IMPLEMENTING ERAS IN ENDOSCOPIC GASTROPLASTY: STRATEGIES FOR FASTER RECOVERY

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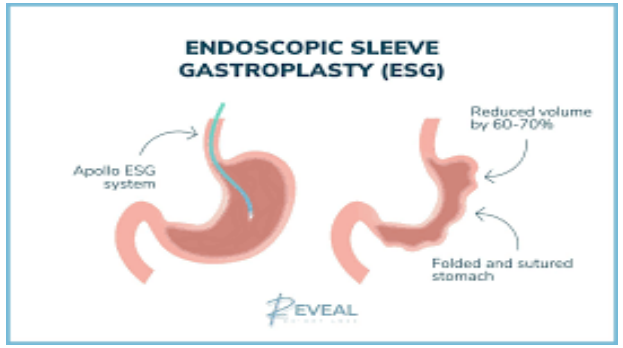
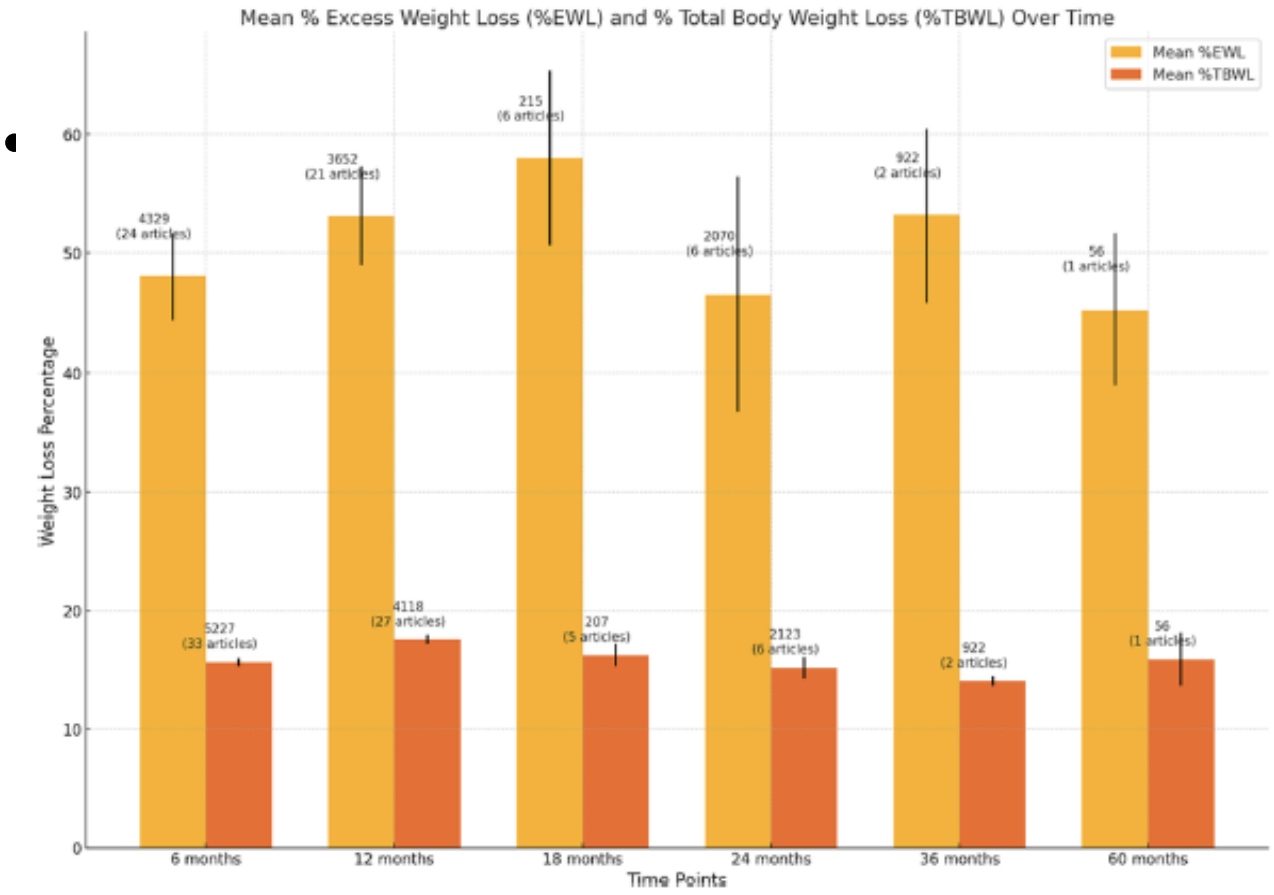
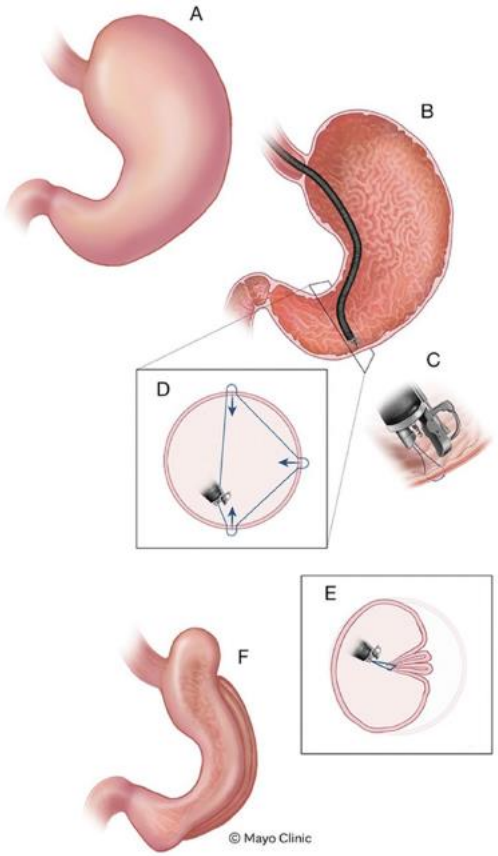
What is Endoscopic Sleeve Gastroplasty (ESG)

- Indicated in patients with Class I and II obesity or Class III obesity for patients not wanting surgery
- Minimally invasive procedure -Size of stomach is reduced in size by 70% (around size of banana)-full thickness sutures inside the stomach and folding it
- Maintenance of 16% weight loss over a 5-year period
- Reduces weight and incidence of Type 2 DM, sleep apnea
- Reversible
- Outpatient procedure
- Fast recovery



IFSO Bariatric Endoscopy Committee Position Statement-2024

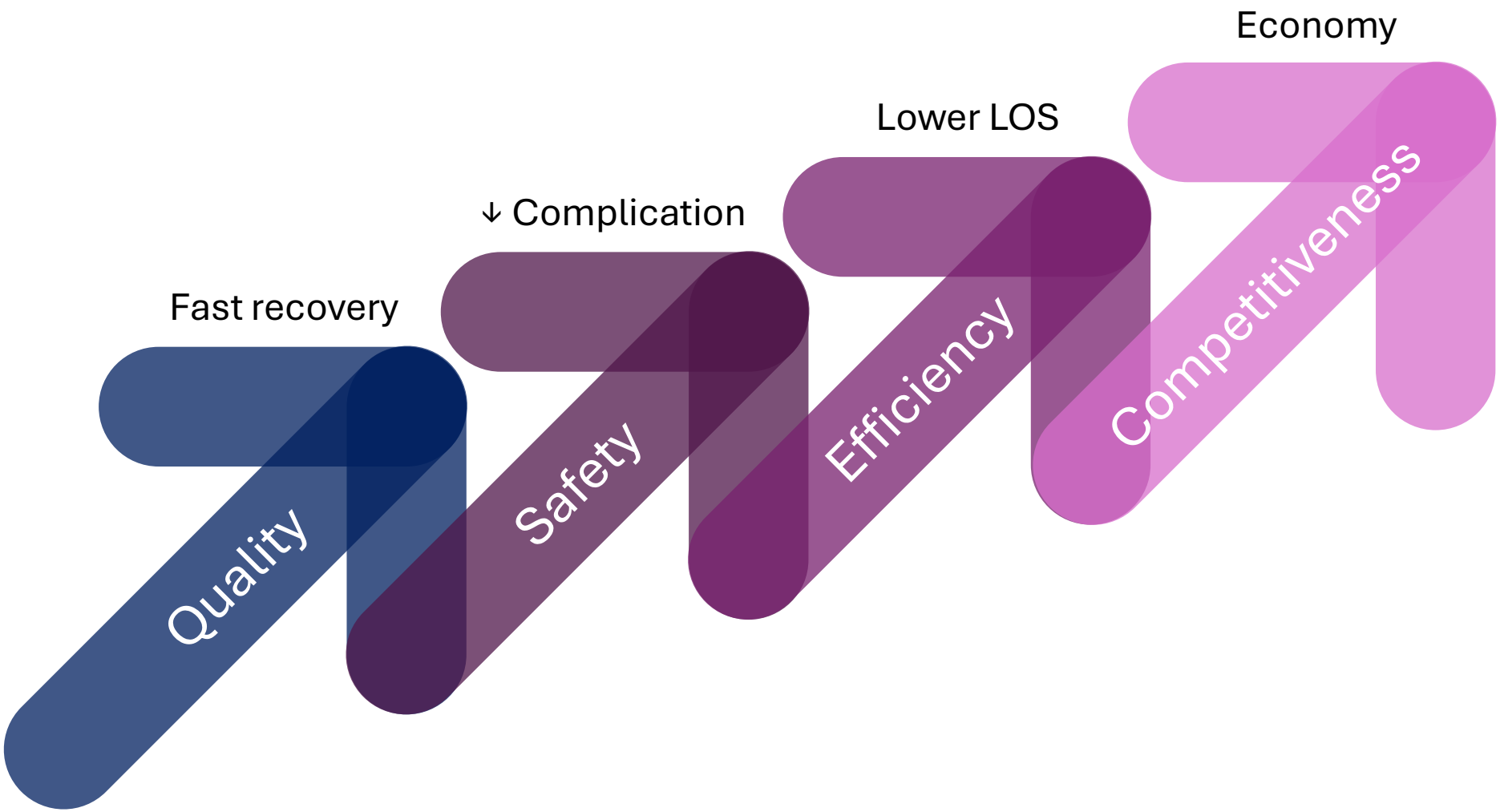




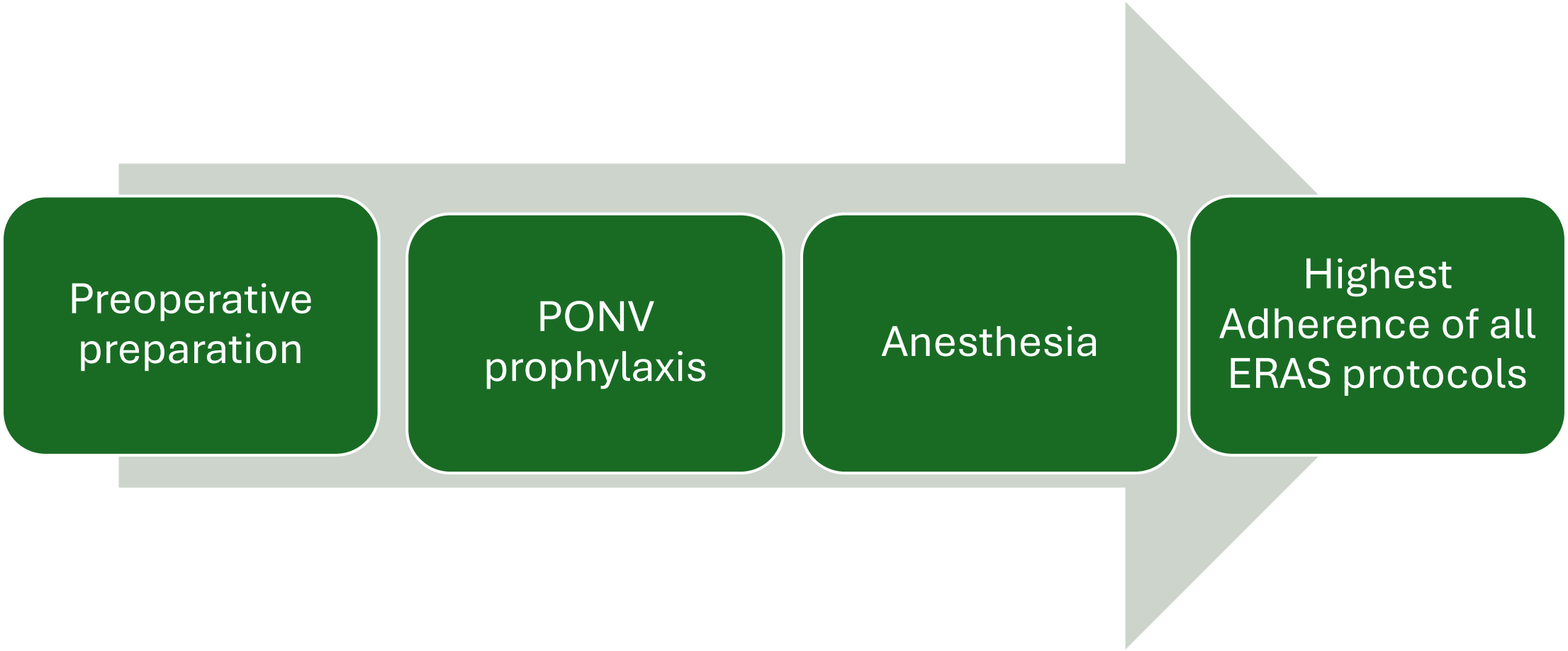
Enhanced recovery after surgery (ERAS)- Components

- ERAS is a comprehensive **multi-disciplinary** approach to surgical patient care to minimize post-operative complications and **reduce recovery time up to 30-50%**
- ERAS pathways aim to return patient physiological function, enhance mobilization, reduce pain and facilitate early oral nutrition postoperatively, thus **reducing perioperative surgical stress**

Core Principles of ERAS



Therapeutic Endoscopy



Perfect for ERAS?

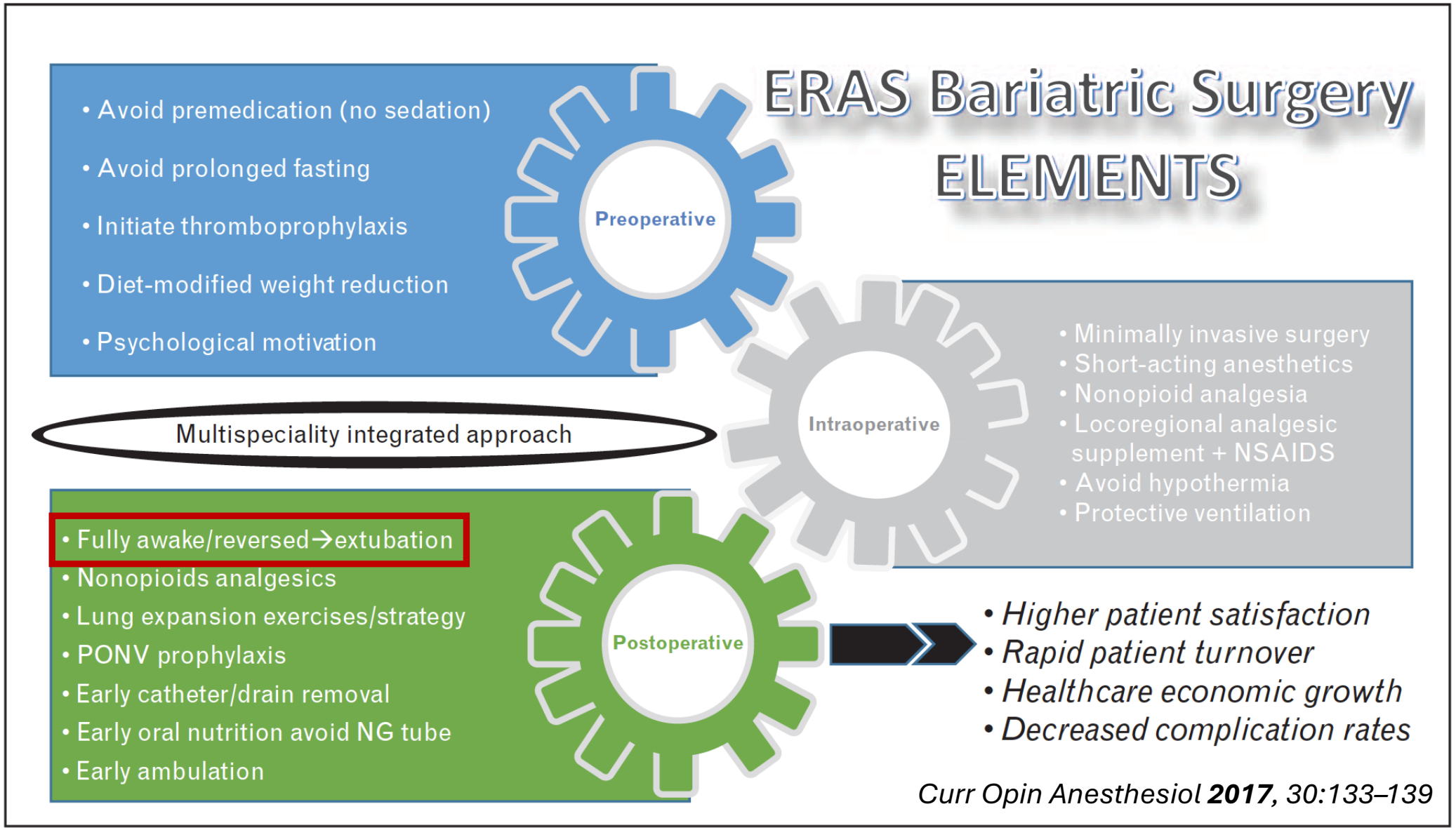
- Non-invasive-no incision
- Minimal Pain
- Outpatient surgery
- Well prepared patients for endoscopic procedure

Issues?

- May not have the same longitudinal preparation as MBS
- May not be subject to same stringent prep with 10% preop weight loss

Enhanced recovery after bariatric surgery

Adrian Alvarez[a], *Basavana G. Goudra*[b], *and Preet Mohinder Singh*[c]



Curr Opin Anesthesiol ***2017,*** *30:133–139*

Components of ERAS for Endoscopists

Patient Education and Involvement

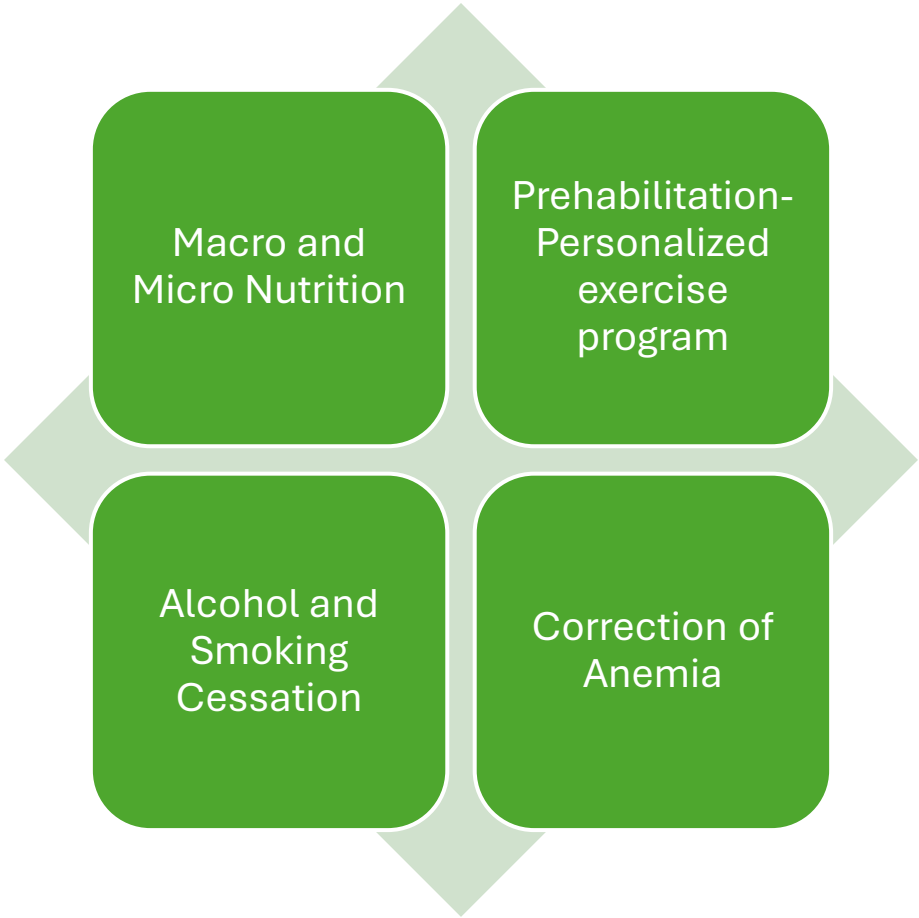
Preoperative Evaluation and Nutrition

Anesthesia and Sedation

Preop Components of ERAS can be applied to ESG

- Patient Education and Counseling
- Alcohol and Smoking Cessation
  - duration
- Treatment of Anemia-IV iron
- Assessment of Frailty
- Prehabilitation
  - Daily steps
  - Strength training
- Optimization of Macro and micronutrition
  - High protein
  - Low carbs

Preoperative



Day of Surgery

- Hydration-Oral fluids-Until 2 hours before surgery
- No premedication
- PONV Prophylaxis
- Carbohydrate Drinks

Intraoperative

- Monitored Anesthesia Care vs General Anesthesia
- Minimal Opioids
  - IV Paracetamol
  - IV NSAIDs
  - IV Ketamine
- Normothermia
  - Bair Hugger may not be available in GI suites
- Normovolemia
- Quantitative TOF monitoring

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SCIENTIFIC REVIEW

Guidelin
Recovery

A. Thorell[1] · A
A. Alvarez[8] · F

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INTRAOPERATIVE

Guidelines for Perioperative Care in Bariatric Surgery (ERABS)

- Preoperative information and education
- Prehabilitation and exercise
- Smoking and alcohol cessation
- Preoperative weight loss
- Glucocorticoids
- Preoperative fasting
- Carbohydrate loading

9. NEUROMUSCULAR BLOCK

Deep NMB
WEAK recommendation

Ensuring full reversal of NMB
Objective monitoring with TOF
STRONG recommendation

- Postoperative analgesia
- Thromboprophylaxis
- Early postoperative nutrition
- Non-invasive positive pressure ventilation

World J Surg. 2016 Sep;40(9):2065-83.

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

Postoperative

- Early Mobilization
- Opioid sparing analgesia-Paracetamol and NSAIDs
- Phone call follow up the day after discharge
- PONV Medications to Go
  - Ondansetron solutabs
- Early oral nutrition
  - Clear liquids at 6 hours
  - Semi-solids at 12 hours

Serious Adverse Events (1-2%)

- PONV or Pain needing Hospitalization (1%)
- Upper GI bleeding (.6%)
- Peri-gastric leak (0.5%)
- Refractory Symptoms needing ESG reversal (0.2%)
- Pulmonary Embolism (0.06%)
- Pneumoperitoneum (0.06%)

1140 GASTROINTESTINAL ENDOSCOPY Volume 89, No. 6 : 2019

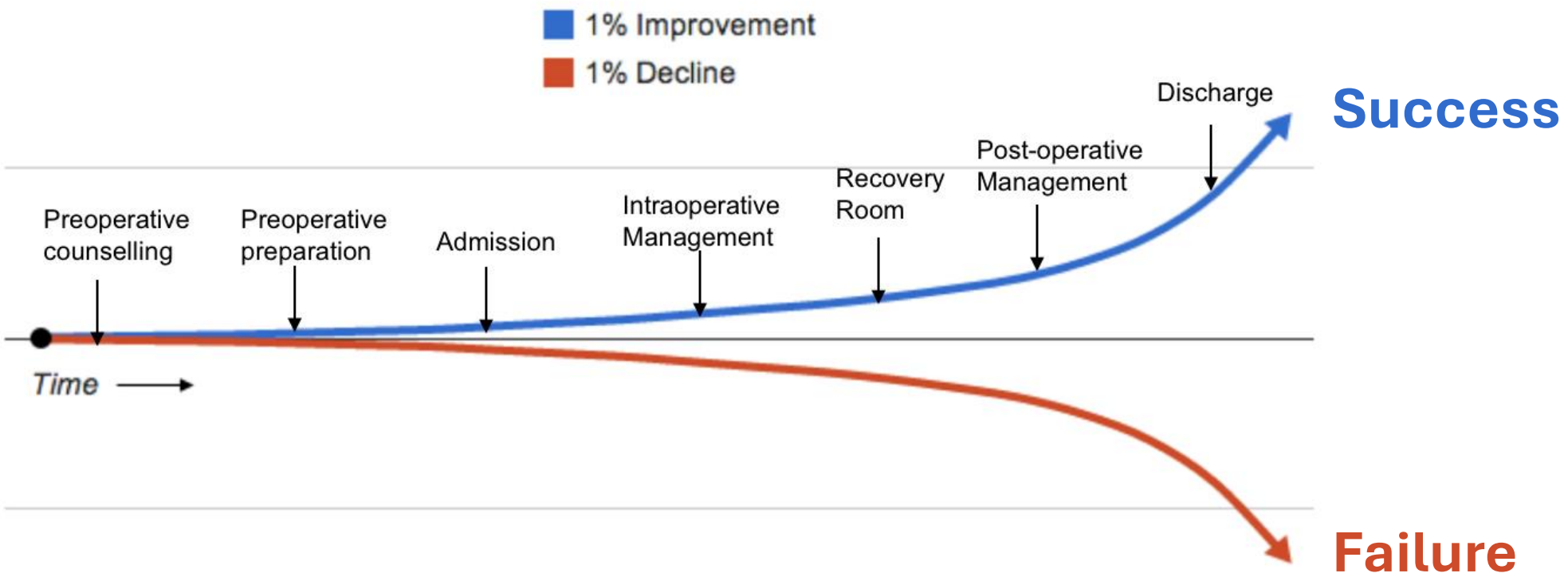
Efficacy and Safety of Endoscopic Sleeve Gastroplasty: A Systematic Review and Meta-Analysis

Clinical Gastroenterology and Hepatology 2020;18:1043-1053

Core members of ERAS team

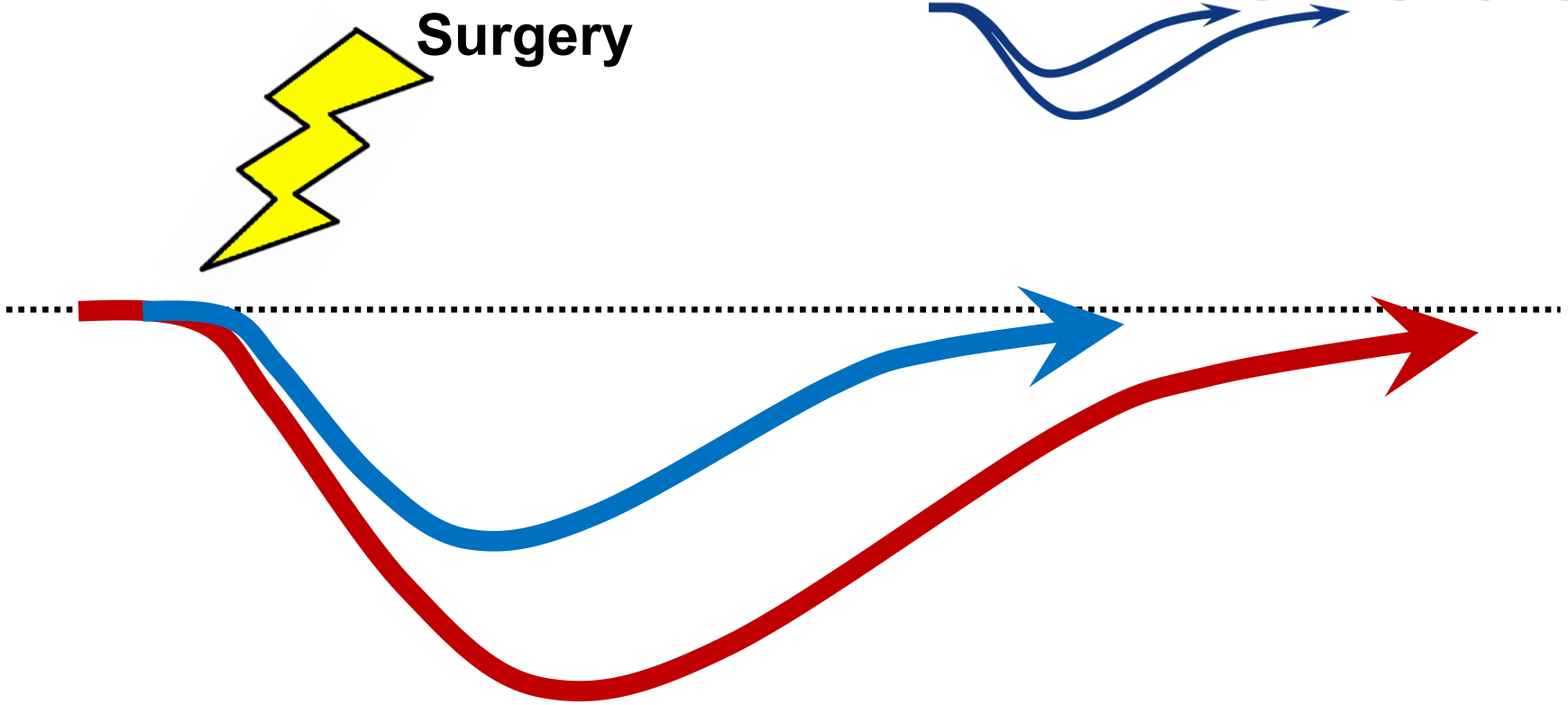
- Endoscopist
- Anesthesiologist
- ERAS Nurse
- Well educated patient who is engaged in concepts of faster recovery

Marginal gain



ERAS: decreasing the surgical trauma

ERAS® Society



THANK YOU FOR YOUR ATTENTION

Gains from implementation of ERAS

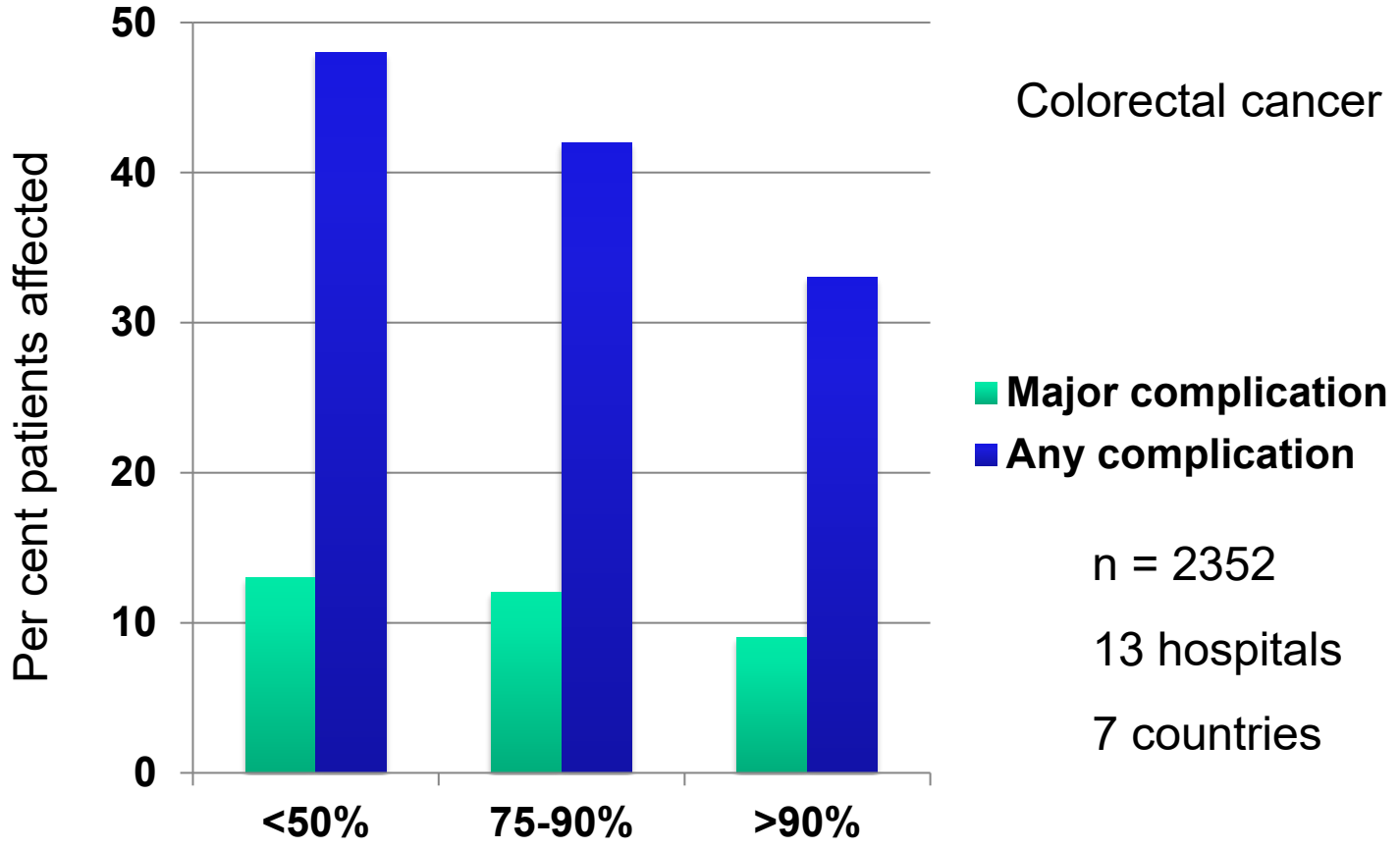
Gastric endoscopic submucosal dissection

	ERAS group	Traditional group	
No. of Patients	60	57	
Anal exhaust time			P=0.048
PONV			P=0.043
LOS (hours)	35.6	77	P<0.001
Patient satisfaction	High Less thirst, hunger, dry mouth, PONV		

Digestive and Liver Disease 56 (2024) 1253–1256

Wang et al. Medicine (2019) 98:20

Better ERAS compliance: Reduced Complications



Multi center study, consecutive patients

ERAS Compliance group, Ann Surg, 2015

Gains from implementation of ERAS

Hospital cost savings for enhanced recovery programs in non-colorectal surgery

Study	ERAS program	Hospital cost savings (US$)
Zhao et al	Esophagectomy	5508*
Wang et al	Gastrectomy	4219*
Liang et al	Laparoscopic hepatectomy	4318*
Lemanu et al	Laparoscopic sleeve gastrectomy	1035
Kim et al	Laparoscopic distal gastrectomy	7179*
Feng et al	Total gastrectomy	5941*
Joliat et al	Pancreaticoduodenectomy	8726
Joliat et al	Hepatectomy	4064
Kalogera et al	Gynecologic oncology surgery	7642*

J Surg Oncol. 2017;1–5.

Gains from implementation of ERAS

Cost-effectiveness of Enhanced Recovery Versus Conventional Perioperative Management for Colorectal Surgery

Lawrence Lee, MD, MSc, Juan Mata, MD,* Gabriela A. Ghitulescu, MD,† Marylise Boutros, MD,† Patrick Charlebois, MD,* Barry Stein, MD,* A. Sender Liberman, MD,* Gerald M. Fried, MD,* Nancy Morin, MD,† Franco Carli, MD, MPhil,‡ Eric Latimer, PhD,§ and Liane S. Feldman, MD**

CONCLUSIONS

Enhanced recovery perioperative management was associated with improved clinical and postdischarge outcomes, which resulted in lower overall costs than conventional management in patients undergoing elective colorectal resection.

Ann Surg 2015;262:1026–1033