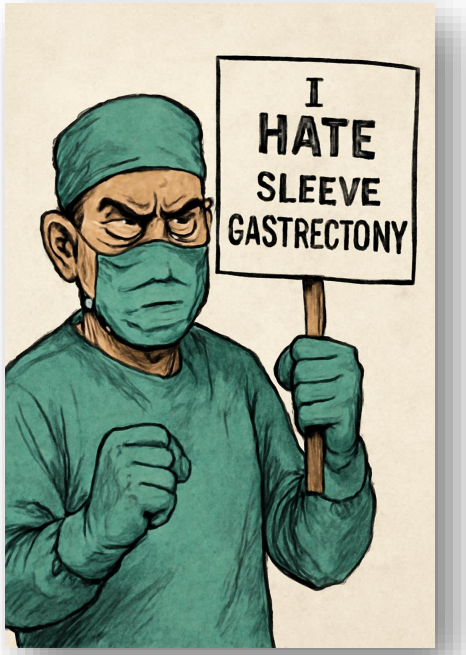
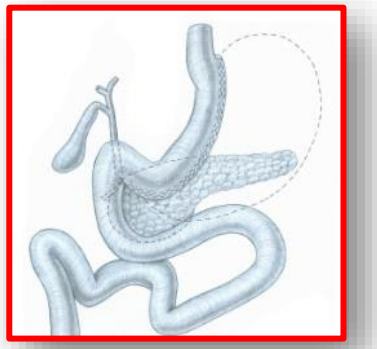
Why I do not do Sleeve

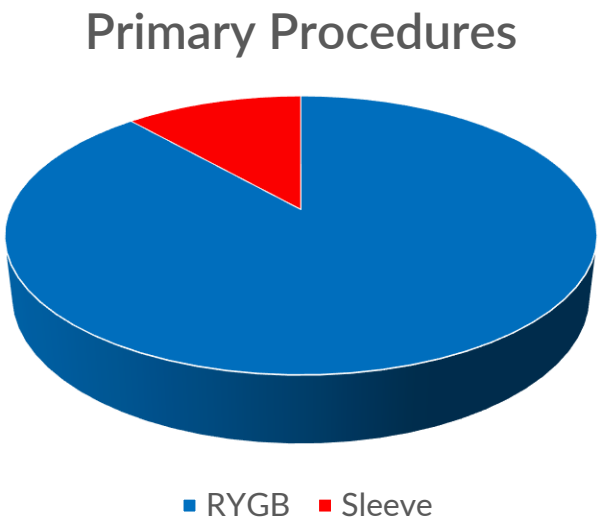


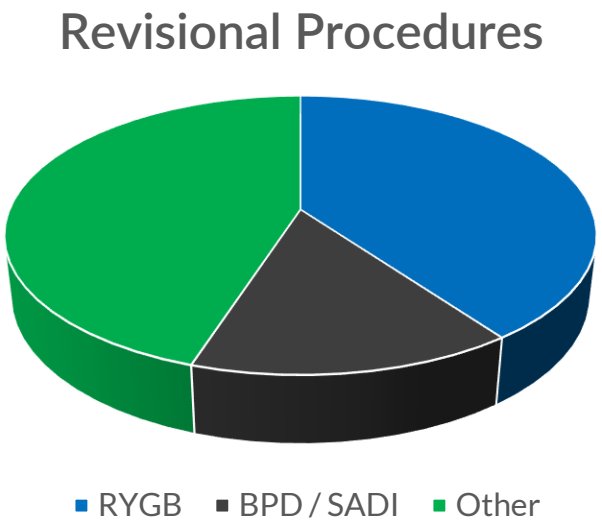


Prof. Ralph Peterli
Department of Clinical Research University of Basel, Switzerland
Senior Consultant Visceral Surgery: ViszeraMed Zürich & Spital Männedorf

DISCLOSURES

- Research grants: Swiss National Science Foundation, Johnson & Johnson, Hirzbrunnen Foundation NovoNordisk, UKBB, Novartis
- Lecture/consulting fees: Johnson & Johnson, Viatris, Falk Foundation, NovoNordisk, Lilly, Medtronic
- Case mix disclosure





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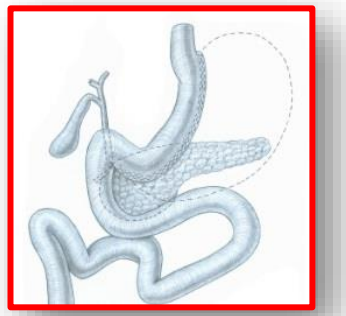
Why I do not do Sleeve ?

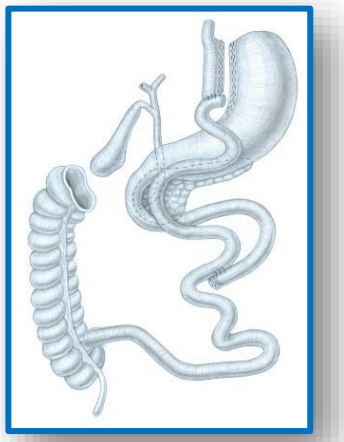
Because I believe in (my own) research

Swiss Multicentre Bypass or Sleeve Study (SM-BOSS)

- Endpoints:
  - Primary: Weight loss (excess BMI loss) at 5 y, comparative trial
  - Secondary: Reduction of co-morbidity
    QoL
    Safety
    Mechanistic studies (gut hormones, adipokines, bile acids, …)



vs



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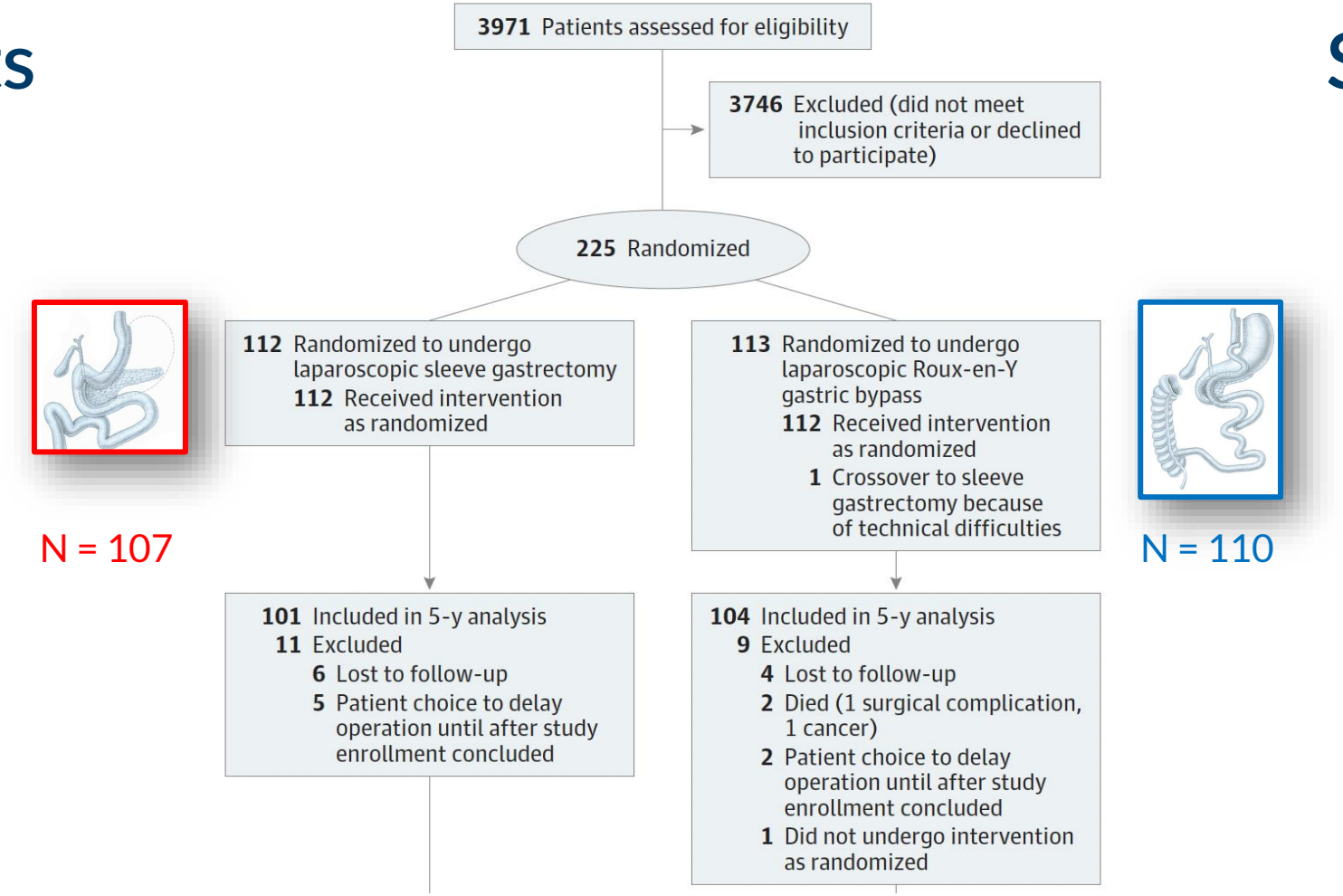
Patients



N = 107

N = 110

SM-BOSS

At baseline:

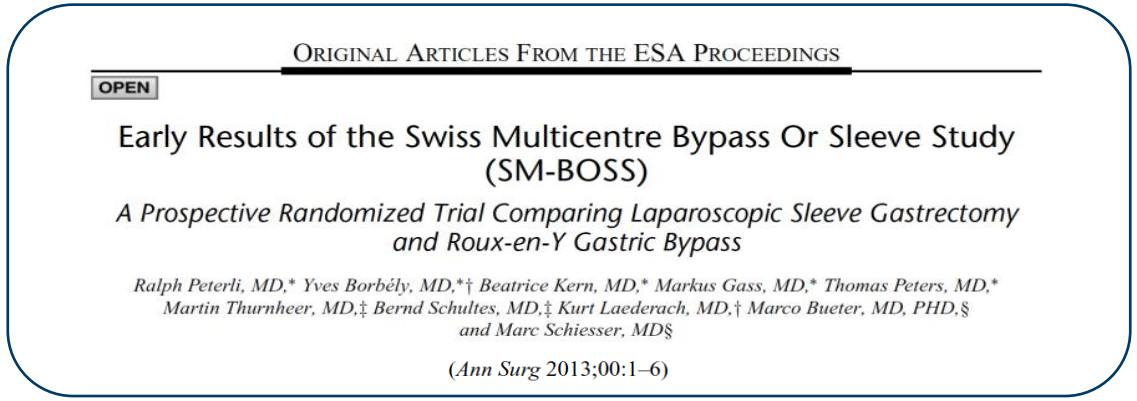
- Age = 43 y
- BMI = 44

- T2D = 25%

5y: FU rate = 95%

SM-BOSS

Early / Mid-term Results



ORIGINAL ARTICLES FROM THE ESA PROCEEDINGS

OPEN

Early Results of the Swiss Multicentre Bypass Or Sleeve Study (SM-BOSS)

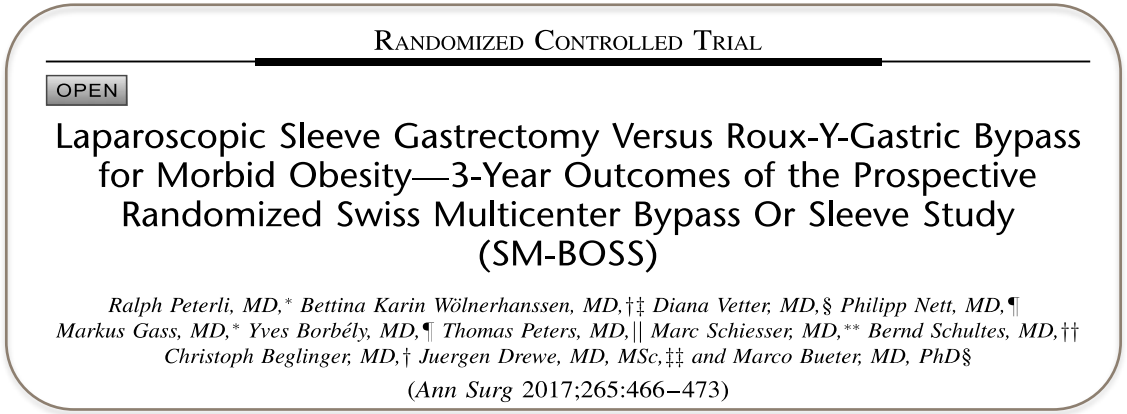
A Prospective Randomized Trial Comparing Laparoscopic Sleeve Gastrectomy and Roux-en-Y Gastric Bypass

Ralph Peterli, MD, Yves Borbély, MD,*† Beatrice Kern, MD,* Markus Gass, MD,* Thomas Peters, MD,* Martin Thurnheer, MD,‡ Bernd Schultes, MD,‡ Kurt Laederach, MD,† Marco Bueter, MD, PHD,§ and Marc Schiesser, MD§*

(*Ann Surg* 2013;00:1–6)

Early (1 year):

- Sleeve faster, (safer); equal weight loss



RANDOMIZED CONTROLLED TRIAL

OPEN

Laparoscopic Sleeve Gastrectomy Versus Roux-Y-Gastric Bypass for Morbid Obesity—3-Year Outcomes of the Prospective Randomized Swiss Multicenter Bypass Or Sleeve Study (SM-BOSS)

Ralph Peterli, MD, Bettina Karin Wölnerhanssen, MD,†‡ Diana Vetter, MD,§ Philipp Nett, MD,¶ Markus Gass, MD,* Yves Borbély, MD,¶ Thomas Peters, MD,|| Marc Schiesser, MD,** Bernd Schultes, MD,†† Christoph Beglinger, MD,† Juergen Drewe, MD, MSc,‡‡ and Marco Bueter, MD, PhD§*

(*Ann Surg* 2017;265:466–473)

3 years:

- Equal weight loss, complications, QoL, co-morbidity
  - Except GERD, dyslipidemia: bypass better
- Same rate of vitamin deficiencies

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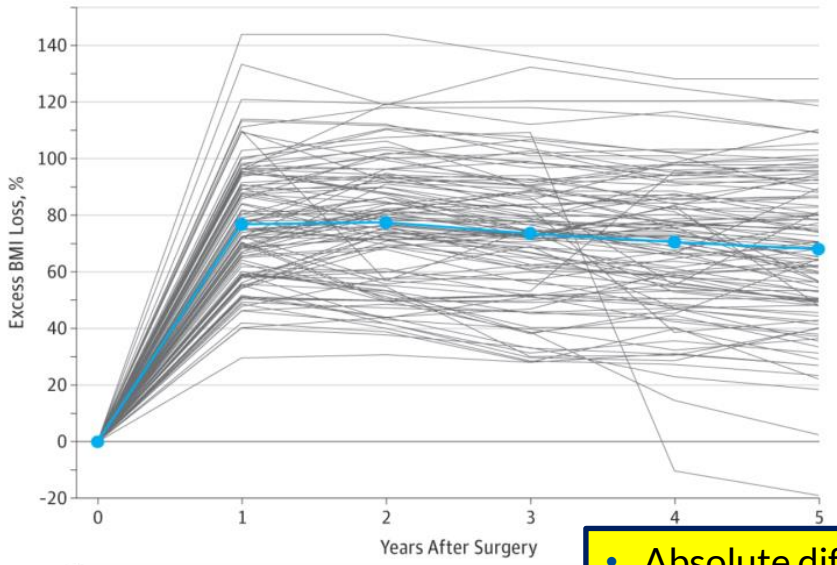
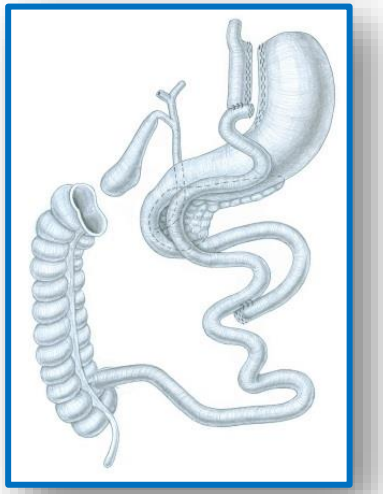
5-year Results

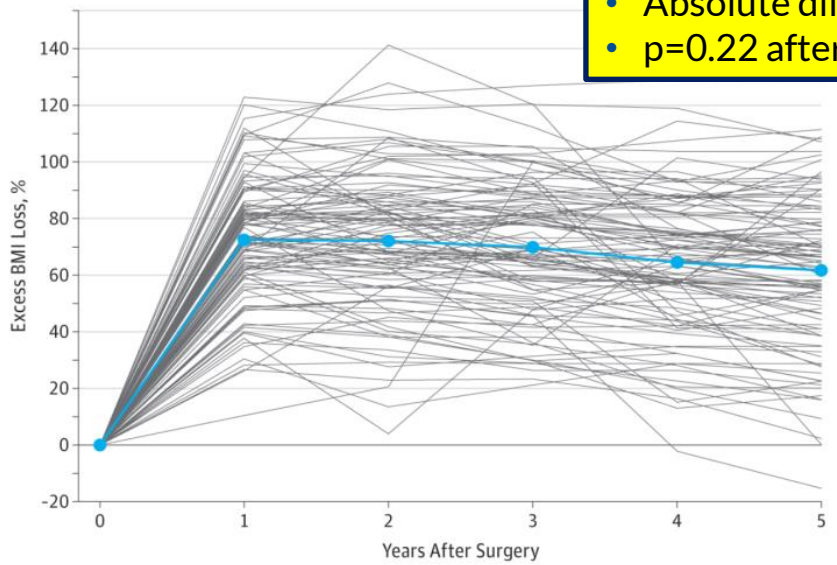
Excess BMI loss



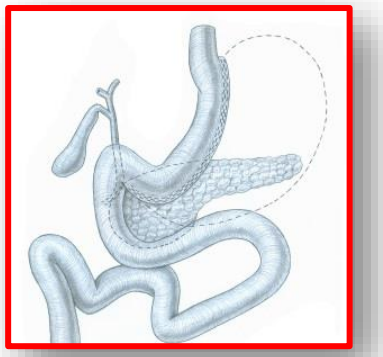
68%



- Absolute difference -7.18% (95%CI: -14.30% to -0.06%)
- p=0.22 after adjustment for multiple comparisons



61%



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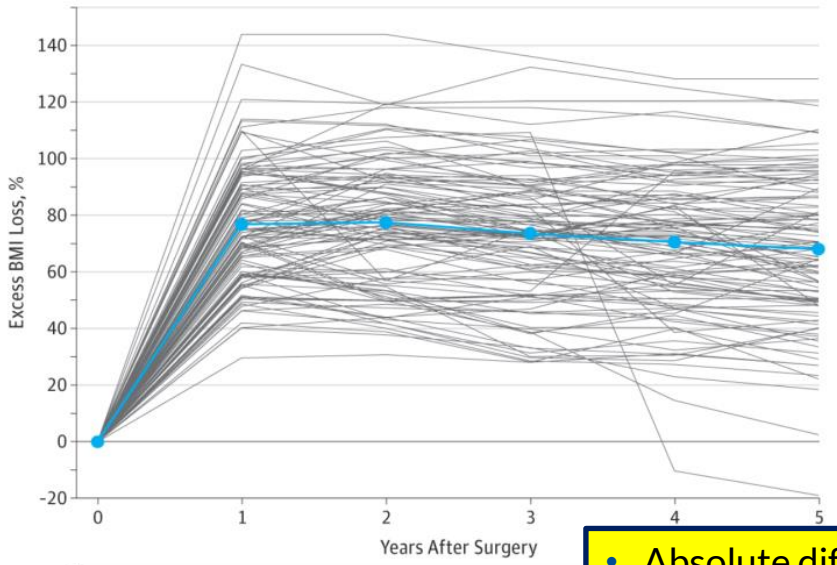
Peterli, JAMA 2018

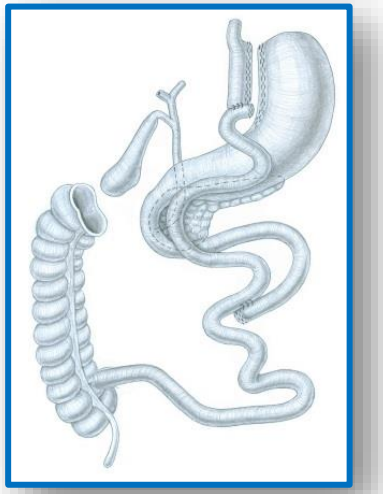
5-year Results

Excess BMI loss

% WL



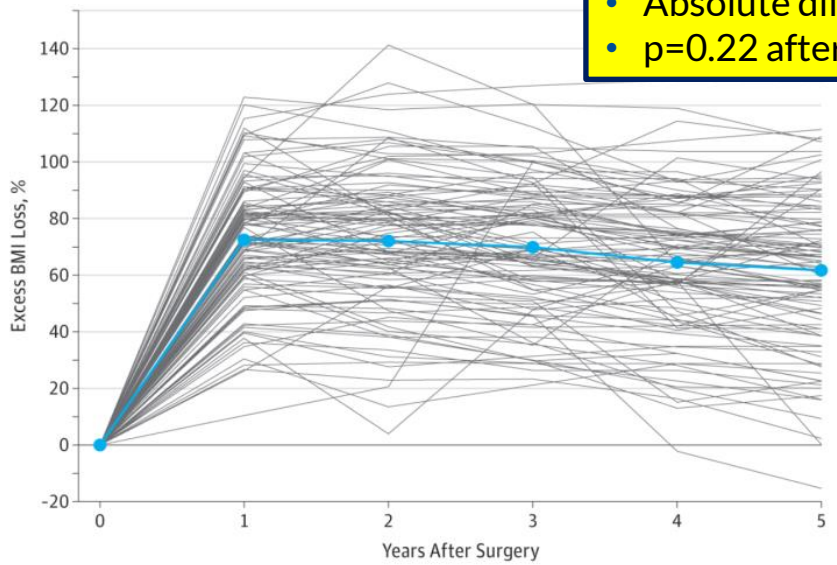
68%



29%

- Absolute difference -7.18% (95%CI: -14.30% to -0.06%)
- p=0.22 after adjustment for multiple comparisons

P = 0.019



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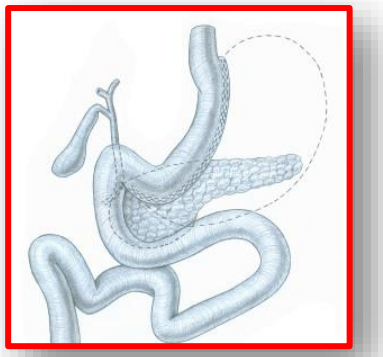

25%

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Peterli, JAMA 2018

10-year Results

Research

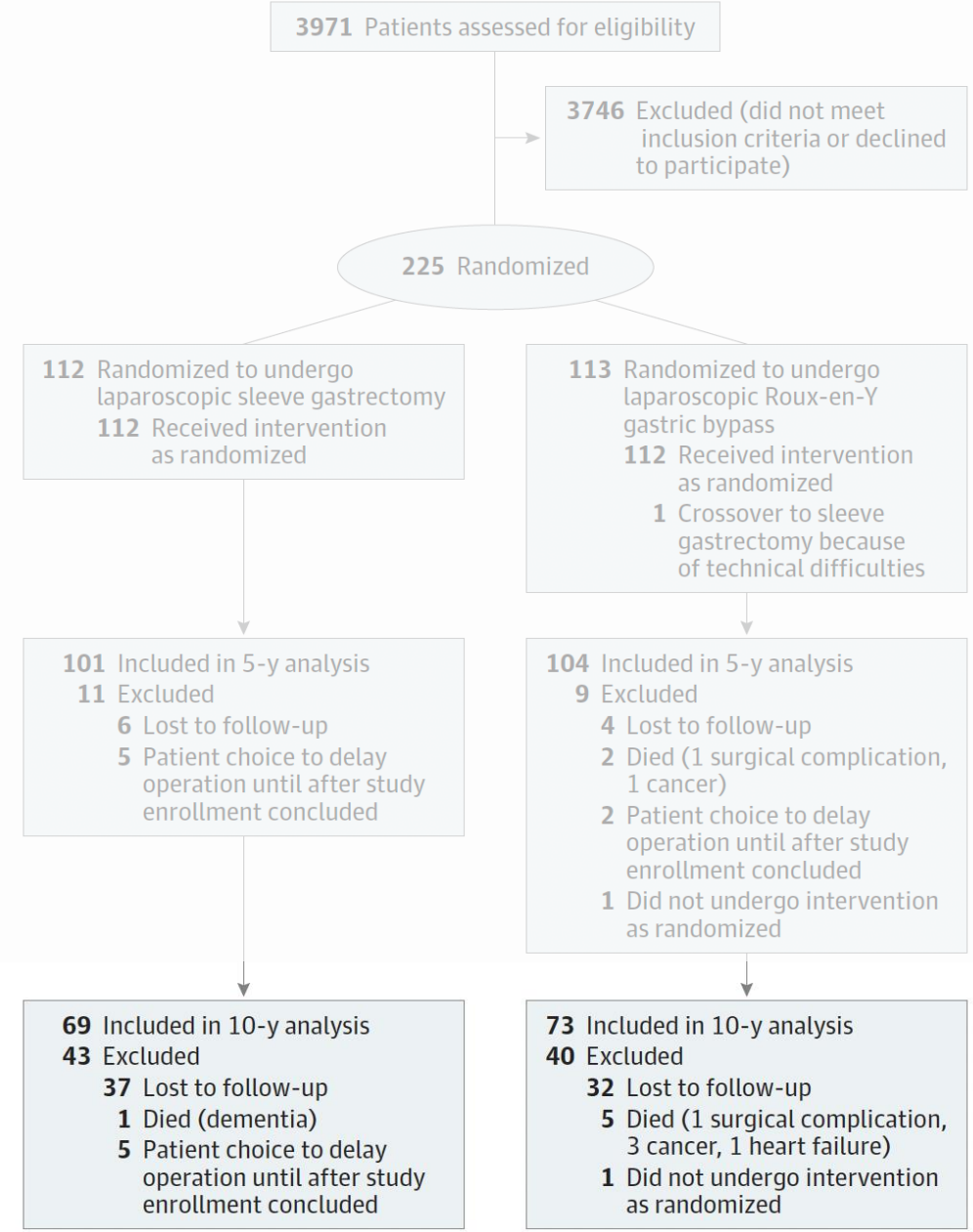
JAMA Surg. doi:10.1001/jamasurg.2024.7052
Published online February 19, 2025.

JAMA Surgery | Original Investigation

Long-Term Outcomes of Laparoscopic Roux-en-Y Gastric Bypass vs Laparoscopic Sleeve Gastrectomy for Obesity
The SM-BOSS Randomized Clinical Trial

Marko Kraljević, MD; Julian Süsstrunk, MD; Bettina Karin Wölnerhanssen, MD; Thomas Peters, MD; Marco Bueter, MD; Daniel Gero, MD; Bernd Schultes, MD; Adisa Poljo, MD; Romano Schneider, MD; Ralph Peterli, MD

Patients at 10 y



At baseline:

- Age = 43 y
- BMI = 44

- T2D = 25%

5y: FU rate = 95%

10y: FU rate = 65%

One centre not delivering pt data

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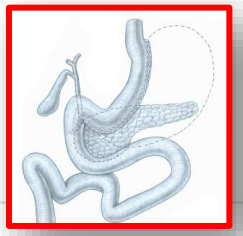
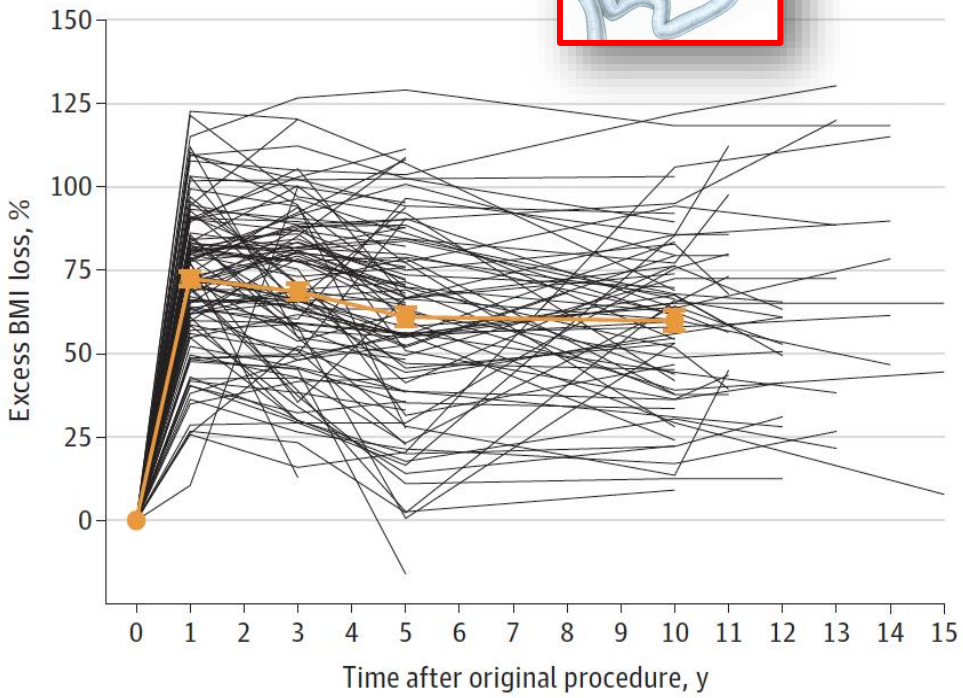
10-year Results

%EBMIL for ITT Population

n = 69

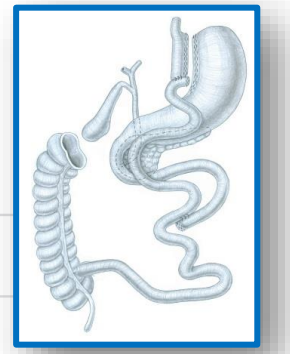


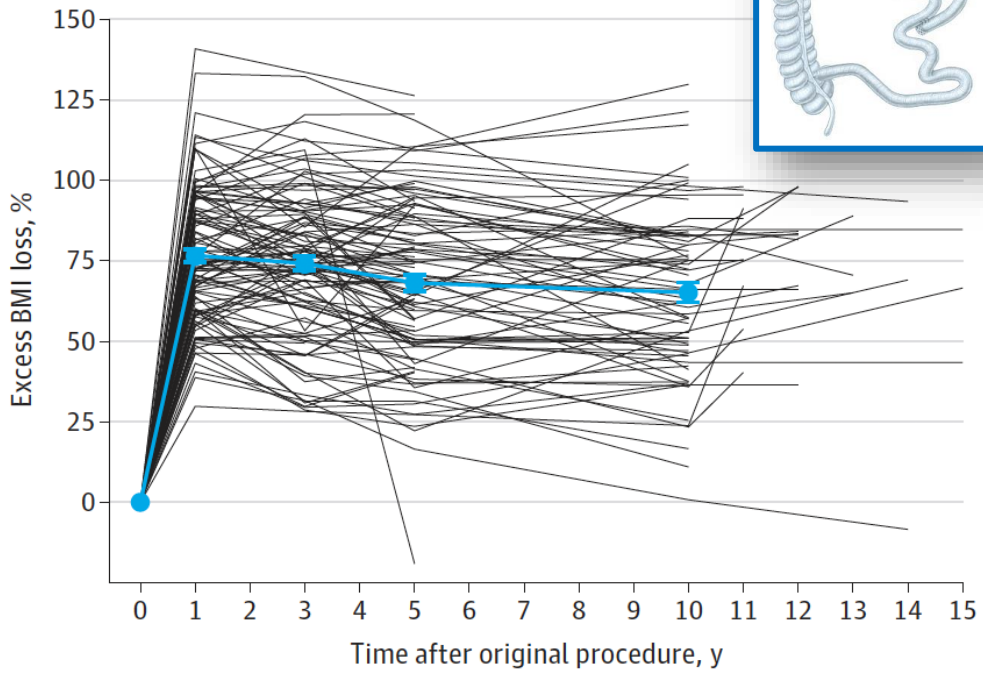


10y: Sleeve 60.6 ±26 %

ns

n = 73





10y: Bypass 65.2 ±26 %

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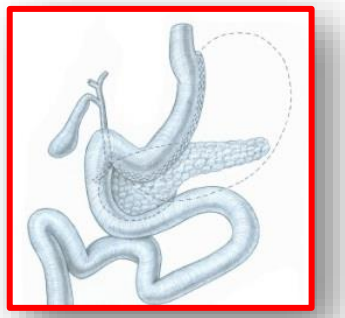
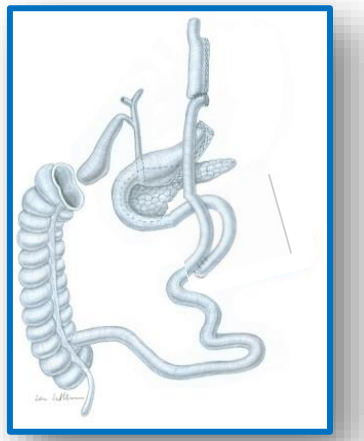
10-year Results

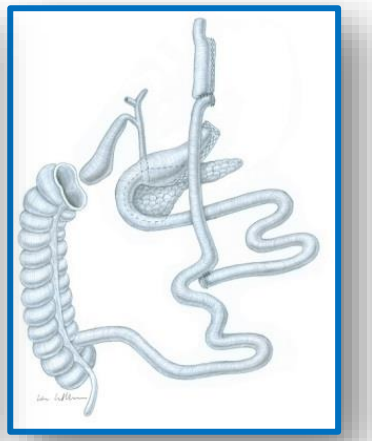
Conversion to different anatomy

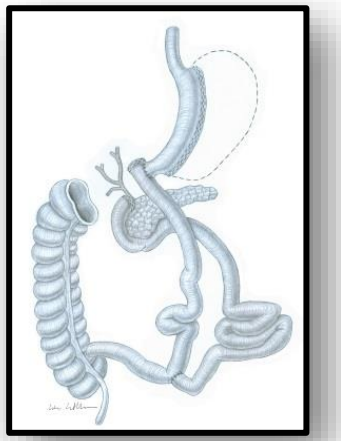
- Sleeve group had significantly higher rates of conversion (30% vs. 5.5%, $p < 0.001$)

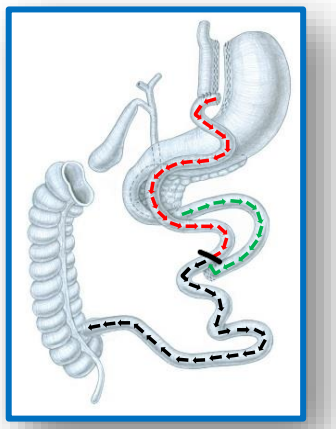


- n=32
- Indication:
  - Reflux 50%
  - Suboptimal weight loss 30%
  - Both 20%

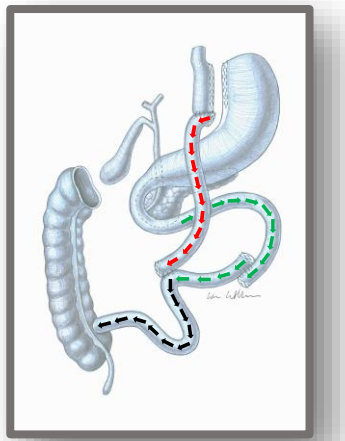








- n = 6
- Indication:
  - Suboptimal weight loss 100%



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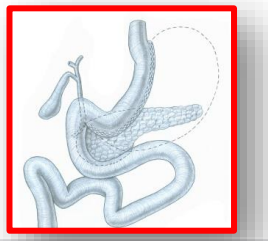
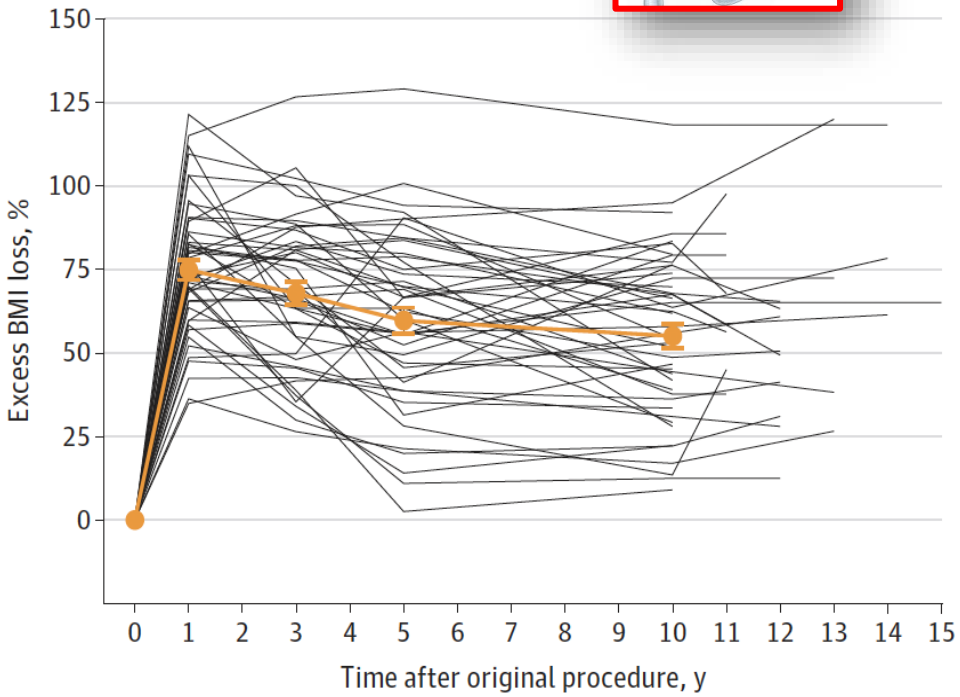
10-year Results

%EBMIL for PP Population

n = 48

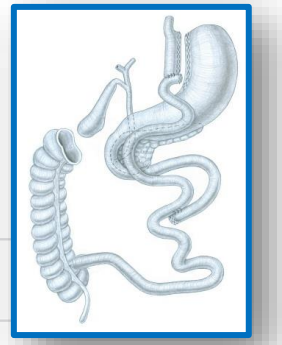


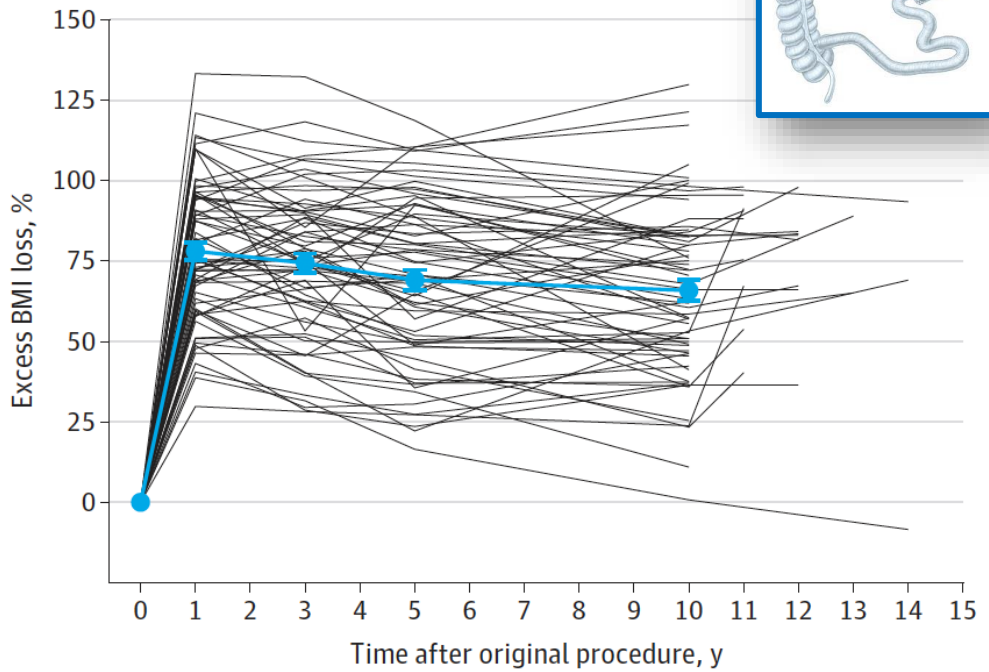


Sleeve 56.1 ±25.2%

p = 0.048

n = 66





Bypass 65.9 ±26.3%

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Comparison to other RCT's 5 & 10 y

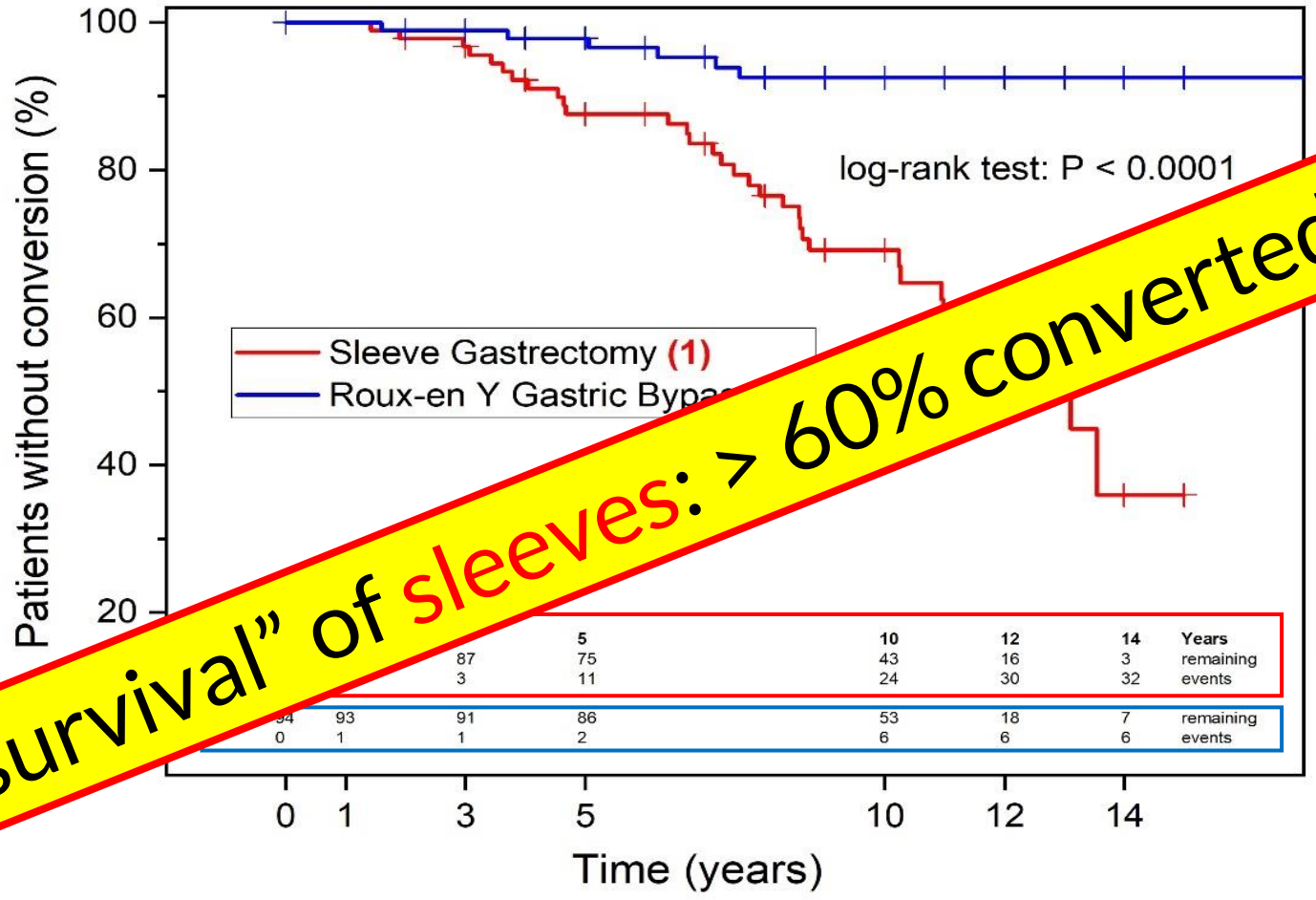
Author	Journal	Year	N		FU years	FU-rate %	reported as	Mean weight loss		p
			Sleeve	Bypass				Sleeve	Bypass	
Schauer (Stampede)	NEJM	17	47	49	5	96	% EBMIL	61	68	0.02
Zang	Obes Surg	14	32	32	5	96	% EWL	63.2	76.2	0.02
Ignat	BJS	17	37	29	5	66	% EWL	65.1	74.8	0.02
Salminen (Sleevepass) *	JAMA	18	98	95	5	80	% EWL	49	57 *	n.s.
Peterli (SM-BOSS)	JAMA	18	101	104	5	95	% EBMIL	61.1	68.3	n.s.
Sleevepass/SM-BOSS	BJS	21	199	199	5	87	% EBMIL	56	63	0.001
Hauge (Oseberg)	Lancet DM	25	55	54	5	85	% WL	17.2	22.2	0.0002
Biter (SleeveBypass) #	Lancet RHE	25	312	316	5	77	% EBMIL	58.8	67.1 #	(n.s.)
Salminen (Sleevepass) *	JAMA Surg	22	98	95	10	85	% EWL	43.5	50.7 *	(n.s.)
Kraljevic & Peterli (SM-BOSS)	JAMA Surg	25	93	95	10	76	% EBMIL	56 pp	66 pp	0.04

* Equivalence trial: margins -8 to +8% EWL

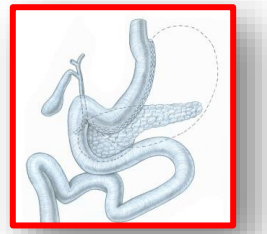
Equivalence trial: margins -13 to +13% EBMIL

10-year Results

Probability of Conversion over time



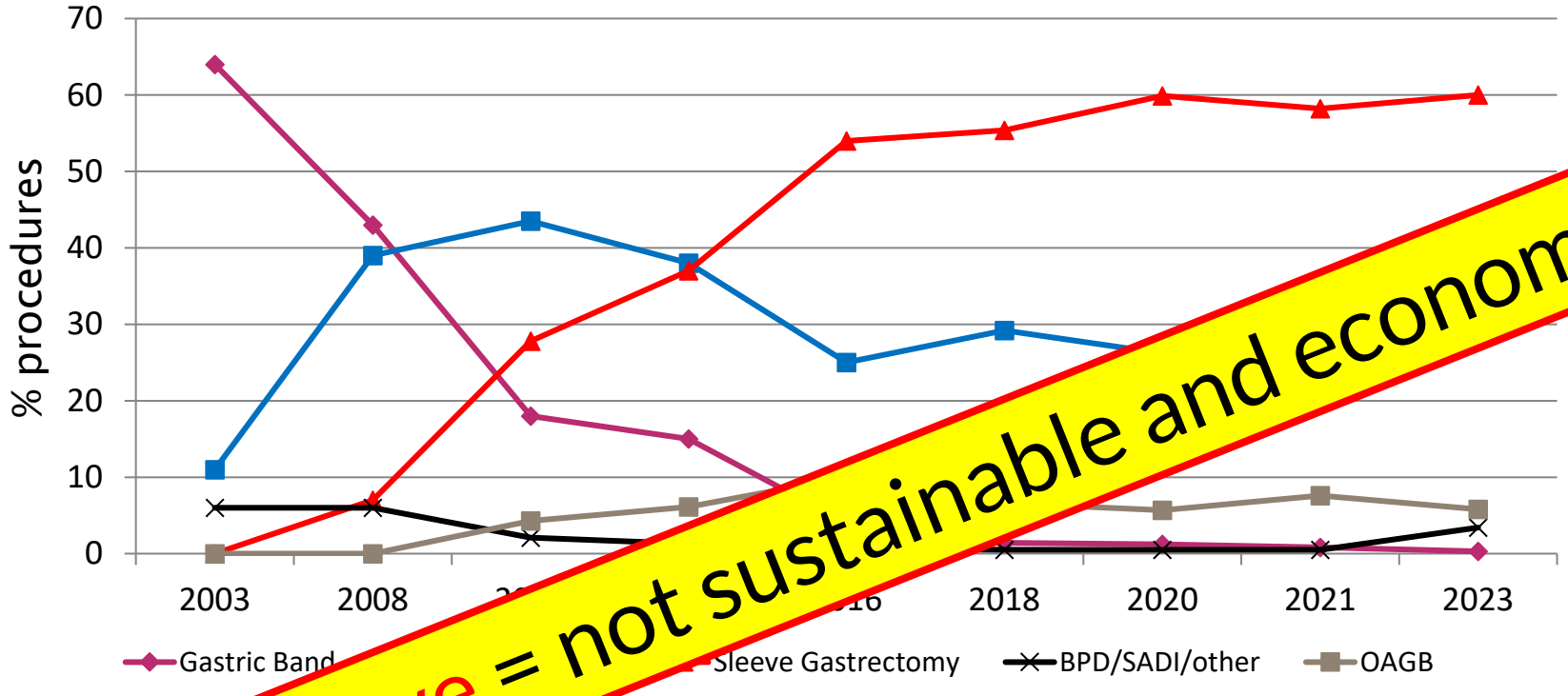
Poor "survival" of sleeves: > 60% converted at 14y FU



> 60%

BACKGROUND

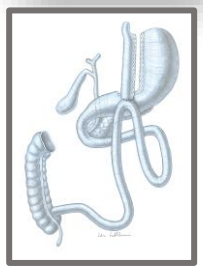
Procedures worldwide *~ 10 6*



Sleeve = not sustainable and economically unwise

23%

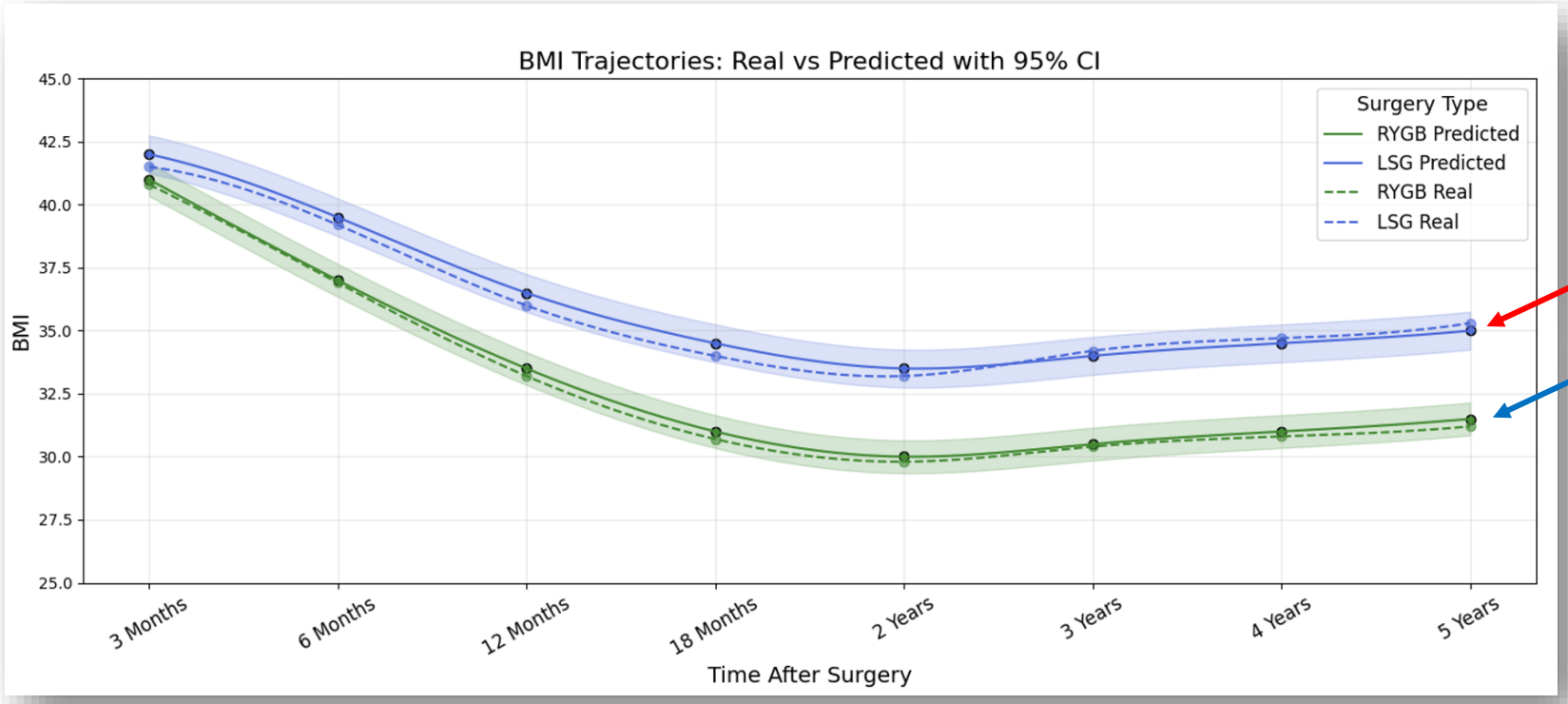
27% 29% 75%

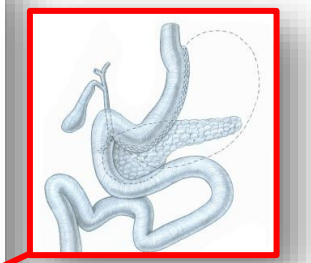


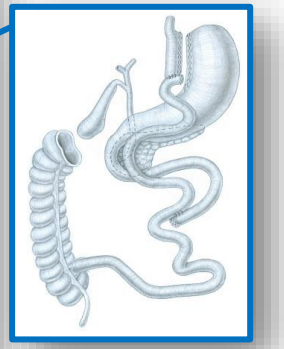
0.5% 16% 1%

Predictive model for postoperative BMI outcomes

- A two-stage machine learning framework
- 11 European centers
- N = 9652

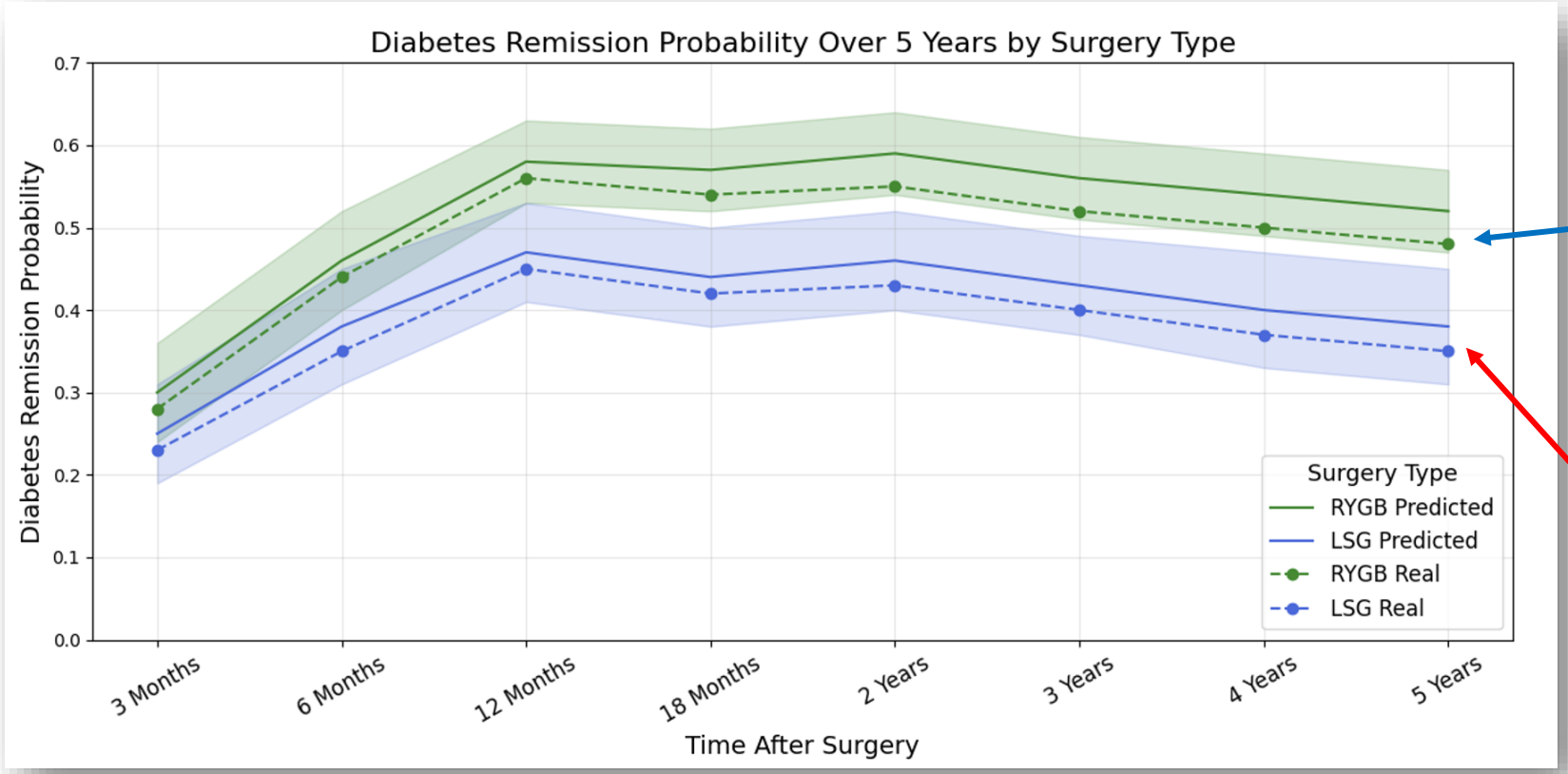


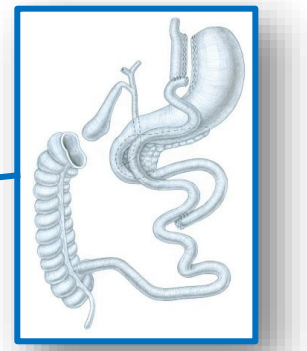


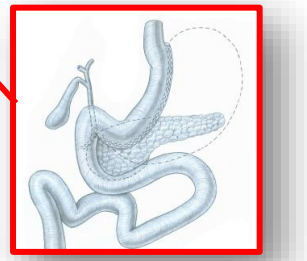


Predictive model for postoperative T2DM outcomes

- A two-stage machine learning framework
- 11 European centers
- N = 9652

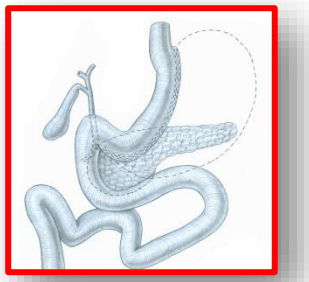




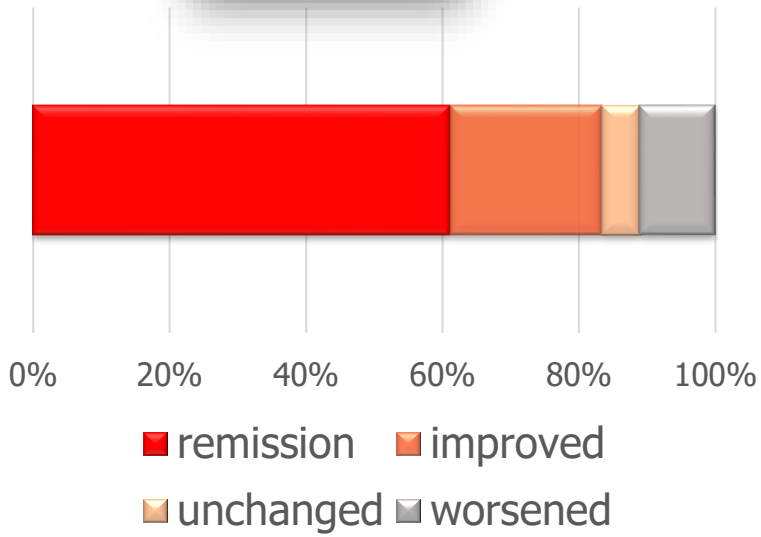


Taha, … Peterli, submitted

SM-BOSS 10-year Results (ITT) T2DM

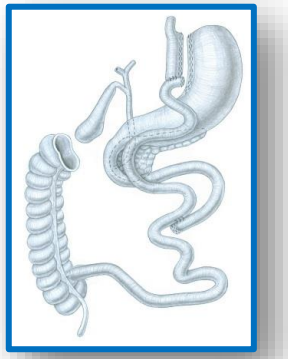


26%

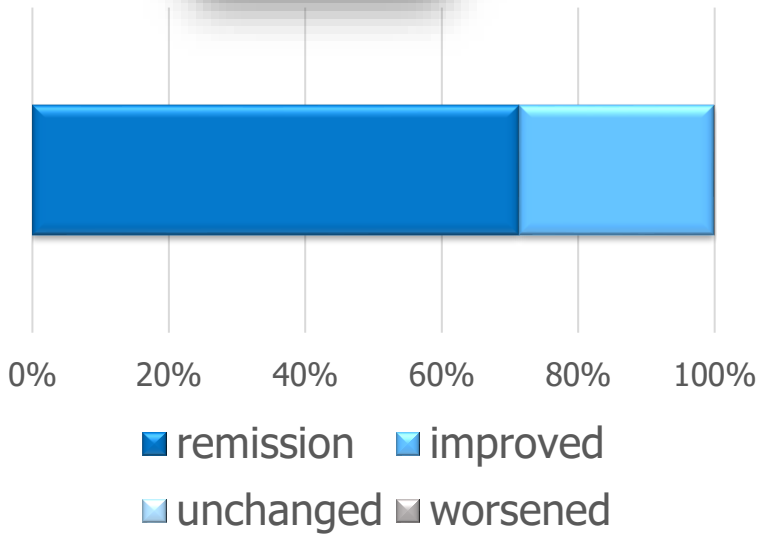


De novo: 2.5 %

n.s.

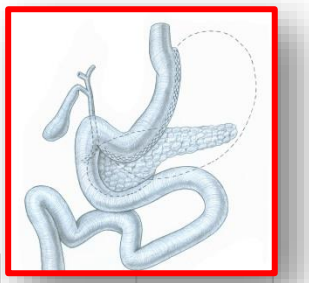


19%

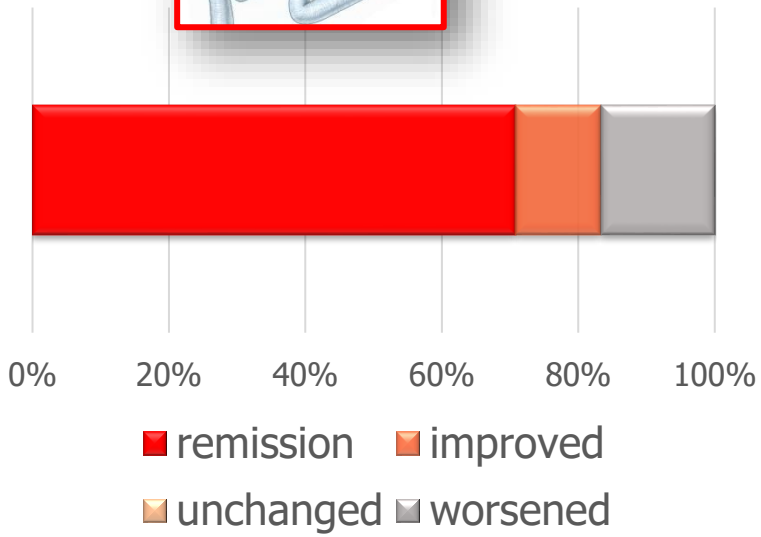


De novo: 1.8 %

SM-BOSS 10-year Results (ITT)

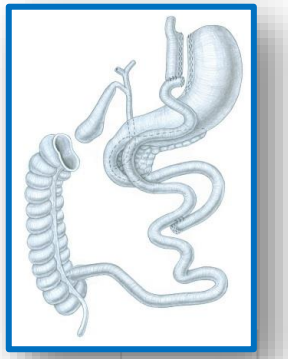


36 %

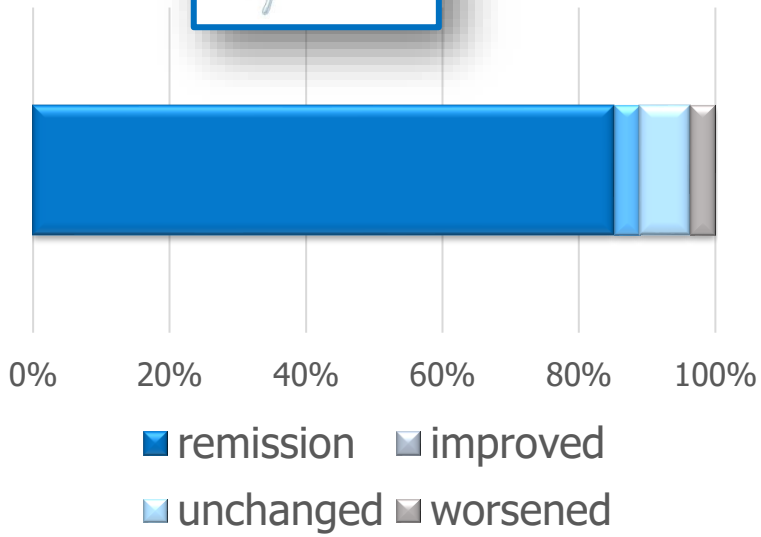


p=0.059

GERD



44 %



- De novo GERD: 32.4 % vs 8 % (p<0.01)
- De novo Barrett (7y)*: 3.6% 1.2%

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SM-BOSS 10-year Results

Late Complications ≥ Clavien-Dindo III

	LSG (n = 69)	RYGB (n = 73)	p
Gastroesophageal reflux	15	0	< 0.01
Internal herniation	0	9	< 0.01
Small bowel obstruction	0	1	ns
Incisional hernia	0	2	ns
Abdominal pain	0	3	ns
Dumping	0	3	ns
Stricture/stenosis	2	1	ns
Suboptimal weight loss	9	6	ns
Suboptimal weight loss + reflux	6	0	0.01
Gallstones	1	1	ns
Total intervention/reoperation	33	26	ns
Death	1	4 (+1 early)	ns
Comprehensive Complication Index (CCI) All pts Pts with complications	 13.0 (±19.3) 38.1	 12.0 (±31.3) 38.2	ns

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Swiss-Finnish BARIatric Metabolic Outcome Score* *SM-BOSS 10 years*

- Composite endpoint to compare different treatment modalities / series
  - Weight loss (%WL * 2)
  - Co-morbidities
    - T2DM
    - Dyslipidemia
    - Hypertension
    - OSAS
  - Complications / side effects
    - Comprehension complication index (0 = no complication / 100 = death)
  - Quality of life

Categorization of score

Response	SF-BARI Score
Excellent	≥ 135
Very good	110 to <135
Good	70 to < 110
Fair	35 to < 70
Suboptimal	< 35

- No significant difference for SF-BARI Score between Sleeve and Bypass: 84.5 ± 30.0 vs. 87.9 ± 35.9

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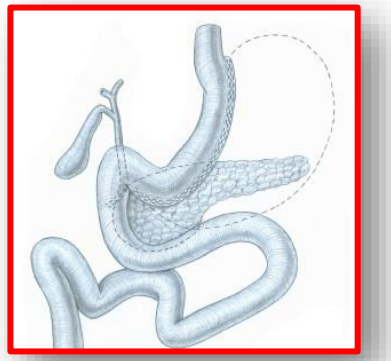
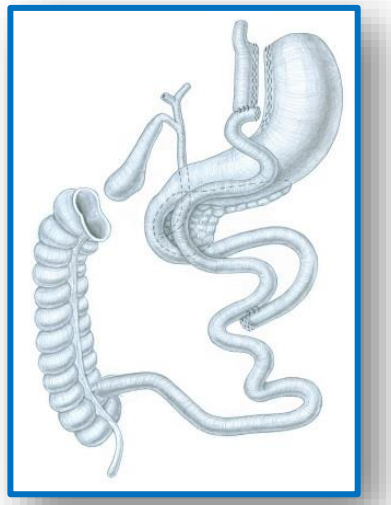
** Peterli, Bueter, ..., Salminen, JAMASurg 2023*

Summary

Swiss Multicentre Bypass or Sleeve Study (SM-BOSS)

- Sleeve vs Bypass
  - Weight loss 10y: Bypass (pp-population % EBMIL 56% vs. 66%)
  - Co-morbidities 10y:
    - T2DM remission: (Bypass)
    - Dyslipidemia: (Bypass)
    - GERD: Bypass
  - Safety:
    - Early: Sleeve
    - 5 years: Sleeve ≅ Bypass
    - 10 years: Bypass > Sleeve
  - Other:
    - Reversable: Bypass
    - Conversion risk: Bypass (Sleeve at 14y > 60y)





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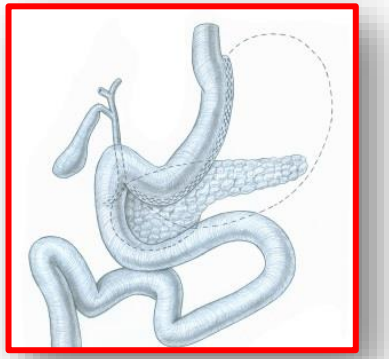
Conclusion

- Candidate for Sleeve:
  - Very high BMI
  - Necessity of endoscopic access
  - Extensive previous surgery (exp
  - Crohn's disease
  - Driver by profession (fear of dur
  - Elderly patient



- All other pts get some sort of byp

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