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Sport benefits of functional foods

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A healthy and balanced diet is essential for athletes to meet their needs for essential nutrients and to promote optimal health, reach peak performance, build strength and/or muscle mass, as well as prevent injury and help rapid recovery from injury. There is widespread recognition today that most athletes have moved on from the typical concepts of nutrient deficiencies and plain nutritional adequacy to positive or optimal performance in sport (1).

Dietary supplements are used by many athletes to improve their performance beyond what can be achieved through a typical nutritionally balanced diet. Consequently, the growing interest in nutraceuticals/functional foods/dietary supplements has led to an important paradigm shift in the field of supplements and sport nutrition (2). Functional foods and/or nutraceuticals are new terms used in the food and nutrition sciences. Generally, most foods are considered functional since they have a certain taste, aroma, and/or nutritive value. However, the formal definition of functional foods by the Institute of Medicine's Food and Nutrition Board (3) is "any food or food ingredient that may provide a health benefit beyond the traditional nutrients it contains." Functional foods are foods that are intended to be consumed as part of the normal diet and offer the potential to optimize physical and mental well-being or reduce risk of disease due to certain specific physiologically active components. Examples of such foods include foods containing probiotics, prebiotics, or plant stanols and sterols, as well as foods or drinks with added biologically active substances such as phytochemicals, antioxidants or nutrients.

Due to increased awareness about potential health benefits of myriads of functional foods and nutraceuticals there is a growing demand among athletes for these products. On the sports market several functional food products are sold but the efficacy of only a few of them has been clearly demonstrated to improve sport performance. Although a large number of studies have reported the beneficial effects of functional foods in human health (4), very limited data are available on their use in different sports. In future research serious attempts should be made to establish evidence-based guidelines for the use of sport-specific functional foods to improve energy metabolism, hormone release and muscle function; help maintain fluid balance; reduce muscle cramps/pain; and help rapid recovery from injury.

In addition, using valid methods, potential risks related to the safety of individual functional foods need to be assessed. Due to lack of regulations for the use of functional foods in most countries, the performance-enhancing claims made for these products may be false or misleading. Government regulatory bodies, as well as professional sport organizations and academia, face challenges in this important field and must establish specific legal and scientific criteria for the use and evaluation of athletic functional foods.

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