

NUTRITIONAL SUPPLEMENTS  
IN SPORTS AND EXERCISE

# NUTRITIONAL SUPPLEMENTS IN SPORTS AND EXERCISE

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# Contents

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Preface . . . . .	vii
About the Editors and Authors . . . . .	ix

## **Part I. Industrial Nature of the Supplement Game**

1 Effect of Government Regulation on the Evolution of Sports Nutrition . . . . .	3
<i>Rick Collins and Douglas Kalman</i>	
2 Psychology of Supplementation in Sport and Exercise: <i>Motivational Antecedents and Biobehavioral Outcomes . . .</i>	33
<i>Rafer Lutz and Shawn Arent</i>	

## **Part II. Nutritional Basics First**

3 Role of Nutritional Supplements Complementing Nutrient- Dense Diets: <i>General Versus Sport/Exercise-Specific</i> <i>Dietary Guidelines Related to Energy Expenditure . . . . .</i>	75
<i>Susan Kleiner and Mike Greenwood</i>	
4 Macronutrient Intake for Physical Activity . . . . .	95
<i>Thomas Buford</i>	
5 Essential and Nonessential Micronutrients and Sport . .	121
<i>Kristen M. Beavers and Monica C. Serra</i>	
6 Fluid Regulation for Life and Human Performance . . .	167
<i>Allyn Byars</i>	

## **Part III. Specialized Nutritional Supplements and Strategies**

7 Muscle Mass and Weight Gain Nutritional Supplements	189
<i>Bill Campbell</i>	
8 Weight Loss Nutritional Supplements . . . . .	225
<i>Joan M. Eckerson</i>	
9 Effective Nutritional Supplement Combinations . . . . .	259
<i>Matt Cooke and Paul J. Cribb</i>	

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<b>10</b>	Nutritional Supplements for Strength Power Athletes . . . . .	321
	<i>Colin Wilborn</i>	
<b>11</b>	Nutritional Supplements for Endurance Athletes . . . . .	369
	<i>Christopher J. Rasmussen</i>	
<b>12</b>	Nutritional Supplements to Enhance Recovery . . . . .	409
	<i>Tim N. Ziegenfuss, Jamie Landis, and Mike Greenwood</i>	
<b>13</b>	Nutritional Supplementation and Meal Timing . . . . .	451
	<i>Jim Farris</i>	
 <b>Part IV. Present and Future Directions of Nutritional Supplements</b>		
<b>14</b>	Future Trends: <i>Nutritional Supplements in Sports</i> <i>and Exercise</i> . . . . .	491
	<i>Marie Spano and Jose Antonio</i>	
	Index . . . . .	509

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# Preface

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Over the past two decades, the area of sport nutrition and nutritional supplementation has escalated in monumental proportions. An enormous number of qualified professionals—sport nutritionists, athletic coaches, athletic trainers, sports medicine personal, strength and conditioning coaches, personal trainers, medical representatives, and health practitioners, among others—as well as a variety of athletic and exercise participants have searched for viable dietary ergogenic aids to attain optimal training and performance levels. A multitude of universities have infused relevant sport nutrition courses, academic majors, and critical research agendas into their curriculums to further investigate this popular and dynamic aspect of our society. Professional organizations such as The International Society of Sport Nutrition have evolved to place a scientifically based approach to help further understand this billion dollar a year industry. What an extraordinary challenge this undertaking has been due to the multitude of nutritional supplements that are currently on the market and the plethora of these products that surface on a regular basis.

The editors and the authors noted in this textbook firmly believe that the public has the right to know the truth regarding nutritional supplement ingestion—health, safety, efficacy—and quality based scientific research is the accepted approach supported by those contributing to this published endeavor. However, it should be noted that even highly acclaimed researchers are not always in agreement regarding specific scientific findings, but such is the nature of research in any realm. Based on this reality, there is a critical need for professionals to bridge the gap between scientific results and common sense approaches related to practical sports and exercise nutritional supplement strategies.

A major purpose of this book is to provide detailed analysis of nutritional supplementation supported by, whenever possible, replicated scientific research regarding sports and exercise performance. The book is divided into four sections to accomplish this goal. Section 1 delves into the industrial component as well as the psychological nature of the consumer-based nutritional supplement game. In Section 2, strong emphasis is placed on nutrient-dense food/fluid ingestion basics. Section 3 provides information regarding specialized nutritional supplements and strategies, and Section 4 addresses the present and future status of nutritional supplements in sports and exercise environments. This book provides the readers with a viable up-to-date reference guide, keeping in mind that publication time frames limit the inclusion of current research outcomes. We have attempted to include relevant nutritional supplement information that is timely and useful in an ever-evolving industry.

*Mike Greenwood*  
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**Part I**  
**The Industrial Nature of the**  
**Supplement Game**

# 1 Effect of Government Regulation on the Evolution of Sports Nutrition

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*Rick Collins and Douglas Kalman*

## **Abstract**

The sports nutrition segment of the dietary supplement industry enjoyed nearly a decade of unfettered growth under federal legislation passed in 1994. A series of breakthroughs in the dietary supplement field led to the development and marketing of innovative products designed to enhance performance, build muscle, or lose excess fat. As the popularity of these products soared and evolved into a multi-billion dollar industry, the sports nutrition supplement market drew the attention of federal and state regulatory bodies and sports antidoping authorities. Growing concerns over potential health risks and unfair athletic advantages have spurred government regulators and legislators to heighten the scrutiny of this market, leading to recent legislative amendments and increased government enforcement action.

## **Key words**

Dietary Supplement Health and Education Act of 1994 · Food and Drug Administration · Dietary supplements · FTC · Nutrition

## **1. DIETARY SUPPLEMENT HEALTH AND EDUCATION ACT OF 1994**

The Dietary Supplement Health and Education Act of 1994 (DSHEA) was passed with the unanimous consent of Congress. This statute was enacted amid claims that the Food and Drug Administration (FDA) was distorting the then-existing provisions of the Food, Drug, and Cosmetic Act (FDCA) (1) to try improperly to deprive the public of safe and popular dietary supplement products. The FDA was perceived as engaging in antisupplement

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