

# Enhanced Recovery After Surgery: A Review.

## Review article

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## Abstract

**Importance:** Enhanced Recovery After Surgery (ERAS) is a paradigm shift in perioperative care, resulting in substantial improvements in clinical outcomes and cost savings.

**Observations:** Enhanced Recovery After Surgery is a multimodal, multidisciplinary approach to the care of the surgical patient. Enhanced Recovery After Surgery process implementation involves a team consisting of surgeons, anesthesiologists, an ERAS coordinator (often a nurse or a physician assistant), and staff from units that care for the surgical patient. The care protocol is based on published evidence. The ERAS Society, an international nonprofit professional society that promotes, develops, and implements ERAS programs, publishes updated guidelines for many operations, such as evidence-based modern care changes from overnight fasting to carbohydrate drinks 2 hours before surgery, minimally invasive approaches instead of large incisions, management of fluids to seek balance rather than large volumes of intravenous fluids, avoidance of or early removal of drains and tubes, early mobilization, and serving of drinks and food the day of the operation. Enhanced Recovery After Surgery protocols have resulted in shorter length of hospital stay by 30% to 50% and similar reductions in complications, while readmissions and costs are reduced. The elements of the protocol reduce the stress of the operation to retain anabolic homeostasis. The ERAS Society conducts structured implementation programs that are currently in use in more than 20 countries. Local ERAS teams from hospitals are trained to implement ERAS processes. Audit of process compliance and patient outcomes are important features. Enhanced Recovery After Surgery started mainly with colorectal surgery but has been shown to improve outcomes in almost all major surgical specialties.

**Conclusions and Relevance:** Enhanced Recovery After Surgery is an evidence-based care improvement process for surgical patients. Implementation of ERAS programs results in major improvements in clinical outcomes and cost, making ERAS an important example of value-based care applied to surgery.