



Gastric Sleeve Enhanced Recovery After Surgery Pathway Synopsis

Objective of the Gastric Sleeve ERAS Pathway

The objectives of the Gastric Sleeve ERAS pathway are to foster evidence-based collaboration among all perioperative team members to minimize variation in care for patients undergoing laparoscopic gastric sleeve surgery and to improve patient and family satisfaction from the pre-admission testing visit through hospital discharge.

Background

Obesity affects the current and long-term health of approximately 14.4 million children and adolescents in the U.S., with one in five adolescents aged 12–19 living with the condition—making it one of the most prevalent pediatric chronic diseases¹⁻³. Associated comorbidities, including type II diabetes, dyslipidemia, hypertension, non-alcoholic fatty liver disease, obstructive sleep apnea, and polycystic ovarian syndrome, are increasingly common in this population^{4,5}.

Given the long-term health risks, the American Academy of Pediatrics (AAP) issued a policy statement in 2019 and clinical practice guidelines in 2023 recommending bariatric surgery for adolescents when lifestyle and medical interventions are unsuccessful^{6,7}.

Enhanced Recovery After Surgery (ERAS) pathways use a multimodal, multidisciplinary approach to optimize surgical outcomes by standardizing care across preoperative, intraoperative, and postoperative phases^{8,9}. Core components include opioid-sparing analgesia, goal-directed IV fluid therapy, early mobilization, avoidance of catheters, and oral intake on the day of surgery^{10,11}. In adolescent bariatric surgery, ERAS protocols have demonstrated benefits such as reduced opioid use and shorter hospital stays^{12,13}.

At Children's Mercy, the Gastric Sleeve ERAS Pathway Committee launched its first ERAS protocol in 2021, resulting in improved pain management and shorter length of stay. In response to emerging evidence, the pathway now includes goal-directed IV fluid therapy to mitigate postoperative dehydration and has revised fluid resumption to begin with clear liquids rather than water alone, supporting earlier discharge.

Target Users

- Physicians (Surgeons, Anesthesiologists, Fellows, and Residents)
- Nurses (Advanced Practice and staff nurses)

Target Population

Inclusion Criteria

- Patients 14 – 18 years of age diagnosed as obese
- Patient having one or more of the following comorbidities:
 - Insulin resistance
 - Hypertension
 - Hyperlipidemia
 - GERD
 - Obstructive sleep apnea

Exclusion Criteria

- Patients who have not complied with medications and counseling

These ERAS pathways do not establish a standard of care to be followed in every case. It is recognized that each case is different, and those individuals involved in providing health care are expected to use their judgment to determine what is in the patient's best interests based on the circumstances at the time. It is impossible to anticipate all possible situations and to prepare a clinical pathway for each. Accordingly, these clinical pathways should guide care with the understanding that departures from them may be required at times.



Core Principles of ERAS

- Preoperative education of patients and their families with an introduction to ERAS
- Reduced pre-operative fasting, with clear liquid oral carbohydrate loading until 2 hours prior to surgery
- Goal-directed strict intraoperative intravenous fluid therapy guidelines to avoid hypo- or hypervolemia
- Avoidance of pre-operative mechanical bowel preparation
- Minimizing long-acting opioid analgesia in favor of regional anesthesia with epidural and/or local anesthesia for intra-operative and postoperative pain control when appropriate and using alternative non-opioid medications when appropriate (e.g., non-steroidal anti-inflammatories or acetaminophen)
- Early postoperative mobilization
- Early postoperative enteral feeding

Additional Questions Posed by the ERAS Committee

This standard work is based on consensus, as the evidence is sparse to guide patient care.

Updates from Previous Versions of the Clinical Pathway

- Added guidance for IVF administration intraoperatively (~10cc/kg at the beginning of surgery [max 1 L] followed by goal-directed therapy)
- Post-op nutrition will begin with bariatric diet 2 (clear liquids) versus water only
- Updated discharge criteria to discharge on bariatric diet 2 **or** 3 based on the patient being able to consume 4 ounces of liquid per hour over 4 hours without vomiting

Key Metrics Monitored:

Pre-Op	Intra-Op	Post-Op
Scopolamine Patch	Dexamethasone/Ondansetron	Length of stay
Enoxaparin	Euolemia	Time to ambulation
	Antibiotics administered prior to incision	Time to Bariatric Diet 2
	IV Acetaminophen/IV Ketorolac	Long-acting opioids
	Long-acting opioids	
	Normothermia	

Value Implications

The following improvements may increase value by reducing both monetary and non-monetary costs (e.g., missed school/work, loss of wages, stress) for patients and their families, as well as reducing costs and resource utilization for healthcare facilities.

- Decreased length of stay
- Decreased unwarranted variation in care
- Improved communication between patients and care team throughout the perioperative period
- Improved post-operative pain control (pain controlled with acetaminophen vs. opioids)

Organizational Barriers and Facilitators

Potential Barriers

- Variability of acceptable level of risk among providers
- Challenges with follow-up faced by some families

Potential Facilitators

- Collaborative engagement across care continuum settings during ERAS development
- High rate of use of the ERAS pathway

These ERAS pathways do not establish a standard of care to be followed in every case. It is recognized that each case is different, and those individuals involved in providing health care are expected to use their judgment to determine what is in the patient's best interests based on the circumstances at the time. It is impossible to anticipate all possible situations and to prepare a clinical pathway for each. Accordingly, these clinical pathways should guide care with the understanding that departures from them may be required at times.



Bias Awareness

Our goal is to recognize the social determinants of health and minimize healthcare disparities, while acknowledging that unconscious biases can contribute to them.

Order Sets

- There are no order sets associated with this ERAS pathway

Education Materials

- ERAS overview handout
 - Intended to be a general handout encompassing the key concepts and plan for an ERAS pathway
 - Found on the CM external website for each ERAS pathway
 - Available in [English](#) and [Spanish](#)
- [Gastric Sleeve Surgery Discharge Instructions](#)
 - Intended for patients and families as guidance for nutrition and post-operative care at home
 - Found in the electronic medical record

ERAS Pathway Preparation

This pathway was developed by the EBP Department in collaboration with the Gastric Sleeve ERAS Pathway Committee, which is composed of content experts at Children's Mercy Kansas City. If a conflict of interest is identified, the conflict will be disclosed next to the committee member's name.

ERAS Pathway Representation

This clinical pathway was originally created with representation from Anesthesiology, Pediatric Surgery, and Evidence Based Practice.

Gastric Sleeve ERAS Pathway Revision Representation

- Tolu Oyetunji, MD, MPH, MBA | Pediatric General Surgery | Committee Co-Chair
- Shawn St Peter, MD | Pediatric General Surgery | Committee Co-Chair
- Efua Bolouvi, MD | Pediatric General Surgery Fellow | Committee Member
- Christian Taylor, MD | Anesthesiology | Committee Member
- Nadeen Alturki, MBChB | Surgical Scholars Fellow | Committee Member
- Kaylene Whited, M.S., CCRP | Children's Mercy Research Institute | Committee Member
- Stephanie Otis, MSN, RN, CPN | Pediatric Surgery | Committee Member
- Heather Sambol, RN, APRN | Anesthesiology | Committee Member

EBP Committee Members

- Todd Glenski, MD, MSHA, FASA | Anesthesiology, Evidence Based Practice
- Andrea Melanson, OTD, OTR/L | Evidence Based Practice

ERAS Development Funding

The development of this ERAS pathway was underwritten by the following departments/divisions: Anesthesiology, Pediatric Surgery, and Evidence Based Practice.

Conflict of Interest

The contributors to the Gastric Sleeve ERAS have no conflicts of interest to disclose related to the subject matter or materials discussed.

These ERAS pathways do not establish a standard of care to be followed in every case. It is recognized that each case is different, and those individuals involved in providing health care are expected to use their judgment to determine what is in the patient's best interests based on the circumstances at the time. It is impossible to anticipate all possible situations and to prepare a clinical pathway for each. Accordingly, these clinical pathways should guide care with the understanding that departures from them may be required at times.



Approval Process

- This pathway was reviewed and approved by the EBP Department and the Gastric Sleeve ERAS Revision Committee, after the committee members garnered feedback from their respective divisions/departments.

Review Requested

Department/Unit	Date Obtained
Anesthesiology	November 2025
Pediatric Surgery	November 2025
Evidence Based Practice	November 2025

Version History

Date	Comments
October 2021	Version one – (developed algorithms, synopsis, and educational documents)
January 2023	Version two – (completed and added update to medications in algorithms)
July 2023	Version three – (Updated medications, amended broken links, and updated format)
November 2025	Version four – (updated algorithms and synopsis; Added IVFs to the intraoperative process, post-op: start with BD 2 vs. BD 1, and updated d/c criteria to allow d/c on BD 2)
February 2026	Version five – minor updates to medications and instructions prior to surgery day and intraop algorithms. Minor updates to formatting
October 2026	Version six – minor updates to antibiotic medications to align with ASP guidelines. Minor updates to formatting

Date for Next Review:

- November 2028**

Implementation & Follow-Up

- Once approved, the ERAS pathway was presented to appropriate care teams and implemented.
- Key metrics will be assessed and shared with the appropriate care teams to determine if changes are needed.
- Pathways are reviewed every 3 years (or sooner) and updated as necessary within the EBP Department at CMKC. Pathway committees are involved with every review and update.

Disclaimer

When evidence is lacking or inconclusive, care options are provided in the supporting documents accompanying the ERAS pathway.

These ERAS pathways do not establish a standard of care to be followed in every case. It is recognized that each case is different, and those individuals involved in providing health care are expected to use their judgment to determine what is in the patient's best interests based on the circumstances at the time.

It is impossible to anticipate all possible situations and to prepare ERAS pathways for each. Accordingly, these ERAS pathways should guide care with the understanding that departures from them may be required at times.

These ERAS pathways do not establish a standard of care to be followed in every case. It is recognized that each case is different, and those individuals involved in providing health care are expected to use their judgment to determine what is in the patient's best interests based on the circumstances at the time. It is impossible to anticipate all possible situations and to prepare a clinical pathway for each. Accordingly, these clinical pathways should guide care with the understanding that departures from them may be required at times.



References

1. Hu K, Staiano AE. Trends in obesity prevalence among children and adolescents aged 2 to 19 years in the US from 2011 to 2020. *JAMA Pediatr.* 2022;176(10):1037-1039. doi:10.1001/jamapediatrics.2022.2052
2. Centers for Disease Control and Prevention. Prevalence of childhood obesity in the United States. Accessed October 2, 2026. <https://www.cdc.gov/obesity/data/childhood.html>
3. Hales CM, Fryar CD, Carroll MD, Freedman DS, Ogden CL. Trends in obesity and severe obesity prevalence in US youth and adults by sex and age, 2007-2008 to 2015-2016. *JAMA.* 2018;319(16):1723-1725. doi:10.1001/jama.2018.3060
4. Smith JD, Fu E, Kobayashi MA. Prevention and management of childhood obesity and its psychological and health comorbidities. *Annu Rev Clin Psychol.* 2020;16:351-378. doi:10.1146/annurev-clinpsy-071519-113656
5. Vajravelu ME, Tas E, Arslanian S. Pediatric obesity: complications and current-day management. *Life (Basel).* 2023;13(7):1591. doi:10.3390/life13071591
6. Armstrong SC, Bolling CF, Michalsky MP, Reichard KW. Pediatric metabolic and bariatric surgery: evidence, barriers, and best practices. *Pediatrics.* 2019;144(6):e20193223. doi:10.1542/peds.2019-3223
7. Hampl SE, Hassink SG, Skinner AC, et al. Clinical practice guideline for the evaluation and treatment of children and adolescents with obesity. *Pediatrics.* 2023;151(2):e2022060640. doi:10.1542/peds.2022-060640
8. Rafeeqi T, Pearson EG. Enhanced recovery after surgery in children. *Transl Gastroenterol Hepatol.* 2021;6:46. doi:10.21037/tgh-2020-08
9. Vacek J, Davis T, Many BT, et al. A baseline assessment of enhanced recovery protocol implementation at pediatric surgery practices performing inflammatory bowel disease operations. *J Pediatr Surg.* 2020;55(10):1996-2006. doi:10.1016/j.jpedsurg.2020.01.034
10. Varadhan KK, Neal KR, Dejong CHC, Fearon KCH, Ljungqvist O, Lobo DN. The enhanced recovery after surgery (ERAS) pathway for patients undergoing major elective open colorectal surgery: a meta-analysis of randomized controlled trials. *Clin Nutr.* 2010;29(4):434-440. doi:10.1016/j.clnu.2010.01.004
11. Liu VX, Rosas E, Hwang J, et al. Enhanced recovery after surgery program implementation in 2 surgical populations in an integrated health care delivery system. *JAMA Surg.* 2017;152(7):e171032. doi:10.1001/jamasurg.2017.1032
12. Yalcin S, Walsh SM, Figueroa J, Heiss KF, Wulkan ML. Does ERAS impact outcomes of laparoscopic sleeve gastrectomy in adolescents? *Surg Obes Relat Dis.* 2020;16(12):1920-1926. doi:10.1016/j.soard.2020.08.020
13. Svetanoff WJ, Diefenbach K, Hall B, et al. Utilization of an enhanced recovery after surgery (ERAS) protocol for pediatric patients. *J Pediatr Surg.* 2023;58:695-701. doi:10.1016/j.jpedsurg.2022.12.014

These ERAS pathways do not establish a standard of care to be followed in every case. It is recognized that each case is different, and those individuals involved in providing health care are expected to use their judgment to determine what is in the patient's best interests based on the circumstances at the time. It is impossible to anticipate all possible situations and to prepare a clinical pathway for each. Accordingly, these clinical pathways should guide care with the understanding that departures from them may be required at times.