



cfⁿ

CONSELHO FEDERAL
DE **NUTRIÇÃO**



Caio Victor Coutinho de Oliveira

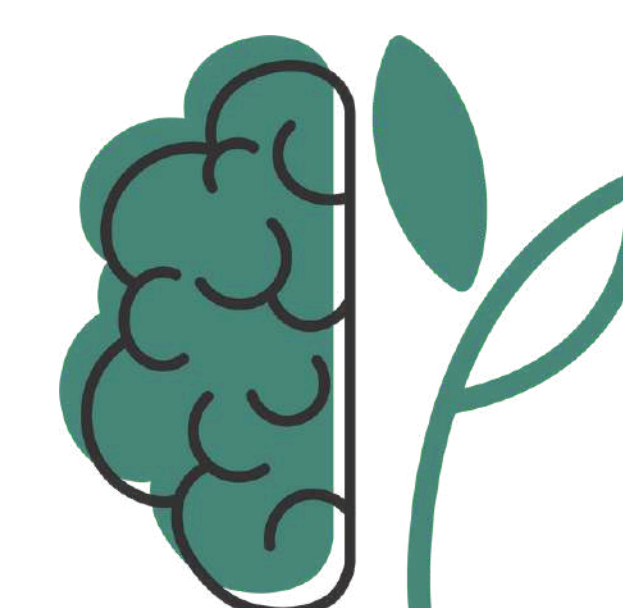
Conselheiro Federal



contato@caiovco.com.br



@caiovco



Caio Victor
Nutricionista

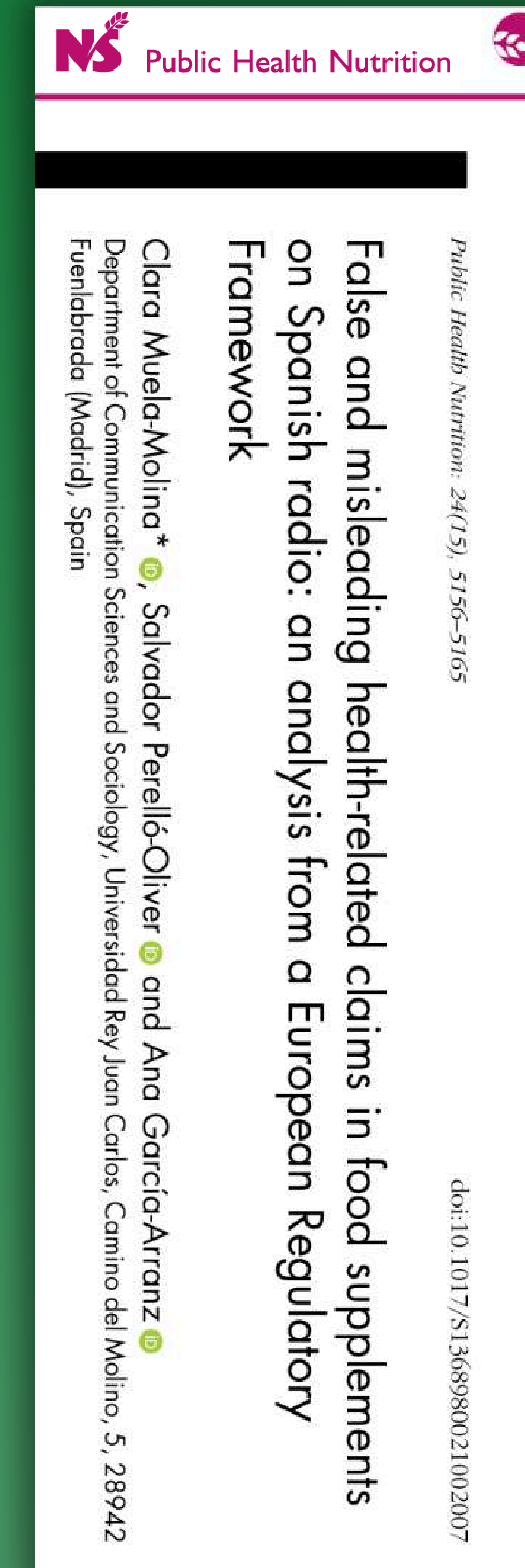
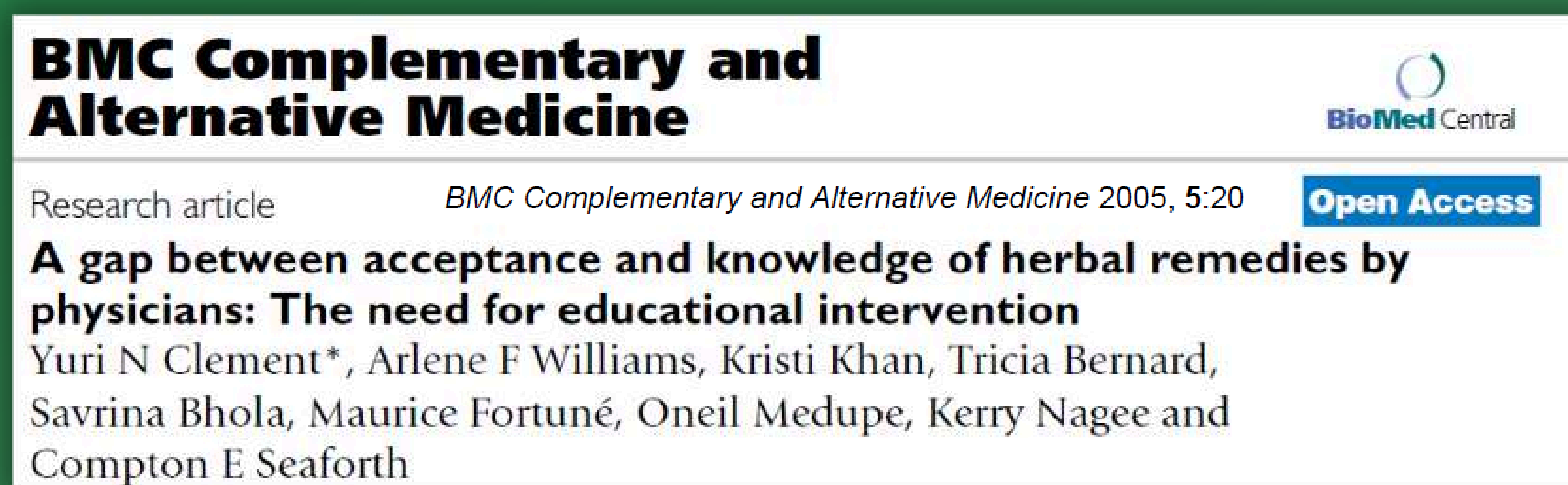
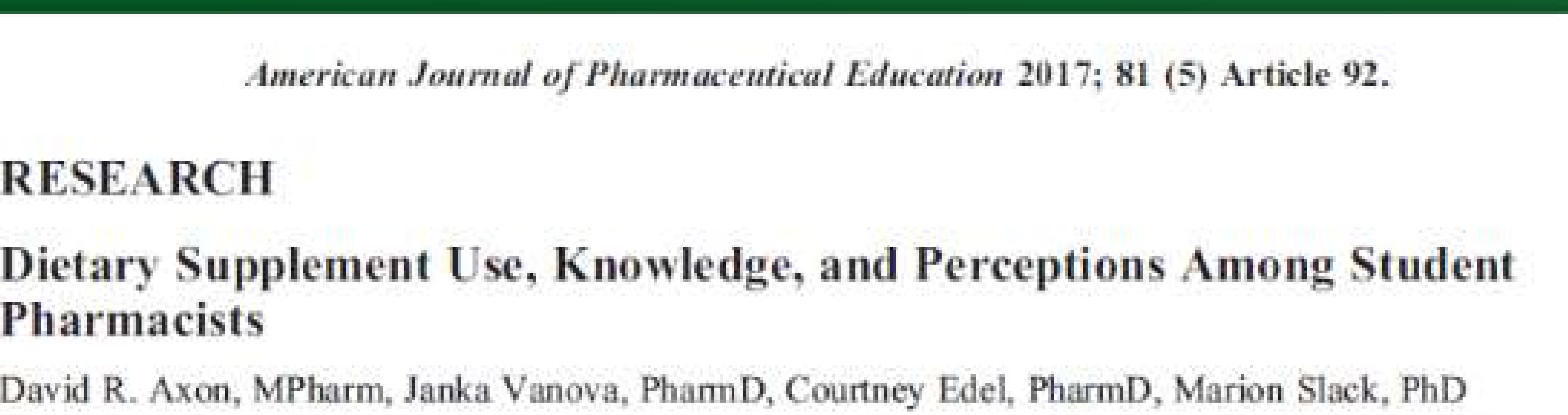


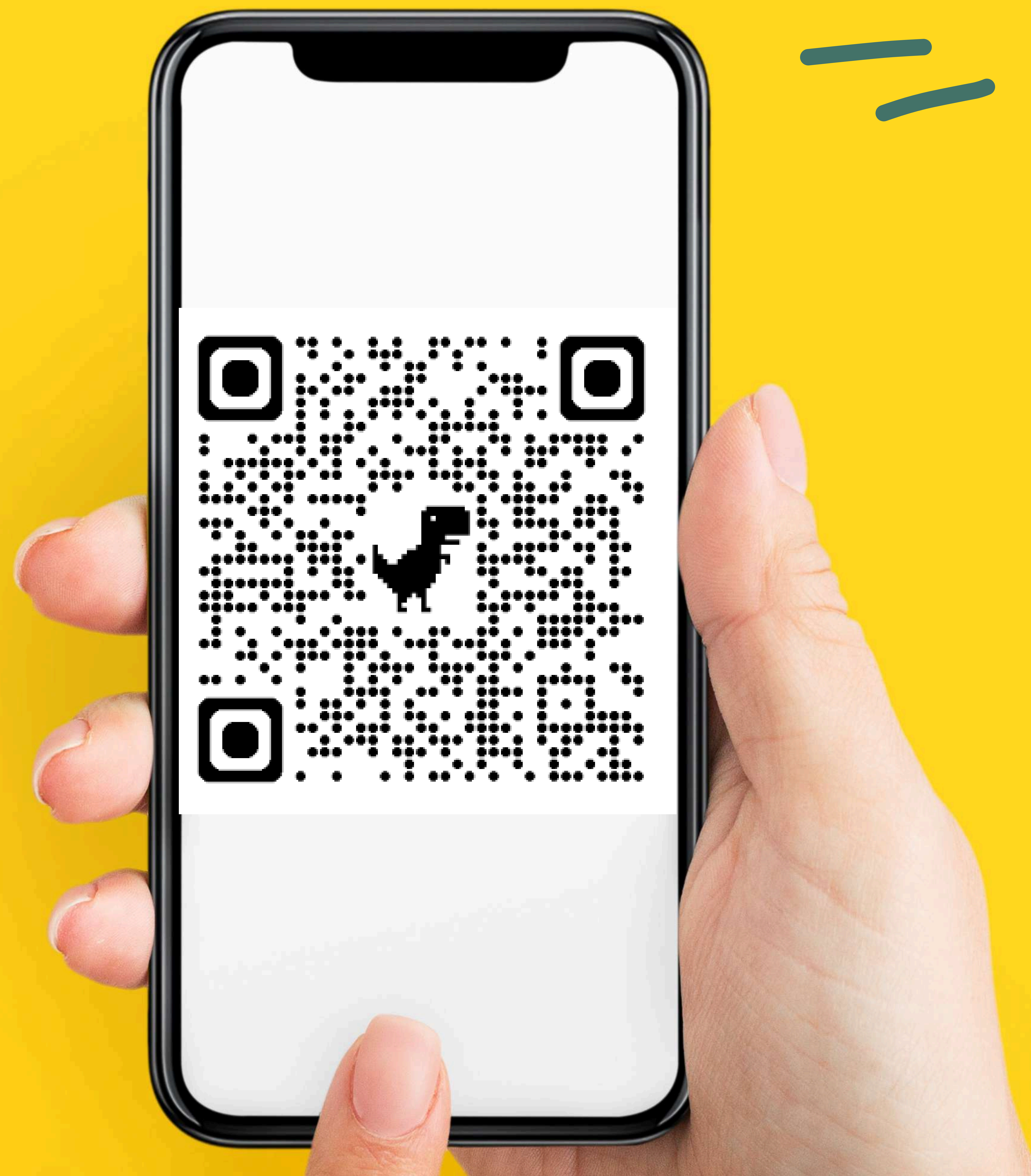
Fitoterapia Aplicada

OBJETIVOS

- 1** Explicitar as características de uso, perfil e objetivos dos consumidores de Suplementos Alimentares (SA)
- 2** Ratificar a importância do Nutricionista para promoção de educação nutricional e Segurança Alimentar
- 3** Explicitar dados que mostram que produtos adulterados, estimulados por falhas na fiscalização e regulamentação, podem comprometer a SAN.







Acesso ao material!



ETAPAS

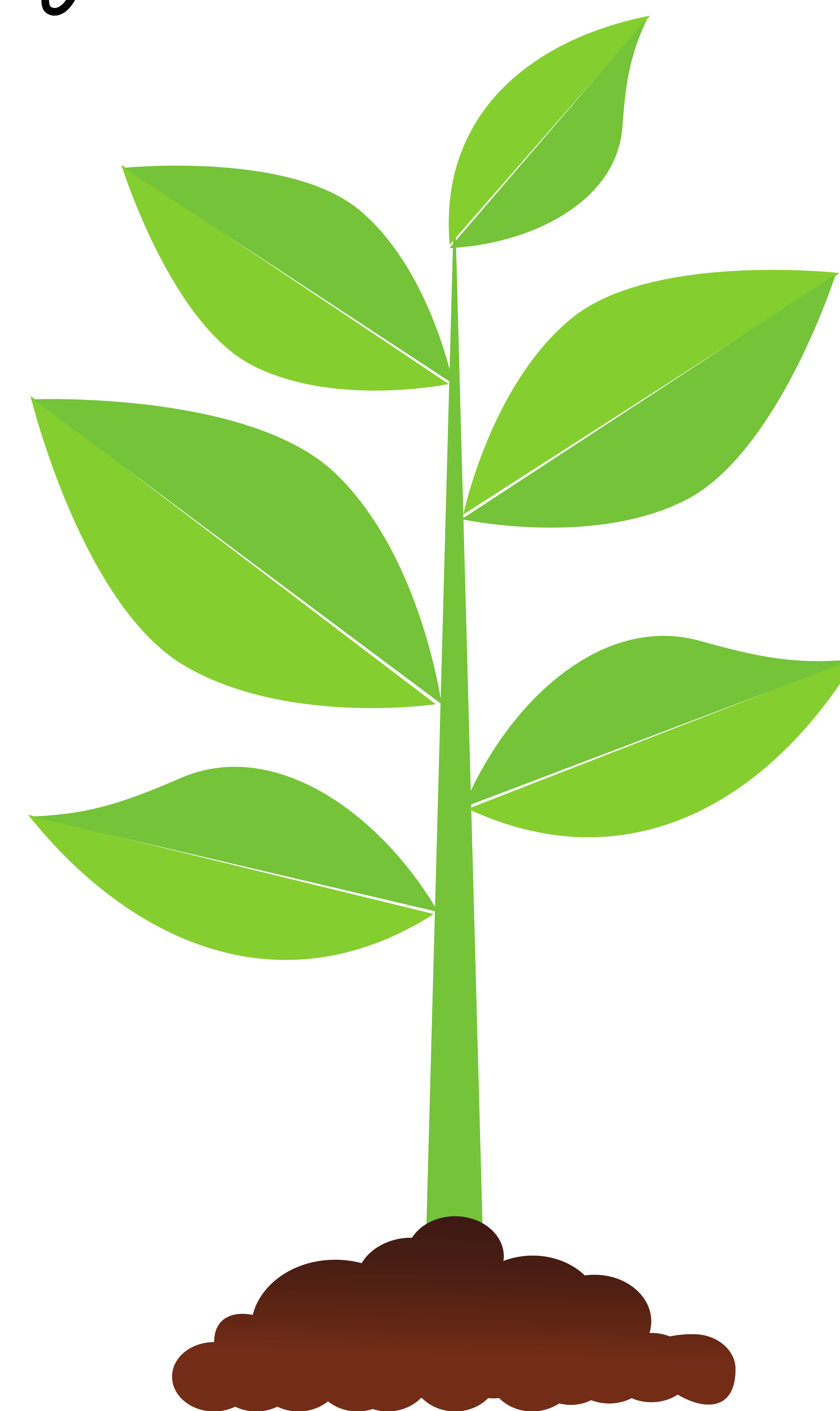
Sugestões e desafios

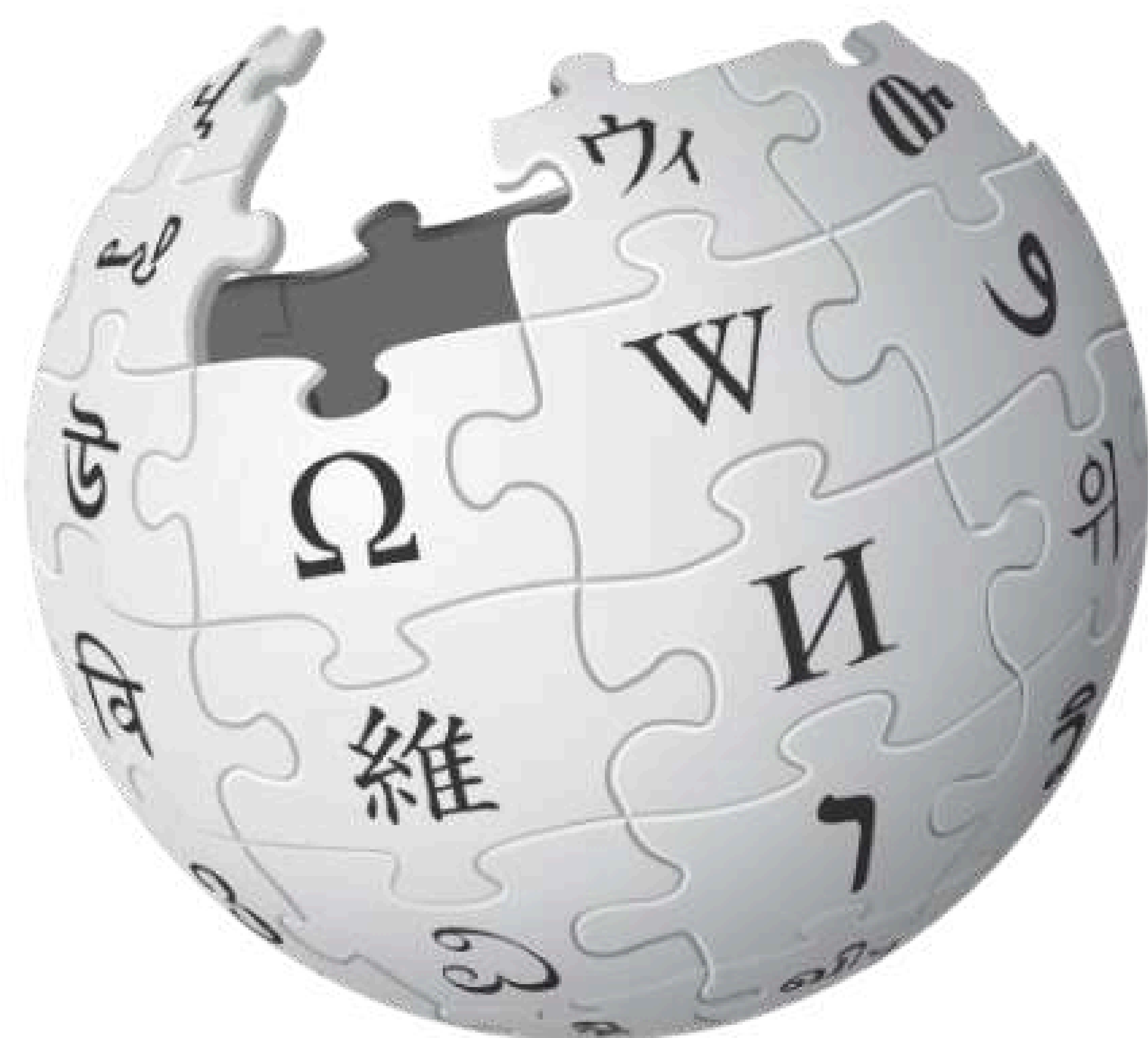
Por onde se
informar?

Características do
mercado e dos
consumidores de SA

São seguros?

Papel do
Nutricionista





Fontes confiáveis?



Wikipedia vs Peer-Reviewed Medical Literature for Information About the 10 Most Costly Medical Conditions

Robert T. Hasty, DO; Ryan C. Garbalosa, DO; Vincenzo A. Barbato, DO; Pedro J. Valdes Jr, DO; David W. Powers, DO; Emmanuel Hernandez, DO; Jones S. John, DO; Gabriel Suciu, PhD, MSPH; Farheen Qureshi, DO; Matei Popa-Radu, DO; Sergio San Jose, DO; Nathaniel Drexler, DO; Rohan Patankar, DO; Jose R. Paz, DO; Christopher W. King, DO; Hilary N. Gerber, DO; Michael G. Valladares, DO, MS; and Alyaz A. Somji, DO

The Journal of the American Osteopathic Association May 2014 | Vol 114 | No. 5



Jiang et al. *BMC Public Health* (2023) 23:574
<https://doi.org/10.1186/s12889-023-15456-7>

BMC Public Health

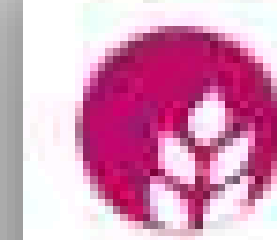
RESEARCH

Open Access



Status quo of the public's knowledge of probiotics based on video-sharing platforms

Chun-Hui Jiang^{1†}, Jia-Jia Xu^{2†}, Chao Xu^{1†}, Shi-Yue Chen^{3†}, Jia-Yun Chen¹, Jing-Song Xia^{1,4}, Zhuan Liao¹, Wen-Bin Zou^{1*} and Xue Fang^{1*}



Public Health Nutrition

Public Health Nutrition: 26(7), 1345–1357

doi:10.1017/S1368980023000873

Review Article

Quality and accuracy of online nutrition-related information: a systematic review of content analysis studies

Emily Denniss^{*}, Rebecca Lindberg^{*} and Sarah A McNaughton^{*}



“

Os profissionais de saúde
sabem sobre alimentação e
suplementos alimentares?

”

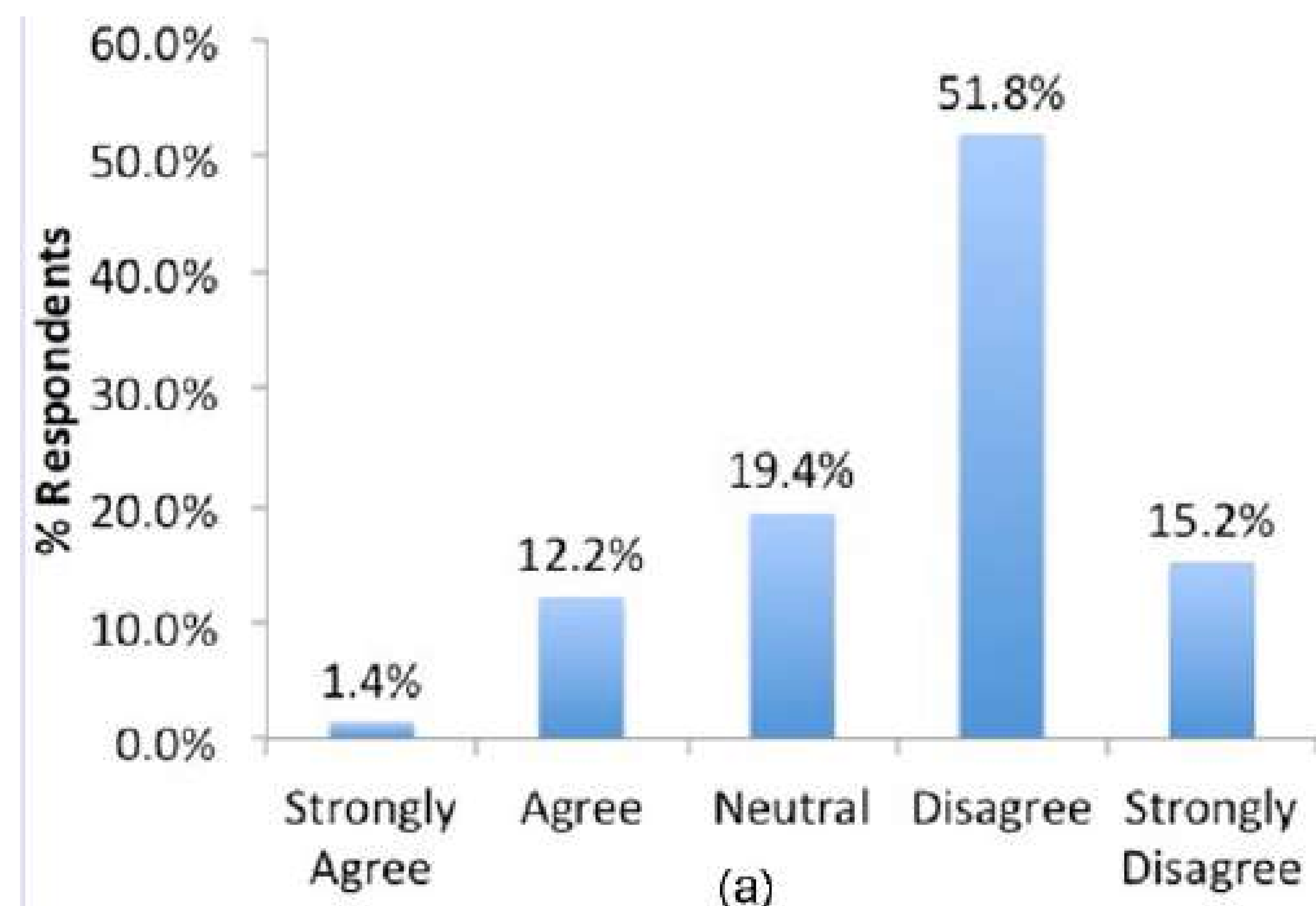


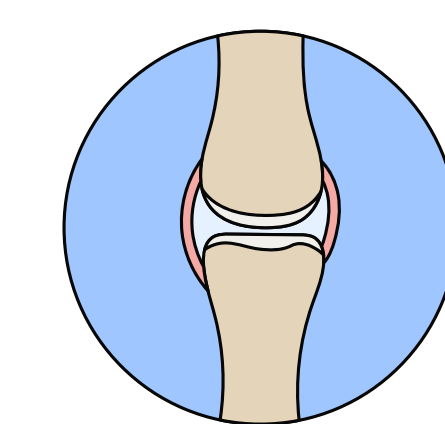
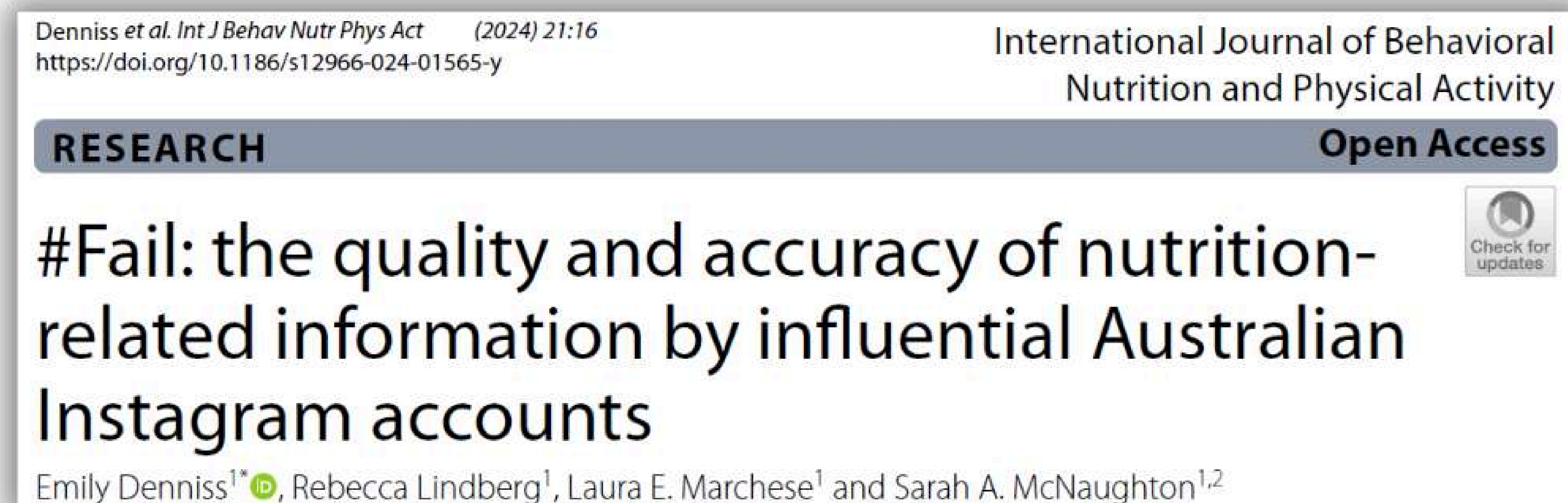
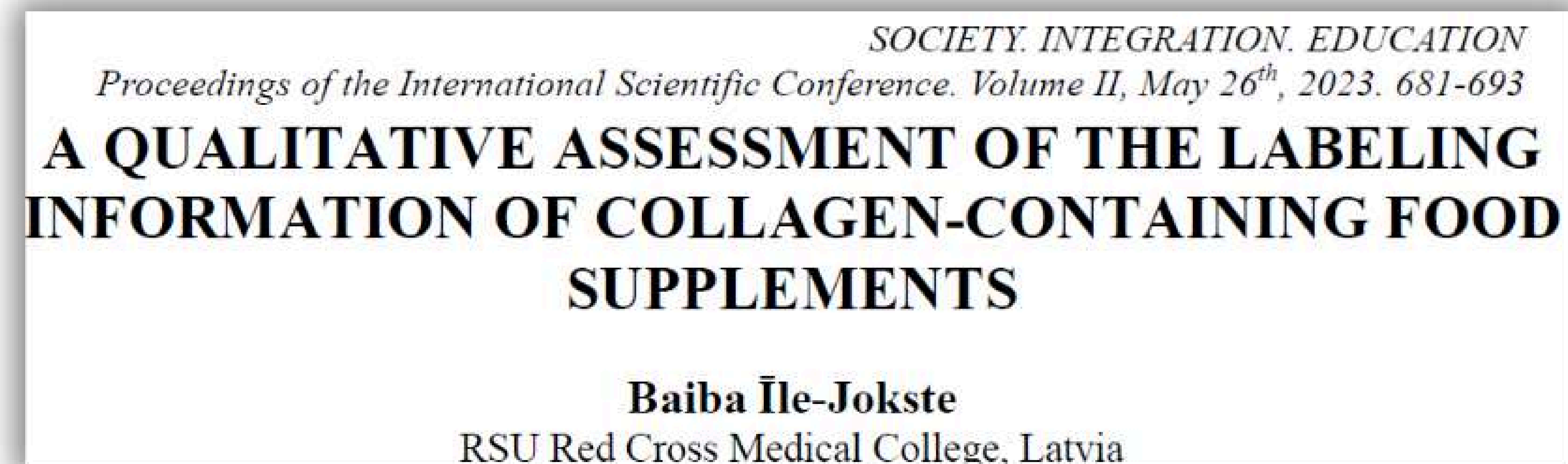
8% referem ter conhecimentos adequados em Nutrição

Baixa carga horária na graduação

Médicos apresentam conhecimento adequado em Nutrição

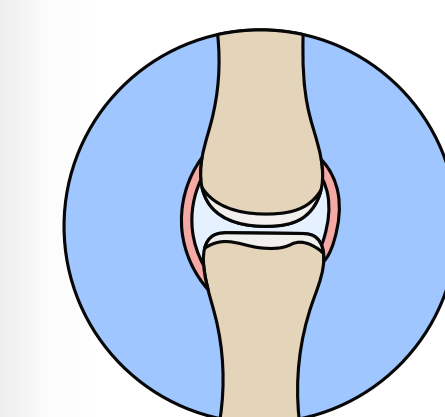
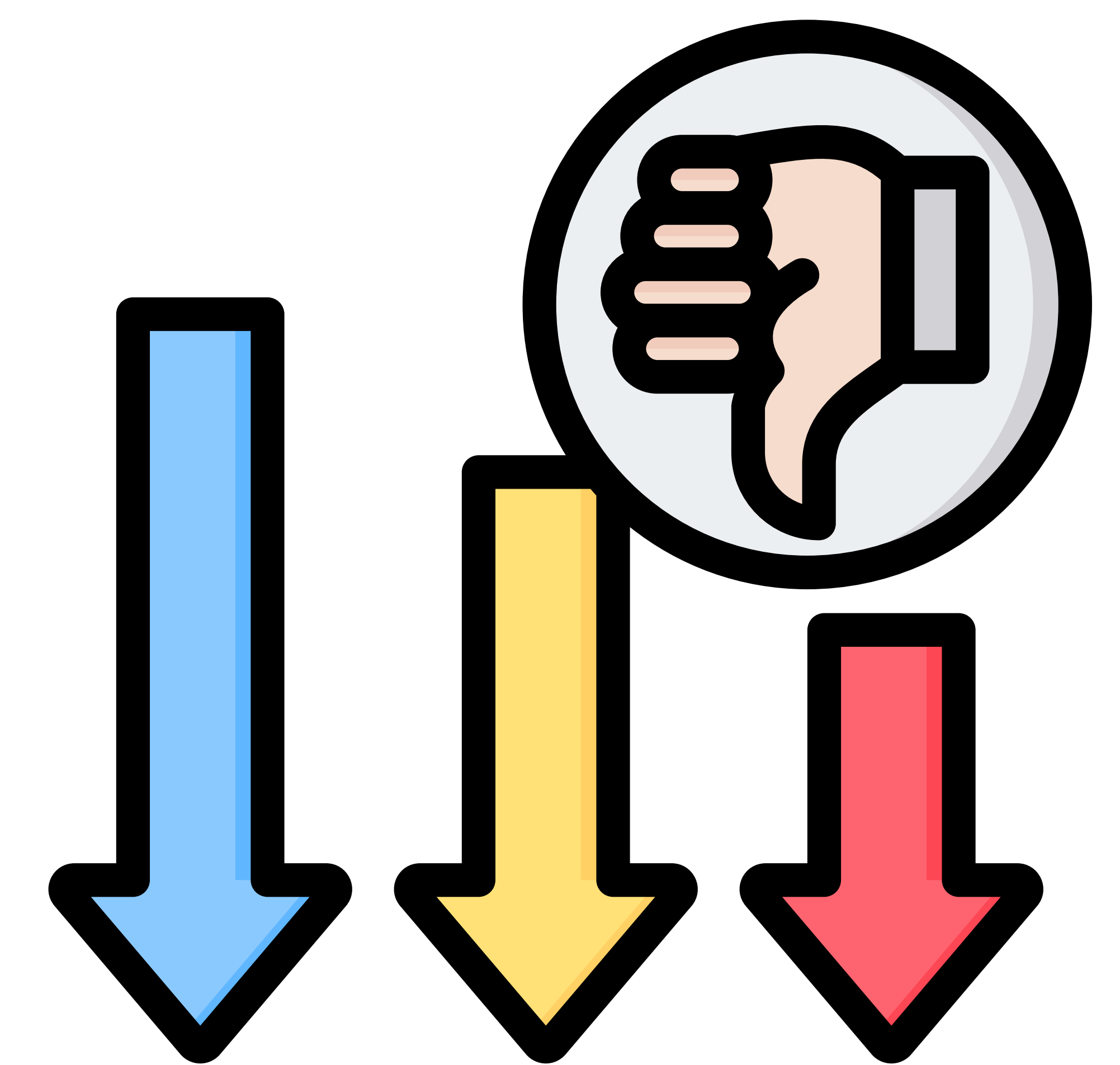
20% dos entrevistados consumiam frutas/verduras adequadamente



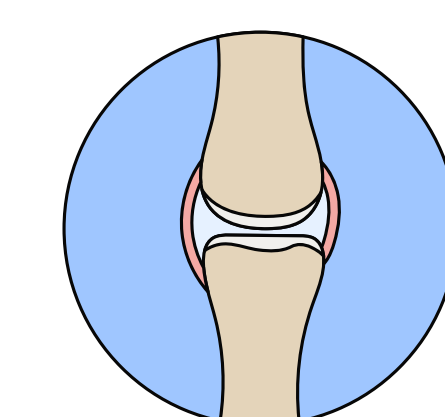


A qualidade das informações no Instagram é, em sua maioria, de baixa qualidade (n=47, 34,8%)

Perfis com > 100.000 seguidores



As informações provenientes de nutricionistas apresentam maior acurácia



As informações provenientes de marcas ou outras contas contêm maior quantidade de erros





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Como o nutricionista pode contribuir para
o uso racional e seguro de suplementos
alimentares pela população?

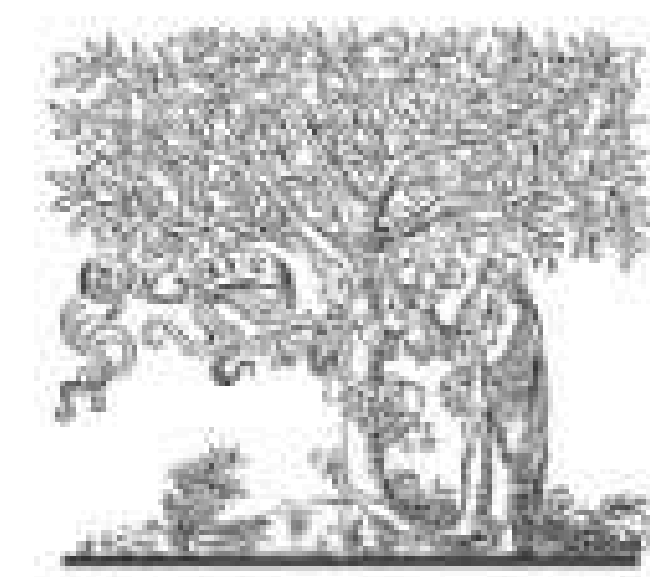
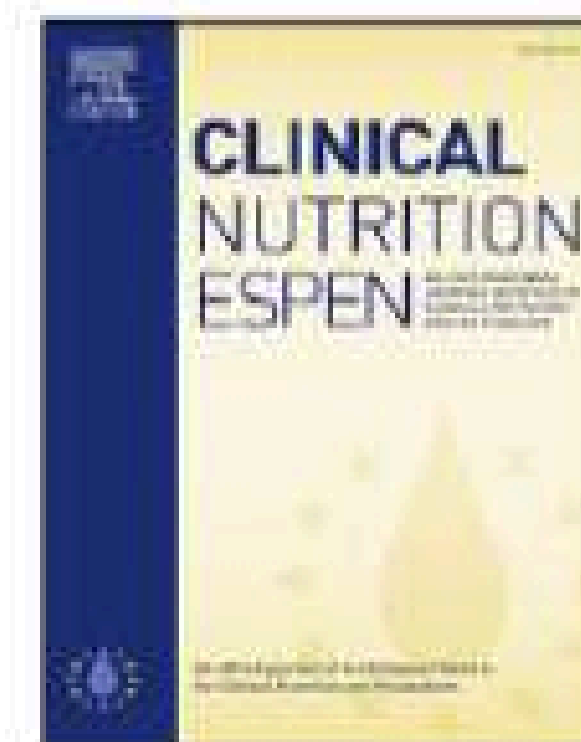
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A nutritional intervention program improves the nutritional status of geriatric patients at nutritional risk—a randomized controlled trial

Clinical Rehabilitation
2018, Vol. 32(7) 930–941
© The Author(s) 2018
Reprints and permissions:
sagepub.co.uk/journalsPermissions.nav
DOI: 10.1177/0269215518765912
journals.sagepub.com/home/cre


REVIEW

Effectiveness of dietary counseling with or without nutrition supplementation in hospitalized patients who are malnourished or at risk of malnutrition: A systematic review and meta-analysis

**ELSEVIER**Contents lists available at [ScienceDirect](#)**Clinical Nutrition ESPEN**journal homepage: <http://www.clinicalnutritionespen.com>

Original article

Effectiveness of a multidisciplinary and transitional nutritional intervention compared with standard care on health-related quality of life among acutely admitted medical patients aged ≥ 65 years with malnutrition or risk of malnutrition: A randomized controlled trial



Does adding a dietician to the liaison team after discharge of geriatric patients improve nutritional outcome: A randomised controlled trial

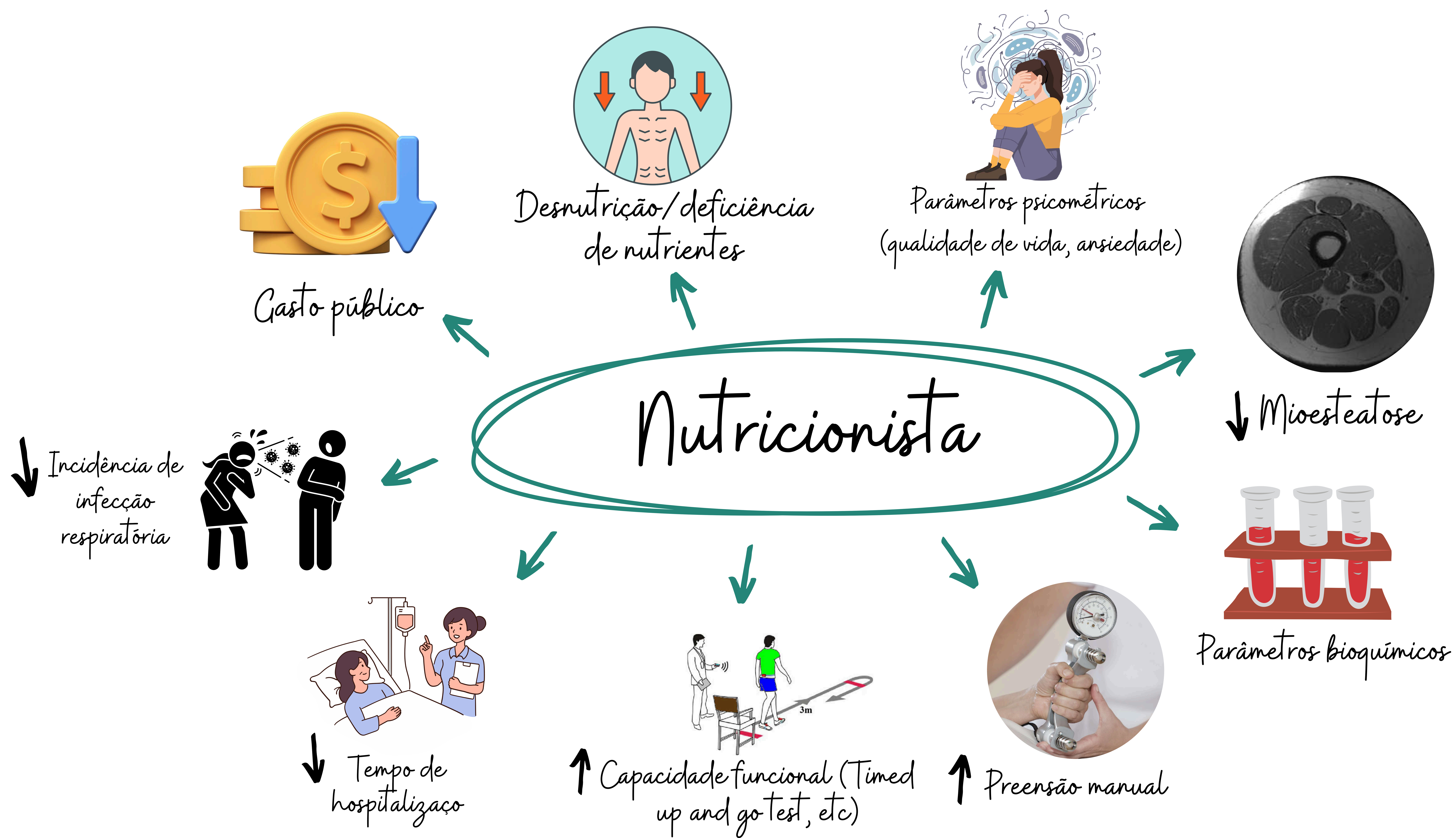
Clinical Rehabilitation
1–12
© The Author(s) 2014
Reprints and permissions:
sagepub.co.uk/journalsPermissions.nav
DOI: 10.1177/0269215514564700
cre.sagepub.com


RESEARCH**Open Access**

Individual nutritional intervention for prevention of readmission among geriatric patients—a randomized controlled pilot trial

Mai Østerø Cramon^{1,2*}, Ines Raben^{1,2}, Anne Marie Beck^{3,4} and Jens Rikardt Andersen²

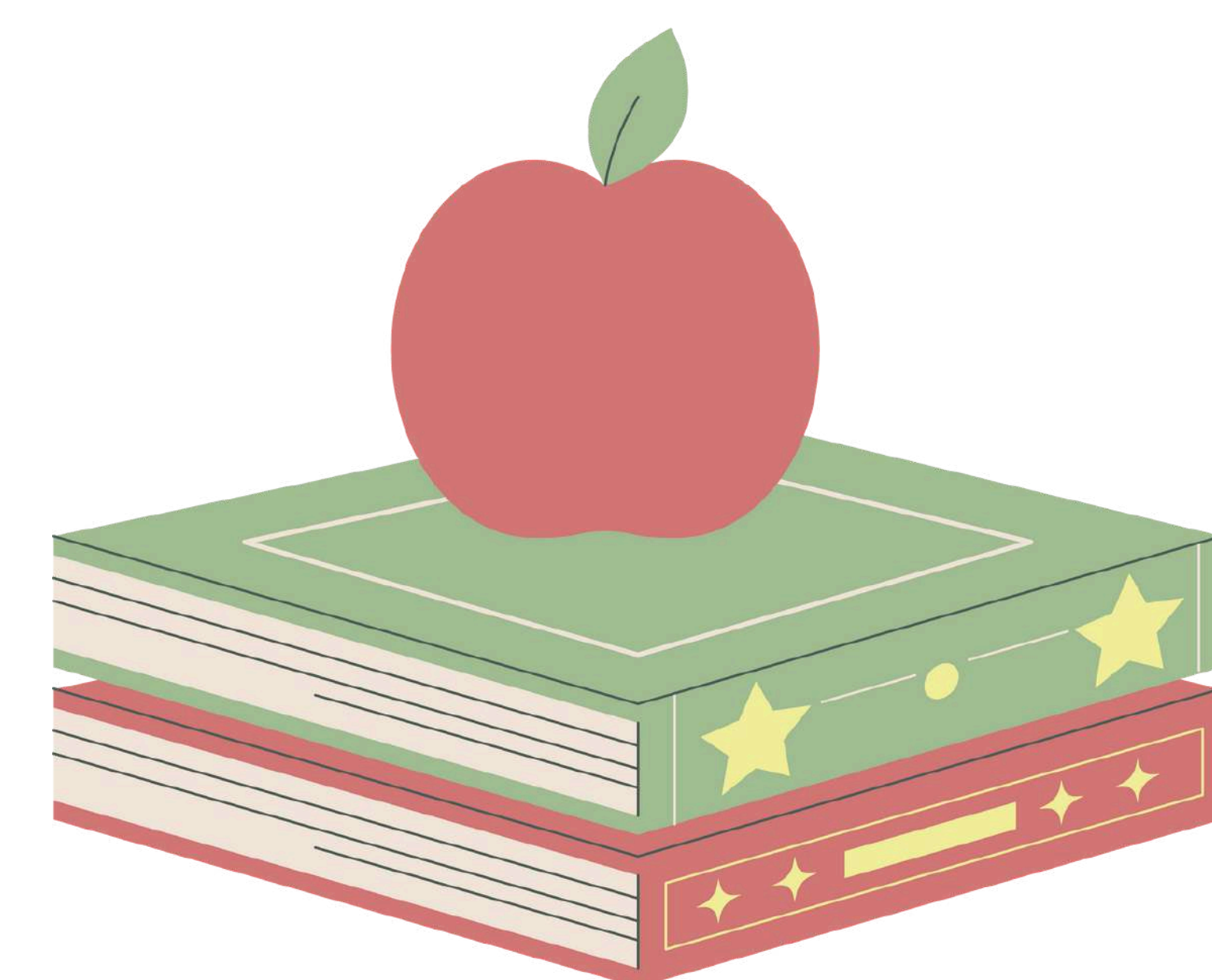




“

Quais fatores influenciam nas
escolhas alimentares?

”



**Conhecimento
nutricional**



**Estratégias de
marketing**



Segurança alimentar



Escolhas alimentares



Habilidade em cozinhar



Preço

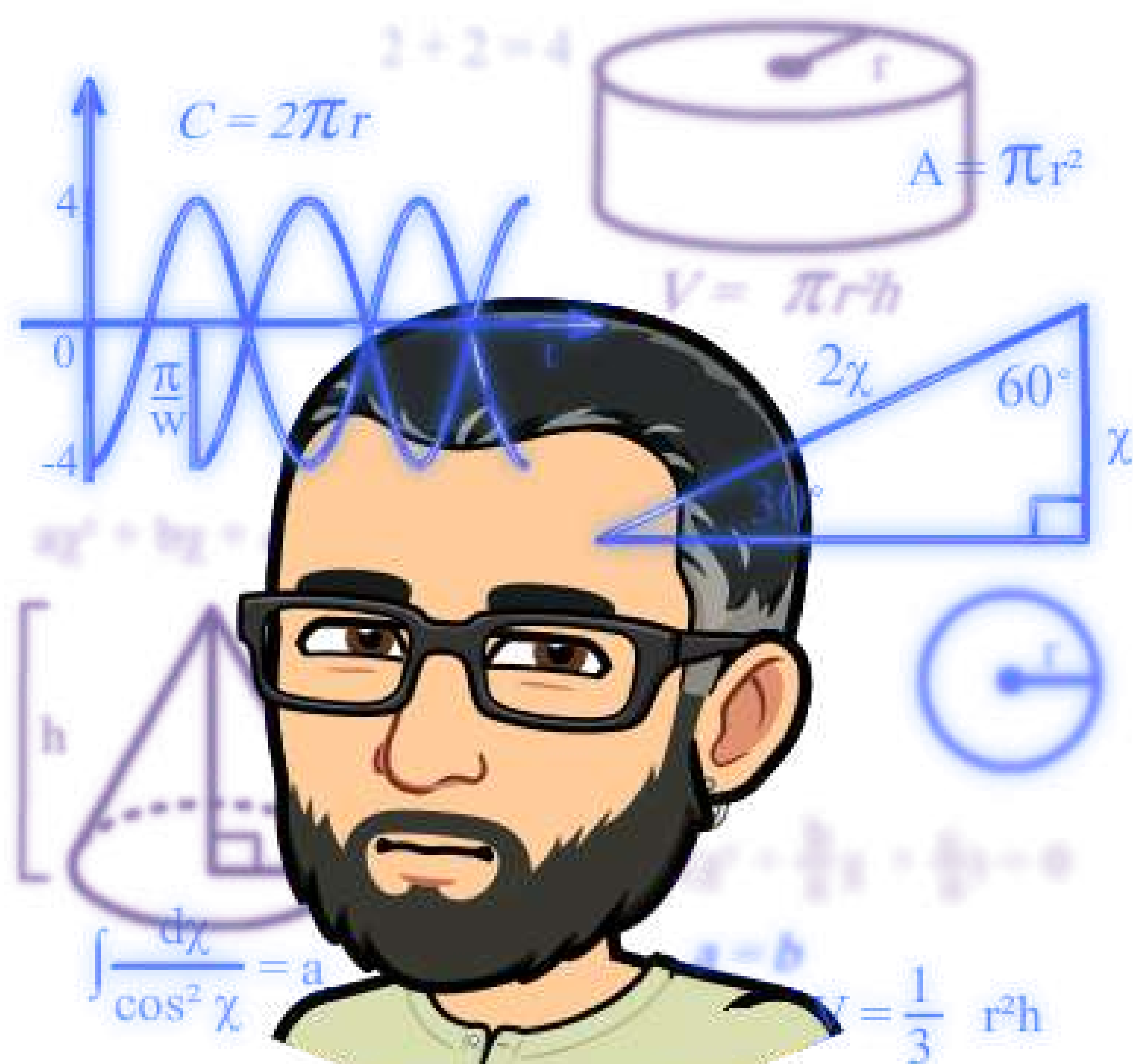


Crenças culturais

“

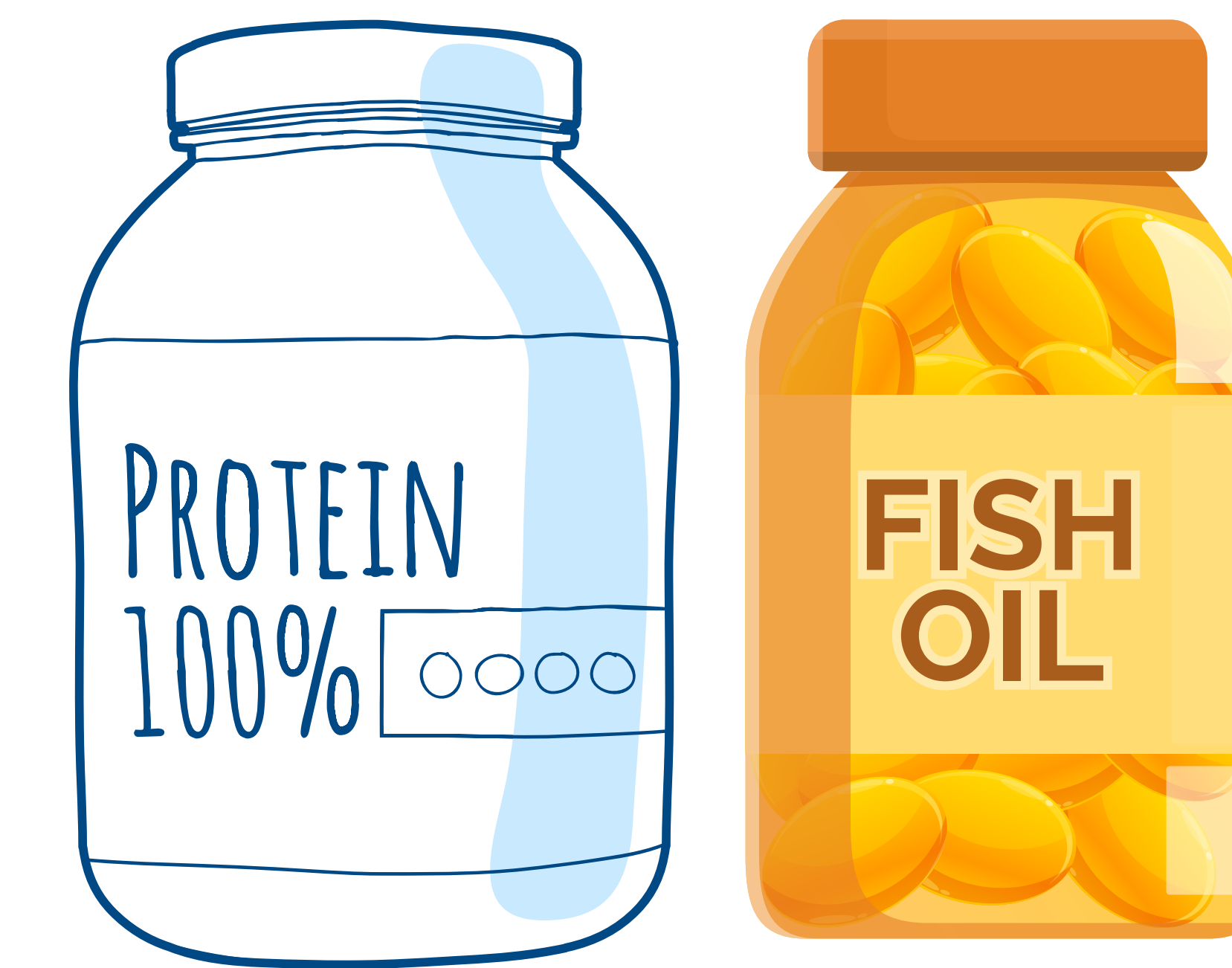
Por que as pessoas consomem
suplementos alimentares?

”





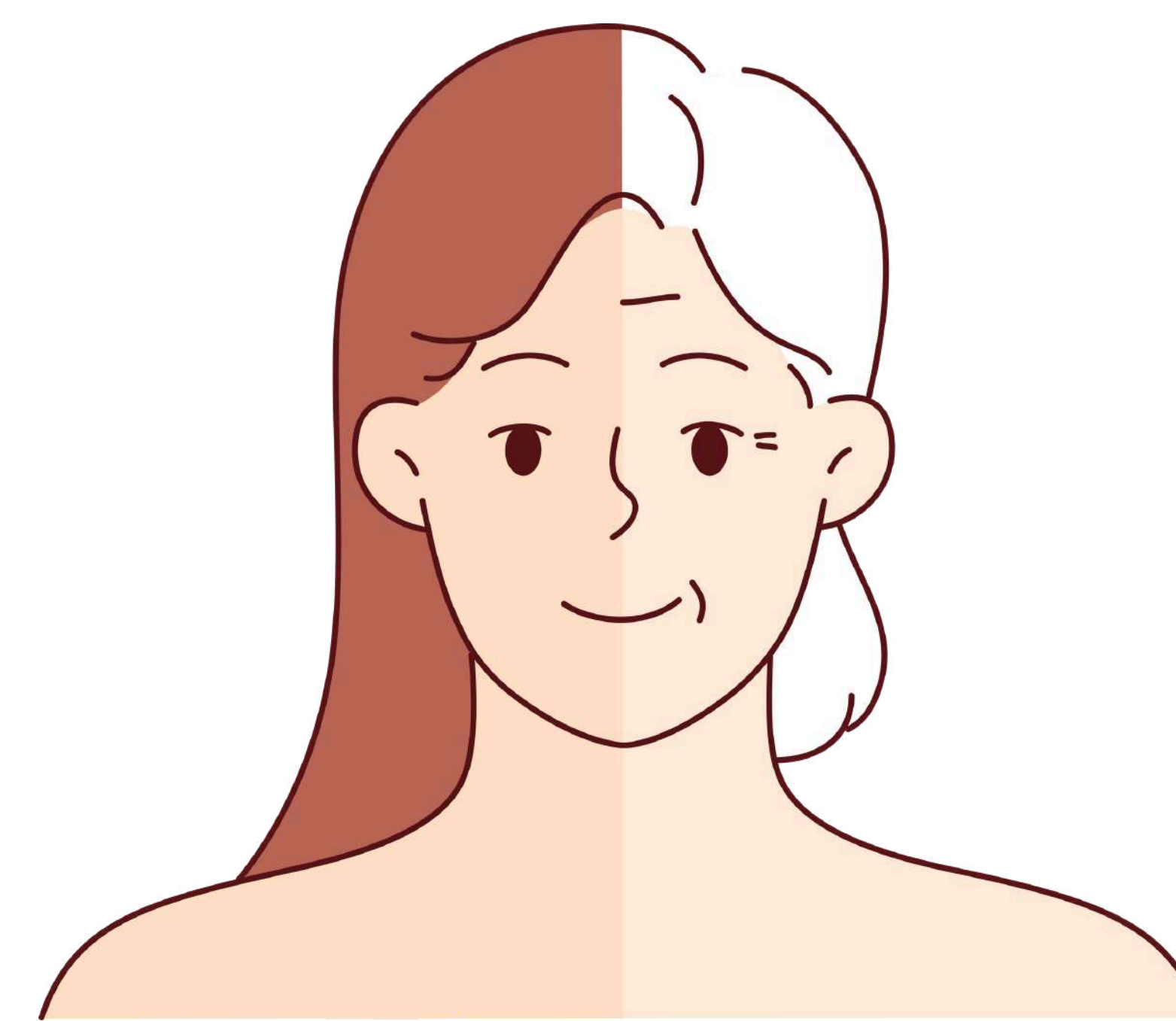
Imunidade e
saúde digestiva



Proteínas, w-3



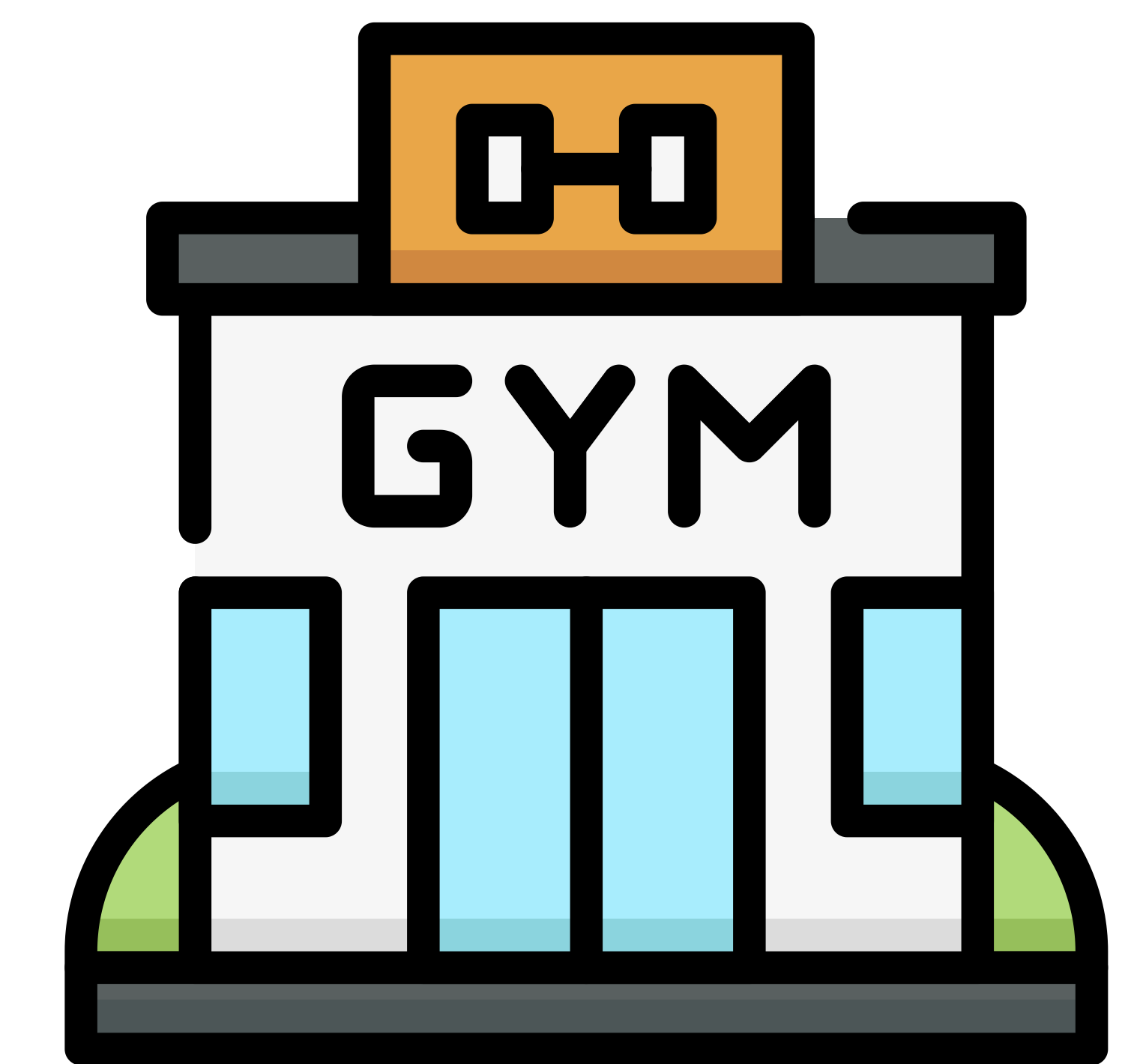
Digitalização



Envelhecimento
populacional (DCNT)



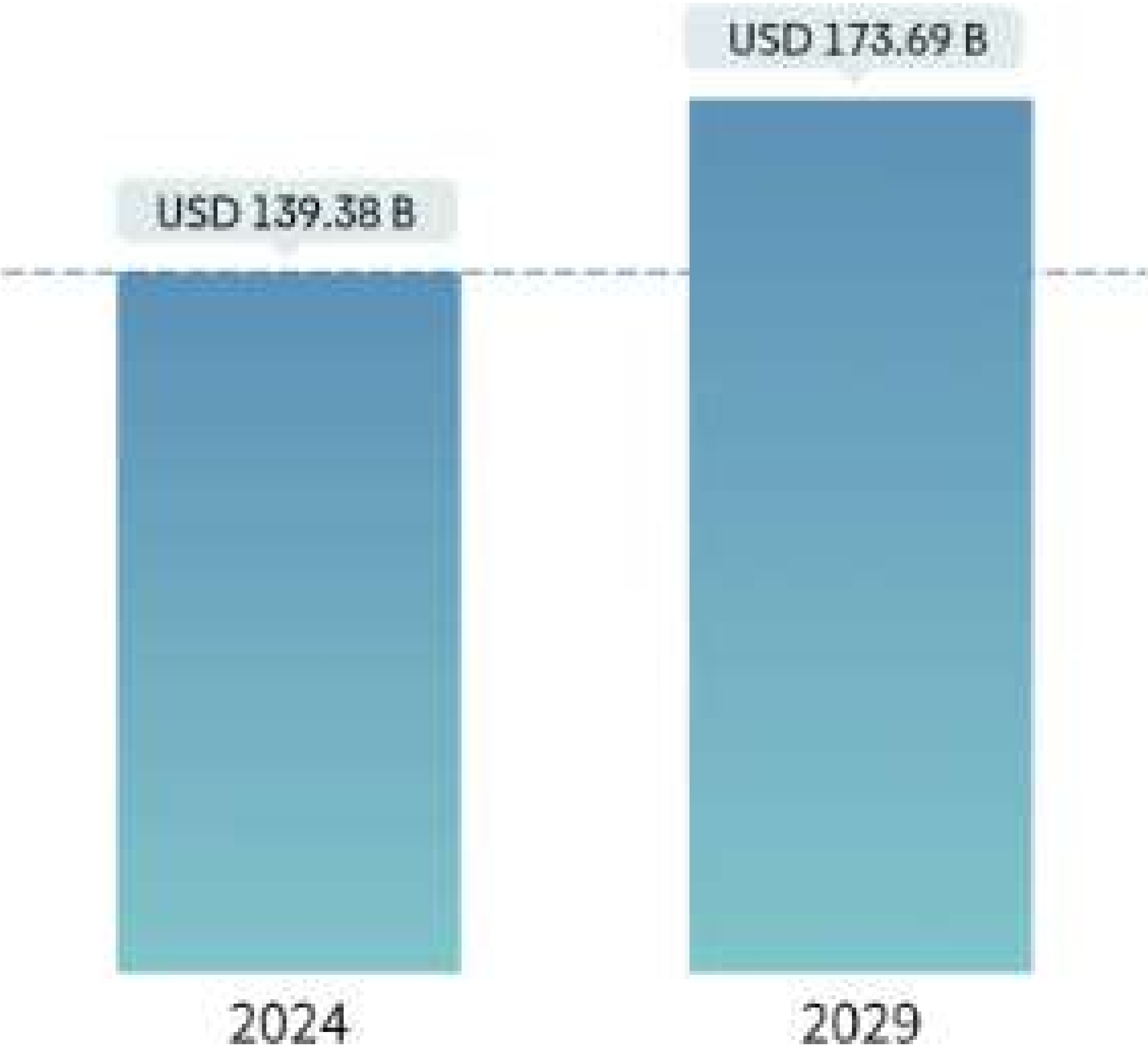
Produtos "naturais"
(espécies vegetais)



Número de praticantes
e de academias

Dietary Supplements Market

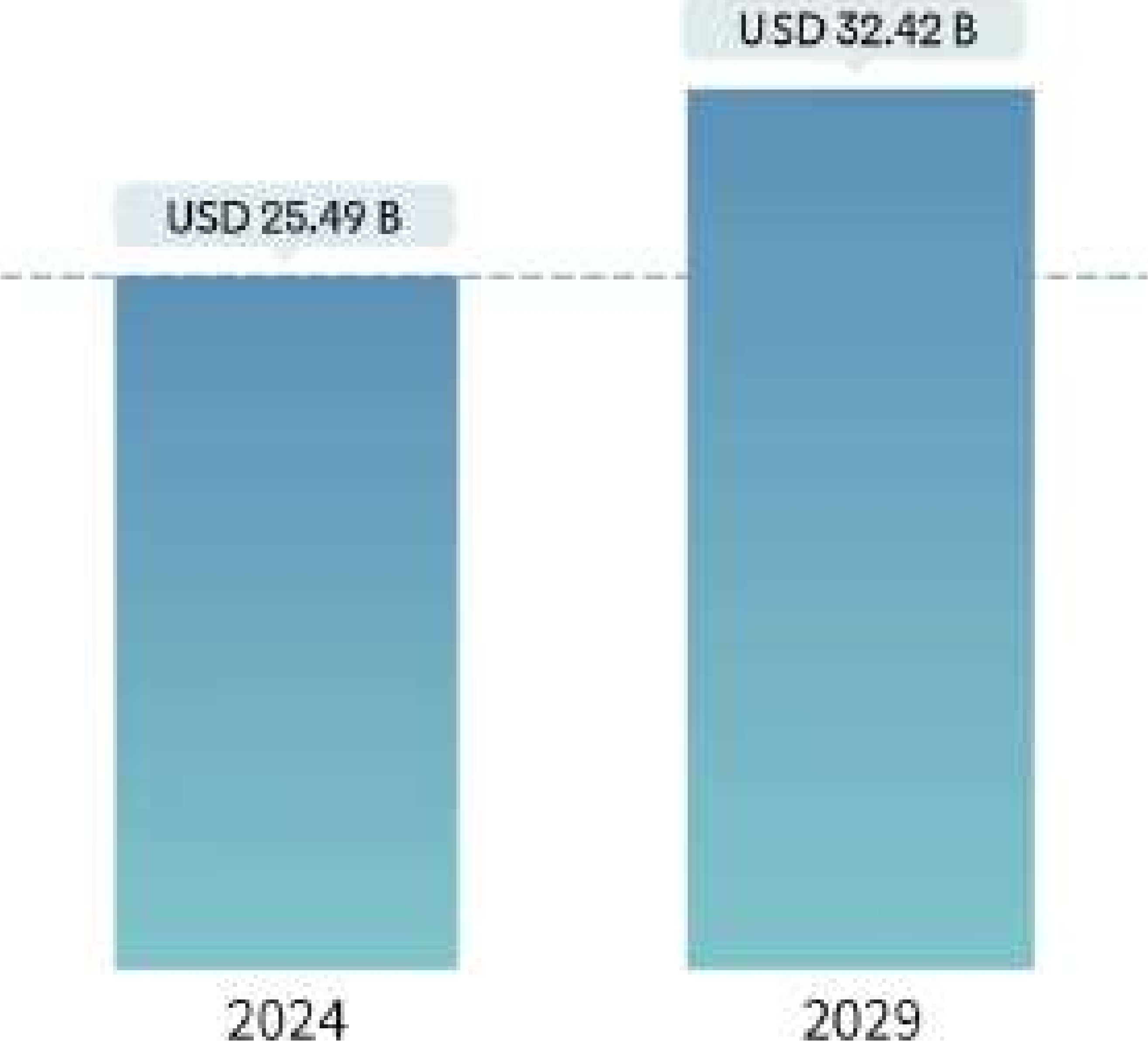
Market Size in USD Billion
CAGR 4.5%



Source : Mordor Intelligence







Protein Market

Market Size in USD Billion
CAGR 4.93%



Source : Mordor Intelligence

Curiosidades

-  Procura por opções práticas de desjejum
-  Atenção com a Nutrição de populações idosas
-  Lanches (“Snacks”) saudáveis
-  Utilização de ingredientes “naturais”
-  Crescimento da “população flexitariana”
-  Soja, trigo e ervilha como principais matérias-primas para produção de proteínas vegetais

Período de Estudo	2019 - 2029
Tamanho do Mercado (2024)	USD 145.62 Billion
Tamanho do Mercado (2029)	USD 179.36 Billion
CAGR (2024 - 2029)	4.50%
Mercado de Crescimento	Ásia-Pacífico
Mais Rápido	
Maior Mercado	América do Norte
Concentração do Mercado	Baixo

Período de Estudo	2017 - 2029
Tamanho do Mercado (2024)	USD 28.32 Billion
Tamanho do Mercado (2029)	USD 36.69 Billion
Maior participação por usuário final	Alimentos e Bebidas
CAGR (2024 - 2029)	4.93 %
Maior participação por região	América do Norte
Concentração do Mercado	Baixo

“

Como foi a contribuição dessa
indústria para a economia
nacional?

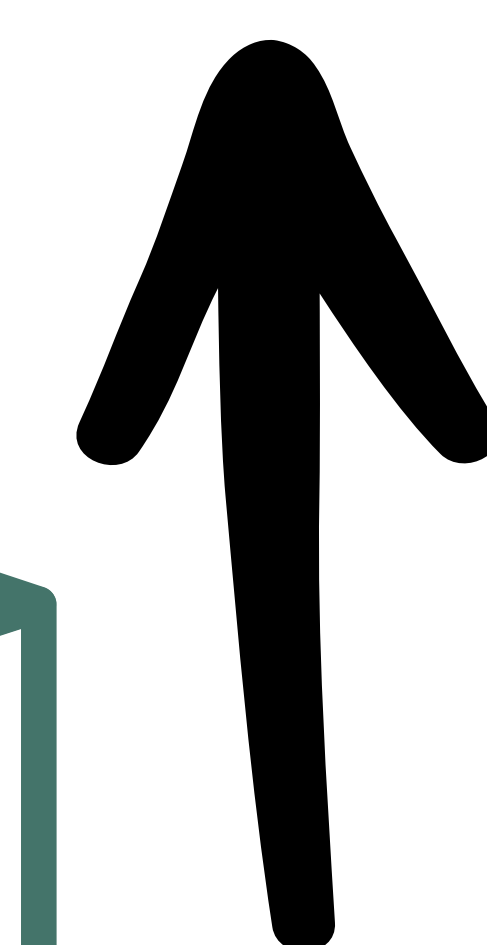
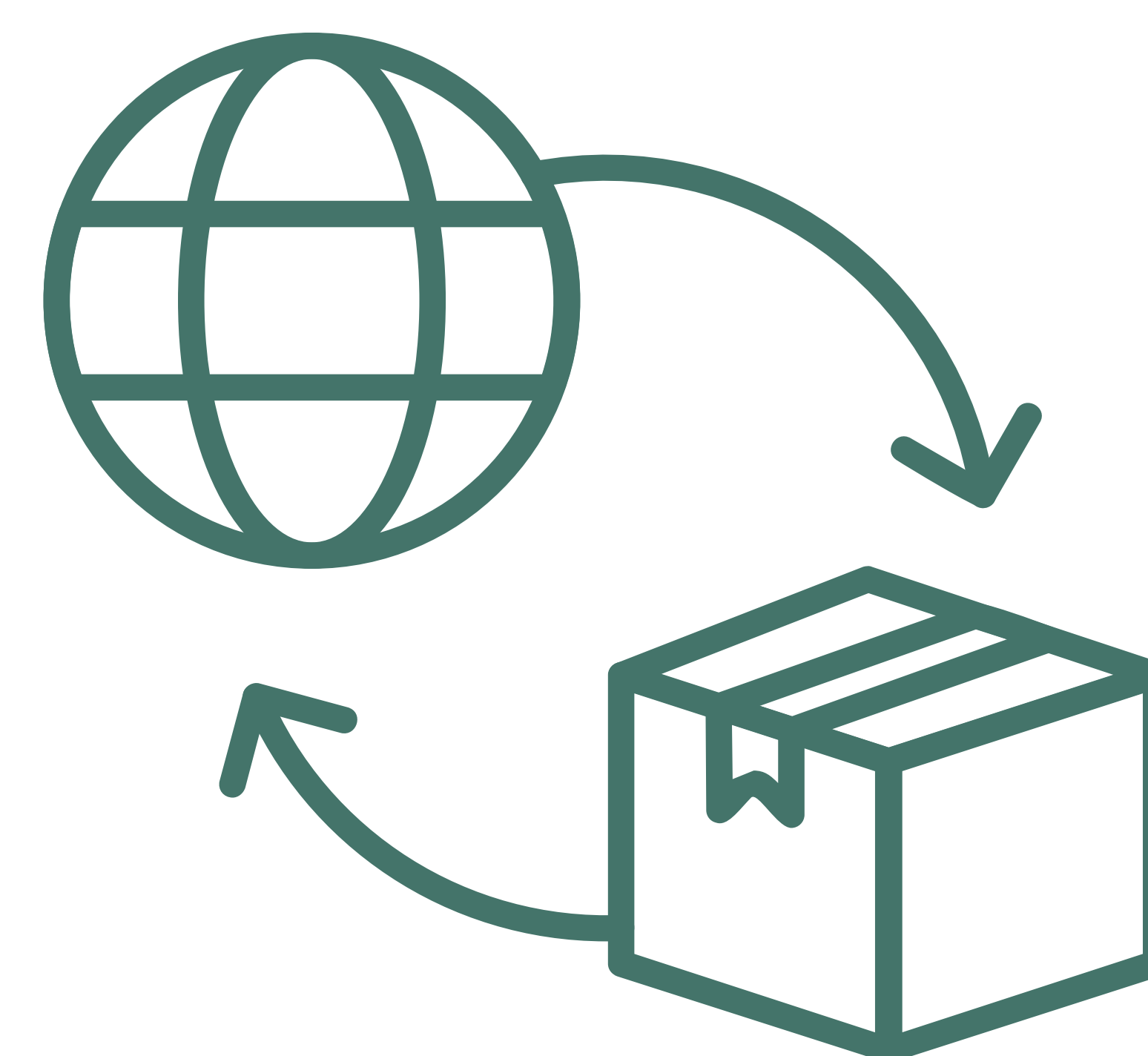
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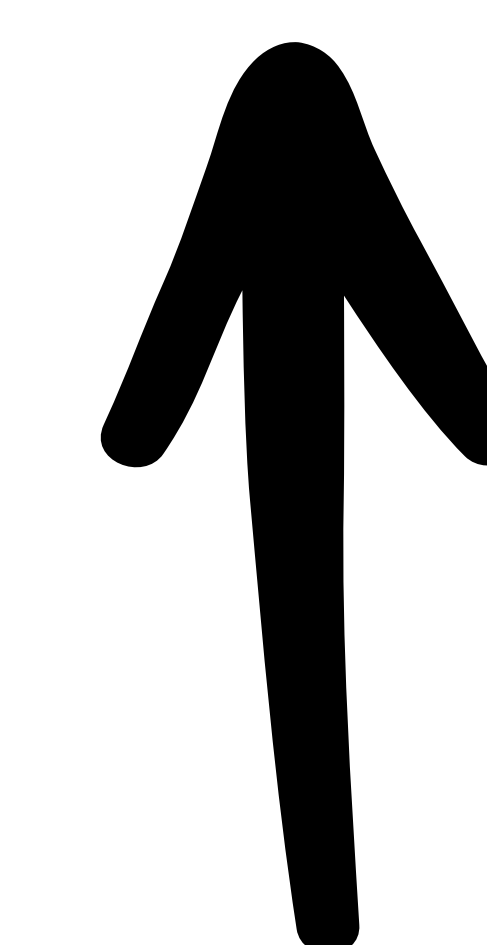
VITAMINAS



9% Consumo
15,6% importações



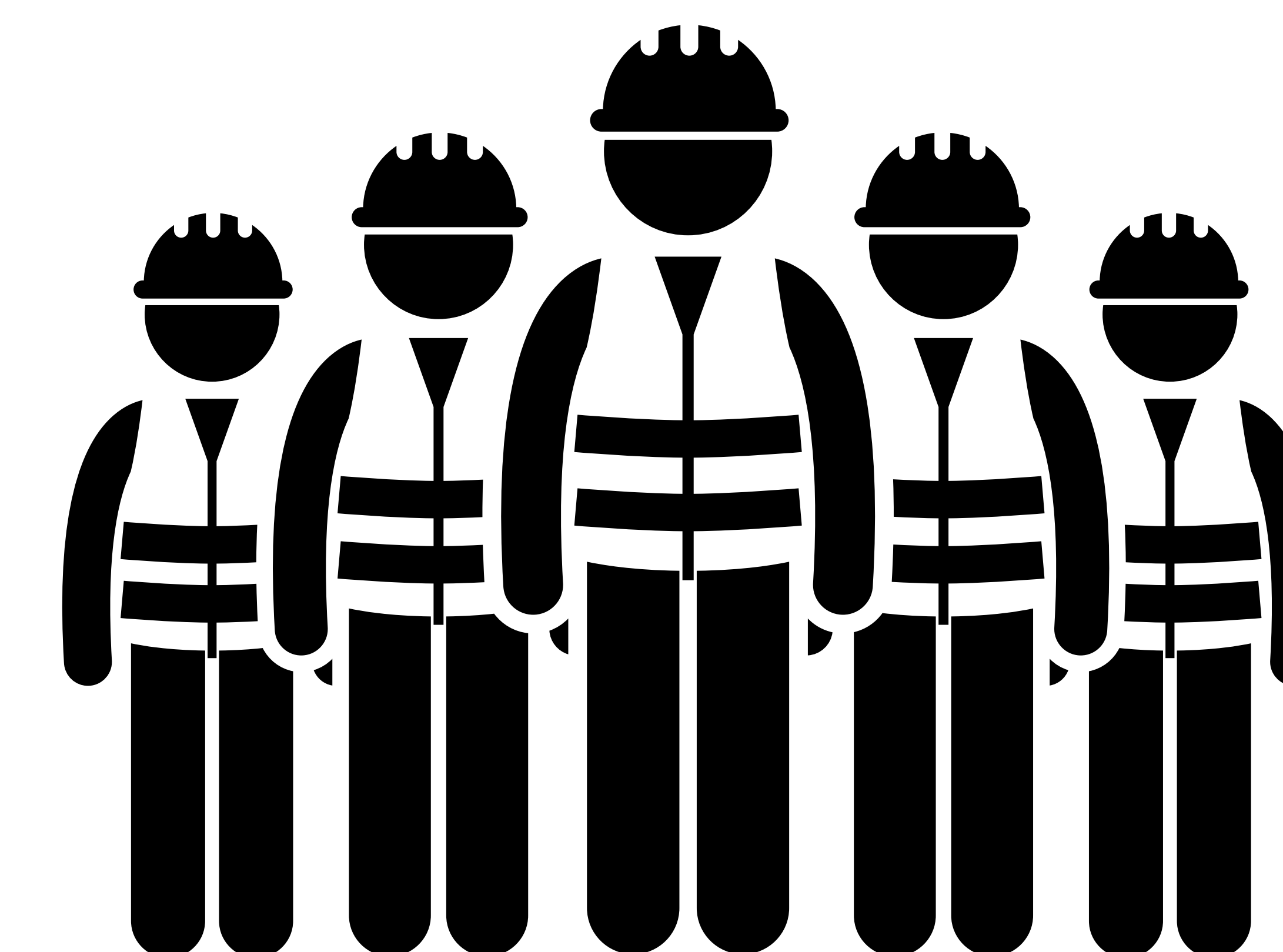
24,6% importações de alimentos para fins especiais (totalizando 1 bilhão de dólares)



3% Consumo
66,7% importações



4,4% nas contratações (chegando em 4,3 mil empregados)



*Dados da ABIAD referentes a 2024,
em comparação com o ano anterior.*

“

*Eu suplemento para ter mais
energia e melhorar os
resultados do treino!*

”

Common Ingredient Profiles of Multi-Ingredient Pre-Workout Supplements

Andrew R. Jagim ^{1,*}, Patrick S. Harty ² and Clayton L. Camic ³

¹ Human Performance Lab, Sports Medicine, Mayo Clinic Health System, Onalaska, WI 54650, USA

² Exercise & Performance Nutrition Laboratory, Lindenwood University, St. Charles, MO 63301, USA; pharty@lindenwood.edu

³ Kinesiology and Physical Education, Northern Illinois University, DeKalb, IL 60115, USA; ccamic1@niu.edu

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Received: 2 January 2019; Accepted: 21 January 2019; Published: 24 January 2019



Abstract: Multi-ingredient pre-workout supplements are a popular class of dietary supplements which are purported to improve exercise performance. However, the composition of these products varies substantially between formulations, thus making comparisons challenging. Therefore, the purpose of this study was to identify a common ingredient profile of top-selling pre-workout supplements and to compare ingredient dosages to established efficacious values. The top 100 commercially available pre-workout products were analyzed for listed ingredients and amounts, if available, from the supplement facts panel. The mean \pm SD number of ingredients per supplement ($n = 100$) was 18.4 ± 9.7 with 8.1 ± 9.9 of these ingredients included in a proprietary blend at undisclosed quantities. Relative prevalence and average amounts of the top ingredients amounted to: Beta-alanine (87%; 2.0 ± 0.8 g), Caffeine (86%; 254.0 ± 79.5 mg), Citrulline (71%; 4.0 ± 2.5 g), Tyrosine (63%; 348.0 ± 305.7 mg), Taurine (51%; 1.3 ± 0.6 g), and Creatine (49%; 2.1 ± 1.0 g). Nearly half (44.3%) of all ingredients were included as part of a proprietary blend with undisclosed amounts of each ingredient. The average amount of beta-alanine per serving size was below the recommended efficacious dose. The average caffeine content was near the low end for an effective relative dose for a 70 kg individual ($3\text{--}6$ mg·kg⁻¹ of bodyweight).

Keywords: ergogenic aid; supplement; pre-workout; beta-alanine; caffeine; citrulline; creatine; strength; power; energy

1. Introduction

Dietary supplements represent approximately a 30-billion-dollar industry in the United States alone [1], with over 50% of US adults reporting the regular use of one or more supplements [2]. In 1994, Congress passed the Dietary Supplement Health and Education Act, which established an official definition for a dietary supplement, stating that in order for a product to be classified as a dietary supplement it must meet one or more of the following: (1) A vitamin, (2) A mineral, (3) A herb or other botanical, (4) An amino acid, (5) A dietary substance for use by man to supplement the diet by increasing the total dietary intake, or (6) A concentrate, metabolite, constituent, or extract of one of the above categories [3]. Dietary supplement manufacturers have a lot of liberty in how they design and formulate their products. Currently, there is not a pre-market approval process needed to document the efficacy and safety before new dietary ingredients can be included into a manufactured dietary supplement product, as long as they meet the aforementioned criteria. However, the Food and Drug Administration (FDA) does require a pre-market notification of a new dietary ingredient (NDI) to be submitted by the manufacturer at least 75 days prior to marketing the NDI in a supplement [4]. Additionally, the FDA has strict guidelines for supplement facts panel labeling in regards to what

CAFEÍNA

86% (prevalência)
254 ± 79,5mg

TAVURINA

51% (prevalência)
1,3 ± 0,6g

WELCOME TO
BODYBUILDING.COM



www



TOP
100

CITRULINA

71% (prevalência)
4 ± 2,5g



CREATINA

49% (prevalência)
2,1 ± 1,0g

NIACINA

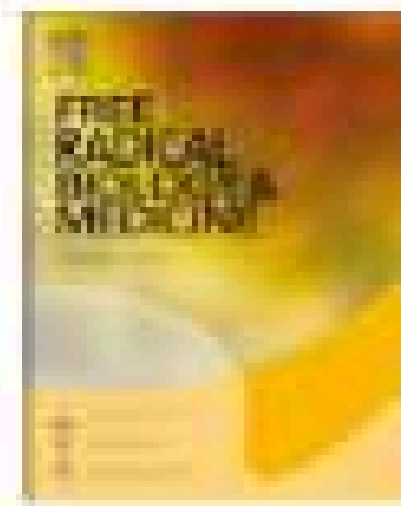
48% (prevalência)
25,8 ± 15,2mg

TIROSINA

63% (prevalência)
348 ± 305mg

BETA-ALANINA

87% (prevalência)
2 ± 0,8g



Original article

Post-exercise hypotension and skeletal muscle oxygenation is regulated by nitrate-reducing activity of oral bacteria

C. Cutler^a, M. Kiernan^b, J.R. Willis^c, L. Gallardo-Alfaro^d, P. Casas-Agustench^e, D. White^a, M. Hickson^a, T. Gabaldon^{a,c,f}, R. Best^a^a Institute of Health & Community, University of Plymouth, Plymouth, UK^b Peninsula Medical School, University of Plymouth, Plymouth, UK^c Centre for Genetic Regulation, (CRG), The Biomedical Sciences^d Research Group on Community Nutrition and Oral Health, (GROCO)^e Universitat Pompeu Fabra (UPF), Barcelona, Spain^f Instituto Catalán de Recerca i Innovació Tecnològica (ICREA), Barcelona, Spain

ABSTRACT

Post-exercise hypotension (PEH) is a common physiological response that occurs. This study investigated whether double-blind and crossover design, twenty-three healthy participants rinsed their mouth with antibacterial mouthwash 2 h after exercise. The microvascular response to nitrate and nitrite concentrations and the oral nitrate concentration were observed after exercise compared to baseline (2h: 100 ± 13 nM) compared to baseline (5 min: 100 ± 13 nM). The microvascular response to nitrate and nitrite concentrations and the oral nitrate concentration were observed after exercise compared to baseline (2h: 100 ± 13 nM) compared to baseline (5 min: 100 ± 13 nM). The microvascular response to nitrate and nitrite concentrations and the oral nitrate concentration were observed after exercise compared to baseline (2h: 100 ± 13 nM) compared to baseline (5 min: 100 ± 13 nM).

1. Introduction

Post-exercise hypotension (PEH) is a common physiological response occurring in healthy and hypertensive individuals. It is a significant reduction of blood pressure over an acute bout of exercise [1,2]. However, how this response is elicited is not fully understood yet, originally suggested to play a key role in PEH is that exercise upregulates NO synthesis in endothelial endothelial NO synthase (eNOS) expression. Previous studies in humans concluded that PEH was not affected [4,5]. Importantly, it was found that NO can be formed by another pathway while

Single Dose of Dietary Supplement Nutrex Lipo-6 Black® Limits the Post Exercise Hypotension Induced by Aerobic Exercise in Young Adults

Leonardo Medeiros Magalhães¹, Caio Victor Coutinho de Oliveira², Maria da Conceição Rodrigues Gonçalves², Alesandra Araújo de Souza¹ and Alexandre Sérgio Silva^{1,*}¹Department of Physical Education, Federal University of Paraíba, João Pessoa, Paraíba, Brazil²Department of Nutrition, Federal University of Paraíba, João Pessoa, Paraíba, Brazil

Abstract: Objective: to evaluate the blood pressure (BP) behavior and sympathetic activity in response to an aerobic exercise session after taking a dose of Nutrex Lipo-6 Black®.

Methods: This randomized, placebo-controlled study utilized seventeen subjects, divided in supplementation (n=10, 26.5±5.3 years) and placebo groups (n=7, 22.4±2.8 years). They ingested a dose of Nutrex Lipo-6 Black® (containing synephrine, caffeine, yohimbine and diiodine) or placebo and underwent a session of 40min of aerobic exercise of moderate intensity. Heart rate (HR), BP and cardiac autonomic balance (measured by heart rate variability) (CANA) were monitored at baseline, 30min after supplementation, at the end of the exercise and every 10min during a recovery period of 30min.

Results: After 30min of intake, Nutrex Lipo-6 Black® and placebo groups exhibited HR, BP and CANA similar to each other and in relation to the pre-supplementation moment. At the end of the exercise all variables showed a rise in relation to rest, but without statistical difference between groups (p>0.05). Moreover, at 30min of recovery, the Nutrex Lipo-6 Black® group presented with diastolic hypertensive response (increase of 4.2 mmHg) and a discrete post-exercise hypotension only to systolic pressure (-0.2 mmHg) relative to the pre-supplementation, while the placebo group showed evident both systolic and diastolic hypotension (-8.3 and -0.5 mmHg, respectively). HR and CANA were similar to pre-supplementation at this time.

Conclusion: single dose of Nutrex Lipo-6 Black® is able to limit the benefits of an exercise session in reducing BP, even without affecting the resting conditions of BP and CANA.

Keywords: Dietary Supplements, Sympathetic Nervous System, Exercise, Blood Pressure, Heart Rate, Post-Exercise Hypotension.

INTRODUCTION

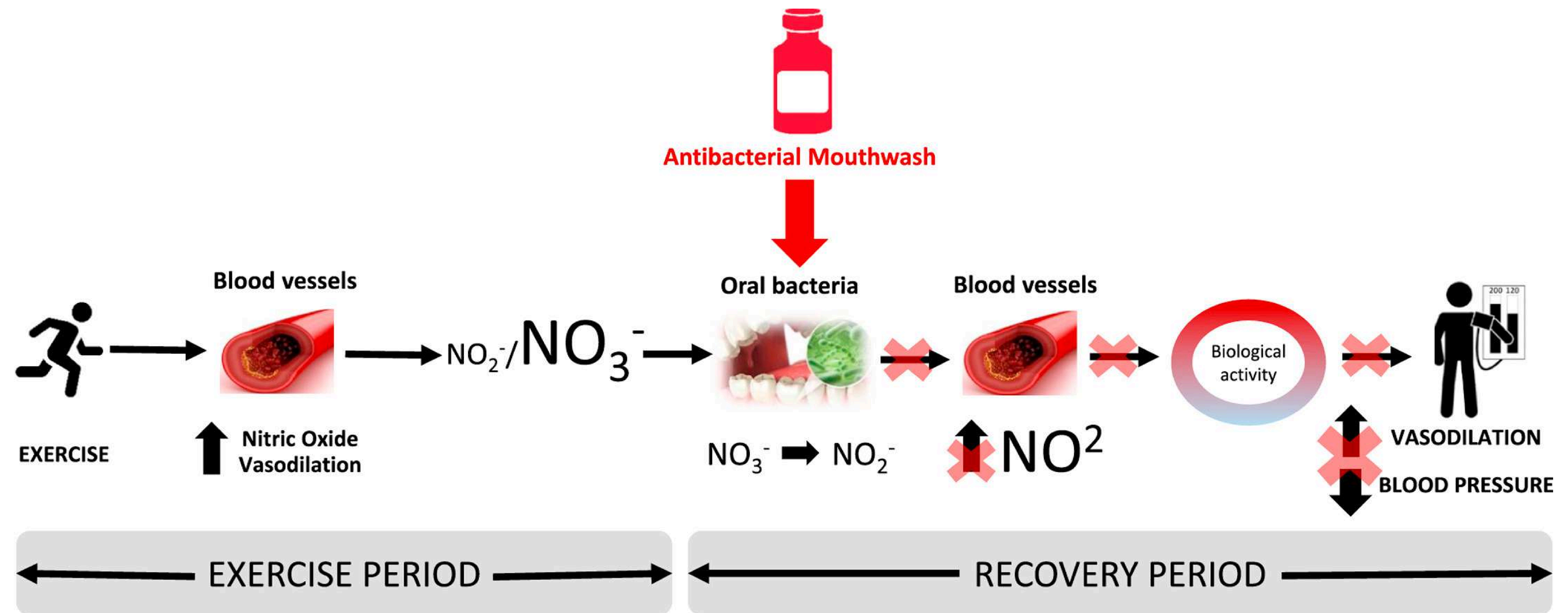
Nutritional supplementation is a notorious practice among athletes and practitioners of physical exercise [1, 2]. Studies report prevalence of use that ranges from 60 to 80% in elite young athletes under 20 years [2], 65 to 99% in athletics [3, 4] and 55 to 99% in elite athletes [1], presenting a great variety in the types of products used [4]. In this context, dietary supplements marketed as being capable of promoting weight loss have been widely used, reaching the figure of \$ 50 billion annually only in the United States [5].

Considering the process of lipolysis is initiated by activation of beta adrenergic receptors in adipose tissue by increasing the serum concentration of catecholamines [6] and several substances that can mimic these effects, supplements called thermogenic were marketed with this biochemical argument for its

effectiveness. One of the most potent sympathomimetic substances is extracted from the native plant of Asia of genus Ephedra, which are natural sources of alkaloids, mostly ephedrine [7]. However, severe neurological complications including cardiovascular and cerebrovascular accident, seizures, myocardial infarction and sudden death were associated with supplements containing ephedra and ephedrine alkaloids [8, 9]. Shekelle *et al.* [10] found 16,000 adverse events associated with the use of ephedrine contained in dietary supplements. Consequently, the U.S. Food and Drug Administration (FDA) has determined to ban the marketing of these products [8].

With this ban, new formulations appeared on the market that does not use ephedrine, but other substances with sympathomimetic similar actions. A commercial product free of ephedrine that has been widely marketed is called Nutrex Lipo-6 Black® (Nutrex Research, Inc., Oviedo, Fla.), voted "Fat-loss Product of the Year" between 2005-2008 by the specialized website bodybuilding.com. It consists of replacing the ephedrine for synephrine, and in its formula still

*Address correspondence to this author at the Department of Physical Education, Federal University of Paraíba, João Pessoa, Paraíba, R. Oliveira Lopes, 410 - 804 - Tamaritá - João Pessoa - PB CEP code: 58039-190, Brazil; Tel: (83) 32266017; Fax: (83) 3216-7030; E-mail: alexandresergiosilva@yahoo.com.br

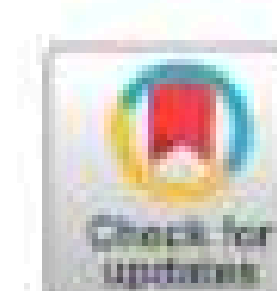
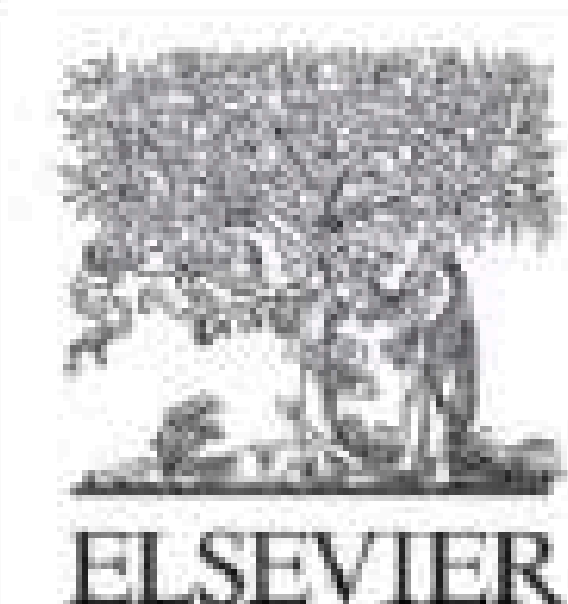


Suplementos pré-treino
podendo inibir a redução da
pressão arterial!

Associação com vitaminas isoladas, peptídeos, minerais

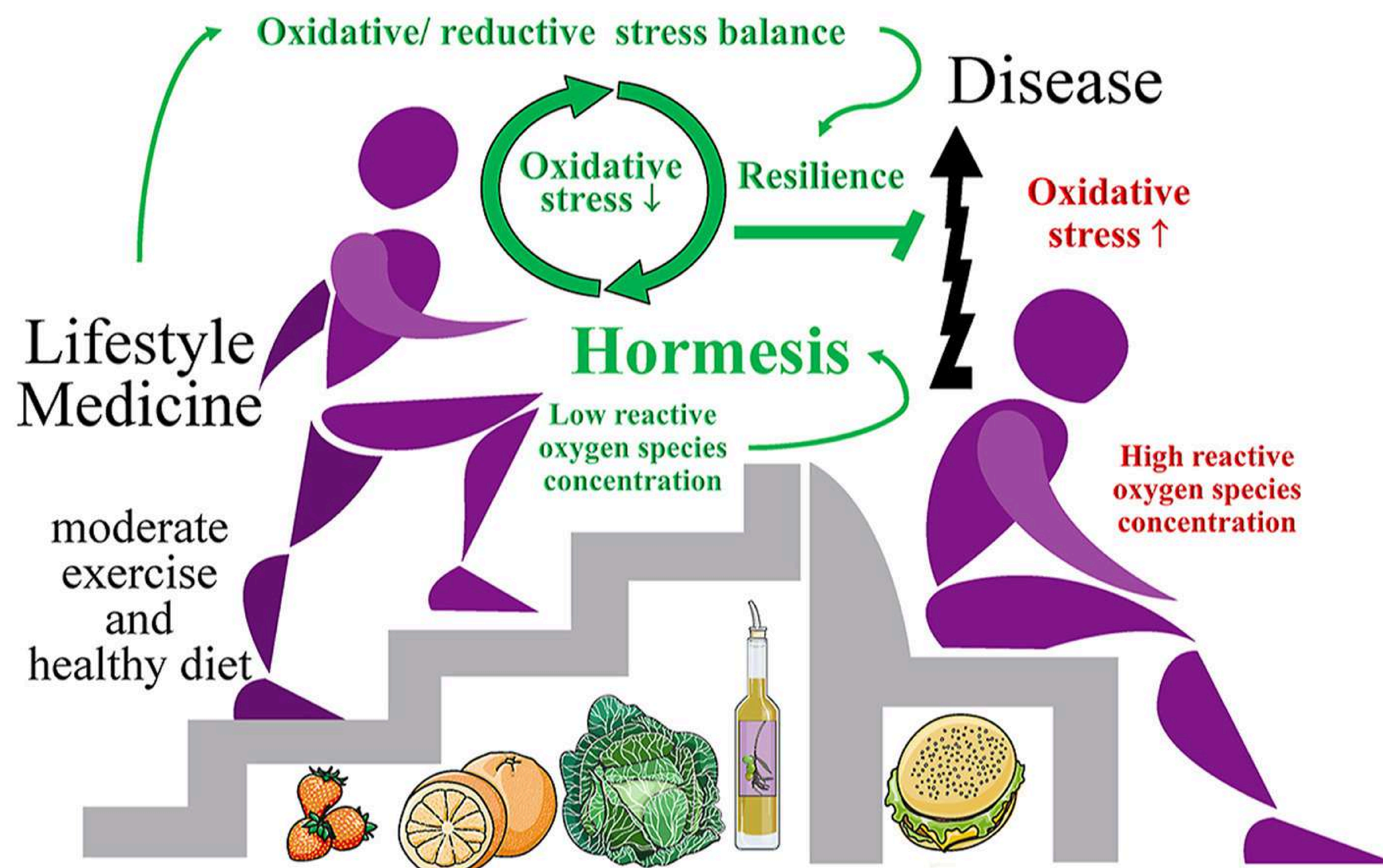
(Forte associação com diversos aditivos químicos, o que não pode ser saudável)





Diet and exercise in lifestyle medicine: The hormetic effects of bioactive compounds on human health

Ilaria Peluso



Nem todo estresse ao organismo é ruim
[dependerá da magnitude e duração]



O exercício físico, o estresse, serve como “sinal” para
adaptação do organismo (hipertrofia, recuperação
tecidual, ganho de força, aumento da atividade de
enzimas antioxidantes/antiinflamatórias)

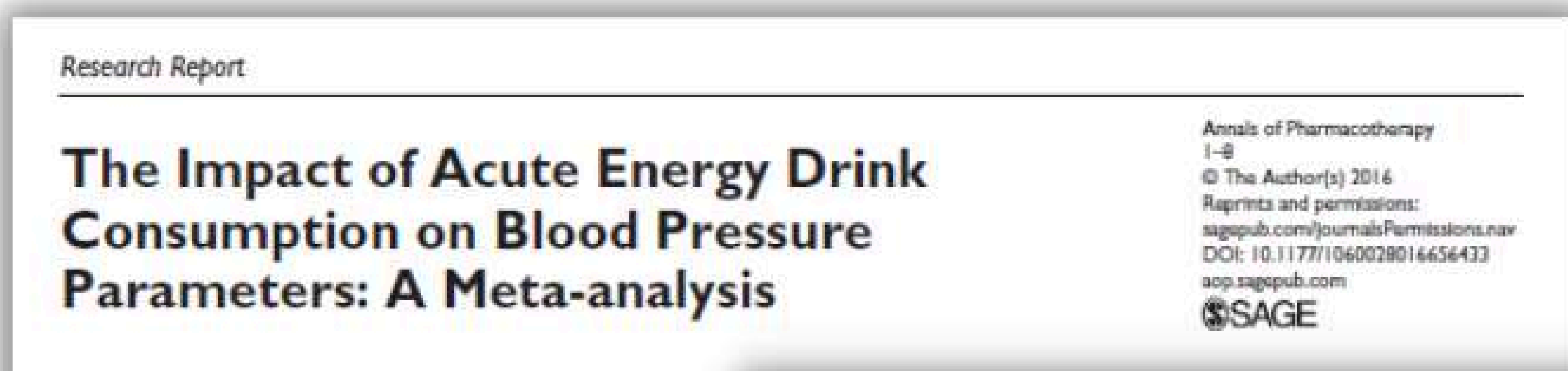


O sinal sendo inibido (pelo elevado consumo de
vitaminas/minerais antioxidantes): adaptação é
abolida (sem ganho de força, sem melhora da
imunidade ou hipertrofia...)

“

São inerentemente seguros?

”



Sachin A. Shah, PharmD^{1,2}, Belinda W. C. Ian C. Riddock, MD³, Michael Lee, RPh, M

Abstract
Objective: Hospitalizations associated with energy drinks are suspected to cause hemodynamic effects, the magnitude of acute energy drink consumption on systolic and diastolic blood pressure (SBP and DBP) was assessed. **Data Sources:** A search in PubMed, Cumulative Index to Nursing and Biomedical Literature (CINAHL), and Cochrane Database of Systematic Reviews through December 31, 2015, was performed. **Study Selection:** Studies assessing the effects of commercially available energy drinks on blood pressure were included. **Results:** The mean SBP baseline was calculated using the DerSimonian and Laird method. 15 studies were included, encompassing a total of 340,340 participants. The mean SBP increased significantly by 4.44 mm Hg (95% CI = 1.52 to 3.95; Cochrane Q P = 0.050), respectively. HR changed to 2.87; Cochrane Q P < 0.001). The largest change in SBP was 1.52 to 3.95 mm Hg. 95% CI = 4.62 to 8.27). **Conclusions:** Our results suggest that energy drink consumption is warranted.

Keywords: complementary medicine, hemodynamics, hypertension, energy drinks

Introduction
Energy drinks have become a new niche in the beverage market bolstered after the introduction of Red Bull in 1987. A standard definition of energy drink does not exist, but they are distinguished from sports and nutraceutical drinks in that they contain caffeine in conjunction with presume energy-enhancing ingredients such as taurine, B vitamins and herbal extracts (eg, *Panax ginseng*).^{1,2} Claims of benefit include improvements in alertness, aerobic and anaerobic endurance, concentration, memory, and reaction time. These drinks are also available in a quickly consumed “shot” form, such as the 5-hour ENERGY shot, which markets long-lasting effects with a gradual descent, rather than a “crash.”³ In the United States, energy drinks hold 63% of the market share for nonalcoholic beverages, estimated to be a \$5.4 billion industry in 2006, with 47% of the market internationally.^{2,4} The majority of energy drinks are marketed and consumed by young adults between the ages of 18 and 34 years, but 46% of those younger than 19 years also report having consumed an energy drink.^{5,6}



Introduction
One substantial subcategory of soft drinks that is considered to be one of the most popular is represented by energy drinks (EDs). Indeed, the popularity of EDs has substantially increased since their introduction around 1960 (1), and this subcategory been found to be one of the fastest growing segments in the beverage industry (2). The majority of EDs are targeted toward young adults aged between 18 and 34 y, with a reported consumption frequency of 1–4 EDs/mo (3); and approximately half of college student “ED users” consumed EDs while studying or working on a major project (3). To date, there exists an abundance and variety of EDs on the market, with >200 brands in the United States alone (4). However, only a few dominate the market, and there is not much difference in caffeine and sugar content when comparing the market leaders (Table 1). At the beginning of the 21st century, early concerns arose about the safety

¹The authors reported no funding received for this study.
²Author disclosures: EK Grasser, JL Miles-Chan, N Chamière, CR Loonan, AG Dulloo, and JP Montani, no conflicts of interest.
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Submitted: 14 September 2020; Accepted: 3 February 2020; Published: 5 February 2020

There is an increasing consumption of energy drinks both in the United States and globally. The components of these beverages are sometimes unclear but common to many energy drinks are caffeine, taurine, and B-vitamins. Young people, particularly those engaged in sports, are especially likely to be consumers of energy drinks. While their autonomic and hemodynamic effects, current literature suggests that consumption is accompanied by increases in blood pressure, sympathetic activity, and heart rate. There are no systematic long-term studies identifying consequences of energy drink consumption. However, multiple anecdotal reports implicate energy drinks in causing adverse cardiovascular events including atrial fibrillation, ventricular arrhythmia, myocardial infarction, and sudden cardiac death. Events such as atrial fibrillation may even occur in otherwise healthy individuals. It is likely that these cardiovascular outcomes are related to the combination of caffeine, taurine, and B-vitamins. It is likely that these cardiovascular outcomes are related to the combination of caffeine, taurine, and B-vitamins. It is likely that these cardiovascular outcomes are related to the combination of caffeine, taurine, and B-vitamins.

Keywords: energy drinks; caffeine; taurine; arrhythmia; red bull; monster energy

Introduction
Energy drink consumption has increased worldwide with its use becoming a norm in society. Many of these EDs advertise claims of increasing physical stamina, focus, cognition, and wakefulness in individuals who consume them. Combined with aggressive marketing from ED companies, these claims may be the very reason these beverages appeal to young adults, athletes, students, and military personnel. In addition to containing large quantities of caffeine, they also contain high concentrations of ingredients such as taurine, sucrose, B-vitamins, ginseng, and other herbal extracts [1]. According to recent data which evaluated caffeinated beverage consumption through volume sales in countries around the world, it was found that the United States consumed the most EDs, sports drinks, and carbonated soda per capita than in any other country [2]. The consumption of these beverages in the United States is most prevalent in men, especially between the ages of 18–34. Additionally, about one-third of teens from the ages of 12–17 also consume these beverages regularly [3]. Co-ingestion of other drugs and substances, particularly alcohol, with EDs has also become a widespread practice amongst adolescents and young adults [4]. Being highly unregulated, EDs are showing increasing scientific evidence of their detrimental health effects on various organ systems of the body. The organ systems affected by ED consumption include the gastrointestinal, renal, endocrine, and psychiatric systems [5] along with the cardiovascular and neurological systems being the most common [5,6]. The American Association of Poison



Cristina Cadoni^{1,*} and Alessandra Tiziana Peana^{2,*}

Abstract
Energy drink (ED) consumption has become a growing public health issue over the past few decades. Despite claims of being safe and beneficial, EDs have been linked to particularly fatal outcomes associated with the cardiovascular system which include atrial and ventricular arrhythmias, myocardial infarctions, cardiomyopathies, and sudden cardiac death. Large quantities of caffeine, taurine, sugars, and B-vitamins may be contributing to these outcomes by increasing the heart rate, blood pressure (BP), and contractility of the heart in addition to prolonging the QTc. There is still a substantial amount of unknown information on EDs that warrants more research and a dire need for age regulations, transparency of ingredients, clear labeling of adverse effects, and most importantly, education of consumers.

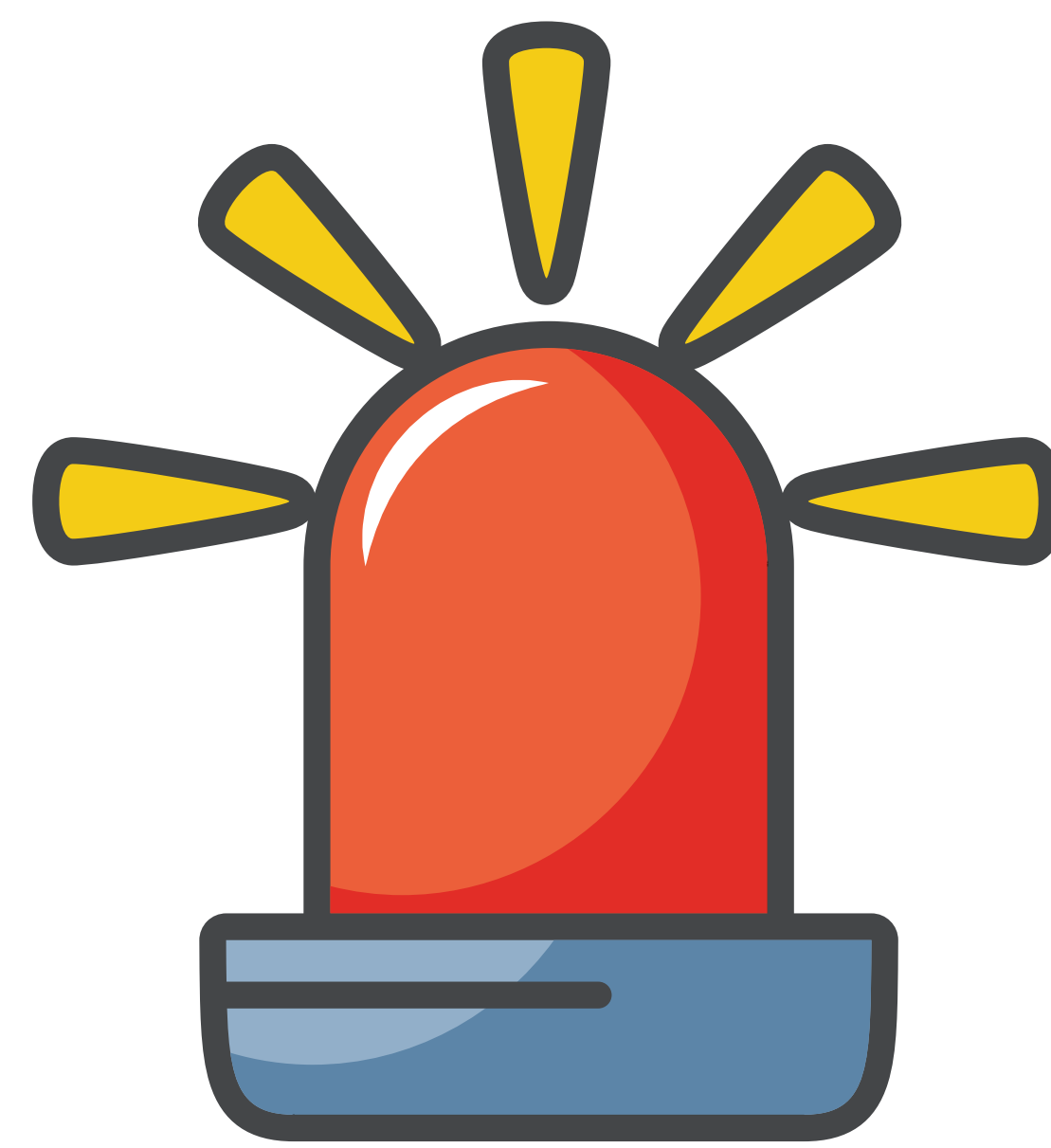
Keywords: energy drinks; caffeine; taurine; arrhythmia; red bull; monster energy

1. Introduction
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2. Pathophysiology
The adverse effects of EDs on the cardiovascular system are due to its many different ingredients that have the ability to individually and collectively change the physiology of the cardiovascular system. The main ingredients contributing to the stimulatory effects of these beverages are caffeine, taurine, sugars, and B-vitamins [1]. Currently, some of the top selling brands of EDs, Red Bull, Monster Energy, and Bang Energy all include these ingredients, in



Cuidado com propagandas enganosas!



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Mulher que tomou chá emagrecedor de 50 ervas morre em São Paulo

Médica diz que paciente sem nenhum problema de saúde prévio teve hepatite fulminante após o consumo das cápsulas com composto de ervas

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CALCINHA PRETA

Paulinha Abelha: médicos apuraram intoxicação por remédios para emagrecer e 'doença da urina preta'

Cantora do Calcinha Preta estava fazendo tratamento para perder peso, com supervisão de um nutrólogo, e comeu comida japonesa na véspera de se sentir mal

Por Agência O Globo
24/02/22 às 09H55 atualizado em 24/02/22 às 10H03



Review Article

Dietary Supplements as Source of Unintentional Doping

Vanya Rangelov Kozhuharov , Kalin Ivanov , and Stanislava Ivanova 

Department of Pharmacognosy and Pharmaceutical Chemistry, Faculty of Pharmacy, Medical University-Plovdiv, 4002 Plovdiv, Bulgaria

Correspondence should be addressed to Vanya Rangelov Kozhuharov; vanya.kozhuharov@mu-plovdiv.bg

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Academic Editor: Mihajlo Jakovljevic

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Background. The substances used in sport could be divided into two major groups: those banned by the World Anti-Doping Agency and those which are not. The prohibited list is extremely detailed and includes a wide variety of both medicinal and nonmedicinal substances. Professional athletes are exposed to intense physical overload every day. They follow a relevant food regime and take specific dietary supplements, which is essential for the better recovery between trainings and competitions. However, the use of “nonprohibited” dietary supplements (DS) is not always completely safe. One of the risks associated with the use of dietary supplements is the risk of unintentional doping—originating from contaminated products. The presence of undeclared compounds in the composition of DS is a serious concern. The aim of this study is to evaluate the risk of unintentional doping. **Materials and Methods.** Literature search was done through PubMed, Science Direct, Google Scholar, and Web of Science. Studies investigating the presence of undeclared compounds, in dietary supplements, banned by WADA met the inclusion criteria. The last search was conducted in June 2021. The present review is based on a total of 50 studies, which investigated the presence of undeclared compounds in DS. **Results.** The total number of analyzed DS is 3132, 875 of which were found to contain undeclared substances. Most frequently found undeclared substances are sibutramine and anabolic-androgenic steroids. **Conclusion.** More than 28% of the analyzed dietary supplements pose a potential risk of unintentional doping. Athletes and their teams need to be aware of the issues associated with the use of DS. They should take great care before inclusion of DS in the supplementation regime.

1. Introduction

Obligatory drug testing was introduced by the International Olympic Games in 1968 Committee. Since then, numerous doping cases were reported. The presence of prohibited substances and/or their metabolites in athlete samples (blood or urine) is considered a serious violation of the Anti-Doping Rules, according to the World Anti-Doping Code (WADC). Athletes are responsible even when a doping compound enters their bodies without their knowing, because according to WADC, it is considered athletes’ “personal duty” to ensure that no prohibited substance enters their bodies [1].

Violations of the Anti-Doping Rules include not only unintended or attempted use by an athlete of a prohibited substance but also the use of a prohibited method. There are three main categories of prohibited methods: manipula-

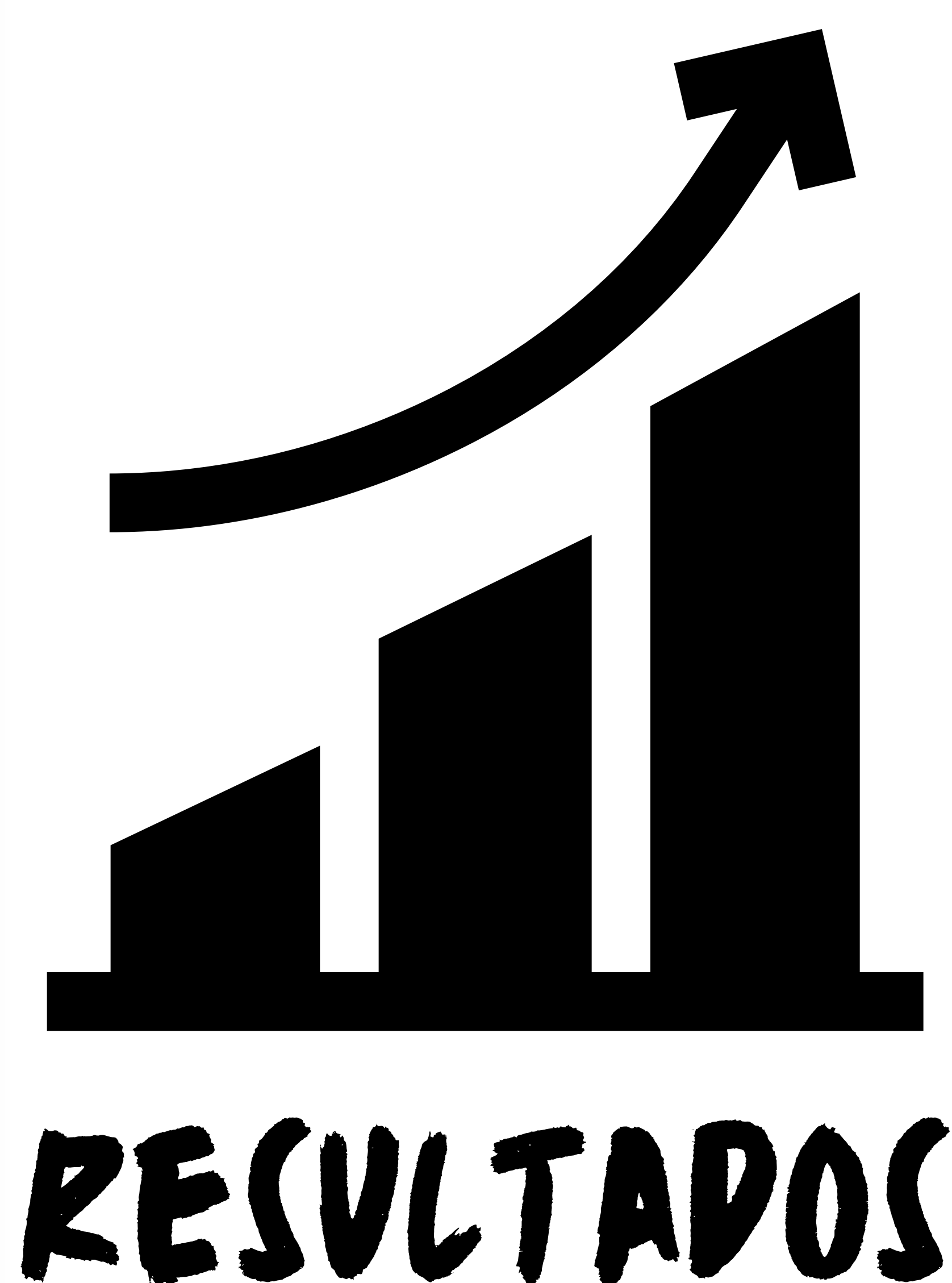
tion of blood and blood components, chemical and physical manipulation, and gene and cell doping [1].

Doping is considered a serious sports crime, which may cause many negative effects, including loss of championship titles, bans from participation in competitions, compromised reputation, and poor health. Since doping is considered a premeditation behavior, engaging in this behavior is mainly attributed to the athlete’s decision-making process and moral values or obligations [2].

In the last 2 decades, there were many cases of unintended doping because of the use of dietary supplements (DS) with bad quality. In the same time, the trend of using DS by professional athletes is constantly growing [3]. Doping control statistics from the Olympic Games in Sydney and Athens in 2000 and 2004 show that [4, 5] 78 percent and 75.7 percent of tested athletes consumed food supplements in the three days before testing, respectively. Several



Avaliar a presença de contaminantes em suplementos comercialmente disponíveis



50 estudos analisados

3.172 SA verificados

875 (28%) com substâncias não declaradas



Trenbolona



Fluoxetina



Orlistate



Sibutramina



Article

Healthcare Professionals’ Knowledge and Behaviors Regarding Drug–Dietary Supplement and Drug–Herbal Product Interactions

Zorica Stanojević-Ristić ^{1,*}, Isidora Mrkić ², Aleksandar Ćorac ³, Mirjana Dejanović ⁴, Radoslav Mitić ¹, Leonida Vitković ⁵, Julijana Rašić ¹, Dragana Valjarević ⁶ and Aleksandar Valjarević ⁷



Major DDSIs—Serious-avoid co-administration				
Doxycycline with magnesium	92 (88)	81 (93)	114 (74)	287 (83)
Levofloxacin with iron	89 (85)	62 (71)	94 (61)	245 (71)
Fosinopril with potassium	42 (40)	43 (49)	111 (72)	196 (57)
Moderate DDSIs—Use with caution-monitor				
ASA with omega-3 fatty acid	46 (44)	57 (65)	47 (31)	150 (43)
Hydrochlorothiazide with vitamin D3	46 (44)	48 (55)	43 (28)	137 (40)
Levothyroxine with calcium	67 (64)	39 (45)	23 (15)	129 (37)
Warfarin with coenzyme Q10	25 (24)	36 (41)	68 (44)	129 (37)
Zolpidem with melatonin	41 (39)	40 (46)	37 (24)	118 (34)
Levodopa with pyridoxine	8 (8)	7 (8)	47 (31)	62 (18)
Warfarin with glucosamine	25 (24)	12 (14)	10 (6)	47 (14)

^a See File S1 in Supplementary Materials. GPs—general practitioners.

Table 3. Frequency of correct answers about drug-herbal product interactions (DHPIs) among respondents.

Question ^a	GPs Correct Answer <i>n</i> (%)	Specialists Correct Answer <i>n</i> (%)	Nurses Correct Answer <i>n</i> (%)	Total Correct Answer <i>n</i> (%)
Major DHPIs—Contraindicated				
Indinavir with St John’s wort	16 (15)	33 (38)	16 (10)	65 (19)
Major DHPIs—Serious-avoid co-administration				
Phenobarbital with valerian	75 (71)	47 (54)	89 (58)	211 (61)
Cyclosporine and St John’s wort	19 (18)	10 (11)	36 (23)	63 (18)
Moderate DHPIs—Use with caution-monitor				
ASA with ginger	82 (78)	52 (60)	110 (71)	244 (71)
ASA with ginkgo	82 (78)	57 (66)	84 (54)	223 (64)
Warfarin with ginseng	59 (56)	53 (61)	80 (52)	192 (56)
Iraconazole with echinacea	35 (33)	34 (39)	41 (27)	110 (32)
Atorvastatin with black cohosh	44 (42)	20 (23)	36 (23)	100 (29)
Warfarin with cranberry	33 (31)	18 (21)	81 (53)	132 (28)
Insulin with aloe vera	27 (26)	35 (40)	11 (7)	73 (21)

^a See File S1 in Supplementary Materials. GPs—general practitioners.

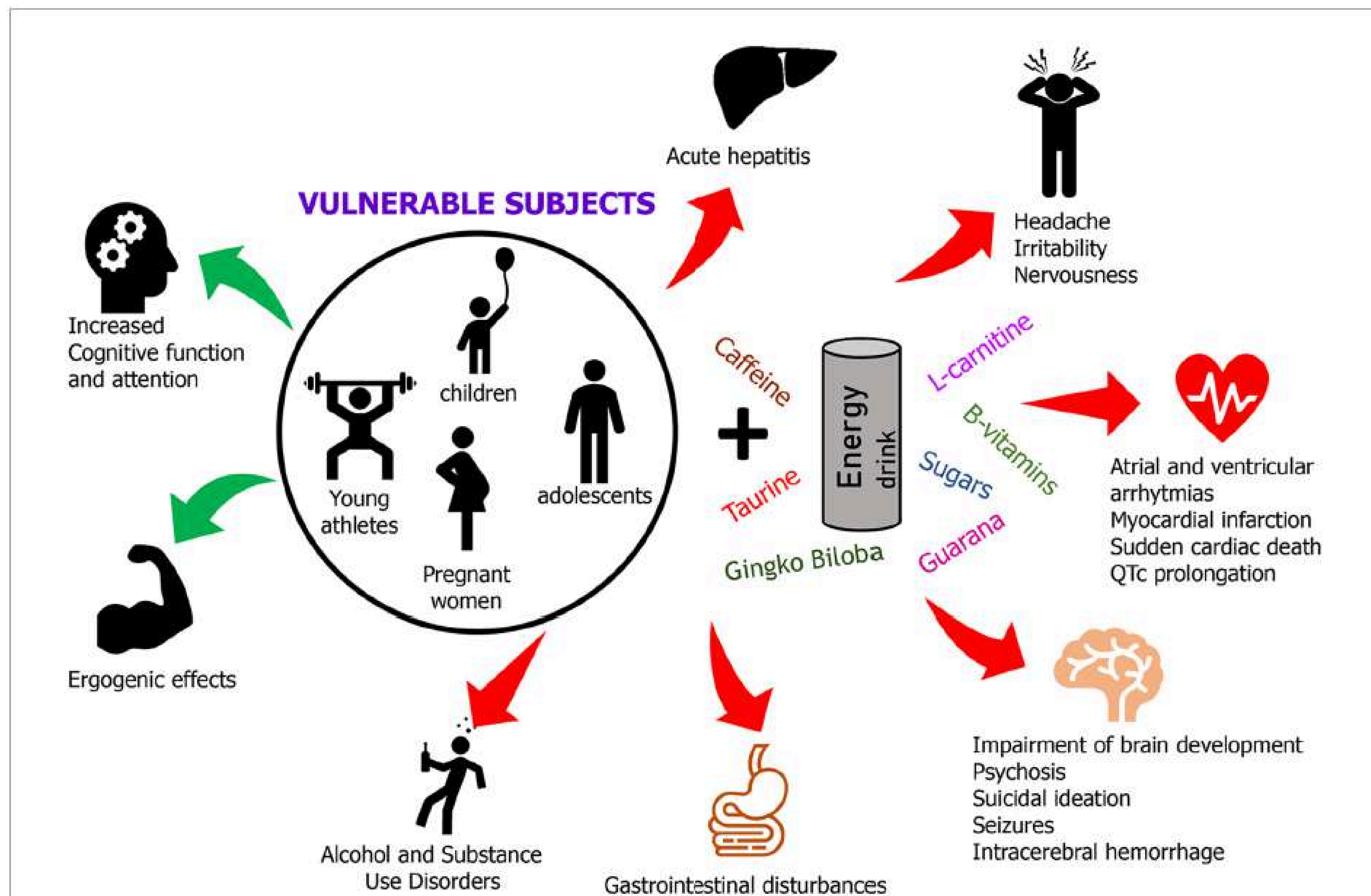
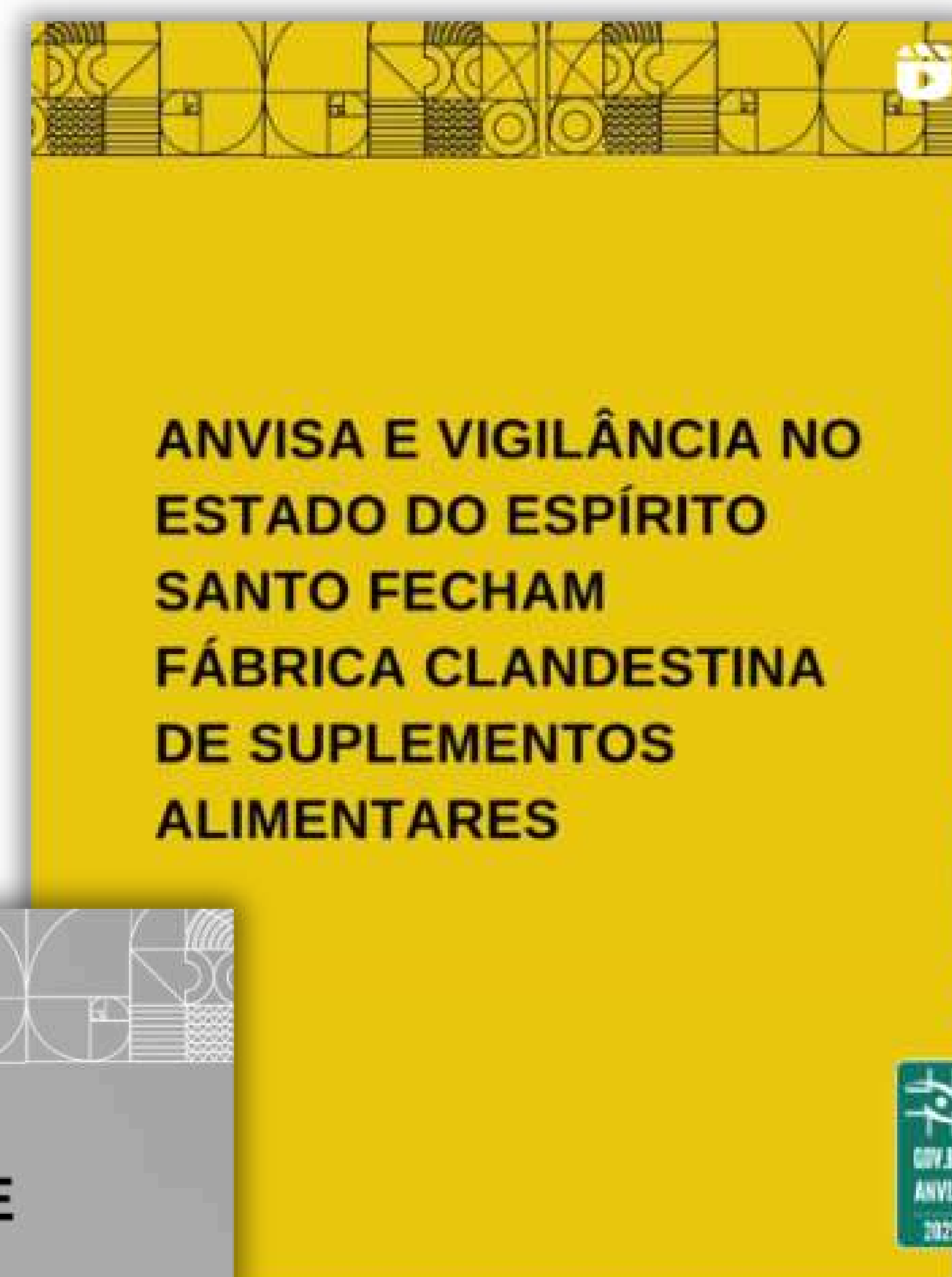


FIGURE 2

A graphical summary of positive and negative effects of EDs consumption in vulnerable individuals. In the circle are depicted the vulnerable population most sensitive to the harmful outcomes of excessive consumption of EDs. The red arrows mean negative outcomes while green arrows represent likely beneficial effects of moderate EDs consumption.



Necessidade de considerar os diversos grupos populacionais!





nutrients

Nutrients 2017, 9, 1154; doi:10.3390/nu9101154



Article

The Prevalence and Predictors of Dietary Supplement Use in the Australian Population

Stacey K. O'Brien, Eva Malacova, Jill L. Sherriff  and Lucinda J. Black *

Jornal de Pediatria 2024;100(S1): S31–S39





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REVIEW ARTICLE

Use of dietary supplements by children and adolescents

Junaura Rocha Barretto ^a, Mara Alves da Cruz Gouveia ^b, Crésio Alves ^{c,*}



Open access

Original research

**BMJ Open
Diabetes
Research
& Care**

Prevalence and trends in dietary supplement use among US adults with diabetes: the National Health and Nutrition Examination Surveys, 1999–2014

BMJ Open Diab Res Care 2020;8:e000925. doi:10.1136/bmjdr-2019-000925

Jing Li,¹ Xinli Li,² Wambui Gathirua-Mwangi,³ Yiqing Song ⁴



Foods 2025, 14, 884



Article

Key Factors Driving Portuguese Individuals to Use Food Supplements—Findings from a Cross-Sectional Study

Maria João Campos ¹, Agnieszka Garbacz ², Natalia Czlapka-Klapinska ², Magdalena Czlapka-Matyasik ^{2,*}
and Angelina Pena ^{1,*}

J Nutr Health Aging. 2022;26(2):133–138

Published online January 24, 2022, <http://dx.doi.org/10.1007/s12603-022-1732-9>

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Original Research

Dietary Supplement Use in Middle-aged and Older Adults

E.C.K. Tan¹, T.C. Eshetie², S.L. Gray², Z.A. Marcum²

PLOS ONE

PLOS ONE | <https://doi.org/10.1371/journal.pone.0292900> October 12, 2023

RESEARCH ARTICLE

Prevalence, attitudes, and practices of dietary supplements among middle-aged and older adults in Asir region, Saudi Arabia: A cross-sectional study

J Nutr Health Aging. 2018;22(5):575–580

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DIETARY BEHAVIORS AMONG YOUNG AND OLDER ADULTS IN BRAZIL

I. NOGUEIRA BEZERRA¹, A.O. DE CARVALHO GURGEL², R.G. BASTOS BARBOSA²,
G. BEZERRA DA SILVA JUNIOR³



August 2012 Volume 112 Number 8

RESEARCH

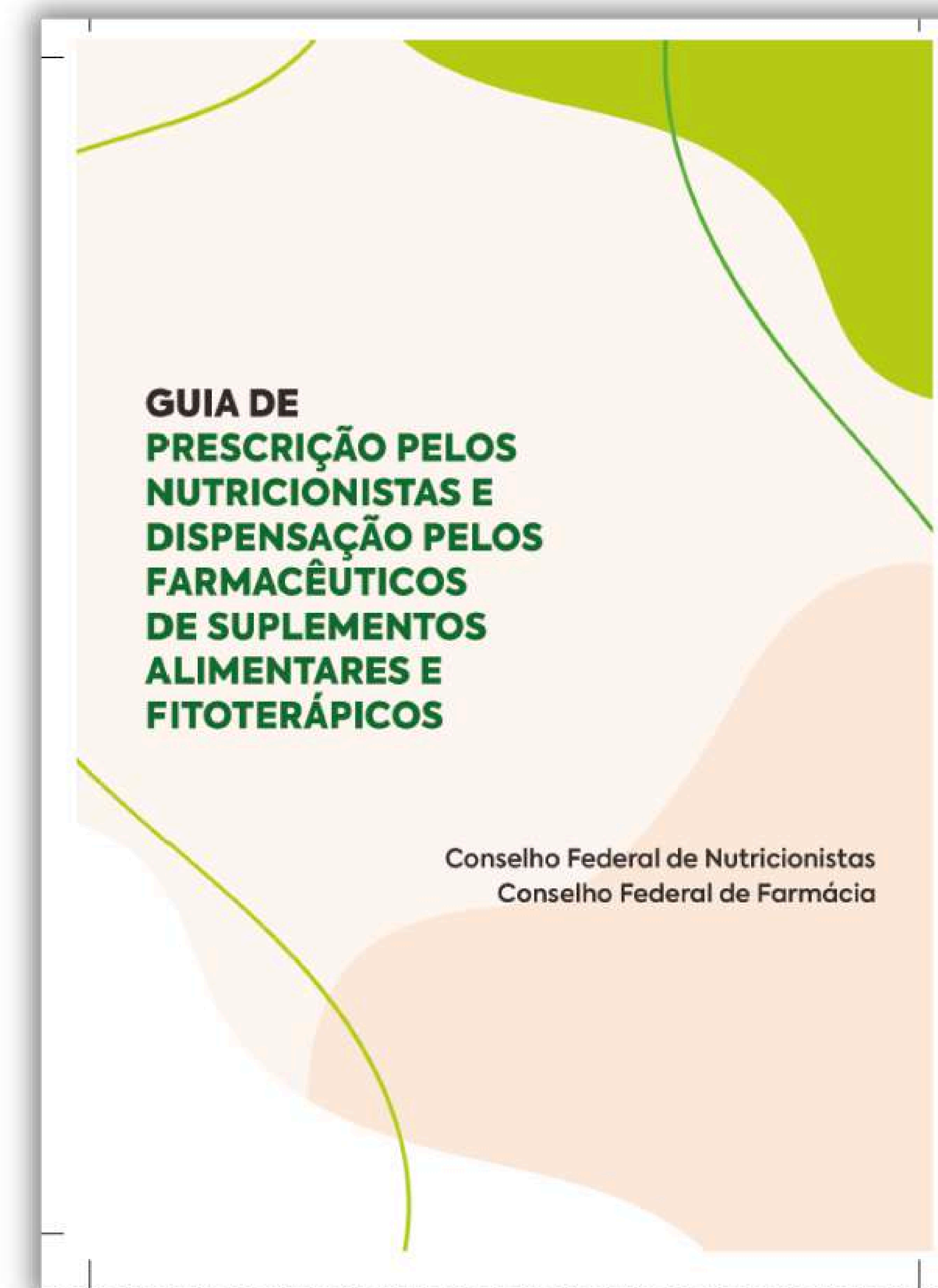
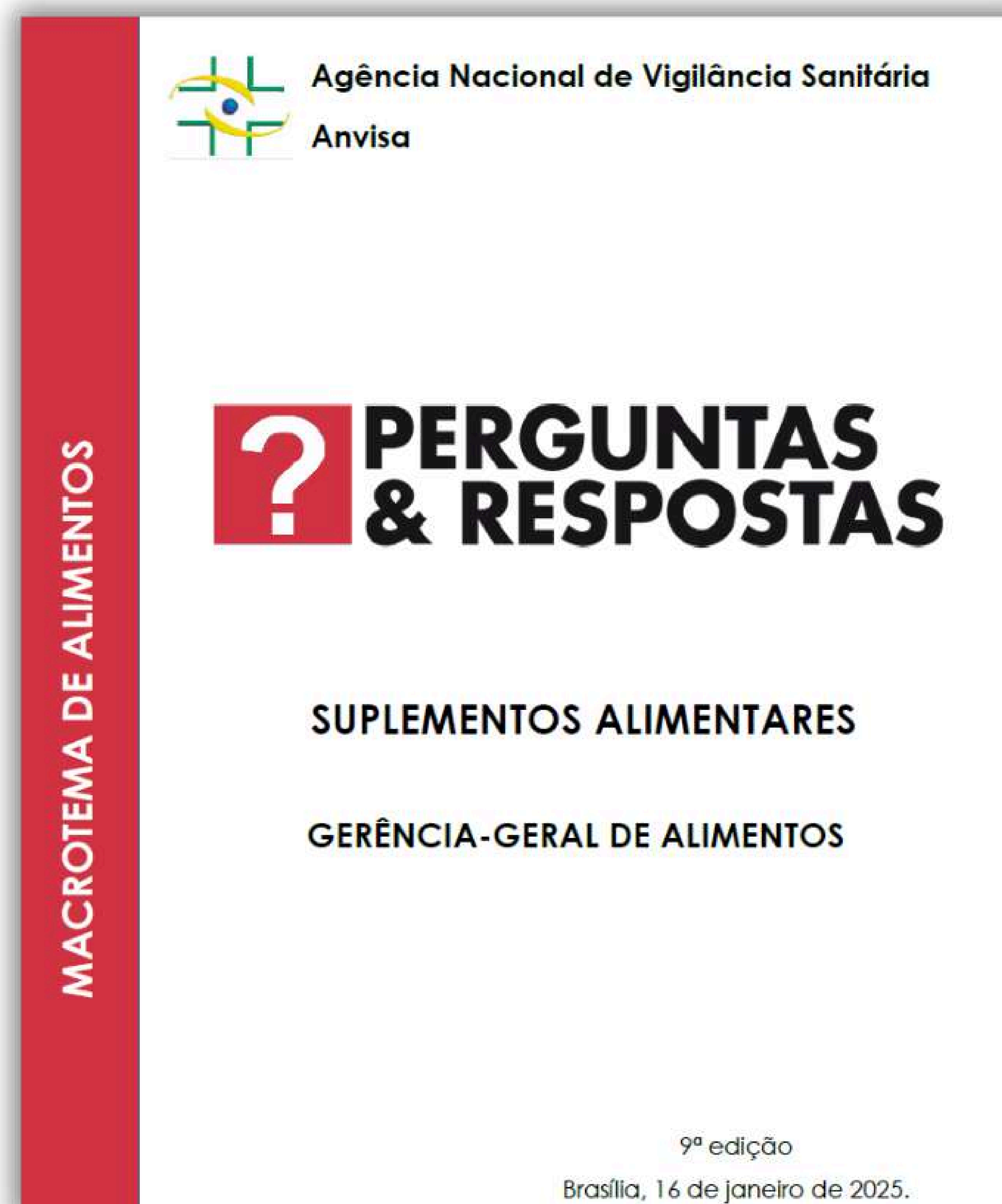
Research and Professional Briefs

JOURNAL OF THE ACADEMY OF NUTRITION AND DIETETICS

Differences by Race/Ethnicity in Older Adults' Beliefs about the Relative Importance of Dietary Supplements vs Prescription Medications: Results from the SURE Study

AÇÕES DO CFN





Checklist:

1. Verifique a confiabilidade de quem está vendendo

- ✓ O site ou plataforma é oficial e possui boa reputação?*
- ✓ Estão disponíveis informações de contato, como e-mail, telefone e endereço?
- ✓ O vendedor ou a loja online possui avaliações positivas e consistentes de outros clientes?

2. Analise as informações técnicas do produto

- ✓ O produto apresenta informações detalhadas, como ingredientes, tabela nutricional e modo de uso?
- ✓ Há menção clara à autorização de órgãos reguladores oficiais, como a Anvisa?
- ✓ O fabricante é reconhecido e possui boa reputação no mercado?

3. Questione promessas e exageros

- ✓ O produto promete resultados rápidos ou milagrosos, como "perca 10 kg em uma semana"?
- ✓ Existem garantias exageradas que não parecem realistas ou cientificamente embasadas?

4. Avalie as fontes e os depoimentos

- ✓ A descrição do produto utiliza termos técnicos ou pseudocientíficos sem comprovação confiável?
- ✓ Os depoimentos parecem naturais ou são exageradamente perfeitos e suspeitos?
- ✓ O produto é promovido por influenciadores digitais ou celebridades sem qualificação na área da saúde?

5. Consulte um profissional de saúde antes de comprar

- ✓ O produto foi recomendado por um nutricionista?
- ✓ Você discutiu com um profissional a real necessidade de consumir este produto?

6. Verifique a segurança da plataforma de venda

- ✓ O site utiliza uma conexão segura? Verifique se o link começa com "https".
- ✓ Há políticas de devolução ou reembolso disponíveis e bem detalhadas?

7. Pesquise sobre a reputação do produto de nutrição

- ✓ O produto é mencionado em fóruns, grupos ou redes sociais? Qual é o feedback dos consumidores?
- ✓ Existem alertas de órgãos oficiais sobre fraudes ou possíveis efeitos colaterais associados a ele?

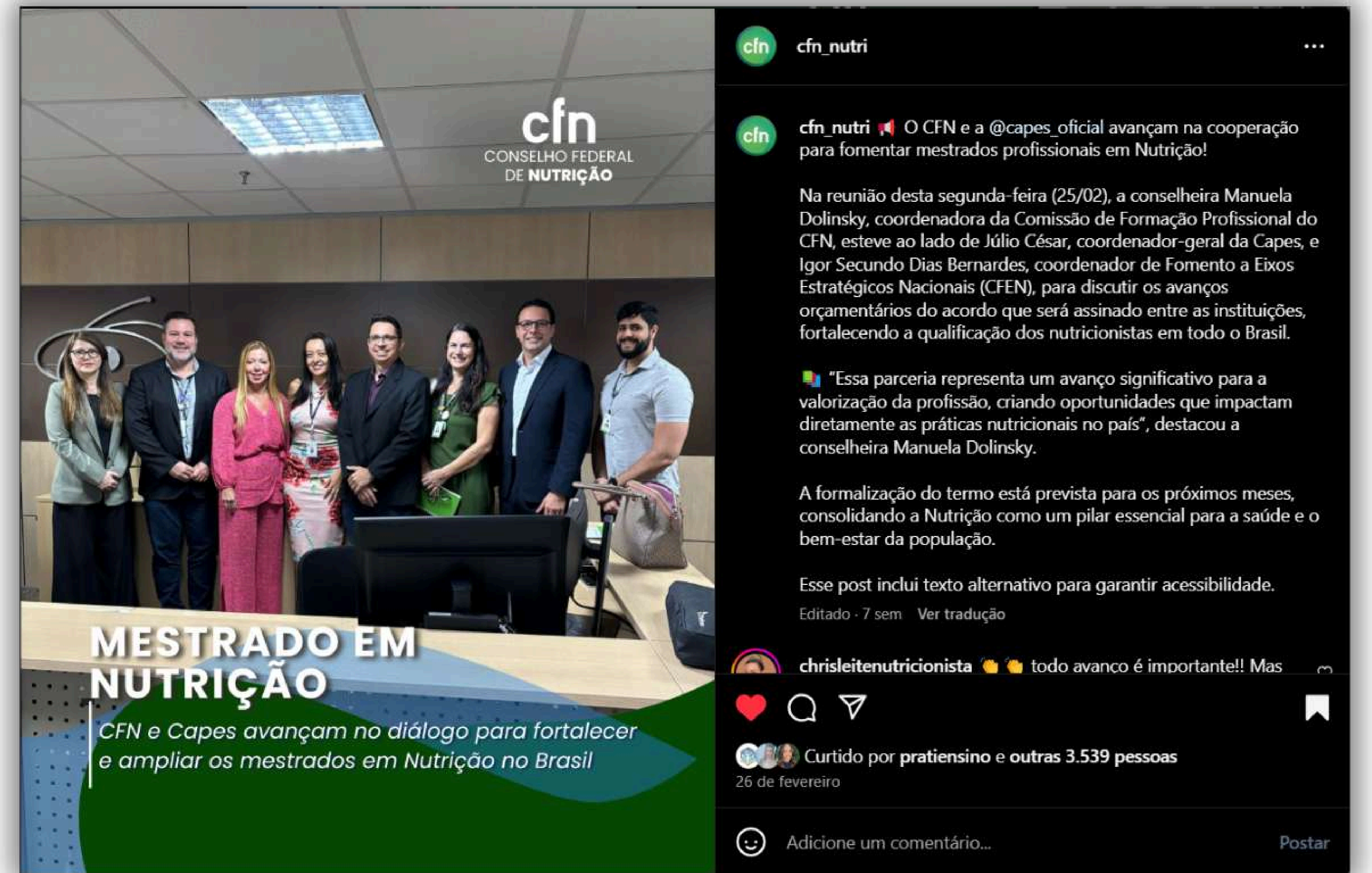
8. Confira a validade e a procedência do produto

- ✓ A data de validade está claramente informada na embalagem?
- ✓ Há informações detalhadas sobre o local de fabricação e distribuição?
- ✓ O lote do produto está registrado, permitindo sua rastreabilidade?

*Para verificar a legitimidade e a reputação de um site ou plataforma, recomenda-se observar a presença de informações institucionais, como endereço físico, CNPJ e canais de atendimento. Além disso, é possível consultar plataformas especializadas, como o [Reclame Aqui](http://www.reclameaqui.com.br) (www.reclameaqui.com.br), que reúne avaliações e experiências de consumidores. Uma busca pelo nome da empresa ou do site na barra de pesquisa pode fornecer informações relevantes sobre sua reputação e o índice de resolução de problemas reportados.



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Conselho Federal de Nutricionistas
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CFN - Nota Técnica nº 40/2025/CFN-CTN/CFN-Diretoria

Brasília, 03 de julho de 2025.

ASSUNTO: Nutrição e Individualidade: o papel do nutricionista no processo de cuidado em clínicas de emagrecimento

CONSIDERANDO

1. Que o Conselho Federal de Nutrição (CFN) é responsável por orientar, disciplinar o exercício da profissão e zelar pela promoção da saúde e pela segurança alimentar e nutricional da população brasileira;
2. Que o Processo do Cuidado em Nutrição (PCN) é uma metodologia estruturada e sistematizada que orienta o atendimento nutricional, assegurando a individualização de condutas com base em evidências científicas e avaliação clínica criteriosa;
3. Que o Código de Ética e Conduta do Nutricionista (Resolução CFN nº 599/2018) estabelece a responsabilidade do nutricionista em conduzir o cuidado nutricional de forma ética, técnica e científica, respeitando a individualidade do paciente;
4. Que práticas generalistas ou automatizadas, como o uso indiscriminado de aplicativos paciente e ferem os princípios éticos da profissão;
5. Que a individualização do cuidado nutricional contribui para a prevenção de agravos à saúde, para o tratamento de condições específicas e para a promoção do bem-estar, alinhando-se aos princípios do Direito Humano à Alimentação Adequada e da Segurança Alimentar e Nutricional;
6. Que a integração entre ciência, ética e respeito à individualidade no cuidado nutricional assegura resultados seguros, eficazes e sustentáveis a longo prazo.

I – INTRODUÇÃO

O Processo do Cuidado em Nutrição (PCN) é uma abordagem metodológica amplamente reconhecida na literatura científica por sua capacidade de estruturar e sistematizar o atendimento nutricional. Ele é composto por etapas sequenciais que incluem a avaliação, diagnóstico, intervenção, monitoramento e reavaliação, sendo fundamental para garantir a eficácia e segurança das intervenções nutricionais.

Estudos indicam que o cuidado nutricional individualizado promove maior adesão dos pacientes às intervenções propostas, melhora os desfechos clínicos e contribui para mudanças comportamentais sustentáveis a longo prazo. Além disso, a personalização do atendimento permite que o nutricionista leve em consideração as particularidades metabólicas, culturais e emocionais de cada indivíduo, maximizando os resultados e minimizando os riscos associados a práticas inadequadas ou generalistas.

A Organização Mundial da Saúde (OMS) enfatiza a importância de estratégias personalizadas em cuidados de saúde, destacando que intervenções genéricas podem não atender às necessidades de populações diversas. No contexto nutricional, a prática individualizada está alinhada a essa perspectiva, garantindo que as intervenções sejam baseadas em evidências científicas.

NOTA TÉCNICA SOBRE DIETAS DA MODA E USOS DE SA



Nota técnica sobre as evidências da presença do Nutricionista no cuidado em saúde, focando em desfechos clínicos.



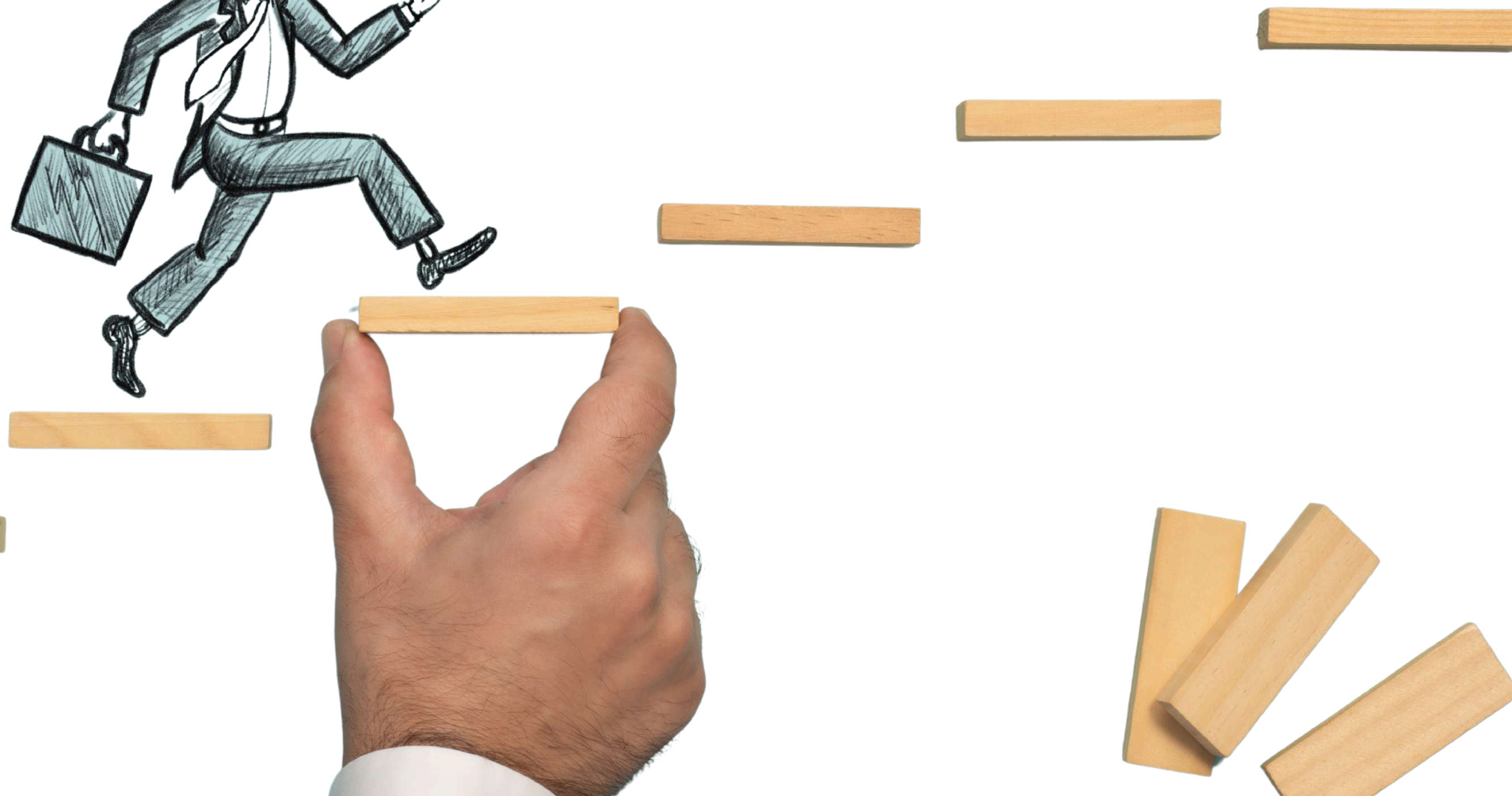
O foco é para profissionais que trabalham em clínicas de emagrecimento



A NT foi um produto, mas não o único, do Grupo de Trabalho Clínicas de Emagrecimento e Aplicativos de Dieta

Desafios

Regulamentação
Evidências científicas
Controle de qualidade
Fiscalização



O que ficamos sabendo?

1

O mercado e o consumo de SA tem crescido de maneira estável, de modo que garantir a qualidade dos produtos, bem como a fiscalização, é essencial para trabalharmos em prol da SAN do consumidor.

2

O conhecimento popular de serem “naturais” é conceitualmente errado e perigoso!

3

A educação nutricional é essencial para prescrição assertiva e segura



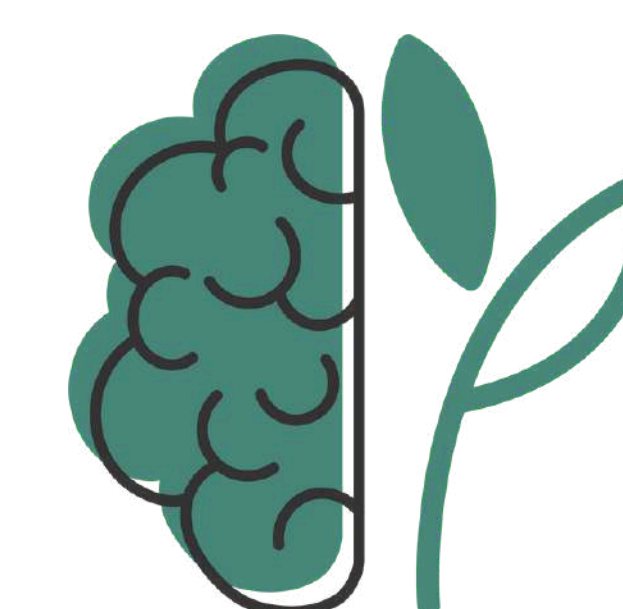
contato@caiorvco.com.br



Fitoterapia Aplicada



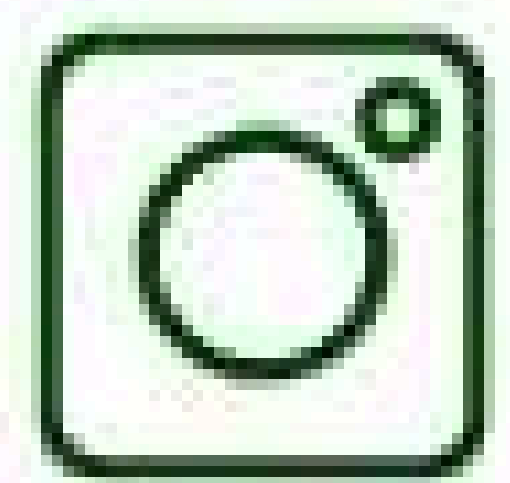
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