



A eficácia do binômio nutrição e suplementação na atividade física

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O que devo comer?

Alimento
Complemento
Suplemento



Escolha eficaz e eficiente



SUPLEMENTOS



PROGRAMA ALIMENTAR



PROGRAMA DE TREINAMENTO



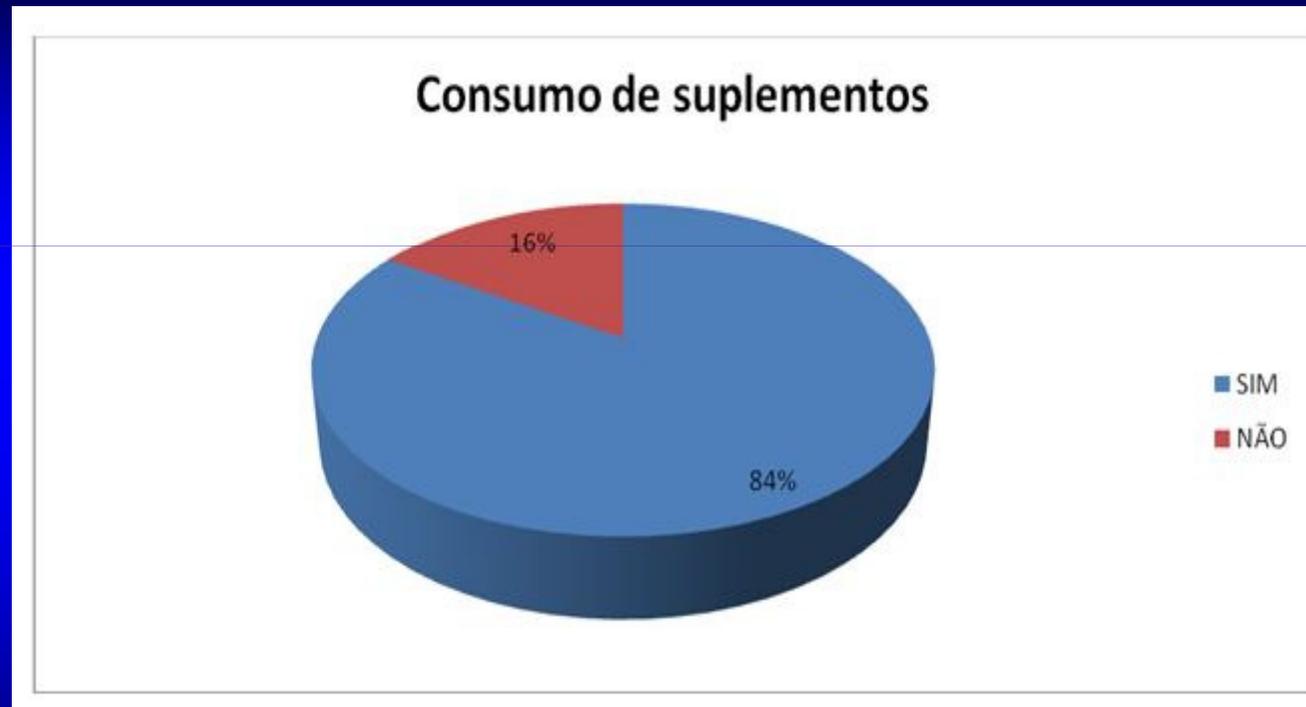
Mitos ou verdades?

- Carboidrato à noite engorda?
- Consumir muita proteína causa dano renal e hepático?
- Gestantes e lactantes não podem tomar suplementos?
- Suplementos são anabolizantes e fazem mal à saúde?
- Vitaminas engordam?
- Qual o segredo para ter o corpo perfeito?

Nutre Brasil/Faculdade Inspirar Curitiba-PR, 2017



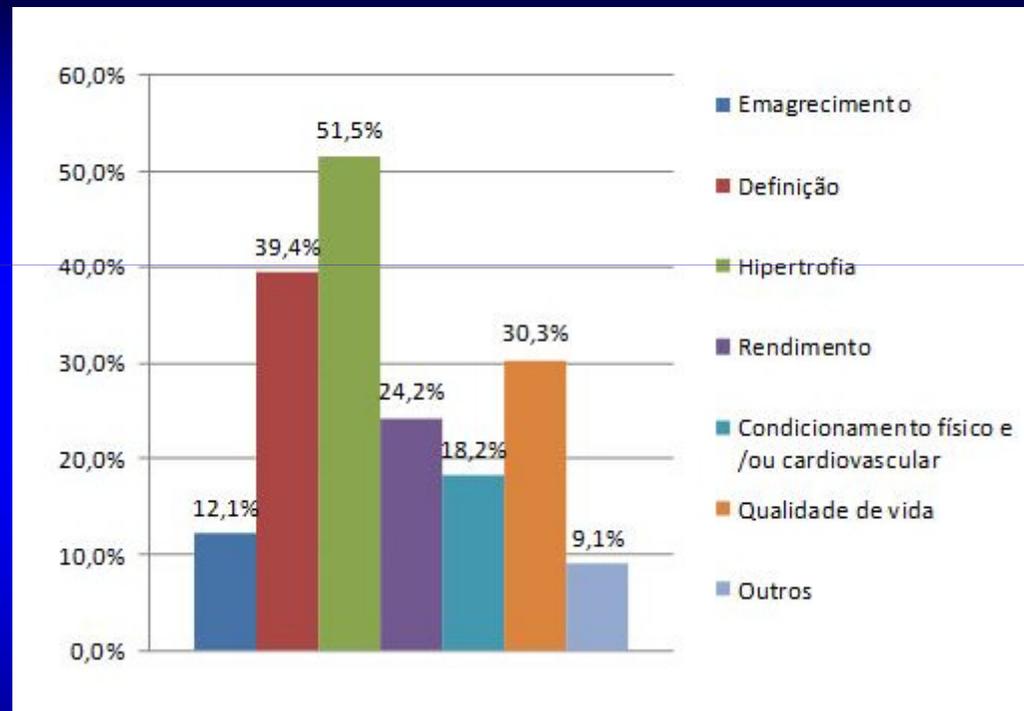
Consumo de suplementos



Tipo de suplemento



Motivação para o uso



Suplementos



Achados científicos

Suplementos e atividade física



RESEARCH ARTICLE

Open Access

The effects of consuming a high protein diet (4.4 g/kg/d) on body composition in resistance-trained individuals

Jose Antonio*, Corey A Peacock, Anya Ellerbroek, Brandon Fromhoff and Tobin Silver

Abstract

Background: The consumption of dietary protein is important for resistance-trained individuals. It has been posited that intakes of 1.4 to 2.0 g/kg/day are needed for physically active individuals. Thus, the purpose of this investigation was to determine the effects of a very high protein diet (4.4 g/kg/d) on body composition in resistance-trained men and women.

Methods: Thirty healthy resistance-trained individuals participated in this study (mean \pm SD; age: 24.1 \pm 5.6 yr; height: 171.4 \pm 8.8 cm; weight: 73.3 \pm 11.5 kg). Subjects were randomly assigned to one of the following groups: Control (CON) or high protein (HP). The CON group was instructed to maintain the same training and dietary habits over the course of the 8 week study. The HP group was instructed to consume 4.4 grams of protein per kg body weight daily. They were also instructed to maintain the same training and dietary habits (e.g. maintain the same fat and carbohydrate intake). Body composition (Bod Pod®), training volume (i.e. volume load), and food intake were determined at baseline and over the 8 week treatment period.

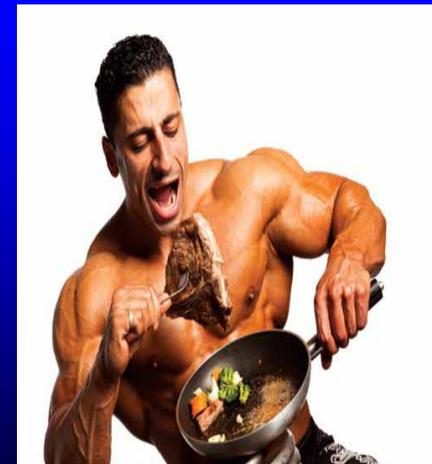
Results: The HP group consumed significantly more protein and calories pre vs post ($p < 0.05$). Furthermore, the HP group consumed significantly more protein and calories than the CON ($p < 0.05$). The HP group consumed on average 307 \pm 69 grams of protein compared to 138 \pm 42 in the CON. When expressed per unit body weight, the HP group consumed 4.4 \pm 0.8 g/kg/d of protein versus 1.8 \pm 0.4 g/kg/d in the CON. There were no changes in training volume for either group. Moreover, there were no significant changes over time or between groups for body weight, fat mass, fat free mass, or percent body fat.

Conclusions: Consuming 5.5 times the recommended daily allowance of protein has no effect on body composition in resistance-trained individuals who otherwise maintain the same training regimen. This is the first interventional study to demonstrate that consuming a hypercaloric high protein diet does not result in an increase in body fat.

Keywords: Protein, Diet, Body composition, Exercise, Supplements



O grupo que ingeriu uma dieta hiperprotéica, 5,5 vezes a dose diária recomendada não apresentou diferença significativa com relação à composição corporal.



Review

Open Access

Dietary protein safety and resistance exercise: what do we really know?

Lonnie M Lowery*^{1,2} and Lorena Devia¹

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Abstract

Resistance trainers continue to receive mixed messages about the safety of purposely seeking ample dietary protein in their quest for stimulating protein synthesis, improving performance, or maintaining health. Despite protein's lay popularity and the routinely high intakes exhibited by strength athletes, liberal and purposeful protein consumption is often maligned by "experts". University textbooks, instructors, and various forms of literature from personal training groups and athletic organizations continue to use dissuasive language surrounding dietary protein. Due to the widely known health benefits of dietary protein and a growing body of evidence on its safety profile, this is unfortunate. In response, researchers have critiqued unfounded educational messages. As a recent summarizing example, the *International Society of Sports Nutrition (ISSN) Position Stand: Protein and Exercise* reviewed general literature on renal and bone health. The concluding remark that "Concerns that protein intake within this range [1.4 – 2.0 g/kg body weight per day] is unhealthy are unfounded in healthy, exercising individuals." was based largely upon data from non-athletes due to "a lack of scientific evidence". Future studies were deemed necessary. This assessment is not unique in the scientific literature. Investigators continue to cite controversy, debate, and the lack of direct evidence that allows it. This review discusses the few existing safety studies done specific to athletes and calls for protein research specific to resistance trainers. Population-specific, long term data will be necessary for effective education in dietetics textbooks and from sports governing bodies.



As informações são contraditórias sobre o utilização de dietas ricas em proteína em busca de aumentar a síntese protéica, melhorar desempenho e manter a saúde.



RESEARCH

Open Access

Effect of a low dose whey/guar preload on glycemic control in people with type 2 diabetes-a randomised controlled trial

Peter M Clifton^{1*}, Claire Galbraith² and Leah Coles²

Diabetologia (2014) 57:1807–1811
DOI 10.1007/s00125-014-3305-x

SHORT COMMUNICATION

Incretin, insulinotropic and glucose-lowering effects of whey protein pre-load in type 2 diabetes: a randomised clinical trial

Daniela Jakubowicz · Oren Froy · Bo Ahrén ·
Mona Boaz · Zohar Landau · Yosefa Bar-Dayan ·
Tali Ganz · Maayan Barnea · Julio Wainstein



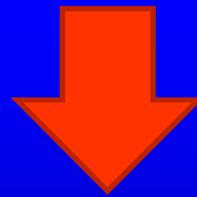
O efeito do uso de Whey protein com fibra foi positivo em indivíduos com diabetes do tipo II, pois reduziu a glicemia nas primeiras 3 horas.



Micronutrient Supplementation Improves Physical Performance Measures in School-Age Children¹⁻⁴



Suplementação de micronutrientes em dietas carente



Aumento do desempenho físico

**Micronutrient Supplementation Improves
Physical Performance Measures in
School-Age Children¹⁻⁴**



Não houve diferença no crescimento durante o período de 4 meses de suplementação entre os grupos

A suplementação de micronutrientes não promoveu aumento na força muscular, velocidade ou reflexo

**Micronutrient Supplementation Improves
Physical Performance Measures in
School-Age Children¹⁻⁴**



A suplementação de micronutrientes em crianças só promove efeito em casos de carências nutricionais

Oral nutritional supplement fortified with beta-alanine improves physical working capacity in older adults: A randomized, placebo-controlled study

Suplementação e benefícios

Dose: 2,4g de beta-alanina
Duração: 12 semanas



Benefícios:
Redução no limiar da fadiga (28,6%)

Effect of calcium β -hydroxy- β -methylbutyrate (CaHMB) with and without resistance training in men and women 65+ yrs: A randomized, double-blind pilot trial



Fase I – Suplementação de 24 semanas melhorou o total de massa magra e força, sem a presença do exercício físico.

Fase II – O exercício aumentou a massa magra e força mesmo sem o uso de suplementação.

A suplementação com exercício reduziu o total de massa gorda e aumentou de massa magra.

Effect of calcium β -hydroxy- β -methylbutyrate (CaHMB) with and without resistance training in men and women 65+ yrs: A randomized, double-blind pilot trial

A suplementação de HMB isolado ou combinado auxilia idosos no ganho de força muscular



Experimental Gerontology 48 (2015) 1303–1310

International Society of Sports Nutrition Position Stand: beta-hydroxy-beta-methylbutyrate (HMB)

1. O HMB pode ser usado para melhorar a recuperação pós-treino, atenuando a lesão muscular.
2. O maior benefício do HMB ocorre se consumido próximo ao treino.
3. O HMB parece ser mais eficaz se consumido durante 2 semanas antes da prova.
4. A dose diária recomendada é de 38mg/Kg de peso corporal com o objetivo de melhorar a hipertrofia do músculo esquelético, força e potência.

5. Atualmente, existem duas formas de apresentação do HMB: ligado ao cálcio (HMB-Ca) e na sua forma livre (HMB-FA). O HMB-FA parece ter melhor absorção e retenção plasmática. No entanto, não existem dados suficientes para recomendar uma forma em detrimento da outra.
6. O HMB demonstrou aumentar a massa magra e a funcionalidade em idosos e populações sedentárias.
7. A associação da ingestão de HMB com programa de exercício estruturado pode resultar em maiores diminuições na massa gorda.

8. Os mecanismos de ação do HMB incluem inibição da proteólise e aumento da síntese de proteína.
9. O consumo crônico de HMB é seguro tanto em jovens quanto em idosos.

Creatine Supplementation Associated or Not with Strength Training upon Emotional and Cognitive Measures in Older Women: A Randomized Double-Blind Study

Aumento da idade e diminuição da cognição

Novas hipóteses:
suplementação de creatina
para melhorar a cognição
em idosos



Creatine Supplementation Associated or Not with Strength Training upon Emotional and Cognitive Measures in Older Women: A Randomized Double-Blind Study

Creatina isolada ou combinada não promoveu benefícios no aspecto cognitivo

Treinamento de força isolado pode ser capaz de melhorar as medidas emocionais, mas não função cognitiva



RESEARCH ARTICLE

Open Access

Does long-term creatine supplementation impair kidney function in resistance-trained individuals consuming a high-protein diet?

Rebeca Lugaresi¹, Marco Leme¹, Vitor de Salles Painelli¹, Igor Hisashi Murai¹, Hamilton Roschel^{1,2,4}, Marcelo Tatit Sapienza³, Antonio Herbert Lancha Junior¹ and Bruno Gualano^{1,2*}



Abstract

Background: The aim of this study was to determine the effects of creatine supplementation on kidney function in resistance-trained individuals ingesting a high-protein diet.

Methods: A randomized, double-blind, placebo-controlled trial was performed. The participants were randomly allocated to receive either creatine (20 g/d for 5 d followed by 5 g/d throughout the trial) or placebo for 12 weeks. All of the participants were engaged in resistance training and consumed a high-protein diet (i.e., ≥ 1.2 g/Kg/d). Subjects were assessed at baseline (Pre) and after 12 weeks (Post). Glomerular filtration rate was measured by ^{51}Cr -EDTA clearance. Additionally, blood samples and a 24-h urine collection were obtained for other kidney function assessments.

Results: No significant differences were observed for ^{51}Cr -EDTA clearance throughout the trial (Creatine: Pre 101.42 ± 13.11 , Post 108.78 ± 14.41 mL/min/1.73m²; Placebo: Pre 103.29 ± 17.64 , Post 106.68 ± 16.05 mL/min/1.73m²; group x time interaction: $F = 0.21$, $p = 0.64$). Creatinine clearance, serum and urinary urea, electrolytes, proteinuria, and albuminuria remained virtually unchanged.

Conclusions: A 12-week creatine supplementation protocol did not affect kidney function in resistance-trained healthy individuals consuming a high-protein diet; thus reinforcing the safety of this dietary supplement.

Trial registration: ClinicalTrials.gov NCT01817673

Keywords: Glomerular filtration rate, ^{51}Cr -EDTA clearance, Side effects

A ingestão de uma suplementação de creatina não comprometeu a função renal em indivíduos saudáveis que treinam resistência e consomem dieta rica em proteína.



A Suplementação de Creatina Prejudica a Função Renal?

Does Creatine Supplementation Harm Renal Function?

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RESUMO

Enquanto o consumo de creatina por atletas e praticantes de atividade física tem crescido vertiginosamente, os efeitos adversos desse suplemento continuam sendo alvos de calorosos debates científicos, sobretudo no que se refere à função renal. O objetivo dessa revisão é descrever as falhas metodológicas e lacunas na literatura, que contribuem para a divergência do tema. Relatos de caso sugerem que a creatina é um potencial agente nefrotóxico. Em contrapartida, estudos longitudinais, embora possuam diversas limitações, indicam o oposto. Pesquisas com humanos não demonstram efeitos deletérios da suplementação de creatina à função renal, porém a falta de controle experimental e o caráter retrospectivo da maioria delas comprometem as conclusões dos autores. Já os estudos experimentais com ratos empregam bons marcadores de função renal e possuem controle de variáveis satisfatório. Contudo, os resultados destes são contraditórios. Estudos futuros devem investigar os efeitos da suplementação de creatina em diversas patologias renais, assim como em idosos, diabéticos do tipo 2 e hipertensos, cuja propensão a nefropatia é bem descrita. Não há evidências de que a suplementação de creatina prejudique a função renal em sujeitos saudáveis, quando consumida na dosagem preconizada. Diante disso, questiona-se a legitimidade científica da proibição do comércio de creatina no Brasil.

Palavras-chave: efeitos adversos, suplementos alimentares, creatinina, cistatina C, rim

ABSTRACT

While creatine consumption has been greatly increasing among athletes and physical activity practitioners, the adverse effects of this supplement remain scientifically controversial, especially concerning renal function. The aim of this review is to describe the methodological limitations and gaps in the literature which contribute to the topic's divergence. Case reports suggest that creatine is a nephrotoxic agent. On the other hand, despite having several limitations, longitudinal studies have indicated the opposite. Research with humans does not demonstrate any deleterious effects as a consequence of creatine supplementation; however, the absence of experimental control as well as their retrospective characteristics compromise the authors' conclusion. Experimental studies with animal models though, use both gold standard for renal function and have satisfactory variable control. However, the results remain controversial. Future studies should investigate the effects of creatine supplementation in several kidneys diseases as well as in the elderly, type 2 diabetes and hypertensive individuals, whose tendency to renal dysfunction is well-described. There is not evidence that creatine sup-

ARTIGO DE REVISÃO



Não há evidências de que a suplementação de creatina cause danos à função renal em indivíduos saudáveis, quando ingerida na dose recomendada.



The influence of endurance exercise on the antioxidative status of human skin



Fig. 1 Concentration of carotenoids (a) and lycopene (b) at time point 0 (before running), after 30 min (directly after running) and the time point of the maximum decrease, exercise intensity: moderate, measuring point: forehead, $n = 6$

Evidenciou a importância de conhecer o momento em que a suplementação tem seu papel primordial.



Fórmula mágica



How Many Steps/Day Are Enough?

Preliminary Pedometer Indices for Public Health

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2 Department of Health and Exercise Science, University of Tennessee, Knoxville, Tennessee, USA



Estudo de revisão Pedômetro

Estilo de vida sedentário	Baixo nível de ativ. física	Ativo de “alguma forma”	Nível ideal de ativ. física	Estilo de vida muito ativo
< 5000 passos	5000 - 7499 passos	7500 – 9999 passos	≥ 10.000 passos	> 12500 passos

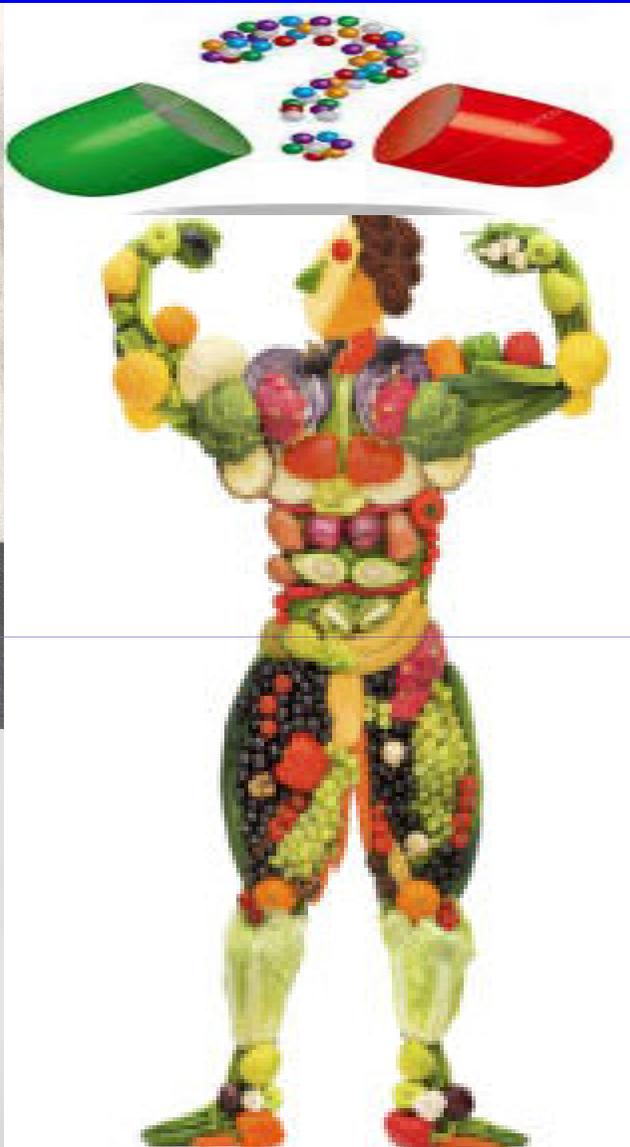
Sports Med 2004; 34(11): 1-8
0112-1642/04/0001-0001/\$31.00/0

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Mudanças Comportamentais

Obesidade
A Epidemia
do Século XXI





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