NUOVE RACCOMANDAZIONI NUTRIZIONALI:BACKSTAGE

IL POSTOPERATORIO: ALERT NUTRIZIONALI

Dott.ssa Barbara Neri
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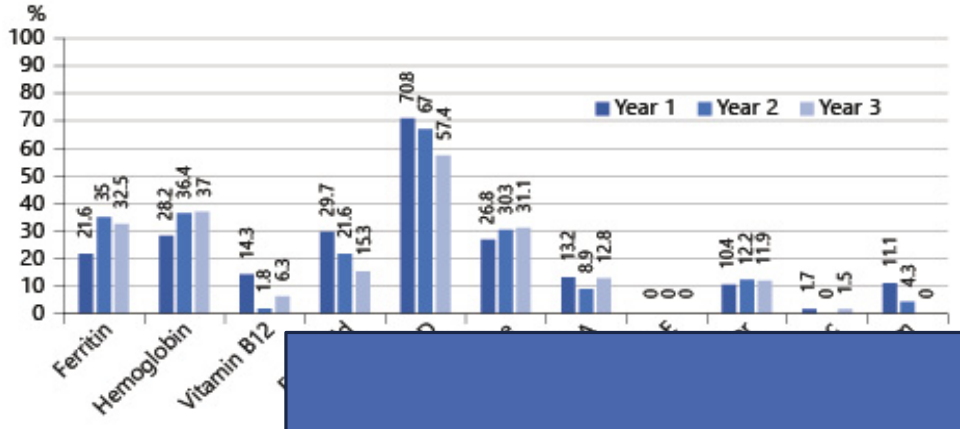
Azienda Ospedaliera S. Camillo Forlanini Roma

Prevalence of Micronutrient Deficiency after Bariatric Surgery

Obes Facts. 2021;14(2):197-204. doi:10.1159/000514847



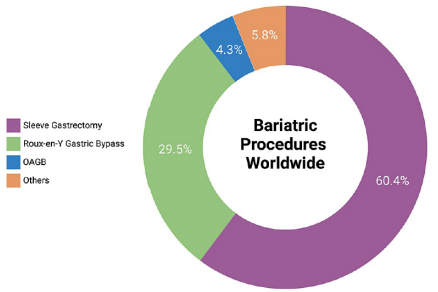


FIGURE 1: Most common bariatric surgeries performed worldwide 2021-2022.

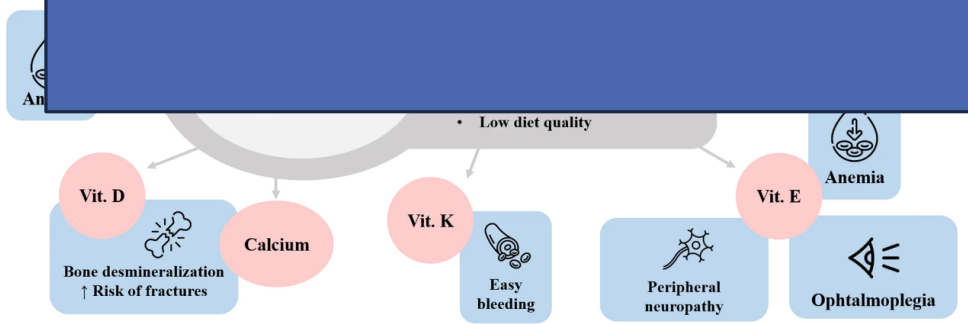
Data represents 480,970 procedures performed across 25 countries [23]

OAGB = One-Anastomosis Gastric Bypass

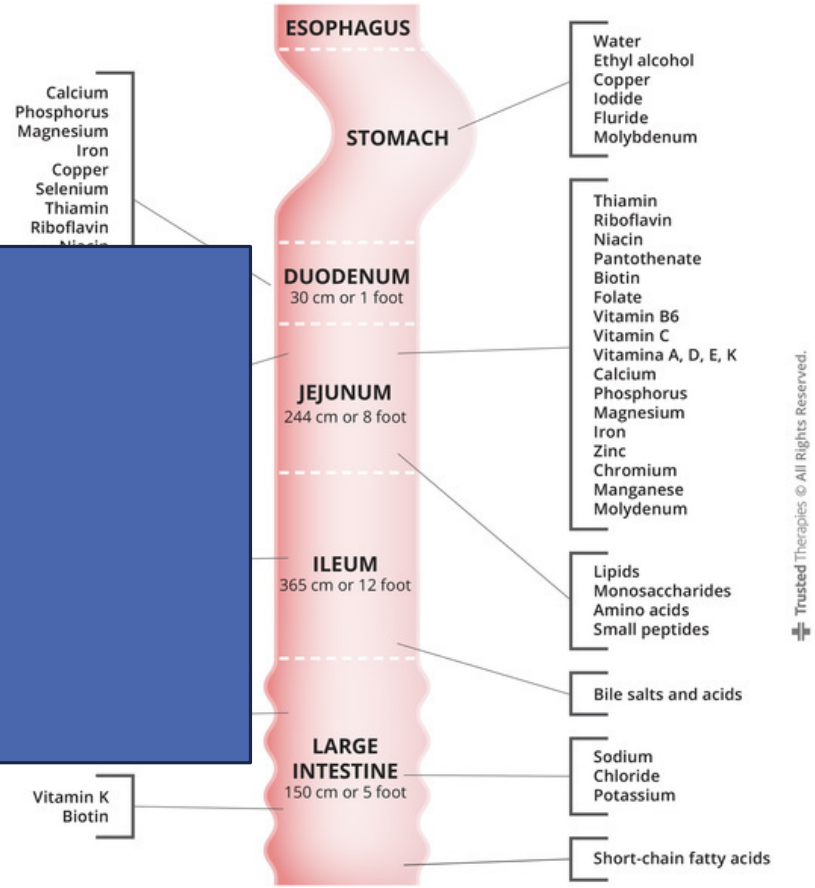
Image credits: Omar A. Kamal, 2024 (created with BioRender.com)

Kamal F A, Fernet L Y, Rodriguez M, et al. (February 27, 2024) Nutritional Deficiencies Before and After Bariatric Surgery in Low- and High-Income Countries: Prevention and Treatment. Cureus 16(2)

ALERT



Common nutritional deficiencies after BS and their accompanying alterations



Note: The duodenum, jejunum and ileum make up the small intestine.

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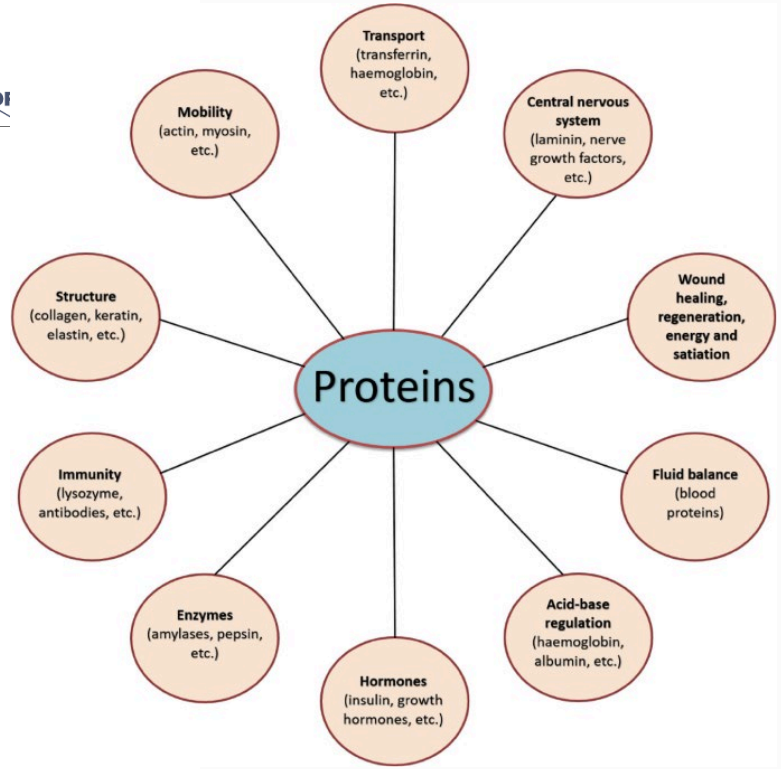
nutrients

Article

Nutritional Status, Selected Nutrients Intake, and Metabolic Disorders in Bariatric Surgery Patients

Iwona Boniecka [1,*], Aneta Czerwonogrodzka-Senczyna [1], Anna Jeznach-Steinhagen [1], Krzysztof Paśnik [2], Dorota Szostak-Węgierek [1] and Samir Zeair [3]



Contents lists available at ScienceDirect

Clinical Nutrition ESPEN

journal homepage: http://www.clinicalnutritionespen.com

Original article

Bariatric surgery affects obesity-related protein requirements

C. Guillet [a,*,1], A. Masgrau [a,1], A. Mishellany-Dutour [a], A. Blot [a], A. Caille [a], N. Lyon [a], B. Pereira [b], K. Slim [c], M. Robert [d], E. Disse [e], N. Feugier [e], P. Le Ruyet [f], C. Louvet [g], M. Miolanne [g], N. Farigon [g], M. Laville [e], Y. Boirie [a,g]

- un cambiamento temporale nel fabbisogno proteico dopo la chirurgia bariatrica, indipendentemente dal tipo di intervento chirurgico.
- L'assunzione spontanea di proteine dopo la chirurgia bariatrica non copre il fabbisogno proteico per la maggior parte dei pazienti

raccomandazioni proteiche dietetiche specifiche devono essere adattate ai pazienti affetti da obesità dopo l'intervento.

Riduzione Assunzione proteica:

- minore assunzione di cibo,
- ridotto assorbimento correlato alla diminuita produzione di acido cloridrico e enzimi digestivi
- intolleranza ai prodotti ad alto contenuto proteico (in particolare la carne) che può persistere per molti anni

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SCOMPENSO EPATICO

Può verificarsi dopo la chirurgia bariatrica e in un periodo di tempo molto variabile.

Obesity Surgery (2021) 31:3860–3861
https://doi.org/10.1007/s11695-021-05408-8

LETTER TO THE EDITOR

Severe Protein Malnutrition After Bariatric Surgery and Liver Failure: a Dangerous Sequence

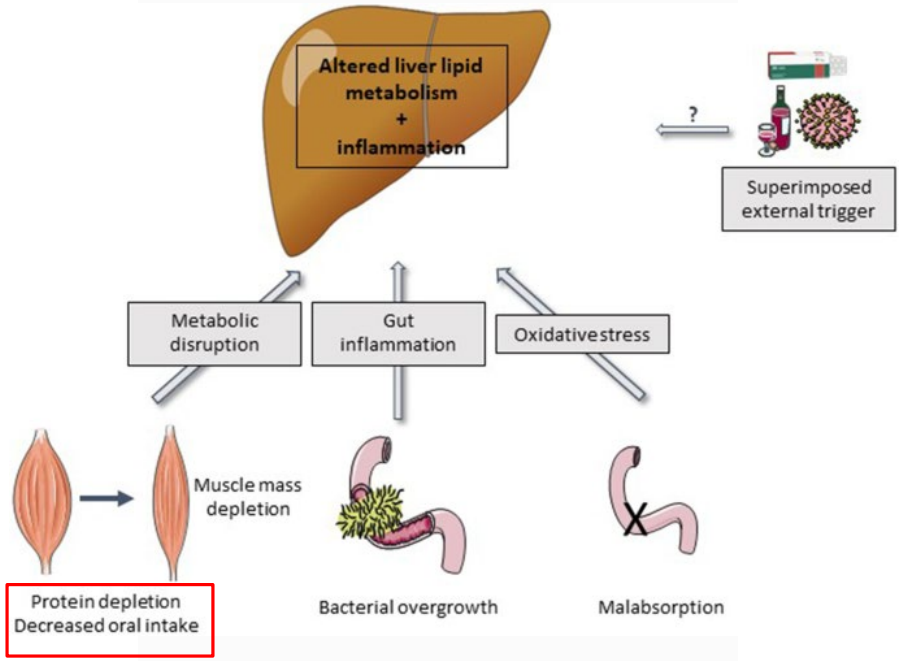
Antonio Iannelli[1,2,3] · Niccolo' Petrucciani[1,2] · Luigi Schiavo[4] · Rodolphe Anty[1,2,3]

Obesity Surgery (2022) 32:1227–1235
https://doi.org/10.1007/s11695-022-05930-3

ORIGINAL CONTRIBUTIONS

Liver Decompensation after Bariatric Surgery in the Absence of Cirrhosis

Perrine Vande Berg[1] · Artida Ulaj[2] · Graziella de Broqueville[1] · Marie de Vos[3] · Bénédicte Delire[1] · Philippe Hainaut[2] · Jean-Paul Thissen[4] · Peter Stärkel[1] · Mina Komuta[5] · Paulina Henry[5] · Nicolas Lanthier[1]



Review article

Liver transplantation for bariatric surgery-related liver failure: a systematic review of a rare condition

Pietro Addeo, M.D.[a,*], Manuela Cesaretti, M.D., Ph.D.[b], Rodolphe Anty, M.D., Ph.D.[c,d], Antonio Iannelli, M.D., Ph.D.[b,c]

[a]Hepato-Pancreato-Biliary Surgery and Liver Transplantation, Pôle des Pathologies Digestives, Hépatiques et de la Transplantation, Hôpital de Hautepierre-Hôpitaux Universitaires de Strasbourg, Université de Strasbourg, Strasbourg, France
[b]Digestive Surgery and Liver Transplantation Unit, Archet 2 Hospital, Centre Hospitalier Universitaire de Nice, Université Côte d'Azur, Nice, France
[c]INSERM U1065, Mediterranean Center for Molecular Medicine, Team 8 Hepatic Complications of Obesity, Nice, France
[d]Pole Digestif, Archet 2 Hospital, Centre Hospitalier Universitaire de Nice, Université Côte d'Azur, Nice, France

Received 16 July 2018; accepted 4 June 2019

SURGERY FOR OBESITY AND RELATED DISEASES ASMBS

SUPPORTO NUTRIZIONALE MIGLIORA LA PROGNOSI

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Complicanze neurologiche

prevalenza fino al 16%.

Carenza di **folati B9** può portare a neuropatia periferica o sindrome delle gambe senza riposo.
Carenza di **vitamina B12** può manifestarsi neurologicamente presentandosi come mielopatia, neuropatia, parestesia, atassia e demenza

VITAMINA B1

Steenackers N, Van der Schueren B, Augustijns P, Vanuytsel T, Matthys C. Development and complications of nutritional deficiencies after bariatric surgery. Nutrition Research Reviews. 2023;36(2):512-525.

Obesity Surgery (2022) 32:3104–3112
https://doi.org/10.1007/s11695-022-06178-7

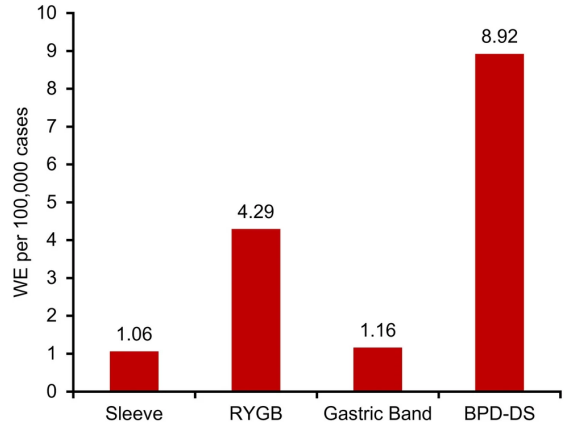
REVIEW

B1 Vitamin Deficiency After Bariatric Surgery, Prevalence, and Symptoms: a Systematic Review and Meta-analysis

Mansour Bahardoust[1,2] · Foolad Eghbali[1,3,4] · Shahab Shahabi Shahmiri[1] · Abolhasan alijanpour[5] · Fahime yarigholi[1] · Rohollah Valizadeh[1,6] · Ahmad Madankan[1] · Amir Bahador Pouraskari[1] · Behnaz Ashtarinezhad[1] · Hossein Farokhi[7] · Hamid sarafraz[1] · Elham Khanafshar[8]

Carenza nel 27% circa
Assunzione < o > utilizzo

Vitamina idrosolubile



Incidence of WE by bariatric procedure

Beri –Beri
SWK

la diagnosi può essere ritardata o sfuggire a personale sanitario non competente nel campo.

REVERSIBILI

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IPERPARATIROIDISMO SECONDARIO

Surgical Endoscopy (2023) 37:8019–8028
https://doi.org/10.1007/s00464-023-10218-3

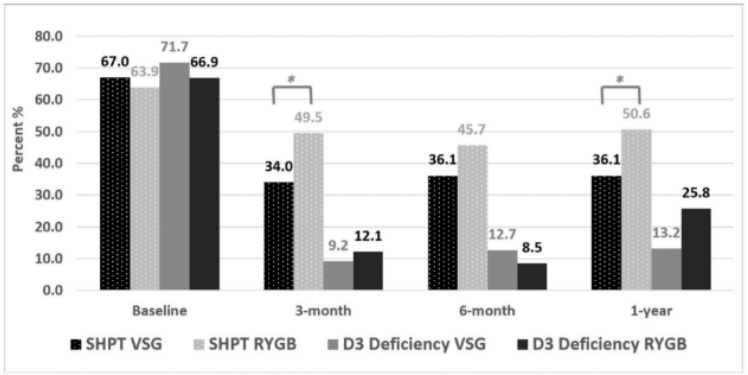
2023 SAGES ORAL

Prevalence and risk factors for secondary hyperparathyroidism (SHPT) in patients undergoing bariatric surgery

Laura E. Fischer[3,4] · Fernando Moreno-Garcia[1] · Rachel Tran[1] · Allison Harmon[1] · Cooper Little[1] · Grayson Domingue[2] · Kenneth Stewart[3] · Fernando Mier Giraud[3,4] · Rishi Thakral[2]

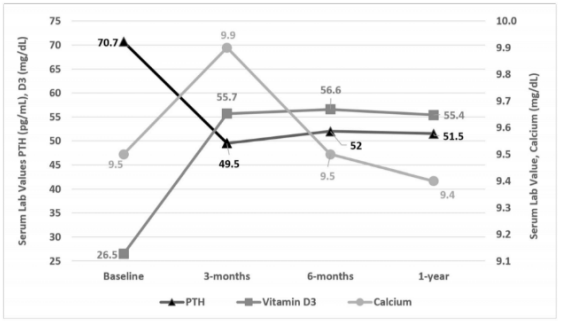
Received: 21 April 2023 / Accepted: 11 June 2023 / Published online: 18 July 2023

Fig. 4 Prevalence of SHPT and vitamin D3 deficiency by surgery type. Graph showing prevalence of secondary hyperparathyroidism and vitamin D3 deficiency at multiple time points before and after bariatric surgery, stratified by surgical anatomy (Roux-en-Y gastric bypass versus vertical sleeve gastrectomy)



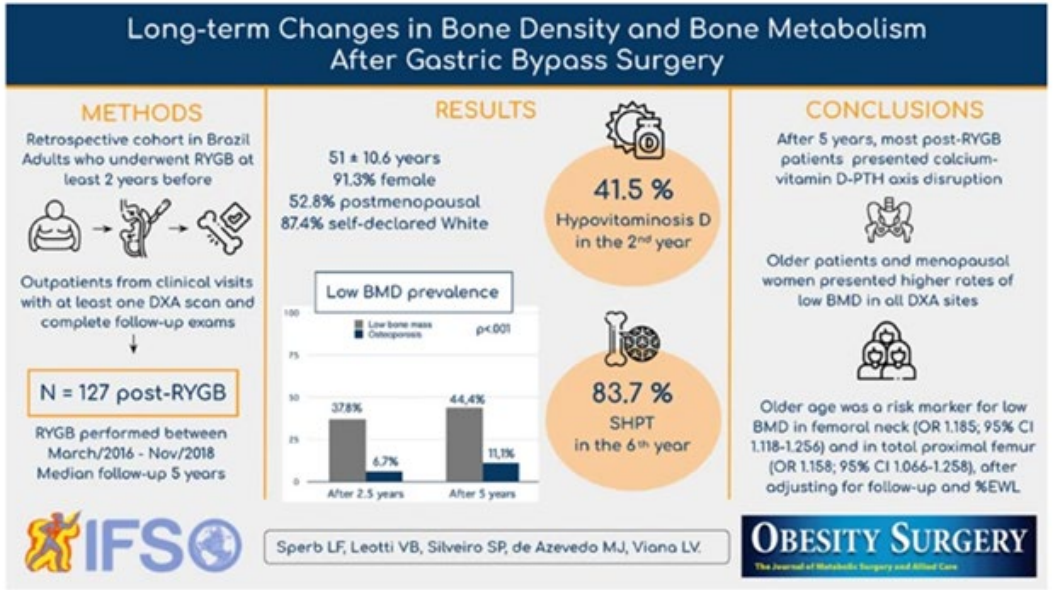
SHPT=Secondary hyperparathyroidism; VSG=Vertical sleeve gastrectomy; RYGB=Roux-en-Y gastric bypass
* indicates *P*-value ≤ .05

Fig. 2 Change in mean PTH, calcium, and vitamin D3 over time. Graph showing change in mean serum laboratory values for parathyroid hormone, calcium, and vitamin D3 at multiple time points before and after bariatric surgery



PTH=Parathyroid hormone

Determinato malfunzionamento dell'asse calcio-vitamina D-PTH



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Joint Bone Spine 89 (2022) 105443

Contents lists available at ScienceDirect

Joint Bone Spine

journal homepage: www.elsevier.com

Recommendations of metaanalyses

French recommendations on the prevention and treatment of osteoporosis secondary to bariatric surgery

Julien Paccou[a,*], Laurent Genser[b], Éric Lespessailles[c], Éric Bertin[d], Rose-Marie Javier[e], Martine Duclos[f], Anne-Sophie Joly[g], Yves Boirie[h], François Pattou[i], Jacques Delarue[j], Bernard Cortet[a]

Valutazione regolare

Assessment of fracture risk in patients with an indication for or who have already undergone bariatric surgery

General measures: For whom? ⇨ **All patients**

Normalise the intake of calcium (1000 mg/day after SG, and 1500 mg/day after RYGB) and protein (at least 60 g/day); attain a 25(OH) vitamin D concentration of at least 30 ng/mL; prevent the risk of falls and introduce a program of weight-bearing physical activity

Who to assess?

- ✓ Regardless of age, in the case of RYGB and biliopancreatic diversion
- ✓ Regardless of age, for patients at high risk of fracture*
- ✓ Menopausal women and men ≥ 50 years: for other bariatric surgery procedures and excluding patients at high risk of fracture*

How to assess?

- ✓ Measurement of BMD by DXA
- ✓ Vertebral imaging (if necessary)
- ✓ Osteoporosis risk factors

*Patients at high risk of fracture are:
- Those with a history of fragility fracture after the age of 40;
- Those presenting comorbidities that are frequently associated with osteoporosis, i.e. certain endocrinopathies, neurological disorders with neurosensory impairment, hepatic cirrhosis, chronic obstructive pulmonary disease > stage 1, and chronic inflammatory diseases);
- Those taking medications that are frequently associated with osteoporosis (corticosteroids, LH-RH antagonists, antiretroviral drugs, aromatase inhibitors, prolonged chemotherapy).

Who to treat?

Menopausal women and men ≥ 50 years:

- ✓ If previous history of severe fractures
- ✓ If non-severe fracture and T-score ≤ -1
- ✓ If T-score ≤ -2 (in the absence of fractures)

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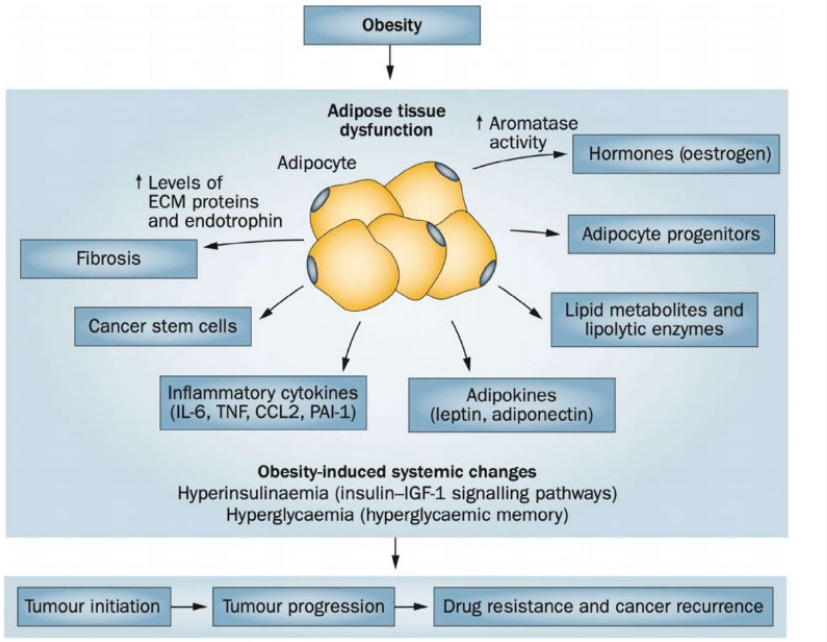
Chirurgia Bariatrica e rischio di cancro



Wilson R, Aminian A, Tahrani AA. Metabolic surgery: A clinical update. Diabetes Obes Metab. 2021 Feb;23 Suppl 1:63-83

Gender-specific summary of cancer risk for each 5 kg per m^2 increase in BMI for major cancers with strong evidence of relationship with obesity.

Type of Cancer	Number of Cohorts	Relative Risk (95% Confidence Interval)	
		Women	Men
Endometrial cancer [4]	19	1.59 (1.50–1.68)	NA
Gallbladder cancer [4]	4	1.59 (1.02–2.47)	1.09 (0.99–1.21)
Esophageal adenocarcinoma [4]	5	1.51 (1.31–1.74)	1.52 (1.33–1.74)
Kidney cancer [4]	12	1.34 (1.25–1.43)	1.24 (1.15–1.34)
Postmenopausal breast cancer [4]	34	1.12 (1.08–1.16)	NA
Hpatocellular cancer [19]	9	1.12 (1.03–1.22)	1.19 (1.09–1.29)
Pancreatic adenocarcinoma [23]	23	1.10 (1.04–1.16)	1.13 (1.04–1.22)
Colon cancer [4]	29	1.09 (1.05–1.13)	1.24 (1.20–1.28)
Ovarian cancer [77]	34	1.06 (1.00–1.12)	NA
Stomach cancer [4]	8	1.04 (0.90–1.20)	0.97 (0.88–1.06)
Rectal cancer [4]	29	1.02 (1.00–1.05)	1.09 (1.06–1.12)
Later stage prostate cancer [73]	23	NA	1.08 (1.04–1.12)

NA = not available.

Pati S, Irfan W, Jameel A, Ahmed S, Shahid RK. Obesity and Cancer: A Current Overview of Epidemiology, Pathogenesis, Outcomes, and Management. Cancers (Basel). 2023 Jan 12;15(2):485

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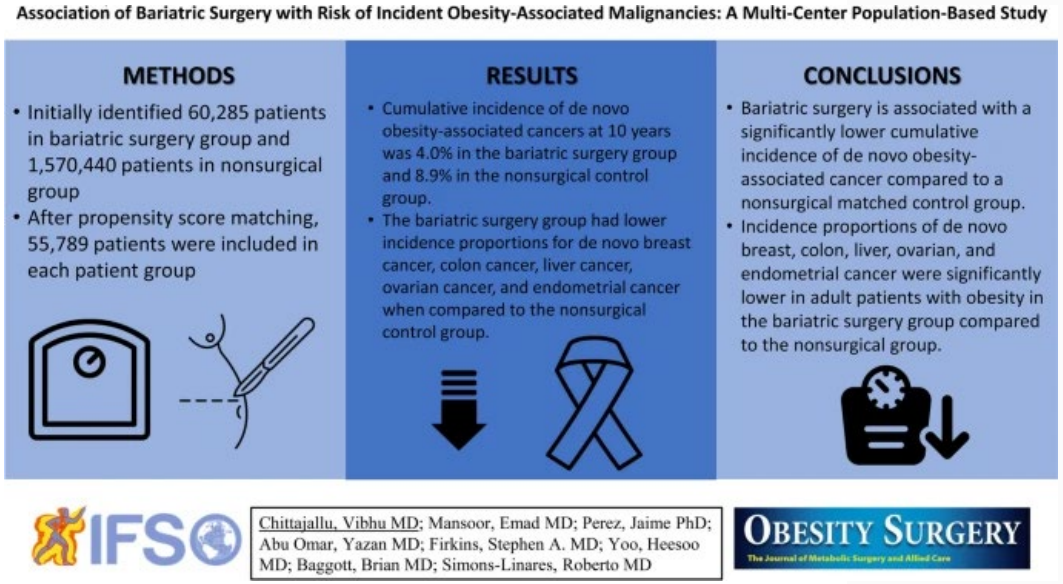

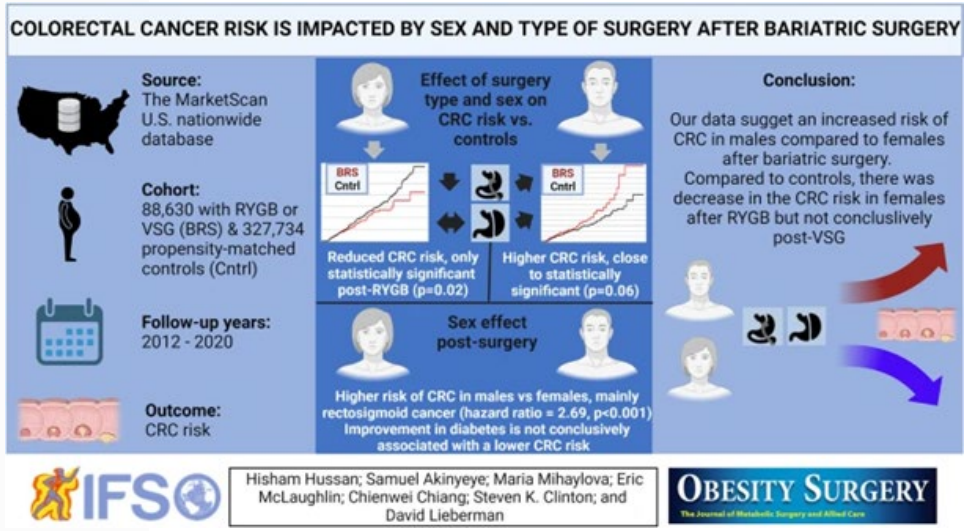

Aumento del rischio di CRC, soprattutto nei maschi rispetto alle femmine dopo chirurgia bariatrica

Rischio fortemente ridotto ma non scomparso

SCREENING
Prevenzione/controllo

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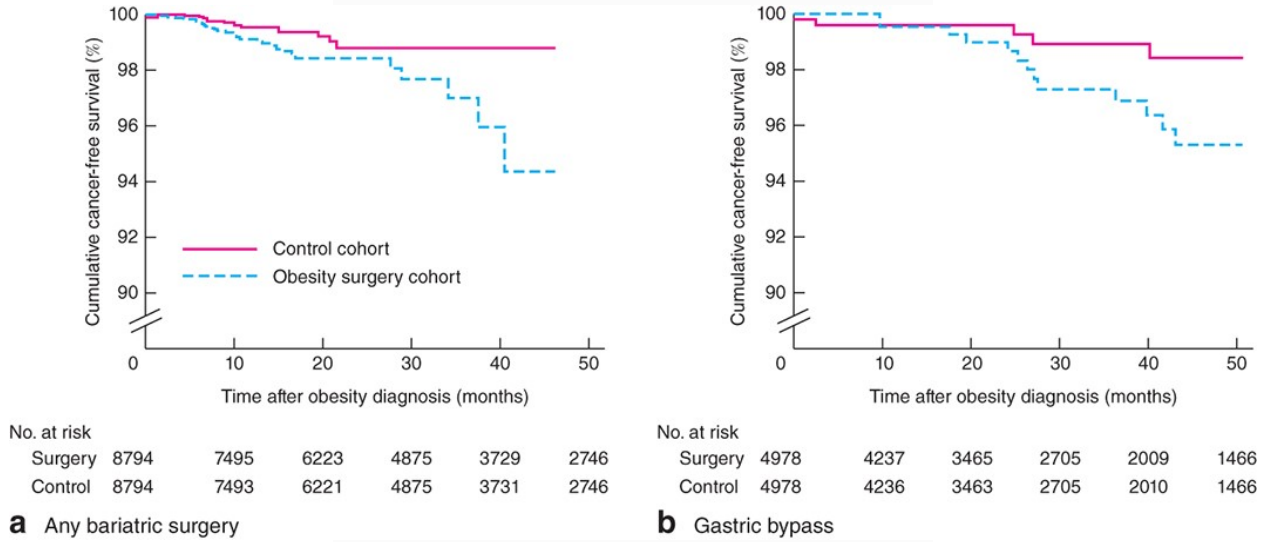
Fig. 2 Kaplan–Meier curves of freedom from colorectal cancer following a any bariatric surgery and b gastric bypass ...



Br J Surg, Volume 105, Issue 12, November 2018, Pages 1650–1657, https://doi.org/10.1002/bjs.10914

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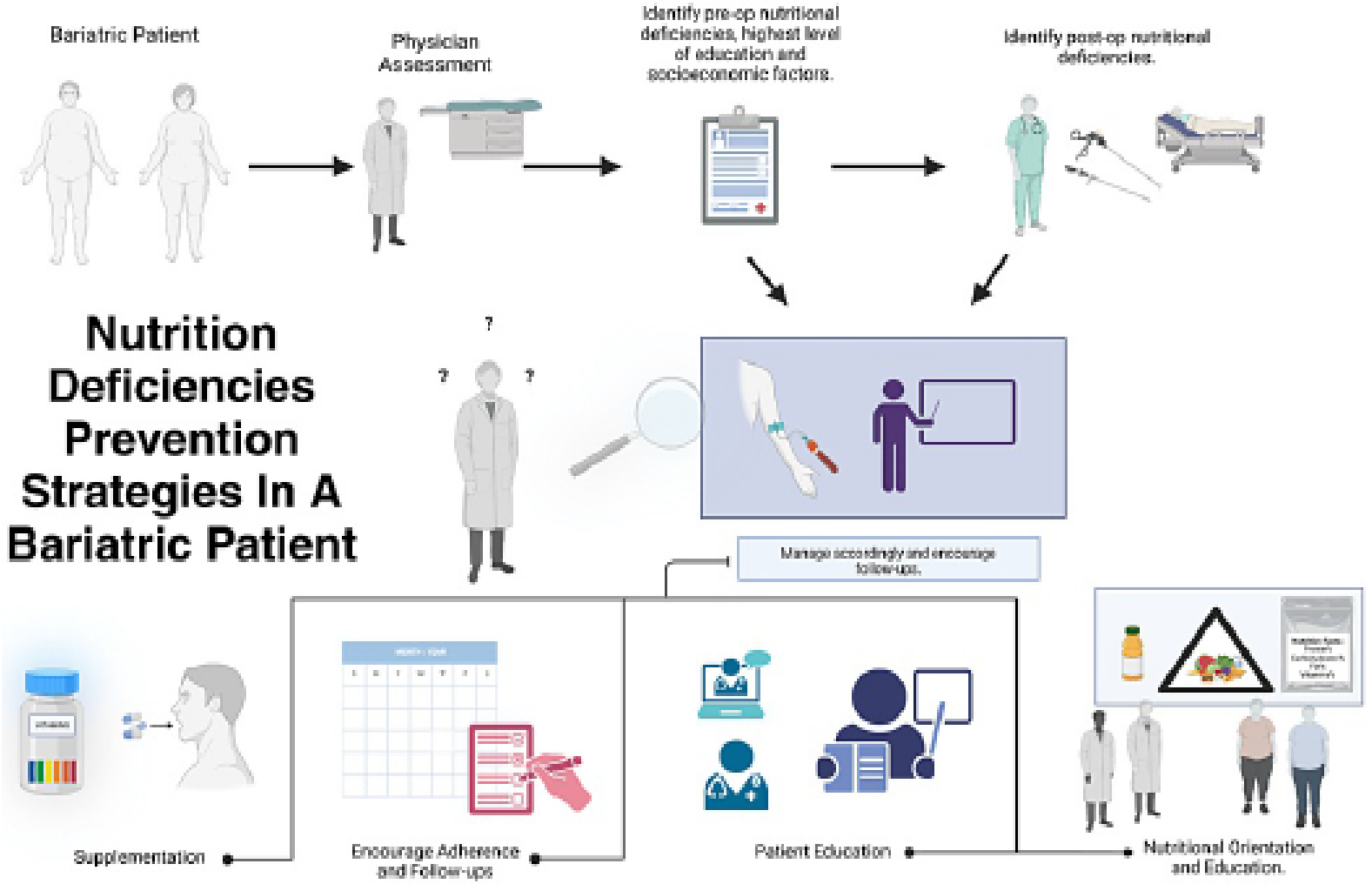
CONCLUSIONI



Kamal F A, Fernet L Y, Rodriguez M, et al. (February 27, 2024) Nutritional Deficiencies Before and After Bariatric Surgery in Low- and High-Income Countries: Prevention and Treatment. Cureus 16(2)

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Grazie

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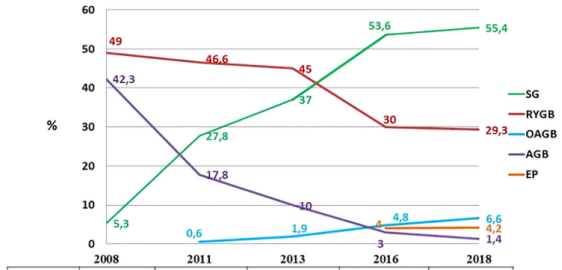

Bariatric procedures (N)	344,221	340,768	468,609	685,874	696,191

FIGURE 3 Number of metabolic surgeries performed from 2008 to 2018, and endoscopic procedures from 2016 to 2018. Adapted from Angrisani et al. ("Bariatric Surgery Survey 2018")[155]

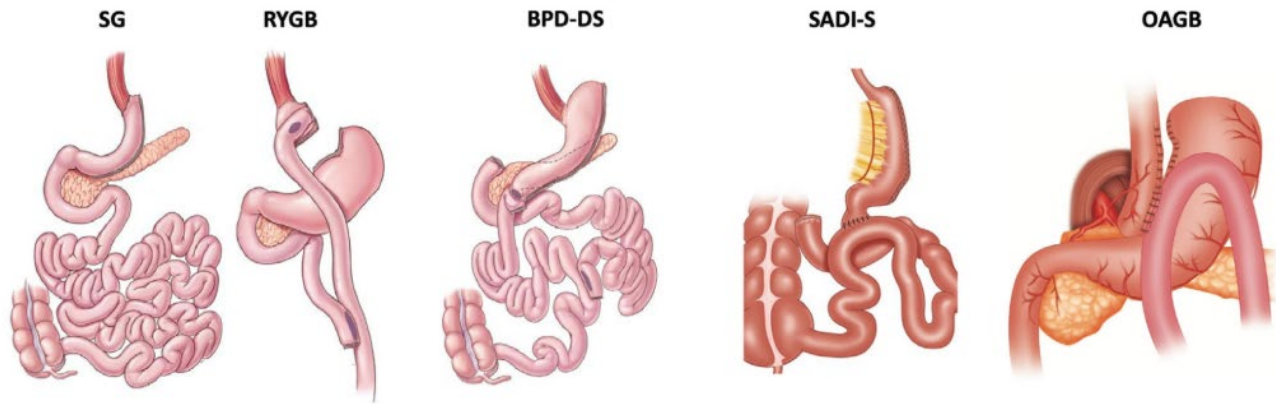

FIGURE 4 Anatomy of metabolic procedures more commonly performed globally.[17,24,48] BPD-DS, biliopancreatic diversion with duodenal switch; OAGB, one anastomosis gastric bypass; RYGB, Roux-en-Y gastric bypass; SADI-S, single anastomosis duodenoileostomy with sleeve gastrectomy; SG, sleeve gastrectomy