



cfⁿ

CONSELHO FEDERAL
DE **NUTRIÇÃO**



Caio Victor Coutinho de Oliveira

Conselheiro Federal



contato@caiovco.com.br



@caiovco



Caio Victor
Nutricionista

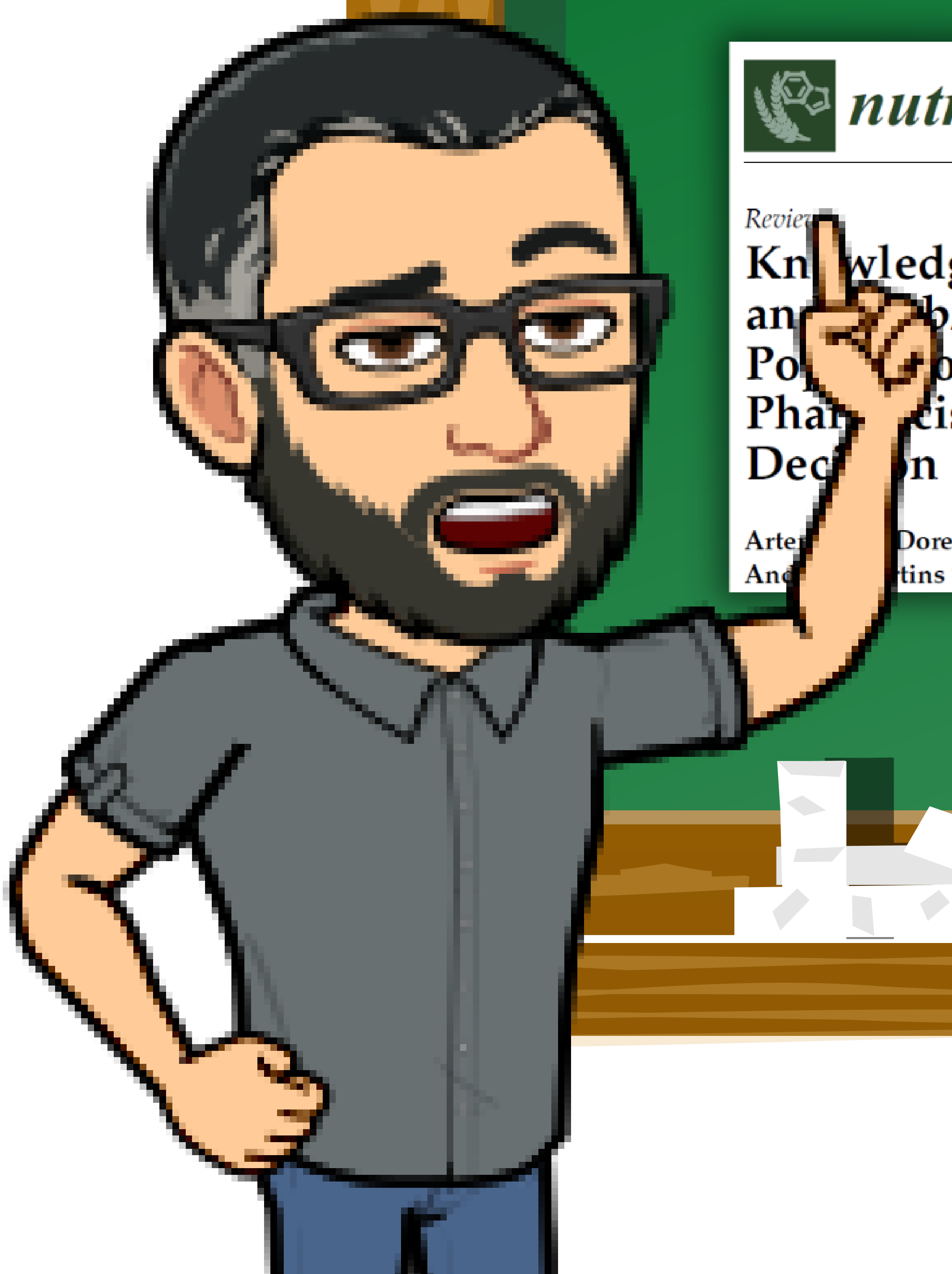


Fitoterapia Aplicada

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** Problematicar possíveis aplicações, interações medicamentosas e desfechos clínicos do uso de SA em pacientes polimedicados





 **nutrients** *Nutrients* 2024, 16, 3691. <https://doi.org/10.3390/nu16213691> 

Article

Knowledge and Practices Regarding Dietary Supplements Among Healthcare Professionals in Poland

Justyna Strocka ¹, Urszula Religioni ^{1,*}, Katarzyna Plagens-Rotman ², Agnieszka Drab ³, Piotr Merks ⁴, Justyna Kaźmierczak ⁵, Eliza Blicharska ⁶ and Jarosław Pinkas ¹

American Journal of Pharmaceutical Education 2017; 81 (5) Article 92.

RESEARCH

Dietary Supplement Use, Knowledge, and Perceptions Among Student Pharmacists

David R. Axon, MPharm, Janka Vanova, PharmD, Courtney Edel, PharmD, Marion Slack, PhD

 **nutrients** *Nutrients* 2023, 15, 2298. <https://doi.org/10.3390/nu15102298> 

Review

Knowledge and Beliefs about Herb/Supplement Consumption and Herb/Supplement–Drug Interactions among the General Population, including Healthcare Professionals and Pharmacists: A Systematic Review and Guidelines for a Smart Decision System

Artur Soares ^{1,*}, Miguel Peixoto ¹, Maria Castro ¹, Catarina Sá ¹, Irene P. Carvalho ^{2,3}, Ana Rita Martins ⁴, Eva Maia ⁴, Isabel Praça ⁴ and António Marques ¹

 International Journal of Environmental Research and Public Health *Int. J. Environ. Res. Public Health* 2022, 19, 4290 

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

 **foods** *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 Czapka-Klapinska ², Magdalena Czapka-Matysik ^{2,*} and Angelina Pena ^{1,*}

BMC Complementary and Alternative Medicine  **Open Access**

Research article *BMC Complementary and Alternative Medicine* 2005, 5:20

A gap between acceptance and knowledge of herbal remedies by physicians: The need for educational intervention

Yuri N Clement*, Arlene F Williams, Kristi Khan, Tricia Bernard, Savrina Bhola, Maurice Fortuné, Oneil Medupe, Kerry Nagee and Compton E Seaforth

 **NS Public Health Nutrition** 

Public Health Nutrition 24(15), 5156–5165 doi:10.1017/S1368980021002007

False and misleading health-related claims in food supplements on Spanish radio: an analysis from a European Regulatory Framework

Clara Muela-Molina* , Salvador Perelló-Oliver  and Ana García-Arranz 
Department of Communication Sciences and Sociology, Universidad Rey Juan Carlos, Camino del Molino, 5, 28942 Fuenlabrada (Madrid), Spain



ETAPAS

Sugestões e desafios

Por onde se
informar?

Grau de conhecimento
de profissionais de saúde

O CFN está
atuando!

Interações com
outras substâncias...





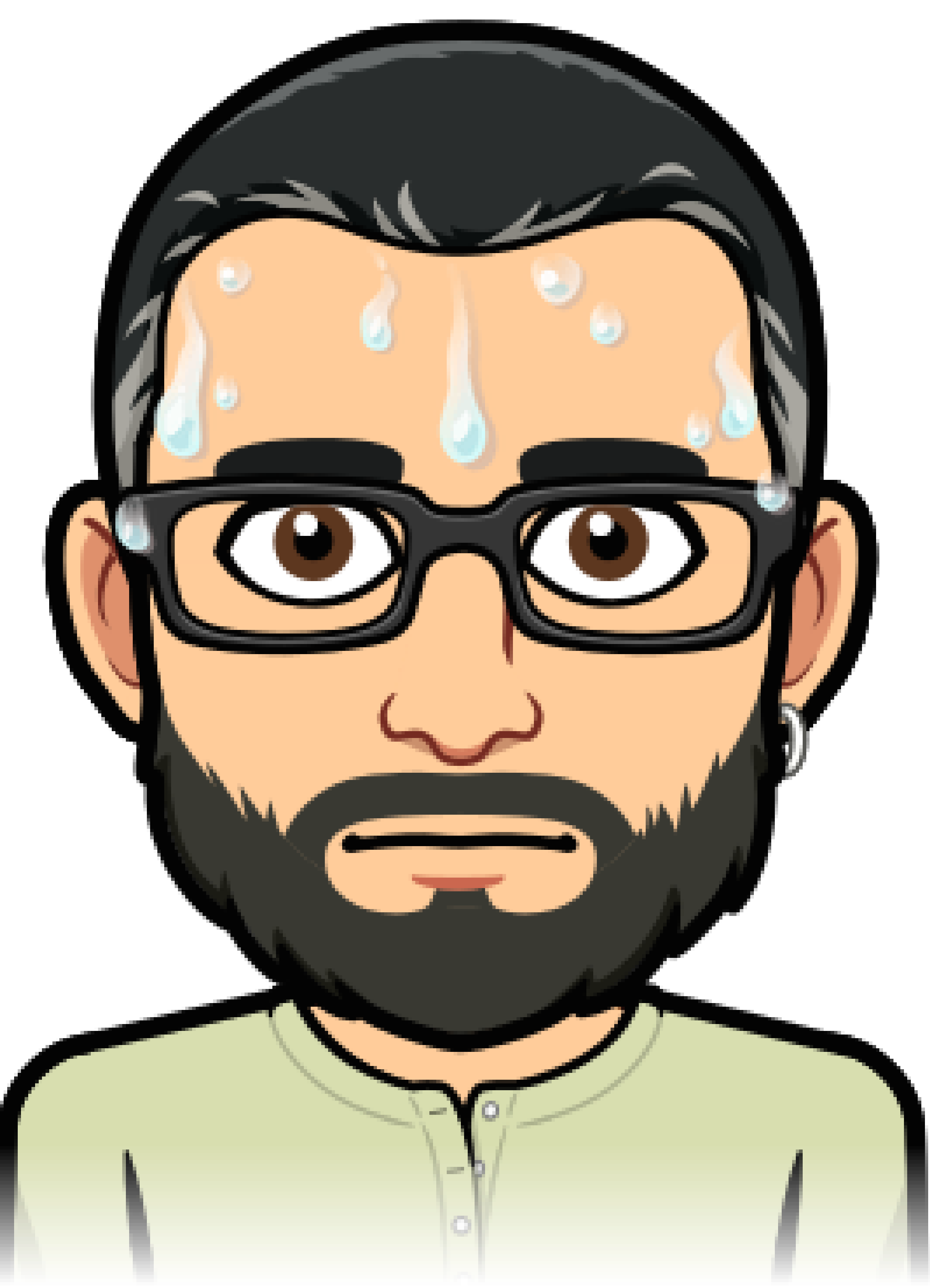
Fontes confiáveis?



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 Suci, 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

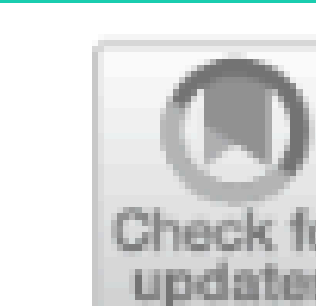


Jiang et al. BMC Public Health (2023) 23:574
<https://doi.org/10.1186/s12889-023-15456-7>

BMC Public Health

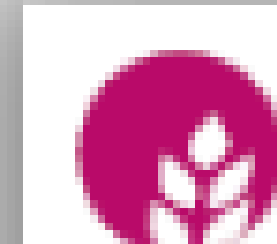
RESEARCH

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

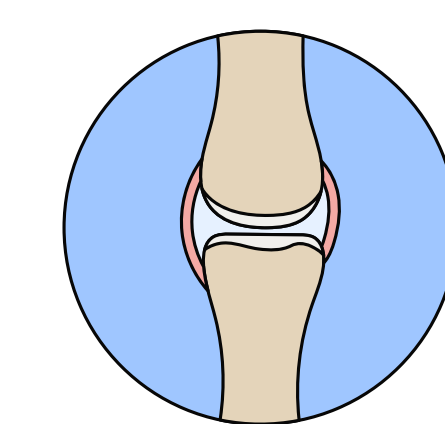
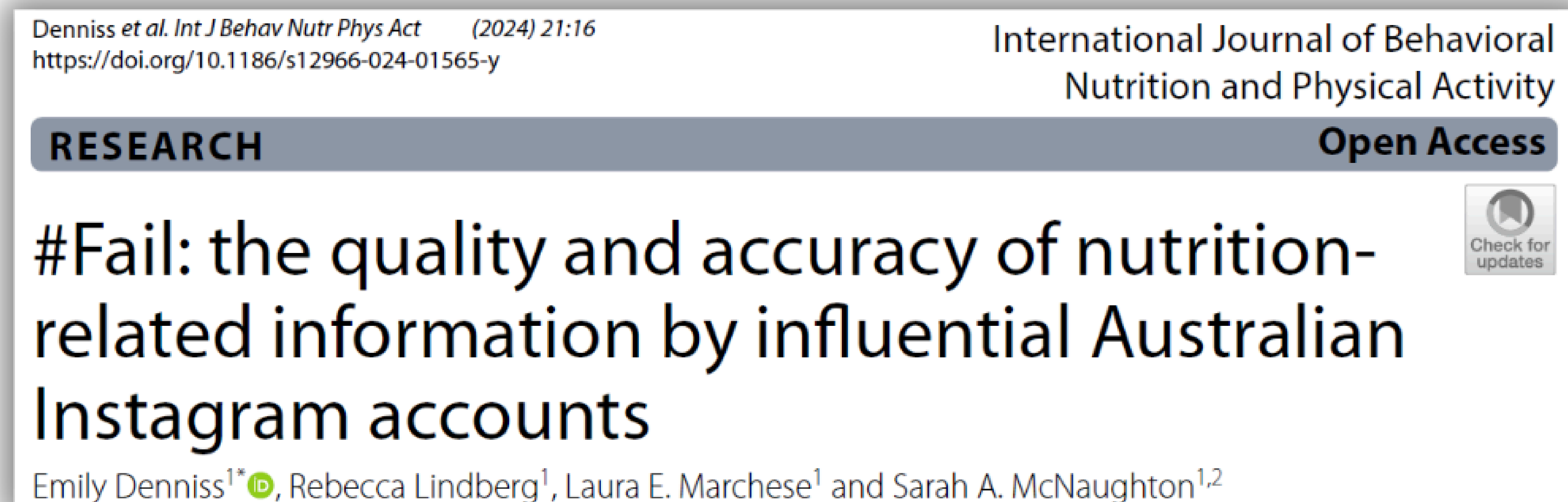
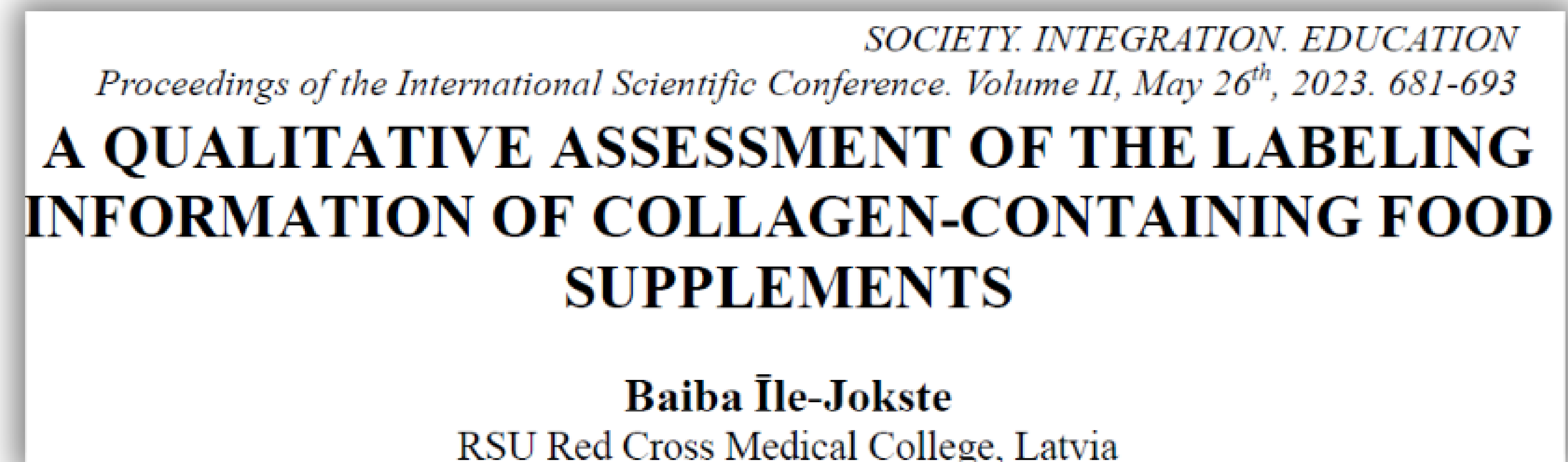
doi:10.1017/S1368980023000873

Review Article

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

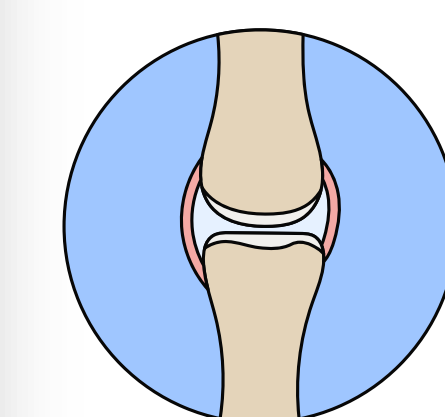
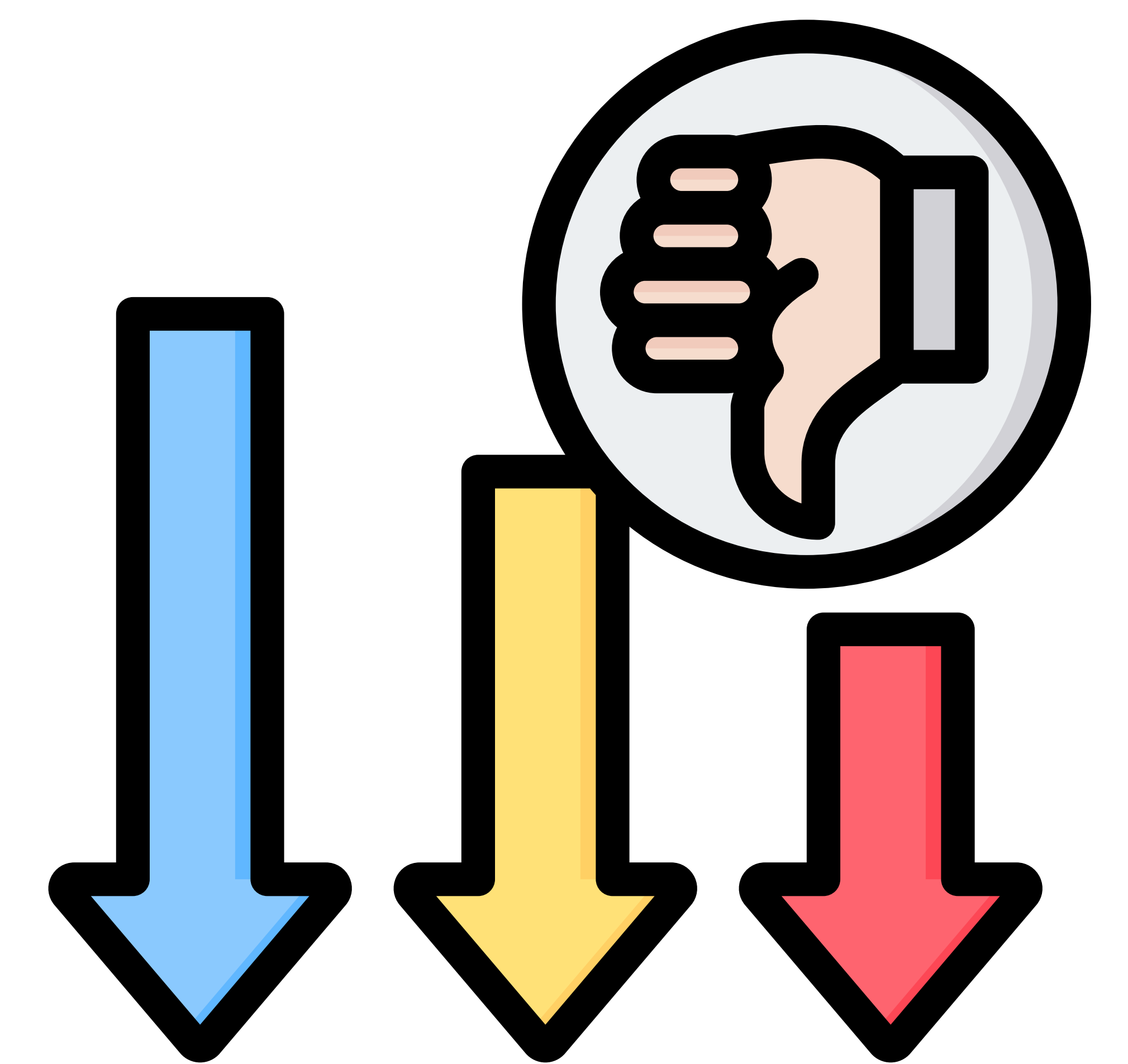
Emily Denniss*, Rebecca Lindberg and Sarah A McNaughton



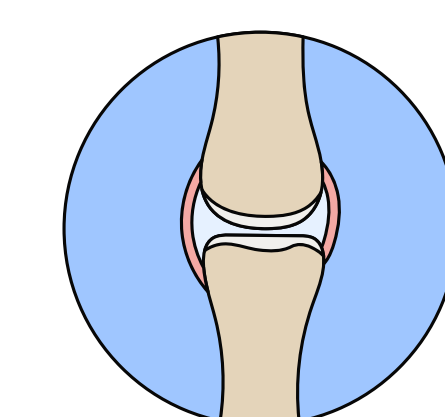


A qualidade das informações no Instagram é, em sua maioria, de baixa qualidade (n=47, 34,8%)

Perfis com > 100.000 seguidores

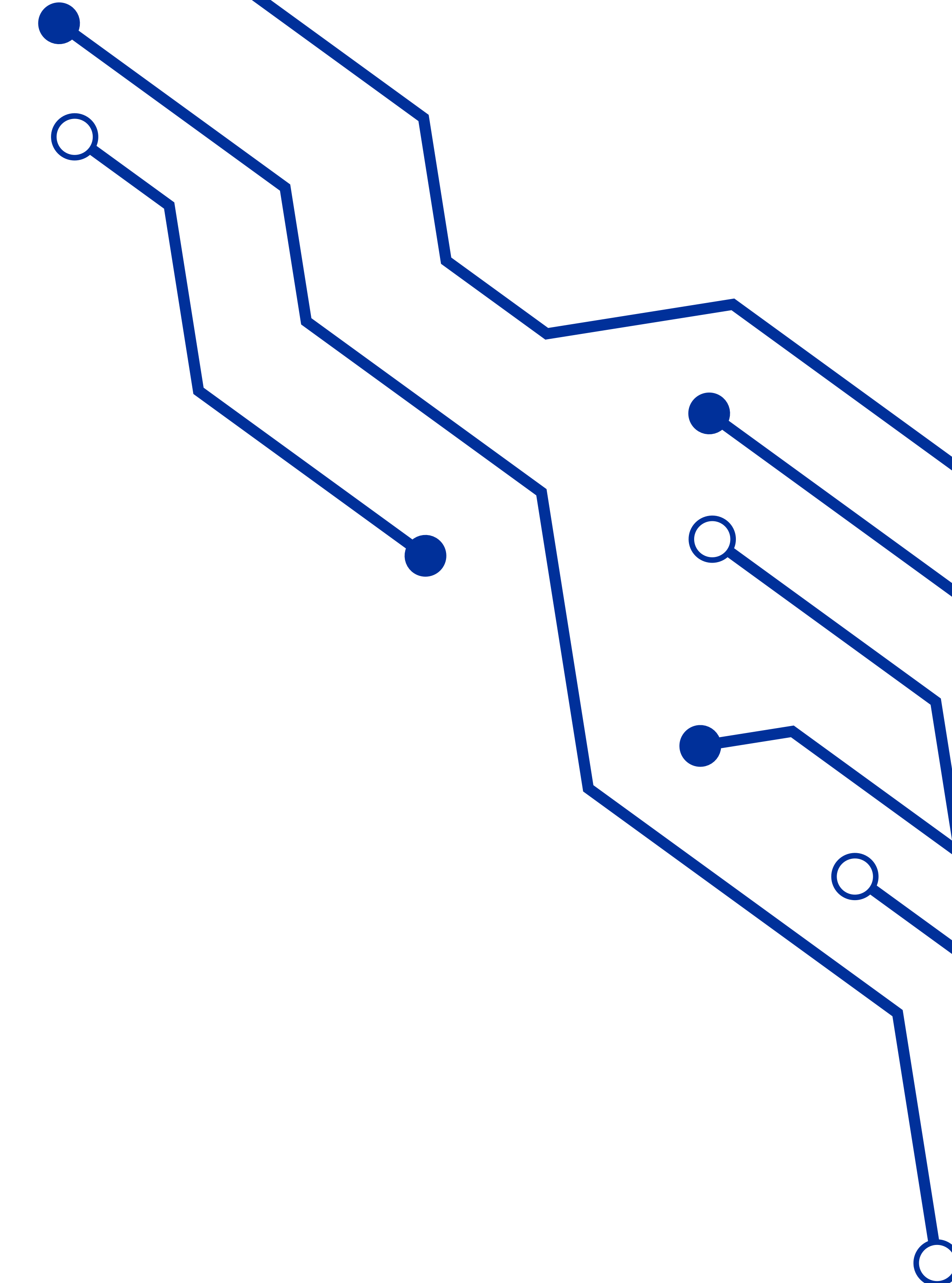
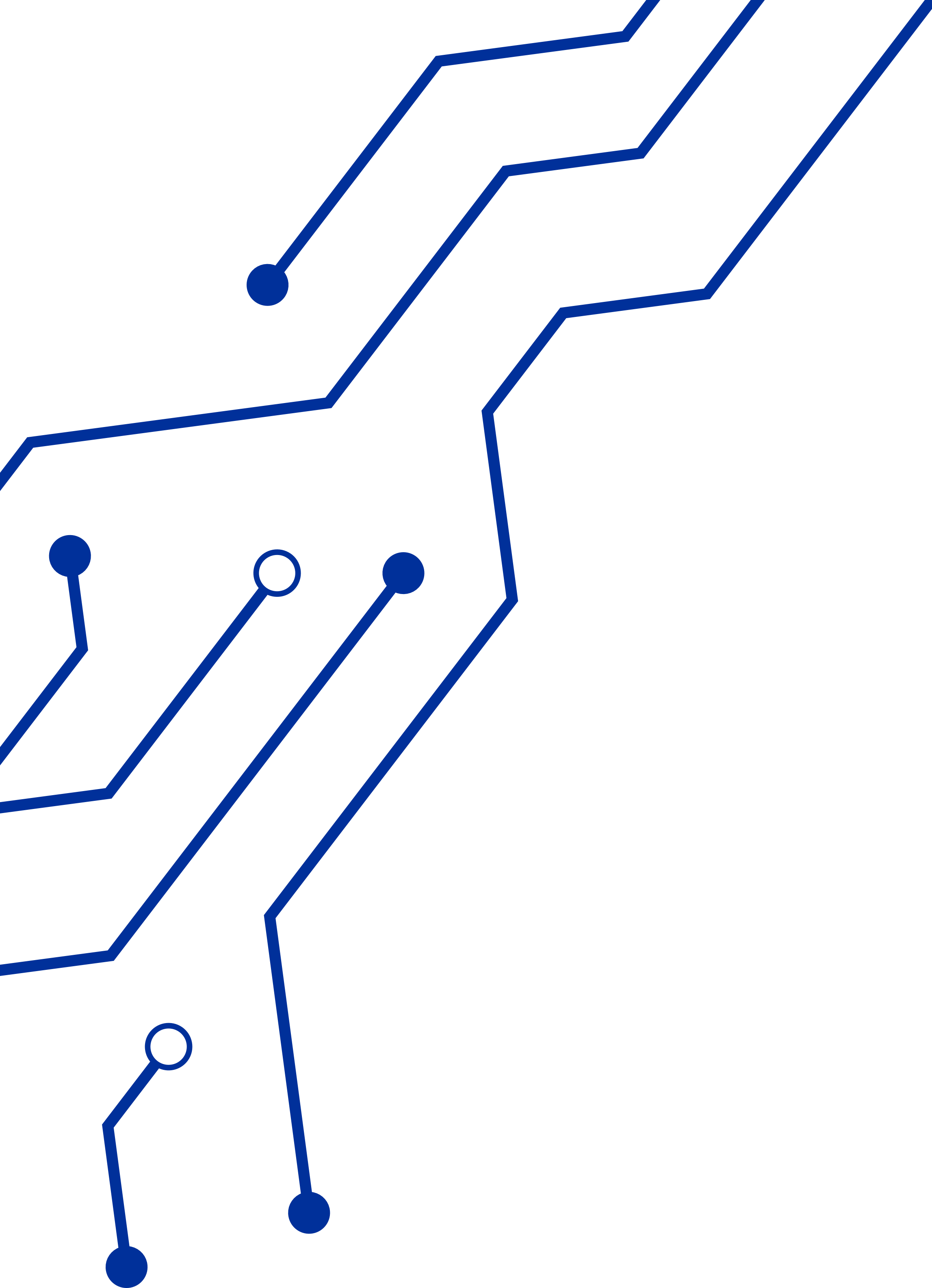


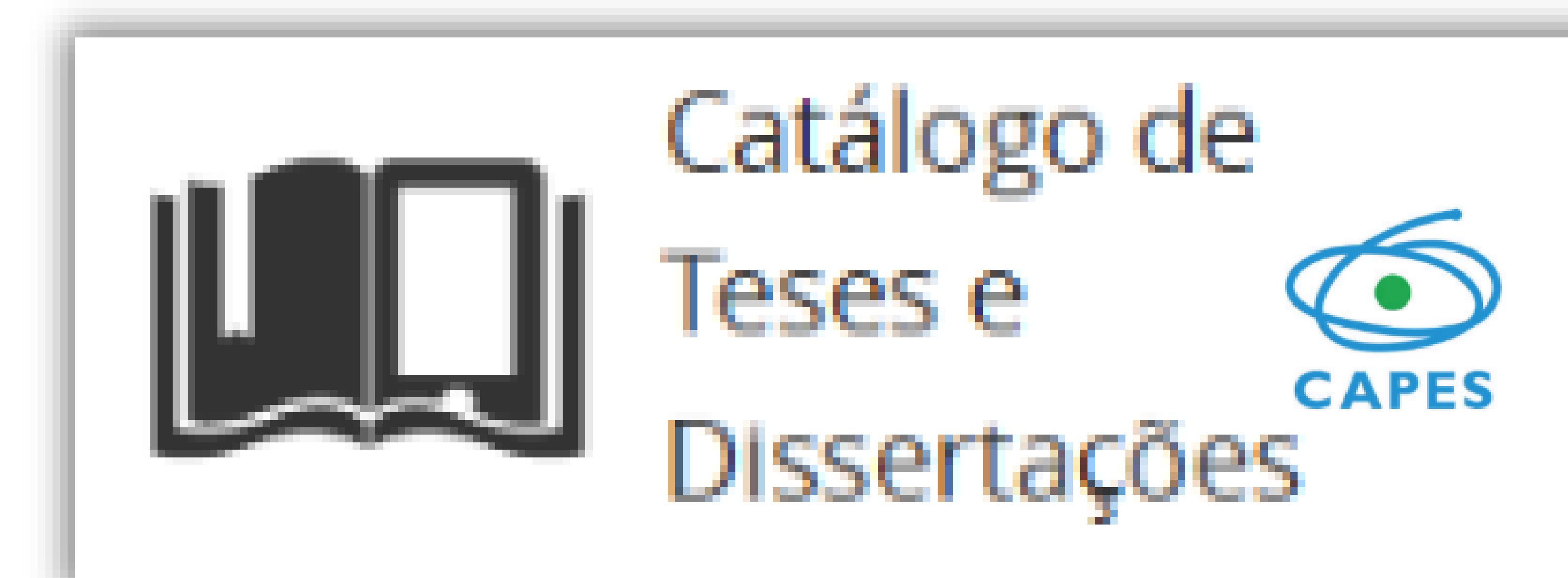
As informações provenientes de nutricionistas apresentam maior acurácia



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

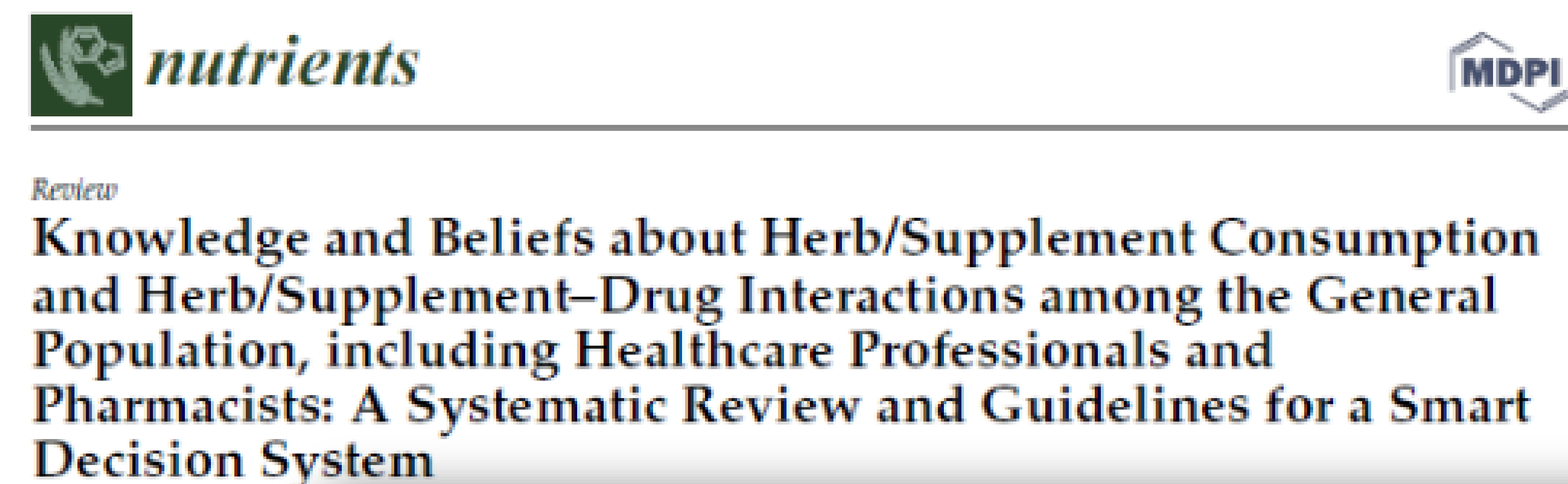








Literatura vasta
sobre o tema!



Artemisa R. Soares ^{1,*}, Andreia Martins ⁴, Ev...

RESEARCH

Dietary Supplement Use, Knowledge, and Perceptions Among Student Pharmacists

David R. Axon, MPharm, Janka Vanova, PharmD, Courtney Edel, PharmD, Marion Slack, PhD

University of Arizona College of Pharmacy, Tucson, Arizona

Submitted May 6, 2016; a...



Citation: Soares AR, Martins A, ...
Castro M, Sá C, Carvalho LP, ...
Martins A, Mata E, Praça L, ...
Marques A. Knowledge and Beliefs ...
about Herb/Supplement ...
Consumption and ...
Herb/Supplement-Drug Interactions ...
among the General Population, ...
including Healthcare Professionals ...
and Pharmacists: A Systematic ...
Review and Guidelines for a Smart ...
Decision System. *Nutrients* 2023, 15, 2298. <https://doi.org/10.3390/nut15102298>

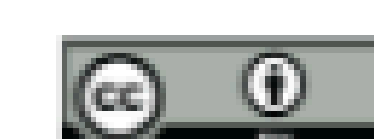
Academic Editors: Rosa Casas and Roberto Lacort

Received: 10 March 2023

Revised: 3 May 2023

Accepted: 11 May 2023

Published: 13 May 2023



Copyright: © 2023 by the author. Licensee MDPI, Basel, Switzerland. This article is an open access article distributed under the terms and conditions of the Creative Commons Attribution (CC BY) license (<http://creativecommons.org/licenses/by/4.0/>).

Nutrients 2023, 15, 2298. <https://doi.org/10.3390/nut15102298>

INTRODUCTION

The Dietary Supplement Use, Knowledge, and Perceptions Among Student Pharmacists study is a cross-sectional survey of 1994 student pharmacists in the United States. The study aimed to assess the knowledge and perceptions of student pharmacists regarding dietary supplement use, knowledge, and perceptions. The study found that 19.4% of student pharmacists reported using dietary supplements, with 11.1% reporting use of herbal supplements and 8.3% reporting use of non-herbal supplements. The study also found that 19.4% of student pharmacists reported having knowledge of dietary supplement use, knowledge, and perceptions. The study concluded that student pharmacists have limited knowledge and perceptions regarding dietary supplement use, knowledge, and perceptions. The study also found that student pharmacists have limited knowledge and perceptions regarding dietary supplement use, knowledge, and perceptions.

Corresponding Author: J. Pharmacy Practice and Science College of Pharmacy, 129 Arizona. Tel.: 520-373-9...



Citation: Strocka J, Religioni U, ...
Plagens-Rotman Z, Drab A, Merks P, ...
Kazmierczak J, Blicharska E, ...
Pinks J. Knowledge and Practices ...
Regarding Dietary Supplements ...
Among Healthcare Professionals in ...
Poland. *Nutrients* 2024, 16, 3691. <https://doi.org/10.3390/nut16123691>

Article

Knowledge and Practices Regarding Dietary Supplements Among Healthcare Professionals in Poland

Justyna Strocka ¹, Urszula Religioni ^{1,*}, Katarzyna Plagens-Rotman ², Agnieszka Drab ³, Piotr Merks ⁴, Justyna Kazmierczak ⁵, Eliza Blicharska ⁶ and Jarosław Pinkas ¹

- ¹ School of Public Health, Centre of Postgraduate Medical Education of Warsaw, 01-826 Warsaw, Poland; justyna_strocka@onet.pl (J.S.)
- ² Center for Sexology and Pediatric, Adolescent Gynecology, Division of Gynecology, Department of Perinatology and Gynecology, Poznan University of Medical Sciences, 60-535 Poznan, Poland; plagens.rotman@gmail.com
- ³ Department of Medical Informatics and Statistics with e-Health Laboratory, Medical University of Lublin, 20-093 Lublin, Poland
- ⁴ Department of Pharmacology and Clinical Pharmacology, Faculty of Medicine, Collegium Medicum, Cardinal Stefan Wyszyński University, 01-815 Warsaw, Poland
- ⁵ The Polish Pharmacy Practice Research Network (PPPRN), 02-097 Warsaw, Poland
- ⁶ Department of Analytical Chemistry, Medical University of Lublin, 20-093 Lublin, Poland

* Correspondence: urszula.religioni@gmail.com



Citation: Strocka J, Religioni U, ...
Plagens-Rotman Z, Drab A, Merks P, ...
Kazmierczak J, Blicharska E, ...
Pinks J. Knowledge and Practices ...
Regarding Dietary Supplements ...
Among Healthcare Professionals in ...
Poland. *Nutrients* 2024, 16, 3691. <https://doi.org/10.3390/nut16123691>

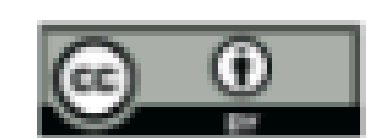
Academic Editor: Gary D. Miller

Received: 24 September 2024

Revised: 17 October 2024

Accepted: 17 October 2024

Published: 29 October 2024



Copyright: © 2024 by the authors. Licensee MDPI, Basel, Switzerland. This article is an open access article distributed under the terms and conditions of the Creative Commons Attribution (CC BY) license (<http://creativecommons.org/licenses/by/4.0/>).

Keywords: dietary supplements; healthcare professionals; medical practice; quality of care

1. Introduction

The global dietary supplement market has experienced significant growth, with an increasing number of people turning to supplements as a means of improving their health and well-being. This trend is not limited to any one region; studies have shown that in many parts of the world, including Europe, North America, and Asia, the consumption of dietary supplements is becoming more widespread. Factors contributing to this global rise include heightened health awareness, the desire to prevent chronic diseases, and the increasing accessibility of dietary supplements without a prescription. Furthermore, the COVID-19 pandemic has further accelerated this trend as consumers sought ways to boost their immunity and protect against infections, leading to a substantial increase in the sales and consumption of dietary supplements worldwide [1,2].



Clara Muela-Molina ^{*}, Salvador Perelló-Oliver and Ana García-Arriaza
Department of Communication Sciences and Sociology, Universidad Rey Juan Carlos, Camino del Molino, 5, 28942 Fuenlabrada (Madrid), Spain

Submitted 17 January 2021; Final revision received 4 April 2021; Accepted 6 May 2021; First published online 11 May 2021

Abstract

Objective: The objective of this study was to analyze the prevalence of false and misleading health-related claims in food supplements on Spanish radio. **Design:** This was a cross-sectional study. **Setting:** Spain. **Participants:** All participants were radio listeners. **Results:** Results indicated that 11.1% of radio listeners reported using food supplements. **Conclusions:** This study found that 11.1% of radio listeners reported using food supplements. **Keywords:** food supplements; health-related claims; radio; Spain.



Article

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

Maria João Campos ^{1,*}, Agnieszka Drab ² and Angelina Pena ^{1,*,†}

¹ LAQV, REQUIMAS, Faculty of Pharmacy, University of Porto, 4169-006 Porto, Portugal; ² Department of Nutrition, Faculty of Medicine, University of Porto, 4169-006 Porto, Portugal; ^{*} Correspondence: maria.joao.campos@fe.up.pt

Abstract: The objective of this study was to analyze the prevalence of false and misleading health-related claims in food supplements on Spanish radio. **Design:** This was a cross-sectional study. **Setting:** Spain. **Participants:** All participants were radio listeners. **Results:** Results indicated that 11.1% of radio listeners reported using food supplements. **Conclusions:** This study found that 11.1% of radio listeners reported using food supplements. **Keywords:** food supplements; health-related claims; radio; Spain.

Submitted 2013 and 2020, sal increased by 22.33% of 11 billion euros in daily consumption and 5% over the last 5 years compared with 2013. **Conclusions:** This study found that 11.1% of radio listeners reported using food supplements. **Keywords:** food supplements; health-related claims; radio; Spain.

Submitted 2013 and 2020, sal increased by 22.33% of 11 billion euros in daily consumption and 5% over the last 5 years compared with 2013. **Conclusions:** This study found that 11.1% of radio listeners reported using food supplements. **Keywords:** food supplements; health-related claims; radio; Spain.

Submitted 2013 and 2020, sal increased by 22.33% of 11 billion euros in daily consumption and 5% over the last 5 years compared with 2013. **Conclusions:** This study found that 11.1% of radio listeners reported using food supplements. **Keywords:** food supplements; health-related claims; radio; Spain.

Submitted 2013 and 2020, sal increased by 22.33% of 11 billion euros in daily consumption and 5% over the last 5 years compared with 2013. **Conclusions:** This study found that 11.1% of radio listeners reported using food supplements. **Keywords:** food supplements; health-related claims; radio; Spain.

Submitted 2013 and 2020, sal increased by 22.33% of 11 billion euros in daily consumption and 5% over the last 5 years compared with 2013. **Conclusions:** This study found that 11.1% of radio listeners reported using food supplements. **Keywords:** food supplements; health-related claims; radio; Spain.

Submitted 2013 and 2020, sal increased by 22.33% of 11 billion euros in daily consumption and 5% over the last 5 years compared with 2013. **Conclusions:** This study found that 11.1% of radio listeners reported using food supplements. **Keywords:** food supplements; health-related claims; radio; Spain.

Submitted 2013 and 2020, sal increased by 22.33% of 11 billion euros in daily consumption and 5% over the last 5 years compared with 2013. **Conclusions:** This study found that 11.1% of radio listeners reported using food supplements. **Keywords:** food supplements; health-related claims; radio; Spain.

Submitted 2013 and 2020, sal increased by 22.33% of 11 billion euros in daily consumption and 5% over the last 5 years compared with 2013. **Conclusions:** This study found that 11.1% of radio listeners reported using food supplements. **Keywords:** food supplements; health-related claims; radio; Spain.

Submitted 2013 and 2020, sal increased by 22.33% of 11 billion euros in daily consumption and 5% over the last 5 years compared with 2013. **Conclusions:** This study found that 11.1% of radio listeners reported using food supplements. **Keywords:** food supplements; health-related claims; radio; Spain.

Submitted 2013 and 2020, sal increased by 22.33% of 11 billion euros in daily consumption and 5% over the last 5 years compared with 2013. **Conclusions:** This study found that 11.1% of radio listeners reported using food supplements. **Keywords:** food supplements; health-related claims; radio; Spain.

Submitted 2013 and 2020, sal increased by 22.33% of 11 billion euros in daily consumption and 5% over the last 5 years compared with 2013. **Conclusions:** This study found that 11.1% of radio listeners reported using food supplements. **Keywords:** food supplements; health-related claims; radio; Spain.

Submitted 2013 and 2020, sal increased by 22.33% of 11 billion euros in daily consumption and 5% over the last 5 years compared with 2013. **Conclusions:** This study found that 11.1% of radio listeners reported using food supplements. **Keywords:** food supplements; health-related claims; radio; Spain.

Submitted 2013 and 2020, sal increased by 22.33% of 11 billion euros in daily consumption and 5% over the last 5 years compared with 2013. **Conclusions:** This study found that 11.1% of radio listeners reported using food supplements. **Keywords:** food supplements; health-related claims; radio; Spain.

Submitted 2013 and 2020, sal increased by 22.33% of 11 billion euros in daily consumption and 5% over the last 5 years compared with 2013. **Conclusions:** This study found that 11.1% of radio listeners reported using food supplements. **Keywords:** food supplements; health-related claims; radio; Spain.

Submitted 2013 and 2020, sal increased by 22.33% of 11 billion euros in daily consumption and 5% over the last 5 years compared with 2013. **Conclusions:** This study found that 11.1% of radio listeners reported using food supplements. **Keywords:** food supplements; health-related claims; radio; Spain.

Submitted 2013 and 2020, sal increased by 22.33% of 11 billion euros in daily consumption and 5% over the last 5 years compared with 2013. **Conclusions:** This study found that 11.1% of radio listeners reported using food supplements. **Keywords:** food supplements; health-related claims; radio; Spain.

Submitted 2013 and 2020, sal increased by 22.33% of 11 billion euros in daily consumption and 5% over the last 5 years compared with 2013. **Conclusions:** This study found that 11.1% of radio listeners reported using food supplements. **Keywords:** food supplements; health-related claims; radio; Spain.

Submitted 2013 and 2020, sal increased by 22.33% of 11 billion euros in daily consumption and 5% over the last 5 years compared with 2013. **Conclusions:** This study found that 11.1% of radio listeners reported using food supplements. **Keywords:** food supplements; health-related claims; radio; Spain.

Submitted 2013 and 2020, sal increased by 22.33% of 11 billion euros in daily consumption and 5% over the last 5 years compared with 2013. **Conclusions:** This study found that 11.1% of radio listeners reported using food supplements. **Keywords:** food supplements; health-related claims; radio; Spain.

Submitted 2013 and 2020, sal increased by 22.33% of 11 billion euros in daily consumption and 5% over the last 5 years compared with 2013. **Conclusions:** This study found that 11.1% of radio listeners reported using food supplements. **Keywords:** food supplements; health-related claims; radio; Spain.

Submitted 2013 and 2020, sal increased by 22.33% of 11 billion euros in daily consumption and 5% over the last 5 years compared with 2013. **Conclusions:** This study found that 11.1% of radio listeners reported using food supplements. **Keywords:** food supplements; health-related claims; radio; Spain.

Submitted 2013 and 2020, sal increased by 22.33% of 11 billion euros in daily consumption and 5% over the last 5 years compared with 2013. **Conclusions:** This study found that 11.1% of radio listeners reported using food supplements. **Keywords:** food supplements; health-related claims; radio; Spain.

Submitted 2013 and 2020, sal increased by 22.33% of 11 billion euros in daily consumption and 5% over the last 5 years compared with 2013. **Conclusions:** This study found that 11.1% of radio listeners reported using food supplements. **Keywords:** food supplements; health-related claims; radio; Spain.

Submitted 2013 and 2020, sal increased by 22.33% of 11 billion euros in daily consumption and 5% over the last 5 years compared with 2013. **Conclusions:** This study found that 11.1% of radio listeners reported using food supplements. **Keywords:** food supplements; health-related claims; radio; Spain.

Submitted 2013 and 2020, sal increased by 22.33% of 11 billion euros in daily consumption and 5% over the last 5 years compared with 2013. **Conclusions:** This study found that 11.1% of radio listeners reported using food supplements. **Keywords:** food supplements; health-related claims; radio; Spain.

Submitted 2013 and 2020, sal increased by 22.33% of 11 billion euros in daily consumption and 5% over the last 5 years compared with 2013. **Conclusions:** This study found that 11.1% of radio listeners reported using food supplements. **Keywords:** food supplements; health-related claims; radio; Spain.

Submitted 2013 and 2020, sal increased by 22.33% of 11 billion euros in daily consumption and 5% over the last 5 years compared with 2013. **Conclusions:** This study found that 11.1% of radio listeners reported using food supplements. **Keywords:** food supplements; health-related claims; radio; Spain.

Submitted 2013 and 2020, sal increased by 22.33% of 11 billion euros in daily consumption and 5% over the last 5 years compared with 2013. **Conclusions:** This study found that 11.1% of radio listeners reported using food supplements. **Keywords:** food supplements; health-related claims; radio; Spain.

Submitted 2013 and 2020, sal increased by 22.33% of 11 billion euros in daily consumption and 5% over the last 5 years compared with 2013. **Conclusions:** This study found that 11.1% of radio listeners reported using food supplements. **Keywords:** food supplements; health-related claims; radio; Spain.

Submitted 2013 and 2020, sal increased by 22.33% of 11 billion euros in daily consumption and 5% over the last 5 years compared with 2013. **Conclusions:** This study found that 11.1% of radio listeners reported using food supplements. **Keywords:** food supplements; health-related claims; radio; Spain.

Submitted 2013 and 2020, sal increased by 22.33% of 11 billion euros in daily consumption and 5% over the last 5 years compared with 2013. **Conclusions:** This study found that 11.1% of radio listeners reported using food supplements. **Keywords:** food supplements; health-related claims; radio; Spain.

Submitted 2013 and 2020, sal increased by 22.33% of 11 billion euros in daily consumption and 5% over the last 5 years compared with 2013. **Conclusions:** This study found that 11.1% of radio listeners reported using food supplements. **Keywords:** food supplements; health-related claims; radio; Spain.

Submitted 2013 and 2020, sal increased by 22.33% of 11 billion euros in daily consumption and 5% over the last 5 years compared with 2013. **Conclusions:** This study found that 11.1% of radio listeners reported using food supplements. **Keywords:** food supplements; health-related claims; radio; Spain.

Submitted 2013 and 2020, sal increased by 22.33% of 11 billion euros in daily consumption and 5% over the last 5 years compared with 2013. **Conclusions:** This study found that 11.1% of radio listeners reported using food supplements. **Keywords:** food supplements; health-related claims; radio; Spain.

Submitted 2013 and 2020, sal increased by 22.33% of 11 billion euros in daily consumption and 5% over the last 5 years compared with 2013. **Conclusions:** This study found that 11.1% of radio listeners reported using food supplements. **Keywords:** food supplements; health-related claims; radio; Spain.

Submitted 2013 and 2020, sal increased by 22.33% of 11 billion euros in daily consumption and 5% over the last 5 years compared with 2013. **Conclusions:** This study found that 11.1% of radio listeners reported using food supplements. **Keywords:** food supplements; health-related claims; radio; Spain.

Submitted 2013 and 2020, sal increased by 22.33% of 11 billion euros in daily consumption and 5% over the last 5 years compared with 2013. **Conclusions:** This study found that 11.1% of radio listeners reported using food supplements. **Keywords:** food supplements; health-related claims; radio; Spain.

Submitted 2013 and 2020, sal increased by 22.33% of 11 billion euros in daily consumption and 5% over the last 5 years compared with 2013. **Conclusions:** This study found that 11.1% of radio listeners reported using food supplements. **Keywords:** food supplements; health-related claims; radio; Spain.



Article

Healthcare Professionals' Knowledge and Behaviors Regarding Drug-Dietary Supplement and Drug-Herbal Product Interactions

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

- ¹ Department of Pharmacology and Toxicology, Faculty of Medicine, University of Pristina-Kosovska Mitrovica, 38220 Kosovska Mitrovica, Serbia; radoslav.mitic@yahoo.com (R.M.); julijana.rasic@med.pr.ac.rs (J.R.)
- ² Department of Ophthalmology, Medical Center, 38220 Kosovska Mitrovica, Serbia; isidorac@gmail.com
- ³ Department of Preventive Medicine, Faculty of Medicine, University of Pristina-Kosovska Mitrovica, 38220 Kosovska Mitrovica, Serbia; dracorac@gmail.com
- ⁴ Department of Physiology, Faculty of Medicine, University of Pristina-Kosovska Mitrovica, 38220 Kosovska Mitrovica, Serbia; mirjana.dejanovic@gmail.com
- ⁵ Department of Histology and Embryology, Faculty of Medicine, University of Pristina-Kosovska Mitrovica, 38220 Kosovska Mitrovica, Serbia; leonidavitkovic@yahoo.com
- ⁶ Department of Mathematics, Faculty of Sciences and Mathematics, University of Pristina-Kosovska Mitrovica, 38220 Kosovska Mitrovica, Serbia; dragana.valjarevic@pr.ac.rs
- ⁷ Department of Geospatial and Environmental Sciences, Faculty of Geography, University of Belgrade, 11000 Belgrade, Serbia; aleksandar.valjarevic@fgf.bg.ac.rs

* Correspondence: zorica.stanojevic@med.pr.ac.rs

Submitted 2013 and 2020, sal increased by 22.33% of 11 billion euros in daily consumption and 5% over the last 5 years compared with 2013. **Conclusions:** This study found that 11.1% of radio listeners reported using food supplements. **Keywords:** food supplements; health-related claims; radio; Spain.

Submitted 2013 and 2020, sal increased by 22.33% of 11 billion euros in daily consumption and 5% over the last 5 years compared with 2013. **Conclusions:** This study found that 11.1% of radio listeners reported using food supplements. **Keywords:** food supplements; health-related claims; radio; Spain.

Submitted 2013 and 2020, sal increased by 22.33% of 11 billion euros in daily consumption and 5% over the last 5 years compared with 2013. **Conclusions:** This study found that 11.1% of radio listeners reported using food supplements. **Keywords:** food supplements; health-related claims; radio; Spain.

Submitted 2013 and 2020, sal increased by 22.33% of 11 billion euros in daily consumption and 5% over the last 5 years compared with 2013. **Conclusions:** This study found that 11.1% of radio listeners reported using food supplements. **Keywords:** food supplements; health-related claims; radio; Spain.

Submitted 2013 and 2020, sal increased by 22.33% of 11 billion euros in daily consumption and 5% over the last 5 years compared with 2013. **Conclusions:** This study found that 11.1% of radio listeners reported using food supplements. **Keywords:** food supplements; health-related claims; radio; Spain.

Submitted 2013 and 2020, sal increased by 22.33% of 11 billion euros in daily consumption and 5% over the last 5 years compared with 2013. **Conclusions:** This study found that 11.1% of radio listeners reported using food supplements. **Keywords:** food supplements; health-related claims; radio; Spain.

Submitted 2013 and 2020, sal increased by 22.33% of 11 billion euros in daily consumption and 5% over the last 5 years compared with 2013. **Conclusions:** This study found that 11.1% of radio listeners reported using food supplements. **Keywords:** food supplements; health-related claims; radio; Spain.

Submitted 2013 and 2020, sal increased by 22.33% of 11 billion euros in daily consumption and 5% over the last 5 years compared with 2013. **Conclusions:** This study found that 11.1% of radio listeners reported using food supplements. **Keywords:** food supplements; health-related claims; radio; Spain.

Submitted 2013 and 2020, sal increased by 22.33% of 11 billion euros in daily consumption and 5% over the last 5 years compared with 2013. **Conclusions:** This study found that 11.1% of radio listeners reported using food supplements. **Keywords:** food supplements; health-related claims; radio; Spain.

Submitted 2013 and 2020, sal increased by 22.33% of 11 billion euros in daily consumption and 5% over the last 5 years compared with 2013. **Conclusions:** This study found that 11.1% of radio listeners reported using food supplements. **Keywords:** food supplements; health-related claims; radio; Spain.

Submitted 2013 and 2020, sal increased by 22.33% of 11 billion euros in daily consumption and 5% over the last 5 years compared with 2013. **Conclusions:** This study found that 11.1% of radio listeners reported using food supplements. **Keywords:** food supplements; health-related claims; radio; Spain.

Submitted 2013 and 2020, sal increased by 22.33% of 11 billion euros in daily consumption and 5% over the last 5 years compared with 2013. **Conclusions:** This study found that 11.1% of radio listeners reported using food supplements. **Keywords:** food supplements; health-related claims; radio; Spain.

Submitted 2013 and 2020, sal increased by 22.33% of 11 billion euros in daily consumption and 5% over the last 5 years compared with 2013. **Conclusions:** This study found that 11.1% of radio listeners reported using food supplements. **Keywords:** food supplements; health-related claims; radio; Spain.

Submitted 2013 and 2020, sal increased by 22.33% of 11 billion euros in daily consumption and 5% over the last 5 years compared with 2013. **Conclusions:** This study found that 11.1% of radio listeners reported using food supplements. **Keywords:** food supplements; health-related claims; radio; Spain.

Submitted 2013 and 2020, sal increased by 22.33% of 11 billion euros in daily consumption and 5% over the last 5 years compared with 2013. **Conclusions:** This study found that 11.1% of radio listeners reported using food supplements. **Keywords:** food supplements; health-related claims; radio; Spain.

Submitted 2013 and 2020, sal increased by 22.33% of 11 billion euros in daily consumption and 5% over the last 5 years compared with 2013. **Conclusions:** This study found that 11.1% of radio listeners reported using food supplements. **Keywords:** food supplements; health-related claims; radio; Spain.

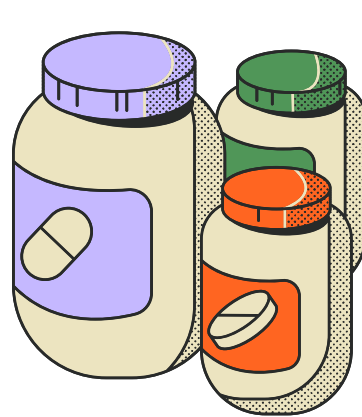
Submitted 2013 and 2020, sal increased by 22.33% of 11 billion euros in daily consumption and 5% over the last 5 years compared with 2013. **Conclusions:** This study found that 11.1% of radio listeners reported using food supplements. **Keywords:** food supplements; health-related claims; radio; Spain.

Submitted 2013 and 2020, sal increased by 22.33% of 11 billion euros in daily consumption and 5% over the last 5 years compared with 2013. **Conclusions:** This study found that 11.1% of radio listeners reported using food supplements. **Keywords:** food supplements; health-related claims; radio; Spain.

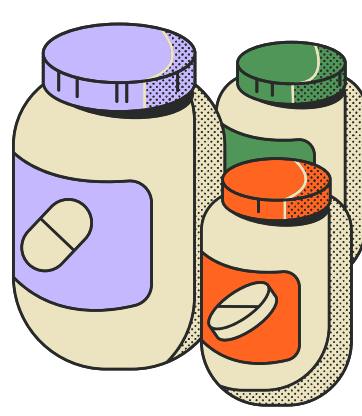
Submitted 2013 and 2020, sal increased by 22.33% of 11 billion euros in daily consumption and 5% over the last 5 years compared with 2013. **Conclusions:** This study found that 11.1% of radio listeners reported using food supplements. **Keywords:** food supplements; health-related claims; radio; Spain.

Submitted 2013 and 2020, sal increased by 22.33% of 11 billion euros in daily consumption and 5% over the last 5 years compared with 2013. **Conclusions:** This study found that 11.1% of radio listeners reported using food supplements. **Keywords:** food supplements; health-related claims; radio; Spain.

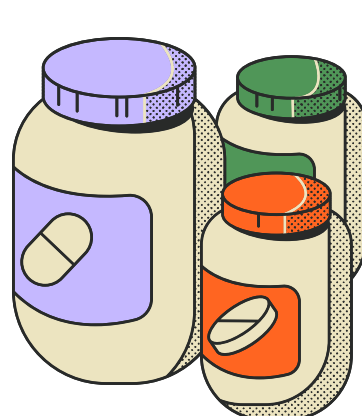
Submitted 2013 and 202



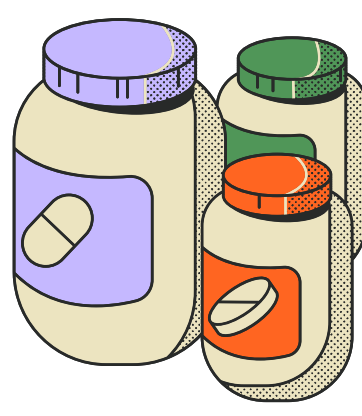
**Grau de desenvolvimento do país tendo
relação com nível de conhecimento
sobre SA**



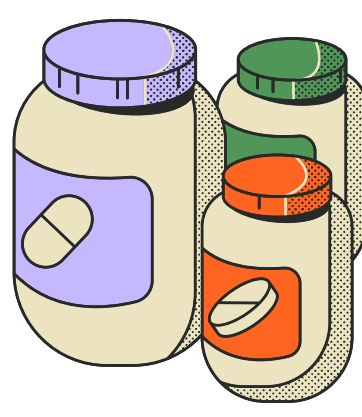
**O ato de recomendar/prescrever SA
está associado ao uso pessoal**



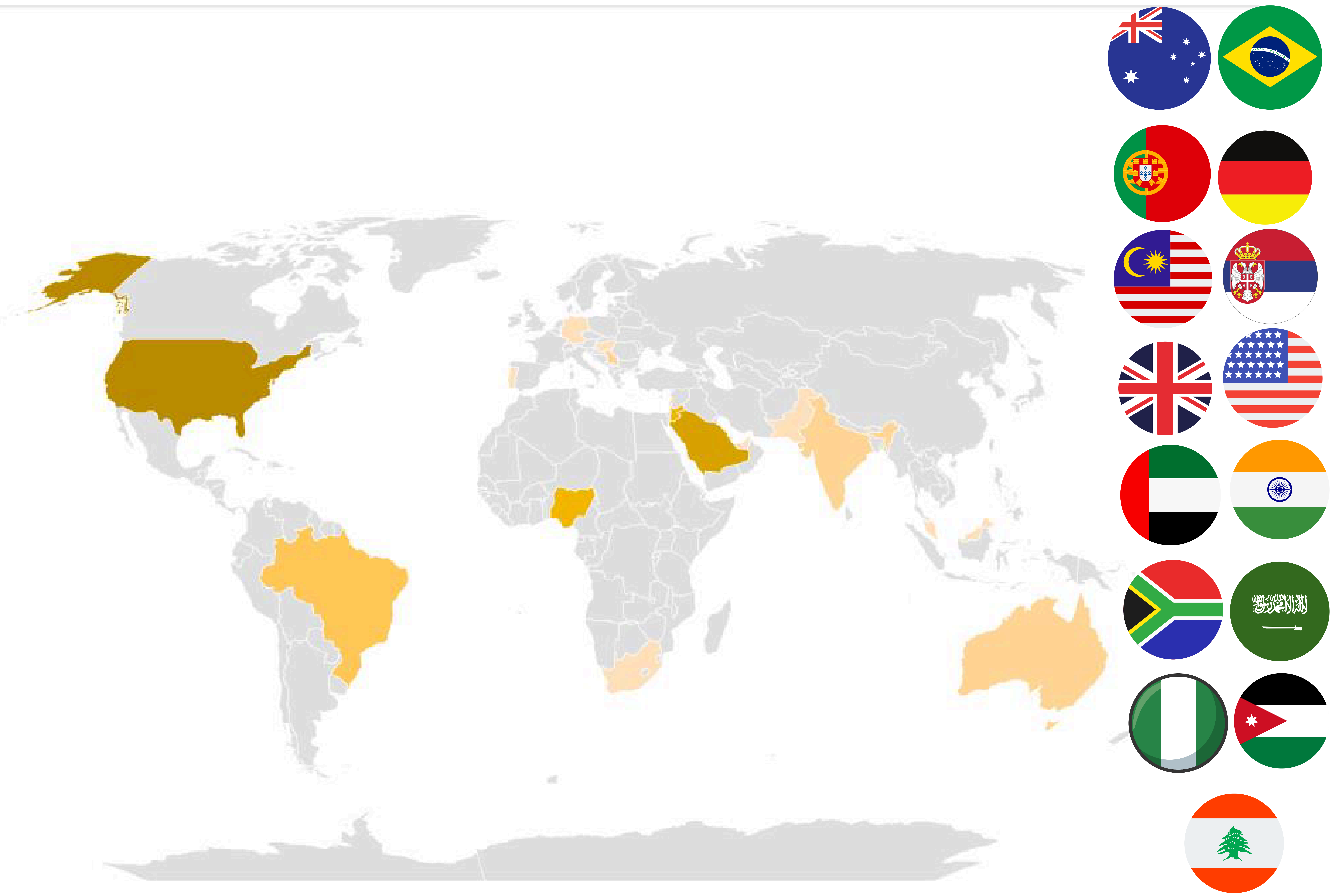
**Propagandas em diversos veículos de
informação infringem normas de
comercialização (“alegação terapêutica”)**



**Conhecimento deficitário em interações
medicamentos/ suplementos/fitoterápicos**



**Nutricionistas e/ou profissionais da saúde
com especialização em Ciências da
Nutrição apresentam maior conhecimento**



Com tecnologia Bing
© Australian Bureau of Statistics, GeoNames, Geospatial Data Edit, Microsoft, Navinfo, OpenStreetMap, TomTom, Wikipedia

Figure 2. Countries where the studies were conducted.

“

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

”



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^a, D. White^a, M. Hickson^a, T. Gabaldon^{e,f}, R. Besos^a^a Institute of Health & Community, University of Plymouth, Plymouth, UK^b Peninsula Medical School, University of Plymouth, Plymouth, UK^c Centre for Genomic Regulation (CRG), The Barcelona Institute of Science and Technology, Barcelona, Spain^d Research Group on Community Nutrition and Oral Health, University of Valencia, Valencia, Spain^e Universitat Pompeu Fabra (UPF), Barcelona, Spain^f Instituto Catalán de Recerca i Innovació Tecnològica (ICREA), Barcelona, Spain

Journal of Pharmacy and Nutrition Sciences, 2013, 3, 127–133

127

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

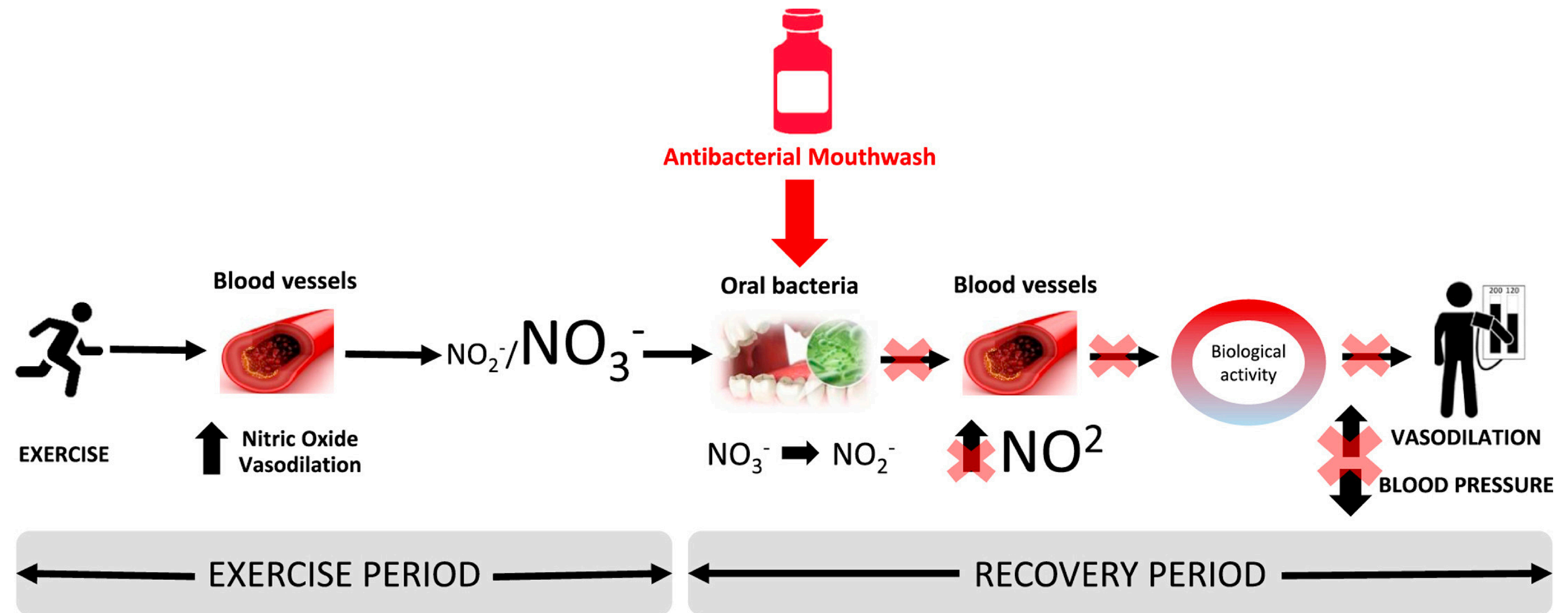
Nutritional supplementation is a notorious practice among athletes and practitioners of physical exercise [1, 2]. Studies report prevalence of use that ranges from 60 to 80% in elite young athletes under 20 years [2], 65 to 99% in athletics [3, 4] and 55 to 99% in elite athletes [1], presenting a great 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. Silvino Lopes, 410 - 804 - Tamaritão - João Pessoa - PB CEP code: 58039-190, Brazil; Tel: (83) 32266017; Fax: (83) 3216-7030; E-mail: alexandresegiolva@yahoo.com.br



Inibição de um efeito agudo positivo do exercício!

EPIDEMIOLOGIA



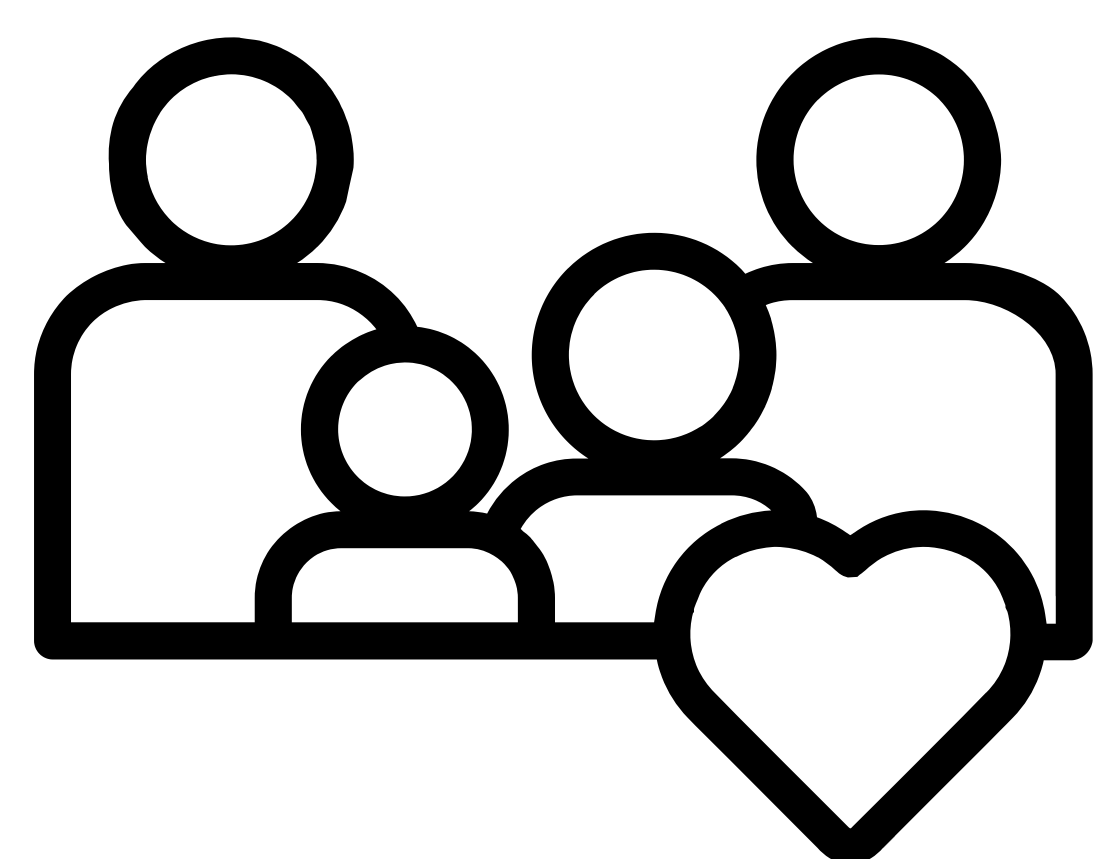
Pré-treinos: suplementos mais populares
após polivitamínicos (adolescentes)



30%



68%



Em 59% dos lares, pelo menos
1 integrante faz uso de SA

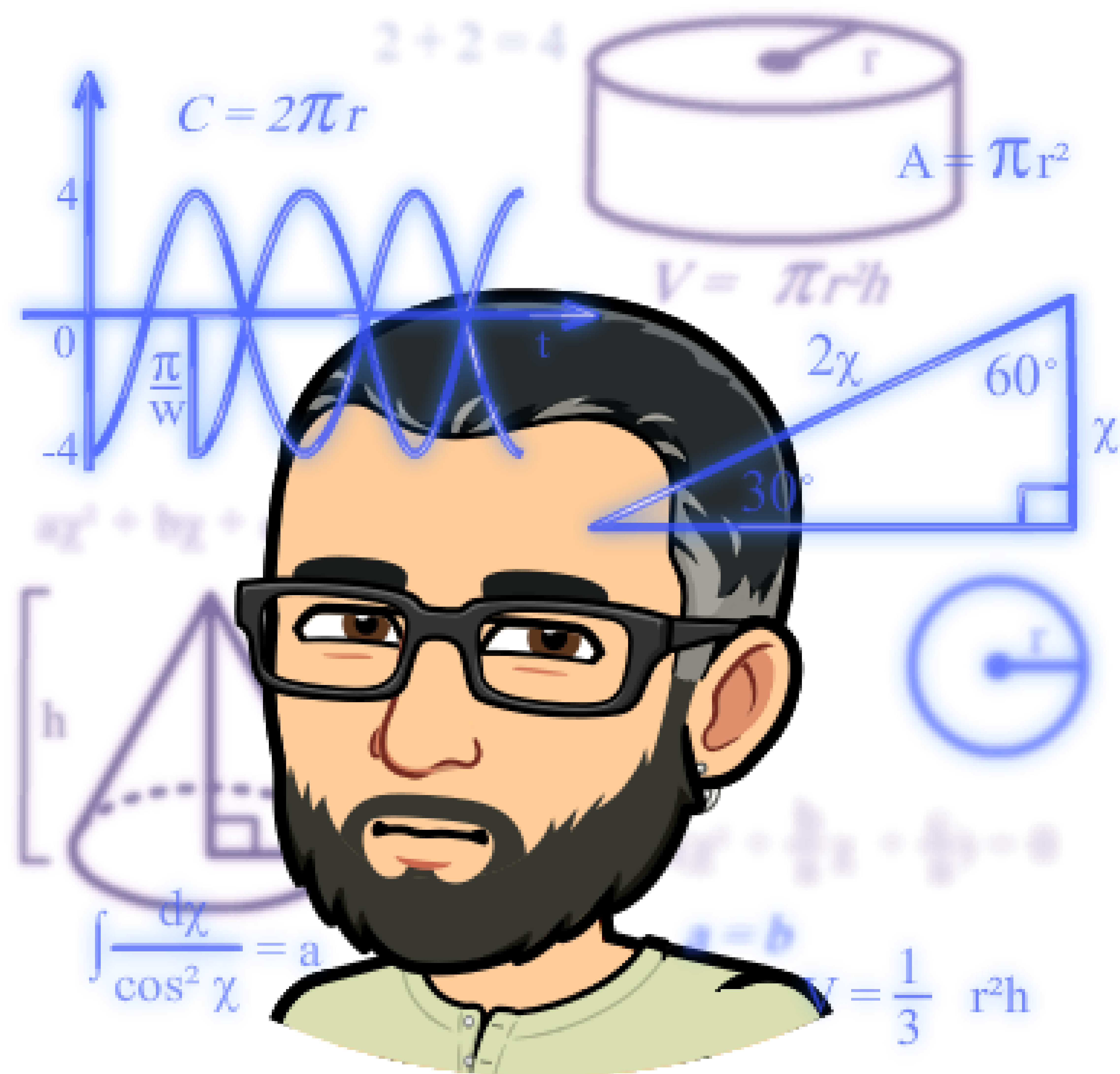
2026: \$21 bi/ano



“

Por que as pessoas consomem suplementos alimentares?

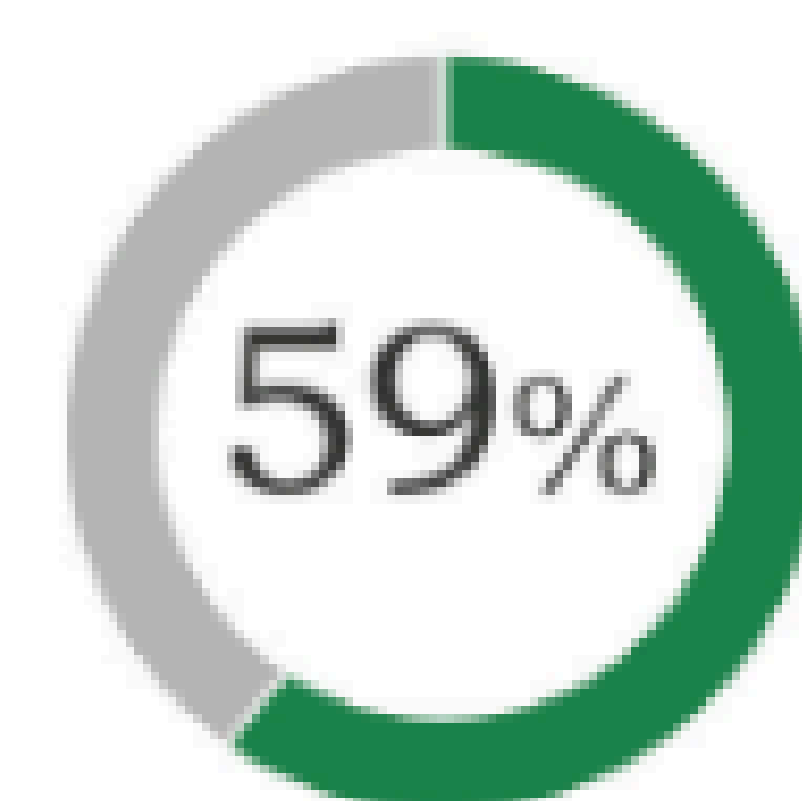
”



"HÁBITOS DE CONSUMO DE SUPLEMENTOS ALIMENTARES" - 2020



O estudo foi realizado em sete capitais, nas cinco regiões do Brasil, no primeiro trimestre de 2020
(Primeira edição da pesquisa foi realizada em 2015)



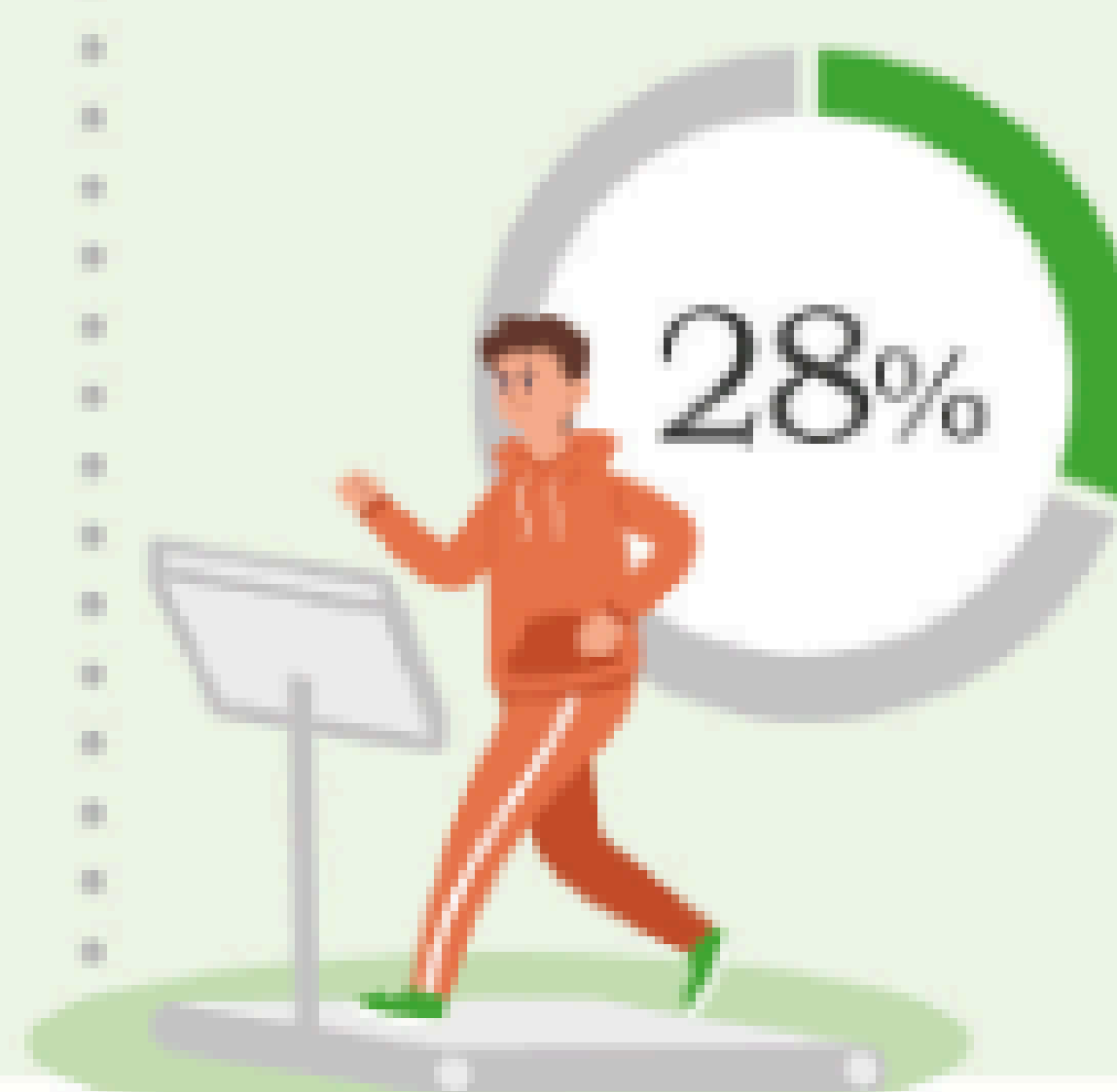
dos lares brasileiros possuem, no mínimo, **uma pessoa consumindo suplementos**



Em comparação com a edição anterior, o número de lares com consumidores de suplementos alimentares **aumentou 10%**

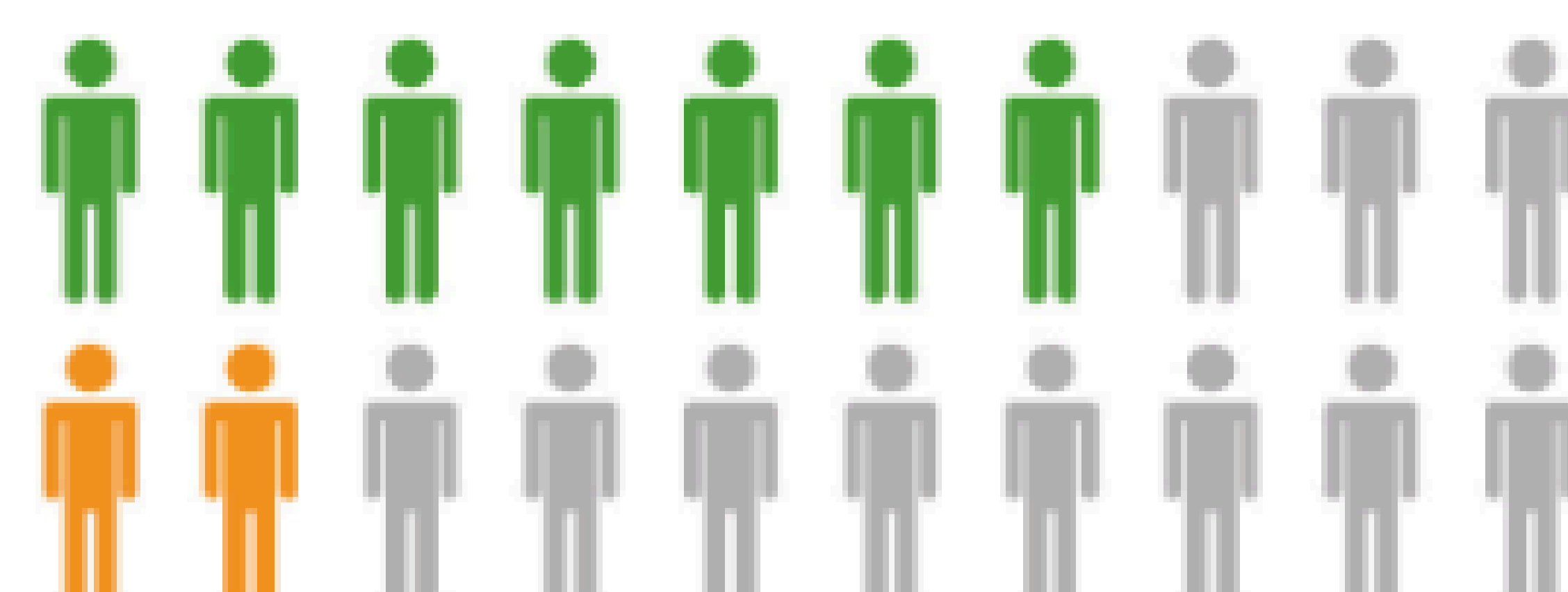


dos entrevistados **aumentaram seus cuidados com a alimentação**

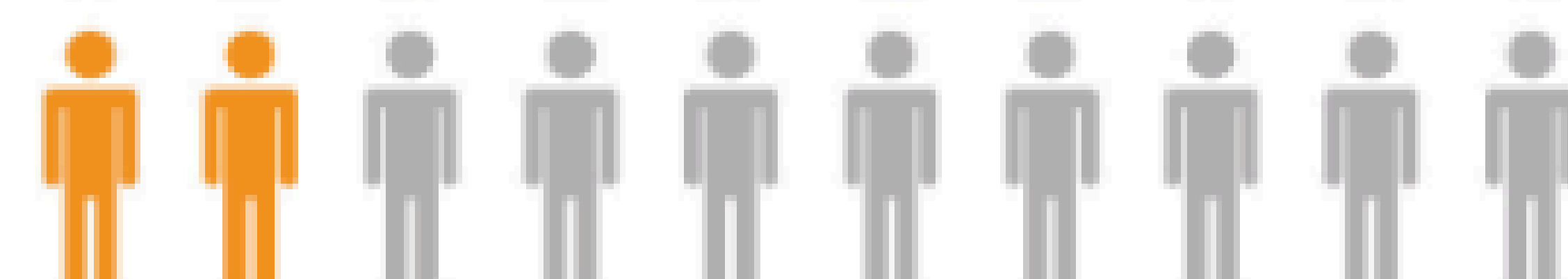


dos entrevistados afirmam que os suplementos **aumentam a disposição física**.
Consumo com **responsabilidade e incorporação de hábitos saudáveis** também cresceu no período

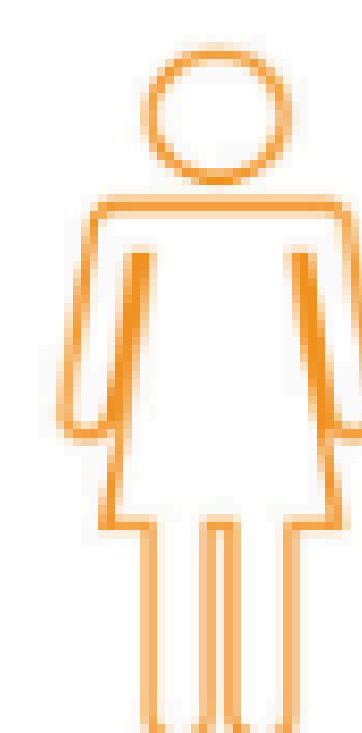
Cerca de duas vezes ao ano, os entrevistados se consultam:



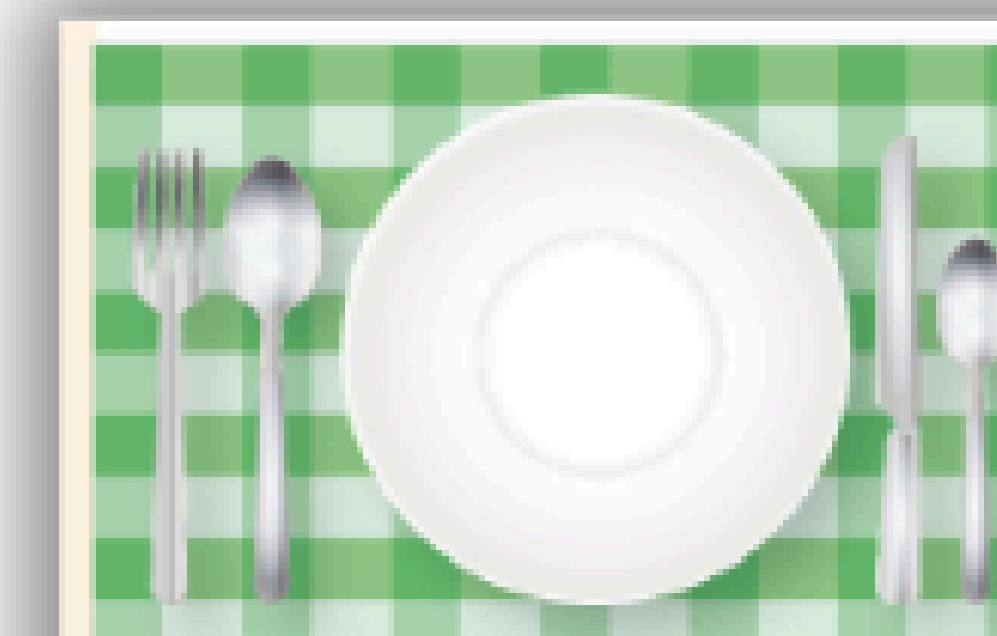
Médicos (71%)



Nutricionistas (24%)



Hábito é maior entre mulheres



Percentual dos entrevistados que tendem a fazer refeições fora de casa cresce **26%**, alcançando 87% em 2020



Acesso às informações é mais frequente pela internet (68%).
E 96% dos entrevistados estão presentes nas mídias sociais - um crescimento de 28% em cinco anos, praticamente todos os indivíduos.

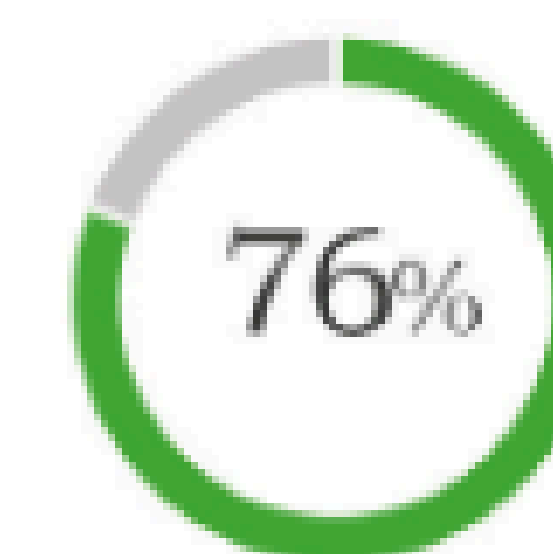
CONSUMO DE SUPLEMENTOS ALIMENTARES



Quase a totalidade (98%) dos entrevistados estão **MUITO SATISFEITOS / SATISFEITOS** com o uso de suplementos alimentares



Entendem que os suplementos alimentares são **complementos da alimentação**

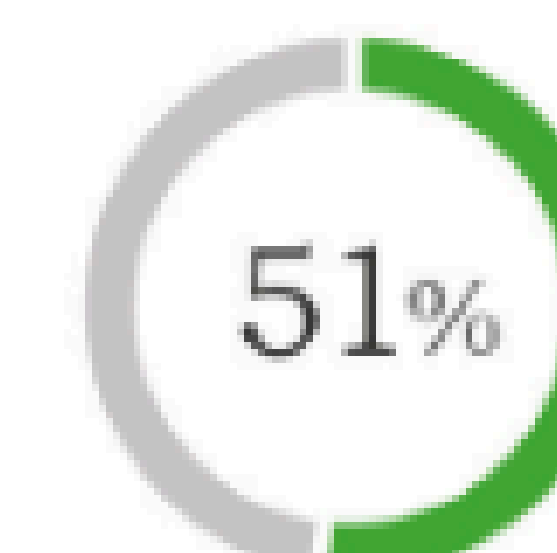


das compras de suplementos alimentares são feitas em farmácias

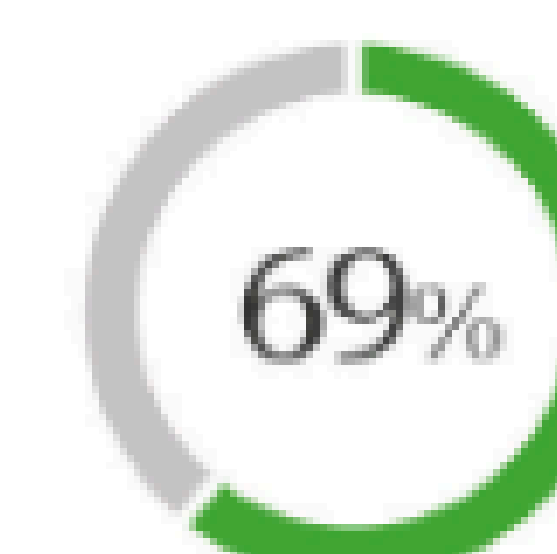
SAÚDE é o principal fator que leva os entrevistados a consumirem suplementos alimentares



A maior parte das recomendações de consumo de suplementos são feitas por profissionais de saúde



Dos consumidores de suplementos alimentares praticam **atividades esportivas**



Vitaminas, Proteínas e Minerais
lideram os grupos de produtos consumidos



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

* Correspondence: jagim.andrew@mayo.edu; Tel.: +1-701-730-4842

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

CITRULINA

71% (prevalência)
4 ± 2,5g

NIACINA

48% (prevalência)
25,8 ± 15,2mg

TIROSINA

63% (prevalência)
348 ± 305mg



TAVURINA

51% (prevalência)
1,3 ± 0,6g

CREATINA

49% (prevalência)
2,1 ± 1,0g

BETA-ALANINA

87% (prevalência)
2 ± 0,8g

WELCOME TO
BODYBUILDING.COM



www



TOP
100

Article

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

* Correspondence: jagim.andrew@mayo.edu; Tel.: +1-701-730-4842

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

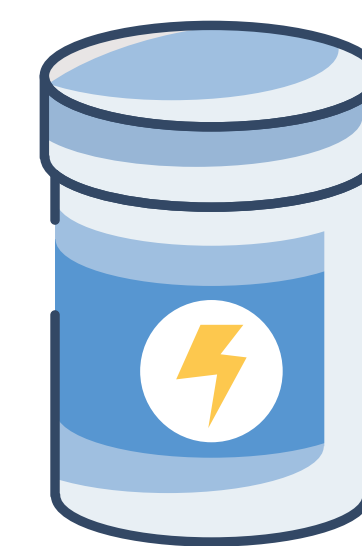


Abstract: Multi-ingredient pre-workout supplements are a popular class of dietary supplements which are purported to improve exercise performance. However, the composition of these products varies substantially between formulations, thus making comparisons challenging. Therefore, the purpose of this 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).

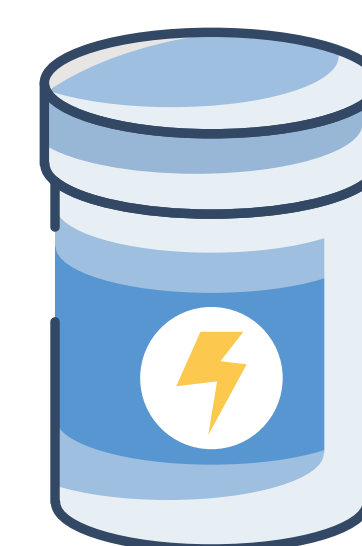
Keywords: ergogenic aid; supplement; pre-workout; beta-alanine; caffeine; citrulline; creatine; strength; power; energy

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



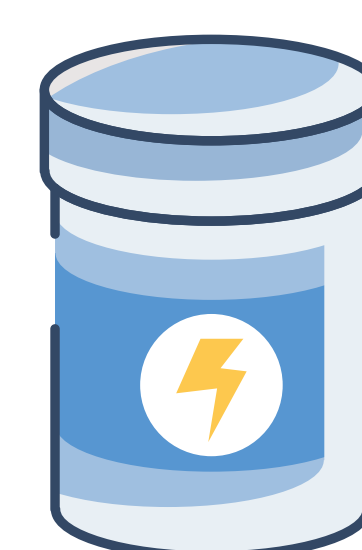
Doses presentes não estão de acordo com a evidência clínica estabelecida. Ex: apenas 29% dos trabalhos analisados continham quantidades ótimas de creatina (>3g).



Sinergismo farmacocinético e farmacodinâmico

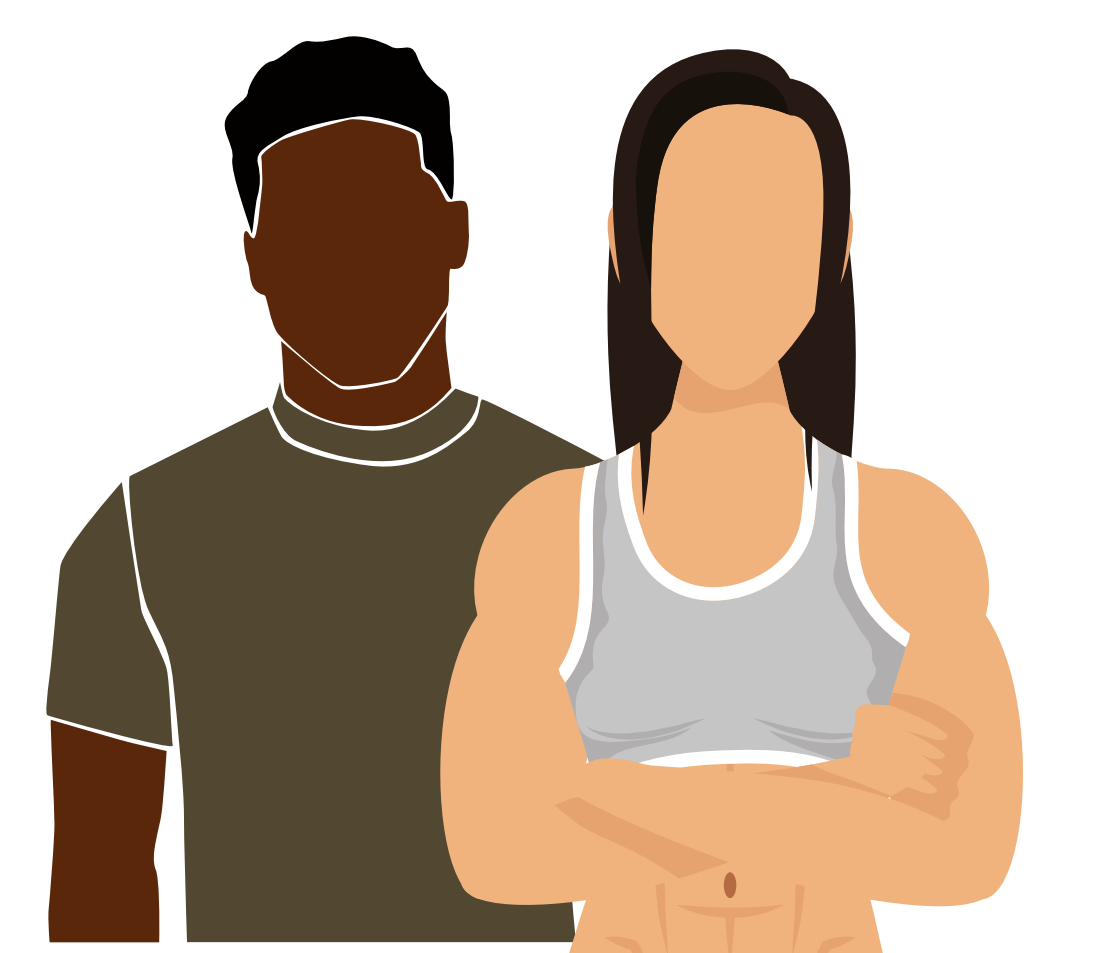


"Tamanho da porção" apresentando forte correlação com efeito ergogênico: quanto maior, melhor. Ex: se um produto apresentar dose de 8g, pouco provável conter 6g de citrulina e 4g de beta-alanina (que são doses efetivas).



Vários produtos não informam o montante de cada componente individual. Ademais, alguns ativos podem estar com dosagens altas (ex: niacina), aumentando risco de efeitos adversos.

PERFIL DO USUÁRIO



n = 1045
(636 homens)



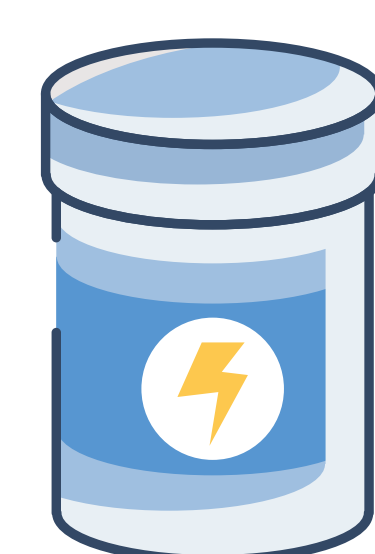
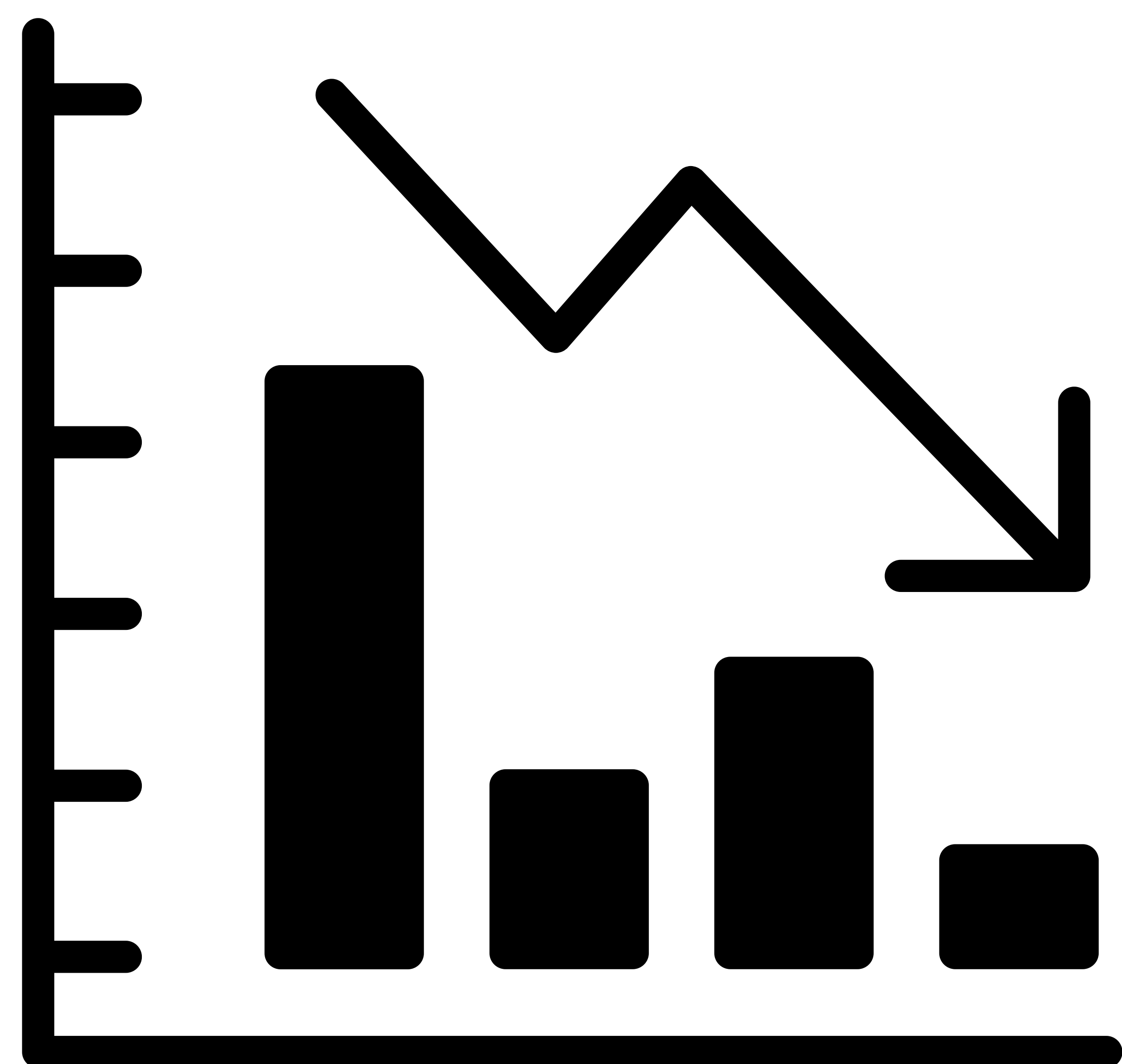
Questionário
online

Perfil dos usuários

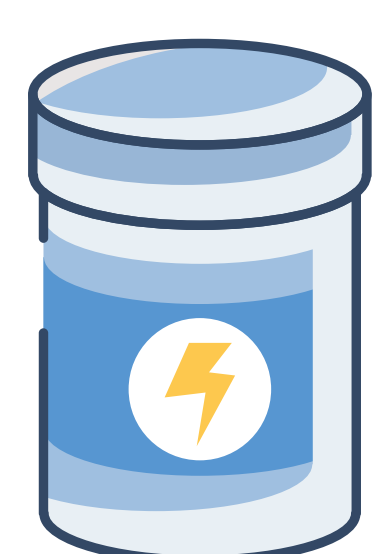
Padrão de uso: dose, motivos

Avaliação da segurança

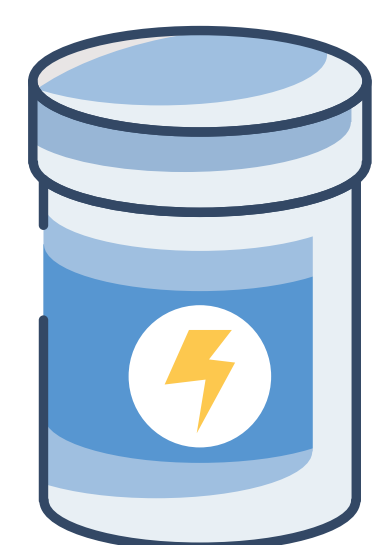
RESULTADOS



Maioria de usuários são homens que treinam entre 4 a 6x/semana; fazem uso há mais de 1 ano de 4-6x/semana.



Parece que uso menor que 8 semanas está associado a menor risco de efeitos adversos



Posologia: seguem recomendações dos fabricantes [30-40' pré-treino, 1 dosador].



nutrients

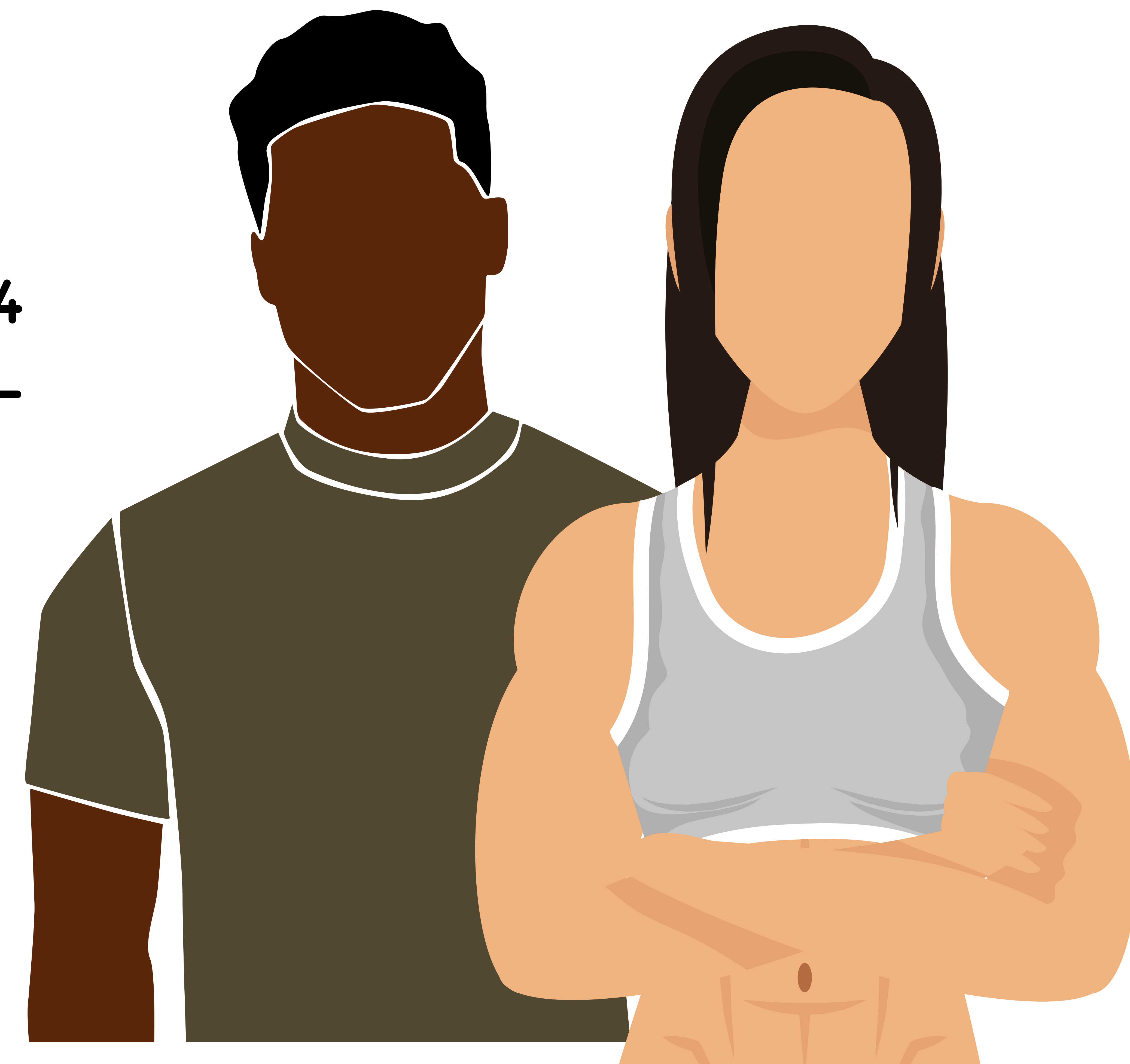
Nutrients 2019, 11, 855; doi:10.3390/nu11040855



Article

Common Habits, Adverse Events, and Opinions Regarding Pre-Workout Supplement Use Among Regular Consumers

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



PERFIL DO USUÁRIO



nutrients

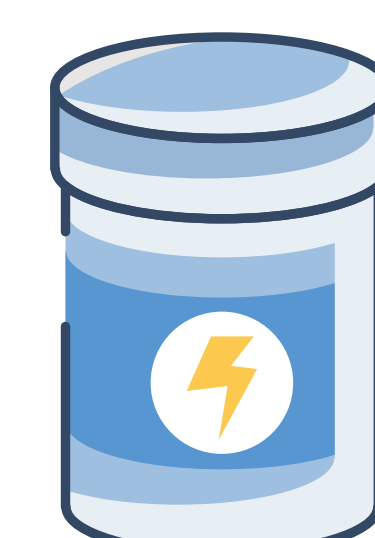
Nutrients 2019, 11, 855; doi:10.3390/nu11040855



Article

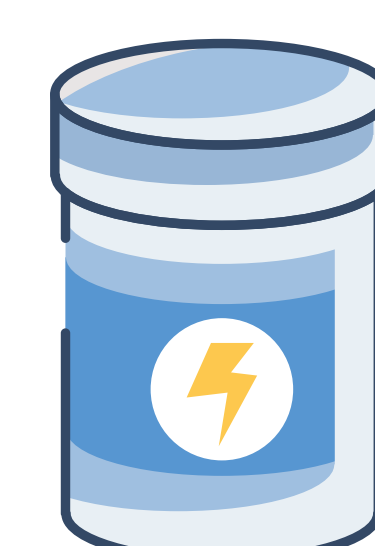
Common Habits, Adverse Events, and Opinions Regarding Pre-Workout Supplement Use Among Regular Consumers

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



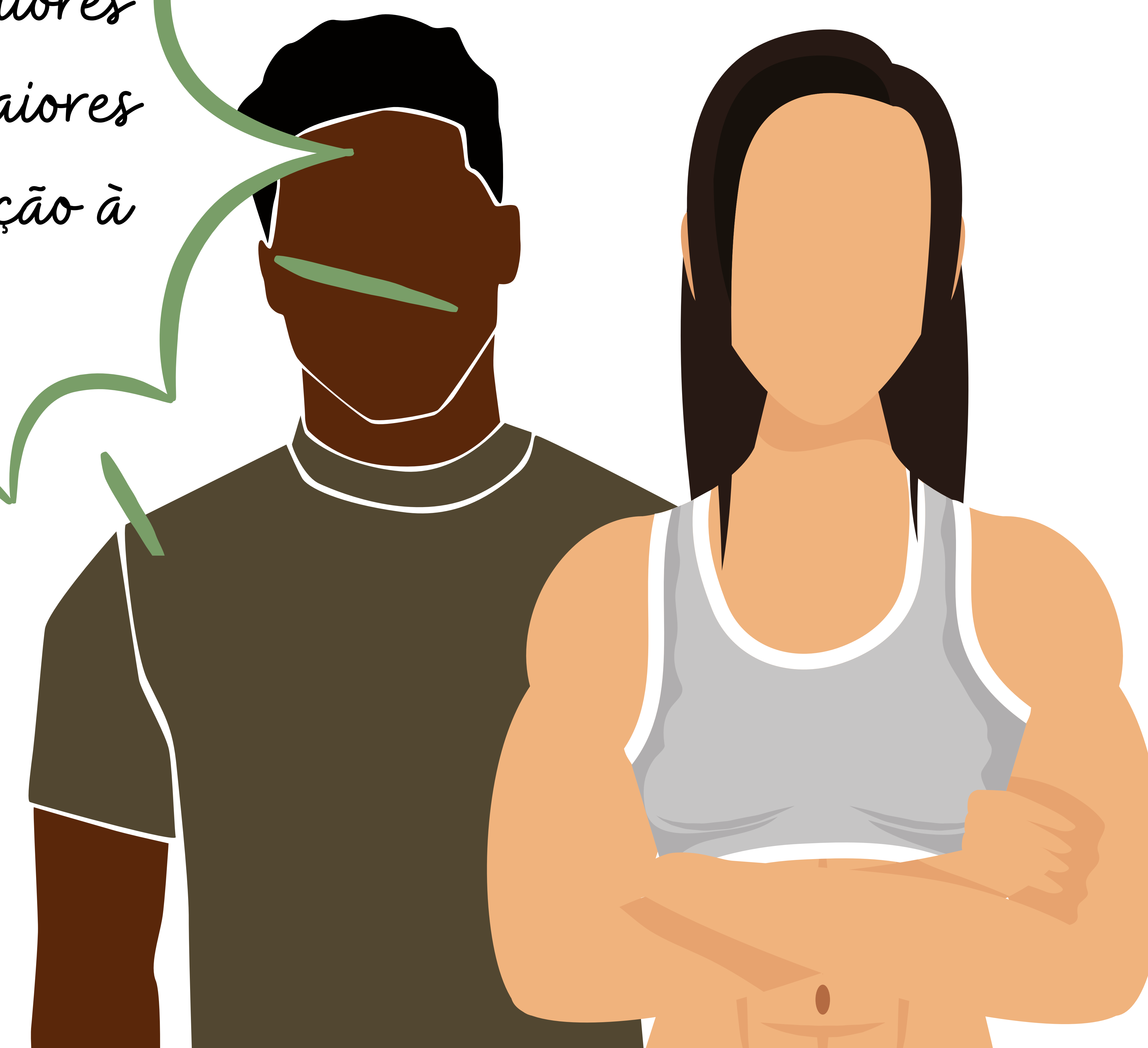
14% dos usuários consomem 2 dosadores por vez; 18% consomem 2x por dia

Metade dos usuários reportaram efeitos adversos: reações cutâneas, náuseas, efeitos cardíacos (auto-relatados)



Momento de uso importa! Maior probabilidade de alteração do sono e, consequentemente, recuperação

Parece que doses maiores estão associadas a maiores reduções da Percepção à Fadiga



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

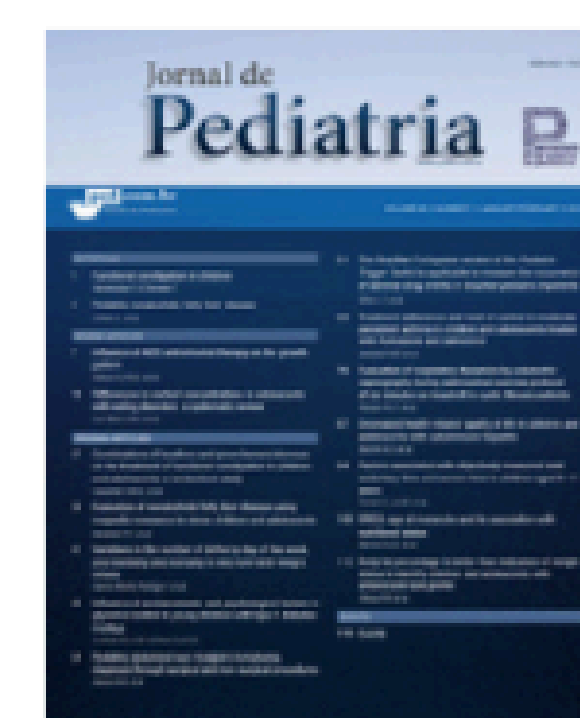
Stacey K. O'Brien, Eva Malacova, Jill L. Sherriff  and Lucinda J. Black *

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



Jornal de
Pediatria

www.jpmed.com.br



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-Matysik ^{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>

© Serdi and Springer-Verlag International SAS, part of Springer Nature

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

© Serdi and Springer-Verlag International SAS, part of Springer Nature

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

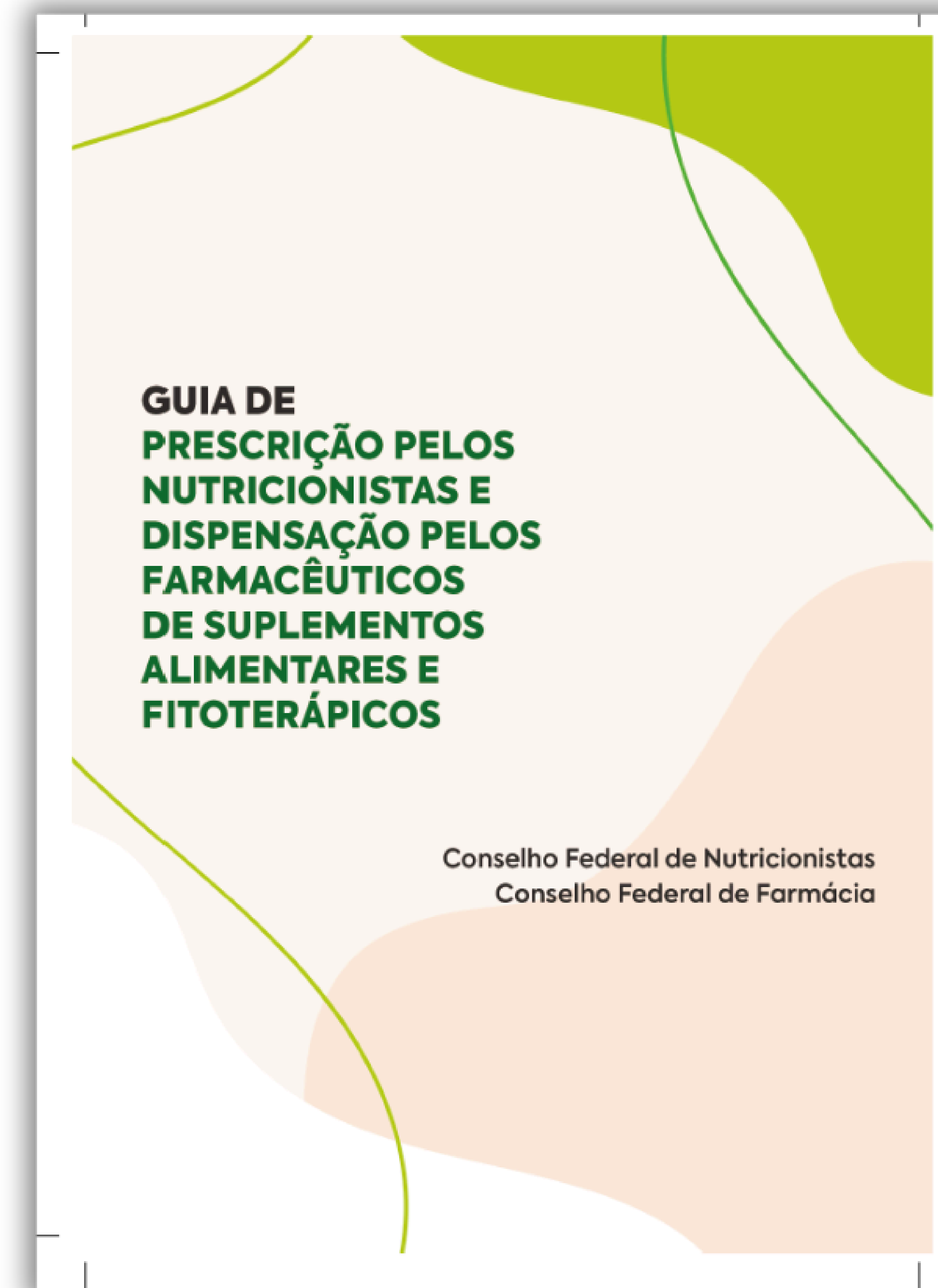
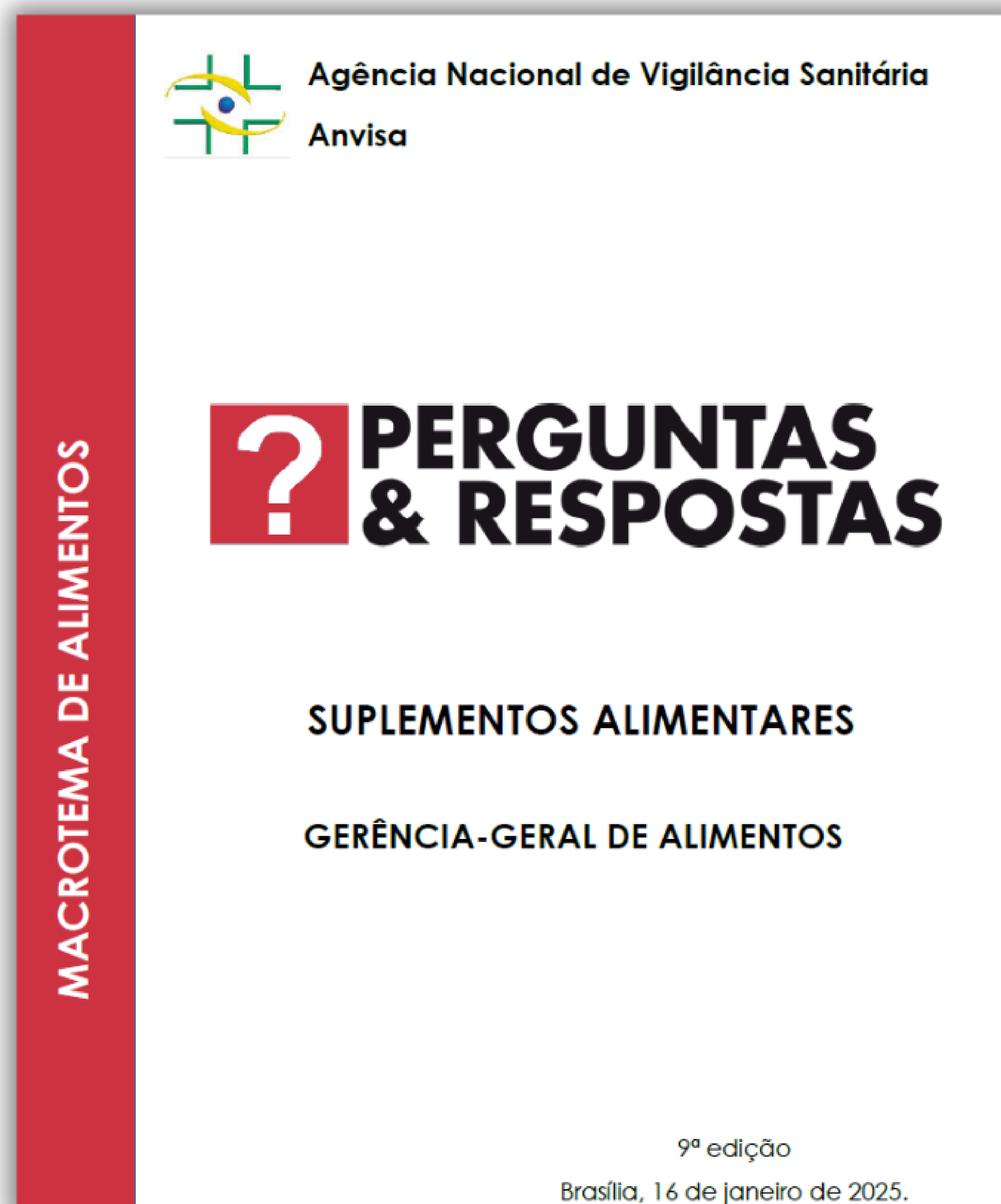
Research and Professional Briefs

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?

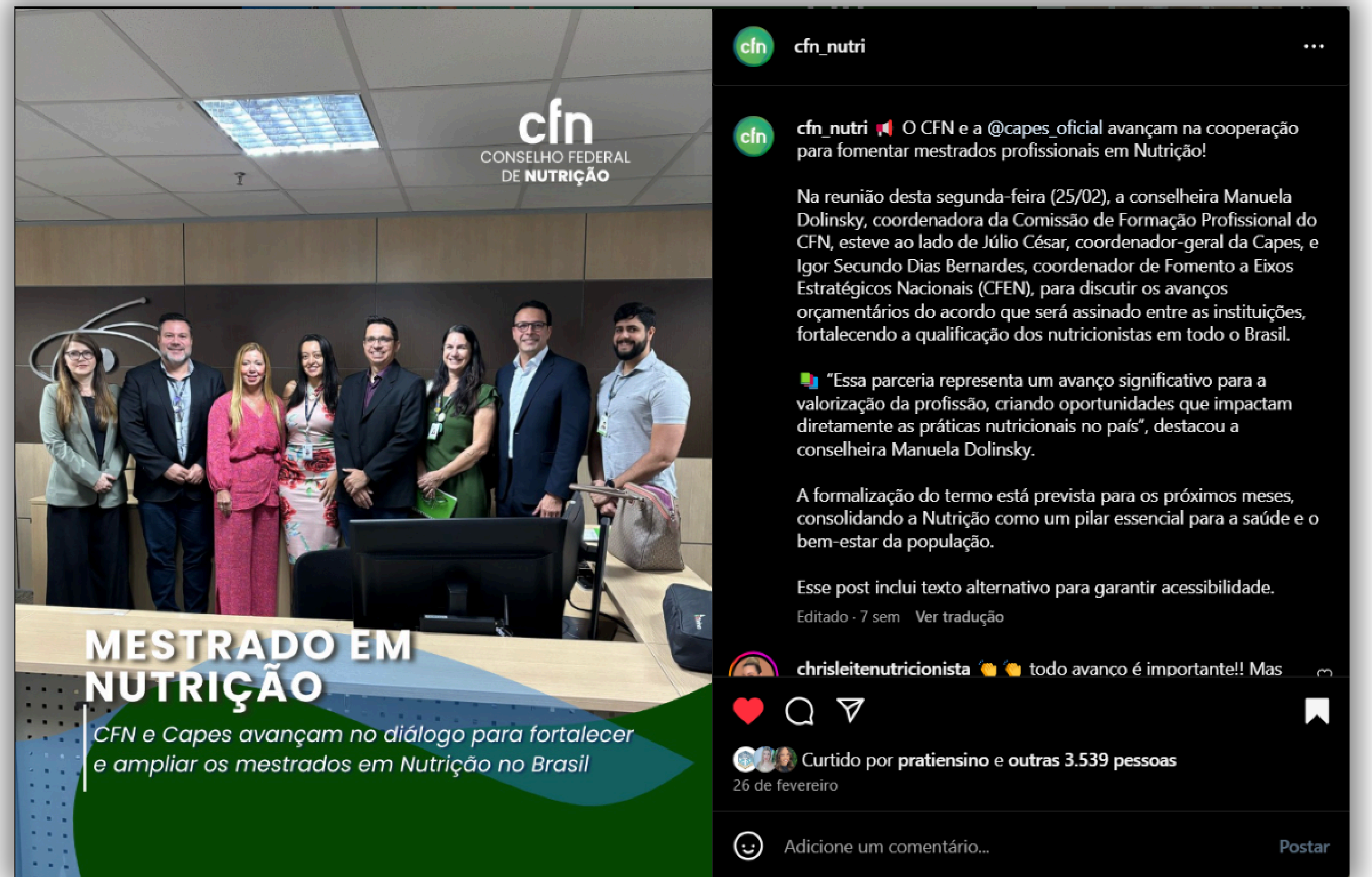
8. Confira a validade e a procedência do produto

- ✓ 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.



cfn
CONSELHO FEDERAL
DE NUTRIÇÃO



**GUIA DE
PRESCRIÇÃO PELOS
NUTRICIONISTAS E
DISPENSAÇÃO PELOS
FARMACÊUTICOS
DE SUPLEMENTOS
ALIMENTARES E
FITOTERÁPICOS**

Conselho Federal de Nutricionistas
Conselho Federal de Farmácia

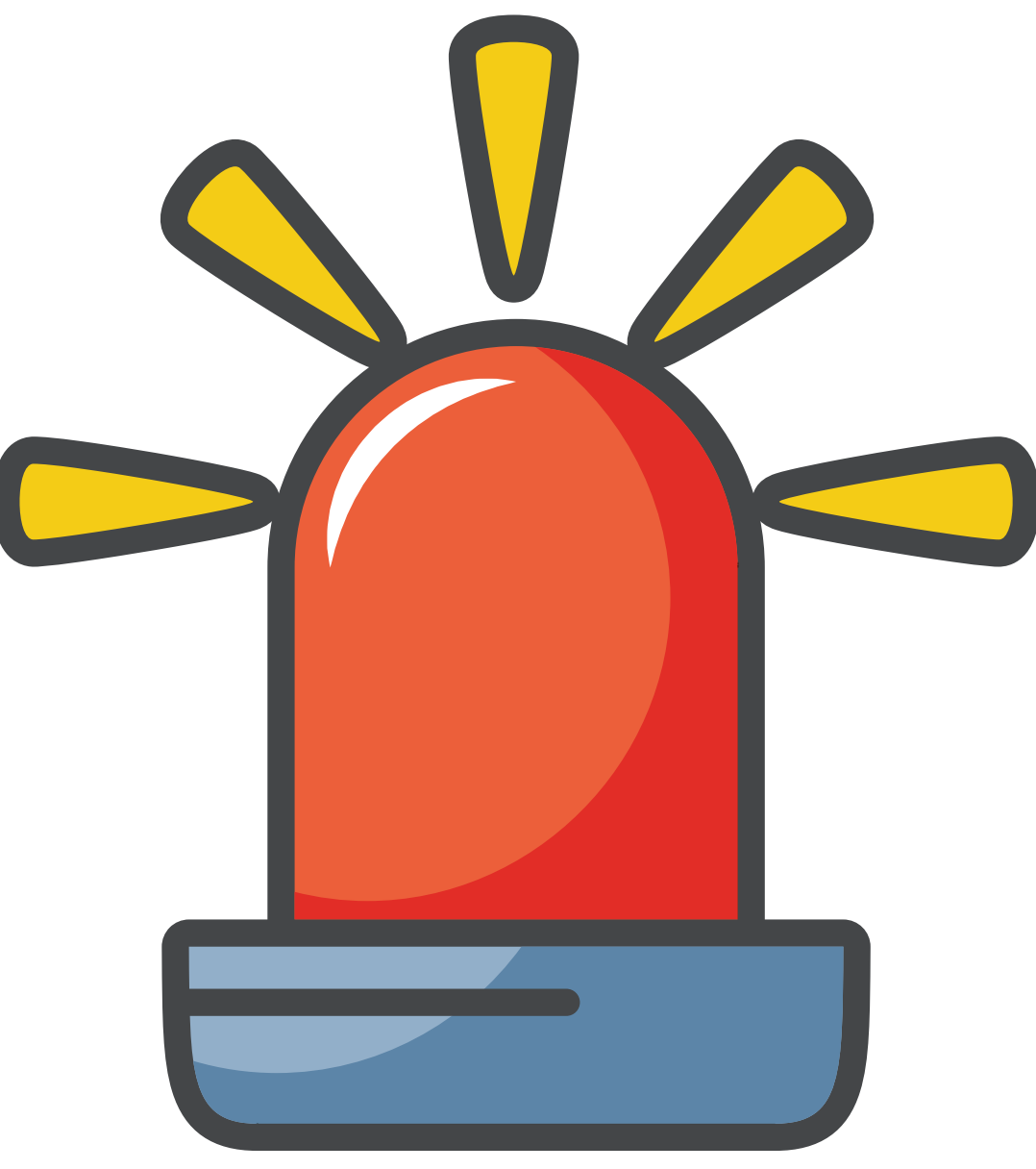


“

São inerentemente seguros?

”

Cuidado com propagandas enganosas!



Estudo da UFRN mostra que suplemento “natural” vendido no Brasil contém substâncias sintéticas não informadas

abr 14, 2025 • Cidades Educação Grande Natal Interior Natal Rio Grande do Norte
Atualizado pela última vez em abr 13, 2025

A-
A+

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



Research Report

The Impact of Acute Energy Drink Consumption on Blood Pressure Parameters: A Meta-analysis

Annals of Pharmacotherapy
1–8
© The Author(s) 2016
Reprints and permissions:
sagepub.com/journalsPermissions.nav
DOI: 10.1177/106002801665433
asp.sagepub.com
SAGE

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 Design:** A meta-analysis of randomized controlled trials (RCTs) assessing the effects of commercially available energy drinks on blood pressure (BP). **Results:** The baseline SBP was calculated using the DerSimonian and Laird method. Fifteen studies were included, encompassing a total of 340,340 participants. The mean SBP was 115.52 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 mm Hg (95% CI = 4.62 to 8.27). **Conclusions:** Our results suggest that acute energy drink consumption significantly raises SBP and DBP. Further investigation of the effects of 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}

REVIEW

Energy Drinks and Their Impact on the Cardiovascular System: Potential Mechanisms^{1,2}

Erik Konrad Grasser,* Jennifer Lynn Miles-Chan, Nathalie Charrère, Cathriona R. Loonam, Abdul G. Dulloo, and Jean-Pierre Montani
Department of Medicine/Physiology, University of Fribourg, Fribourg, Switzerland

ABSTRACT
Globally, the popularity of energy drinks is steadily increasing. Scientific interest in their effects on cardiovascular and cerebrovascular systems in humans is also expanding and with it comes a growing number of case reports of adverse events associated with energy drinks. The vast majority of studies carried out in the general population report effects on blood pressure and heart rate. However, inconsistencies in the current literature render it difficult to draw firm conclusions with regard to the effects of energy drinks on cardiovascular and cerebrovascular variables. These inconsistencies are due, in part, to differences in methodologies, volume of drink ingested, and duration of postconsumption measurements, as well as subject variables during the test. Recent well-controlled, randomized crossover studies that used continuous beat-to-beat measurements provide evidence that cardiovascular responses to the ingestion of energy drinks are best explained by the actions of caffeine and sugar, with little influence from other ingredients. However, a role for other active constituents, such as taurine and glucuronolactone, cannot be ruled out. This article reviews the potentially adverse hemodynamic effects of energy drinks, particularly on blood pressure and heart rate, and discusses the mechanisms by which their active ingredients may interact to adversely affect the cardiovascular system. Research areas and gaps in the literature are discussed with particular reference to the use of energy drinks among high-risk individuals. *Adv Nutr* 2016;7:950–60.

Keywords: blood pressure, sugar, caffeine, heart rate, public health

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 Charrère, CR Loonam, AG Dulloo, and JP Montani, no conflicts of interest.
³To whom correspondence should be addressed. E-mail: erikkonrad.grasser@unifr.ch

Journal of Clinical Medicine

Cardiovascular and Autonomic Responses to Energy Drinks—Clinical Implications

Kiran R. Somers¹ and Anna Svatikova^{2,*}
Cardiovascular Diseases, Mayo Clinic, Rochester, MN 55905, USA; kiran.somers@gmail.com
Cardiovascular Diseases, Mayo Clinic, Scottsdale, AZ 85259, USA
e Svatikova.anna@mayo.edu

Received: 15 January 2020; Accepted: 3 February 2020; Published: 5 February 2020

There is an increasing consumption of energy drinks both in the general population and in athletes. 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 their use 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 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 mediated by the effects of caffeine, taurine, and B-vitamins. It is likely that these cardiovascular outcomes are mediated by the effects of caffeine, taurine, and B-vitamins. It is likely that these cardiovascular outcomes are mediated by the effects of caffeine, taurine, and B-vitamins.

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

Energy drinks were first introduced in the United States more than three decades ago. They have been rapidly increasing, with particularly strong penetration in young adults, amateur athletes, and military personnel. These beverages have been associated with an increased risk of adverse cardiovascular events. A review examines the composition of energy drinks, their effects on the cardiovascular system, and potential mechanisms by which energy drinks increase cardiovascular risk. The review also explores the neural and circulatory responses to energy drinks.

Energy Drinks
Energy drinks were first introduced in the United States more than three decades ago. They have been rapidly increasing, with particularly strong penetration in young adults, amateur athletes, and military personnel. These beverages have been associated with an increased risk of adverse cardiovascular events. A review examines the composition of energy drinks, their effects on the cardiovascular system, and potential mechanisms by which energy drinks increase cardiovascular risk. The review also explores the neural and circulatory responses to energy drinks.

Energy drinks were first introduced in the United States more than three decades ago. They have been rapidly increasing, with particularly strong penetration in young adults, amateur athletes, and military personnel. These beverages have been associated with an increased risk of adverse cardiovascular events. A review examines the composition of energy drinks, their effects on the cardiovascular system, and potential mechanisms by which energy drinks increase cardiovascular risk. The review also explores the neural and circulatory responses to energy drinks.

Energy drinks were first introduced in the United States more than three decades ago. They have been rapidly increasing, with particularly strong penetration in young adults, amateur athletes, and military personnel. These beverages have been associated with an increased risk of adverse cardiovascular events. A review examines the composition of energy drinks, their effects on the cardiovascular system, and potential mechanisms by which energy drinks increase cardiovascular risk. The review also explores the neural and circulatory responses to energy drinks.

Reviews in Cardiovascular Medicine

Energy drink consumption: a rising public health issue

Amandeep Kaur^{1,*†}, Hamza Yousuf^{2,†}, Devyani Ramgobin-Marshall^{3,†}, Rahul Jain^{4,†}, Rohit Jain^{5,†}
¹Department of Internal Medicine, American University of Integrative Sciences, School of Medicine, BB11100 Saint Michael, Barbados
²Department of Internal Medicine, Dow University of Health Sciences, 74200 Karachi, Pakistan
³Department of Internal Medicine, Touro College of Osteopathic Medicine, Middletown, NY 10027, USA
⁴Department of Internal Medicine, Division of Cardiology, University of Indiana, Indianapolis, IN 46202, USA
⁵Department of Internal Medicine, Penn State Milton S. Eisenhower Medical Center, Hershey, PA 17033, USA
*Correspondence: Akaur@auis.edu (Amandeep Kaur)
†These authors contributed equally.
Academic Editors: Demosthenes B. Panagiotakos and Marina Kouviri
Submitted: 14 September 2021 | Revised: 28 November 2021 | Accepted: 29 November 2021 | Published: 4 March 2022

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; arrhythmias; red bull; monster energy

1. 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

Control Centers (AAPCC) reported 1764 single exposures to caffeine-containing energy drinks in 2019 alone with 10 major outcomes and 1 death [7]. From 2009 to 2013, a total of 43 fatalities were linked to Monster Energy and 5-hour Energy as reported by the FDA's Center for Food and Safety and Applied Nutrition (CFSAN) Adverse Event Reporting System (CAERS) [8]. In 2018, the FDA issued a guidance on dietary supplements being sold in bulk that contained pure or highly concentrated levels of caffeine as being unlawful, however, they have yet to issue regulations on the consumption or availability of EDs [9]. Currently, EDs and energy shots exceed and even double or triple the FDA's official soft drink caffeine concentration limit that is regarded as safe, which is 71 milligrams (mg) per 12-ounce beverage [10]. The main ingredients of these beverages (caffeine, taurine, sucrose, and B-vitamins [1]) alter the cardiovascular parameters through various mechanisms and contribute to hemodynamic changes and raise the overall risks for short and long-term cardiovascular outcomes.

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

frontiers | Frontiers in Behavioral Neuroscience

Energy drinks at adolescence: Awareness or unawareness?

Cristina Cadoni^{1*} and Alessandra Tiziana Peana^{2*}
¹Department of Biomedical Sciences, Institute of Neuroscience, National Research Council of Italy, Cagliari, Italy
²Department of Medicine, Surgery and Pharmacy, University of Sassari, Sassari, Italy

TYPE: Mini Review
PUBLISHED: 20 February 2023
DOI: 10.3389/fnbeh.2023.1080963

Energy drinks are beverages similar to soft drinks, characterized by high sugar content, additional ingredients like taurine and vitamins, and caffeine. They are consumed by a large number of adolescents, reducing tiredness, increasing concentration, and alertness. The majority of consumers are children, adolescents, and young adults. Although EDs companies claim about the ergogenic and performance-enhancing properties of their products, there is a serious lack of evidence as clinical level to validate their benefits. The regular consumption of these caffeinated drinks are not well understood. The possible negative effects in adolescents whose brain is still developing and alcohol are also gaining popularity among adolescents. Publications indicate that this combined consumption to develop an alcohol use disorder, as well as produce adverse effects. There is an increasing need to disseminate information on health, so that adolescents can be aware about the consequences of consuming these drinks.

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

Energy drinks are beverages similar to soft drinks, characterized by high sugar content, additional ingredients like taurine and vitamins, and caffeine. They are consumed by a large number of adolescents, reducing tiredness, increasing concentration, and alertness. The majority of consumers are children, adolescents, and young adults. Although EDs companies claim about the ergogenic and performance-enhancing properties of their products, there is a serious lack of evidence as clinical level to validate their benefits. The regular consumption of these caffeinated drinks are not well understood. The possible negative effects in adolescents whose brain is still developing and alcohol are also gaining popularity among adolescents. Publications indicate that this combined consumption to develop an alcohol use disorder, as well as produce adverse effects. There is an increasing need to disseminate information on health, so that adolescents can be aware about the consequences of consuming these drinks.

Energy drinks are beverages similar to soft drinks, characterized by high sugar content, additional ingredients like taurine and vitamins, and caffeine. They are consumed by a large number of adolescents, reducing tiredness, increasing concentration, and alertness. The majority of consumers are children, adolescents, and young adults. Although EDs companies claim about the ergogenic and performance-enhancing properties of their products, there is a serious lack of evidence as clinical level to validate their benefits. The regular consumption of these caffeinated drinks are not well understood. The possible negative effects in adolescents whose brain is still developing and alcohol are also gaining popularity among adolescents. Publications indicate that this combined consumption to develop an alcohol use disorder, as well as produce adverse effects. There is an increasing need to disseminate information on health, so that adolescents can be aware about the consequences of consuming these drinks.

Energy drinks are beverages similar to soft drinks, characterized by high sugar content, additional ingredients like taurine and vitamins, and caffeine. They are consumed by a large number of adolescents, reducing tiredness, increasing concentration, and alertness. The majority of consumers are children, adolescents, and young adults. Although EDs companies claim about the ergogenic and performance-enhancing properties of their products, there is a serious lack of evidence as clinical level to validate their benefits. The regular consumption of these caffeinated drinks are not well understood. The possible negative effects in adolescents whose brain is still developing and alcohol are also gaining popularity among adolescents. Publications indicate that this combined consumption to develop an alcohol use disorder, as well as produce adverse effects. There is an increasing need to disseminate information on health, so that adolescents can be aware about the consequences of consuming these drinks.

Energy drinks are beverages similar to soft drinks, characterized by high sugar content, additional ingredients like taurine and vitamins, and caffeine. They are consumed by a large number of adolescents, reducing tiredness, increasing concentration, and alertness. The majority of consumers are children, adolescents, and young adults. Although EDs companies claim about the ergogenic and performance-enhancing properties of their products, there is a serious lack of evidence as clinical level to validate their benefits. The regular consumption of these caffeinated drinks are not well understood. The possible negative effects in adolescents whose brain is still developing and alcohol are also gaining popularity among adolescents. Publications indicate that this combined consumption to develop an alcohol use disorder, as well as produce adverse effects. There is an increasing need to disseminate information on health, so that adolescents can be aware about the consequences of consuming these drinks.

Energy drinks are beverages similar to soft drinks, characterized by high sugar content, additional ingredients like taurine and vitamins, and caffeine. They are consumed by a large number of adolescents, reducing tiredness, increasing concentration, and alertness. The majority of consumers are children, adolescents, and young adults. Although EDs companies claim about the ergogenic and performance-enhancing properties of their products, there is a serious lack of evidence as clinical level to validate their benefits. The regular consumption of these caffeinated drinks are not well understood. The possible negative effects in adolescents whose brain is still developing and alcohol are also gaining popularity among adolescents. Publications indicate that this combined consumption to develop an alcohol use disorder, as well as produce adverse effects. There is an increasing need to disseminate information on health, so that adolescents can be aware about the consequences of consuming these drinks.

Energy drinks are beverages similar to soft drinks, characterized by high sugar content, additional ingredients like taurine and vitamins, and caffeine. They are consumed by a large number of adolescents, reducing tiredness, increasing concentration, and alertness. The majority of consumers are children, adolescents, and young adults. Although EDs companies claim about the ergogenic and performance-enhancing properties of their products, there is a serious lack of evidence as clinical level to validate their benefits. The regular consumption of these caffeinated drinks are not well understood. The possible negative effects in adolescents whose brain is still developing and alcohol are also gaining popularity among adolescents. Publications indicate that this combined consumption to develop an alcohol use disorder, as well as produce adverse effects. There is an increasing need to disseminate information on health, so that adolescents can be aware about the consequences of consuming these drinks.

Energy drinks are beverages similar to soft drinks, characterized by high sugar content, additional ingredients like taurine and vitamins, and caffeine. They are consumed by a large number of adolescents, reducing tiredness, increasing concentration, and alertness. The majority of consumers are children, adolescents, and young adults. Although EDs companies claim about the ergogenic and performance-enhancing properties of their products, there is a serious lack of evidence as clinical level to validate their benefits. The regular consumption of these caffeinated drinks are not well understood. The possible negative effects in adolescents whose brain is still developing and alcohol are also gaining popularity among adolescents. Publications indicate that this combined consumption to develop an alcohol use disorder, as well as produce adverse effects. There is an increasing need to disseminate information on health, so that adolescents can be aware about the consequences of consuming these drinks.

Energy drinks are beverages similar to soft drinks, characterized by high sugar content, additional ingredients like taurine and vitamins, and caffeine. They are consumed by a large number of adolescents, reducing tiredness, increasing concentration, and alertness. The majority of consumers are children, adolescents, and young adults. Although EDs companies claim about the ergogenic and performance-enhancing properties of their products, there is a serious lack of evidence as clinical level to validate their benefits. The regular consumption of these caffeinated drinks are not well understood. The possible negative effects in adolescents whose brain is still developing and alcohol are also gaining popularity among adolescents. Publications indicate that this combined consumption to develop an alcohol use disorder, as well as produce adverse effects. There is an increasing need to disseminate information on health, so that adolescents can be aware about the consequences of consuming these drinks.

Energy drinks are beverages similar to soft drinks, characterized by high sugar content, additional ingredients like taurine and vitamins, and caffeine. They are consumed by a large number of adolescents, reducing tiredness, increasing concentration, and alertness. The majority of consumers are children, adolescents, and young adults. Although EDs companies claim about the ergogenic and performance-enhancing properties of their products, there is a serious lack of evidence as clinical level to validate their benefits. The regular consumption of these caffeinated drinks are not well understood. The possible negative effects in adolescents whose brain is still developing and alcohol are also gaining popularity among adolescents. Publications indicate that this combined consumption to develop an alcohol use disorder, as well as produce adverse effects. There is an increasing need to disseminate information on health, so that adolescents can be aware about the consequences of consuming these drinks.

Energy drinks are beverages similar to soft drinks, characterized by high sugar content, additional ingredients like taurine and vitamins, and caffeine. They are consumed by a large number of adolescents, reducing tiredness, increasing concentration, and alertness. The majority of consumers are children, adolescents, and young adults. Although EDs companies claim about the ergogenic and performance-enhancing properties of their products, there is a serious lack of evidence as clinical level to validate their benefits. The regular consumption of these caffeinated drinks are not well understood. The possible negative effects in adolescents whose brain is still developing and alcohol are also gaining popularity among adolescents. Publications indicate that this combined consumption to develop an alcohol use disorder, as well as produce adverse effects. There is an increasing need to disseminate information on health, so that adolescents can be aware about the consequences of consuming these drinks.

Energy drinks are beverages similar to soft drinks, characterized by high sugar content, additional ingredients like taurine and vitamins, and caffeine. They are consumed by a large number of adolescents, reducing tiredness, increasing concentration, and alertness. The majority of consumers are children, adolescents, and young adults. Although EDs companies claim about the ergogenic and performance-enhancing properties of their products, there is a serious lack of evidence as clinical level to validate their benefits. The regular consumption of these caffeinated drinks are not well understood. The possible negative effects in adolescents whose brain is still developing and alcohol are also gaining popularity among adolescents. Publications indicate that this combined consumption to develop an alcohol use disorder, as well as produce adverse effects. There is an increasing need to disseminate information on health, so that adolescents can be aware about the consequences of consuming these drinks.

Energy drinks are beverages similar to soft drinks, characterized by high sugar content, additional ingredients like taurine and vitamins, and caffeine. They are consumed by a large number of adolescents, reducing tiredness, increasing concentration, and alertness. The majority of consumers are children, adolescents, and young adults. Although EDs companies claim about the ergogenic and performance-enhancing properties of their products, there is a serious lack of evidence as clinical level to validate their benefits. The regular consumption of these caffeinated drinks are not well understood. The possible negative effects in adolescents whose brain is still developing and alcohol are also gaining popularity among adolescents. Publications indicate that this combined consumption to develop an alcohol use disorder, as well as produce adverse effects. There is an increasing need to disseminate information on health, so that adolescents can be aware about the consequences of consuming these drinks.

Energy drinks are beverages similar to soft drinks, characterized by high sugar content, additional ingredients like taurine and vitamins, and caffeine. They are consumed by a large number of adolescents, reducing tiredness, increasing concentration, and alertness. The majority of consumers are children, adolescents, and young adults. Although EDs companies claim about the ergogenic and performance-enhancing properties of their products, there is a serious lack of evidence as clinical level to validate their benefits. The regular consumption of these caffeinated drinks are not well understood. The possible negative effects in adolescents whose brain is still developing and alcohol are also gaining popularity among adolescents. Publications indicate that this combined consumption to develop an alcohol use disorder, as well as produce adverse effects. There is an increasing need to disseminate information on health, so that adolescents can be aware about the consequences of consuming these drinks.

Energy drinks are beverages similar to soft drinks, characterized by high sugar content, additional ingredients like taurine and vitamins, and caffeine. They are consumed by a large number of adolescents, reducing tiredness, increasing concentration, and alertness. The majority of consumers are children, adolescents, and young adults. Although EDs companies claim about the ergogenic and performance-enhancing properties of their products, there is a serious lack of evidence as clinical level to validate their benefits. The regular consumption of these caffeinated drinks are not well understood. The possible negative effects in adolescents whose brain is still developing and alcohol are also gaining popularity among adolescents. Publications indicate that this combined consumption to develop an alcohol use disorder, as well as produce adverse effects. There is an increasing need to disseminate information on health, so that adolescents can be aware about the consequences of consuming these drinks.

Energy drinks are beverages similar to soft drinks, characterized by high sugar content, additional ingredients like taurine and vitamins, and caffeine. They are consumed by a large number of adolescents, reducing tiredness, increasing concentration, and alertness. The majority of consumers are children, adolescents, and young adults. Although EDs companies claim about the ergogenic and performance-enhancing properties of their products, there is a serious lack of evidence as clinical level to validate their benefits. The regular consumption of these caffeinated drinks are not well understood. The possible negative effects in adolescents whose brain is still developing and alcohol are also gaining popularity among adolescents. Publications indicate that this combined consumption to develop an alcohol use disorder, as well as produce adverse effects. There is an increasing need to disseminate information on health, so that adolescents can be aware about the consequences of consuming these drinks.

Energy drinks are beverages similar to soft drinks, characterized by high sugar content, additional ingredients like taurine and vitamins, and caffeine. They are consumed by a large number of adolescents, reducing tiredness, increasing concentration, and alertness. The majority of consumers are children, adolescents, and young adults. Although EDs companies claim about the ergogenic and performance-enhancing properties of their products, there is a serious lack of evidence as clinical level to validate their benefits. The regular consumption of these caffeinated drinks are not well understood. The possible negative effects in adolescents whose brain is still developing and alcohol are also gaining popularity among adolescents. Publications indicate that this combined consumption to develop an alcohol use disorder, as well as produce adverse effects. There is an increasing need to disseminate information on health, so that adolescents can be aware about the consequences of consuming these drinks.

Energy drinks are beverages similar to soft drinks, characterized by high sugar content, additional ingredients like taurine and vitamins, and caffeine. They are consumed by a large number of adolescents, reducing tiredness, increasing concentration, and alertness. The majority of consumers are children, adolescents, and young adults. Although EDs companies claim about the ergogenic and performance-enhancing properties of their products, there is a serious lack of evidence as clinical level to validate their benefits. The regular consumption of these caffeinated drinks are not well understood. The possible negative effects in adolescents whose brain is still developing and alcohol are also gaining popularity among adolescents. Publications indicate that this combined consumption to develop an alcohol use disorder, as well as produce adverse effects. There is an increasing need to disseminate information on health, so that adolescents can be aware about the consequences of consuming these drinks.

Energy drinks are beverages similar to soft drinks, characterized by high sugar content, additional ingredients like taurine and vitamins, and caffeine. They are consumed by a large number of adolescents, reducing tiredness, increasing concentration, and alertness. The majority of consumers are children, adolescents, and young adults. Although EDs companies claim about the ergogenic and performance-enhancing properties of their products, there is a serious lack of evidence as clinical level to validate their benefits. The regular consumption of these caffeinated drinks are not well understood. The possible negative effects in adolescents whose brain is still developing and alcohol are also gaining popularity among adolescents. Publications indicate that this combined consumption to develop an alcohol use disorder, as well as produce adverse effects. There is an increasing need to disseminate information on health, so that adolescents can be aware about the consequences of consuming these drinks.

Energy drinks are beverages similar to soft drinks, characterized by high sugar content, additional ingredients like taurine and vitamins, and caffeine. They are consumed by a large number of adolescents, reducing tiredness, increasing concentration, and alertness. The majority of consumers are children, adolescents, and young adults. Although EDs companies claim about the ergogenic and performance-enhancing properties of their products, there is a serious lack of evidence as clinical level to validate their benefits. The regular consumption of these caffeinated drinks are not well understood. The possible negative effects in adolescents whose brain is still developing and alcohol are also gaining popularity among adolescents. Publications indicate that this combined consumption to develop an alcohol use disorder, as well as produce adverse effects. There is an increasing need to disseminate information on health, so that adolescents can be aware about the consequences of consuming these drinks.

Energy drinks are beverages similar to soft drinks, characterized by high sugar content, additional ingredients like taurine and vitamins, and caffeine. They are consumed by a large number of adolescents, reducing tiredness, increasing concentration, and alertness. The majority of consumers are children, adolescents, and young adults. Although EDs companies claim about the ergogenic and performance-enhancing properties of their products, there is a serious lack of evidence as clinical level to validate their benefits. The regular consumption of these caffeinated drinks are not well understood. The possible negative effects in adolescents whose brain is still developing and alcohol are also gaining popularity among adolescents. Publications indicate that this combined consumption to develop an alcohol use disorder, as well as produce adverse effects. There is an increasing need to disseminate information on health, so that adolescents can be aware about the consequences of consuming these drinks.

Energy drinks are beverages similar to soft drinks, characterized by high sugar content, additional ingredients like taurine and vitamins, and caffeine. They are consumed by a large number of adolescents, reducing tiredness, increasing concentration, and alertness. The majority of consumers are children, adolescents, and young adults. Although EDs companies claim about the ergogenic and performance-enhancing properties of their products, there is a serious lack of evidence as clinical level to validate their benefits. The regular consumption of these caffeinated drinks are not well understood. The possible negative effects in adolescents whose brain is still developing and alcohol are also gaining popularity among adolescents. Publications indicate that this combined consumption to develop an alcohol use disorder, as well as produce adverse effects. There is an increasing need to disseminate information on health, so that adolescents can be aware about the consequences of consuming these drinks.

Energy drinks are beverages similar to soft drinks, characterized by high sugar content, additional ingredients like taurine and vitamins, and caffeine. They are consumed by a large number of adolescents, reducing tiredness, increasing concentration, and alertness. The majority of consumers are children, adolescents, and young adults. Although EDs companies claim about the ergogenic and performance-enhancing properties of their products, there is a serious lack of evidence as clinical level to validate their benefits. The regular consumption of these caffeinated drinks are not well understood. The possible negative effects in adolescents whose brain is still developing and alcohol are also gaining popularity among adolescents. Publications indicate that this combined consumption to develop an alcohol use disorder, as well as produce adverse effects. There is an increasing need to disseminate information on health, so that adolescents can be aware about the consequences of consuming these drinks.

Energy drinks are beverages similar to soft drinks, characterized by high sugar content, additional ingredients like taurine and vitamins, and caffeine. They are consumed by a large number of adolescents, reducing tiredness, increasing concentration, and alertness. The majority of consumers are children, adolescents, and young adults. Although EDs companies claim about the ergogenic and performance-enhancing properties of their products, there is a serious lack of evidence as clinical level to validate their benefits. The regular consumption of these caffeinated drinks are not well understood. The possible negative effects in adolescents whose brain is still developing and alcohol are also gaining popularity among adolescents. Publications indicate that this combined consumption to develop an alcohol use disorder, as well as produce adverse effects. There is an increasing need to disseminate information on health, so that adolescents can be aware about the consequences of consuming these drinks.

Energy drinks are beverages similar to soft drinks, characterized by high sugar content, additional ingredients like taurine and vitamins, and caffeine. They are consumed by a large number of adolescents, reducing tiredness, increasing concentration, and alertness. The majority of consumers are children, adolescents, and young adults. Although EDs companies claim about the ergogenic and performance-enhancing properties of their products, there is a serious lack of evidence as clinical level to validate their benefits. The regular consumption of these caffeinated drinks are not well understood. The possible negative effects in adolescents whose brain is still developing and alcohol are also gaining popularity among adolescents. Publications indicate that this combined consumption to develop an alcohol use disorder, as well as produce adverse effects. There is an increasing need to disseminate information on health, so that adolescents can be aware about the consequences of consuming these drinks.

Energy drinks are beverages similar to soft drinks, characterized by high sugar content, additional ingredients like taurine and vitamins, and caffeine. They are consumed by a large number of adolescents, reducing tiredness, increasing concentration, and alertness. The majority of consumers are children, adolescents, and young adults. Although EDs companies claim about the ergogenic and performance-enhancing properties of their products, there is a serious lack of evidence as clinical level to validate their benefits. The regular consumption of these caffeinated drinks are not well understood. The possible negative effects in adolescents whose brain is still developing and alcohol are also gaining popularity among adolescents. Publications indicate that this combined consumption to develop an alcohol use disorder, as well as produce adverse effects. There is an increasing need to disseminate information on health, so that adolescents can be aware about the consequences of consuming these drinks.

Energy drinks are beverages similar to soft drinks, characterized by high sugar content, additional ingredients like taurine and vitamins, and caffeine. They are consumed by a large number of adolescents, reducing tiredness, increasing concentration, and alertness. The majority of consumers are children, adolescents, and young adults. Although EDs companies claim about the ergogenic and performance-enhancing properties of their products, there is a serious lack of evidence as clinical level to validate their benefits. The regular consumption of these caffeinated drinks are not well understood. The possible negative effects in adolescents whose brain is still developing and alcohol are also gaining popularity among adolescents. Publications indicate that this combined consumption to develop an alcohol use disorder, as well as produce adverse effects. There is an increasing need to disseminate information on health, so that adolescents can be aware about the consequences of consuming these drinks.

Energy drinks are beverages similar to soft drinks, characterized by high sugar content, additional ingredients like taurine and vitamins, and caffeine. They are consumed by a large number of adolescents, reducing tiredness, increasing concentration, and alertness. The majority of consumers are children, adolescents, and young adults. Although EDs companies claim about the ergogenic and performance-enhancing properties of their products, there is a serious lack of evidence as clinical level to validate their benefits. The regular consumption of these caffeinated drinks are not well understood. The possible negative effects in adolescents whose brain is still developing and alcohol are also gaining popularity among adolescents. Publications indicate that this combined consumption to develop an alcohol use disorder, as well as produce adverse effects. There is an increasing need to disseminate information on health, so that adolescents can be aware about the consequences of consuming these drinks.

Energy drinks are beverages similar to soft drinks, characterized by high sugar content, additional ingredients like taurine and vitamins, and caffeine. They are consumed by a large number of adolescents, reducing tiredness, increasing concentration, and alertness. The majority of consumers are children, adolescents, and young adults. Although EDs companies claim about the ergogenic and performance-enhancing properties of their products, there is a serious lack of evidence as clinical level to validate their benefits. The regular consumption of these caffeinated drinks are not well understood. The possible negative effects in adolescents whose brain is still developing and alcohol are also gaining popularity among adolescents. Publications indicate that this combined consumption to develop an alcohol use disorder, as well as produce adverse effects. There is an increasing need to disseminate information on health, so that adolescents can be aware about the consequences of consuming these drinks.

Energy drinks are beverages similar to soft drinks, characterized by high sugar content, additional ingredients like taurine and vitamins, and caffeine. They are consumed by a large number of adolescents, reducing tiredness, increasing concentration, and alertness. The majority of consumers are children, adolescents, and young adults. Although EDs companies claim about the ergogenic and performance-enhancing properties of their products, there is a serious lack of evidence as clinical level to validate their benefits. The regular consumption of these caffeinated drinks are not well understood. The possible negative effects in adolescents whose brain is still developing and alcohol are also gaining popularity among adolescents. Publications indicate that this combined consumption to develop an alcohol use disorder, as well as produce adverse effects. There is an increasing need to disseminate information on health, so that adolescents can be aware about the consequences of consuming these drinks.

Energy drinks are beverages similar to soft drinks, characterized by high sugar content, additional ingredients like taurine and vitamins, and caffeine. They are consumed by a large number of adolescents, reducing tiredness, increasing concentration, and alertness. The majority of consumers are children, adolescents, and young adults. Although EDs companies claim about the ergogenic and performance-enhancing properties of their products, there is a serious lack of evidence as clinical level to validate their benefits. The regular consumption of these caffeinated drinks are not well understood. The possible negative effects in adolescents whose brain is still developing and alcohol are also gaining popularity among adolescents. Publications indicate that this combined consumption to develop an alcohol use disorder, as well as produce adverse effects. There is an increasing need to disseminate information on health, so that adolescents can be aware about the consequences of consuming these drinks.

Energy drinks are beverages similar to soft drinks, characterized by high sugar content, additional ingredients like taurine and vitamins, and caffeine. They are consumed by a large number of adolescents, reducing tiredness, increasing concentration, and alertness. The majority of consumers are children, adolescents, and young adults. Although EDs companies claim about the ergogenic and performance-enhancing properties of their products, there is a serious lack of evidence as clinical level to validate their benefits. The regular consumption of these caffeinated drinks are not well understood. The possible negative effects in adolescents whose brain is still developing and alcohol are also gaining popularity among adolescents. Publications indicate that this combined consumption to develop an alcohol use disorder, as well as produce adverse effects. There is an increasing need to disseminate information on health, so that adolescents can be aware about the consequences of consuming these drinks.

Energy drinks are beverages similar to soft drinks, characterized by high sugar content, additional ingredients like taurine and vitamins, and caffeine. They are consumed by a large number of adolescents, reducing tiredness, increasing concentration, and alertness. The majority of consumers are children, adolescents, and young adults. Although EDs companies claim about the ergogenic and performance-enhancing properties of their products, there is a serious lack of evidence as clinical level to validate their benefits. The regular consumption of these caffeinated drinks are not well understood. The possible negative effects in adolescents whose brain is still developing and alcohol are also gaining popularity among adolescents. Publications indicate that this combined consumption to develop an alcohol use disorder, as well as produce adverse effects. There is an increasing need to disseminate information on health, so that adolescents can be aware about the consequences of consuming these drinks.

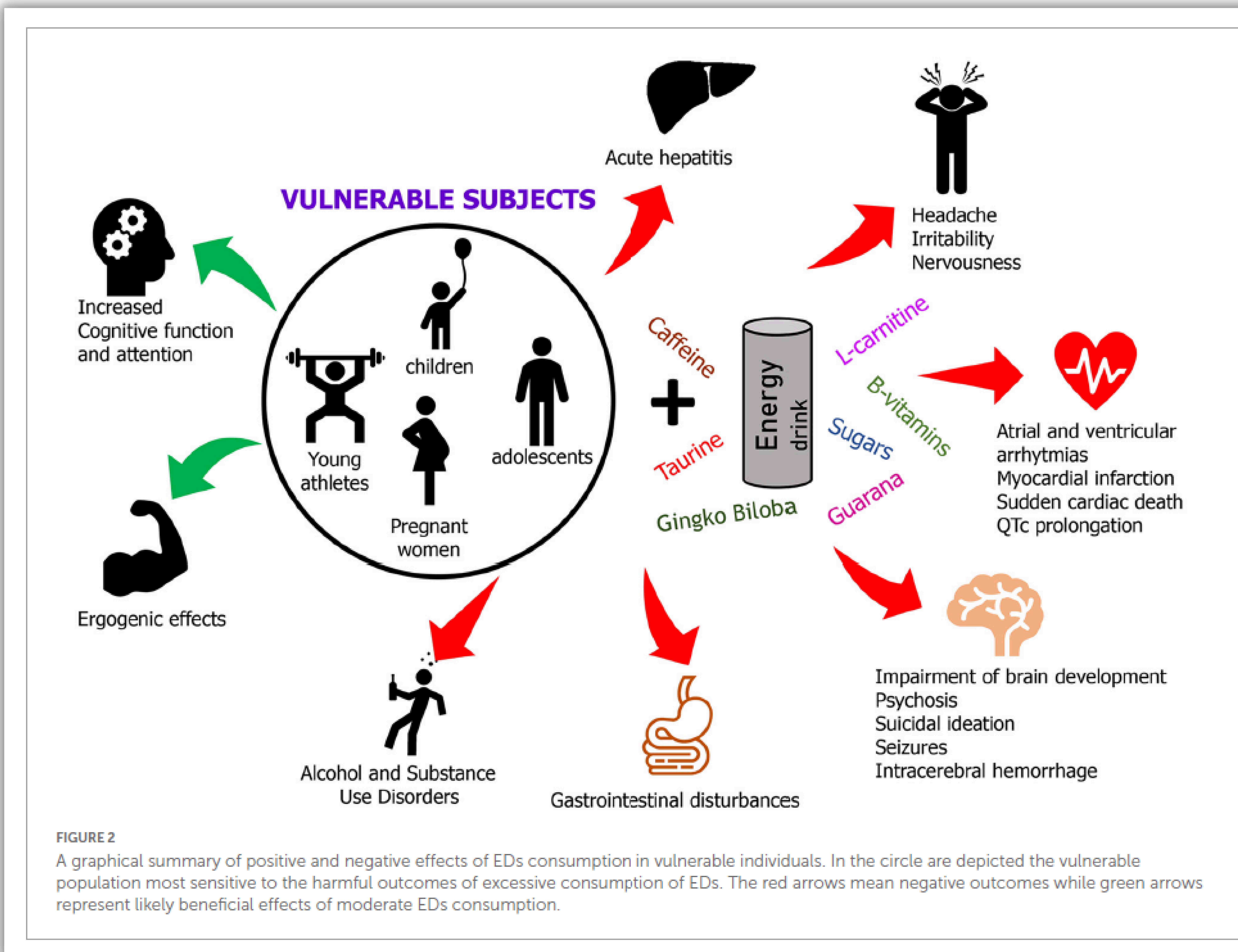
Energy drinks are beverages similar to soft drinks, characterized by high sugar content, additional ingredients like taurine and vitamins, and caffeine. They are consumed by a large number of adolescents, reducing tiredness, increasing concentration, and alertness. The majority of consumers are children, adolescents, and young adults. Although EDs companies claim about the ergogenic and performance-enhancing properties of their products, there is a serious lack of evidence as clinical level to validate their benefits. The regular consumption of these caffeinated drinks are not well understood. The possible negative effects in adolescents whose brain is still developing and alcohol are also gaining popularity among adolescents. Publications indicate that this combined consumption to develop an alcohol use disorder, as well as produce adverse effects. There is an increasing need to disseminate information on health, so that adolescents can be aware about the consequences of consuming these drinks.

Energy drinks are beverages similar to soft drinks, characterized by high sugar content, additional ingredients like taurine and vitamins, and caffeine. They are consumed by a large number of adolescents, reducing tiredness, increasing concentration, and alertness. The majority of consumers are children, adolescents, and young adults. Although EDs companies claim about the ergogenic and performance-enhancing properties of their products, there is a serious lack of evidence as clinical level to validate their benefits. The regular consumption of these caffeinated drinks are not well understood. The possible negative effects in adolescents whose brain is still developing and alcohol are also gaining popularity among adolescents. Publications indicate that this combined consumption to develop an alcohol use disorder, as well as produce adverse effects. There is an increasing need to disseminate information on health, so that adolescents can be aware about the consequences of consuming these drinks.

Energy drinks are beverages similar to soft drinks, characterized by high sugar content, additional ingredients like taurine and vitamins, and caffeine. They are consumed by a large number of adolescents, reducing tiredness, increasing concentration, and alertness. The majority of consumers are children, adolescents, and young adults. Although EDs companies claim about the ergogenic and performance-enhancing properties of their products, there is a serious lack of evidence as clinical level to validate their benefits. The regular consumption of these caffeinated drinks are not well understood. The possible negative effects in adolescents whose brain is still developing and alcohol are also gaining popularity among adolescents. Publications indicate that this combined consumption to develop an alcohol use disorder, as well as produce adverse effects. There is an increasing need to disseminate information on health, so that adolescents can be aware about the consequences of consuming these drinks.

Energy drinks are beverages similar to soft drinks, characterized by high sugar content, additional ingredients like taurine and vitamins, and caffeine. They are consumed by a large number of adolescents, reducing tiredness, increasing concentration, and alertness. The majority of consumers are children, adolescents, and young adults. Although EDs companies claim about the ergogenic and performance-enhancing properties of their products, there is a serious lack of evidence as clinical level to validate their benefits. The regular consumption of these caffeinated drinks are not well understood. The possible negative effects in adolescents whose brain is still developing and alcohol are also gaining popularity among adolescents. Publications indicate that this combined consumption to develop an alcohol use disorder, as well as produce adverse effects. There is an increasing need to disseminate information on health, so that adolescents can be aware about the consequences of consuming these drinks.

Energy drinks are beverages similar to soft drinks, characterized by high sugar content, additional ingredients like taurine and vitamins, and caffeine. They are consumed by a large number of adolescents, reducing tiredness, increasing concentration, and alertness. The majority of consumers are children, adolescents, and young adults. Although EDs companies claim about the ergogenic and performance-enhancing properties of their products, there is a serious lack of evidence as clinical level to validate their benefits. The regular consumption of these caffeinated drinks are not well understood. The possible negative effects in adolescents whose brain is still developing and alcohol are also gaining popularity among adolescents. Publications indicate that this combined consumption to develop an alcohol use disorder, as well as produce adverse effects. There is an increasing need to disseminate information on health, so that adolescents can be aware about the consequences of



Exemplos de interações



Interação farmacocinética

Hipérico
Hypericum perforatum



Alho
Allium sativum



Indução de P450 3A4
(CYP3A4) e
Glicoproteína P

Redução do efeito:

Anticoncepcionais orais

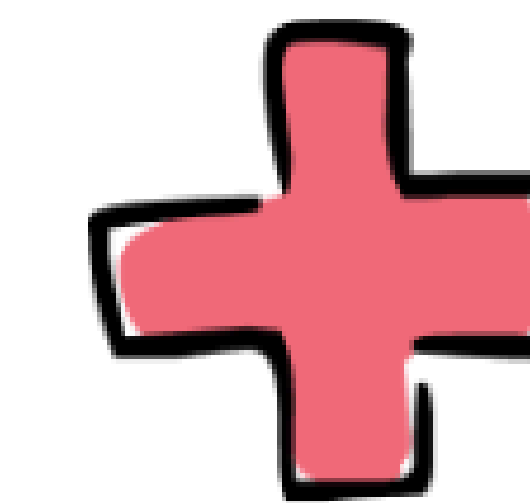
Glivec (imatinibe): fármaco
para leucemia



Interação farmacodinâmica



588mg *Berberis aristata*
(500mg berberina)



105 mg *Silybum marianum*

LDL ↓ 17% (6m)
↓ 26% (12m)

Effects of an Herbal Combination on Glycemic Control and Lipid Profile in Diabetic Women: A Randomized, Double-Blind, Placebo-Controlled Clinical Trial

Journal of Evidence-Based
Complementary & Alternative Medicine
2017, Vol. 22(4) 798-804
© The Author(s) 2017
Reprints and permission:
sagepub.com/journalsPermissions.nav
DOI: 10.1177/2156587217737683
journals.sagepub.com/home/ebcm
SAGE

Reyhaneh Shokoohi, PhD¹, Saeed Kianbakht, PhD², Mohammad Faramarzi, PhD¹,
Masoud Rahmani, PhD³, Farzaneh Nabati, PhD⁴, Saeed Mehrzadi, PhD⁵
and Hasan Fallah Huseini, PhD²

Abstract

The present study was conducted to explore the efficacy of a hyperlipidemic type 2 diabetes. The herbal combination comprised *Commiphora mukul* (200 mg), and *Commiphora myrrha* oleo-gum powder. The patients in one group took the herbal combination for 3 months. In the herbal combination-treated patients, the fasting cholesterol levels were decreased and high-density lipoprotein levels were increased compared with the placebo and baseline. Other blood parameters including creatinine, SGOT, and SGPT levels were not significantly changed. The combination improves glycemic control and lipid profile in women with type 2 diabetes.

Keywords

Commiphora mukul, *Commiphora myrrha*, *Terminalia chebula*, diabetes mellitus

Received August 8, 2016. Received revised September 1, 2017. Accepted for publication October 1, 2017.

Diabetes mellitus type 2 is one of the most prevalent and fast growing diseases in most countries with life-threatening complications leading to heavy personal and national economic burdens. It is estimated that of the total 80 million Iranian population 7.7% of adults aged 25 to 64 years, or 2 million, have diabetes, among whom one half are undiagnosed. An additional 16.8% or 4.4 million of Iranian adults have impaired fasting glucose.²

Dyslipidemia is believed to be one of the major risk factors for coronary heart disease in diabetic patients.³ One study reported that 73.2% of type 2 diabetic patients in Tehran city in Iran had some form of hyperlipidemia.⁴ Although considerable progress has been made in the pharmacotherapy of type 2 diabetes, new remedies are still in great demand because of limited efficacy and undesirable side effects of the present antidiabetic drugs.^{5,6}

Several herbal medicines are used for the treatment of diabetes mellitus.⁷ In Iranian traditional medicine, a combination of 3 herbal medicines—*Commiphora mukul* oleo-gum-resin, *Commiphora myrrha* oleo-gum-resin, and *Terminalia chebula*

Send Orders for Reprints to reprints@benthamscience.net

68

Anti-Inflammatory & Anti-Allergy Agents in Medicinal Chemistry, 2014, 13, 68-74

Effect of *Nigella Sativa* and *Allium Sativum* Coadministered with Simvastatin in Dyslipidemia Patients: A Prospective, Randomized, Double-Blind Trial

Amina Hamed Ahmad Alobaidi*

Department of Biochemistry, Tikrit University, College of Medicine, Alyamook ST, 12112, Tikrit, Iraq

Abstract: Dyslipidemia plays an important role in the provocation of cardiovascular disease. Psoriasis was associated with metabolic disorder and therefore the present study was performed to evaluate the therapeutic effect of combination of blackseed with garlic as a treatment for dyslipidemia. A randomized, double-blind, placebo controlled, two arms parallel study consisted of 4 week diet stabilization period that included a 4 week baseline evaluation phase, followed by an 8 week treatment period. The study comprised men (n=127) and women (n=131) aged 24 to 57 years, who met the NCEP ATP III criteria for drug treatment of hyperlipidemia and dietary intervention. Three hundred patients were randomized to treatment and 258 completed the study. The lipid profile included total cholesterol, HDL-C, Non-HDL-C, LDL-C, and Triglyceride. There were no significant differences between the two treatment groups at the baseline for triglyceride, HDL, Non-HDL, LDL and total cholesterol. Following 8 weeks treatment with simvastatin plus placebo the reduction in Non-HDL, triglyceride, LDL and total cholesterol following treatment course was statistically highly significant ($P \leq 0.01$). However, the increase in HDL was significant ($P=0.02$). Patients who received simvastatin, plus black seed and garlic for 8 weeks of treatment show significant differences between baseline and after treatment course for all tested profiles ($P=0.01$). This comparison of mean values reveals a high significant difference ($P=0.01$) for cholesterol, triglyceride, Non-HDL, and LDL, and significant difference ($P=0.03$) for HDL between the two treatment groups. This study suggests that the evaluated combination was effective in correction of dyslipidemia. Large scale clinical trials comparing different doses are warranted.

Keywords: Black seed, cholesterol, coronary heart disease, dyslipidemia, garlic, HDL, LDL, *Nigella sativa*, Non-HDL, simvastatin, triglyceride.

INTRODUCTION

Coronary heart disease is a major cause of mortality and morbidity, both in developed and developing countries and contributes to one in three deaths [1, 2]. Dyslipidemia plays an important role for provocation of cardiovascular disease [3]. The major detrimental components of dyslipidemia are low high density lipoprotein (HDL-C), high triglycerides, and elevated low density lipoprotein (LDH-C). Davidson [4] raised the awareness of the need to prompt treatment of dyslipidemia to reduce cardiovascular risks in patients with metabolic syndrome or diabetic. The 3rd Adult Treatment Panel of the NCEP currently recommends the use of non-HDL -C, which include cholesterol from all Apo-B-containing lipoproteins, as a secondary target of lipid lowering for individuals with triglyceride concentration of 200 mg/dl [5]. Non -HDL cholesterol showed overall the best concordance with the reference measurement identification of both normal and hypertriglyceremic individuals [6]. Recording LDL-C levels does not eliminate cardiovascular risk [7]. Non -HDL serve as excellent proxy for assessing the total number of circulating atherogenic particles and it is superior to LDL-C in predicting cardiovascular disease [7].

Nigella sativa L. (Black seed) is used extensively around the world for the treatment of many diseases [8]. Many studies reported that blackseed has been shown to produce multi-systemic beneficial action [9], including hypoglycemic [10], hypocholesteremic [11], and antioxidant [12] effects. Reported studies have shown that garlic significantly reduced plasma lipids especially total cholesterol and LDL [13-16]. In addition, garlic extract contains antioxidant compounds and it decreases the output of inflammatory cytokines from cultured cells [17].

Drug combination is a widely used treatment approach for diseases and proves to be an effective therapy. Combination therapy rationale is that drugs with complementary mechanisms of action can provide complementary effects on the lipid profile [18]. Combination of niacin or a fibrate with a statin improved HDL-C and LDL-C which inhibited the progression of atherosclerosis and reduced cardiovascular events in a high risk population with established coronary heart disease [19]. In a recent research study [20] combination of niacin and garlic improved dyslipidemia in psoriatic patients. Therefore, the combination of black seed and garlic may act synergistically to improve dyslipidemia in psoriatic patients. The present study aims to evaluate the therapeutic effect of the combination of black seed with garlic as treatment for dyslipidemia.

*Address correspondence to this author at the Department of Biochemistry, Tikrit University, College of Medicine, Alyamook ST, 12112, Tikrit, Iraq; Tel: +9647702399175; E-mails: aminahamed2006@gmail.com; aminahamed2006@yahoo.com



10mg



Allium sativum



Nigella sativa



Guggul
Commiphora mukul



Mirabolano
Terminalia chebula



Mirra
Commiphora myrrha



Exploring the Safety, Efficacy, and Bioactivity of Herbal Medicines: Bridging Traditional Wisdom and Modern Science in Healthcare

Acharya Balkrishna^{1,2}, Nidhi Sharma^{1*}, Deepika Srivastava¹, Ankita Kukreti¹, Stuti Srivastava¹ and Vedpriya Arya^{1,2}

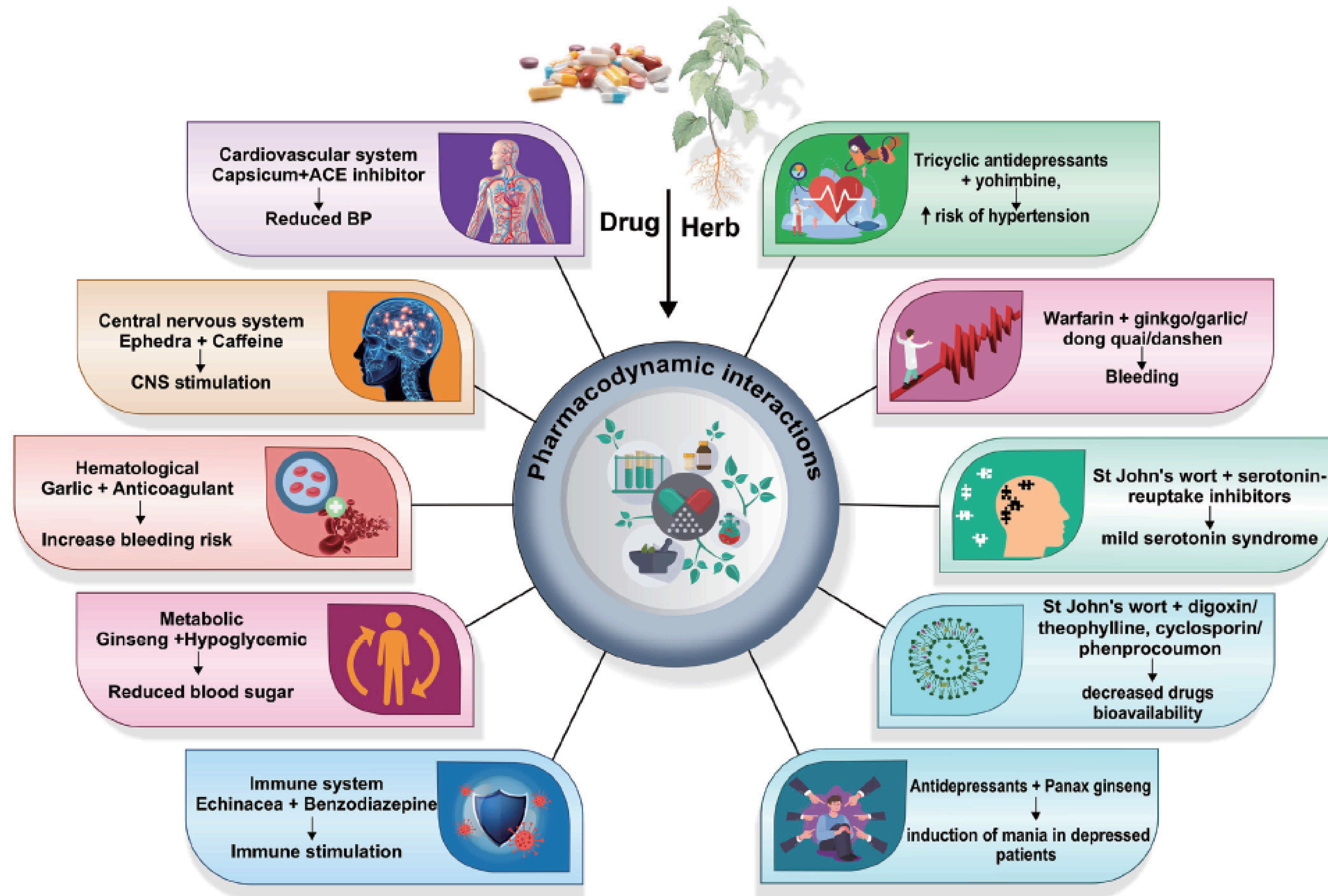


Fig. 3. Impact of drug-herb interactions. ACE, angiotensin-converting enzyme; BP, blood pressure; CNS, central nervous system.

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.

“

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

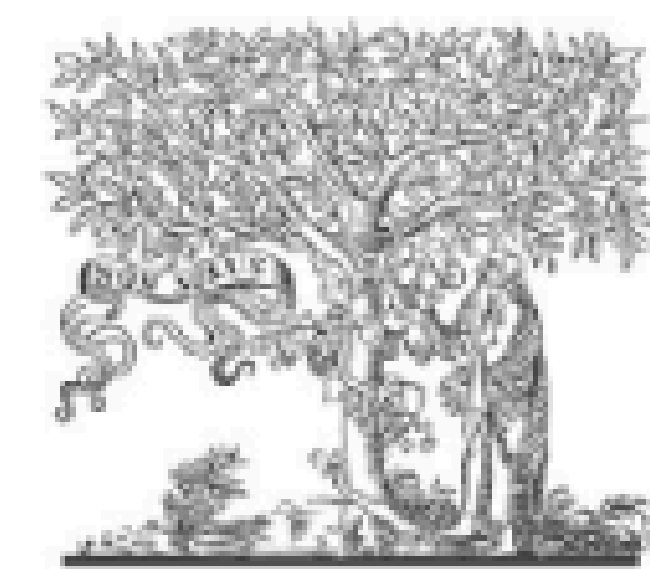
”

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

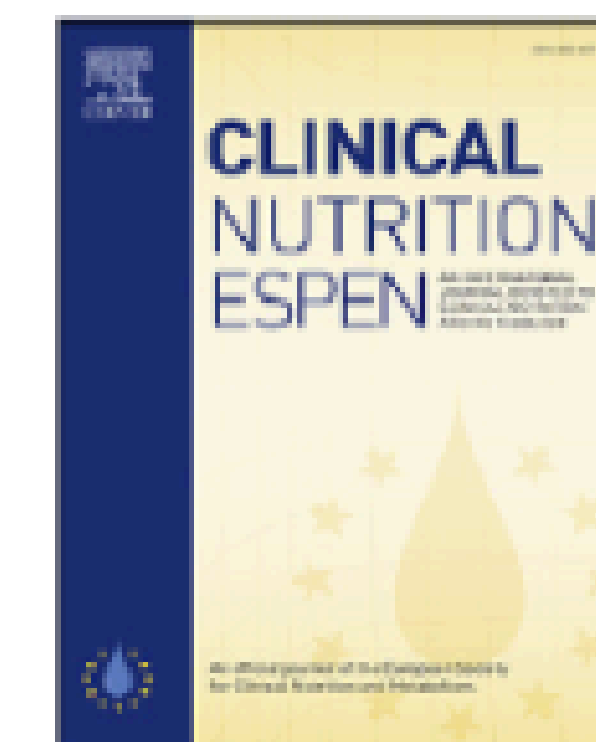
Clinical Rehabilitation
2018, Vol. 32(7) 930–941
© The Author(s) 2018
Reprints and permissions:
sagepub.co.uk/journalsPermissions.nav
DOI: 10.1177/0269215518765912
journals.sagepub.com/home/cre


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 ESPENjournal 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

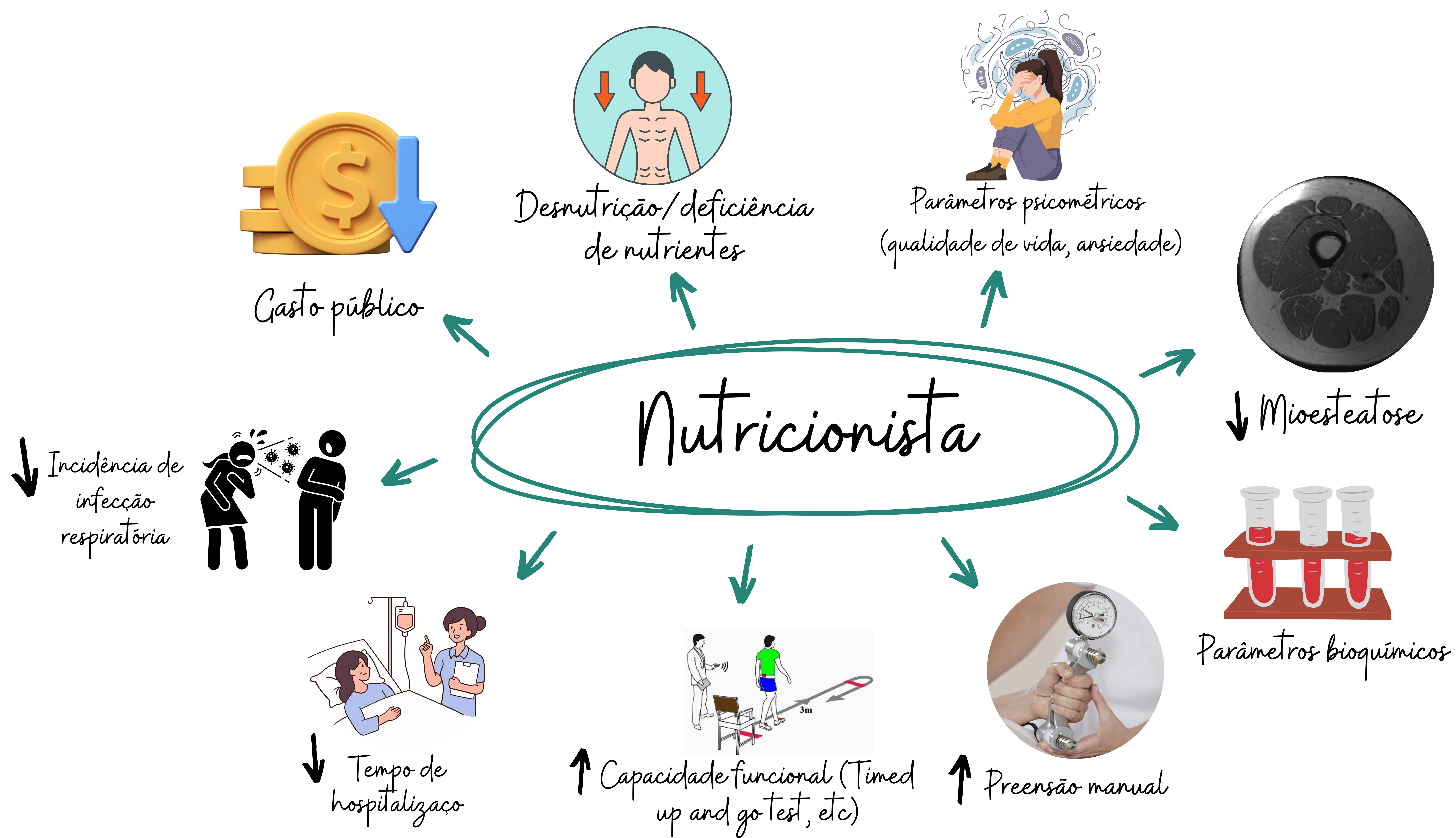

RESEARCH

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



Diversas aplicações!

Redução de problemas de resistência a medicamentos



Melhorar eficácia



Reduzir risco de toxicidade



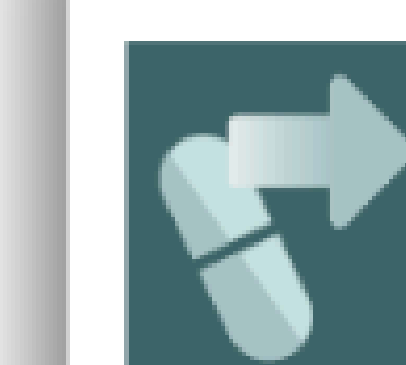
Reduzir reações adversas e tempo de tratamento



Menor dose do fármaco



Maior conveniência posológica



pharmaceutics



Pharmaceutics 2018, 10, 106; doi:10.3390/pharmaceutics10030106

Review

**Beneficial Pharmacokinetic Drug Interactions:
A Tool to Improve the Bioavailability of Poorly
Permeable Drugs**

Werner Gerber, Johan D. Steyn, Awie F. Kotzé and Josias H. Hamman *

O que ficamos sabendo?

1

O tema “suplementos alimentares” é complexo: a mídia influencia grandemente no consumo!

2

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

3

A educação nutricional é essencial para prescrição assertiva e segura



contato@caiorco.com.br



Fitoterapia Aplicada

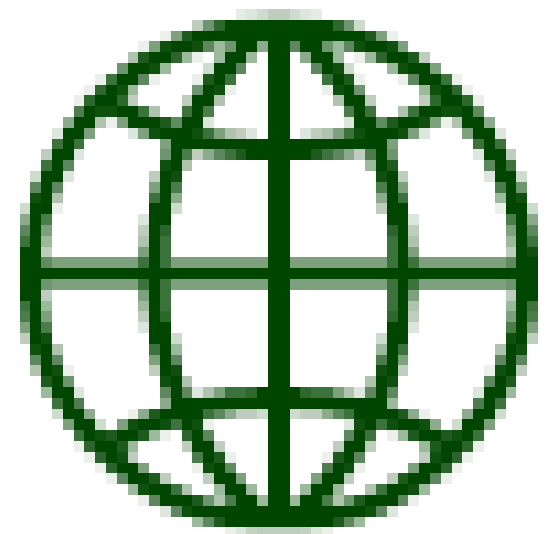


@caiorco

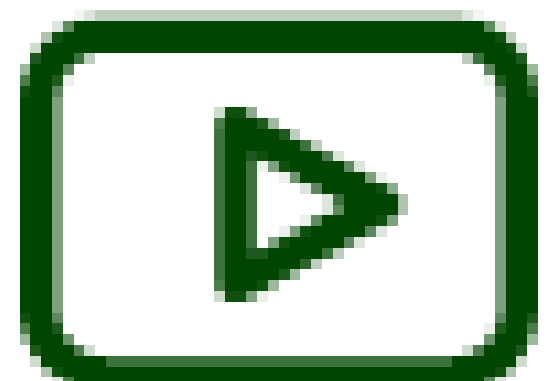


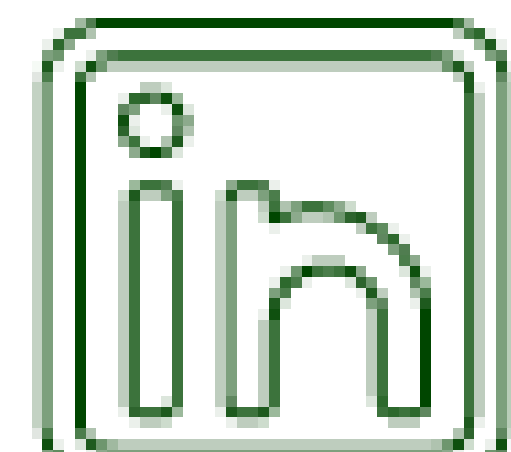
Caio Victor
Nutricionista



 **cfn.org.br**

 **cfn_nutri**

 **cfn_nutri**

 **cfnnutri**

cfn
CONSELHO FEDERAL
DE **NUTRIÇÃO**