SICOB CONVEGNO EMILIA-ROMAGNA
CESENA 19 - 20 Aprile 2024
PRESIDENTE: A.M. SCHETTINO
RESP. SCIENTIFICI: S. CARIANI, V. CORSO, A. LUCCHI

Dall'Alimento alla Chirurgia: il Trattamento Integrato dell'Obesità

Follow up nutrizionale, prevenzione delle complicanze e del weight regain

FRANCESCA ANZOLIN

MEDICO SPECIALISTA IN SCIENZA DELL'ALIMENTAZIONE
UO NUTRIZIONE CLINICA AUSL BOLOGNA

CENTRO INTERAZIENDALE
DI CHIRURGIA METABOLICA E DELL'OBESITA'
AUSL-AOSP BOLOGNA

N°	Raccomandazione	Forza raccomandzione	Qualità delle prove
30	Si raccomanda il follow-up multidisciplinare post-chirurgico nei pazienti sottoposti ad un intervento di chirurgia metabolico-bariatrica.	Forte a favore	Moderata

30 ***Nei pazienti con obesità (BMI ≥30 kg/m^2), che abbiano effettuato chirurgia metabolico-bariatrica il follow-up multidisciplinare post-chirurgico è preferibile rispetto a non eseguirlo, per il mantenimento del peso perso?*** 4.2% 95.8% -

Critici

Outcome (efficacia)

30.2	Miglioramento del compenso glicometabolico (HbA1c; FPG; assetto lipidico; PAS, PAD)	7	✓
30.3	Riduzione del peso corporeo (BMI; riduzione percentuale di peso e massa grassa)	9	✓
30.4	Riduzione della proporzione di pazienti con recupero ponderale	8	✓
30.5	Miglioramento della qualità della vita	8.5	✓

Outcome (sicurezza)

30.6	Eventi avversi gravi	7	✓

Non critici

30.6	Miglioramento dei sintomi depressivo	6.5	✗
30.7	Riduzione della aderenza ai programmi educazionali	6	✗

N°	Raccomandazione	Forza raccomandzione	Qualità delle prove
31	Si raccomandano interventi post-chirurgici per la modifica dello stile di vita nei pazienti sottoposti ad un intervento di chirurgia metabolico-bariatrica, per il mantenimento del peso perso.	Forte a favore	Molto bassa

31	***Nei pazienti con BMI≥ 30 kg/m^2, sottoposti alla chirurgia metabolico-bariatrica, interventi strutturati post-chirurgici per la modifica dello stile di vita sono preferibili rispetto a non effettuarli, per il mantenimento del peso perso?***	0%	100%	-	
	Critici				
	Outcome (efficacia)				
31.1	Prevenzione dell'incidenza diabete/ recidiva del diabete			7	✓
31.2	Miglioramento del compenso glicometabolico (HbA1c; FPG; assetto lipidico; PAS, PAD)			7	✓
31.3	Riduzione del peso corporeo (BMI; riduzione percentuale di peso e massa grassa)			9	✓
31.4	Riduzione della proporzione di pazienti con recupero ponderale			8	✓
31.5	Miglioramento della qualità della vita			9	✓
	Outcome (sicurezza)				
31.6	Eventi avversi gravi			7	✓
	Non critici				
31.7	Miglioramento dei sintomi depressivi			6	✗
31.8	Aumento di abuso di alcol o sostanze stupefacenti			6.5	✗

7. Follow-up

Il FU deve essere programmato nel lungo termine, idealmente a vita.

Controlli

a 30 gg ,

ogni 3 mesi per il primo anno

ogni 6 mesi per il secondo anno

Annualmente a seguire

Monitoraggio del calo ponderale

Andamento delle complicanze

Prevenzione delle complicanze chirurgiche e non chirurgiche

o diagnosi precoce per un trattamento tempestivo

Qualità della vita

Per il raggiungimento degli obiettivi :

Adesione del paziente al progetto

Coinvolgimento di chirurgo dietologo, psicologo e psichiatra

Psicologo

Dietologo /endocrinologo/…..

Dietista

TEAM BARIATRICO MULTIDISCIPLINARE

Altri professionisti

Chirurgo Bariatra

Follow up nutrizionale postintervento

Complicanze nutrizionali

Obesity Facts
Obes Facts 2017;10:597–632
DOI: 10.1159/000481825
Received: August 22, 2017
Accepted: September 21, 2017
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Karger Open access

Review Article

Practical Recommendations of the Obesity Management Task Force of the European Association for the Study of Obesity for the Post-Bariatric Surgery Medical Management

Luca Busetto[a] Dror Dicker[b] Carmil Azran[c] Rachel L. Batterham[d, e, f]
Nathalie Farpour-Lambert[g] Martin Fried[h] Jøran Hjelmesæth[i] Johann Kinzl[j]
Deborah R. Leitner[k] Janine M. Makaronidis[d, f] Karin Schindler[l]
Hermann Toplak[k] Volkan Yumuk[m]

Table 5. Major vitamins and minerals deficiencies after bariatric surgery: clinical manifestations and estimated frequency according to the bariatric procedure

Deficiency	Key clinical manifestations	Procedure-related frequency
Iron	microcytic anaemia	AGB + SG ++ RYGB, BPD, BPD/DS +++
Vitamin B12	megaloblastic anaemia neurologic abnormalities	SG, RYGB, BPD, BPD/DS ++
Vitamin D (and calcium)	bone demineralization increased risk of fractures	RYGB ++ BPD, BPD/DS +++
Vitamin A	ocular xerosis night blindness symptoms	BPD, BPD/DS +++
Vitamin E	anaemia ophthalmoplegia peripheral neuropathy	BPD, BPD/DS +++
Vitamin K	easy bleeding	BPD, BPD/DS +

AGB = Adjustable gastric banding; SG = sleeve gastrectomy; RYGB = gastric bypass; BPD = biliopancreatic diversion; BPD/DS = biliopancreatic diversion with duodenal switch.

Review Article

Practical Recommendations of the Obesity Management Task Force of the European Association for the Study of Obesity for the Post-Bariatric Surgery Medical Management

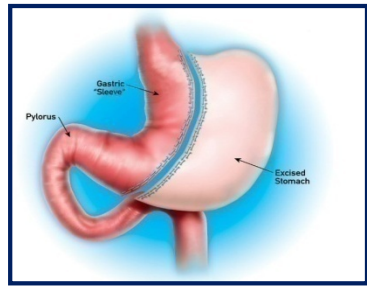
Luca Busetto[a] Dror Dicker[b] Carmil Azran[c] Rachel L. Batterham[d, e, f] Nathalie Farpour-Lambert[g] Martin Fried[h] Jøran Hjelmesæth[i] Johann Kinzl[j] Deborah R. Leitner[k] Janine M. Makaronidis[d, f] Karin Schindler[l] Hermann Toplak[k] Volkan Yumuk[m]

Obes Facts 2017;10:597–632

FERRO
VITAMINA B12
FOLATO

Il **deficit di Cobalamina** si verifica a causa della diminuita produzione acida nello stomaco e a una minore disponibilità del Fattore Intrinseco gastrico

I depositi di cobalamina sono abitualmente elevati ed il deficit di vitamina B 12 è più raro nel primo anno dopo ch bariatrica ma tende ad aumentare con il tempo



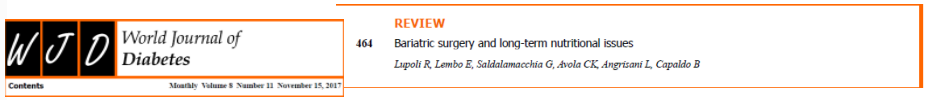
Deficit di ferro

1. l'assorbimento di ferro avviene soprattutto nel duodeno e nel digiuno prossimale, sezioni intestinali bypassate in alcuni interventi
2. Diminuita produzione di di acido nello stomaco e accelerato transito compromettono la riduzione del ferro da Ferrico (Fe^{3+}) a Ferroso (ferro $^{2+}$)
3. L'assunzione di cibi ricchi di ferro (carni, verdure,…) è frequentemente basso
4. L'assorbimento del ferro può essere inibito dall'interazione di supplementi nutrizionali (calcio)
5. Il ferro è abitualmente incluso in multivitaminici orali contenenti vitamina C che è in grado di aumentare l'assorbimento del calcio

Essi non dovrebbero essere assunti insieme al calcio

Il deficit di ferro e l'anemia sideropenica sono maggiormente presenti nelle donne non in menopausa

Il deficit di Folato è più raro dopo chirurgia bariatrica (9-39%) ed è dovuto principalmente a **riduzione degli apporti alimentari**


World Journal of Diabetes

Contents Monthly Volume 8 Number 11 November 15, 2017

REVIEW

464 Bariatric surgery and long-term nutritional issues

Lupoli R, Lembo E, Saldalamacchia G, Avola CK, Angrisani L, Capaldo B

Anemia

33-49% operati entro 2 anni dall'intervento

- LSG: 17%
- RYGB –BPD: 45/50%

American Society of Ematology 2017

Iron deficiency in bariatric surgery patients: a single-centre experience over 5 years

RESEARCH • RECHERCHE Can J Surg/J can chir 2020;63(4)

Bryce Lowry, MD
Krista Hardy, MSc, MD
Ashley Vergis, MMEd, MD

Accepted Nov. 5, 2019

Gli interventi di chirurgia bariatrica effettuati dopo una supplementazione rigorosa di ferro preoperatoria sono associati ad aumentati livelli ferro e ferritina ad 1 anno postintervento. Migliorano tutti gli outcomes clinici evitando deficit e anemia. I programmi di chirurgia metabolica e bariatrica dovrebbero fissare un livello minimo preoperatorio di ferritina.

E' necessario correggere le carenze ed ottimizzare lo stato nutrizionale prima dell'intervento

Obesity Surgery (2018) 28:2060–2068
https://doi.org/10.1007/s11695-018-3262-4

REVIEW ARTICLE

Preventing Wernicke Encephalopathy After Bariatric Surgery

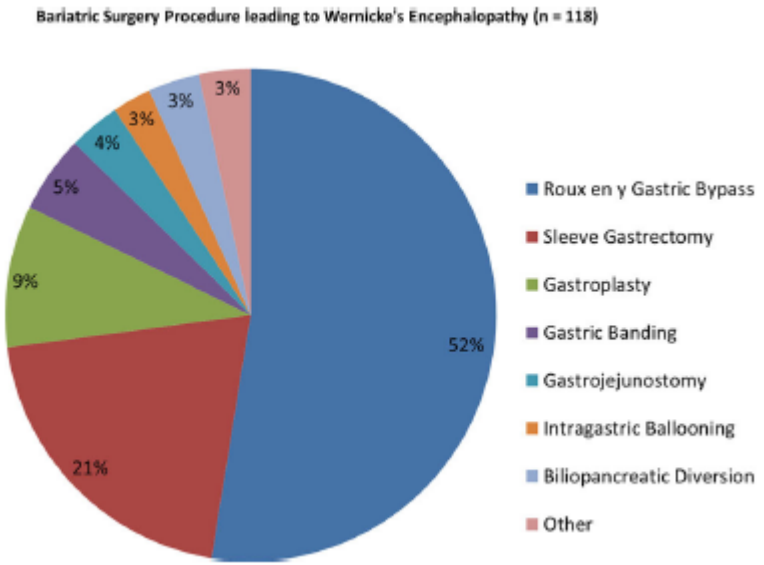
Erik Oudman[1,2] · Jan W. Wijnia[1,2] · Mirjam van Dam[1,2] · Laser Ulas Biter[3] · Albert Postma[1,2]

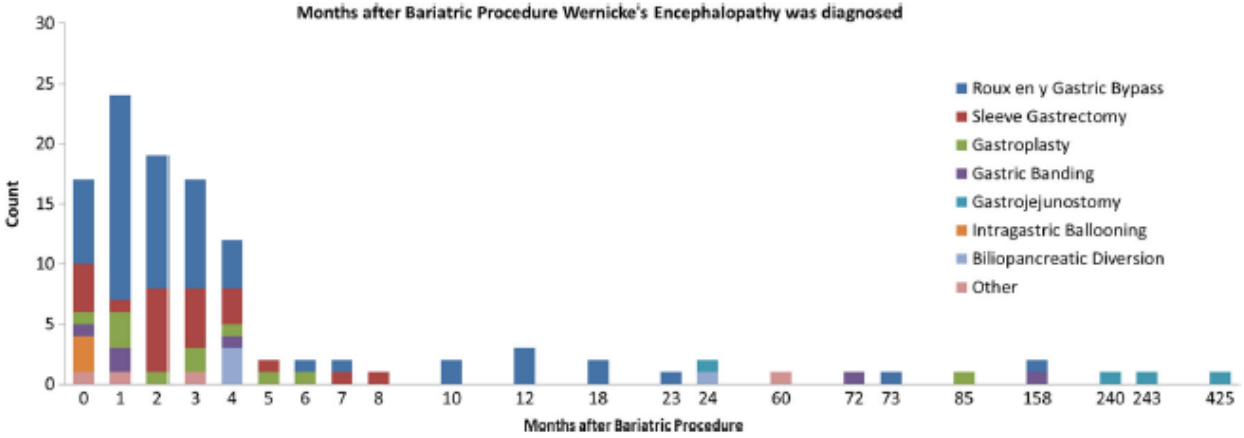
Published online: 24 April 2018

Abstract

Half a million bariatric procedures are performed annually worldwide. Our aim was to review the signs and symptoms of Wernicke's encephalopathy (WE) after bariatric surgery. We included 118 WE cases. Descriptions involved gastric bypass (52%), but also newer procedures like the gastric sleeve. Bariatric WE patients were younger (median = 33 years) than those in a recent meta-analysis of medical procedures (mean = 39.5 years), and often presented with vomiting (87.3%), ataxia (84.7%), altered mental status (76.3%), and eye movement disorder (73.7%). Younger age seemed to protect against mental alterations and higher BMI against eye movement disorders. The WE treatment was often insufficient, specifically ignoring low parenteral thiamine levels (77.2%). In case of suspicion, thiamine levels should be tested and treated adequately with parenteral thiamine supplementation.

VITAMINA B1-TIAMINA





Terapia: 500 mg x 3 die per via parenterale sino alla risoluzione dei sintomi acuti

nutrients

MDPI

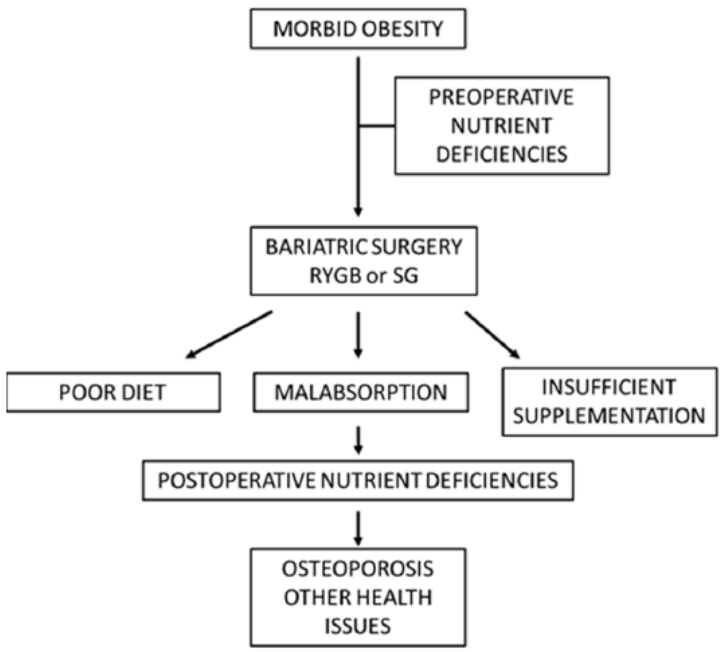
Review

Postoperative Osteoporosis in Subjects with Morbid Obesity Undergoing Bariatric Surgery with Gastric Bypass or Sleeve Gastrectomy

Jan O. Aaseth [1,2,*] and Jan Alexander [3]

Nutrients **2023**, *15*, 1302. https://doi.org/10.3390/nu15061302

Abstract: Obesity has become a worldwide epidemic accompanied by adverse health effects. The limited efficiency of traditional weight reduction regimens has led to a substantial increase in the use of bariatric surgery. Today, sleeve gastrectomy (SG) and Roux-en-Y-gastric bypass (RYGB) are the most used procedures. The present narrative review focuses on the risk of developing postoperative osteoporosis and summarizes some of the most relevant micronutrient deficiencies associated with RYGB and SG. Preoperatively, the dietary habits of obese individuals might lead to precipitated deficiencies in vitamin D and other nutrients affecting bone mineral metabolism. Bariatric surgery with SG or RYGB can aggravate these deficiencies. The various surgical procedures appear to affect nutrient absorption differently. Being purely restrictive, SG may particularly affect the absorption of vitamin B_{12} and also vitamin D. In contrast, RYGB has a more profound impact on the absorption of fat-soluble vitamins and other nutrients, although both surgical methods induce only a mild protein deficiency. Despite adequate supplementation of calcium and vitamin D, osteoporosis may still occur after the surgery. This might be due to deficiencies in other micronutrients, e.g., vitamin K and zinc. Regular follow-ups with individual assessments and nutritional advice are indispensable to prevent osteoporosis and other adverse postoperative issues.



MICRONUTRIENTI
VITAMINA K e ZINCO

VITAMINA D
CALCIO

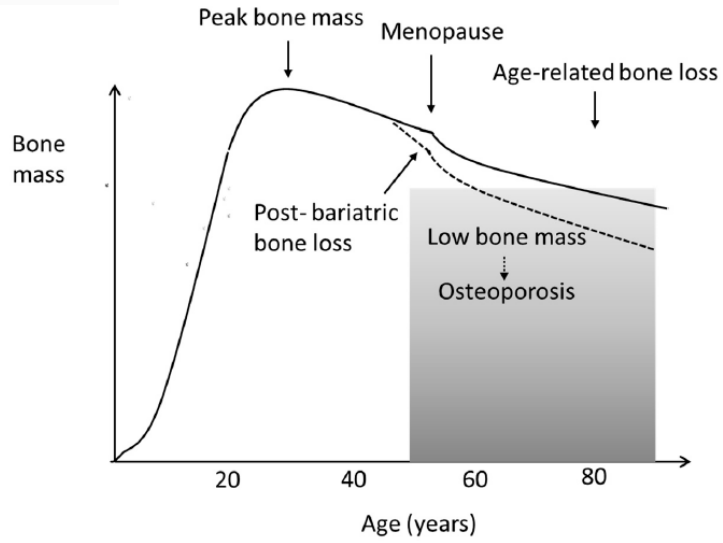


Figure 2. Age-related loss of bone mass in women (schematic). In both women and men, age-related bone loss can be accelerated by bariatric surgery.

Perdita di massa muscolare

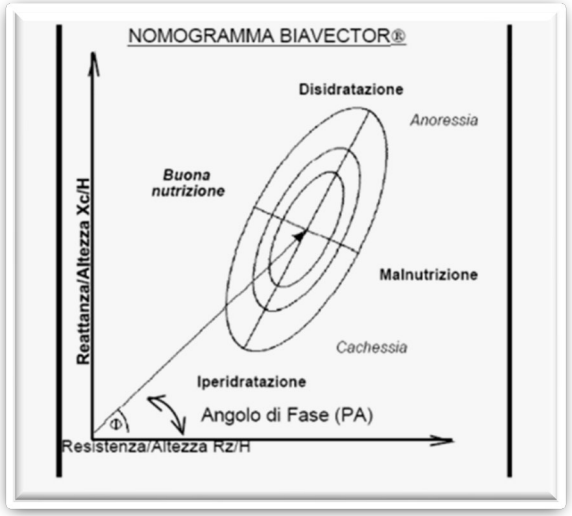
+

Perdita di forza

↓

SARCOPENIA

Bossi P.Nutrients 2021,13,198



CUT OFF della forza di prensione (EWGSOP2):
< 27 Kg uomo
< 16 Kg donna

Table 1. 2018 operational definition of sarcopenia

Probable sarcopenia is identified by Criterion 1.
Diagnosis is confirmed by additional documentation of Criterion 2.
If Criteria 1, 2 and 3 are all met, sarcopenia is considered severe.

(1) Low muscle strength
(2) Low muscle quantity or quality
(3) Low physical performance

Table 3. EWGSOP2 sarcopenia cut-off points

Test	Cut-off points for men	Cut-off points for women	References
EWGSOP2 sarcopenia cut-off points for low strength by chair stand and grip strength			
Grip strength	**<27 kg**	**<16 kg**	Dodds (2014) [26]
Chair stand	**>15 s for five rises**		Cesari (2009) [67]
EWGSOP2 sarcopenia cut-off points for low muscle quantity			
ASM	**<20 kg**	**<15 kg**	Studenski (2014) [3]
ASM/height^2	**<7.0 kg/m^2**	**<5.5 kg/m^2**	Gould (2014) [125]
EWGSOP2 sarcopenia cut-off points for low performance			
Gait speed	**≤0.8 m/s**		Cruz-Jentoft (2010) [1] Studenski (2011) [84]
SPPB	**≤8 point score**		Pavasini (2016) [90] Guralnik (1995) [126]
TUG	**≥20 s**		Bischoff (2003) [127]
400 m walk test	**Non-completion or ≥6 min for completion**		Newman (2006) [128]

Age and Ageing 2019; **48:** 16–31

SARCOPENIA

Questionario SARC-F

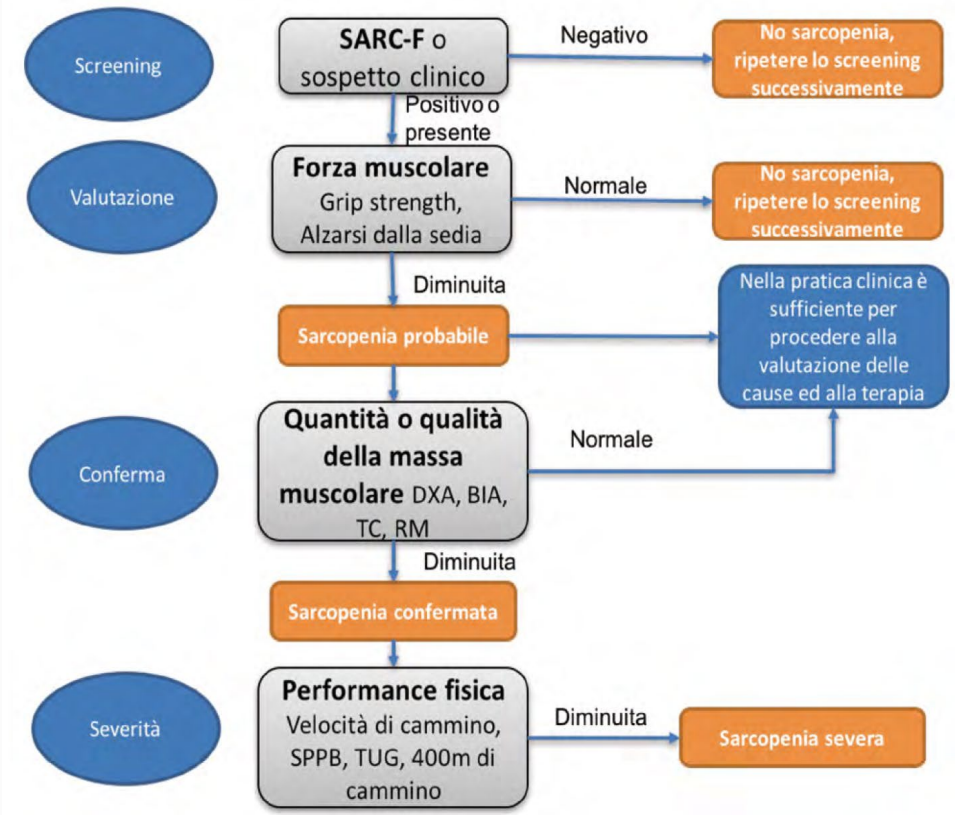
FORZA Quanta difficoltà hai nel sollevare e trasportare 4,5 Kg? *(4,5 kg è approssimativamente il peso di un gatto domestico o di una zucca)*	0 1 2	Nessuna Alcune volte Molta o incapace
VALUTAZIONE DELLA CAMMINATA Quanta difficoltà hai nel camminare in una stanza?	0 1 2	Nessuna Alcune volte Molta, uso ausili, o incapace
ALZARSI DA UNA SEDIA Quanta difficoltà hai ad alzarti da una sedia o dal letto?	0 1 2	Nessuna Alcune volte Molta o incapace senza aiuto
SALIRE LE SCALE Quanta difficoltà hai nel salire una rampa di 10 gradini?	0 1 2	Nessuna Alcune volte Molta o incapace
CADUTE Quante volte sei caduto nell'anno passato?	0 1 2	Nessuna 1-3 cadute 4 o più cadute

Malmstrom TK, Morley JE. SARC-F: a simple questionnaire to rapidly diagnose sarcopenia. J Am Med Dir Assoc 2013;14:531-2

≥4

EWGSOP 2 –Algorithm

European Working Group on Sarcopenia in Older People



Age and Ageing 2019

Obesity Facts

Consensus Statement

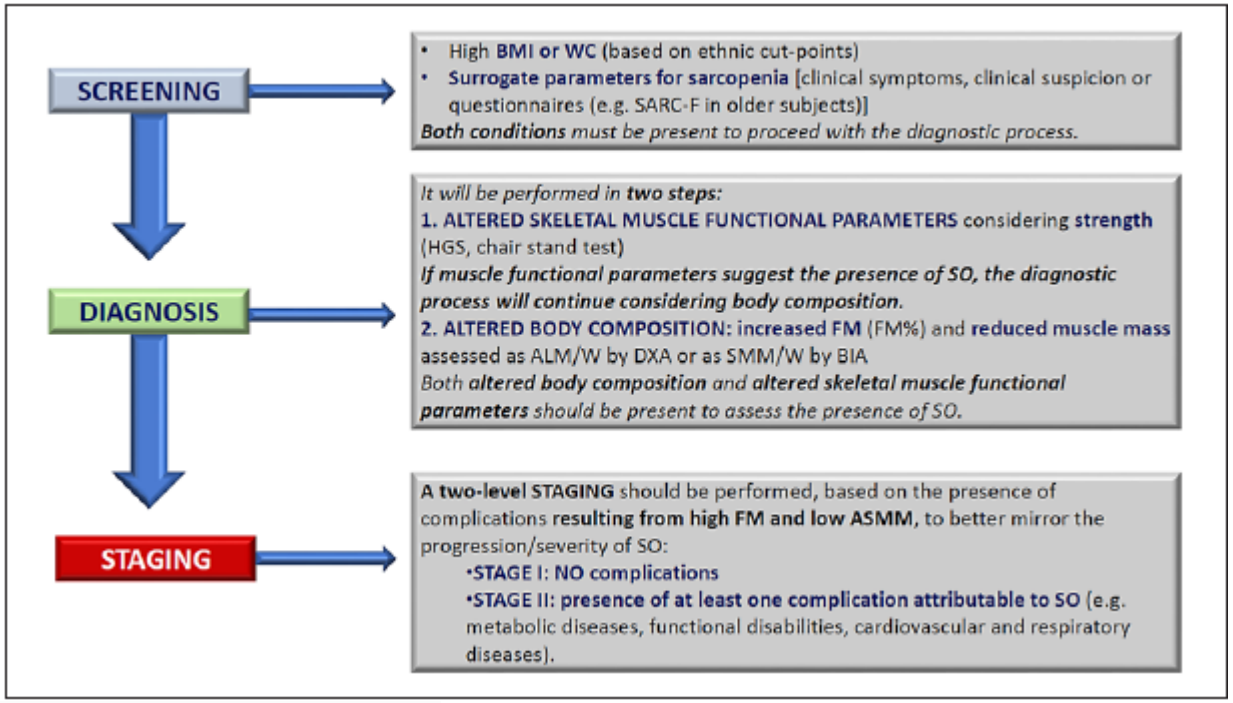
Obes Facts 2022;15:321–335
DOI: 10.1159/000521241

Received: November 21, 2021
Accepted: November 26, 2021
Published online: February 23, 2022

Definition and Diagnostic Criteria for Sarcopenic Obesity: ESPEN and EASO Consensus Statement

OBESITA’ + SARCOPENIA

OBESITA’ SARCOPENIA



Ridotta massa muscolare
+
infiammazione acuta o cronica

→ **MALNUTRIZIONE**

Criteri Glim 2018

PROTEINE

Clinical Nutrition 40 (2021) 4745–4761

Contents lists available at ScienceDirect

Clinical Nutrition

journal homepage: http://www.elsevier.com/locate/clnu

ESPEN Guideline

ESPEN practical guideline: Clinical nutrition in surgery☆

Arved Weimann [a, *], Marco Braga [b], Franco Carli [c], Takashi Higashiguchi [d], Martin Hübner [e], Stanislaw Klek [f], Alessandro Laviano [g], Olle Ljungqvist [h], Dileep N. Lobo [i], Robert G. Martindale [k], Dan Waitzberg [l], Stephan C. Bischoff [m], Pierre Singer [n]

Further recommendations are not different from those for patients undergoing major abdominal surgery (0).

Grade of recommendation 0 – strong consensus (94% agreement)

Commentary

Early postoperative food intake is advocated, and supplementation with protein powders is suggested to meet daily requirements of 60 g protein/day. Of note, standard oral supplements contain high glucose concentrations and are problematic in bariatric patients as they can cause dumping syndrome. Postoperative nutritional follow-up by a dedicated team is a must in these patients for dietary counseling, to monitor weight loss, and to prevent deficiencies (vitamins, micronutrients) with special emphasis on bone health (vitamin D3, Ca). In this context, physical exercise should be encouraged strongly, although evidence is lacking.

Obesity Facts

Obes Facts 2017;10:597–632

DOI: 10.1159/000481825

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Karger Open access

Review Article

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Intake proteico minimo 60 g die -> 1.5 g/kg/die peso ideale

In casi particolari 2.1 g/kg/die peso ideale

nutrients

Nutrients 2022

MDPI

Review

Whey Protein, Leucine- and Vitamin-D-Enriched Oral Nutritional Supplementation for the Treatment of Sarcopenia

Emanuele Cereda [1,*], Roberto Pisati [1], Mariangela Rondanelli [2,3] and Riccardo Caccialanza [1]

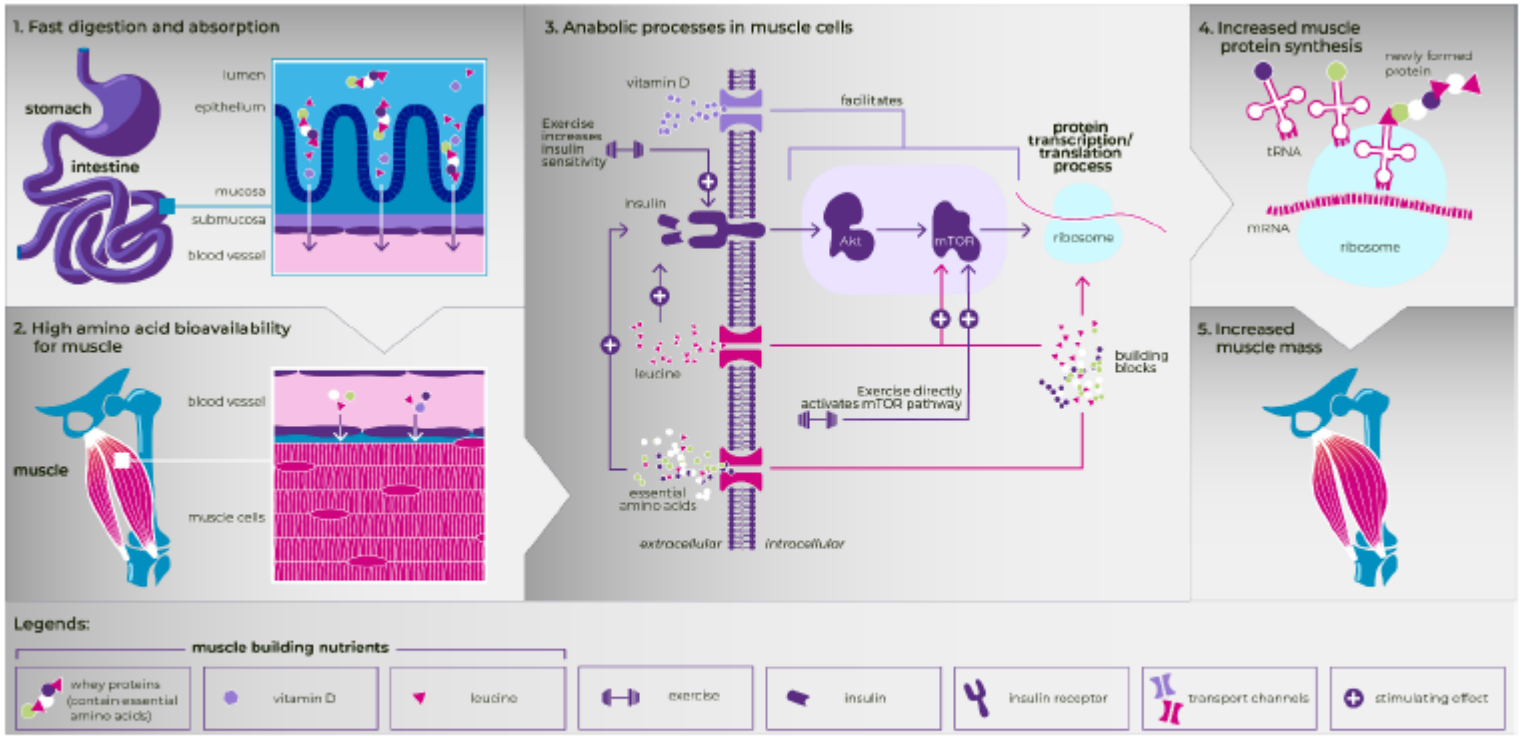


Figure 2. The effect of muscle-targeted ONS (whey protein, leucine and vitamin D) in combination with exercise in increasing appendicular muscle mass in older adults with sarcopenia (the present figure is used with permission from Danone Nutricia Research BV for this single publication).

In conclusione: ci sono prove sufficienti per raccomandare un'integrazione nutrizionale orale mirata ai muscoli come trattamento nutrizionale di prima linea della sarcopenia, molto probabilmente combinata con un programma di esercizio fisico su misura per migliorare ulteriormente i risultati clinici. Anche il suo uso nella prevenzione della sarcopenia nelle popolazioni ad alto rischio dovrebbe essere considerato.

A randomized clinical trial on the effects of exercise on muscle remodelling following bariatric surgery

Saulo Gil[1,2,3], John P. Kirwan[4], Igor H. Murai[1,3], Wagner S. Dantas[4], Carlos Alberto Abujabra Merege-Filho[1,2,3], Sujoy Ghosh[5,6], Samuel K. Shinjo[3], Rosa M.R. Pereira[3], Walcy R. Teodoro[3], Sheylla M. Felau[1], Fabiana B. Benatti[1,7], Ana L. de Sá-Pinto[3], Fernanda Lima[3], Roberto de Cleva[8], Marco Aurélio Santo[8], Bruno Gualano[1,2,3] & Hamilton Roschel[1,2,3]*

Journal of Cachexia, Sarcopenia and Muscle 2021; **12**: 1440–1455

"Questo studio fornisce prove convincenti a supporto dell'integrazione dell'esercizio fisico nell'algoritmo di cura dei pazienti bariatrici per contrastare la perdita postchirurgica di massa e funzione muscolare"

80 donne sottoposte a BPG, effetti sovrapponibili sulla forza arti inferiori
Gruppo intervento: BPG+ ET (esercizi di resistenza e aerobici)
Gruppo controllo: BPG
Inizio ET al 3° mese post-BS
Risultato: BPG +ET vs BPG
✓maggiore forza muscolare al 9° mese,
✓migliori perfomance ai test
✓Minore massa grassa

ATTIVITA' FISICA

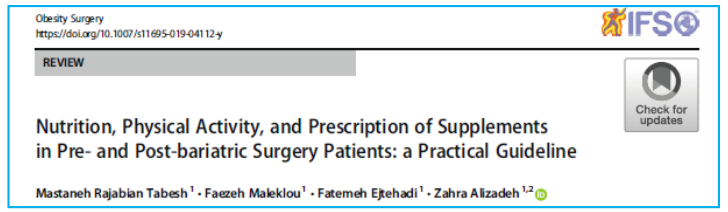
Rimodellamento delle fibre muscolare ET indotto


L'Endocrinologo (2022) 23:469–475
https://doi.org/10.1007/s40619-022-01150-0

RASSEGNA

Weight regain: il recupero del peso dopo chirurgia bariatrica. Quali strategie?

Luca Busetto[1] · Silvia Bettini[1] · Giulia Maria Pontesilli[1]


Obesity Surgery
https://doi.org/10.1007/s11695-019-04112-y

REVIEW

Nutrition, Physical Activity, and Prescription of Supplements in Pre- and Post-bariatric Surgery Patients: a Practical Guideline

Mastaneh Rajabian Tabesh[1] · Faezeh Maleklou[1] · Fatemeh Ejtehadi[1] · Zahra Alizadeh[1,2]

FOLLOW UP:TIMING ESAMI E VISITE

Obesity Facts
The European Journal of Obesity

Obes Facts 2017;10:597–632
DOI: 10.1159/000481825
Received: August 22, 2017
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Deborah R. Leitner[k] Janine M. Makaronidis[d, f] Karin Schindler[l]
Hermann Toplak[k] Volkan Yumuk[m]

Table 6. Minimal periodic surveillance for nutritional deficiencies after bariatric surgery

	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

FOLLOW UP:TIMING ESAMI E VISITE

Received: 5 April 2020 | Revised: 21 May 2020 | Accepted: 31 May 2020
DOI: 10.1111/obr.13087

BARIATRIC SURGERY

OBESITY Reviews WILEY

British Obesity and Metabolic Surgery Society Guidelines on perioperative and postoperative biochemical monitoring and micronutrient replacement for patients undergoing bariatric surgery—2020 update

Folate	
•Check serum folate levels at regular intervals post-surgery	Grade B EL 2 (1+ to 2–)
•Consider the following frequency of monitoring of serum folate levels: 3, 6 and 12 months in the first year and at least annually thereafter so that changes in status may be detected	GPP
Vitamin B12	
•Check vitamin B12 levels at regular intervals following SG, RYGB and malabsorptive procedures such as BPD/DS	Grade B EL 2 (2++ to 2–)
•Consider the following frequency of monitoring of vitamin B12 levels: 3, 6 and 12 months in the first year and at least annually thereafter so that changes in status may be detected	GPP
Vitamin D, calcium and parathyroid hormone	
Vitamin D	
•Check serum 25-hydroxyvitamin D levels at regular intervals post-surgery	Grade B EL 2 (1+ to 3)
•Serum 25-hydroxyvitamin D levels of 75 nmol/L or greater are considered sufficient.	Grade D EL 4
•Ensure total 25-hydroxyvitamin D (D3 and D2) is measured if patient is on vitamin D2 supplements, e.g., ergocalciferol	GPP
•Consider the following frequency of monitoring of vitamin D levels: 3, 6 and 12 months in the first year and at least annually thereafter so that changes in status may be detected	GPP
Calcium	
•Check serum calcium levels at regular intervals	GPP
•Consider the following frequency of monitoring of serum calcium levels: 3, 6 and 12 months in the first year and at least annually thereafter so that changes in status may be detected	GPP
Parathyroid hormone	
•Check parathyroid hormone (to exclude primary hyperparathyroidism) if it has not been checked prior to surgery	GPP

Obesity Surgery
https://doi.org/10.1007/s11695-019-04112-y

IFSO

REVIEW

Check for updates

Nutrition, Physical Activity, and Prescription of Supplements in Pre- and Post-bariatric Surgery Patients: a Practical Guideline

Mastaneh Rajabian Tabesh [1] · Faezeh Maleklou [1] · Fatemeh Ejtehadi [1] · Zahra Alizadeh [1,2]

AACE/TOS/ASMBS/OMA/ASA 2019 Guidelines

CLINICAL PRACTICE GUIDELINES FOR THE PERIOPERATIVE NUTRITION, METABOLIC, AND NONSURGICAL SUPPORT OF PATIENTS UNDERGOING BARIATRIC PROCEDURES – 2019 UPDATE: COSPONSORED BY AMERICAN ASSOCIATION OF CLINICAL ENDOCRINOLOGISTS/AMERICAN COLLEGE OF ENDOCRINOLOGY, THE OBESITY SOCIETY, AMERICAN SOCIETY FOR METABOLIC & BARIATRIC SURGERY, OBESITY MEDICINE ASSOCIATION, AND AMERICAN SOCIETY OF ANESTHESIOLOGISTS*

FOLLOW UP:INTEGRAZIONI

AACE/TOS/ASMBS/OMA/ASA 2019 Guidelines

CLINICAL PRACTICE GUIDELINES FOR THE PERIOPERATIVE NUTRITION, METABOLIC, AND NONSURGICAL SUPPORT OF PATIENTS UNDERGOING BARIATRIC PROCEDURES – 2019 UPDATE: COSPONSORED BY AMERICAN ASSOCIATION OF CLINICAL ENDOCRINOLOGISTS/AMERICAN COLLEGE OF ENDOCRINOLOGY, THE OBESITY SOCIETY, AMERICAN SOCIETY FOR METABOLIC & BARIATRIC SURGERY, OBESITY MEDICINE ASSOCIATION, AND AMERICAN SOCIETY OF ANESTHESIOLOGISTS*

Le linee guida definiscono in modo dettagliato i dosaggi delle integrazioni: è necessario che i prodotti che il paziente assume garantiscano i fabbisogni.
L'integrazione bariatrica non può essere qualsiasi ma pensata e prodotta per il paziente sottoposto a chirurgia bariatrica

Table 12 *Continued*

Folate (Folic Acid)	400-800 μg oral folate daily from their multivitamin 800-1,000 μg oral folate daily in women of child-bearing age	Oral dose of 1000 μg of folate daily to achieve normal levels and then resume recommended dosage to maintain normal levels >1 mg/d supplementation is not recommended because of the potential masking of vitamin B_{12} deficiency
Iron	Males and patients without a history of anemia: 18 mg of iron from multivitamin Menstruating females and patients who have undergone RYGB, SG, or BPD/DS: 45-60 mg of elemental iron daily (cumulatively, including iron from all vitamin and mineral supplements) Oral supplementation should be taken in divided doses separately from calcium supplements, acid-reducing medications, and foods high in phytates or polyphenols	Oral supplementation should be increased to provide 150-200 mg of elemental iron daily to amounts as high as 300 mg 2-3 times daily Oral supplementation should be taken in divided doses separately from calcium supplements, acid-reducing medications, and foods high in phytates or polyphenols Vitamin C supplementation may be added to increase iron absorption and decrease risk of iron overload IV iron infusion should be administered if iron deficiency does not respond to oral therapy
Vitamin D and Calcium	Appropriate dose of daily calcium from all sources varies by surgical procedure • BPD/DS: 1,800-2,400 mg/d • LAGB, SG, RYGB: 1,200-1,500 mg/d To enhance calcium absorption in post-WLS patients • Calcium should be given in divided doses • Calcium carbonate should be taken with meals • Calcium citrate may be taken with or without meals Recommended preventative dose of vitamin D should be based on serum vitamin D levels • Recommended vitamin D_3 dose is 3,000 IU daily, until blood levels of 25(OH)D are greater than sufficient (30 ng/mL) • 7-90% lower vitamin D_3 bolus is needed (compared to vitamin D_2) to achieve the same effects as those produced in healthy nonbariatric surgical patients	All bariatric patients with vitamin D deficiency or insufficiency should be repleted as follows: • Vitamin D_3 at least 3,000 IU/d and as high as 6,000 IU/d, or 50,000 IU vitamin D_2 1-3 times weekly • Vitamin D_3 is recommended over vitamin D_2 as a more potent treatment when comparing frequency and amount needed for repletion Repletion of calcium deficiency varies by surgical procedure: • BPD/DS: 1,800-2,400 mg/d • LAGB, SG, RYGB: 1,200-1,500 mg/d
Vitamin A	Dosage is based on type of procedure: • LAGB: 5,000 IU/d • RYGB and SG: 5,000-10,000 IU/d • DS: 10,000 IU/d Higher maintenance doses of fat-soluble vitamins may be required for bariatric patients with a previous history of vitamin A deficiency Water-miscible forms of fat-soluble vitamins are also available to improve absorption Special attention should be paid to post-bariatric supplementation of vitamin A in pregnant women	For bariatric patients with vitamin A deficiency without corneal changes, a dose of 10,000-25,000 IU/d of vitamin A should be given orally until clinical improvement is evident For bariatric patients with vitamin A deficiency with corneal changes, a dose of 50,000-100,000 IU of vitamin A should be administered IM for 3 d, followed by 50,000 IU/d IM for 2 weeks Bariatric patients with vitamin A deficiency should also be evaluated for concurrent iron and/or copper deficiencies because these can impair resolution of vitamin A deficiency

SUPPLEMENTAZIONE A MISURA DEL PAZIENTE

Os Sublinguale Parenterale (sc im ev)

Compresse da masticare, compresse o capsule da deglutire, formulazione liquida da bere

Costo

Il solo multivitaminico spesso non è sufficiente come supplementazione che deve essere personalizzata.

Il paziente deve essere edotto prima dell'intervento

✓**della necessità di effettuare delle integrazioni**

✓ **della necessità di effettuare le integrazioni a vita**
(in particolare negli interventi malassorbitivi)

✓**dei costi da sostenere**

✓**delle patologie secondarie alla non assunzione delle integrazioni**
(sintomi e carenze possono presentarsi anche molti anni dopo l'intervento)

✓**del follow up a lungo termine**
(esami e visite)

WEIGHT REGAIN POST CH BARIATRICA

SUCCESSO

FALLIMENTO

EWL > 50%

L'Endocrinologo (2022) 23:469–475
https://doi.org/10.1007/s40619-022-01150-0

RASSEGNA

***Weight regain*: il recupero del peso dopo chirurgia bariatrica. Quali strategie?**

Luca Busetto[1] · Silvia Bettini[1] · Giulia Maria Pontesilli[1]

ELSEVIER

Surgery for Obesity and Related Diseases ▮ (▮▮▮▮) ▮▮▮–▮▮▮

SURGERY FOR OBESITY AND RELATED DISEASES

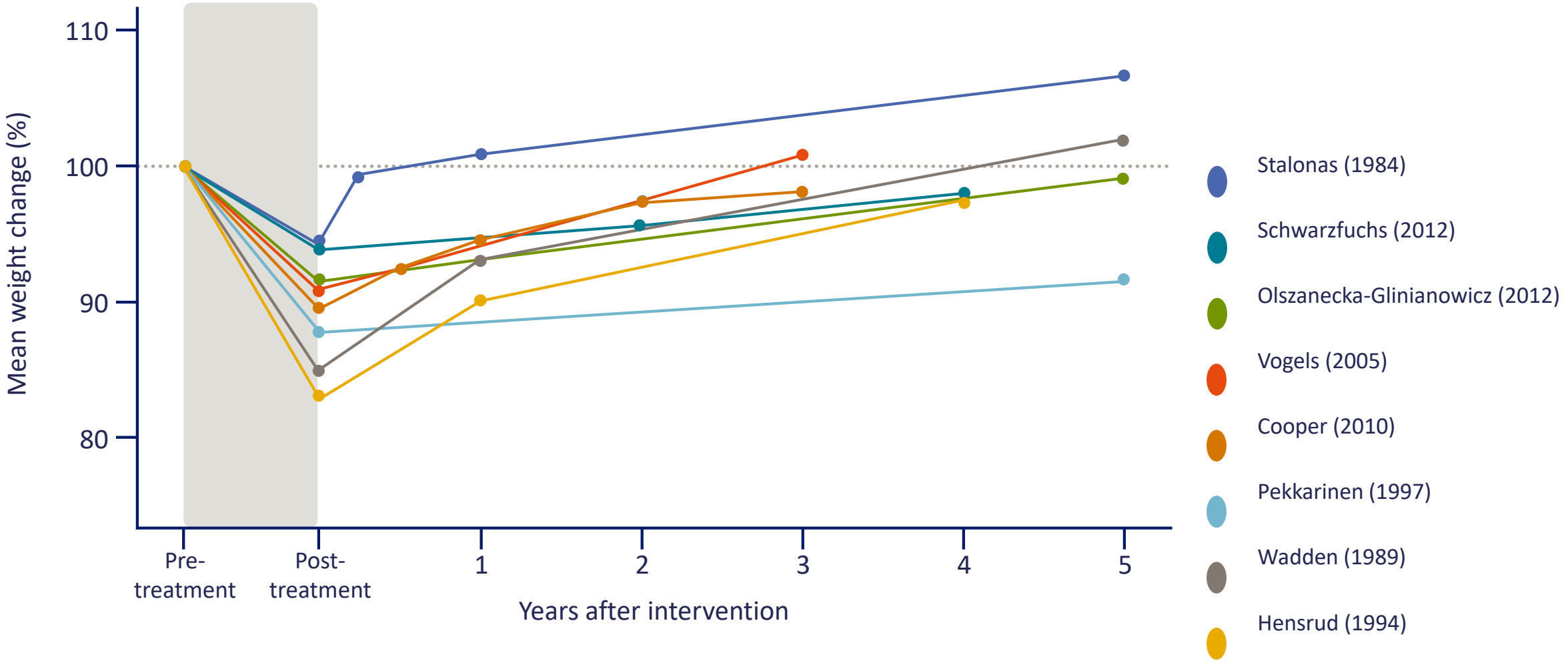
Controversies in bariatric surgery

Weight regain after bariatric surgery—how should it be defined?

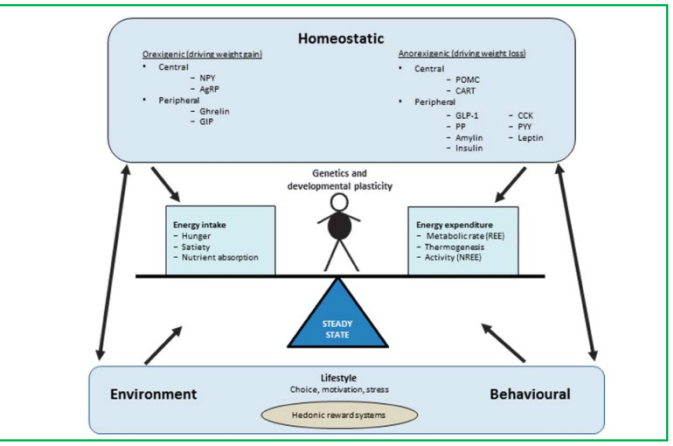
Marius Nedelcu, M.D.[a,*], Haris A. Khwaja, M.D., D.Phil. (Oxon), F.R.C.S. (Eng)[b], Tomasz G. Rogula, M.D., Ph.D.[c]

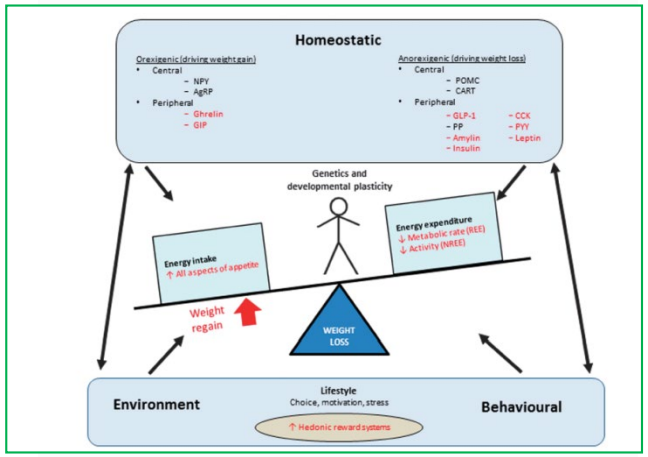
Non responder primario
Calo di peso < 10 %del peso iniziale
Calo di peso non sufficiente a portare il pz al di fuori delle indicazioni per ch bariatrica
Calo di peso non sufficiente a permettere un adeguato controllo delle comorbidità, DM
Non responder secondario
Progressivo recupero del peso in atto
Recupero di peso sufficiente a riportare il pz nella fascia di obesità con inidcazione a ch bariatrica
Recupero di peso associato ad inadeguato controllo delle comorbidità

Maintenance of weight loss is challenging



Nordmo et al. Obes Rev 2020;21:e12949.





REVIEW

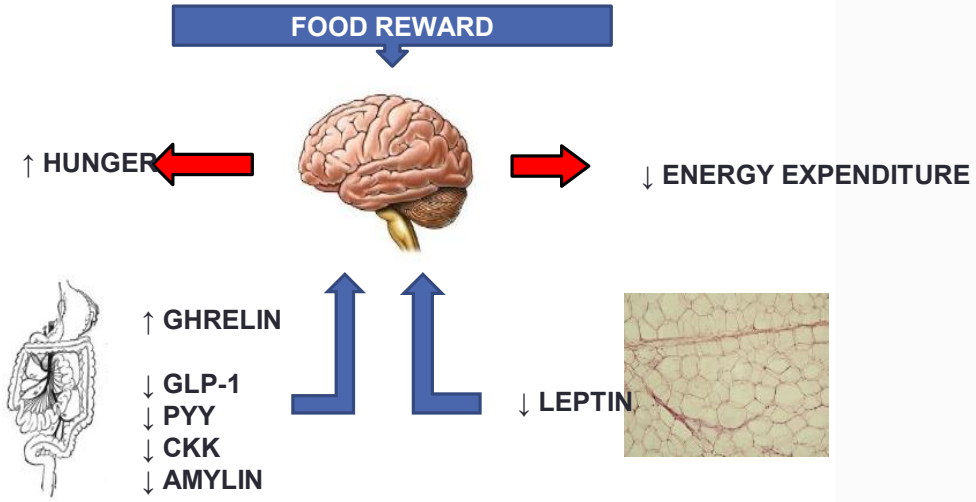
Physiological adaptations to weight loss and factors favouring weight regain

FL Greenway

International Journal of Obesity (2015) **39,** 1188–1196

www.nature.com/ijo

Meccanismi di adattamento che favoriscono il mantenimento o recupero del peso



Contents lists available at ScienceDirect

European Journal of Internal Medicine

journal homepage: www.elsevier.com/locate/ejim

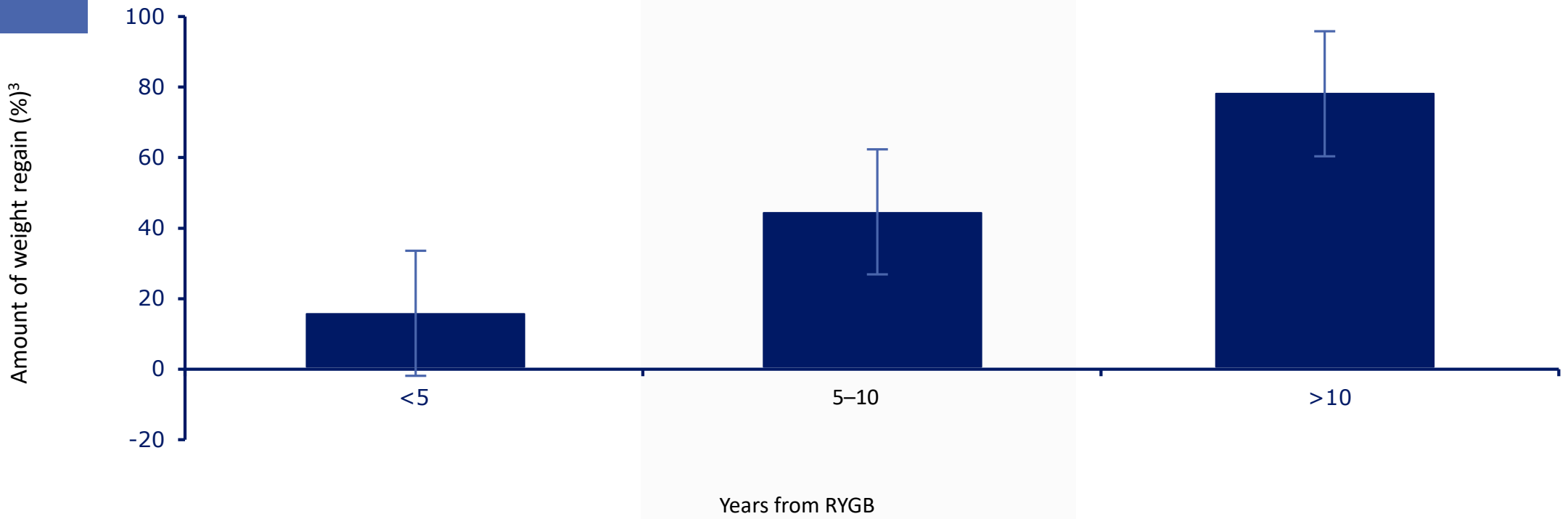
Review Article

Mechanisms of weight regain.

Luca Busetto[a], Silvia Bettini[a,*], Janine Makaronidis[b,c,d], Carl A. Roberts[e], Jason C. G. Halford[e,f], Rachel L. Batterham[b,c,d]

[a] Department of Medicine, University of Padova, Padova, Italy
[b] Centre for Obesity Research, Division of Medicine, Rayne Building, University College London (UCL), London, United Kingdom
[c] Bariatric Centre for Weight Management and Metabolic Surgery, University College London Hospital (UCLH), London, United Kingdom
[d] National Institute of Health Research, UCLH Biomedical Research Centre, London, United Kingdom
[e] Department of Psychology, University of Liverpool, United Kingdom
[f] School of Psychology, University of Leeds, United Kingdom

Weight regain post BS



Significant WR (≥15%) occurs in **25–35%** of patients 2–5 years after surgery[1] However, there is no generally accepted definition for WR. Most are based on kg, BMI units or %EWL[2]

BMI, body mass index; EWL, excess weight loss; RYGB, Roux-en-Y gastric bypass; WR, weight regain

1. Cooper *et al. Obes Surg* 2015;25:1474–81; 2. Karmali *et al. Obes Surg* 2013;23:1922–33; 3. Jirapinyo *et al. BMJ Open Gastroenterol* 2017;4:e000153

Current Diabetes Reports (2023) 23:31–42
https://doi.org/10.1007/s11892-023-01498-z

OBESITY (KM GADDE AND P SINGH, SECTION EDITORS)

Weight Regain After Bariatric Surgery: Scope of the Problem, Causes, Prevention, and Treatment

Sabrena F. Noria[1] · Rita D. Shelby[2] · Katelyn D. Atkins[3] · Ninh T. Nguyen[4] · Kishore M. Gadde[4]

JAMA | Original Investigation

Comparison of the Performance of Common Measures of Weight Regain After Bariatric Surgery for Association With Clinical Outcomes

Wendy C. King, PhD; Amanda S. Hinerman, MPH; Steven H. Belle, PhD; Abdus S. Wahed, PhD; Anita P. Courcoulas, MD, MPH

1406 pz RYGB
La media del recupero di peso rispetto al nadir
1 anno: 5.7%
2 anni: 10.1%
3 anni 12.9%
4 anni 14.2%
5 anni 15%

MEDICO E DIETISTA

Counseling nutrizionale

QUALI STRUMENTI Per intervenire sul WEIGHT REGAIN?

Terapia farmacologica
Naltrexone-bupropione
Liraglutide, Semaglutide
Tirzepatide , ….

Quando?

PRECOCEMENTE

Dieta chetogenica

Predittori di weight regain

Current Diabetes Reports (2023) 23:31–42
https://doi.org/10.1007/s11892-023-01498-z

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Weight Regain After Bariatric Surgery: Scope of the Problem, Causes, Prevention, and Treatment

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Aspetti nutrizionali

- Modifica della **percezione** della **fame** e della **sazietà** nel Tempo e **aumento** del consumo di cibo
- **Regolarità** dei pasti (3+2)
- **Adesione** a dieta ad alto contenuto proteico, basso indice glicemico e basso contenuto in grassi con adeguato apporto di fibre
- Consumo di **alcool** (AUD Alcol Use Disorder)
- **Integrazioni**
- **Ipoglicemia** postchirurgica (Dumping sd)
- **Comportamenti disfunzionali** (grazing, bed , night eating sd, ….)
- Aspetti **psicologici/psichiatrici** (tx antidepressiva, ….)

J Clin Endocrinol Metab. 2021 Jan; 106(1): 251–263. PMCID: PMC7765654
Published online 2020 Oct 29. doi: 10.1210/clinem/dgaa702: 10.1210/clinem/dgaa702 PMID: 33119080

Approach to the Patient: Management of the Post–Bariatric Surgery Patient With Weight Regain

Nawfal W Istfan,[1] Marine Lipartia,[1] Wendy A Anderson,[2] Donald T Hess,[2] and Caroline M Apovian[1]

[1] Section of Endocrinology, Diabetes, Nutrition, and Weight Management, Department of Medicine, Boston University School of Medicine and Boston Medical Center, Boston, Massachusetts
[2] Section of Minimally Invasive Surgery, Department of Surgery, Boston University School of Medicine and Boston Medical Center, Boston, Massachusetts

OBES SURG (2010) 20:349–356
DOI 10.1007/s11695-009-9895-6

RESEARCH-CLINICAL

Behavioral Predictors of Weight Regain after Bariatric Surgery

Jacqueline Odom · Kerstyn C. Zalesin · Tamika L. Washington · Wendy W. Miller · Basil Hakmeh · Danielle L. Zaremba · Mohamed Altattan · Mamtha Balasubramaniam · Deborah S. Gibbs · Kevin R. Krause · David L. Chengelis · Barry A. Franklin · Peter A. McCullough

Attività fisica

- Stile di vita attivo
- AF 150 minuti a settimana

Favorire il calo dipeso
Preservare/recuperare la massa magra
(1/3 della perdita di peso dopo ch bar è dato dalla massa magra)

Al peso nadir 12-24 mesi gli apporti sono in grado di soddisfare i fabbisogni nutrizionali mantenendo il peso raggiunto stabile

Predittori di mantenimento del peso

-"Control food urges"

- Engagement in self monitoring

(controllo del peso regolare e la registrazione della rilevazione)

- benessere inversamente correlato al recupero del peso

- **regolare follow up**

OBES SURG (2010) 20:349–356
DOI 10.1007/s11695-009-9895-6

RESEARCH-CLINICAL

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BARIATRIC SURGERY POST-OP SURVEY

1. Today's Date ____/____/____ (mm dd yyyy)
2. Surgery date ____/____/____ (mm dd yyyy)
3. Pre-operative weight _____lbs (day of surgery)
4. Current weight _____ lbs
5. Lowest weight since surgery _____ lbs
6. Are you still losing weight?
   - ❑ Yes
   - ❑ No
7. Have you regained weight since surgery?
   - ❑ Yes
   - ❑ No *please skip to question 8*

7a. Amount of regain from your lowest point:

Enter exact amount _____ lbs

7b. After surgery, when did you begin to regain?

Give exact time in months _____ months

8. Do you feel you are currently under a lot of stress?
   - ❑ Yes
   - ❑ No *Please skip to question 9*

8a. If yes, what is the source? *Please check all sources of stress*
   - ❑ Family
   - ❑ Social
   - ❑ Work
   - ❑ Financial
   - ❑ Health

9. Has your alcohol consumption increased/decreased since bariatric surgery?
   - ❑ Increased
   - ❑ Decreased
   - ❑ No change
   - ❑ I never drank alcohol before or after

10. Has anyone ever expressed concern about your use of alcohol or drugs?
   - ❑ Yes
   - ❑ No

If yes, please describe: _____

11. Please rate your overall well-being at the present time: This includes physical, psychological, emotional, vocational, etc.

Please circle one

Poor 1 2 3 4 5 Good

12. Please check any behavior changes since surgery:
   - ❑ More control over eating….can stop with less food
   - ❑ Pre-planning food intake
   - ❑ Self-monitoring (weighing regularly and keeping records)
   - ❑ Improved sleep
   - ❑ Set limits/boundaries around eating trigger foods
   - ❑ Decreased food urges
   - ❑ Feelings of hopelessness

13. Since your surgery date, how often do you visit the Weight Control Center?
   - ❑ Not at all
   - ❑ Once a year
   - ❑ 2-3 times/yr.
   - ❑ 4-5 times/yr.

Cambiamento dello stile di vita

✓Ottimizzare aspetti nutrizionali e attività fisica strutturata

✓gestione dello stress

✓Obiettivi realistici

✓Strategie di controllo dell'ambiente

✓Ristrutturazione cognitiva

CONCLUSIONI

Il follow up nutrizionale non può essere omesso pena il recupero di peso e l'elevato rischio di sviluppare quadri patologici su base carenziale.

Il monitoraggio degli esami regolare è necessario per rilevare carenze globali o selettive di vitamine e micronutrienti

Integrazione standard multivitaminica e minerale, ferro, acido folico, vitamina B 12 e calcio durante la fase attiva di calo di peso va rimodulata e personalizzata a stabilizzazione del peso .

Il coinvolgimento attivo e la responsabilizzazione del paziente nel processo di cura, autogestione del peso e dello stato di benessere è presupposto di successo a lungo termine

Rilevazione precoce di comportamenti predittivi di regain, intervento tempestivo (Counseling, farmaci, VLCKD)

Integrazione dei professionisti in un team strutturato

S.I.C.OB. EVENTI

SICOB CONVEGNO EMILIA-ROMAGNA

CESENA 19 - 20 Aprile 2024

PRESIDENTE: A.M. SCHETTINO

RESP. SCIENTIFICI: S. CARIANI, V. CORSO, A. LUCCHI

Dall'Alimento alla Chirurgia: il Trattamento Integrato dell'Obesità

Grazie