



CORSO SICOB IV EDIZIONE  
NAPOLI 19-20 FEBBRAIO 2026

# IL MANAGEMENT DELL'OBESITÀ

RESPONSABILE SCIENTIFICO  
MAURIZIO DE LUCA

## Ipoitaminosi e deficit di micronutrienti pre e post chirurgia bariatrica

**Farnaz Rahimi**

Dirigente Medico

Struttura Complessa di Dietetica e Nutrizione Clinica

AOU Città della Salute e della Scienza di Torino

Responsabile ambito obesità e chirurgia bariatrica

Ospedale Molinette



# MALNUTRIZIONE: UN CONCETTO PIU' COMPLESSO

1

## OVERWEIGHT AND OBESITY<sup>(9)</sup>

>670 million adults  
>120 million young people between 5 and 19 years old are **OBESE**  
40 million children are **OVERWEIGHT**

2

## UNDERNUTRITION<sup>(9)</sup>

>800 million people suffer from **HUNGER**  
149 million children below 5 years old are **UNDERWEIGHT**  
49 million children are chronically **MALNOURISHED**

3

## MICRONUTRIENT DEFICIENCIES

(e.g. iron, iodine, vitamin A, vitamin B12 and zinc)

Obesity-related pathologies affect medical budgets worldwide for:

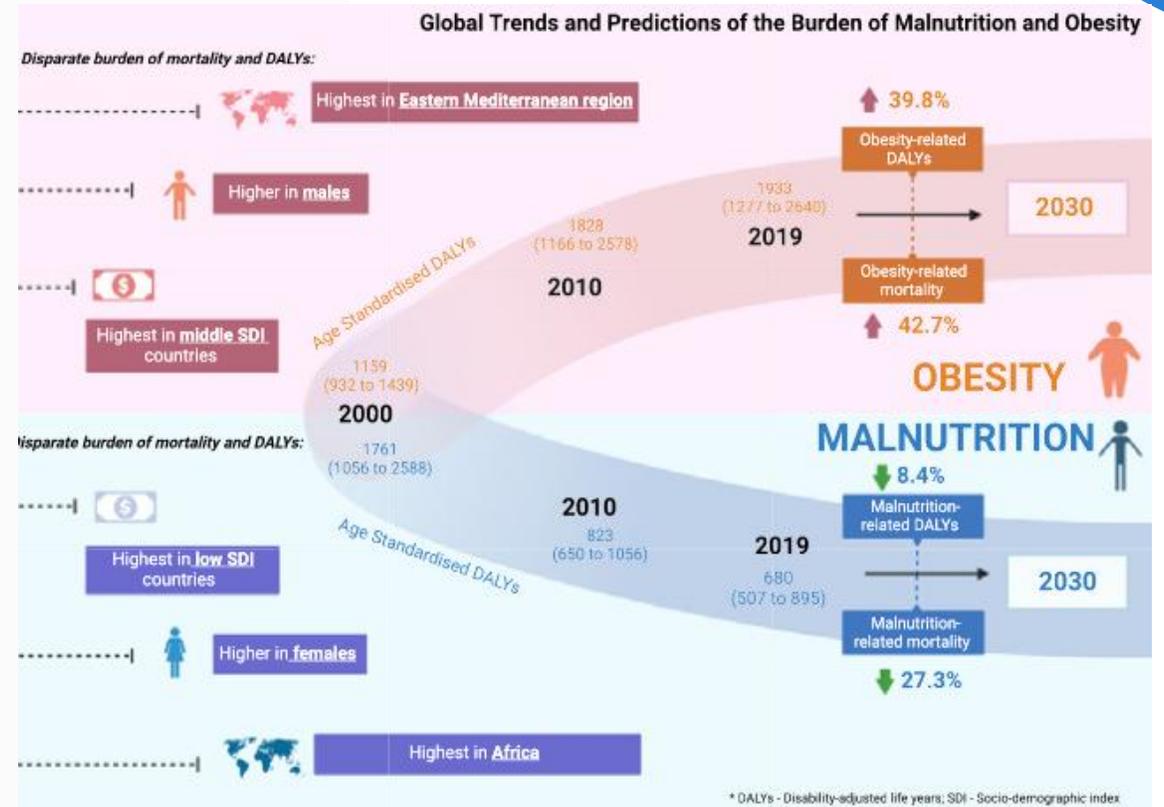
**2000** billion dollars a year<sup>(9)</sup>



## Obesity is fuelling a rise in Type 2 diabetes

If trends persist, **1 in 3** people will be obese by 2034

and **1 in 10** will develop Type 2 diabetes



Global Burden of Disease Study 2019" - Bryan Chong et al. - eClinicalMedicine 2023;57:

the

# Obesità e malnutrizione

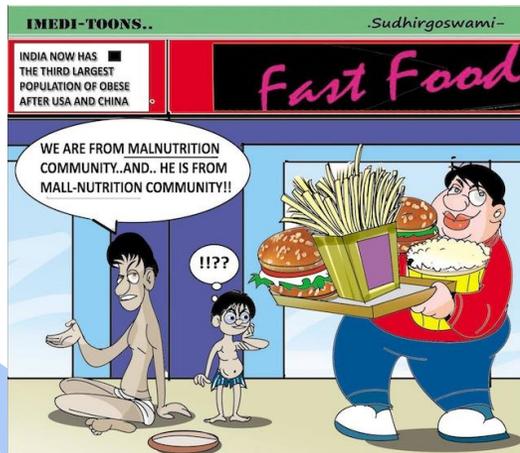
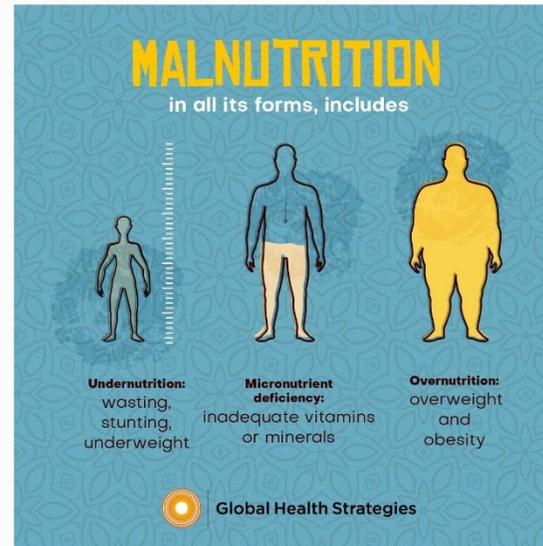
## Protein Energy Malnutrition

• Marasmus

• Kwashiorkor

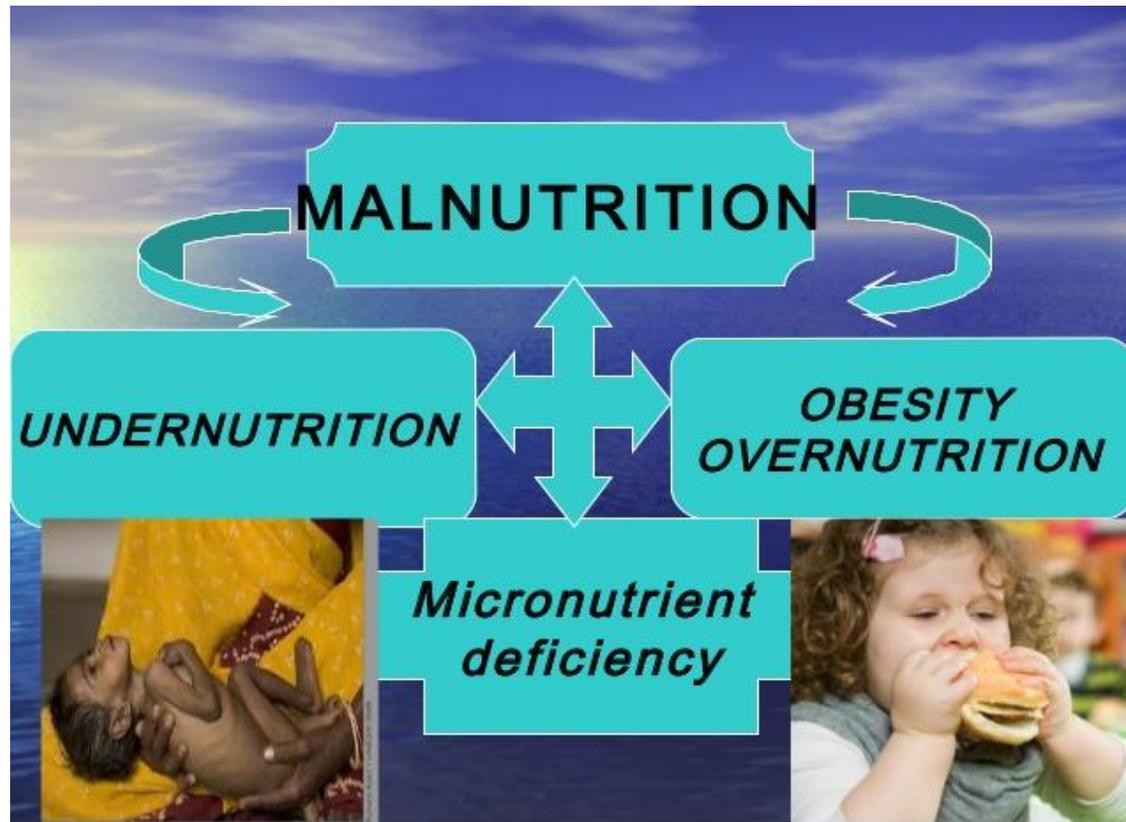


La dieta occidentale è molto **densa dal punto di vista calorico** ma povera di micronutrienti, come vitamine e minerali



Milioni di persone in sovrappeso o affetti da obesità sono in uno **stato di malnutrizione**, a causa di diete troppo ricche di zuccheri a rapido assorbimento (RA) e grassi

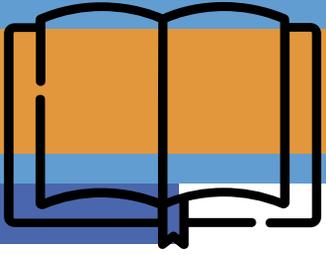
# Obesità e malnutrizione



# OBESITA E SARCOPENIA

## UN DOPPIO PROBLEMA DA AFFRONARE





# Fonti utili



*Bariatric Surgery in Class I Obesity*

**Luca Busetto, John Dixon, Maurizio De Luca, Scott Shikora, Walter Pories & Luigi Angrisani**

**Obesity Surgery**  
The Journal of Metabolic Surgery and Allied Care  
ISSN 0960-8923  
OBES SURG  
DOI 10.1007/s11695-014-1214-1

**OBESITY SURGERY**  
The Journal of Metabolic Surgery and Allied Care

ONLINE FIRST

Springer

Canadian Adult Obesity Clinical Practice **GUIDELINES**

obesity canada / obésité canada

L'ASSOCIATION CANADIENNE des MÉDECINS et CHIRURGIENS BARIATRIQUE  
The Canadian Association of Bariatric Physicians and Surgeons

**EASO**  
European Association for the Study of Obesity

The Official Journal of the  
**European Association for the Study of Obesity**

**SIO**  
ETS  
Società Italiana dell'Obesità  
STUDIO, PREVENZIONE E CURA

**Obesity Facts**  
The European Journal of Obesity

**S.I.C.OB.** Società Italiana di Chirurgia dell'Obesità e delle malattie metaboliche

*International Federation for the Surgery of Obesity and Metabolic Disorders (IFSO)*  
www.ifso.com



# LINEE GUIDA NUTRIZIONALI POST C.B.



Linee Guida della Società Italiana di Chirurgia dell'Obesità e delle malattie metaboliche (SICOB)  
*La terapia chirurgica dell'obesità e delle patologie associate*

## GRADO DI RACCOMANDAZIONE

### PICO 19

*Si raccomanda di includere congrue dosi di vitamina D nelle supplementazioni vitaminiche peri-operatorie per ridurre il rischio di deficit vitaminici.*

**Raccomandazione forte a favore, con qualità delle prove moderata**

## GRADO DI RACCOMANDAZIONE

### PICO 20

*Si raccomanda di somministrare acido ursodesossicolico post-operatorio, per ridurre il rischio di calcolosi della colecisti ed interventi di colecistectomia.*

**Raccomandazione forte a favore, con qualità delle prove alta**

S.I.C.OB.





# PRIMA DELLA CHIRURGIA



## Pre-operative micronutrient deficiencies in patients with severe obesity candidates for bariatric surgery

M. Pellegrini<sup>1</sup> · F. Rahimi<sup>2</sup> · S. Boschetti<sup>2</sup> · A. Devecchi<sup>1</sup> · A. De Francesco<sup>2</sup> · M. V. Mancino<sup>2</sup> · M. Toppino<sup>3</sup> · M. Morino<sup>3</sup> · G. Fanni<sup>1</sup> · V. Ponzo<sup>1</sup> · E. Marzola<sup>4</sup> · G. Abbate Daga<sup>4</sup> · F. Broglio<sup>1,5</sup> · E. Ghigo<sup>1,5</sup> · S. Bo<sup>1,5</sup> 

Miglioramento dello **stato nutrizionale** con correzione di eventuali **deficit** di vitamine/nutrienti (tra i più comuni ferro, acido folico, vitamina B12 e vitamina D)

**Optimizing Nutritional Management Before and After Bariatric Surgery:  
A Comprehensive Guide for Sustained Weight Loss and Metabolic Health, Luigi Schiavo Febb 2025**



# PRIMA DELLA CHIRURGIA

## (A) Nutritional Evaluation and Screening [35,40,50,51]

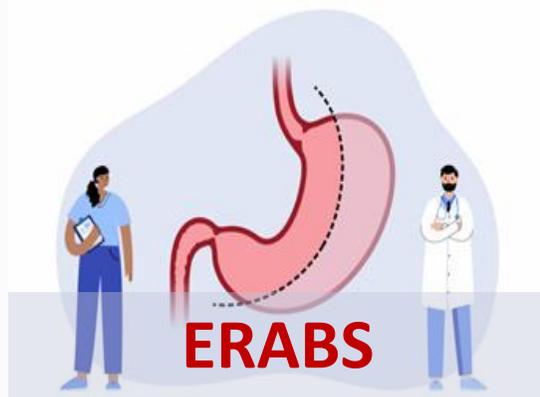
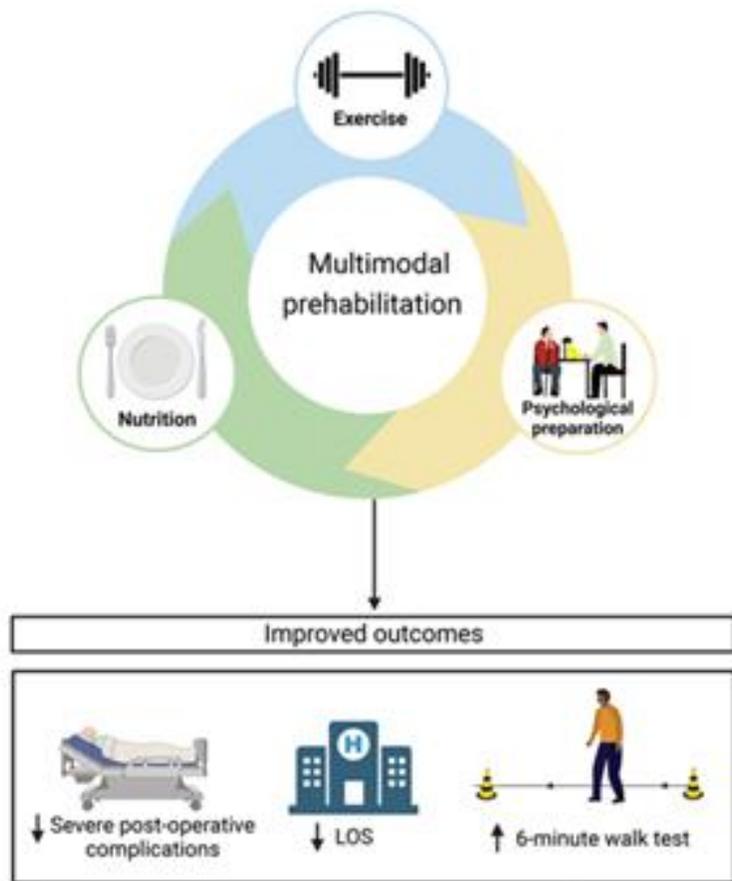
- Comprehensive nutritional evaluation is critical due to the high risk of malnutrition and micronutrient deficiencies in bariatric surgery (BS) patients.
- Malabsorptive procedures require more thorough evaluations than restrictive ones.
- Preoperative corrections of deficiencies prevent postoperative complications and optimize outcomes.
- Obesity-related factors contribute to deficiencies, e.g., malabsorption, dieting, and medication use.

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## Common Deficiencies

- Vitamin B12: Linked to medication use (e.g., metformin) and small intestinal bacterial overgrowth.
  - Vitamin D: 65% prevalence during perioperative period; supplementation improves levels.
  - Iron: Affects up to 45% of patients; caused by poor intake and reduced absorption.
- 
- 

# Preabilitazione Nutrizionale



# Preabilitazione Nutrizionale

## OTTIMIZZAZIONE NUTRIZIONALE

World J Surg (2022) 46:729–751  
<https://doi.org/10.1007/s00268-021-06394-9>

World Journal  
of Surgery



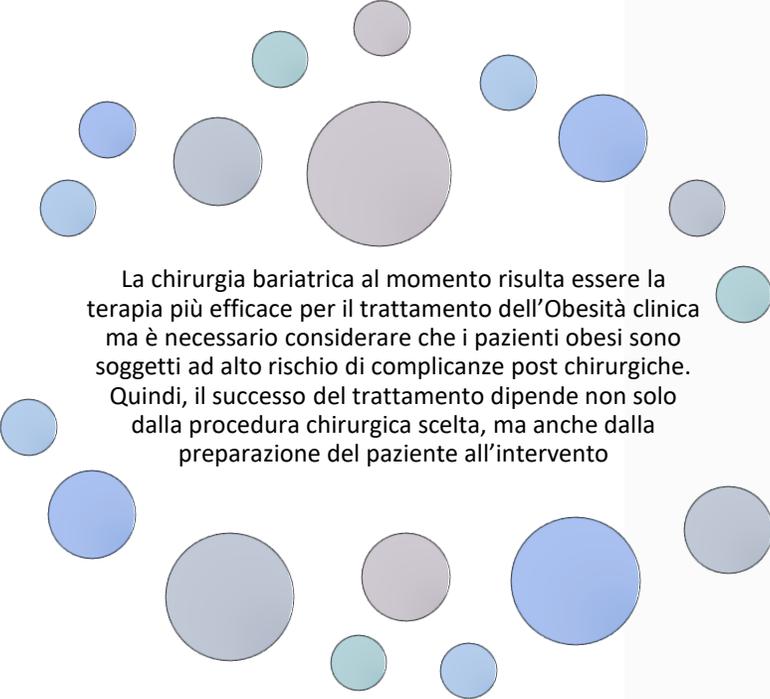
Reviews in Endocrine and Metabolic Disorders (2020) 21:297–306  
<https://doi.org/10.1007/s11154-020-09571-8>

SCIENTIFIC REVIEW

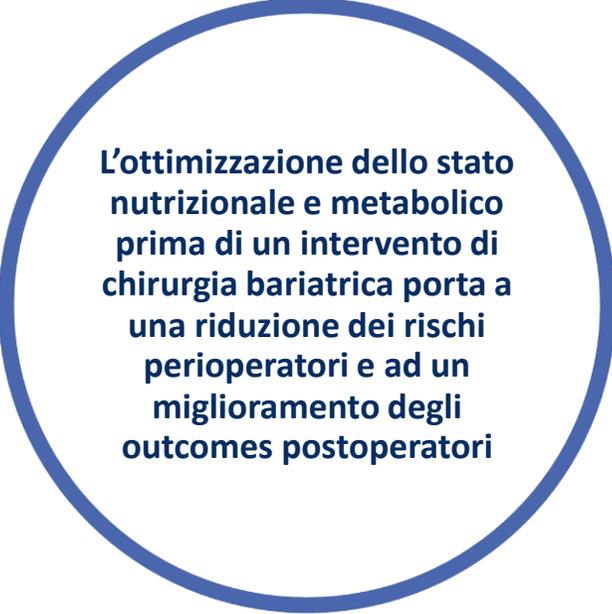
### Guidelines for Perioperative Care in Bariatric Surgery: Enhanced Recovery After Surgery (ERAS) Society Recommendations: A 2021 Update

### Diet approach before and after bariatric surgery

Silvia Bettini<sup>1</sup> • Anna Belligoli<sup>1</sup> • Roberto Fabris<sup>1</sup> • Luca Busetto<sup>1,2</sup>



La chirurgia bariatrica al momento risulta essere la terapia più efficace per il trattamento dell'Obesità clinica ma è necessario considerare che i pazienti obesi sono soggetti ad alto rischio di complicanze post chirurgiche. Quindi, il successo del trattamento dipende non solo dalla procedura chirurgica scelta, ma anche dalla preparazione del paziente all'intervento



L'ottimizzazione dello stato nutrizionale e metabolico prima di un intervento di chirurgia bariatrica porta a una riduzione dei rischi perioperatori e ad un miglioramento degli outcomes postoperatori

# Preabilitazione Nutrizionale

## OTTIMIZZAZIONE NUTRIZIONALE- CORREZIONE DEI DEFICIT

### Deficiencies before surgery

Consequences of obesity and lack of intake due to wrong nutritional habit

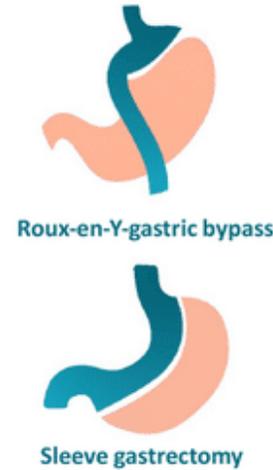
Vitamin A  
Vitamin B12  
Vitamin C  
Vitamin D  
Folic acid  
Calcium  
Iron  
Selenium  
Zinc



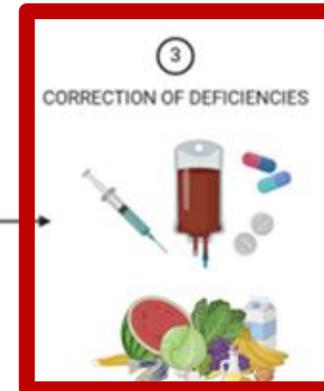
### Deficiencies after surgery

Nutrients malabsorption and lack of intake due to wrong nutritional habit

Vitamin A  
Vitamin B12  
Vitamin B1  
Vitamin C  
Vitamin D  
Vitamin K1  
Vitamin E  
Folic acid  
Calcium  
Copper  
Iron  
Selenium  
Zinc



**Preoperative screening**



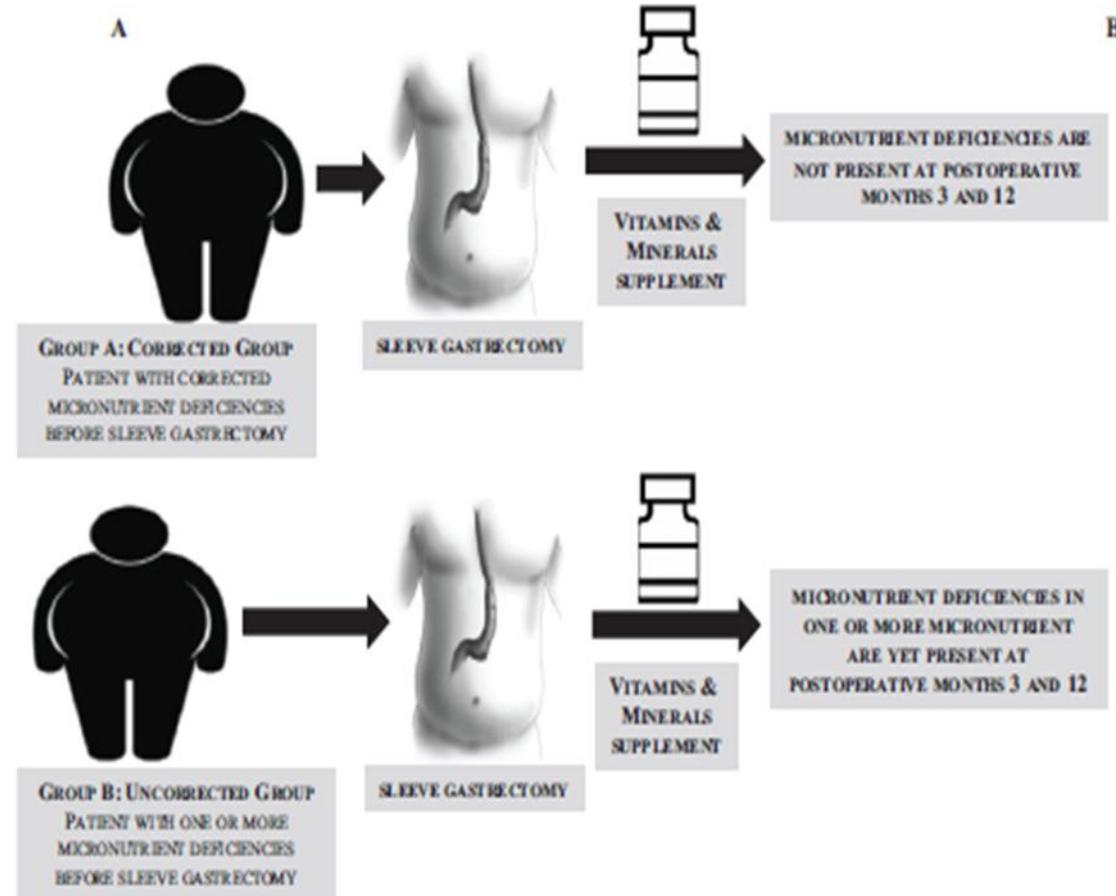
# Preabilitazione Nutrizionale

## OTTIMIZZAZIONE NUTRIZIONALE- CORREZIONE DEI DEFICIT



Correcting micronutrient deficiencies before sleeve gastrectomy may be useful in preventing early postoperative micronutrient deficiencies

Luigi Schiavo<sup>1</sup>, Vincenzo Pilone<sup>1,2</sup>, Gianluca Rossetti<sup>3</sup>, Mafalda Romano<sup>1</sup>, Gor Anne-Sophie Schneck<sup>5</sup>, and Antonio Iannelli<sup>6,7,8</sup>



# Patient preoperative optimization



Surgery for Obesity and Related Diseases 13 (2017) 727–741



Review article

## American Society for Metabolic and Bariatric Surgery Integrated Health Nutritional Guidelines for the Surgical Weight Loss Patient 2016 Update: Micronutrients

Julie Parrott, M.S., R.D.N.<sup>a,\*</sup>, Laura Frank, Ph.D., M.P.H., R.D.N., C.D.<sup>b</sup>,  
Rebecca Rabena, R.D.N., L.D.N.<sup>c</sup>, Lillian Craggs-Dino, D.H.A., R.D.N., L.D.N.<sup>d</sup>,  
Kellene A. Isom, M.S., R.D.N., L.D.N.<sup>e</sup>, Laura Greiman, M.P.H., R.D.N.<sup>f</sup>



**Background:** Optimizing postoperative patient outcomes and nutritional status begins preoperatively. Patients should be educated before and after weight loss surgery (WLS) on the expected nutrient deficiencies associated with alterations in physiology. Although surgery can exacerbate preexisting nutrient deficiencies, preoperative screening for vitamin deficiencies has not been the norm in the majority of WLS practices. Screening is important because it is common for patients who present for WLS to have at least 1 vitamin or mineral deficiency preoperatively.

## STOMACO

Water, ethyl alcohol, copper, iodide, fluoride, molybdenum, intrinsic factor

## DIGIUNO

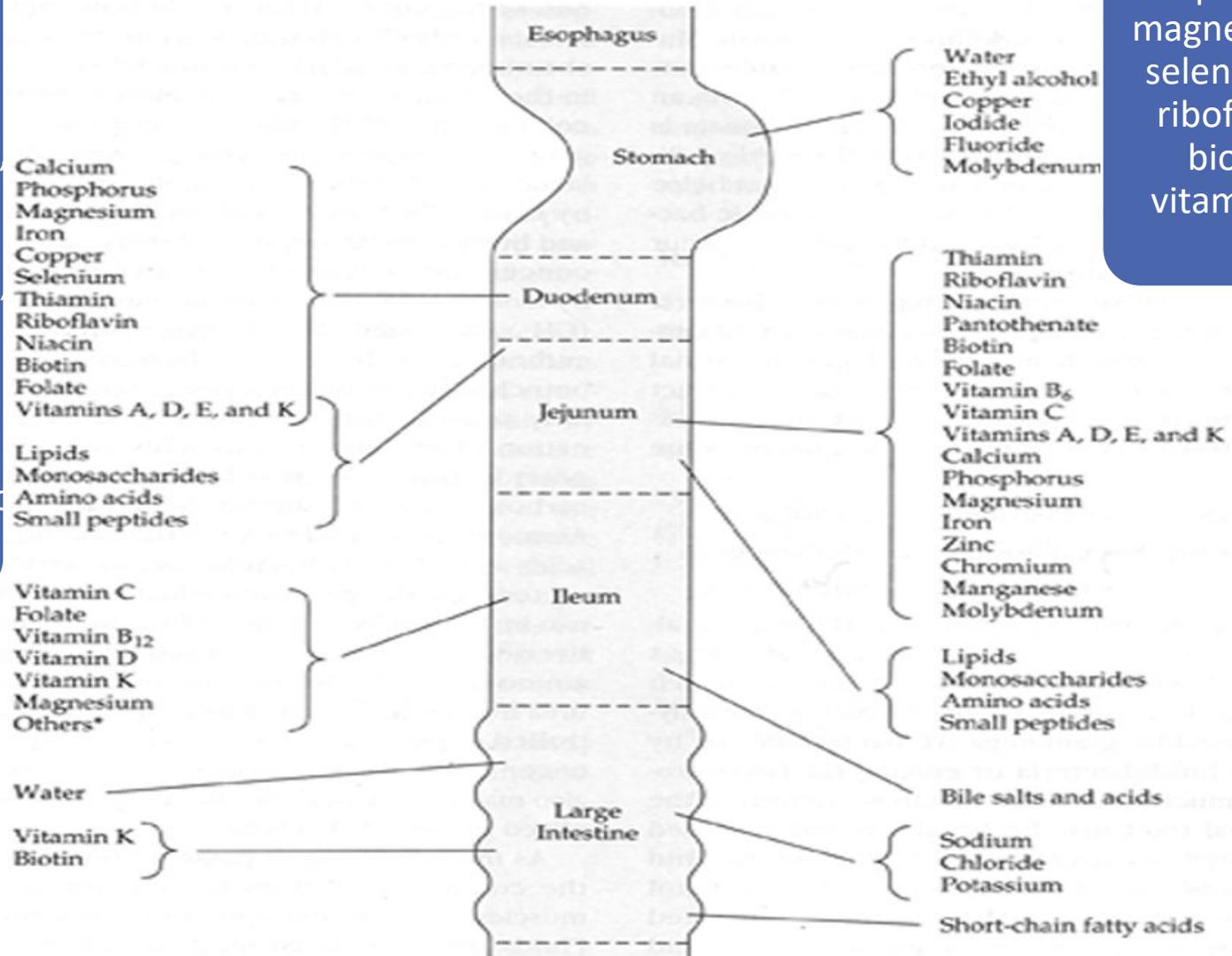
Thiamin, riboflavin, niacin, pantothenate, biotin, folate, vit B6, vit C, vit A, D, E, K, dipeptides, tripeptides, calcium, phosphorus, magnesium, iron, zinc, chromium, manganese, molybdenum, amino acids

## ILEO

Vit C, folate, vit B12, vit D, vit K, magnesium, bile salts/acids

# DOPO LA CHIRURGIA

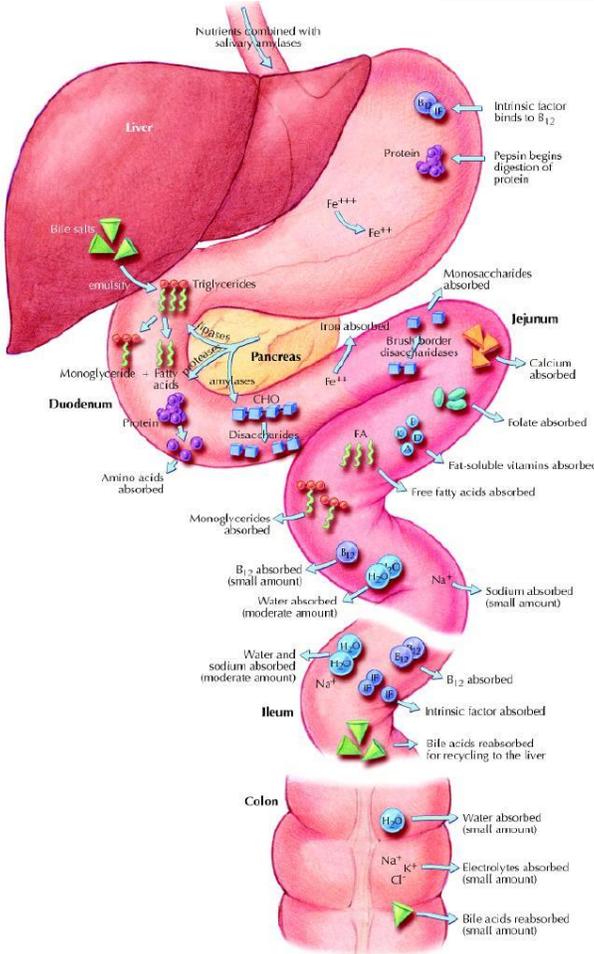
## Siti di assorbimento dei nutrienti



## DUODENO

Calcium, iron, phosphorus, magnesium, copper, selenium, thiamin, riboflavin, niacin, biotin, folate, vitamins A, D, E, K

# Post-bariatric surgery follow-up



**LSG**



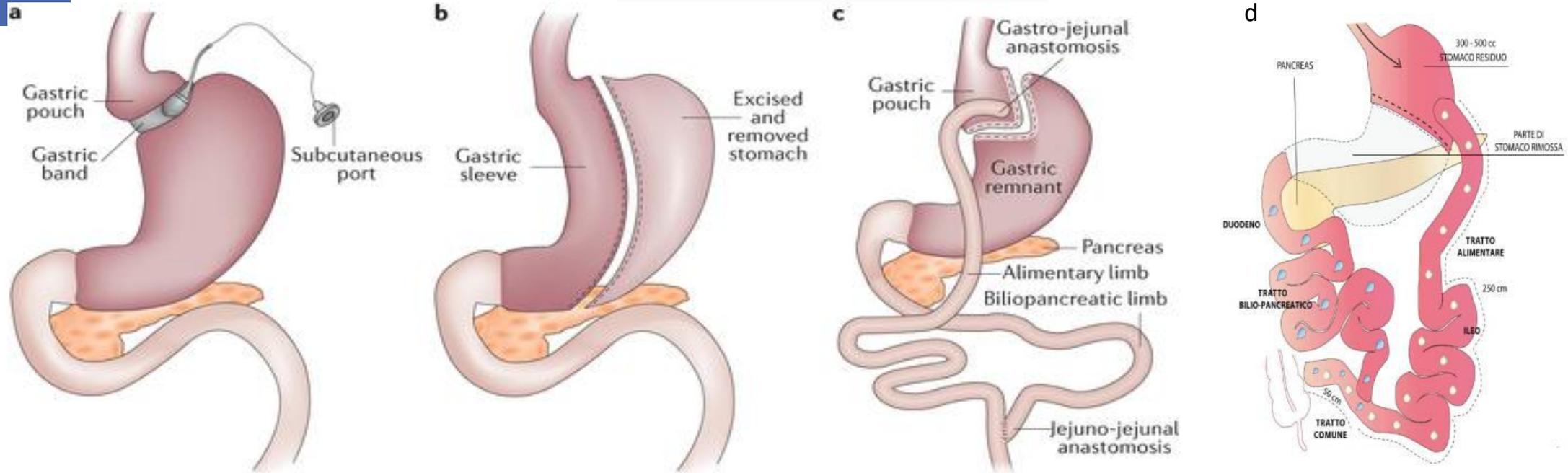
**RYGB**



**BPD/DS**

# Trattamento chirurgico dell'obesità severa

## Differenze tra i vari tipi di chirurgia



Nature Reviews | Gastroenterology & Hepatology

more aggressive nutritional surveillance

Major intestinal anatomical differences between the various bariatric operations (Fujioka 2011)

Table 1

## Pre-WLS Nutrient Screening Recommendations

Micronutrient	Pre-WLS Nutrient Screening Recommendation	Rationale
Thiamin	<ul style="list-style-type: none"> <li>● Routine pre-WLS screening* is recommended for all patients. (Grade C, BEL 3) ☑</li> </ul>	<ul style="list-style-type: none"> <li>● Prevalence of thiamin deficiency pre-WLS is reported to be as high as 29%. </li> </ul>
Vitamin B12 (cobalamin)	<ul style="list-style-type: none"> <li>● Routine pre-WLS screening of B12 is recommended for all patients. (Grade B, BEL 2) ☑</li> <li>● Serum MMA is the recommended assay for B12 evaluation for symptomatic or asymptomatic patients and in those with history of B12 deficiency or preexisting neuropathy. (Grade B, BEL 2) ☑</li> </ul>	<ul style="list-style-type: none"> <li>● Prevalence of B12 deficiency is reported to be 2–18% in patients with obesity and 6–30% in patients taking proton pump inhibitors. </li> </ul>
Folate (Folic Acid)	<ul style="list-style-type: none"> <li>● Routine pre-WLS screening is recommended for all patients. (Grade B, BEL 2) ☑</li> </ul>	<ul style="list-style-type: none"> <li>● Prevalence of folate deficiency is reported to be as high as 54% in patients with obesity. </li> </ul>
Iron	<ul style="list-style-type: none"> <li>● Routine pre-WLS screening is recommended for all patients. (Grade B, BEL 2) ☑</li> <li>● Screening patients for iron status, but not for the purpose of diagnosing iron deficiency, may include the use of ferritin levels. (Grade B, BEL 2) ☑</li> <li>● A combination of tests (serum iron with serum transferrin saturation and total iron-binding capacity) is recommended for diagnosing iron deficiency. (Grade B, BEL 2)</li> <li>● Screening for iron deficiency should include assessment of clinical signs and symptoms common to this condition (e.g., feeling tired and weak, decreased work performance, decreased immune function, and glossitis). (Grade B, BEL 2)</li> </ul>	<ul style="list-style-type: none"> <li>● Prevalence of iron deficiency is reported to be as high as 45% in patients with obesity. </li> </ul>
Vitamin D and Calcium	<ul style="list-style-type: none"> <li>● Routine pre-WLS screening is recommended for all patients. (Grade A, BEL 1) ☑</li> <li>● Routine pre-WLS screening of calcium status, vitamin D deficiency and insufficiency is particularly important for pre- and postmenopausal women. (Grade D, BEL 4) ☑</li> </ul>	<ul style="list-style-type: none"> <li>● Prevalence of vitamin D deficiency is reported to be as high as 90% in patients with obesity. </li> <li>● Elevated values of carboxy-terminal telopeptide have been reported in 66.7% of patients under 50 years of age.</li> </ul>

Table 1

## Pre-WLS Nutrient Screening Recommendations

Micronutrient	Pre-WLS Nutrient Screening Recommendation	Rationale
Fat-soluble vitamins (A, E, K)	<ul style="list-style-type: none"> <li>● Routine pre-WLS screening is recommended for all patients. (Grade C, BEL 3) ☑</li> </ul>	<ul style="list-style-type: none"> <li>● Prevalence of deficiencies pre-WLS is reported to be vitamin A 14%, vitamin E 2.2%. ←</li> <li>● There are no data on vitamin K deficiencies in pre-WLS patients.</li> </ul>
Zinc	<ul style="list-style-type: none"> <li>● Routine pre-WLS screening of zinc status is recommended for patients before RYGB or BPD/DS. (Grade D, BEL 3) ☑</li> <li>● Zinc assays in pre-WLS patients should be interpreted in light of the fact that patients with obesity have lower serum zinc levels and lower concentrations of zinc in plasma and erythrocytes than leaner patients. Thus, repletion of zinc is indicated when signs and symptoms are evident and zinc assays are severely low. (Grade C, BEL 3) ☑</li> </ul>	<ul style="list-style-type: none"> <li>● Prevalence of zinc deficiency is reported to be 24–28% in WLS samples overall, ←</li> <li>● and 74% of patients seeking BPD/DS.</li> </ul>
Copper	<ul style="list-style-type: none"> <li>● Routine pre-WLS screening of copper using serum copper and ceruloplasmin is recommended for patients before RYGB or BPD/DS, but results must be interpreted with caution. (Grade D, BEL 4) ☑</li> <li>● Erythrocyte superoxide dismutase is the preferred assay for determining copper status in patients who have undergone WLS. It is a more precise biomarker for screening of copper deficiency when it is available and affordable. (Grade D, BEL 4) ☑</li> </ul>	<ul style="list-style-type: none"> <li>● Prevalence of copper deficiency is reported to be as high as 70% in pre-BPD women. ←</li> </ul>

Micronutrient  
Supplementation [78]

- Vitamin B12:
  - Oral: 1000–2000 mcg daily (SL or oral).
  - IM: 1000 mcg monthly (if absorption is impaired or deficiency is severe).
- Vitamin D:
  - Deficiency (serum levels <20 ng/mL): High-dose supplementation: 50,000 IU weekly for 8–12 weeks.
  - Insufficiency (serum levels 20–30 ng/mL): 1000–2000 IU daily, adjusted based on follow-up levels.
  - Maintenance dose: 800–2000 IU daily.
- Iron:
  - Oral supplementation: 45–60 mg of elemental iron daily (ferrous sulfate, gluconate, or fumarate) with vitamin C (250–500 mg), which is often co-administered to enhance absorption.
  - IV supplementation (if oral iron is poorly tolerated or severe deficiency is present). Dosage depends on severity; ferric carboxymaltose 1000 mg can be administered over 1–2 sessions.

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Macronutrient Guidelines

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Proteins: 1.2–1.5 g/kg of ideal body weight; supports muscle maintenance, healing, and immunity.

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Carbohydrates: 40–50% of intake; focus on complex carbs to avoid fatty liver.

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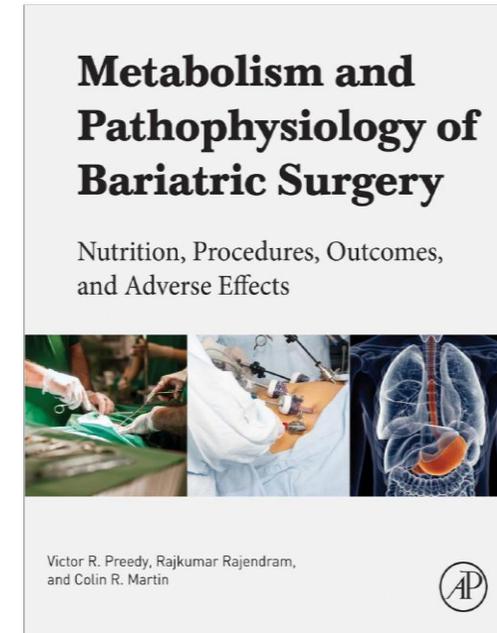
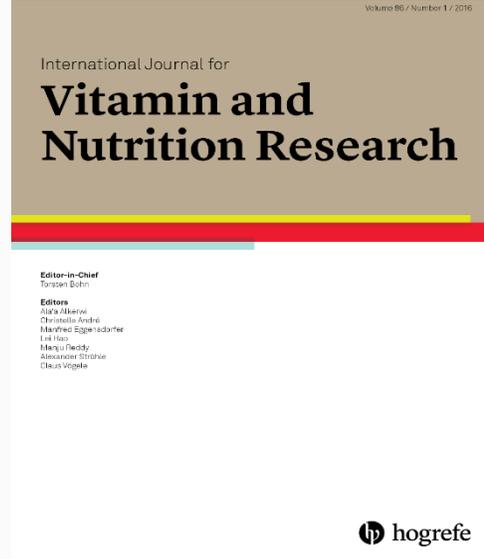
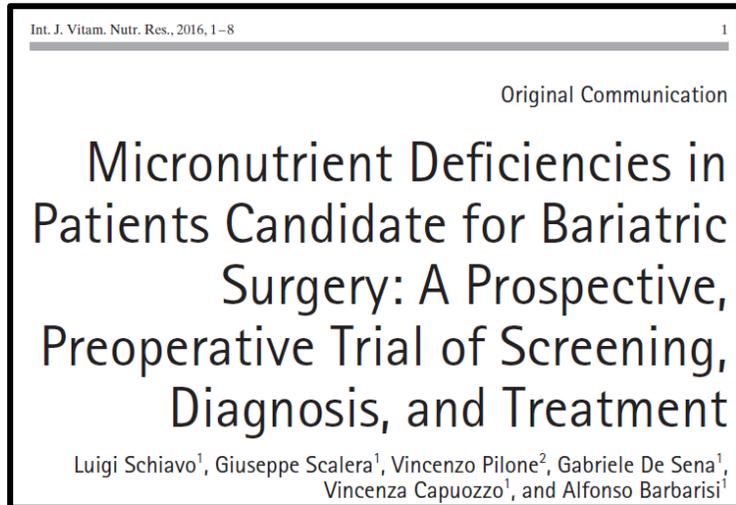
Fats: 20–30% of intake; prioritize healthy fats and minimize trans and saturated fats.

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Micronutrients: Adequate intake of iron, calcium, vitamin D, B vitamins is critical.

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# Causes contributing to MD in patients with obesity



- Poorly balanced diet
- Lifestyle habits
- Chronic subclinical inflammation
- Several diseases (diabetes, hypertension, hypothyroidism, renal and liver disease)
- Medications (such as corticosteroids, bifosphosphonates, etc.)
- Body composition (25-vitamin D sequestration by adipose tissue)

# POTENTIAL REASONS OF LACK OF EFFECTIVENESS OF VITAMIN B12 REPLACEMENT AFTER SLEEVE GASTRECTOMY

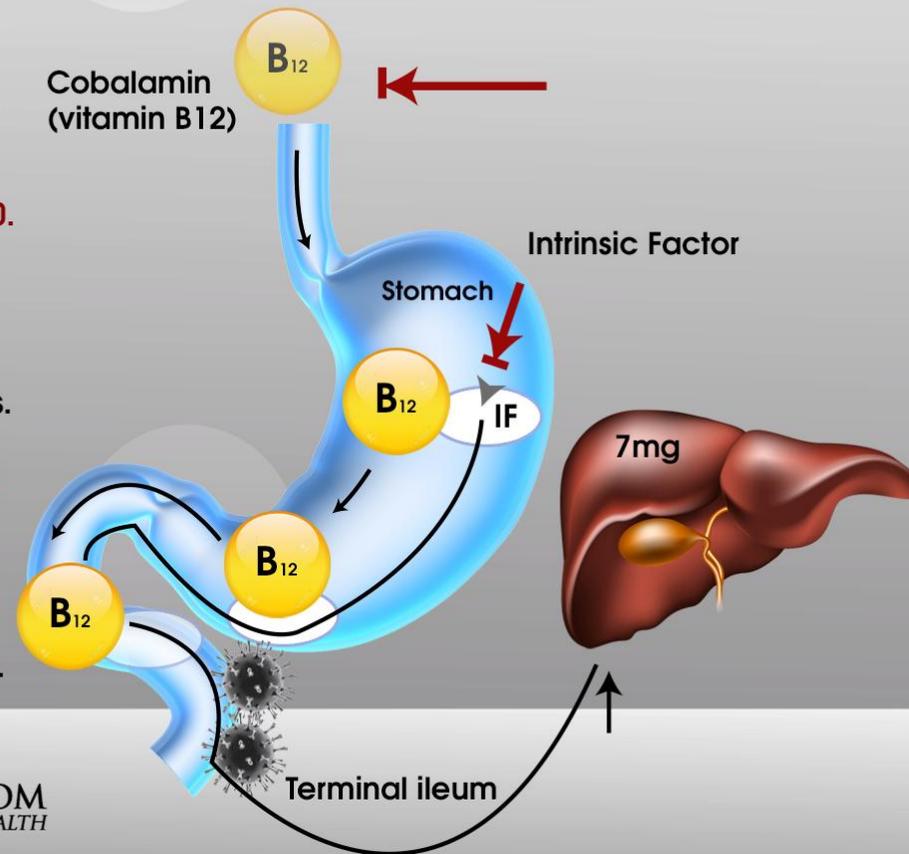
## Absorption of Vitamin B12

Intrinsic factor is a glycoprotein of M.W. 4500.

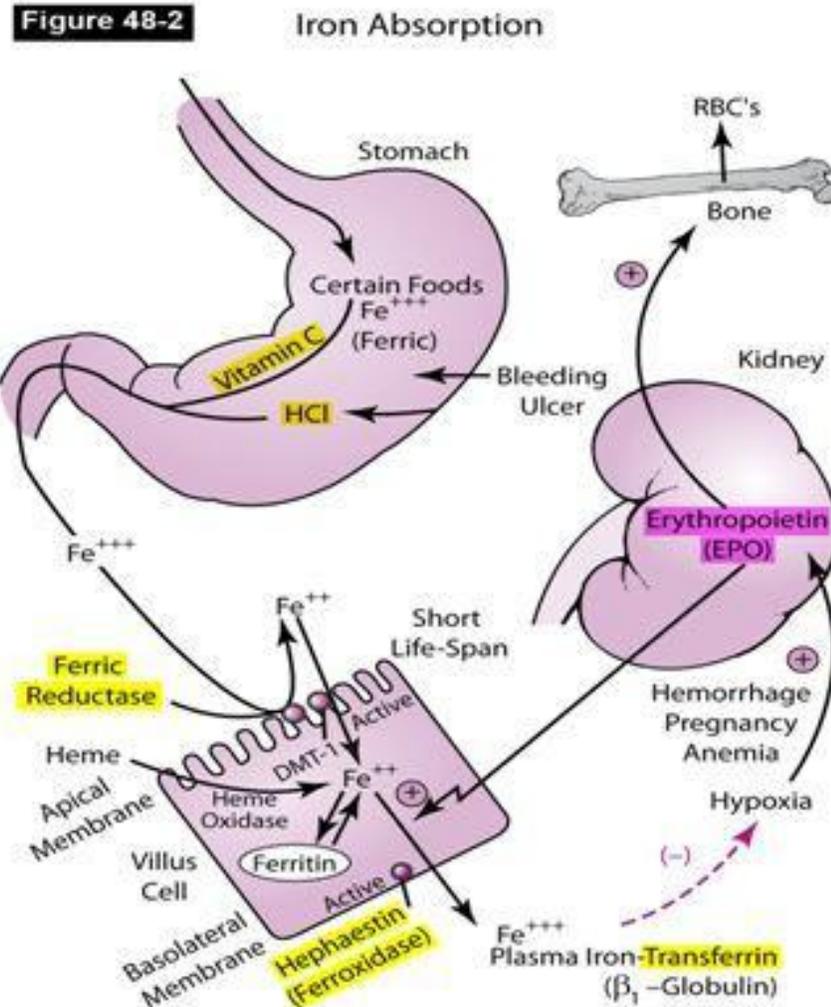
Vit. B12 combine with intrinsic factor forming a complex that resist digestion by GIT enzymes.

This complex is absorbed at terminal ileum by pinocytosis.

Vit. B12 is transported to the liver where it is stored.



# POTENTIAL REASONS OF LACK OF EFFECTIVENESS OF IRON REPLACEMENT AFTER SLEEVE GASTRECTOMY



Iron needs to be transformed to an absorbable form by HCl in the normal stomach.

After SG the quantity of HCl produced in the stomach is reduced and nutrients may pass the stomach faster, thus making it more difficult to absorb iron

# POTENTIAL REASONS OF LACK OF EFFECTIVENESS OF MICRONUTRIENTS REPLACEMENT AFTER SLEEVE GASTRECTOMY

 *Therapeutic Advances in Drug Safety*

*Review*

## Proton pump inhibitors and risk of vitamin and mineral deficiency: evidence and clinical implications

Joel J. Heidelbaugh

*Ther Adv Drug Saf*

(2013) 4(3) 125–133

DOI: 10.1177/

2042098613482484

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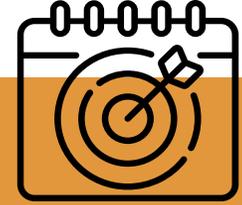
**Abstract:** Proton pump inhibitors (PPIs) remain the superior choice worldwide in antisecretory therapy in the evidence-based treatment of upper gastrointestinal disorders including gastroesophageal reflux disease, erosive esophagitis, dyspepsia and peptic ulcer disease. PPI overutilization in ambulatory care settings is often a result of failure to re-evaluate the need for continuation of therapy, or insufficient use of on-demand and step-down therapy. Nonjudicious use of PPIs creates both preventable financial as well as medical concerns. PPIs have been associated with an increased risk of vitamin and mineral deficiencies impacting vitamin B<sub>12</sub>, vitamin C, calcium, iron and magnesium metabolism. While these risks are considered to be relatively low in the general population, they may be notable in elderly and malnourished patients, as well as those on chronic hemodialysis and concomitant PPI therapy. No current evidence recommends routine screening or supplementation for these potential vitamin and mineral deficiencies in patients on either short- or long-term PPI therapy. Reducing inappropriate prescribing of PPIs can minimize the potential risk of vitamin and mineral deficiencies.

## **IDENTIFY AND CORRECT MICRONUTRIENT DEFICIENCIES AFTER METABOLIC AND BARIATRIC SURGERY**

- Adding Branched-Chain Amino Acids and Vitamin D to Whey Protein Is More Effective than Protein Alone in Preserving Fat Free Mass and Muscle Strength in the First Month after Sleeve Gastrectomy

(I.Schiavo, F.Rahimi et al. Nutrients Aprile 2024)

# TRA I DISTURBI PIU' COMUNI



## ANEMIA

*carezza marziale, di folati,  
vitamina B12, vitamine A, E, rame,  
zinco, selenio*

## MALNUTRIZIONE CALORICO- PROTEICA

*apporto proteico insufficiente,  
ipotrofia muscolare, metabolismo  
rallentato*

## DEFICIT DI CALCIO E VIT D

*conseguenti al  
malassorbimento*

## TRICO EFFLUVIUM, FRAGILITA' UNGUEALE

*deficit di zinco, selenio, biotina,  
proteine*

## CRAMPI MUSCOLARI

*ipopotassiemia,  
ipomagnesiemia*

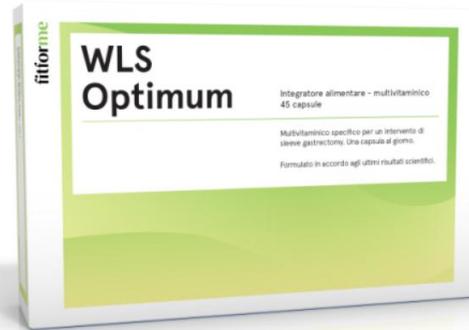
## DISIDRATAZIONE

*assunzione dei liquidi  
preferibilmente lontano  
dai pasti e a piccoli sorsi*



# Supplementazione

Alcuni esempi di integratori multivitaminici e proteici  
Alimenti a Fini Medici Speciali (AFMS) Reg. 2013



  
**KEEP CALM AND TAKE YOUR VITAMINS**



# Supplementazione



Alcuni esempi di integratori multivitaminici in commercio

	ZINCO RDA: 8-10 mg	SELENIO RDA: 45 mcg	VIT. A RDA: 400-500 mcg	VIT. E RDA: 8 mg	A. FOLICO RDA: 0,32 mg	FERRO RDA: 6-10 mg	CALCIO RDA: 800-1000 mg	VIT D (UI) RDA: 400 UI	VIT.B12 RDA: 2 mcg	VIT C RDA: 60-75 mg	VIT. B1 RDA: 0,9-1 mg
MULTICENTRUM Integr.	5	30	800	15	0,2	5	162	200	2,5	100	1,4
SUPRADYN Integr.	0,5	0	999	10	0	10	51	400	5	150	20
BARIATRIC (AFMS)	10	55	800	12	0,4	30	0	1000	500	120	10
BARIATRIFAST cps/bustine (AFMS)	10	55	1200	100	0,4	65	0	7000	500	120	10
WLS FORTE solo online Integr.	22,5	105	600	24	0,6	70	0	3000	350	120	2,75
WLS PRIMO solo online	30	105	1200	36	0,8	85	0	3000	500	140	3
WLS MAXIMUM solo online Integr.	22,5	105	1200	50	0,6	91	0	1000	500	120	3
WLS OPTIMUM solo online Integr.	28	55	800	12	0,5	28	0	3000	100	100	2,75
BARILIFE Integr.	12,5	83	1200	60	0,4	0	0	250	33	160	8
APPORTAL Integr. (bustine)	1,5	27,5	0	30	0	14	0	1000	0	37,5	1

# Recommended Daily Supplements

According to the American Society for Metabolic and Bariatric Surgery, supplements in the months following surgery should

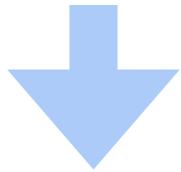
Multivitamin  
optimal  
200% RDA

Calcium (citrate)  
with vitamin D  
(1200-1500 mg  
calcium with 3000  
IU vitamin D OR  
50000 IU 1-3  
Times/mo)

Vitamin B<sub>12</sub>  
(500-1000 mcg)

Iron  
(30-65 mg/day in  
elemental form)





***Interventi restrittivi: 6-12 mesi***  
***Interventi malassorbitivi: ad vitam***

	AGB	SG	RYGB	BPD – BPD/DS
Timing	every 6 months in the first year every 12 months thereafter	every 3–6 months in the first year every 12 months thereafter	every 3–6 months in the first year every 12 months thereafter	every 3 months in the first year every 6–12 months thereafter
Assessment	CBC, platelets electrolytes iron, ferritine vitamin B12 folate vitamin D PTH	CBC, platelets electrolytes iron, ferritine vitamin B12 folate vitamin D PTH	CBC, platelets Electrolytes iron, ferritine vitamin B12 folate vitamin D PTH 24-H U-calcium osteocalcin	CBC, platelets electrolytes iron, ferritine vitamin B12 folate vitamin D PTH 24-H U-calcium osteocalcin vitamin A vitamin E INR albumin prealbumin



Busetto L et al, *Practical Recommendations of the Obesity Management Task Force of the European Association for the Study of Obesity for the Post-Bariatric Surgery Medical Management*, *Obes Facts*, 10:597-632,

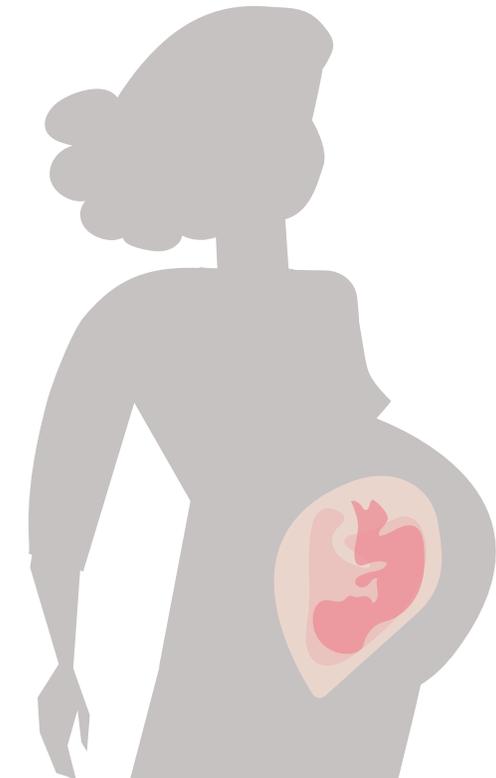
# GRAVIDANZA POST CB



**E.33** La gravidanza va in linea generale evitata nel periodo perioperatorio (fino a 18 mesi dall'intervento). La terapia con estrogeni deve essere sospesa prima dell'intervento (1 ciclo di contraccettivo in donna fertile, 3 settimane per terapia sostitutiva) (LIVELLO DI EVIDENZA: 4; GRADO DI RACCOMANDAZIONE: D).

**Table 10.** List of graded clinical practical recommendations for the management of pregnancy after bariatric surgery

Recommendations	Level of evidence	Grade of recommendation*
Pregnancy is not recommended in the first 12–18 months following bariatric surgery.	3	D
Antenatal care should be offered at a specialised centre with experience in pregnancy following bariatric surgery, via a specialist multidisciplinary antenatal care team.	4	D
Micronutrient supplementation should be provided to all women who are pregnant following bariatric surgery, in the form of a prenatal multivitamin preparation, B12 injections and oral calcium supplements.	3	D
Screening for gestational diabetes should be offered, however the conventional oral glucose tolerance test should be avoided. Serial capillary glucose monitoring should be used as an alternative.	4	D
Women presenting with abdominal pain in pregnancy should be offered urgent expert assessment, particularly for complications related to the primary bariatric surgical procedure.	3	D



# Fabbisogni in gravidanza

Per le donne sane normopeso nel **primo trimestre** non è necessario aumentare l'introito calorico, dal **secondo** + 260 kcal, nel **terzo** + 500 kcal circa.

Attenzione se sovrappeso/obesità, presenza di diabete gestazionale.

## CARBOIDRATI

Il fabbisogno giornaliero rimane invariato in percentuale, rispetto alle calorie totali. Privilegiare cereali integrali ricchi di fibre, 25-35 g/die (utili per stipsi).

## PROTEINE

È previsto un incremento per sostenere la sintesi proteica e la crescita fetale, secondo i LARN dovrebbe essere pari a + 1 g per il primo trimestre, + 8 g per il secondo e + 26 g per il terzo.

## GRASSI

Prestare attenzione alla loro composizione, l'apporto, come per i carboidrati, rimane invariato. Aumentato fabbisogno degli acidi grassi della serie omega-3 (EPA e DHA), migliore fonte pesce azzurro (almeno 1-2 porzioni/sett.)

## ACQUA

Apporto ideale: 2000 cc + 350 cc aggiuntivi.

# Fabbisogni in gravidanza post CB

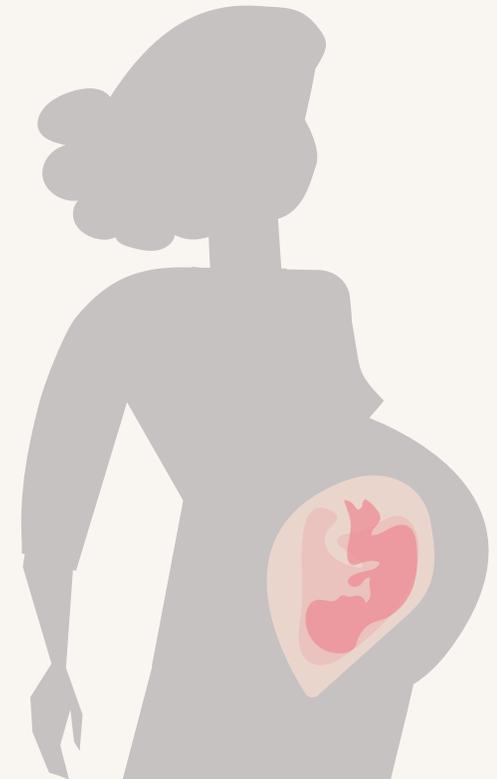
FERRO da 45 a 200 mg

ACIDO FOLICO da 400 a 800 mcg

VITAMINA B12 da 350 a 500 mcg

VITAMINA D da 3000 a 8000 UI

CALCIO (citrato) da 1500 a 2400 mg



# Sorveglianza nutrizionale

Il percorso di accompagnamento verso una gravidanza può cambiare in base alla tipologia di intervento a cui ci si è sottoposte. Quelli di tipo malassorbitivo, come il **bypass gastrico** e la **diversione biliopancreatica**, richiedono maggiori accorgimenti.

## NECESSITA' DI UNA SUPPLEMENTAZIONE PERSONALIZZATA



**! ATTENZIONE !**

**i multivitaminici  
generici** possono  
rivelarsi insufficienti  
per i fabbisogni delle  
pazienti sottoposte a  
CB!

**...la chirurgia da sola non basta...**



Precoce senso di sazietà  
Riduzione del senso di fame  
Riduzione dell'assorbimento

Alimentazione corretta  
Esercizio fisica regolare  
Corretto stile di vita  
Adeguate follow up e  
Supplementazione



# VALUTAZIONE MULTIDISCIPLINARE



CHIRURGO BARIATRICO

DIETOLOGO E DIETISTA

ENDOCRINOLOGO

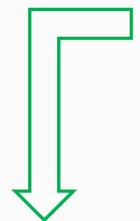
PSICHIATRA/PSICOLOGO

ANESTESISTA

PNEUMOLOGO

CHIRURGO PLASTICO

TEAMWORK



**CHIRURGIA BARIATRICA**

**PDTA  
aziendale**

# Signs of Malnutrition

The signs of malnutrition vary by the type of malnutrition, but in general, malnutrition causes fatigue, weakness, apathy, dry skin, hair loss. For some people, there may be notable changes in their fingernails, poor wound healing may be present, or dry eyes and bleeding gums may be noted.





# GRAZIE PER L'ATTENZIONE



**ACCADEMIA  
SICOB**

**CORSO SICOB IV EDIZIONE  
NAPOLI 19-20 FEBBRAIO 2026**

**IL MANAGEMENT  
DELL'OBESITÀ**

RESPONSABILE SCIENTIFICO  
MAURIZIO DE LUCA

The cover features a white background with a purple and blue abstract top border. At the bottom, there is a silhouette of a city skyline in shades of orange and brown.

