

Δίαιτες υψηλής πρωτεΐνης και Σακχαρώδης Διαβήτης

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ΟΡΙΣΜΟΙ-ΣΥΣΤΑΣΕΙΣ

WIKIPEDIA

Διατροφή υψηλή σε πρωτεΐνες

Μια δίαιτα πλούσια σε πρωτεΐνες είναι χαμηλής περιεκτικότητας η σε υδατάνθρακες η σε λίπη. Παραδείγματα τροφίμων πλούσιων σε πρωτεΐνες είναι το κρέας, κοτόπουλο, ψάρια αυγά, η σόγια, τα φασόλια. Μια δίαιτα θεωρείται υψηλή σε πρωτεΐνες αν η ημερήσια πρόσληψη πρωτεΐνης είναι υψηλότερη του 15% της συνολικής ενεργειακής πρόσληψης.

The free dictionary

Διατροφή υψηλή σε πρωτεΐνες

Μια διατροφή που προσφέρει περισσότερο από 15% της ενεργειακής πρόσληψης από πρωτεΐνες. Παραδοσιακά οι δίαιτες υψηλής πρωτεϊνικής περιεκτικότητας είναι δίαιτες χαμηλής περιεκτικότητας σε υατάνθρακες. Ορισμένες έρευνες δείχνουν ότι δίαιτες με υψηλή περιεκτικότητα σε πρωτεΐνες μπορεί να οδηγήσουν σε μείωση της όρεξης κυρίως μέσα από τον μηχανισμό της παραγωγής κετονικών σωμάτων. Επιπλέον η αύξηση της θερμογένεσης οδηγεί σε μειωμένη χρησιμοποίηση των προσλαμβανόμενων θερμίδων από πρωτεΐνες. Η μακροπρόθεσμη επιτυχία των πρωτεϊνικών διατροφών παραμένει αμφισβητούμενη ενώ οι κίνδυνοι περιλαμβάνουν πρόβλήματα στα νεφρά, αύξηση των λιπιδίων του αίματος και αφυδάτωση.

DIET.COM

- **Διατροφή υψηλή σε πρωτεΐνες**
- Μια διατροφή που προσφέρει περισσότερο απο 20% της ενεργειακής πρόσληψης απο πρωτεΐνες . Μια πολύ υψηλή σε πρωτεΐνες δίαιτα είναι αυτή που περιέχει περισσότερο απο 30% της ενεργειακής πρόσληψης σε πρωτεΐνες .

ΤΡΟΦΙΜΑ ΠΛΟΥΣΙΑ ΣΕ ΠΡΩΤΕΙΝΕΣ



- ΣΥΣΤΑΣΕΙΣ

American Diabetes Association's 2019 Lifestyle Management Standards of Medical Care in Diabetes

- With respect to protein intake, it was emphasized that;
- (1) there isn't any evidence to suggest that adjusting protein intake from 1–1.5 g/kg body weight/day (15–20% total calories) will improve health.
- (2) research is inconclusive regarding the ideal amount of dietary protein to optimize either blood sugar control or cardiovascular disease (CVD).
- (3) “some research has found successful management of type 2 diabetes with meal plans including slightly higher levels of protein (20–30%), which may contribute to increased satiety.”
- Caution for those with diabetic kidney disease (i.e. urine albumin and/or reduced glomerular filtration rate) advise that dietary protein should be maintained at the recommended daily allowance of 0.8 g/kg body weight/day.

Σύμφωνα με τις διατροφικές συστάσεις της ADA δεν υπάρχει **ιδανική** (συνιστώμενη) προσληψη μακροπρεπτικών συστατικών για όλα τα άτομα με σακχαρώδη διαβήτη αλλά η διατροφή πρέπει να είναι εξατομικευμένη. Η διατροφή υψηλής πρωτεΐνης για απώλεια βάρους και γλυκαιμικό έλεγχο έχει γίνει δημοφιλής ανάμεσα σε ορισμένους ειδικούς. Πολλοί προτείνουν μια διατροφή χαμηλή σε υδατάνθρακες αλλά με μειωμένα ζωικά λίπη.

Dietary and nutritional approaches for prevention and management of type 2 diabetes

BMJ 2018

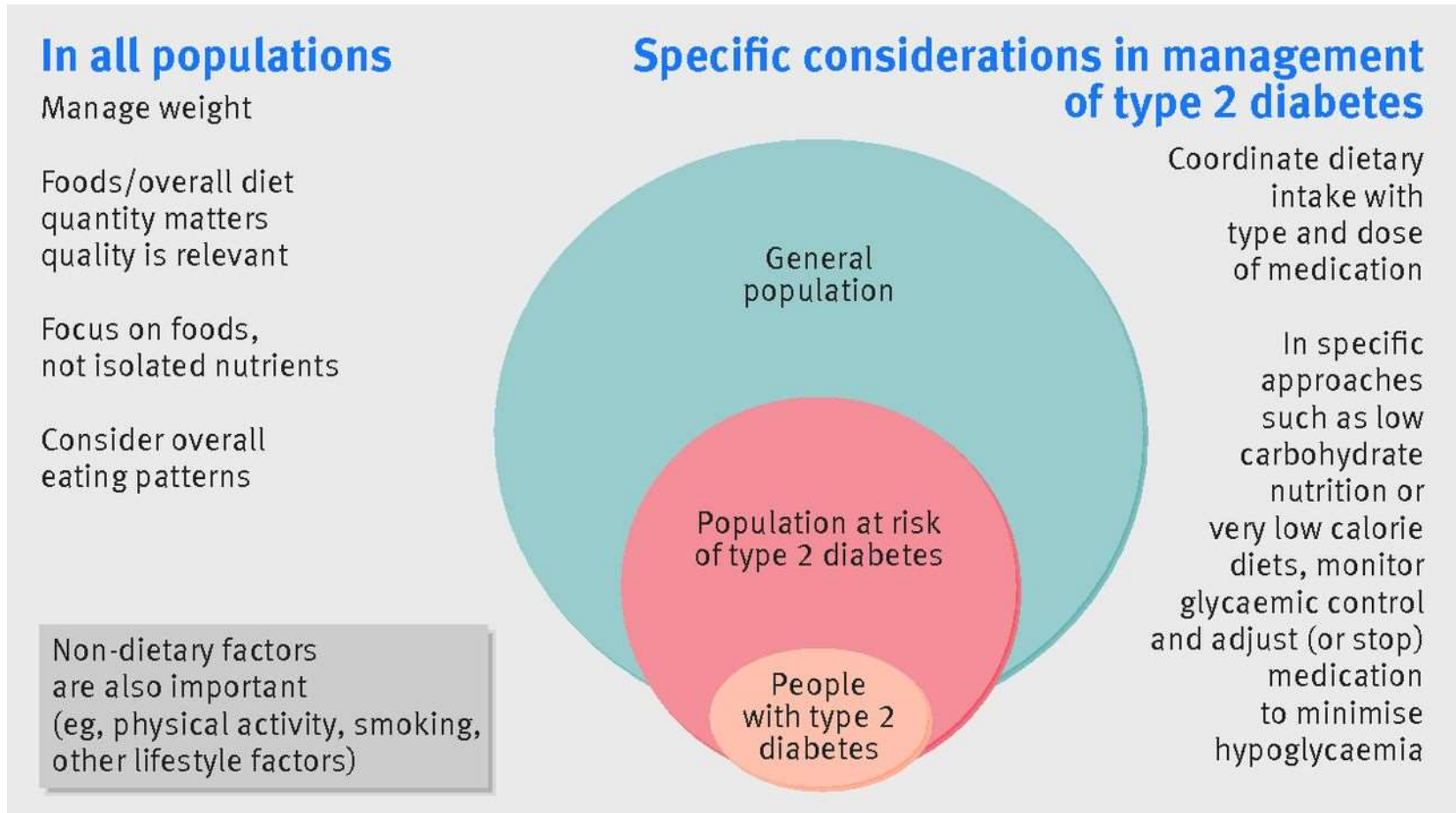


Table 3—Reviewed eating patterns

Type of eating pattern	Description
Mediterranean style (96)	Includes abundant plant food (fruits, vegetables, breads, other forms of cereals, beans, nuts and seeds); minimally processed, seasonally fresh, and locally grown foods; fresh fruits as the typical daily dessert and concentrated sugars or honey consumed only for special occasions; olive oil as the principal source of dietary lipids; dairy products (mainly cheese and yogurt) consumed in low to moderate amounts; fewer than 4 eggs/week; red meat consumed in low frequency and amounts; and wine consumption in low to moderate amounts generally with meals.
Vegetarian and vegan (97)	The two most common ways of defining vegetarian diets in the research are vegan diets (diets devoid of all flesh foods and animal-derived products) and vegetarian diets (diets devoid of all flesh foods but including egg [ovo] and/or dairy [lacto] products). Features of a vegetarian-eating pattern that may reduce risk of chronic disease include lower intakes of saturated fat and cholesterol and higher intakes of fruits, vegetables, whole grains, nuts, soy products, fiber, and phytochemicals.
Low fat (98)	Emphasizes vegetables, fruits, starches (e.g., breads/crackers, pasta, whole grains, starchy vegetables), lean protein, and low-fat dairy products. Defined as total fat intake <30% of total energy intake and saturated fat intake <10%.
Low carbohydrate (88)	Focuses on eating foods higher in protein (meat, poultry, fish, shellfish, eggs, cheese, nuts and seeds), fats (oils, butter, olives, avocado), and vegetables low in carbohydrate (salad greens, cucumbers, broccoli, summer squash). The amount of carbohydrate allowed varies with most plans allowing fruit (e.g., berries) and higher carbohydrate vegetables; however, sugar-containing foods and grain products such as pasta, rice, and bread are generally avoided. There is no consistent definition of "low" carbohydrate. In research studies, definitions have ranged from very low-carbohydrate diet (21–70 g/day of carbohydrates) to moderately low-carbohydrate diet (30 to <40% of calories from carbohydrates).
DASH (99)	Emphasizes fruits, vegetables, and low-fat dairy products, including whole grains, poultry, fish, and nuts and is reduced in saturated fat, red meat, sweets, and sugar-containing beverages. The most effective DASH diet was also reduced in sodium.



Dietary advice for different populations for the prevention and management of type 2 diabetes.



Nita G Forouhi et al. *BMJ* 2018;361:bmj.k2234



- **ΕΛΕΓΧΟΣ ΒΑΡΟΥΣ**

Dansinger ML, Gleason JA, Griffith JL, Selker HP, Schaefer EJ. Comparison of the Atkins, Ornish, Weight Watchers, and Zone diets for weight loss and heart disease risk reduction: a randomized trial. JAMA 2005;293:43-53.

- Higher loss with the Atkins diet
- sustained adherence to a diet, rather than diet type, predicted weight loss and reduction of cardiac risk factors.

Comparison of the Atkins, Zone, Ornish, and LEARN diets for change in weight and related risk factors among overweight premenopausal women: the A TO Z Weight Loss Study: a randomized trial.

Gardner CD, Kiazand A, Alhassan S, Kim S, Stafford RS, Balise RR, Kraemer HC, King AC.

JAMA. 2007 Jul 11;298(2):178.

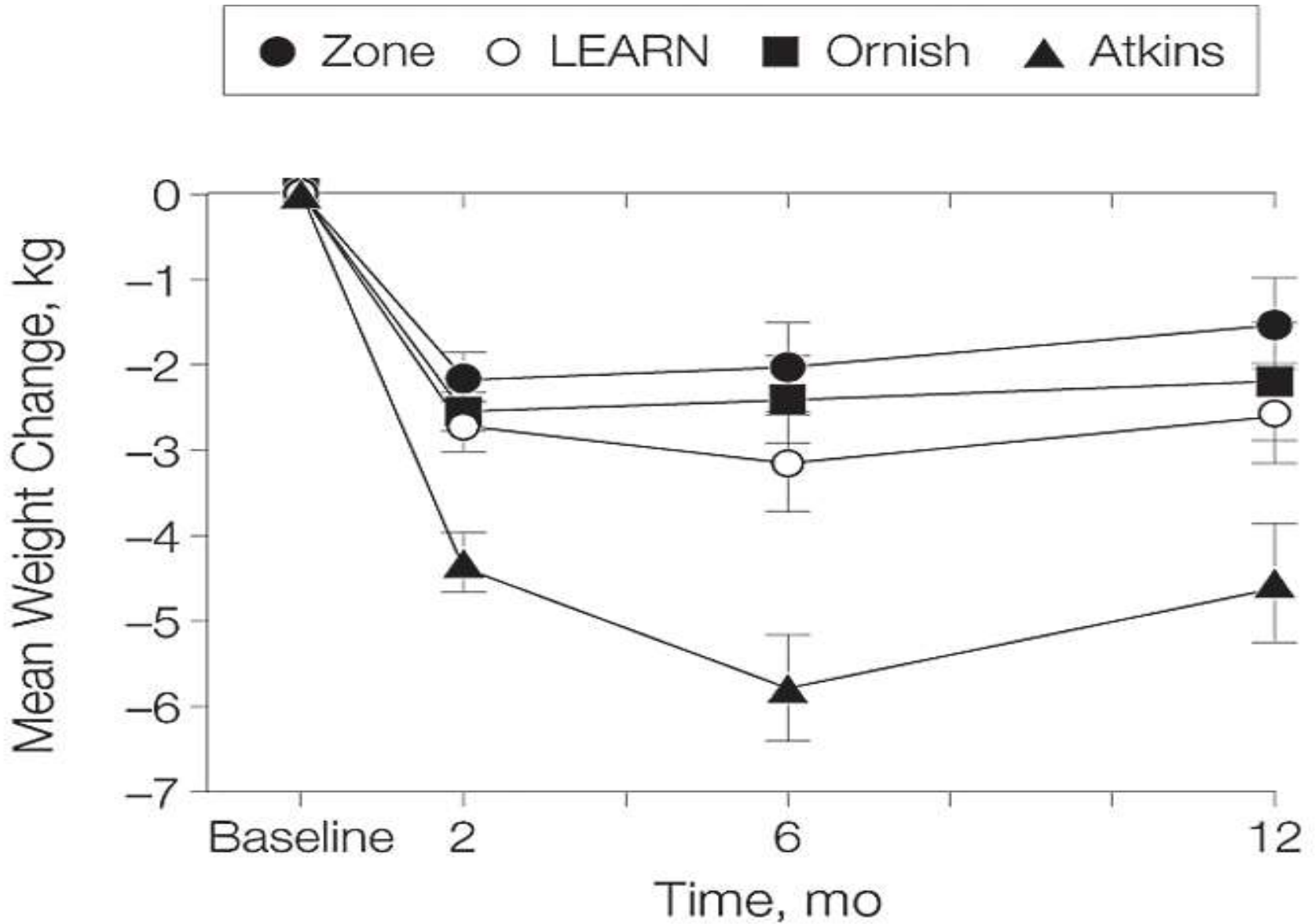


Figure 1. Weight Change Relative to Baseline

- **Conclusions:**

- In this study, premenopausal overweight and obese women assigned to follow the Atkins diet, which had the lowest carbohydrate intake, lost more weight at 12 months than women assigned to follow the Zone diet, and had experienced comparable or more favorable metabolic effects than those assigned to the Zone, Ornish, or LEARN diets. **While questions remain about long-term effects and mechanisms, a low-carbohydrate, high-protein, high-fat diet may be considered a feasible alternative recommendation for weight loss.**

Table 3. Changes in Body Weight in Individual Trials Comparing Low-Carbohydrate vs Low-Fat Diets

Trial	Follow-up, mo	Body Weight, Mean (SD), kg			
		Baseline		Difference	
		LC	LF	LC	LF
Brehm et al, ¹⁸ 2003	6	90 (8)	92 (8)	-7.2 (5)	-3.2 (4)
Foster et al, ¹⁹ 2003	6	99 (20)	98 (16)	-6.9 (7)	-3.2 (6)
	12	NA	NA	-7.2 (7)	-4.4 (8)
Samaha et al, ²⁰ 2003/ Stern et al, ²¹ 2004	6	130 (23)	132 (27)	-5.8 (9)	-1.9 (4)
	12	NA	NA	-5.1 (9)	-3.1 (8)
Yancy et al, ²² 2004	6	98 (15)	97 (19)	-12.0 (7)	-6.5 (7)
Dansinger et al, ²³ 2005	6	100 (14)	103 (15)	-3.2 (5)	-3.6 (7)
	12	NA	NA	-2.1 (5)	-3.3 (7)

.Nordmann AJ, Nordmann A, Briel M, Keller U, Yancy WS, Brehm BJ, Bucher HC. Effects of low-carbohydrate vs. low-fat diets on weight loss and cardiovascular risk factors. A metaanalysis of randomized controlled trials. *Arch Intern Med* 2006;**166**: 285–293.

Table 5. Changes in Total Cholesterol Values in Individual Trials Comparing Low-Carbohydrate vs Low-Fat Diets

Source	Follow-up, mo	Total Cholesterol, Mean (SD), mg/dL			
		Baseline		Difference	
		LC	LF	LC	LF
Foster et al, ¹⁹ 2003	6	201 (35)	193 (31)	6.6 (23)	-8.1 (23)
	12	NA	NA	0.4 (27)	-10.8 (19)
Samaha et al, ²⁰ 2003/ Stern et al, ²¹ 2004	6	182 (50)	193 (31)	1.9 (35)	-1.2 (31)
	12	NA	NA	6.2 (43)	-8.1 (35)
Yancy et al, ²² 2004	6	244 (35)	240 (35)	-8.1 (35)	-13.5 (39)
Dansinger et al, ²³ 2005	6	213 (31)	213 (35)	-0.8 (19)	-11.6 (27)
	12	NA	NA	-4.3 (23)	-10.8 (19)

Table 8. Changes in Triglyceride Values in Individual Trials Comparing Low-Carbohydrate vs Low-Fat Diets

Source	Follow-up, mo	Triglycerides, Mean (SD), mg/dL			
		Baseline		Difference	
		LC	LF	LC	LF
Foster et al, ¹⁹ 2003	6	133 (115)	124 (80)	-26.6 (44)	-15.9 (27)
	12	NA	NA	-37.2 (35)	-1.8 (62)
Samaha et al, ²⁰ 2003/ Stern et al, ²¹ 2004	6	186 (177)	177 (124)	-38.1 (80)	-7.1 (53)
	12	NA	NA	-57.6 (159)	4.4 (89)
Yancy et al, ²² 2004	6	159 (106)	195 (106)	-74.4 (80)	-27.5 (89)
Dansinger et al, ²³ 2005	6	151 (97)	168 (133)	-10.6 (44)	-2.7 (71)
	12	NA	NA	-1.8 (80)	5.3 (35)

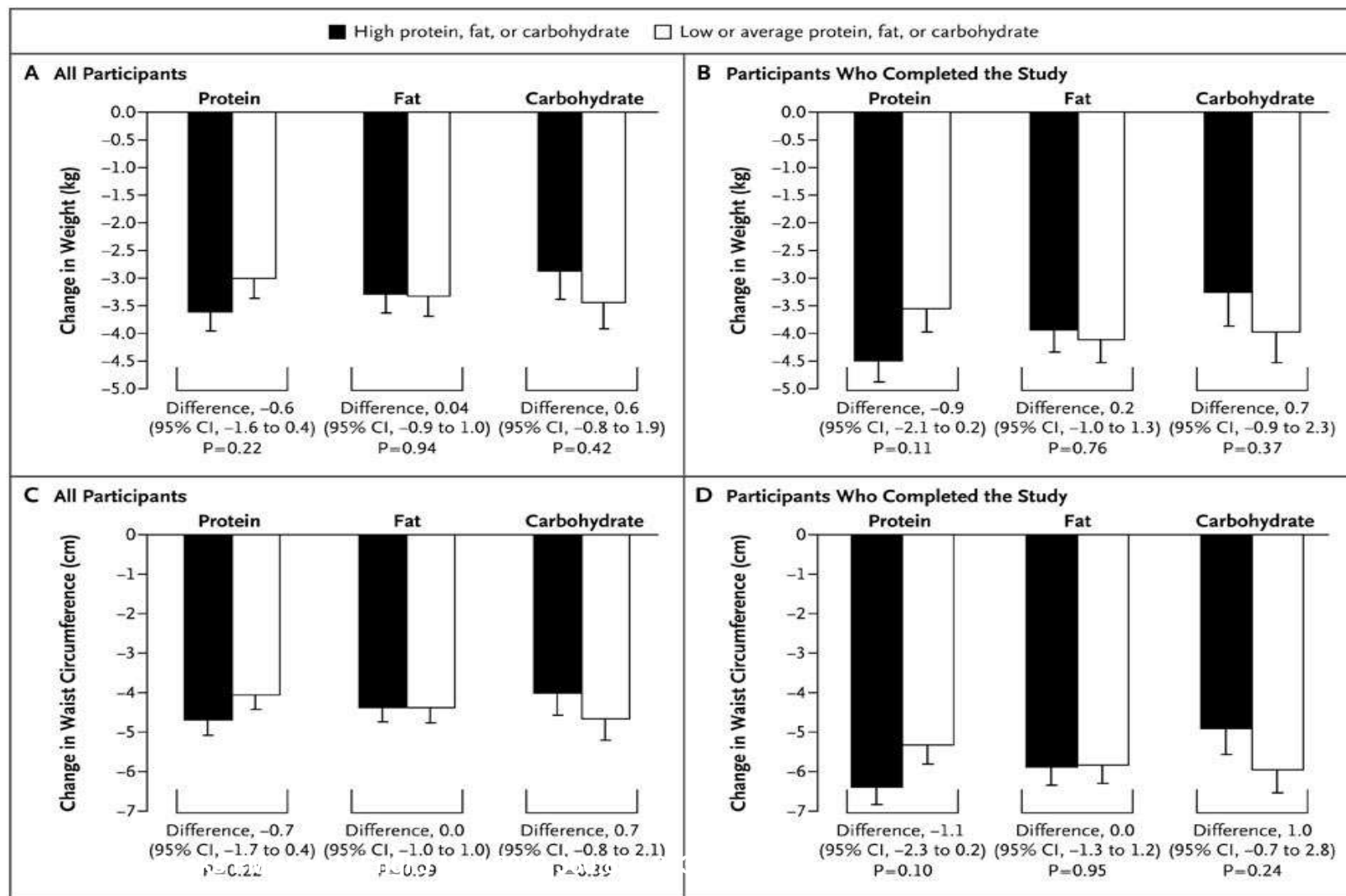
Original Article

Comparison of Weight-Loss Diets with Different Compositions of Fat, Protein, and Carbohydrates

Frank M. Sacks, M.D., George A. Bray, M.D., Vincent J. Carey, Ph.D., Steven R. Smith, M.D., Donna H. Ryan, M.D., Stephen D. Anton, Ph.D., Katherine McManus, M.S., R.D., Catherine M. Champagne, Ph.D., Louise M. Bishop, M.S., R.D., Nancy Laranjo, B.A., Meryl S. Leboff, M.D., Jennifer C. Rood, Ph.D., Lilian de Jonge, Ph.D., Frank L. Greenway, M.D., Catherine M. Loria, Ph.D., Eva Obarzanek, Ph.D., and Donald A. Williamson, Ph.D.

N Engl J Med Volume 360(9):859-873 February 26, 2009

Mean Change in Body Weight and Waist Circumference from Baseline to 2 Years According to Dietary Macronutrient Content



Shai I, Schwarzfuchs D, Henkin Y, Shahar DR, Witkow S, Greenberg I, et al. Weight loss with a low-carbohydrate, Mediterranean, or low-fat diet.
N Engl J Med 2008;359:229-41.

- A comparison of three diets, low-carbohydrate unrestricted energy, Mediterranean restricted energy, and low-fat restricted energy, on weight loss in moderately obese subjects over 2 y
- demonstrated significant decreases in body weight, blood pressure, and waist circumference with all diets; however, these were greater on the low-carbohydrate and Mediterranean diets than on the low-fat diet.
- Concomitant improvements in lipid profiles and other markers were also more favorable on the low-carbohydrate and Mediterranean diets

Weight Loss with a Low-Carbohydrate, Mediterranean, or Low-Fat Diet

Iris Shai, et al

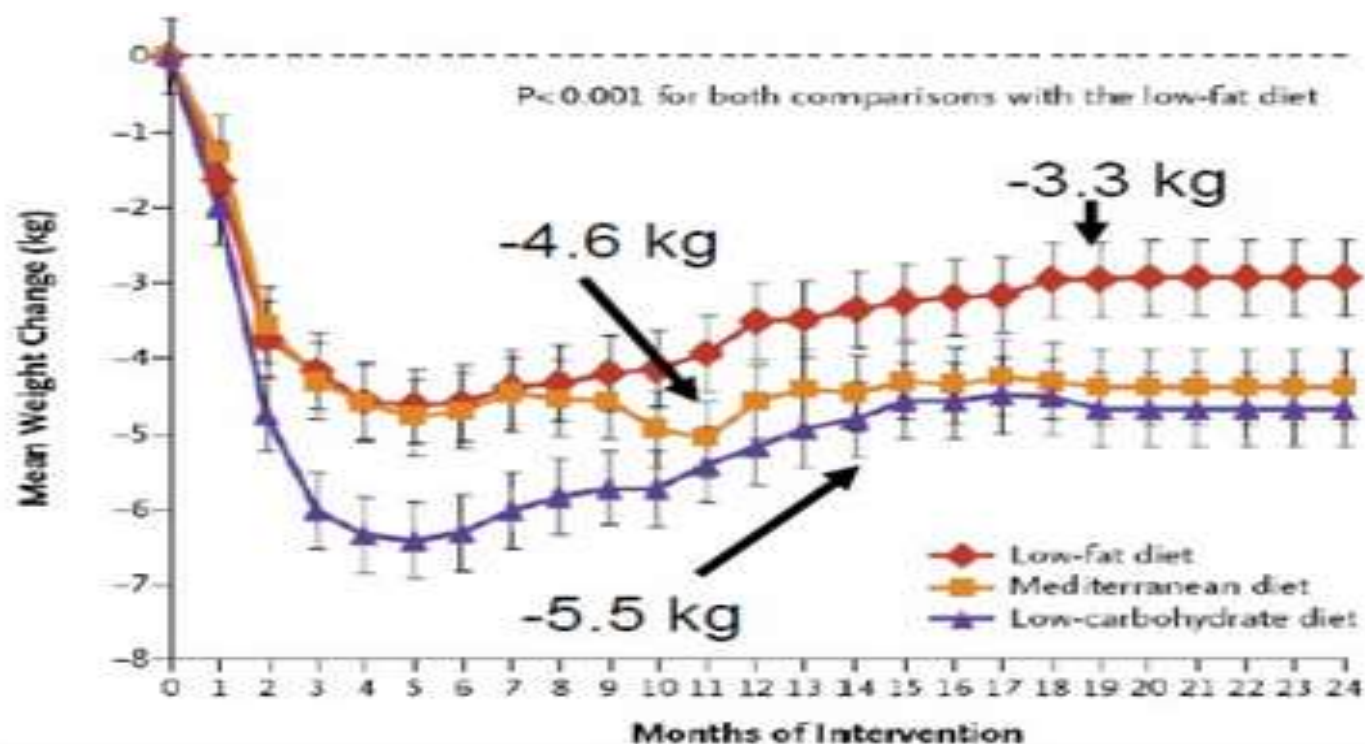


Figure 2. Weight Changes during 2 Years According to Diet Group.

Vertical bars indicate standard errors. To statistically evaluate the changes in weight measurements over time, generalized estimating equations were used, with the low-fat group as the reference group. The explanatory variables were age, sex, time point, and diet group.

The protective role of the mediterranean diet on the prevalence of metabolic syndrome in a population of Greek obese subjects.

[Paletas K](#), [Athanasiadou E](#), [Sarigianni M](#), [Paschos P](#), [Kalogirou A](#),
[Hassapidou M](#), [Tsapas A](#).

J. Am Coll Nutr., 2010, Feb, 29(1)41-5

OBJECTIVE:

The aim of the study was to evaluate and analyze the dietary habits in a population of Greek overweight and obese subjects and to investigate the potential associations between those patterns and the prevalence of metabolic syndrome components.

METHODS:

The study recruited 226 consecutive adult (30 men, 169 women) overweight or obese (body mass index >25 kg/m²) individuals attending the Metabolic Diseases Unit. Medical history, dietary history, and anthropometric parameters were recorded during the first visit. Fasting blood samples were collected for biochemistry assaying.

RESULTS:

According to the nutrient intake history and Mediterranean Diet Scale (MDS), participants were divided into 3 groups: those adhering to the MD and those not following the MD, who were further subdivided into the high-carbohydrate (HC) and high-fat (HF) diet groups according to the source of maximum energy intake.

Adherence to the MD was associated with a lower prevalence of metabolic syndrome (27.3%, 69.2%, and 60.4% in MD, HC, and HF respectively, $p = 0.006$), lower low-density lipoprotein cholesterol ($p = 0.009$, MD vs. HF), and lower postchallenge glucose values ($p = 0.028$, MD vs. HF).

CONCLUSIONS:

Adherence to the MD seems to be declining among Greek overweight and obese subjects, a phenomenon that is associated with an increase in the prevalence of the metabolic syndrome.

Effect of Low-Fat vs Low-Carbohydrate Diet on 12-Month Weight Loss in Overweight Adults and the Association With Genotype Pattern or Insulin Secretion

The DIETFITS Randomized Clinical Trial
[Christopher D. Gardner](#) et al, JAMA, 2018.

- **Question** What is the effect of a healthy low-fat (HLF) diet vs a healthy low-carbohydrate (HLC) diet on weight change at 12 months and are these effects related to genotype pattern or insulin secretion?
- **Findings** In this randomized clinical trial among 609 overweight adults, weight change over 12 months was not significantly different for participants in the HLF diet group (−5.3 kg) vs the HLC diet group (−6.0 kg), and there was no significant diet-genotype interaction or diet-insulin interaction with 12-month weight loss.
- **Meaning** There was no significant difference in 12-month weight loss between the HLF and HLC diets, and neither genotype pattern nor baseline insulin secretion was associated with the dietary effects on weight loss.

- ΣΥΝΘΕΣΗ ΣΩΜΑΤΟΣ

Effects of Adherence to a Higher Protein Diet on Weight Loss, Markers of Health, and Functional Capacity in Older Women Participating in a Resistance-Based Exercise Program

[Nutrients](#). 2018 Aug; 10(8)

- In total, 54 overweight and obese females (65.9 ± 4.7 years; 78.7 ± 11 kg, 30.5 ± 4.1 kg/m², $43.5 \pm 3.6\%$ fat) were randomly assigned to an exercise-only group (E), an exercise plus hypo-energetic higher carbohydrate (HC) diet, or a higher protein diet (HP) diet. Participants followed their respective diet plans and performed a supervised 30-min circuit-style resistance exercise program 3 d/wk. Participants were tested at 0, 10, and 14 weeks
- Results from this study indicate that older but otherwise healthy women following a higher protein diet while participating in a circuit-style resistance-exercise program experienced greater loss in body weight, fat mass, percent body fat, and waist circumference than women following a higher carbohydrate weight loss diet. Additionally, weight loss can be achieved in this population without significant reductions in fat-free mass or resting energy expenditure whether exercising alone or following the HC or HP diets. Participants in the HP group also experienced better management of blood glucose and appetite-related hormones.

- ΠΡΟΛΗΨΗ ΔΙΑΒΗΤΗ

[Diabetes Care](#), 2014 Jul

Dietary protein intake and incidence of type 2 diabetes in Europe: the EPIC-InterAct Case-Cohort Study.

Van Nielen M et al.

- **OBJECTIVE:**

- The long-term association between dietary protein and type 2 diabetes incidence is uncertain. We aimed to investigate the association between total, animal, and plant protein intake and the incidence of type 2 diabetes.

- **RESEARCH DESIGN AND METHODS:**

- The prospective European Prospective Investigation into Cancer and Nutrition (EPIC)-InterAct case-cohort study consists of 12,403 incident type 2 diabetes cases and a stratified subcohort of 16,154 individuals from eight European countries, with an average follow-up time of 12.0 years. Pooled country-specific hazard ratios (HRs) and 95% CI of prentice-weighted Cox regression analyses were used to estimate type 2 diabetes incidence according to protein intake.

- **CONCLUSIONS:**

- High total and animal protein intake was associated with a modest elevated risk of type 2 diabetes in a large cohort of European adults. In view of the rapidly increasing prevalence of type 2 diabetes, limiting iso-energetic diets high in dietary proteins, particularly from animal sources, should be considered.

- ΕΠΙΔΡΑΣΗ ΣΤΗΝ ΑΝΤΙΣΤΑΣΗ ΣΤΗΝ ΙΝΣΟΥΛΙΝΗ

Use of Novel High-Protein Functional Food Products as Part of a Calorie-Restricted Diet to Reduce Insulin Resistance and Increase Lean Body Mass in Adults: A Randomized Controlled Trial

Carol S. Johnston et al
Nutrients 9(11):1182,2017

- Significant reductions in insulin resistance (IR) can be achieved by either calorie restriction or by the increase of lean mass. However, calorie restriction usually results in significant loss of lean mass. A 6-week randomized controlled feeding trial was conducted to determine if a calorie-restricted, high-protein diet (~125 g protein/day consumed evenly throughout the day) using novel functional foods would be more successful for reducing IR in comparison to a conventional diet (~80 g protein/day) with a similar level of calorie restriction. Healthy adults (age 20–75 years; body mass index, 20–42 kg/m²) with raised triglyceride/high-density lipoprotein ratios were randomly assigned to the control group (CON: test foods prepared using gluten-free commercial pasta and cereal) or to the high-protein group (HPR: test foods prepared using novel high-protein pasta and cereal both rich in wheat gluten). Mean weight loss did not differ between groups (-2.7 ± 2.6 and -3.2 ± 3.0 kg for CON (n = 11) and HPR (n = 10) respectively, p = 0.801); however, the 6-week change in fat-free mass (FFM) differed significantly between groups (-0.5 ± 1.5 and $+1.5 \pm 3.8$ kg for CON and HPR respectively, p = 0.008). IR improved in HPR vs. CON participants (homeostasis model assessment-estimated insulin resistance [HOMA-IR] change: -1.7 ± 1.4 and -0.7 ± 0.7 respectively; p = 0.020). The change in HOMA-IR was related to the change in FFM among participants (r = -0.511, p = 0.021). **Thus, a high-protein diet using novel functional foods combined with modest calorie restriction was 140% more effective for reducing HOMA-IR in healthy adults compared to a lower protein, standard diet with an equal level of calorie restriction**

- ΔΙΑΤΗΡΗΣΗ ΤΟΥ ΑΠΟΛΕΣΘΕΝΤΟΣ ΒΑΡΟΥΣ

SYSTEMATIC REVIEW AND META-ANALYSIS

Long term weight maintenance after advice to consume low carbohydrate, higher protein diets – A systematic review and meta analysis

P.M. Clifton ^{a,*}, D. Condo ^{a,b}, J.B. Keogh ^a

Weight

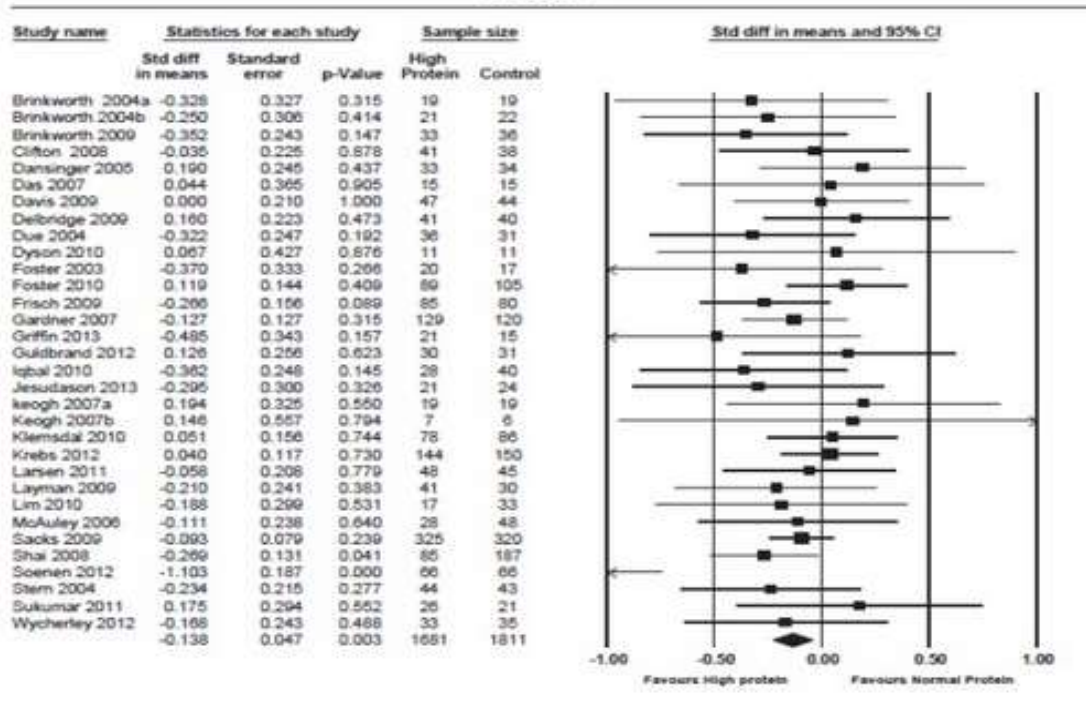


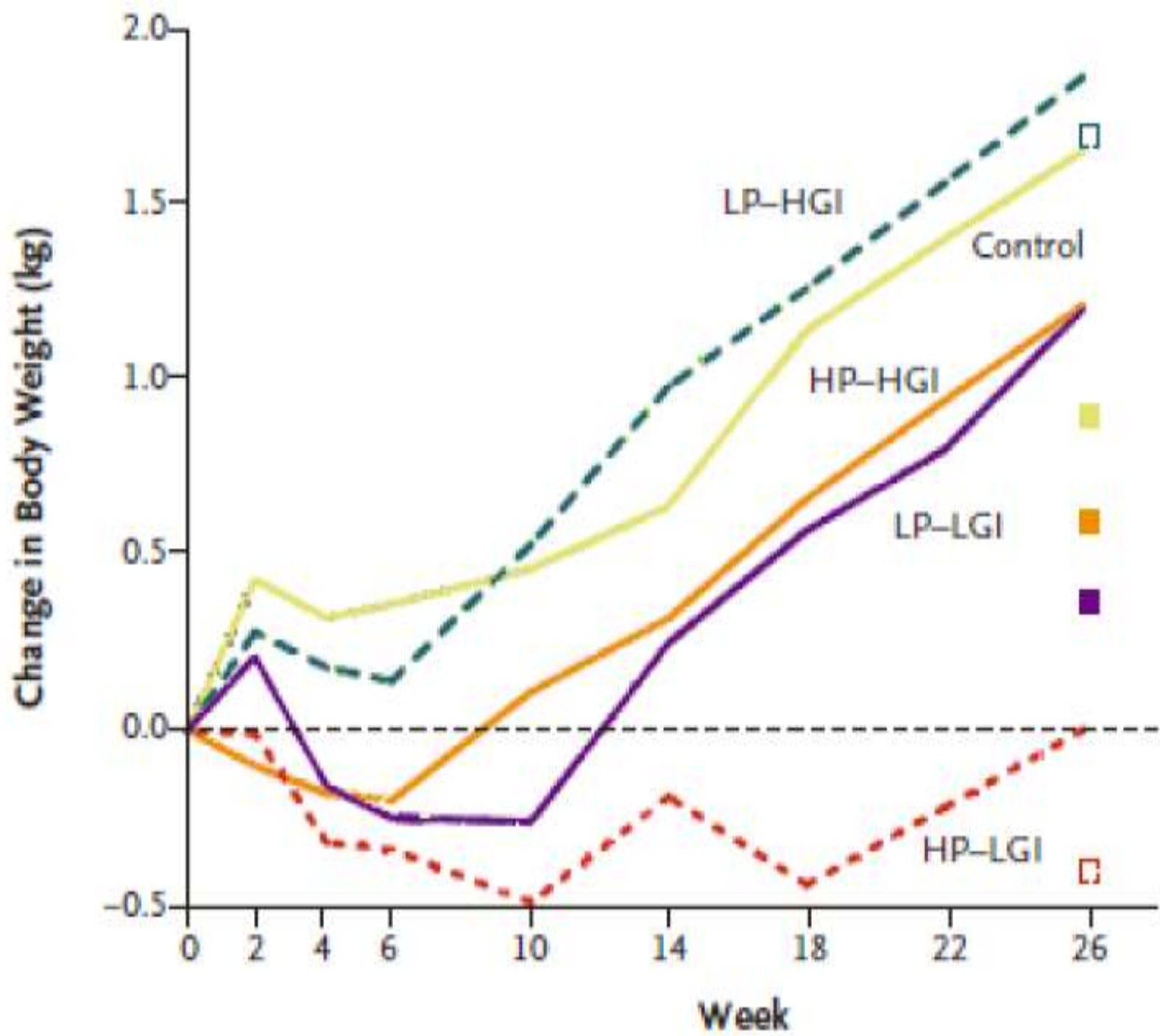
Figure 1 Random effects meta analysis of weight from 32 separate studies. Data shown are standardised means and 95% confidence intervals.

Diets with High or Low Protein content and Glycemic index for weight loss maintenance (the DIOGENES STUDY)

- The Diogenes ('Diet, obesity and genes') study was conducted across 8 European countries and involved over 700 families with one overweight or obese parent and one healthy child (irrespective of weight).
- The study involved adult participants undergoing an initial 8-week low-energy diet to lose weight, with participants losing an average of 11kg.

..Description of the program

- Those who completed the weight-loss phase, and their families, then followed one of five different dietary regimes for 6 months:
- Group 1: Low protein/low GI
- Group 2: Low protein/high GI
- Group 3: High protein/low GI
- Group 4: High protein/high GI
- Group 5: Control diet
- The target difference was 15 GI U between the LGI/HGI groups and 13 protein percentage points between the LP/HP groups.
- All the diets were low in fat (>30% of EI).-



- In conclusion, in this large, randomized study, a diet that was moderately high in protein content and slightly reduced in glycemic index improved the rate of completion of the intervention and maintenance of weight loss and therefore appears to be ideal for the prevention of weight regain.

ΣΥΜΠΕΡΑΣΜΑΤΑ

- Οι δίαιτες υψηλής πρωτεΐνης με μειωμένη πρόσληψη υδατανθράκων οδηγούν βραχυπρόθεσμα σε μεγαλύτερη απώλεια βάρους συγκριτικά με δίαιτες χαμηλής περιεκτικότητας σε λίπη και υψηλής περιεκτικότητας σε υδατάνθρακες. Στις περισσότερες μελέτες η διαφορά στην απώλεια βάρους δεν διατηρείται μακροπρόθεσμα.
- Οι πρωτεϊνικές δίαιτες φαίνεται να βοηθούν στην διατήρηση της μυϊκής μάζας μετά την απώλεια βάρους
- Ορισμένες μελέτες δείχνουν ότι αυξάνουν τον κορεσμό, τη θερμογένεση και τη γλυκαιμική ρύθμιση στο διαβήτη.
- Η αύξηση της πρωτεϊνικής πρόσληψης μπορεί να βοηθήσει στην διατήρηση του απολεσθέντος βάρους.
- Η υψηλή πρωτεϊνική πρόσληψη από ζωικές πρωτεΐνες έχει συνδεθεί με αυξημένη συχνότητα σακχαρώδη διαβήτη σε πληθυσμιακές μελέτες
- Οι κετογονικές δίαιτες έχουν διάφορες παρενέργειες
- Δεν είναι κατάλληλες για όλους και θα πρέπει να συστήνονται εξατομικευμένα.



Σας ευχαριστούμε

