



Obesitasoperaties....

*... veel meer dan
opereren*

Obesitas Centrum Stuivenberg

Dr. Leo Hendrickx, Dr. Jody Valk, Dr. Bart Gypen,

Dr. Frank van Sprundel en Dr. Stijn Heyman



The NEW ENGLAND
JOURNAL *of* MEDICINE

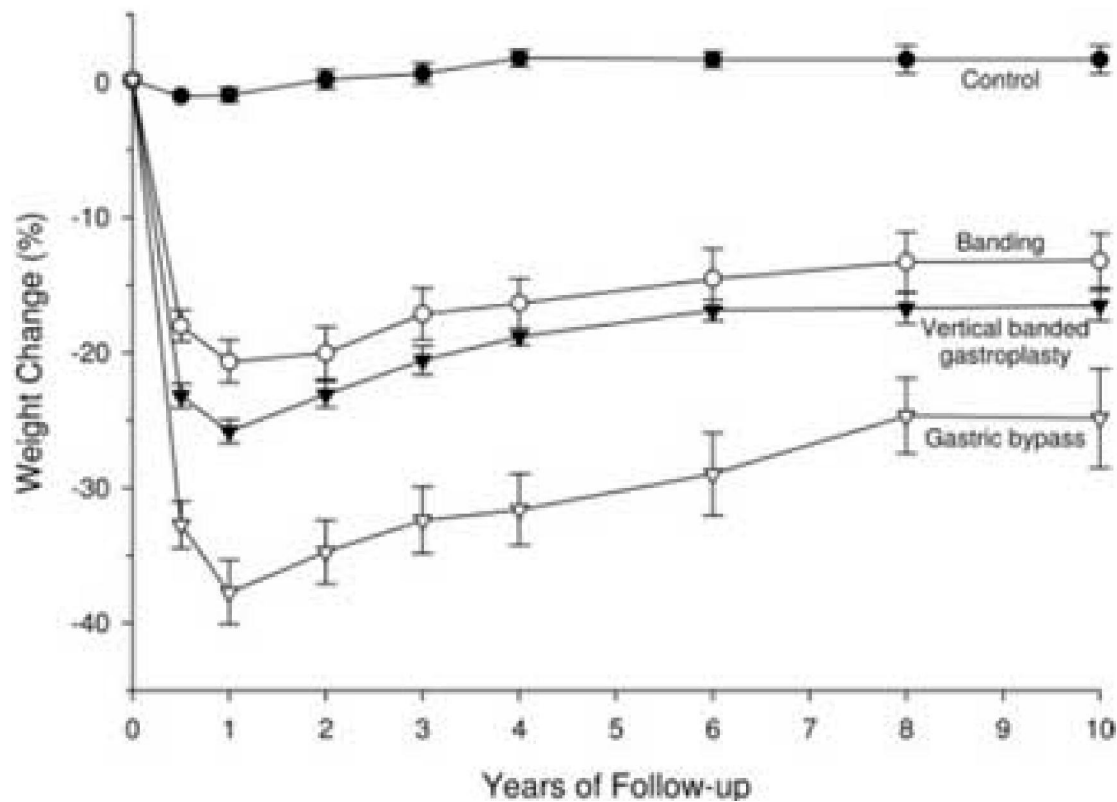
ESTABLISHED IN 1812

AUGUST 23, 2007

VOL. 357 NO. 8

Effects of Bariatric Surgery on Mortality in Swedish Obese Subjects

Lars Sjöström, M.D., Ph.D., Kristina Narbro, Ph.D., C. David Sjöström, M.D., Ph.D., Kristjan Karason, M.D., Ph.D., Bo Larsson, M.D., Ph.D., Hans Wedel, Ph.D., Ted Lystig, Ph.D., Marianne Sullivan, Ph.D., Claude Bouchard, Ph.D., Björn Carlsson, M.D., Ph.D., Calle Bengtsson, M.D., Ph.D., Sven Dahlgren, M.D., Ph.D., Anders Gummesson, M.D., Peter Jacobson, M.D., Ph.D., Jan Karlsson, Ph.D., Anna-Karin Lindroos, Ph.D., Hans Lönroth, M.D., Ph.D., Ingmar Näslund, M.D., Ph.D., Torsten Olbers, M.D., Ph.D., Kaj Stenlöf, M.D., Ph.D., Jarl Torgerson, M.D., Ph.D., Göran Ågren, M.D., and Lena M.S. Carlsson, M.D., Ph.D., for the Swedish Obese Subjects Study



Pajunaweergave

Table 2. Cause of Death.^a

Variable	Surgery Group (N=2010)	Control Group (N=2037)
	no. of subjects	
Cardiovascular condition		
Any event	43	53
Cardiac	35	44
Myocardial infarction	13	25
Heart failure	2	5
Sudden death	20	14
Stroke	6	6
Intracerebral hemorrhage	2	4
Infarction	1	2
Subarachnoid bleeding	3	0
Other	2	3
Aortic aneurysm	1	2
Aortic thrombosis	0	1
Diabetic gangrene	1	0
Noncardiovascular condition		
Any event	58	76
Tumor	29	48
Cancer	29	47
Meningioma	0	1
Infection	12	3
Thromboembolic disease	5	7
Pulmonary embolism	4	7
Vena caval thrombosis	1	0
Other	12	18
Total no. of deaths	101	129

RESULTS

BASELINE CHARACTERISTICS

In this study, 2010 obese subjects who were treated surgically were contemporaneously matched with 2037 conventionally treated obese controls. Table 1 details matching and baseline information. The matching procedure created two groups that were very similar, although subjects in the

surgery group were heavier ($P<0.001$) and more frequent subjects in the surgery group had higher values in the weight in the surgery group, higher values in the surgery group, and in the surgery group.

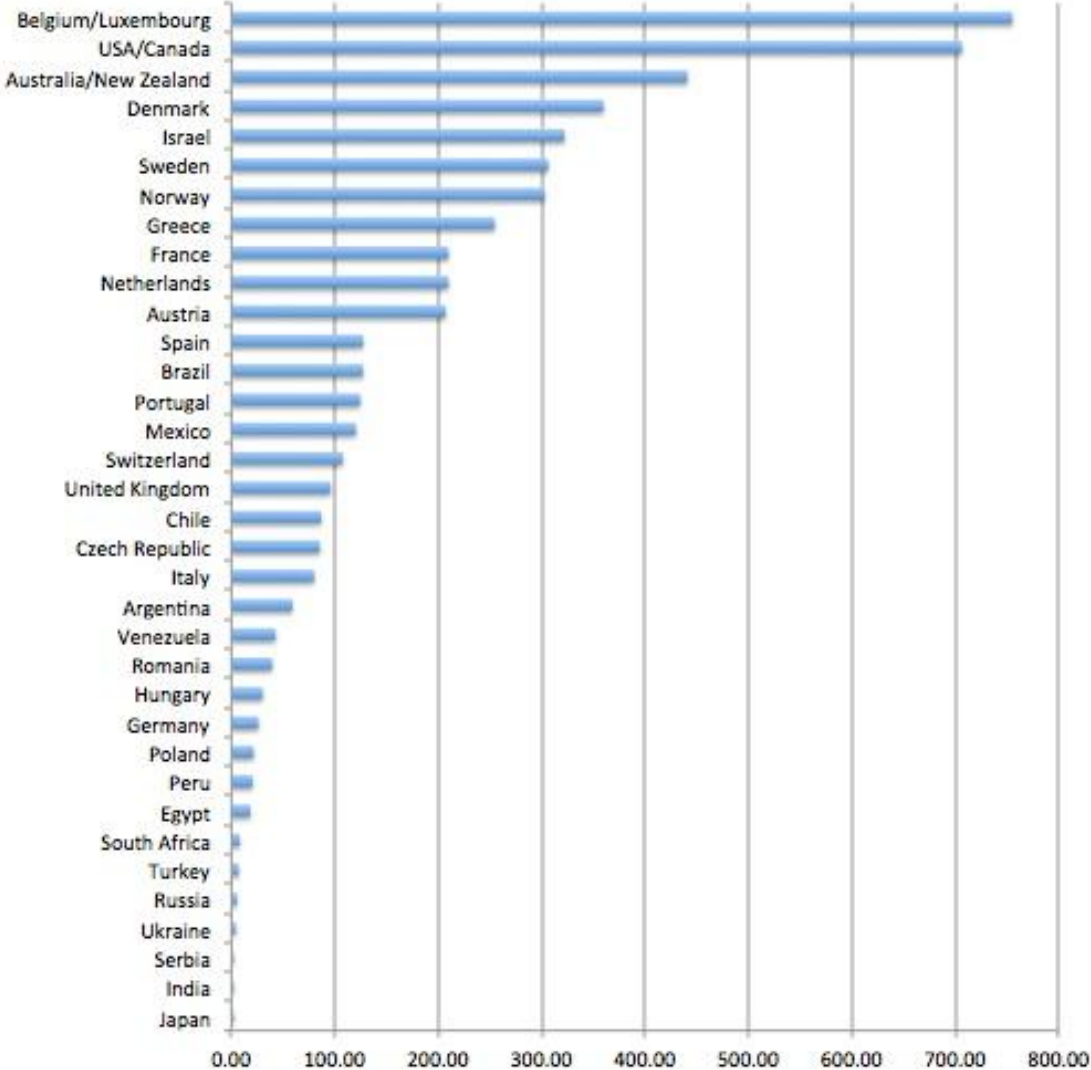
Between the surgery groups, there was a decrease in weight in the surgery group (2.2 kg) and diverging weight to become significant study groups.

At baseline, waist circumference and bilirubin levels were the only variables that were significantly different between groups, were associated with a significant univariate difference in survival, and would benefit survival in the surgery group. Thus, most differences between the study groups that were observed at matching and at baseline constitute survival disadvantages for the surgery group in a univariate analysis.

PARTICIPATION RATES AND FOLLOW-UP

	Gastric Banding	Gastric Bypass
Average Weight Loss	63 lbs	96 lbs
Diabetes Resolution	48%	83.7%
Sleep Apnea Resolution	95%	80%
Hypertension Resolution	43%	68%
Lipid Improvement	59%	97%

#Bariatric Surgeries per million population





Behandeling in ons Obesitascentrum



ZNA Stuivenberg

eerst geaccrediteerde centrum in België / Europa !

Diëtiste



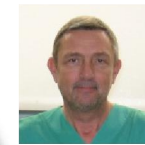
Gastroenterologen



Endocrinologen

Pneumologen

Chirurgen



Kinesisten

Cardiologen



Psychologe



Obesitastraject

Afspraak: 03/217.72.60

Geertrui Agache, secretariaat heelkunde

Volgende afspraken worden gepland:

- Diëtiste/coördinator **Anne Bosman**
- Psychologe **Ann Soetewey**

Het multifactoriële van obesitas

Psychosociale context

Levensstijl

Familiaal...

***Gerelateerde oorzaken voor
obesitas. Is er nood aan mental/life
style coaching? Motivatie? Begrip?***

Focus op gezonde leefstijl



Obesitatraject

Multidisciplinaire obesitasstaf

Chirurgen, diëtiste, psychologe, endocrinologen, kinesisten, hoofdverpleegkundige OK en zaal, eventueel aangevuld met gastro-enterologen of andere disciplines. Steeds welkom!!!

Doel: discussie rond moeilijke casussen

Elke eerste maandag van de maand om 16u in zaal Lambotte, Stuivenberg.

Obesitatraject

Criteria bariatrische heekunde (RIZIV)

BMI 40 kg/m² of meer (morbide obesitas)

BMI 35 tot 40 kg/m² (ernstige obesitas) met:

- behandelde DM
- OSAS
- AHT onder 3 medicamenten
- gefaalde eerdere ingreep

Randvoorwaarden

Obesitastraject

Het eerste consult bij de chirurg:
bariatrische chirurgie als **TOOL**

Planning van de vooronderzoeken via
de **zorgtrajectplanner (ZTP)**

Stuivenberg: 03/217.75.11

St.-Erasmus: 03/270.80.31

Termijn: < 1 maand tot 2^{de} controle én planning ingreep

Pre-operatieve opinstelling Obesitas:
Gastric Bypass

zna
Versie 02/2011

IDENTIFICATIE PATIËNT

Naam: _____
Voornaam: _____
Geboortedatum: _____

STEMPEL/HANDTEKENING ARTS

Onderzoek	ZNA STUIVENBERG		ZNA ST-ERASMUS		Aanpak	Aanpak
	Zorgtraject Inkomhal	03 217 76 17	Zorgtraject route 12	03 270 80 31		
PLANNING PRE-OP ONDERZOEKEN						
ONDERZOEKSDAG 1/ VERLOOP EN INSTRUCTIES ZOZ →						
MEDISCHE BEELDVORMING • echo abdome • RX thorax (enkel op indicatie)	C2: route 7	03 217 76 57	Poli 1e route 24 wechtrzaal H	03 270 81 41	<input type="checkbox"/>	<input type="checkbox"/>
BLEDAPNAME - Inleveren urine • SN: -routine (cfr bloedaanvaag) -HbA1c (bij diabetes) • URINE: -UNK (enkel op indicatie)	C1: route 1	03 27 76 19	Poli 1e 8-12 h: via route 12 wechtrzaal C Zorgtraject na 12 h: route 12	03 270 82 11	<input type="checkbox"/>	<input type="checkbox"/>
FYSISCHE GENEESKUNDE • uitleg triflow	C1: route 1	03 217 71 42	Zorgtraject route 12	03 270 89 37	<input type="checkbox"/>	<input type="checkbox"/>
CARDIOLOGIE • EKG • pre operatief consult: (enkel op indicatie)	C1: route 2 C1: route 1	03 217 76 39	Poli 2e route 21 wechtrzaal I	03 270 89 05	<input type="checkbox"/>	<input type="checkbox"/>
PNEUMOLOGIE • longfunctie (enkel op indicatie)	C1: route 1	03 217 76 21	Poli 2e route 21 wechtrzaal J	03 270 82 02	<input type="checkbox"/>	<input type="checkbox"/>
GASTROSCOPIE	C1: route 42	03 217 76 27	Poli 2e route 21 wechtrzaal J	03 270 81 35	<input type="checkbox"/>	<input type="checkbox"/>
BIJKOMENDE ONDERZOEKEN: INFORMATIE EN INSTRUCTIES ZOZ →						
PNEUMOLOGIE • slaaponderzoek (enkel op indicatie)			4e vercleping.: Slaaplabo	03 270 84 40	<input type="checkbox"/>	<input type="checkbox"/>
CONSULT ENDOCRINOLOOG	C1: route 1	03 217 74 53	Poli 2e route 21 wechtrzaal I of J	03 270 89 16	<input type="checkbox"/>	<input type="checkbox"/>
CONSULT ANESTHESIE • nazicht dossier	Zorgtraject Inkomhal	03 217 76 17	Zorgtraject route 12	03 270 80 31	<input type="checkbox"/>	<input type="checkbox"/>
CONSULT CHIRURGIE • planning operatiedatum	CS: route 50	03 217 70 30	Poli 1e route 16 wechtrzaal F	03 270 81 30	<input type="checkbox"/>	<input type="checkbox"/>
OPMERKINGEN:						

Follow up Bariatrische Heelkunde

- Eerste controle een week na de ingreep
- Eerste bloedname 3 maanden na de ingreep
 - Vervolgens iedere 3 maanden in het eerste jaar
 - Voorts ieder half jaar in de volgende jaren
- Controle bij diëtiste na 1 maand en halfjaarlijkse opvolging diëtiste en psychologe

Dataregistratie

IFSO

International Federation for Surgery of Obesity and Metabolic Diseases

Geertrui Agache
als coördinator

FOLLOW UP!!!
Minimaal 70% na
12 maanden...

Audits elke 4 jaar





EAC-BS

European Accreditation Council For Bariatric Surgery

Home	IFSO	IFSO-endorsed COE programs	EAC-BS	REGISTRATION	NEWS	FAQ	CONTACT
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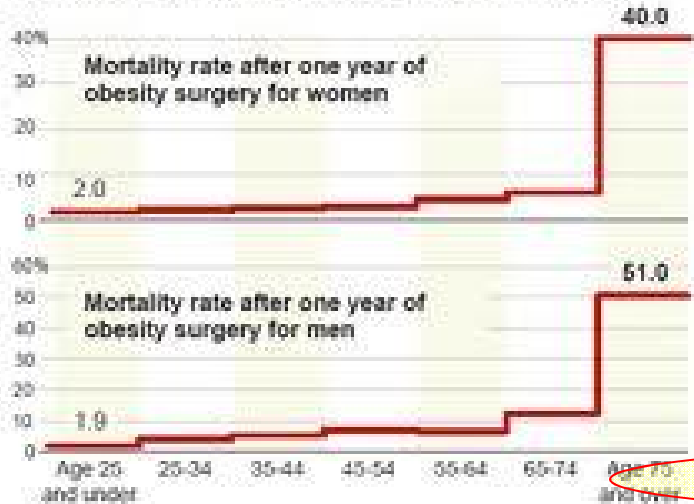


- 1st Propedeutic Department of Surgery, Medical School, University of Athens
- Ain Shams University Specialized Hospital
- Aintree University Hospital NHS
- Foundation Trust
- Al Rayan Hospital
- Angrisani Luigi
- Athens Bioclinic
- Athens Medical Center
- AZ NIKOLAAS
- Azienda Ospedaliera di riferimento nazionale per alta specialita Garibaldi Catania
- Azienda Ospedaliera Universita
- Padova
- Azienda Ospedaliera Universita

Goede follow up is noodzakelijk !

Obesity surgery, more risk than reported

In a recent obesity surgery study, among 35-to-44-year-olds, more than 5 percent of men and nearly 3 percent of women were dead within a year. Rates were slightly higher in patients 45 to 54.



SOURCE: Journal of American Medical Association



Late Complications of Roux-en-Y Gastric Bypass

	Patients (%)
Dumping syndrome	71
Vitamin B ₁₂ deficiency	40
Anemia	39
Hospital readmission	38
Incisional hernia	24
Depression	23
Staple-line failure	15
Gastritis	13
Cholelithiasis	11
Bile reflux	9

Porjes WJ et al. *Ann Surg.* 1995;222:339-350.

GASTRIC BYPASS SURGERY COMPLICATIONS: 14-YEAR FOLLOW UP²

Vitamin B ₁₂ deficiency	239	39.9 percent
Readmit for various reasons	229	38.2 percent
Incisional hernia	143	23.9 percent
Depression	142	23.7 percent
Staple line failure	90	15.0 percent
Gastritis	79	13.2 percent
Cholecystitis	68	11.4 percent
Anastomotic problems	59	9.8 percent
Dehydration, malnutrition	35	5.8 percent
Dilated pouch	19	3.2 percent

Clinical Pearls for Emergency Care of the Bariatric Surgery Patient

EMERGENCY PRESENTATIONS:

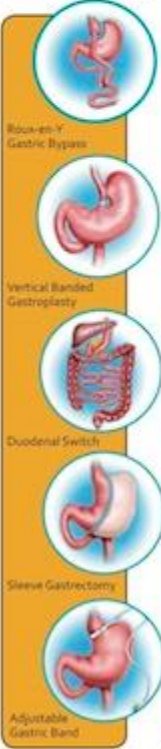
1. Unstable Vital Signs
 - Fever > 101° F
 - Hypotension
 - Tachycardia > 120 bpm x 4 hours
 - Tachypnea
 - Hypoxia
 - Decreased urine output
2. Bright Red Blood by Mouth or Rectum, Melena, Bloody Drainage
3. Abdominal Pain or Colic > 4 hours
4. Nausea ± Vomiting > 4 hours
5. Vomiting ± Abdominal Pain

BARIATRIC COMPLICATIONS:

- Intra-Abdominal Bleeding
- Leaks and Sepsis
- Obstruction
- Pulmonary Embolism
- Vomiting ± Abdominal Pain
- Abdominal Compartment Syndrome

IMPORTANT! KNOW THE ALGORITHM! IT CAN BE VERY CONFUSING!
Patients often don't know which procedure they have had, and surgeons vary the procedure dramatically. If you're not the primary surgeon, call the surgeon who performed the procedure.

Principles to Guide Management of Bariatric Emergencies



I. Critical Time Frame

- Diagnose within 6 hours
- To OR within 12-24 hours

II. Critical Warning Signs

- Call surgeon support early. If not available, call general surgeon on call
- There are not total abdominal surgery patients. They do not avoid expected or typical signs and symptoms, and they have no protective features to prevent complications
- NO-CLUE
 - Avoid "blind placement" due to risk of perforation
 - Will not decompress the distal stomach
- Avoid ASA/ASA II, ASA/ASA III, ASA/ASA IV
- Place an EM for gastric access (optional)
- Preoperative deficiency
 - Initiate avoid glucose or IV fluids unless hemodynamically compromised
 - Use RL or RL or low amounts of multivitamins
 - Can result in metabolic syndrome, characterized by anemia, hypokalemia, elevated sodium, ↓ bicarb with increase the rate of permanent neurologic impairment
 - Avoid overloading the gastric pouch with oral fluids or enteral feeds post-op day 4-6

Initial Assessments

1. Physical exam and vital signs - may need to be serial
2. Labs
 - CBC
 - Comprehensive Chemistry Profile
 - Amylase
3. Imaging
 - Chest X-Ray
 - CT of Abdomen with oral contrast
 - CT of Chest with IV contrast

Hospital Management of the Bariatric Surgery Patient

"FAST HUG"

- **FOOD:** Establish enteral or parenteral nutrition within 48 hours
- **ANALGESIA:** Control pain for patient comfort
- **SEDATION:** If an analgesic to prevent self-dehydration
- **VOLUME/EMOLIC PROMPHYLAXIS:** Mechanical and chemical
- **HEAD-OF-BED-ELEVATED:** get for aspiration risk
- **VACUER PROMPHYLAXIS:** Proton pump inhibitor
- **GLUCOSE CONTROL:** Tight control with glucose < 100

● INTRA-ABDOMINAL BLEEDING

I. Emergency Presentation

Bright Red Blood Oral or Rectal, Melena, Bloody Drainage, Tachycardia, Hypotension, Fainting

- < 48 hrs postop indicates potential bleed from staple line
- > 48 hrs postop indicates potential marginal ulcer hemorrhage
- Bleeding via oral route indicates potential pouch source
- Melena or bleeding via rectal route indicates potential duodenal ulcer or distal stomach or bowel source

II. Emergency Assessment and Treatment

- Give anti-nausea Rx first
- Stop Anticoagulants, ASA, PPIs
- Pyloric Compression (PC), may need PPI or proton pump inhibitor
- Serial imaging
- Repeat vital signs
- Monitor Urine Output
- Check Serial Hb/Hct
- Serial IV access may need central line

III. To Surgery if:

- Drop or trend of labs
- Ongoing vital signs deterioration
- Failure to stabilize with IV fluids
- Despite fluid bolus or blood transfusion
- Hemodynamic instability
- Hemodynamic instability with oral/parenteral nutrition
- Hemodynamic instability with oral/parenteral nutrition

● LEAKS AND SEPSIS

I. Emergency Presentation

- Unstable vital signs within 72 hours of bariatric surgery
- Persistent and progressive tachycardia (>120 bpm x 4 hrs) is the most sensitive indicator of potential surgical emergency
- Signs of sepsis may be subtle at first and may require rule-out hepatomegaly, pancreatitis, bleeding, pulmonary embolism (PE), obstruction and/or leak
- Distal small signs of presentation are all signs of sepsis, especially within 72 hours of bariatric surgery: fever > 101° F, tachycardia, tachypnea, hypoxemia, hypotension, decreased urine output
- Presentation of an intra-abdominal complication, such as leak, is often similar to that of PE. Give PE a ruled and tachy persistant without ruled CT, consider immediate surgical exploration
- A negative abdominal CT does not definitively rule out a complication such as a leak. Abdominal series and gastrografin swallow can be helpful even when there is a leak

II. Emergency Treatment

- Conservative supportive management of leaks may be considered. Esophageal dilatation is well tolerated internally or externally with gastrografin swallow. Serial fluoroscopy for ingesting oral contrast (CT of the abdomen, stable clinically T < 101° F, pulse < 100 bpm, WBC < 12,000, normal renal and respiratory functions)
- Antibiotics
- Surgical exploration

Adjustable Gastric Band

- If nausea and vomiting is present, obtain flat plate of abdomen, with hand lifted up compared to spine, and barium swallow to assess for possible stenosis or obstruction
- If sig seen on x-ray → urgent deflate, possibly operate
- To deflate the band, ask patient where their port is located and should be able to palpate via abdominal wall or use fluoroscopy. Can also see it on flat plate x-ray. Use sterile prep under local. Insert non-coating Huber needle similar to that used for port access, as the system is under pressure and will leak. Remove as much fluid as possible, then re-evaluate symptoms and findings
- Maximum band volume is a 1L mL depending on model



● PULMONARY EMBOLISM

I. Emergency Presentation

- Unstable vital signs with tachycardia > chest pain

II. Emergency Assessment

- PE is common immediate post CT
- Presentation of PE in abdominal compartment such as leak or bleed from intra-abdominal compartment often comes to that of PE


● VOMITING ± ABDOMINAL PAIN

I. Emergency Presentation

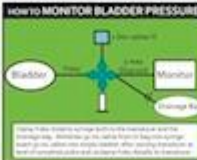
Vomiting associated with abdominal pain needs prompt surgical evaluation and observation until resolved or surgical exploration.

II. Emergency Assessment and Treatment

CLINICAL PATHWAY FOR EVALUATION OF VOMITING (V) ± ABDOMINAL PAIN



HOW TO MONITOR BLADDER PRESSURE:



● OBSTRUCTION

I. Emergency Presentation

- Abdominal Pain or Colic > 4 hours
- Common gastric complaint. Occurs at more than 1 year, or associated with vomiting. Requires surgical evaluation and observation and medical treatment if possible. (usually dependent on model type, brand, etc)
- No place for PE rule out common sense management
- Rule out bowel obstruction (partial or complete) also rule out leak. Serial imaging
- Persistent CT of abdomen with oral contrast or barium (B) with serial B's follow through to the colon with contrast to assess the possible obstruction
- Consider B's to rule out oral gastric pouch obstruction or GI motility problems
- Monitor of expansion of gastrografin or CT contrast - consider parenteral nutrition if no expansion
- If leak, site and physical exam often negative in patients with obstruction
- Serial B's often show obstruction and/or leak. Serial B's often show obstruction and/or leak. Serial B's often show obstruction and/or leak.
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II. Emergency Treatment

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For more information, please visit www.asmbms.org

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Bereikbaarheid!!!

Maandag	VM	Bart Gypen Frank van Sprundel	Stuivenberg St.-Erasmus
	NM	Stijn Heyman Leo Hendrickx	St.-Elisabeth Stuivenberg
Dinsdag	VM	Bart Gypen	Stuivenberg
	NM	Jody Valk	St.-Erasmus
Woensdag	VM	Stijn Heyman Leo Hendrickx	St.-Erasmus Stuivenberg
	NM	Frank van Sprundel	Stuivenberg
Donderdag	NM	Bart Gypen Jody Valk	St.-Erasmus Stuivenberg
Vrijdag	VM	Jody Valk Leo Hendrickx	Stuivenberg St.-Erasmus

Hiaten in ons obesitasteam

Patiënten met BMI tussen 30 en 35 kg/m²

Diëtiste

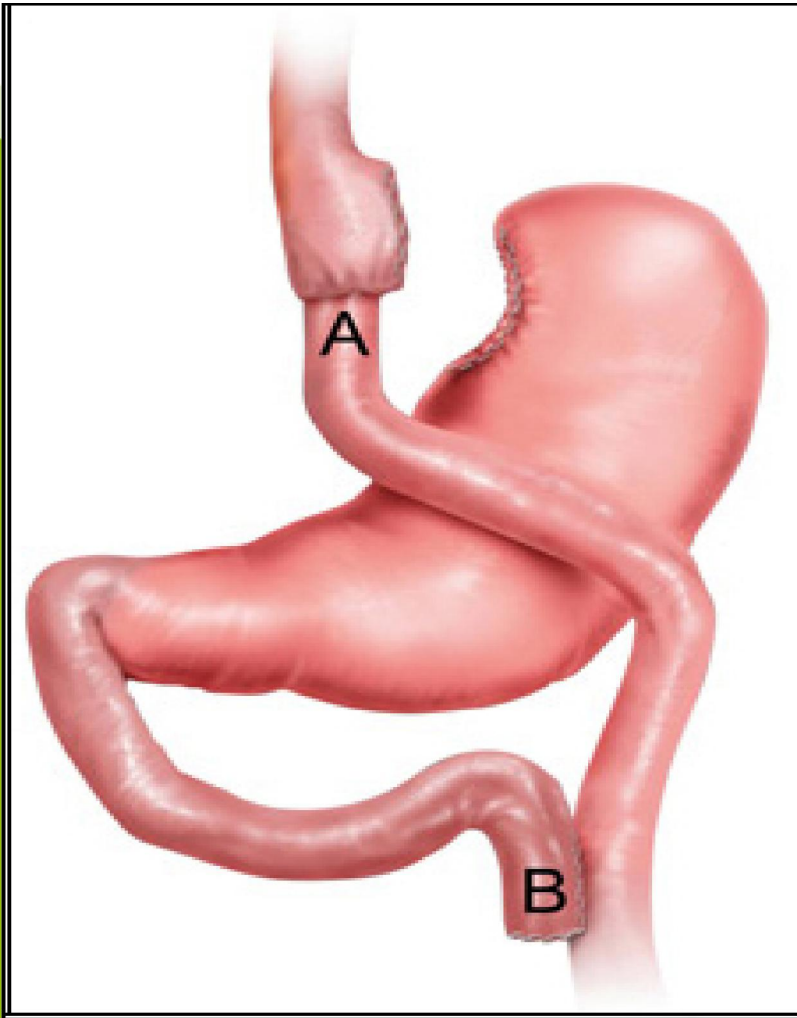
Psychologe

Kinesiste

Life style coach???

Patiënten met BMI tussen 35 en 40 kg/m²
zonder de aangegeven comorbiditeiten

**Onze wens: evolutie tot een
“obesitashuis”**



zna

Gastric Bypass

Korte termijn complicaties na laparoscopische gastric bypass

Peroperatieve en peri-operatieve complicaties

lekkage
nabloeding
pneumonie
en andere...

zeldzaam, maar



Lange termijn complicaties na laparoscopische gastric bypass

haarverlies en huidoverschot

tekorten van vitaminen en mineralen

ulcus anastomoticum/stenose gastroenterostomie

galstenen

dumping

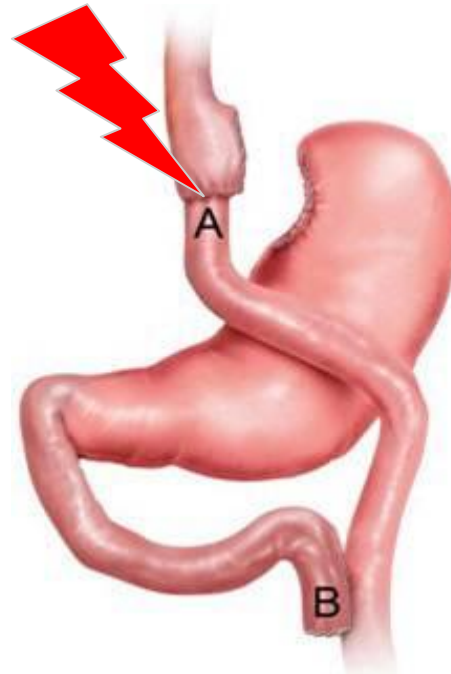
interne hernia

Lange termijn complicaties na laparoscopische gastric bypass

Het ulcus anastomoticum

Nausea

Epigastrische pijn



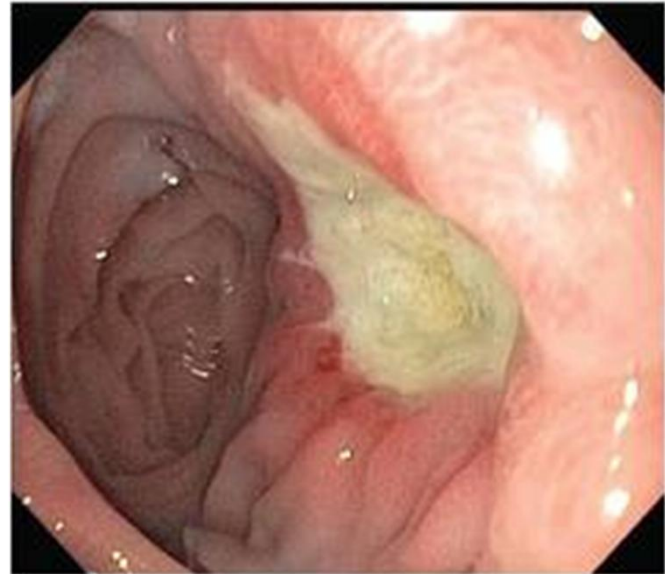
Roken

“NSAID”

Lange termijn complicaties na laparoscopische gastric bypass

Ulcus anastomoticum

**Behandeling met PPI
Rookstop
Degastrogastrectomie**



Lange termijn complicaties na laparoscopische gastric bypass

Galstenen

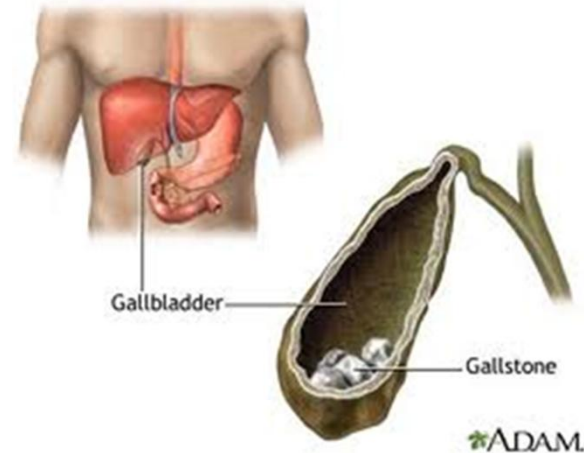
Misselijk en braken

Pijn in de bovenbuik

Uitstralend naar rechts en de rug

Soms bandvormig

Bewegingsdrang



Bloedname

Echografie

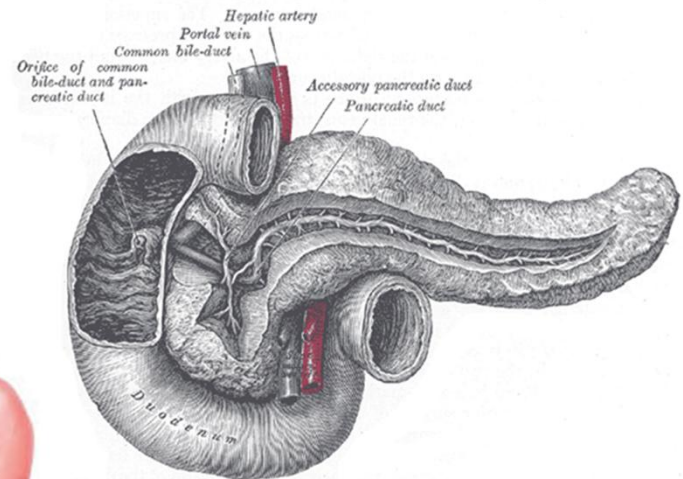
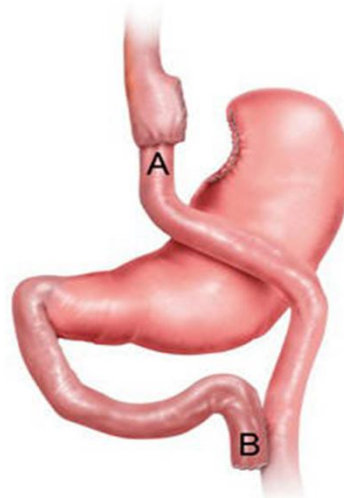
Operatie

Lange termijn complicaties na laparoscopische gastric bypass

Sfincter van Oddi dysfunctie

Soortgelijke pijnen als galstenen
Status na cholecystectomie

Bloedname
MRCP
Nardi test (dagopname)
Laparoscopisch
geassisteerde ERCP



Lange termijn complicaties na laparoscopische gastric bypass

dumping

vroege dumping

wet van osmose

late dumping

“de appelflauwte”

**beven, hoofdpijn, aandacht, zicht
 (“neuroglycopene klachten”)**



Lange termijn complicaties na laparoscopische gastric bypass

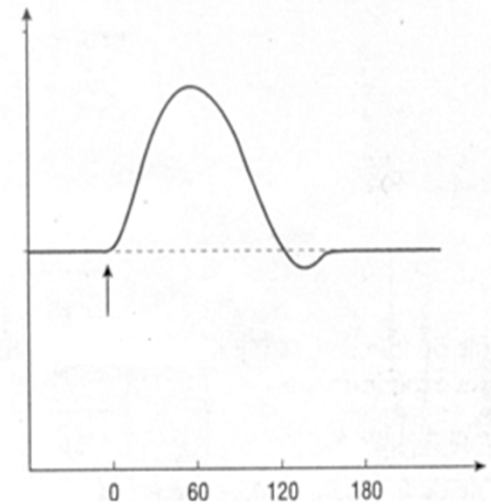
dumping

**vermijden van suikers
(snelle suikers)**

frequentere, kleinere maaltijden

Acarbose/Glucobay

inspuitingen met sandostatine/octreotide

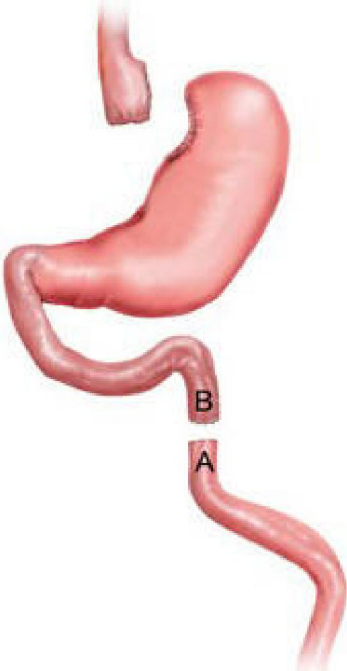


Interne hernia na gastric bypass

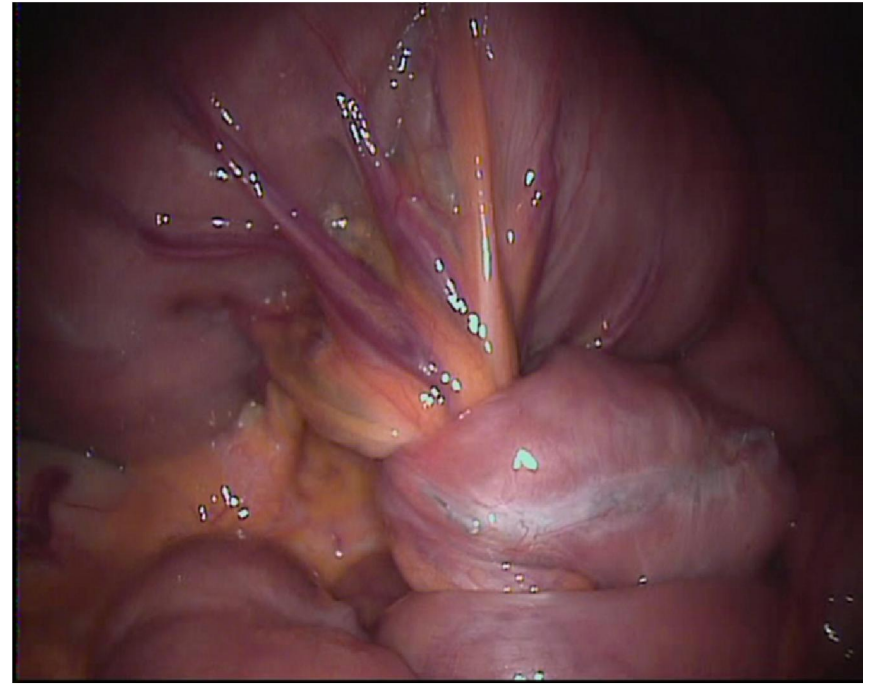
“knoop in de darm”



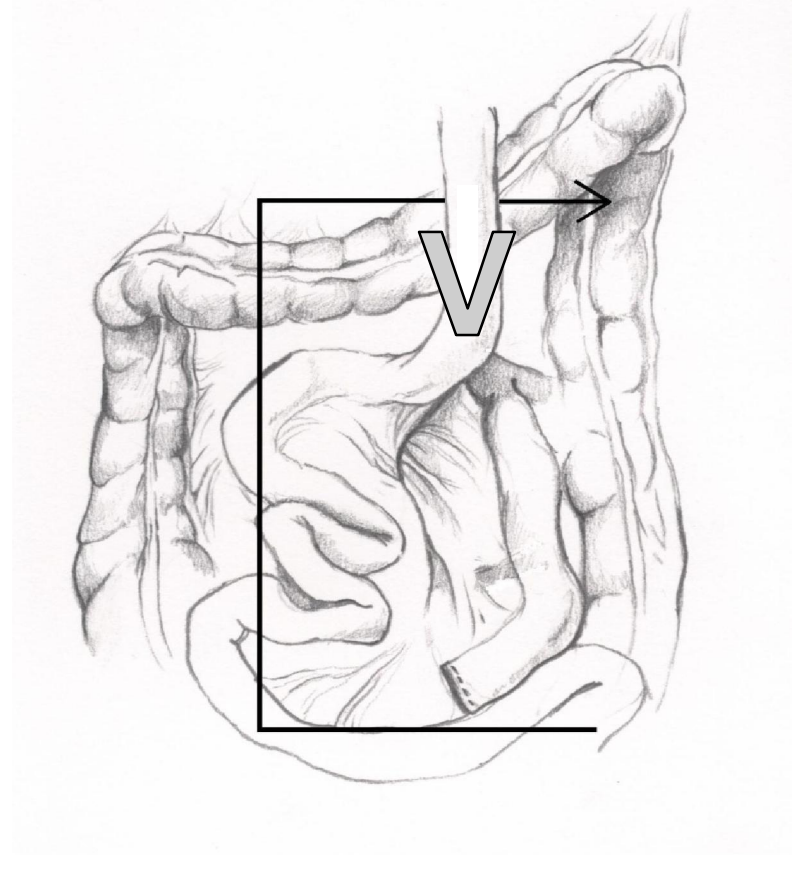
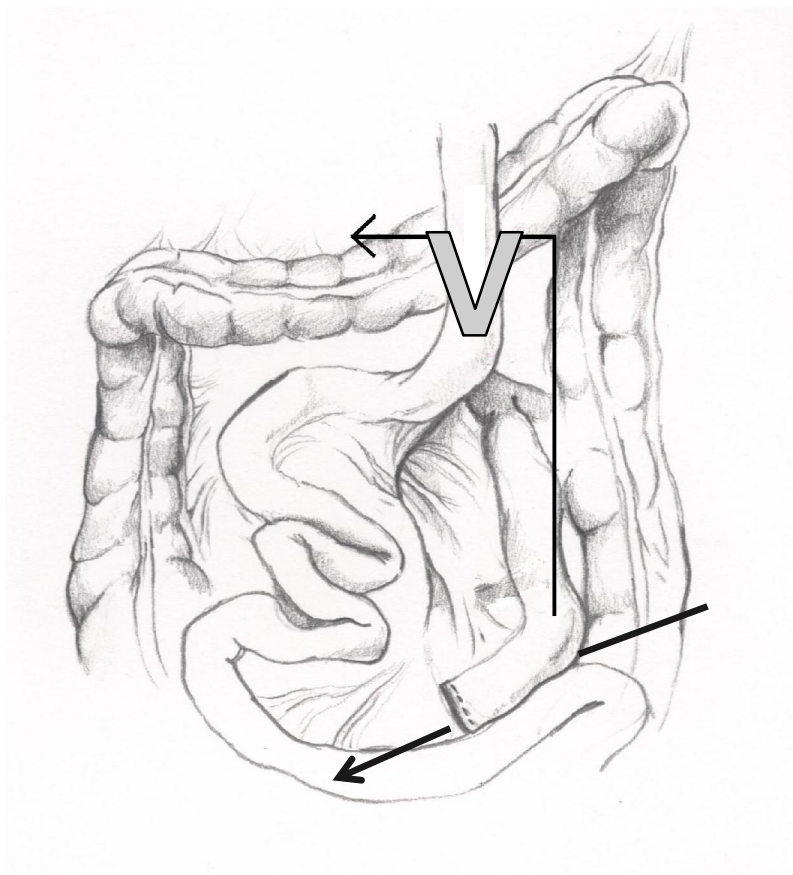
De gastric bypass



Interne hernia na LGBP



De interne hernia volgens Petersen en door “mesobres”



De kans op een interne hernia

De kans is duidelijk verhoogd sinds de laparoscopie

Tussen 0,5 en 4,5% in de literatuur

Let op:

- > miskende diagnose
- > verdwenen uit follow up

De kans op een interne hernia

Meestal (+/- 90%) binnen de 24 maanden

Gemiddelde van 14 maanden

Grote en snelle daling van EWL en BMI

$$EWL\% = \frac{\textit{Excessive Weight Loss}}{\textit{Overweight}}$$

$$EWL\% = \frac{(\textit{Weight Before LRYGBP}) - (\textit{Current Weight})}{(\textit{Start Weight}) - (\textit{Ideal Body Weight})}$$

Op moment van operatie veel intra-abdominaal vet



Klachten bij interne hernia

Vrij plots opgekomen bovenbuikspijn

Meestal krampachtig of knagend

Vaak verergerend na een maaltijd

Vaak misselijkheid

Uitstralend naar links en de rug

De pijn is vaak beter in zijlig of bij voorover buigen

Soms is deze pijn al enkele dagen tot maanden bestaande

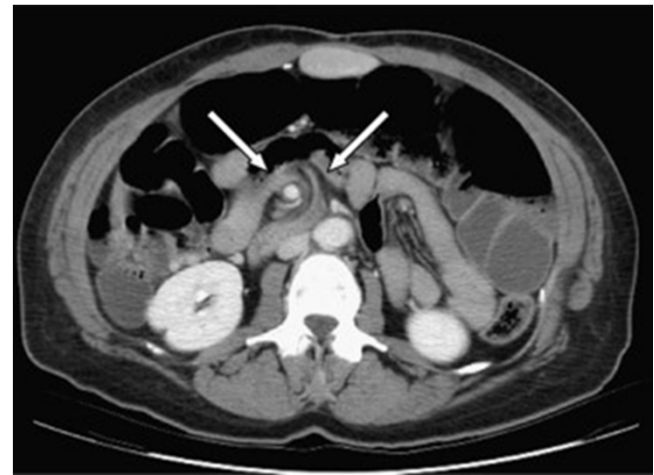


Diagnose van interne hernia

CT-scan

- > swirl sign
- > mushroom
- > hurricane eye

- > vocht (chyle)
- > opgezette darmen en restmaag
- > knik van darm (Treitz)
- > stuwing meso dundarm



Diagnose van interne hernia



Behandeling van interne hernia

Laparoscopie, zo mogelijk met dezelfde incisies

Soms dringend

Reductie van de darmen op de juiste plaats

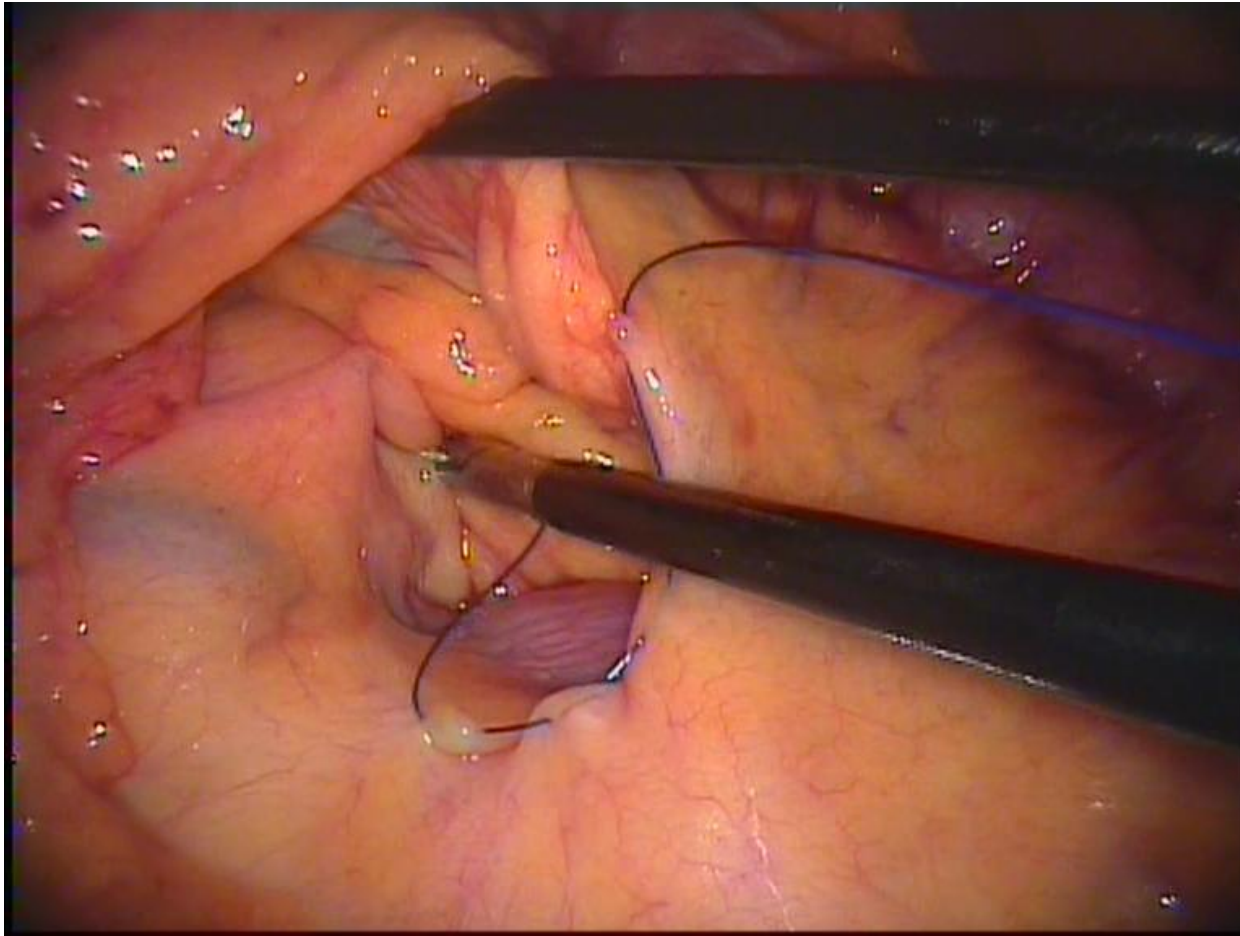
(Her)sluiten van de ontstane opening tgv het afvallen:

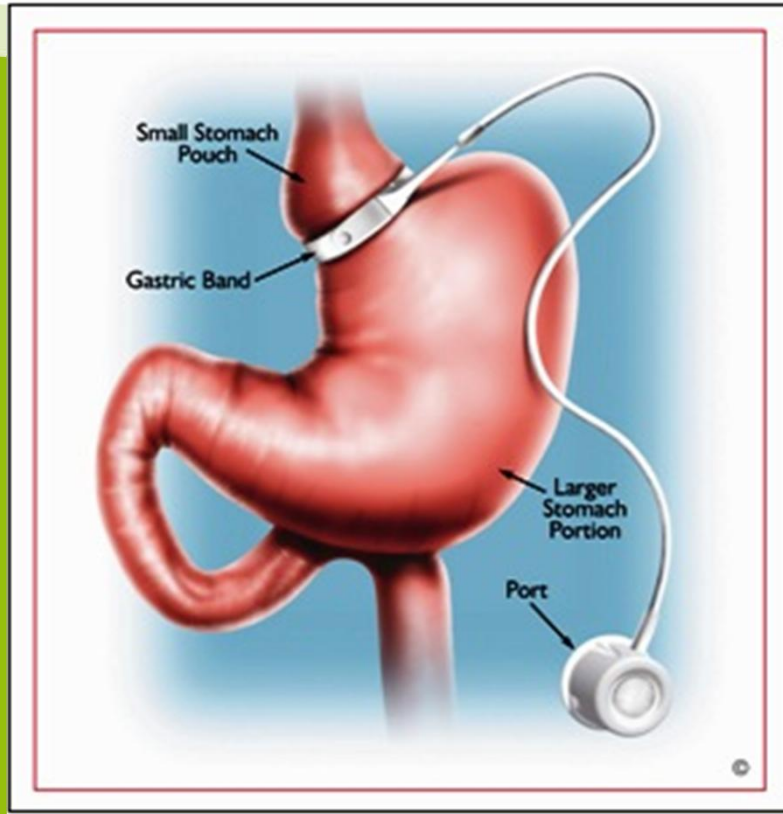
Petersen's space of mesobres

Meestal 1 overnachting, soms in dagopname

Snel normale voeding

Behandeling van interne hernia

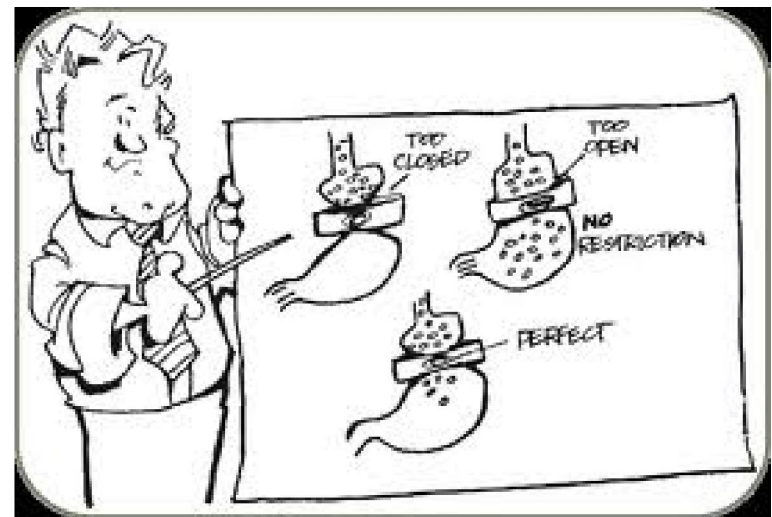
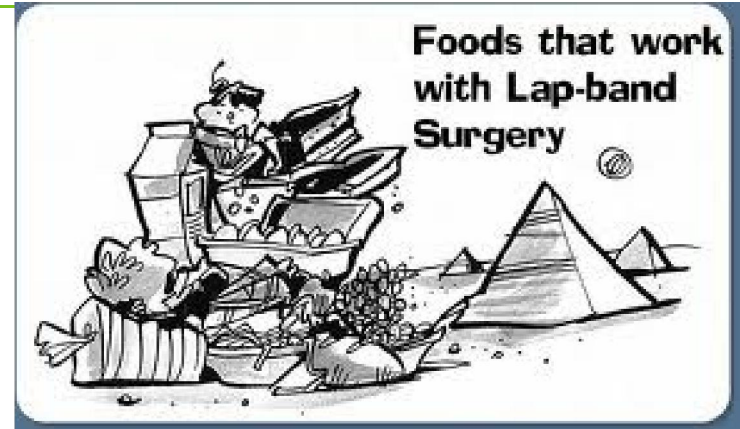




Maagband

Problemen met de Maagband

- Misselijk en braken
- Pijn thv de poortsite.....
- Pijn epigastrisch
- Gewichtstoename



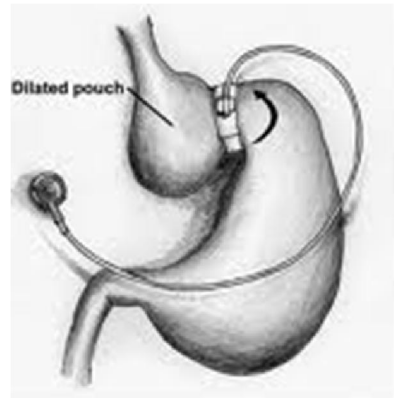
'Slipping'



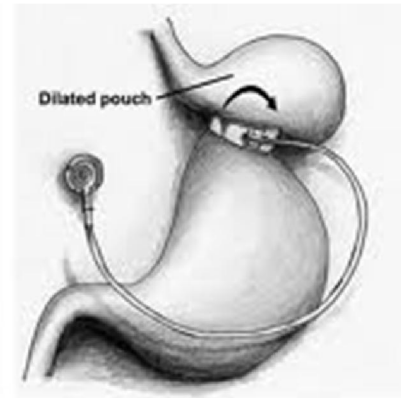
Fig. 1. Pouch enlargement



Fig. 2. Band slipping



(a)



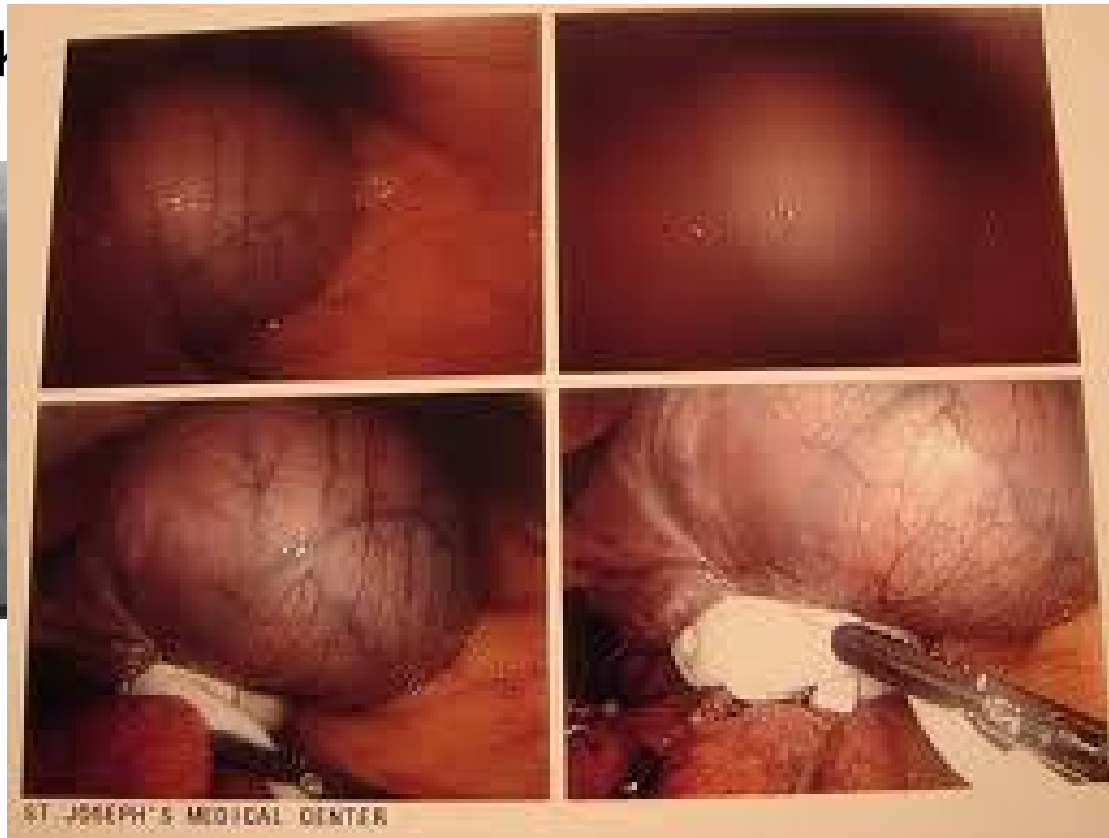
(b)

Onderzoek voor 'Slipping'

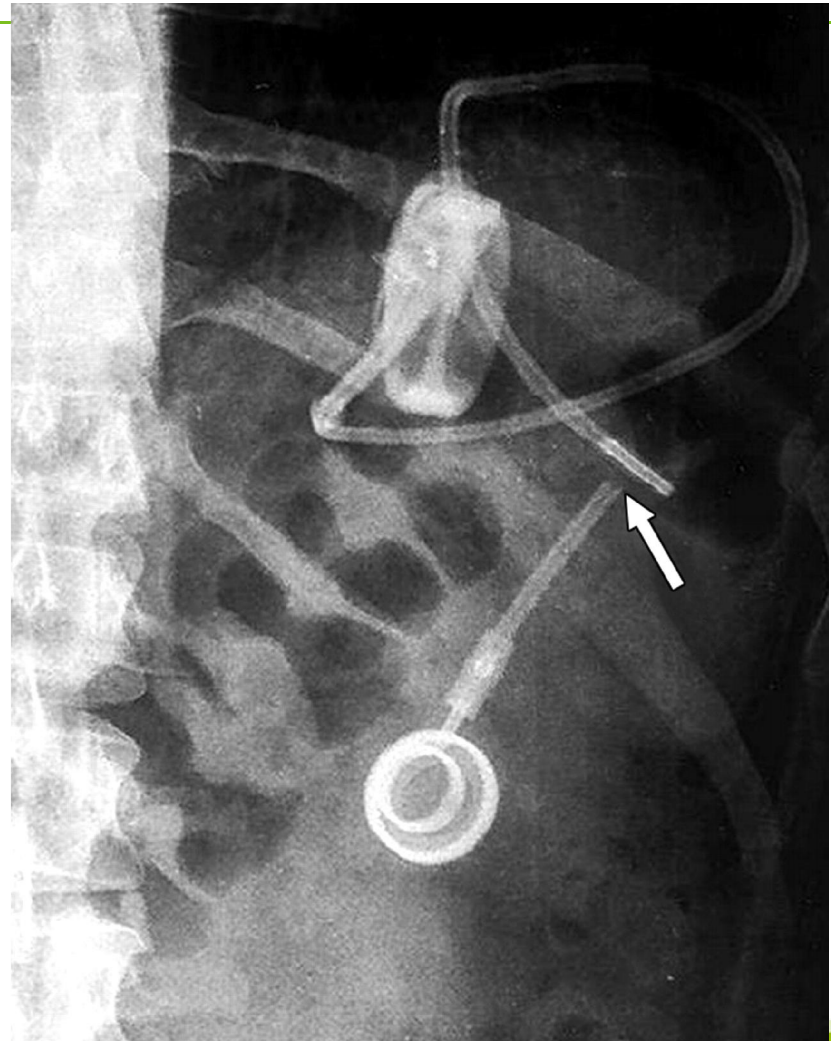
SMD - Slip



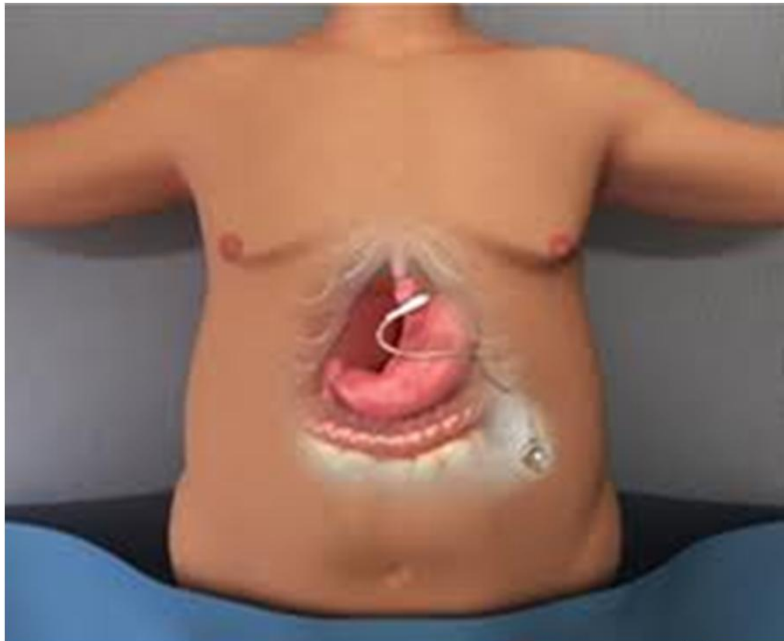
(a)



Poort problemen

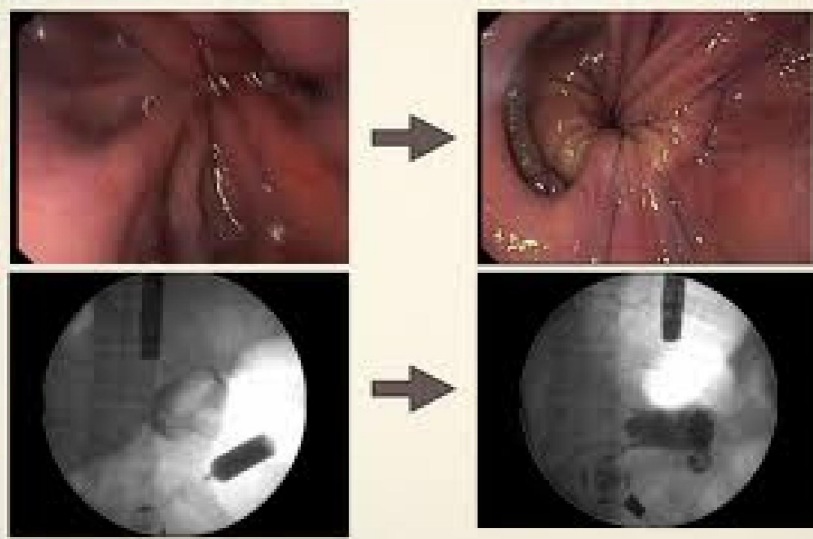
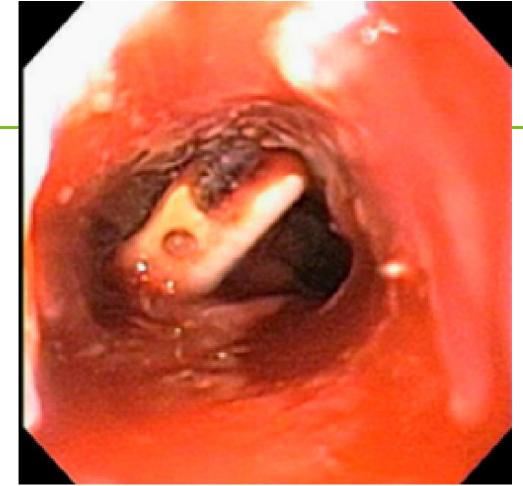


Pijn poortsite



Infectie thv poortsite vaak eerste teken erosie maagband !

Erosie / Perforatie





Voormaag



ADAM.

zna

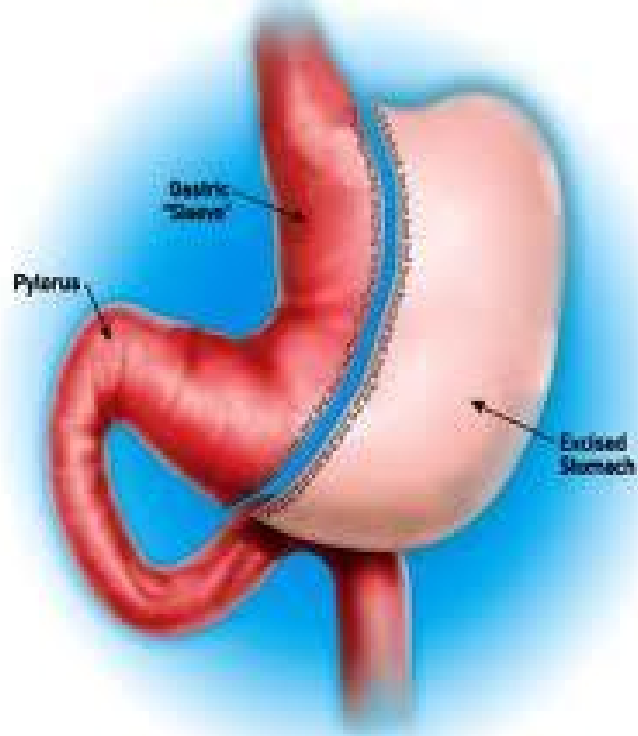
VBG / Mason

Problemen na VBG / Mason

- Reflux
- Passage hinder
- Gastric Outlet klachten

SMD / Slikfoto
Gastroscopie





Sleeve Gastrectomie

Problemen na Sleeve Gastrectomie

- Reflux
- Passage hinder



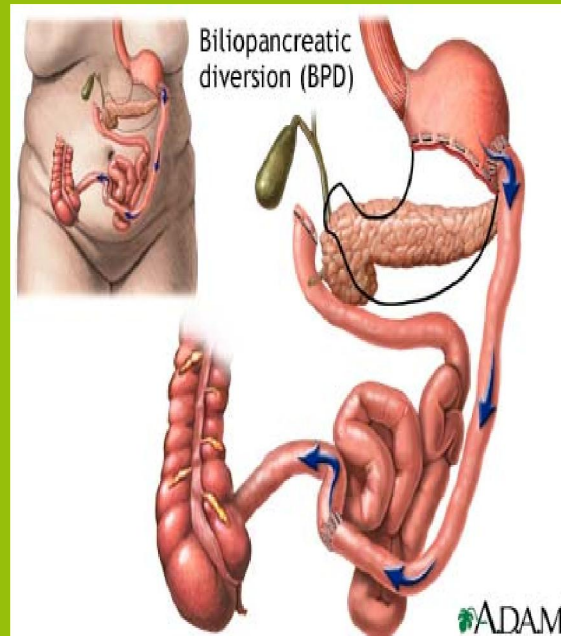
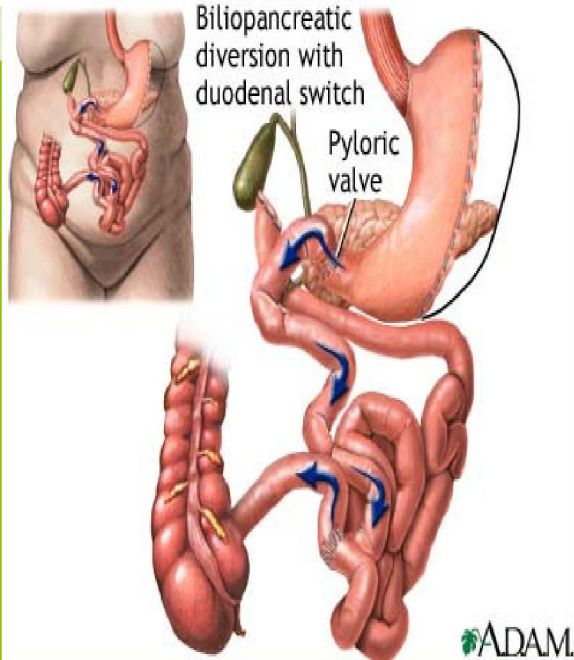
Gastroscoopie



Ernstige reflux of stenose



Conversie overwogen naar Gastric Bypass



BPD / Scopinaro

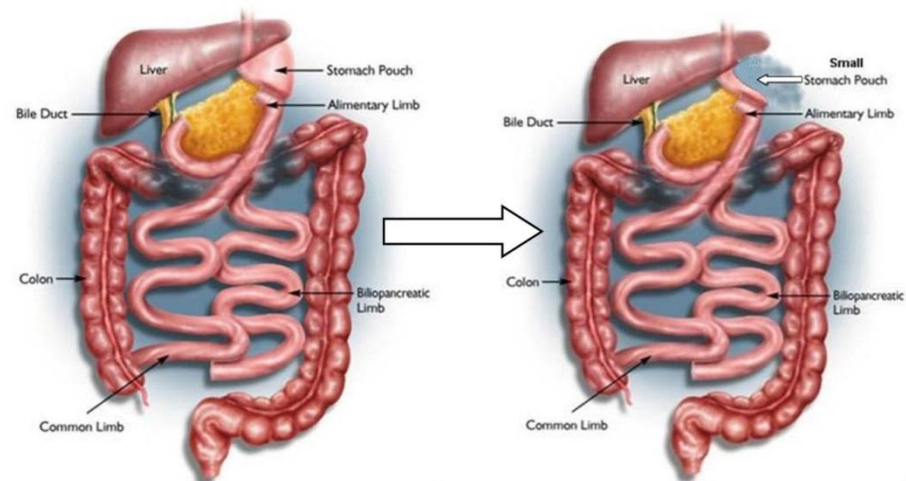
Deficienties & Bijwerkingen

Malabsorptie

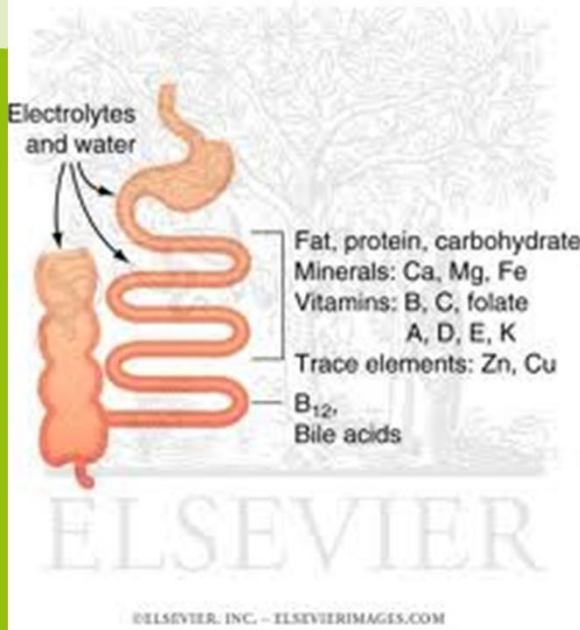
- Eiwitten
- Vetten
- Vet oplosbare vitaminen (A,D,E,K)
- Water oplosbare vitaminen (B12)
- IJzer
- Calcium

Steatorrhoe

Geurhinder



Conversie van BPD naar Gastric Bypass



Behandelning deficienties



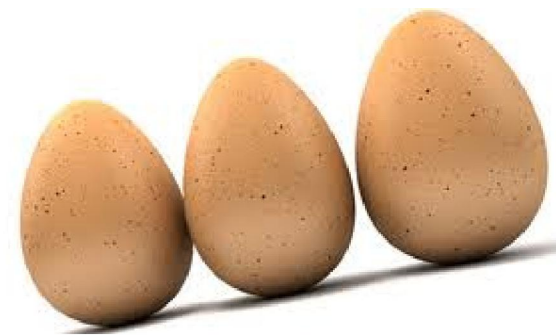
Follow up Bariatrische Heelkunde

Bloedname

- Cytologie (Hb, Ht, MCV)
- Calcium, Magnesium
- IJzer, Ferritine
- Levertesten
- Vitamines
 - ✓ A
 - ✓ B12
 - ✓ D
 - ✓ E
 - ✓ K
- Zink, Foliumzuur
- Parathyroidhormoon



Eiwitten (0 – 18%)



Kan optreden vanaf enkele weken na de ingreep.

Klinisch:

- Spierzwakte, verlies van spiermassa
- Huidschilfering
- Oedemen

Behandeling: Eiwitrijke voeding



IJzer (13 - 52%)



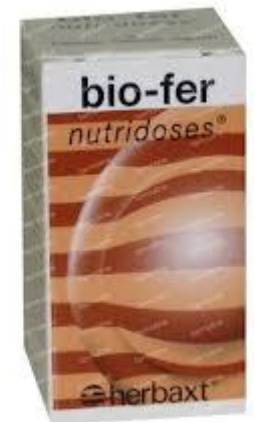
Soms reeds preoperatief tekort (menometrorrhagia)
Weinig inname van rood vlees

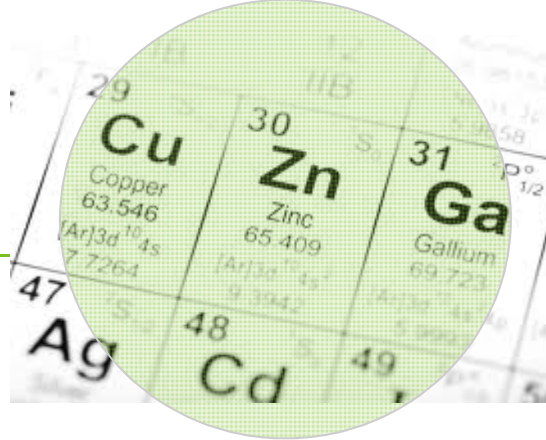
Klinisch:

- Anemie
- Microcytose
- Asthenie
- Aandoeningen onderhuid

Behandeling:

- Dieetadviezen
- IJzermedicatie (oppassen met Calcium)
- Venofer i.v.





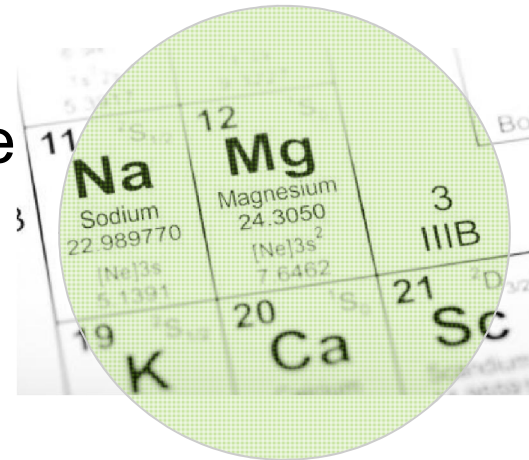
Zink (11-36%)

Klinisch mogelijk alopecia
Behandeling via multivitamine

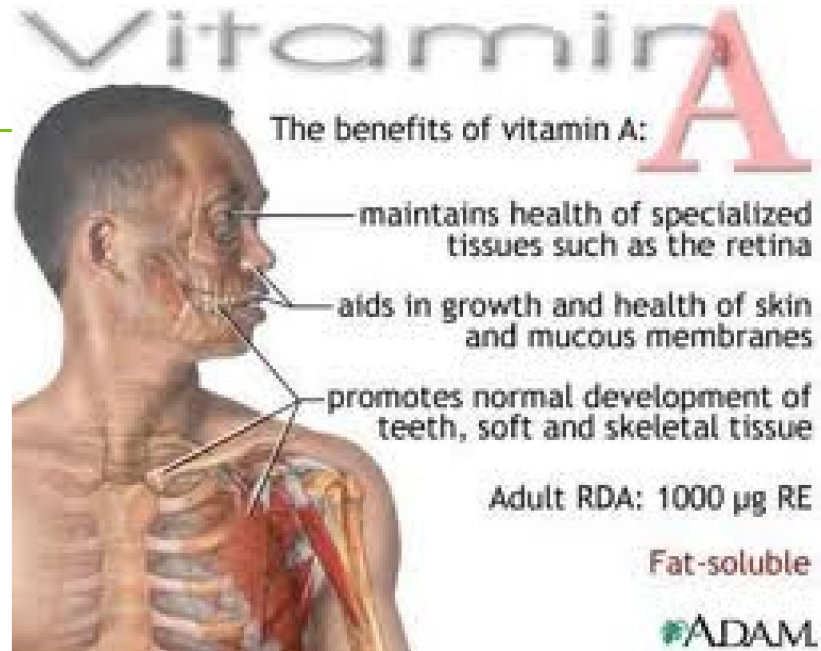


Magnesium (0-34%)

Klinisch mogelijk krampen
Behandeling via multivitamine



Vitamine A (10 – 69%)



Ten gevolge van malabsorptie

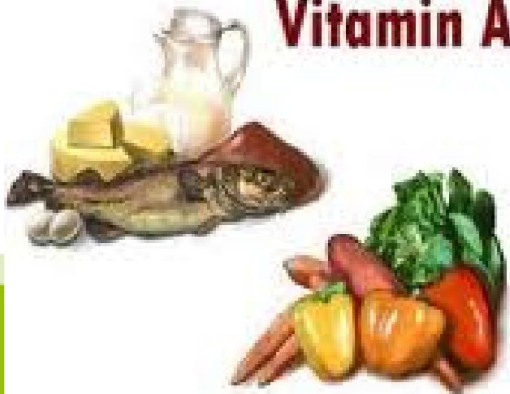
Klinisch:

- Visueel / nachtblindheid (zeldzaam)

Behandeling:

- Dieetadvies
- Suppletie peroraal

Vitamin A



Vitamin A

Vitamin is essential for eye and skin health. It is an anti-oxidant.



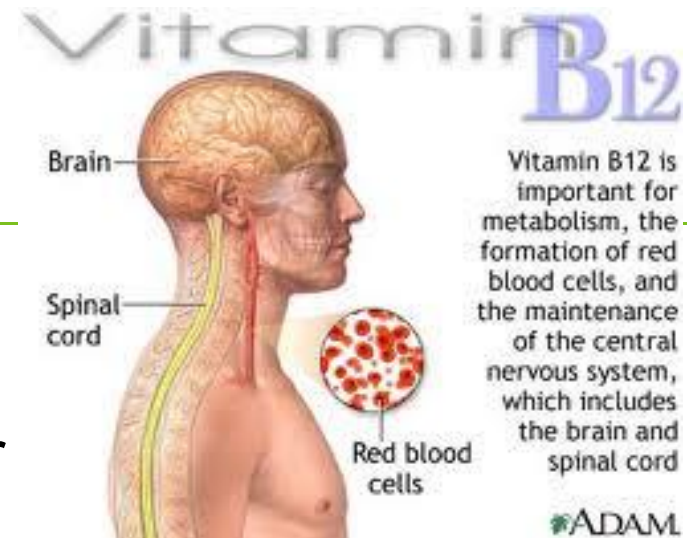
<http://eatingmywaytobetterhealth.blogspot.com/>

Vitamine B12 (12 – 30%)

Lage inname voedingsmiddelen van dierlijke oorsprong (vlees / zuivel)
Malabsorptie, minder Intrinsiek Factor

Klinisch:

- Macrocytaire anemie
- Neurologische aandoeningen (myelopathie, neuropathie, neuropsychiatrische manifestaties)



Behandeling:

- Dieetadvies
- Peroraal B12 (>1gram/dag)
- Intramusculair

vitamin B12:



Vitamine D (17 – 63%)

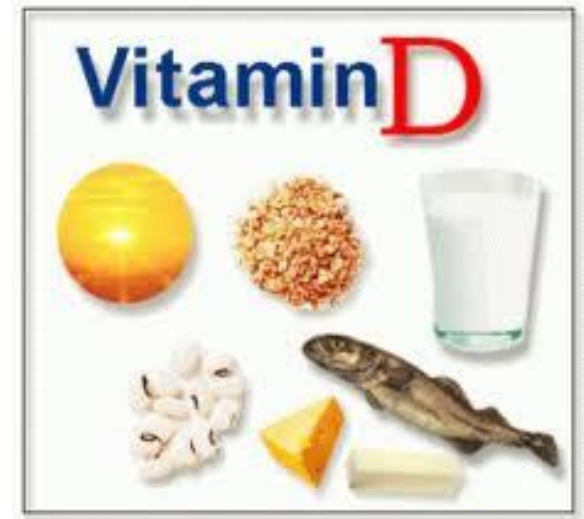
Vaak reeds pre-operatief tekort
Lage blootstelling zon
Malabsorptie

Klinisch:

- Hypocalciemie
- Secundaire hyperparathyreoidie
- Osteomalacie
- Osteopenie of osteoporose
- Botbreuken

Behandeling:

- Dieetadviezen
- Perorale vitamine D (D-Cure / Steovit)



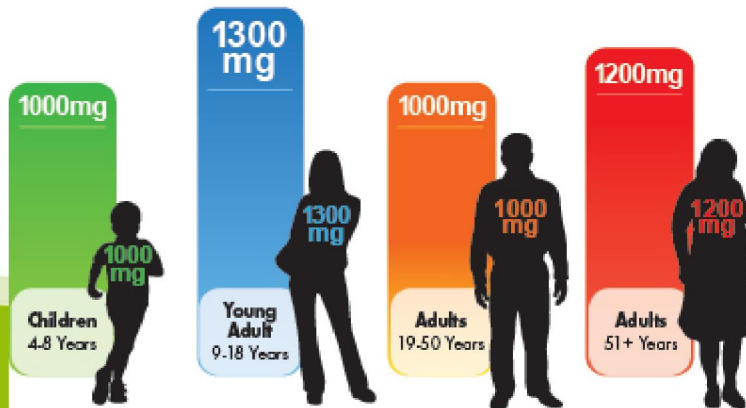
Calcium (0- 48%)

Hoofdzakelijk lage inname
Laag Vitamine D.

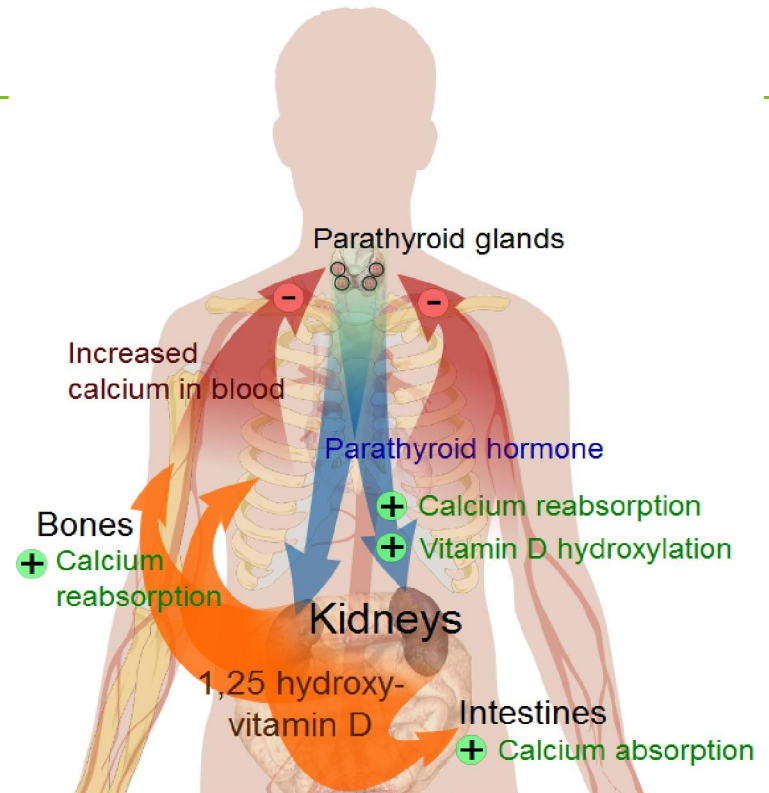
Klinisch:

- Osteopenie of osteoporose
- Botbreuken

How Much Calcium is Recommended?



Calcium regulation



Behandeling:

- Peroraal Calcium



Calcium

Betere absorptie door:

- Gelijktijdige inname van Calcium en Vitamine C
- Gelijktijdige inname Calcium en Lysine rijk voedsel (ei, vis, soya)
- Combineer met Magnesium
- Kleine porties verspreid over dag beter

Slechte absorptie door:

- Zink, Ijzer
- Koolzuur houdende dranken (veel phosphor)
- Cashew noten, rabarber, amandelen, spinazie (veel oxaalzuur)

Overige vitamines

Vitamine B1 zeldzaam, wel enkele case reports.
Klinisch Wernicke Encephalopathie

Vitamine E enkel bij BPD tot 4%
Klinisch werkzaam als antioxidant
Zit o.a. veel in Kiwi's



Vitamine K

Enkel beschreven bij extreme gewichtsverlies
Klinisch:

- mogelijk stollingstoornissen.
- Intra-uteriene vruchtdood bij zwangeren tgv bloeding !

SUPRADYN VITAL 50+ BEVAT PER TABLET:

VITAMINES

Ingrediënt	Per tablet	ADH*
Vitamine A (incl. bètacaroteen)	400 mcg	50 %
Vitamine B ₁	1,6 mg	118 %
Vitamine B ₂	2,4 mg	150 %
Vitamine B ₃	18 mg	100 %
Vitamine B ₅	6 mg	100 %
Vitamine B ₆	2,5 mg	124 %
Vitamine B ₈	0,075 mg	50 %
Vitamine B ₁₁	300 mcg	150 %
Vitamine B ₁₂	1,5 mcg	150 %
Vitamine C	90 mg	150 %
Vitamine D	4 mcg	80 %
Vitamine E	15 mg	150 %

MINERALEN EN SPORENELEMENTEN

Ingrediënt	Per tablet	ADH*
Calcium	160 mg	20 %
Chroom	50 mcg	**
Ijzer	5,6 mg	40 %
Jodium	60 mcg	40 %
Koper	1 mg	**
Magnesium	120 mg	40 %
Mangaan	1,4 mg	**
Molybdeen	60 mcg	**
Selenium	28 mcg	**
Zink	6 mg	40 %
Ginseng extract	50 mg	**

* ADH = aanbevolen dagelijkse hoeveelheid



Specificaties

Vitamine A	1000 microgram (mcg)
Procent van de ADH van Vitamine A	125 %
Beta-caroteen	-
Procent van de ADH van beta-caroteen	-
Vitamine D	5 microgram (mcg)
Procent van de ADH van vitamine D	100 %
Vitamine E	10,7 milligram (mg)
Procent van de ADH van vitamine E	89 %
Vitamine K	-
Procent van de ADH van vitamine K	-
Vitamine B1	1,1 milligram (mg)
Procent van de ADH van vitamine B1	100 %
Vitamine B2	1,5 milligram (mg)
Procent van de ADH van vitamine B2	107 %
Niacine (B3)	17 milligram (mg)
Procent van de ADH van niacine (B3)	106 %
Pantotheenzuur (B5)	5 milligram (mg)
Procent van de ADH van pantotheenzuur (B5)	83 %
Vitamine B6 (pyridoxine)	1,8 milligram (mg)
Procent van de ADH van vitamine B6 (pyridoxine)	129 %
Foliumzuur (B11)	300 microgram (mcg)
Procent van de ADH van foliumzuur (B11)	150 %
Vitamine B12	2,8 microgram (mcg)
Procent van de ADH van vitamine B12	112 %
Biotine (B8)	-
Procent van de ADH van biotine (B8)	-
Vitamine C	70 milligram (mg)
Procent van de ADH van vitamine C	88 %
Calcium	128 milligram (mg)
Procent van de ADH van calcium	16 %
Magnesium	250 milligram (mg)
Procent van de ADH van magnesium	67 %
Ijzer	8,8 milligram (mg)
Procent van de ADH van ijzer	63 %
Koper	1,5 milligram (mg)



Samenstelling WLS Forte

Actieve ingrediënten per capsule		% ADH*
Vitamines		
Vitamine A	1 mg	125 %
Vitamine B1 (Thiamine)	2,75 mg	250 %
Vitamine B2 (Riboflavine)	3,5 mg	250 %
Vitamine B3 (Niacine)	32 mg	200 %
Vitamine B5 (Calcium Panthotenaat)	18 mg	300 %
Vitamine B6 (Pyridoxine)	2,8 mg	200 %
Vitamine B8 (Biotine)	600 µg	1200 %
Vitamine B11 (Foliumzuur)	600 µg	300 %
Vitamine B12	350 µg	14000 %
Vitamine C	120 mg	150 %
Vitamine D3	12,5 µg	250 %
Vitamine E (Tocoferolsuccinaat)	24 mg	200%
Vitamine K1	120 µg	160%
Mineralen		
Chroom (Chroompolynicotinaat)	160 µg	400 %
IJzer (Ferro fumeraat)	70 mg	500 %
Jodium (Kalium jodaat)	225 µg	150 %
Koper (Koper gluconaat)	3 mg	300 %
Mangaan (Mangaan citraat)	3 mg	150 %
Molybdeen (Natrium molybdaat)	112,4 µg	225 %
Selenium (Selenium methionine)	105 µg	191 %
Zink (zink citraat)	22,5 mg	225 %
Overige actieve ingrediënten		
Choline	10 mg	-

* Aanbevolen Dagelijkse Hoeveelheid



Besluit

- Obesitas vereist een teambehandeling in centra waar een multidisciplinair aanbod aanwezig is.
- Het chirurgisch team dient de diverse technieken te kunnen uitvoeren. Belang van toegankelijkheid,
- Voedingsbegeleiding is noodzakelijk
- Follow-up !