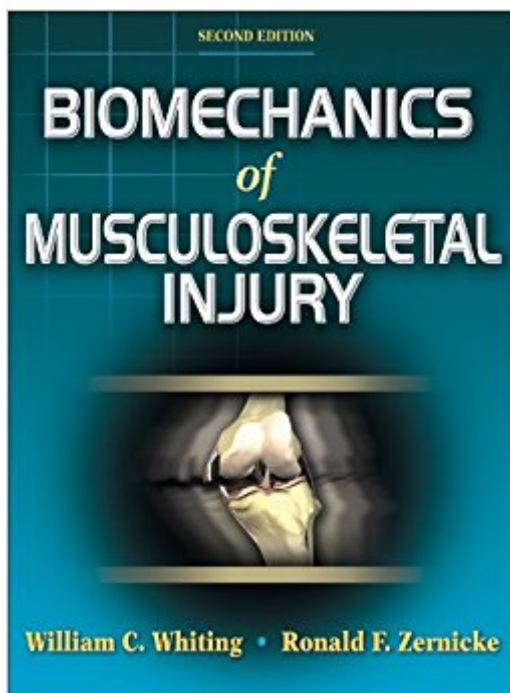


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# Biomechanics Of Musculoskeletal Injury, Second Edition



## Synopsis

Biomechanics of Musculoskeletal Injury, Second Edition, presents clear, accessible explanations of the biomechanical principles of injury and how injuries affect the normal function of muscles, connective tissue, and joints. Noted biomechanists William Whiting and Ronald Zernicke guide readers through the mechanical concepts of musculoskeletal injuries without heavy emphasis on mathematics. Almost 10 years after the publication of the first edition, this much-needed second edition has been vastly improved. Packed with more than 400 illustrations, including graphs and anatomical art (nearly twice as many as in the previous edition), Biomechanics of Musculoskeletal Injury, Second Edition, is an indispensable reference offering perspectives on and appreciation for the intricacies of injury mechanisms. The text provides a solid foundation for in-depth study with a comprehensive examination of these issues:

- The mechanical aspects of injury and the concept of injury as a stimulus for beneficial tissue adaptations
- How injury affects the normal function of the human musculoskeletal system and an examination of arthrology, or joint mechanics
- Mechanical parameters such as force, stress and strain, stiffness, and elasticity and their application to tissue mechanics and injury
- How connective tissues respond to mechanical loading and how those tissues are studied to quantify their mechanical behavior
- Factors such as age, gender, nutrition, and exercise with emphasis on how lifestyle choices might lessen the chance or severity of injury
- How the principles of mechanical load and overload, use and overuse, level and progression of injury, and the many contributory factors involved in injury combine to form a backdrop for viewing specific musculoskeletal injuries

Drawing on the information provided in previous chapters, the final section of the text covers the essentials of injuries of the lower extremity, upper extremity, and the head, neck, and trunk. New to the second edition, special sections titled "A Closer Look" present a detailed analysis of anterior cruciate ligament injuries, rotator cuff pathologies, and concussion. In addition, topics of current concern such as falls in older populations, throwing-related rotator cuff pathologies, and youth-related injuries from carrying backpacks are also discussed. This new edition also employs updated design features to reinforce learning, including the addition of a second color to highlight new sections and special elements. The running glossary provides immediate access to definitions, thereby increasing reading comprehension. The improved index offers a quick-search feature for glossary word definitions, and expanded references provide direction for further study. Additionally, essay questions included at the end of each chapter help readers create logical flows of information pertinent to chapter contents. For instructors, an online instructor guide offers outlines of the topics that students should address to answer the chapter review questions. Also available to instructors is an online presentation package featuring the

graphics from the text to be incorporated easily into lecture presentations. By providing an understanding of injury mechanisms in all body regions, *Biomechanics of Musculoskeletal Injury, Second Edition*, serves as a comprehensive resource to assist health professionals, researchers, and students with the proper diagnosis, treatment, and prevention of musculoskeletal injuries.

## Book Information

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## Customer Reviews

""The style and format of the book is excellent. It is easily read with ample illustrations." Don B. Chaffin, PhD Director, Center for Ergonomics The University of Michigan ""Finally, an authoritative text that provides a scientific foundation for understanding the mechanisms of musculoskeletal injury. Knowledge of this information is essential for several professional groups, including those interested in the biomedical aspects of injury mechanisms, those concerned with injury prevention, and those involved in facilitating recovery from injury. For individuals with these interests, this text is required reading." Roger M. Enoka Professor University of Colorado at Boulder ""Injury occurs from mechanical overload of tissue. This simple tenet is often overlooked by those responsible for injury prevention and rehabilitation of those already injured. This fine textbook fills the current need for a resource that synthesizes the links between tissue properties, skeletal architecture, applied loads and injury. While general principles of tissue biomechanics and injury mechanisms are described, special areas of expertise of the authors shine, particularly those of loading and adaption, and injuries specific to areas of the body. The material is well organized into chapters that emphasize ""concluding comments"" and contain functional and usable information for scientific and

clinical students alike. Professors Whiting and Zernicke are to be thanked for filling the need and to be congratulated for filling it so well." "" Stuart M. McGill, Ph.D. Professor of Biomechanics, University of Waterloo" --This text refers to an out of print or unavailable edition of this title.

"Unlike other biomechanics and kinesiology books, this one offers a comprehensive overview of the biomechanical basis of musculoskeletal injury that is crucial to the understanding of how and why injuries occur." Doody's Book Review Service

A better title for the book would be "Medical Terminology of Musculoskeletal Injury". The authors of this book seem to be more concerned with what things are called than understanding biomechanics. Many of the human body parts are studied separately without consideration of the movement patterns that lead to injury. The book is full of important terms, equations, and other sterile information implying credibility but lacks insight. I don't believe this is a good resource for people interested in understanding biomechanics and how they relate to injury as the description states.

This is a great text. I read the first edition cover-to-cover in grad school, and am now working my way through this second edition. Covering the topic completely takes the length of a career, but they've done about as good an overview as one could expect in 300 pages. Very appropriate for any health professional, trainers, or anyone else dealing with musculoskeletal issues of any sort.

Ordered for my son. Was delivered directly to him very quickly. Quality as as described. Would order from this vendor again....but it's his LAST YEAR OF GRAD SCHOOL so probably won't be ordering any textbooks for a lllllllloooooonnnnnnnggggggg time! Can you tell I'm excited about that?

one of the best books I've ever purchased :)

Quality was like new when I received it. The textbook itself is very detailed, easy to read print, good diagrams.

The authors Whiting and Zernicke are to be congratulated for this high-quality reference book. As someone who testifies often in civil litigation cases regarding the physical mechanics of motor vehicle and premises accidents and the associated mechanisms of human injury, I found this book to be a superb addition to my technical library. For the uninitiated in injury mechanics, it begins

impressively with a low-gear, historical, and introductory manner, and takes the reader through many basic mechanical concepts. The book then covers a wide assortment of human injuries and their causal mechanisms. I observed that the book is very well-formatted with titles, sub-titles, text, add-in framed articles, effective anatomical line drawings, and illustrative photographs. While the book is technical in nature, I noted that it was written to be appreciated by those outside the technical area of injury biomechanics. I readily recommend this book to anyone interested in the mechanisms of human injury.

Well written and very thorough. Great combination of Gross Anatomy, Orthopedics and Biomechanics.

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