



XXIX IFSO World Congress

1-4 September 2026 | Toronto, Canada



Dr Mohit Bhandari

Pro-Chancellor

Sri Aurobindo University, Indore

Founder, Director and Chief Surgeon

MOHAK Bariatric and Robotic Surgery

Indore, India

TORONTO2026

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



ifso2026.org

HIGH VOLUME FRAMEWORK:

CHOOSING THE BEST PROCEDURE FOR THE BEST PATIENT

HOW HIGH-VOLUME CENTERS DO IT: ENDOSCOPY, SURGERY & MEDICAL PROGRAMS





**SRI AUROBINDO
UNIVERSITY**

VISION WITH ACTION

Sri Aurobindo Medical College & PG Institute, Indore



IRCAD-INDIA@INDORE

**MOHAK BARIATRIC AND ROBOTIC
SURGERY CENTER INDORE, INDIA (MBRSC)**



DISCLOSURE

Mohit Bhandari MD

Consultant to:

- Johnson and Johnson
- Medtronic
- Bariatric Solution
- Intuitive Surgical
- Karl Storz
- Stryker
- Apollo Endo-surgery
- Pentax
- Olympus

Mathias Fobi MD FACS, FICS, FACN

- Founding President, Bariatec Corporation

Manoel Galvao Neto

- Director Bariatric Endoscopy

David E Cummings

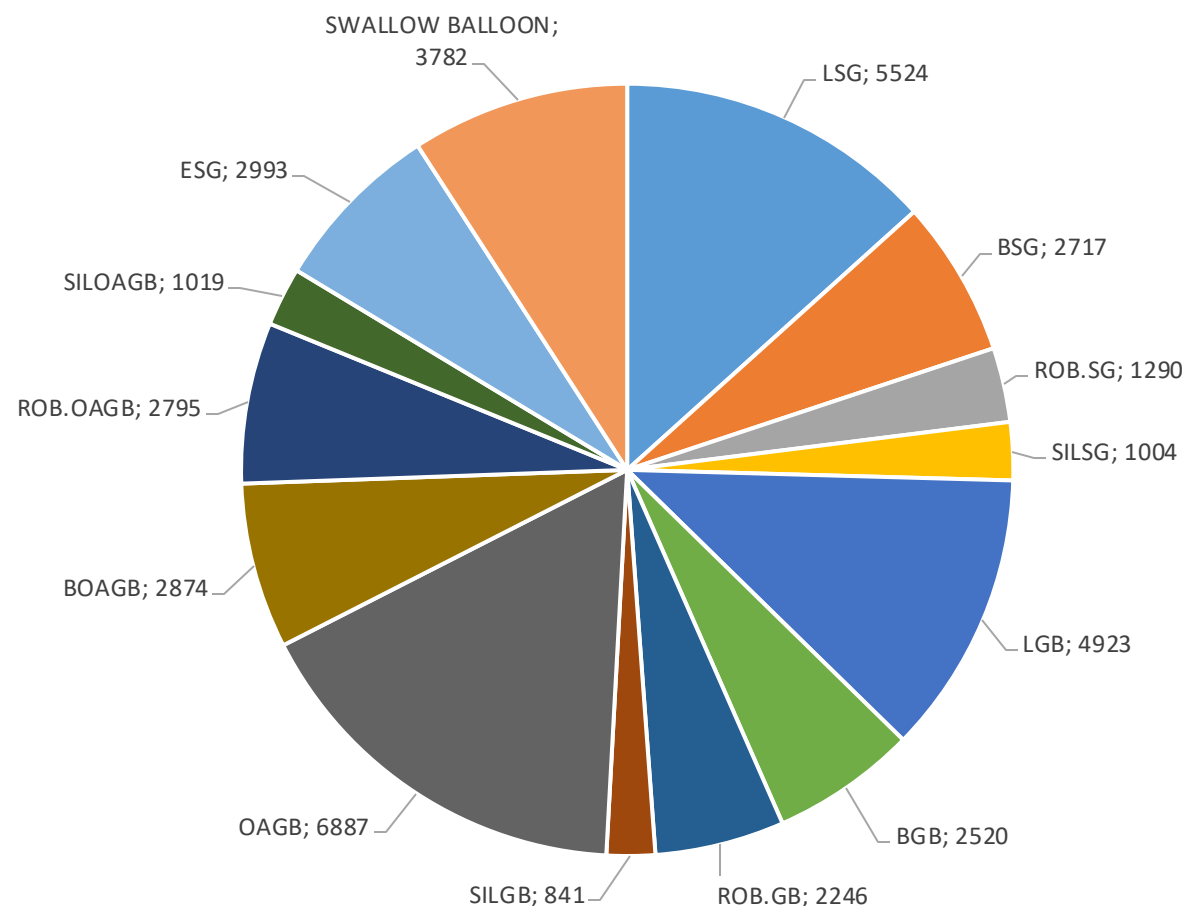
- Head of Obesity Medicine at Mohak Bariatric and Robotic Surgery Centre & IRCAD India





BARIATRIC PROCEDURES MIX DISCLOSURES MBRSC January 2010 –July 2026

TOTAL	45158
LSG	10535
LGB	10530
OAGB	13575
ESG	2993
SWALLOW BALLOON	3782
Other	3743





Dr Manoel Galvao Neto

Clinical Director- Dept Bariatric Endoscopy
Mohak Bariatric and Robotic Surgery Center
Indore- Mumbai- Hyderabad- Bangaluru

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

IFSO
XXIX IFSO
World Congress

1-4 September 2026
Toronto, Canada





Dr David E Cummings

**Head of Obesity Medicine at Mohak Bariatric and
Robotic Surgery Centre & IRCAD India, Indore**



The Global Health Crisis

Obesity is a multifactorial and lifelong disease with profound medical, psychological, physical, economic, and social ramifications.

**Any Treatment at best provides
remission and amelioration not a cure**



Why Patient Selection Matters

Successful outcomes depend not only on surgical technique but also on careful patient selection and thorough preoperative evaluation.



Who Is the Best Candidate

DETERMINING FACTORS

Genetics: Expression of Obesity
Response to surgical treatment

Medical: Metabolic syndrome
T2DM, CAD, H/O VTE, Presence or absence of GERD,
Liver status and Mental Illness

Patient profile: BMI, Age, Gender

Socio-psycho-economic Factors:

Smoking
Alcohol intake
Access to post op care,
Distance from care provider,
Cost of the operation-Cost and availability of equipment, devices and supplies
Affordability of post operative care-Supplements-educational-financial status

Demographic/Environmental factors

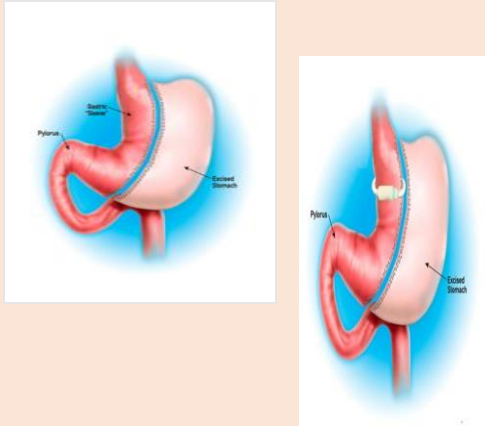
Vegetarian
Areas endemic to certain problems—Cancer, Ulcers
Cultural norms



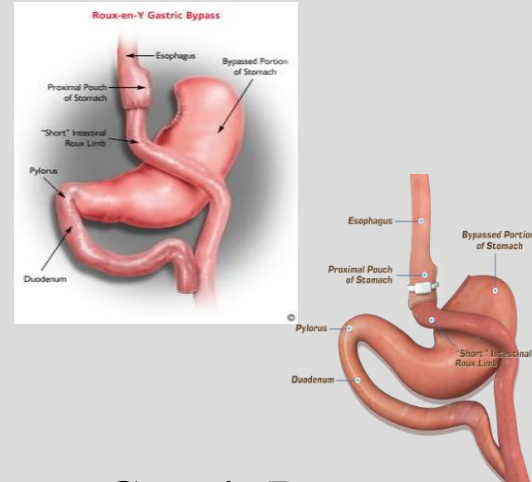
MECHANISMS OF ACTION OF VARIOUS BARIATRIC METABOLIC OPERATIONS

- Currently known mechanisms responsible for the effects of the various bariatric metabolic operations include but not limited to:
 - Restrictive Effect; *Control the reservoir size.*
 - Neural Stimulation of G-E; *full sense effect/satiation*
 - Patient Compliance; *Forced behavior modification, Motivation, fear, dyspepsia, physical activity, dietary habit alteration, support group participation and physician contact.*
 - Malabsorptive Effect; *Bypassed segment of the GI tract results in mal absorption*
 - Dumping Effect; *High caloric fluid and fatty food intolerance*
 - Ghrelin Effect; *Anorexia*
 - Foregut effect; *GIP, PYY and Leptin effects*
 - Hindgut effect; *GLP-I motility/Nausea/satiation*
 - Microbiota effect; *alteration of the bacterial flora of the gut alters absorption*
 - Bile salts

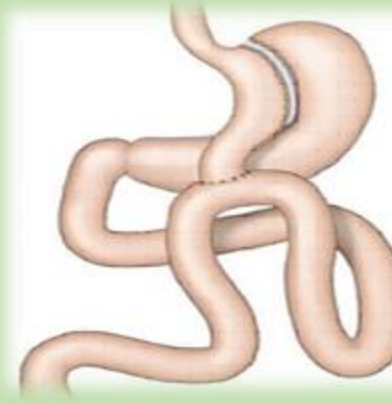




Sleeve Gastrectomy



Gastric Bypass



OAGB/MGB

SURGICAL TREATMENT OPTIONS

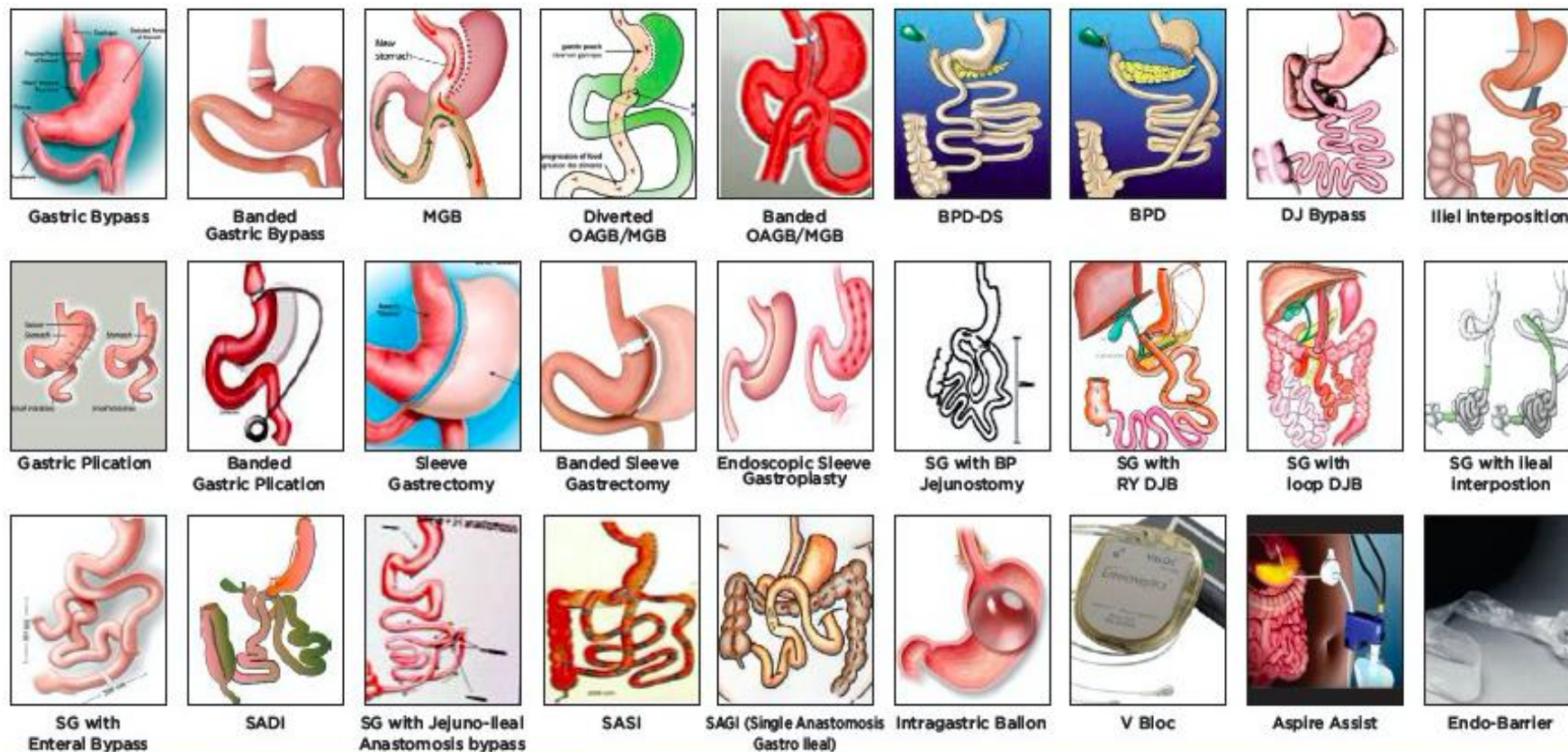
**A Bariatric Metabolic Surgeon should be able to Perform
these three basic procedures and their modifications**



ARMAMENTARIUM OF BARIATRIC METABOLIC PROCEDURES

IFSO
XXIX IFSO
World Congress

1-4 September 2026
Toronto, Canada



Standardization of Bariatric Metabolic Procedures: World Consensus Meeting Statement

Mohit Bhandari¹, M A L Fobi², Jane N Buchwald³;

Bariatric Metabolic Surgery Standardization (BMSS) Working Group:

Collaborators, Affiliations + expand

PMID: 31297742 DOI: 10.1007/s11695-019-04032-x



1-4 September 2026
Toronto, Canada

Background: Standardization of the key measurements of a procedure's finished anatomic configuration strengthens surgical practice, research, and patient outcomes. A consensus meeting was organized to define standard versions of 25 bariatric metabolic procedures.

Methods: A panel of experts in bariatric metabolic surgery from multiple continents was invited to present technique descriptions and outcomes for 4 classic, or conventional, and 21 variant and emerging procedures. Expert panel and audience discussion was followed by electronic voting on proposed standard dimensions and volumes for each procedure's key anatomic alterations. Consensus was defined as $\geq 70\%$ agreement.

Results: The Bariatric Metabolic Surgery Standardization World Consensus Meeting (BMSS-WOCOM) was convened March 22-24, 2018, in New Delhi, India. Discussion confirmed heterogeneity in procedure measurements in the literature. A set of anatomic measurements to serve as the standard version of each procedure was proposed. After two voting rounds, 22/25 (88.0%) configurations posed for consideration as procedure standards achieved voting consensus by the expert panel, 1 did not attain consensus, and 2 were not voted on. All configurations were voted on by $\geq 50\%$ of 50 expert panelists. The Consensus Statement was developed from scientific evidence collated from presenters' slides and a separate literature review, meeting video, and transcripts. Review and input was provided by consensus panel members.

Conclusions: Standard versions of the finished anatomic configurations of 22 surgical procedures were established by expert consensus. The BMSS process was undertaken as a first step in developing evidence-based standard bariatric metabolic surgical procedures with the aim of improving consistency in surgery, data collection, comparison of procedures, and outcome reporting



DETERMINING FACTORS

Genetics: Expression of Obesity
Response to surgical treatment

Medical: Metabolic syndrome
T2DM, CAD, H/O VTE, Presence or absence of GERD,
Liver status and Mental Illness

Patient profile: BMI, Age, Gender

Socio-psycho-economic Factors:

Smoking

Alcohol intake

Access to post op care,

Distance from care provider,

Cost of the operation-Cost and availability of equipment, devices and supplies

Affordability of post operative care-Supplements-educational-financial status

Demographic/Environmental factors

Vegetarian

Areas endemic to certain problems—Cancer, Ulcers

Cultural norms



MECHANISMS OF ACTION OF VARIOUS BARIATRIC METABOLIC OPERATIONS

Currently known mechanisms responsible for the effects of the various bariatric metabolic operations include but not limited to:

- Restrictive Effect; *Control the reservoir size.*
- Neural Stimulation of G-E; *full sense effect/satiation*
- Patient Compliance; *Forced behavior modification, Motivation, fear, dyspepsia, physical activity, dietary habit alteration, support group participation and physician contact.*
- Malabsorptive Effect; *Bypassed segment of the GI tract results in mal absorption*
- Dumping Effect; *High caloric fluid and fatty food intolerance*
- Ghrelin Effect; *Anorexia*
- Foregut effect; *GIP, PYY and Leptin effects*
- Hindgut effect; *GLP-1 motility/Nausea/satiation*
- Microbiota effect; *alteration of the bacterial flora of the gut alters absorption*
- Bile salts



Contraindications and outcomes of the various operations

Weight Loss and maintenance-----graph

Resolution of co-morbid conditions---

Contra-indications to the various operations--

Complications inherent in the operations----

- Reflux
- Ulcers
- Nutrient deficiencies
- Protein caloric malnutrition
- Diarrhea/Steatorrhea
- Food Intolerance
- Ring/Band Migration



**We have enough information currently
to enhance the outcome and minimize
the risk by matching the operation to the
patient.**

**That is the basis for:
An Algorithm for Bariatric Metabolic Operations**

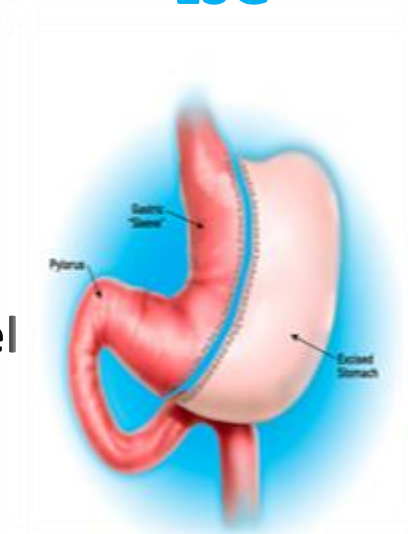


ALGORITHM

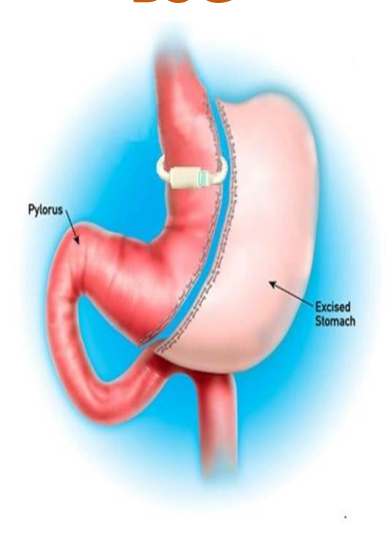
Laparoscopic Sleeve Gastrectomy Or Banded Sleeve Gastrectomy (SG/BSG) Indicated for Patients:

- All ages
- With no diabetes
- With low BMI preferably <40
- With no GERD
- With H/O PUD
- With H/O or findings of liver disease
- With Inflammatory bowel disease
- With dense adhesions from multiple small bowel
- Without H/O VTE
- In heavy smokers who are not likely to quit
- In gastric cancer endemic areas
- High Risk needing minimal anesthesia and OR time
- High BMI > 60 as part of a two stage approach

LSG



BSG



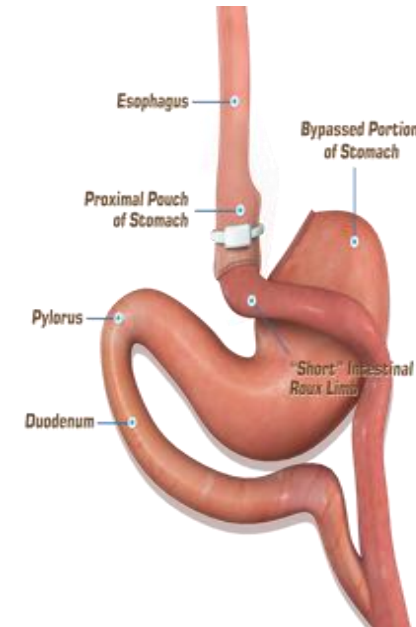
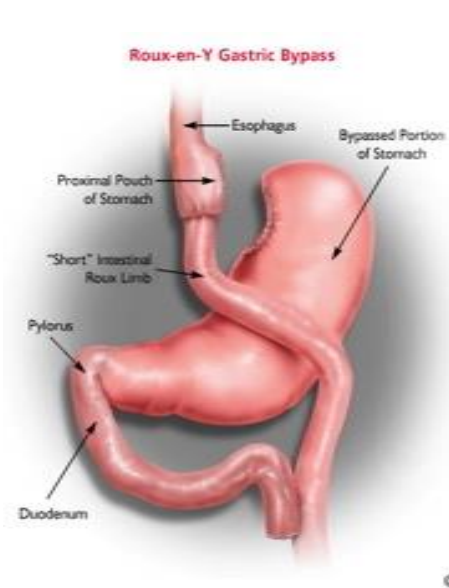
ALGORITHM

Laparoscopic Gastric Bypass(LGBP) or Banded Gastric Bypass(BGBP) Indicated for Patients:

- All ages
- Patients with T2DM <5years and HbA1-c <8, C-Peptide>2 and not on insulin
- Patients with GERD
- ALL BMI ----- -BGBP
- BMI<50-- LGBP

Vegetarian (BGBP)

LGBP



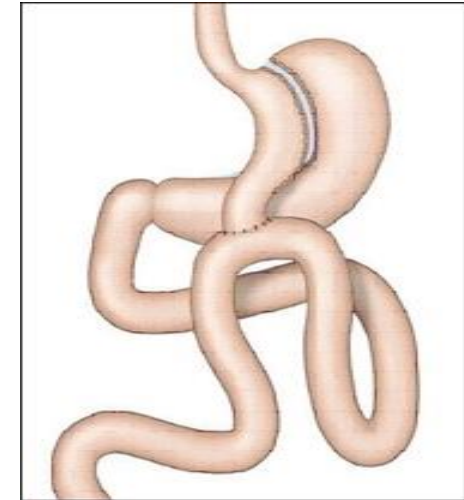
BGBP



ALGORITHM

OAGB/MGB for patients

- With Diabetes >5 years, HbA1c>8. C-Peptide <2 and/or on Insulin
- All ages
- All BMI particularly High BMI->50
- High risk patients with need for short anesthesia time
- Because it is an easy to perform procedure.
- Best tolerated by non Vegetarian
- GERD Is a contraindication
- Liver disease is a contraindication



OAGB



ALGORITHM

Sleeve gastrectomy with duodenal bypass(SGDJB) in patients

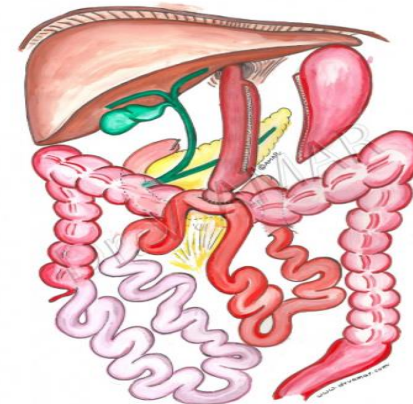
Sleeve gastrectomy with duodenal bypass(SGDJB) in patients with indication for Gastric Bypass in Gastric Cancer Endemic Areas

**As effective as GBP
Same weight loss and
metabolic effects as gastric bypass**

SLEEVE GASTRECTOMY WITH LOOP DUODENOJEJUNAL BYPASS (SG LDJB) – A NOVEL OBESITY/DIABETES SURGERY

By drvamarblog | May 11, 2016

0 Comment



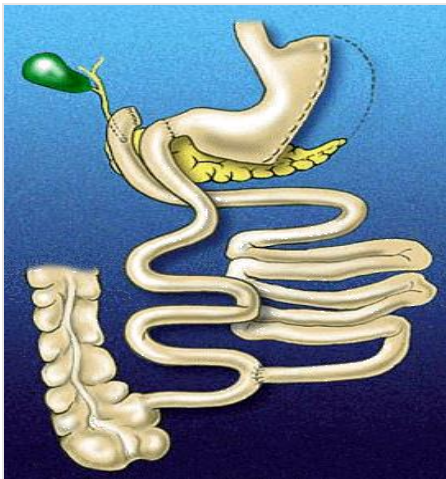
SG-DJB



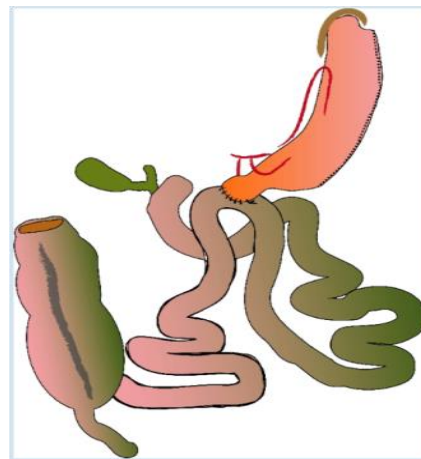
ALGORITHM

BPD-DS, SADI, SAGI, SASI) Indicated for:

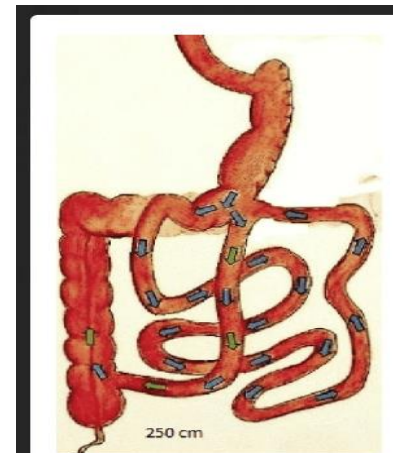
1. Second stage operation for the sleeve gastrectomy
2. Non responders or complications of sleeve, gastric bypass or OAGB/MGB.



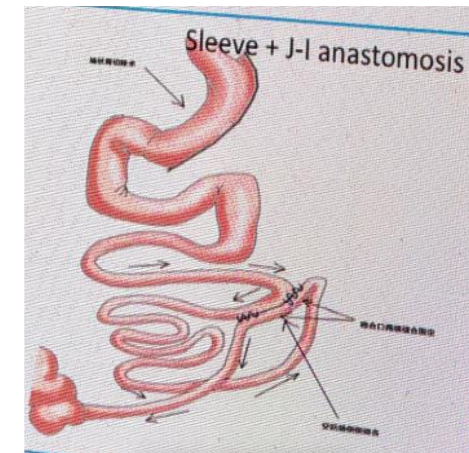
BPD-DS



SADI



SASI



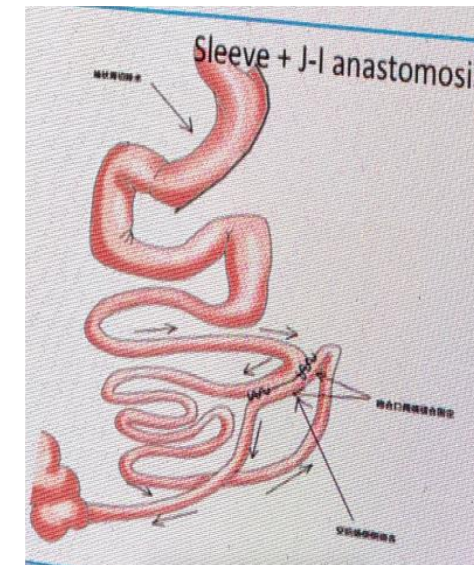
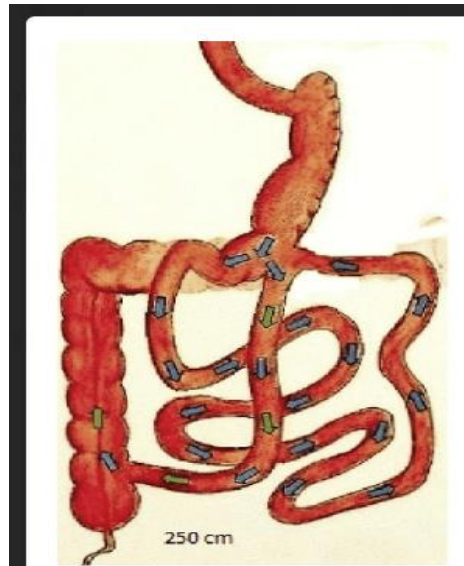
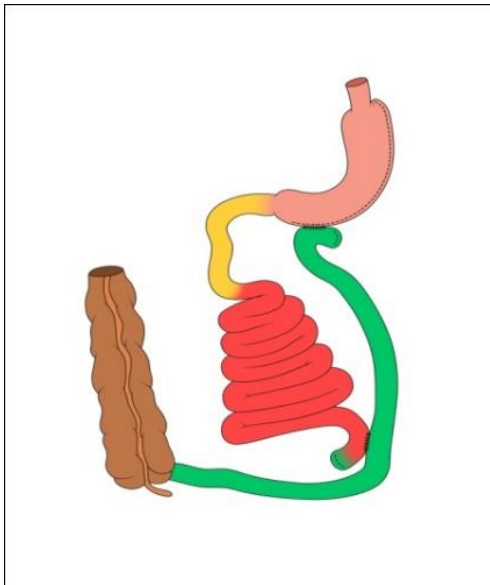
SG with enteral bypass



ALGORITHM

Sleeve Gastrectomy with gastro-jejunal, gastro-ileal or entero-enteral anastomosis

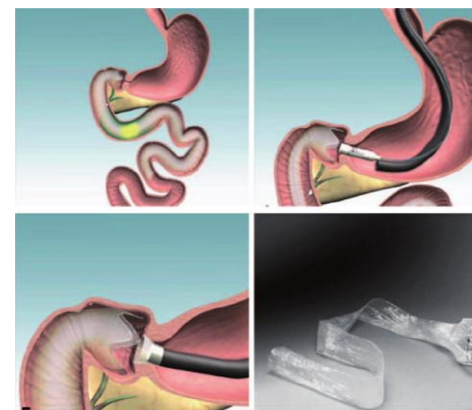
Areas with high incidence of anemia and very strict vegetarian food habits.



For a patient who does not want an intra abdominal gastro-intestinal procedure



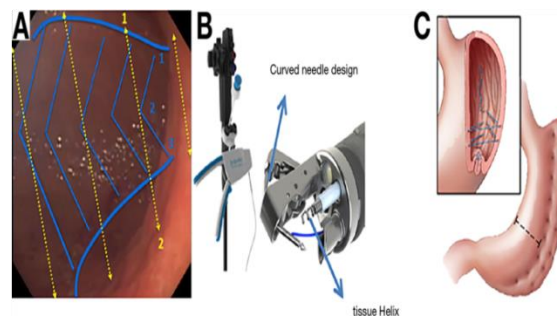
Intra Gastric Balloon



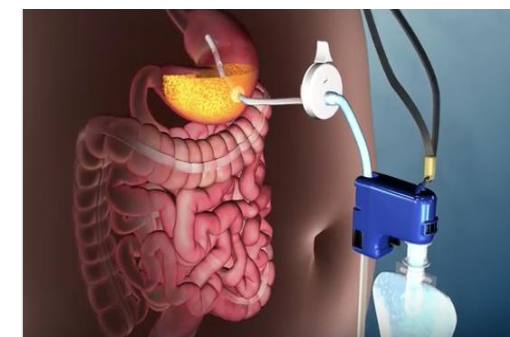
ENDOBarrier



V-BLOC



Endoscopic Plication



Aspire Assist



Should You Do A Bariatric Metabolic Operation Because That Is What The Patient Wants?"

**NO/YES—It depends. However
A bariatric metabolic surgeon should be able to offer the
best operation for the patient based on the patient's
profile. It is good practice to refer the patient to a
tertiary center if the surgeon does not offer the
operation that meets the patients indication.**



THE MOHAK PROTOCOL

Standardized Bariatric and Robotic Surgery Operations

Evidence based operations performed at MBRSC From 2010 to 2017---Standardized Operations

Laparoscopic Sleeve Gastrectomy

- 90-120 cc Sleeve
- 2-5cm from pylorus
- Where a sleeve is indicated but a band is contraindicated or not affordable

Banded Sleeve Gastrectomy (BSG) 84% EWL after 60 months

- 90-120 cc Sleeve
- 2-5cm from pylorus
- Ring 6.5-7.5 cm
- At 3-6 cm below GE junction

Banded Gastric bypass (BGBP) 75% EWL 48 months

- Create 6—7cm long **pouch**
- 6.5-7.5 cm ring at 3-5 cm below GE junction and >2cm above anastomosis
- Large Gastroenterostomy > 2cm
- 100cm Roux Limb and 80 cm BP limb for BMI<50
- 100cm Roux Limb and 150 cm BP limb for BMI>50

Mini-Gastric Bypass (MGB) (OAGB) 79% EWL 60 months

- 9-18cm long pouch ~2.5cm wide
- BP Limb length of 180cm BMI<50

Banded Mini-Gastric Bypass(BMGB)(BOAGB)

- 9-18cm long pouch ~2.5cm wide
- Ring 7-7.5 cm
- BP Limb length of 180cm BMI50

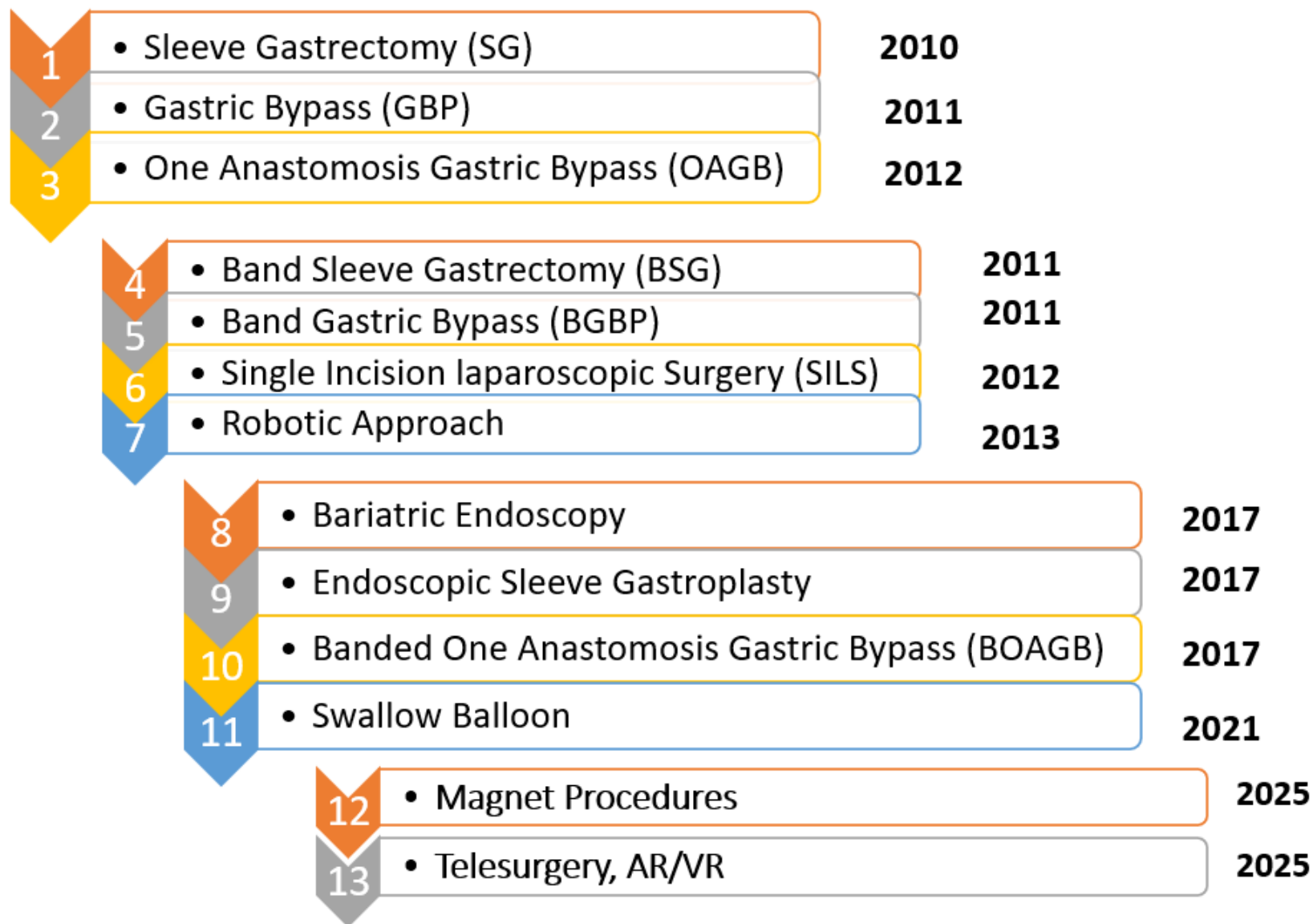


The MOHAK Protocol

Standardized Bariatric and Robotic Surgery Operations



Planned
and
Metered
growth of
the
MOHAK
program



MOHAK ALGORITHM

Sleeve Gastrectomy (LSG) or Banded Sleeve Gastrectomy (BSG)

- Non-diabetics
- No hiatal hernia or GERD
- H/O Smoking
- H/O alcohol use
- H/O PUD
- Abnormal LFTs. NASH and early Cirrhosis
- Pts. from areas with high incidence of gastric cancer or H pylori infection
- High risks patients and super obese patients as part of a two-staged operation

Gastric Bypass (LGBP) or Banded Gastric Bypass (BGBP) or Hybrid BGBP/MGB

- Have T2DM with HgbA1c < 8, and duration < 5 years
- Have Hiatal hernia or GERD
- Are Vegetarian
- No nicotine addiction (smoking)
- Have H/O Alcohol intake
- Have NASH at surgery-No cirrhosis
- Not likely to come back for follow up and
- Revision operation of Failed Sleeve gastrectomy, GBP or MGB



MOHAK ALGORITHM

One Anastomosis Gastric Bypass-Mini-Gastric Bypass (OAGBP-MGB)

- Have T2DM with HgbA1c ≥ 8 and duration >5 years
- Have No GERD
- Are Non-vegetarian
- Have poor dentition
- **Most likely to return for follow up at the clinic**
- No H/O alcohol intake
- No Nicotine addiction (smoking)
- Normal LFTs.
- No NASH at surgery or cirrhosis
- **Commitment by our program to have 100% follow up of these patient**

Revision Operation

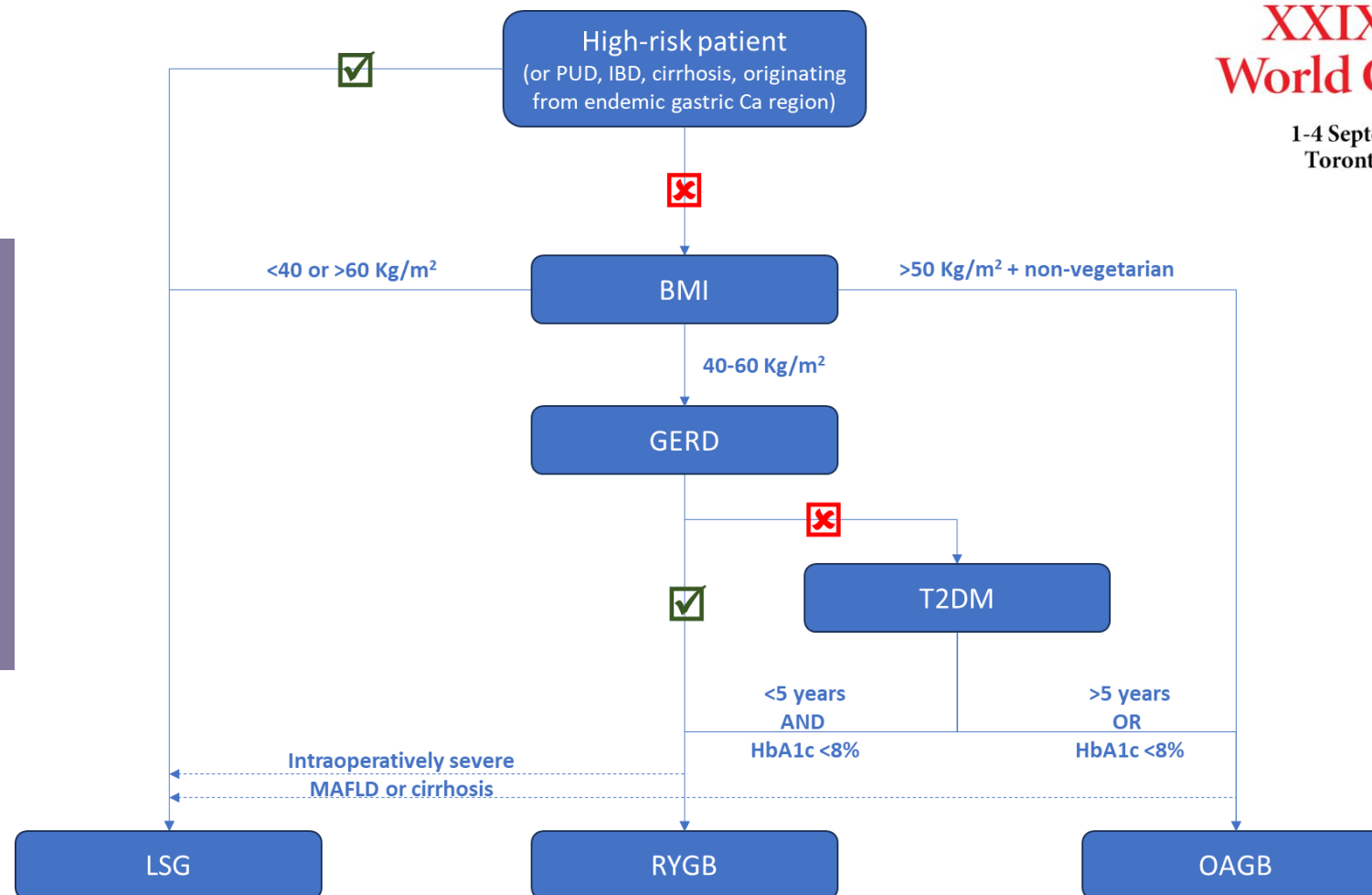
- Sleeve to Banded RY with 100 cm AL limb and 180 cm BP Limb
- MGB to diverted MGB for Reflux .Existing BPL and 100cm AL
- MGB to GBP for PCM or reversal to normal anatomy for PCM—interim gastrostomy feeding
- GBP to BGBP with 180cm BP limb for Weight regain or inadequate weight loss BMI <40
- GBP to BGBP with 300cm common limb for Weight regain or inadequate weight loss BMI >40



Long-Term MOHAK Data



Algorithm followed in our
center for choosing the
appropriate bariatric
procedure for each patient





Single-Center Metabolic Bariatric Surgery Experience Study: Outcomes from 21,205 Cases over 12 Years

Bhandari, Mohit; Kosta, Susmit; Mathur, Winni; Reddy, Manoj; Bhandari, Mahak; Neto, Manoel Galvao

[Author Information](#) 

Journal of Bariatric Surgery 3(2):p 69-78, May–Aug 2024. | DOI: 10.4103/jbs.jbs_8_24 ©

Conclusion: The long-term results from a high-volume bariatric center provide real-world data on the effectiveness and safety of MBS. Most importantly, they reflect the incorporation of new techniques and facilitate the implementation of regional algorithms for optimizing patient selection and improving outcomes.

Introduction: Metabolic bariatric surgery (MBS) is the most effective treatment for obesity, nevertheless, long-term results from high-volume centers are scarce in literature.

Methods: We retrospectively analyzed prospectively collected records of our high-volume center from June 2010–December 2022 on demographics, evolution of procedures, follow-up, effectiveness, and safety of MBS.

Results: A total of 21205 patients underwent MBS over the 12-year period. Laparoscopic sleeve gastrectomy (LSG) was performed in 6136 patients, Roux-n-Y gastric bypass (RYGB) in 5878, one-anastomosis gastric bypass (OAGB) in 7678, endoscopic sleeve gastroplasty (ESG) in 941, and swallow balloon (SB) in 572. At the end of the study period, the follow-up rates for different procedures were LSG group (68.7%, 2108/3068), RYGB group (63.2%, 1312/2075), OAGB group (68.9%, 1135/1647), and ESG group (67.8%, 319/470), resulting in an overall follow-up rate of 68.1%, respectively. At 10 years, the percentages of total weight loss (%TWL), excess weight loss (%EWL), and weight regain (%WR) for LSG were 22.4%, 53.4%, and 31.8%, respectively. Similarly, the figures were 23.9%, 60.2%, and 25.2% for RYGB; 27.3%, 70.3%, and 20.9% for OAGB. These differences were significant among procedures, according to the repeated-measures analysis of variance (%TWL: $F=25.13$, $p<0.0001$; %EWL: $F=21.36$, $p<0.0001$; %WR: $F=2.31$, $p=0.004$). Operative times and intraoperative blood loss were significantly higher for RYGB. Postoperative complications occurred in 2.0%, 1.2%, and 1.8% of patients in the LSG, RYGB, and OAGB groups, respectively ($p<0.001$). There were no significant differences in serious complication rates among groups ($p=0.787$). The mortality rate was 0.04%.



Weight loss pattern

- **Excess weight loss (%EWL)**

Type of Surgery	1yr	2yr	3yr	4yr	5yr	6yr	7yr	8yr	9yr	10yr
LSG	70.5	75.2	74.5	70.2	69.7	67.7	64.8	61.9	57.1	53.4
RYGB	71.5	72.6	75.2	73.5	70.6	68.1	64.9	62.3	61.1	60.2
OAGB	74.3	80.8	81.1	78.6	78.1	77.1	75.2	73.3	71.8	70.3
B-SG	72.9	74.8	76.1	71.2	72.3	68.9	66.3	65.2	-	-
B-RYGB	70.1	73.3	75.5	74.2	71.2	69.6	68.6	66.2	-	-
B-OAGB	78.3	82.3	83.4	81.4	79.5	79.1	78.5	-	-	-
ESG	56.5	54.5	50.7	48.9	44.4	43.4	-	-	-	-



Resolution of obesity-related health problems

	LSG	RYGB	OAGB	BSG	B-RYGB	B-OAGB	ESG
T2DM	70%	82%	89%	74%	81%	89%	51%
HTN	81%	83%	85%	81%	83%	86%	73%
OSA	79%	76%	87%	82%	80%	93%	-



Why Look Beyond Surgery?

- Bariatric surgery is often considered the gold standard.
- But is not suitable or accessible for all patients due to medical, financial, or personal reasons.
- Surgery carries risks (complications, long recovery time).
- Long-term success requires lifestyle changes, not just surgery.

Goal:

Improve health, reduce weight, and sustain long-term benefits without the need for invasive procedures.



Emerging Endoscopic Procedures

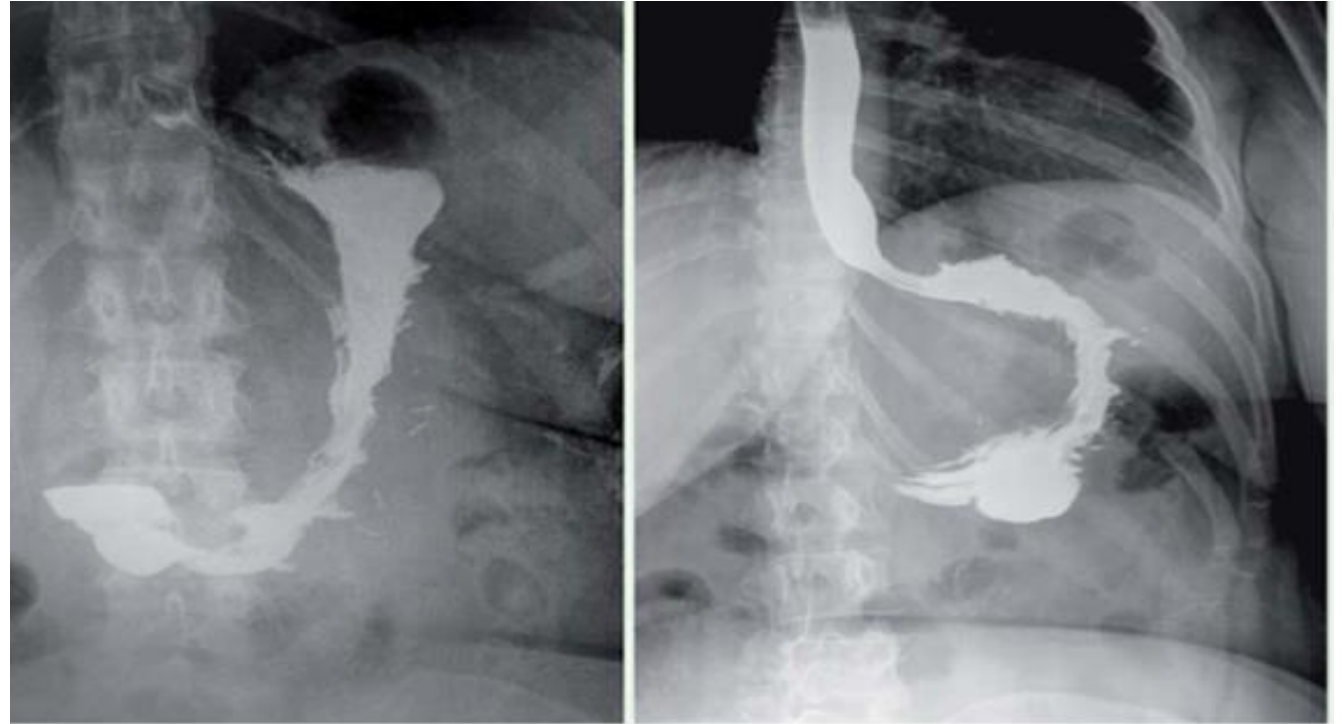
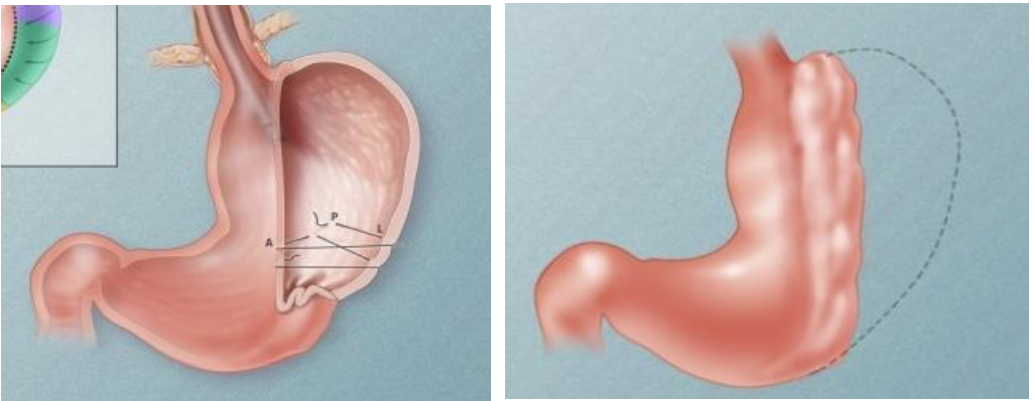
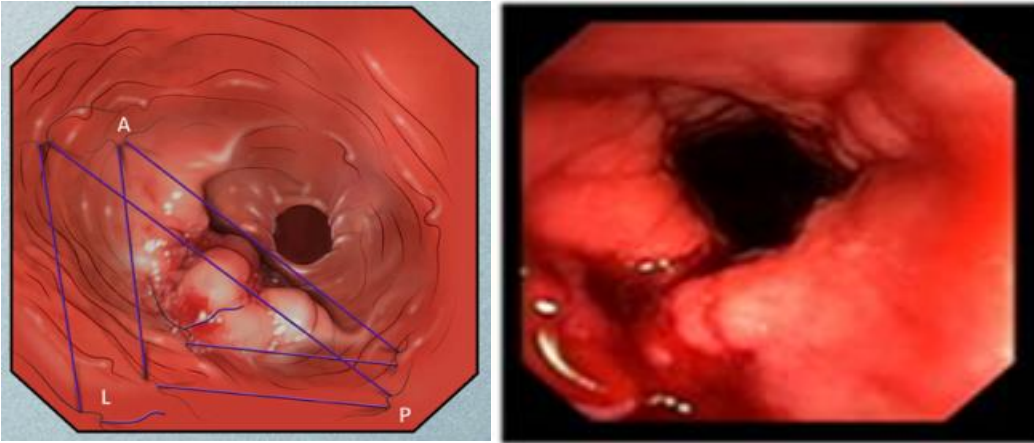
- **Endoscopic sleeve gastroplasty (ESG):** A minimally invasive procedure to reduce stomach size using a flexible tube.
- **Intragastric balloons/swallow balloon** Temporary devices inserted to reduce stomach volume and promote satiety.
- **Primary Obesity Endolumenal Surgery (POSE)**



Endoscopic Sleeve Gastroplasty

IFSO
XXIX IFSO
World Congress

1-4 September 2026
Toronto, Canada



Dig. Endosc. 2019 Aug 8. doi: 10.1111/den.13508. [Epub ahead of print]

Endoscopic Sleeve Gastroplasty is an effective and safe minimally invasive approach for treatment of obesity: First Indian experience.

Bhandari M¹, Jain S¹, Mathur W¹, Kosta S¹, Neto MG¹, Brunaldi VO¹, Fobi M¹.

Author information

¹ Department of Bariatric and metabolic Surgery, Mohak Bariatrics and Robotics Center, Indore, India.

Abstract

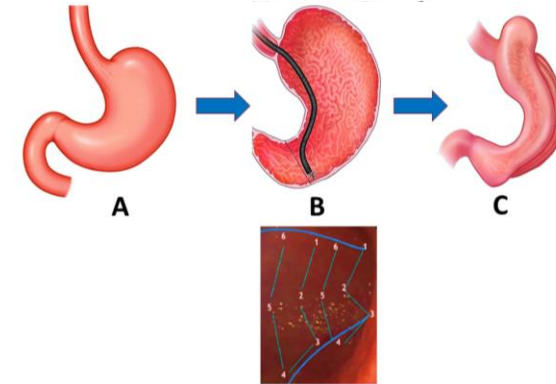
OBJECTIVES: Endoscopic Sleeve Gastroplasty (ESG) is gaining acceptance as a non-surgical option for the treatment of obesity. However, its role is still not consolidated for all populations and the ideal indications are yet to be determined. We aimed to study the efficacy and safety of ESG in Indian patients.

METHODS: We conducted a single-center retrospective study of obese patients who underwent consecutive ESG at our tertiary care center. Data on weight loss and adverse events at 1, 3, 6, and 12 months were collected and analyzed.

RESULTS: Fifty-three patients underwent ESG from March 2017 to October 2018. Eighty one percent patients were female (43/53). The mean baseline age and BMI were 40.54 ± 13.79 years and 34.78 ± 5.20 kg/m², respectively. Mean duration of procedure was 68.96 ± 11.19 minutes. Immediate postoperative complications included mainly epigastric pain (45.2%) and nausea (22.6%) but there was no serious adverse event. The average %TWL was 8.26%, 11.96%, 14.25%, and 19.94% at 1, 3, 6, and 12 months, respectively. Eighty-eight percent of patients achieved >15%TWL at 12 months. Younger patients (<30 years old) and female patients had greater %TWL at 12 months ($p=0.01$ and $p=0.021$, respectively). Last 18 procedures were significantly faster than the first 35 cases ($p=0.01$).

CONCLUSIONS: ESG is effective and safe at promoting weight loss in Indian population. Young age and female gender are related to better outcomes. This article is protected by copyright. All rights reserved.

1-4 September 2026





Four-year outcomes for endoscopic sleeve gastroplasty from a single centre in India

Bhandari M, Kosta S, Reddy M, Mathur W, Neto MG, Bhandari M. Four-year outcomes for endoscopic sleeve gastroplasty from a single centre in India. J Minim Access Surg. 2023 Jan-Mar;19(1):101-106. doi: 10.4103/jmas.jmas_3_22. PMID: 36124467; PMCID: PMC10034804.

Bhandari et al. 2022

Published
manuscript on:

*Four-year outcomes for
Endoscopic Sleeve Gastroplasty from
a single center in India*

- This study shows acceptable results with ESG at 4 years in our unit.
- Regular monitoring by a multidisciplinary nurtures weight loss, resolution or improvement of comorbidities and improvement of quality of life with low perioperative complications.

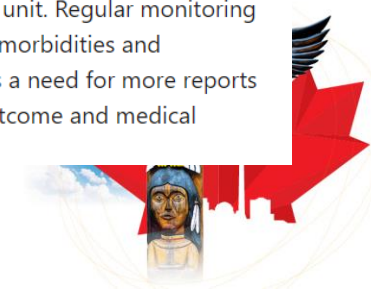
Background: Bariatric endoscopy has emerged for non-surgical treatment of obesity, providing a treatment option for weight loss and associated comorbidities. Outcomes of endoscopic sleeve gastroplasty (ESG) of 12 months have been published by our team and there is a need for longer follow-up period understanding the effects of ESG techniques.

Aim: This report emphasises on weight loss pattern in follow-up time points and monitors the post-procedure improvement in comorbidities with minimum 4-year follow-up of patients undergoing ESG at a single academic centre in India.

Subjects and methods: This was a prospective cohort study. All procedures were performed by the same surgeon. Patients with a body mass index of $>30 \text{ kg/m}^2$ (or >27 with comorbidities) underwent ESG for treatment of obesity. Patients were systematically followed yearly after their procedure. Data collected on the primary outcome and secondary outcomes were analysed and presented.

Results: 612 patients (69.3% female) with a mean age of 40.70 ± 12.66 years and mean body mass index of $34.30 \pm 5.05 \text{ kg/m}^2$ underwent ESG. Out of 612 patients, follow-up rates for a 1-2-3 and 4 years were 93.1%, 90.2%, 81.7% and 81.9%, respectively. The mean percentage total body weight loss was 18.19% (95% confidence interval [CI]: 17.72-18.57) and %EWL was 49.30% (95% CI: 48.91-49.68) with 90% of participants-maintaining a percentage of total weight loss of $\geq 5\%$ and 70% of patients maintaining an EWL of $\geq 25\%$ at 4 years, respectively. Resolution/improvement of comorbidities was 51.2% cases of T2DM, 65.8% cases of hypertension, 73.6% cases of dyslipidaemia and 89.9% remission were in obstructive sleep apnoea. No patient required an emergency intervention, and there was no mortality or significant morbidity.

Conclusions: This study shows acceptable results with ESG at 4 years in our unit. Regular monitoring by a multidisciplinary nurtures weight loss, resolution or improvement of comorbidities and improvement of quality of life with low perioperative complications. There is a need for more reports with this approach to determine the amount and duration of weight loss outcome and medical intervention.



Abstract

Background: Endoscopic sleeve gastropasty (ESG) is a minimally invasive endoluminal bariatric procedure, but long-term outcomes beyond 5 years remain limited. This study reports 6-year weight loss, comorbidity outcomes, and safety data from a large single-center cohort.

Methods: This retrospective cohort study included adults undergoing ESG between June 2019 and June 2025 with mean follow up of 3.8 ± 1.4 years. Primary outcomes were percent total weight loss (%TWL) and percent excess weight loss (%EWL) assessed up to 6 years. Secondary outcomes included resolution or improvement of type 2 diabetes mellitus (T2DM), hypertension, obstructive sleep apnea (OSA), and dyslipidemia. Adverse events and revision procedures were recorded. Missing data were handled using multiple imputation by chained equations within an intention-to-treat framework, with sensitivity analyses using non-responder imputation and last-observation-carried-forward methods.

Results: A total of 1,377 patients underwent ESG (mean age 41.5 ± 12.2 years; 53.5% female; baseline BMI 35.2 ± 4.8 kg/m²). Mean %TWL was 21.2% (95% CI 20.8–21.6) at 1 year and 14.4% (95% CI 14.0–14.8) at 6 years. Mean %EWL was 56.9% at 1 year and 43.4% at 6 years. At 6 years, resolution or improvement was observed in T2DM (51.2%), hypertension (65.8%), OSA (89.9%), and dyslipidemia (73.6%). There was no mortality. One patient (0.07%) required operative intervention for bleeding. Revision procedures occurred in 5.7% of patients.

Conclusions: This study shows that ESG produces measurable weight loss and achieves comorbidity improvement through 6 years, with a favourable safety profile and low revision rate. However, prospective comparative studies are needed to define its role relative to surgical and pharmacologic therapies.

[Home](#) > [Obesity Surgery](#) > [Article](#)

Endoscopic Sleeve Gastropasty: 6-Year Outcomes in 1,377 Patients

Published: 17 February 2026

Volume 36, pages 979–987 (2026) [Cite this article](#)

[Manoel Galvao Neto](#), [Mohit Bhandari](#) , [Manoj Reddy](#), [Mahak Bhandari](#), [Sonika Ranganath](#), [Susmit](#)

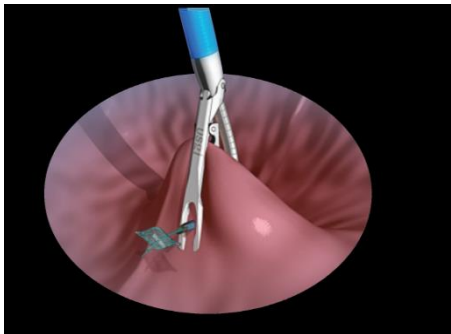
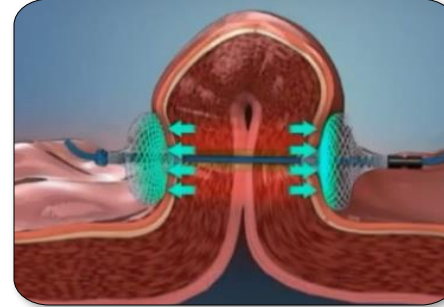
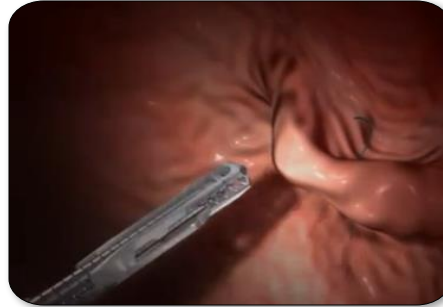
[Kosta](#) & [Winni Mathur](#)



Primary Obesity Endolumenal Surgery (POSE)

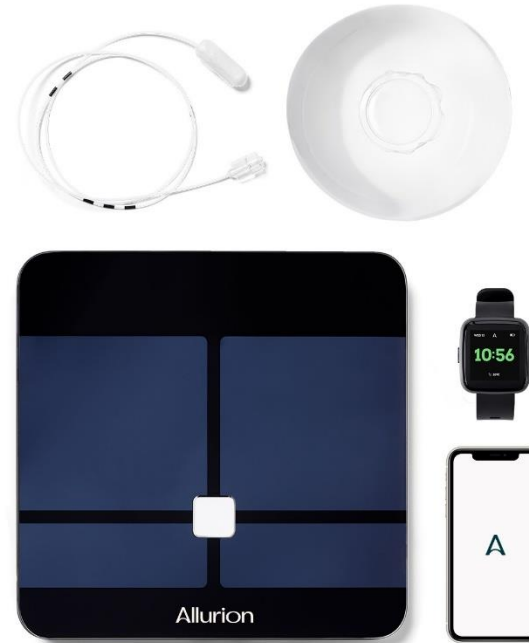
IFSO
XXIX IFSO
World Congress

1-4 September 2026
Toronto, Canada



FUTURE TRENDS FOR OBESITY & DIABETES

Swallow Balloon




XXIX IFSO
World Congress

1-4 September 2026
Toronto, Canada

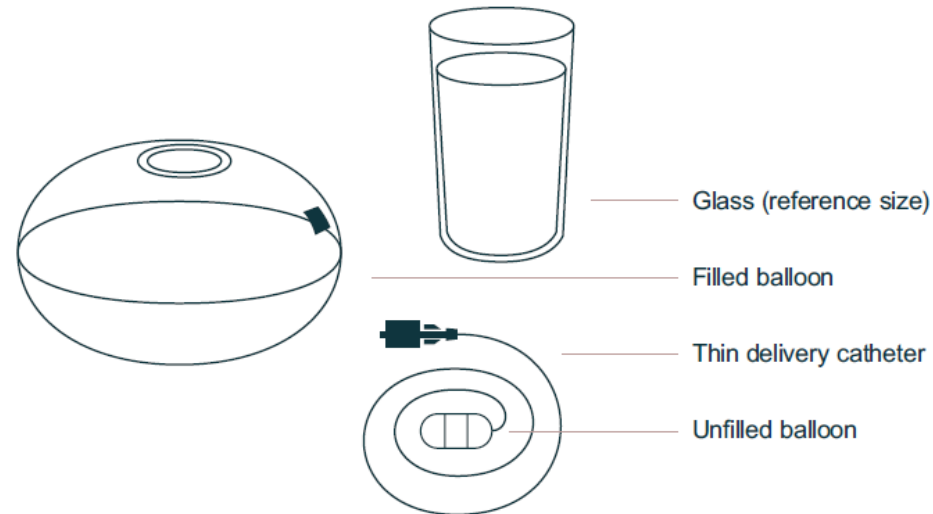


Swallow Balloon

No surgery.
No endoscopy.
No anesthesia.
Just results.

How?

Gastric balloons induce weight-loss by increasing satiety (fullness), delaying gastric emptying, and reducing the amount of food eaten at each meal.



15_{MIN}

The Elipse Swallow Pill experience takes place during a brief 15-minute walk-in placement.



The Revolutionary Allurion Balloon

A best-in-class consumer experience from start to finish with the world's first and only procedureless weight loss device. All in just a 15 minute office visit.


XXIX IFSO
World Congress

1-4 September 2026
Toronto, Canada



01 - Swallow

The Allurion Balloon is swallowed in a capsule



02 - Fill

Once in the stomach, the Allurion Balloon is filled with 550ml of liquid



03 - Disappear

16 weeks later, the Allurion Balloon self-empties through our patented Release Valve™ and passes naturally



Brief Report

Open Access

Emerging Outcomes for Treatment of Obesity with Type 2 Diabetes Mellitus: Novel Swallowable Balloon Process

Mohit Bhandari^{1*}, Manoel Galvao Neto¹, Susmit Kosta¹, Winni Mathur¹, Mahak Bhandari², Manoj Reddy² and Vinod Bhandari²

¹Mohak Bariatrics and Robotics Center, Sri Aurobindo University, Indore, India

²Sri Aurobindo Medical College and PG Institute, Mohak Bariatrics and Robotics Center, Sri Aurobindo University, Indore, India

Abstract

Background: Swallowable balloon process is a new way for the treatment of obesity and type 2 diabetes (T2DM). The aim of this study was to assess the outcomes of the novel swallowable balloon on T2DM remission, weight loss, and adverse events in individuals with T2DM and obesity.

Methodology: We treated forty-two T2DM patients with obesity at our center with a swallowable balloon. During the 6-month follow-up diabetes remission was defined as HbA1c<6.5% without T2DM medication and diabetic improvement was HbA1c<7.0% with decreased usage of oral diabetes medications.

Results: At 6 months of follow-up, 87.8% of the cohort treated by swallowable balloon experienced diabetes remission. The highest diabetes remission was 66.7% (HbA1c 6.43%; 95%CI 6.2-6.5 and FPG 120.3; 95% CI 111.6-124.9) occurred between 3-and 4-months post balloon insertion, and 12.5% recrudescence of diabetes during the end of follow-up. Improvement of diabetes without full remission was observed in 27.8% and 36.1% of patients at 4 and 6 months (HbA1c, 6.8% 95% CI 6.5-7.0). These patients achieved diabetes control (HbA1c, 6.8% 95%CI 6.5-7.0) with decreased usage of oral diabetes medications and withdrawal of insulin when previously used. Significant ($p<0.001$) improvements in %TWL were 6.5 %,10.1 %, 12.7%, 15.14%,14.7%, and 14.4% at 1-2-3-4-5-6 months, respectively were noted after the insertion of the balloon. There was a significant ($p<0.001$) resolution in diabetes-related comorbidities (75% HTN and 73.3% DLP).

Conclusion: New emerging swallowable balloon process is an effective tool to reduce HbA1c and put T2DM into remission and weight loss.



Combination Therapy: The Rationale

Combining endoscopy and medical therapy:

- Enhances weight loss outcomes
- Improves glycemic control
- Reduces the need for invasive surgical procedures



Clinical Trial Insights

Randomized controlled trial comparing ESG alone vs. ESG combined with Semaglutide:

- Greater %TWL in combined therapy group: 25% vs. 18%
- Significantly better glycemic control (HbA1c reduction)

Clinical study on intragastric balloons and GLP-1 receptor agonists:

- Enhanced weight loss with combined therapy ($p < 0.01$)
- Reduced visceral adiposity and improved lipid profiles.

References:

- Abu Dayyeh BK et al. Gastroenterology, 2022.
- Ruban A et al. Obesity Surgery, 2021.



Observational Studies

Study 1: Long-term outcomes of ESG combined with GLP-1 therapy:

- Sustained weight loss over 3 years (mean %TWL: 20%)
- Resolution of type 2 diabetes in 65% of patients

Study 2: Revisional endoscopy and GLP-1 receptor agonists:

- Effective for patients with weight regain post-sleeve gastrectomy
- Improved satiety and lower calorie intake.

References:

- Lopez-Nava G et al. Endoscopy International Open, 2020.
- Vargas EJ et al. Clinical Obesity, 2020.



Effect of Swallow Balloon Therapy with the Combination of Semaglutide Oral Formulation: a Randomised Double-Blind Single-Centre Study

Winni Mathur¹, Susmit Kosta¹, Manoj Reddy¹, Manoel Galvao Neto¹, Mohit Bhandari²

Affiliations + expand

PMID: 38091192 DOI: [10.1007/s11695-023-06975-8](https://doi.org/10.1007/s11695-023-06975-8)

Abstract

Background: Obesity is a significant public health issue; new therapies and pharmaceutical approaches to weight management are needed.

Objective: This study assesses weight reduction efficacy in the novel swallow balloon procedure and semaglutide, both promising non-surgical and pharmaceutical options, addressing obesity's critical public health challenge.

Methods: This was a computer-generated, blocked randomisation, double-blind, single-centre study. Fifty-seven participants were assigned to swallow balloon therapy group I (with semaglutide), and 58 were assigned to swallow balloon therapy group II (without semaglutide). All treatment doses were orally administered once daily (3 mg for the 1st month, 7 mg for the 2nd month, and 14 mg for the 3rd and 4th months after the placement of the swallow balloon). All the data were statistically analysed.

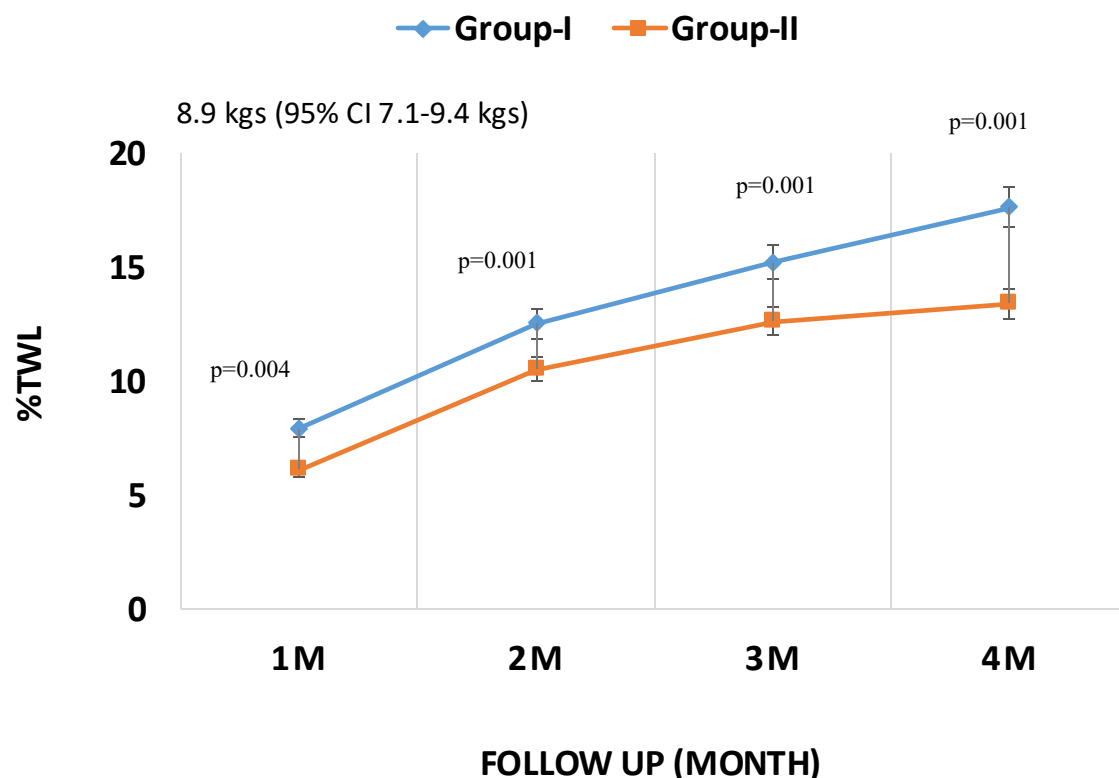
Results: The groups were highly well-matched. The %TWL in group I was 7.9%, 12.5%, 15.2%, and 17.6% and in group II was 6.1%, 10.5%, 12.8%, and 13.7% at 1, 2, 3, and 4 months, respectively. The most common adverse events (AEs) were nausea and vomiting, observed within the week. The resolution of T2DM, HTN, and OSA was 64.7% vs 55.5%, 64.3% vs 58.8%, and 72.0 vs 57.8% in groups I vs II, respectively. QoL significantly improved 4 months postoperatively in both groups. No major late complications occurred in either of the groups.

- The study supports the efficacy of swallow balloon therapy combined with semaglutide oral formulation in promoting weight loss and improving comorbid conditions.
- The findings highlight the potential of this combined approach in managing obesity and its associated health issues.



Results

Weight-loss outcome

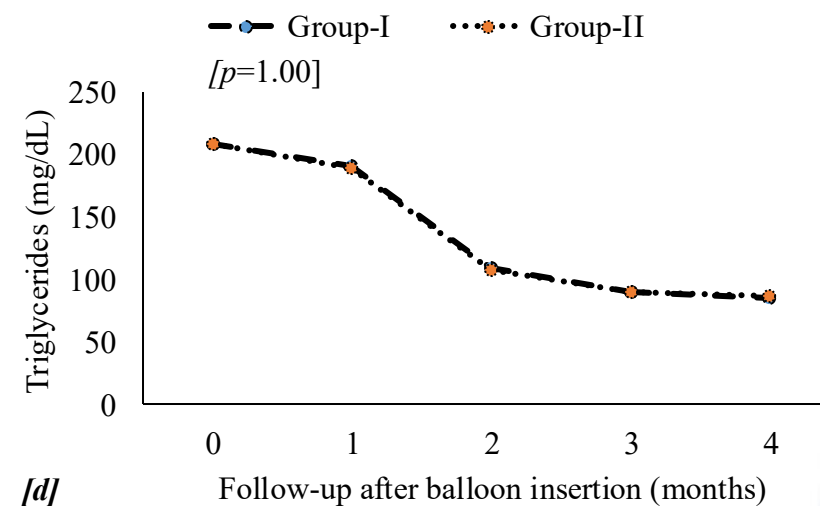
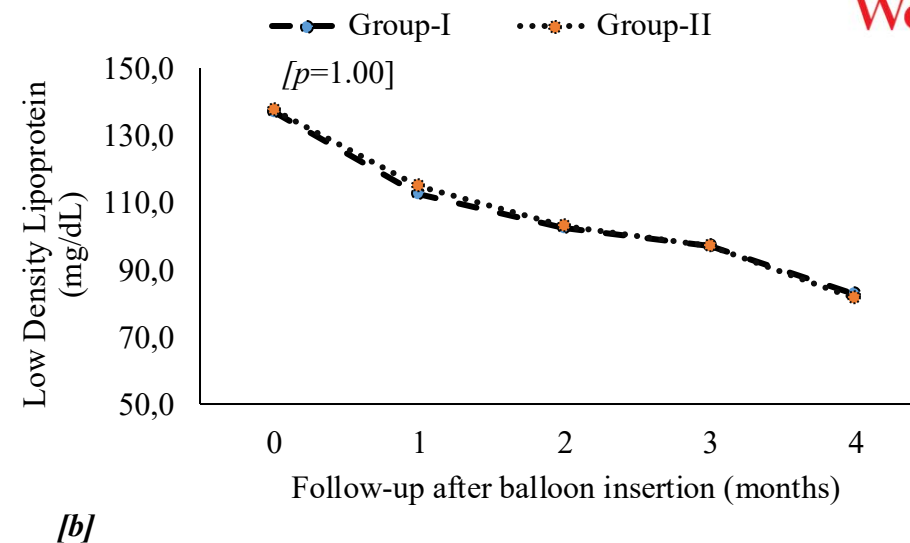
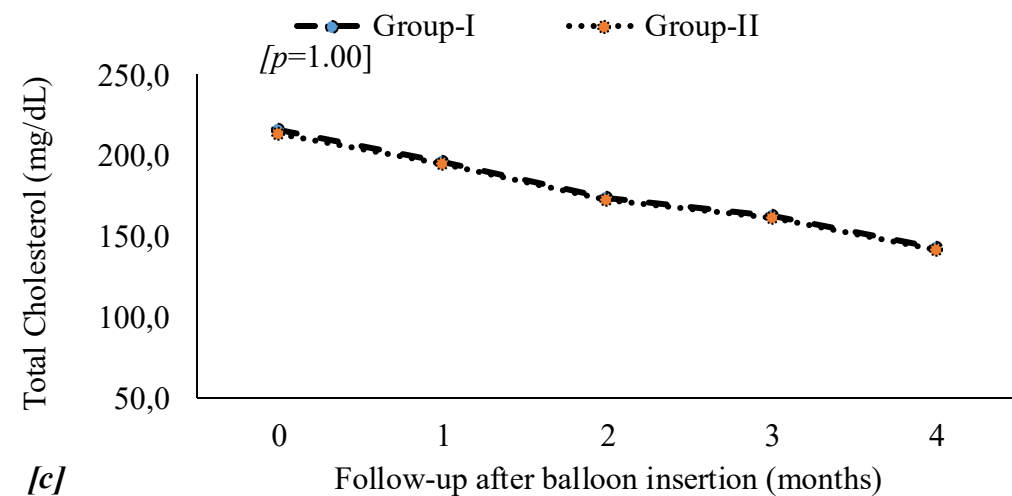
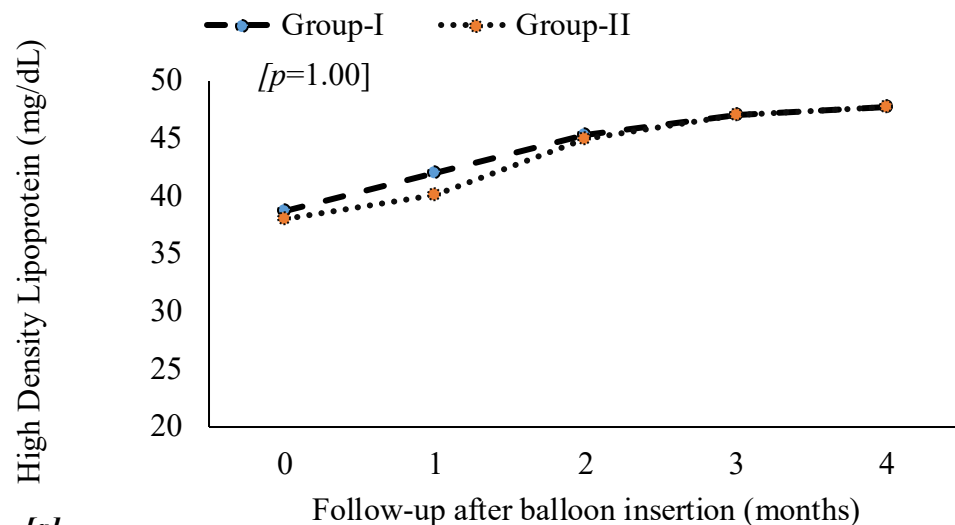


- **Mean %TWL in group I :** 7.9%, 12.5%, 15.2%, and 17.6% at 1, 2, 3, and 4 months.
- **Mean %TWL in group II :** 6.1%, 10.5%, 12.8%, and 13.7%
- Significant difference ($p < 0.001$) in the mean %TWL.
- During postoperative follow-up visits, the group treated with Oral-semaglutide and swallow balloon had a significantly higher proportion of patients achieving 5% weight loss.
- The mean weight difference in the group 8.9 kg until the end of the follow-up period (95% CI 7.1–9.4 kg).



Results

Lipid levels improved after balloon insertion (group I vs group II)



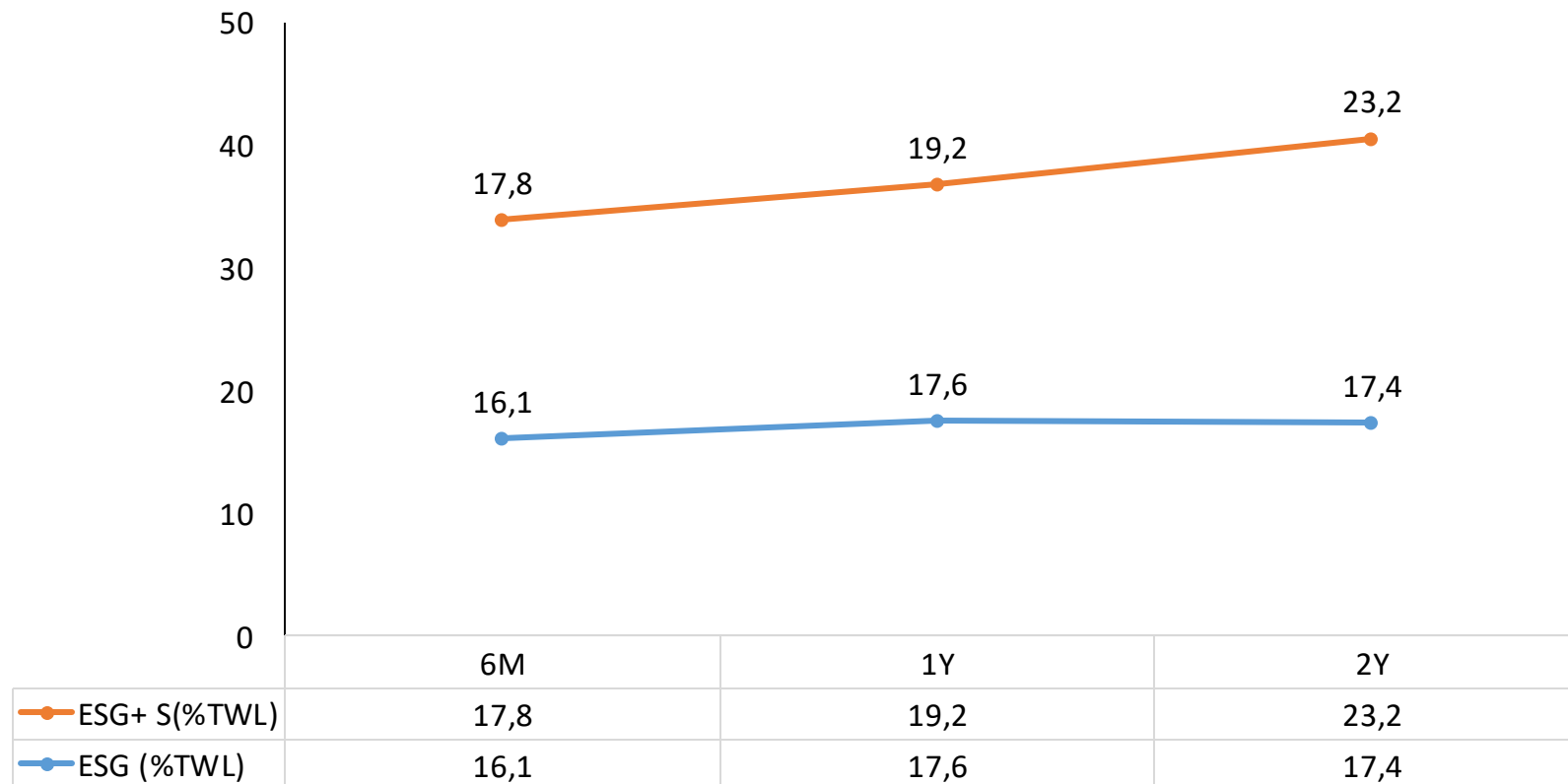
ESG vs ESG with semaglutide

	ESG (n=93)	ESG with semaglutide (n=78)
Mean age, yrs	42.02(10.1)	42.25 (10.2)
Mean HT, cms	1.61(8.11)	1.61 (14.1
Mean WT, kgs	93.43(13.1)	95.19 (12.3)
Mean BMI, kg/m2	35.12(3.16)	34.22(3.3)



ESG vs ESG with semaglutide

Weight-loss outcome



Best Candidates for Endoscopy + AOMs

- Patients with contraindications to surgery.
- BMI 30-40 kg/m² individuals who want significant weight loss without surgery.
- Patients needing long-term non-surgical maintenance therapy.



How AOMs changed landscape of obesity treatment

The increasing availability of anti-obesity medications (AOMs) is changing the landscape of obesity management, influencing both bariatric surgery and endoscopic treatments.

These medications, particularly GLP-1 receptor agonists like semaglutide and tirzepatide, have demonstrated significant weight loss, prompting discussions about their impact on patient selection, surgical outcomes, and long-term weight maintenance.



Clinical Evidence

- **IGB + GLP-1 RAs:** Extended durability of weight loss; prevents post-balloon rebound and improves metabolic parameters such as HbA1c and lipid profile.
- **ESG + Semaglutide:** Synergistic impact on weight loss and appetite control; multiple studies report higher %TWL and improved quality of life compared to ESG alone.



Combination Therapy Models

Endoscopy + AOMs: A Non-Surgical Alternative for Weight Loss

Why Combine Endoscopy with AOMs?

- EBTs alone lead to only 15-20% TBWL adding AOMs can increase this to 25-30%, approaching the results of sleeve gastrectomy.
 - Prevents weight regain post-EBT (a common problem with intragastric balloons and ESG).
 - Ideal for lower BMI patients (BMI 30-40 kg/m²) who do not qualify for bariatric surgery.
 - **EndoBarrier + Semaglutide (2024 study):** Patients who underwent duodenal bypass liner placement achieved 22% TBWL at 1 year when combined with semaglutide, versus 15% with EndoBarrier alone.
 - **ESG + Tirzepatide (2023 observational study):** TBWL increased from 16% to 27% at 12 months compared to ESG alone.
- Barclay A., Williams R., Hopkins D., et al. (2024). *EndoBarrier treatment for longstanding type 2 diabetes and obesity: Outcomes two-years after EndoBarrier in 90 consecutively treated patients*. Presented at Diabetes UK Professional Conference 2024.
- Badurdeen D., Kumar N., Swee E., et al. (2024). *Revisional endoscopic sleeve gastroplasty versus semaglutide and tirzepatide for weight recidivism after sleeve gastrectomy: comparative study*.
DOI: 10.1016/j.soard.2024.02.007



Combination Therapy Models

Endoscopy + AOMs: A Non-Surgical Alternative for Weight Loss

Why Combine Endoscopy with AOMs?

- EBTs alone lead to only 15-20% TBWL adding AOMs can increase this to 25-30%, approaching the results of sleeve gastrectomy.
- Prevents weight regain post-EBT (a common problem with intragastric balloons and ESG).
- Ideal for lower BMI patients (BMI 30-40 kg/m²) who do not qualify for bariatric surgery.
 - **EndoBarrier + Semaglutide (2024 study):** Patients who underwent duodenal bypass liner placement achieved 22% TBWL at 1 year when combined with semaglutide, versus 15% with EndoBarrier alone.
 - **ESG + Tirzepatide (2023 observational study):** TBWL increased from 16% to 27% at 12 months compared to ESG alone.
- Barclay A., Williams R., Hopkins D., et al. (2024). *EndoBarrier treatment for longstanding type 2 diabetes and obesity: Outcomes two-years after EndoBarrier in 90 consecutively treated patients*. Presented at Diabetes UK Professional Conference 2024.
- Badurdeen D., Kumar N., Swee E., et al. (2024). *Revisional endoscopic sleeve gastrectomy versus semaglutide and tirzepatide for weight recidivism after sleeve gastrectomy: comparative study*.
DOI: 10.1016/j.soard.2024.02.007



Who Benefits from AOMs vs. Surgery vs. Endoscopy ?

Patient Profile	Ideal Treatment Approach
BMI 27–35 kg/m ² with metabolic disease	AOMs ± ESG
BMI 35–40 kg/m ² , hesitant about surgery	ESG ± AOMs
BMI 40+ kg/m ² , multiple comorbidities	Bariatric surgery
Post-bariatric weight regain	AOMs ± Endoscopic revision
Ineligible for surgery (high risk)	AOMs ± Endoscopic treatment



Revisional Endoscopy and Medical Therapy

Combining revisional endoscopy with GLP-1 receptor agonists effectively addresses weight regain post-sleeve gastrectomy or gastric bypass.

References:

- Ruban A et al. Clinical Obesity, 2021.



Challenges in Combined Therapy

- **Cost:** Combined therapies remain expensive.
- **Patient adherence:** Long-term compliance with dual therapies is critical.
- **Limited data:** Long-term safety and efficacy data are needed.
- **Access:** Limited availability of trained endoscopists and specialized centers.



Cost-Effectiveness Analysis

- Short-term cost of combining therapies is higher.
- Long-term savings due to reduced obesity-related complications (e.g., diabetes, cardiovascular diseases).
- Potential for wider adoption with insurance coverage and innovative healthcare models.

References:

- Chan SM et al. Journal of Obesity, 2023.
- Schauer PR et al. New England Journal of Medicine, 2021.



The Future of Obesity Treatment

- **Innovative Approaches on the Horizon:**
 - **Gut microbiome:** Research into how gut bacteria influence obesity.
 - **Gene therapy:** Targeting genetic factors in obesity.
 - **Digital health interventions:** AI-driven personalized nutrition and fitness plans.
- **Holistic Approach:** Combining medical, behavioral, and technological methods may hold the key to long-term success.



Future Research Directions

Multicenter trials with diverse populations.

- Exploring new combinations of therapies.
- Long-term safety and efficacy studies.



Conclusion

- Obesity Treatment is Multifaceted
- Surgery is one option, but it's important to explore all available methods.
- Medications, lifestyle changes, technologies, and professional support can also lead to effective weight management.
- **Combination of medical treatment and bariatric endoscopy is a promising approach for sustainable obesity management.**



We have enough information currently to enhance the outcome and minimize the risk by matching the operation to the patient.

**That is the basis for:
An Algorithm for Bariatric Metabolic Operations**



Take home message

- Obesity is treatable through various means beyond surgery.
- Success often involves a combination of strategies tailored to individual needs.
- Emphasizing non-surgical treatments helps reduce stigma associated with obesity and its management.
- Sustainable weight management involves addressing the root causes of obesity and promoting long-term lifestyle changes.
- Obesity treatment is evolving everyday and there is much more to seek.





MOHAK TEAM THANK YOU

We offer various treatment modalities for obesity. The operation is determined by the profile of the patient and guided by findings from analysis of the data from our prospectively maintained database



XXX IFSO WORLD CONGRESS

"Advancing Multimodal Obesity Care"

24-27 August 2027

ifso2027.org



IFSO
PARIS 2027

See you in

PARIS

