

Exertional Heat Illness

William M. Adams • John F. Jardine
Editors

Exertional Heat Illness

A Clinical and Evidence-Based Guide

 Springer

Editors

William M. Adams
Department of Kinesiology
University of North Carolina at Greensboro
Greensboro, NC
USA

John F. Jardine
Korey Stringer Institute
University of Connecticut
Storrs, CT
USA

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This book is dedicated to my wife, Ami. Her constant and undying love and support is unfathomable, and I would not be where I am today without her. To my parents, I cannot thank them enough for raising me to become who I am today. To my sisters, Jeanelle and Sarah, their accomplishments throughout life have been truly admirable, and I am proud to be their brother.

William M. Adams

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John F. Jardine

Preface

The idea for this book arose from collaborative work and many conversations that we have had with friends and colleagues who share an interest on the topic of exertional heat illness. Having a resource such as this available for clinicians and scientists is essential for disseminating the knowledge necessary to enhance the health and safety of the physically active—first, to provide them with a current and comprehensive overview of the prevention, recognition, treatment, and care of the various medical conditions that fall within the realm of exertional heat illness, and second, to provide a setting-specific (i.e., athletics, military, occupational, and road race medicine) discussion on exertional heat illness for the consideration of the medical providers working in these settings.

As medicine has evolved, and as it will continue to evolve, we have and will continue to garner new knowledge on how to reduce the risk of mortality and morbidity from a variety of pathologies afflicting the world's population. Exertional heat illness is unique in that it can appear in generally healthy and physically active individuals. The most severe form, exertional heat stroke, is life-threatening and requires immediate triage and care to optimize survival. What is fascinating about the topic of exertional heat illness, particularly exertional heat stroke, are the vast historical accounts of this condition, some dating back to the Roman Empire, that in some instances have shaped the course of history. As clinicians and scientists have begun to pursue the various facets of exertional heat illness, we have gained a deeper understanding of the etiology and pathophysiology involved, the complexities of which continue to steer the path for future research.

While we as clinicians and scientists have a better understanding of how to reduce risk, but more importantly, to ensure survival from exertional heat stroke, we are continually plagued with news from mass media surrounding young, seemingly healthy and fit individuals (i.e., athletes, laborers, and soldiers) dying from this survivable condition. The recent deaths of athletes Jordan McNair from the University of Maryland; Braeden Bradforth from Garden City Community College, Garden City, Kansas; Zach Polsenberg from Riverdale High School in Fort Myers, Florida; and other notable and highly profiled cases such as Korey Stringer and Max Gilpin are just a few among many young individuals who have succumbed to a

medical condition that would have been 100% survivable had the appropriate policies and procedures been in place at the time of their collapse.

We believe this book provides clinicians and scientists at all levels of training and experience a practical, yet thorough, review of exertional heat illness that can be used as a resource to guide them in their practice/research. We also hope that this text can act as a conduit for medical providers from various fields of medicine (athletic training, emergency medical services, emergency room physicians, sports medicine and primary care physicians, etc.) who may encounter exertional heat illness to work closely together to guarantee that current evidence-based practices for the appropriate management and care of exertional heat illness are consistent and seamless throughout healthcare.

Greensboro, NC, USA
Storrs, CT, USA

William M. Adams, PhD, LAT, ATC
John F. Jardine, MD

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- Dr. Douglas Casa for his mentorship and the many opportunities he provided to assist in making a positive and lifelong impact for the health and safety of athletes, soldiers, and laborers. His passion on topics related to exertional heat illness and preventing sudden death in sports and physical activity is contagious and has been an inspiration for me as I continue my career as a researcher in this field. Having Dr. Casa as a friend and colleague is truly an honor.
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- Springer for seeing the value of this book as a clinical and evidence-based guide on this topic, which is an ever-present concern for physically active populations.

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- Dr. William Adams for including me in this project. I felt that a clinical guide based on the science and evidence of prominent researchers would be most helpful to fellow clinicians to better understand this group of illnesses. Dr. Adams is a bright scientist and researcher in this field. This has been his brainchild, and I am honored to work with this talented colleague and friend.
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Editors

William M. Adams, PhD, LAT, ATC Department of Kinesiology, University of North Carolina at Greensboro, Greensboro, NC, USA

John F. Jardine, MD Korey Stringer Institute, Department of Kinesiology, University of Connecticut, Storrs, CT, USA

Contributors

Lawrence E. Armstrong, PhD Hydration & Nutrition, LLC, Newport News, VA, USA

Department of Kinesiology (Professor Emeritus), University of Connecticut, Storrs, CT, USA

Luke N. Belval, MS, ATC, CSCS Korey Stringer Institute, Department of Kinesiology, University of Connecticut, Storrs, CT, USA

Jacob S. Bowie, BS Human Performance Laboratory, Department of Kinesiology, University of Connecticut, Storrs, CT, USA

Department of Kinesiology, University of Connecticut, Storrs, CT, USA

Douglas J. Casa, PhD, ATC Korey Stringer Institute, Department of Kinesiology, University of Connecticut, Storrs, CT, USA

Aidan P. Fiol, BS Human Performance Laboratory, Department of Kinesiology, University of Connecticut, Storrs, CT, USA

Department of Kinesiology, University of Connecticut, Storrs, CT, USA

Andreas D. Flouris, PhD FAME Laboratory, Department of Exercise Science, University of Thessaly, Karies, Trikala, Greece

Gabrielle E. W. Giersch, MSc Korey Stringer Institute, Department of Kinesiology, University of Connecticut, Storrs, CT, USA

Andrew Grundstein, PhD Department of Geography, University of Georgia, Athens, GA, USA

Yuri Hosokawa, PhD, ATC Faculty of Sport Sciences, Waseda University, Tokorozawa, Saitama, Japan

Robert A. Huggins, PhD, ATC Human Performance Laboratory, Department of Kinesiology, University of Connecticut, Storrs, CT, USA

Department of Kinesiology, University of Connecticut, Storrs, CT, USA

Korey Stringer Institute, Department of Kinesiology, University of Connecticut, Storrs, CT, USA

Glen P. Kenny, PhD Human and Environmental Physiology Research Unit, School of Human Kinetics, University of Ottawa, Ottawa, ON, Canada

Elaine C. Lee, PhD Human Performance Laboratory, Department of Kinesiology, University of Connecticut, Storrs, CT, USA

Department of Kinesiology, University of Connecticut, Storrs, CT, USA

Rebecca M. Lopez, PhD, ATC, CSCS Athletic Training Post-Professional Program, Department of Orthopaedics & Sports Medicine, University of South Florida, Tampa, FL, USA

Kevin C. Miller, PhD, AT, ATC School of Rehabilitation and Medical Sciences, Central Michigan University, Mount Pleasant, MI, USA

Margaret C. Morrissey, MS Korey Stringer Institute, Department of Kinesiology, University of Connecticut, Storrs, CT, USA

Sean R. Notley, PhD Human and Environmental Physiology Research Unit, School of Human Kinetics, University of Ottawa, Ottawa, ON, Canada

Nathaniel S. Nye, MD, Maj, USAF, MC Sports Medicine Clinic, 559th Medical Group, Joint Base San Antonio-Lackland, TX, USA

Francis G. O'Connor, COL (ret.), MC, USA, MD, MPH Military and Emergency Medicine, Consortium for Health and Military Performance, Uniformed Services University of the Health Sciences, Bethesda, MD, USA

Julien D. Périard, PhD, MA, BEd, BSc Research Institute for Sport and Exercise, University of Canberra, Bruce, ACT, Australia

J. Luke Pryor, PhD, ATC, CSCS Exercise and Nutrition Sciences, University at Buffalo, Buffalo, NY, USA

Riana R. Pryor, PhD, ATC Exercise and Nutrition Sciences, University at Buffalo, Buffalo, NY, USA

William O. Roberts, MD, MS Sports Medicine Program, Department of Family Medicine and Community Health, University of Minnesota, Minneapolis, MN, USA

Rebecca L. Stearns, PhD, ATC Korey Stringer Institute, Department of Kinesiology, University of Connecticut, Storrs, CT, USA