

ENHANCED RECOVERY PROTOCOLS (ERPs): IMMUNONUTRITION & CARBOHYDRATE LOADING

Complementary Protocols for Major Elective Surgery



- Immunonutrition and Carbohydrate Loading are complementary practices. Society recommendations include perioperative immunonutrition and preoperative carbohydrate loading.¹

Immunonutrition with IMPACT® Formulas

- Shown to improve outcomes with or without the addition of carbohydrate loading^{2,3}
- Improved clinical outcomes associated with use of immunonutrition (**arginine, omega-3 fatty acids from fish oil, and nucleotides**), do not require the adoptions of ERPs², but may be enhanced by them³⁻⁵

Carbohydrate Loading

- Shown to improve clinical outcomes when an ERP bundle⁶ of protocols are in place⁷
- Limited clinical benefit as a separate intervention⁸
 - No difference in length of stay (LOS) when compared to water or placebo⁹

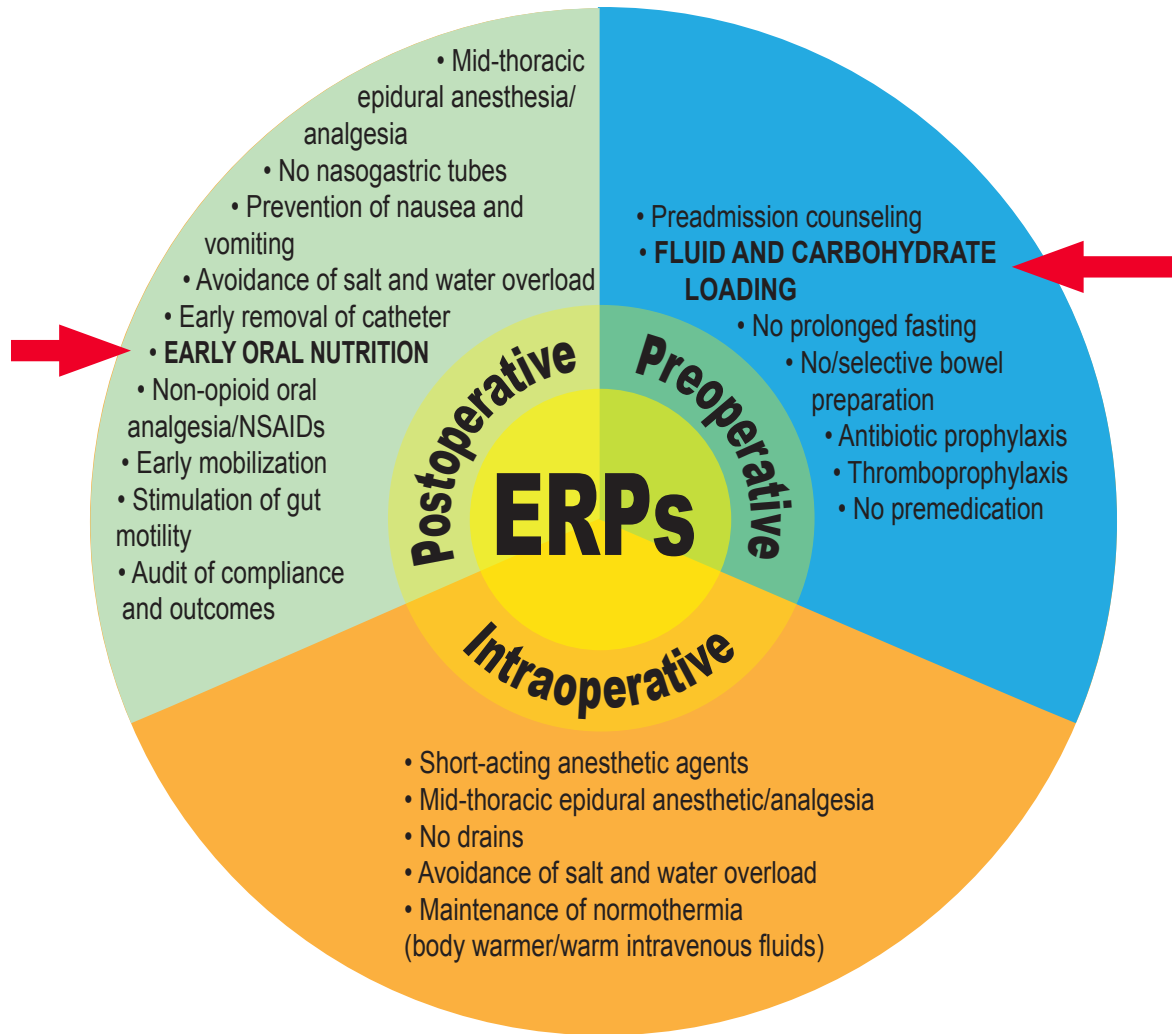
*Initiate IMPACT® tube feeding and advance to ≥1000 calories/day to meet nutritional needs for 5 days. Also available in open system.

**Carbohydrate loading not appropriate for patients with Type 1 Diabetes¹.

These are suggested guidelines based on clinical references and should not be construed as a substitute for medical advice or existing facility protocols.

What are Enhanced Recovery Protocols (ERPs)?

Protocol components implemented Pre-, Intra- and Postoperatively



- ERPs may have 17+ types of interventions across multiple functions.
- Institutions may customize which interventions to implement.
- Immunonutrition and carbohydrate loading protocols can be included as complementary nutrition interventions.
- ERPs that include **IMPACT Advanced Recovery**[®] drink have shown:
 - Reductions in length of stay (LOS)⁵
 - Reductions in 90-day readmissions⁵
 - Reductions in infection rates⁴
 - Reductions in postoperative CRP values³
 - Improved diet advancement⁵
 - Improved time to flatus/bowel movements⁵

References: 1. American Society of Enhanced Recovery (ASER). Enhanced Recovery Implementation Guide. Published on line Sept 2016. <http://aserhq.org/> 2. Drover JW et al. *J Am Coll Surg* 2011;212(3):385-399. 3. Alito Aprelino M and de Aguilar-Nascimento JE. *Nutrition Journal* 2016;15:34. 4. Hamilton-Reeves JM et al. *Eur Urol* 2016;69(3):389-392. 5. Majumder A et al. *J Am Coll Surg* 2016;222:1106-1115. 6. Lassen K et al. *Clin Nutr* 2012;31:817-830. 7. Zhuang CL et al. *Dis Colon Rectum* 2013;56(5):667-678. 8. Smith MD et al. *Cochrane Database Review* 2014. 9. Amer MA et al. *Brit J Surg*; published on line Sept 2016.

All trademarks are owned by Soci t  des Produits Nestl  S.A., Vevey, Switzerland.
 2017 Nestl . All rights reserved. IPCT-13441-0119