



Roma, 8-11 novembre 2018



ITALIAN CHAPTER



LA DIETA CHETOGENICA

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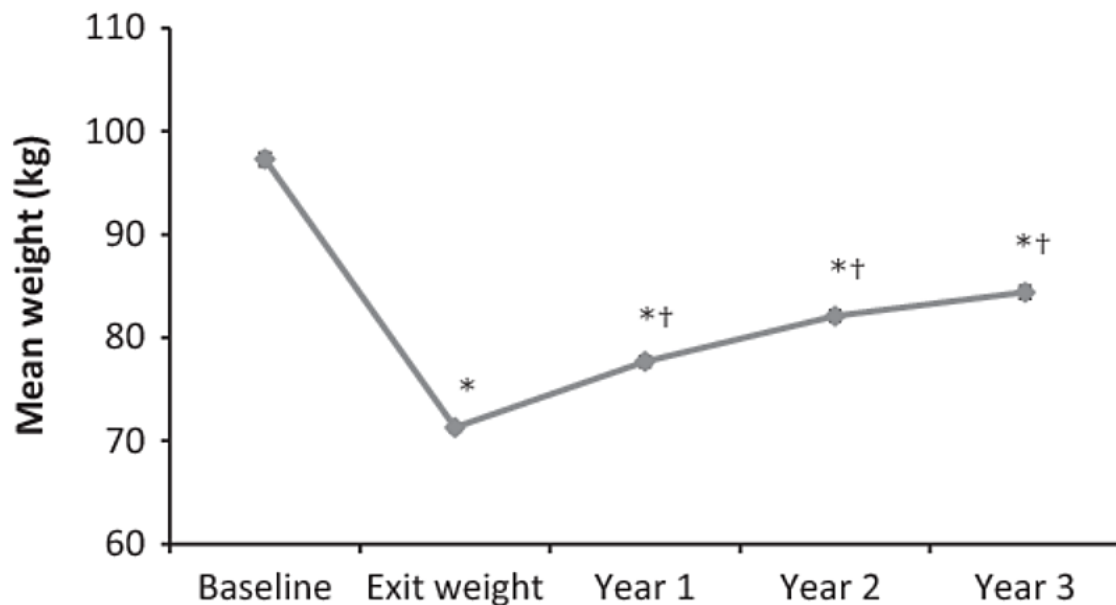


- La forte correlazione tra obesità e malattie cardiovascolari e metaboliche impone l'indicazione assoluta alla perdita di peso.
- Nei soggetti con BMI > 35 o BMI > 30 con importanti comorbidità come il diabete è auspicabile la perdita del 15-20% del peso per ottenere la correzione delle anomalie dismetaboliche.
- La chirurgia bariatrica permette la normalizzazione o il forte contenimento del peso corporeo ma è gravata da costi e rischi a breve e lungo termine che non la rendono uno strumento applicabile a tutti i pazienti.

Long-term weight loss maintenance and management following a VLCD: a 3-year outcome

C. Rolland,^{1,*} K. L. Johnston,² S. Lula,² I. Macdonald,³ J. Broom^{1,2}

Weight change over time



What's known

The erroneous belief that rapid weight loss is associated with poorer long-term weight loss outcomes is unsubstantiated, but these cognitive biases are attributable to the repeated exposure of such claims (i.e. through the media) despite no sound scientific evidence base for these. Emerging evidence suggests that long-term weight loss is achievable providing that additional weight maintenance approaches are implemented in the weight maintenance phase of the programme.

What's new

Our findings not only corroborate the mounting evidence that long-term weight loss is achievable following a VLCD in motivated individuals, but more importantly demonstrate that this can be achieved in a community-based setting where individuals are involved in group support, along with behavioural therapy. Furthermore, this weight loss regime should receive better long-term support from GPs and the scientific community for their value to be optimised.

REVIEW

Weight losses with low-energy formula diets in obese patients with and without type 2 diabetes: systematic review and meta-analysis

REVIEW
Weight losses with low-energy formula diets in obese patients with and without type 2 diabetes: systematic review and meta-analysis

International Journal of Obesity (2017) 41, 96–101; doi:10.1038/ijo.2016.175

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AIM: To provide a systematic review, of published data, to compare weight losses following very low calorie (< 800 kcal per day VLCD) or low-energy liquid-formula (> 800 kcal per day LELD) diets, in people with and without type 2 diabetes mellitus (T2DM).

METHODS: Systematic electronic searches of Medline (1946–2015) and Embase (1947–2015) to identify published studies using formula total diet replacement diets (VLCD/LELD). Random effects meta-analysis using weighted mean difference (WMD) in body weight between groups (with and without diabetes) as the summary estimate.

RESULTS: Final weight loss, in the five included studies, weighted for study sizes, ($n = 569$, mean BMI = 35.5–42.6 kg/m²), was not significantly different between participants with and without T2DM: – 1.2 kg; 95% CI: – 4.1 to 1.6 kg). Rates of weight loss were also similar in the two groups – 0.6 kg per week (T2DM) and 0.5 kg per week (no diabetes), and for VLCD (< 800 kcal per day) and LELD (> 800 kcal per day).

CONCLUSIONS: Weight losses with liquid-formula diets are very similar for VLCD and LELD and for obese subjects with or without T2DM. They can potentially achieve new weight loss/ maintenance targets of > 15–20% for people with severe and medically complicated obesity.

International Journal of Obesity (2017) **41**, 96–101; doi:10.1038/ijo.2016.175



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Very-low-energy diet for type 2 diabetes: An underutilized therapy?



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ABSTRACT

Background: Current approaches to the management of type 2 diabetes focus on the early initiation of novel pharmacologic therapies and bariatric surgery.

Objective: The purpose of this study was to revisit the use of intensive, outpatient, behavioral weight management programs for the management of type 2 diabetes.

Design: Prospective observational study of 66 patients with type 2 diabetes and BMI ≥ 32 kg/m² who enrolled in a program designed to produce 15% weight reduction over 12 weeks using total meal replacement and low- to moderate-intensity physical activity.

Results: Patients were 53 ± 7 years of age (mean \pm SD) and 53% were men. After 12 weeks, BMI fell from 40.1 ± 6.6 to 35.1 ± 6.5 kg/m². HbA1c fell from $7.4\% \pm 1.3\%$ to $6.5\% \pm 1.2\%$ (57.4 ± 12.3 to 47.7 ± 12.9 mmol/mol) in patients with established diabetes; 76% of patients with established diabetes and 100% of patients with newly diagnosed diabetes achieved HbA1c $< 7.0\%$ (53.0 mmol/mol). Improvement in HbA1c over 12 weeks was associated with higher baseline HbA1c and greater reduction in BMI.

Conclusions: An intensive, outpatient, behavioral weight management program significantly improved HbA1c in patients with type 2 diabetes over 12 weeks. The use of such programs should be encouraged among obese patients with type 2 diabetes.



Nutritional Ketosis for Weight Management and Reversal of Metabolic Syndrome

Victoria M. Gershuni¹ · Stephanie L. Yan² · Valentina Medici³

High Blood Press Cardiovasc Prev (2015) 22:389–394
DOI 10.1007/s40292-015-0096-1



ORIGINAL ARTICLE

Middle and Long-Term Impact of a Very Low-Carbohydrate Ketogenic Diet on Cardiometabolic Factors: A Multi-Center, Cross-Sectional, Clinical Study

Arrigo F. G. Cicero¹ · Maddalena Benelli² · Marco Brancaloni³ · Giuseppe Dainelli³ ·
Desiré Merlini³ · Raffaele Negri³



Roma, 8-11 novembre 2018

VLCKD and MetS



ITALIAN CHAPTER



- Weight Management
- Lipid Profile
- Systolic and Diastolic Blood Pressure
- Glycemic control and Insulin Sensitivity
- NAFLD
- Inflammatory markers



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VLCKD e LCKD Elementi Distintivi



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- La composizione biochimica
- L'utilizzo di prodotti sostitutivi specificatamente formulati
- La progressione in fasi ben distinte



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Caratteristiche biochimiche



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- Contenuto calorico molto ristretto o ristretto
 - VLCKD: 450-800 kcal
 - LCKD: 800-1200 kcal
- Normale apporto proteico: 0.8 – 1.5 g/kg peso ideale
- Ridotto contenuto di grassi: 15-20 g/die
- Ridotto contenuto di carboidrati: < 50 g/die (frazionati in almeno 4 o 5 porzioni nel corso della giornata)
- Richieste vitaminiche e micronutrizionali totalmente soddisfatte



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MECCANISMI COINVOLTI IN CORSO DI VLCKD



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- Perdita di peso
- Restrizione calorica
- Ridotto contenuto di carboidrati
- Ruolo specifico dei corpi chetonici
- Composizione biochimica della dieta



KETONE BODIES

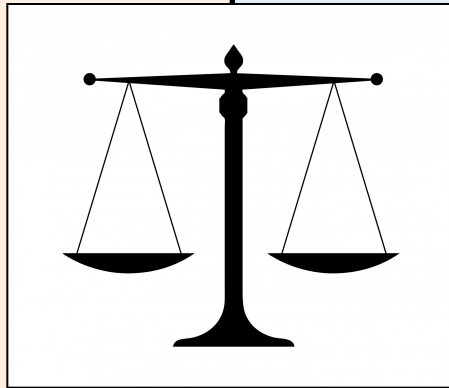


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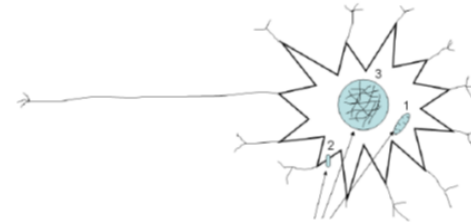
Ketoacidosis

Ketogenic diet



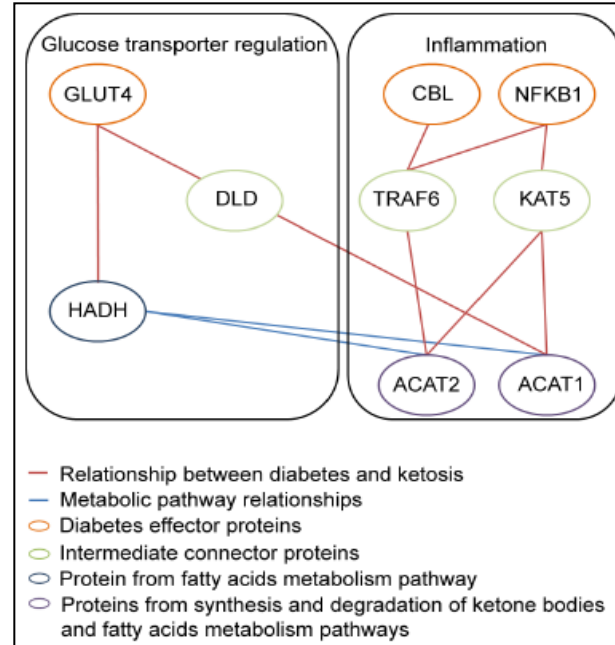
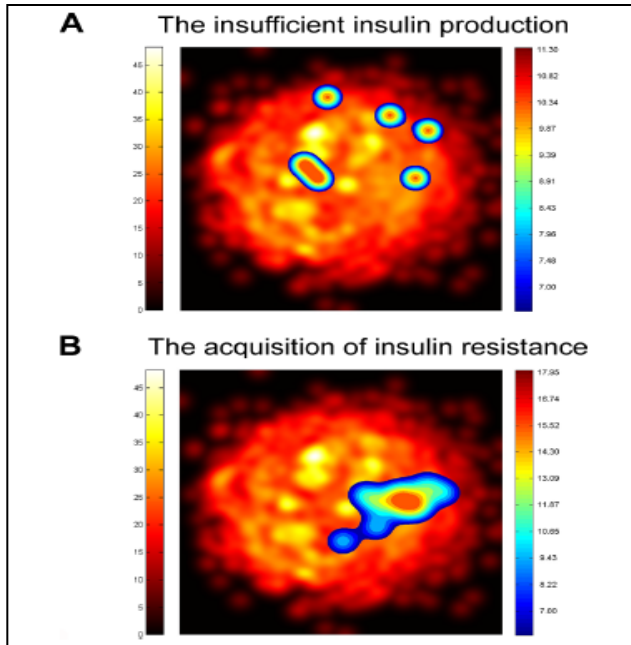
Concentration ≥ 10 mM
pH = 7,2

Concentration $\leq 5-6$ mM
pH = 7,4



Ketone bodies

- Bioenergetics and Metabolic level:
Mitochondrial modulation
- Signaling level:
G-protein linked receptor HCA 2 activation
- Epigenetic level:
Histone deacetylase inhibition



1. Elements of lipid metabolism may facilitate proper cellular localization of glucose transporter and recycling
2. Ketone bodies can alleviate certain inflammatory processes by blocking specific cytokines.

β -hydroxybutyrate: Much more than a metabolite

John C. Newman^{1,2} and Eric Verdin^{2,*}

- Endogenous inhibitor of histone deacetylase (HDACs): activation of gene expression of glucose metabolism and promotion of resistance to oxidative stress.
- Binds at least 2 G-protein coupled receptors related to glucose control and macrovascular complication of T2D.
- Causes increase levels of other regulatory metabolites (acetyl-CoA, succinyl-CoA, NAD+).

These regulatory functions of β OHB serve to link the outside environment to cell function and gene expression and have important implications for the pathogenesis and treatment of metabolic disease including T2DM



VLCD and VAT



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International Journal of Obesity (2008) 32, 619–628
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www.nature.com/ijob



REVIEW

Factors associated with percent change in visceral versus subcutaneous abdominal fat during weight loss: findings from a systematic review

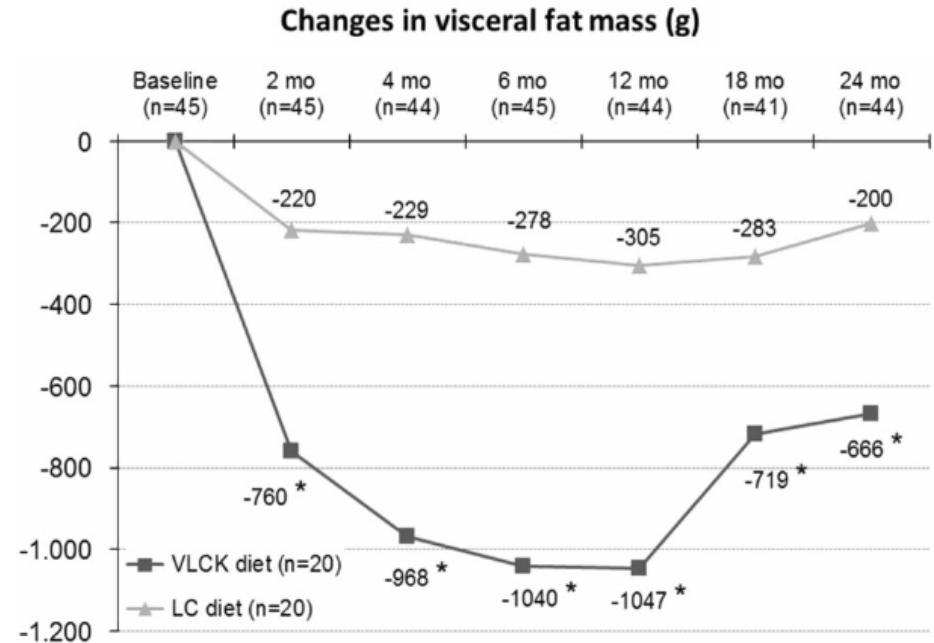
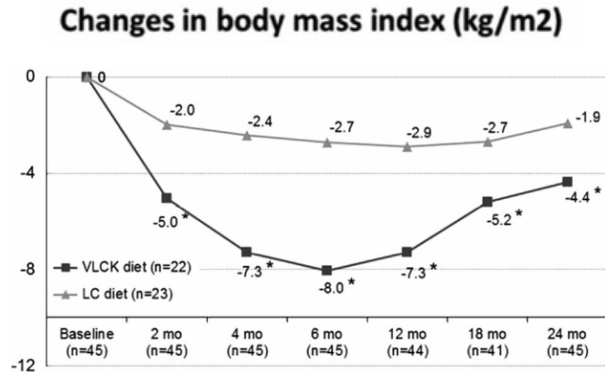
TB Chaston and JB Dixon

Australian Centre for Obesity Research and Education (CORE), Monash University, Melbourne, Victoria, Australia

- Visceral adipose tissue is lost preferentially with modest weight loss.
- Acute caloric restriction, using VLCD, produces early preferential loss of VAT.
- Very-low-calorie diets (VLCDs) provided exceptional short-term (<4 weeks) preferential VAT loss, but this effect was lost by 12-14 weeks.

Obesity treatment by very low-calorie-ketogenic diet at two years: reduction in visceral fat and on the burden of disease

Basilio Moreno¹ · Ana B Crujeiras^{2,3} · Diego Bellido⁴ · Ignacio Sajoux⁵ ·
Felipe F Casanueva^{3,6}





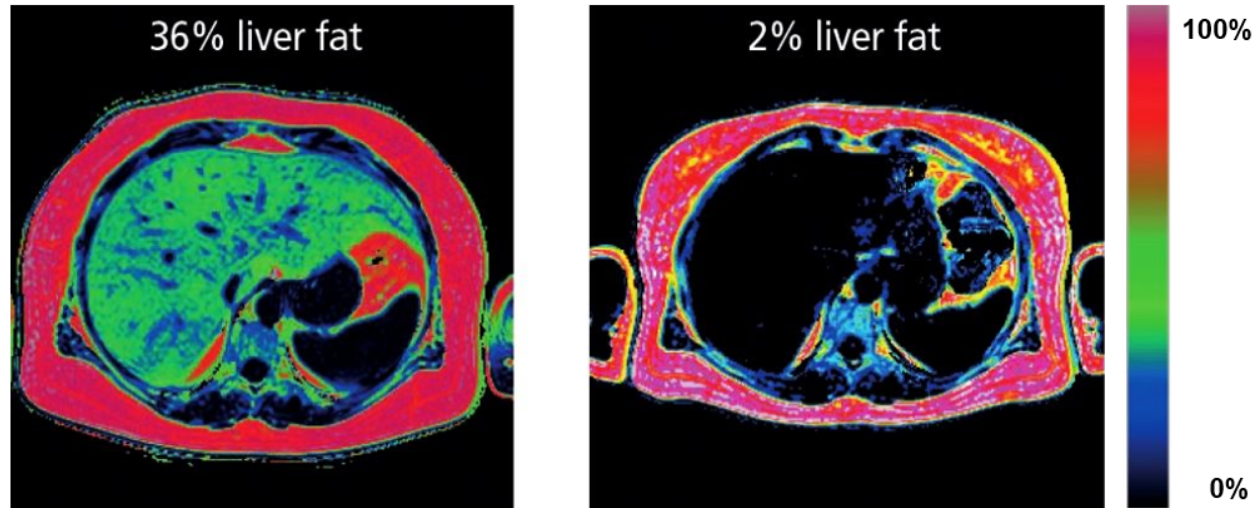
THE COUNTERPOINT STUDY

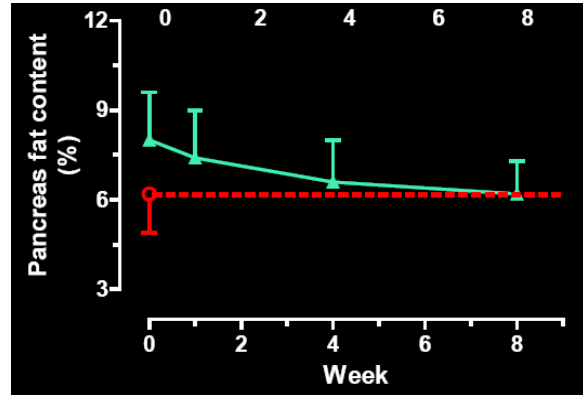
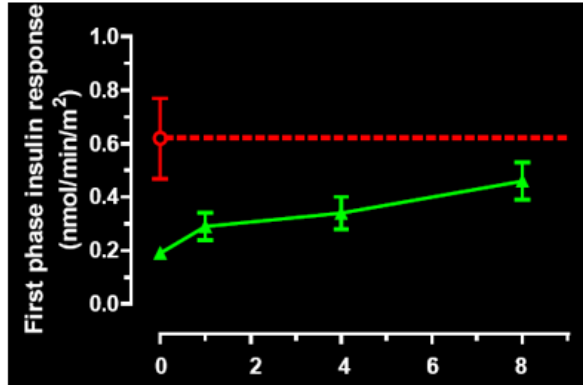
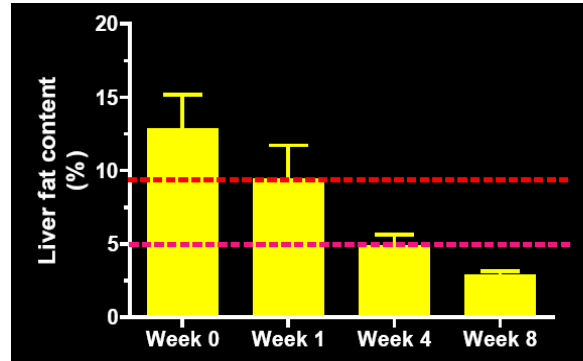
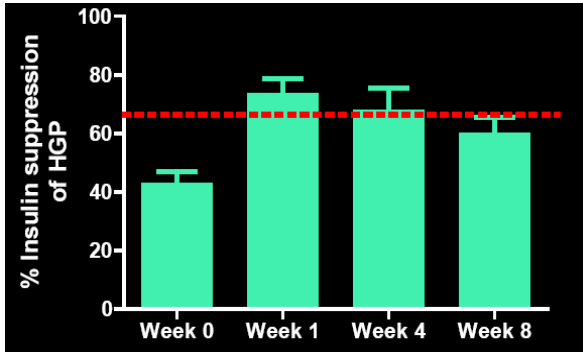


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Reversal of type 2 diabetes: normalisation of beta cell function in association with decreased pancreas and liver triacylglycerol





Primary care-led weight management for remission of type 2 diabetes (DiRECT): an open-label, cluster-randomised trial

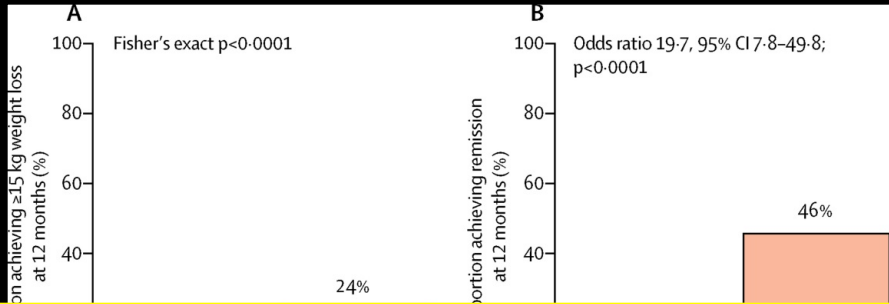
Prof Michael EJ Lean, MD, Wilma S Leslie, PhD, Alison C Barnes, PGDip, Naomi Brosnahan, PGDip, George Thom, MSc, Louise McCombie, BSc, Carl Peters, MB, Sviatlana Zhyzhneuskaya, MD, Ahmad Al-Mrabeh, PhD, Kieren G Hollingsworth, PhD, Angela M Rodrigues, PhD, Lucia Rehackova, PhD, Prof Ashley J Adamson, PhD, Prof Falko F Sniehotta, PhD, Prof John C Mathers, PhD, Hazel M Ross, BSc, Yvonne McIlvenna, MSc, Renae Stefanetti, PhD, Prof Michael Trenell, PhD, Paul Welsh, PhD, Sharon Kean, Prof Ian Ford, PhD, Alex McConnachie, PhD, Prof Naveed Sattar, FMedSci, Prof Roy Taylor, MD

The Lancet

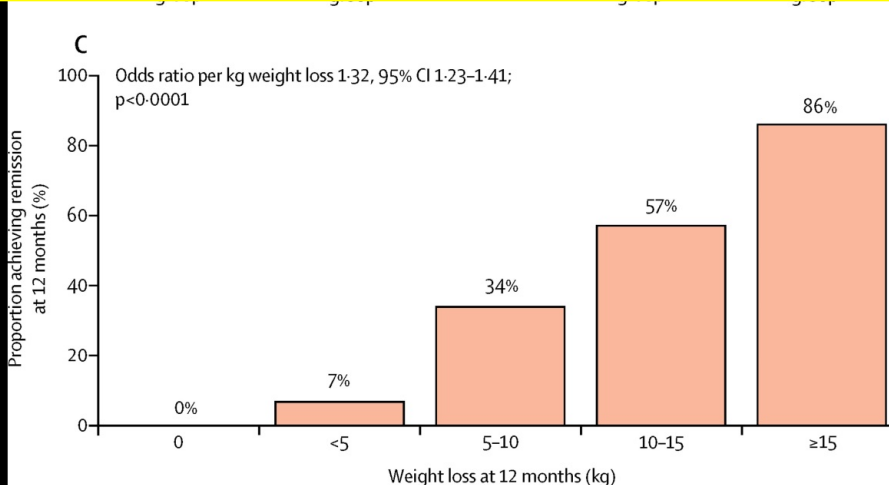
Volume 391, Issue 10120, Pages 541-551 (February 2018)

DOI: 10.1016/S0140-6736(17)33102-1





Remission of type 2 diabetes is a practical target for primary care





Diabetologia

<https://doi.org/10.1007/s00125-018-4729-5>



CONSENSUS REPORT



CrossMark

Management of hyperglycaemia in type 2 diabetes, 2018. A consensus report by the American Diabetes Association (ADA) and the European Association for the Study of Diabetes (EASD)

Melanie J. Davies^{1,2} • David A. D'Alessio³ • Judith Fradkin⁴ • Walter N. Kernan⁵ • Chantal Mathieu⁶ •
Geltrude Mingrone^{7,8} • Peter Rossing^{9,10} • Apostolos Tsapas¹¹ • Deborah J. Wexler^{12,13} • John B. Buse¹⁴

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Consensus recommendation

All overweight and obese patients with diabetes should be advised of the health benefits of weight loss and encouraged to engage in a programme of intensive lifestyle management, which may include food substitution.

Non-surgical energy restriction for weight loss If a patient wishes to aim for remission of type 2 diabetes, particularly within 6 years of diagnosis, evidence-based weight management programmes are often successful.

The most effective non-surgical strategies for weight reduction involve food substitution and intensive, sustained counselling (e.g. 12–26 individual counselling sessions over 6–12 months). Among adults with type 2 diabetes, meal replacement (825–853 kcal/day [3450–3570 kJ/day] formula-diet for



Conclusioni



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È un trattamento sicuro ed efficace e rappresenta uno strumento utile nel percorso del paziente affetto da obesità grave complicata da comorbidità metaboliche.

Rappresenta l'unica alternativa medica alla chirurgia bariatrica per quanto riguarda la remissione del diabete e deve essere considerata come opzione terapeutica da proporre al paziente motivato al cambiamento.



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Grazie per la vostra attenzione