



XXIX IFSO WORLD CONGRESS

1-4 September 2026 - Toronto, Canada

Long term outcomes of revisional MBS: Is surgery effective?

Jaime Ponce MD, FACS, FASMBS, DABS-FPMBS, DABOM

Chattanooga, TN, USA

ASMBS Past-President (2012-2013)

IFSO North America Chapter President (2021-2024)

IFSO Global President-Elect (2025-2026)

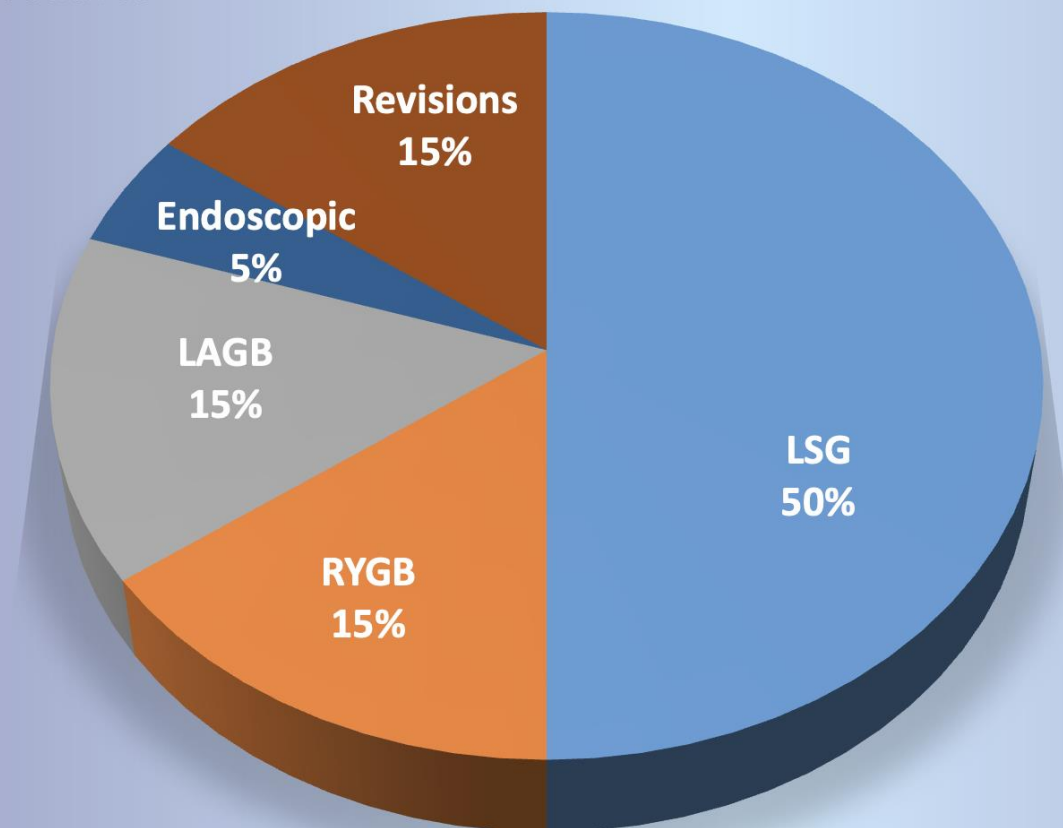


Financial Disclosures

- Allurion: consultant
- Medtronic: consultant, speaker
- J&J Med-Tech: consultant, speaker
- Intuitive: speaker
- GT Metabolic: consultant

Case Mix Disclosure Slide

Whole career procedures

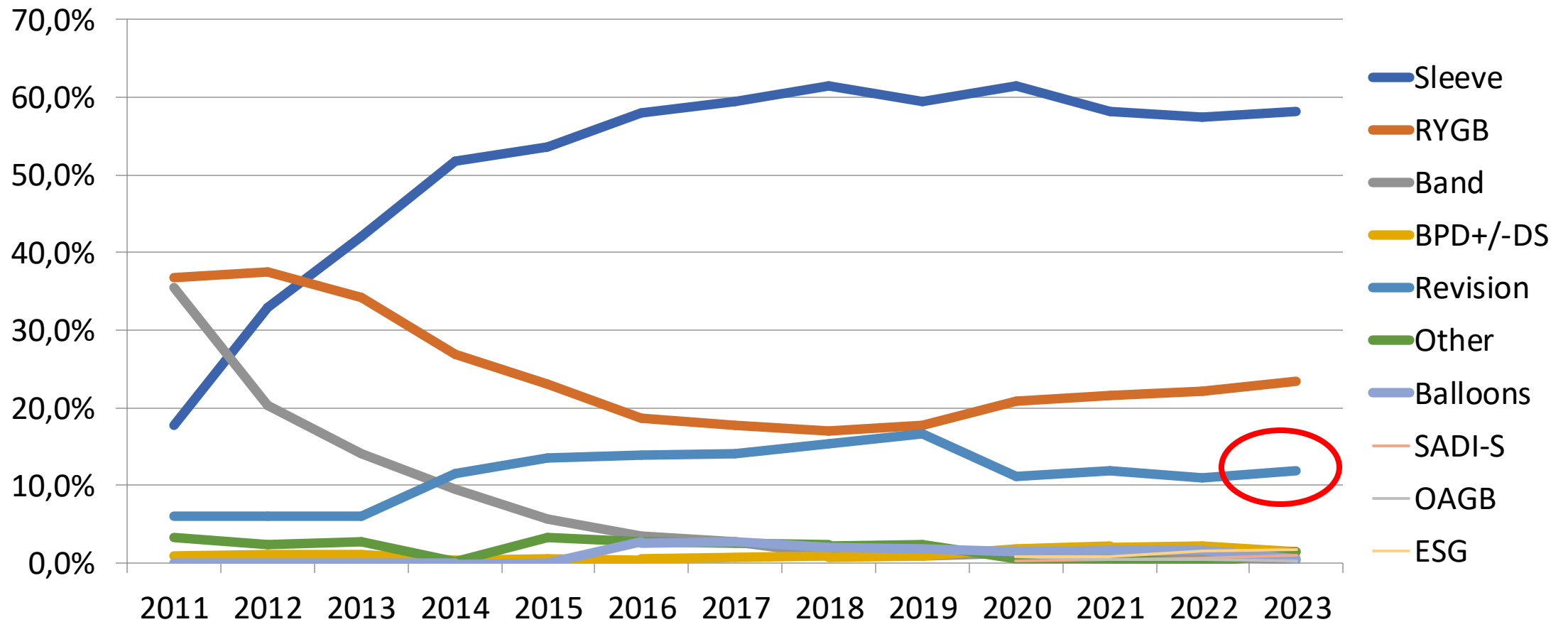


- LSG
- RYGB
- LAGB
- BPD/DS
- OAGB
- LoopDS
- Endoscopic
- Revisions

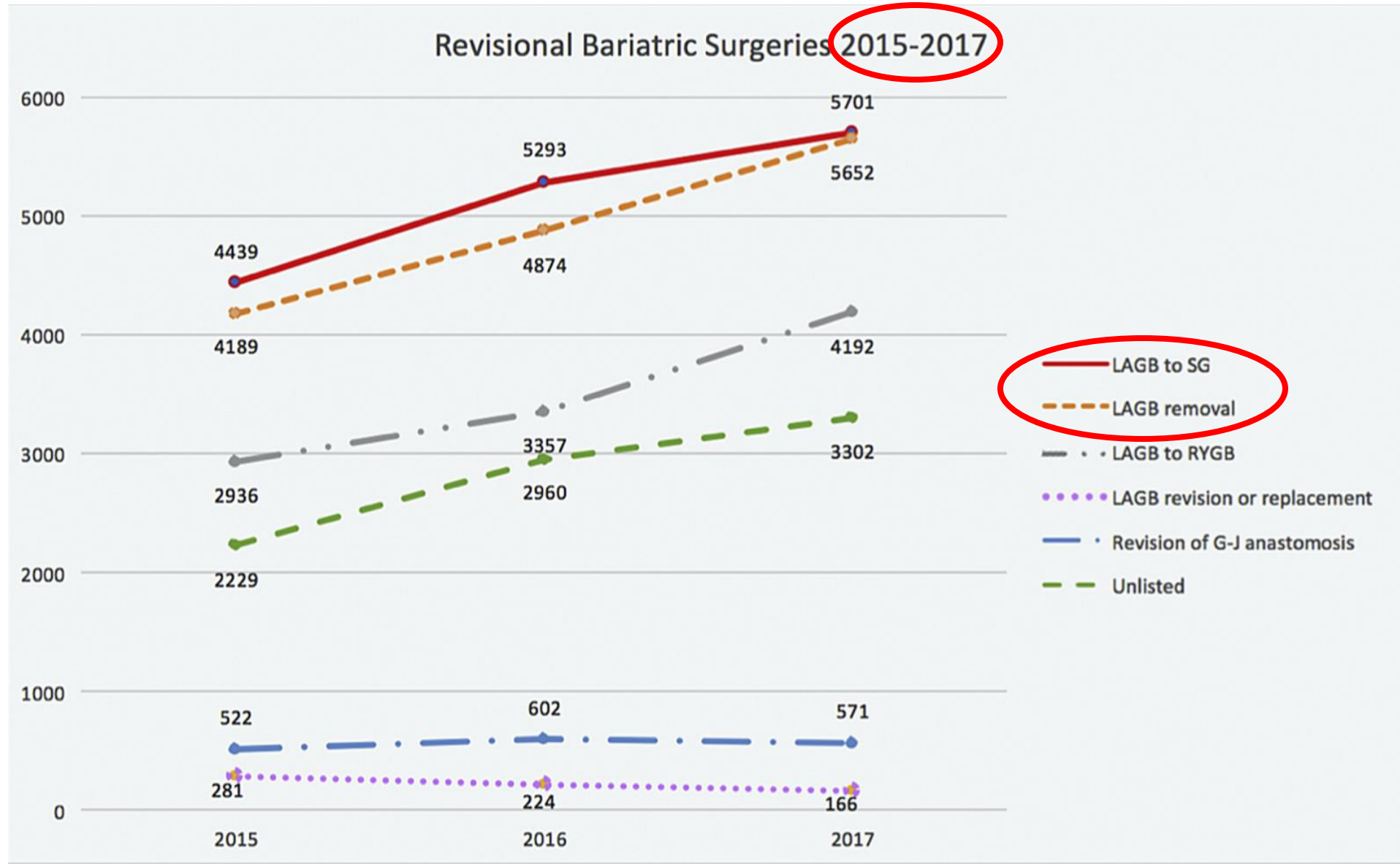
ASMBS Metabolic and Bariatric Surgery Numbers Estimation for 2023

	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020	2021	2022	2023
Total	158,000	173,000	179,000	193,000	196,000	216,000	228,000	252,000	256,000	199,000	262,893	279,967	270.089
Sleeve	17.8%	33.0%	42.1%	51.7%	53.6%	58.1%	59.4%	61.4%	59.4%	61.4%	58.1%	57.4%	58.2%
RYGB	36.7%	37.5%	34.2%	26.8%	23.0%	18.7%	17.8%	17.0%	17.8%	20.8%	21.5%	22.2%	23.4%
Band	35.4%	20.2%	14%	9.5%	5.7%	3.4%	2.7%	1.1%	0.9%	1.2%	0.4%	0.9%	0.3%
BPD-DS	0.9%	1.0%	1.0%	.4%	0.6%	0.6%	0.7%	0.8%	0.9%	1.8%	2.1%	2.2%	1.4%
Revision	6.0%	6.0%	6.0%	11.5%	13.6%	14.0%	14.1%	15.4%	16.7%	11.1%	11.8%	11.0%	11.9%
SADI	-	-	-	-	-	-	-	-	-	0.2%	0.4%	0.6%	0.9%
OAGB	-	-	-	-	-	-	-	-	-	0.7%	0.4%	0.4%	0.2%
Other	3.2%	2.3%	2.7%	0.1%	3.2%	2.6%	2.5%	2.3%	2.4%	0.6%	2.8%	2.2%	1.4%
Balloon	-	-	-	-	0.3%	2.6%	2.8%	2.0%	1.8%	1.4%	1.6%	1.6%	1.7%
ESG	-	--	-	-	-	-	-	-	-	0.8%	0.8%	1.6%	0.5%

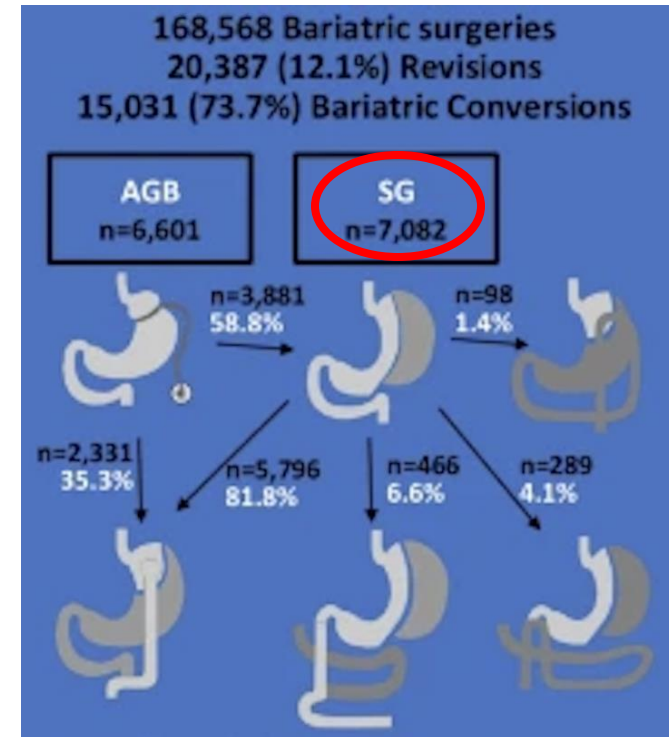
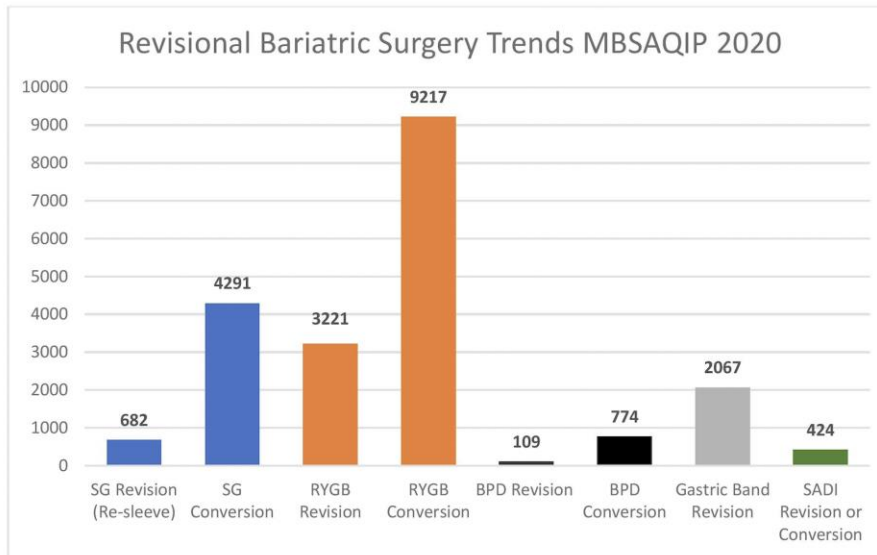
Metabolic and Bariatric Surgery Procedure Percentage Trends: 2011 - 2023



MBSAQIP revisional cases



MBSAQIP 2020 Revisional cases



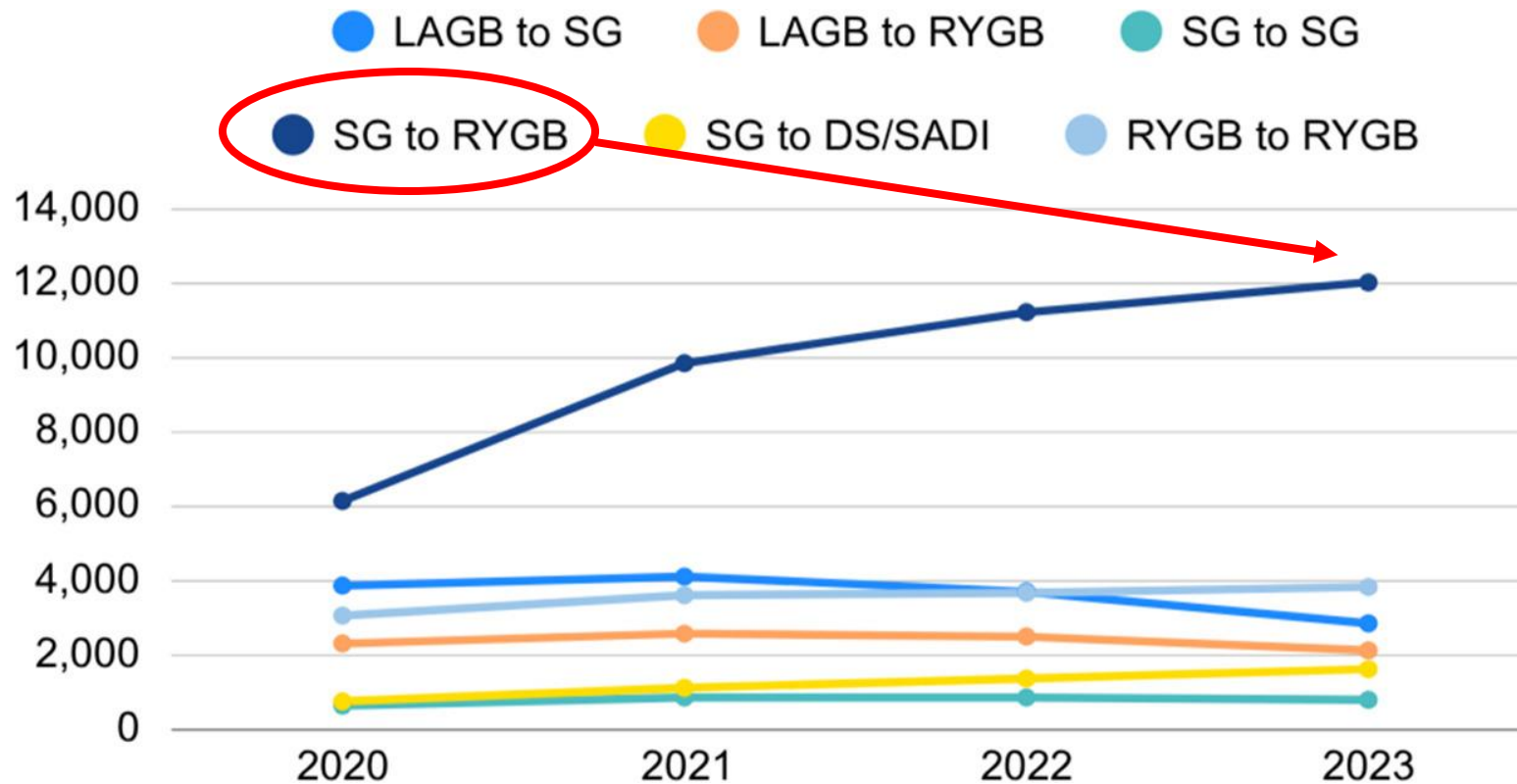
Vanetta et al. Bariatric Surgery Conversions in MBSAQIP Centers: Current Indications and Outcomes. Obes Surg (published online Aug 2022)

MBSAQIP 2020 Revisional cases -Conversions-

Conversion	
SG to RYGB Reflux 54.2% Poor weight loss 35.8%	40.3%
AGB to SG	27%
AGB to RYGB	16.2%
SG to BPD/DS	3.2%
SG to SADI	2%
RYGB to BPD/DS	0.9%

Vanetta et al. Bariatric Surgery Conversions in MBSAQIP Centers: Current Indications and Outcomes. Obes Surg (published online Aug 2022)

Current Trends in Re-operative Bariatric Surgery using MBSAQIP Database 2020-2023



ASMBS Revision Surgery Task Force (2013)



ASMBS Revision Surgery Task Force

- Goal: position statement
- Reality: Not enough good quality, data from many revision variations, not strong for position statement
- Systematic Review with Society opinion



Review article

Systematic review on reoperative bariatric surgery
*American Society for Metabolic and Bariatric Surgery Revision
Task Force*

Stacy A. Brethauer, M.D.^{a,*}, Shanu Kothari, M.D.^b, Ranjan Sudan, M.D.^c,
Brandon Williams, M.D.^d, Wayne J. English, M.D.^e, Matthew Brengman, M.D.^f,
Marina Kurian, M.D.^g, Matthew Hutter, M.D.^h, Lloyd Stegemann, M.D.ⁱ, Kara Kallies, M.S.^b,
Ninh T. Nguyen, M.D.^j, Jaime Ponce, M.D.^k, John M. Morton, M.D.^l

^aBariatric and Metabolic Institute, Cleveland Clinic, Cleveland, Ohio

^bDepartment of Surgery, Gunderson Health System, La Crosse, Wisconsin

^cDepartment of Surgery, Duke University Medical Center, Durham, North Carolina

^dVanderbilt Center for Surgical Weight Loss, Nashville, Tennessee

^eDepartment of Surgery, Marquette General Hospital, Marquette, Michigan

^fAdvanced Surgical Partners of Virginia, Richmond, Virginia

^gDepartment of Surgery, New York University Bariatric Surgery Associates, New York, New York

^hDepartment of Surgery, Massachusetts General Hospital, Boston, Massachusetts

ⁱBetter Weigh Center, Corpus Christi, Texas

^jDepartment of Surgery, University of California Irvine Medical Center, Orange, California

^kDalton Surgical Group, Dalton, Georgia

^lDepartment of Surgery, Stanford University, Palo Alto, California

Received January 30, 2014; accepted February 10, 2014

Rationale for Reoperative Bariatric Surgery for Inadequate Weight Loss

- Morbid obesity is a chronic disease that requires lifetime treatment.
- As with many other chronic diseases requiring medical or surgical therapy, there will be patients who respond well to an initial therapy and others with only a partial response.
- There will also be a subset of patients who are non-responders or have recurrent or persistent disease; these patients may require escalation of therapy or a new treatment modality.

Rationale

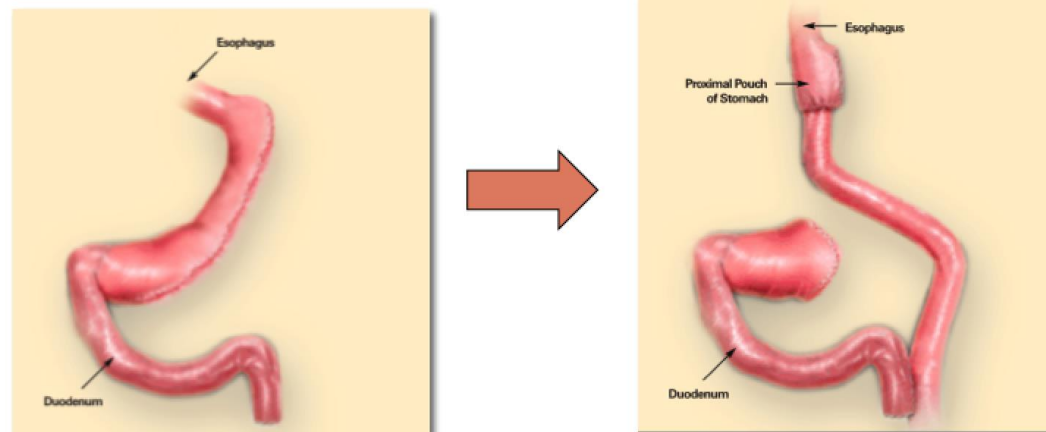
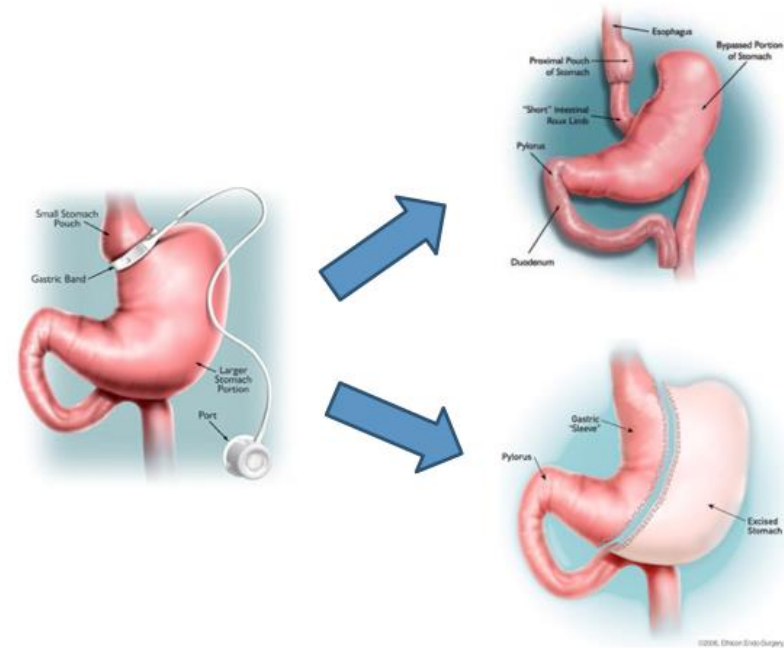
- “**Chronic disease**” paradigm is well established for many other specialties (i.e., total joint arthroplasty, coronary artery bypass grafting, oncologic operations)
- **Reoperative surgery is more challenging** and is associated with a higher complication rate
- **Experienced surgeons** who perform a variety of revisional procedures, have acceptable risk and complication rates

Nomenclature

- **Conversion** Procedures that change from an index procedure to a different type of procedure.
- **Corrective** Procedures addressing complications or incomplete treatment effect of a previous bariatric operation.
- **Reversal** Procedures that restore original anatomy.

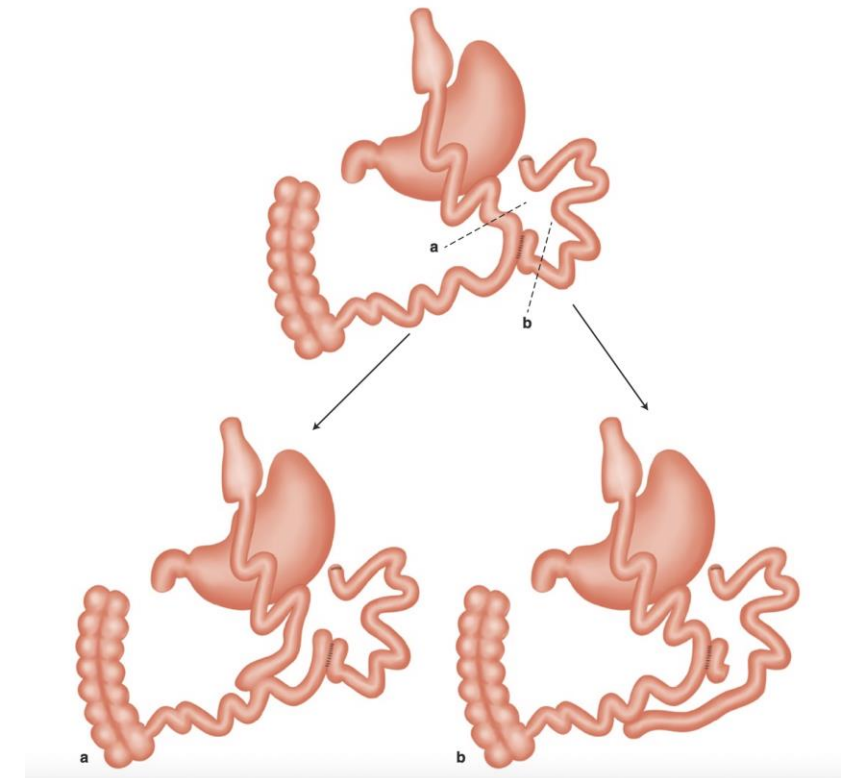
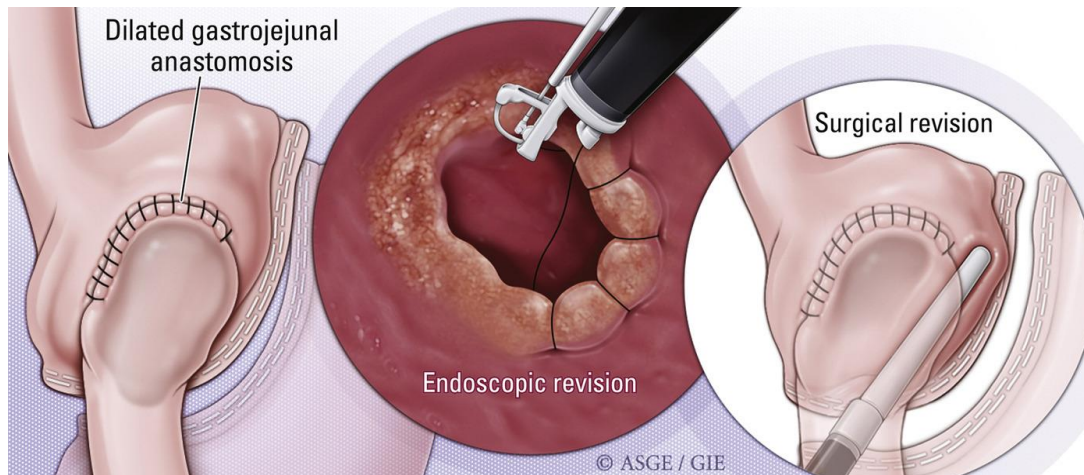
Conversion

- Band to Gastric Bypass
- Band to Sleeve
- Sleeve to Bypass



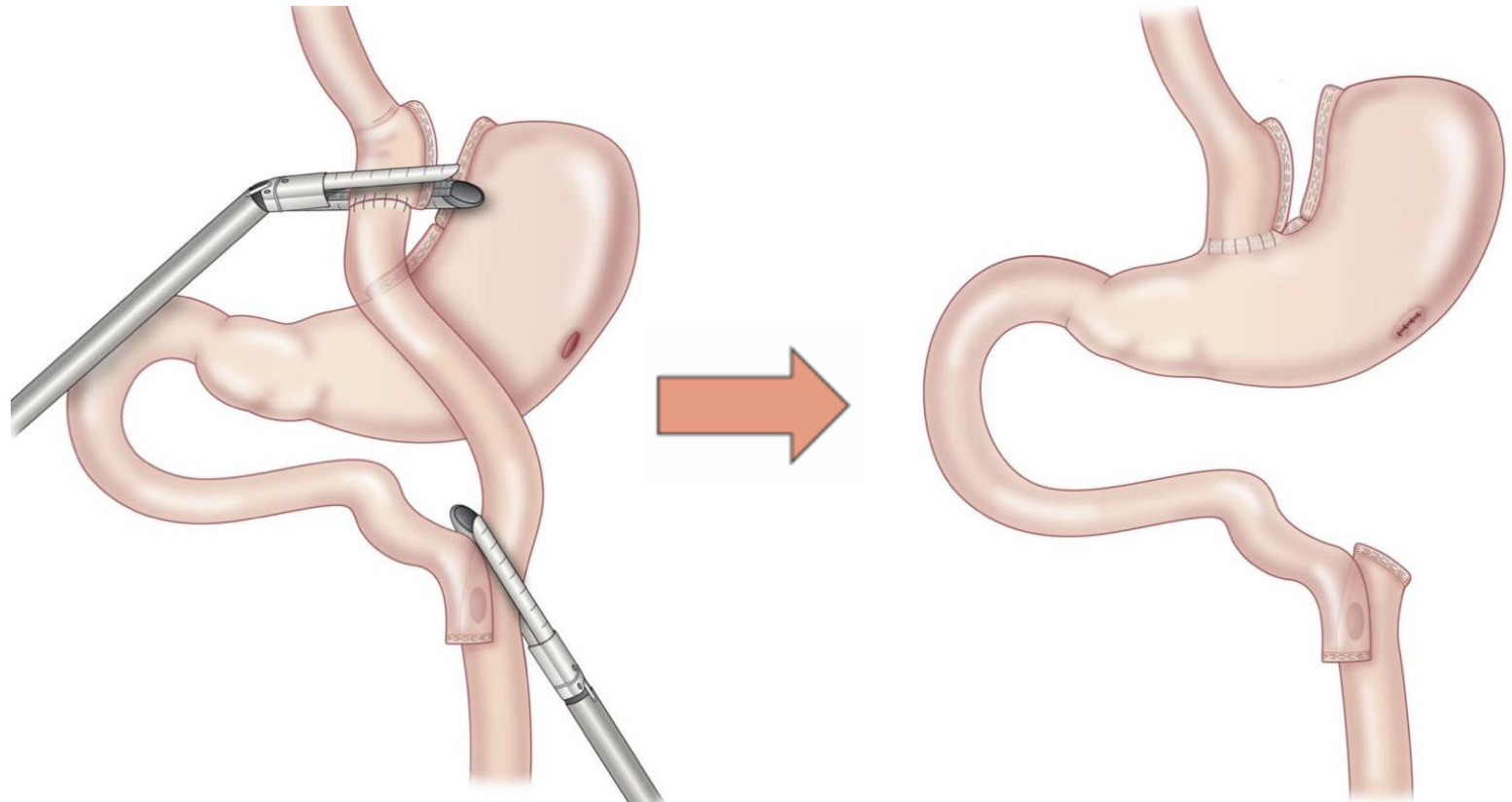
Corrective

- Endoscopic pouch/stoma reduction
- Surgical revision of enlarged pouch/GJ
- Limb lengthening/distal bypass



Reversal

- Band removal
- Bypass reversal





**CONSENSUS ON DEFINITIONS AND CLINICAL
PRACTICE GUIDELINES FOR PATIENTS CONSIDERING
METABOLIC-BARIATRIC SURGERY**

March 9-10, 2023

J&J Medical Institute, Hamburg



IFSO Consensus (2023) definitions¹

Suboptimal initial clinical (SoCR) response to MBS

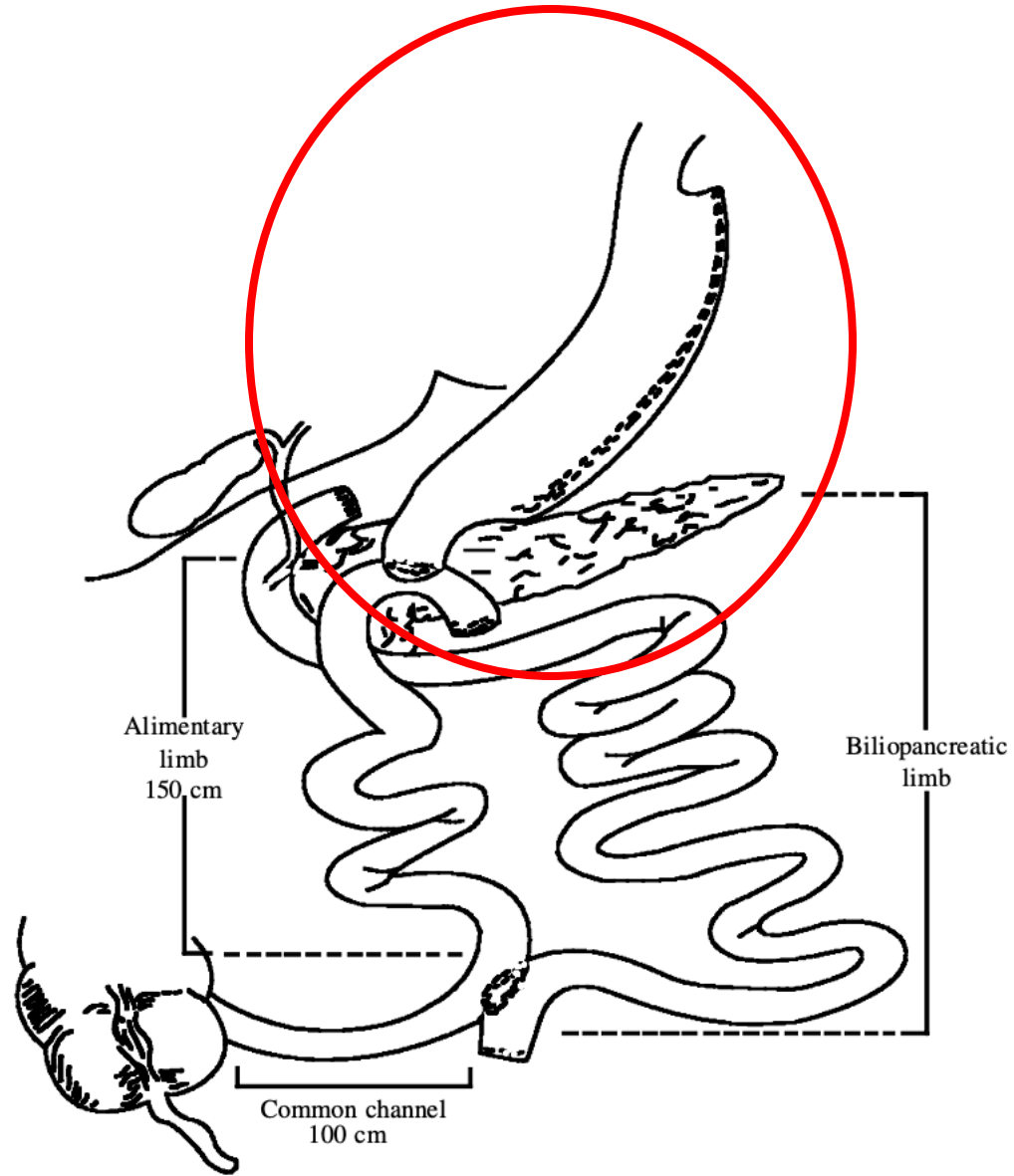
Total body weight or BMI loss of less than 20% or by inadequate improvement in an obesity complication that was a significant indication for surgery

Late post-operative clinical deterioration after MBS

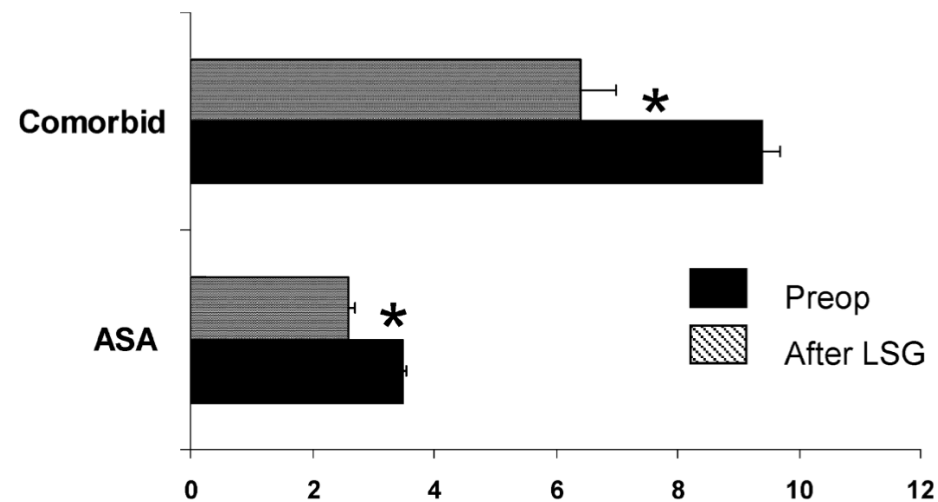
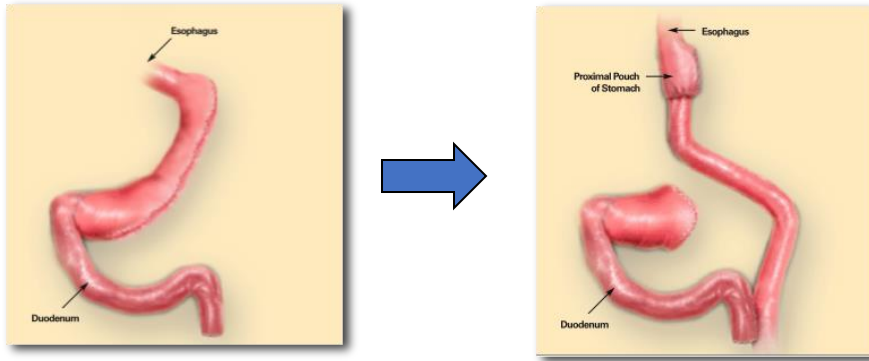
Recurrent weight gain (RWG) of more than 30% of the initial surgical weight loss or by worsening of an obesity complication that was a significant indication for surgery

What about the
"Staging" concept?

M. Gagner
1999 – first lap DS
2000 – 1st stage LSG



Laparoscopic sleeve gastrectomy as an initial weight-loss procedure for high-risk patients with morbid obesity (2002)



Position statement

Sleeve gastrectomy as a bariatric procedure

Clinical Issues Committee of the American Society for Metabolic and Bariatric Surgery

Received June 23, 2007; accepted June 26, 2007

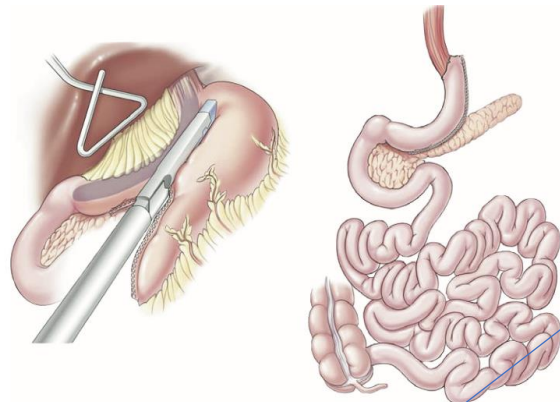


Fig. 1. Sleeve gastrectomy.

diameters between 32F and 60F. It has been suggested that dilation of the unbanded gastric sleeve conduit may provide a mechanism of long-term weight loss failure.

Long-term (≥ 5 yr) weight loss and comorbidity resolution data for sleeve gastrectomy have not been reported at this time. Weight regain or a desire for further weight loss in a super-super-obese patient may require the procedure to be revised to a gastric bypass or BPD with duodenal switch.

Detailed informed consent, including information about the possibility of long-term weight regain and the potential need for subsequent conversion to another procedure, is suggested before the sleeve gastrectomy is planned for an individual patient. Decisions to perform this procedure should also be in compliance with ethical guidelines published by the ASMBS [17].

The ASMBS recognizes that performance of sleeve gastrectomy may be an option for carefully selected patients undergoing bariatric surgical treatment, particularly those who are high risk or super-super-obese, and that the concept of staged bariatric surgery may have value as a risk reduc-

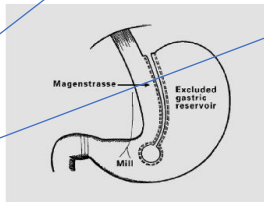


Fig. 2. Magenstasse and Mill.

the lack of published evidence for sustained weight loss beyond 3 years and provide them with information regard-

The ASMBS recognizes that performance of sleeve gastrectomy may be an option for carefully selected patients undergoing bariatric surgical treatment, particularly those who are high risk or super-super-obese, and that the concept of staged bariatric surgery may have value as a risk reduc-

ASMBS online statements/guidelines

Updated position statement on sleeve gastrectomy as a
bariatric procedure

ASMBS Clinical Issues Committee

Revised March 14, 2012

The ASMBS therefore recognizes SG as an acceptable option as a primary bariatric procedure and as a first-stage procedure in high-risk patients as a part of a planned staged approach.

Potential benefits of "Staging" approach

STAGE 1

SG



STAGE 2

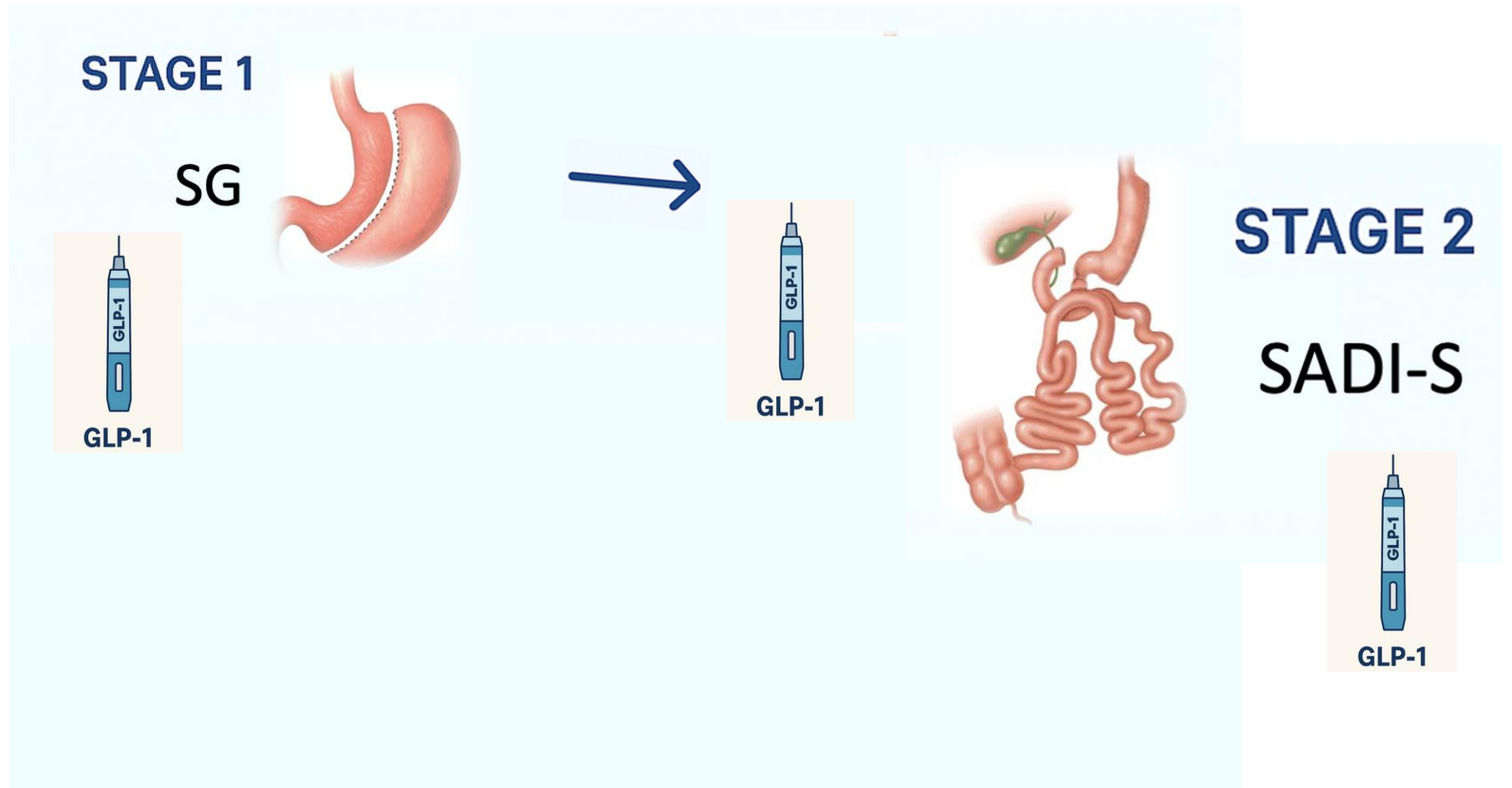
SADI-S



- **Earlier Intervention**
Initiate obesity/comorbidities improvement sooner
- **Outpatient Feasibility**
Many patients can go home same day
- **Less Invasive**
Faster recovery

- **Lower Perioperative Risk**
Reduced complications
- **Fewer Nutritional Issues**
Minimal risk of severe deficiencies
- **Wider Patient Acceptance**
More appealing than major bypass
- **Preserves Future Options**
Anticipates growing need for safe revisions

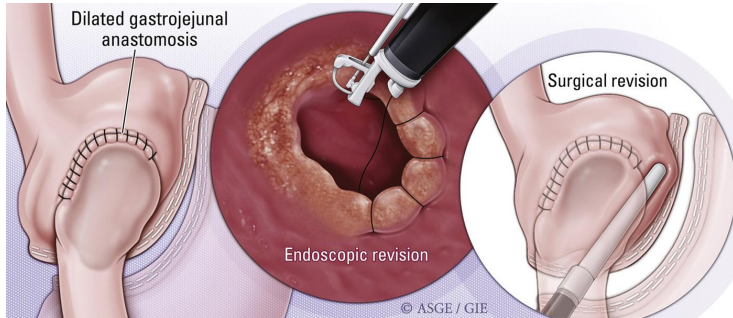
Potential "Staging" approach in SADI-S



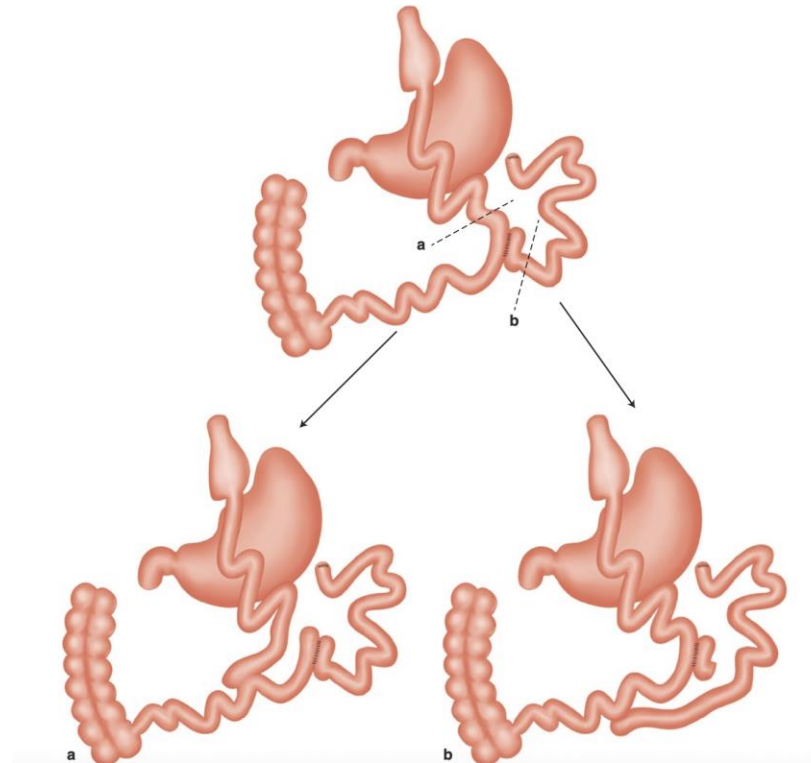
What about long-term data?

Unfortunately, not a whole lot of
good long-term data on Revisional
Bariatric Surgery outcomes

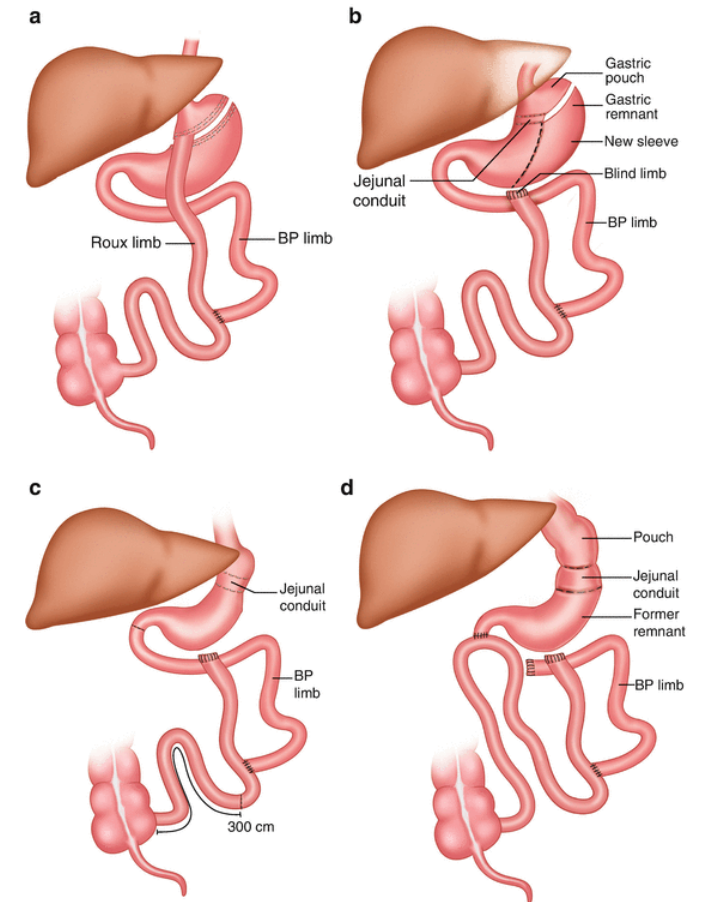
Longest follow-up comes from RNY gastric bypass revisional surgery



Pouch / Stoma Revision



Distalization



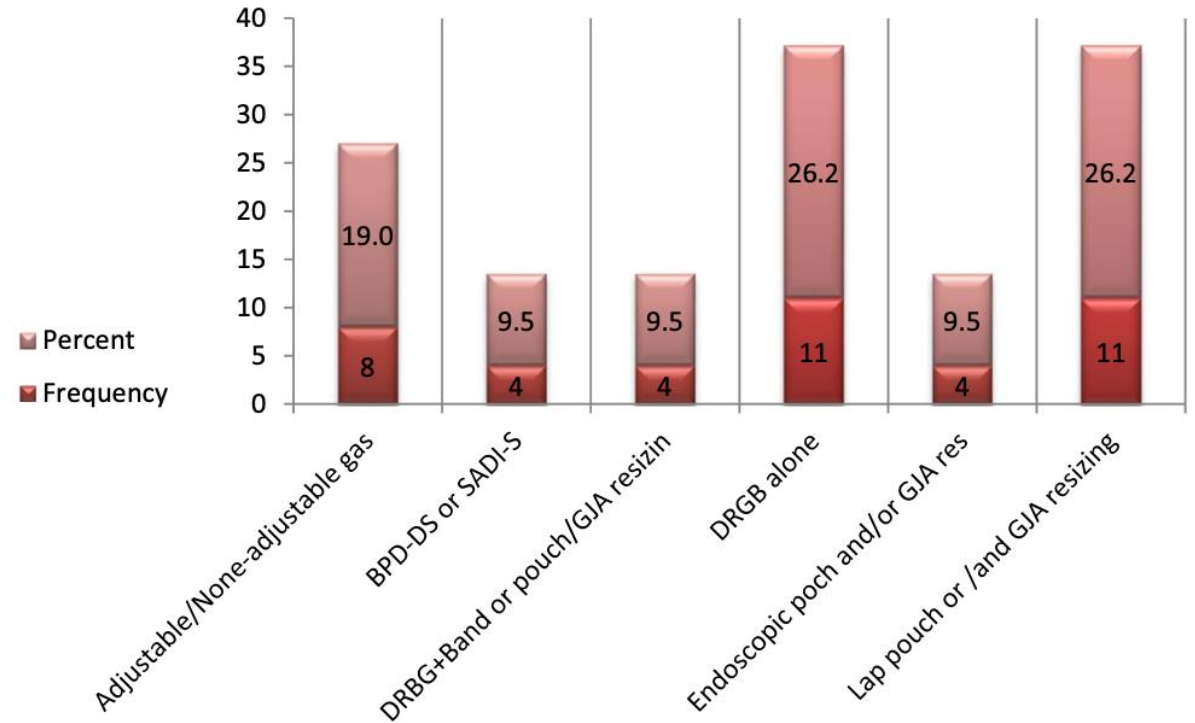
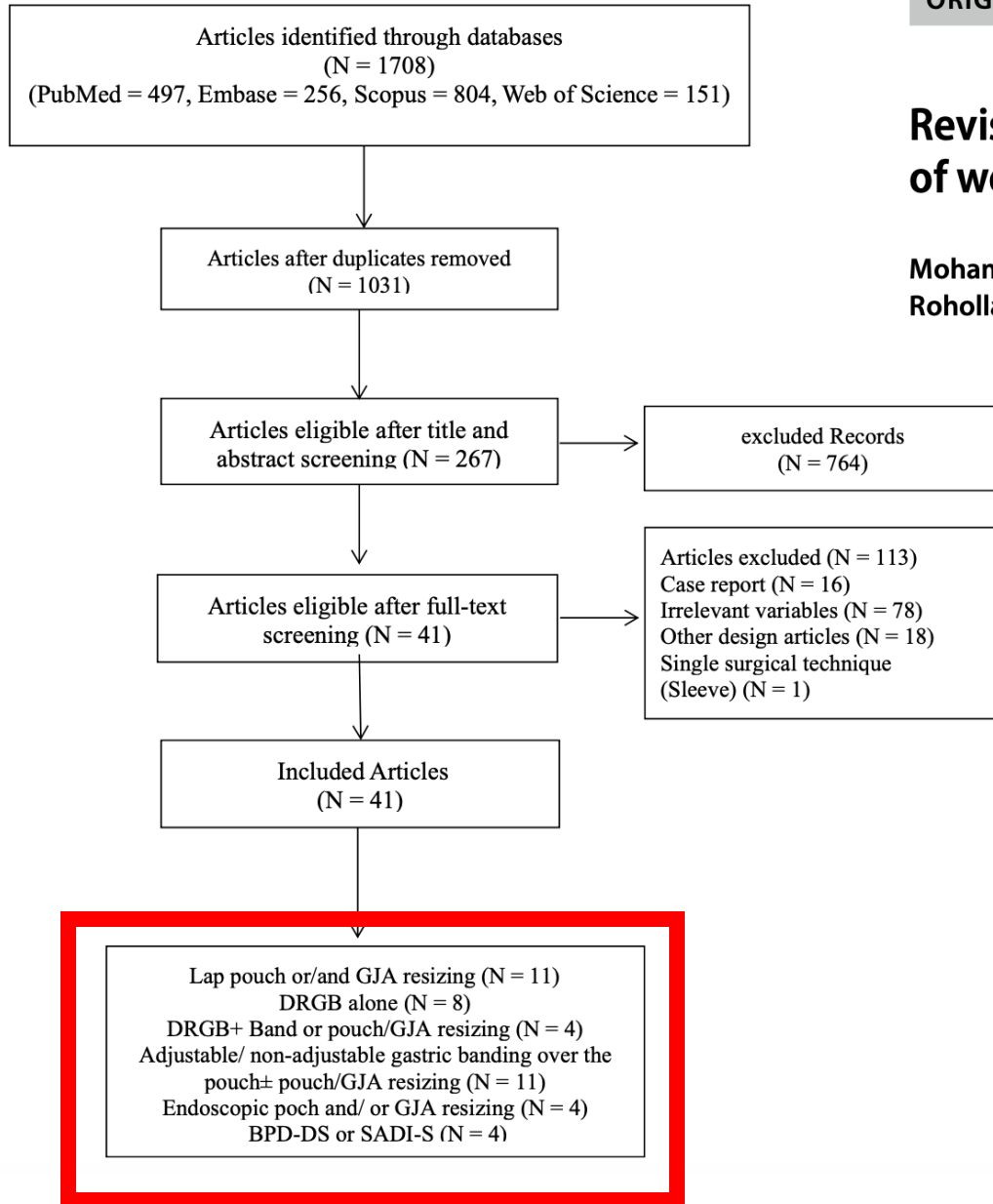
Duodenal Switch

ORIGINAL ARTICLE



Revision procedures after initial Roux-en-Y gastric bypass, treatment of weight regain: a systematic review and meta-analysis

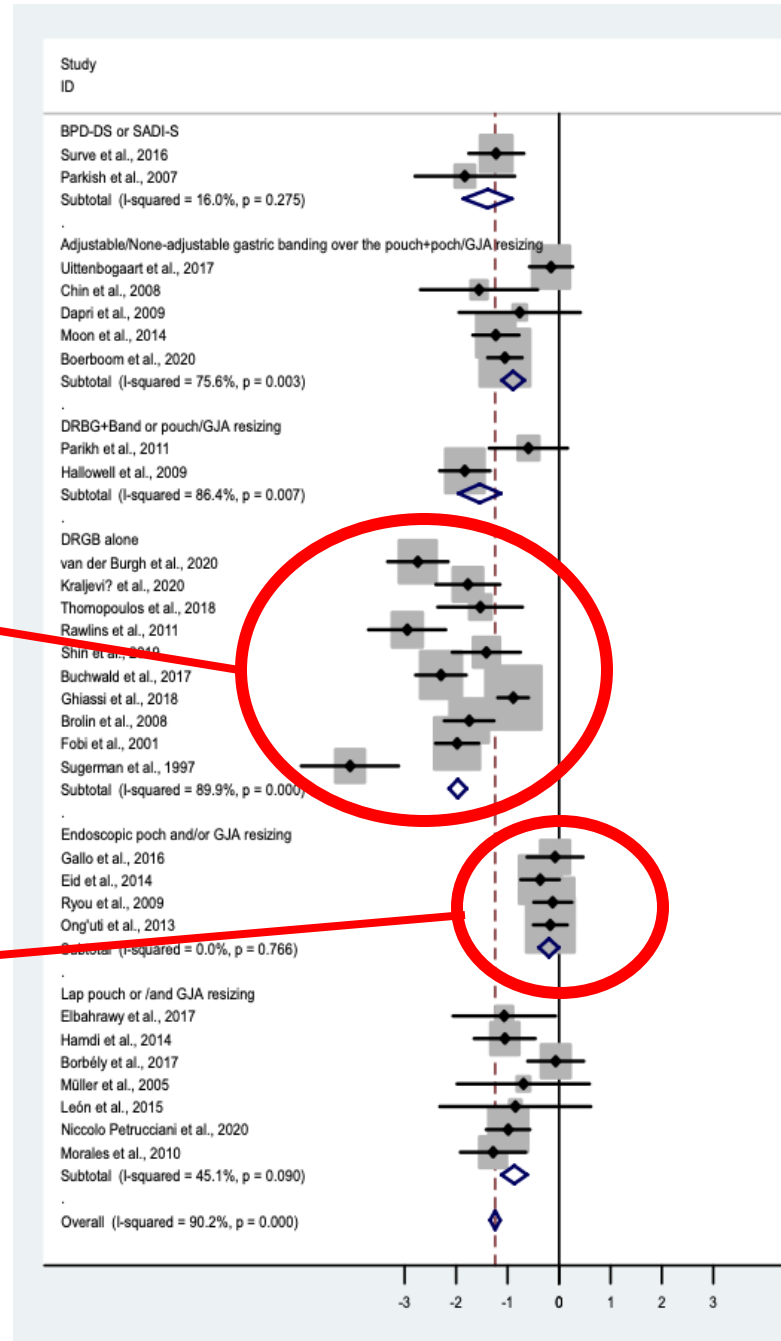
Mohammad Kermansaravi¹ · Amir Hossein Davarpanah Jazi² · Shahab Shahabi Shahmiri² · Foolad Eghbali¹ · Rohollah Valizadeh³ · Masoud Rezvani⁴



1-year follow-up weight loss

Distalization – surgical revision
= best weight loss

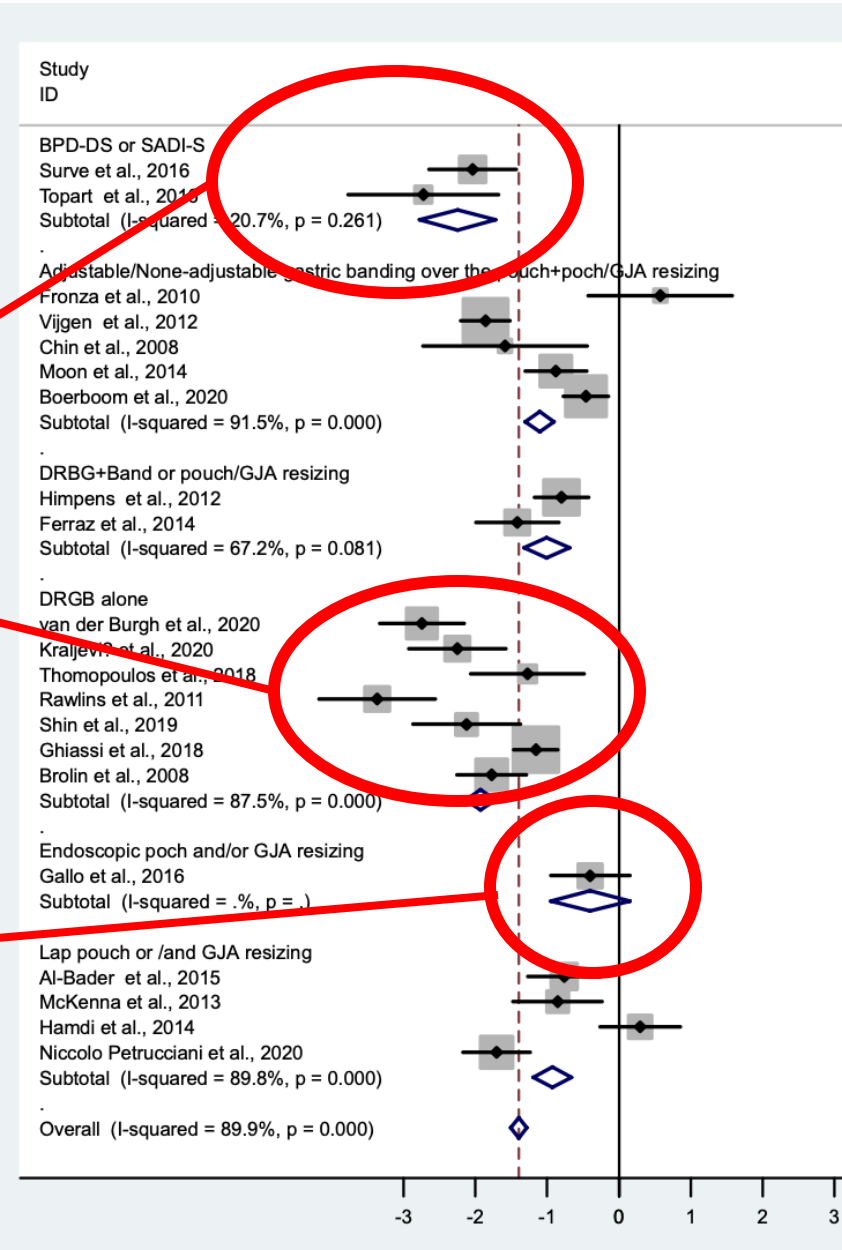
Endoscopic pouch revision
= **worst** weight loss



3-years follow-up weight loss

Distalization and DS
= best weight loss

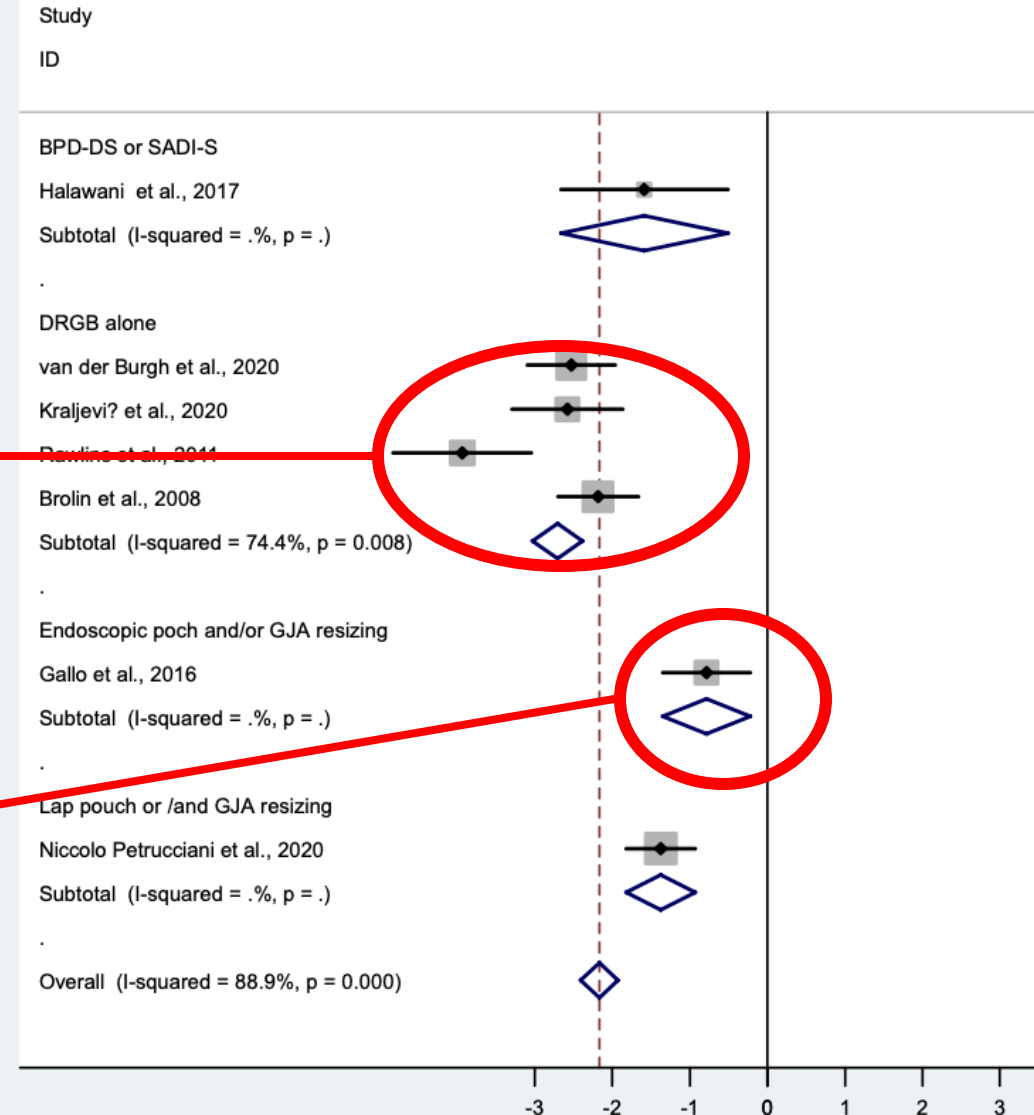
Endoscopic pouch revision
= **worst** weight loss



5-years follow-up weight loss

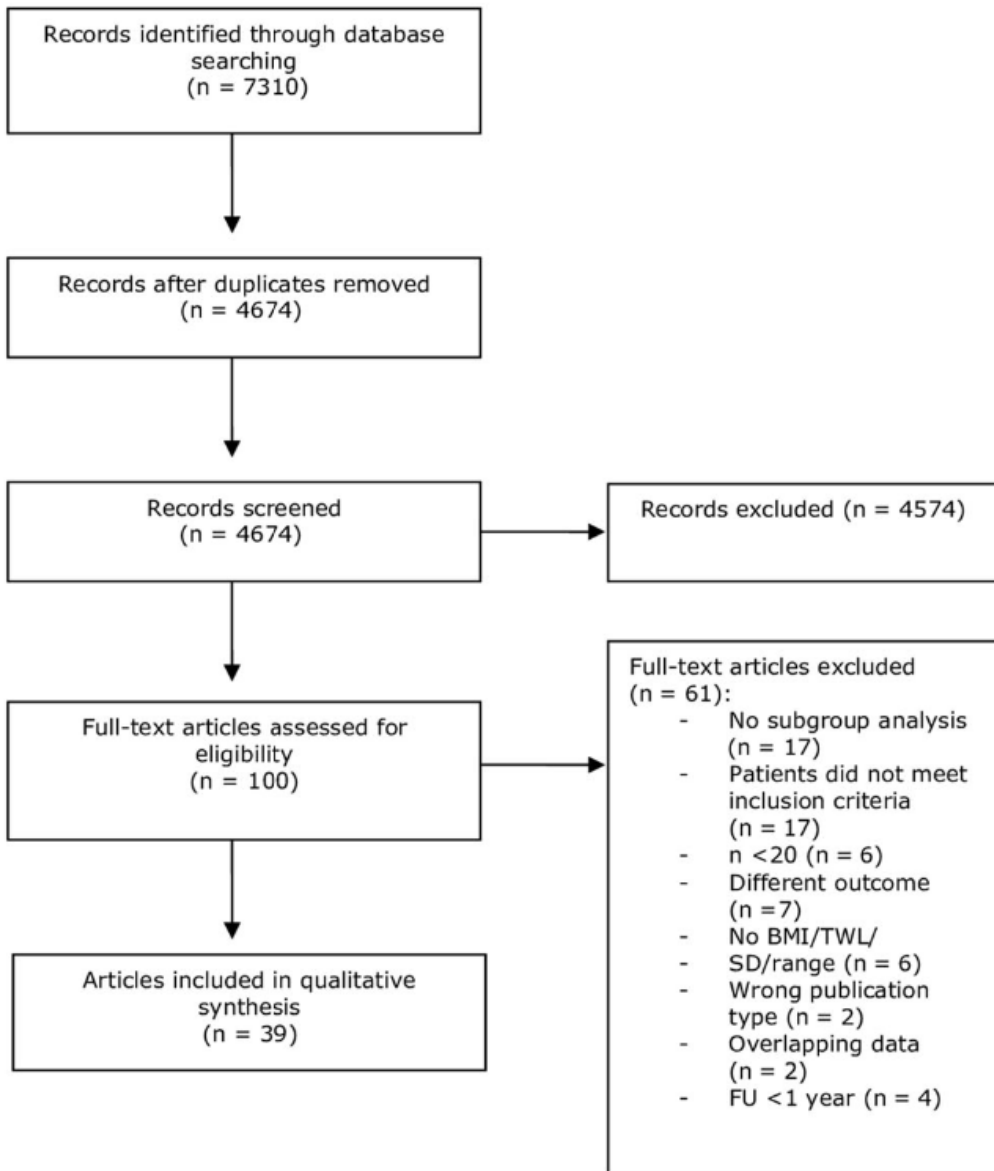
Distalization – surgical revision
= best weight loss

Endoscopic pouch revision
= **worst** weight loss



Efficacy and safety of revisional treatments for weight regain or insufficient weight loss after Roux-en-Y gastric bypass: A systematic review and meta-analysis

Rutger J. Franken¹  | Josephine Franken¹ | Nina R. Sluiter¹ | Ralph de Vries² | Sjoerd Euser³ | Victor E. A. Gerdes^{4,5} | Maurits de Brauw¹



- Argon plasma coagulation (APC)
- Transoral outlet reduction (TORe)
- TORe + APC
- Pouch/gastro-jejunal anastomosis (GJA) revision
- Laparoscopic gastric banding (LGB)
- LGB + pouch resizing
- Distalization of the Roux-en-Y gastric bypass (D-RYGB)
- Duodenal switch (DS)

Weight loss at 12 months

Endoscopic

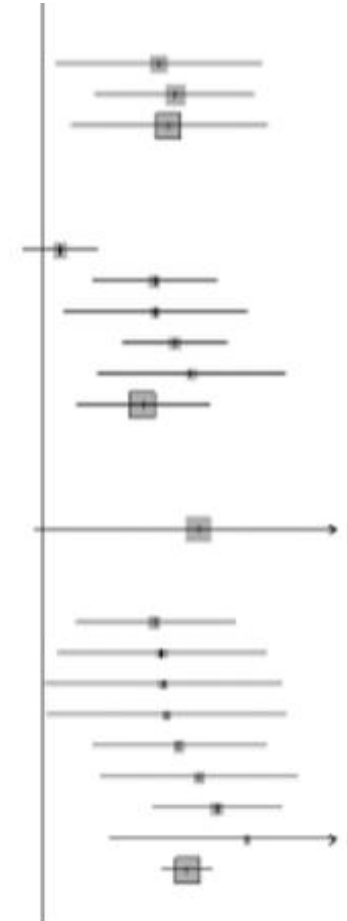
APC	
Gurian 2022	1.80 [-2.74; 6.34]
Jirapinyo 2020	7.24 [3.27; 11.22]
Moon 2018	8.30 [4.68; 11.92]
Brunaldi 2020	8.30 [-3.79; 20.39]
Random effects model	6.17 [1.14; 11.20]
Heterogeneity: $I^2 = 43\%$ [0%; >81%], $p = 0.15$	
TORe	
Eid 2014	4.60 [-1.52; 10.72]
Thomspon 2012	5.00 [0.00; 10.00]
Mikami 2009	9.20 [-13.93; 32.33]
Random effects model	4.96 [2.72; 7.20]
Heterogeneity: $I^2 = 0\%$ [0%; >90%], $p = 0.93$	
TORe + APC	
Patel 2016 (IS + PS)	3.90 [-3.03; 10.83]
Vargas 2017	6.00 [0.44; 11.56]
Gitelis 2014	6.50 [-15.11; 28.11]
Callahan 2019	7.30 [-0.57; 15.17]
Schulman 2017	8.05 [4.02; 12.08]
Jirapinyo 2019	8.50 [5.19; 11.81]
Kumar 2016	9.50 [4.00; 15.00]
Jirapinyo 2023	9.50 [3.37; 15.63]
Kumar 2014	13.20 [7.29; 19.31]
Random effects model	8.36 [6.67; 10.05]
Heterogeneity: $I^2 = 0\%$ [0%; 65%], $p = 0.74$	

8.4%

Surgical

Pouch/GJA revision	
Borbely 2016	15.86 [1.82; 29.90]
Amor 2020	18.03 [7.16; 28.91]
Random effects model	17.22 [3.83; 30.60]
Heterogeneity: $I^2 = 0\%$, $p = 0.81$	
LGB	
Uitterbogaart 2016	2.42 [-2.82; 7.66]
Liu 2018	15.33 [6.83; 23.83]
Jacobs 2021	15.46 [2.94; 27.99]
Boerboom 2020	18.03 [10.89; 25.17]
Irani 2011	20.32 [7.53; 33.12]
Random effects model	13.60 [4.46; 22.75]
Heterogeneity: $I^2 = 77\%$ [45%; >91%], $p < 0.01$	
LGB + pouch resizing	
Moon 2014	21.20 [-1.02; 43.41]
D-RYGB	
Ghiassi 2018	15.27 [4.39; 26.15]
De Luca 2022	16.27 [2.08; 30.46]
Linke 2020	16.42 [0.19; 32.66]
Ngomba Muakana 2023	16.93 [0.50; 33.37]
Van der Burgh 2019	18.60 [6.84; 30.37]
Buchwald 2017	21.40 [8.00; 34.80]
Shah 2022	23.83 [15.03; 32.64]
Shin 2018	27.81 [9.18; 46.65]
Random effects model	19.72 [16.21; 23.16]
Heterogeneity: $I^2 = 0\%$ [0%; 68%], $p = 0.90$	

19.7%



Weight loss at 36 months

Surgical

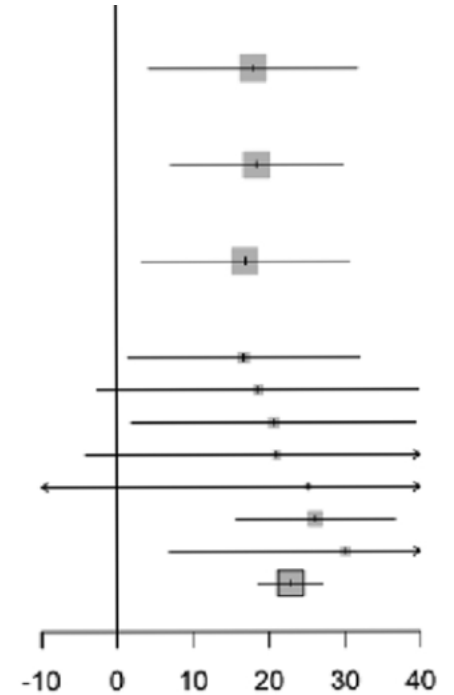
Endoscopic

APC Moon 2018	5.00 [-4.32; 14.32]
TORs + APC Callahan 2019	4.50 [-2.80; 11.80]
Jirapinyo 2019	6.90 [3.48; 10.32]
Kumar 2016	6.00 [2.09; 17.29]
Random effects model	6.71 [3.36; 10.05]
Heterogeneity: $I^2 = 0\%$ [0%; >90%], $p = 0.76$	

6.7%

Pouch/G.I.A revision	18.03 [4.28; 31.79]
	18.54 [7.18; 29.89]
	16.98 [3.31; 30.64]
ing	
Ortega-Serrano 2020	16.74 [1.48; 32.00]
Van der Burgh 2019	18.60 [-2.55; 39.76]
Ghiassi 2018	20.69 [1.98; 39.40]
Ngomba Muakana 2023	21.05 [-4.22; 46.32]
De Luca 2022	25.20 [-12.86; 63.25]
Shah 2022	26.17 [15.64; 36.69]
Buchwald 2017	22.86 [18.45; 27.17]
Random effects model	
Heterogeneity: $I^2 = 0\%$ [0%; 71%], $p = 0.95$	

22.9%



Weight loss at 60 months

Endoscopic

TORe + APC

Callahan 2019

Jirapinyo 2019

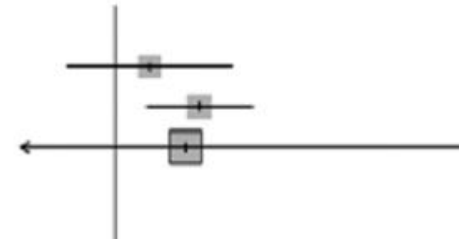
Random effects model

Heterogeneity: $I^2 = 0\%$, $p = 0.32$

3.60 [-5.01; 12.21]

8.80 [3.30; 14.30]

7.29 [-2.68; 37.27]



7.3%

Surgical

D-RYGB

Felsenreich 2019

Ngomba Muakana 2023

Shah 2022

Buchwald 2017

Random effects model

Heterogeneity: $I^2 = 2\%$ [0%; >85%], $p = 0.38$

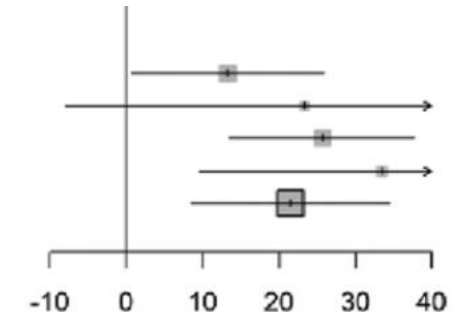
13.30 [0.72; 25.88]

23.34 [-7.99; 54.68]

25.65 [13.54; 37.75]

28.47 [9.59; 57.36]

21.49 [8.46; 34.53]



21.5%

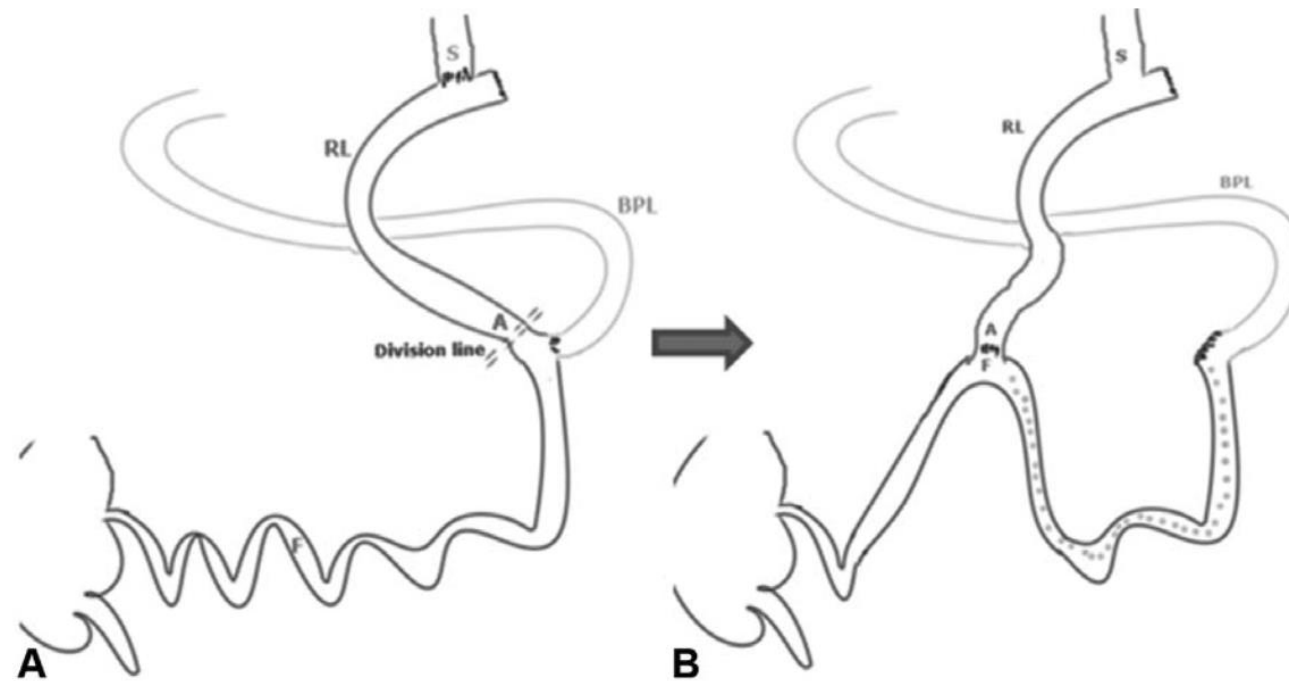
Distalization seems to be the
best surgical revision based on
risk:benefit

Types, Safety, and Efficacy of Limb Distalization for Inadequate Weight Loss After Roux-en-Y Gastric Bypass

A Systematic Review and Meta-analysis With a Call for Standardized Terminology

Hosam Hamed, MD,✉ Mahmoud Ali, MD, and Youssif Elmahdy, MD

Annals of Surgery • Volume 274, Number 2, August 2021



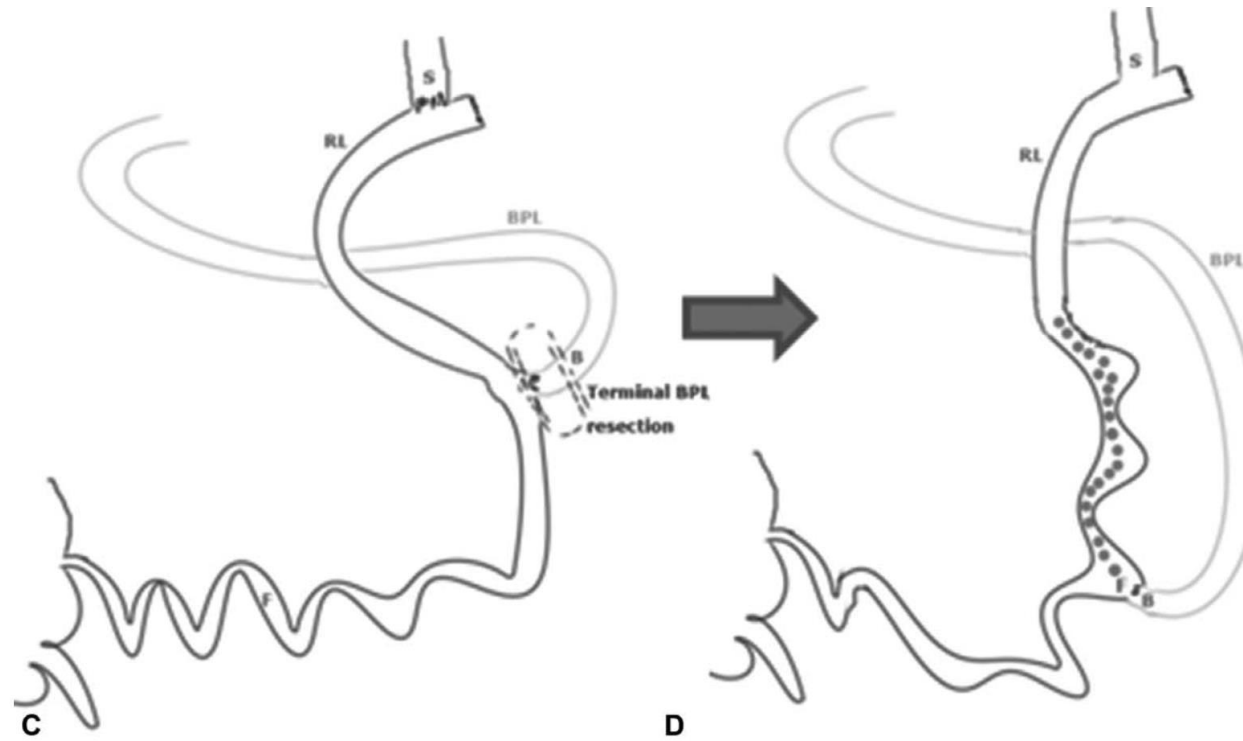
Type I “Sugerman”: BP limb distalization

Types, Safety, and Efficacy of Limb Distalization for Inadequate Weight Loss After Roux-en-Y Gastric Bypass

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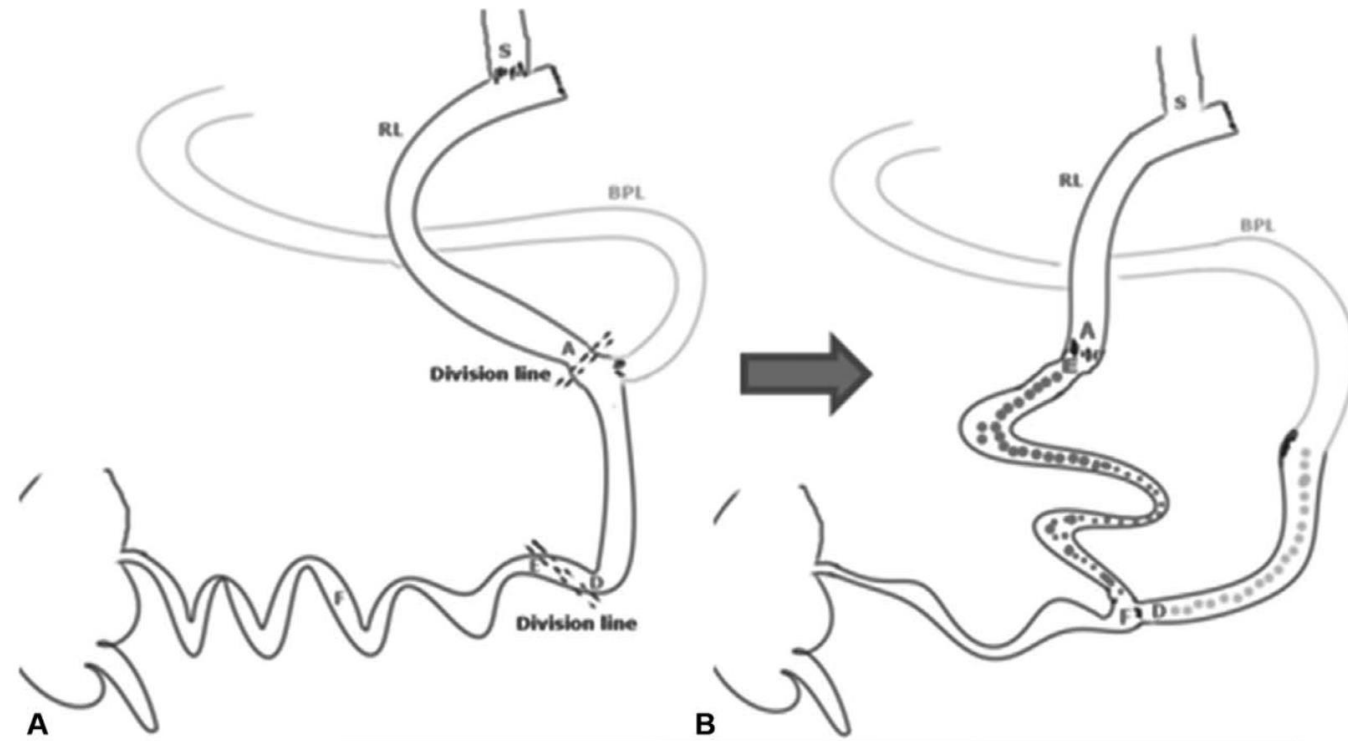
Type II "Brolin": Roux limb distalization

Types, Safety, and Efficacy of Limb Distalization for Inadequate Weight Loss After Roux-en-Y Gastric Bypass

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Annals of Surgery • Volume 274, Number 2, August 2021



Type III: Both limb distalization

Included studies	%EWL (95% C.I.)
Kraljevic M et al. 2020	40.000 (33.074, 46.926)
van der Burgh Y et al. 2019	45.000 (44.395, 45.605)
Shin R et al. 2019	55.500 (47.200, 63.720)
Felsenreich DM et al. 2019	81.500 (66.091, 96.909)
Ghiassi S et al. 2018	41.900 (33.341, 50.459)
Buckwald H et al. (TALL:335) 2017	55.200 (19.000, 91.400)
Buckwald H et al. (TALL: 160) 2017	47.700 (38.583, 56.817)
Caruana J et al. (<70%) 2015	23.000 (14.943, 31.057)
Caruana J et al. (70%) 2015	41.000 (32.323, 49.677)
Rawlins M et al. 2011	60.900 (39.026, 82.774)
Superman HJ et al. 1997	61.000 (59.432, 62.568)
Overall (I²=97.57 %, P<0.001)	48.599 (41.991, 56.007)

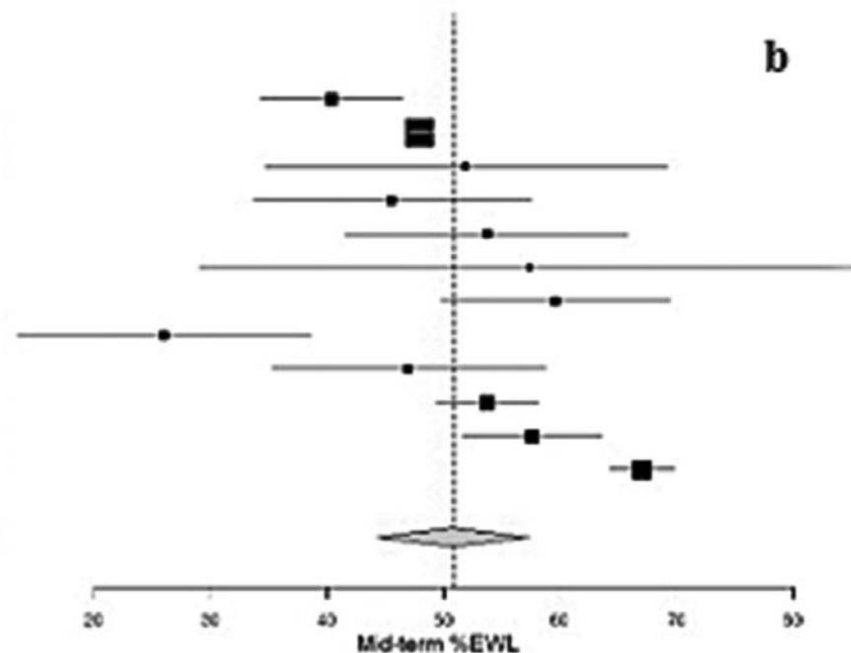
49% EWL
at 1 year

Included studies	%EWL (95% C.I.)
Kraljevic M et al. 2020	40.400 (34.251, 46.549)
van der Burgh Y et al. 2019	48.000 (46.926, 49.074)
Shin R et al. 2019	51.900 (34.617, 69.183)
Felsenreich DM et al. 2019	45.600 (33.747, 57.453)
Ghiassi S et al. 2018	53.700 (41.550, 65.850)
Buckwald H et al. (TALL:335) 2017	57.400 (20.997, 85.803)
Buckwald H et al. (TALL: 160) 2017	59.600 (49.700, 69.420)
Caruana J et al. (<70%) 2015	26.000 (13.406, 38.594)
Caruana J et al. (70%) 2015	47.000 (35.224, 58.776)
Himpens J et al. 2012	53.700 (49.293, 58.107)
Dapri J et al. 2011	57.600 (51.600, 63.600)
Superman HJ et al. 1997	67.000 (64.282, 69.718)
Overall (I²=94.49 %, P<0.001)	50.827 (44.339, 57.315)

51% EWL
at 3 year

a

b



Long-term (≥ 5 years) %EWL was reported by:

- Kraljević et al¹ = 46%
- Rawlins et al² = 68.8%
- Buckwald et al³ = 51.6%
- Sugerman et al⁴ = 69%

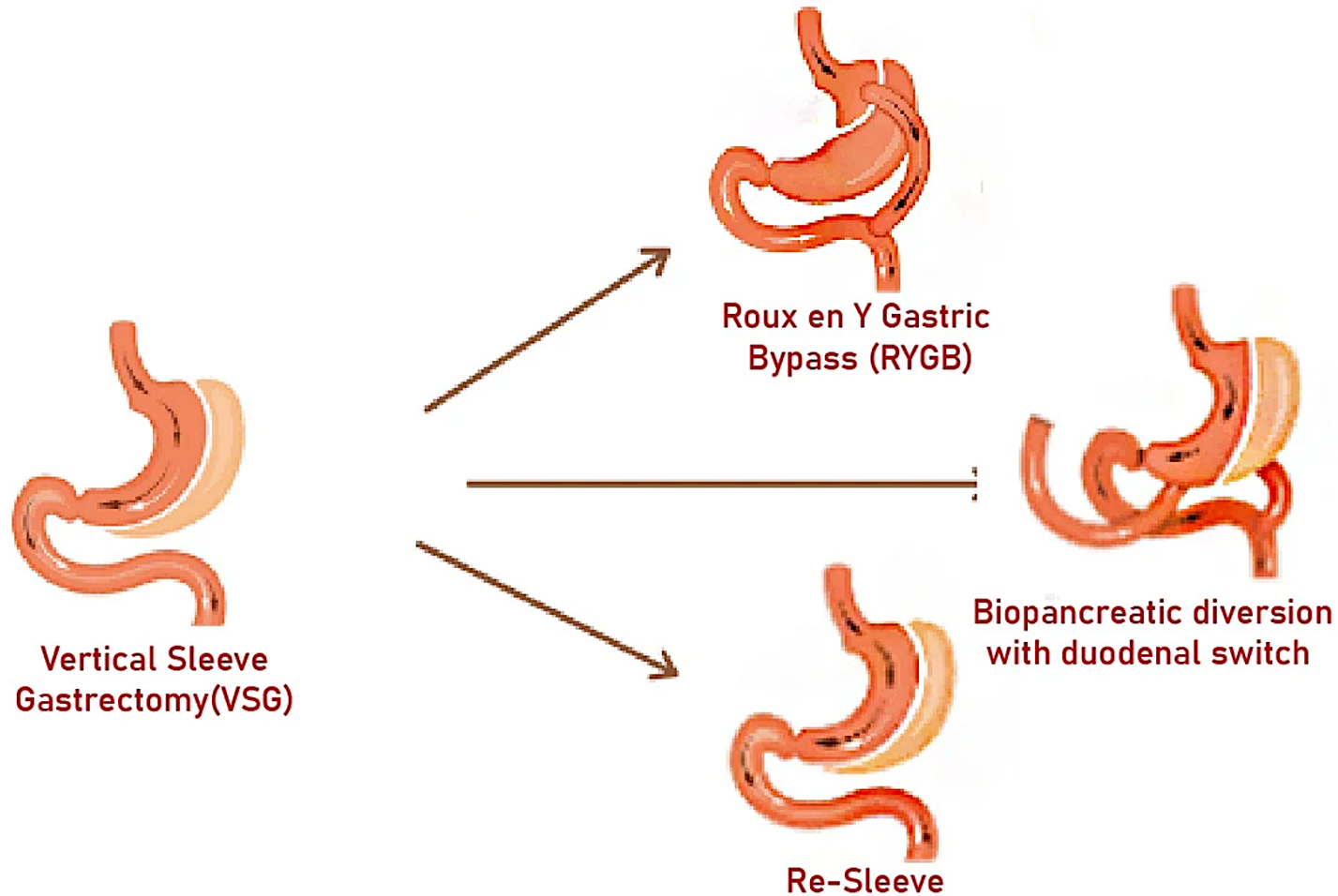
1. Kraljević M, Köstler T, Süsstrunk J, et al. Revisional surgery for insufficient loss or regain of weight after roux-en-y gastric bypass: Biliopancreatic limb length matters. *Obes Surg.* 2020;30:804–811.

2. Rawlins ML, Teel D, Hedgcorth K, et al. Revision of Roux-en-Y gastric bypass to distal bypass for failed weight loss. *Surg Obes Relat Dis.* 2011;7:45 – 49.

3. Buchwald H, Oien DM. Revision roux-en-y gastric bypass to biliopancreatic long-limb gastric bypass for inadequate weight response: case series and analysis. *Obes Surg.* 2017;27:2293–2302.

4. Sugerman HJ, Kellum JM, DeMaria EJ. Conversion of proximal to distal gastric bypass for failed gastric bypass for superobesity. *J Gastrointest Surg.* 1997;1:517 – 524.

Limited data and follow-up from Sleeve Gastrectomy revisional surgery



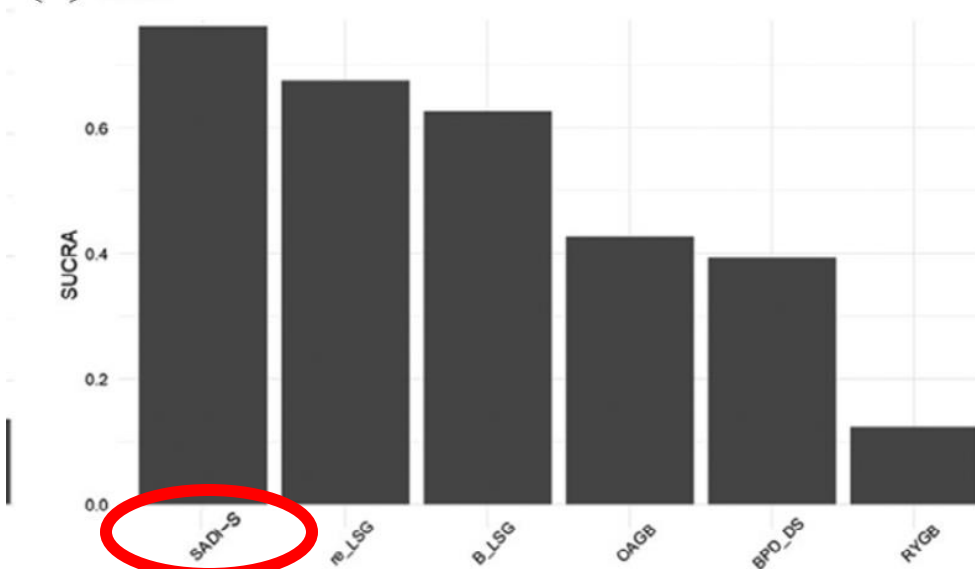
Comparison of different revisional surgeries after sleeve gastrectomy: A network meta-analysis

Piotr Małczak, Sung Ryul Shim, Michał Wysocki ✉, Justyna Rymarowicz, Mateusz Wierdak, Michał Pędziwiatr, Piotr Major

First published: 09 April 2025 | <https://doi.org/10.1111/obr.13930> | Obesity Reviews. 2025;26:e13930.

1-year outcomes

(B) TWL

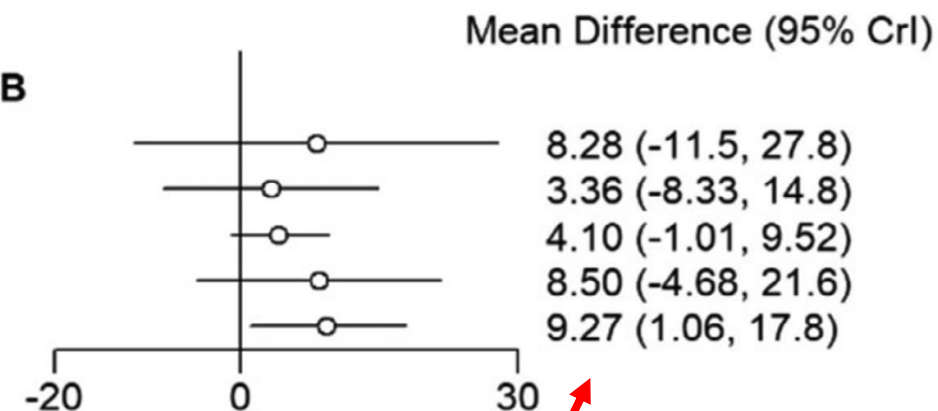


Surface Under the Cumulative Ranking Curve (SUCRA)

(B) TWL

Compared with RYGB

B_LSG
BPD_DS
OAGB
re_LSG
SADI-S



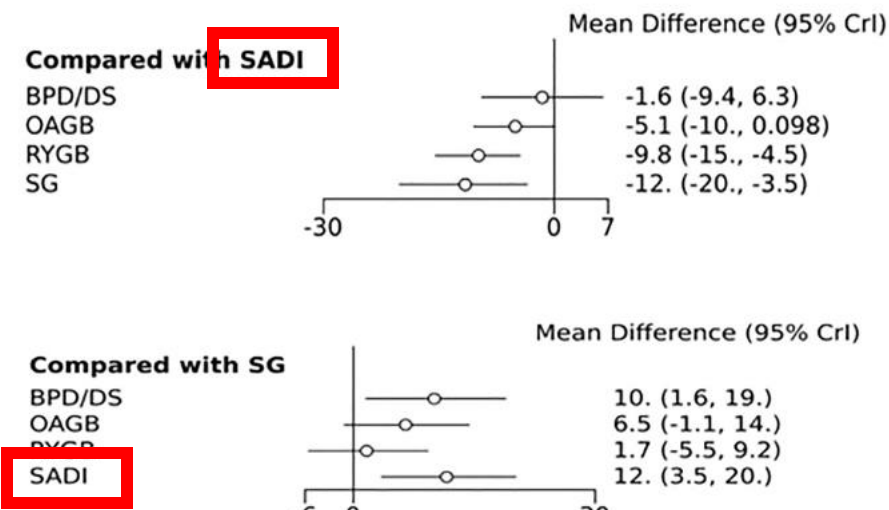
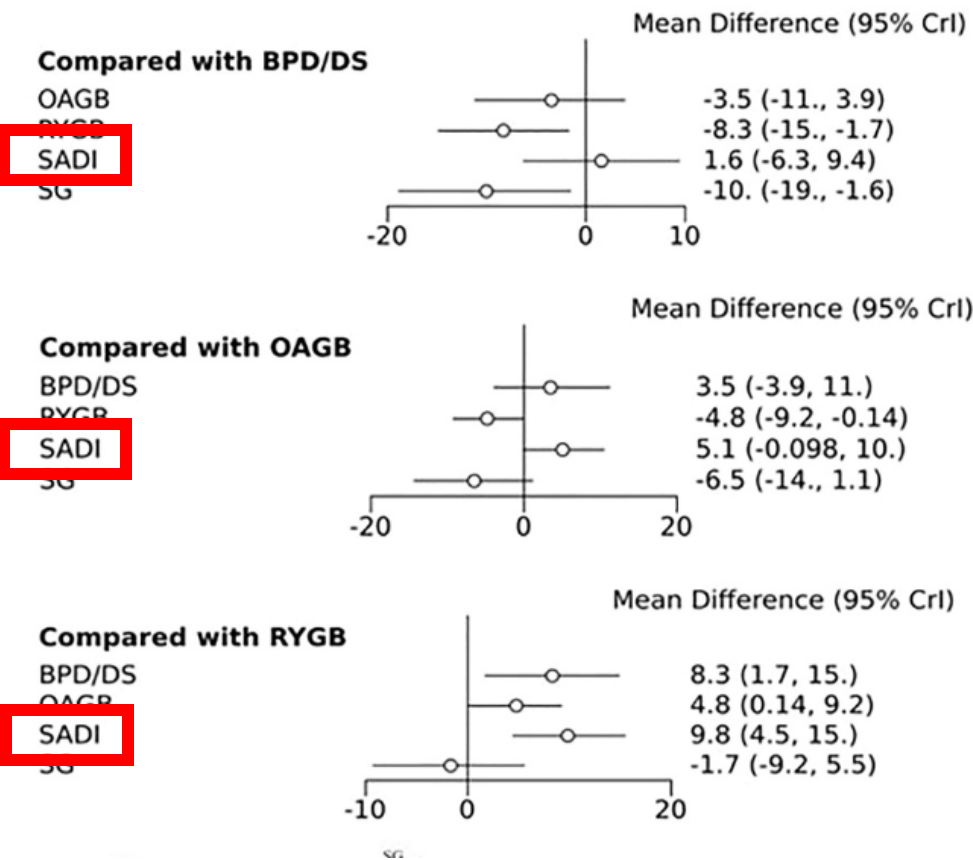
9.27% > weight loss than RYGB

Outcomes of revisional surgery options after inadequate sleeve gastrectomy: A comprehensive network meta-analysis

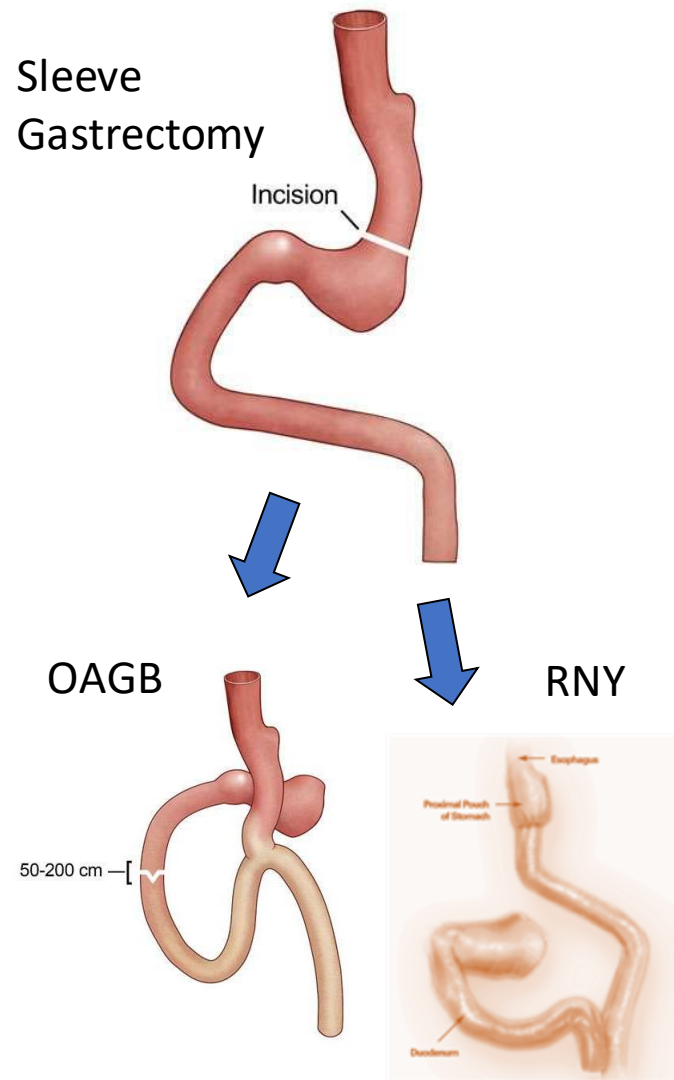
Mohamed AbdAlla Salman✉, Ahmed Salman, Ahmed Elewa, Mohammed Elsherbiny, Mohamed Tourkey, Stewart Chikukuza, Mohamed A. Gadallah, Ahmed Abdelaziz Ismail, Ahmed Mahmoud Hussein

First published: 28 July 2024 | <https://doi.org/10.1002/wjs.12293> | *World J Surg.* 2024;48:2040–2057.

1-year outcomes



Sleeve Gastrectomy



Obesity Surgery (2025) 35:3905–3917
<https://doi.org/10.1007/s11695-025-08162-3>



REVIEW



Comparative Effect of Roux-en-Y Gastric Bypass vs. One-Anastomosis Gastric Bypass for Revisional Surgery After Sleeve Gastrectomy With Insufficient Clinical Response: A Systematic Review and Meta-analysis

Wilson Silva-Chavez¹ · Alexander Bustamante-Cabrejo¹ · Jose Caballero-Alvarado^{1,2} · Víctor Lau-Torres³ · Joaquín Sarmiento-Falen¹ · Carlos Zavaleta-Corvera⁴

Obesity Surgery (2022) 32:4082–4088
<https://doi.org/10.1007/s11695-022-06326-z>



REVIEW



One-Anastomosis Gastric Bypass Versus Roux-en-Y Gastric Bypass as Revisional Surgery After Sleeve Gastrectomy: a Systematic Review and Meta-analysis

Anna Carolina Batista Dantas¹ · Leonardo Torres Branco² · Francisco Tustumi² · Daniel Riccioppo Cerqueira Ferreira de Oliveira¹ · Denis Pajacki¹ · Marco Aurelio Santo¹

SG -> OAGB vs RNY (1 yr FU)

SG conversion **OAGB better** Weight Loss and lower Operative time

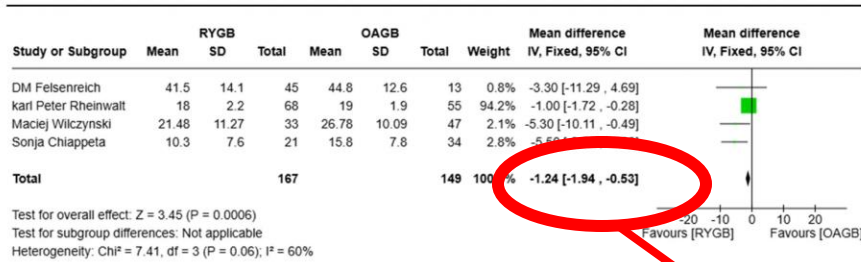


Fig. 4 Forest plot of TWL% at 1 year

-1.24%

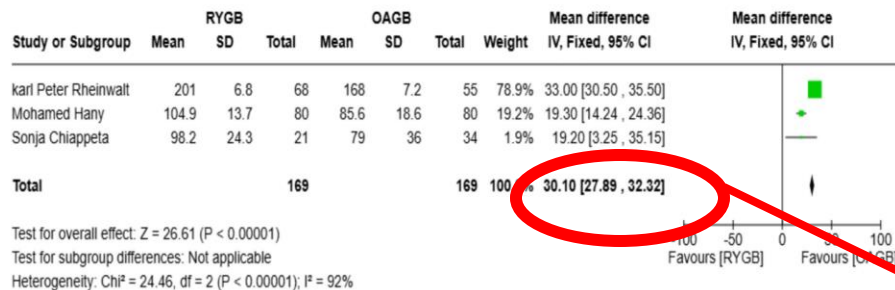


Fig. 10 Forest plot of operative time

30'

No difference in T2DM and HTN improvement and perioperative Complications

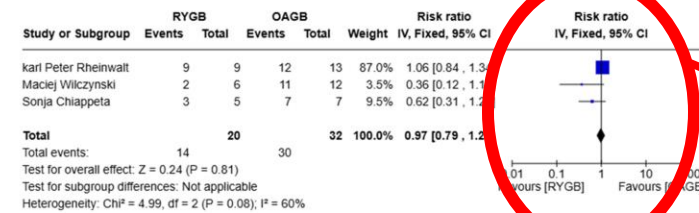


Fig. 6 Forest plot of T2DM

T2DM

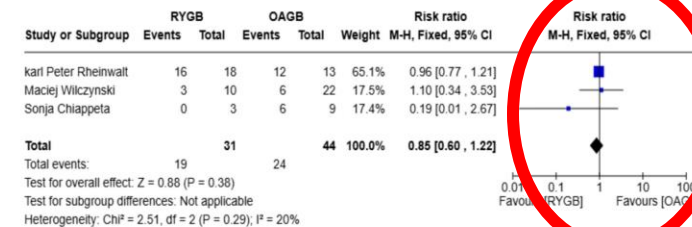


Fig. 7 Forest plot of hypertension remission

HTN

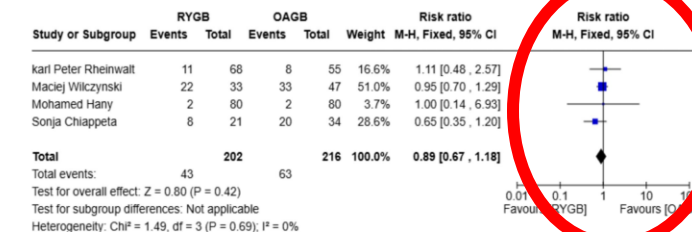


Fig. 9 Forest plot of postoperative complications

Postop
Comp

Conclusions

Is revisional MBS effective?

- Revisional MBS is effective for durable weight loss
- Outcomes depend on procedure choice and indication
- Higher complexity and risk than primary surgery

Thanks!

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