Endoscopic Sleeve Gastroplasty

Andras B. Fecso, MD PhD FRCSC FACS
Minimally Invasive & Bariatric Surgery
Therapeutic & Bariatric Endoscopy

UHN Canada's Hospital

Name: Andras Fecso - “XXIX World Congress IFSO – May 2026”

IFSO

XXIX IFSO World Congress

1-4 September 2026
Toronto, Canada

Financial Disclosures
(over past 24 months)

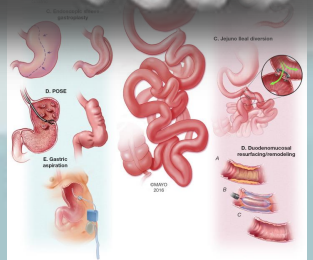
	Speaker	Advisory	Research	Consultant
Boston Scientific				√
Johnson & Johnson				√

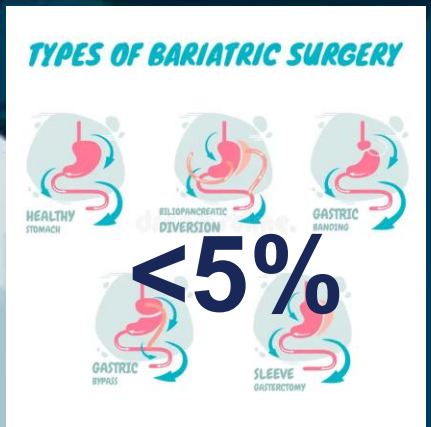
TORONTO2026 The Future of Obesity Management: From Weight Loss to Health Gain

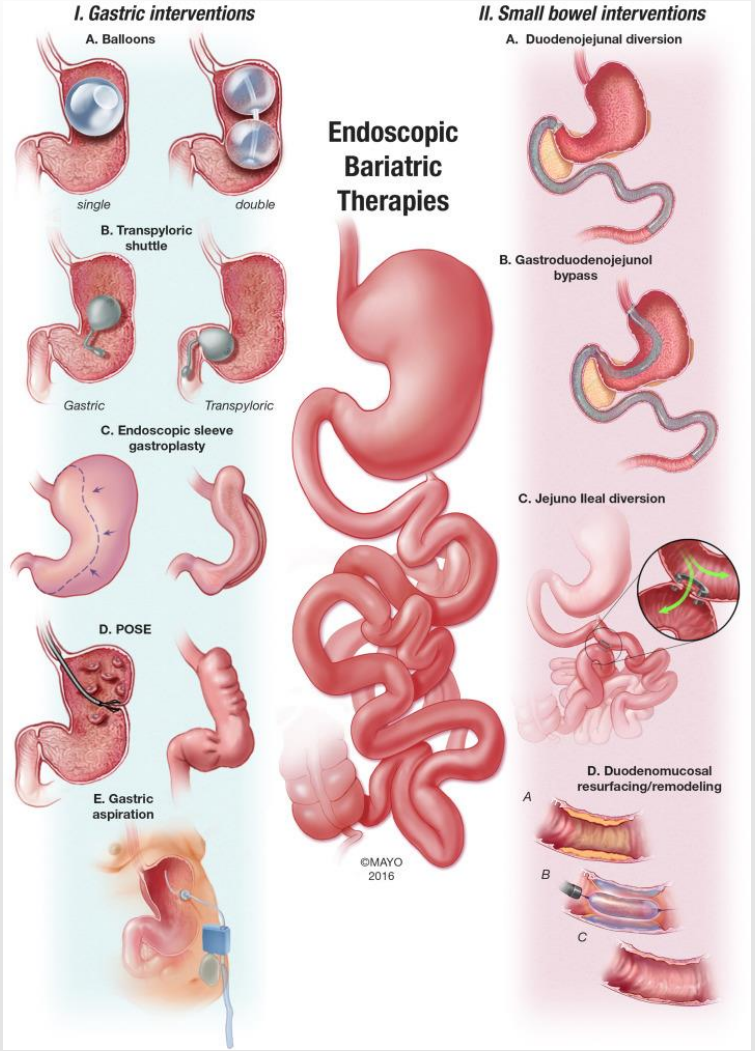
Collaboration Vs Competition

TBWL <5%

TBWL 25-30 %







Dayyeh et al. - Clinical Practice Update: Expert Review on Endoscopic Bariatric Therapies, Gastroenterology, 2017

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Endoscopic Sleeve Gastroplasty (ESG)

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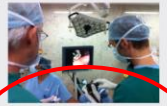
History of Bariatric Endoscopy

1985-2000

- Garren-Edwards Gastric Bubble FDA approved in 1985 and removed from market in 1992
- Bioenterics Intragastric Balloon (BIB) CE-mark and commercialization; 1997
- Bard EndoCinch Suturing System FDA approved for tissue approximation and treatment of symptomatic GERD; 2000

2006

- First instructional DVD on Bariatric Endoscopy (ASGE) - C. Thompson



2012

- First-in-human ESG with Apollo OverStitch - C. Thompson and R. Hawes, India
- ASGE Special Interest Group (SIG) in Bariatric Endoscopy - C. Thompson and N. Kumar
- Launch of Bariatric Endoscopy and Foregut Endosurgery Fellowship at BWH - C. Thompson

2013

- First-in-human Duodenal Mucosal Resurfacing (Revita) - M. Galvao Neto, L. Rodriguez-Grunert and P. Becerra, Chile
- TORe US Multicenter Randomized Sham-controlled Trial (RESTORe Trial) - C. Thompson et al
- First Annual Madrid International Bariatric Endoscopy (MIBE) Course - G. Lopez-Nava
- First Textbook of Bariatric Endoscopy - C. Thompson, Editor

2015

- Founding of the Association for Bariatric Endoscopy (ABE) - N. Kumar, B. Abu Dayyeh, S. Sullivan, S. Jonnalagadda, M. Larsen, C. Thompson (Co-chair), P. Blake (ASGE CEO) and S. Edmundowicz (Co-chair)
- First-in-human ESD-TORe, combining third space and bariatric endoscopy - C. Thompson
- First-in-human Endomina procedure - V. Huberty, Belgium

2018

- Obalon Balloon US Pivotal Trial (SMART Trial) - S. Sullivan et al
- Short-term outcomes of endoscopic sleeve gastroplasty in 1000 consecutive patients - A. Alqahtani et al, Saudi Arabia

2022

- ESG US Multicenter Randomized Controlled Trial (MERIT Trial) - B. Abu Dayyeh et al
- FDA Grants De Novo Marketing Authorization to Apollo Endosurgery for Apollo ESG™ and Apollo REVISE™
- Pylorus Sparing Antral Myotomy for weight loss – third space only procedure without suturing - C. Thompson, Boston

2003

- First applications of endoscopic suturing for weight loss
  - First-in-human gastrogastric fistula closure - C. Thompson, Boston
  - First-in-human Transoral Outlet Reduction (TORe) - C. Thompson, Boston
  - First-in-human Endoluminal Vertical Gastroplasty (EVG) - R. Fogel, Venezuela
  - 'Director of Bariatric Endoscopy' title created at Brigham and Women's Hospital - C. Thompson

2008

- Predecessor to Endoscopic Sleeve Gastroplasty (ESG) - Bard TRIM Clinical Trial; S. Brethauer, B. Chand, P. Schauer and C. Thompson, USA
- First-in-human Primary Obesity Surgery Endoluminal procedure (POSE) - S. Horgan, Argentina
- First-in-human Restorative Obesity Surgery Endoluminal procedure (ROSE) - C. Thompson, Boston
- First-in-human Duodenal Jejunal Bypass Liner (Endobarrier) - L. Rodriguez-Grunert and M. Galvao Neto, Chile

2014

- First US annual Flexible Endoscopic Surgery and Bariatric Endoscopy Course - C. Thompson and L. Swanstrom, Miami Beach
- First-in-human magnetic anastomosis/enteral diversion for metabolic disease - E. Machytka, M. Bužga, M. Ryou, P. Zonca, D. Lautz and C. Thompson, Czech Republic

2017

- Orbera Balloon US Pivotal Trial - A. Courcoulas et al
- AspireAssist US Pivotal Trial (PATHWAY Trial) - C. Thompson et al

2020

- Bariatric Endoscopy Live (BEL) – Global - E. de Moura, C. Thompson and D. de Moura
- Five-year outcomes of TORe for weight regain after RYGB - P. Jirapinyo et al, Boston

2021

- Five-year Outcomes of ESG - R. Sharaiha et al, New York
- First-in-human Gastroplasty with Endoscopic Myotomy – combination of third space and primary EBMT (GEM) - C. Thompson, Boston
- Spatz Balloon US Pivotal Trial - B. Abu Dayyeh et al

ASGE

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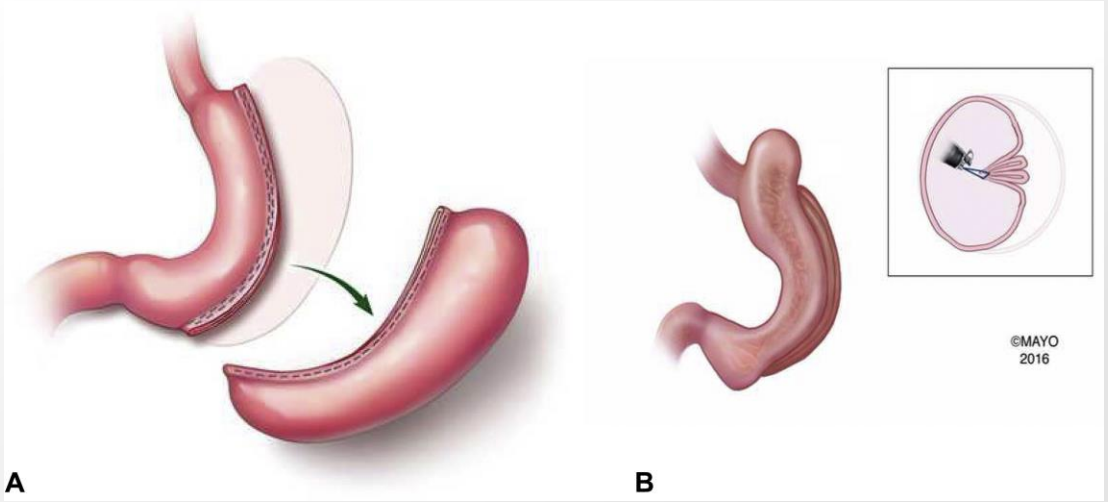

Bazerbachi, Fateh et al. - The pressure is on! Endoscopic sleeve gastroplasty versus laparoscopic sleeve gastrectomy: toward better patient allocation beyond pygmalionism - Gastrointestinal Endoscopy, Volume 89, Issue 4, 789 - 791

- Reduces gastric volume by 75-80%
- Less invasive
- Organ sparing
- Potentially reversible
- Similar safety profile
- Comparable results
- Improved GERD
- Ability for surgical conversion

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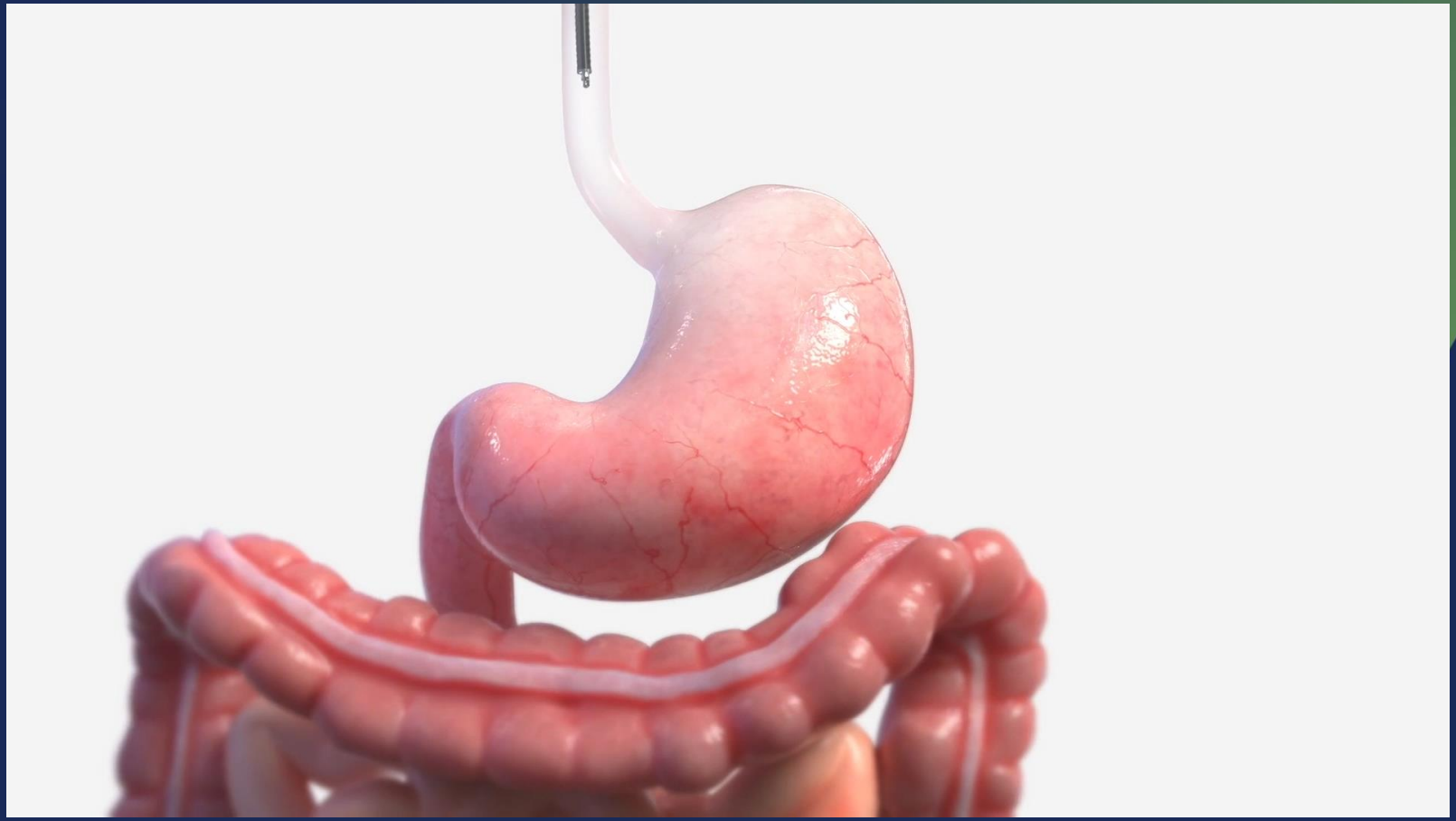

Courtesy: Boston Scientific

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Endoscopic sleeve gastroplasty for treatment of class 1 and 2 obesity (MERIT): a prospective, multicentre, randomised trial

Barham K Abu Dayyeh, Fateh Bazerbachi, Eric J Vargas, Reem Z Sharaiha, Christopher C Thompson, Bradley C Thaemert, Andre F Teixeira, Christopher G Chapman, Vivek Kumbhari, Michael B Ujiki, Jeanette Ahrens, Courtney Day, the MERIT Study Group, Manoel Galvao Neto, Natan Zundel, Erik B Wilson

MERIT = Multicentre ESG Randomised Interventional Trial

The Lancet, 2022

Funding – Apollo Endosurgery

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Design

- Multi-center, prospective, randomized clinical trial
- Evaluated safety & effectiveness of ESG procedure vs medically monitored regimen of diet & healthy lifestyle
- Direct response to collaborative surgical and GI society position statement

Primary Endpoints

- **EFFICACY:** At least 25% excess body weight loss (%EBWL) at 12 months and at least 15% EBWL vs. control at 12 months
- **SAFETY:** SAE rate of less than 5% (Clavien-Dindo Grade 3 or higher)

Population

21-65 years

Class I or II Obesity (BMI 30-40 kg/m^2)

Failed non-surgical weight loss methods

Agreed to comply with lifelong dietary restrictions

Quota of >50 pts with HTN, ≥50 pts with DM (oral agents only)

Secondary Endpoints

Patients also evaluated for improvement in hypertension and type 2 diabetes at 24 months

Abu Dayyeh BK, Bazerbachi F, Vargas EJ, et al. Endoscopic sleeve gastroplasty for treatment of class 1 and 2 obesity (MERIT): a prospective, multicentre, randomised trial. *Lancet*. Vol 400. July 28, 2022

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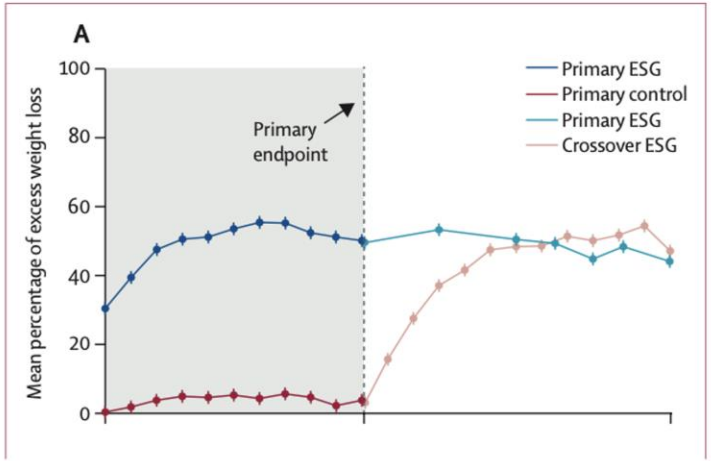
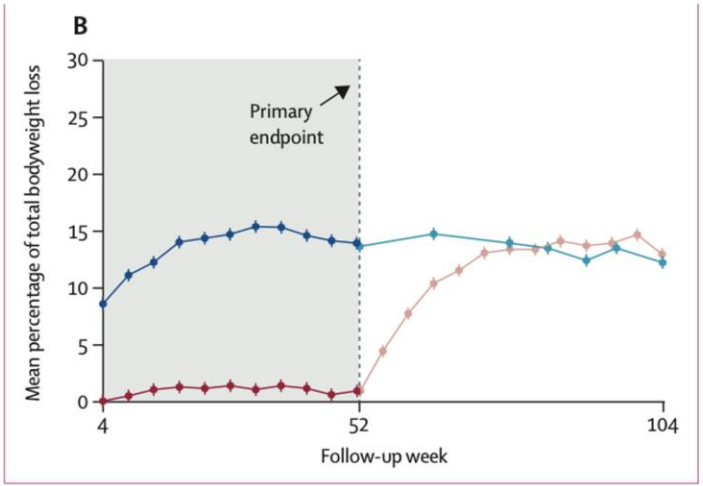
%EWL

49.2% vs. 3.2%, p<0.0001



%TBWL

13.6% vs. 0.8%, p<0.0001



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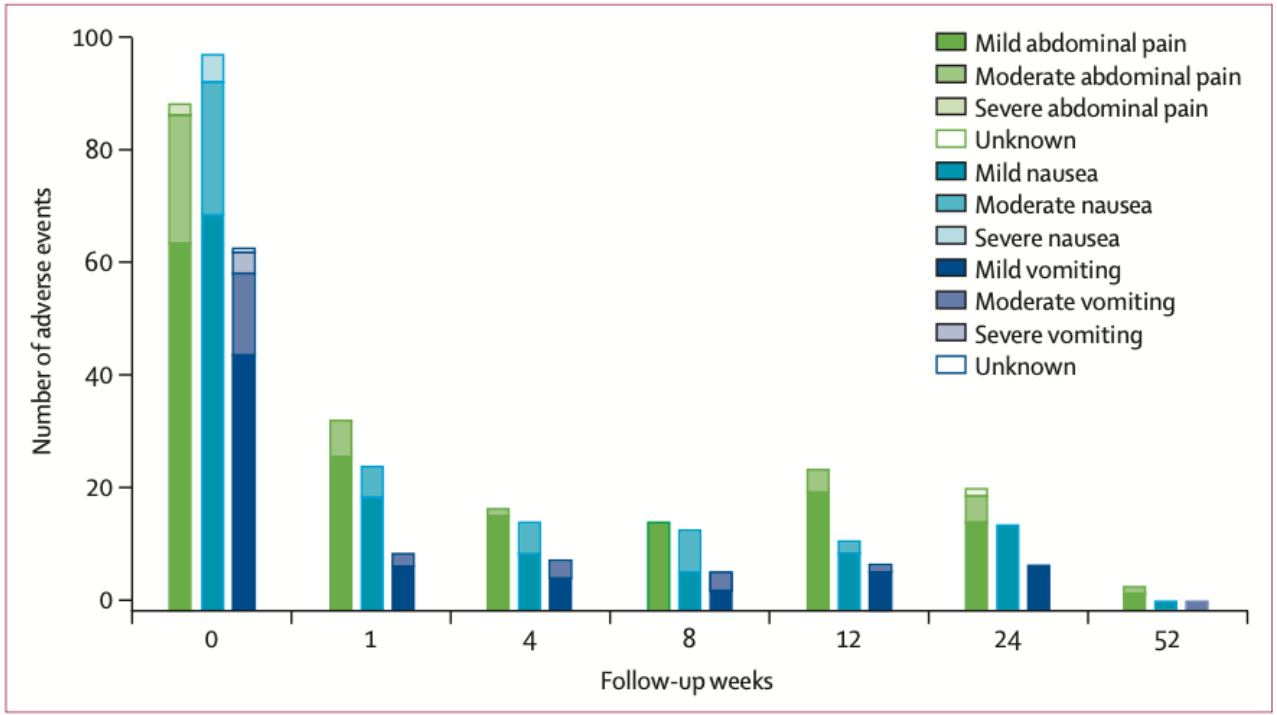
	ESG (primary)	Control	Rate difference*	p value†	ESG (primary and crossover)
Diabetes					
Improving	92% (12/13; 65 to 100)	15% (4/27; 5 to 33)	−77·5 (10·1; −91·4 to −47·4)	<0·0001	93% (25/27; 76 to 99)
Worsening	0% (0/13; 0 to 27)	44% (12/27; 28 to 63)	44·4 (9·6; 16·1 to 60·2)	0·0041	0% (0/27; 0 to 15)
Hyperlipidaemia					
Improving	40% (6/15; 20 to 64)	32% (8/25; 17 to 52)	8·0 (15·7; −37 to −22)	0·61	30% (7/23; 10 to 15)
Worsening	27% (4/15; 11 to 52)	28% (7/25; 14 to 48)	1·3 (14·9; −28 to 28)	0·93	30% (7/23; 10 to 15)
Hypertension					
Improving	67% (24/36; 50 to 80)	40% (19/48; 27 to 54)	−27·1 (10·6; −46·1 to 5·5)	0·014	60% (39/65; 48 to 71)
Worsening	6% (2/36; 1 to 19)	23% (11/48; 13 to 37)	17·4 (7·2; 1·5 to 30·7)	0·029	9% (6/65; 4 to 19)
Metabolic syndrome					
Improving	83% (24/29; 65 to 93)	35% (10/29; 20 to 53)	−48·3 (11·3; −67·0 to −23·3)	0·0002	83% (35/42; 69 to 92)
Worsening	0% (0/29; 0 to 14)	38% (11/29; 23 to 56)	37·9 (9·0; 17·2 to 53·7)	0·0002	5% (2/42; 1 to 17)
Effect on multiple comorbid conditions					
Improved at least 1 condition	41 (80%; n=51)	28 (45%; n=62)	..	..	70 (78%; n=90)
Worsened at least 1 condition	6 (12%; n=51)	31 (50%; n=62)	..	..	15 (17%; n=90)

Data are rate (n/N; 95% CI), rate difference (SE; 95% CI) or n (%; N). ESG=endoscopic sleeve gastroplasty. A negative rate difference indicates that the ESG rate was greater than the control rate. *Mean difference was calculated as the difference between the rate for the control group minus ESG group. †The p value was determined with an independent samples proportions test to evaluate differences between two rates.

***Table 2*: Comorbidity 52-week change from baseline for randomly assigned participants**



2% CD3+

- Intraabdo abscess
- Upper GI bleeding
- Malnutrition

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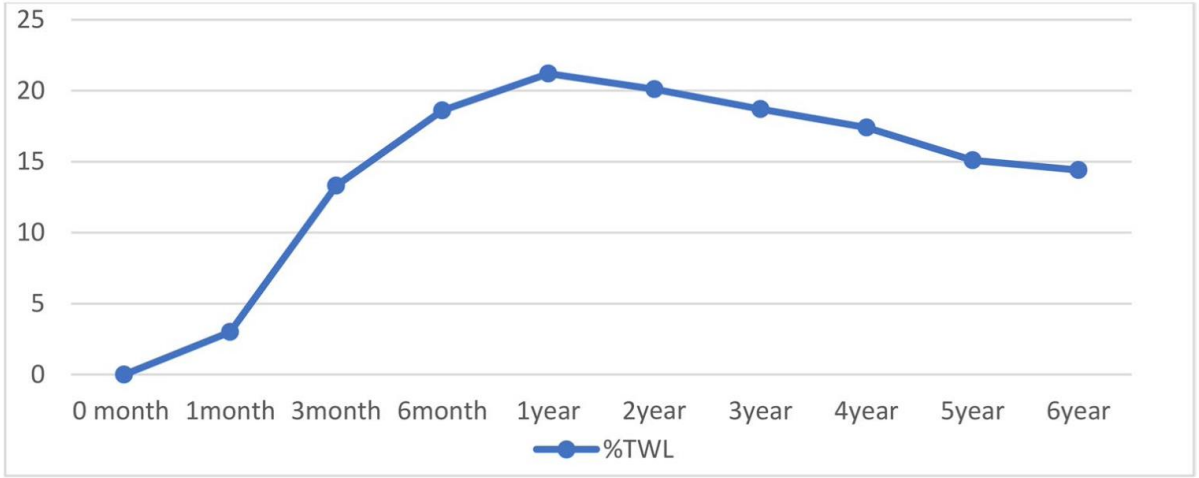

Table 3 Comorbidity outcomes at 6 years

Comorbidity	Prevalence Before Surgery (%)	Resolution/ Improvement at 6 Years (%)	*p*-value
Type 2 diabetes mellitus	33.3	51.2	<0.001
Hypertension	44.3	65.8	<0.001
Obstructive sleep apnea	37.0	89.9	<0.001
Dyslipidemia	34.9	73.6	<0.001

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

Manoel Galvao Neto [1], Mohit Bhandari [2], Manoj Reddy [1], Mahak Bhandari [1], Sonika Ranganath [1], Susmit Kosta [1], Winni Mathur [1]

Affiliations + expand

PMID: 41703242 DOI: 10.1007/s11695-026-08505-8

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- 404 pts followed for 10 yrs
- Mean TBWL 15.8%
- 10.9 % ESG revision
- 0.01 % serious AE

S2063 Ten-Year Outcomes of Endoscopic Sleeve Gastroplasty for the Treatment of Obesity

Lahooti, Ali BS[1,*]; Rizvi, Anam MD[1]; Baig, Muhammad Usman. MBBS[1]; Akagbosu, Cynthia MD, MA[1]; Mahadev, SriHari MD[2]; Sampath, Kartik MD[1]; Carr-Locke, David L. MA, MD, FACG[1]; Aronne, Louis MD[1]; Shukla, Alpana MD[1]; Johnson, Kate E. BS[1]; Herr, Andrea NP[1]; Newberry, Carolyn MD[2]; Kumar, Sonal MD, MPH[1]; Sharaiha, Reem MD[1]

Author Information

The American Journal of Gastroenterology 119(10S):p S1473-S1474, October 2024. | *DOI:* 10.14309/01.ajg.0001037620.30740.d4

Bariatric Endoscopy Monday, May 8, 2023 12:30 PM - 1:30 PM

Poster Session

TEN-YEAR EFFICACY OF ENDOSCOPIC SLEEVE GASTROPLASTY (ESG)

Pichamol Jirapinyo, Nitin Kumar, Sohail Shaikh, Roberto Trasolini, Michele Ryan, Christopher Thompson

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ELSEVIER

Surgery for Obesity and Related Diseases 19 (2023) 1205–1218

SURGERY FOR OBESITY AND RELATED DISEASES

ASMBS Guidelines/statements

Endoscopic sleeve gastroplasty and its role in the treatment of obesity: a systematic review

Summary…
- ESG for BMI <=40, high risk surgical patient, to avoid incisions
- Sustained weight loss (2-3 years), but less than LSG
- Improves metabolic parameters and GERD
- 2-3% serious adverse events
- Endobariatrics should be performed and be part of a multidisciplinary bariatric team

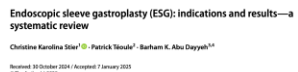
Table 2 IFSO statements from the 2023 Consensus Conference on ESG indications [14]

• ESG combined with lifestyle intervention is preferable to lifestyle interventions alone, for the management of adults with class I obesity
• ESG combined with lifestyle intervention is preferable to lifestyle interventions alone, for the management of adults with class II obesity
• ESG combined with lifestyle is an acceptable management option for adults with class III obesity who either do not qualify (given medical or psychological comorbidities) or do not wish to pursue MBS
• ESG combined with lifestyle intervention is preferable to lifestyle interventions alone, for the management of adolescents with class II obesity

ESG endoscopic sleeve gastrectomy

Table 3 NICE guideline statements on ESG indications [15]

The committee considered that this procedure may particularly benefit people:
• with class 3 obesity for whom invasive bariatric surgery would be considered high risk
• who decline bariatric surgery because of the associated risks and complications
• who have class 1 or class 2 obesity, for whom the procedure may prevent progression of obesity and associated comorbidities


Endoscopic sleeve gastroplasty (ESG): indications and results—a systematic review

Christine Karolina Stier[1] · Patrick Tóoule[2] · Barham K. Abu Dayyeh[3,4]

Received: 30 October 2024 / Accepted: 7 January 2025
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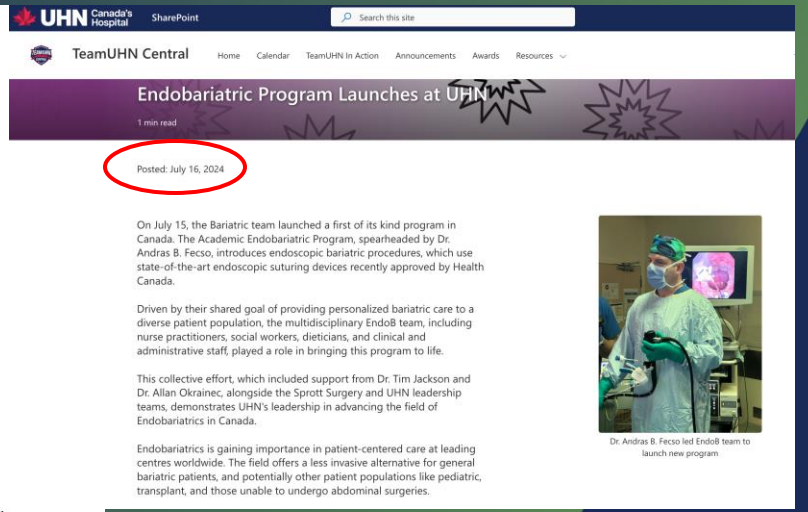

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Endobariatric Program Launches at UHN

1 min read

Posted: July 16, 2024

On July 15, the Bariatric team launched a first of its kind program in Canada. The Academic Endobariatric Program, spearheaded by Dr. Andras B. Fecso, introduces endoscopic bariatric procedures, which use state-of-the-art endoscopic suturing devices recently approved by Health Canada.

Driven by their shared goal of providing personalized bariatric care to a diverse patient population, the multidisciplinary EndoB team, including nurse practitioners, social workers, dieticians, and clinical and administrative staff, played a role in bringing this program to life.

This collective effort, which included support from Dr. Tim Jackson and Dr. Allan Okrainec, alongside the Sprott Surgery and UHN leadership teams, demonstrates UHN's leadership in advancing the field of Endobariatrics in Canada.

Endobariatrics is gaining importance in patient-centered care at leading centres worldwide. The field offers a less invasive alternative for general bariatric patients, and potentially other patient populations like pediatric, transplant, and those unable to undergo abdominal surgeries.

Dr. Andras B. Fecso led EndoB team to launch new program

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Total: 30 (29) pts
Mean: 15.01
Max: 30.12
Min: -0.58

Unpublished UHN data

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Endoscopic Sleeve Gastroplasty…

- New(ish) and exciting opportunity
- Has the potential o… significant impact i… treatment of obesi… related diseases
- Great opportunity … patients and bariatri… centers across the world

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ENDOBARIATRIC TEAM

Dr. Andras B. Fecso, MD
Surgeon
Endobariatric Progam Lead

Dr. Allan Okrainec, MD
Surgeon
Bariatric Program Director

Dr. Tim Jackson, MD
Surgeon
Division Head of General Surgery

Laura Scott, RD, MHM(c)
Patient Care Coordinator
Interdisciplinary EndoBariatric Team Lead

Gifty Mahama, BScN, RN, MN
Bariatric Program Manager

Dr. Sanjeev Sockalingham, MD
Psychiatrist

Intekhab Hossain, MD
Minimally Invasive Surgery Fellow

Kelly Chen, RD
Registered Dietitian

Stella Paterakis, RD
Registered Dietitian

Chau Du, MSc, RP
Psychometrist

Sasha-Ann Winchester, MSW
Social Worker

Mariyam Bajwa, RN
Registered Nurse

Lorraine Whitehead, RN
Registered Nurse

Wei Wang, NP
Nurse Practitioner

Christine Estonilo
Administration

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A Healthier World

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