

# BOOK REVIEWS

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## CLINICAL EPIDEMIOLOGY OF ORTHOPEDIC TRAUMA

Zhang Y. New York, NY: Thieme Medical Publishers, 2012, 648 pp, hardcover, illus, \$189.99.

*Clinical Epidemiology of Orthopedic Trauma* is a retrospective review and presentation of the distribution of 65 267 fractures in 60 266 patients collected over a 5-year period at the Third Hospital of Hebei Medical University in China. Dr Zhang is the chairman, director, and chief of orthopaedics of Third Hospital. The author details the methodology by which fractures are classified using the AO Foundation/Orthopaedic Trauma Association (AO/OTA) fracture classification, and then uses this system to tell a fascinating epidemiologic story based on the clinical data. Each chapter focuses on a specific bone, detailing its anatomy, AO/OTA fracture classification, epidemiologic features of the specific fracture, and side-by-side illustrations of each fracture with corresponding radiographs and, in some cases, computed tomography scan images. Data from radiographs of each fracture are statistically analyzed using the AO/OTA classification system. Brief paragraphs on injury mechanism, diagnosis, and current and new advancements in orthopaedic care conclude each chapter. The book is well laid out and easy to read.

The epidemiology of the 65 267 fractures is described as it relates to fractures in general, and the author focuses on specific fractures of the proximal, shaft, and distal components of the bone. For example, humeral fractures represent 9.31% of

all types of fractures, and proximal humeral fractures represent 39.7% of adult humeral fractures. Each type of fracture is detailed to describe distribution based on number of fractures and patients, age, gender, fracture type, and group. Data are described with clarity through use of tables, pie charts, line graphs, and bar graphs. Throughout the book, the author shares pearls of information as to why certain types of fractures occur; for example, knee fractures more often occur at the tibial plateau versus the tibial shaft, as the tibial plateau bone is cancellous compared to the thicker cortical bone of the tibial shaft. The author achieves the goal of clearly presenting and classifying the 5-year epidemiologic study. Dr Zhang uses illustrations as a superb educational tool, and describes current and new advances in fracture care.

The anatomical illustrations, partnered with radiographic pictures and the story told by the epidemiological data, make a very good resource for physical therapists who work with the rehabilitation of persons following bone fractures. The largest audience for which this book is appropriate would be medical students with a focus on orthopaedics, family practice, and trauma.

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## CORE CONCEPTS IN ATHLETIC TRAINING AND THERAPY, WITH WEB RESOURCE

Hillman SK. Champaign, IL: Human Kinetics, 2012, 640 pp, hardcover, illus, web resources, clinical modules, \$98.00.

This textbook is an introductory text for the profession of athletic training. The book is part of the Athletic Training Education Series, published by Human Kinetics. Within the series, it replaces a previous text, *Introduction to Athletic Training*. This textbook is well suited for

introductory athletic training courses; however, it may be utilized throughout the educational program within an accredited athletic training program. Susan K. Hillman, ATC, PT is the editor, along with 12 other nationally known contributing authors.

The text is divided into an introduction chapter and 6 parts, including Prevention and Health Promotion, Clinical Examination and Diagnosis, Acute and Emergency Care, Therapeutic Interventions, Health Care Administration, and Advanced Athletic Training Concepts. The introduction is very comprehensive, including the history of the profession of athletic training, the steps to obtain the certified athletic trainer credential, employment opportunities in the profession, the sports medicine team, and learning aids that summarize the chapter. However, the information regarding the Board of Certification exam is outdated; otherwise, this introductory chapter gives an extensive history and background of the allied health profession of athletic training.

Part 1, Prevention and Health Promotion, covers the role of the athletic trainer in the preparticipation physical examination of the athlete, fitness testing, basic fluid and nutritional needs of the physically active patient, environmental conditions, protective equipment, and techniques of taping and bracing.

Part 2, Clinical Examination and Diagnosis, begins with the explanation of classification and mechanism of athletic injuries. This section does an excellent job of introducing anatomical reference terminology and the mechanisms involved with tissue injury. Next, injury classifications are discussed, including soft tissue, bone and joint, and nerve pathologies. Chapter 8, Principles of Examination, introduces the student to injury evaluation. It begins with primary and secondary surveys, then moves to on-site, acute examinations and clinical examinations. The clinical exam section covers the subjective and objective evaluations,

observation, palpation, range of motion, strength, function, as well as stress tests, special tests, and tests of the neurologic and vascular systems. The chapter ends with a brief overview of documentation of the examination. The following 3 chapters cover injury evaluation of the upper extremity; lower extremity; and head, spine, and thorax. The final chapter in this section discusses general medical condition evaluation.

Part 3, Acute and Emergency Care, encompasses planning for acute care situations, essentials of the acute examination, immediate care, and moving and transporting injured patients. Specifically, first aid, cardiopulmonary resuscitation, emergency action plans, consent to treat, roles and responsibilities of the emergency medical professions, and emergency care equipment are covered.

The next section, part 4: Therapeutic Interventions, begins with components of a rehabilitation program. Basic information regarding therapeutic exercise, psychological considerations in rehabilitation, and return-to-competition criteria are discussed. The author continues with topics of tissue healing, healing phases, and the role of therapeutic exercise during healing. Techniques of therapeutic exercise and parameters are given for a variety of areas, including stretching and massage. Goniometry, myofascial release, muscle energy techniques, joint mobilization, proprioceptive neuromuscular facilitation, strength training, proprioception, and plyometrics are also briefly introduced. The section continues with functional activities and evaluation. Next, the topic of therapeutic modalities is introduced, including the application of cold, heat, electrotherapy, ultrasound, laser, biofeedback, traction, and manual therapy. Parameters, precautions, indications, contraindications, and applications are included for the student. The section ends with the topic of pharmacology in athletic training.

Part 5, Health Care Administration, introduces the areas of documentation,

information management, program management, financial resource management, human resource management, facility design, and planning. This section ends with the topic of insurance and legal principles for reducing risk.

The final section, part 6: Advanced Athletic Training Concepts, gives the student an in-depth look at the pathophysiology of tissue injury, psychology of sport injury, and evidence-based practice. This section is for the more advanced student.

Overall, this introductory textbook for the athletic training student is perfectly suited for the first year of an undergraduate or entry-level master's athletic training education program. The comprehensive nature of this textbook makes it one that students can reference throughout their academic career and utilize to prepare for their Board of Certification examination. Each chapter ends with key concepts and review, critical thinking questions, case studies, key terms, and web resources. The web resources include clinical competency modules for the student. Instructor resources include an instructor guide, image bank, and test package. The entire text is well written and contains information pertinent for all health care professionals who evaluate and treat athletes.

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## PHYSICAL THERAPY OF THE SHOULDER: FIFTH EDITION

*Donatelli RA. St Louis, MO: Elsevier/Churchill Livingstone, 2011, 488 pp, softcover, illus, \$113.95.*

This textbook provides a comprehensive overview of the shoulder complex, based largely on the principles of evidence-based practice. In this fifth edition, chief editor Robert A. Donatelli, PT, PhD, OCS, along with 28 contributing authors from around the world, have provided

a text that effectively covers traditional management strategies while keeping up to date with new and innovative treatment techniques, surgical procedures and outcomes, and evaluation methods for the shoulder.

Similar to previous editions, the book is organized into 5 parts. Part 1, Mechanics of Movement and Evaluation, provides a thorough review of the functional anatomy, kinesiology, and examination and evaluation strategies of the shoulder complex.

Part 2 is titled Neurologic Considerations. In this section, the direct and indirect relationships between the shoulder and spine are explained in detail, including the various sensory, motor, and sympathetic pathways. In addition, and perhaps the most important take-home message for physical therapists working in a direct-access environment, is the authors' emphasis on medical screening to rule out referred symptoms. This is accomplished with effective written and visual descriptions of various cervical, thoracic, and lumbar spine tissues and rib injuries capable of referring pain and dysfunction to the shoulder. I found the inclusion of pain diagrams, special test sequencing, and case studies to be extremely useful to enhance the reader's understanding.

Part 3, Special Considerations, focuses on commonly encountered pathologic shoulder conditions in clinical practice, including impingement syndrome, shoulder instability, adhesive capsulitis, and rotator cuff pathology. It also includes a chapter on differentiation of the causes of a patient's pain between a musculoskeletal origin and a visceral pathologic condition or disease. Collectively, the majority of these chapters are organized in an effective manner, with adequate descriptions of the various disease processes, examination techniques, diagnostic procedures, and treatment considerations.

Part 4, Treatment Approaches, covers a variety of clinical treatment strategies, with emphasis on manual therapy and

upper extremity exercise. Chapter 14 discusses various manual therapy techniques for the shoulder complex from a basic science and problem-solving approach. The authors present a number of treatment techniques with appropriate written and visual descriptions, case studies, and evidence support. Chapter 15 presents an overview of muscle-length assessment, manual muscle testing procedures, and fundamental exercises commonly used for rehabilitation of the shoulder based on electromyographic evidence. Chapter 16 covers myofascial trigger points of the shoulder, and encourages the practitioner to develop a more comprehensive approach to shoulder treatment. Finally, chapter 17 provides a basic understanding of skeletal muscle adaptations in response to strength training.

Part 5 is titled Surgical Considerations. In this final section, the primary surgical procedures for shoulder joint dysfunction are presented, including those that address rotator cuff pathology, instability, and arthritic processes. In each respective chapter, the etiology, diagnostic work-up, and treatment are presented. In addition, the authors include postoperative rehabilitation guidelines, or protocols, that clarify the particular goals, restrictions, and concerns for each phase of the healing and recovery process.

When looking at the weaknesses of this textbook, there is little to comment on. The material, at times, is dense and seems best suited for the experienced clinical specialist, as the information may become overwhelming for the novice practitioner. To simplify concepts, I would have liked the inclusion of more illustrations, higher-quality images, and tables to enhance the comprehension of material for the visual learner. This would have been most useful in the introductory section on functional anatomy, in part 3 within the descriptions of various shoulder pathologies, and in part 5 with surgical techniques and imaging. Nevertheless, I would still highly recommend the text to students, as it depicts

many concepts not covered in entry-level graduate programs.

In all, this is a very useful text for any rehabilitation professional with special interests in the management of shoulder dysfunction. It is systematic, comprehensive, and clinically relevant. It would be an excellent addition to one's personal literary collection.

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### FOOT AND ANKLE SPORTS MEDICINE

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*Altchek DW, DiGiovanni CW, Dines JS,  
Positano RG. Philadelphia, PA: Wolters  
Kluwer/Lippincott Williams & Wilkins,  
2012, 352 pp, hardcover, illus, \$249.99.*

The stated purpose of this text was to address the myriad of foot and ankle injuries in athletes and to assist sports medicine professionals in the diagnosis and treatment of these often difficult and complex injuries. The book has a lengthy and well-respected list of authors who have penned 32 chapters with a wealth of information in a relatively modest number of pages. This is accomplished through the use of a relatively small text font size for the body of the chapters and an even smaller text font size for the chapter references, which might create issues for some readers. However, the complete contents of the text, plus additional resources, are available online for those who have purchased the text. While not divided into specific sections, the book begins with basic science information (chapters 1-4), including a review of foot and ankle anatomy and the structure and basic science of tendon healing. Chapters 5 through 9 address examination and surgical management of the area. Specific foot and ankle injuries and their management are addressed in the remaining chapters (chapters 10-32). These include chapters on chronic and

acute ankle instability, bony lesions of the foot and ankle (impingement, osteochondral lesions, and fractures), soft tissue injuries (tendon and nerve, syndesmosis, and plantar fascia), and dermatological conditions. This section also includes some well-written chapters on foot/ankle injuries in the runner and in the pediatric athlete, sports-specific injury prevention, rehabilitation of foot and ankle injuries, the relationship between foot and hip mechanics, and sports-specific orthotic intervention.

It is a difficult task for any author or editor to be complete in the coverage of any subject, let alone such a broad subject as foot and ankle injuries in the athlete. However, these editors and contributors did an impressive job of describing the major injuries and management of this area. There are several strengths of this textbook. The book is well illustrated, highlighted by excellent color photographs and line drawings along with tables that summarize key points. The chapters are well referenced, providing adequate evidence for the presented information. The basic science chapters do a very nice job of providing important information on anatomy and the physiology of healing. The chapters on examination of the foot and ankle and surgical management are excellent, particularly for nonorthopaedic surgeons. One of the highlights of this section is the chapter on imaging, which includes minimal text but a plethora of excellent radiographs to illustrate specific athletic injuries. These sections provide a nice precursor to the information presented in the rest of the text. The information is clear and concise, with a thorough discussion of each injury and general information regarding management. The chapter on sports-specific injury prevention focuses on balance and proprioception exercises, with a brief mention of taping, bracing, and orthotic intervention. The chapter on rehabilitation addresses the use of modalities and has a brief discussion on the rehabilitation of common foot and

ankle disorders. The one weakness I perceived in this text was a lack of in-depth discussion on standardized functional outcome measurement tools and return-to-play guidelines for each specific foot and ankle injury.

This text would be very useful for sports medicine clinicians to have on their bookshelf. It provides valuable information on specific foot and ankle injuries seen in the athletic population. However, because of the cost, I would hesitate to recommend it for students as a resource guide for such injuries.

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## TREAT YOUR OWN KNEE

*McKenzie R. Minneapolis, MN: Orthopedic Physical Therapy Products, 2012, 108 pp, softcover, illus, \$12.00.*

This is a brief book written as a guide for self-treatment of the knee. This book is clearly written and provides good descriptions to help the layperson understand the functions, structure, and types of injuries that are particular to the knee. The differentiation of knee pain from back pain and precautions for treating your own knee can be particularly helpful for the individual at home trying to make an informed decision about visiting a medical professional.

This book has good information on how posture can influence the function of the knee and ways to mitigate posture-related knee stress. The book provides a simple and safe progression for range-of-motion exercises as well as strengthening exercises.

Overall, I feel this book could be very useful for the individual suffering from low-level recurrent knee pain that causes minimal to moderate limitations in daily function. This book can be beneficial as an adjunct to those individuals going

through a course of physical therapy for generalized knee pain.

The only weakness of the book is the few plugs for the McKenzie method and those practitioners certified in mechanical diagnosis and therapy.

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## WHY DO I HURT? A PATIENT BOOK ABOUT THE NEUROSCIENCE OF PAIN

*Low A. Minneapolis, MN: Orthopedic Physical Therapy Products, 2013, 52 pp, softcover, illus, \$17.95.*

*Why Do I Hurt? A Patient Book About the Neuroscience of Pain* is a 52-page, spiral-bound, softcover text intended as an educational supplement to professionals treating patients experiencing problematic musculoskeletal pain. This text is a natural extension of current literature supporting the utilization of basic neuroscience education as a component in the arsenal of knowledgeable clinicians. This paperback grammatically speaks directly to the patients. Utilizing numerous analogies and metaphors and supplemented by multiple simplistic but effective illustrations, this work gently guides patients toward a greater understanding of the numerous factors contributing to the modulation of their pain.

This text is composed of a brief, straightforward introduction followed by 6 sections progressively providing an uncomplicated rationale for rethinking one's understanding of the personal pain experience. A final section offers strategies and support for implementing change.

Section 1, *Your Tissues and Your Nerves*, is perhaps the most significant of this text, establishing the groundwork for a neural understanding of pain. The role of ion channels is introduced, as

they contribute to "nerve sensors," and patients are asked to consider their personal pain sensitivity.

Section 2, *Your Nosy Neighbors*, is a brief discussion of how present pain can sensitize old aches and pains. The author states, "This is all normal and expected. Agitated nerves may be felt as aches, but they may not indicate an injury."

Section 3, *Your Body's Chief Executive Officer*, discusses the brain (as the CEO) as the primary processor of pain. It is noted that "most CEOs are paranoid," and that often pain is "not an indication of injury, but rather of sensitive nerves in the area and a CEO snooping around to make sure everything is OK."

Section 4, *Your Brain's Board Meetings and Airline Maps*, introduces the complexity of pain processing, with a take-home message that "pain is individualized, which makes it so hard to treat."

Section 5, *Your Body's Injury—Ankle Sprains and Bruises*, is composed of 2 pages that establish that "pain is a brain decision." Although brief, this section may be especially valuable to those fixated on the paradigm of "end-organ dysfunction."

Section 6, *Your Body Under Attack*, introduces multiple biopsychosocial factors that contribute to and result from an extended pain experience, including sleep disturbance, depression, tender areas, and fatigue, among others.

Section 7, *Your Treatment—Taking Back Your Life*, offers that "education is therapy." Numerous strategies for change are offered, which ideally are individualized by each patient and facilitated by the caregiver.

Overall, this book is well organized and supported by contemporary evidence. Supportive references are provided at the conclusion of the text. Illustrations are simple but otherwise adequate and helpful. A majority of sections are concluded by helpful take-home messages.

This text would be very helpful in a clinical environment and has the potential to become a mainstay as an aid in the

management of patients with chronic pain conditions, or as a preventative measure to diminish the potential for acute pain to progress to more problematic levels.

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### **YOUR FIBROMYALGIA WORKBOOK: A NEUROSCIENCE APPROACH TO THE UNDERSTANDING AND TREATMENT OF FIBROMYALGIA**

*Louw A. Minneapolis, MN: Orthopedic Physical Therapy Products, 2013, 114 pp, softcover, illus, \$24.95.*

This text is written as a guide for individuals diagnosed with fibromyalgia, with the underlying tenet that patients “get better” when they know about their pain experiences and understand how pain is processed. The author draws heavily on the area of therapeutic neuroscience education and provides the reader with 80 references, largely based in the pain literature, to provide “scientific evidence” for the conceptual framework of the book. These references, along with the author’s clinical experience in manual therapy and his previous published works, provide a good foundation for the text.

The text is organized into 8 sections. Each section, or “session,” provides suggested treatment sessions for the patient and the health care professional to systematically work through the persistent pain that is a hallmark of fibromyalgia. The overarching goal of this approach is to have the patient “personalize” their symptoms. Each session encompasses specific content, along with multiple opportunities for the patient to validate/substantiate their symptoms through various tasks and assignments relative to the content area.

Session 1 covers the patient’s experience with fibromyalgia and introduces

the reader to Susan, a fictitious patient with fibromyalgia, who takes the journey through 8 treatment sessions. This session asks the reader to perform a self-test about their knowledge of fibromyalgia and to complete a personal history checklist and a record of the health care professionals previously consulted. Through this self-analysis, the patient gains an understanding of the experiences dealt with by others with fibromyalgia.

Session 2 introduces the underlying nature of pain in patients with fibromyalgia. The author describes the brain of the patient as making a conscious decision to defend the patient. The patient is introduced in a cursory fashion to the complex interaction of various areas of the brain that creates a patient’s pain map. This is done through an assignment by which the patient ties symptoms to the respective area of the brain responsible for their symptom generation/recognition, that is, the motor and sensory cortex, prefrontal lobe, cerebellum, etc.

Session 3 uses a lion as a metaphorical collection of the patient’s pain, fear, anxiety, and worry that rushes unexpectedly into their life. Through this example, the reader is introduced to the impact of cortisol and hormonal imbalance, which feed their symptoms of fatigue, hypersensitivity, and weakness. Patient homework in this session requires self-reflection as well as having the patient describe their symptoms and their causes to another person.

Session 4 introduces the notion of the hypersensitive nervous system as an innate alarm mechanism and the root cause of fibromyalgia, that is, amplification of normal pain signals. The inherent difficulties in diagnosing a hypersensitive nervous system, combined with common experiences of failed prior treatments and the variety of explanations for their symptoms, perpetuate the hypersensitivity. The theory of hypersensitivity is also described as underlying principles of referred and radiating pain.

Fatigue is the focus in session 5 and is nicely described in layman’s terms as the

imbalance between energy requirements from hypersensitivity; the energy required to replenish energy stores; the peripheral role of cortisol in robbing blood flow to muscles, tendons, and joints; as well as cortisol’s central influence on the brain. A simple patient explanation of the impact of cortisol on the immune system, neurosensitivity, the inflammatory response, and the role of the parasympathetic nervous system is also provided.

With the majority of patient instructions provided, session 6 focuses on the patient’s treatment plan. The author emphasizes treating the patient’s pain (versus managing pain) with aerobic exercise, specialized education, and membrane-stabilizing drugs. The author promotes exercise in moderation to help minimize nervous system hypersensitivity by “burning off stress chemicals out of the blood and promoting local tissue oxygenation.” Specialized education includes a discussion of a case study in which decreased brain activity is demonstrated in areas that process pain (as measured by functional magnetic resonance imaging) after an educational session similar to material in the text. Endorphins, enkephalins, opioids, and serotonin are mentioned but not discussed in detail. Finally, breathing exercises, relaxation, humor, social interaction, weight control, and sleep hygiene are discussed as vital components of the treatment program.

Session 7 helps the patient establish goals and design a program to “tease” the pain. This approach emphasizes realistic, small steps balanced with fun and socialization and dispels the myths of “no pain, no gain” and “if it hurts, don’t do it.”

The workbook concludes in session 8 with a summary and posttest for the patient, along with a suggested treatment regime that includes a thorough subjective exam, skilled physical exam, a 45-minute neuroscience education (including explanation, pictures, brain scan information, self-treatment ideas and plans, and the role of the physical therapist), and a graded exercise program and goals.

The author's stated audience is both the patient and the health care provider. As such, it is difficult to provide one resource that explains fibromyalgia in lay terms and also provides adequate substance to address the educational needs of the physical therapist. A physical

therapist familiar with the pathophysiology of pain and able to develop a comprehensive intervention strategy will not gain a significant amount of new knowledge from the text. Clinicians treating patients with fibromyalgia will find this text a helpful tool to provide their patients an

excellent resource to help understand the complex nature of this challenging clinical entity.

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