
# OBESITA' DI PRIMA CLASSE: QUALE TRATTAMENTO?

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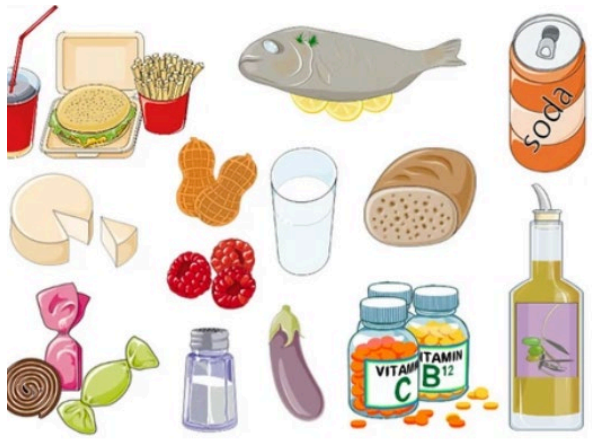
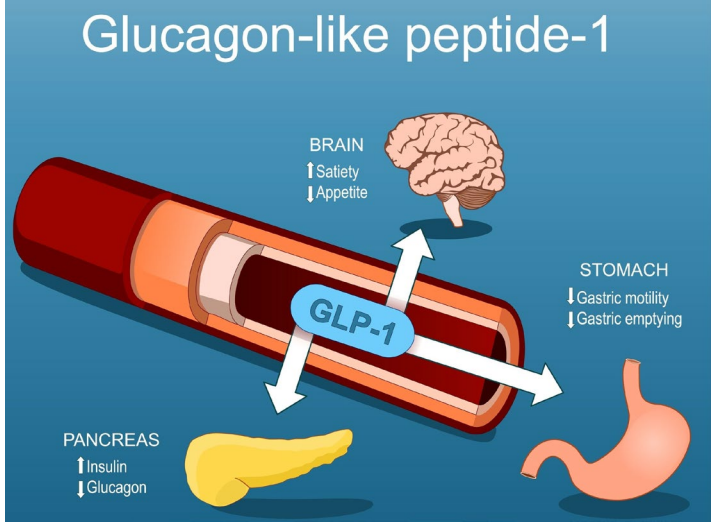



Nutrition

Other lifestyle habits




# Humans against Obesity: Who Will Win?

**Benjamin Caballero**

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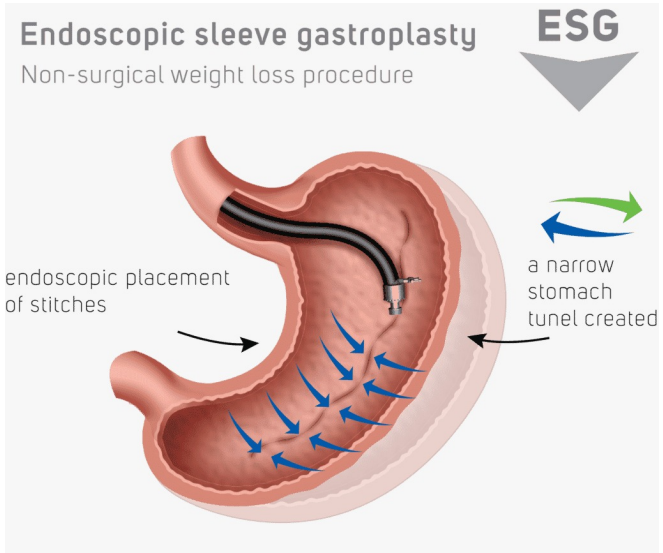
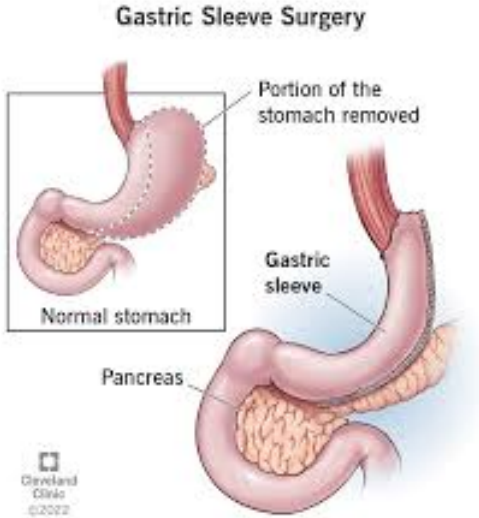
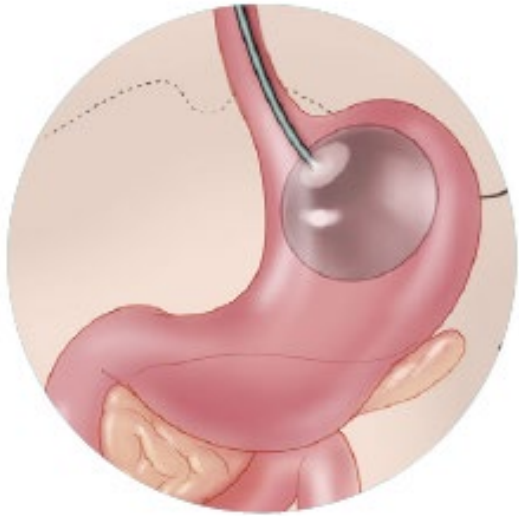
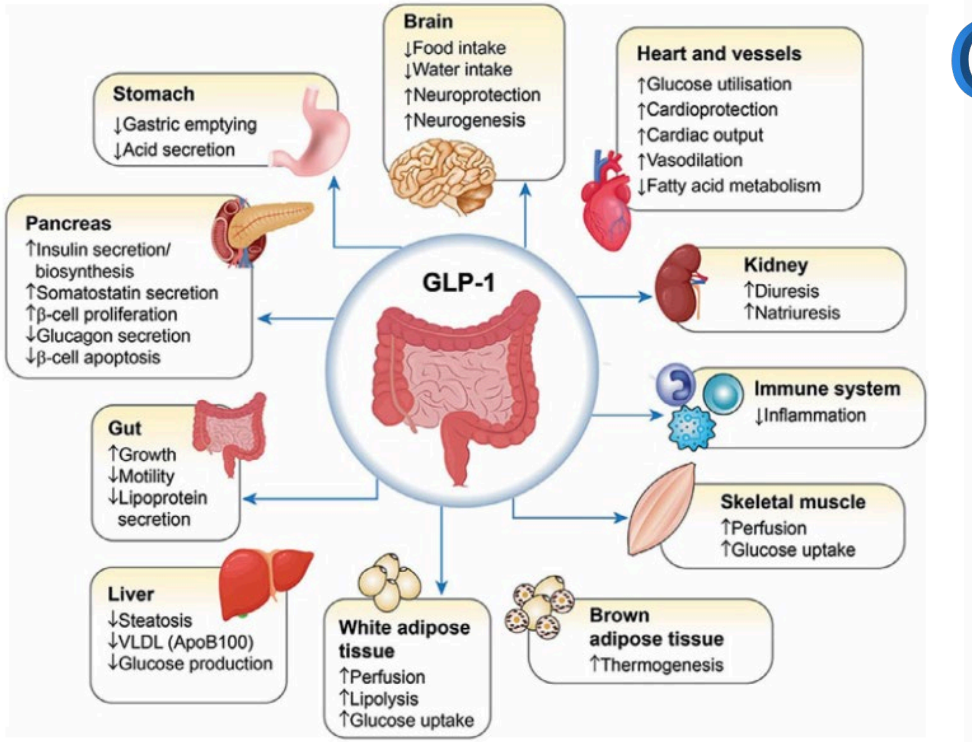


# GLP-1 receptor-agonist




The NEW ENGLAND JOURNAL of MEDICINE

ORIGINAL ARTICLE

## A Randomized, Controlled Trial of 3.0 mg of Liraglutide in Weight Management

**Authors**: Xavier Pi-Sunyer, M.D., Arne Astrup, M.D., D.M.Sc., Ken Fujioka, M.D., Frank Greenway, M.D., Alfredo Halpern, M.D., Michel Krempf, M.D., Ph.D., David C.W. Lau, M.D., Ph.D., Carel W. le Roux, F.R.C.P., Ph.D., Rafael Violante Ortiz, M.D., Christine Bjørn Jensen, M.D., Ph.D., and John P.H. Wilding, D.M., for the SCALE Obesity and Prediabetes NN8022-1839 Study Group* Author Info & Affiliations

Published July 2, 2015 | N Engl J Med 2015;373:11-22 | DOI: 10.1056/NEJMoa1411892
VOL. 373 NO. 1 | Copyright © 2015

The NEW ENGLAND JOURNAL of MEDICINE

ORIGINAL ARTICLE

## Once-Weekly Semaglutide in Adults with Overweight or Obesity

**Authors**: John P.H. Wilding, D.M., Rachel L. Batterham, M.B., B.S., Ph.D., Salvatore Calanna, Ph.D., Melanie Davies, M.D., Luc F. Van Gaal, M.D., Ph.D., Ildiko Lingvay, M.D., M.P.H., M.S.C.S., Barbara M. McGowan, M.D., Ph.D., +7, for the STEP 1 Study Group* Author Info & Affiliations

Published February 10, 2021 | N Engl J Med 2021;384:989-1002 | DOI: 10.1056/NEJMoa2032183
VOL. 384 NO. 11 | Copyright © 2021

**Indication:**

Chronic weight management in adults with:

**Obesity** (BMI ≥30 kg/m²)

**Overweight** (BMI ≥27 kg/m²) with at least one weight-related comorbidity (e.g., type 2 diabetes, hypertension, dyslipidemia)

**Mechanism of Action:**

- GLP-1 receptor agonist that:
- Stimulates insulin secretion in a glucose-dependent manner
- Inhibits glucagon secretion
- Delays gastric emptying
- Reduces appetite, contributing to weight loss

# GLP-1 receptor-agonist

The NEW ENGLAND JOURNAL of MEDICINE

ORIGINAL ARTICLE

## Tirzepatide Once Weekly for the Treatment of Obesity

**Authors**: Ania M. Jastreboff, M.D., Ph.D., Louis J. Aronne, M.D., Nadia N. Ahmad, M.D., M.P.H., Sean Wharton, M.D., Pharm.D., Lisa Connery, M.D., Breno Alves, M.D., Arihiro Kiyosue, M.D., Ph.D., Shuyu Zhang, M.S., Bing Liu, Ph.D., Mathijs C. Bunck, M.D., Ph.D., and Adam Stefanski, M.D., Ph.D., for the SURMOUNT-1 Investigators* Author Info & Affiliations

**Published June 4, 2022 | N Engl J Med 2022;387:205-216 | DOI: 10.1056/NEJMoa2206038**
VOL. 387 NO. 3 | Copyright © 2022

**Dual Agonist of the Receptors:**

**GIP (Gastric Inhibitory Polypeptide):**

- Increases insulin sensitivity
- Acts synergistically with GLP-1 for glycemic control

**GLP-1 (Glucagon-Like Peptide-1):**

- Stimulates insulin secretion (glucose-dependent)
- Inhibits glucagon secretion
- Delays gastric emptying
- Reduces appetite

The NEW ENGLAND JOURNAL of MEDICINE

ORIGINAL ARTICLE

## Triple–Hormone-Receptor Agonist Retatrutide for Obesity — A Phase 2 Trial

**Authors**: Ania M. Jastreboff, M.D., Ph.D. , Lee M. Kaplan, M.D., Ph.D., Juan P. Frías, M.D. , Qiwei Wu, Ph.D., Yu Du, Ph.D., Sirel Gurbuz, M.D., Tamer Coskun, M.D., Ph.D., Axel Haupt, M.D., Ph.D., Zvonko Milicevic, M.D., and Mark L. Hartman, M.D., for the Retatrutide Phase 2 Obesity Trial Investigators* Author Info & Affiliations

**Published June 26, 2023 | N Engl J Med 2023;389:514-526 | DOI: 10.1056/NEJMoa2301972**
VOL. 389 NO. 6 | Copyright © 2023

**GLP-1 (Glucagon-Like Peptide-1):**

Stimulates insulin secretion, inhibits glucagon secretion, and reduces appetite, contributing to weight loss.

**GIP (Gastric Inhibitory Polypeptide):**

Another incretin hormone that stimulates insulin secretion and may improve glycemic control.

**Glucagon:**

Although it typically acts to increase blood glucose levels, retatrutide modulates glucagon's effects in a way that supports weight management.

Diabetes Care
American Diabetes Association

# Efficacy of GLP-1 Receptor Agonists on Weight Loss, BMI, and Waist Circumference for Patients With Obesity or Overweight: A Systematic Review, Meta-analysis, and Meta-regression of 47 Randomized Controlled Trials

Hon Jen Wong, Bryan Sim, Yao Hao Teo, Yao Neng Teo, Mark Y. Chan, Leonard L.L. Yeo, Pei Chia Eng, Benjamin Y.Q. Tan, Naveed Sattar, Mayank Dalakoti, and Ching-Hui Sia

*Diabetes Care 2025;48(2):292–300 | https://doi.org/10.2337/dc24-1678*

A **meta-analysis of 47 randomized controlled trials (RCTs)** including **23,244 participants** with overweight or obesity was conducted. Compared to placebo, **GLP-1 receptor agonists (GLP-1 RAs)** resulted in:

- **Average weight loss: –4.57 kg** (95% CI –5.35 to –3.78),
- **BMI reduction: –2.07 kg/m²** (95% CI –2.53 to –1.62),
- **Waist circumference reduction: –4.55 cm** (95% CI –5.72 to –3.38).

## CONCLUSIONS

We performed a meta-analysis and meta-regression on the older and latest GLP-1 RAs. GLP-1 RAs showed significant decreases in weight, BMI, and waist circumference, and the magnitude of effect may be greater in individuals without diabetes compared with individuals with diabetes. Furthermore, oral GLP-1 RAs have comparable efficacies and could offer better patient compliance.

Guideline

Thieme

# American Society for Gastrointestinal Endoscopy–European Society of Gastrointestinal Endoscopy guideline on primary endoscopic bariatric and metabolic therapies for adults with obesity

Authors
Pichamol Jirapinyo[1,‡], Alia Hadefi[2,‡], Christopher C. Thompson[1], Árpád V. Patai[3], Rahul Pannala[4], Stefan K. Goelder[5], Vladimir Kushnir[6], Marc Barthet[7], Caroline M. Apovian[8], Ivo Boskoski[9], Christopher G. Chapman[10], Paul Davidson[11], Gianfranco Donatelli[12], Vivek Kumbhari[13], Bu Hayee[14], Janelle Esker[15], Tomas Hucl[16], Aurora D. Pryor[17], Roberta Maselli[18], Allison R. Schulman[19], Francois Pattou[20], Shira Zelber-Sagi[21], Paul A. Bain[22], Valérie Durieux[23], Konstantinos Triantafyllou[24], Nirav Thosani[25], Vincent Huberty[2,*], Shelby Sullivan[15,*]

## Expanded Indications

The guidelines recommend the use of **EBMTs** in combination with lifestyle modification for patients with:

- **BMI ≥ 30 kg/m²**, and also
- **BMI 27–29.9 kg/m²** if they have at least one obesity-related comorbidity.

## Recommended Techniques

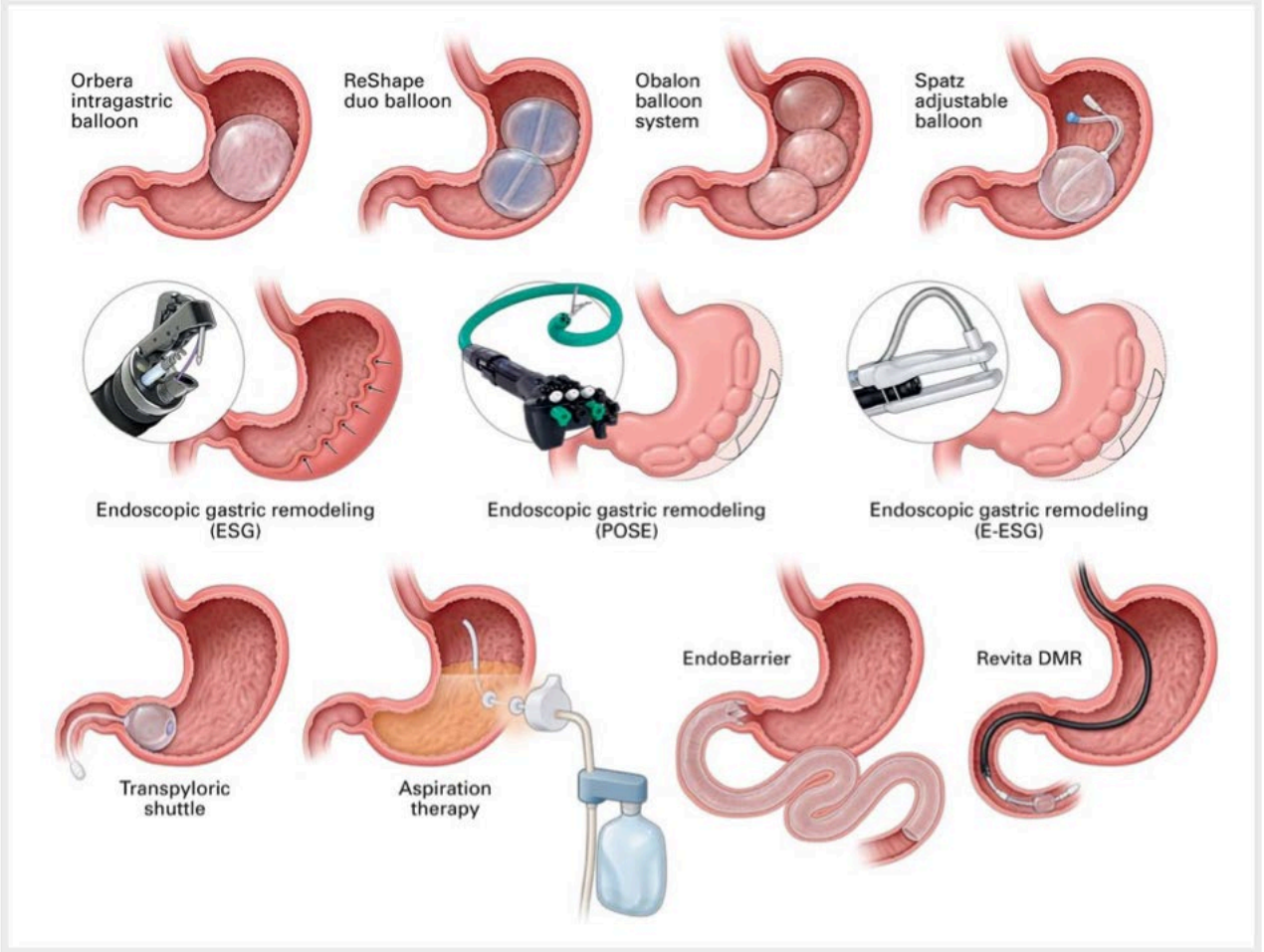
The main endoscopic interventions supported include:

- **Intragastric balloons (IGBs)**,
- **Endoscopic gastric remodeling procedures** (e.g., endoscopic sleeve gastroplasty).

## Multidisciplinary Approach Required

These therapies must always be combined with:

- Lifestyle interventions,
- Nutritional counseling,
- Physical activity,
- Multidisciplinary follow-up care to optimize and sustain weight loss outcomes.




▶ **Fig. 1** Gastric and small bowel endoscopic bariatric and metabolic therapies. ESG: endoscopic sleeve gastroplasty, POSE: primary obesity surgery endoluminal, DMR: duodenal mucosal resurfacing.

Journal of Visceral Surgery 162 (2025) 71–78

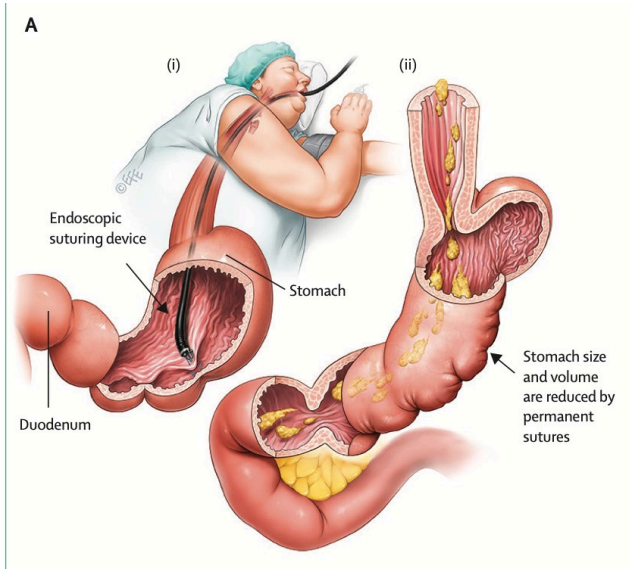
Available online at ScienceDirect www.sciencedirect.com

Elsevier Masson France EM|consulte www.em-consulte.com/en

RECOMMENDATIONS

# Position statement and guidelines about Endoscopic Sleeve Gastroplasty (ESG) also known as ''Endo-sleeve''☆

Clément Baratte[a], Hugues Sebbag[b], Laurent Arnalsteen[c], Thomas Auguste[d], Marie-Cécile Blanchet[e], Salomon Benchetrit[f], Adel Abou-Mrad[g], Fabian Reche[h], Laurent Genser[i], Robert Caiazzo[j], Andrea Lazzati[k], Jean-Marc Catheline[l], Guillaume Pourcher[m,n], Pierre Leyre[o], Sandrine Kamoun-Zana[p], Fabien Stenard[q], Thibaut Coste[r], Adrien Sterkers[s], Claire Blanchard[t], Tigran Poghosyan[a], François Pattou[u,*], Silvana Perretta[v], Maud Robert[w,x]




**Indications:**
Recommended for patients with class I and II obesity, with a BMI between 30 and 40.

**Efficacy:**
Total body weight loss of 16–17% and excess weight loss between 60% and 67% at 18–24 months.

**Safety:**
Serious complications are rare, with rates below 1%.

**Durability:**
Medium-term results are promising, with significant weight loss maintained up to two years.

**Combination with Medications:**
ESG can be combined with weight loss medications, to improve outcomes.

**Conclusions:**
ESG is a safe and effective procedure for treating class I and II obesity, with durable medium-term results.

Obesity Facts

Systematic Review

Obes Facts
DOI: 10.1159/000542921

Received: May 5, 2024
Accepted: November 29, 2024
Published online: February 13, 2025

# The Efficacy and Safety of Adjustable Intragastric Balloon for Weight Loss: A Systematic Review and Meta-Analysis

Chuqi Xia[a] Yinuo Wang[a] Guowu Sun[b] Wanyang Lei[c] Daoming Liang[a]

[a]Department of Gastrointestinal Surgery, The Second Affiliated Hospital of Kunming Medical University, Kunming, PR China; [b]Department of Gastrointestinal Surgery, Jinan Zhangqiu District People's Hospital, Jinan, PR China; [c]Department of Clinical Laboratory, The Second Affiliated Hospital of Kunming Medical University, Kunming, PR China

**✓ Efficacy**

**•Total Body Weight Loss (TWL):**

– **16.4%** average loss (95% CI: 15.3–17.5%; $I^2$ = 91.2%)

**⚠ Safety & Tolerability**

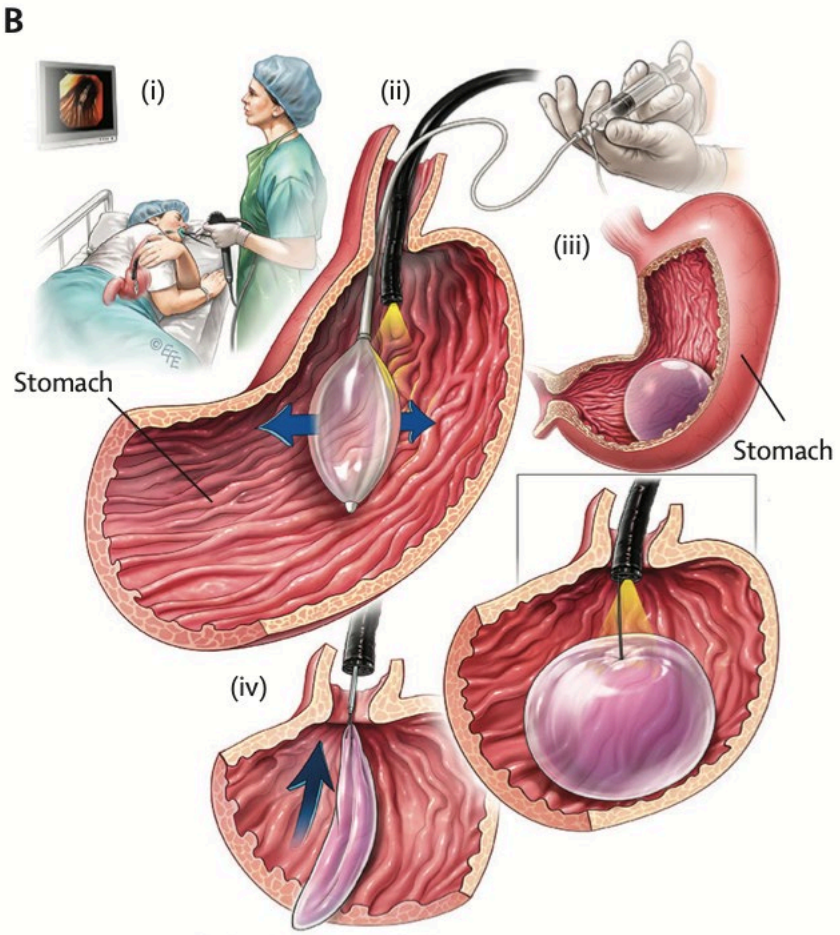
**•Early removal (<3 mo):** 5.7% (95% CI: 3.5–7.8%)

**•Stomach ulcer cases:** 1.1% (95% CI: 0.8–1.4%)

**•✓ Conclusion**

**•aIGB provides significant and sustained weight loss**

**•Safety profile acceptable**



Surgical Endoscopy (2024) 38:6070–6075
https://doi.org/10.1007/s00464-024-11169-z

2024 SAGES ORAL

# Weighing your options—intragastric balloon versus semaglutide

Kevin Choy[1] · Danielle Abbitt[1] · Alexandra Kovar[1] · Teresa S. Jones[1,2] · Molly McCallum[3] · Elizabeth A. Thomas[2,3] · David R. Saxon[2,3] · Krzysztof J. Wikiel[1,2] · Edward L. Jones[1,2]

Received: 19 April 2024 / Accepted: 5 August 2024 / Published online: 13 August 2024


**Intragastric Balloon (IGB):**
- Produces **more rapid weight loss** in the first 3–6 months (−12.7 kg vs. −9.4 kg).
- Associated with **significant weight regain** after removal (average +3 kg from 6 to 12 months).
- Best used as a **short-term bridge to surgery**, especially in preoperative candidates.

**Semaglutide:**
- Induces **more gradual but sustained weight loss** (continued weight reduction up to 12 months).
- Shows **better long-term maintenance** compared to IGB.

**Overall Recommendation:**
- Semaglutide may be more appropriate for **long-term obesity management**.
- Future research should explore **combined therapy** (IGB + semaglutide) to optimize both early and sustained weight loss

JAMA Network Open 2024

Original Investigation | Gastroenterology and Hepatology

# Semaglutide vs Endoscopic Sleeve Gastroplasty for Weight Loss

Muhammad Haseeb, MD, MSc; Jagpreet Chhatwal, PhD; Jade Xiao, MSc; Pichamol Jirapinyo, MD, MPH; Christopher C. Thompson, MD, MSc

To evaluate which intervention is more cost-effective—**semaglutide** (a GLP-1 receptor agonist) or **ESG**

**Conclusions**
- **ESG is more cost-effective** than semaglutide over a 5-year period.
- ESG leads to:
  - Greater weight loss
  - Higher QALYs
  - Lower overall cost
- **Semaglutide would need a ~70% price reduction** to be cost-competitive.
- Results are robust across sensitivity analyses.

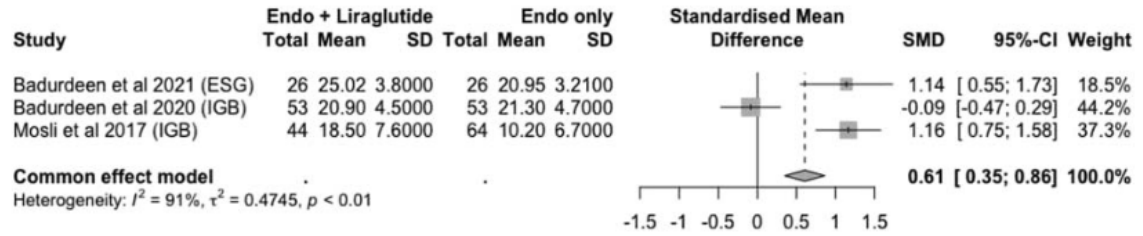
OBESITY - STANDARD STUDY

# S2085 Comparing the Efficacy of Endoscopic Bariatric Interventions and GLP-1 Agonists to Endoscopic Bariatric Interventions Alone in Weight Loss; A Systematic Review and Meta-analysis

Khan, Nihal I. MD[1,*]; Sharbatji, Mohamad MD[1]; Rahman, Syed Hamaad DO[2]; Hurairah, Abu MD[1]

Author Information

*The American Journal of Gastroenterology* 119(10S):p S1489, October 2024. | *DOI:* 10.14309/01.ajg.0001037708.99179.76




**Conclusion:** Our meta-analysis demonstrates that the use of GLP-1 agonists alongside endoscopic bariatric treatment is superior to the use of endoscopic bariatric treatment alone for mean absolute body weight loss at follow-up. Further studies are required to evaluate the safety and adverse events comparing these 2 treatment modalities and to discover differences between comparing the 2 endoscopic options to various GLP-1 agonists

OBES SURG (2014) 24:487–519
DOI 10.1007/s11695-014-1214-1

OTHER

# Bariatric Surgery in Class I Obesity

## A Position Statement from the International Federation for the Surgery of Obesity and Metabolic Disorders (IFSO)

**Luca Busetto · John Dixon · Maurizio De Luca · Scott Shikora · Walter Pories · Luigi Angrisani**

- **Variable Impact**
  Health burden of class I obesity varies individually but can be significant physically, psychologically, and socially.
- **Non-Surgical Treatments**
  May achieve meaningful weight loss, but long-term maintenance is limited.
- **Effectiveness of Surgery**
  Bariatric surgery is effective for short-term weight loss in class I obesity.
- **Safety Profile**
  Adverse events are comparable to those in morbid obesity; serious events are rare but possible.
- **Eligibility Beyond BMI**
  Surgery should not be denied based solely on BMI—especially when comorbidities are present.
- **Individualized Assessment**
  Surgical indication must be based on comprehensive health evaluation and future disease risk.
- **Comorbidity-Driven Indication**
  Surgery should be considered based on the burden and treatability of comorbidities, not just BMI.
- **Avoid in Frail Patients**
  Not recommended for frail patients where weight loss may not improve prognosis or may be harmful.
- **Age Limitations**
  Surgery currently not advised for children/adolescents or elderly patients with class I obesity.
- **Healthcare System Considerations**
  National health systems should adapt recommendations to local resources and needs.

**LINEE GUIDA DELLA SICOB SOCIETÀ ITALIANA DI CHIRURGIA DELL'OBESITÀ E DELLE MALATTIE METABOLICHE**

*La terapia chirurgica dell'obesità e delle complicanze associate*

| *N°* | *Raccomandazione* | *Forza raccomandzione* | *Qualità delle prove* |
|---|---|---|---|
| | **INDICAZIONI ALLA CHIRURGIA** | | |
| 1 | Si suggerisce l'utilizzo della chirurgia metabolico-bariatrica nei pazienti con obesità di Classe I (BMI tra 30 e 34.9 Kg/m$^2$) e DM2 non controllato con la terapia medica, per il trattamento del diabete. | Debole a favore | Molto bassa |
| 3 | Si raccomanda l'utilizzo della chirurgia metabolico-bariatrica nei pazienti con obesità di Classe I (BMI tra 30 e 34.9 Kg/m$^2$) e almeno una comorbidità non controllata (DM2, ipertensione arteriosa, dislipidemia, OSAS), per il trattamento dell'obesità. | Forte a favore | Molto bassa |
| 9 | Si suggerisce un intervento di chirurgia metabolico-bariatrica nei pazienti affetti da patologie osteoarticolari agli arti inferiori ed obesità (BMI ≥ 30 Kg/m$^2$), per il trattamento delle patologie osteoarticolari. | Debole a favore | Molto bassa |
| | **ENDOSCOPIA BARIATRICA PRIMARIA** | | |
| 26 | Si suggerisce l'impiego della endoscopia bariatrica primaria nei pazienti con BMI≥ 30 Kg/m2, per il trattamento dell'obesità. | Debole a favore | Bassa |

**Tabella 1** – Votazione delle singole domande cliniche secondo metodologia Delphi e degli outcome di efficacia e sicurezza (critici e non critici).

| N | PICO | Disaccordo (punti 1-2) | Accordo (punti 3-5) | Outcome (mediana) | Esito |
|---|---|---|---|---|---|
| | **A. INDICAZIONI ALLA CHIRURGIA** | | | | |
| **1** | ***Nei pazienti con DM2 non controllato e BMI tra 30 e 34.9 kg/m2, la chirurgia metabolico-bariatrica è preferibile rispetto ad altri interventi non chirurgici, per il trattamento del diabete?*** | 4.2% | 95.8% | - | |

| N | PICO | Disaccordo (punti 1-2) | Accordo (punti 3-5) | Outcome (mediana) | Esito |
|---|---|---|---|---|---|
| | Nessuno | | | | |
| **3** | ***Nei pazienti con BMI tra 30 e 34.9 kg/m2 e almeno una comorbidità non controllata (diabete, ipertensione arteriosa, dislipidemia, OSAS), la chirurgia metabolico-bariatrica è preferibile rispetto ad altri trattamenti non chirurgici, per il trattamento dell'obesità?*** | 0% | 100% | - | |
| | **E. ENDOSCOPIA BARIATRICA PRIMARIA** | | | | |
| **26** | ***Nei pazienti con BMI ≥ 30 kg/m2, la endoscopia bariatrica primaria è preferibile rispetto ad interventi non di endoscopia bariatrica primaria, per il trattamento dell'obesità?*** | 12.5% | 87.5% | - | |

Published in final edited form as:
*JAMA*. 2023 November 28; 330(20): 2000–2015. doi:10.1001/jama.2023.19897.

# Obesity Management in Adults A Review

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**Jessica L. Schwartz, MD, MHS**,
Division of General Internal Medicine, Johns Hopkins School of Medicine, Baltimore, Maryland

**Conclusion**

Obesity is a common and complex condition. Effective treatments include:

- **Behavioral interventions:** −5–10%
- **Pharmacological therapies** (GLP-1, GIP/GLP-1): −8–21%
- **Bariatric surgery**: −25–30%

A multidisciplinary and personalized approach is essential, combining various therapeutic strategies tailored to each patient.

**CONCLUSION AND RELEVANCE—**Obesity affects approximately 42% of adults in the US. Behavioral interventions can attain approximately 5% to 10% weight loss, GLP-1 agonists and glucose-dependent insulinotropic polypeptide/GLP-1 receptor agonists can attain approximately 8% to 21% weight loss, and bariatric surgery can attain approximately 25% to 30% weight loss. Comprehensive, evidence-based obesity treatment combines behavioral interventions, nutrition, physical activity, pharmacotherapy, and metabolic/bariatric procedures as appropriate for individual patients.

> Gut. 2023 Nov 24;72(12):2250-2259. doi: 10.1136/gutjnl-2023-330437.

# Cost-effectiveness of endoscopic, surgical and pharmacological obesity therapies: a microsimulation and threshold analyses

Monica Saumoy [1], Devika Gandhi [2], Seth Buller [3], Shae Patel [3], Yecheskel Schneider [4], Gregory Cote [5], Michael L Kochman [6 7], Nikhil R Thiruvengadam [# 2], Reem Z Sharaiha [# 8]

Affiliations + expand

PMID: 37524445 DOI: 10.1136/gutjnl-2023-330437

## ✓ Conclusions

- **Cost-effective options**:
  - **ESG** for **Class I obesity**
  - **SG** for **Class II/III obesity**
- **Semaglutide** could be cost-effective only **if its price is substantially reduced**
- Despite cost, **semaglutide** could potentially lead to the **greatest mortality reduction** due to **higher patient uptake**.

# Conclusions: Class I Obesity – Choosing the Right Therapeutic Approach

| Approach | Weight Loss (TBWL) | Invasiveness | Durability | Cost-Effectiveness | Ideal Patient Profile |
|---|---|---|---|---|---|
| **Pharmacotherapy** | ~10–15% (e.g., GLP-1 analogs) | Low | Moderate (ongoing use) | Variable (↓ if long-term) | Prefers non-invasive; early-stage obesity |
| **Endoscopic Procedures** | ~15–20% (e.g., ESG) | Minimally invasive | High (≥5 years) | High (better than GLP-1) | Motivated, BMI 30–35, not eligible for surgery |
| **Bariatric Surgery** | >25% (e.g., sleeve, bypass) | High | Very high (long-term) | High in eligible patients | Rarely indicated; only if severe comorbidities |


# Grazie per l'attenzione