

Preoperative Nutrition and Prehabilitation



Ruchir Gupta, MD, Tong J. Gan, MD, MHS, FRCA*

KEYWORDS

- Nutrition • Prehabilitation • Preoperative optimization • Functional capacity
- Immunonutrition

KEY POINTS

- Identifying patients who are nutritionally deficient allows us to intervene preoperatively to optimize their nutritional status.
- The development of a carbohydrate beverage that is also clear liquid has allowed patients to be brought to the operating room in a fed state, thereby reducing insulin resistance postoperatively and postoperative hypoglycemia.
- Physical exercise training programs have demonstrated an improvement in both physical fitness and clinical outcomes in patients with major comorbidities (ie, cardiac failure, ischemic heart disease, and chronic obstructive pulmonary disease).
- The 6-minute walk test is a simple test that does not require expensive equipment and allows evaluation of exercise tolerance.
- The contribution of cardiopulmonary exercise testing to the evaluation of perioperative risk, the subsequent development of a training program, and the use of indices to both risk stratify as well as measure improvement after a training program allow a personalized preoperative program to be developed for each patient.

INTRODUCTION

Enhanced recovery after surgery (ERAS) is the natural evolution of what were previously referred to as *fast track* programs and seeks to implement a series of preoperative, intraoperative, and postoperative interventions to improve and enhance recovery from surgery and anesthesia after major surgical procedures. These goals are achieved by instituting measures that will minimize the effects of surgical stress and encourage early active patient mobilization and participation in the immediate postoperative period. Using evidence-based protocols, care is coordinated between

Department of Anesthesiology, Health Science Center, Stony Brook University School of Medicine, L4-060, Stony Brook, NY 11794, USA

* Corresponding author. Department of Anesthesiology, Stony Brook University, Stony Brook, NY 11794.

E-mail address: tong.gan@stonybrookmedicine.edu

Anesthesiology Clin 34 (2016) 143–153
<http://dx.doi.org/10.1016/j.anclin.2015.10.012>

anesthesiology.theclinics.com

1932-2275/16\$ – see front matter © 2016 Elsevier Inc. All rights reserved.

the various members of the health care team from the preoperative clinic to the intraoperative care and postoperative care team. This coordination of care combined with evidence-based clinical management interventions are the 2 main pillars of the enhanced recovery strategy. Two important aspects of the ERAS pathway are nutrition and prehabilitation.

PREOPERATIVE NUTRITION ASSESSMENT AND OPTIMIZATION

The prevalence of malnutrition in patients undergoing surgery varies by type of surgery as well as by patient population. Patients with advanced age, weight loss, and a lack of nutritional support are at greater risk of malnutrition.¹ The presence of malnutrition preoperatively in patients undergoing surgery has been associated with an increased risk of postoperative complications, prolonged length of hospital stay, delayed recovery of bowel function,^{2,3} higher rates of readmission,⁴ and an increased incidence of postoperative death. As a result, there has been an increased focus on perioperative nutrition; several consensus guidelines have been developed to address this issue by various societies.^{5–8} Among these are the guidelines for elective colon surgery and rectal/pelvic surgery⁹ from the Enhanced Recovery After Surgery Society.

One of the main goals in ERAS is the optimization of patients' preoperative nutritional status and instituting strategies to prevent perioperative starvation, which can lead to negative protein balance.⁶ Through the utilization of supplemental nutritional drinks¹⁰ and the avoidance of overnight fast, the risk of postoperative insulin resistance is also reduced.¹¹

DETECTING MALNUTRITION BEFORE SURGERY

The early guidelines from the Enhanced Recovery After Surgery Society focused primarily on colorectal procedures. Malnutrition and weight loss in this population is common because of tumor-related cachexia and decreased oral food intake caused in part by gastrointestinal tract obstruction. Furthermore, malnutrition continues to be a prognostic indicator of poor outcome in terms of survival and response to surgical treatment.^{6,12,13}

Although much effort has been devoted in developing tools for preoperative nutrition risk screening, it remains unclear which screening system best predicts the risk of developing nutrition-related complications. Traditional anthropometric nutritional assessment using body weight, serum nutritional factor levels (such as low serum albumin, pre-albumin, and transthyretin), skin fold thickness and functional measurements of muscle strength have fallen out of favor due to their limited value in determining actual nutritional risk before surgery. Thus, several diverse measurements have been combined into subjective scoring systems including the Subjective Global Assessment (SGA) questionnaire,¹⁴ the nutritional risk screening (NRS) 2002,¹⁵ Reilly's NRS¹⁶ and the nutritional risk indicator (NRI) scoring systems (**Table 1**). A combination of objective and subjective nutritional assessment tools may be better than either alone.

Once a patient is identified as nutritionally at risk, oral nutritional supplementation should be initiated and a dietician should be involved in further nutritional care of the patient. Although there is a lack of consensus in the interval when nutritional supplementation should occur, 5 to 7 days seems to be the most commonly recommended time period.⁵ If patients are deemed to be at severe nutritional risk (ie, weight loss >10%–15% per 6 months; body mass index <18.5 kg/m²; SGA grade C [see **Table 1**]; serum albumin less than 30 g/L), it would be reasonable to consider delaying surgery until the nutritional deficit is corrected, if only partially.

Download English Version:

<https://daneshyari.com/en/article/2744478>

Download Persian Version:

<https://daneshyari.com/article/2744478>

[Daneshyari.com](https://daneshyari.com)