

Bariatrische en metabole chirurgie

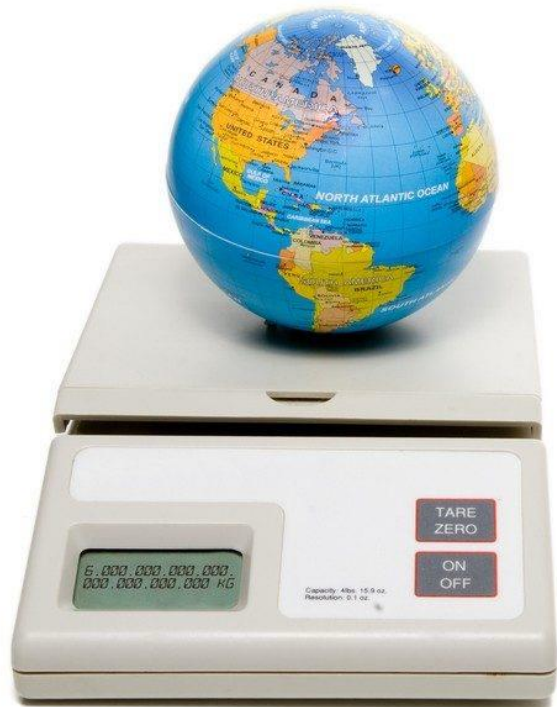
Webinar Obesitas en Bariatrie
27 november 2020

Dr. W.A. den Hengst

Disclosure

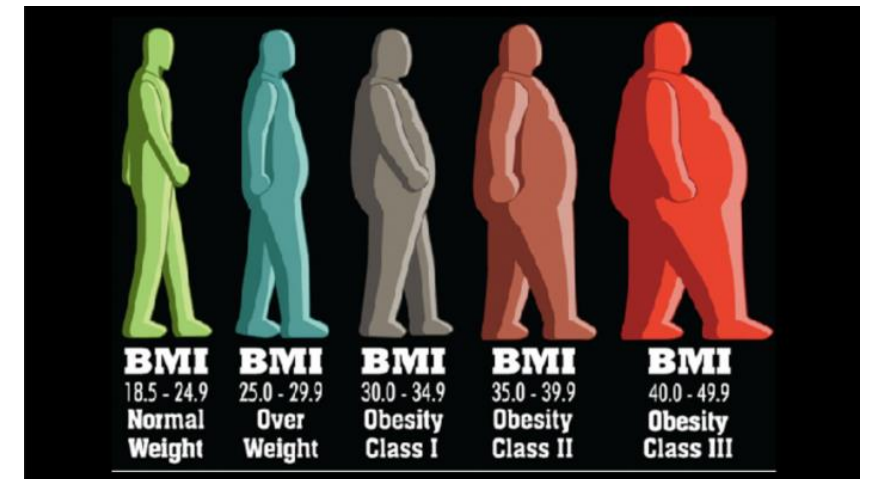
Geen

Obesitas, hoe zat het ook al weer?



Body Mass Index (BMI) = kg/m^2

- 19 - 25 normaal gewicht
- 25 - 30 overgewicht
- 30 - 35 obesitas
- 35 - 40 ernstige obesitas
- 40+ morbide obesitas



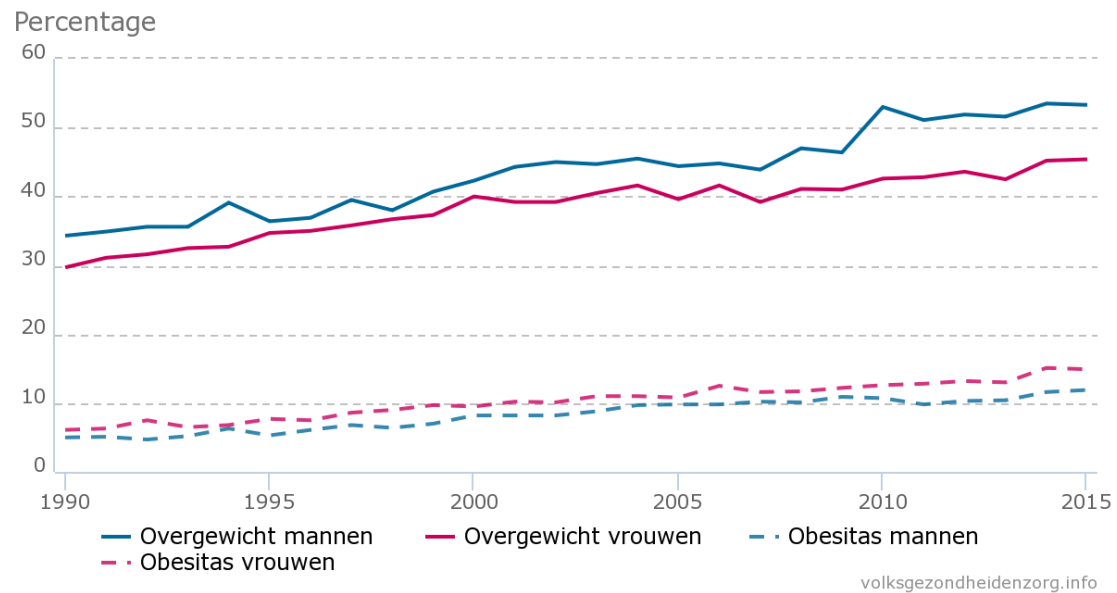
Kliniek tegen overgewicht

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Obesitas

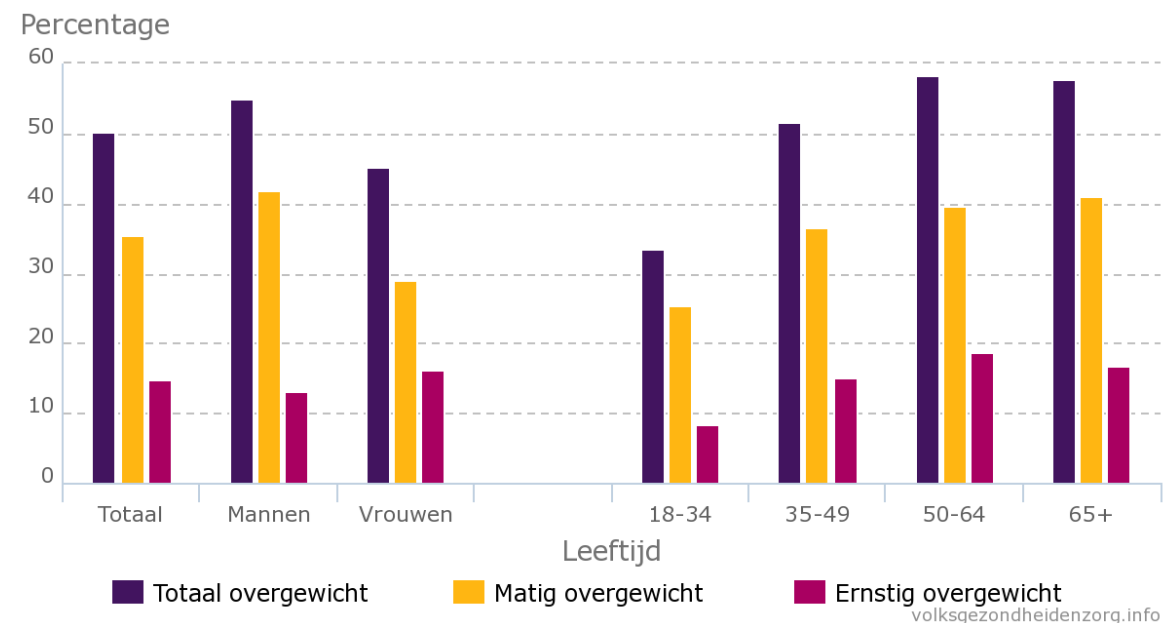
Volwassenen met overgewicht en obesitas, 1990-2015

18 jaar en ouder

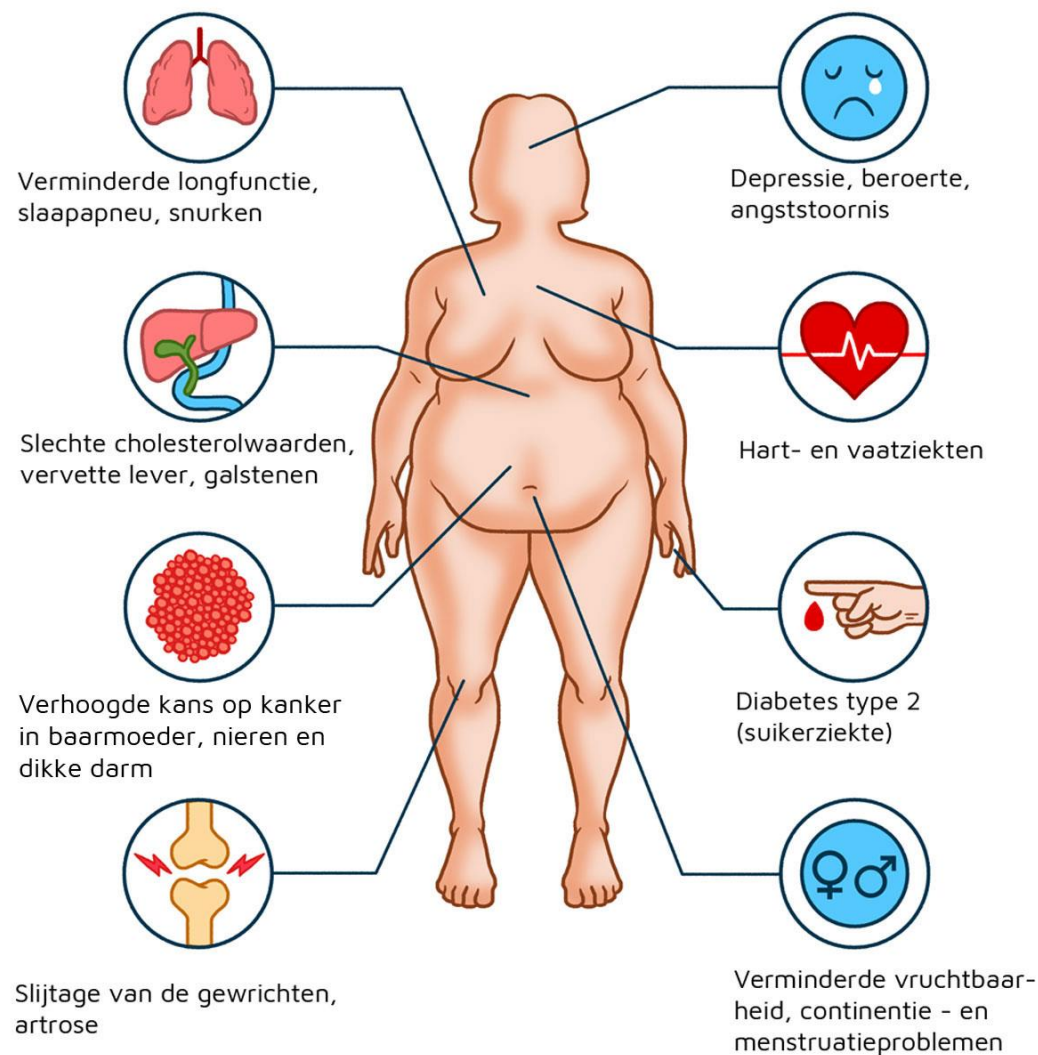


Volwassenen met overgewicht en obesitas 2019

18 jaar en ouder



Co-morbiditeiten



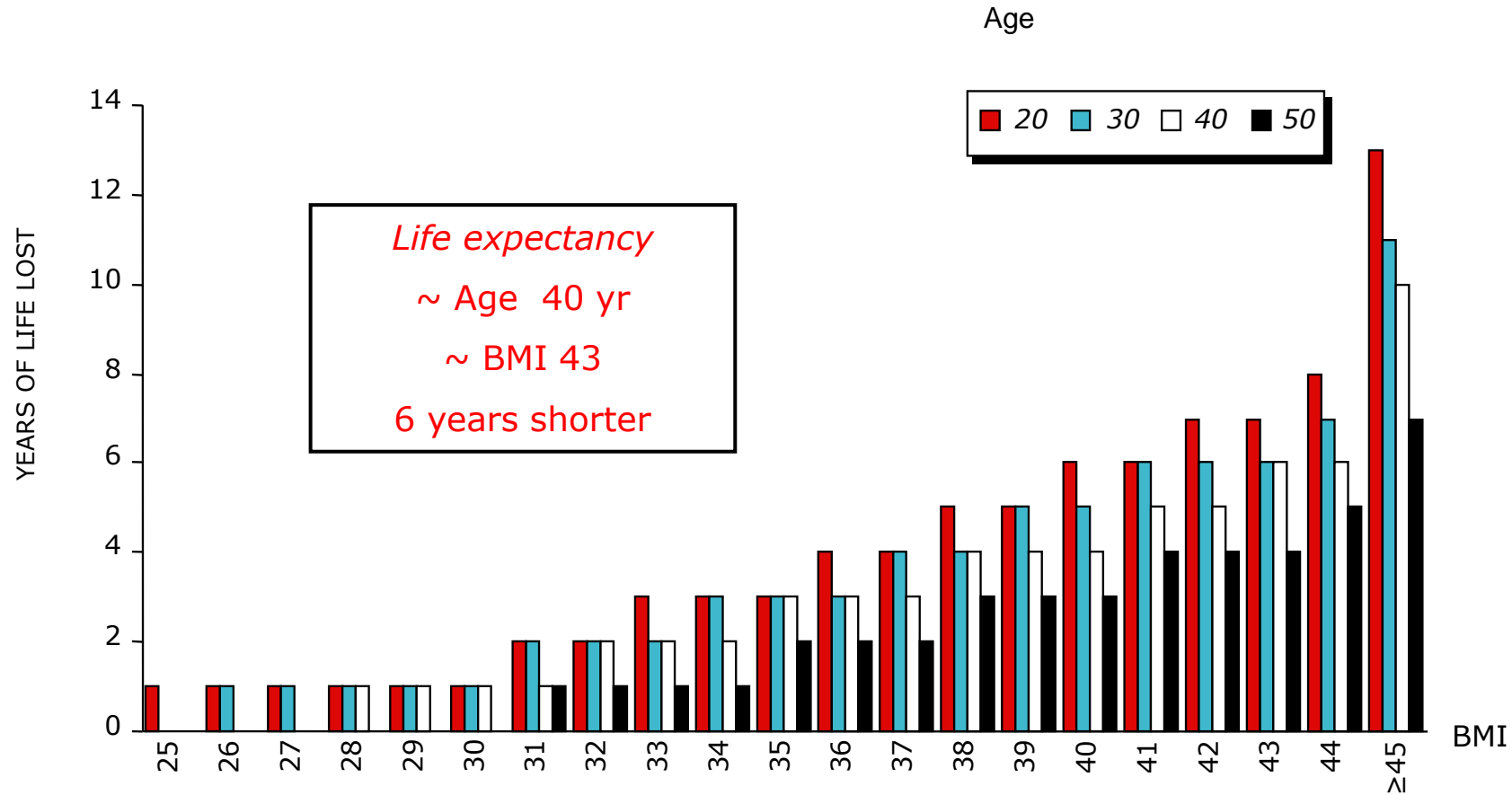
Verhoogde kans op parodontitis:

- Slechtere mondhygiëne
- Verhoogde systemische inflammatie
- Andere bacteriële mondflora (multifactorieel)
- GERD bij obesitas

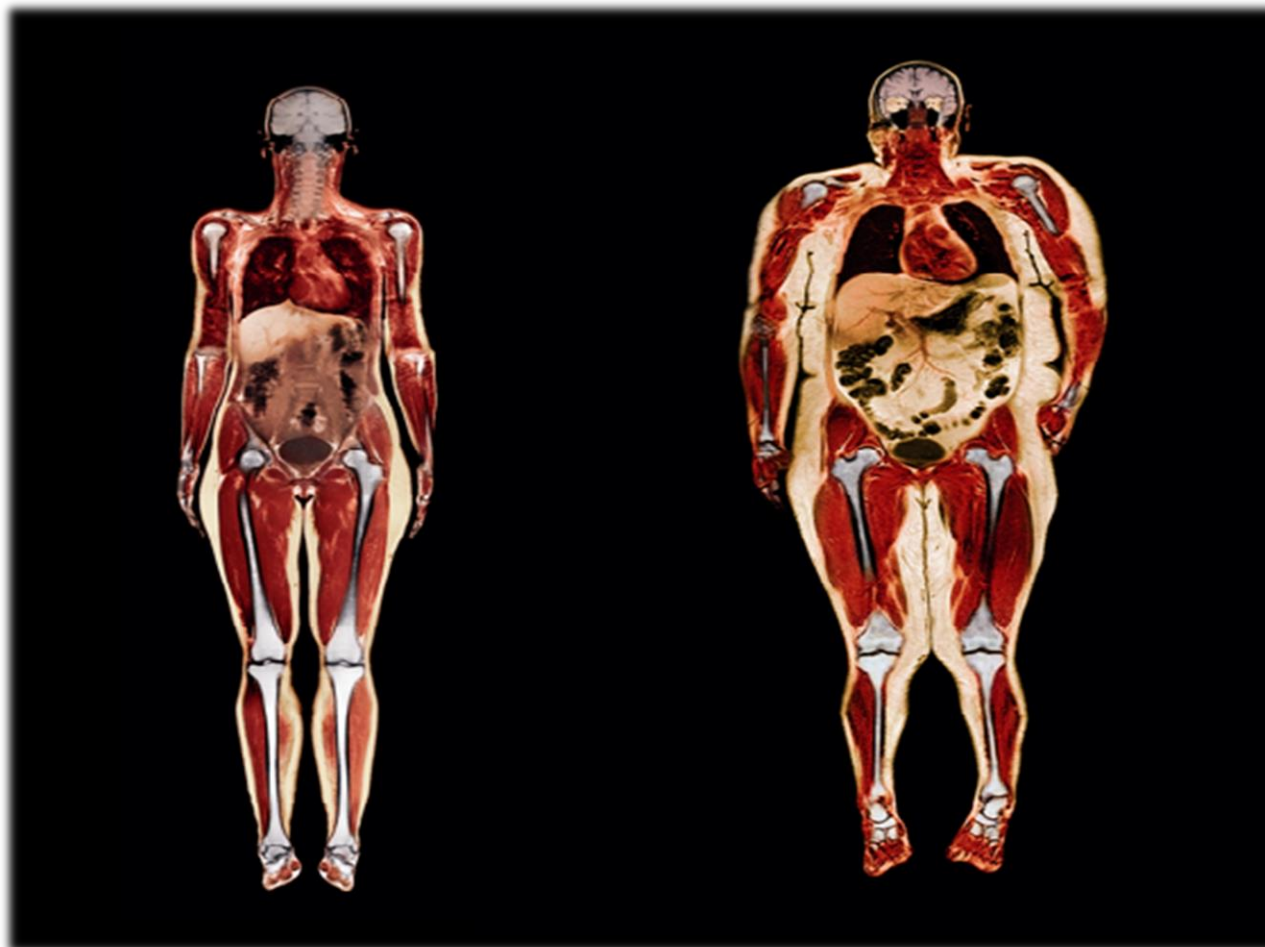
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Levensverwachting



Years of life lost due to obesity. JAMA 2003;289:187.



“Comparing apples with pears....”



Metabolic syndrome
(Syndrome X)

- Central obesity
- High blood pressure
- High triglycerides
- Low HDL-cholesterol
- Insulin resistance



1 in 3 Americans Have This Apple Shaped Body Leading To Risk Of Prediabetes, and Heart Disease! Weight MD Can Help Reverse It!





Balans tussen intake en verbruik



Hoe kunnen we zwaarlijvigheid behandelen?

Therapeutische opties

Conservatief:

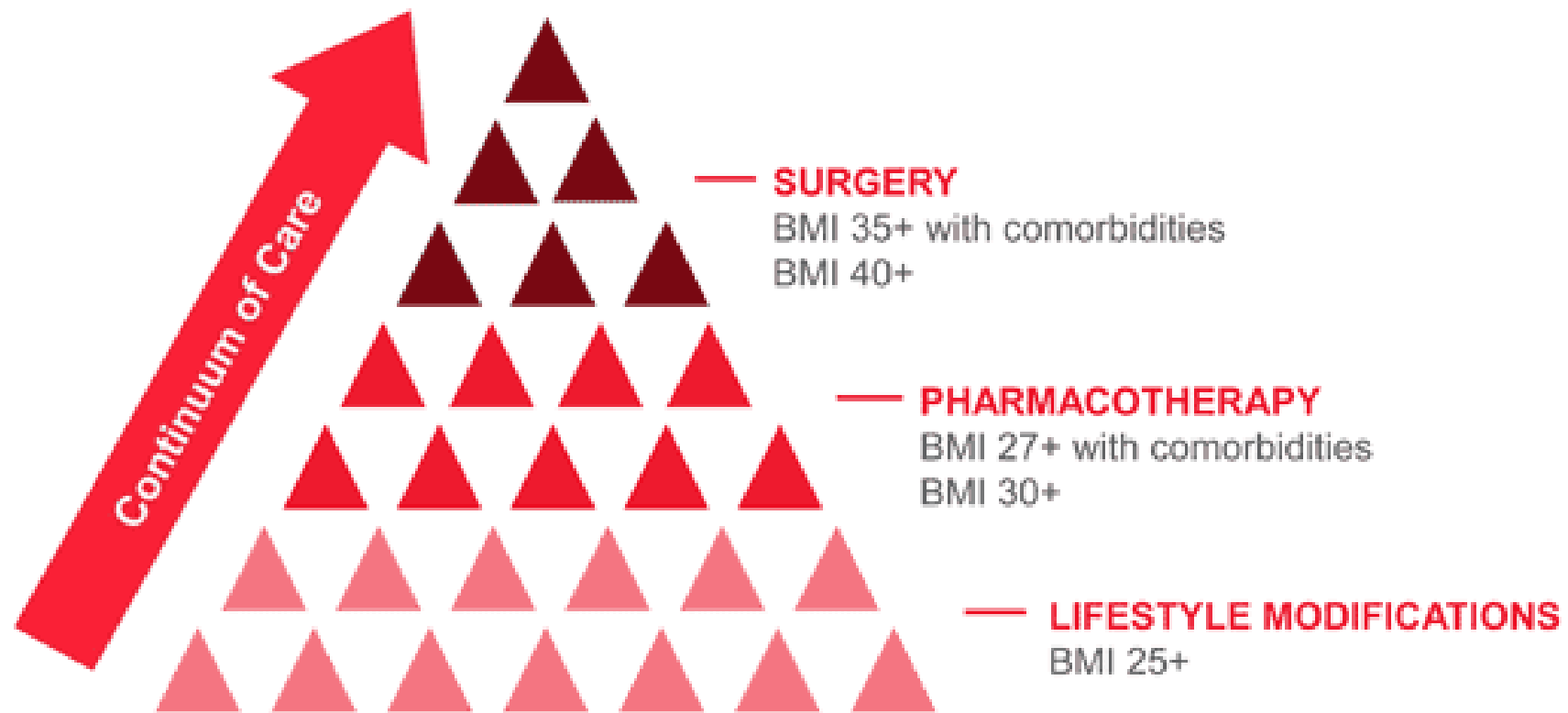
- Dieet
- Lifestyle programma's

Resultaat: max 5% gewichtsreductie (TWL) na 5 jaar

Chirurgie is enige bewezen therapie op lange termijn



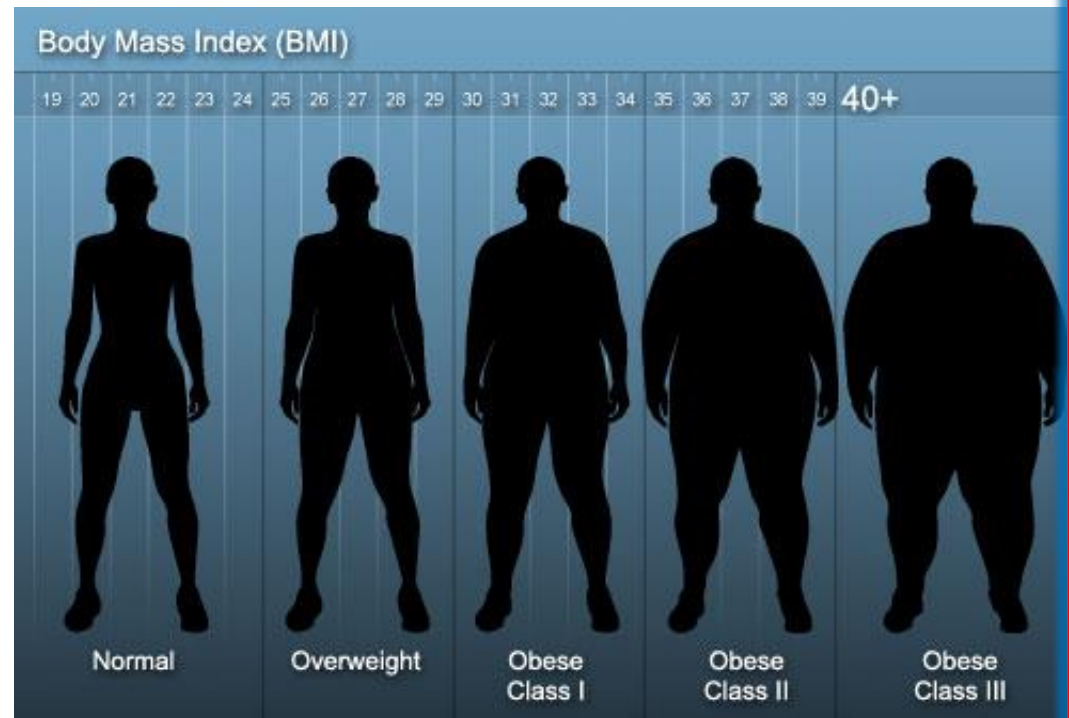
Obesity Treatment Pyramid



Used with permission by Ethicon Endo-Surgery

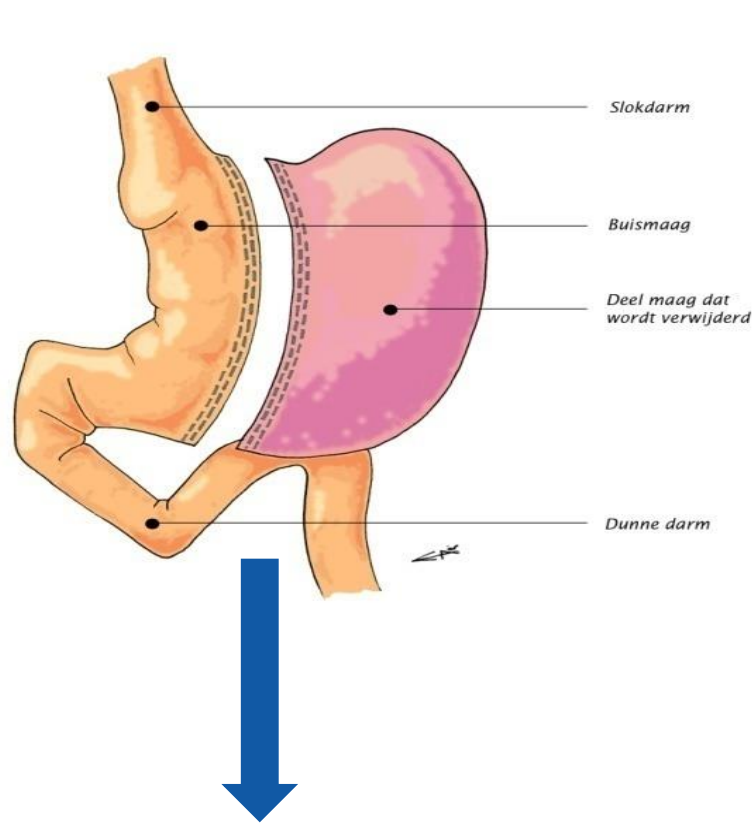
Wie is kandidaat?

- BMI \geq 40
- BMI \geq 35 met co-morbiditeit
- Leeftijd: 18-65 jaar

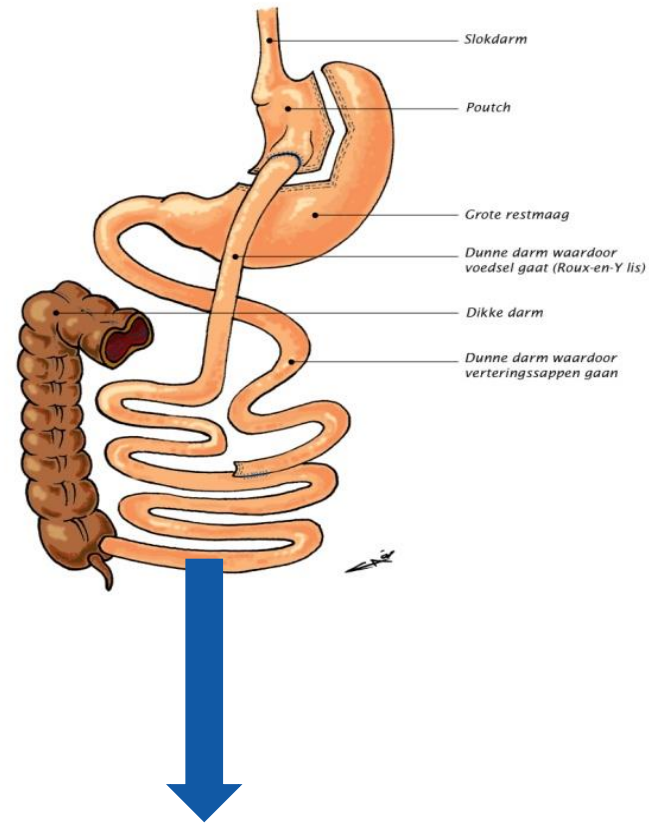


Welke bariatrische ingrepen?

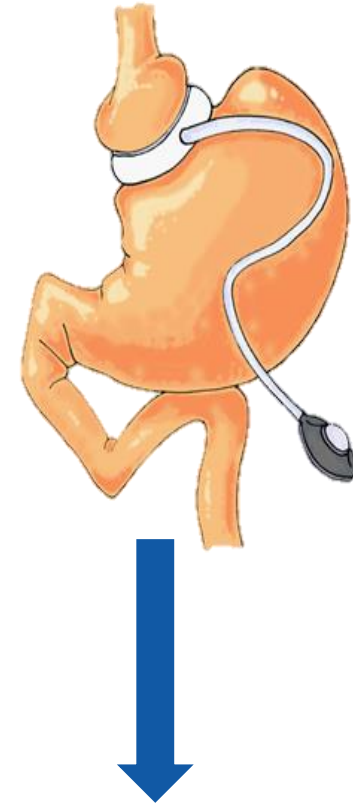
Bariatrische ingrepen



Gastric sleeve



Gastric bypass

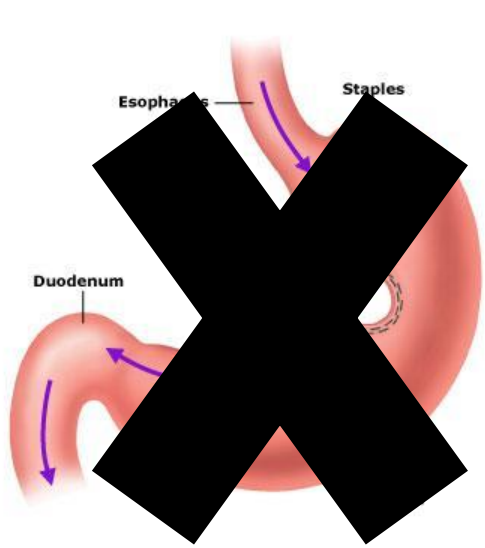


Gastric banding

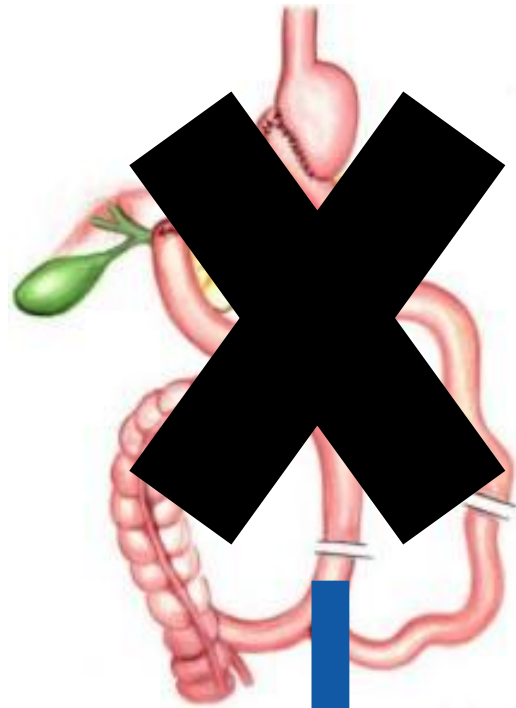
Kliniek tegen overgewicht

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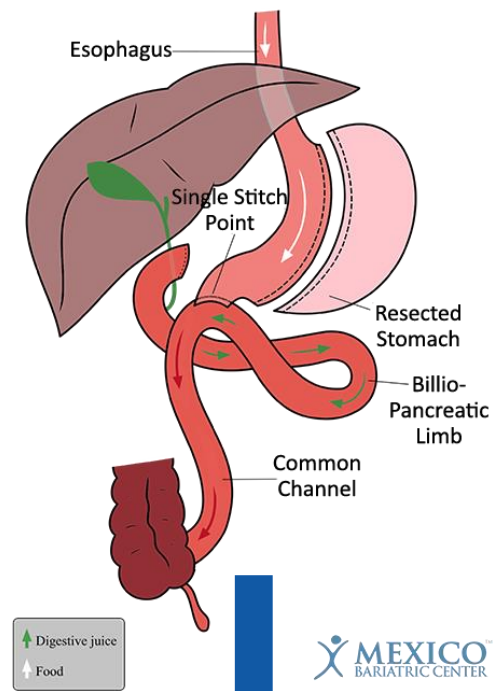
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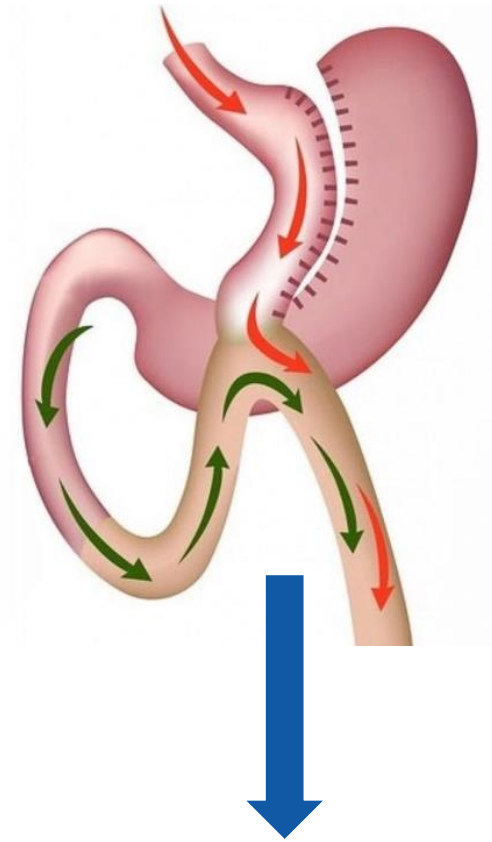
Mason



Scopinaro



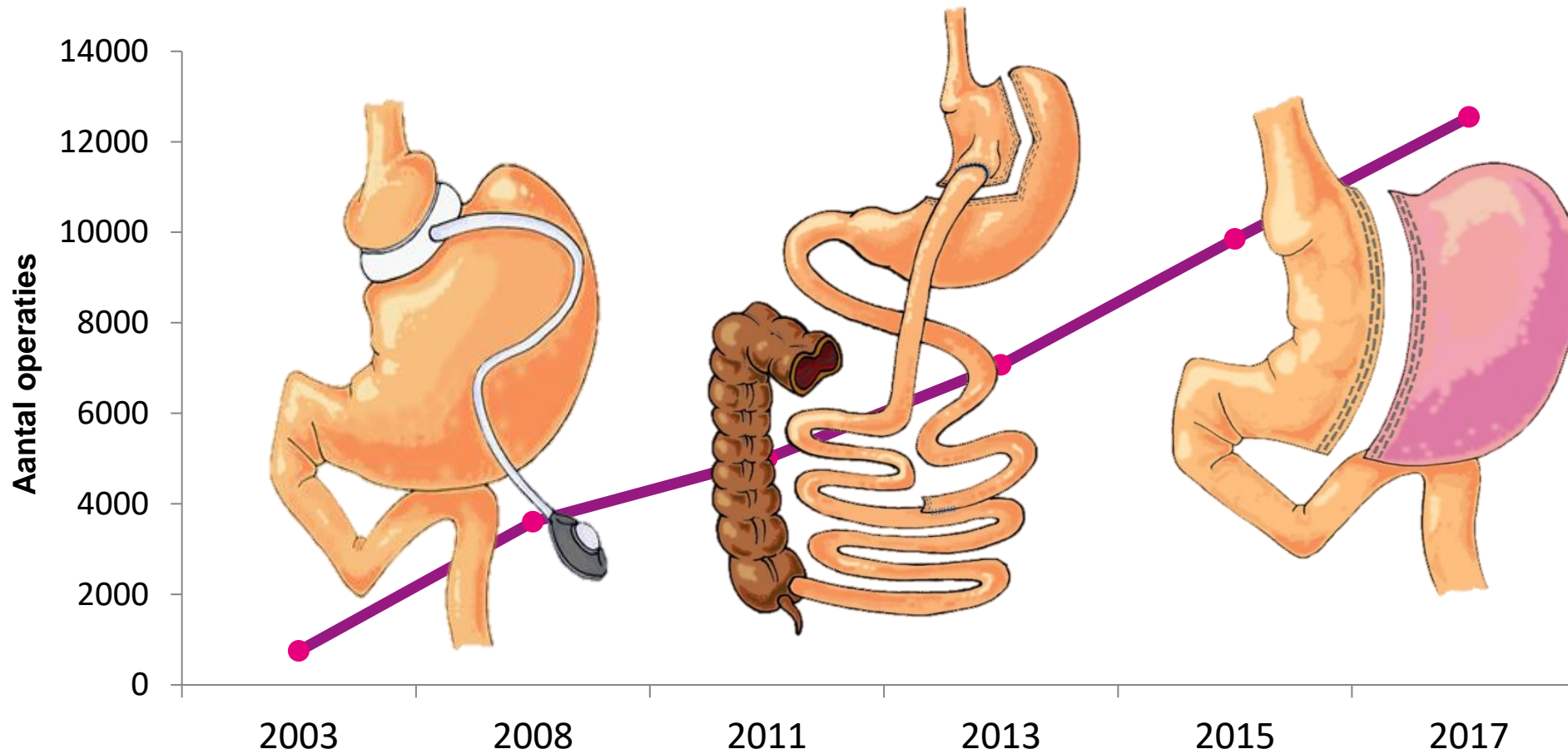
SADI-S



Mini gastric bypass of one anastomotic gastric bypass

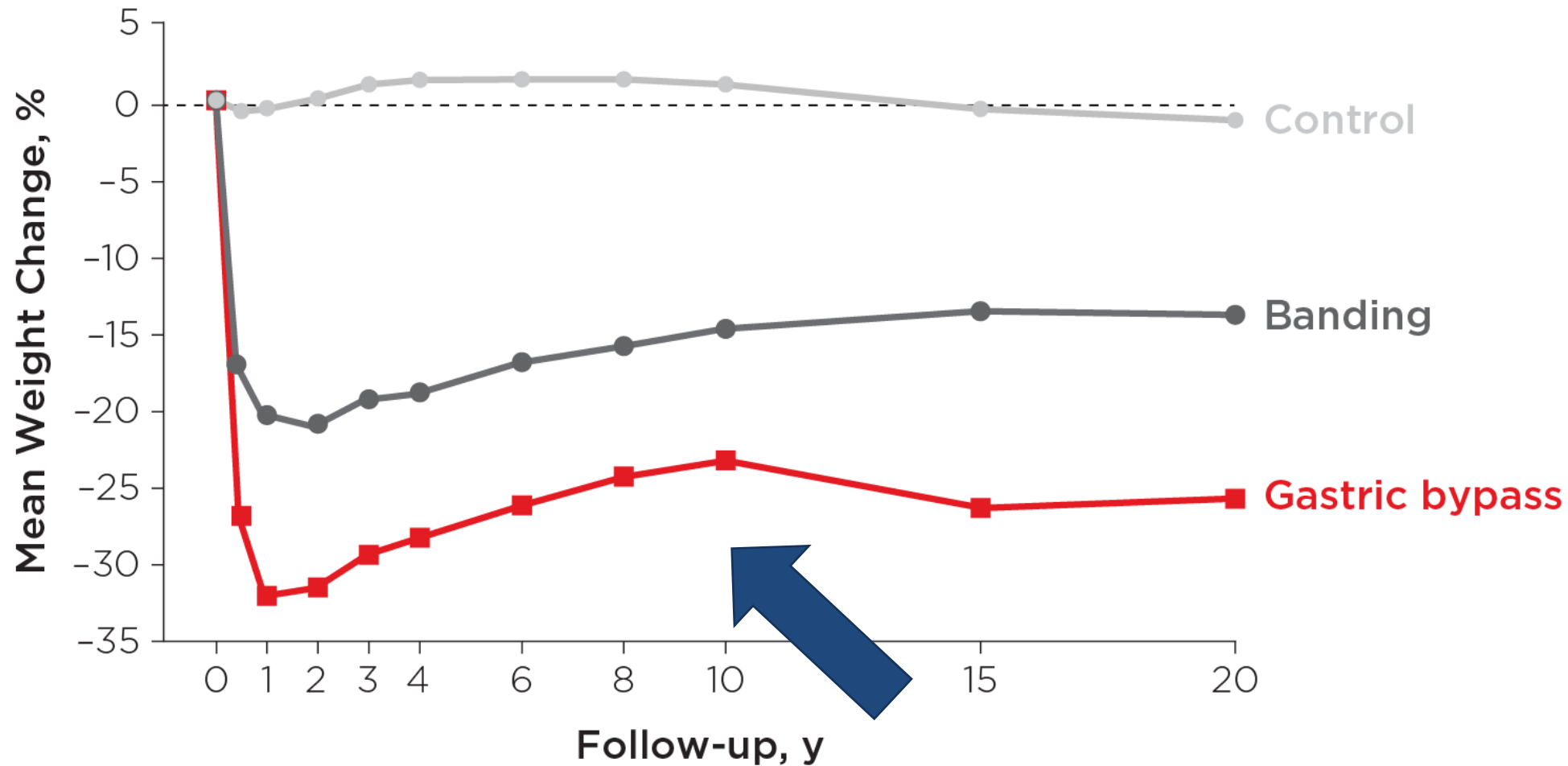
En meer en meer worden weer met “bandje” behandeld

Bariatrische procedures

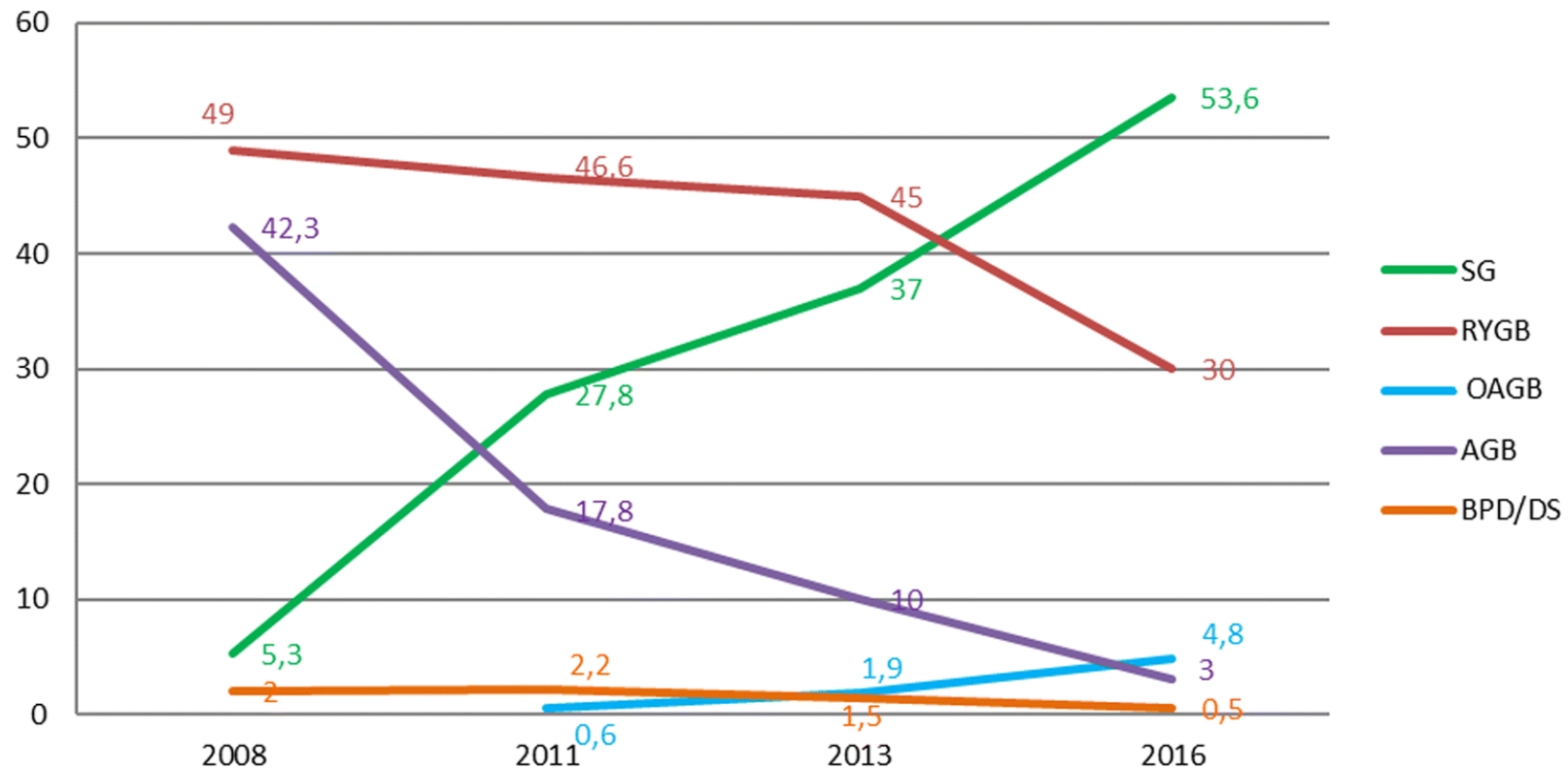


Kliniek tegen overgewicht

Bariatrische procedures



Trend bariatrische & metabole procedures wereldwijd

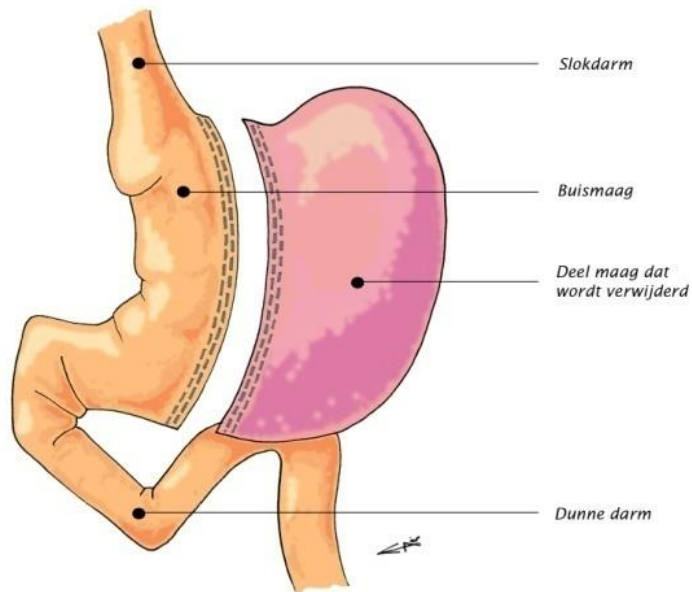


Zorgpad

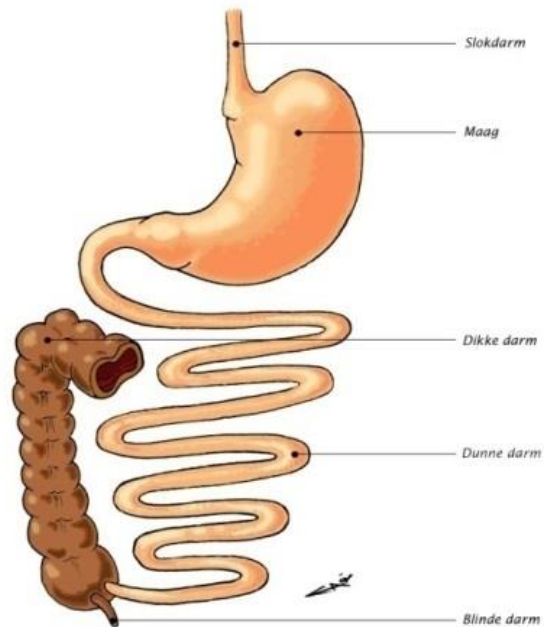
- Oriëntatie fase (consult)
- Multidisciplinaire screening (chirurg, internist, diëtist, psycholoog)
 - 15% afgewezen; 15% enkel akkoord bij aanpassingen; 70% akkoord
- Voorbereiding (groep, motivatie)
- Leefstijl aanpassing
- Operatie
- Consolidatie fase (intensiteit follow-up ↓)

Welke operatie?

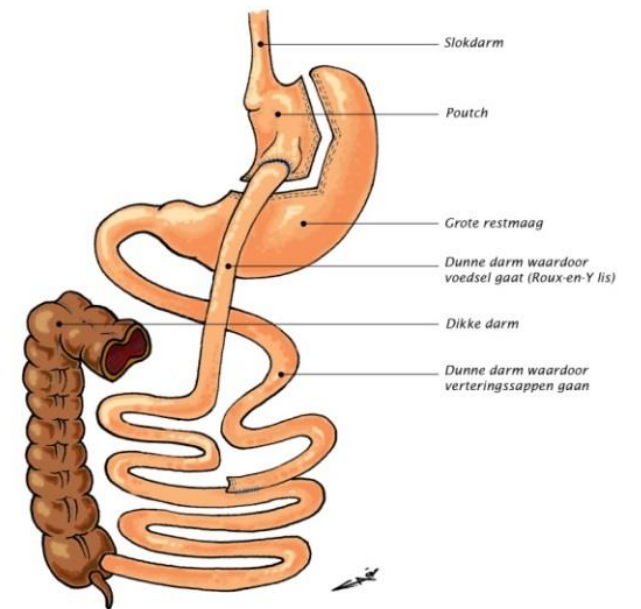
Gastric sleeve



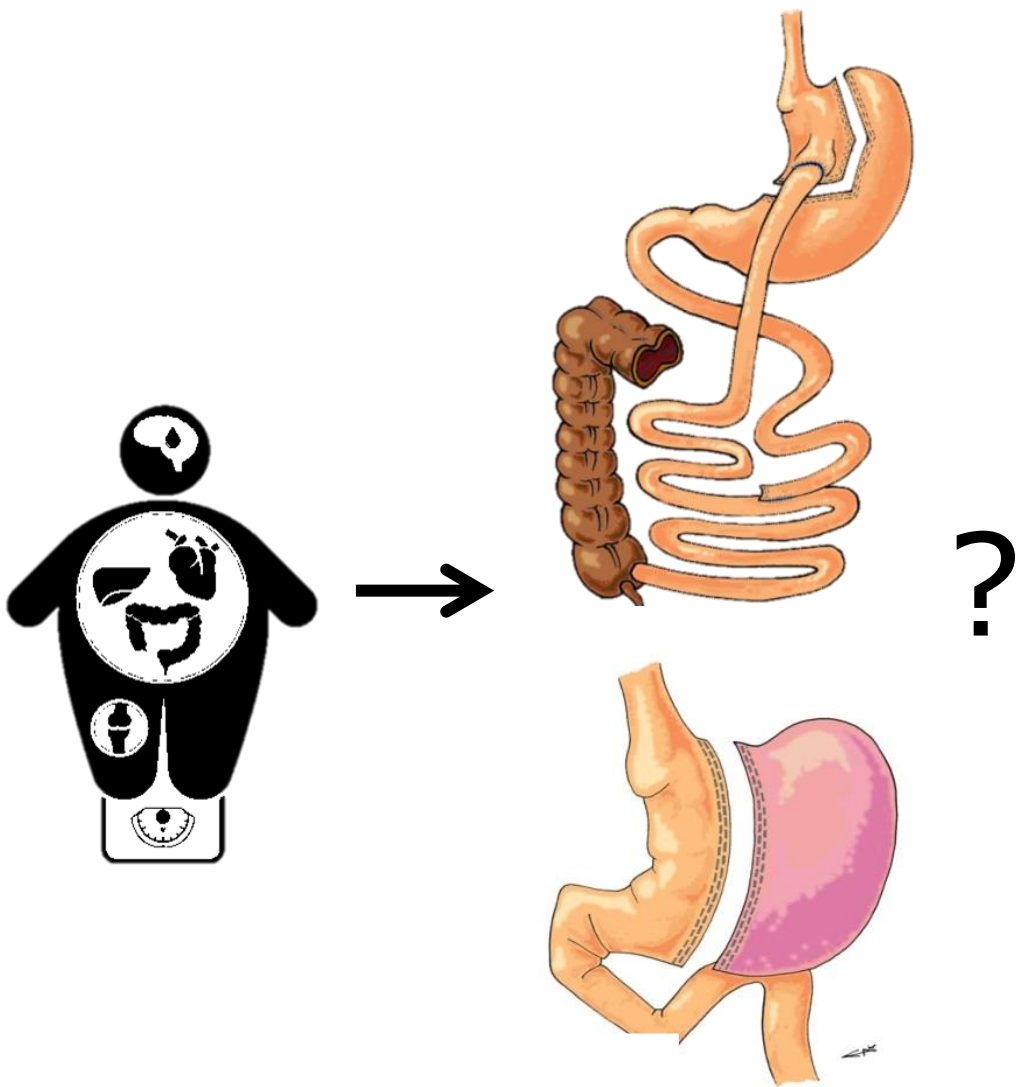
Geen operatie



Gastric bypass



Welke operatie?



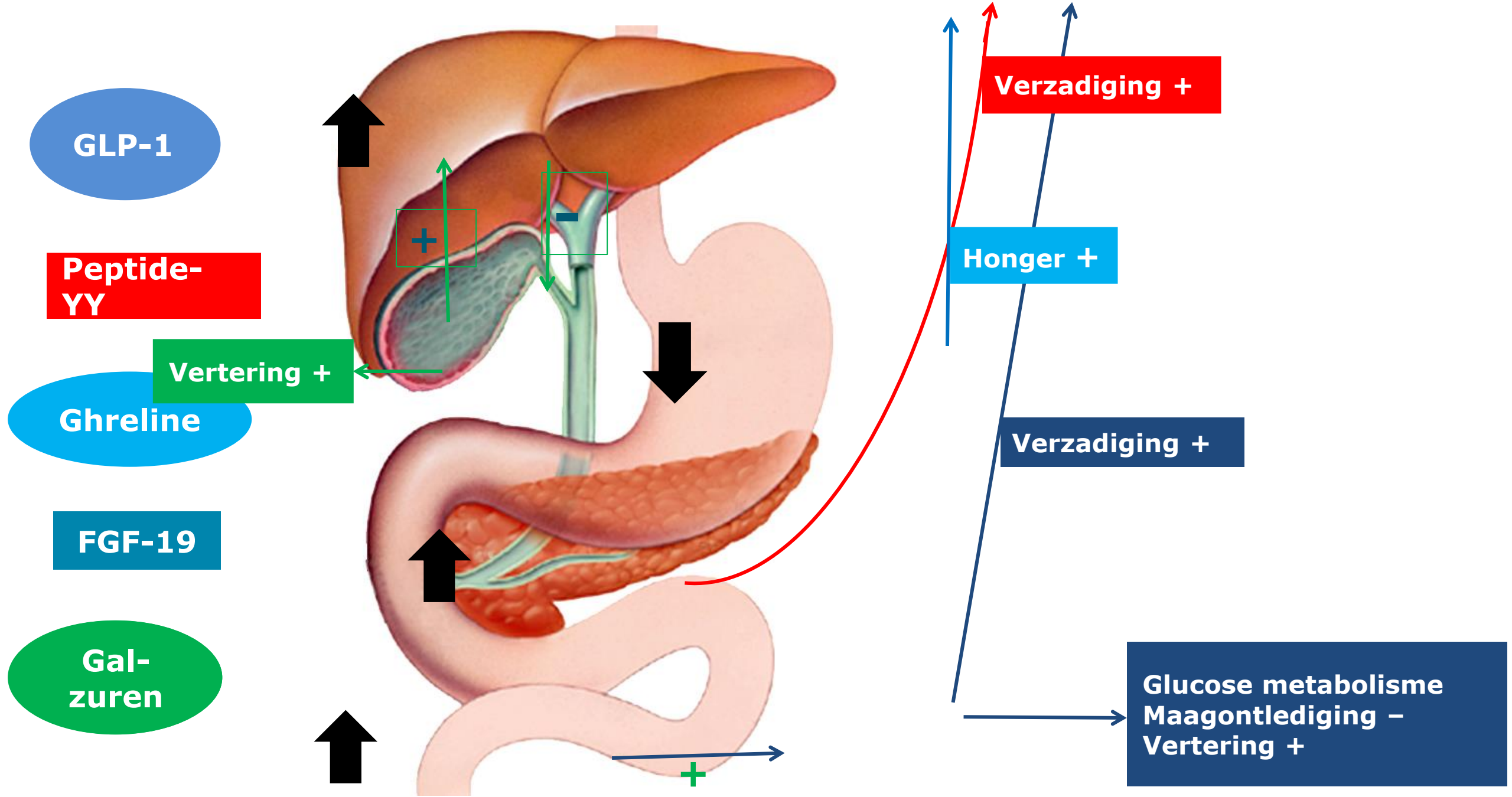
Individueel bepaald:

- Super-obees ($BMI > 60\text{kg/m}^2$)
- Leeftijd
- Eetpatroon
- Co-morbiditeiten (Diabetes, Crohn, reflux)
- Medische VG (maagband, abdominale chir)

Welk effect heeft bariatrische chirurgie?

Voor en na..





	RYGB	SG	Diet-Induced Weight Loss
Ghrelin	↓	↔ ↓	↑
PYY	↑	↑	↓
GLP-1	↑	↑	↔
GIP	↑ ↔	↑ ↔	↑ ↔
CCK	↑	↑	↓
Insulin	↑	↑	↓
Leptin	↓	↓	↓
Adiponectin	↑	↑	↑
Estrogen	↓	↓	-

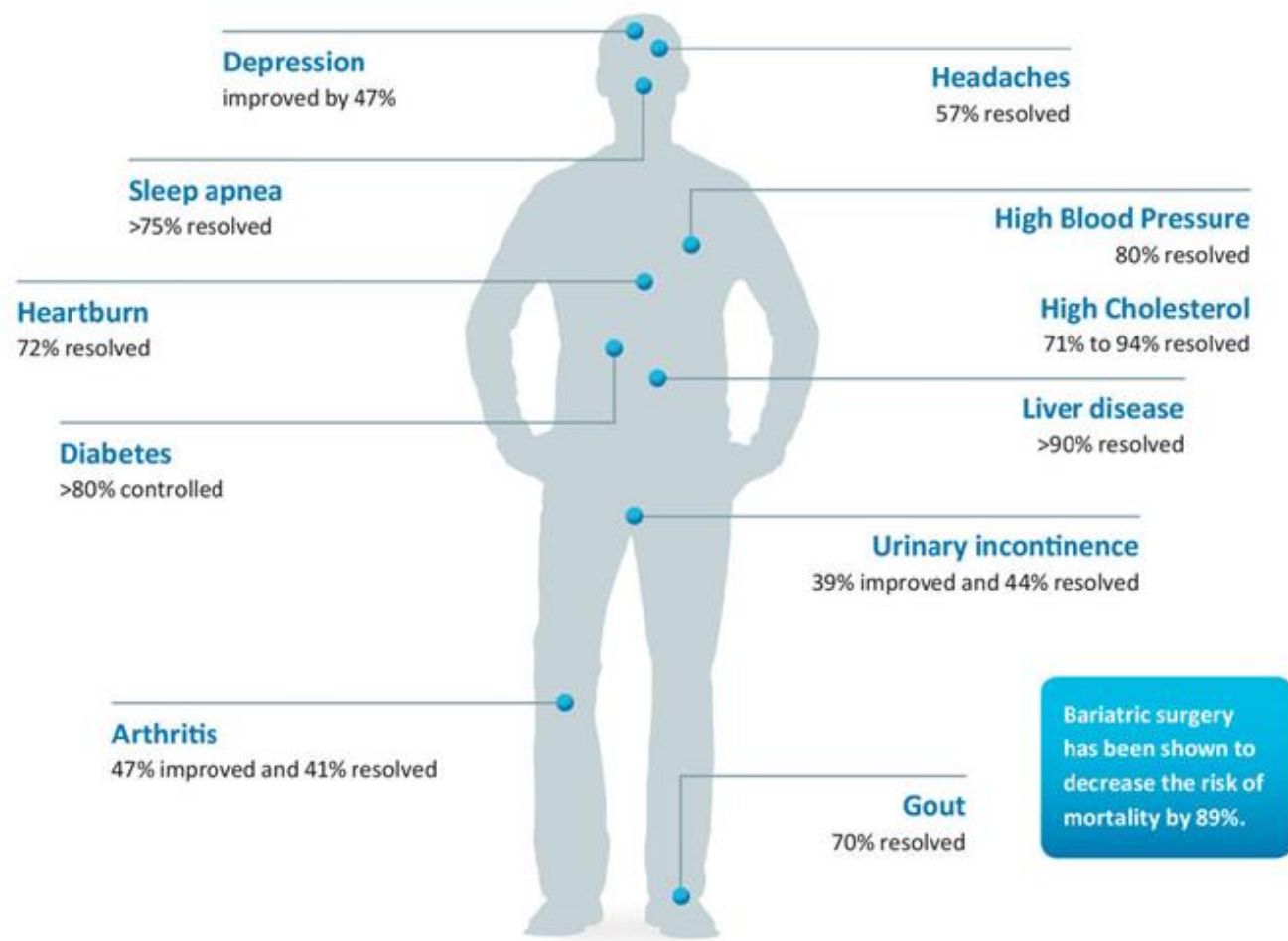
Levels of GLP-1 and PYY rise after both RYGB and SG and not in diet-induced weight loss. Ghrelin levels decrease markedly after SG and increase after diet-induced weight loss. There are conflicting data regarding the change of GIP after surgical and diet-induced weight loss and ghrelin levels after RYGB. While estrogen reduction is associated with surgical weight loss and exercise-induced weight loss it does not significantly change in diet-induced weight loss.

↓ Decreased, ↑ Increased, ↔ Conflicting data, - No change.

Darmflora

- Belangrijke hoeksteen in voorkomen of krijgen/onderhouden van zwaarlijvigheid
 - Sommige alleen bij zwaarlijvigen
 - Sommige preventief in knaagdieren ondanks hoog calorisch dieet, voorkomt zwaarlijvigheid
- Oa PPI -> negatieve invloed op de darmflora door veranderende pH; rol bij zwaarlijvigheid nog onduidelijk
- Darmflora na RYGB veranderd -> bij transplantatie ook gewichtsverlies bij knaagdieren die geen RYGB hebben
- Veel onderzoek loopt nog
- In toekomst ontlastingstransplantatie?

Co-morbiditeiten



Onduidelijk effect op orale problematiek

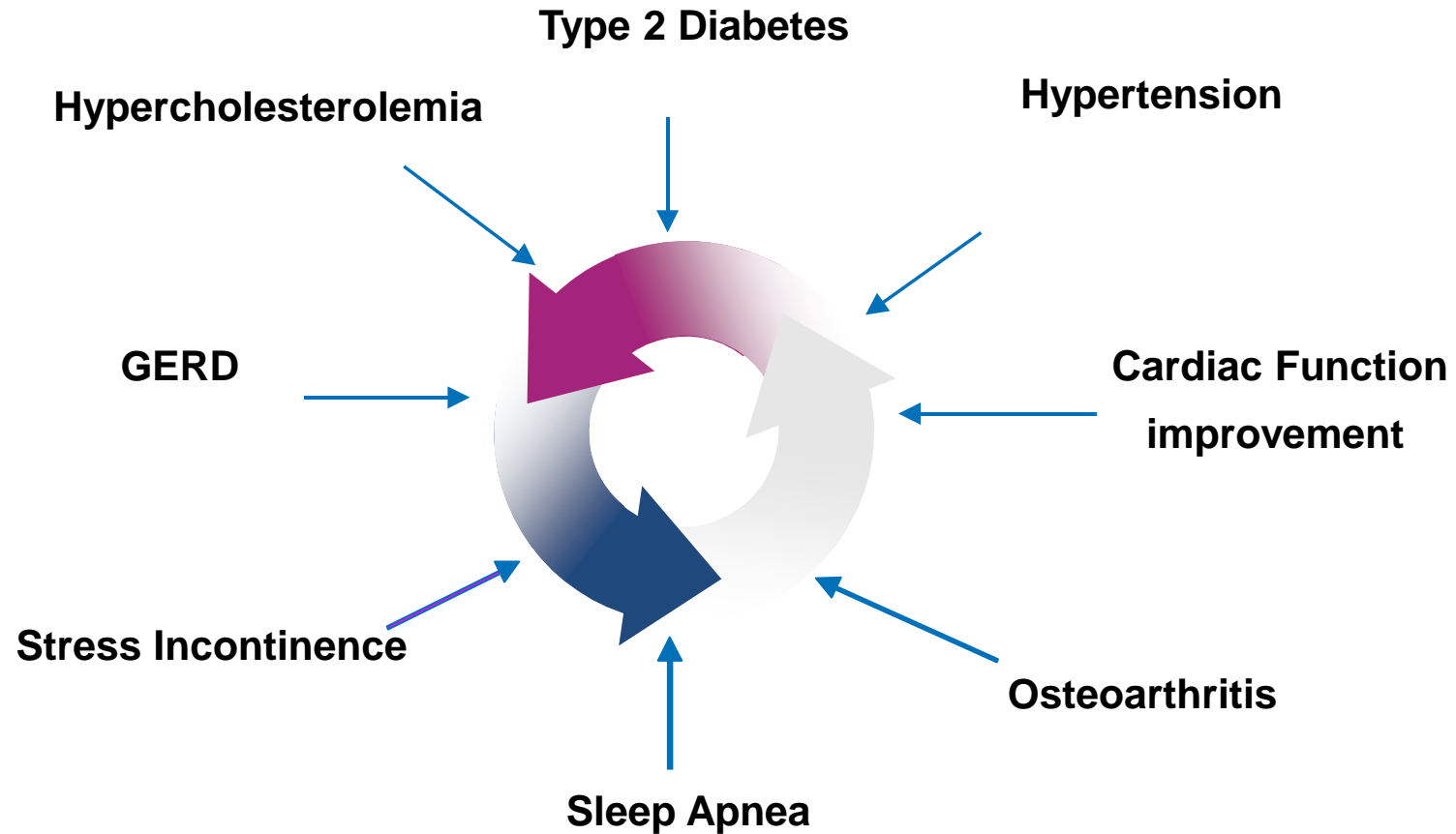
- Tegengestelde resultaten
- Al slechte uitgangssituatie
- Niet volledig te keren
- Strikte controle blijft belangrijk!

Kliniek tegen overgewicht

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Bariatrische en metabole chirurgie



De metabole consequenties...

THE
LANCET

JAMA[®]
The Journal of the
American Medical
Association



The NEW ENGLAND
JOURNAL of MEDICINE



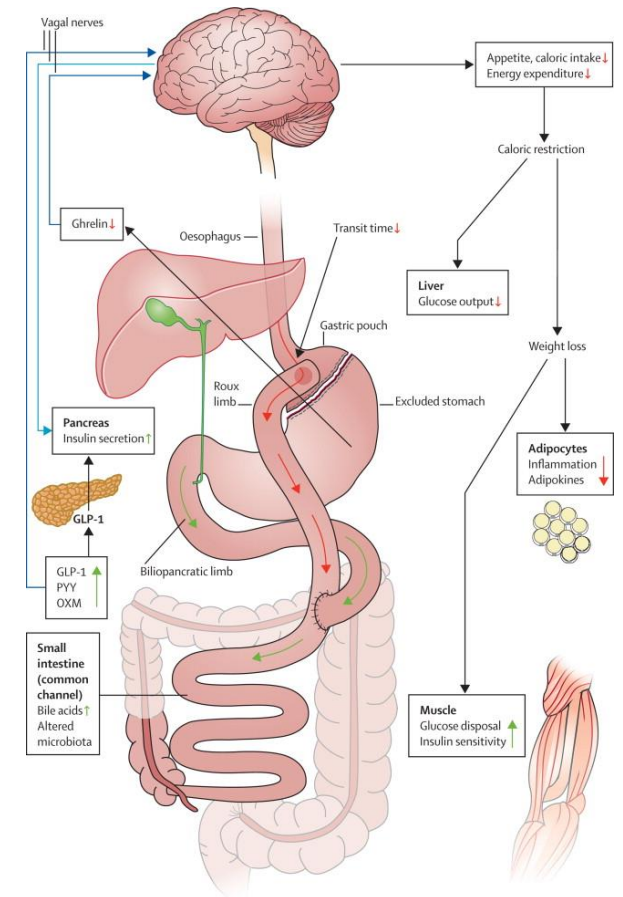
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Diabetes verbetering d.m.v. chirurgie

Verbeterde bloedsuiker-controle: niet exclusief door gewichtverlies

Verbeterde insuline werking, bèta-cel functie en complex samenspel darmhormonen

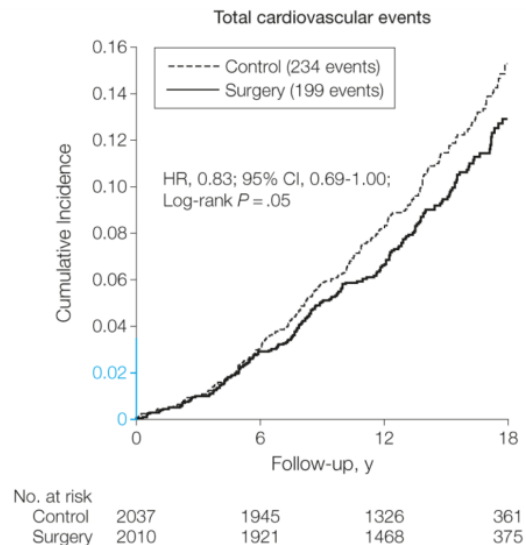
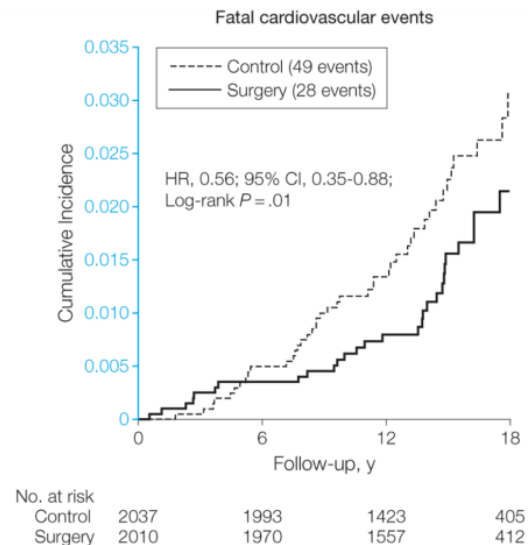


Le Roux. et al. Ann Surg 2007
Masbad et al. Lancet 2014

20 jaar resultaten SOS

Sjöstrom et al. JAMA 2012

- Lagere cardiovasculaire mortaliteit
- Lagere incidentie cardiovasculaire events



Metabole chirurgie: behandelen van DM type 2 & cardiovasculair risico in patienten met obesitas

Wetenschappelijk bewijs

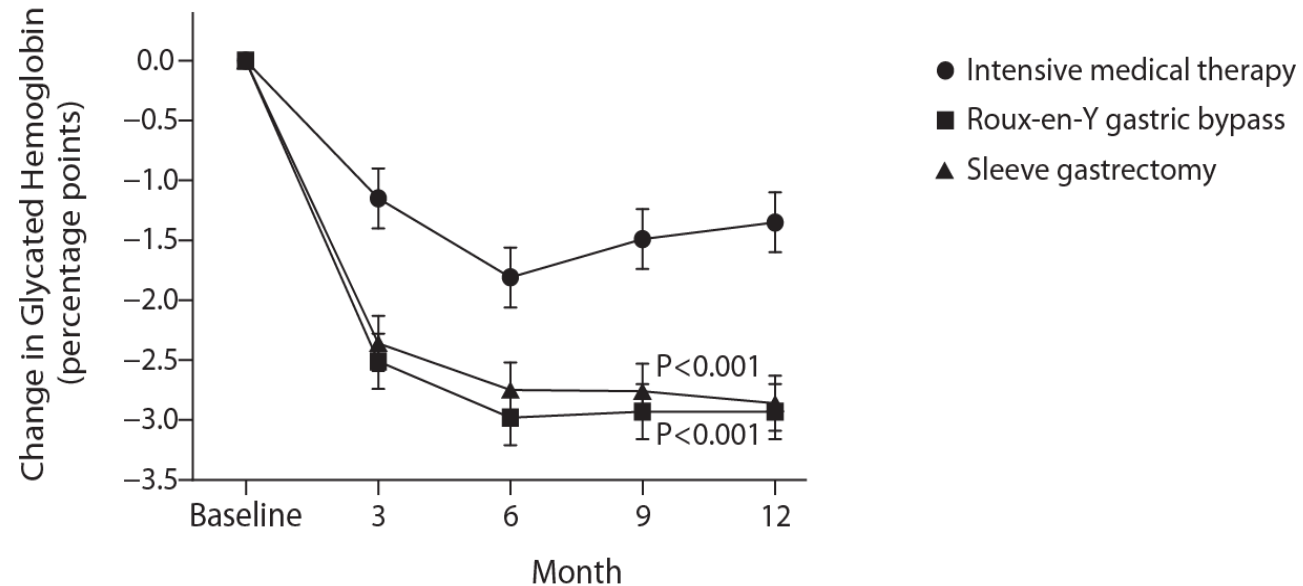
<u>Investigator</u>	<u>Study Type</u>	<u># Diabetic Patients</u>	<u>Primary Endpoint</u>	<u>Study Duration</u>
STAMPEDE (Schauer)	RCT, single center	150 pts, 3 arms	HbA1c \leq 6 with or w/o meds	Year 1 of 5-year study
Mingrone	RCT, single center	60 pts, 3 arms	HbA1c \leq 6.5 without meds	2 years



STAMPEDE

Average levels of HbA1c were significantly lower after bariatric surgery

A Change in Glycated Hemoglobin



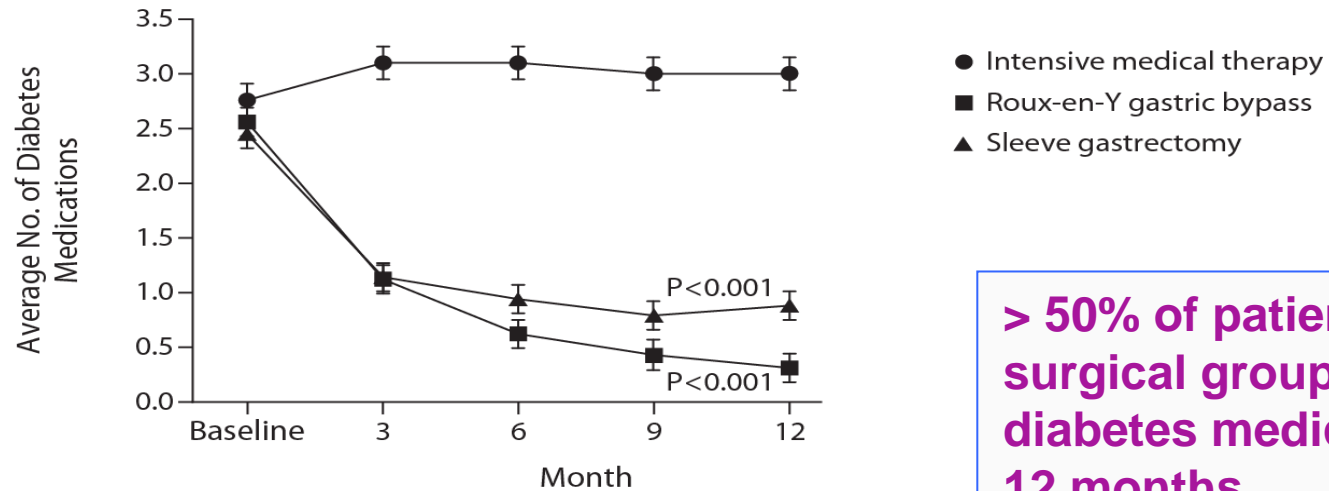
Value at Visit

Intensive medical therapy	8.9	7.7	7.1	7.4	7.5
Roux-en-Y gastric bypass	9.3	6.8	6.3	6.4	6.4
Sleeve gastrectomy	9.5	7.1	6.7	6.7	6.6

STAMPEDE

Significant decrease in **diabetic medication** usage with bariatric surgery

C Average No. of Diabetes Medications



Value at Visit

Intensive medical therapy	2.8	3.1	3.1	3.0	3.0
Roux-en-Y gastric bypass	2.6	1.1	0.6	0.4	0.3
Sleeve gastrectomy	2.4	1.1	0.9	0.8	0.9

> 50% of patients in each surgical group used no diabetes medication at 12 months

Treating type 2 diabetes

5 year results of metabolic surgery

STAMPEDE (2017)



Mingrone (2015)



Diabetes Surgery Summit (DSS-II)

52 international societies, including:

American Diabetes Association

American Heart Association

International Diabetes Federation

American Association of Clinical Endocrinologists

The Endocrine Society

Growing consensus

POSITION STATEMENT

AHA Scientific Statement

Bariatric Surgery and Cardiovascular Risk Factors

Paul Poirier
Barry A. Franklin

International Diabetes Federation

The rate of obesity in those with >40 kg/m². Clinical family practitioners increasingly contend with postoperative associated with mortality. In addition, severely obese. Significant modifications in this population, suggested that patients with BMI obesity-related condition, type 2 diabetes. When indicated, improvements in hypertension, obesity, dysfunction. Recombinant, or case-control bariatric surgery. Different types formed. Historical 0.1% and 2.0%.

AACE Guidelines

**AMERICAN ASSOCIATION OF CLINICAL ENDOCRINOLOGISTS
MEDICAL GUIDELINES FOR CLINICAL PRACTICE FOR
DEVELOPING A DIABETES MELLITUS COMPREHENSIVE CARE PLAN**

THE ENDOCRINE SOCIETY

Evaluating the Benefits of Treating Type 2 Diabetes with Bariatric Surgery

An Endocrine Society Statement to Providers on Study Findings Related To Medical versus Surgical Treatment of Obese Patients with Type 2 Diabetes

This week's (March 26, 2012) issue of the *New England Journal of Medicine* includes two randomized controlled trials reporting superior weight loss and diabetes remission for surgical compared to medical treatment of obese patients with type 2 diabetes.

Observational studies have suggested that weight loss surgery can rapidly improve glycemic control and even produce remission of diabetes in severely obese patients with type 2 diabetes. This improvement and/or remission of diabetes is noted before meaningful weight loss occurs, and is thought to be due to a weight-loss independent change in the incretin hormone milieu as a result of the alteration in intestinal anatomy. Complete remission is defined as a fasting glucose level below 101 mg per deciliter and a glycated hemoglobin level of less than 6.0% for at least 1 year without active pharmacologic therapy. Until now, however, there has been a paucity of randomized controlled trials showing greater efficacy for surgical versus medical therapy, and for the variety of weight loss procedures available.

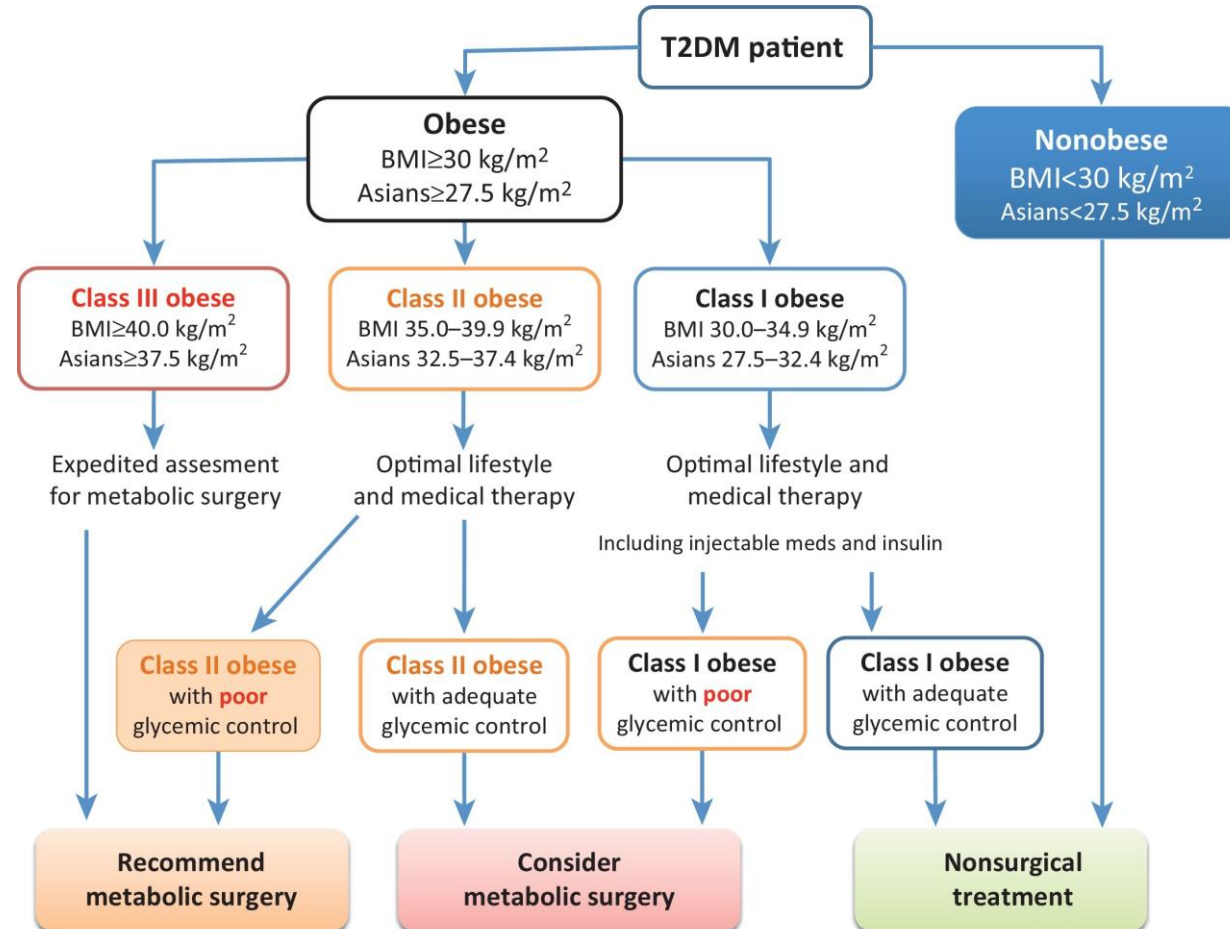
The two studies published this week are each single center, randomized, non-blinded, controlled trials evaluating surgery versus medical treatment in obese patients with type 2 diabetes whose glycated hemoglobin level was $>7.0\%$. Mingrone et al. randomized 80 patients with BMI ≥ 35 kg/m² or more and at least 5 years of diabetes to medical therapy or either gastric bypass or the more malabsorptive biliopancreatic diversion, with 2 year follow-up. They found complete remission of diabetes at 2 years had occurred in none of the medically treated group versus 75% in the gastric bypass group and 95% in the biliopancreatic diversion group. Schauer et al. randomized 150 patients with BMI of 27-43 kg/m² to medical therapy alone or medical therapy plus Roux-en-Y gastric bypass or sleeve gastrectomy. After one year, complete remission of diabetes was seen in 12% of the medically treated group versus 42% in the gastric bypass group and 37% in the sleeve gastrectomy group.

In interpreting these findings, The Endocrine Society notes the differences between the two studies which likely contribute to the difference in magnitude of the results:

- The BMI of the patients in the Schauer study started at a BMI of as low as 27 and was restricted to up to 43, whereas the Mingrone study accepted patients with BMI over 35 kg/m². This may have affected remission rates of diabetes even though the studies report that preoperative BMI did not predict control of diabetes after surgery. While this is certainly the case,

DSS-II recommendations

Rubino et al. Diabetes Care 2016



Toekomst

- Lange termijn follow-up huidige procedures
- Beste optie voor weight regain
- Adolescenten
- Nieuwe technieken

- Duurzaamheid metabole chirurgie...



Complicaties en bijwerkingen van chirurgie

Voeding- en nutriëntenopname

Complicaties



Vroeg:

- Bloeding
- Lekkage
- Trombose
- Pneumonie

Laat:

- Vitaminedeficiënties
- Galstenen
- Maagzweer
- Inwendige herniatioe
- Adhesies/darmobstructie
- Littekenbreuk



Complicaties

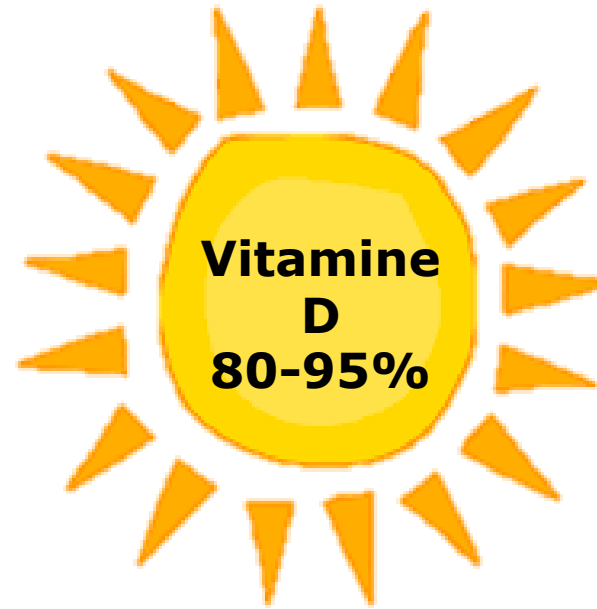
Vroeg (<30 dgn)		Laat (>30 dgn)	
Naadlekkage	0,5%	Inwendige hernia	2,3%
Bloeding	2,3%	Maagzweer	2,7%
Trombose/embolie	0,1%	Galstenen	7,8%
Pneumonie	1,4%	Darmobstructie	0,9%
Overlijden	0,2%		

Deficiënties

Voor de operatie:

- Ongevarieerd eetpatroon
- Onvolwaardig dieet (relatief hoog vet/KH en laag eiwit, zuivel, groenten en fruit)
- Onderliggende chronische conditie
- Medicatie

**Standaard zorg:
preoperatieve check
'voedingsstatus' en suppletie
zo nodig**

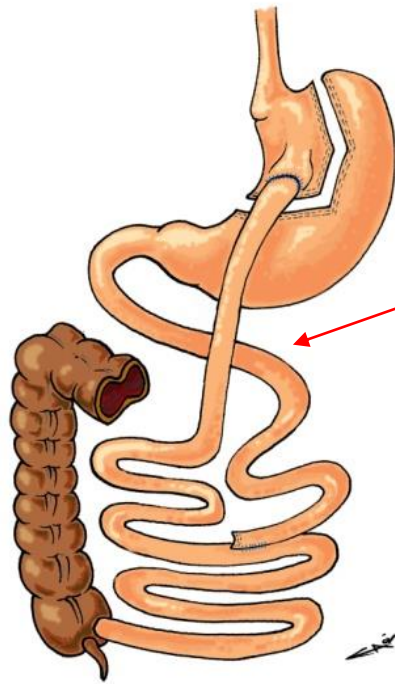


**Foliumzuur
en ijzer**

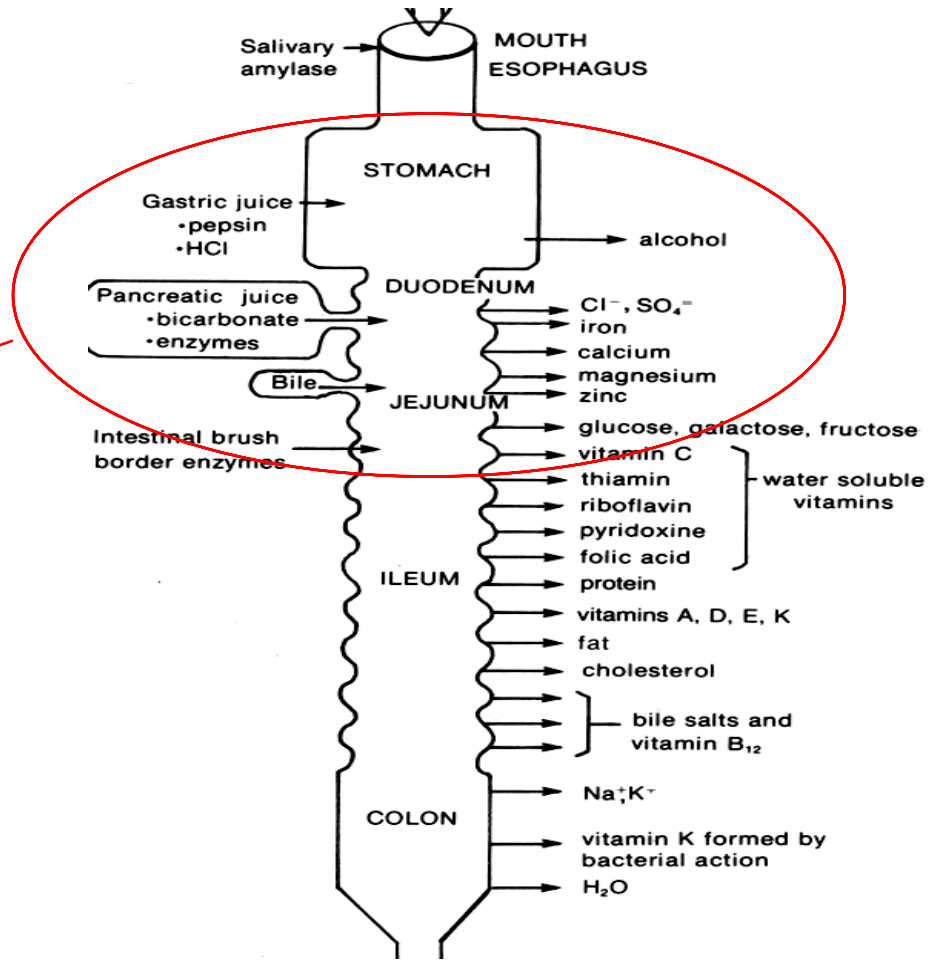
**Internationale
studies:
40-80% van de
patiënten**

**≥ 1 micronutriënt
deficiënties**

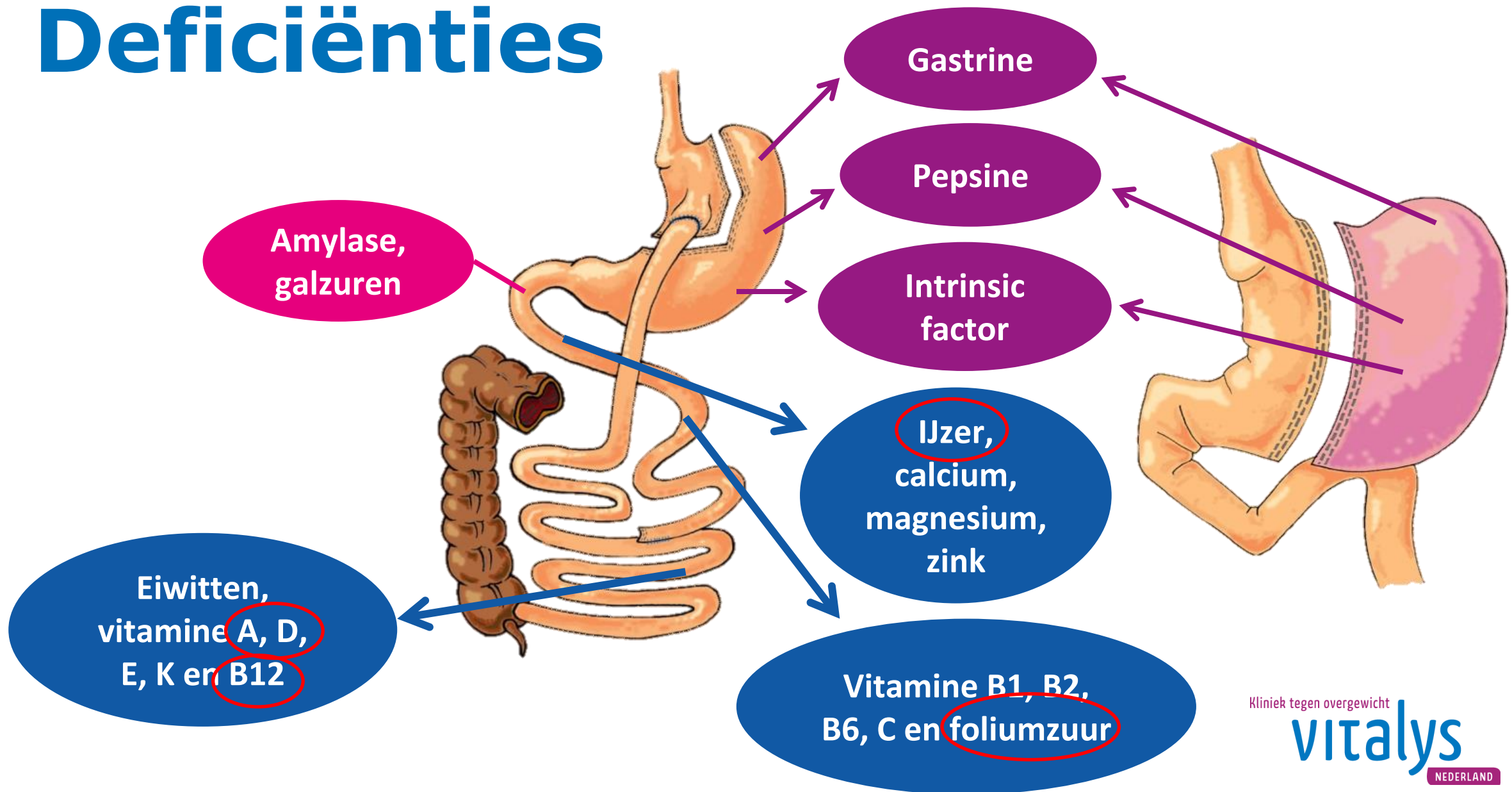
Deficiënties



Gastric bypass

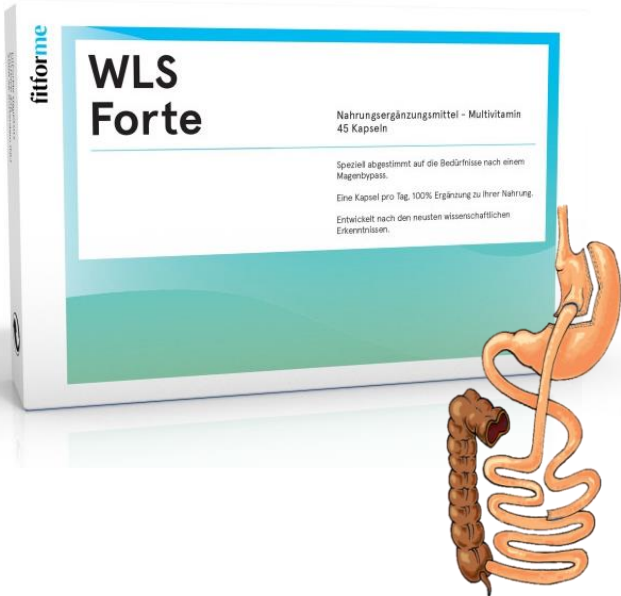


Deficiënties



ASMBS Allied Health Nutritional Guidelines for the Surgical Weight Loss Patient

Allied Health Sciences Section Ad Hoc Nutrition Committee:
 Linda Aills, R.D. (Chair)^a, Jeanne Blankenship, M.S., R.D.^b, Cynthia Buffington, Ph.D.^c,
 Margaret Furtado, M.S., R.D.^d, Julie Parrott, M.S., R.D.^{e,*}



WLS Optimum

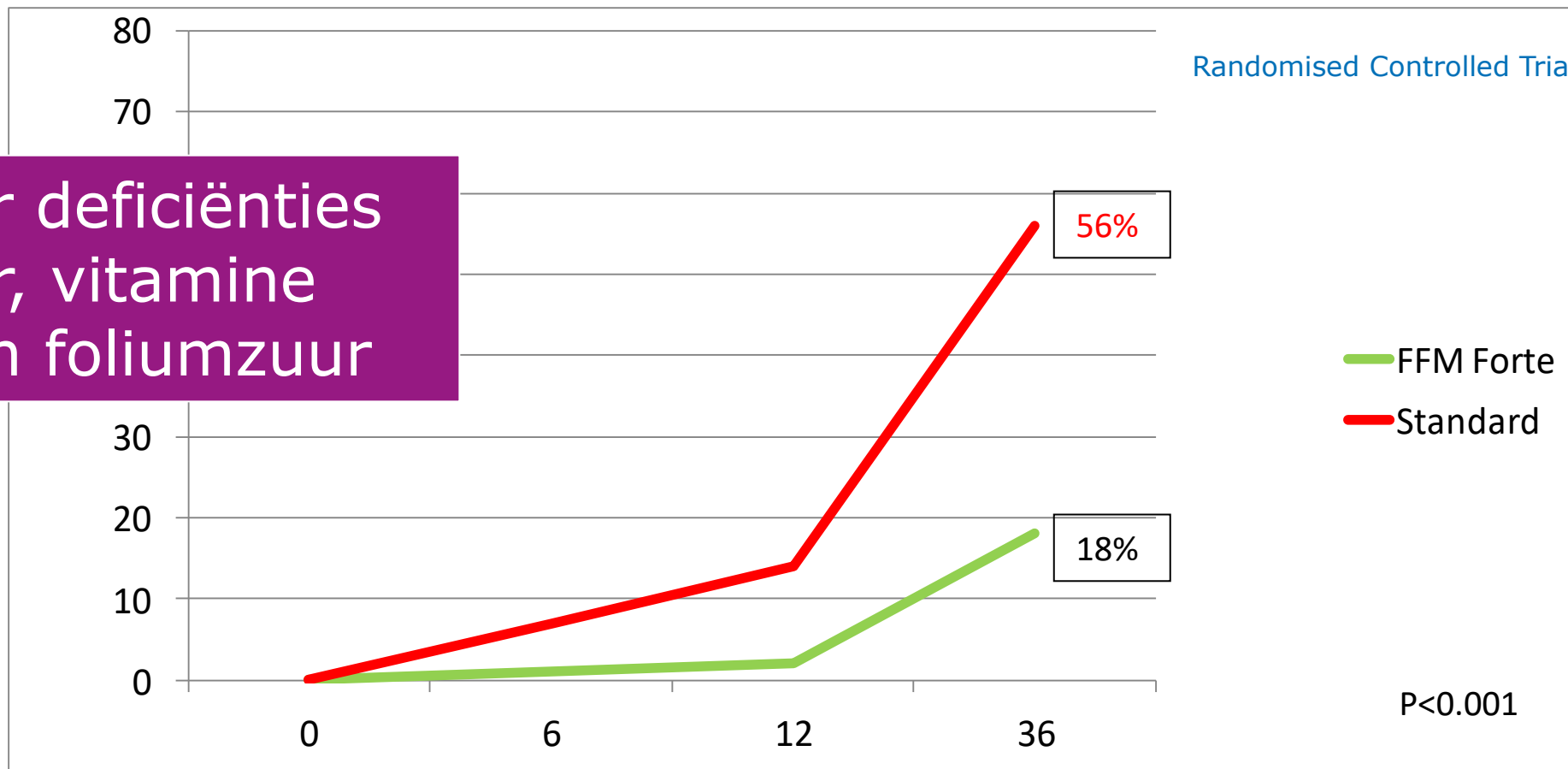
WLS Forte

Ingredients per capsule		%RDA		%RDA
Vitamins				
Vitamin A (Retiöl palmitate)	800 µg RE	100%	600 µg	75%
Vitamin B1 (Thiamine HCL)	2.75 mg	250%	2.75 mg	250%
Vitamin B2 (Riboflavin)	2 mg	143%	3.5 mg	250%
Vitamin B3 (Nicotinamide)	25 mg NE	156%	32 mg	200%
Vitamin B5 (Calcium pantothenate)	9 mg	150%	18 mg	300%
Vitamin B6 (Pyridoxine HCL)	2 mg	143%	0.98 mg	70%
Biotin	150 µg	300%	100 µg	200%
Folic acid	500 µg	250%	600 µg	300%
Vitamin B12 (Cyanocobalamin)	100 µg	4000%	350 µg	14000%
Vitamin C (Ascorbic acid)	100 mg	125%	120 mg	150%
Vitamin D3 (Cholecalciferol)	75 µg	1500%	75 µg	1500%
Vitamin E (Tocopherol succinate)	12 mg	100%	24 mg	200%
Minerals				
Chromium (Chromium III Chloride)	40 µg	100%	160 µg	400%
Copper (Copper gluconate)	1.9 mg	190%	3 mg	300%
Iron (Iron fumerate)	28 mg	200%	70 mg	500%
Iodine (Potassium iodide)	150 µg	100%	225 µg	150%
Manganese (Manganese citrate)	3 mg	150%	3 mg	150%
Molybdenum (Sodium molybdate)	50 µg	100%	112.4 µg	225%
Selenium (Sodium selenite)	55 µg	100%	105 µg	191%
Zinc (Zinc citrate)	28 mg	280%	22.5 mg	225%

VITAAAL studie



Minder deficiënties
in ijzer, vitamine
B12 en foliumzuur



Kliniek tegen overgewicht

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Take home messages

Factsheet 1

Morbide obesitas	BMI > 40 kg/m² BMI >35 kg/m² met co-morbiditeiten
Co-morbiditeiten	Metabool syndroom Slaap apnoe / reflux artrose / cardiovasculair kanker / infertiliteit
Nederland	15% obees 1.5% morbide obees
Toekomst	Adolescenten/kinderen

Factsheet 2

Conservatief

**Kort: 5% TWL
Lang: 5% TWL**

Bariatrische chirurgie

**Kort: 35% TWL
Lang: 25% TWL**

Metabool

**Superieur
RCTs**

QoL

Verbetering

Factsheet 3

Chirurgie

BMI >40

BMI >35 met co-morbiditeit

.....

Contra-indicatie

Relatief

Instabiele ziekte

Commitment?

Vereist

Multidisciplinair team

Follow-up

Lange termijn

Voedingsdeficiënties (suppletie + voedingsadviezen)

Dank!

