening door endocrinoloog om andere onderliggende oorzaken van obesitas uit te sluiten
- Minstens 1 jaar geprobeerd om op andere, niet-chirurgische wijze, te vermageren, zonder blijvend resultaat

Chirurgie

- (Relatieve) Contra-indicaties:

- Overdreven alcohol- en/of druggebruik
- Patiënt met inadequate cardiopulmonaire reserve?
- Patiënt met sterk verminderde intellectuele capaciteiten?
- Bepaalde psychiatrische afwijkingen
- Patiënt met bepaalde eetstoornissen
- Te lage BMI
- Zwangerschap op ogenblik van de ingreep of zwangerschapswens het jaar volgend op de ingreep



MDO

Chirurgie: Pre-operatieve evaluatie

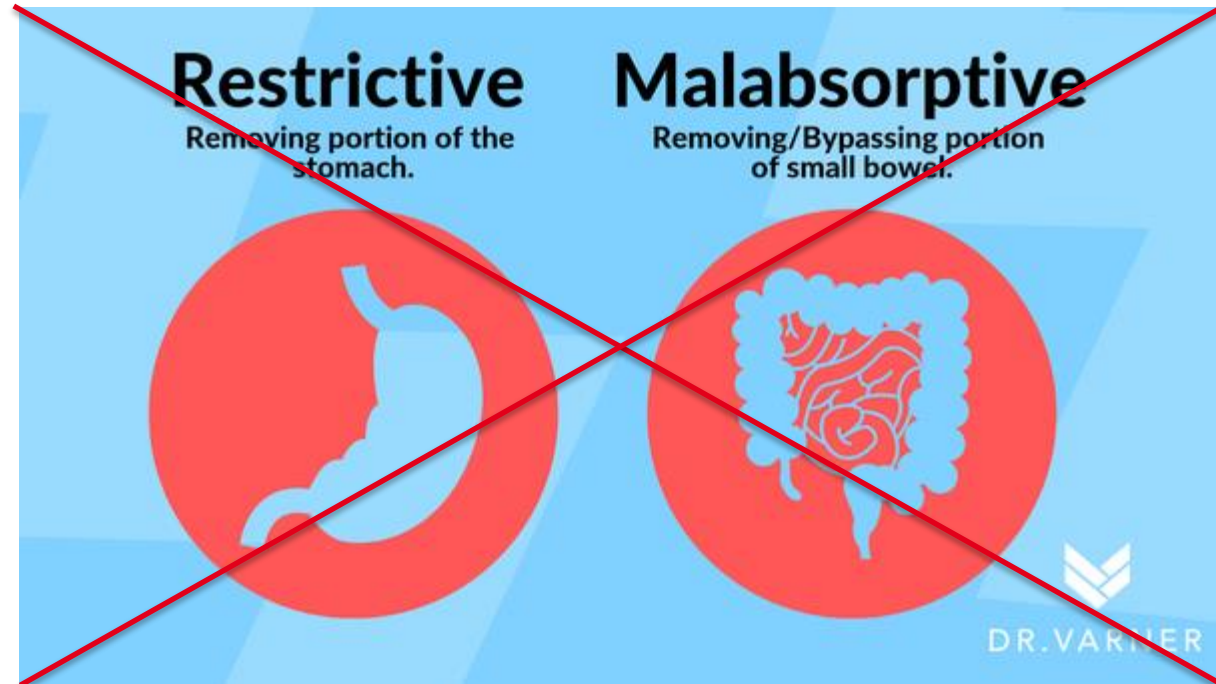


- **Multidisciplinaire evaluatie**
 - Huisarts!
 - Diëtiste
 - Psycholoog
 - Endocrinoloog
 - Chirurg
- **Pre-operatieve onderzoeken**
 - Gastroscoopie + HP screening
 - Echo abdomen
 - (Cardiopulmonaire evaluatie)
 - Biochemische evaluatie: pre-operatieve deficiënties in 57% van de patiënten

*'Healthcare professionals should be aware that **the morbidly obese patient** is by definition **not a well-nourished patient.**'*

Werkingsmechanisme bariatrische chirurgie

→ Klassieke indeling



Werkingsmechanisme bariatrische chirurgie

- **Malabsorptie**

- slechts beperkt effect op zich (slechts 6-11% minder absorptie van koolhydraten)

- **Calorierestrictie**

- vooral effect op korte termijn
- beperktere rol in lange termijn gewicht/glycemie controle

- **Energieverbruik: ↓ of ↑**

Mechanism of action	Procedure				
	RYGB	LSG	LAGB	BPD	BPD-DS
Malabsorption	+/-	-	-	+	+
Caloric restriction	+	+	+/-	+	+
Energy expenditure	+/-	-	-	+	+
Δ(delta)-eating behavior	+	+/-	-	?	?
Hormonal	+	+	-	+	+
Vagus nerve	?/-	?/-	?/-	?/-	?/-
Bile salts	+	+	+/-	+	+
Adipose tissue	+	+ ^a	-	+	+
Microbiota	+/-	?	-	+/-	+/-
β(beta)-cell function	+/-	?	-	+/-	+/-
Insulin sensitivity	+/-	+	+ ^b	++	++

^bOnly related to weight loss

Werkingsmechanisme bariatrische chirurgie

- **Verandering in eetgedrag: ↓ zin in vet (verandering in neuronale respons en/of smaak)**

Selective Reduction in Neural Responses to High Calorie Foods Following Gastric Bypass Surgery

Christopher N. Ochner, PhD^{*,†}, Yolande Kwok, MHSA^{*}, Eva Conceição, MS^{*}, Spiro P. Pantazatos, MA^{‡,§}, Lauren M. Puma, MS^{*}, Susan Carnell, PhD^{*}, Julio Teixeira, MD[¶], Joy Hirsch, PhD[§], and Allan Geliebter, PhD^{*,†}

^{*} New York Obesity Research Center, St. Luke's Roosevelt Hospital, New York

+ effect van dumping op voedselaversie

... maladaptief eetgedrag → weight regain (volume naar sweet-eater)

High-ED > Low-ED (Pre > 1-month Post)

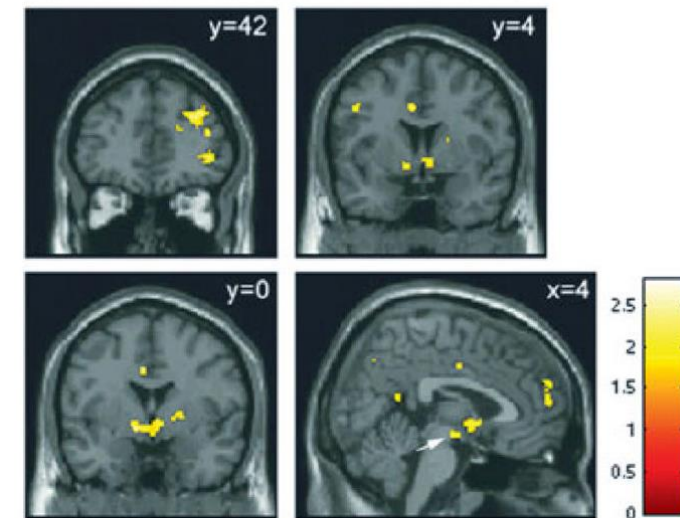


FIGURE 2. Coronal and sagittal slices depicting areas in which the difference between conjoint activation in response to high- and low-ED foods (high-ED–low-ED contrast) was greater presurgery as compared to postsurgery. Montreal Neurological Institute coordinates are given in upper right corner of each panel. The color bar represents *t* values. The largest

Werkingsmechanisme bariatrische chirurgie

- **Enterohormonen:**

- GLP-1: insulintrop, verhoogt insulinesecretie na orale intake (incretine effect), verminderde motiliteit ('ileal brake'), verzadiging
 - verklaart vroeg effect bariatrie op glycemisch profiel
- GIP: insulintrop
- PYY: vermindert motiliteit, verminderd hongergevoel
- Ghreline: Fundus + + +, orexigeen hormoon

	Origin	Satiety	Glycemic control	GI motility	RYGB	LSG	LAGB	BPD	BPD-DS
GLP-1	L cells	↑	↑	↓	↑	↑	No Δ(delta)	↑	↑
GIP	K cells	No Δ(delta)	↑	No Δ(delta)	↓	Unknown	No Δ(delta)	↓	↓
PYY	L cells	↑	↑ or no Δ(delta)	↓	↑	↑ or no Δ(delta)	No Δ(delta)	↑	↑
Oxyntomodulin	L cells	↑	↑	↓	↑	↑	No Δ(delta)	↑	↑
CCK	I cells	↑	No Δ	↑	?	↑ or no Δ(delta)	Unknown	Unknown	Unknown
Ghrelin	Oxyntic	↓	No Δ	No Δ	↓	↓↓	No Δ(delta)	No Δ(delta)	↓↓

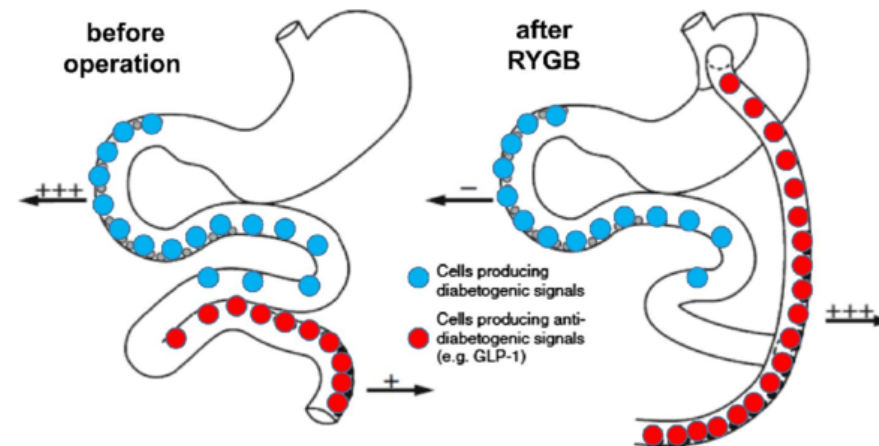
Werkingsmechanisme bariatrische chirurgie: effect op diabetes

Foregut hypothesis

- Uitsluiten duodenum
 - inhibitie van ongekend 'anti-incretine'
 - Δ SGLT1 glucose transporter morfologie en functie: verminderde glucose absorptie

Hindgut hypothesis

- Aanwezigheid van onverteerd voedsel in distale dunne darm:
 - \uparrow secretie 'incretines' (GLP-1/GIP)



Werkingsmechanisme bariatrische chirurgie

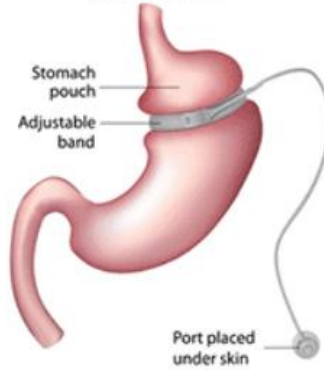
- **N. Vagus**
 - Rol onduidelijk. Effect op ghreline secretie.
- **Galzouten**
 - Meer geconcentreerd na RYGB (Δ enterohepatische cyclus)
 - \uparrow Secreties incretines via L cellen
- **Vetweefsel**
 - Leptine
 - Adiponectine
- **Microbioom**
 - Obesitas: Firmicutes > Bacteroidetes = verhoogde efficiëntie van energie opname
 - Bariatrie: Δ microbioom, \downarrow Firmicutes

Mechanism of action	Procedure				
	RYGB	LSG	LAGB	BPD	BPD-DS
Malabsorption	+/-	-	-	+	+
Caloric restriction	+	+	+/-	+	+
Energy expenditure	+/-	-	-	+	+
Δ (delta)-eating behavior	+	+/-	-	?	?
Hormonal	+	+	-	+	+
Vagus nerve	?/-	?/-	?/-	?/-	?/-
Bile salts	+	+	+/-	+	+
Adipose tissue	+	+ ^a	-	+	+
Microbiota	+/-	?	-	+/-	+/-
β (beta)-cell function	+/-	?	-	+/-	+/-
Insulin sensitivity	+/-	+	+ ^b	++	++

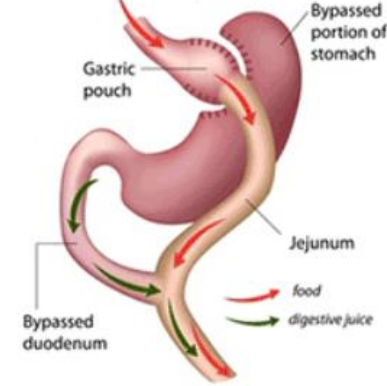
^bOnly related to weight loss

Types chirurgie

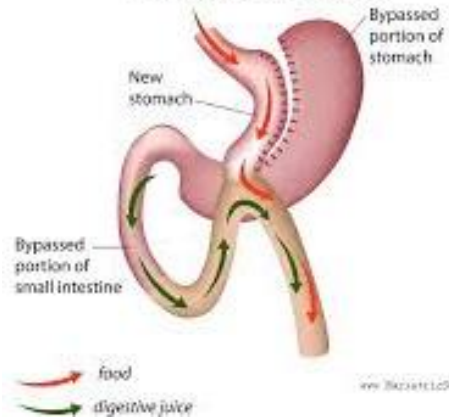
Adjustable Gastric Band (Lap Band)



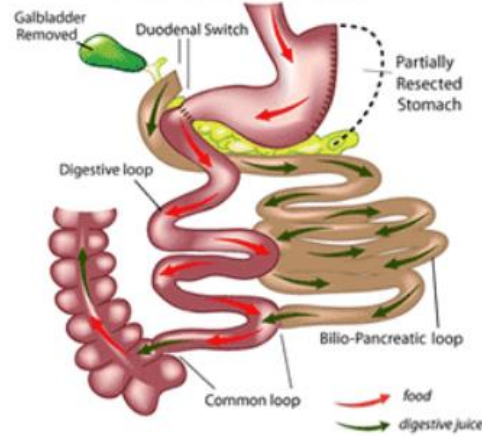
Roux-en-Y Gastric Bypass (RNY)



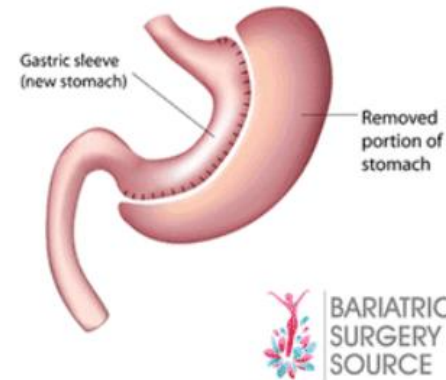
Mini-Gastric Bypass



Duodenal Switch (DS)

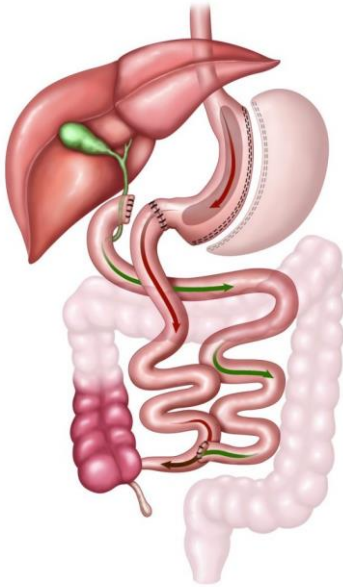


Vertical Sleeve Gastrectomy (Gastric Sleeve)

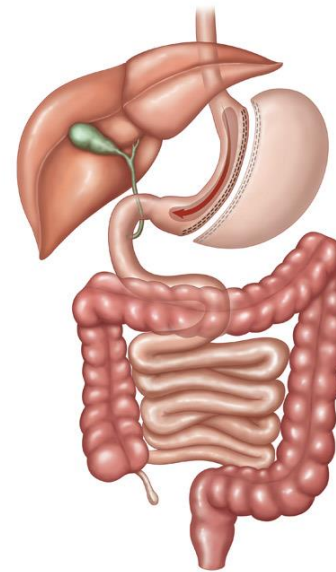


Types chirurgie

- Sleeve gastrectomie (LSG)
 - Ontstaan als 1^{ste} stap in gefaseerde Bilio-Pancreatisch Diversie + Duodenal Switch.

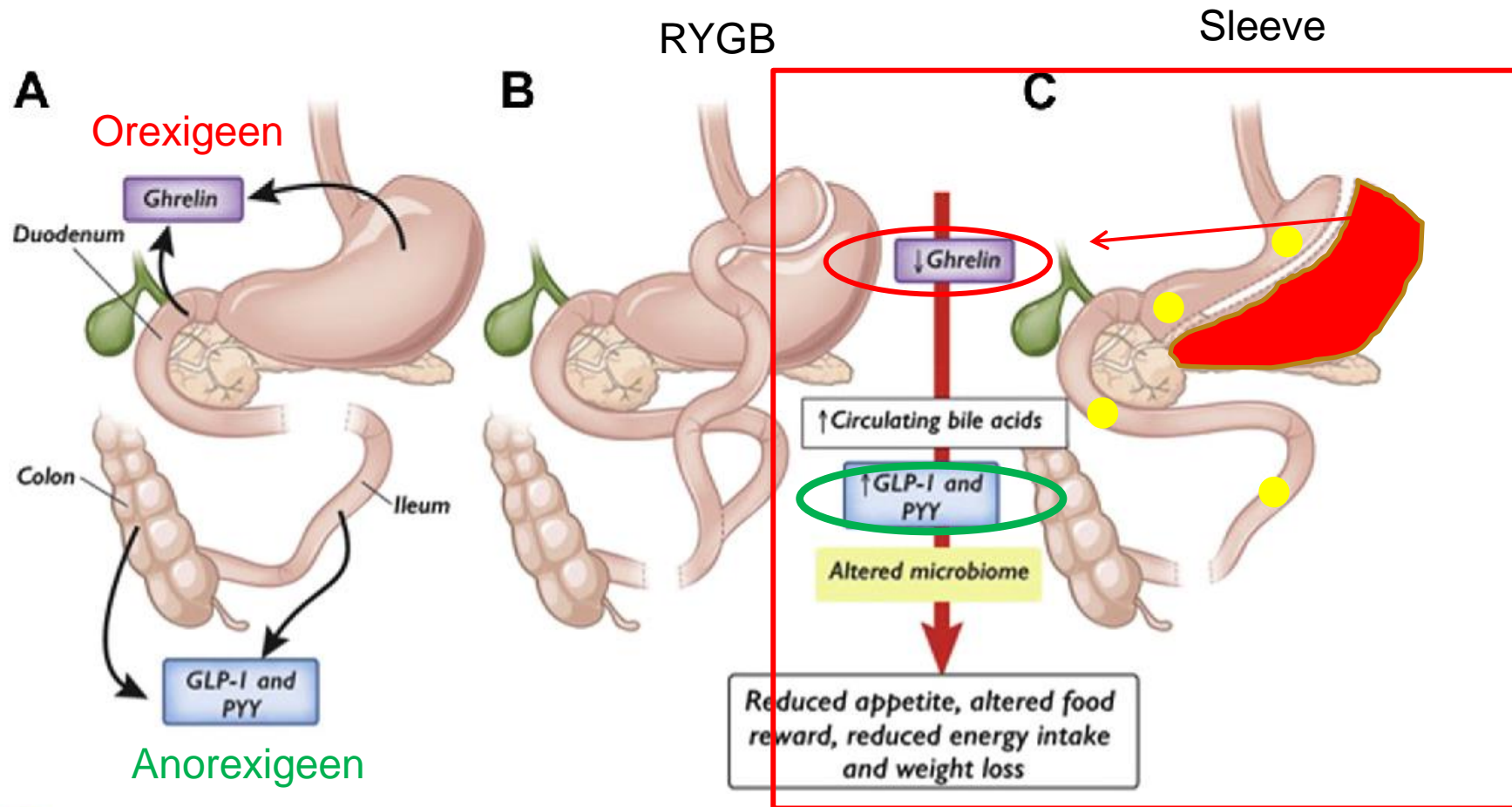


BPD-DS



Sleeve
gastrectomie

Sleeve gastrectomy



Sleeve gastrectomie

- Lagere morbiditeit/mortaliteit ivm complexere bariatrische procedures?
- Technisch eenvoudiger
- Geen intestinale chirurgie (interne herniatioe, dunnedarmobstructie...)
- *'Vergevingsgezind'*
- Minder postoperatieve micronutriëntdeficiënties

Sleeve gastrectomie

Fewer Nutrient Deficiencies After Laparoscopic Sleeve Gastrectomy (LSG) than After Laparoscopic Roux-Y-Gastric Bypass (LRYGB)—a Prospective Study

Simone Gehrler • Beatrice Kern • Thomas Peters •
Caroline Christoffel-Courtin • Ralph Peterli

Table 4 Preoperative and postoperative deficiencies

	Prevalence preop. in percent	LSG (group 1) incidence postop. in percent (n=50)	LRYGB (group 2) incidence postop. in percent (n=86)	P value
Vitamin B ₁	0	0	0	
Vitamin B ₆	0	0	0	
Vitamin B ₁₂	3	18	58	<0.0001
Calcium	0	0	0	
Vitamin D	23	32	52	0.02
Secondary hyperparathyroidism	8	14	33	0.02
Folate	3	22	12	(0.11)
Iron	3	18	28	n.s
Zinc	14	34	37	n.s
Protein (mild)	6	4	8	n.s

2 jaar follow-up



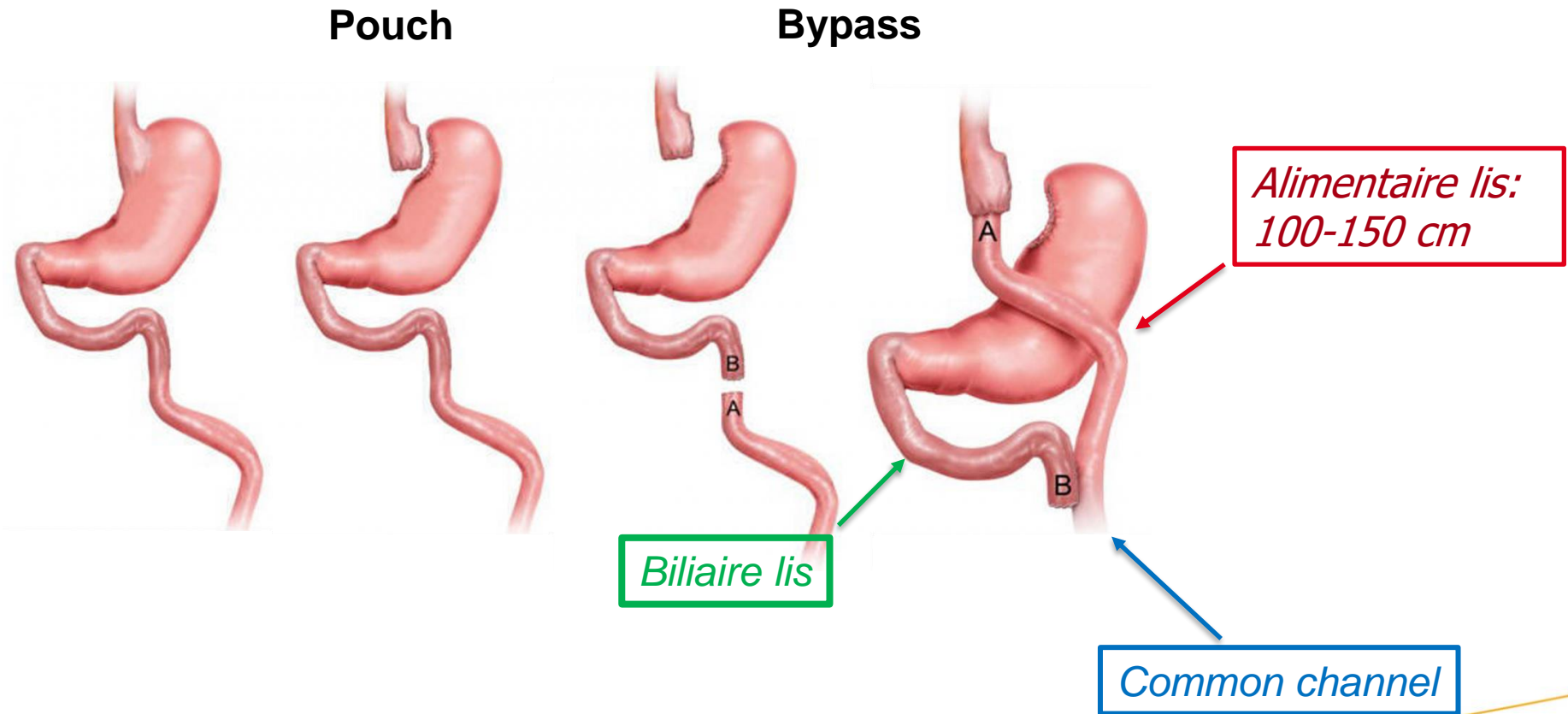
Sleeve gastrectomie

- Resultaten

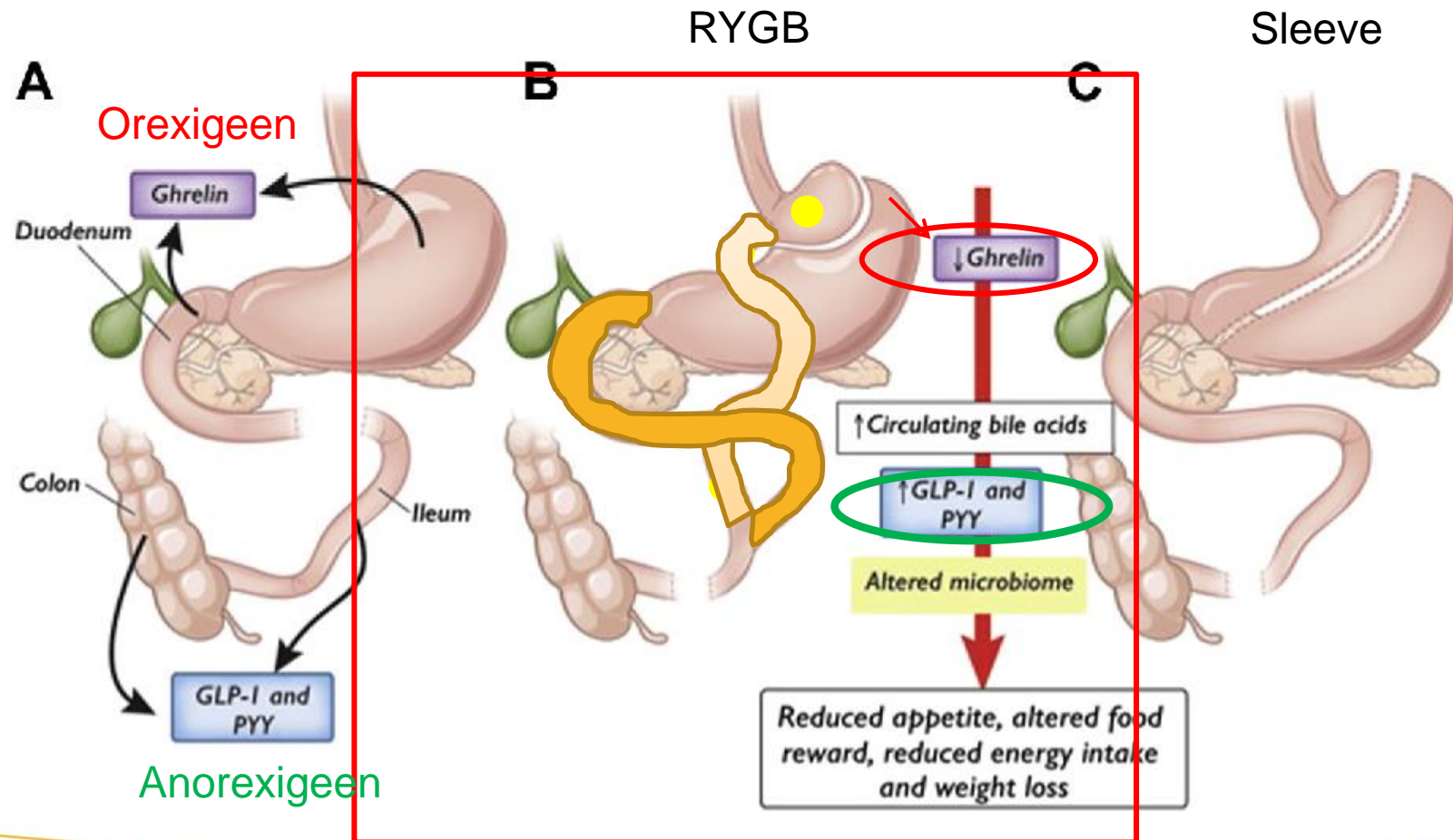
- **Excess Weight Loss** op 5 jaar: 52.3% - 63%
- **DM type II**: resolutie op 5 jaar: 66%
- **hypertensie**: resolutie op 5 jaar: 50%

Types chirurgie

- Roux-en-Y Gastric Bypass (LRYGB)



Roux-en-Y gastric bypass



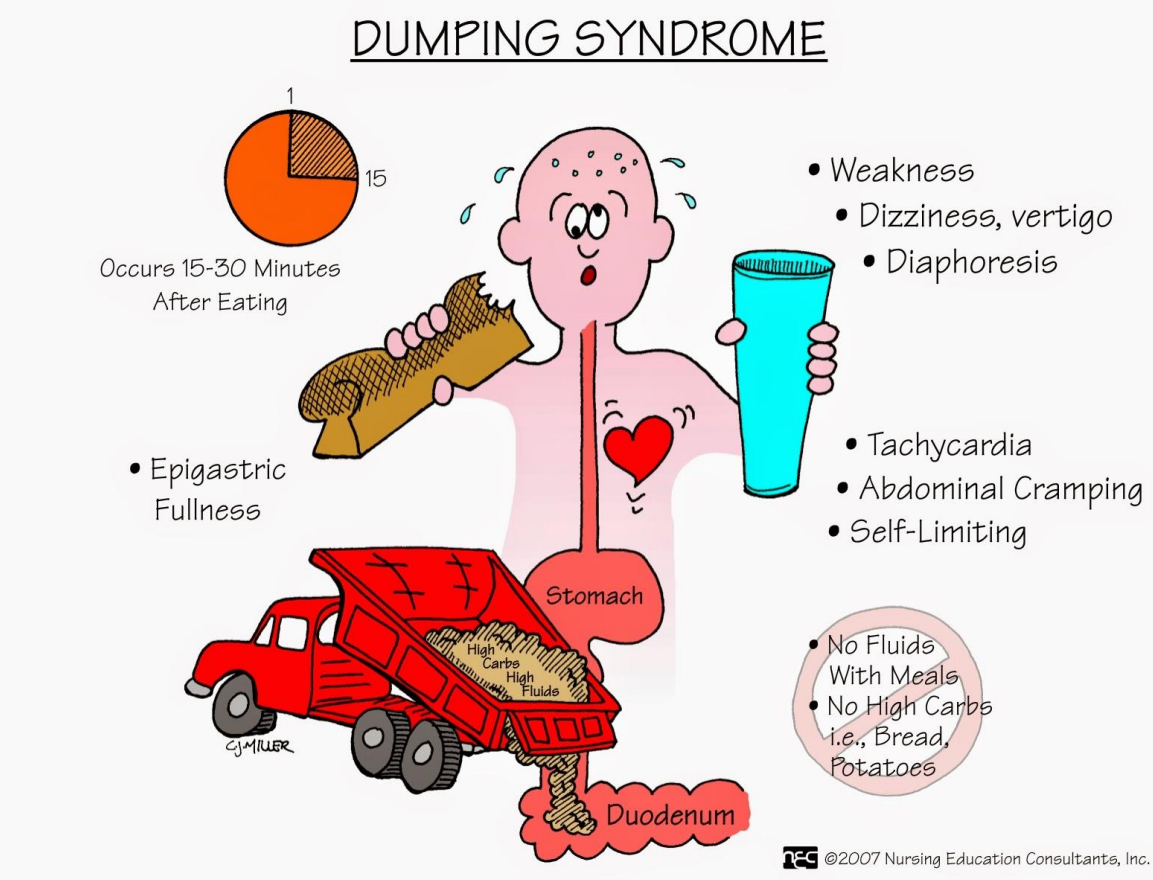
Roux-en-Y gastric bypass

- Resultaten

- **Excess Weight Loss:** 52 – 63 %
- **DM type II: 2 jaar FU:** 80 % resolutie
- **Hypertensie:** 75 % resolutie
- **Dyslipidemie:** 94 % resolutie
- **OSAS:** 87% resolutie

Roux-en-Y gastric bypass

DUMPING SYNDROME



Occurs 15-30 Minutes After Eating

1
15

- Epigastric Fullness
- Weakness
- Dizziness, vertigo
- Diaphoresis
- Tachycardia
- Abdominal Cramping
- Self-Limiting

Stomach

High Carbs
High Fluids

Duodenum

No Fluids With Meals
No High Carbs
i.e., Bread, Potatoes

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Roux-en-Y gastric bypass

Table 15.1 Long-term postoperative BMI

Investigator	Patients (n)	Follow-up (years)	Patients eligible for follow-up (n)	Patients at follow-up, n (%)	% EWL	Postoperative BMI (kg/m ²)
Jones [8]	352	10	71	36 (51)	62	30
Pories et al. [9]	608	10	NR	158 (NR)	55	35
Sugerman et al. [10]	1025	10–12	361	135 (37)	52	36
Christou et al. [11]	272	12	272	161 (59)	68	38
Higa et al. [12]	242	10	242	65 (27)	57	33
Himpens et al. [13]	126	9	126	77 (61)	63	30

Table 15.2 Postoperative comorbid conditions for patients in Higa et al. study [12]

Outcomes of comorbid conditions for 242 study patients and 51 patients evaluated during postoperative year 10

Comorbid condition	Patients (n)	% of 242	242 study patients		51 patients with 10-year follow-up	
			Follow-up (%)	Resolved or improved (%)	Follow-up (%)	Resolved or improved (%)
Osteoarthritis	110	45	35	84	100	78
Diabetes	45	19	27	83	75	67
Dyslipidemia	6	2	100	67	100	80
Hypertension	108	45	36	87	100	86
Infertility	5	2	40	50	100	100
Obstructive sleep apnea	45	19	47	76	95	79
Asthma	23	10	30	100	100	100
Gastroesophageal reflux disease	121	50	36	89	94	90
Urinary stress incontinence	35	14	46	69	92	55
Varicose veins	21	9	29	100	63	100

Sleeve of bypass?

- Leeftijd?
- BMI?
- GERD?
- Volume vs. Sweet eater?
- Zwangerschapswens?
- Te verwachten compliantie?
- Metabool profiel?
- Co-morbiditeit? Vb: Crohn?
- Alcohol?
-

Sleeve or bypass?

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ORIGINAL CONTRIBUTIONS

Gastric Bypass and Sleeve Gastrectomy for Type 2 Diabetes: A Systematic Review and Meta-analysis of Outcomes

Shelley Yip • Lindsay D. Plank • Rinki Murphy

**Percentage of patients with diabetes remission after GBP and SG
(by criteria HbA1c <6.5%)**

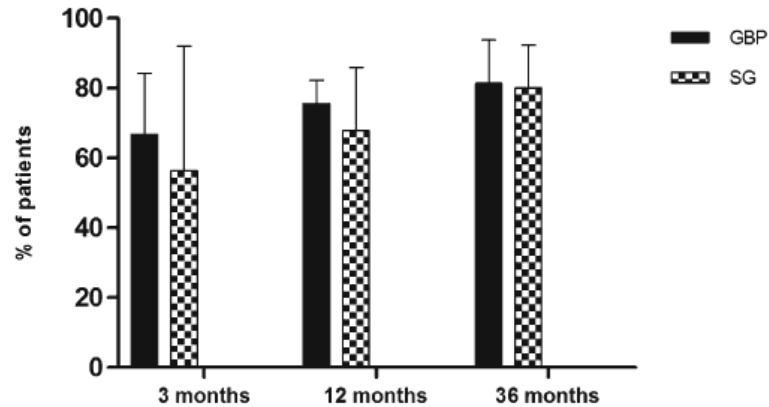


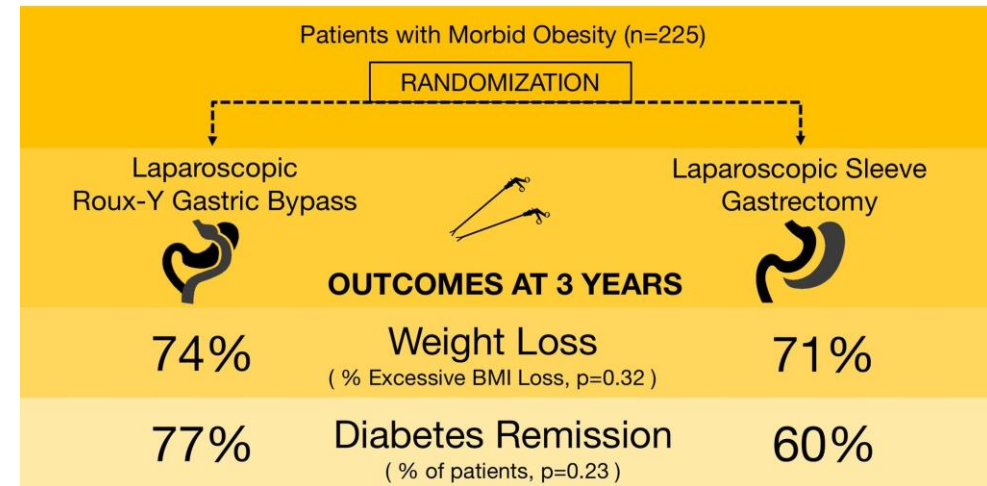
Fig. 3 Proportion of patients with T2D remission after GBP and SG by criteria of HbA_{1c} at <6.5% at 3, 12, and 36 months follow-up after surgery

Conclusions

This systematic review suggests both SG and GBP are equally effective in causing T2D remission and weight loss, at least as long as 3 years of follow-up. Further randomised studies comparing SG and GBP reporting long-term data using ADA criteria to define T2D remission with adequate follow-up, using standardised reporting of weight change are required to determine which surgical procedure is better for patients with T2D in the long term.



RCT: Laparoscopic Roux-Y Gastric Bypass vs. Sleeve Gastrectomy (SM-BOSS Trial)



Peterli et al. *Ann Surg.* July 2016.

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Vroeg postoperatief

- Parameters: tachycardie!
- Biochemie
- ± drain?
- ± RX SMD controle?
- Diëtistisch advies
- 2-3 d hospitalisatie

Postoperatieve opvolging

- Controle consultatie (DIT/PSY/CHIR/END) op 1, 3, 6, 12 maanden en nadien jaarlijks (+ biochemiecontrole)
- Huisarts
- ± cardioloog, pneumoloog, ... ifv co-morbiditeiten (DM, OSAS,)

→ Ervaring leert: loss to follow up = meer risico op weight regain, maladaptief eetpatroon complicaties etc....

→ Cfr. Oncologische follow up