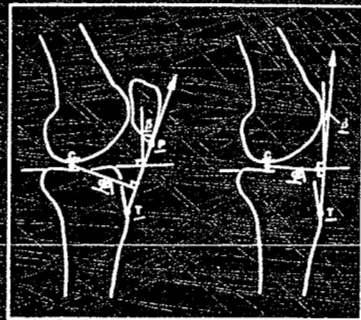


Biomechanics *of* Musculoskeletal INJURY



William C. Whiting
Ronald F. Zernicke

Biomechanics of Musculoskeletal Injury

In the first book of its kind, noted biomechanists William Whiting and Ronald Zernicke explore the mechanical bases of musculoskeletal injury to better understand causal mechanisms, the effect of injury on musculoskeletal tissues, and how our current knowledge of biomechanics can contribute to injury prevention.

Never before has the broad spectrum of injury mechanics been covered so completely in a single book. From introductory biomechanics to detailed examinations of the mechanical aspects of common injuries, *Biomechanics of Musculoskeletal Injury* provides a solid foundation for in-depth study. The book includes comprehensive information on

- the basic biomechanical concepts of force, stress and strain, stiffness, and elasticity;
- the mechanics of joints that are subject to disabling injury;
- the structure of connective tissues (bone, cartilage, tendons, and ligaments), which are most often involved in musculoskeletal injuries; and
- factors such as age, gender, nutrition, and exercise, which affect the musculoskeletal system's response to force.

After providing the reader with a fundamental understanding of tissue structure and function, the authors then proceed with detailed explorations of the mechanisms of common injuries, including

- inversion ankle sprains, stress fractures, and other lower-extremity injuries;
- rotator cuff tears, carpal tunnel syndrome, and other upper-extremity injuries; and
- concussions, intervertebral disc injuries, and other injuries that afflict the head, neck, and trunk.

Packed with more than 300 drawings, photos, and tables, *Biomechanics of Musculoskeletal Injury* is both visually compelling and indispensable as a reference on injury mechanisms.

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