
XXVIII IFSO World Congress
9-12 September 2025 | Santiago, Chile
COMBINED THERAPIES, THE DAWN OF A NEW ERA
IFSO
SANTIAGO 2025
Transit Bipartition
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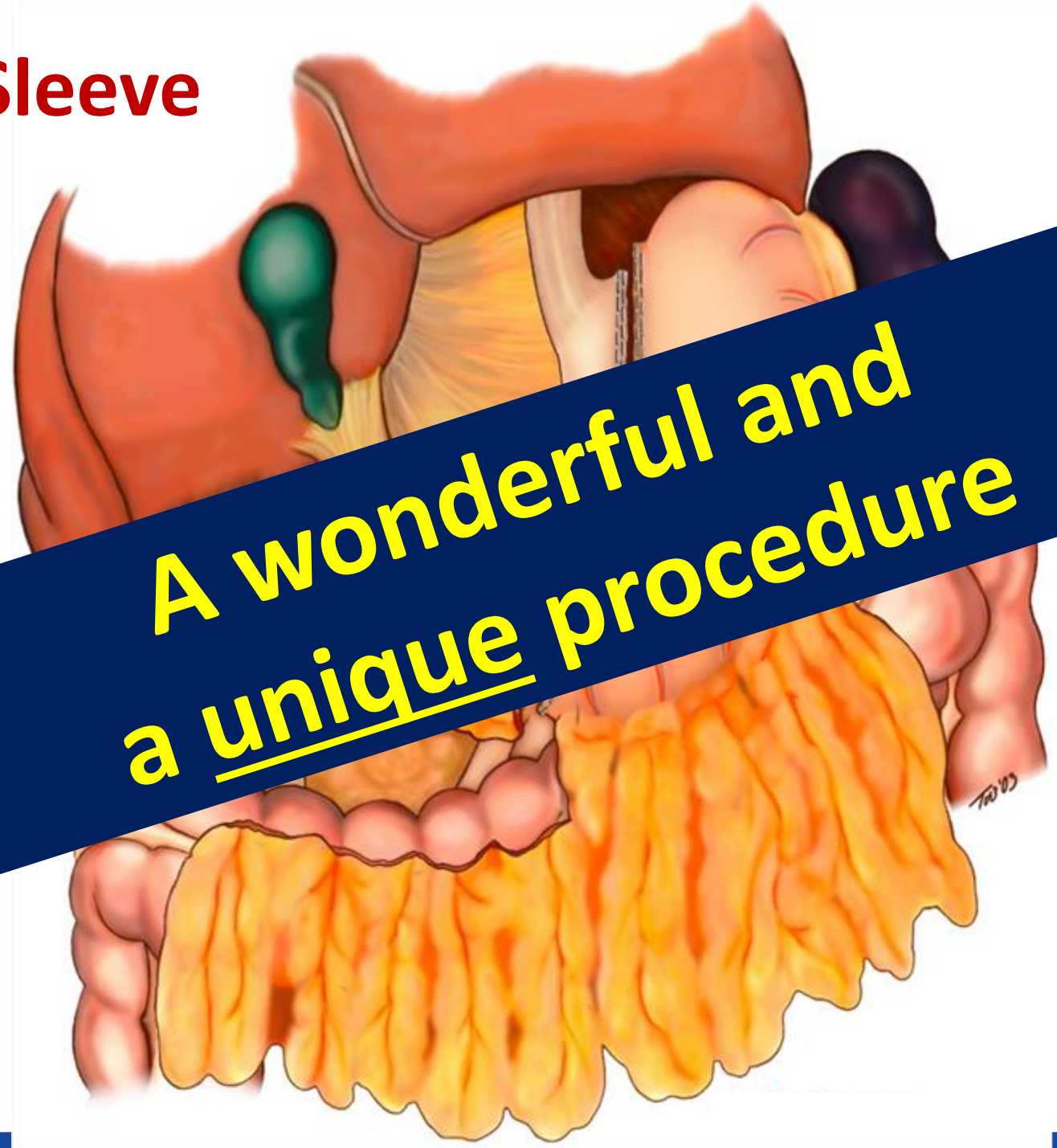
IFSO 2025 Santiago
Combined Therapies, The Dawn of a New Era
ifso2025.org

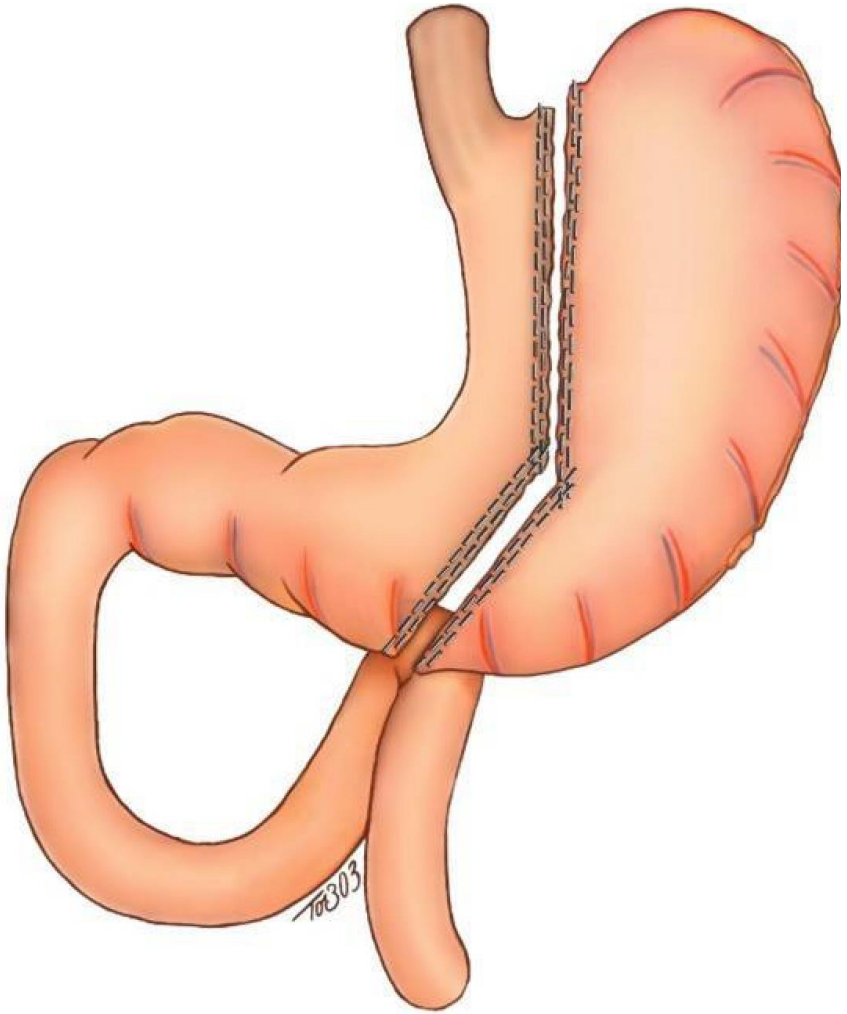
# Nothing to Disclosure

# The Sleeve



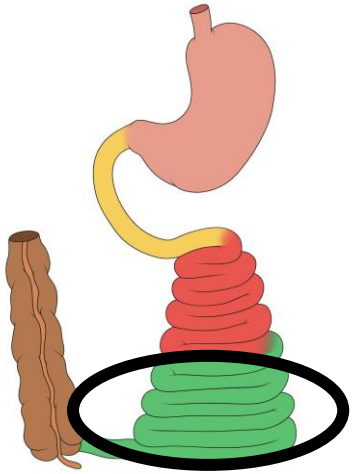
**A wonderful and a unique procedure**

# The Sleeve



**But frequently,**

- **Insufficient weight loss**
- **Weight regain**
- **Not powerful enough** to induce remission of comorbidities



**Absorption of** nutrients **mainly in the ileum** → **L CELLS** → **GLP-1**, **PYY**, **OXM**

**Reabsorption of** bile **exclusively in the ileum** → **ileocyte** → **FGF-19**

- Estimulate insulin secretion
- Block gluconeogenesis
- Insulin sensitivity
- Maintain Beta Cell Trophism
- Clearence of Triglycerides
- Glucose Effectiveness
- Block gastric Emptying

- Increase Brown Fat tissues
- Enhance Energy Expenditure
- Modify food preferences
- Reduce Hepatic Steatosis
- Satiety
- Reduce Food intake
- Weight loss

# WEIGHT REGAIN AFTER RYGB, WHAT DID NOT WORK?

ORIGINAL ARTICLES

## Gut Hormones as Mediators of Appetite and Weight Loss After Roux-en-Y Gastric Bypass

*Carel W. le Roux, MRCP, PhD,* Richard Welbourn, MD, FRCS,† Malin Werling, MD,‡ Alan Osborne, MRCS,† Alexander Kokkinos, MD,* Anna Laurenius, RD,‡ Hans Lönroth, MD, PhD,‡ Lars Fändriks, MD, PhD,‡ Mohammad A. Ghatei, PhD,* Stephen R. Bloom, FRCP, DSc,* and Torsten Olbers, MD, PhD‡*

(*Ann Surg* 2007;246: 780–785)

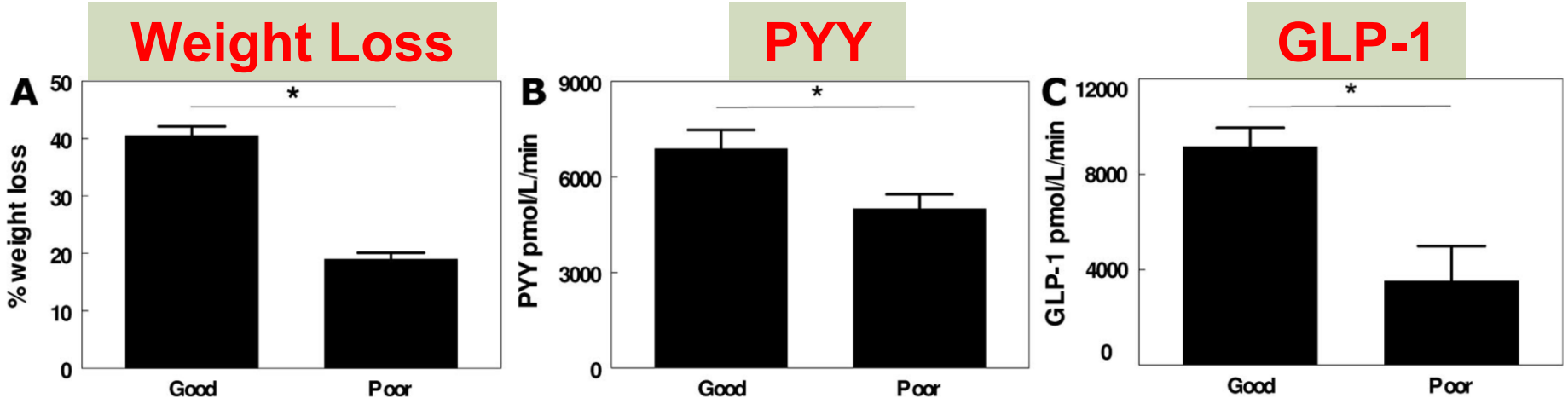



**FIGURE 2.** A, The total body weight loss after gastric bypass surgery in the good and poor weight loss groups. B and C, The PYY and GLP-1 responses after a standard meal of 400 kcal in the good and poor weight loss groups. *$P < 0.05$.

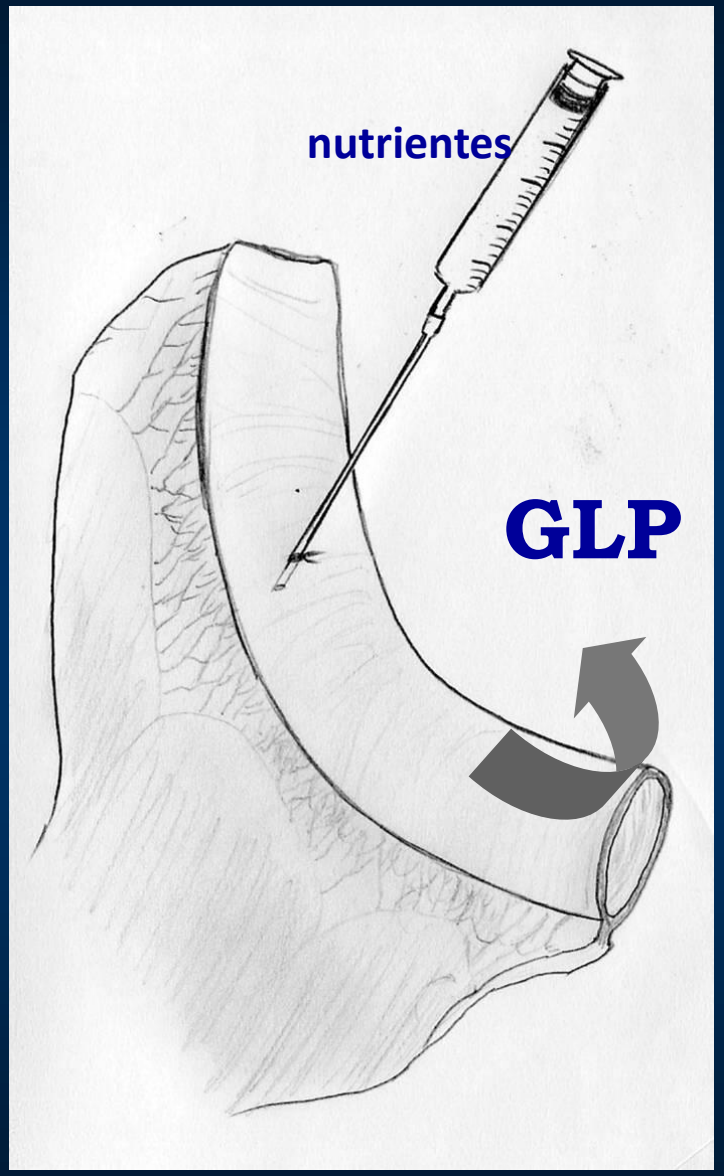
**Good weight loss = BMI ~ 25.1 Kg/m$^2$**

**Poor weight loss = BMI ~ 37.8 Kg/m$^2$**

# After the failure of a **jejunal surgery**

**The Plan is to administer**

**ileal hormones analogs ??**




"Under all experimental conditions,
ileal carbohydrate increased plasma GLP-1
by 80-100% (all $P < 0.005$).
Ileal lipid perfusion had similar effects"

Dig Dis Sci 1995 May;40(5):1074-82

XXVIII IFSO World Congress
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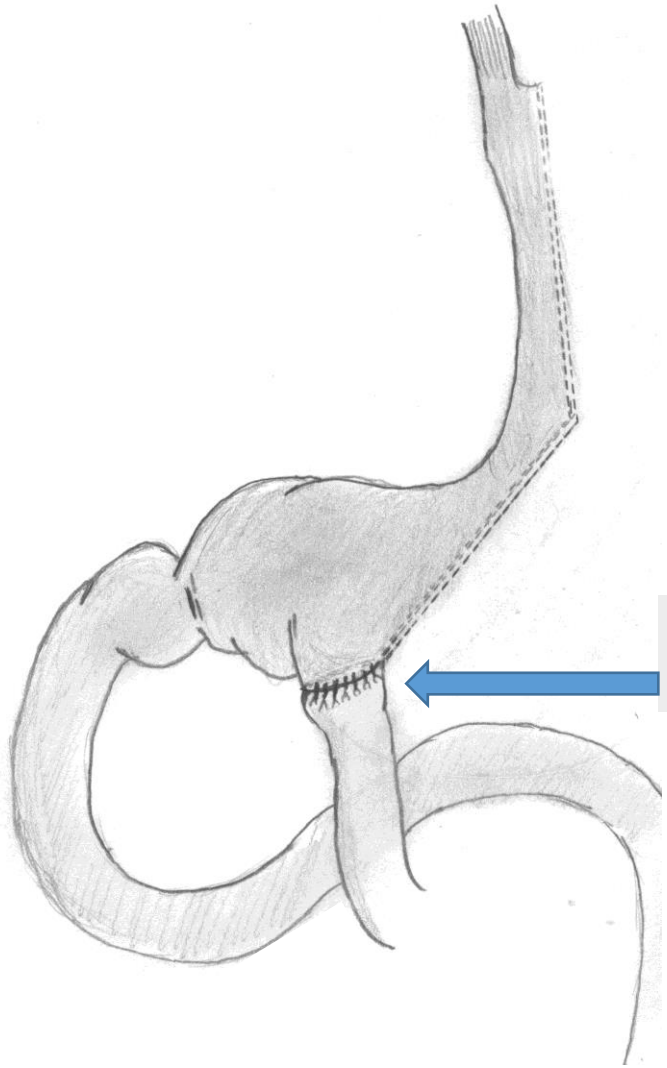
Santiago, Chile

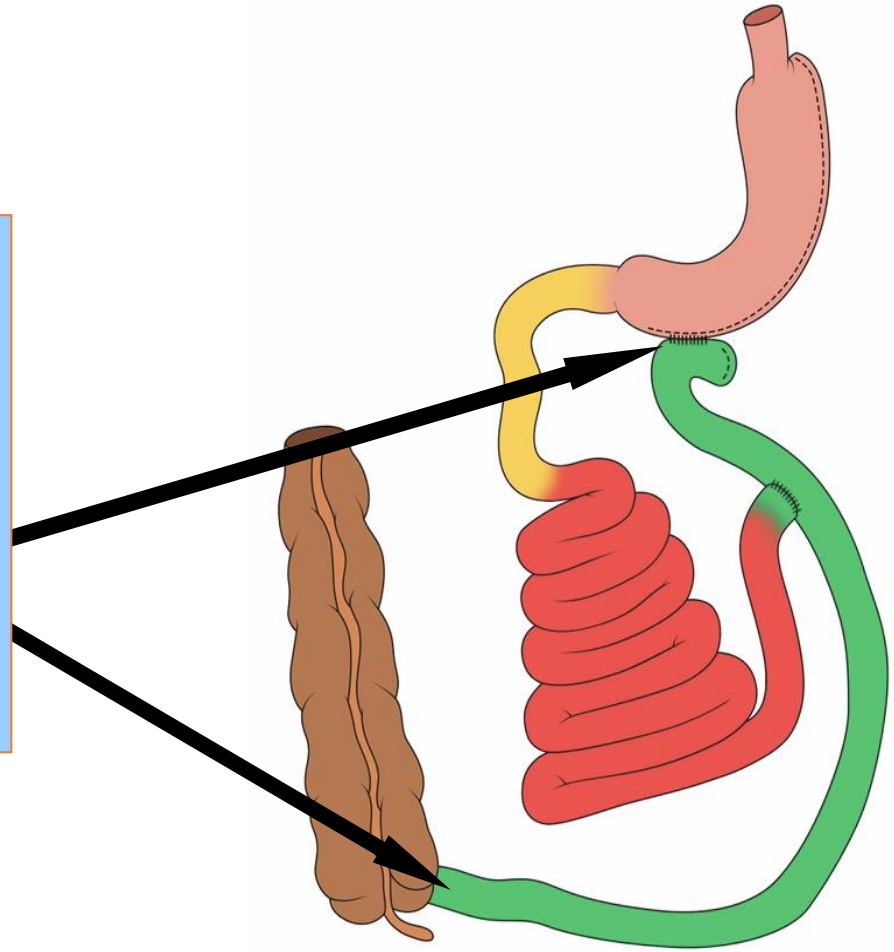

A
B
A
B

**Bipartitions**
**add distal gut signals,**
**not the analogs but the originals**
**to your sleeve**

# It is fundamental to be a distal part of the bowel

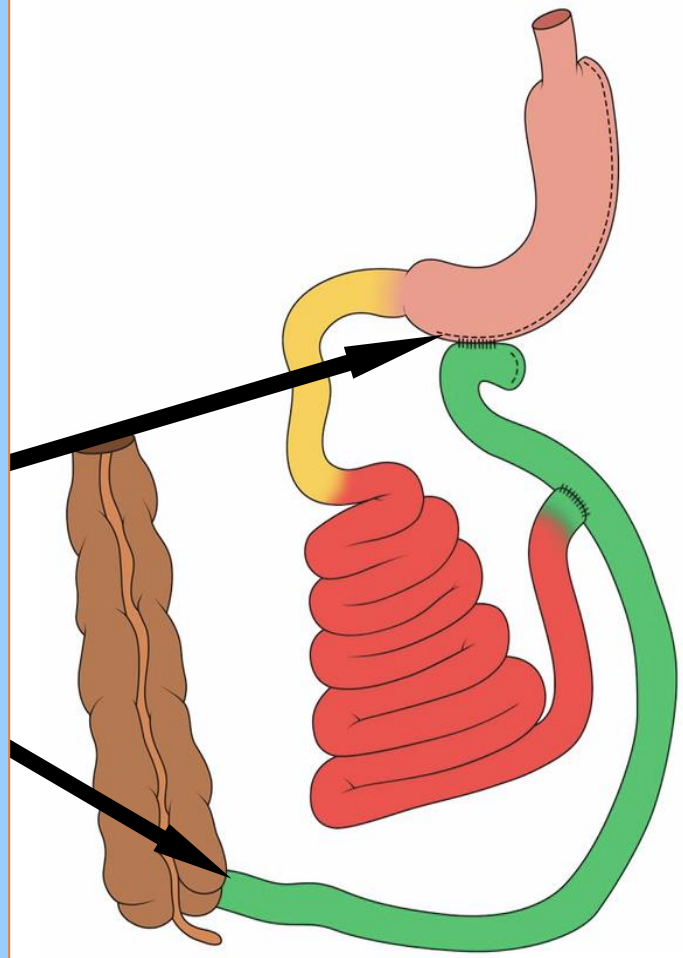


The smallest distance that does not provoke clinical malabsorption



**The smallest distance that does not provoke clinical malabsorption varies:**

- With ethnic origin
- With local diet
- With the surgeon mode of measuring
- With surgeon mode and size of gastroileal anastomosis



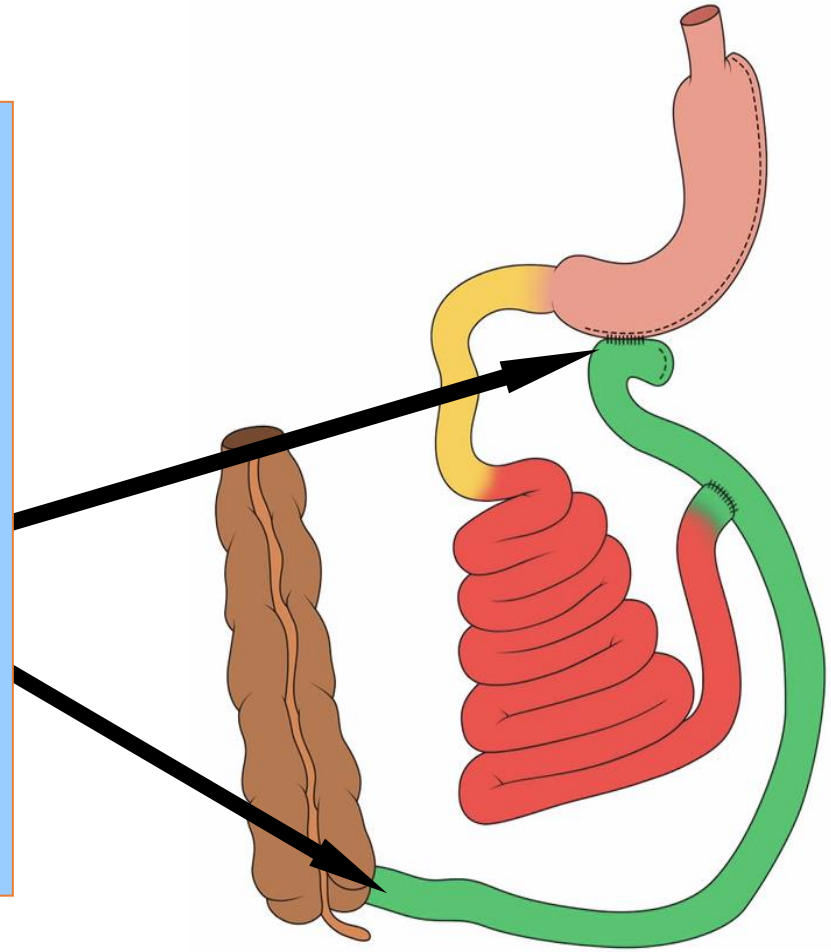
# When Shorter ?



**The range 260-350cm**

**Shorter in**

- short people,
- shorter small bowels
- constipation,
- severe comorbidities,
- high BMI

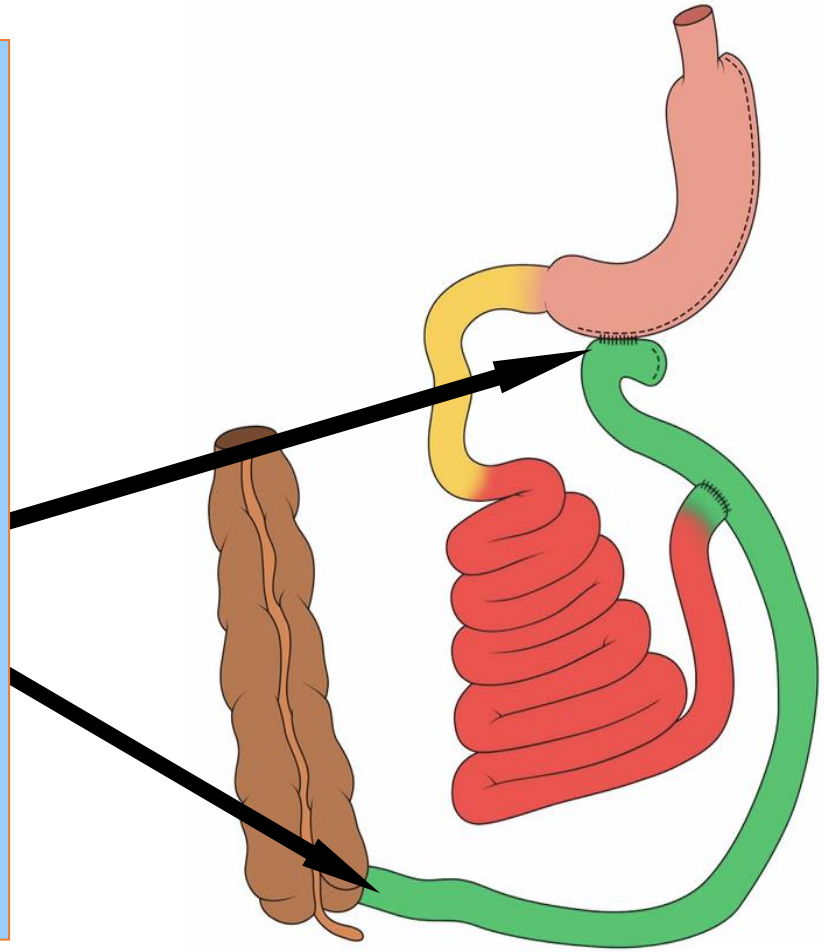


# When Longer ?

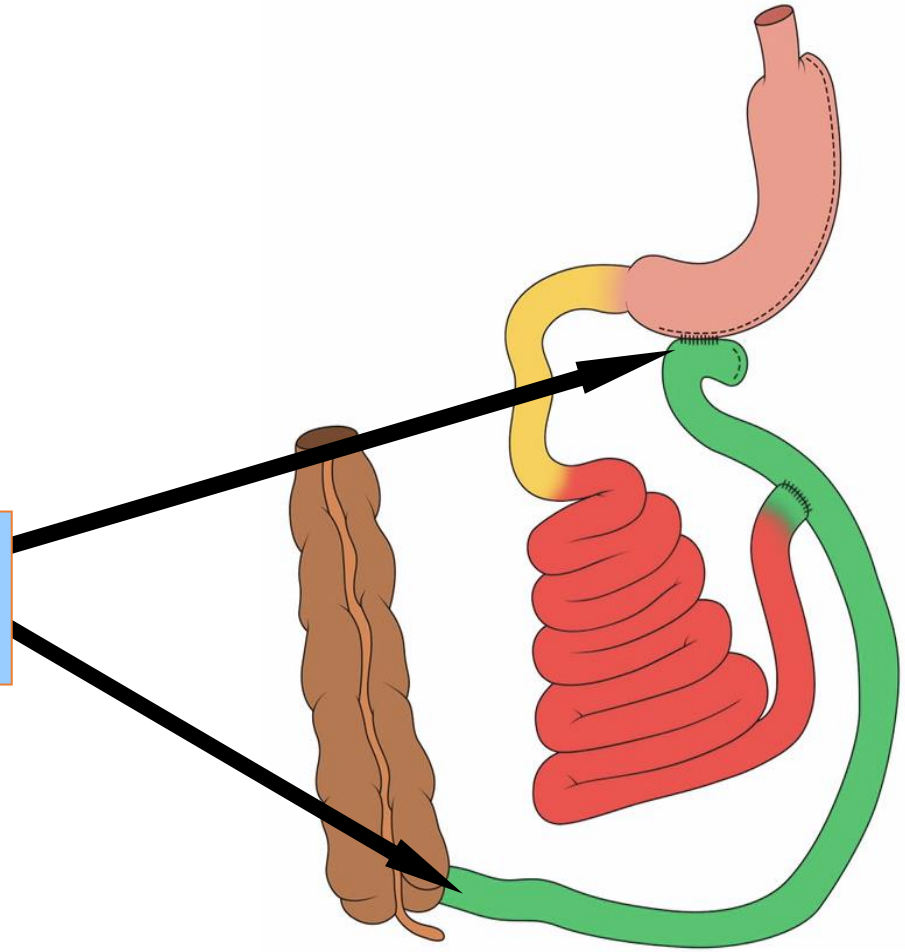
**The range 260-350cm**

**Longer in**

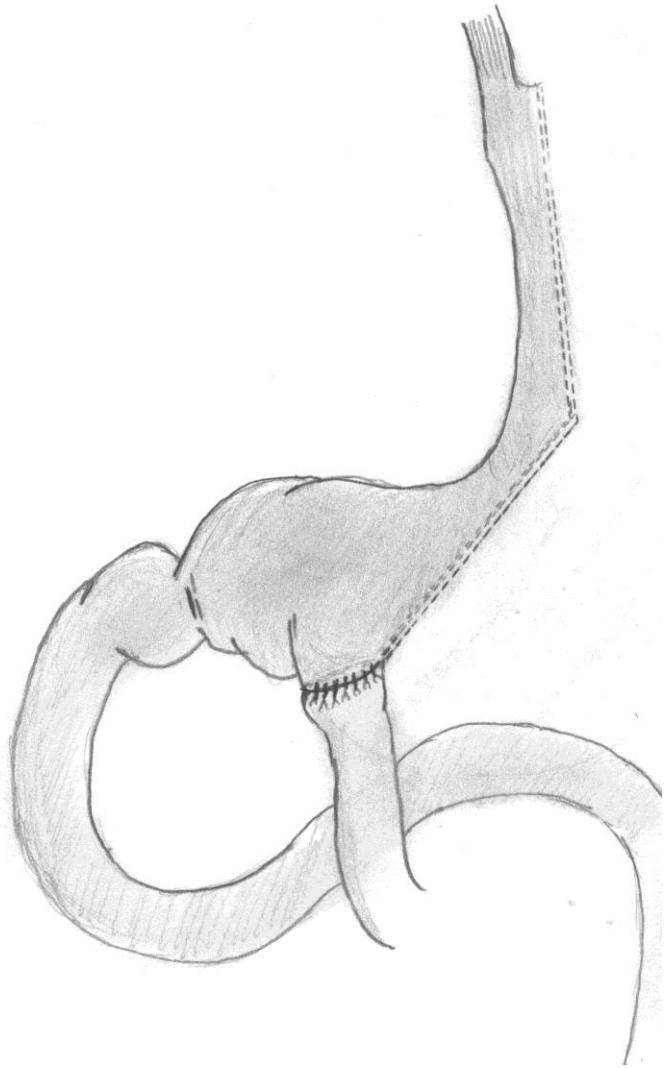
- tall people,
- Vegetarians,
- tendency to diarrhea,
- Lactose intolerance,
- mild comorbidities,
- low BMI



# The usual 300cm

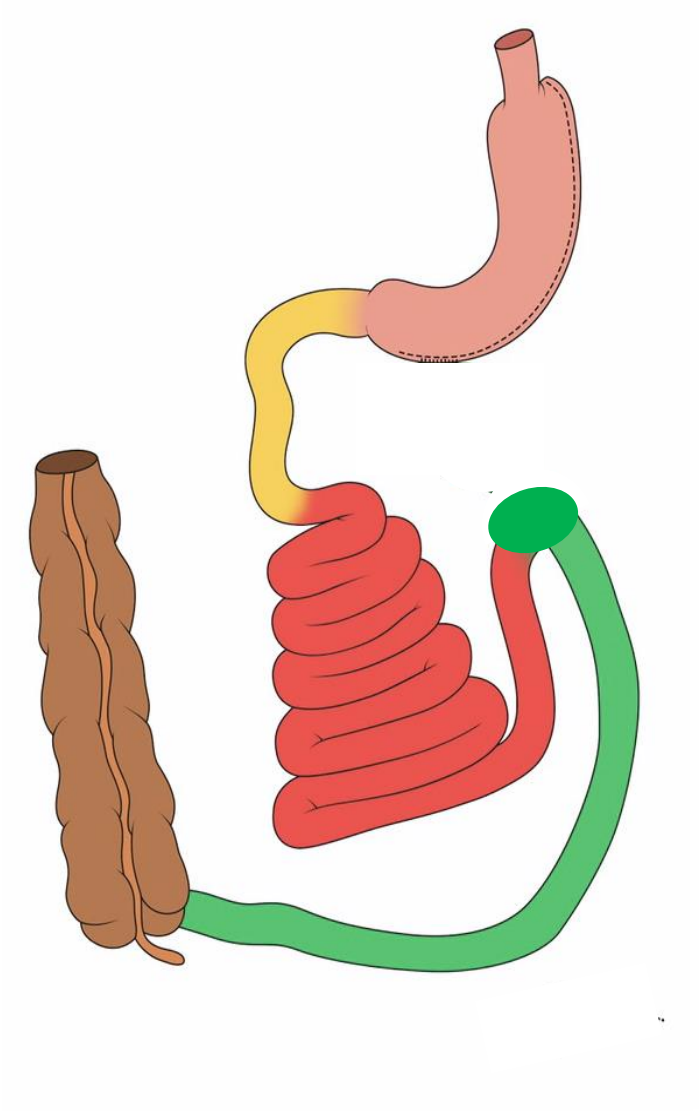


# Oh! But there is no exclusion !!



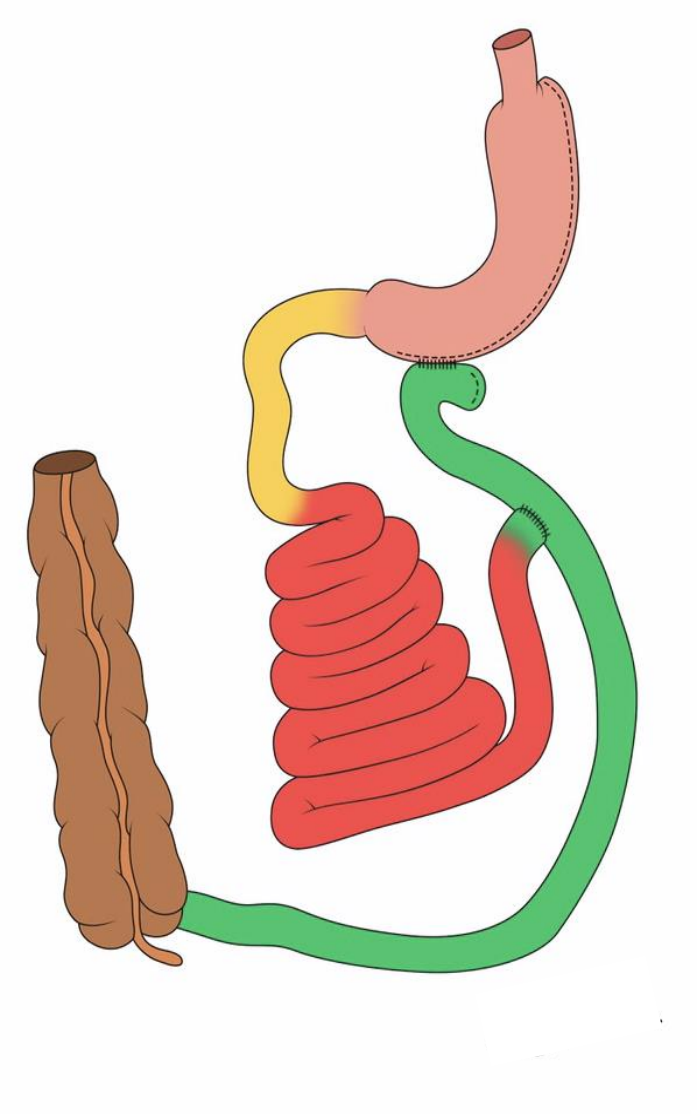
# If exclusions were crucial, medications would not work!!!

# Bipartition



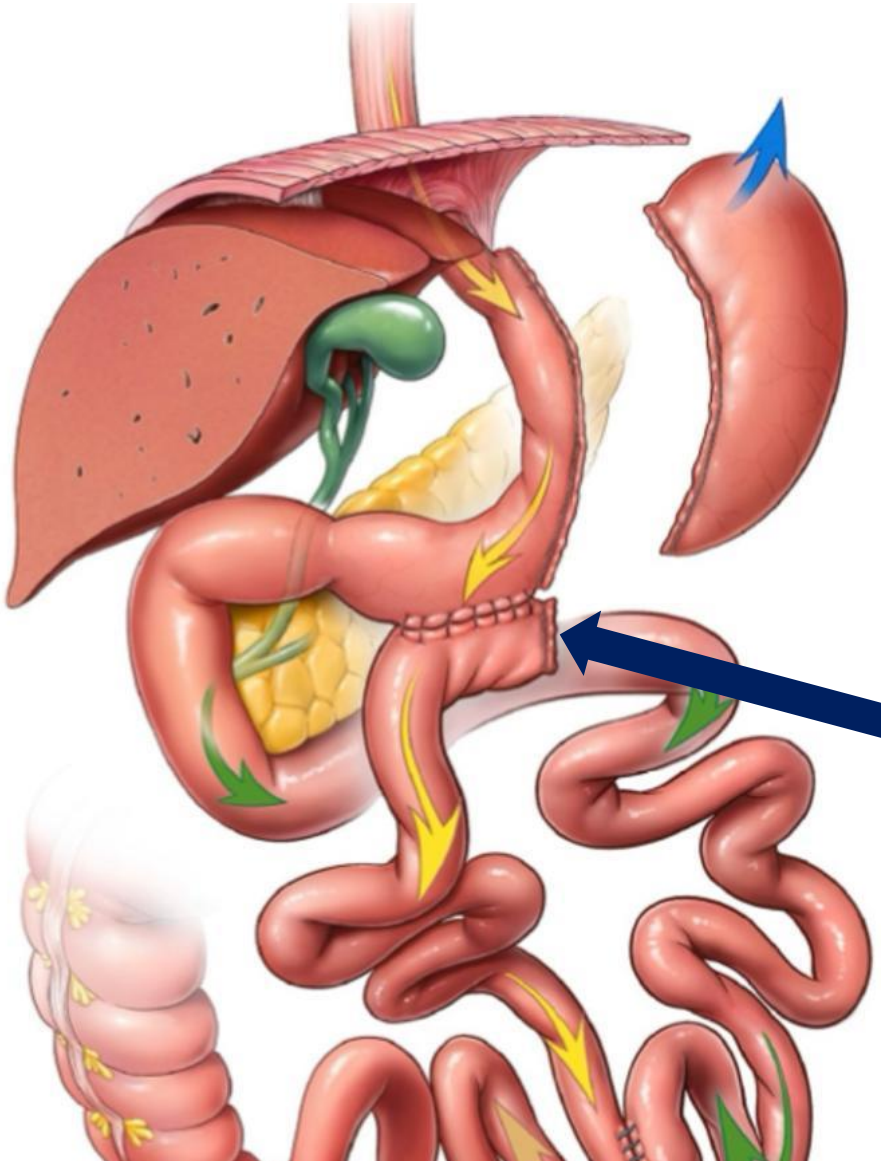
**A Sleeve**

# Bipartition



**A Sleeve with**
**an ileal bridge**
**To your normal ileum**
**to provide you**
**more of your own hormones**

# Bipartition



**35 - 45mm**
**Latero-lateral**
**Anastomosis**

METABOLIC MESSENGERS
https://doi.org/10.1038/s42255-020-00327-x
nature metabolism



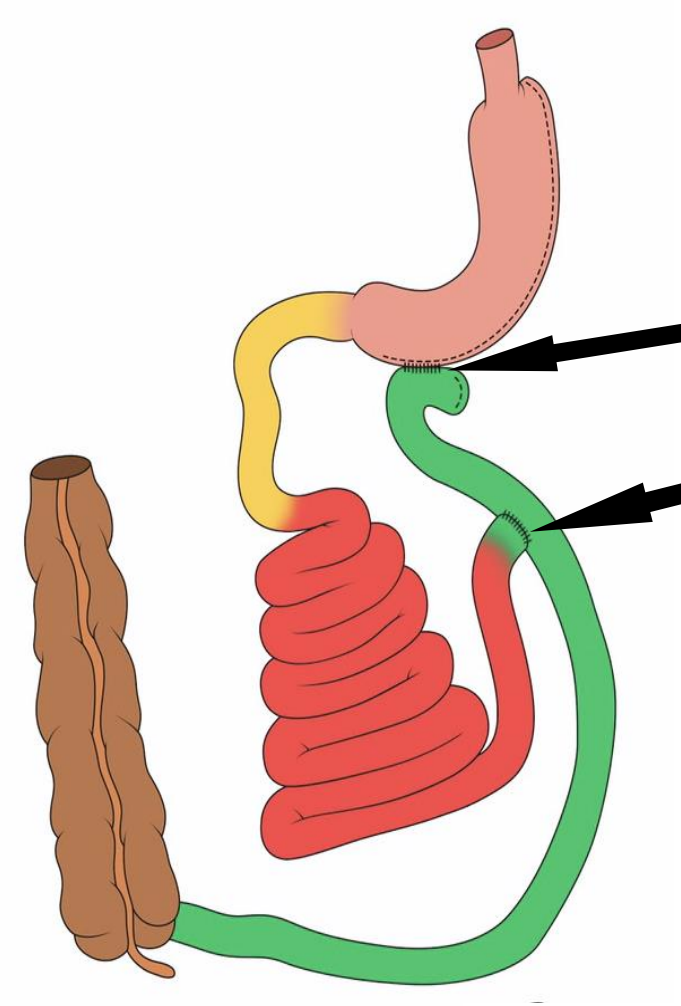
# Metabolic Messengers: glucagon-like peptide 1

Fiona M. Gribble ✉ and Frank Reimann ✉

**Glucagon like peptide-1 (GLP-1), a peptide hormone from the intestinal tract, plays a central role in the coordination of postprandial glucose homeostasis through actions on insulin secretion, food intake and gut motility. GLP-1 forms the basis for a variety of current drugs for the treatment of type 2 diabetes and obesity, as well as new agents currently being developed. Here, we provide a concise overview of the core physiology of GLP-1 secretion and action, and the role of the peptide in human health, disease and therapeutics.**

It is the **ABSORPTION** ,
**NOT JUST THE PRESENCE**
of nutrients that trigger
gut hormonal secretion

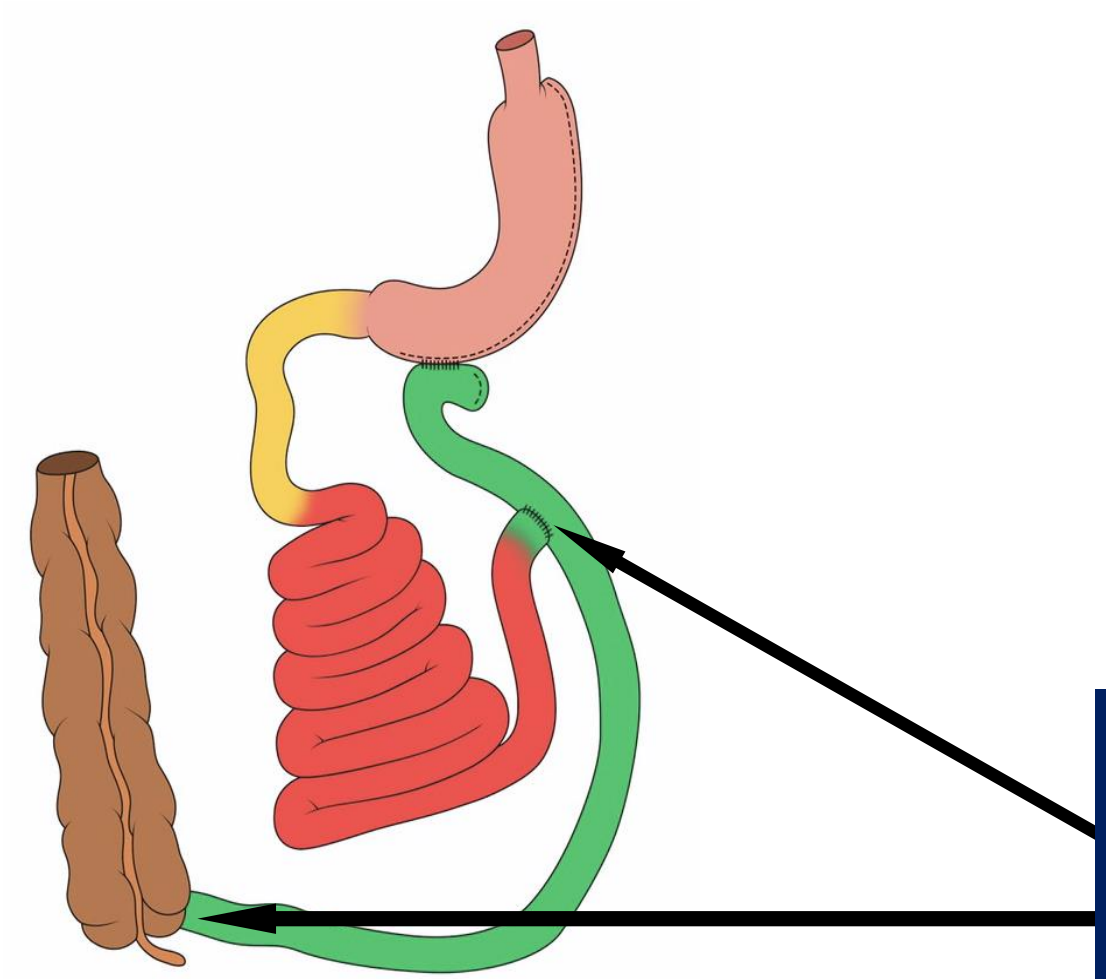
# The Holoileum Hypothesis



The
**'ileal bridge"**
Protection against
enterogastric reflux
**30-50 cm**

***The ileum absorbs better and produces hormones better with bile***

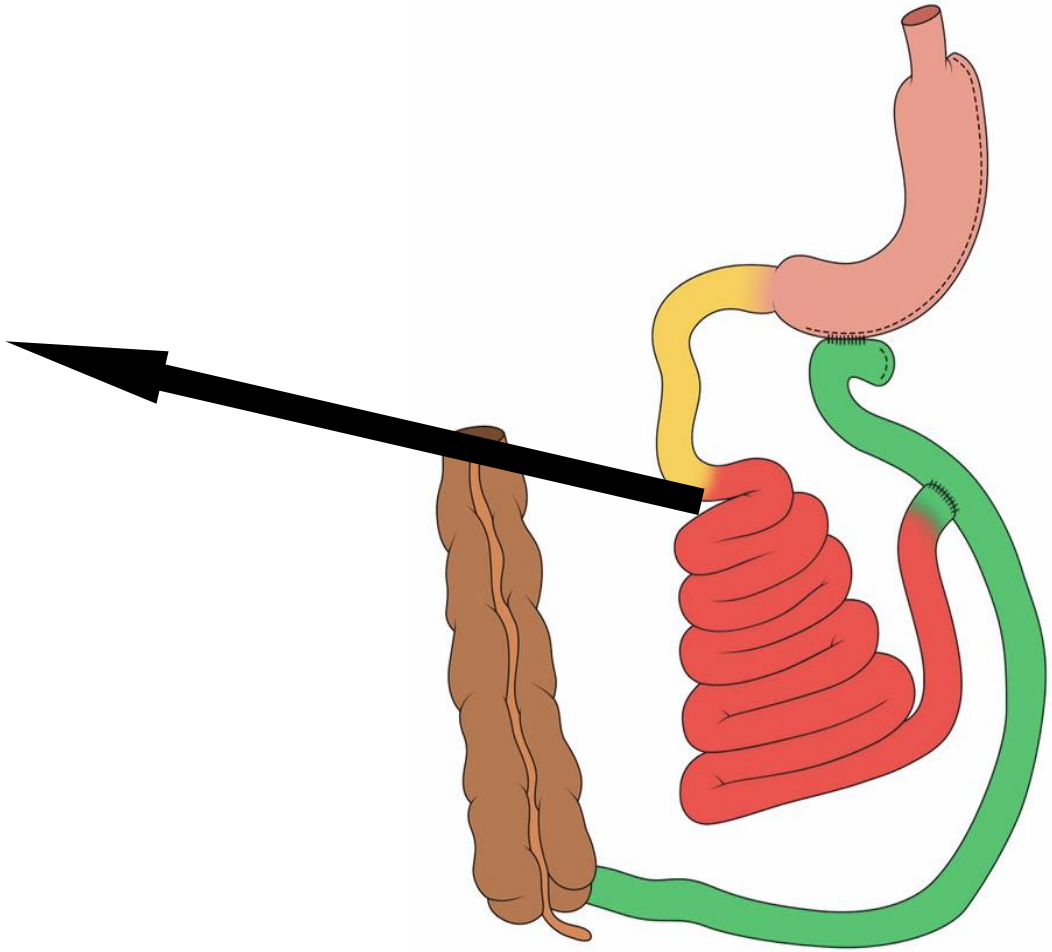
# Bipartition



**Long Distal Common Channel**

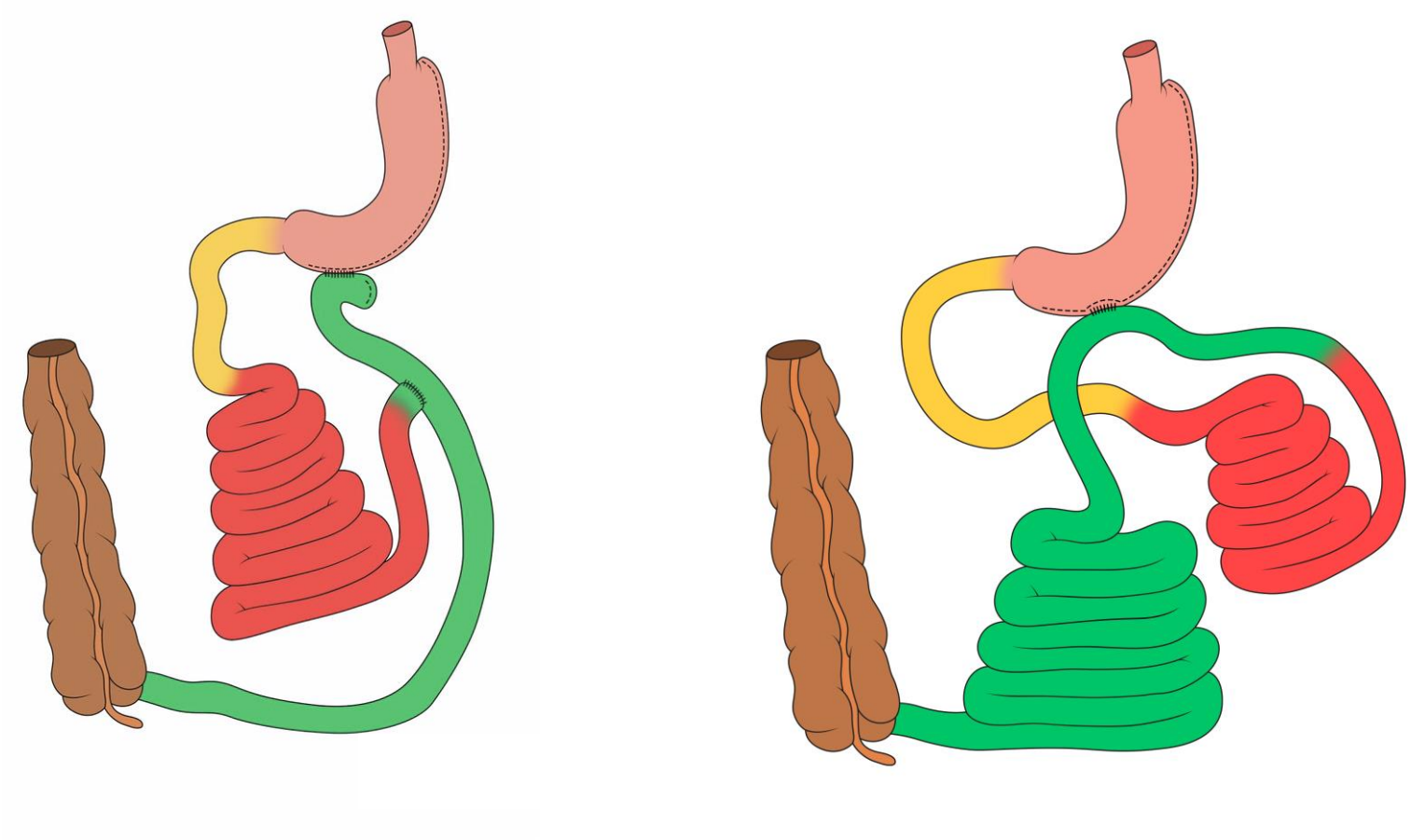
**250-270 cm**

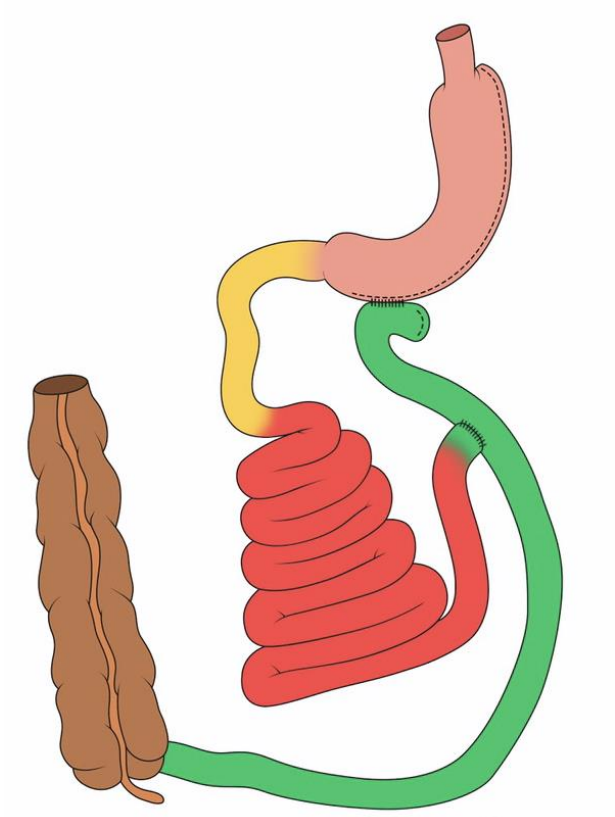
**“The biliopancreatic limb”**
**Is indeed a**
**Proximal Common Channel**



# Transit Bipartition in 1 or 2 anastomoses

## RYTB OATB





The Bipartition

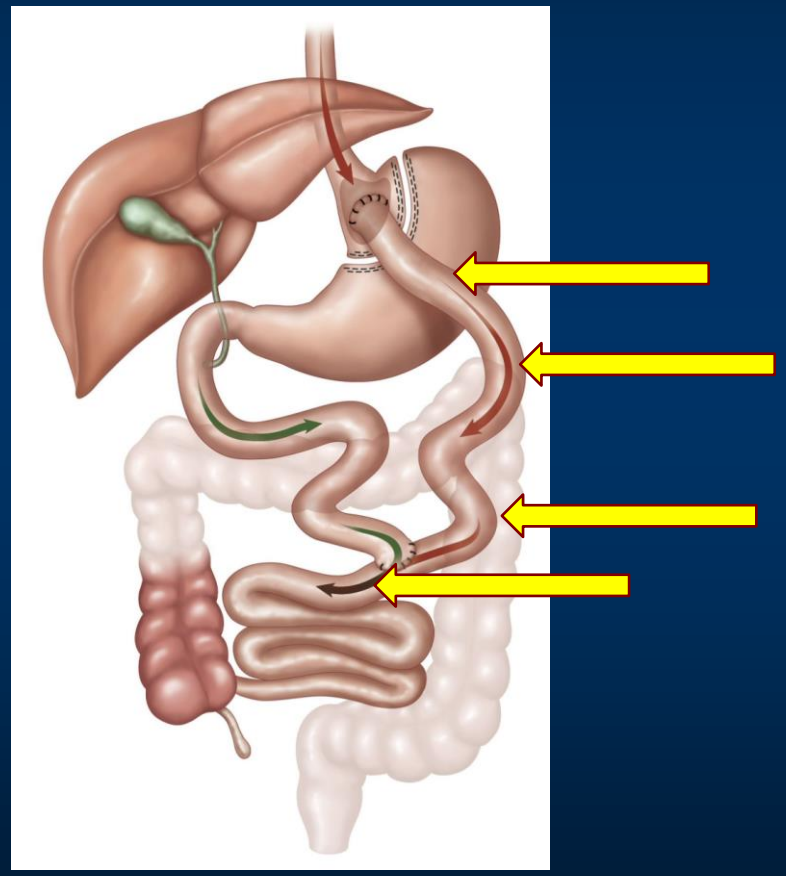
There is food every where

All limbs are alimentary

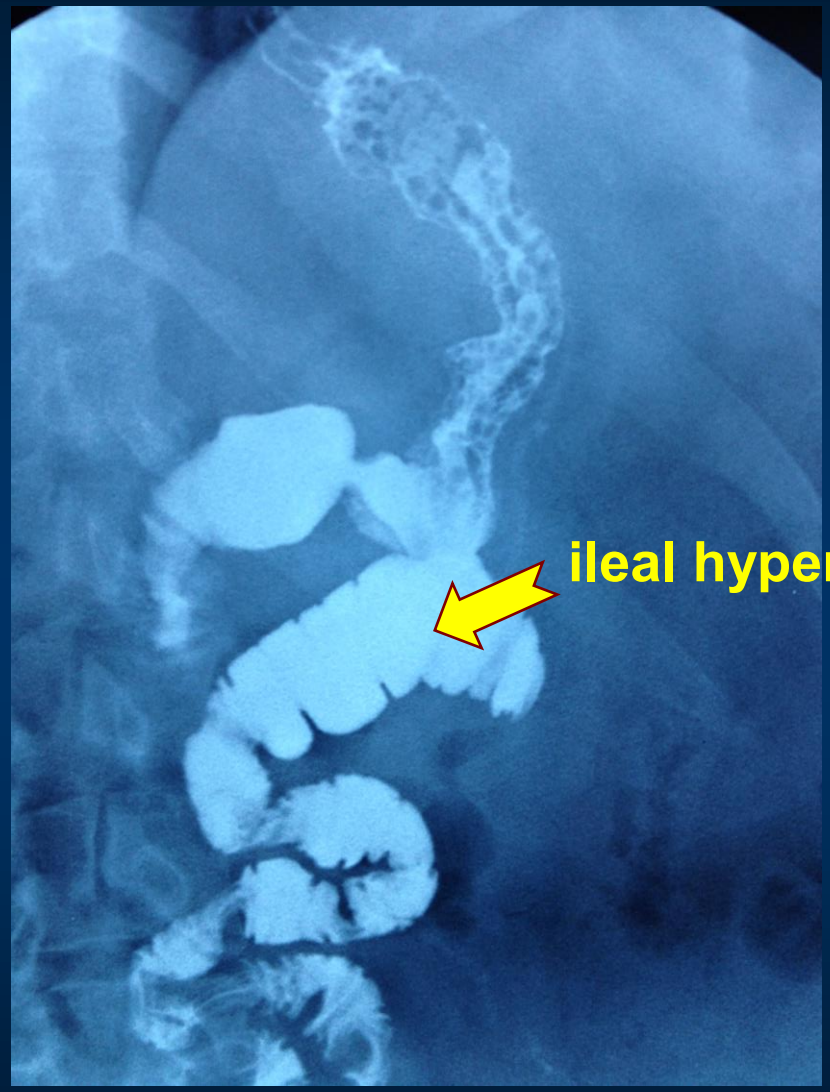
Full endoscopic access, including to the ileum

All is Common Channel Except 40cm

# Post RYGB, the hypertrophy will occur in the proximal gut (jejunum)



Areas with more K cells and less L cells than the ileum



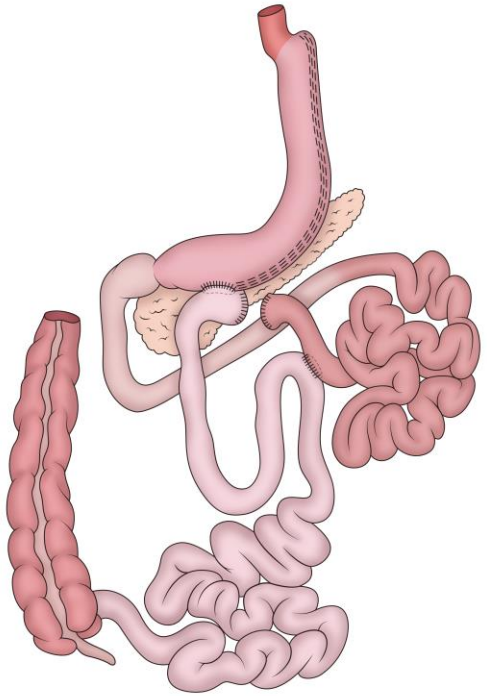

Areas with more L cells and the mucosa that produces FGF-19

Obesity Surgery
https://doi.org/10.1007/s11695-018-3239-3


ORIGINAL CONTRIBUTIONS

# A Prospective Randomized Controlled Trial of the Metabolic Effects of Sleeve Gastrectomy with Transit Bipartition

Fernanda R. Azevedo [1] · Sergio Santoro [2] · Maria L. Correa-Giannella [3,4] · Marcos T. Toyoshima [5] · Daniel Giannella-Neto [4] · Daniela Calderaro [1] · Danielle M. Gualandro [1] · Pai C. Yu [1] · Bruno Caramelli [1]



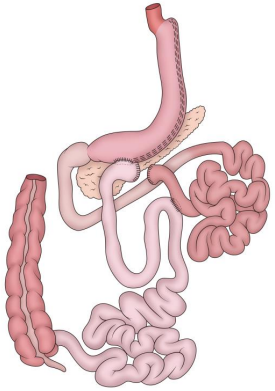
**Randomized Prospective Controlled Independent Trial**

(done at INCOR) approved in CONEP,
with public (FAPESP) and private grants (Einstein)

**Azevedo FR et al.**
**Obesity Surg. 2018; 28:3012-19**

# Randomized Control Trial – T2DM at 28 to 30 BMI

**Sleeve gastrectomy with Transit Bipartition** X Medical treatment X **Healthy controls**



**20 T2DM**
BMI 28 to 35
on insulin – **HbA1c>8%**

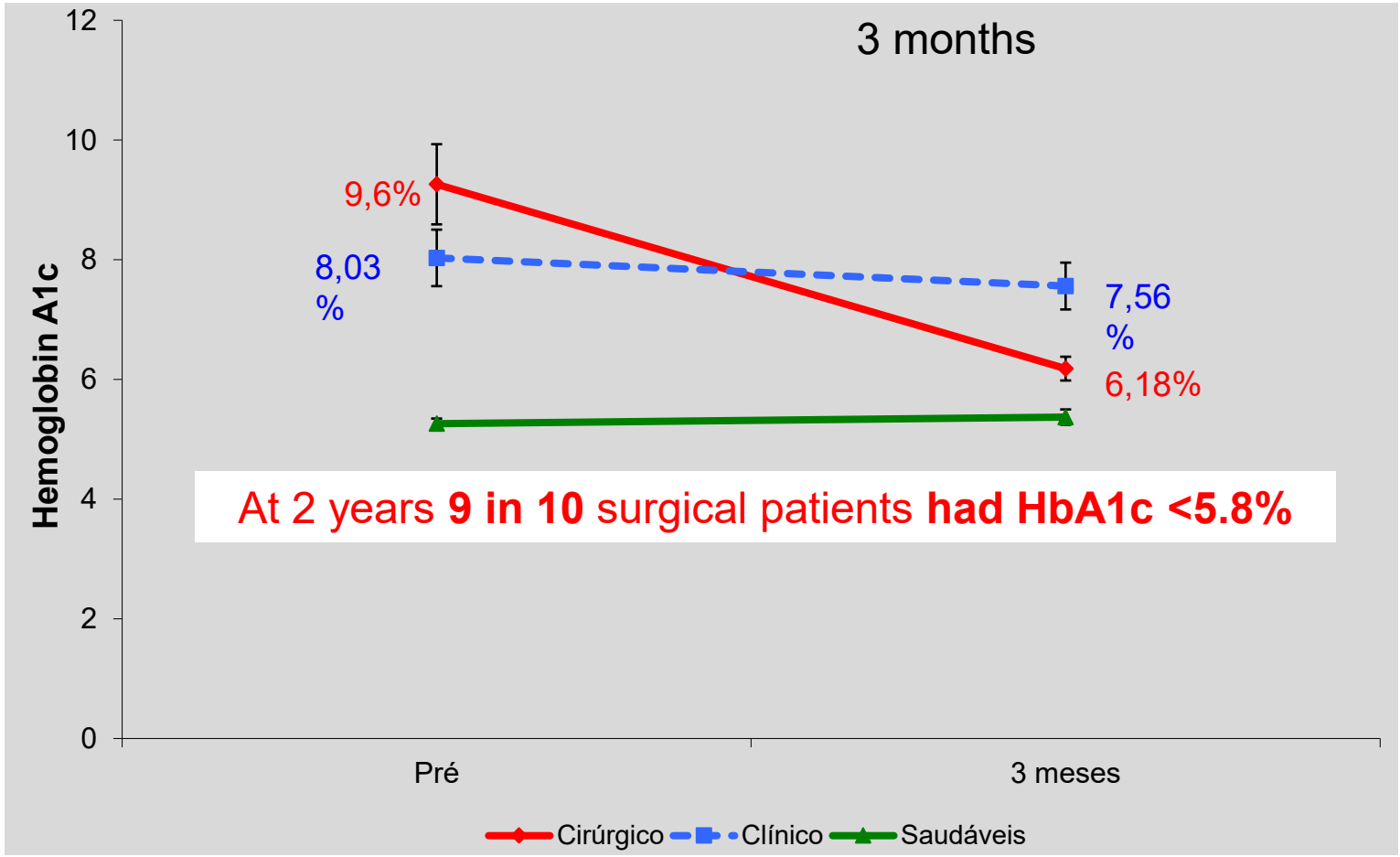
**10 SG+TB** | **10 Medical T** | **10 healthy & lean**

clinicaltrials.gov
number NCT01581099
Plataforma Brasil 523558.

**Azevedo, Santoro, Caramelli et al.**
Albert Einstein Hospital
& INCOR (Heart Institute of University of São Paulo)
**Obes Surg 2018 Oct;** 28(10): 3012-19

# Randomized Control Trial

**Sleeve gastrectomy with Transit Bipartition** X Medical treatment X **Healthy controls**




Azevedo FR et al.
Obesity Surgery, Oct. 2018; 28:3012-19

# Randomized Control Trial

**Sleeve gastrectomy with Transit Bipartition** X Medical treatment X **Healthy controls**

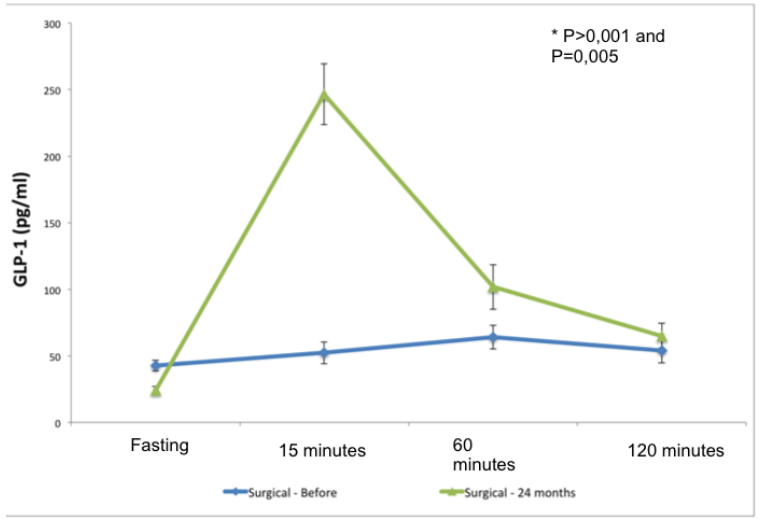
**GLP-1 and GIP behavior during Mixed Meal test, before and 24 months after the surgery.**

**Surgery increased GLP-1**

**GLP-1**

**Pre-surgery**

**2-year post surgery**

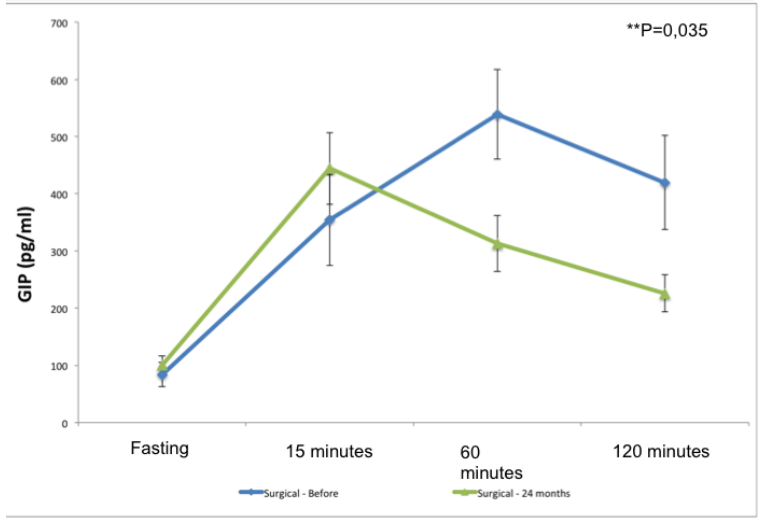



**Surgery decreased GIP**

**GIP**

**Pre-surgery**

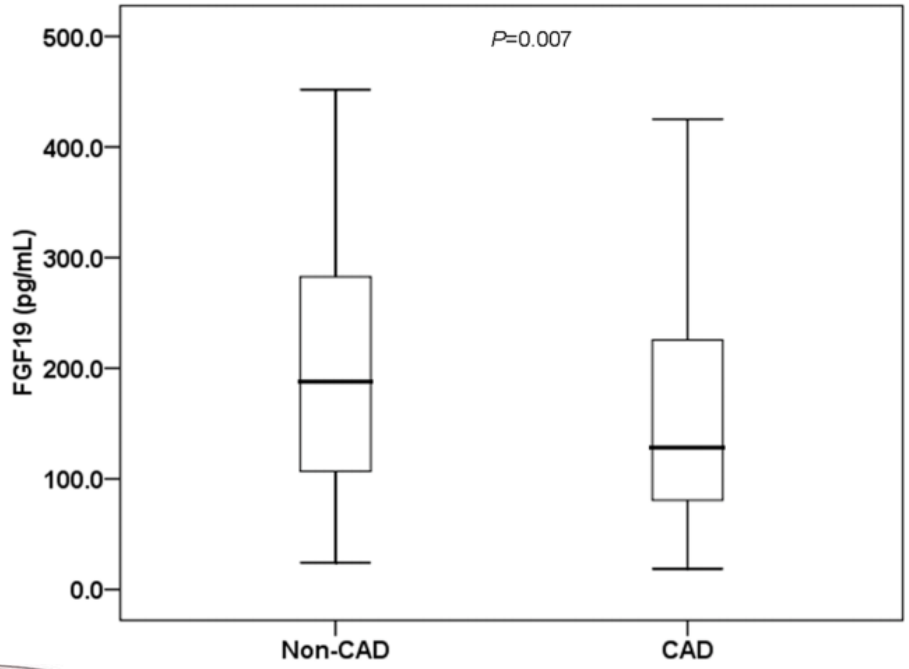
**2-year post surgery**



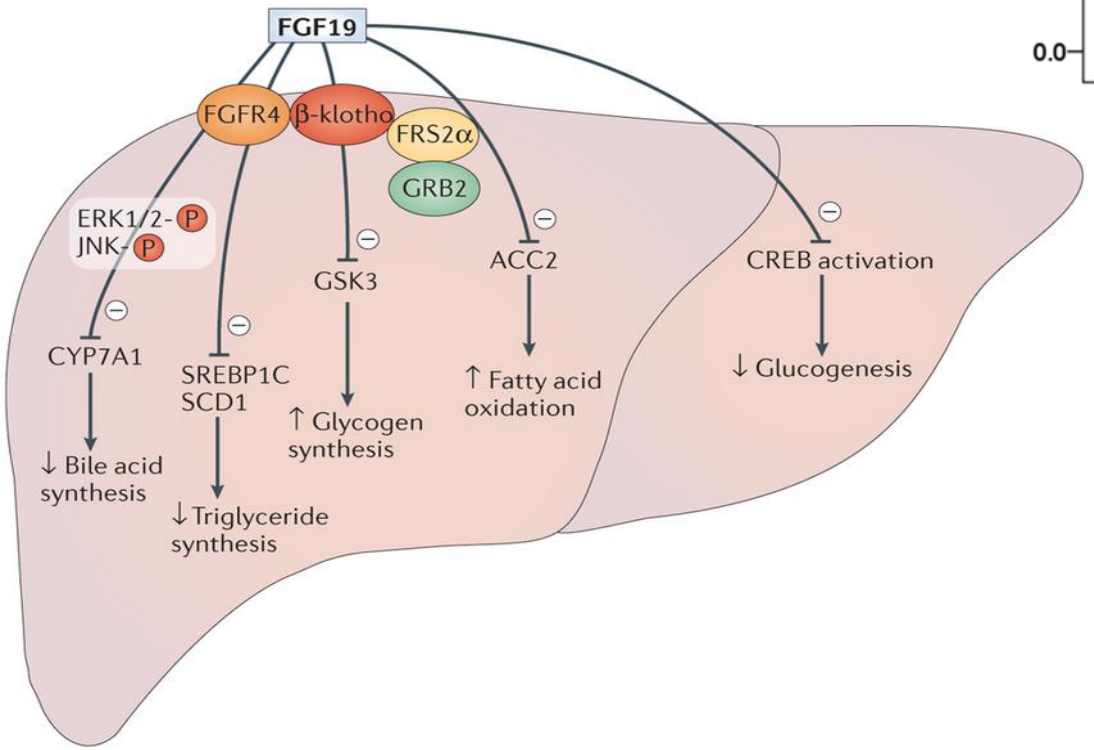

Azevedo FR et al.
Obesity Surgery, Oct. 2018; 28:3012-19

# FGF-19

- Glycemic Homeostasis
- Regulate Biliary acids production
- Regulate lipids oxydation




Hao Y, et al. (2013). PLoS ONE 8(8): e72345.



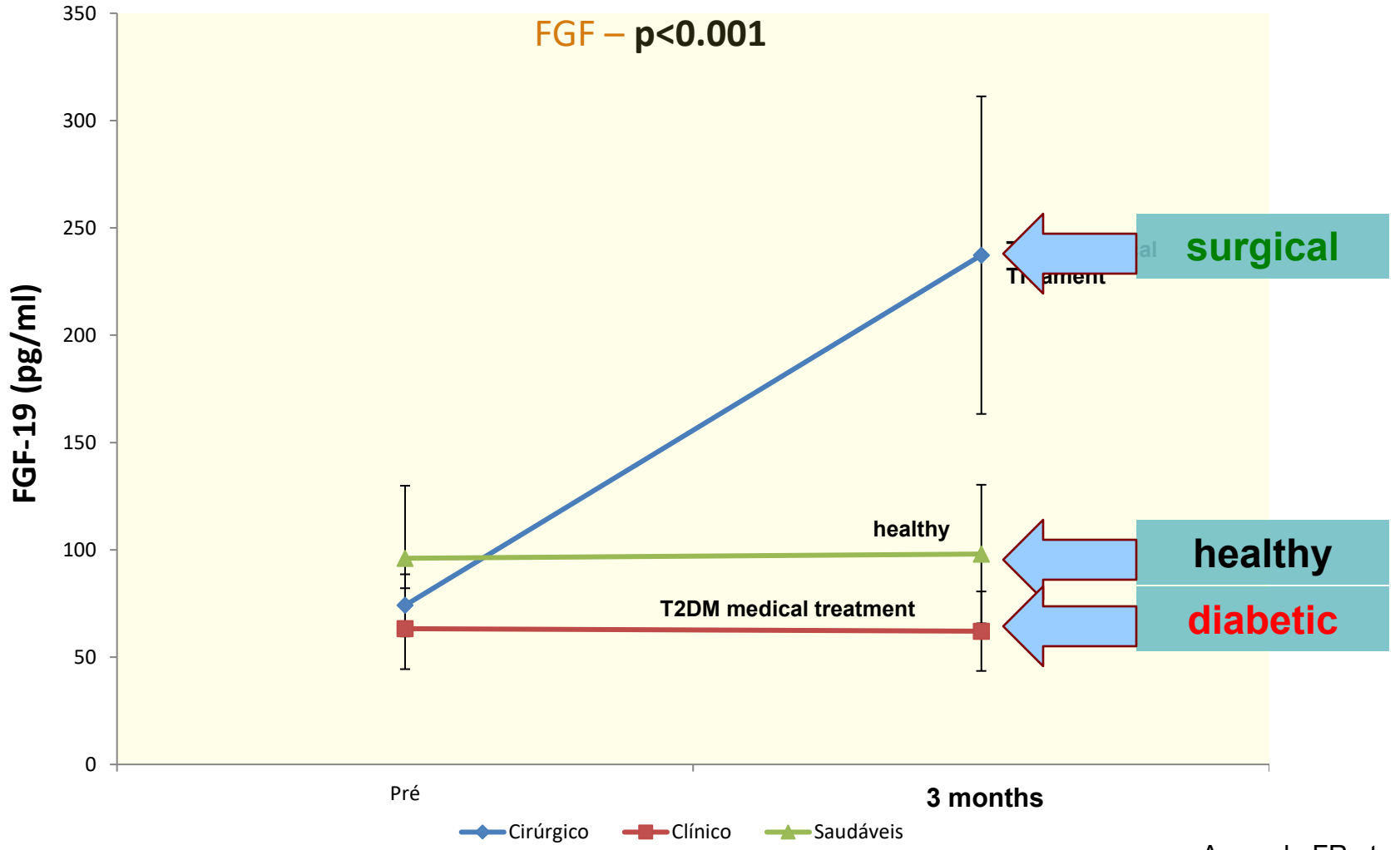

**Low FGF-19**
A predictor of
**Coronary Artery Disease**
and
**T2DM**

Nature Reviews | Drug Discovery

Porthoff MJ. Cell Metab 2011; Chennamsetty I. Arterioscler Thromb Vasc Biol 2012; Hao Y. Plos One 2013.

# Randomized Control Trial

**Sleeve gastrectomy with Transit Bipartition** X Medical treatment X **Healthy controls**




Azevedo FR et al.
Obesity Surgery, Oct. 2018; 28:3012-19

# Randomized Control Trial

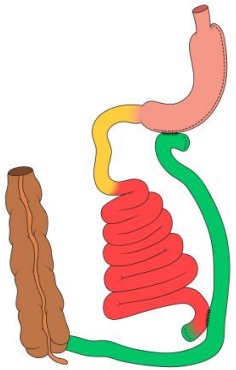
**Sleeve gastrectomy with Transit Bipartition** X Medical treatment X **Healthy controls**

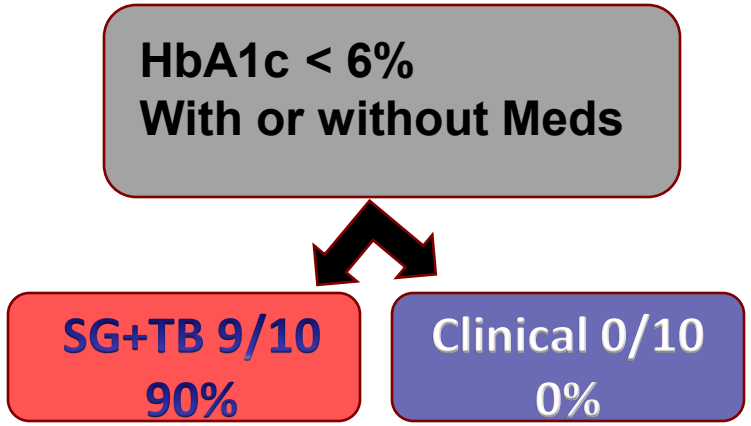
- ✓ **Potently increases GLP-1**
- ✓ **Potently increases FGF-19**
- ✓ **Decreases GIP, mildly.**

Reis F, Santoro S, Caramelli B, et al.
Preliminary results 2017

# Randomized Control Trial – T2DM at 28 to 30 BMI

**Sleeve gastrectomy with Transit Bipartition** X Medical treatment X **Healthy controls**






clinicaltrials.gov
number NCT01581099
Plataforma Brasil 523558.

**Azevedo FR et al.**
**Obes Surg 2018 Oct;** 28(10): 3012-19

ORIGINAL ARTICLE

# Metabolic Effects of Bariatric Surgery in Patients With Moderate Obesity and Type 2 Diabetes

## Analysis of a randomized control trial comparing surgery with intensive medical treatment

SANGEETA R. KASHYAP, MD[1]
DEEPAK L. BHATT, MD, MPH[2]
KATHY WOLSKI, MPH[3]
CLAIRE E. POTHIER, MPH[3]
STACY BRETHAUER, MD[6]
STEVEN NISSEN, MD[3]

Gastric Bypass

**Stampede at 2 years**

**6/18= 33.3%**

Table 2—*Clinical changes at 12 and 24 months: glycemic and lipid control*

| | IMT ($N = 17$) | Gastric bypass ($N = 18$) | Sleeve gastrectomy ($N = 19$) | $P$* | $P$† | $P$‡ |
|---|---|---|---|---|---|---|
| $HbA_{1c}$ ≤6 (12 months) | 1/16 (6.25) | 8/18 (44.44) | 5/19 (26.32) | 0.02 | 0.19 | 0.25 |
| $HbA_{1c}$ ≤ 6 (24 months) | 1/17 (5.9) | 6/18 (33.3) | 2/19 (10.5) | 0.09 | 1.00 | 0.12 |
| $HbA_{1c}$ (%) | | | | | | |
| Baseline | 9.5 ± 1.73 | 9.8 ± 1.35 | 9.7 ± 1.95 | 0.54 | 0.74 | 0.84 |
| 12 months | 8.1 ± 2.34 | 6.3 ± 0.78 | 6.9 ± 1.11 | 0.004 | 0.05 | 0.08 |
| 24 months | 8.4 ± 2.33 | 6.7 ± 1.23 | 7.1 ± 0.84 | 0.01 | 0.04 | 0.18 |
| Change from baseline | −1.1 ± 1.99 | −3.1 ± 1.38 | −2.5 ± 2.39 | 0.001 | 0.06 | 0.37 |

JAMA | Original Investigation

# Lifestyle Intervention and Medical Management With vs Without Roux-en-Y Gastric Bypass and Control of Hemoglobin $A_{1c}$, LDL Cholesterol, and Systolic Blood Pressure at 5 Years in the Diabetes Surgery Study

Sayeed Ikramuddin, MD, MHA; Judith Korner, MD, PhD; Wei-Jei Lee, MD, PhD; Avis J. Thomas, MS; John E. Connett, PhD; John P. Bantle, MD; Daniel B. Leslie, MD; Qi Wang, MS; William B. Inabnet III; Robert W. Jeffery, PhD; Keong Chong, MD; Lee-Ming Chuang, MD, PhD; Michael D. Jensen; Leaque Ahmed, MD; Kumar Belani, MD; Charles J. Billington, MD

Gastric Bypass

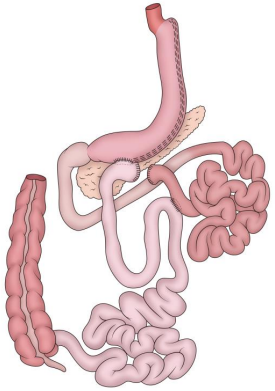
**Diabetes Surgery Study**
**At 2 years**
**18/57= 35%**

Table 3. Post Hoc Outcomes in Years 1 Through 5

| Outcome[a] | Success or Yes, % (95% CI) | | ifference, % (95% CI) | Estimated Odds Ratio (95% CI)[b] | *P* Value |
|---|---|---|---|---|---|
| | Lifestyle and Intensive Medical Management | Roux-en-Y Gastric Bypass | | | |
| $HbA_{1c}$ <6.0% | | | | | |
| 1 | 5 (2 to 16) | 45 (26 to 65) | 40 (19 to 61) | 13.94 (3.17 to 61.28) | .001 |
| 2 | 3 (1 to 11) | 35 (18 to 57) | 32 (12 to 52) | 18.25 (3.32 to 100.4) | .001 |
| 3 | 4 (1 to 16) | 20 (9 to 39) | 16 (−1 to 33) | 5.52 (0.97 to 31.49) | .05 |
| 4 | 3 (1 to 13) | 15 (6 to 32) | 12 (−2 to 26) | 6.51 (0.92 to 46.06) | .06 |
| 5 | 3 (0 to 13) | 11 (4 to 26) | 8 (−5 to 21) | 4.62 (0.64 to 33.13) | .13 |

# Randomized Control Trial – T2DM at 28 to 30 BMI

Sleeve gastrectomy with Transit Bipartition X Medical treatment X Healthy controls



**Blood pressure**
**after 2 years**

**Remission of Hypertension**

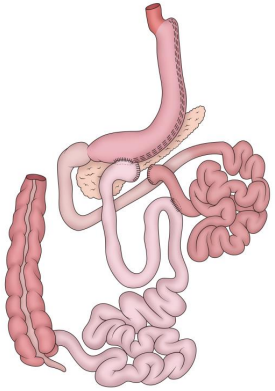
| SG+TB 10/10 100% | Clinical 0/10 0% |
|---|---|

clinicaltrials.gov
number NCT01581099
Plataforma Brasil 523558.

**Azevedo FR et al.**
Albert Einstein Hospital
& INCOR (Heart Institute of University of São Paulo)
**Obesity Surgery, 2018.** Ahead of Print

# Randomized Control Trial – T2DM at 28 to 30 BMI

Sleeve gastrectomy with Transit Bipartition X Medical treatment X Healthy controls



**Lipids**
**after 2 years**

**Withdrawal of statins**
**(blood lipids normalization)**

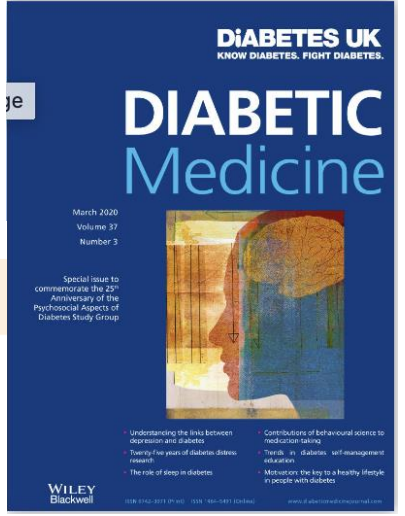
| SG+TB 10/10 | Clinical 0/10 |
|---|---|
| 100% | 0% |

clinicaltrials.gov
number NCT01581099
Plataforma Brasil 523558.

**Azevedo FR et al.**
Albert Einstein Hospital
& INCOR (Heart Institute of University of São Paulo)
**Obesity Surgery, 2018.** Ahead of Print

DIABETIC Medicine

DiABETES UK
KNOW DIABETES. FIGHT DIABETES.



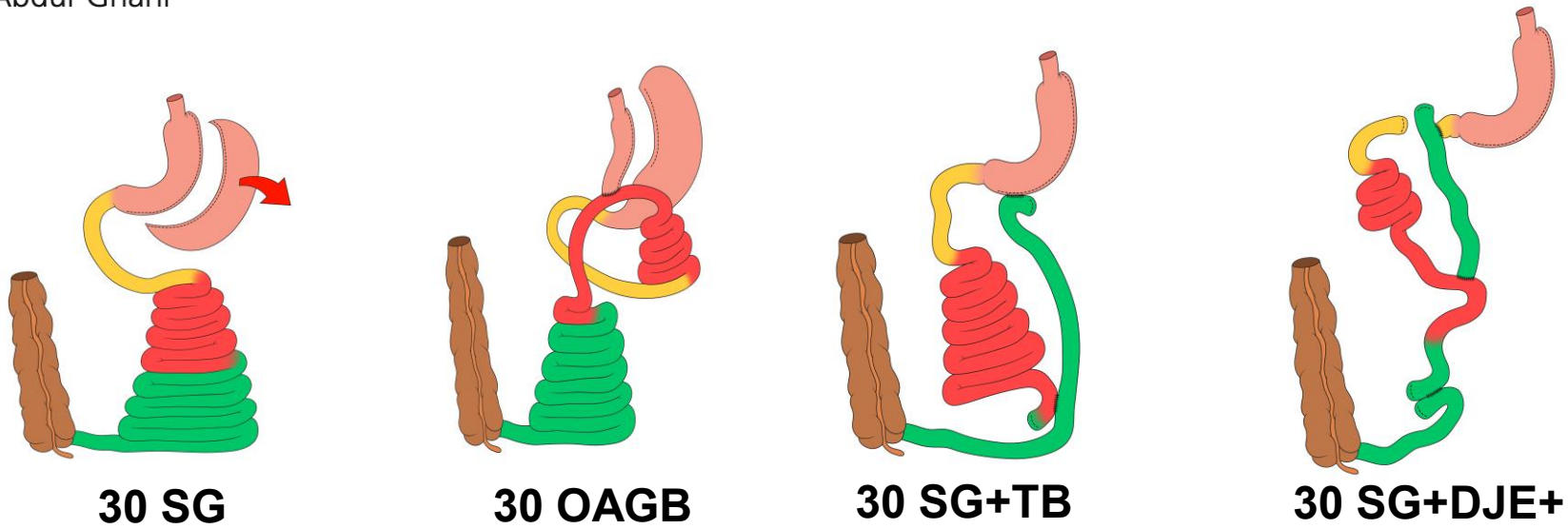

DIABETICMedicine

DOI: 10.1111/dme.14191

## Research: Metabolism

# Effects of different metabolic states and surgical models on glucose metabolism and secretion of ileal L-cell peptides: results from the HIPER-1 study

E. Cagiltay[1], A. Celik[2], J. B. Dixon[3,4], S. Pouwels[5], S. Santoro[6], A. Gupta[7], S. Ugale[8] and M. Abdul-Ghani[9,10]



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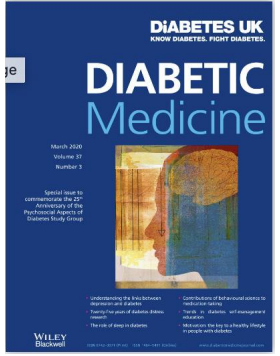


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**Elevation of Blood glucose After Mix Meal**

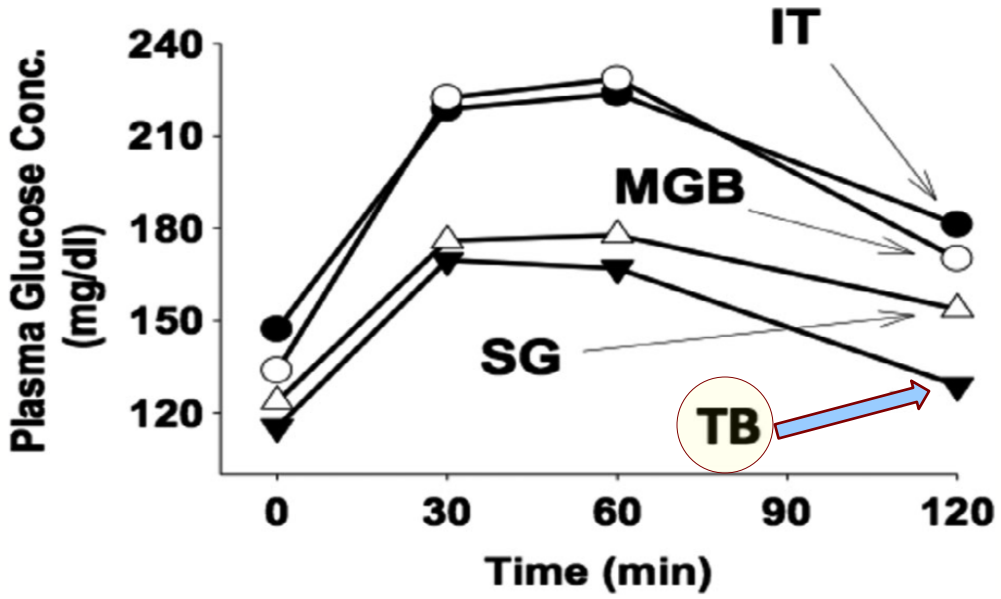


**FIGURE 1** Changes in plasma glucose concentration during mixed-meal tolerance test. IT, ileal transposition; TB, transit bipartition; MGB, mini-gastric bypass/one-anastomosis gastric bypass; SG; sleeve gastrectomy

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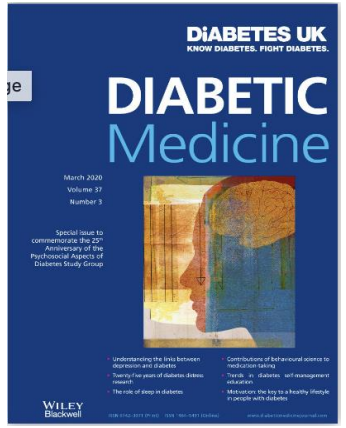


## Research: Metabolism

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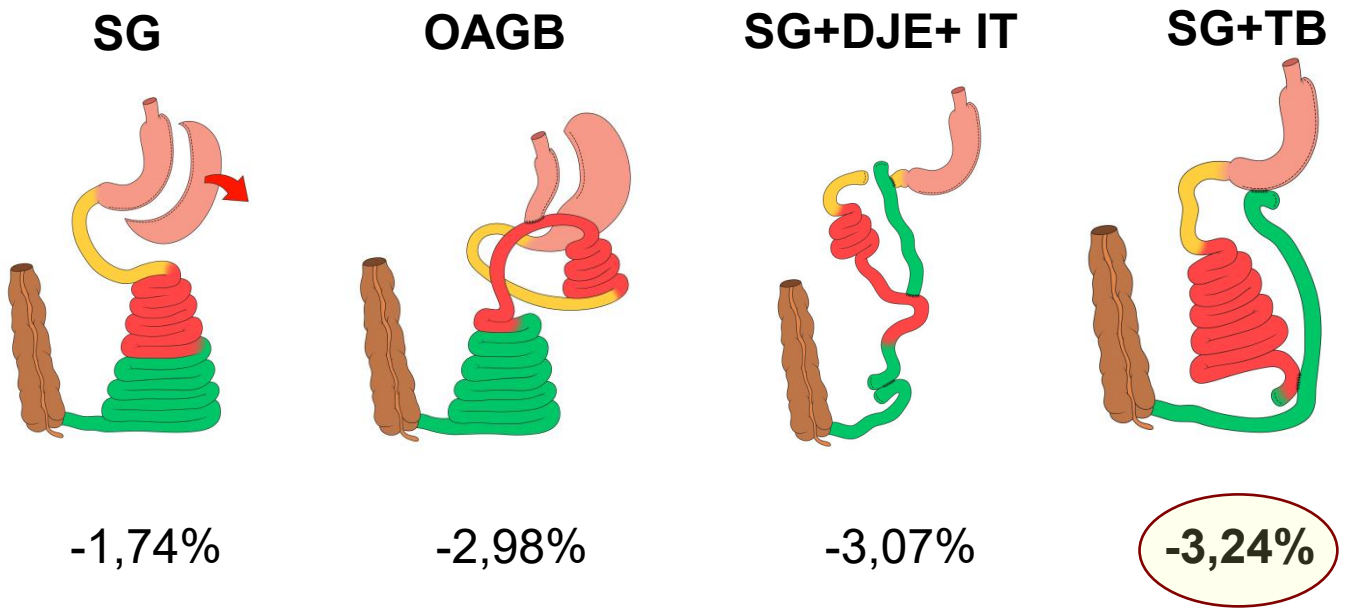



**- HbA1c%**

**Lowering in glycated hemoglobin**

Obesity Surgery
https://doi.org/10.1007/s11695-023-06477-7

ORIGINAL CONTRIBUTIONS

# Analysis of the Efficacy and the Long-term Metabolic and Nutritional Status of Sleeve Gastrectomy with Transit Bipartition Compared to Roux-en-Y Gastric Bypass in Obese Rats

Clement Baratte[1,2,3] · Alexandra Willemetz[1,2] · Lara Ribeiro-Parenti[1,2,3] · Claire Carette[1,4] · Simon Msika[1,2,3] · Andre Bado[1,2] · Sebastien Czernichow[1,4,5] · Maude Le Gall[1,2] · Tigran Poghosyan[1,2,3]

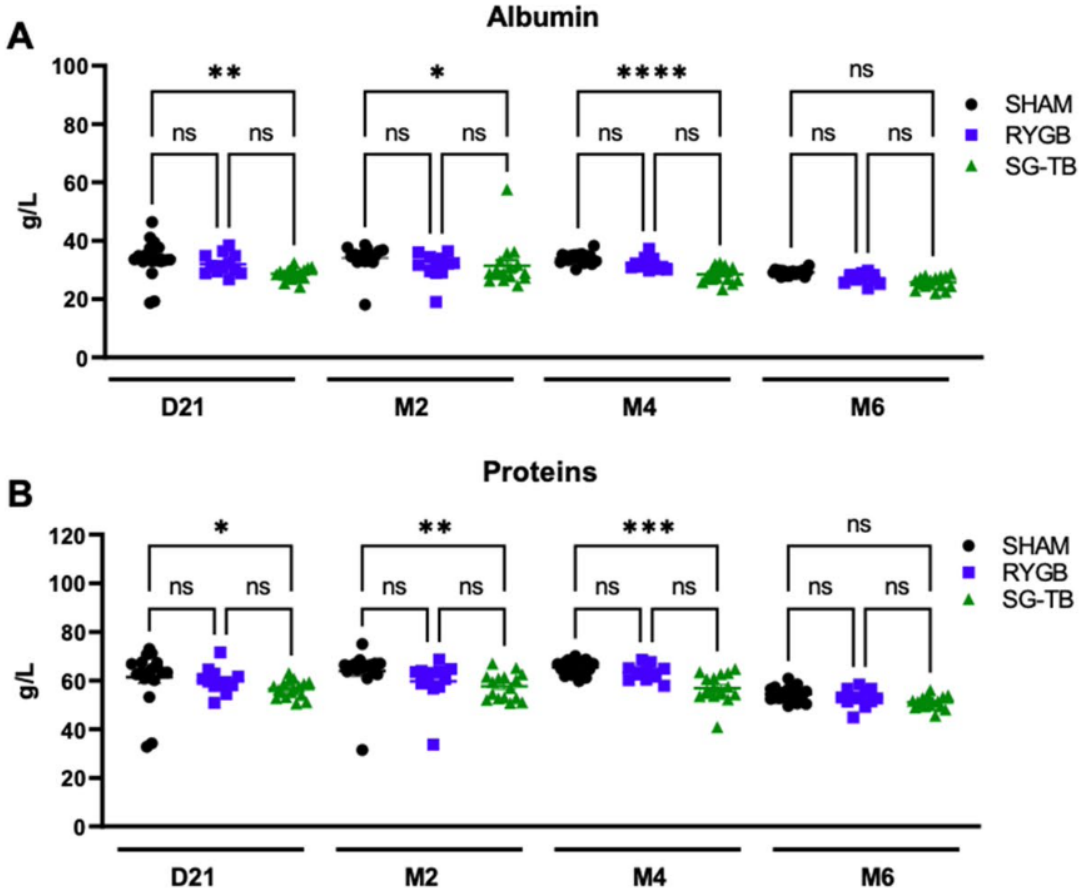
Received: 18 June 2022 / Revised: 12 January 2023 / Accepted: 19 January 2023

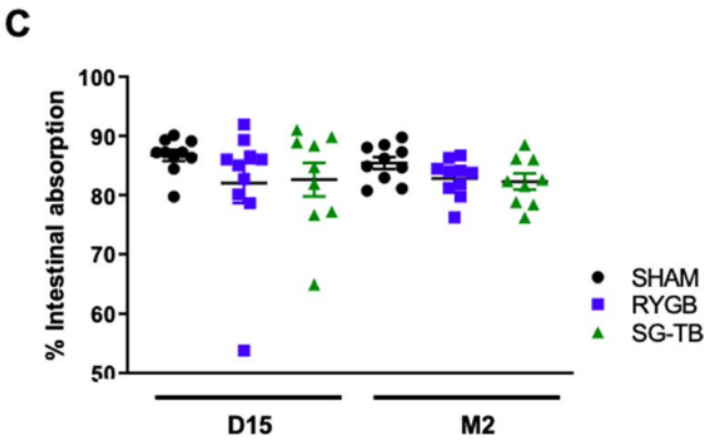

**SGTB x RYGB**
**Obese rats**
**6 months in a rat = 15 years in a man**

Published online in February 2023

RYGB

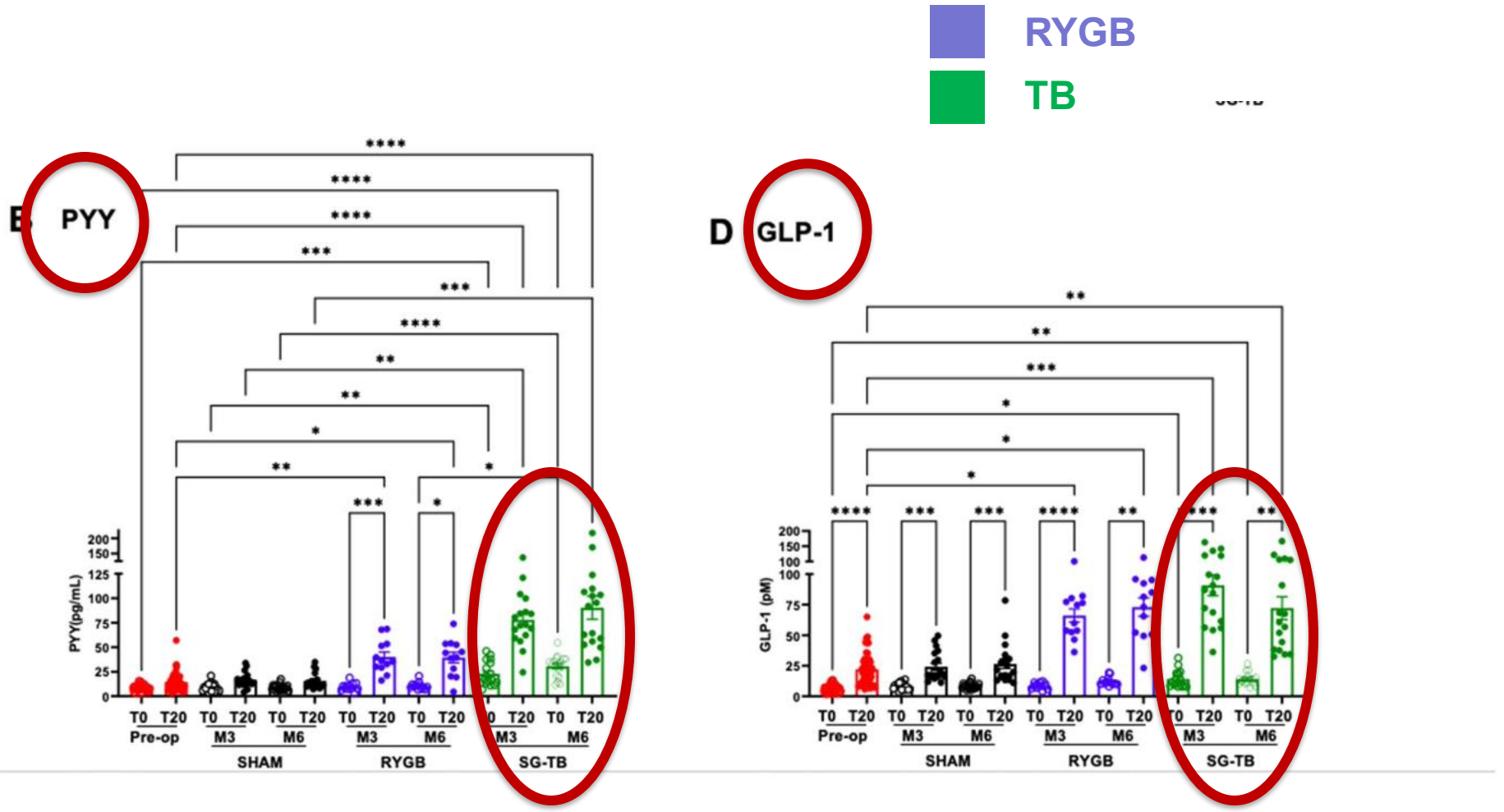
TB




# No significant diferences in nutritional parameters

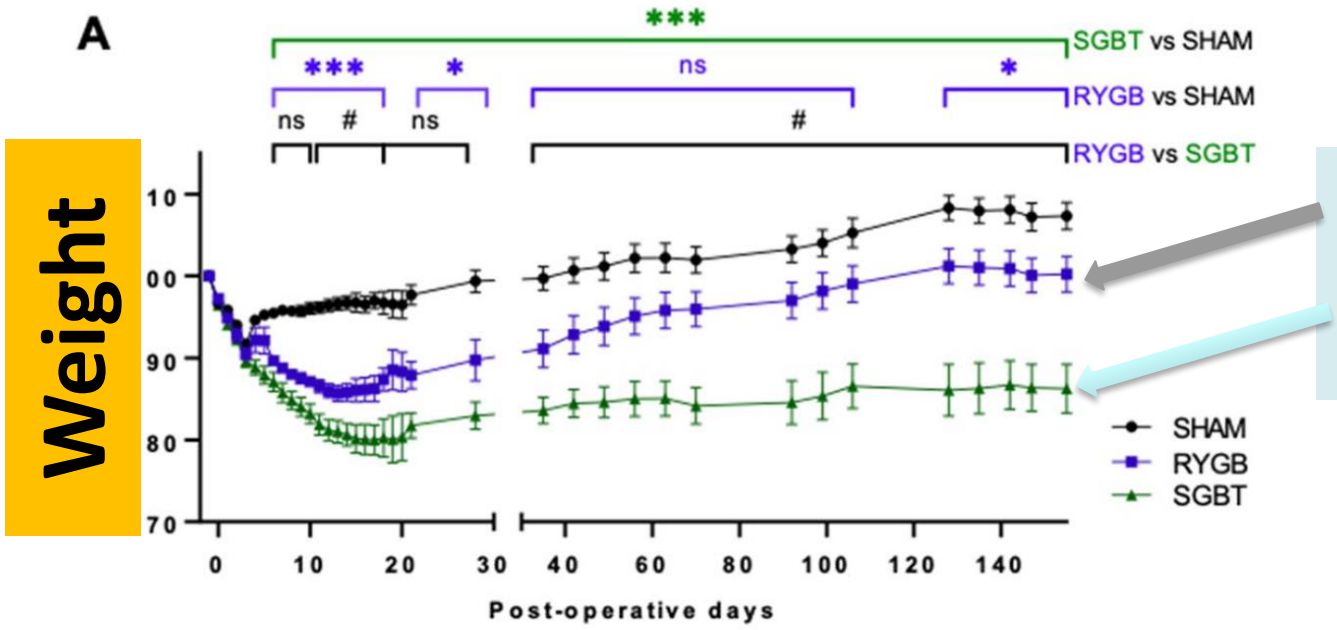
Baratte C et al. Obes Surg 2023




Baratte C et al. Obes Surg 2023

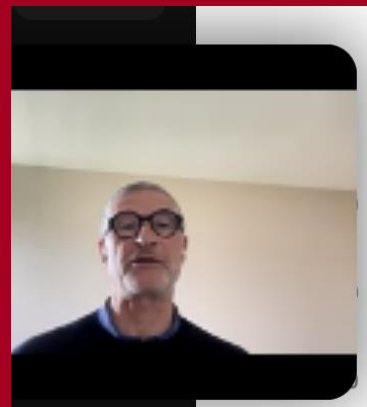
RYGB

TB

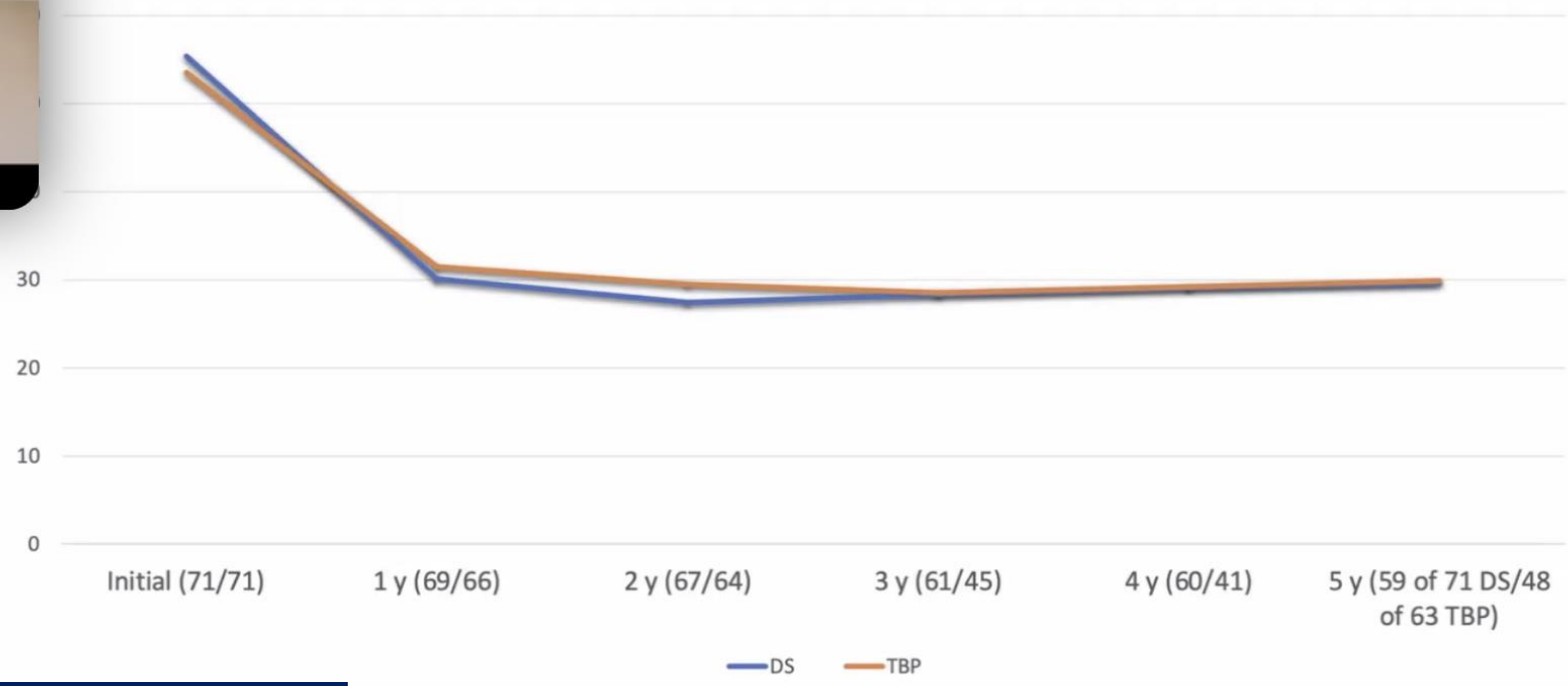



More potent and more durable weight loss than RYGB

**Baratte C et al. Obes Surg 2023**



# BMI evolution – 5 years – DS x Bipartition




Prof. Philippe Topart - France

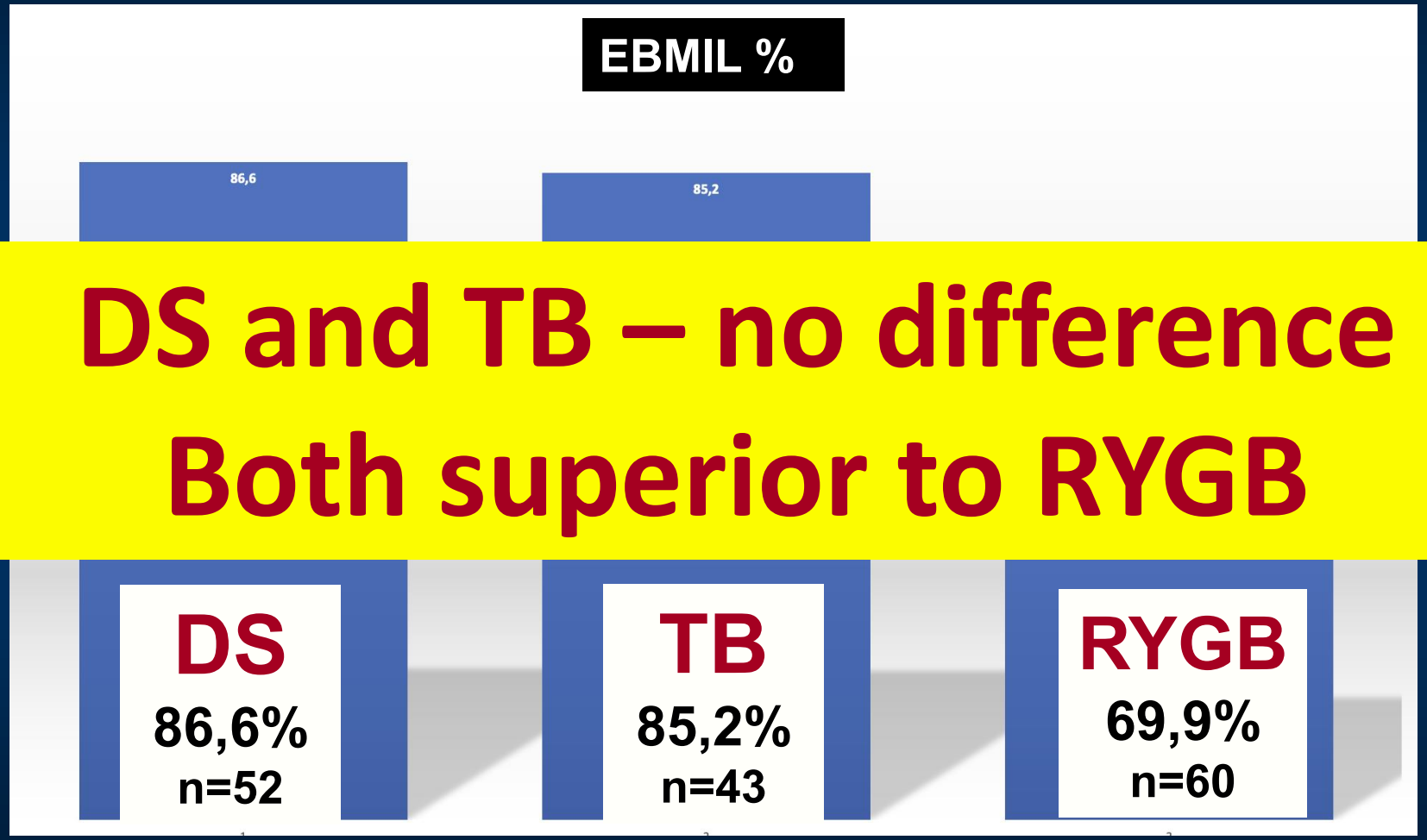
# Comorbidities

## Remissions at 2 years Post Op - France

## TB and DS – no difference

| | | |
|---|---|---|
| • Diabetes | TB 90% | DS 88% |
| • Hypertension | TB 81.8% | DS 61.9% |
| • Sleep Apnea | TB 84% | DS 78% |

# EBMIL % at 4 years Post Op - France

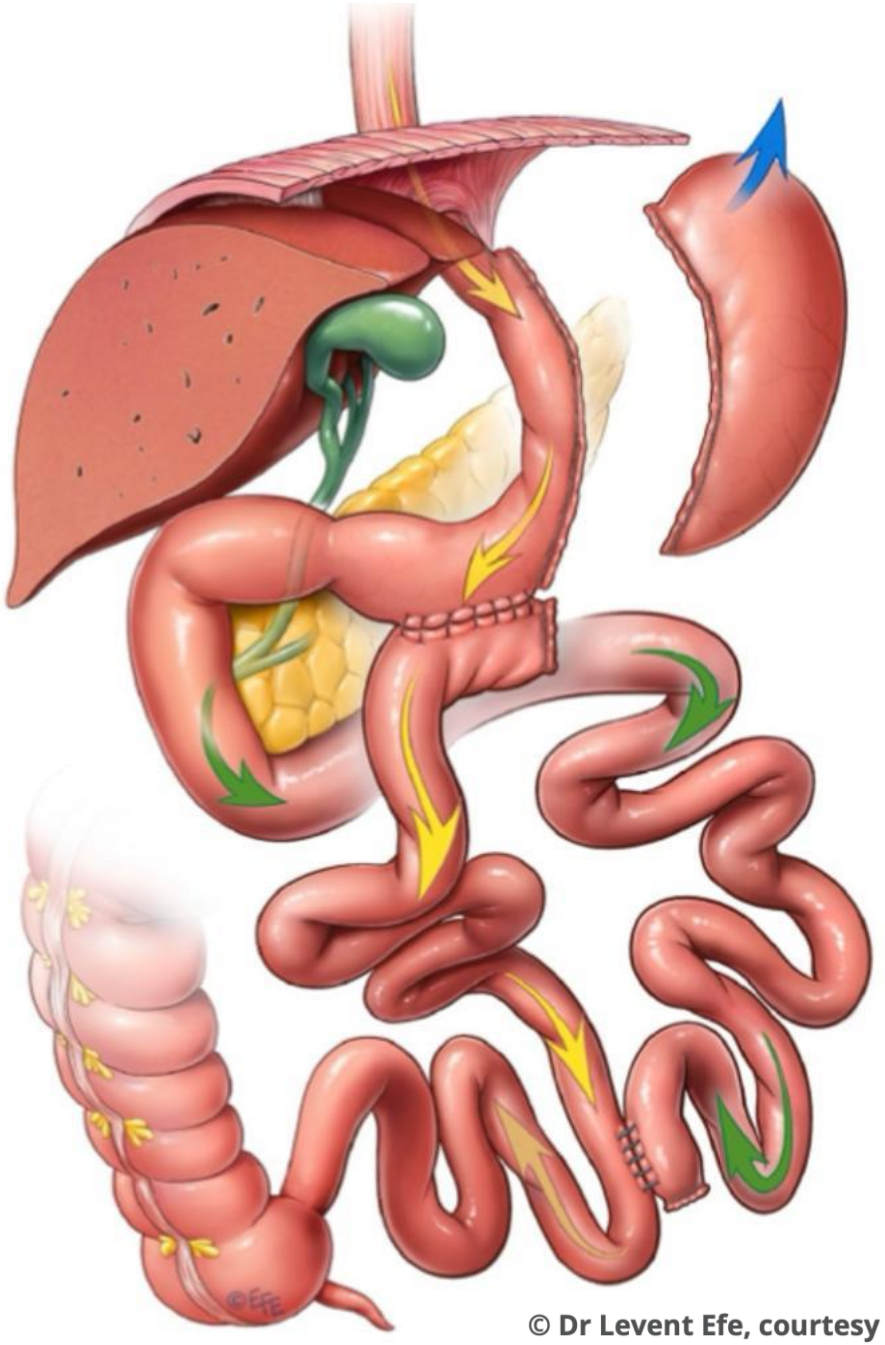



**DS and TB – no difference**
**Both superior to RYGB**

Very, very low complications in TB

because it is simple !

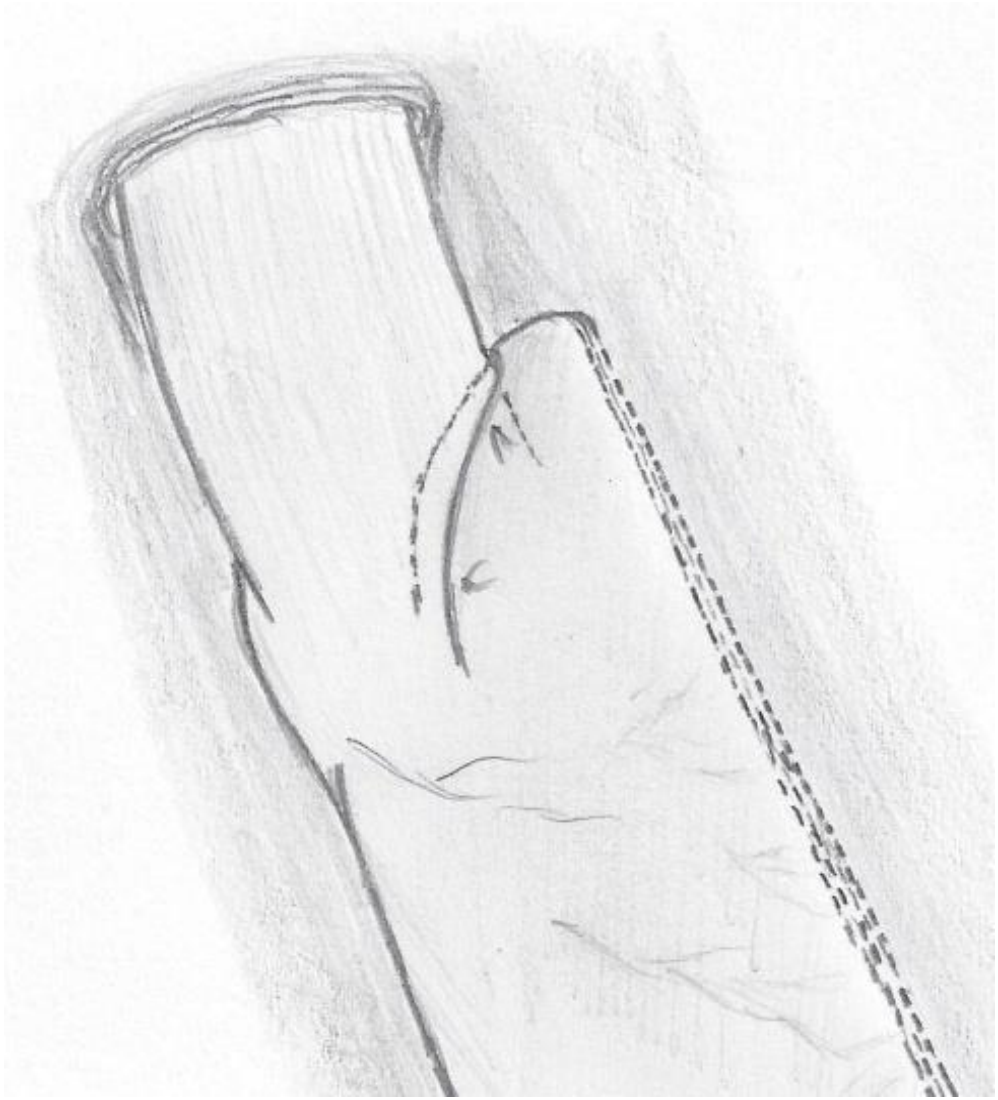
# The Bipartition

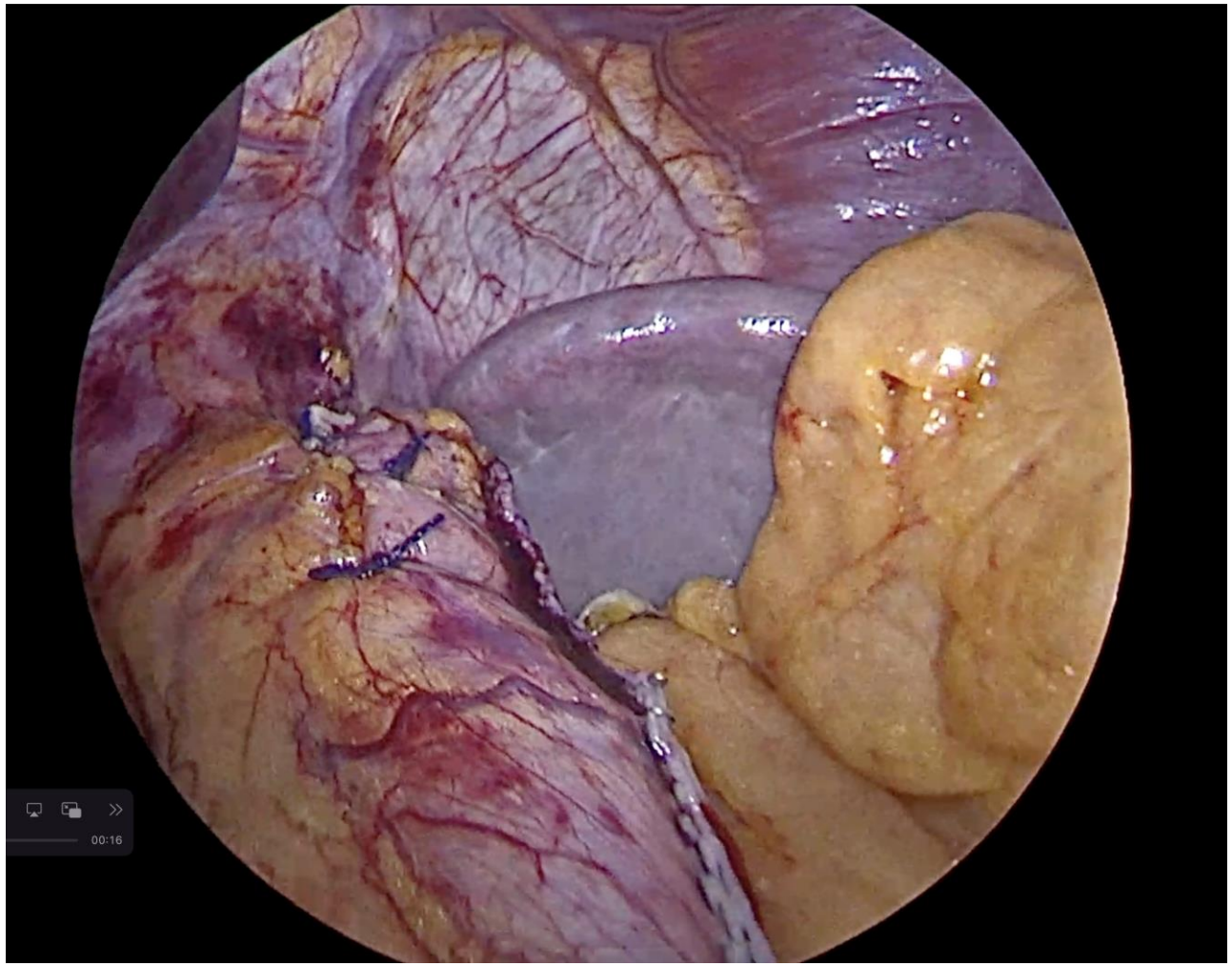


© Dr Levent Efe, courtesy of IFSO

**GERD is improved by 4 mechanisms**

# 1 The sleeve with **sphincter protection**
# The Cardioplicature





2

# The Bipartition

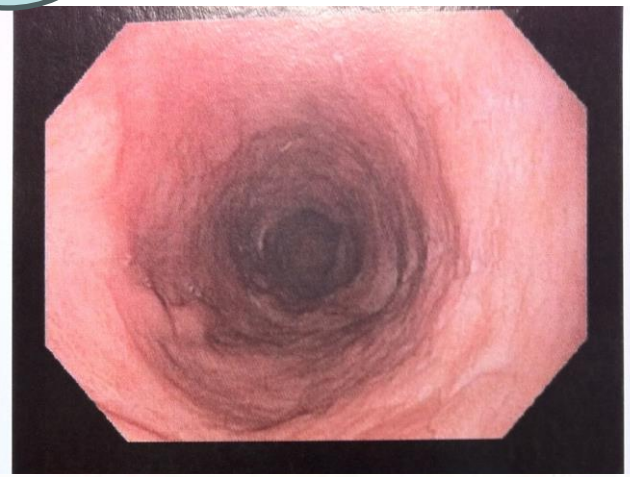

**It Keeps the stomach**

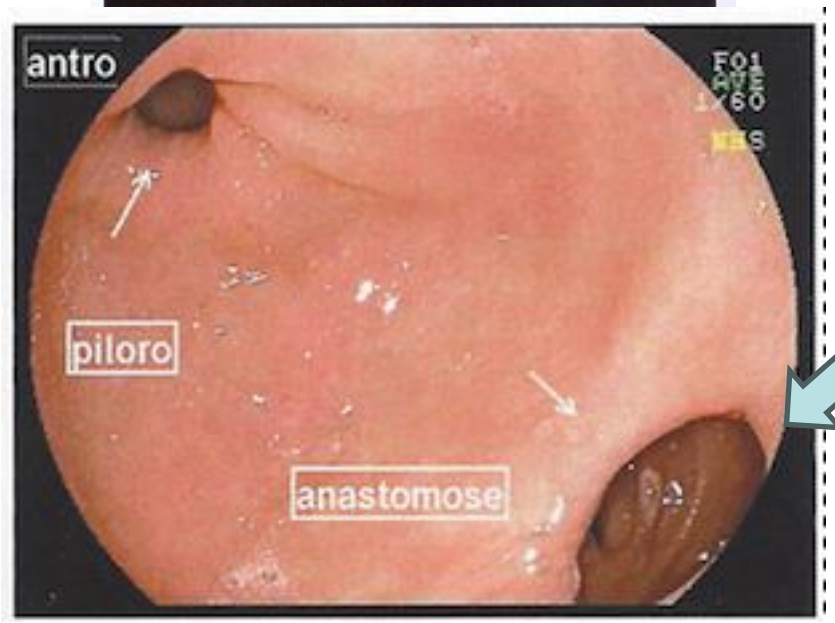
**in the right position**

**NO coiling!**

3

# The Bipartition



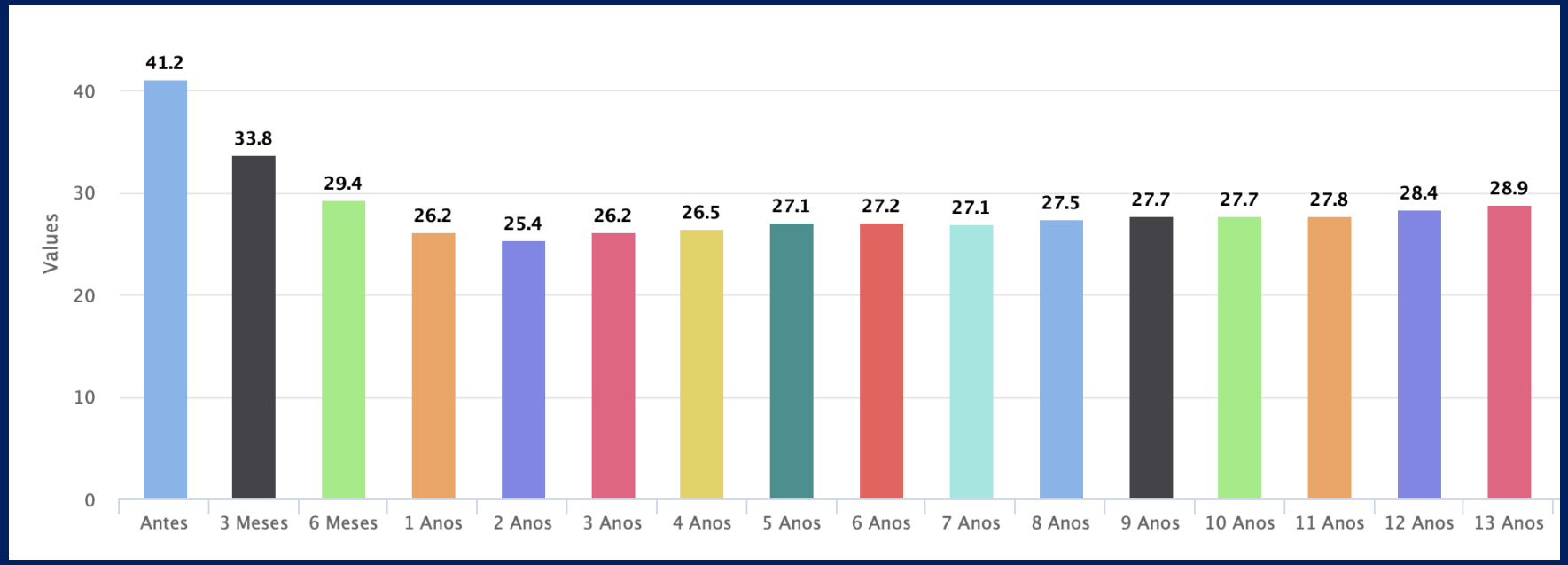



The bipartition is a **Gastric Drainage**

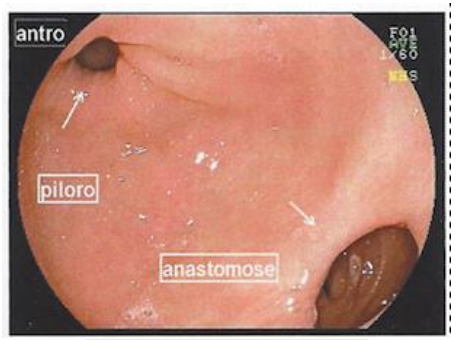
4

# The Bipartition

## Substancial weight loss is important to relieve GERD

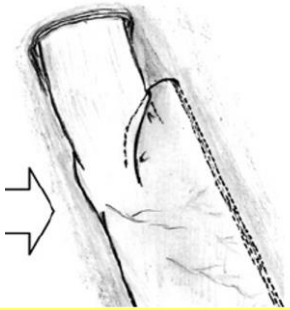



BMI




Drainage

+



Protection of the Sling Fibers of LES

+

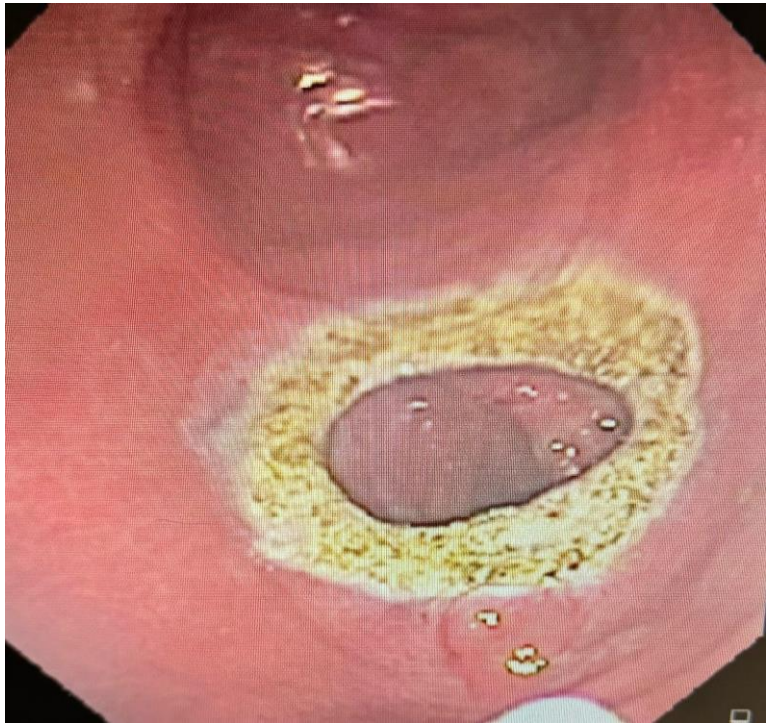
**Enhanced Weight Loss**

**We can treat Gastroesophageal Reflux**

# Easy to Adjust

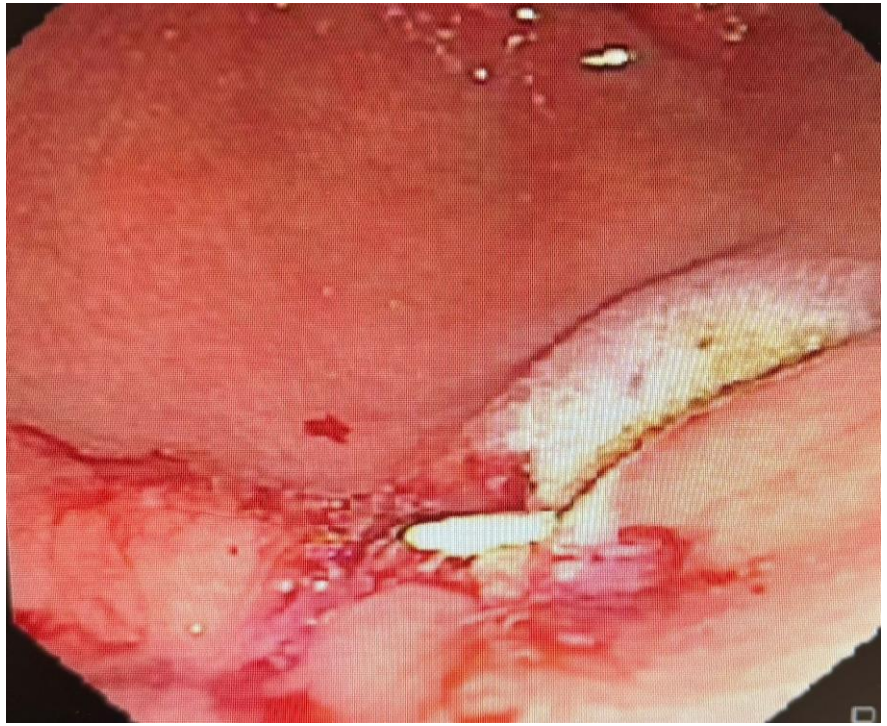
# NARROWING ANASTOMOSIS

**Argon plasma**



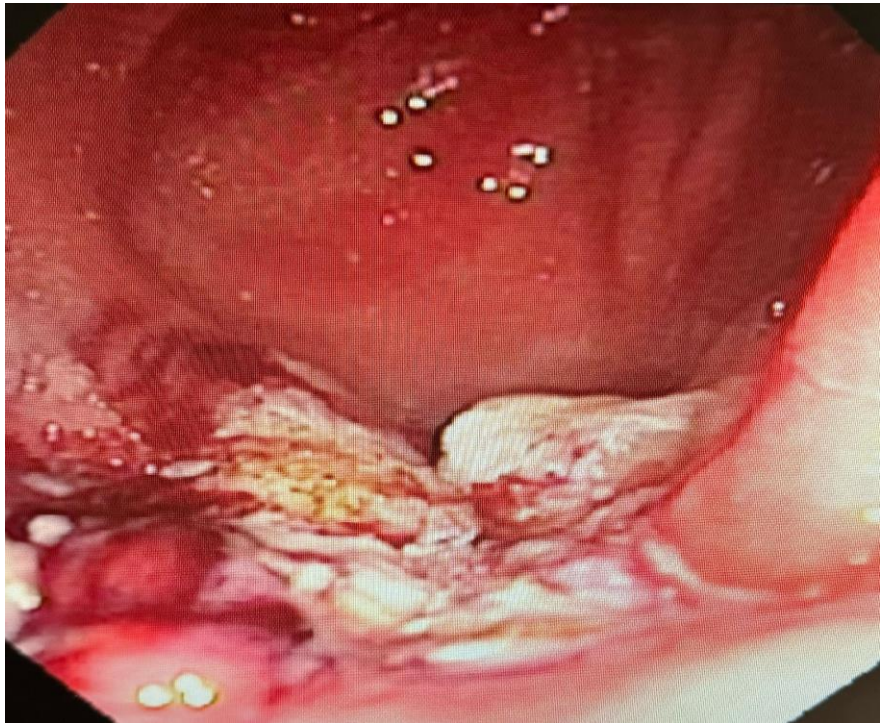
**SIZE REDUCTION**

**Argon + SUTURING**



**CLOSURE**

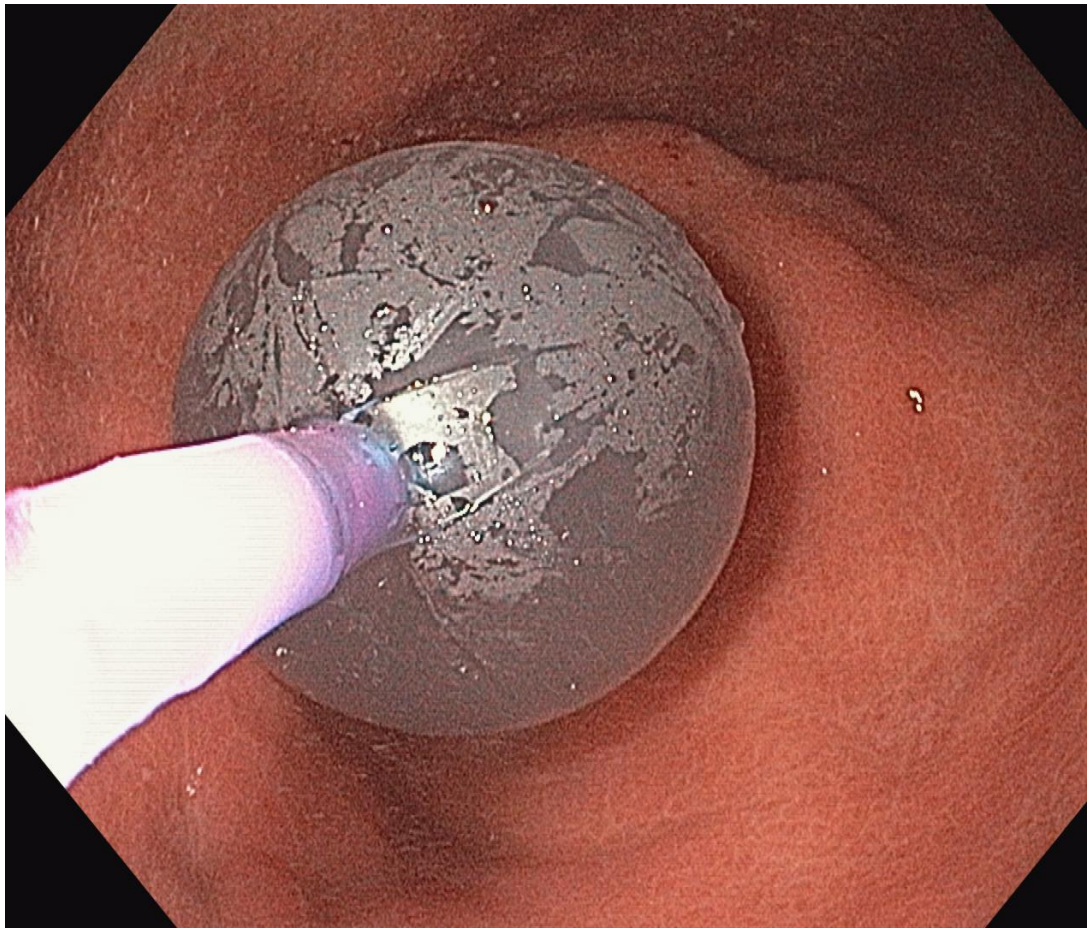
**Argon + SUTURING**



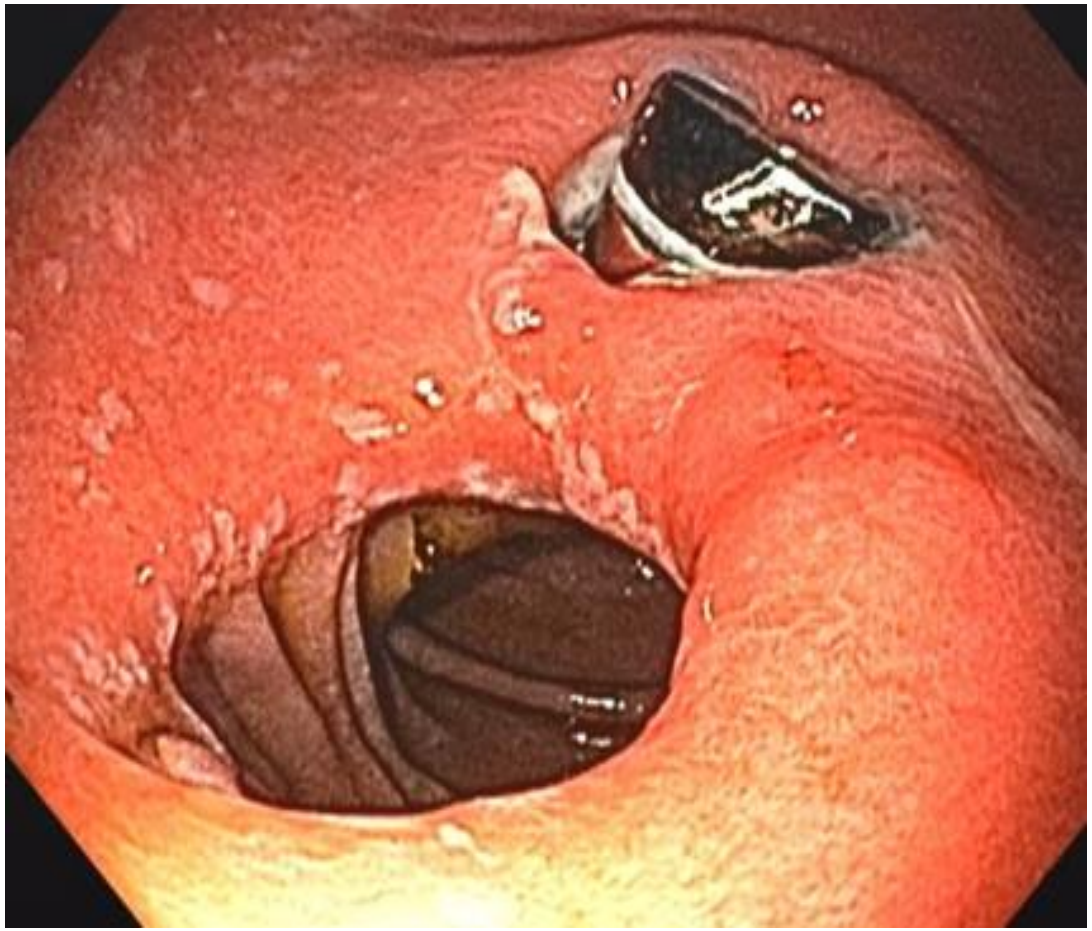
Courtesy Prof. Eduardo and Diogo Moura

# DILATING ANASTOMOSIS

## HYDROSTATIC BALLOON DILATION



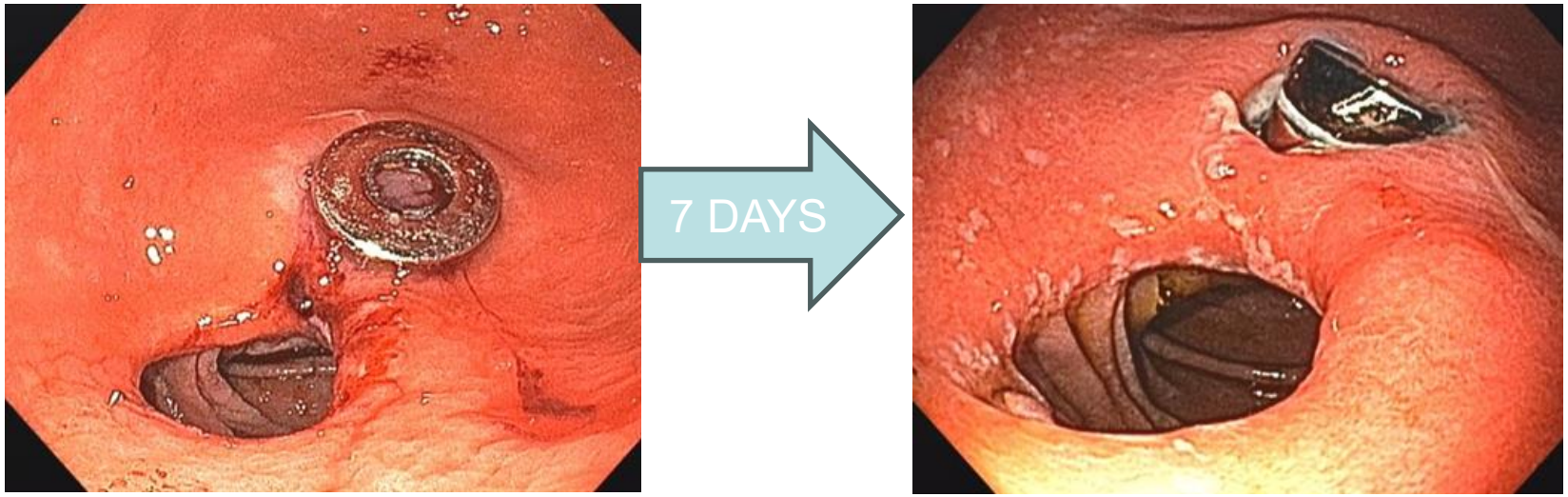
## MAGNETS

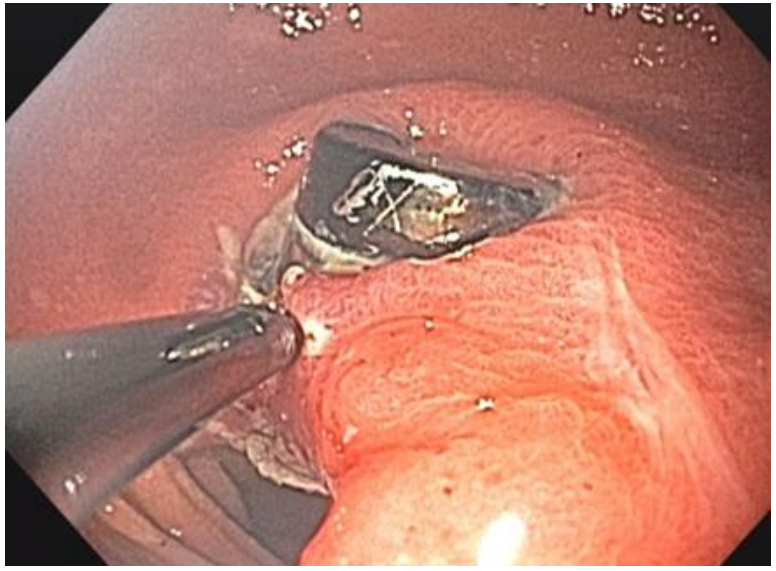


Courtesy Prof. Eduardo and Diogo Moura

# DILATING ANASTOMOSIS

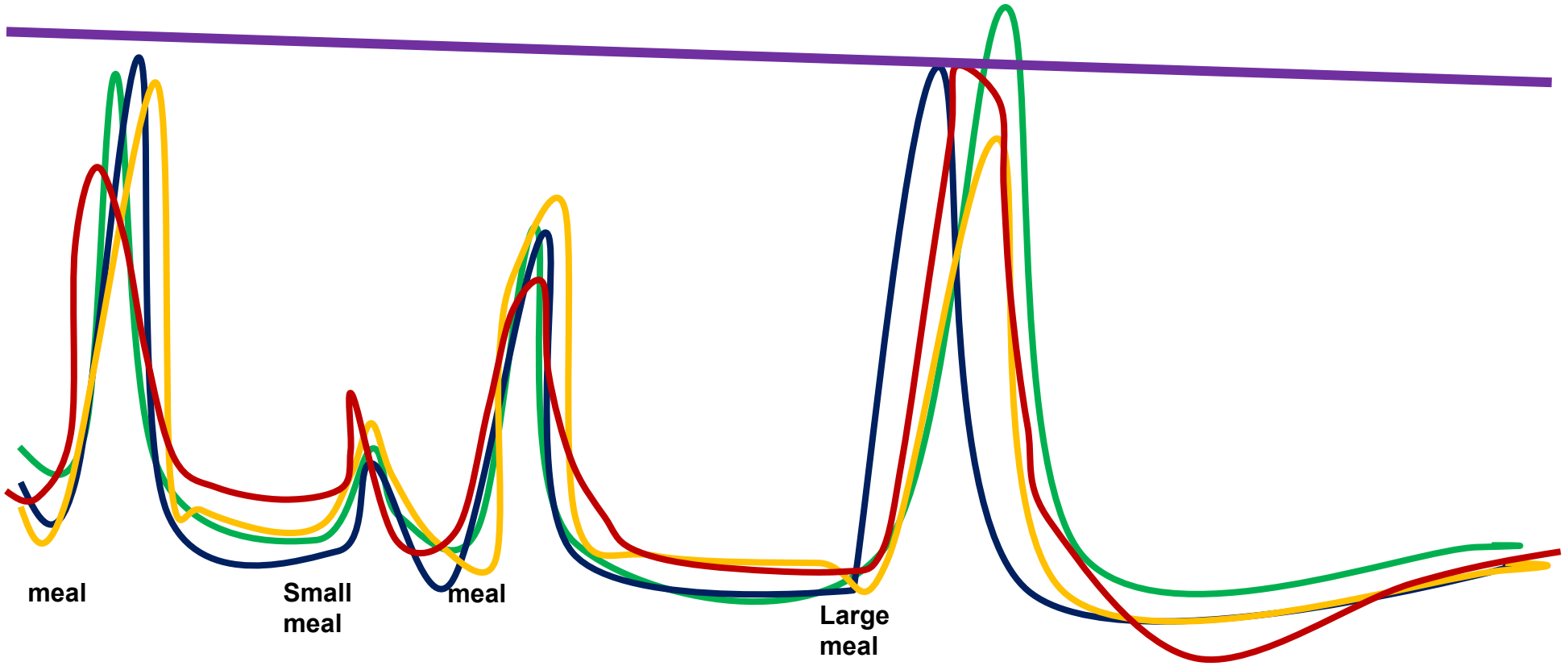
## MAGNETS



# Final Thoughts

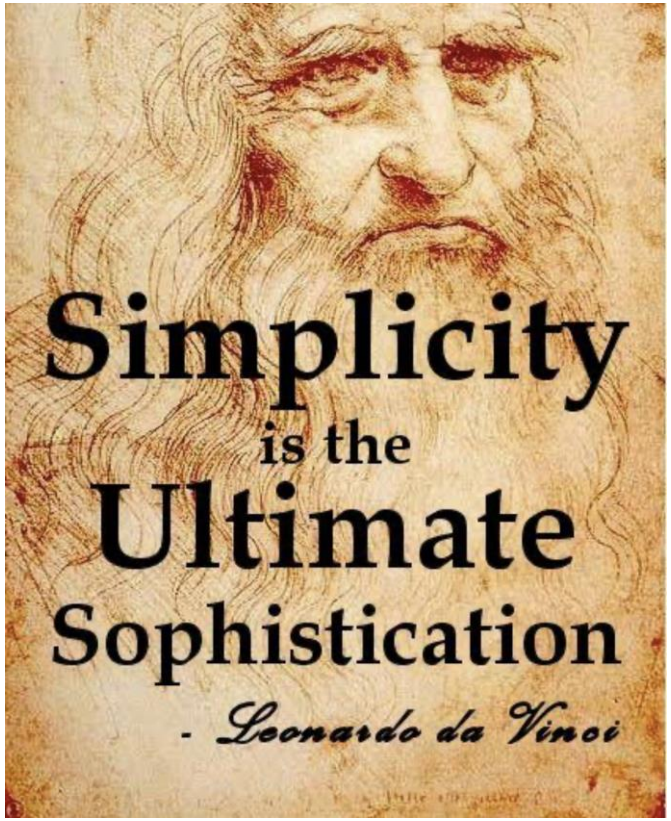
# Physiological secretion of Gut hormones




## Plasmatic levels of an administered single gut hormone analog

# The Bipartitions






**A simple mode to add the physiological ileal signals to your sleeve**

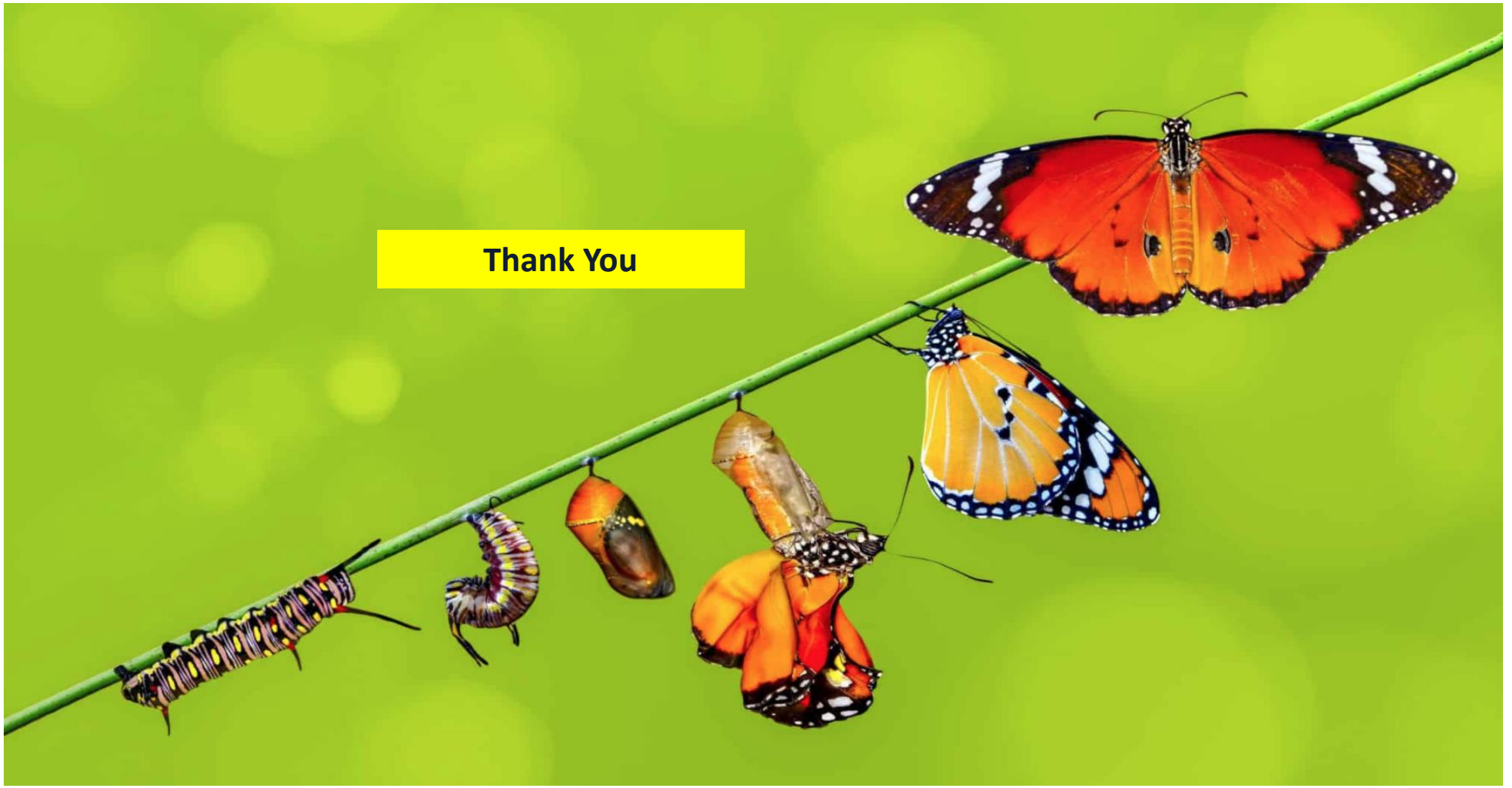
Bariatric Surgery → once aimed at Ma[illegible]ption

Disease

Pure Metabolic Surgery → aims at Dist[illegible]ption

Treatment

# Pure Metabolic Surgery is our Evolution

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