



XXIX IFSO World Congress

1-4 September 2026 | Toronto, Canada

TORONTO 2026

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



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Disclosure Slide

No Disclosures



ERAMBS to Facilitate Ambulatory Bariatric Procedures

ISPCOP Session: Optimizing Perioperative Care in Patients with Obesity

Speaker: Dr. Anupama Wadhwa, Professor of Anesthesiology, Uni of Texas Southwestern

Date: September 2, 2026

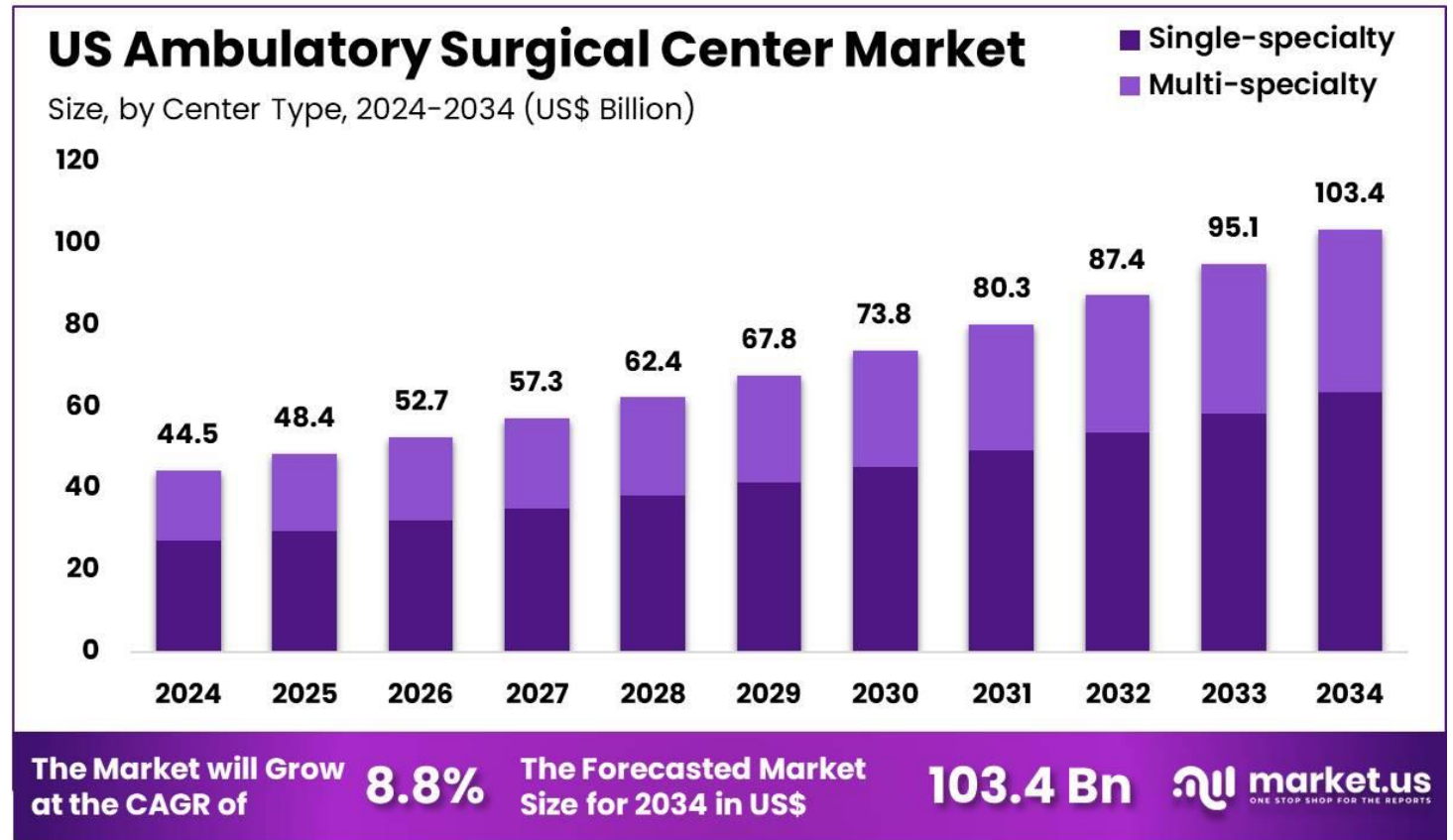


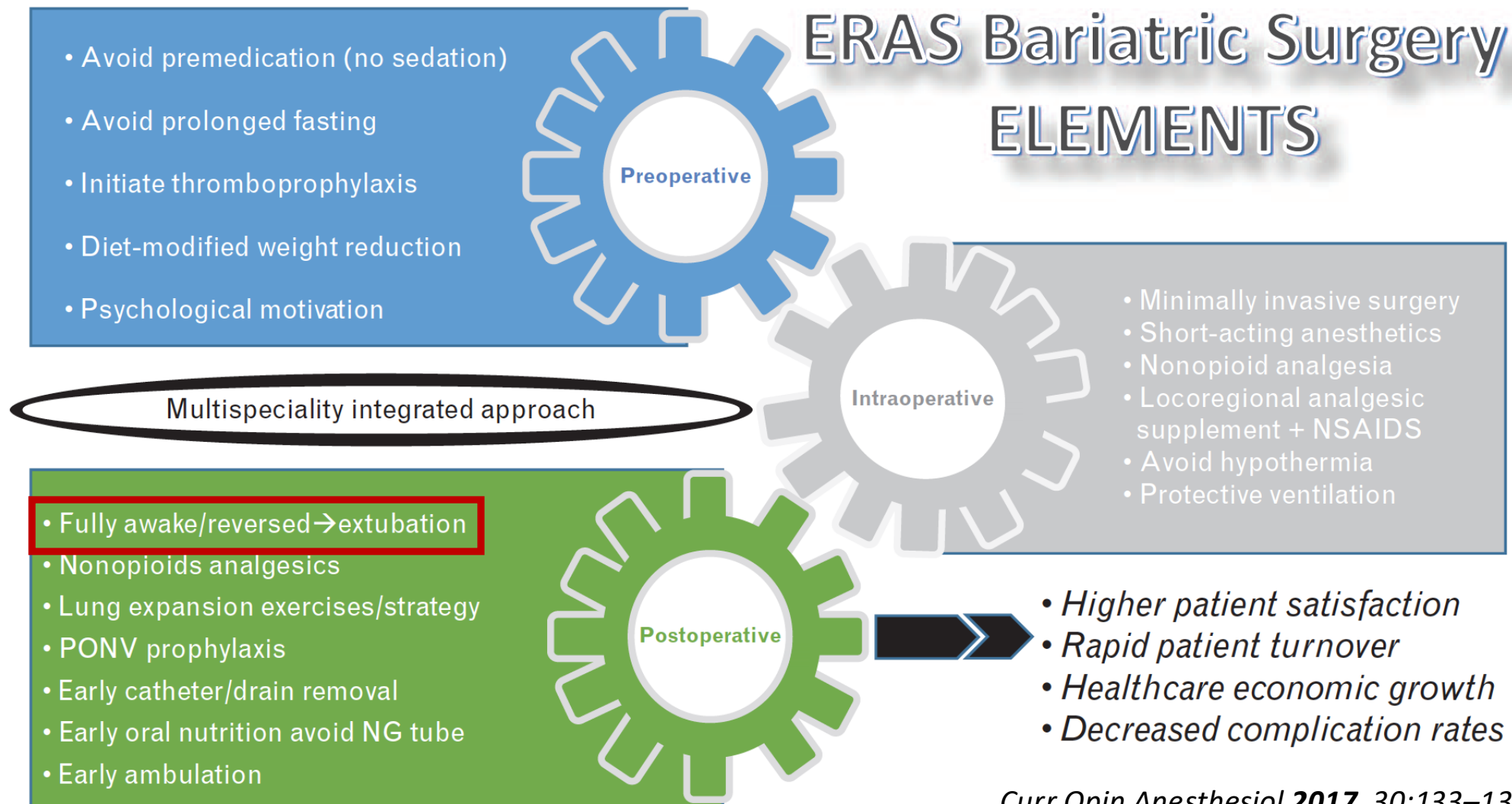
IMMEDIATE
RECOVERY



Ambulatory Surgery

- Advances in surgical technology and anesthetic techniques
- Decreased cost, improved patient satisfaction
- Ambulatory surgery accounts for 70% of all elective surgical procedures performed in the US (Steiner 2017 AHRQ)





Timely Identification of High Risk Patients

- Patients with severe OSA, esp OHS
- Super Obesity, BMI > 50 kg/m²
- Chronic opioid usage
- Severe cardiovascular disease
- High dose use of GLP-1 medications combined with no liquid diet
- History of severe PONV
- Non-compliance with prehabilitation and required weight loss before surgery
- Roux-en-Y procedures





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NEWSLETTER

THE OFFICIAL JOURNAL OF THE ANESTHESIA PATIENT SAFETY FOUNDATION

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Are Serious Anesthesia Risks of Semaglutide and Other GLP-1 Agonists Under-Recognized?

Case Reports of Retained Solid Gastric Contents in Patients Undergoing Anesthesia

by William Brian Beam, MD, and Lindsay R. Hunter Guevara, MD

INTRODUCTION

Glucagon-like peptide (GLP-1) receptor agonists are an emerging and increasingly popular class of medications used for the treatment of type 2 diabetes mellitus and, more recently, obesity. Since the expansion of approved uses to include weight loss, these medications have become increasingly popular. One mechanism of action of GLP-1 agonists is delayed gastric emptying.¹ We describe two cases of patients taking GLP-1 receptor agonists that were found to have high volumes of complex gastric contents despite appropriate fasting per American Society of Anesthesiologists (ASA) practice guidelines for preoperative fasting.² With the use of GLP-1 receptor agonists becoming increasingly more common, anesthesia professionals need to be aware of these



medications and the potential risks they pose to patients receiving anesthesia.

CASE 1

A 60-year-old female presented for magnetic resonance imaging with sedation for claustrophobia. She had a history of hypertension and was overweight (body mass index [BMI] 28 kg/m²). The month prior, she started *semaglutide* (Ozempic, Novo Nordisk, Plainsboro, NJ) for weight loss (last dose 7 days prior to presentation). Despite fasting from solid food

for more than 18 hours prior to evaluation, she described feeling “full.” A point-of-care gastric ultrasound was performed, which revealed solid gastric contents. The decision was made to cancel her imaging for fear of high risk of aspiration during the delivery of anesthesia.

CASE 2

A 50-year-old female with past medical history of class 2 obesity (BMI 37.7 kg/m²), type 2 diabetes, hypertension, and obstructive sleep apnea was scheduled to undergo a robotic-assisted hysterectomy for endometrial hyperplasia. Of note, she previously had gastroesophageal reflux disease, but these symptoms had resolved since she started *tirzepatide* (Mounjaro, Eli Lilly, Indianapolis, IN) 12.5 mg/0.5 mL pen injector injection (last dose 2 days before surgery).

See “GLP-1 Agonist Aspiration Risk,” Page 69

Consensus Recommendations for the Safe Conduct

of Anesthesia in Patients Receiving GLP-1 Agonists



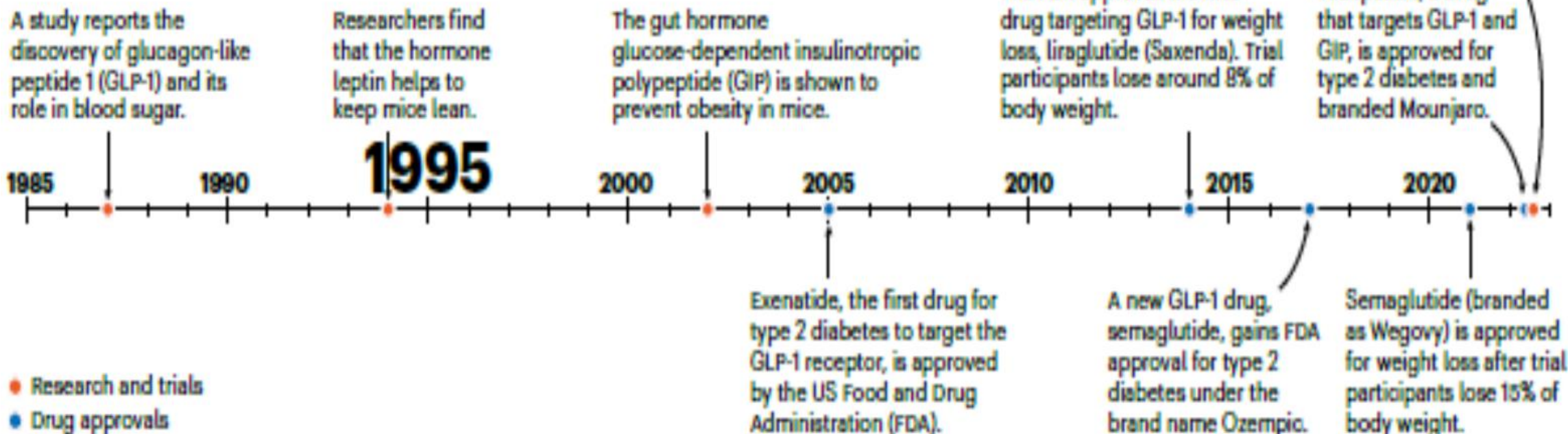
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WEIGHT BUSTERS

Decades of work on the biological basis of obesity have yielded drugs that help people to lose excess weight more effectively than ever before.



Gastric Emptying and Obesity

RICHARD A. WRIGHT, SAM KRINSKY, CARLA FLEEMAN,
JUAN TRUJILLO, and EDWARD TEAGUE

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Abnormal gastric emptying in the obese has been previously suggested. To explore this concept, we studied a group of 77 subjects composed of 46 obese and 31 age-, sex-, and race-matched nonobese individuals. All of the subjects underwent quantitative fluid/solid gastric emptying assays utilizing a dual radionuclide technique. For the solid phase, obese subjects were found to have a more rapid emptying rate than nonobese subjects ($p < 0.05$). Obese men were found to empty much more rapidly than their nonobese counterparts ($p < 0.01$). In 4 obese subjects whose weight loss was to within 10% of their ideal weight, repeat gastric emptying studies revealed no change in liquid or solid emptying rates. The elimination patterns of gastric emptying for liquids and solids were identical to those described previously, and did not differ between the obese and nonobese groups. No correlation between body surface area and gastric emptying rates of solids or liquids could be found. The rate of solid gastric emptying in the obese subjects is abnormally rapid. No clear-cut explanation for this finding yet exists.

Obesity is a common malady that influences multiple physiological functions. The underlying etiology for this disorder remains obscure in all but rare cases of primary endocrine anomalies.

Several investigators have described alterations in gastric emptying in relation to food composition, body surface area, and obesity (1-7). Hunt and Stubbs (1) demonstrated an inverse relationship between the rate of gastric emptying, and the caloric

density of the ingested meal. Gastric emptying was delayed by increasing the amount of protein in the test meal (2). In addition, Hunt (3,4) noted that obese subjects selected a more energy dense diet than did normal subjects. Fara's work (5) demonstrated that the infusion of lipid into the duodena of cats decreased gastric motility. Johansson et al. (6) found that nonobese subjects transferred calories from the stomach to the duodenum at a rate directly proportional to their body weight. In normal subjects, Lavigne (7) noted an inverse linear relationship between the body surface area and the rate of solid gastric emptying. Studies in morbidly obese patients were not performed. Thus, possible interrelationships between the caloric density and constituents of ingested meals, gastric emptying rates, and obesity have been elucidated.

The purpose of this investigation was to determine whether morbidly obese subjects had significantly different rates of solid and liquid gastric emptying than age-, sex-, and race-matched nonobese controls. Also, the tenet of gastric emptying as a variable of body surface area, as noted by Lavigne et al., was explored. Further, the measurement of gastric emptying rates after weight reduction was studied to ascertain whether or not a primary or secondary relationship between altered gastric emptying and obesity existed. If gastric emptying changed after weight loss, then alterations in gastric emptying might be due to obesity itself, thus indicating a secondary disorder. On the other hand, if rapid emptying was found to exist in the obese population with no change after weight loss, it might be considered as a potential primary causative factor in the genesis of the condition.

Methods

Patient Selection

Forty-six obese subjects [mean weight 249 lbs. (range 167-461 lbs), mean age 39.5 yr (range 20-62 yr), mean height 68 in. (range 59-84 in.)] were selected from

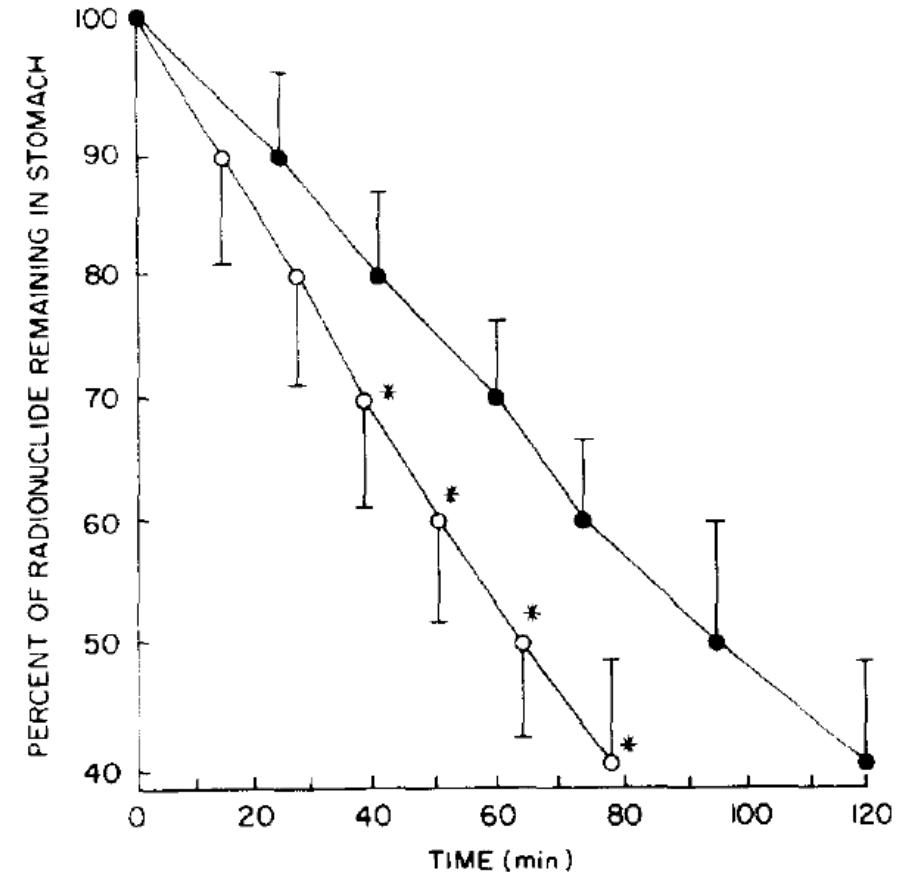


Figure 1. Gastric emptying of a solid test meal in obese (open circles) ($n = 46$) and nonobese (closed circles) subjects ($n = 31$). Statistical significance ($p < 0.05$) between the

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Multi-Society Clinical Practice Guidance for the Safe Use of Glucagon-like Peptide-1 Receptor Agonists in the Perioperative Period



1-4 September 2026
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American Gastroenterological Association, American Society for Metabolic and Bariatric Surgery, American Society of Anesthesiologists, International Society of Perioperative Care of Patients with Obesity, and the Society of American Gastrointestinal and Endoscopic Surgeons

To be published on Oct 23, 2024



Multi Society Guidance- Recommendation 1

Shared decision-making of the patient with procedural, anesthesia, and prescribing care teams balancing metabolic need of the GLP-1RA with individual patient risk. This can be achieved by developing multidisciplinary protocols/procedures appropriate for individual practices.



Care teams should consider the following variables as elevating risk of delayed gastric emptying and aspiration with the periprocedural use of GLP-1RA:

1. *Escalation phase*: The escalation phase, versus maintenance phase, is associated with higher risk of delayed gastric emptying with GLP-1RA usage
2. *Higher dose*: The higher the dose of GLP-1RA used, the more likely the risk of gastrointestinal side effects
3. *Weekly dosing*: Gastrointestinal side effects are more common with weekly compared to daily formulation compounds
4. *Presence of gastrointestinal symptoms*: Symptoms suggestive of delayed gastric emptying and intestinal transit times
5. *Medical conditions beyond GLP-1RA usage which may also delay gastric emptying*



GLP-1RA therapy may be continued pre-operatively in patients not at elevated-risk of delayed gastric emptying and aspiration

When elevated risk of delayed gastric emptying and aspiration exist, withholding of GLP-1RAs should be balanced

- With the surgical and medical risk of inducing the potential for a hazardous, metabolic disease state, like hyperglycemia
- Bridging therapy off a GLP-1RA may be resource intensive, cost or insurance prohibitive, and risk other negative side effects like hypoglycemia
- Withholding GLP-1RA perioperatively only for patients with the diseases of overweight and obesity would constitute overweight and obesity bias and discrimination, which should be avoided.



High-Flow Nasal Oxygen Improves Safe Apnea Time in Morbidly Obese Patients Undergoing General Anesthesia: A Randomized Controlled Trial

David T. Wong, MD,* Amelie Dallaire, MD,* Kawal Preet Singh, MD,* Poorna Madhusudan, MD,* Timothy Jackson, MD,† Mandeep Singh, MD,* Jean Wong, MD,* and Frances Chung, MBBS*

(Anesth Analg 2019;129:1130–6)



High-Flow Nasal
Oxygenation Group
(n = 20)

261.4 ± 77.7



Supplementation of pre-oxygenation in morbidly obese patients using nasopharyngeal oxygen insufflation

A. S. Baraka,¹ S. K. Taha,² S. M. Siddik-Sayyid,² G. E. Kanazi,² M. F. El-Khatib,²
C. M. Dagher,³ J.-M. A. Chehade,³ F. W. Abdallah³ and R. E. Hajj³

1 Professor and Chairman, 2 Associate Professor, 3 Resident, Department of Anaesthesiology, American University of Beirut, P. O. Box 11-0236, Beirut 1107-2020, Lebanon

- In the control group, the SpO₂ fell from 100% to 95% during the subsequent apnoea in 145 (27) s, with a significantly negative correlation between the time to desaturation to 95% and the body mass index.
- In the study group, the SpO₂ was maintained in 16 of 17 patients at 100% for **4 min** when apnoea was terminated



Apneic Oxygenation During Prolonged Laryngoscopy in Obese Patients: A Randomized, Controlled Trial of Buccal RAE Tube Oxygen Administration

Andrew Heard, FRCA,* Andrew J. Toner, FRCA,* James R. Evans, FRCA,*
Alberto M. Aranda Palacios, FRCA,*† and Stefan Lauer, MD*‡ (Anesth Analg 2017;124:1162–7)

- Recipients of buccal oxygenation were less likely to exhibit $\text{SpO}_2 < 95\%$ during 750 seconds of apnea;



Figure 2. Adapted Ring-Adair-Elwyn (RAE) tube secured for oxygen delivery to the left buccal space.



Figure 1. Adapted 3.5-mm south-facing Ring-Adair-Elwyn (RAE) tube for administration of buccal oxygen. Pictures from left to right show intact apparatus, connector removed, and distal tube cut above Murphy eye, modified apparatus with auxiliary oxygen tubing attached to cut end.



Nasal CPAP for apneic oxygenation during intubation

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Nasal Continuous Positive Airway Pressure During Intubation in Superobese Patients Prolongs Safe Apnea Period

www.anesthesia-analgesia.org

DOI: 10.1213/ANE.0000000000004176

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From Weight Loss to Health Gain



Figure. Nasal continuous positive airway pressure during intubations efforts with Airtraq (Phodol, Guecho [Vicare], Spain) videolaryngoscope.

Tomasz Gaszynski, MD, PhD

*Department of Anaesthesiology and Intensive Therapy
Medical University of Lodz*



Leiden Surgical Rating Scale

Extremely poor conditions: The surgeon is unable to work due to coughing or due to the inability to obtain a visible laparoscopic field because of inadequate muscle relaxation	1
Poor conditions: There is a visible laparoscopic field but the surgeon is severely hampered by inadequate muscle relaxation continuous muscle contractions and/or movements with the hazard of tissue damage	2
Acceptable conditions: There is a wide visible laparoscopic field but muscle contractions and/or movements occur regularly causing some interference	3
Good conditions: There is a wide laparoscopic working field with sporadic muscle contractions and/or movements	4



Surgical Conditions in Robotic Surgery Obese versus non-Obese Patients

Robotic hysterectomy, n=100

	BMI 25.8	BMI 43
Leiden surgical rating scale	BMI < 29.9	BMI > 30
Pooled data M + D paralysis	4.5 ± 0.5	3.5 ± 0.8
Pooled data M paralysis	4.4 ± 0.4	3.4 ± 0.7
Pooled data D paralysis	4.6 ± 0.5	4.0 ± 0.6



INTRAOPERATIVE

Guideline Recovery

Guidelines for Perioperative Care in Bariatric Surgery (ERABS)

A. Thorell¹ · A.
A. Alvarez² · P.

Preoperative information and education

Prehabilitation and exercise

© Société Internat

Smoking and alcohol cessation

Abstract

Background
formed work
to present su
perioperative
Methods: Th
attention pai
were exami
consensus re
Results: Alt
rectal), mos
Conclusions
enhanced rec
Surgical M
elements of

Preoperative weight loss

Glucocorticoids

Preoperative fasting

Carbohydrate loading

Deep NMB

WEAK recommendation

Ensuring full reversal of NMB
Objective monitoring with TOF
STRONG recommendation

9. NEUROMUSCULAR BLOCK

Postoperative analgesia

Thromboprophylaxis

Early postoperative nutrition

Non-invasive positive pressure ventilation

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¹⁰ Gastrointestinal Surgery, National Institute for Health
Research Nottingham Digestive Diseases Biomedical
Research Unit, Nottingham University Hospitals and
Healthcare Sciences, Nottingham NG7 2UH, UK

What is Residual Neuromuscular Block?

- Residual Neuromuscular Block = TOF Ratio < 0.9
- Common despite clinical recovery
- Outcomes
 - Impaired airway protection,
 - Poor oxygenation
 - Postoperative Pulmonary complications
 - Poor patient outcomes



Electromyography



Measures compound muscle action potentials evoked by neurostimulation

Many different muscles can be examined- Does not require freely moving limbs

Easy and fast set up and short calibration

Possible interference from other electrical equipment (electrocautery)

Ulnar nerve – adductor pollicis, abductor digiti minimi and first dorsal interosseous muscles;

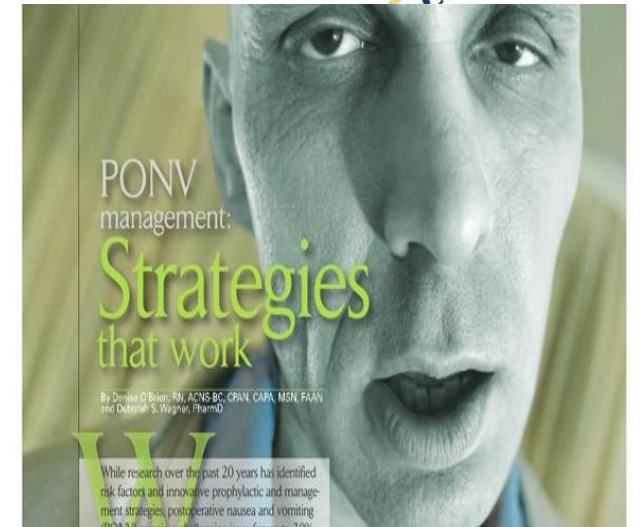
Posterior tibial nerve - flexor hallucis brevis muscle;

Phrenic nerve - diaphragm



PONV in ERAMBS

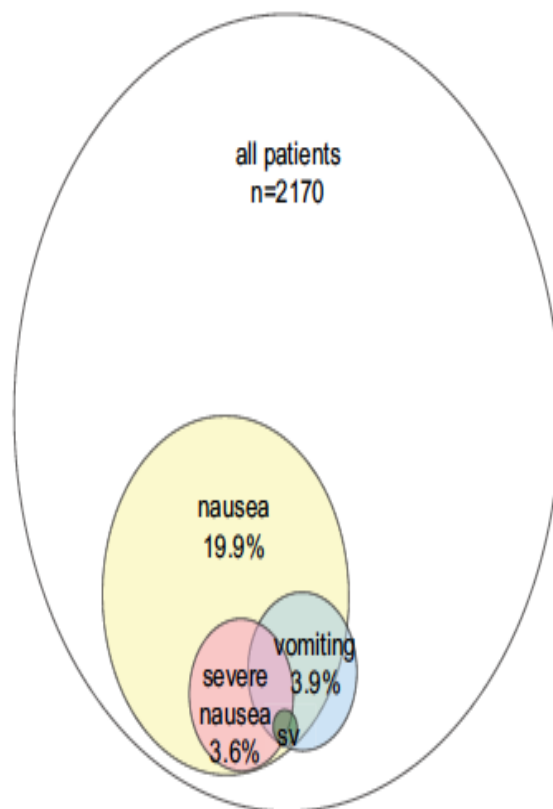
- Preoperative
 - Scopolamine patch and
 - Aprepitant 40 mg/Fosaprepitant IV
- Intraoperative
 - Opioid sparing or Opioid Free Anesthesia
 - Dexamethasone and
 - 5 HT-3 antagonist-Ondansetron and
 - Low dose Propofol infusion
- Postop
 - Metoclopramide or
 - Promethazine or
 - Repeat Ondansetron Solutab/IV
 - Droperidol/Haloperidol



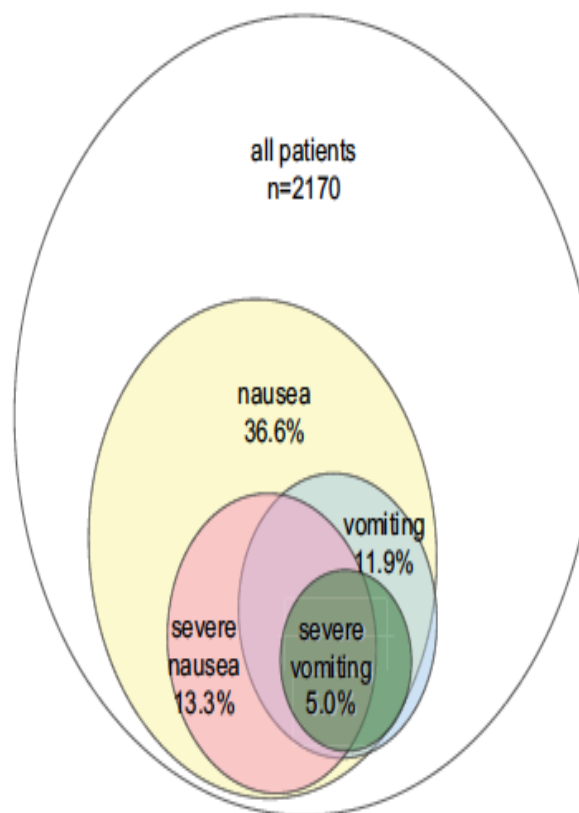
POST DISCHARGE NAUSEA AND VOMITING



A Post-anesthesia Care Unit



B Post-discharge



Adaptation and Application of a Patient Satisfaction Survey in a Bariatric Ambulatory Surgery Center: Four-Year Outcomes

Obesity Surgery (2025) 35:3465–3470

<https://doi.org/10.1007/s11695-025-08153-4>

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Tristan Patel¹ · Sunil Sharma² · Amit Surve³ · Smita Sharma⁴

Age	43 ± 10.5 years
BMI	38.4 ± 5.2 kg/m ²
GERD	63.8%
Patient satisfaction scores	9.74–9.95/ 10, compared to 7.20 for hospital based surgeries
Complication rate	(2.1%) with no mortalities and a 0.2% hospital transfer rate.





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THANK YOU FOR YOUR ATTENTION



DOGMA

“A belief that is accepted by the members of a group without being questioned or doubted”

Opinions develop based on “experience” or inadequate research.

Taught as “facts” to subsequent generations.

“Facts” remain unchallenged.



Thank you!

Thank you for your attention. We will now transition to our next speaker.



Weight stigma: As harmful as obesity itself?

June 2, 2022

By **Chika Anekwe, MD, MPH**, Contributor; Editorial Advisory Board Member, Harvard Health Publishing

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June 1-5, 2022



GLP-1 Agonists and Aspiration Risk

From "GLP-1 Agonist Aspiration Risk," Page 67

Her other medications included: metformin, hydrochlorothiazide, pregabalin, oxycodone, 5 mg as needed (intermittent use with last dose the day prior to surgery), and sertraline. She had been fasting since the night before surgery.

Anesthesia proceeded with an uneventful induction of general anesthesia and intubation. After intubation, an orogastric tube was placed and gastric contents (Figure 1) were suctioned.

The case was uncomplicated from a surgical perspective. At case completion, the patient was transferred to the transport cart and sat up in anticipation of emergence. Shortly before she was ready for extubation, she developed large volume emesis of particulate matter that was consistent with what she reported eating several days prior to surgery (Figure 2). Fortunately, the endotracheal tube was still in place and her airway remained protected. Once emesis was cleared, she was uneventfully extubated. She was closely observed in the PACU and did not have evidence to suggest gastropulmonary aspiration and was therefore discharged home later that day.

DISCUSSION

GLP-1 receptor agonists are an increasingly popular class of medications being prescribed to patients. These medications have been described as a "breakthrough" for weight loss. The GLP-1 receptor is expressed in a diverse range of organ systems including gastrointestinal (GI) tract, pancreas, heart, liver, and brain. Stimulation of this receptor leads to weight loss, improved glycemic control in diabetic patients, and improved cardiac and renal outcomes. The primary mechanism of action is related to both activation of vagal afferent nerves innervating the stomach as well as direct binding to GLP-1 receptors on gastric mucosal cells leading to delayed gastric emptying.¹ For diabetics, weight

Table 1: Common GLP-1 Agonists.^{16,17}

	GLP-1 Agonists	Clinical Dosing	Pharmacokinetics		Special Considerations
			HALF-LIFE	ELIMINATION	
1st Generation	Exanetide (Byetta®, Bydureon®)	SQ, twice daily (IR), weekly (ER), uptitrated	3 hours	Renal	Associated with Immune-mediated thrombocytopenia
	Lixisenatide (Aldurin®)	SQ, daily, uptitrated	3 hours	Renal	No longer available in United States
2nd Generation	Semaglutide (Wegovy®, Ozempic®) (Rybelsus®)	SQ, weekly, uptitrated Oral, daily, uptitrated	7 days	Renal	Approved (SQ formulation only) for weight loss
	Liraglutide (Saxenda®, Victoza®)	SQ, daily uptitrated	12.5 hours	Renal	Approved for weight loss
	Dulaglutide (Trulicity®)	SQ, weekly	4.5 days	Renal	
GLP-1/GIP Agonist					
	Tirzepatide (Mounjaro®)	SQ, weekly	5 days	Renal	Approved for weight loss

SQ = Subcutaneous.



Figure 1: Depicts gastric contents in a patient on a GLP-1 agonist, who appropriately adhered to ASA fasting guidelines.

cystitis, have also been described. Although rare, anaphylactic and angioedema reactions have been described.⁷

Despite the benefits of the class of medications on obese and diabetic patients, there are



Figure 2: Depicts large volume emesis of particulate matter in a patient on a GLP-1 agonist that was consistent with what the patient reported eating several days prior to surgery.

contents.^{10,11} For this reason, recognition of patient populations at elevated risk for increased gastric volume is key to delivering a safe anesthetic (Table 2).

Although it was avoided in these cases, the

