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ESPEN GUIDELINES

ESPEN Guidelines on Enteral Nutrition: Surgery including Organ Transplantation ☆

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Summary Enhanced recovery of patients after surgery ("ERAS") has become an important focus of perioperative management. From a metabolic and nutritional point of view, the key aspects of perioperative care include:

- avoidance of long periods of pre-operative fasting;
- re-establishment of oral feeding as early as possible after surgery;
- integration of nutrition into the overall management of the patient;
- metabolic control, e.g. of blood glucose;
- reduction of factors which exacerbate stress-related catabolism or impair gastrointestinal function;
- early mobilisation

Enteral nutrition (EN) by means of oral nutritional supplements (ONS) and if necessary tube feeding (TF) offers the possibility of increasing or ensuring nutrient

Abbreviations: EN, enteral nutrition (oral nutritional supplements and tube feeding); ONS, oral nutritional supplements; TF, tube feeding; Normal food/normal nutrition: normal diet as offered by the catering system of a hospital including special diets

☆For further information on methodology see Schütz et al.[231] For further information on definition of terms see Lochs et al.[232]

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Undernutrition;
Complications

intake in cases where food intake is inadequate. These guidelines are intended to give evidence-based recommendations for the use of ONS and TF in surgical patients. They were developed by an interdisciplinary expert group in accordance with officially accepted standards and are based on all relevant publications since 1980. The guideline was discussed and accepted in a consensus conference.

EN is indicated even in patients without obvious undernutrition, if it is anticipated that the patient will be unable to eat for more than 7 days perioperatively. It is also indicated in patients who cannot maintain oral intake above 60% of recommended intake for more than 10 days. In these situations nutritional support should be initiated without delay. Delay of surgery for preoperative EN is recommended for patients at severe nutritional risk, defined by the presence of at least one of the following criteria: weight loss >10–15% within 6 months, BMI $<18.5\,kg/m^2$, Subjective Global Assessment Grade C, serum albumin $<30\,g/l$ (with no evidence of hepatic or renal dysfunction).

Altogether, it is strongly recommended not to wait until severe undernutrition has developed, but to start EN therapy early, as soon as a nutritional risk becomes apparent.

The full version of this article is available at www.espen.org.

Summary of statements: Surgery

Subject	Recommendations	Grade[231]	Number
General	Preoperative fasting from midnight is unnecessary in most patients.	A	1
	Interruption of nutritional intake is unnecessary after surgery in most patients.	A	3
Indications			
Perioperative	Use nutritional support in patients with severe nutritional risk for 10–14 days prior to major surgery even if surgery has to be delayed.	A	4.1
	Severe nutritional risk refers to at least one: – Weight loss >10–15% within 6 months – BMI $<18.5\,kg/m^2$ – Subjective Global Assessment Grade C – Serum albumin $<30\,g/l$ (with no evidence of hepatic or renal dysfunction)		4.1
	Initiate nutritional support (by the enteral route if possible) without delay: • even in patients without obvious undernutrition, if it is anticipated that the patient will be unable to eat for more than 7 days perioperatively	C	4
	• in patients who cannot maintain oral intake above 60% of recommended intake for more than 10 days.	C	4
	Consider combination with parenteral nutrition in patients in whom there is an indication for nutritional support and in whom energy needs cannot be met (<60% of caloric requirement) via the enteral route.	C	4