

Enhanced Recovery After Surgery, or ERAS, is a patient-centered program for surgical recovery. The basic principles of this ERAS pathway are to ensure the patient's strength before and after surgery through diet and nutrition, to help provide appropriate pain relief after their procedure, and to encourage early walking and exercise.

At UPMC, ERAS strategies are employed throughout the entire care continuum, from the time a surgeon decides to operate until a patient is discharged. The ultimate goal is to improve the quality of surgical care by decreasing length of stay and preventing complications, readmissions, and same-day surgery cancellations.

## Prehospital ERAS strategies include:

1. **Preoperative counseling and education** — begins in the office with **setting expectations with the patient**.
  - a. Patients should receive presurgical information and education in both written and oral form.
  - b. Patients should meet with all members of the surgical team.
  - c. Discussions should include:
    - i. Early discharge planning
    - ii. Importance of preoperative and postoperative nutrition
    - iii. Multimodal pain management
    - iv. Early ambulation
    - v. Early feeding post op
    - vi. Optimization of co-morbidities — consider referral to Surgery Optimization Clinic for moderate to high risk patients

All surgical patients should receive the *About Your Surgery Guide* and the *ERAS Patient booklet*. Additional patient education material can be obtained by visiting the UPMC ERAS website:  
UPMC.com/services/south-central-pa/enhanced-recovery-after-surgery
2. **Preoperative fasting (relaxed NPO guidelines)** — All scheduled patients will receive instructions by the Preadmission Testing Department on relaxed fasting guidelines. Patients may continue with clear liquids up until two hours prior to **arrival** time to the hospital. Clear liquids should not exceed 16 oz. in the two- to four-hour period prior to arrival.
3. **Presurgical nutritional education** — Optimal pre- and postoperative nutrition including a high protein diet one week prior to and after surgery can aid in wound healing and help prevent infections. Eating healthy foods will fuel the body with the nutrients that patients will need during and after surgery.
  - a. Screen all surgical patients for nutritional risk using the PONS screening tool.
    - Does the patient have a low BMI < 20 kg/m<sup>2</sup>?
    - Has the patient experienced a weight loss >10% in past 6 months?
    - Has the patient had a reduced oral intake by >50% in the past week? (and/or)
    - Does the patient have a preoperative serum albumin <3.0 g/dL?
  - b. Preoperative nutrition (high protein) patient education sheet should be given to all patients.
  - c. Preoperative nutrition (obesity) patient education sheet should be given to patients with a BMI > 35.
  - d. Consider high protein oral nutritional supplementation (ONS) including over-the-counter drinks and powders, supplements one per day for one week prior to surgery (i.e. *Ensure High Protein*, *Boost High protein or Carnation Instant Breakfast Essentials High Protein* and *Glucerna Shakes*, *Boost Glucose Control*, or *Carnation Instant Breakfast Light Start* for diabetics).
  - e. Rec: up to 2g of protein/kg/day or 65 to 100 gm per day.
  - f. For those patients deemed to be at nutritional risk: recommend over-the-counter oral nutritional supplements two to three times per day with a minimum 18g protein/dose.
  - g. Consider consult to UPMC dietitian or Surgery Optimization Clinic for complex needs or if patient answers “yes” to any of the PONS screening questions.
4. **Presurgical skin cleaning**
  - a. Patients should use chlorhexidine soap to shower for three days prior to surgery.
  - b. Patients should be given the chlorhexidine patient education. This can be obtained by visiting the UPMC ERAS website: UPMC.com/services/south-central-pa/enhanced-recovery-after-surgery

5. **Prehabilitation** — To increase strength and improve recovery, patients should be encouraged to walk at least 30 minutes a day before their surgery if they are able. Exercise before surgery will help your patient recover after the surgery. Patients should also be advised that they will be expected to get up and walk soon after their surgery.
6. **Preoperative carbohydrate loading** — is associated with decreased insulin resistance, enhanced return to bowel function, and a shorter hospital stay. Other benefits include: decrease thirst and hunger and decreased post-operative nausea and vomiting.
  - a. Patients should be provided three bottles of the *Ensure Pre-Surgery Clear Carbohydrate* beverage.
  - b. Patients should be provided the *Ensure Pre-Surgery* patient education material. This can be obtained by visiting the UPMC ERAS website:  
UPMC.com/services/south-central-pa/enhanced-recovery-after-surgery
  - c. Patients should be instructed to drink one full bottle the **evening prior to surgery** with dinner, and one prior to bedtime. Patients should be instructed to drink the third bottle the morning of surgery **four hours prior to the surgery time**.
  - d. Diabetics and patients with a strawberry allergy should not receive these beverages.
  - e. The Preadmission Testing department will reinforce all instructions when they speak with the patient the business day prior to surgery.
7. **Optimal glycemic control** — All surgical patients should be screened for diabetes prior to surgery.
  - a. **Goal:** HA1C < 8 , blood glucose < 180 and or fructosamine < 325
  - b. Consider referral to UPMC Surgery Optimization Clinic or endocrinology prior to surgery for complex needs.
8. **Prevention of Postoperative Ileus** — Consider simple, safe, and inexpensive interventions after surgery.
  - a. Early feeding
  - b. Coffee consumption
  - c. Gum chewing
  - d. Early ambulation
9. **Screening for Postoperative Nausea and Vomiting (PONV)** — Risk factors include:
  - Female gender
  - Nonsmoker
  - < 50 years of age
  - History of motion sickness
  - History of PONV
  - a. Consider providing a prescription in the office for 40 mg Aprepitant (EMEND) PO for patients that have four risk factors. The approximate cost is \$100. Patients should be instructed to take this the morning of surgery with a small sip of water approximately three hours prior to the surgery time. Patients can obtain coupons for this prescription at GoodRx if the medication is not covered by their insurance.
10. **Nicotine and alcohol cessation** — It is recommended that patients abstain for at least eight weeks prior to surgery.
  - a. Consider referral to UPMC Smoking Cessation Counselor
  - b. Consider referral to UPMC Center for Addiction Recovery
  - c. Consider referral to UPMC Surgery Optimization Clinic
11. **Screening for Obstructive Sleep Apnea (OSA)** — All scheduled surgical patients are screened for OSA by Preadmission Testing department using the Stop Bang Assessment tool.
  - a. **For a score of >3** — a postoperative order set is generated in the EMR to provide the following:
    - i. Elevate HOB
    - ii. Continuous pulse ox while in bed
    - iii. Respiratory consult for SpO2 parameters
    - iv. OSA education and F/U with PCP on AVS
  - b. Consider referral for sleep study prior to surgery if time permits for patients at risk for OSA.
  - c. Consider referral to the UPMC Surgery Optimization Clinic if time permits.
  - d. Remind patients to bring their own CPAP machine to surgery.

**For more information or to refer patients to the UPMC Surgery Optimization Clinic, please call 717-782-4785.**

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