

# Preface

Concussion in athletics, commonly known as mild traumatic brain injury (mTBI), is a growing public health concern with increased attention being focused on treatment and management of this frustrating epidemic. A critical decision confronting healthcare practitioners is to determine the appropriate time frame with respect to returning an injured athlete back to full participation. Premature return to play after a concussion increases an athlete's risk for recurrent brain injury and potentially increases the severity of injury. At present there is no definitive diagnostic tool prognosticating the brain's true return to normal. The common symptoms of concussion may be caused by abnormalities anywhere in the brain. Therefore, a multidisciplinary approach to understanding the true pathology and associated residual behavioral, psychosocial, neuropsychological, and neurological consequences of concussion injuries in athletes is necessary. The purpose of this book is to condense our current understanding of concussion, *From Brain to Behavior*, including the neuromechanisms, predispositions, and the latest developments in evaluation and management of concussive injuries.

This book is the partial product of a conference: "Concussion in Athletics: From Brain to Behavior" held at Pennsylvania State University in October 5–6, 2012. This conference received the generous support of The College of Health and Human Development, Penn State Hershey College of Medicine, the Departments of Kinesiology, Psychology, The Social Science Research Institute, and Springer. Due to this support, we were able to invite world known experts in the field supplementing the host Pennsylvania State University faculty. This conference experienced great success, evidenced by 180 attendees not only from the USA, but also from Canada, Israel, and Russia. It should be noted that the conference was not able to cover all aspects of concussion. A limited emphasis was given to the treatment and management of sports-related concussions. A limited discussion was developed in the area of rehabilitation and recovery of diminished neurocognitive and behavioral consequences of traumatic brain injury. We are very pleased with the fact that several chapters of this book provided by contributing authors address

these less studied but still very important aspects of sports-related concussions. We are indebted to all authors for their great contribution to this book. We would also like to acknowledge the presentation of Dr. Albert King at this conference. Unfortunately, we are unable to include his presentation into the content of this book due to copyright issues.

Caring for athletes at any level is a distinct pleasure and privilege. We would like to thank the thousands of students and recreational athletes that we have cared for over the last several decades. They have allowed us to become part of their lives. This book represents a continuum of interest and concern for athletes with mTBIs, aka concussion. Although we have learned a tremendous amount since our research initially started, one can see from the excellent chapters in this textbook that more remains to be understood. To the trainers, coaches, and athletic administrative support personnel, our sincere thanks for helping us pursue a solution to this challenging problem. To our office staff, support staff, and partners, our sincere appreciation for giving us the time to pursue this endeavor. A special thanks to Katie Finelli for her dedication to our research and tremendous contribution to this book. It is with great pleasure we extend our thanks to our publishers and particularly to Richard Lansing and Barbara Lopez-Lucio for their efforts to make this book happen.

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