

A Brief Review of the Impact of Ergogenic Supplements for Athletes

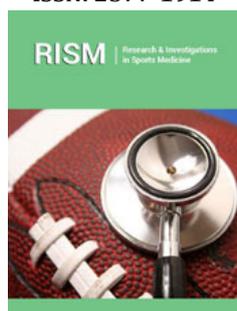
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ISSN: 2577-1914



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Submission: 📅 November 01, 2021

Published: 📅 November 15, 2021

Volume 8 - Issue 1

How to cite this article: Pınar Tatlibal, Onur Oral, Evangelia Stavropoulou. A Brief Review of the Impact of Ergogenic Supplements for Athletes. *Res Inves Sports Med*, 8(1), RISM.000677. 2021. DOI: [10.31031/RISM.2021.08.000677](https://doi.org/10.31031/RISM.2021.08.000677)

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Abstract

Background: The study aims to investigate and evaluate the impacts of energy drink and ergogenic aid use among athletes and examine the possible results of these consumptions.

Materials and methods: In the search for scientific literature related to this review the US National Library of Medicine (PubMed) used MEDLINE and Sport Discus data and the terms “energy drink”, “ergogenic aid”, “physical activity” and “sports drink” were used. The relevant literature has also taken its source from the research of relevant articles from reference lists derived from data studies.

Results: Energy drinks are known to enhance performance. However, they also pose a possible threat to the athletes’ health. The consequences of energy drink use may result in a variety of disorders such as nervousness, headaches, nausea, organ damage, cardiac disorders, and even sudden death.

Conclusion: Achieving top athletic performance is the primary goal for every athlete. For this reason, the use of ergogenic aids is a very common choice among athletes. Water and minerals lost by athletes during exercise and competitions should be replaced with water consumption and sports drinks

Keywords: Energy drink; Ergogenic aid; Physical activity; Sports drink

Introduction

The need for proper nutrition in the life of an athlete is unarguable. To reach their true potential, it is essential to follow an appropriate exercise and diet program. As many studies indicate, sufficient water intake is equally important [1]. Water intake regularly is a must for any athlete who wants to be healthy and successful. While exercising, a certain amount of water and electrolyte is lost from the athlete’s body. This loss can be quite influential for the performance and the health of the athlete. During exercise, water loss of 2% may affect athletic performance negatively. Certain changes in the body are observed in the case of dehydration. Body temperature rises and sweat production decreases. In this case, the body puts more effort to manage body temperature by controlling blood flow and producing sweat [2]. Several symptoms may be observed as a result of losing potassium and sodium salts such as muscle cramps and tiredness. However, by consuming a proper drink, the lost substances such as water and electrolytes can be regained. Sports drinks are used for this purpose [3].

For the past twenty years, energy drinks have become quite popular in the international market. Today, these drinks can be found anywhere. The main target group of companies that produce energy drinks is adults in their early ages and university-level athletes. The common statement of most energy drinks is that they help increase athletic performance. Since it is the primary goal of any athlete to reach maximum potential in terms of athletic performance, enhancing substances such as energy drinks can be very appealing [4]. Athletes commonly use

energy drinks at the time of competitions to manage the water and electrolyte in their bodies [5].

There are many cases in developed countries that suggest a direct association between severe health issues and overconsumption of energy drinks. Even so, there are strict rules that control the marketing of energy drinks in some countries. Countries such as France, Turkey, and Norway have prohibited the sale of energy drinks that contain an excessive amount of caffeine and taurine. In some countries such as Sweden, energy drinks can only be found in drugstores [6].

Discussion

The debate on energy drinks is ongoing. Many studies indicate adverse side effects like arrhythmia. However, some studies also report that arrhythmia and energy drinks have no association [7,8]. There are also studies in the literature that argue energy drinks cause arrhythmia in case of over-consumption [9,10].

There are studies in the literature that investigated the influence of sports drinks, carbohydrates, and water during sports. After the participants who had consumed one of these products-completed training of one hour, they showed no variations in terms of athletic performance [11].

In another research study, subjects who were chosen among recreational completed five different pieces of training. While one group was asked to consume energy drinks among three brands, others had a placebo instead. After reviewing the blood pressures of the runners, those who consumed an energy drink showed much higher blood pressure than the other group [12,13].

Conclusion

Achieving maximum athletic performance is a primary goal for any athlete. For this reason, ergogenic aid use is popular among athletes. During exercise and competitions, athletes lose a certain amount of water and electrolyte from their bodies. The replacement of these can be done through energy drinks and sports drinks. Conscious consumption of these ergogenic substances is recommended, as it is known that the consequences of intense use of energy drinks can cause irritability, headache, nausea, and heart palpitations. The intake of water and sports drinks is considered as a suitable option for water and electrolyte replacement. It is

of great importance for the athletes to know and evaluate the possible physiological and metabolic effects of the use of energy drinks and ergogenic aids. Therefore, water and sports drink intake are evaluated to be a proper option for water and electrolyte replacement.

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