

# Essentials of Sports Nutrition and Supplements



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# Essentials of Sports Nutrition and Supplements

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## **Dedication**

### **In memory of Joseph Allen Chromiak A Father, Husband, Friend, and Scientist**

*This book is dedicated to the memory of Joseph Allen Chromiak, 47, of Starkville, Miss. He passed away after a long battle with cancer. Joseph is survived by his wife, Anna; son, Joseph; parents, Joseph and Bonnie; and his brothers, David and John. Joseph was born in Pennsylvania and earned his B.S. degree from Clarion State College. He continued his education through graduate studies, receiving his M.S. degree from the University of Michigan in 1984, from the Department of Kinesiology, and a Ph.D. degree in physiology from Auburn University in 1990. Joseph was a faculty member of the Department of Sport Health Science at Life University in Georgia and eventually joined the faculty at Mississippi State University in 2000. He rose to the rank of associate professor in the Department of Kinesiology, and served as the department's graduate coordinator and interim head. Joseph touched the lives of many students as a graduate adviser and committee member, mentoring more than 25 students in his discipline. With an always positive attitude, Joseph was a devoted husband, father, and friend to many. He will be missed.*



# Preface

*Essentials of Sports Nutrition and Supplements* brings credible information, research-based education, and validated sports nutrition protocols to the sports nutrition professional and academician. It is the single best resource for anyone interested in the field. This book contains information from the thought leaders in the field, provides the latest scientific (basic and applied in the category) findings, is the culmination of thousands of hours of work, as well as the genesis of an academic society dedicated to sports nutrition. That is, the International Society of Sports Nutrition (ISSN) was founded several years ago to fill the needs of consumers, scientists, and students of sports nutrition. Prior to the genesis of the ISSN, there was no single place that one could go to learn sports nutrition. Certainly, we saw enormous potential in the field of sports nutrition. Advances in the scientific understanding of the link between specific nutritional and supplementation protocols and human performance will make this a tremendously exciting field for decades to come. As scientists, we have dedicated our lives to the sports nutrition field out of passion to see its potential further realized. Many of the current sports nutrition marketing companies work against fulfilling that potential. By featuring physiques that are largely unattainable and unbelievable claims in their advertising, they create an aura of incredibility around their brands. By focusing on hyperbolic advertising instead of clinical research and consumer education, they are failing the professional and serious consumer who simply wants to know the truth. Despite a high level of advertising communications, we think the sports nutrition market (both academic and industrial) is largely underserved. We believe there should be a place that professionals and serious consumers can come for access to the real science and intelligent commentary on sports nutrition. Our goal, via this book as well as the world-class conferences organized by the ISSN, is to bring you scientifically-based information on the sports nutrition and supplement category.

*Essentials of Sports Nutrition and Supplements* should be required reading for all students of exercise physiology and dietetics, and for fitness professionals. As sports nutrition scientists, we are *always* looking for novel breakthroughs in basic and applied sports nutrition. With the introduction of creatine monohydrate in the early 1990s, the sports nutrition industry (both on the research side and the business side) grew rapidly. Not only is the sports supplement industry a \$20 billion business, but when you add to the mix the category of functional foods (i.e., foods with supplements added to them), you have an industry that is worth \$40 billion or more. With such rapid growth comes consumer confusion (and academic confusion for that matter) regarding what's true and what's marketing hyperbole. Unfortunately, there is no quick way to learn the science of sports nutrition. However, our goal through this textbook is to give you the tools to make an educated and wise decision about the sports nutrition category.

The field of sports nutrition is not "owned" by exercise physiologists or clinical dietitians. It is its own field. It is part exercise, part nutrition, combined with a bit of biochemistry, cell biology, physiology, and anatomy. Thus, with the diverse background of the editors and authors, we truly have accomplished

the gargantuan task of culling the latest science in this new and exciting field and delivering it to you in a timely fashion.

*Jose Antonio, PhD*  
Co-Founder and CEO of the International  
Society of Sports Nutrition



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# Companion CD

This CD-ROM contains a study guide in Adobe PDF format. Adobe Reader® is required to view this document. We have included installers for this free software on this disc for both Mac and PC computers. The application is compatible with most Mac and PC computers.

## PC USERS:

The application “HP\_ESN\_StudyGuide.exe” should launch automatically on most Windows computers when the disc is inserted into your computer. If the application does not start after a few moments, simply double click the application “HP\_ESN\_StudyGuide.exe” located on the root of this CD-ROM.

## MAC OSX USERS:

Double click the application “HP\_ESN\_StudyGuide” after inserting the CD-ROM. The Mac OSX operating system does not support an auto-start feature.

The following hardware and software are the minimum required to use this CD-ROM:

- For Microsoft Windows: An Intel Pentium II with 64 MB of available RAM running Windows 98, or an Intel Pentium III with 128 MB of available RAM running Windows 2000 or Windows XP. A monitor set to 1024 × 768 or higher resolution.
- **For Macintosh OS X:** A Power Macintosh G3 with 128 MB of available RAM running Mac OS X 10.1.5, 10.2.6 or higher. A monitor set to **1024 × 768** or higher resolution.





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