

**Medication as good as
surgery...**

Should I look for another career?

Gerhard Prager, MD
Department of General Surgery
Metabolic and Bariatric Surgery


**XXIX IFSO
World Congress**
1-4 September 2026 | Toronto, Canada



TORONTO2026
**The Future of Obesity Management:
From Weight Loss to Health Gain**

Disclosures



New OMMs will kill MBS

1. medication will be sufficiently effective for every patient
2. patients will take it for life
3. healthcare systems will pay for it for life

None of these assumptions is supported by current evidence

New OMMs will **not** kill MBS.

They will redefine its indications

improve its outcomes

and make **multimodal** obesity treatment possible

1. Surgery still produces the most powerful and durable weight loss

Modern medications achieve impressive trial results:

- Semaglutide: approximately 15% TWL
- Tirzepatide: approximately 20–23% TWL
- Newer combinations may approach 25%-30% TWL

But metabolic surgery typically achieves:

- Sleeve gastrectomy: approximately 25–30% TWL
- RYGB: approximately 30–35%
- OAGB/SADI-S: often 30–40%

**OMMs have impressive
72-week efficacy.
MBS has demonstrated
lifetime effectiveness**

MBS: outcome data > 10–20 years.

2. **OMMs** efficacy depends on continued exposure

- Lifelong adherence
- Lifelong access
- Stable reimbursement
- Drug availability
- Tolerability
- Willingness to inject or take medication indefinitely

A weekly injection or daily tablet is less invasive than an operation...

But only if the patient can obtain, tolerate and continue it every week for decades.



Original Investigation | Nutrition, Obesity, and Exercise

Discontinuation and Reinitiation of Dual-Labeled GLP-1 Receptor Agonists Among US Adults With Overweight or Obesity

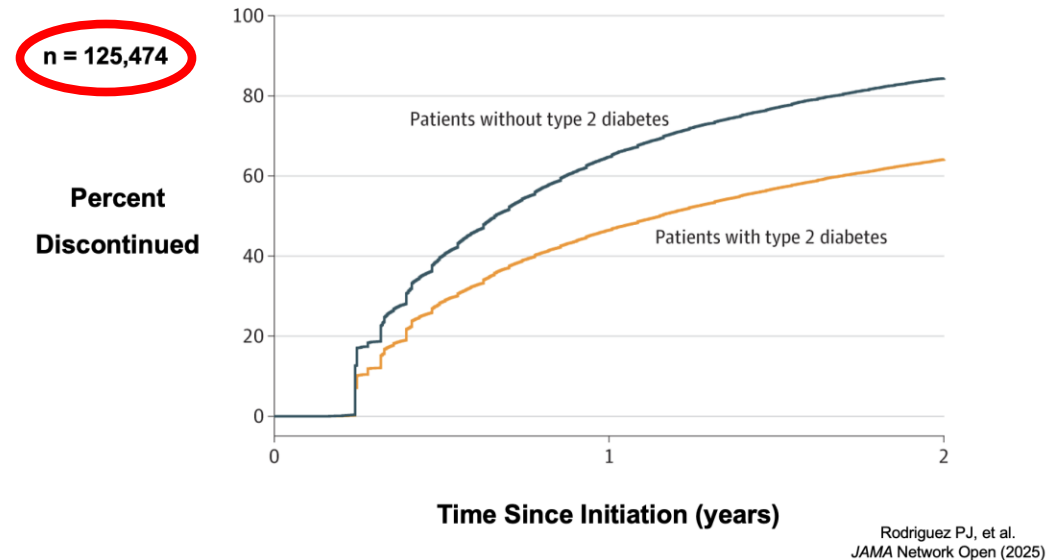
Patricia J. Rodriguez, PhD, MPH; Vincent Zhang, BA; Samuel Gratzl, PhD; Duy Do, PhD; Brianna Goodwin Cartwright, MS; Charlotte Baker, DrPH, MPH, CPH; Ty J. Gluckman, MD, MHA; Nicholas Stucky, MD, PhD; Ezekiel J. Emanuel, MD, PhD

WHY stop patients OMM treatment?

- Availability
- Costs
- Side Effects
- Injections
- Compliance

70% of patients stop
treatment within **2 years**

Premature Discontinuation of GLP-1 Meds



electronic health record (EHR) data from a collective of 30 US health care systems

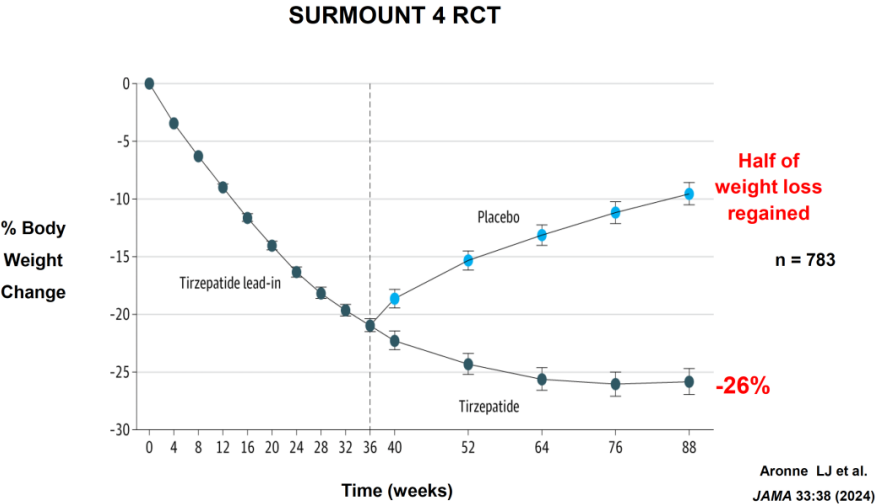
Rodriguez PJ. et al. JAMA Open 2025

Weight Regain After Liraglutide, Semaglutide or Tirzepatide Interruption: A Narrative Review of Randomized Studies

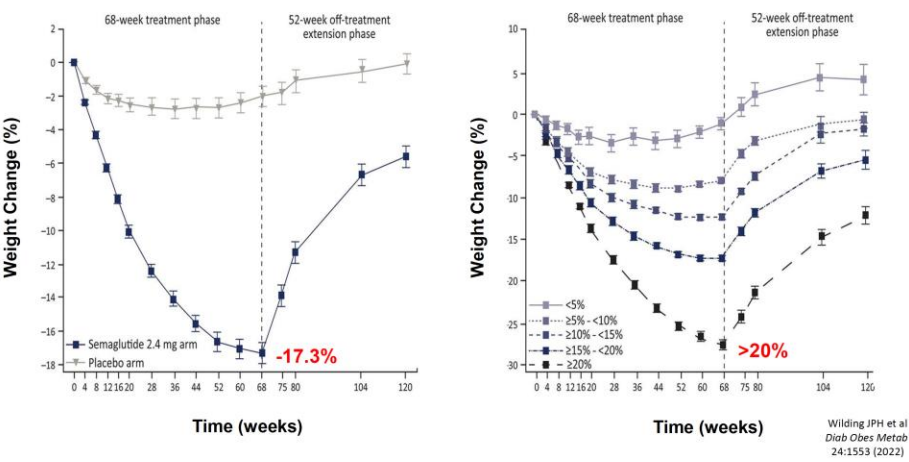
[Massimo Quarenghi](#)^{1,2,*}, [Silvia Capelli](#)², [Giulia Galligani](#)², [Arianna Giana](#)¹, [Giorgia Preatoni](#)^{1,2}, [Rosamaria Turri](#)
[Quarenghi](#)³

13 articles were included in the analysis

The analysis showed a rapid regain of weight after cessation of therapy, regardless of the duration of the treatment with GLP-1 RA or GIP/GLP-1 RA.



STEP 1 Extension Trial (Semaglutide)



J Clin Med 2025 May 28;14(11):3791

3. Trial efficacy is not real-world effectiveness

OMM trials include selected, intensively supported participants.

Real-world treatment is affected by:

- Poor persistence and discontinuation
- Dose reduction because of gastrointestinal adverse effects
- Cost and reimbursement restrictions
- Supply shortages
- Therapeutic interruptions
- Failure to reach the maximum dose
- Lower effectiveness in severe or complex obesity

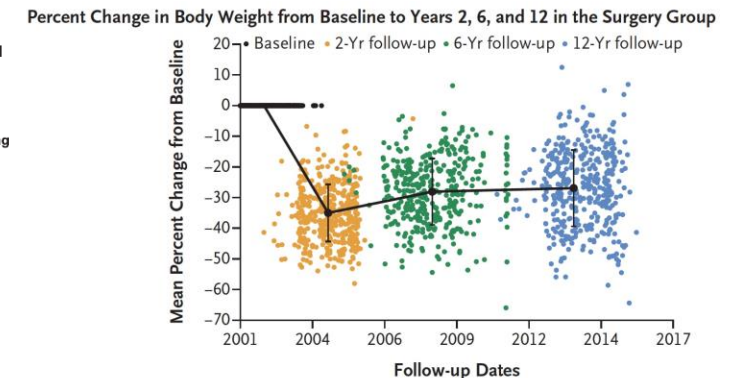
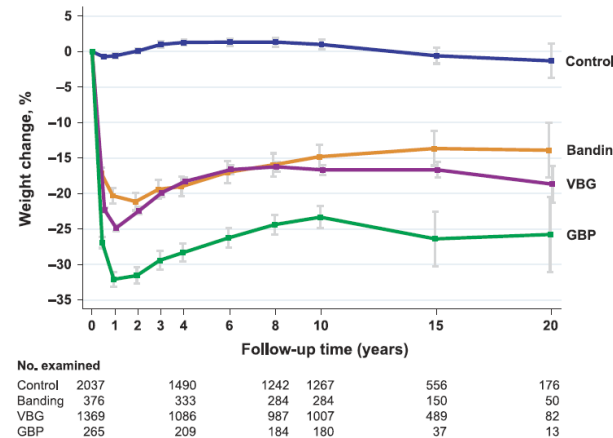
An operation is delivered once. Its biological effect does not depend on weekly prescription refills.

4. Surgery has the strongest long-term evidence in severe obesity

The Swedish Obese Subjects study showed reduced mortality after MBS and an adjusted median life expectancy approximately three years longer than in matched controls. [Carlsson et al., NEJM 2020](#)

No current incretin-based obesity medication has comparable 20–30-year evidence for:

- Weight maintenance
- Overall survival
- Cancer incidence
- Microvascular complications
- End-stage organ disease
- Lifetime safety



Patients group	Baseline	2 Yr	6 Yr	12 Yr
	418	409	379	387
	—	3	9	14
Total	418	412	388	401

SELECT demonstrated cardiovascular benefit with semaglutide, but that is not yet equivalent to **decades** of evidence in patients with severe obesity.

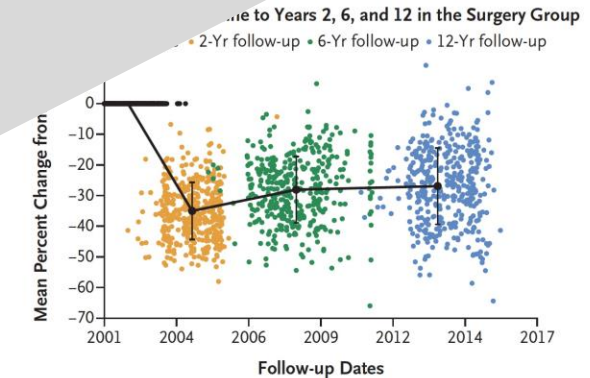
4. Surgery has the strongest long-term evidence in severe obesity

The Swedish Obese Subjects study showed reduced mortality for MBS and an adjusted median life expectancy approximately three years longer than matched controls. [Carlsson et al., NEJM 2020](#)

No current incretin-based obesity medication has the same level of evidence for:

- Weight maintenance
- Overall survival
- Cancer incidence
- Microvascular complications
- End-stage organ disease
- Lifetime safety

Promising long-term benefit is not the same as demonstrated long-term benefit.



Patients group	Baseline	2 Yr	6 Yr	12 Yr
Total	418	412	388	401

SELECT demonstrated cardiovascular benefit with semaglutide, but that is not yet equivalent to **decades** of evidence in patients with severe obesity.

5. Surgery is metabolic treatment, not simply mechanical weight reduction

MBS produces rapid, weight-independent effects through:

- Incretin and bile-acid signaling
- Altered nutrient sensing
- Changes in insulin sensitivity
- Neuroendocrine appetite regulation
- Changes in energy expenditure and food preference

Essentially, **surgery produces a sustained multi-hormonal intervention** rather than stimulating one or two pharmacological pathways

6. Surgery remains particularly powerful for type 2 diabetes

In the ARMMS-T2D randomized-trial consortium, surgery produced:

- Better long-term HbA1c control
- Greater diabetes remission
- Less insulin use
- Fewer diabetes medications
- Greater weight loss at 7–12 years

JAMA | Original Investigation

Long-Term Outcomes of Medical Management vs Bariatric Surgery
in Type 2 Diabetes

Anita P. Courcoulas, MD; Mary Elizabeth Patti, MD; Bo Hu, PhD; David E. Arterburn, MD; Donald C. Simonson, MD, ScD;
William F. Gourash, PhD; John M. Jakicic, PhD; Ashley H. Vernon, MD; Gerald J. Beck, PhD; Philip R. Schauer, MD;
Sangeeta R. Kashyap, MD; Ali Aminian, MD; David E. Cummings, MD; John P. Kirwan, PhD

At 12 years, diabetes remission remained 12.7% after surgery versus 0% with medical/lifestyle therapy

While these trials began before current tirzepatide-era treatment, they establish a **level of durability not yet demonstrated by medications**

JAMA. 2024;331(8):654-664

7. Direct observational comparisons increasingly favor surgery

Surgery associated with a 62% lower mortality risk than GLP-1 RA treatment, although residual confounding prevents a causal conclusion.

Dicker et al., JAMA Network Open 2024

Swedish registry study: Better metabolic and cardiovascular outcomes after surgery than after GLP-1 treatment, while appropriately identifying greater risks of fractures, alcohol/substance misuse and self-harm after surgery.

Stenberg et al., BJS 2024

AND:

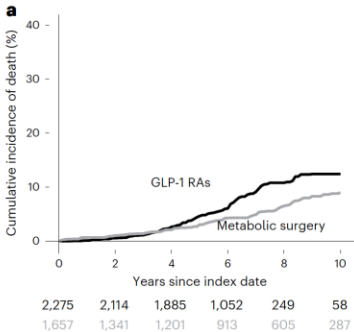
Macrovascular and microvascular outcomes of metabolic surgery versus GLP-1 receptor agonists in patients with diabetes and obesity

Macro- and microvascular outcomes in 1,657 patients (65% type 2 diabetes and 35% type 1 diabetes) who went to metabolic surgery

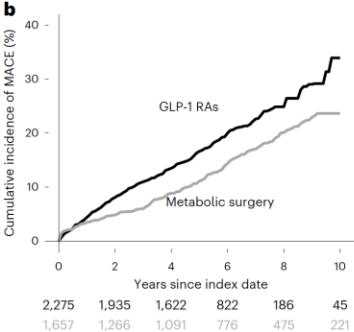
with 2,275 patients (53.5% female) who were treated with GLP-1 receptor agonists

...NOT weight loss, but HEALTH GAIN!

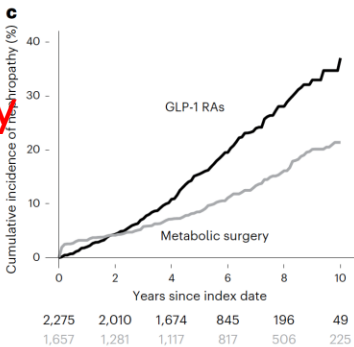
Death
↓ 32%
with MBS



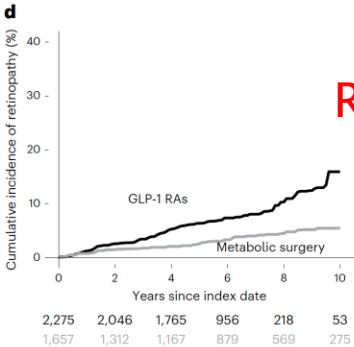
MACE
↓ 35%
with MBS



Nephropathy
↓ 47%
with MBS



Retinopathy
↓ 54%
with MBS



Nature Medicine, 16 September 2025

8. Surgery is highly cost-effective over the long term

Medication costs accumulate every month and every year.

Surgery has a higher initial cost but a limited procedural cost followed by surveillance and supplementation.

A US cohort of 30,458 patients found that surgery was associated with greater weight loss and approximately \$11,689 lower ongoing costs over two years than GLP-1 receptor agonist treatment. [Barrett et al., JAMA Surgery 2025](#)

The precise economics vary greatly by country and future drug pricing, but the fundamental question remains:

Can healthcare systems provide expensive lifelong pharmacotherapy to hundreds of millions of people?

Obesity Treatment With Bariatric Surgery vs GLP-1 Receptor Agonists

Tyson S. Barrett, PhD; Juliane O. Hafermann, PhD; Shannon Richards, MSN; Keith LeJeune, PhD;
George M. Eid, MD

Comparison of weight loss and costs: MBS and OMMs USA

Insurance data; Propensity Score matching

14101 MBS und 16357 OMM

Outcome: weight loss

Costs within 2 years

Weight Loss:	MBC	28.3%
	OMMs	10.3%
Costs (2a)	MBC	\$51794
	OMMs	\$63483

JAMA Surgery November 2025 Volume160, Number11

9. Contemporary MBS is remarkably safe

A meta-analysis including more than 3.6 million patients reported perioperative mortality of approximately 0.08% - less than 1 in 1,000. [BJS meta-analysis](#)

That is comparable to several commonly accepted elective operations.

The contrast is therefore not:

“Dangerous surgery versus a harmless injection.”

It is:

“A small, concentrated procedural risk versus decades of medication exposure, cost, adherence and uncertain lifetime effects.”

10. There are patients for whom pharmacotherapy alone is unlikely to be enough

Surgery remains **particularly** relevant for:

- BMI ≥ 40 – 50 kg/m²
- Severe or insulin-treated type 2 diabetes
- Multiple obesity complications
- Need for large and rapid weight reduction
- Patients failing or not tolerating pharmacotherapy
- Patients unable to obtain lifelong medication
- Advanced MASLD/MASH or severe obstructive sleep apnea
- Patients requiring a durable ≥ 25 – 30% weight reduction

Indication for **MBS** will shift towards a **more severe disease** (severity is NOT higher BMI!)

A 15–20% reduction can be transformative, but for a patient with BMI 55, it may still leave severe obesity and substantial residual risk.

11. Surgery and medications are **complementary** - not competitors

The future IS HERE:

OMMs can improve surgery by being used:

- Before surgery to reduce operative risk
- As bridge therapy in very high BMI
- After surgery for SOCR
- For postoperative RWG
- To improve metabolic control without revision
- Potentially to reduce the need for revisional surgery

Therefore, the arrival of effective medication may expand the number of treated patients and ultimately increase - not eliminate - appropriate surgical referrals.

OMMs will not kill MBS

just as antihypertensive drugs did not eliminate
vascular intervention and biologics did not eliminate
surgery for inflammatory bowel disease

They will improve

patient selection
provide alternatives
complement surgery.

The future is not drugs or surgery.



It is the **right treatment, in the **right** sequence, for the **right** patient**



Global guideline recommended target achievements in glycaemic, blood pressure, and lipid control in type 2 diabetes: An updated *meta*-analysis of 1,618,972 participants

Ghanshyam Kacha^{a,b}, Patrick J. Highton^{a,b}, Mark P. Funnell^{a,b}, Clare Gillies^{a,b}, Tolu Onuwe^{a,b}, Niraj Kumar^c, Xavier Cos^{d,e}, Antonio Ceriello^f, Samuel Seidu^{a,b}, Kamlesh Khunti^{a,b,g,*}

44% of individuals achieved HbA1c targets,
41% achieved BP targets
47% achieved LDL-C targets.

Only 12% of individuals met all three targets

Meta-regression analysis revealed no significant improvement in HbA1c target attainment from 1997 to 2023 in Europe and North America

If combination therapy is standard in diabetes, hypertension and oncology, why should obesity be treated with an artificial choice between medication and surgery?

Diabetes Research and Clinical Practice 230 (2025) 113001

Adherence in type 2 diabetes:

Approximately 1 in 2 patients with T2D does not take medication as prescribed.

Prevalence of adherence to oral antidiabetic drugs in patients with type 2 diabetes: A systematic review and meta-analysis

Kansak Boonpattharatthiti ^{1 2}, Pirune Na Songkla ^{2 3}, Junpen Chantara ^{2 4},
Chanchanok Koomsri ^{2 5}, Ines Krass ⁶, Nathorn Chaiyakunapruk ^{7 8}, Teerapon Dhippayom ²

J Diabetes Investig 2024 Nov;15(11):1614-1625

Adherence by treatment type

Treatment	Approximate adherence/persistence 
Oral glucose-lowering medication	54–56% adherent
Insulin in T2D	52.6% adherent
GLP-1 receptor agonists	Approximately 50% adherent at 1 year
GLP-1 RA persistence	Often approximately 50% at 1 year, highly study-dependent

Efficacy is what happens in a trial.

Effectiveness is
 $\text{efficacy} \times \text{adherence} \times \text{persistence}.$





... ok – I need an **eye doctor**

The President Elect of IFSE

(International Federation for the Surgery of the Eye)

Exactly for that... 16:50 ✓✓

Ricardo Cohen

io know. I am the underdog

16:53

actually I am an eye doctor
now.. I am the next presisent of
the International Federation for
the Surgery of the Eye. IFSE.

16:54









OMMs will not kill MBS

just as antihypertensive drugs did not eliminate
vascular intervention and biologics did not eliminate
surgery for inflammatory bowel disease

They will improve

patient
pre
surgery.

**It is the right treatment, in the right
sequence, for the right patient**

MULTIMODAL TREATMENT

The future is not drugs or surgery.



Trends in Metabolic and Bariatric Surgery Use During the GLP-1 Receptor Agonist Era

Stefanie C. Rohde, MD¹; Grace F. Chao, MD, MSc²; Mahmoud Abdel-Rasoul, MS, MPH³; et al

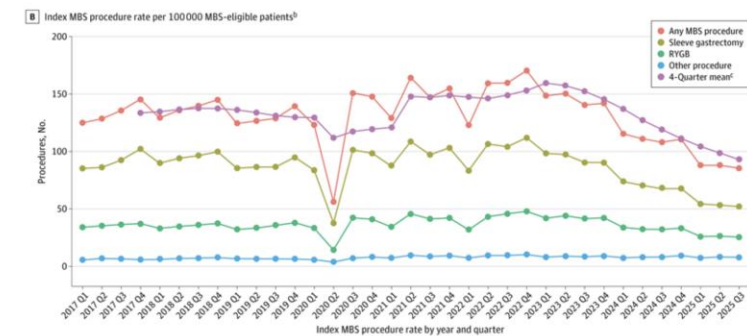
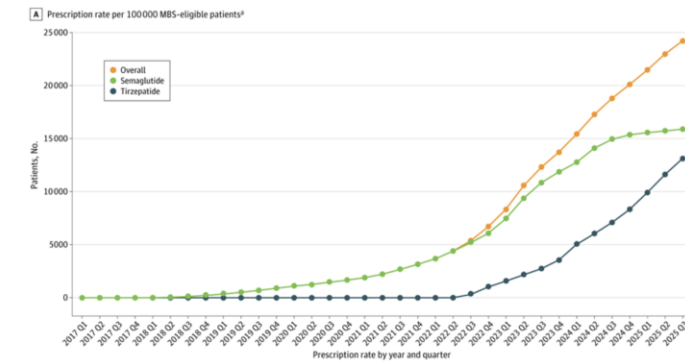
MBS-eligible cohort included 31 684 807 patients

Among MBS-eligible patients, prescription prevalence rates (**Semaglutide, Tirzepatide**) increased rapidly from 0.22% in quarter 4 of 2018 to **24.17% in quarter 3 of 2025**

46.4% decrease in overall MBS use in eligible patients over 3 years
Decrease more pronounced for SG than RYGB

MBS declined least in patients with a BMI of 55 or greater (decreased by 35.0% vs by 40.7%-49.8% for lower BMI categories)

Figure 1. Line Graphs Depicting Prescription Rates and Metabolic and Bariatric Surgery (MBS) Rates in MBS-Eligible Patients

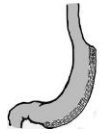


Published Online: March 4, 2026. doi:10.1001/jamasurg.2026.0049

Evolution of MBS at the Medical University of Vienna



1996 lap. Gastric Banding



2002 lap. Sleeve Gastrectomy



2003 lap. Y-Roux Gastric Bypass



2009 lap. BPD



2010 lap. OAGB



2016 SADI-S



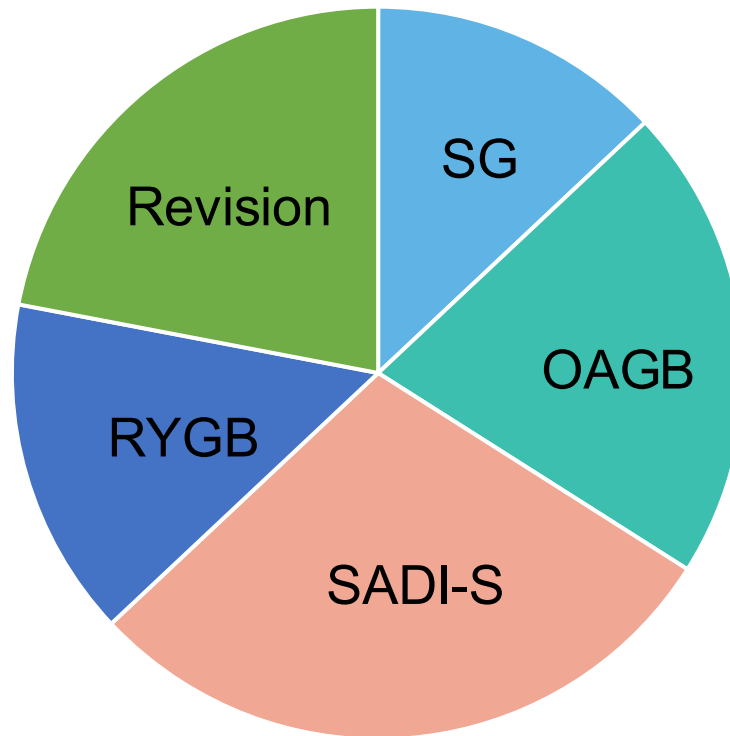
2023 Robotic MBS



2024 ESG/TORE



Case mix



LAGB	0%
SG	13%
RYGB	20%
OAGB	21%
SADI-S	26%
Revision	20%



The Role of Obesity Management Medications (OMMs) in the Context of Metabolic/Bariatric Surgery (MBS)

An IFSO Consensus Conference

Vienna, Hotel Hilton Vienna Park
30th of April - 1st of May 2024



Core Scientific Committee
Gerhard Prager, Ricardo Cohen, Luca Busetto

Introduction

No top level evidence regarding efficacy of preoperative OMM treatment for reducing perioperative risks

Still scarce evidence for use of OMMs as adjunct therapy to MBS

Role in - suboptimal responders
- recurrent weight gain

unclear so far...



The Role of Obesity Management Medications (OMMs) in the Context of Metabolic/Bariatric Surgery (MBS)

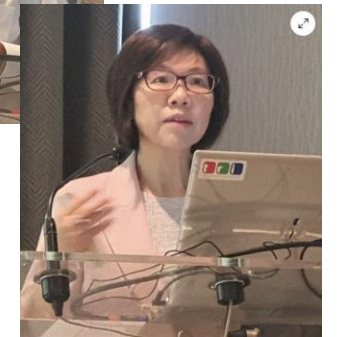
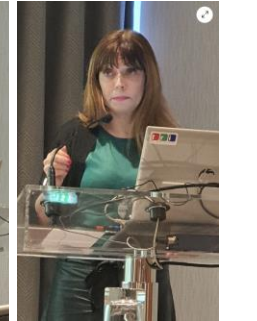
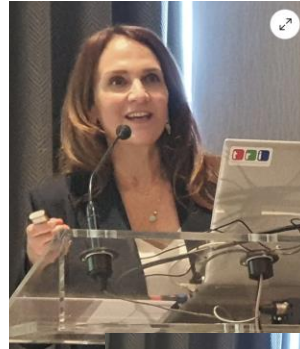
An IFSO Consensus Conference

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Core Scientific Committee

Gerhard Prager, Ricardo Cohen, Luca Busetto



MEDICAL UNIVERSITY
OF VIENNA

OMMs and MBS
Gerhard Prager

Objectives:

Bringing together leading
**physicians, surgeons,
researchers and thought
leaders** in the realm of
obesity medicine and MBS

Explore latest
developments in OMMs
and their synergies with
MBS

Active participation:
ASMBS, WOF, EASO, IDF

Core Scientific Committee

Gerhard Prager, *Austria*
Luca Busetto, *Italy*
Ricardo Cohen, *Brazil*

Systematic Review Committee

Mohammad Kermansaravi, *Iran*
Chetan Parmar, *UK*

Delphi Expert

Randy Levinson, *USA*

Invited Experts

METABOLIC BARIATRIC SURGEONS

Ali Aminian, *USA*
Ricardo Cohen, *Brazil*
Nicola Di Lorenzo, *Italy*
Khaled Gawdat, *Egypt*
Mohammed Hadad, *UAE*
Mohammad Kermansaravi, *Iran*
Lilian Kow, *Australia*
Marina Kurian, *USA*
Muffazal Lakdawala, *India*
Abdelrahman Nimeri, *USA*
Chetan Parmar, *UK*
Silvana Perretta, *France*
Luis Poggi, *Peru*
Jaime Ponce, *USA*
Gerhard Prager, *Austria*
Francesco Rubino, *UK*
Paulina Salminen, *Finland*
Phil Schauer, *USA*
Scott Shikora, *USA*
Michel Suter, *Switzerland*

OBESITY PHYSICIANS

Nasreen Al Faris, *Saudi Arabia*
Matthias Blüher, *Germany*
Luca Busetto, *Italy*
Lena Carlsson, *Sweden*
David Cummings, *USA*
Dror Dicker, *Israel*
Linong Ji, *China*
Lee Kaplan, *USA*
Arya Sharma, *Germany*
Sara Suliman, *UAE*
Wei Tham, *Singapore*
Josep Vidal, *Spain*
Tarissa Zanata Petry, *Brazil*

INTEGRATED HEALTH EXPERTS

Silvia Leite, *Brazil*
Mary O'Kane, *UK*
Andrea Schroeder, *New Zealand*

PARTNER SOCIETIES' REPRESENTATIVES

Jason Halford
EASO President, *UK*
Carel Le Roux,
WOF Clinical Care Committee
Ireland

Peter Schwarz
IDF President elect, *Germany*

PATIENTS' REPRESENTATIVES

Vickey Mooney, *Ireland*
Ximena Ramos Salas, *Sweden*

**41 experts: Endocrinology, diabetology, internal
medicine, gastroenterology, allied health, surgery, and
patients**

1. Use of OMMs before MBS

- a. How much weight loss do we need for health? [Carel Le Roux](#)
- b. Use and Choice of OMMs prior to MBS [Josep Vidal](#)
- c. Are there Subgroups with special Benefits from OMM Treatment prior to MBS? [Nasreen Al Faris](#)

2. Use of OMMs after MBS

- a. Evidence & Timing for OMMs in case of recurrent weight gain or inadequate initial response [Lee Kaplan](#)
- b. Treatment with OMM due to recurrent weight gain/persistent metabolic disease [Dror Dicker](#)
- c. Evidence & Rationale for continuous or intermittent use of OMM after MBS [Dave Cummings](#)
- d. Endoscopic Procedures and OMM [Silvana Perretta](#)
- e. Comparison of the Efficacy of OMM with and without MBS [Kwang Wei Tham](#)

3. The Future

- a. A perspective on Cost-Effectiveness of OMM and MBS [Ricardo Cohen](#)
- b. What is in the pipeline? [Matthias Blüher](#)
- c. What will be the Role of Revisional Surgery with Modern Pharmacotherapy? [Phil Schauer](#)
- d. How to deal with the Challenges of MBS and lifelong OMM use [Arya Sharma](#)
- e. Potential Need for further Studies [Francesco Rubino](#)

International consensus position statement on the role of obesity management medications in the context of metabolic bariatric surgery: expert guideline by the International Federation for the Surgery of Obesity and Metabolic Disorders (IFSO)

Ricardo V. Cohen^{1,*} , Luca Busetto² , Randy Levinson³, Carel W. Le Roux⁴, Paulina Salminen^{5,6}  and Gerhard Prager⁷ on behalf of the experts of the International Consensus on the Role of Obesity Management Medications in the Context of Metabolic Bariatric Surgery

¹The Centre for Obesity and Diabetes, Hospital Alemao Oswaldo Cruz, São Paulo, Brazil

²Department of Medicine, University of Padua, Padua, Italy

³Lai Wen Di Consulting, LLC, New York, USA

⁴Diabetes Complications Research Centre, University College Dublin, Dublin, Ireland

⁵Division of Digestive Surgery and Urology, Turku University Hospital, Turku, Finland

⁶Department of Surgery, University of Turku, Turku, Finland

⁷Division of Visceral Surgery, Department of General Surgery, Vienna Medical University, Vienna, Austria

*Correspondence to: Ricardo V. Cohen, The Centre for Obesity and Diabetes, Hospital Alemao Oswaldo Cruz, São Paulo, CEP: 01327-001, Brazil (e-mail: ricardo.cohen@haoc.com.br)

Members of the International Consensus on the Role of Obesity Management Medications in the Context of Metabolic Bariatric Surgery study and are listed under the heading Collaborators.



BJS, 2024, znae284
<https://doi.org/10.1093/bjs/znae284>
 Cutting Edge Review

Role of obesity-management medications before and after metabolic bariatric surgery: a systematic review

Ricardo V. Cohen^{1,*} , Ji Yeon Park^{2,3}, Gerhard Prager⁴, Marco Bueter⁵, Carel W. le Roux⁶ , Chetan Parmar⁷, Mohammad Kermansaravi⁸ , Paulina Salminen^{9,10}  and Alexander D. Miras¹¹

¹The Center for Obesity and Diabetes, Hospital Alemao Oswaldo Cruz, Sao Paulo, Brazil

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⁵Department of Surgery and Transplantation, University Hospital Zurich, University of Zurich, Zurich, Switzerland

⁶Diabetes Complications Research Centre, University College Dublin, Dublin, Ireland

⁷Bariatric and Emergency Surgery, Whittington Hospital, University College London, London, UK

⁸Minimally Invasive and Bariatric Surgery, Hazrate Rasool Akram Hospital at Iran University of Medical Sciences, Tehran, Iran

⁹Department of Surgery, University of Turku, Turku, Finland

¹⁰Division of Digestive Surgery and Urology, Turku University Hospital, Turku, Finland

¹¹School of Medicine, Ulster University, Derry, UK

*Correspondence to: Ricardo V. Cohen, The Center for Obesity and Diabetes, Hospital Alemao Oswaldo Cruz, Rua Treze de Maio, 1.815—Torre D—1° Andar—Bela Vista—CEP, São Paulo, 01327-001, Brazil (e-mail: ricardo.cohen@haoc.com.br)

1. Use of OMMs before MBS

Perioperative risk reduction

Increase proportion of those achieving weight loss goals and obesity complication improvement/remission after MBS

2. Use of OMMs after MBS

Optimizing outcome

Use for recurrent weight gain or SubOptimal initial Clinical Response (SOCR)

Association of Preoperative Body Weight and Weight Loss With Risk of Death After Bariatric Surgery

Yangbo Sun, MD, PhD; Buyun Liu, MD, PhD; Jessica K. Smith, MD; Marcelo L. G. Correia, MD, PhD; Dana L. Jones, DNP; Zhanyong Zhu, MD; Adeyinka Taiwo, MD; Lisa L. Morselli, MD, PhD; Katie Robinson, PhD; Alexander A. Hart, MPH; Linda G. Snetselaar, PhD; Wei Bao, MD, PhD

Reduction in 30 day mortality:

0%–5.0%:	24%
5.0%–9.9%:	31%
>10.0%:	42%

Preoperative weight loss is linked to improved mortality and leaks following elective bariatric surgery: an analysis of 548,597 patients from 2015–2018

Valentin Mocanu, M.D.*, Gabriel Marcil, M.D., Jerry T. Dang, M.D.,
Daniel W. Birch, M.D., M.Sc., Noah J. Switzer, M.D., M.P.H.,
Shahzeer Karmali, M.D., M.P.H.

Department of Surgery, University of Alberta, Edmonton, Alberta, Canada

Received 2 March 2021; accepted 29 June 2021

When compared to individuals who did not lose weight prior to surgery, **>10% TBWL preoperatively** :

-30% decreased odds of leaks

-40% decrease in odds of mortality

Mocanu V. et al. SOARD-(2021) 1–8

Sun Y, Liu B, Smith JK, et al. *JAMA NetwOpen*.2020;3(5):e204803

1. Statements on Use of OMMs **before** MBS:

	Grade	Consensus (%)	Nr.of rounds	Nr.of total votes
There is insufficient high-level evidence to recommend the routine use of OMMs for weight loss before MBS	A+	100	2	37

Neoadjuvant Semaglutide, Bariatric Surgery Weight Loss, and Overall Outcomes

Vasundhara Mathur, MD¹; Katherine Wasden, BA¹; Thomas H. Shin, MD, PhD¹; et al

NEOADJUVANT semaglutide: NO benefit in weight loss and remission of obesity complications

NO difference in complication rate (cave: median BMI 42.6kg/m²)

NO association between patient responses to semaglutide and surgery



Jama Surgery, online March 5 2025

1. Statements on Use of OMMs **before** MBS:

	Grade	Consensus (%)	Nr.of rounds	Nr.of total votes
The decision to use OMMs before MBS should be personalized to determine the most appropriate strategy for each patient's circumstances	A+	100	2	38

Special Circumstances can be:

BMI > 60 kg/m²,
Cirrhosis/Huge Livers
heart failure/progressed CVD
end-stage kidney disease

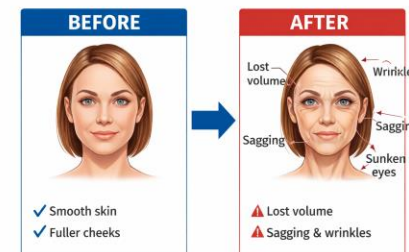


1. Statements on Use of OMMs before MBS:

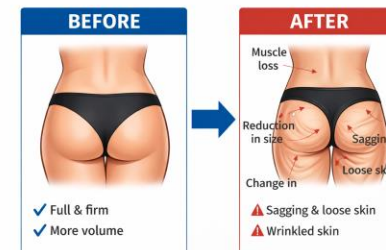
	Grade	Consensus (%)	Nr.of rounds	Nr.of total votes
Healthy nutrition, including adequate protein consumption, as well as resistance exercise, is recommended for those treated with OMMs prior to MBS	A	97	2	36

New OMMs lead to greater weight loss:

Deficiencies
Lean Body Mass loss



„Ozempic – Face“



„Ozempic – Butt“

1. Use of OMMs before MBS

Perioperative risk reduction

Increase proportion of those achieving weight loss goals and comorbidity resolution after surgery

2. Use of OMMs **after** MBS

Optimizing outcome
Use for recurrent weight gain

2. Statements on Use of OMMs **after** MBS:

	Grade	Consensus (%)	Nr.of rounds	Nr.of total votes
Treatments with OMMs after MBS should generally be withheld until the achievement of weight plateau unless there is a compelling clinical need for earlier initiation	A+	100	3	33

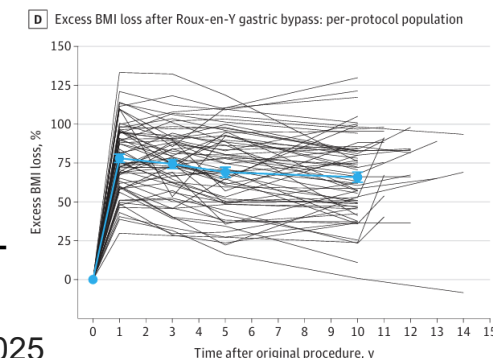
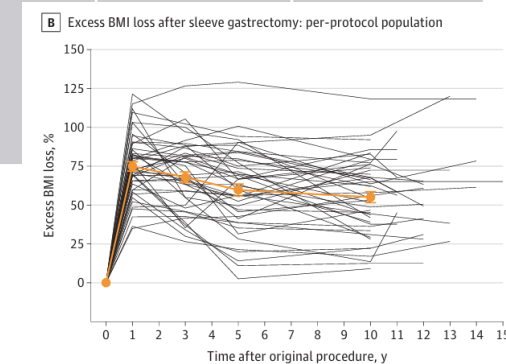
Differentiation of the effect of MBS and OMMs

2. Statements on Use of OMMs **after** MBS:

	Grade	Consensus (%)	Nr.of rounds	Nr.of total votes
Treatments with OMMs after MBS should generally be withheld until the achievement of weight plateau unless there is a compelling clinical need for earlier initiation	A+	100	3	33

Rationale: Adopting a **multimodal approach to care**, including combining OMMs with MBS

Suboptimal Initial Clinical Response
Recurrent weight gain



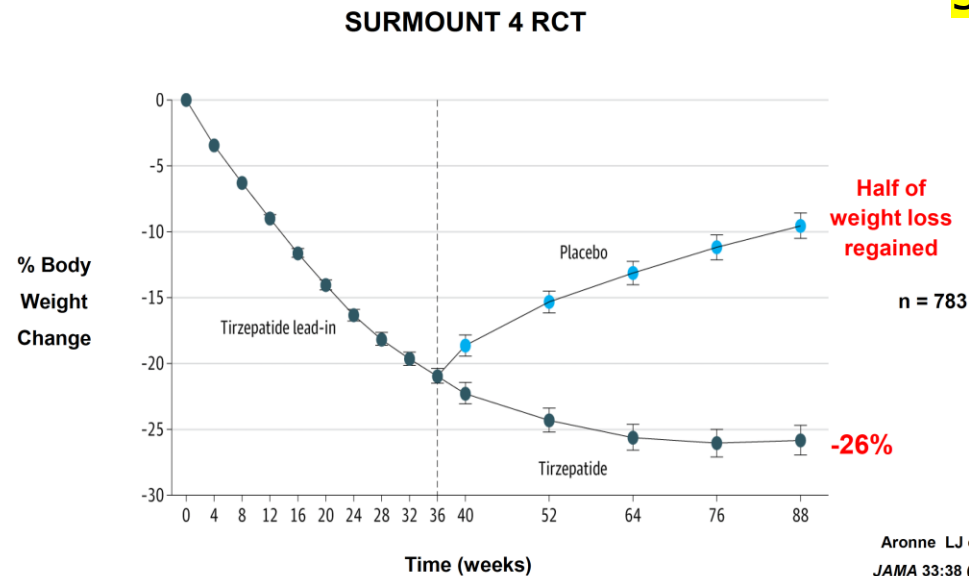
Spaghetti Plot: SM-BOSS Trial 10a

Kraljevic M. JAMA Surg. 2025

2. Statements on Use of OMMs **after** MBS:

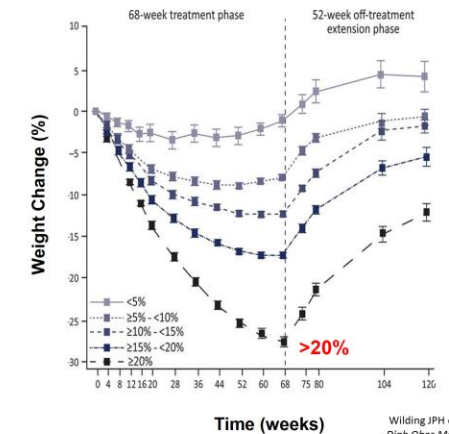
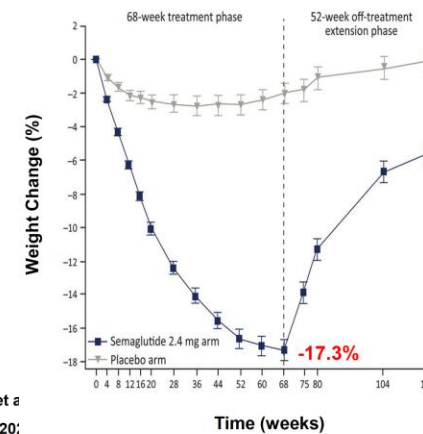
	Grade	Consensus (%)	Nr.of rounds	Nr.of total votes
For patients requiring OMMs to maintain a healthy weight after MBS, the ongoing use of the medications is likely needed	A	94	2	36

Stopping OMMs --> recurrent weight gain



Aronne LJ et al
JAMA 33:38 (2022)

STEP 1 Extension Trial (Semaglutide)



Wilding JPH et al
Diab Obes Metab
24:1553 (2022)

Weight Regain After Liraglutide, Semaglutide or Tirzepatide Interruption: A Narrative Review of Randomized Studies

[Massimo Quarenghi](#)^{1,2,*}, [Silvia Capelli](#)², [Giulia Galligani](#)², [Arianna Giana](#)¹, [Giorgia Preatoni](#)^{1,2}, [Rosamaria Turri](#)
[Quarenghi](#)³

13 articles were included in the analysis

The analysis showed a rapid regain of weight after cessation of therapy, regardless of the duration of the treatment with GLP-1 RA or GIP/GLP-1 RA.

J Clin Med 2025 May 28;14(11):3791

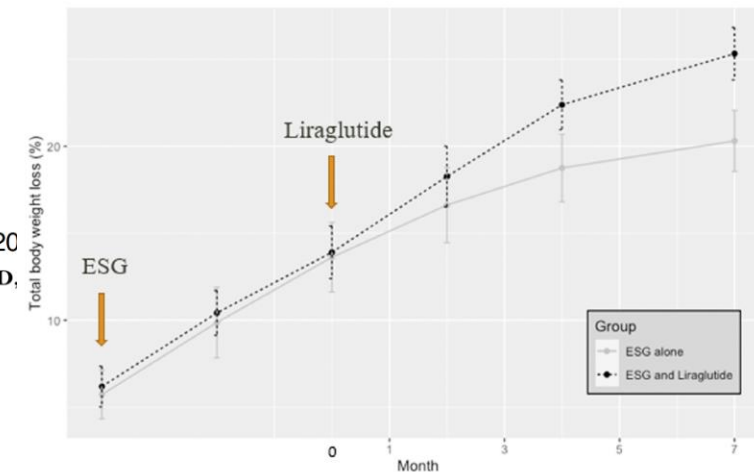
2. Statements on Use of OMMs **after** MBS:

	Grade	Consensus (%)	Nr.of rounds	Nr.of total votes
The benefit of endoscopic therapies for obesity can be enhanced by combination with OMMs	C	74	2	35

Endoscopic sleeve gastroplasty plus liraglutide versus endoscopic sleeve gastroplasty alone for weight loss

Dilhana Badurdeen, MD,¹ Anna Carolina Hoff, MD,² Abdellah Hedjoudje, MD, MSc,¹ Atif Adam, PhD,¹ Mohamad I. Itani, MD,¹ Jad Farha, MD,¹ Shahem Abbarh, MBBS,¹ Anthony N. Kalloo, MD,¹ Mouen A. Khashab, MD,¹ Vikesh K. Singh, MD, MSc,¹ Andrea Oberbach, MD, PhD, MPH,¹ Manoel Galvao Neto, MD,³ Sergio Barrichello, MD,⁴ Vivek Kumbhari, MD, PhD¹

Baltimore, Maryland, USA; São José dos Campos, São Paulo, Brazil



Badurdeen D et al. *Gastrointest Endosc.* 2021 Jun; 93(6): 1316-1324

Study	Design / setting	N	Medication strategy	Timing	Main weight-loss outcome	Comment
Badurdeen et al., GIE 2021	Retrospective matched cohort	52	ESG + liraglutide vs ESG alone	Liraglutide started 5 months after ESG	%TBWL at 12 mo: 24.7% vs 20.5% , p<0.001	First key ESG + GLP-1 study; improved body-fat reduction too. (ScienceDirect)
Hoff et al., EC Gastroenterology 2022	Prospective randomized double-blind placebo-controlled study	58 completed	ESG + semaglutide vs ESG + placebo	Semaglutide started within 1 month after ESG	%TBWL at 12 mo: 25.2% vs 18.6% , p<0.001	Important but published in a less prominent journal; also reported lower body fat and HbA1c. (ECronicon)
Jirapinyo et al., Endosc Int Open 2024	Retrospective review of prospectively collected data	208	Endoscopic gastric remodeling + GLP-1RA or other AOM	AOM before/after EGR, within or after 6 months	12-mo %TWL: EGR alone 17.3% ; EGR+GLP-1RA 23.7% , p=0.04	Includes ESG-like endoscopic gastric remodeling; not pure ESG-only terminology. (Frontiers)
Gala et al., Obesity Pillars 2024	Multicenter US retrospective analysis	1,506	ESG alone vs ESG + GLP-1RA vs ESG + other AOMs	AOM started within 2 years after ESG	24-mo %TWL: ESG alone 15.4% ; ESG+GLP-1RA 16.7% ; ESG+other AOM 14.2%	Largest real-world dataset; effect less striking, likely due to heterogeneity/timing/adherence. (Frontiers)
Chung et al., Clinical Endoscopy 2025	Retrospective study	18	ESG + semaglutide vs ESG alone	Semaglutide started 2 weeks after ESG	6-mo %TWL: 20.27% vs 15.32% , p=0.02	Small but directly supports early semaglutide add-on. (Frontiers)
Lahooti et al., DDW 2025 abstract	Conference abstract	not fully accessible in indexed text	ESG + GLP-1RA sequencing	GLP-1RA before vs after ESG	Reported that sequence did not significantly affect outcomes	Abstract-level only; useful as emerging evidence, not definitive. (eposters.ddw.org)

3. Recurrent Weight Gain:

	Grade	Consensus (%)	Nr.of rounds	Nr.of total votes
For patients with recurrent weight gain, treatment with available OMMs should be considered prior to revisional surgery.	A	92	1	38

No long term Data on efficiency of revisional MBS

Revisional MBS = higher morbidity

Surgical Endoscopy (2023) 37:4613–4622

Excellent safety profile for OMMs

(With Liraglutide and Semaglutide 50-75% of regained weight lost)



Glucagon-Like Peptide-1 Receptor Agonists for the Treatment of Suboptimal Initial Clinical Response and Weight Gain Recurrence After Bariatric Surgery: a Systematic Review and Meta-analysis

Yuntao Nie¹ · Yiran Zhang² · Baoyin Liu¹ · Hua Meng¹

19 studies including 1290 patients

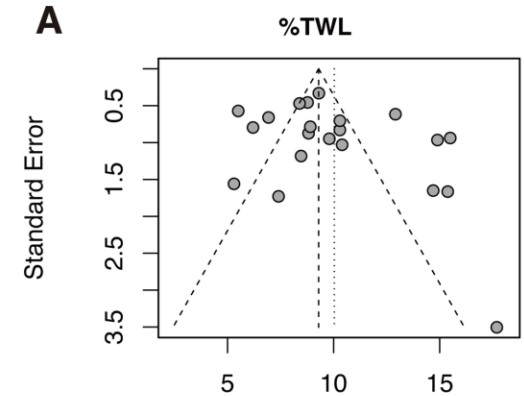
After at least 3 months of treatment, the pooled %TWL was

9.24% for liraglutide

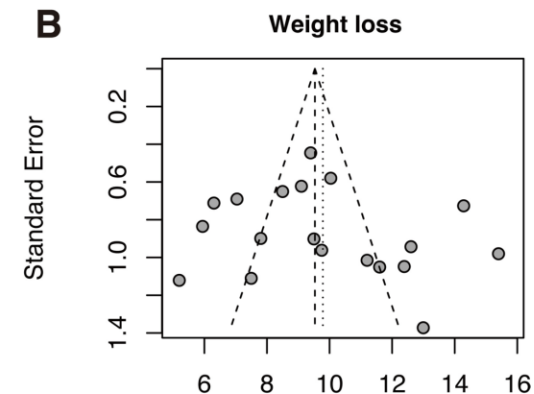
11.38% for semaglutide

15.50% for tirzepatide

GLP-1 RAs are associated with meaningful weight loss in patients with SOCR and RWG after MBS



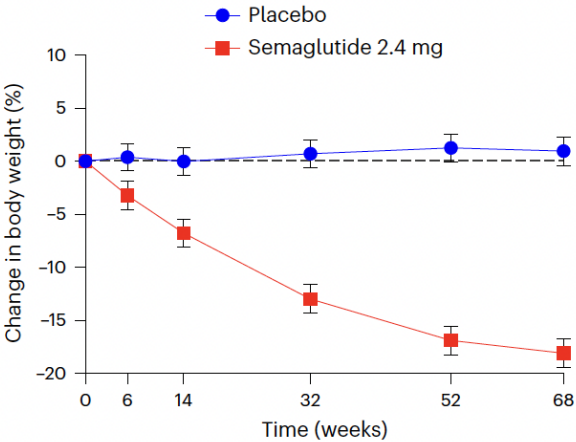
Egger's test: $p = 0.206$ Proportion



Egger's test: $p = 0.451$ Proportion

Obesity Surgery (2025) 35:808–822

Semaglutide versus placebo in individuals with poor weight loss after bariatric surgery: a double-blinded, randomized, placebo-controlled trial



„...68 weeks of semaglutide 2.4 mg weekly may rival weight loss results from revisional MBS“

Trial Design and Key Results

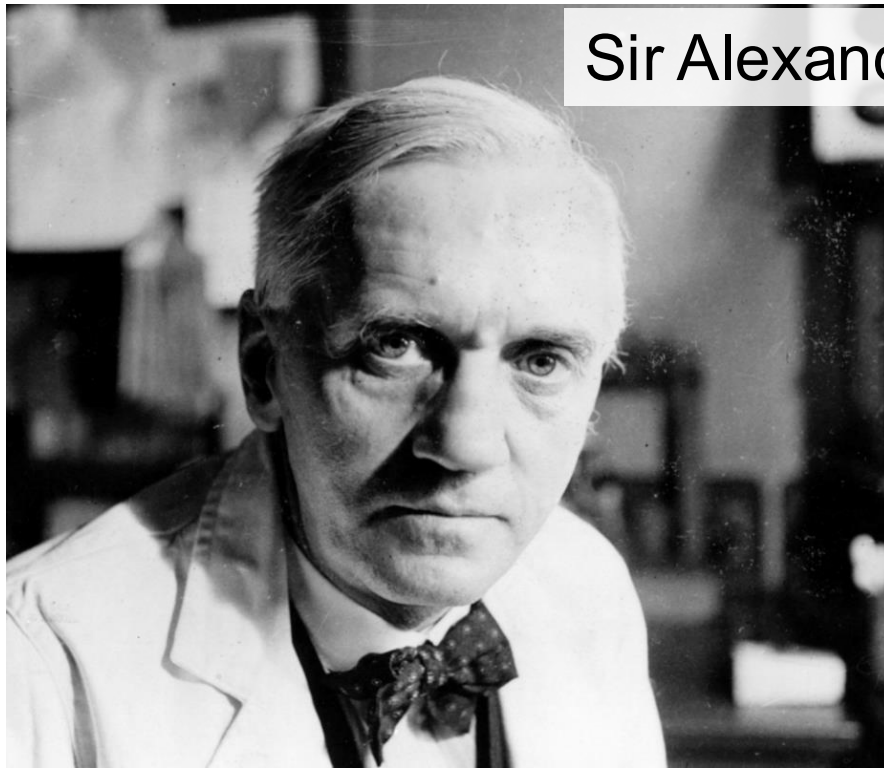
Feature	Result / Value
Study Type	Double-blinded, randomized (1:1), placebo-controlled trial
Population	Adults ≥1 year post RYGB or SG with <20% TWL
Sample Size	70 randomized (35 semaglutide, 35 placebo); 63 in intention-to-treat analysis
Intervention	Semaglutide 2.4 mg weekly + lifestyle intervention (500-kcal daily deficit)
Primary Endpoint	Percentage weight loss at 68 weeks
Key Result	-18.0% weight loss with semaglutide vs. +0.4% with placebo

3. Future Perspectives:

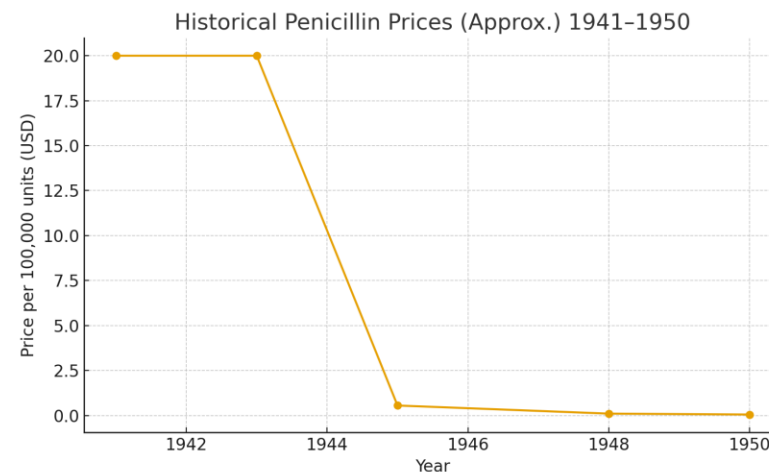
	Grade	Consensus (%)	Nr.of rounds	Nr.of total votes
People living with obesity need access to all evidence-based treatments , including MBS and OMMs, as part of standard healthcare services	A	95	1	38

Policy makers:

Access to treatment
Costs
Availability
Willingness to pay



Sir Alexander Fleming



1941 Penicillin was one of the most expensive drugs ever

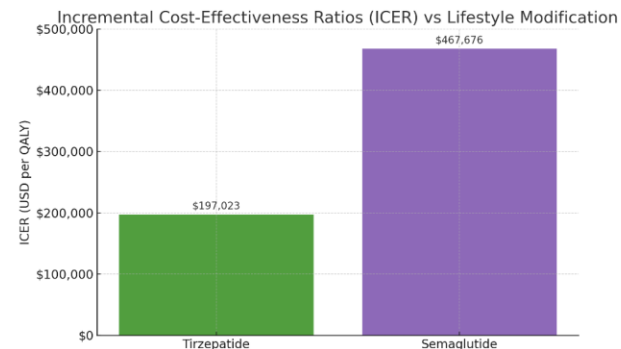
5 years later price dropped dramatically



Original Investigation

Lifetime Health Effects and Cost-Effectiveness of Tirzepatide and Semaglutide in US Adults

Jennifer H. Hwang, DO; Neda Laiteerapong, MD; Elbert S. Huang, MD; David D. Kim, PhD



ICER
Low (>\$150 000)

Intermediate (\$50 to \$150 000)

High (<\$50 000) value per QALY compared with the alternative



NOVO NORDISK TO CUT OZEMPIC AND WEGOVY LIST PRICES BY UP TO 50% IN 2027

Hwang et al., JAMA Health Forum 2025

Drug	ICER (\$/QALY)	Incremental QALYs vs lifestyle mod	Price cut needed to meet \$100 k/QALY
Tirzepatide	\$197,023	0.35	30.5 % off current net price
Semaglutide	\$467,676	0.25	81.9 % off current net price

...“not Cost-effective at the current net prices“

Hwang et al. JAMA Health 2025



Begin of a new era in obesity treatment

In 10 years from now OMMs will be **effective, cheap and everywhere available**

NEXT-GENERATION OBESITY DRUGS ARE ARRIVING SOON

More than 100 treatments are in development to deliver greater and healthier weight loss. Some should be available in the next few years. **By Elie Dolgin**

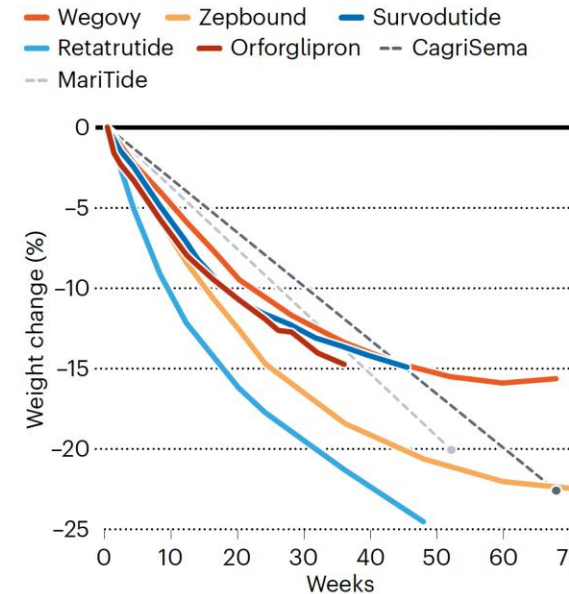
CagriSema (Amylin+Semaglutide)

Bimagrumab (Myostatin inhibitor)

Retatrutide (triple agonist: GLP-1, GIP & Glucagon)

Survodutide (GLP-1 & Glucagon)

....



*Data are from company reports of the most recent trials, with no intermediate data available for CagriSema (cagrilintide and semaglutide) or MariTide (maridebart cagraglutide). Data are not placebo-adjusted.

International consensus position statement on the role of obesity management medications in the context of metabolic bariatric surgery: expert guideline by the International Federation for the Surgery of Obesity and Metabolic Disorders (IFSO)

Ricardo V. Cohen^{1,*} , Luca Busetto² , Randy Levinson³, Carel W. Le Roux⁴, Paulina Salminen^{5,6}  and Gerhard Prager⁷ on behalf of the experts of the International Consensus on the Role of Obesity Management Medications in the Context of Metabolic Bariatric Surgery

¹The Centre for Obesity and Diabetes, Hospital Alemao Oswaldo Cruz, São Paulo, Brazil

²Department of Medicine, University of Padua, Padua, Italy

³Lai Wen Di Consulting, LLC, New York, USA

⁴Diabetes Complications Research Centre, University College Dublin, Dublin, Ireland

⁵Division of Digestive Surgery and Urology, Turku University Hospital, Turku, Finland

⁶Department of Surgery, University of Turku, Turku, Finland

⁷Division of Visceral Surgery, Department of General Surgery, Vienna Medical University, Vienna, Austria

*Correspondence to: Ricardo V. Cohen, The Centre for Obesity and Diabetes, Hospital Alemao Oswaldo Cruz, São Paulo, CEP: 01327-001, Brazil (e-mail: ricardo.cohen@haoc.com.br)

Members of the International Consensus on the Role of Obesity Management Medications in the Context of Metabolic Bariatric Surgery study and are listed under the heading Collaborators.



BJS, 2024, znae284

<https://doi.org/10.1093/bjs/znae284>

Cutting Edge Review

Role of obesity-management medications before and after metabolic bariatric surgery: a systematic review

Ricardo V. Cohen^{1,*} , Ji Yeon Park^{2,3}, Gerhard Prager⁴, Marco Bueter⁵, Carel W. le Roux⁶ , Chetan Parmar⁷, Mohammad Kermansaravi⁸ , Paulina Salminen^{9,10}  and Alexander D. Miras¹¹

¹The Center for Obesity and Diabetes, Hospital Alemao Oswaldo Cruz, Sao Paulo, Brazil

²Department of Surgery, School of Medicine, Kyungpook National University, Daegu, Korea

³Department of Surgery, Kyungpook National University Chilgok Hospital, Daegu, Korea

⁴Division of Visceral Surgery, Department of General Surgery, Vienna Medical University, Vienna, Austria

⁵Department of Surgery and Transplantation, University Hospital Zurich, University of Zurich, Zurich, Switzerland

⁶Diabetes Complications Research Centre, University College Dublin, Dublin, Ireland

⁷Bariatric and Emergency Surgery, Whittington Hospital, University College London, London, UK

⁸Minimally Invasive and Bariatric Surgery, Hazrate Rasool Akram Hospital at Iran University of Medical Sciences, Tehran, Iran

⁹Department of Surgery, University of Turku, Turku, Finland

¹⁰Division of Digestive Surgery and Urology, Turku University Hospital, Turku, Finland

¹¹School of Medicine, Ulster University, Derry, UK

*Correspondence to: Ricardo V. Cohen, The Center for Obesity and Diabetes, Hospital Alemao Oswaldo Cruz, Rua Treze de Maio, 1.815—Torre D—1° Andar—Bela Vista—CEP, São Paulo, 01327-001, Brazil (e-mail: ricardo.cohen@haoc.com.br)

Re-Thinking Obesity

- Obesity definition (Lancet Commission, EASO → BMI)
- Obesity as a **chronic relapsing disease** requires different **ONGOING** interventions (OMMs, Endoscopic, Surgical, etc.)
- **Surgical interventions** have demonstrated long-term durable success
- Comparison with other chronic diseases (diabetes, cancer) – 1st line/2nd/3rd line... Treatment exacerbation



It is NOT “MBS against OMMs” –
it is about developing

MULTIMODAL TREATMENT ALGORITHMS





Reinventing the bariatric wheel: what we know, thought we knew and hope to learn

„Although we have made considerable progress in improving the safety and efficacy of bariatric operations, we still have a lot to learn“.

Keep in mind: Enthusiasm about VBG and LAGB

Evaluation of a procedure: at least sound 5a Fup data!





Obesity is a Chronic, Complex Disease



REVIEW



Preoperative Glucagon-Like Peptide-1 Receptor Agonists and Bariatric Surgery Outcomes: **A Systematic Review**

Ali Esparham¹ · Erfan Sheikhabahaei² · Hengameh Anari Moghadam¹ · Zhamak Khorgami³

11 studies (2 *prospective* and 9 *retrospective*)

Liraglutide < Semaglutide

impact of GLP-1 RAs on MBS outcomes

diabetes-related outcomes

factors related to technical operability

Obesity Surgery (2025) 35:3939–3946



Preoperative Glucagon-Like Peptide-1 Receptor Agonists and Bariatric Surgery Outcomes: A Systematic Review

Ali Esparham¹ · Erfan Sheikhabaei² · Hengameh Anari Moghadam¹ · Zhamak Khorgami³

Preoperative GLP-1 RAs use
enhanced preoperative weight loss
and surgical access (extreme obesity)

- Preoperative GLP-1 RAs were linked to increased postoperative nausea but did not significantly affect major complications and postoperative weight loss.

Obesity Surgery (2025) 35:3939–3946

Neoadjuvant Semaglutide, Bariatric Surgery Weight Loss, and Overall Outcomes

Vasundhara Mathur, MD¹; Katherine Wasden, BA¹; Thomas H. Shin, MD, PhD¹; et al

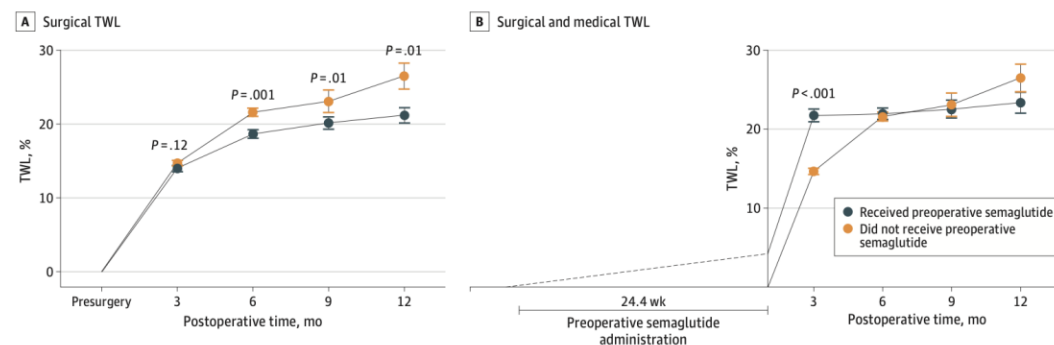
NEOADJUVANT semaglutide:

NO benefit in weight loss and remission of obesity complications

NO difference in complication rate (cave: median BMI 42.6kg/m²)

NO association between patient responses to semaglutide and surgery

Figure. Surgical and Multimodality Total Weight Loss (TWL) in Patients Who Received vs Did Not Receive Preoperative Semaglutide



A, Surgical TWL was calculated using weight immediately prior to surgery as the baseline. B, In patients who received preoperative semaglutide, multimodality TWL was calculated using weight at the time of semaglutide initiation as the baseline.

Jama Surgery, online March 5 2025

RESEARCH



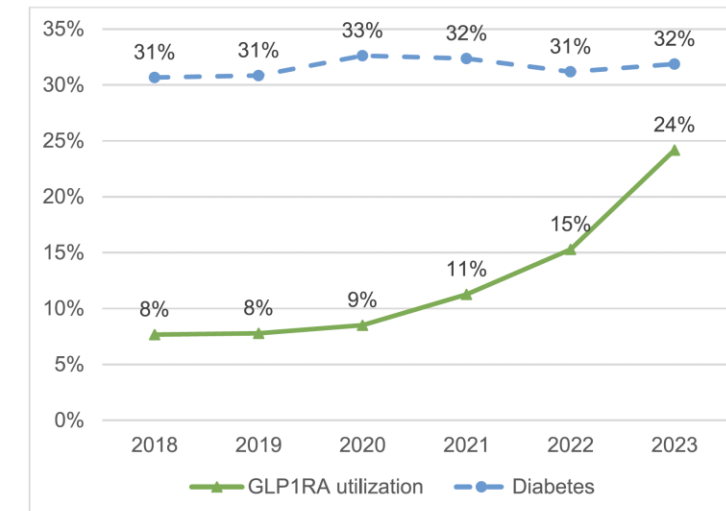
Preoperative Glucagon-Like Peptide-1 Receptor Agonist Utilization and Association with Bariatric Surgery Outcomes

Qais AbuHasan¹ · Luke M. Funk^{2,3} · Jane L. Holl^{1,4} · Claire Draucker⁵ · Shaun Grannis⁶ · Karl Y. Bilimoria¹ · Dimitrios Stefanidis¹ · Tarik K. Yuce¹

3 US-centers; 2018-2023; 2169 patients

Pre-op GLP-1 RA use (within 1 year before MBS) tripled over time

no increase in 30-day complications
no difference in 1-year %TWL vs. no pre-op GLP-1



Obesity Surgery (2025) 35:556–560

Trends in Metabolic and Bariatric Surgery Use During the GLP-1 Receptor Agonist Era

Stefanie C. Rohde, MD¹; Grace F. Chao, MD, MSc²; Mahmoud Abdel-Rasoul, MS, MPH³; et al

Developing evidence-based, patient-centered, multimodal pathways that integrate pharmacological and surgical approaches is essential because **MBS remains the most effective and durable treatment** for severe obesity, and reduced use may delay definitive care for advanced metabolic disease

Published Online: March 4, 2026. doi:10.1001/jamasurg.2026.0049

GLP-1 versus Metabolic/Bariatric Surgery (MBS)

REVIEW OPEN ACCESS

Obesity Biology and Integrated Physiology

Comparative Efficacy of Metabolic/Bariatric Surgery Versus GLP-1 Receptor Agonists: A Network Meta-Analysis of Randomized Controlled Trials

Lucas Sabatella¹ | Patricia M. Ortega² | Victor Valentí Azcárate¹ | Fernando Rotellar Sastre¹ | Adriana Uriz Pagola¹ | Ahmed Ahmed² | Sanjay Purkayastha² | Carlota Tuero Ojanguren¹ | Nuria Blanco Asensio¹ | Manuel F. Landecho³

¹Obesity Unit, Department of General Surgery, Clínica Universidad de Navarra, University of Navarra, Pamplona, Spain | ²Department of Surgery and Cancer, Imperial Weight Centre, Imperial College Healthcare NHS Trust, London, UK | ³Obesity Unit, Department of Internal Medicine, Clínica Universidad de Navarra, University of Navarra, Pamplona, Spain

Network-Metaanalysis of RCT's

30 RCT's and 20.015 patients; variable Follow-up

MBS and GLP1 **good weight loss** and **positive metabolic Effects**

MBS is superior to GLP1-RA treatment

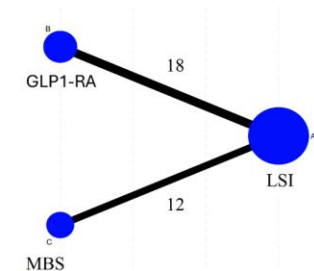
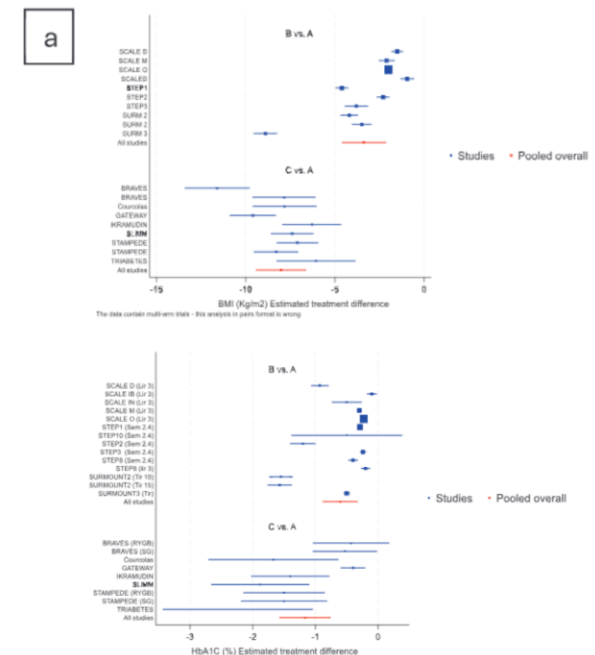


FIGURE 2 | Network map of available direct comparisons between treatments. GLP1-RA, GLP-1 receptor agonists; LSI, lifestyle intervention; MBS, metabolic/bariatric surgery.



Sabatella L. et al Obesity (Silver Spring). 2025

Neoadjuvant Semaglutide, Bariatric Surgery Weight Loss, and Overall Outcomes

Vasundhara Mathur, MD¹; Katherine Wasden, BA¹; Thomas H. Shin, MD, PhD¹; et al

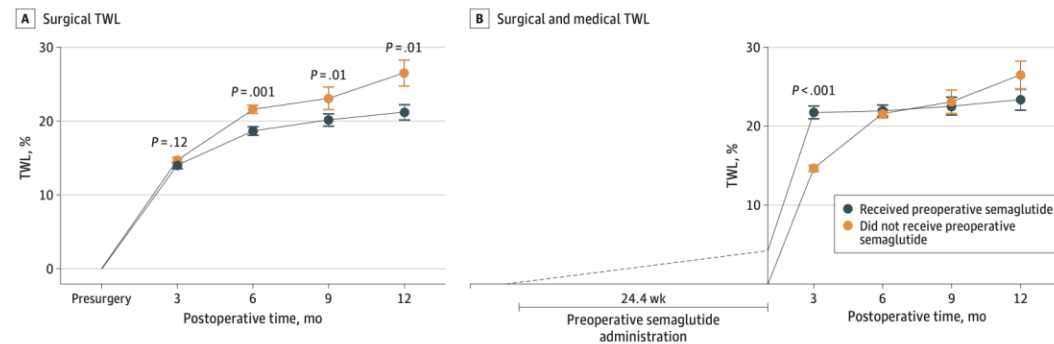
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Jama Surgery, online March 5 2025







Trends in Metabolic and Bariatric Surgery Use During the GLP-1 Receptor Agonist Era

Stefanie C. Rohde, MD¹; Grace F. Chao, MD, MSc²; Mahmoud Abdel-Rasoul, MS, MPH³; et al

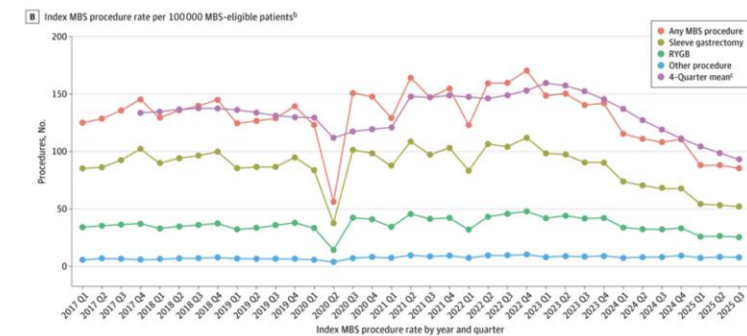
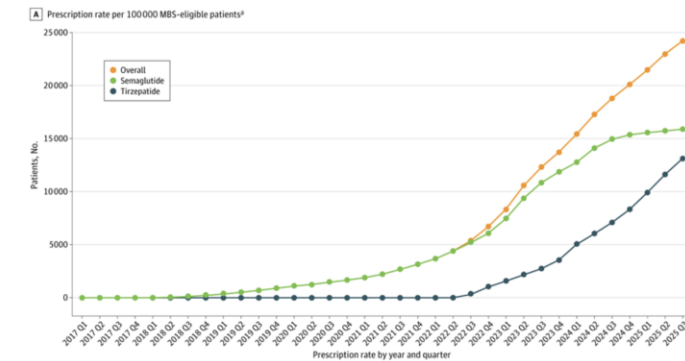
MBS-eligible cohort included 31 684 807 patients

Among MBS-eligible patients, prescription prevalence rates (**Semaglutide, Tirzepatide**) increased rapidly from 0.22% in quarter 4 of 2018 to **24.17% in quarter 3 of 2025**

46.4% decrease in overall MBS use in eligible patients over 3 years
Decrease more pronounced for SG than RYGB

MBS declined least in patients with a BMI of 55 or greater (decreased by 35.0% vs by 40.7%-49.8% for lower BMI categories)

Figure 1. Line Graphs Depicting Prescription Rates and Metabolic and Bariatric Surgery (MBS) Rates in MBS-Eligible Patients



Published Online: **March 4, 2026**. doi:10.1001/jamasurg.2026.0049

