

# Fundamentals of Sports Injury Management

THIRD EDITION

Marcia K. Anderson  
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# Fundamentals of Sports Injury Management

THIRD EDITION

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# PREFACE

We are so excited to present the third edition of *Fundamentals of Sports Injury Management* to our many textbook adopters. In this edition, we have focused our attention on establishing a comprehensive content, “user-friendly” format for a target audience that includes individuals asked to provide immediate first aid care for physically active individuals across the life span in the absence of a certified athletic trainer. These individuals may include coaches, exercise science/health fitness professionals, physical education instructors, supervisors in recreational sports programs, and directors in YMCA or other community sports-related programs. In an effort to facilitate ease of reading, the term “coach” is used to collectively identify individuals who may be asked to be responsible for initial assessment and immediate care of an injured patient. This text can be used in an introductory athletic training class or sports first aid class. Because of the content, it is advisable that the student complete parallel coursework and receive current certification in cardiopulmonary resuscitation and airway management.

## NEW FEATURES IN THIS EDITION

*Fundamentals of Sports Injury Management* has undergone extensive review from certified athletic trainers, leading to a more reader-friendly text that includes pertinent information that can be easily taught in a one-semester course. As in previous editions, we have expanded illustrations of anatomy, critical information boxes, tables, and application strategies in each chapter to enhance the learning process. We have separated some critical information into new chapters and added a new section with the Injury Prevention chapter on the importance of conditioning to prevent injuries. Many of the highlighted changes and additions include the following:

- Highlighted medical terms are defined within the text and in the glossary.
- Wherever possible, injuries and conditions are organized on the basis of the specific joint or body part affected. The conditions are defined or explained, signs and symptoms are identified, and general immediate management protocols are provided. Guidelines for the coach for referral to an athletic trainer or physician are also provided.
- The end of each chapter includes Application Questions, which allow the student to integrate the information presented in each chapter into practical application. Scenarios are presented from various settings sites and involve individuals of different ages. Open discussion is encouraged on each of these scenarios. There are no “right” answers per se. Rather, the intent is to allow the students and instructor to critically assess the situation and determine the best course of action. In some scenarios, it will be as important to determine actions that should be taken as it is to define actions that should not be taken.
- **Chapter 1, *Introduction to Injury Care***, introduces the student to the athletic training profession and explains the primary sports medicine team and its responsibilities, and discusses the coach’s role in providing basic acute injury care.
- **Chapter 2, *Legal Issues***, is a new chapter that introduces legal considerations in providing injury care and explains several strategies to prevent litigation.
- **Chapter 3, *Injury Prevention***, introduces the three most important concepts to prevent injuries: physical conditioning, proper skill techniques, and protective equipment.
- **Chapter 4, *Injury Mechanism and Classification of Injury***, describes general anatomical terms and concepts; mechanisms of injuries; anatomical properties and classifications of injury to soft-tissue, bone, and nerves; and finally explains basic theories of pain and its management.
- **Chapter 5, *The Healing Process***, expands on Chapter 4 to introduce the stages of healing in soft-tissue, bones, and nerve, and explains factors that may delay the healing process.



photographs incorporated to supplement material presented in the text. The illustrations provide realistic and accurate figures to depict anatomical structures and to illustrate injury mechanisms.

### Chapter Summary

Each chapter has a summary of key concepts discussed in the text. Although provided as a summary, they in no way denote all of the critical information covered in the chapter.

### Application Questions

Several injury scenarios are provided to challenge each student to clinically apply the knowledge from the text into a real-life experience. There are no correct answers provided. The intent is to spark classroom discussion, facilitated by the instructor, to encourage students to think creatively and logically in managing each injury.

### References

Any valuable teaching tool must include a listing of cited references used to gather information for the text. We have tried to limit the references to a 5-year period, except where the reference is considered to be the original groundbreaking research. The bibliography can be used by the instructor or the student to find additional information on a topic, if needed.

### Glossary and Index

An extensive glossary of terms from highlighted words in the individual chapters is provided at the end of the book. Furthermore, the comprehensive index contains cross-referencing information to locate specific information within the text.

## ANCILLARY MATERIALS

Online resource centers are available for both the instructor and the student on *thePoint*.

### Instructor's Resource Center

The online resource center will be organized by chapters and include the following:

- **PowerPoint Presentations.** The PowerPoint presentations were developed with an understanding that instructors and students adopt various strategies when using PowerPoint. The slides provide detailed rather than general information, recognizing that it is simpler for an educator to delete rather than add information. In addition, given the tendency of many students to take notes verbatim from a slide, an effort was made to condense the actual wording of statements to streamline the note-taking process. The presentations can be downloaded and customized to meet specific needs.
- **Supporting Lecture Notes.** The lecture notes correspond to the individual slides comprising the PowerPoint presentations. The notes are not intended to serve as an actual lecture. Rather, they are designed to provide the instructor with information that supports the material presented on the slides. As such, the notes include additional explanation and background information, as well as examples of concepts.
- **Worksheets.** Utilizing various formats, the exercises in the worksheets require students to demonstrate knowledge and comprehension, as well as apply, analyze, synthesize, and evaluate information. Answer sheets are provided for the worksheets.
- **Image Bank.** A bank of the various illustrations contained in the text is provided for classroom use.
- **Test Bank.** The bank includes more than 1,000 sample test questions composed of multiple choice, true/false, and short answer questions. The program will allow faculty to add/customize their own test questions.

**Student Resource Center.** The online resource center for students will include:

- **PowerPoint Presentations.** The slides will be the same as those available to the instructor. However, the student will not have access to the supporting lecture notes.
- **Glossary.** The glossary available in the text will also be readily accessible online.
- **Quizzes.** Quizzes containing multiple choice and true/false questions will be available for each chapter.

- **Chapter 6, *Injury Management***, begins by introducing the need for developing and implementing an emergency care plan. This is followed by information on open and closed soft-tissue wound care including current universal precautions and infection control standards. General principles in moving an injured athlete are then explained followed by a discussion on using cold versus heat in the injury process.
- **Chapter 7, *Injury Assessment***, introduces the student to the HOPS format to assess injuries and discusses the role of the coach in injury assessment.
- **Chapter 8, *Emergency Conditions***, explains some common emergency conditions, such as airway obstruction, cardiopulmonary emergencies, the unconscious individual, shock, anaphylaxis, and hemorrhage.
- **Chapters 9 to 16** cover specific injuries or conditions organized by body regions. The organization of the chapters has been changed to reflect a better flow through the body, beginning at the head and face; moving down the spine, thorax, and abdomen; then moving to the shoulder, elbow, wrist, and hand; and finally moving to the hip, knee, lower leg, ankle, and foot.
- Each chapter opens with an expanded coverage of joint anatomy with detailed illustrations drawn by a medical illustrator. Joint motions are demonstrated and the primary muscles responsible for the motions are listed. Injury prevention strategies including protective equipment are then discussed.
- Chapters are organized to provide information on contusions, sprains, strains, overuse conditions, and fractures. Each condition is defined, signs and symptoms are identified, and management protocols are provided.
- Assessment highlights the role and responsibility of the coach in assessing each body region with recommendations for disposition of the more severe injuries.
- **Chapter 17, *Environmental Conditions***, discusses heat- and cold-related injuries and discusses safe sport participation during potential thunderstorms.
- **Chapter 18, *Systemic Conditions***, highlights several conditions that coaches may encounter in working with physically active individuals, such as bronchial asthma, exercise-induced bronchospasm, diabetes mellitus, seizure disorders, and epilepsy.

## PEDAGOGICAL FEATURES

As educators, we have highlighted and summarized information in the text by incorporating several pedagogical features to enhance the text's usefulness as a teaching tool. This is designed to increase readability and retention of relevant and critical information. These in-text features include the following.

### Learning Outcomes

Each chapter opens with a series of learning outcomes and important concepts in the chapter that the student should focus on during reading.

### Key Terminology

New and difficult medical terminology is listed at the start of each chapter, is bolded and defined in the text, and can be found in the glossary.

### Critical Information Boxes

Boxes are interspersed throughout each chapter to list or summarize critical information to supplement material in the text. In the joint chapters, for example, these boxes summarize signs and symptoms of specific conditions.

### Tables

Several chapters have tables that expand upon pertinent information discussed in the text. This allows a large amount of knowledge to be organized in an easy-to-read summary of information.

### Art and Photography Program

Art plays a major role in facilitating the learning process for visual learners. As such, the art in this edition has been thoroughly updated to provide appropriate, detailed illustrations and

We hope the new format and level of the material is well received by our colleagues. It is very difficult to please all educators who are looking for that one book that can meet all their needs. We hope this edition of *Fundamentals of Sports Injury Management* will be that book and look forward to your comments.

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*Marcia K. Anderson*

*Gail P. Parr*



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SECTION

ONE

# Foundations of Injury Prevention

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Legal Issues

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Injury Prevention

