



S.I.C.O.B.

Bari

SPRING MEETING

18 - 19 MAGGIO 2023

THE NICOLAUS HOTEL

CONDIVIDERE PER CRESCERE

Strategie di integrazione  
in Chirurgia Bariatrica

Presidente del Congresso  
**ANTONIO BRAUN**

# Supporto nutrizionale

*...UN GIOCO DI SFIDE*

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CENTRO MULTIDISCIPLINARE  
PER LO STUDIO E LA TERAPIA DELL'OBESITÀ  
Azienda Ospedaliera S. Maria - Terni

# Gastric leak: Una complicanza temibile

Gastric leak post laparoscopic sleeve gastrectomy (LSG) is a severe complication that has been reported in 1.5–3% of cases.

*“the leak of luminal contents from a surgical join between two hollow viscera”*

This has significant physical and psychological impacts on patients and their families

**The management of leak post sleeve gastrectomy imposes a lot of controversies and difficulties in the adoption of a standard algorithm**



Obesity Surgery  
<https://doi.org/10.1007/s11695-019-04203-w>

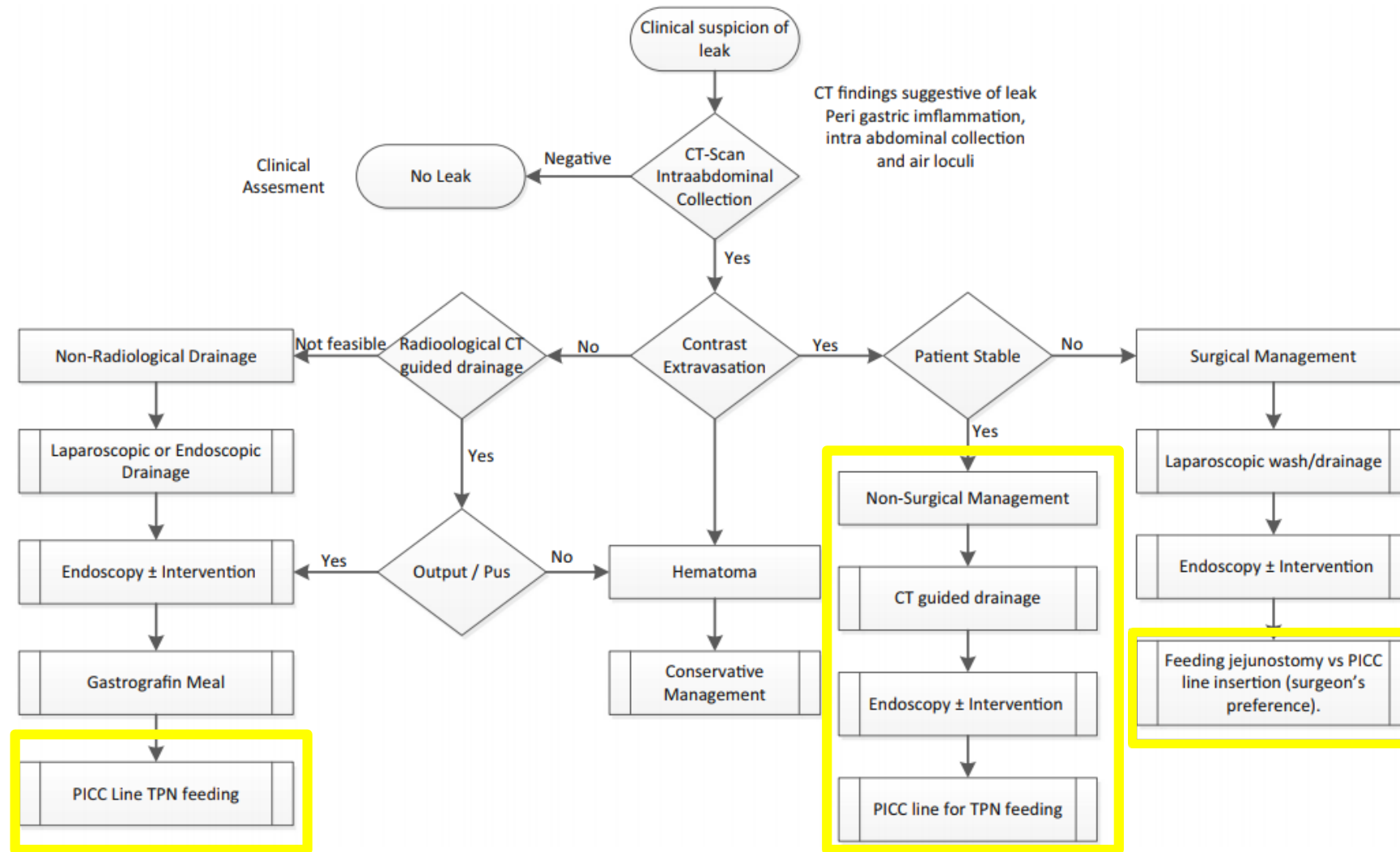


ORIGINAL CONTRIBUTIONS



Management of leak after sleeve gastrectomy: outcomes of 73 cases, treatment algorithm and predictors of resolution.

Moataz Bashah<sup>1,2</sup> · Nesreen Khidir<sup>1</sup> · Moamena EL-Matbouly<sup>3</sup>



**Fig. 1** Management algorithm of patients with post sleeve gastrectomy leak. PICC peripherally inserted central line; TPN total parenteral nutrition

**Una 'sfida' per il  
Medico  
Nutrizionista**

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# Obiettivi della Nutrizione Artificiale

Il ruolo della nutrizione artificiale nei pazienti con fistola digestiva risponde a due esigenze:

- Correzione di uno stato di malnutrizione (o sua prevenzione)
- Mantenimento di uno stato di 'riposo intestinale'

*Entrambe le condizioni svolgono un ruolo "permissivo" nei confronti della chiusura delle fistole e consentono una selezione più accurata dei pazienti candidati a un eventuale trattamento chirurgico allorché, col passare del tempo, una guarigione spontanea diventa sempre meno probabile*

**Inoltre i pazienti possono arrivare all'intervento in condizioni nutrizionali migliori e con minor rischio di complicanze postoperatorie**



...un passo indietro

# Preparazione del paziente

**Calo ponderale preoperatorio** (...“a 2–4 week period of Low Calorie or Very Low Calorie Diet is usually recommended prior to bariatric surgery. This regimen has been shown to reduce liver volume and a surgeon’s perceived complexity of the procedure. Furthermore, VLCD for two weeks is associated with improved whole-body insulin sensitivity...preoperative weight loss was associated with reduced postoperative complications”...)

**Management delle comorbidità**

**Identificazione del paziente fragile, supplementazione ed adeguamento terapeutico**

**ERAS**



# Ha il Diabete?



Accurata valutazione dei parametri: Hba1c%, glicemia a digiuno, eventuale dosaggio del C-peptide

Durata di malattia

Presenza di complicanze

Tipo di trattamento

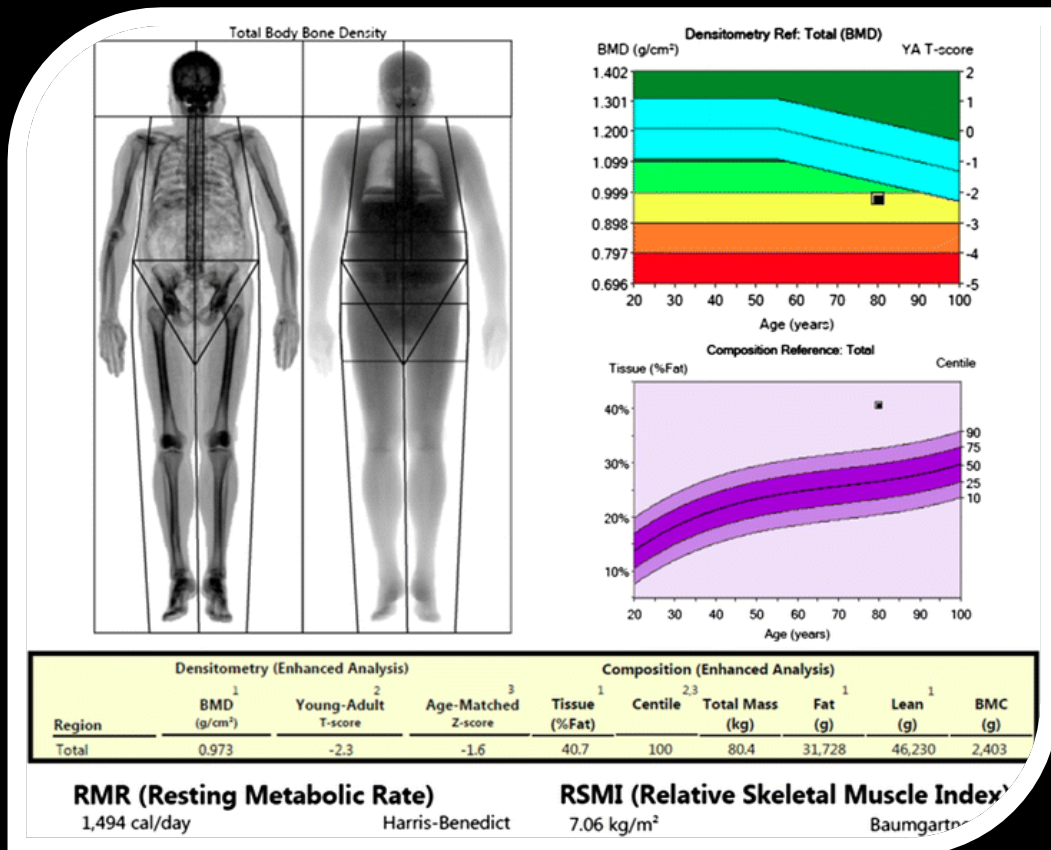
**Ottimizzazione della terapia e del controllo glicemico**

L'iperglicemia preoperatoria è stata associata ad aumentato riscontro di infezioni postoperatorie con un rapporto di 1,5 rispetto ai controlli, di reinterventi chirurgici con un rapporto di 1,6 e mortalità ospedaliera con un rapporto di 1,87.

In pazienti sottoposti a By-pass Gastrico (RYGB), un inadeguato controllo glicemico è tra i fattori responsabili di un aumentato rischio di outcome sfavorevole.

Inoltre, un miglior controllo della glicemia preoperatoria è associato a un più alto tasso di remissione di T2DM dopo chirurgia bariatrica





“Sarcopenia is considered as a major cause of frailty”

Table 1. Methods for measurement of muscle mass, muscle strength, and physical performance

Muscle mass	Muscle strength	Physical performance
Anthropometry	Handgrip strength	Short physical performance battery
Computed tomography	Knee flexion/extension	Usual gait speed
Magnetic resonance imaging		Timed get-up-and-go test
Dual energy X-ray absorptiometry		
Bioimpedance analysis		

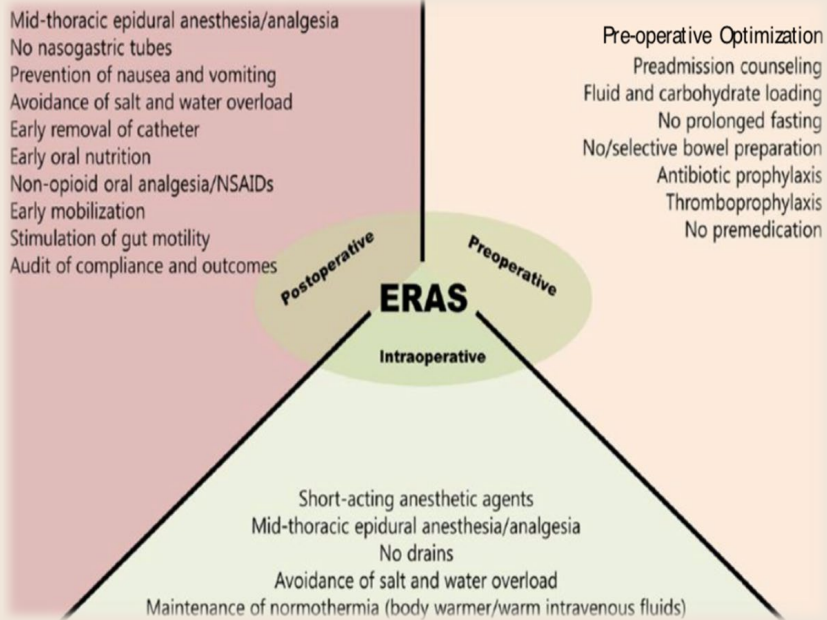
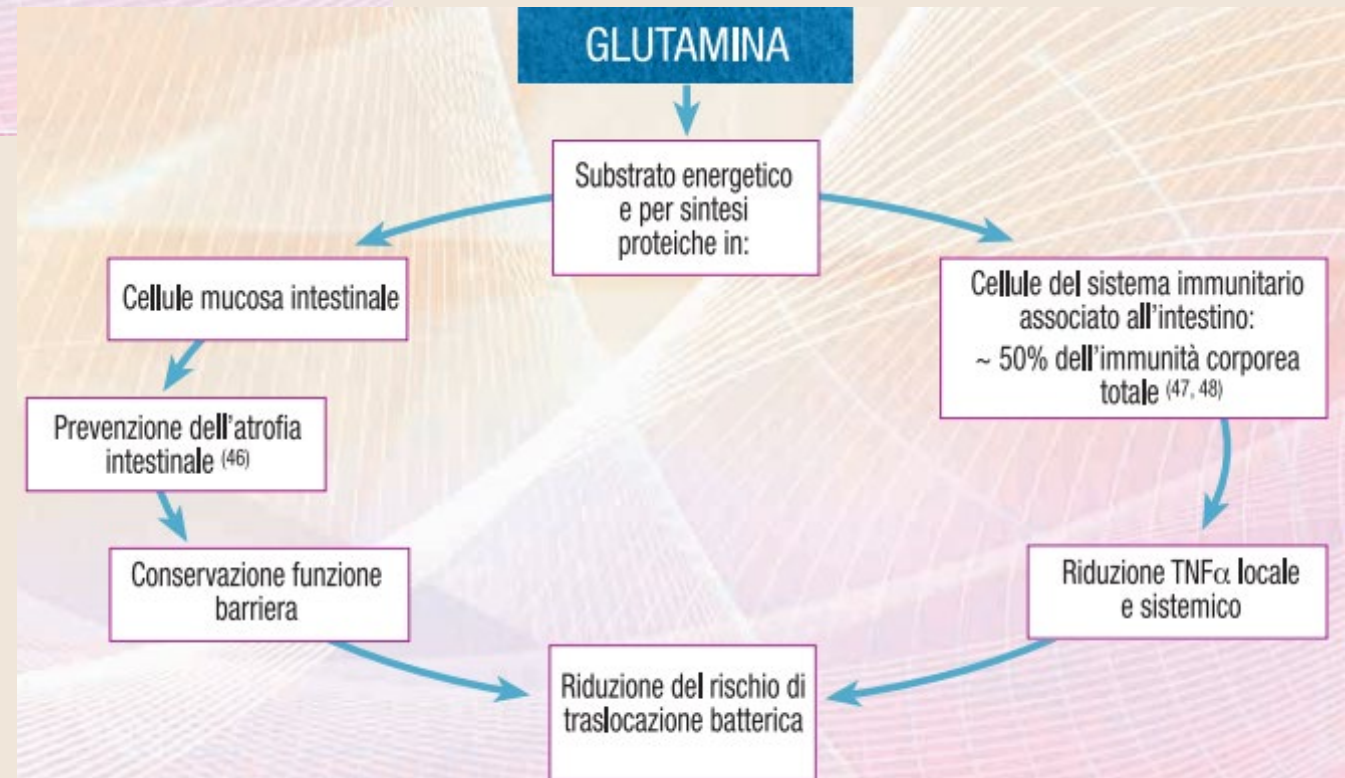
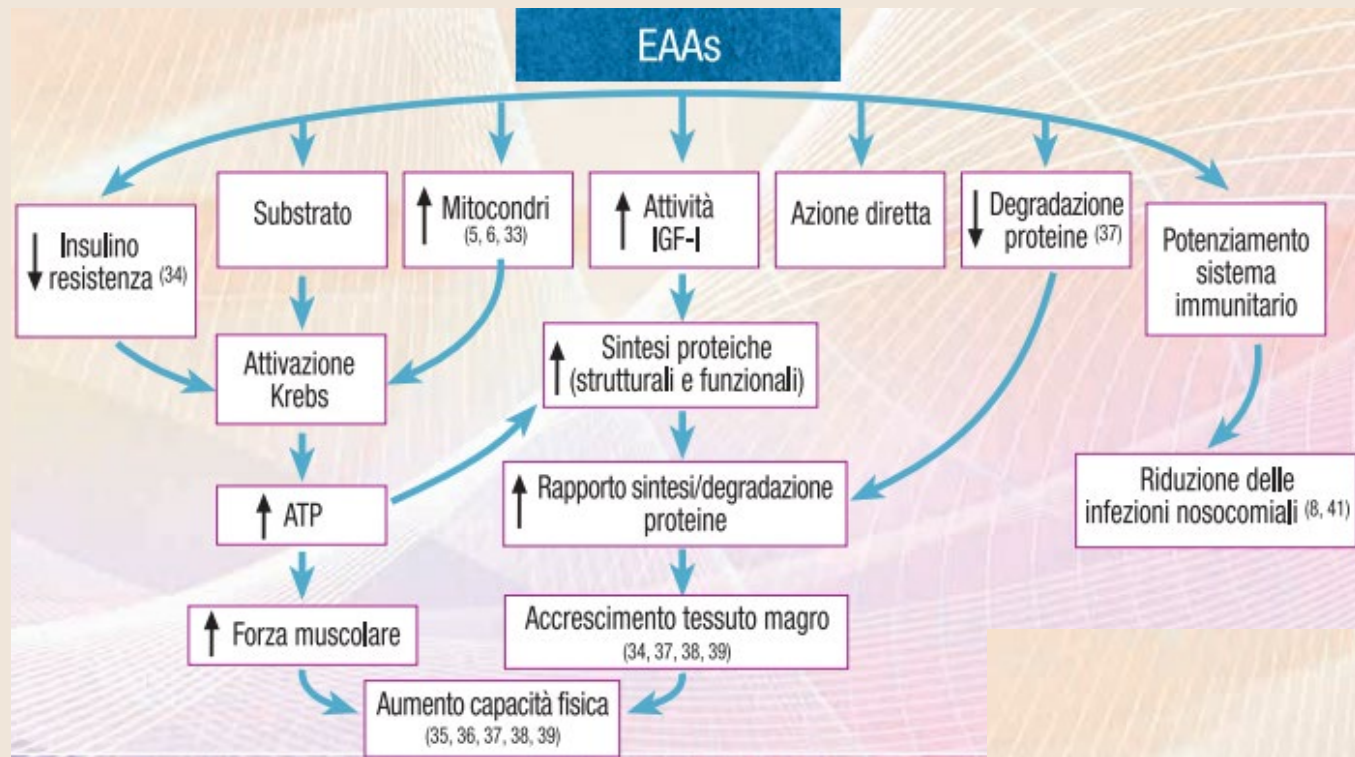


## ...e le vitamine?

*Even though surgery can exacerbate preexisting nutrient deficiencies, preoperative screening for vitamin deficiencies has not been the norm.*

Despite high-caloric intake, the deficiencies present appear to be related to the **poor quality** of the diet and low micronutrient intake.

TIAMINA	29%
B12	18-30%
FOLATI	54%
FERRO	45%
VITAMINA D	90%
VITAMINA A/E	14-2%
RAME	70%



EN



PN



# La scelta

**La scelta se nutrire il paziente per via enterale o parenterale non può prescindere dalle seguenti osservazioni:**

- 1) Se l'intestino è in grado di assorbire i nutrienti, la nutrizione enterale (NE) va privilegiata.
- 2) La NE non deve aggravare il quadro locale stimolando le secrezioni e aumentando la portata della fistola.
- 3) La NE non deve complicare la gestione del paziente.

*Schematicamente si può dire che la maggior parte delle fistole alte, cioè del primo tratto gastroenterico (esofagee, gastriche, duodenali e del digiuno prossimale), possono essere trattate con NE se è possibile posizionare, a valle della fistola, l'estremità del sondino nutrizionale*

L'apporto calorico e proteico con la NA deve tenere conto dello stato nutrizionale del paziente e del fatto che il trattamento in taluni casi debba essere protratto per lunghi periodi.

È perciò necessario evitare apporti di nutrienti in eccesso o in difetto

Enteral versus parenteral nutrition in the conservative treatment of upper gastrointestinal fistula after surgery: a multicenter, randomized, parallel-group, open-label, phase III study (NUTRILEAK study)



Gronnier et al. *Trials* (2020) 21:448  
<https://doi.org/10.1186/s13063-020-04366-3>

# Considerazioni e ragionevoli dubbi

Therefore, despite fasting, nutritional support is mandatory, and both enteral nutrition (EN) downstream of the site of leakage (via a feeding jejunostomy or a nasojejunal feeding tube placed radiologically or endoscopically) and parenteral nutrition are possible and currently used. However, the role of EN in maintaining the small intestinal structure and function and in improving postoperative outcomes is well established. ***Enteral nutrients maintain the structural function that are compromised by fasting and parenteral nutrition***

## EN was identified as an independent factor significantly associated with fistula closure

Even if EN seems to be promising, the potential risk of increasing the leakage output related to a reflux of nutritional liquid and/or to activate digestive enzymes, consequently reducing the probability of fistula closure rate or increasing the delay of fistula closure, may explain why surgeons are usually reluctant to provide EN

“We try to use enteral nutrition and avoid parenteral nutrition at all cost”

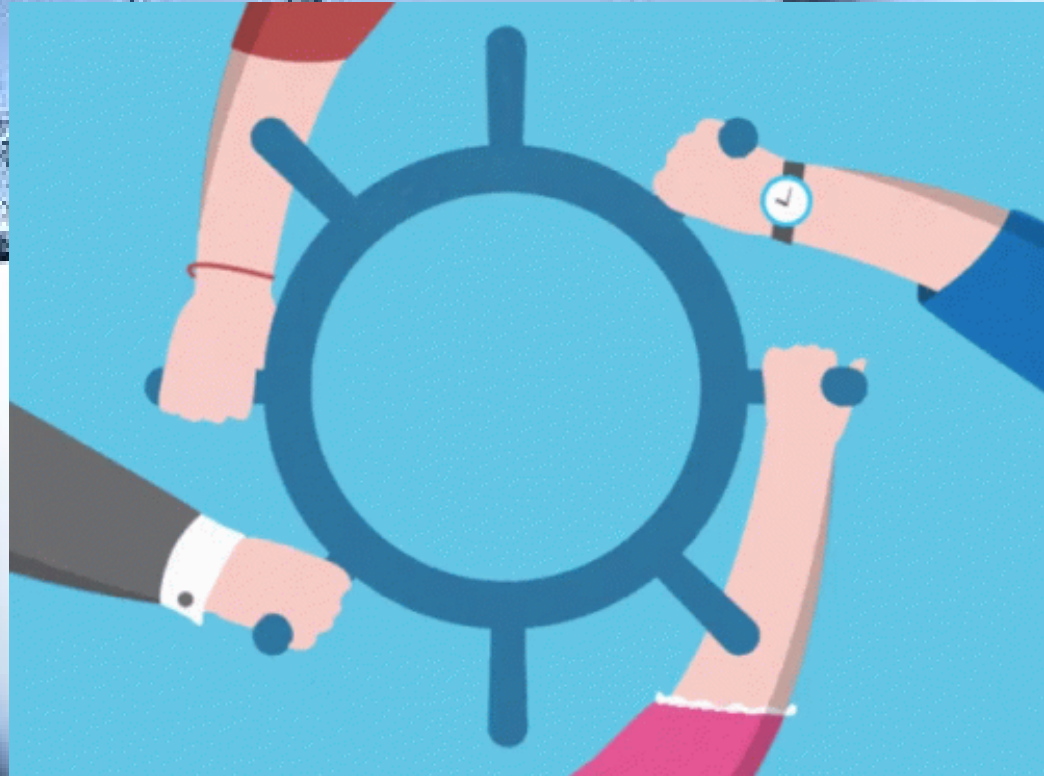
*Management Algorithm for Leaks Following Laparoscopic Sleeve Gastrectomy A. Nimeri et al. Ob Surg 2015*

## Ci vuole un po' di ...intraprendenza

“EN and TPN are already used in daily practice, but some surgeons are often reluctant to use EN... Nutrients via the GI tract stimulate a complex response that has implications on body composition and immunologic integrity...”

*Gronnier et al. Trials (2020)*

The fashioning of a feeding jejunostomy was a surgeon's decision. Otherwise, the patient was kept on TPN. Some colleagues avoided parenteral nutrition at any cost [7]. Statistical analysis indicated that patients on feeding jejunostomy had shorter time to resolution than those on TPN (Table 3). In our opinion, feeding through jejunostomy was superior to TPN in maintaining a good nutritional status and hence faster recovery, though comparing the complications and efficiencies between both methods was not studied in this paper.



# La sfida dei fabbisogni

**Common goals for nutrition support in post-bariatric surgery patients include nutrition repletion, avoiding overfeeding, preserving lean body mass, and promoting wound healing.**

*Indirect calorimetry is considered the gold standard for determining resting energy expenditure (REE) in hospitalized patients and should be used in the post-bariatric surgery patient if available.*

However, many institutions do not have access to indirect calorimetry, and clinicians must use predictive equations to estimate REE.

It is challenging to meet the unique nutrition requirements of post-bariatric surgery patients, and clinicians wonder whether it is safe for complicated bariatric patients **to lose weight while on nutrition support.**

Although there is a lack of published research in the area, expert opinion suggests goals for nutrition support in post-bariatric surgery patients to include

**nutrition repletion, avoiding overfeeding, preserving lean body mass, promoting wound healing, and continuing previously planned weight loss when possible.**



*Invited Review*

**Can Hypocaloric, High-Protein Nutrition Support Be Used in Complicated Bariatric Patients to Promote Weight Loss?**

Mara Lee Beebe, MS, RD, LD, CNSC<sup>1</sup>; and Nina Crowley, PhD, RD, LD<sup>2</sup>



When PN support is required for patients undergoing bariatric surgery CPGs from the American Society for Parenteral and Enteral Nutrition recommend a high-nitrogen (1.2 g/kg actual or 2 to 2.5 g/kg ideal weight of amino acid), low-energy (50 to 70% estimated requirements) formulation . This type of formulation also avoids overfeeding...

AACE/TOS/ASMBS/OMA/ASA 2019 Guidelines

The A.S.P.E.N. clinical guidelines suggested a trial of hypocaloric, high-protein diets in obese hospitalized patients, noting that outcomes were at least equivalent to eucaloric high-protein feedings

**Hypocaloric feedings of 50%–70% of estimated energy requirements based on predictive equations or <14 kcal/kg actual body weight**

**High protein feedings of 1.2 g/kg actual weight or 2–2.5 g/kg ideal body weight**

Despite continued recommendations for checking serum protein levels (serum albumin and prealbumin), it is now well known that these laboratory tests are not reliable biomarkers of adequate protein intake or nutrition. Serum albumin and prealbumin are negative acute phase responders and decrease in response to inflammation, infection, surgery, and trauma. Chronic levels of low-grade inflammation associated with obesity further complicate the use of serum albumin and prealbumin values.

There is no justification to make obese patients fast admitting the existence of body reserves.  
Such practice exacerbates the loss of lean body mass and induces the development of sarcopenia.

**The Bariatric Patient in the Intensive Care Unit:  
Pitfalls and Management**

Carlos E. Pompilio<sup>1</sup> • Paolo Pelosi<sup>2</sup> • Melina G. Castro<sup>3</sup>

MEDICO NUTRIZIONISTA



PSICOLOGO

CHIRURGO

DIETISTA

ENDOSCOPISTA





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Grazie