NUTRITION in EXERCISE and SPORT

Published Titles

Exercise and Disease,
Ronald R. Watson and Marianne Eisinger

Nutrients as Ergogenic Aids for Sports and Exercise,
Luke Bucci

Nutrition in Exercise and Sport, Second Edition,
Ira Wolinsky and James F. Hickson, Jr.

Nutrition Applied to Injury Rehabilitation and Sports Medicine,
Luke Bucci

Nutrition for the Recreational Athlete,
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Sports Nutrition: Minerals and Electrolytes,
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Exercise and Immune Function,
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Sports Nutrition: Vitamins and Trace Elements,
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Mark Tarnopolsky

Macronutrients, Water, and Electrolytes in Sports Nutrition,
Judy A. Driskell and Ira Wolinsky

Sports Nutrition,
Judy A. Driskell

Energy-Yielding Macronutrients and Energy Metabolism in Sports Nutrition,
Judy A. Driskell and Ira Wolinsky
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*Sports Drinks: Basic Science and Practical Aspects,*
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*Nutritional Applications in Exercise and Sport,*
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*Nutrition and the Strength Athlete,*
Catherine G. Ratzin Jackson

*Nutritional Assessment of Athletes,*
Judy A. Driskell and Ira Wolinsky

*Sports Nutrition: Vitamins and Trace Elements, Second Edition,*
Judy A. Driskell and Ira Wolinsky
Dedication

We appreciate the opportunity to have worked with the chapter authors, experts all, on this book and on our other books in the area of sports nutrition. We learned from them and dedicate this book to them.
Preface

This book addresses vitamin and trace element needs as they relate to exercise and sports. A growing body of research indicates that work capacity, oxygen consumption and other measures of physical performance of individuals, including athletes, are affected by deficiency or borderline deficiency of specific vitamins or essential trace elements. Athletes, as well as the public in general, often have low dietary intakes of many of the vitamins and essential trace elements. The findings of some researchers indicate that large doses of certain vitamins and trace elements given to individuals who had adequate status of that vitamin or trace element improved various measures of physical performance. Other researchers have reported conflicting findings. A critical review of these reports is included in this book.

This volume includes a collection of chapters written by scientists from several academic disciplines who have expertise in an area of vitamin or trace element nutrition as it relates to exercise and sports. Following an introduction are reviews of exercise and sports as they relate to the vitamins (ascorbic acid, thiamin, riboflavin, niacin, vitamin B₆, folate, vitamin B₁₂, pantothenic acid and biotin, choline [an essential nutrient], vitamin A, vitamins D and K, vitamin E), the essential trace elements (iron, zinc, iodine, chromium, selenium), as well as a chapter on boron, manganese, molybdenum, nickel, silicon, and vanadium, and ending in a summary chapter. Sports nutritionists, sports medicine and fitness professionals, researchers, students, health practitioners and the well informed layman will find this book timely and informative.

This book is part of a miniseries we edited that deals with nutrition in exercise and sport. Other books in this miniseries are: Sports Nutrition: Vitamins and Trace Elements (first edition); Macroelements, Water and Electrolytes in Sports Nutrition; Energy-Yielding Macronutrients and Energy Metabolism in Sports Nutrition; Nutritional Applications in Exercise and Sport; Nutritional Assessment of Athletes and Nutritional Ergogenic Aids. Additionally useful will be Nutrition in Exercise and Sport, 3rd edition, edited by Ira Wolinsky, and Sports Nutrition, authored by Judy Driskell.

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Judy Anne Driskell, Ph.D., R.D. is Professor of Nutrition and Health Sciences at the University of Nebraska. She received her B.S. degree in Biology from the University of Southern Mississippi in Hattiesburg. Her M.S. and Ph.D. degrees were obtained from Purdue University. She has served in research and teaching positions at Auburn University, Florida State University, Virginia Polytechnic Institute and State University, and the University of Nebraska. She has also served as the Nutrition Scientist for the U.S. Department of Agriculture/Cooperative State Research Service and as a Professor of Nutrition and Food Science at Gadjah Mada and Bogor Universities in Indonesia.

Dr. Driskell is a member of numerous professional organizations including the American Society of Nutritional Sciences, the American College of Sports Medicine, the International Society of Sports Nutrition, the Institute of Food Technologists and the American Dietetic Association. In 1993, she received the Professional Scientist Award of the Food Science and Human Nutrition Section of the Southern Association of Agricultural Scientists. In addition, she was the 1987 recipient of the Borden Award for Research in Applied Fundamental Knowledge of Human Nutrition. She is listed as an expert in B-Complex Vitamins by the Vitamin Nutrition Information Service.

Dr. Driskell co-edited the CRC Press books Sports Nutrition: Minerals and Electrolytes with Constance V. Kies. In addition, she authored the textbook Sports Nutrition and co-authored an advanced nutrition book, Nutrition: Chemistry and Biology, both published by CRC Press. She co-edited Sports Nutrition: Vitamins and Trace Elements (first edition); Macroelements; Water, and Electrolytes in Sports Nutrition; Energy-Yielding Macronutrients and Energy Metabolism in Sports Nutrition; Nutritional Applications in Exercise and Sport, Nutritional Assessment of Athletes, Nutritional Ergogenic Aids, and the current book, Sports Nutrition: Vitamins and Trace Elements, 2nd edition, all with Ira Wolinsky. She has published more than 130 refereed research articles and 12 book chapters, as well as several publications intended for lay audiences, and has given numerous presentations to professional and lay groups. Her current research interests center around vitamin metabolism and requirements, including the interrelationships between exercise and water-soluble vitamin requirements.

Ira Wolinsky, Ph.D., is Professor Emeritus of Nutrition at the University of Houston. He received his B.S. degree in Chemistry from the City College of New York and his M.S. and Ph.D. degrees in Biochemistry from the University of Kansas. He has served in research and teaching positions at the Hebrew University, the University of Missouri, and The Pennsylvania State University, as well as conducted basic research in NASA life sciences facilities and abroad.

Dr. Wolinsky is a member of the American Society of Nutritional Sciences, among other honorary and scientific organizations. He has contributed numerous nutrition research papers in the open literature. His major research interests relate to the nutrition of bone and calcium and trace elements, and to sports nutrition. He has been the recipient of research grants from both public and private sources. He has
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