



# Managing the Injured **Athlete**

Assessment, Rehabilitation  
and Return to Play



Zoë **Hudson**  
Claire **Small**

CHURCHILL  
LIVINGSTONE  
ELSEVIER

# Managing the Injured Athlete

Assessment, Rehabilitation  
and Return to Play

Written by

**Zoë Hudson** PhD, MCSP

Honorary Senior Clinical Lecturer, Centre for Sports and Exercise  
Medicine, Barts and the London School of Medicine and Dentistry,  
Queen Mary University of London  
Editor, Physical Therapy in Sport

**Claire Small** MPhy St., MMACP

Clinical Director, Pure Sports Medicine, London  
Honorary Clinical Lecturer, Center for Sports and Exercise  
Medicine, Barts and the London School of Medicine and Dentistry,  
Queen Mary University of London



Edinburgh London New York Oxford Philadelphia St Louis Sydney Toronto 2011

No part of this publication may be reproduced or transmitted in any form or by any means, electronic or mechanical, including photocopying, recording, or any information storage and retrieval system, without permission in writing from the Publisher. Details on how to seek permission, further information about the Publisher's permissions policies and our arrangements with organizations such as the Copyright Clearance Center and the Copyright Licensing Agency, can be found at our website: [www.elsevier.com/permissions](http://www.elsevier.com/permissions).

This book and the individual contributions contained in it are protected under copyright by the Publisher (other than as may be noted herein).

ISBN 978-0-7020-3004-8

#### **British Library Cataloguing in Publication Data**

A catalogue record for this book is available from the British Library

#### **Library of Congress Cataloging in Publication Data**

A catalog record for this book is available from the Library of Congress

#### **Notices**

Knowledge and best practice in this field are constantly changing. As new research and experience broaden our understanding, changes in research methods, professional practices, or medical treatment may become necessary.

Practitioners and researchers must always rely on their own experience and knowledge in evaluating and using any information, methods, compounds, or experiments described herein. In using such information or methods they should be mindful of their own safety and the safety of others, including parties for whom they have a professional responsibility.

With respect to any drug or pharmaceutical products identified, readers are advised to check the most current information provided (i) on procedures featured or (ii) by the manufacturer of each product to be administered, to verify the recommended dose or formula, the method and duration of administration, and contraindications. It is the responsibility of practitioners, relying on their own experience and knowledge of their patients, to make diagnoses, to determine dosages and the best treatment for each individual patient, and to take all appropriate safety precautions.

To the fullest extent of the law, neither the Publisher nor the authors, contributors, or editors, assume any liability for any injury and/or damage to persons or property as a matter of products liability, negligence or otherwise, or from any use or operation of any methods, products, instructions, or ideas contained in the material herein.

**ELSEVIER**

**your source for books,  
journals and multimedia  
in the health sciences**

**[www.elsevierhealth.com](http://www.elsevierhealth.com)**

**Working together to grow  
libraries in developing countries**

[www.elsevier.com](http://www.elsevier.com) | [www.bookaid.org](http://www.bookaid.org) | [www.sabre.org](http://www.sabre.org)

**ELSEVIER**

**BOOK AID  
International**

**Sabre Foundation**

The  
Publisher's  
policy is to use  
**paper manufactured  
from sustainable forests**

Managing  
the Injured  
**Athlete**

*Commissioning Editor: Rita Demetriou-Swanwick*  
*Development Editor: Veronika Watkins*  
*Project Manager: Gopika Sasidharan/Divya Krish*  
*Designer: Charles Gray*  
*Illustration Manager: Gillian Richards*

# Foreword

In my experience the most difficult question you are faced with when working in competitive sport is whether an individual can race or return to the field of play during training or major competition after the onset of an injury. This can be a real challenge, and sometimes is career changing for the athlete in question. There is no definitive answer and often you have no one with whom you can discuss your reasoning. You are considered the expert and you will have to live with the consequences of the judgement you make. You will on occasions watch anxiously the player you have sent back out into the field of play wondering if you took the right judgement, you will lose sleep, and you will share in the jubilation when your decision brings the sought reward. With time your own experience will allow you to develop your clinical reasoning for situations that arise commonly within the sport that you are associated with, however there will always be presentations that do not quite make sense. A pocket book of this nature will help you to unravel these clinical conundrums.

This book is a welcome and long overdue addition to the increasing resources available in the still evolving field of Sports Medicine. It is a very practical pocket book that provides a framework from which anyone working in sport could determine the most likely diagnosis for a clinical presentation and the most appropriate treatment/activity protocol. A prerequisite for every sports team medical bag.

Dr Ann Redgrave BSc, MBBS, DO, MSc SEM.  
Chief Medical Officer GB Rowing Team

# Acknowledgements

As clinicians, educators and researchers, in this book we have drawn on information gathered from several sources and owe many thanks to them all for this. Our patients, whose clinical experiences have informed us about different presentations of pathology and different responses to treatment, have taught us to be innovative and reflective in our assessment and management. Our students have challenged our teaching and communication processes, helping us develop different ways of imparting knowledge and facilitating skills in evaluative thinking, patient handling and treatment. And our clinical colleagues from whom we have “stolen” clever manual techniques and rehabilitation exercises, discussed countless “problem” patients, watched managing new or unfamiliar conditions, seen operate, inject and image and heard present on specialist topics. Our thanks to all these people whose experiences and expertise have helped shape this book.

Thanks also to the team at Elsevier, Rita Demetriou-Swanwick and Veronika Watkins, who nudged us along throughout the project, encouraging us to focus and complete this book on top of our existing workloads.

To Mark Slocombe from Creation Video and our models Alex and Michael for their work on the photographs. Working with two physios with perfectionist tendencies often meant taking the same image several times to get the right shot. However, we think the results were worth the effort.

And finally to our family and friends, our thanks for their enthusiastic support and their encouragement to see this text completed.

## Acknowledgements

The following pictures in this book have been taken from: McDonald: Pocketbook of Taping Techniques, reproduced with permission of Elsevier: 1.1a, 1.1b, 1.1c, 1.2a, 1.2b, 1.3a, 1.3b, 1.4a, 1.4b, 1.5a, 1.5b, 1.5c, 1.6a, 1.6b, 1.6c, 1.6d, 3.3a, 3.3b, 3.3c, 3.3d.

The following pictures have been taken from Hewetson: An Illustrated Guide to Taping Techniques: 3.2a, 3.2b – and 2.29, 2.37 and 2.46 from Pope: Imaging of the Musculoskeletal System, Vol 1, reproduced with permission of Elsevier.



# Introduction

This pocketbook is aimed at all those clinicians who are working, or are aiming to work, with teams or individual athletes and is relevant to clinicians working in the field of musculoskeletal medicine. It is a pocketbook and not a textbook, and as such, it is small enough to be thrown into your medical bag for quick reference out in the field if needed.

In addition to the usual sections (assessment, treatment and rehabilitation) that you would expect to see in this book, there are sections dealing with your role working within a team, athlete confidentiality, travelling with athletes, drugs and doping issues, working in different climates and return-to-play considerations. These are important issues and your success will be determined not just by your clinical skills, but also by how you deal with your working environment and all the other issues within this.

We have been teaching at undergraduate and postgraduate level for many years and we share a similar philosophy. You can teach anyone manual techniques or exercise prescription, and whilst excellent hands-on skills and innovative exercise prescription are essential, the real skill is knowing when to deploy these techniques. Developing good clinical reasoning skills is critical in becoming a good clinician. Identifying patterns of clinical presentation is the key to problem solving and formulating a "diagnosis". In the field of clinical reasoning this has been recognised as the process most commonly employed by expert clinicians. Sometimes these clinical patterns can be fairly predictable, as in the case of a simple ankle

sprain; however, in the case of something such as groin pain, these patterns can be very inconsistent and less easily distinguished. Equally, some less common pathologies can have clinical findings that are very similar to more commonly seen conditions. Clinicians who have less clinical mileage can find it difficult to identify these more unusual conditions, as they are not pathologies or presentations that they have encountered. In these “cases of the unknown”, it is not unusual for any clinician to make incorrect diagnoses. It would be like hearing hoof beats and assuming it is a horse, when actually the same sounds may be coming from a zebra – similar in many ways, but an entirely different creature!

Ensuring you have not missed a less common condition is extremely important, as some pathologies have only a limited “window of opportunity” to be managed appropriately. This is especially relevant if you are working single-handed in a club where a second opinion may not be readily available.

We have written Section 2 on Assessment with this in mind. As well as providing guidelines for assessment of the spine and periphery, we have detailed the subjective and physical examination findings for numerous clinical conditions. Unfortunately, research information regarding clinical presentations is extremely limited, so we have also drawn on our years of clinical practice to describe these conditions. To assist diagnostic decision making, we have developed a key to indicate how frequently clinicians can expect to come across certain subjective and objective markers for a given condition. We have used the format below and hope this assists in the clinical reasoning process.

Patterns of positive findings:

✓✓✓	Nearly always
✓✓	Often
✓	Sometimes

In Section 3, we present the underlying principles of injury rehabilitation with a series of case studies to demonstrate how these can be put into practice. These case studies are not to be used as “recipe-style” rehabilitation programmes, but rather to illustrate the goal-driven principles that we advocate and help the clinician translate their patient-specific goals into a suitable rehabilitation programme. Every individual athlete will present and respond to treatment slightly differently and any rehabilitation programme needs to be adjusted accordingly.

We have also introduced several other features in an attempt to make this book as clinically useful as possible:



**Clinical tips:** The light bulb indicates any top clinical tips that we think would be helpful or that are important to consider in management.



**Evidence:** We live in a world of evidence-based medicine and we have used the tick symbol to indicate where there is good evidence available in the literature to support the intervention described. It is important for clinicians to recognize where good evidence does exist for our management strategies. But it is equally important to remember that little or no evidence to support an intervention does not mean that we should not use the treatment. It may simply mean that the research required is currently too complex or too invasive to undertake. Utilizing good validated outcome measures with our patients and noting the effects of our interventions on these measures is an effective way of performing clinical research every day.



**Further reading:** There are no lists of references at the end of each section as this book is focused primarily on clinical practice and the reader can refer to other “textbooks” for more detailed information and references on a topic. However, we have highlighted some specific research papers that readers can refer to for more information.

We have worked in the fields of sports and musculoskeletal medicine for long enough to recognize that clinicians of all levels of experience are often working as sole practitioners. This can be in very isolated club or competition environments with limited support or opportunity to discuss clinical problems. Our aim with this pocketbook is to provide support, to help answer clinical queries and solve clinical problems when there may be no-one else to refer to.

Working in sport often throws up situations that weren't covered in university or college lectures or in the in-service training at the hospital. We have therefore tried to put down on paper information that, over time, we have found valuable. Some of this has been learnt first hand, some has come as advice from athletes, coaches and managers, and much of it has been passed on by other, more experienced, clinicians with whom we have worked. We hope you find it valuable, whether as new information to a new practitioner or as an aide memoire to those of you who have been practising for several years.

Zoe Hudson & Claire Small  
London, April 2011

# CONTENTS

Foreword . . . . . vi

Acknowledgements . . . . . vii

Introduction . . . . . ix

**Section 1. Working in sport . . . . . 1**

---

**Section 2. Assessment and diagnosis  
of the injured athlete . . . . . 39**

---

**Section 3. Treatment  
and rehabilitation . . . . . 147**

---

**Section 4. Returning to play . . . . . 239**

---

**Section 5. Comprehensive player  
management . . . . . 257**

---

**Glossary . . . . . 275**

---

**Index . . . . . 279**

---

# Working in sport

SECTION

1

<b>Introduction</b>	2
<b>Know your role</b>	2
<b>Know your sport</b>	3
<b>Know your team</b>	5
<b>Know your location</b>	9
<b>Know your kit bag</b>	10
<b>Know your strapping</b>	14
<b>Know your first aid</b>	26
<b>Know what to document</b>	35
<b>Know when to refer on</b>	37
<b>Know when to arrange further investigations</b>	38

### Introduction

Working with a team or individual athletes can be one of the most rewarding aspects of a clinician's career, but also one of the most demanding. Competition environments are often extremely stressful and it is not unusual for the pitchside clinician to find themselves in unfamiliar territory dealing with an unaccustomed injury or situation. This section is designed to familiarize the clinician with fundamental elements and skills associated with working in a sporting environment, and to highlight key areas for development.

### Know your role

It is essential that all pitchside clinicians safeguard themselves by working only within the scope of practice in which they feel competent. In the world of modern medicine, scope of practice is rarely rigidly defined for any profession, be they a doctor, physiotherapist, sports therapist or osteopath. Professional bodies and the legal system have recognized the importance of avoiding restrictive boundaries for practice, as to do so may limit the professional development of the individual.

While this is advantageous in many team scenarios where one clinician is often expected to wear the hats of many professions, it also places the onus for clinical decision-making and action squarely on the clinician's shoulders. Before undertaking any clinical decision or activity, the clinician must always ask themselves, "Do I feel competent to do this?"



The question of competency is more than simply, "Have I done a course or workshop which qualifies me to do this?". It is also about undertaking these practices on a regular basis and under similar circumstances, and reflecting on and reviewing your clinical practice with peers and as an individual. Clinicians should refer to their professional bodies ([www.csp.org.uk](http://www.csp.org.uk), [www.osteopathy.org.uk](http://www.osteopathy.org.uk), [www.basrat.org](http://www.basrat.org), [www.bma.org.uk](http://www.bma.org.uk)) for information and guidance on scope of practice specific to their profession.

It is important to recognize that you are responsible for the team you are working with. In the event of an injury, it is your decisions which are important. Do not let yourself be influenced by the comments or opinions of spectators or players, no matter what their qualifications are.

Sometimes, student physiotherapists are approached to act as team physiotherapists for amateur clubs and organizations that struggle to find or fund a qualified physiotherapist. It is essential for student physiotherapists to be aware that under the terms of the Chartered Society of Physiotherapy (CSP)'s Professional Liability Insurance (PLI) they are only insured to practise both within their own level of competence and **under the supervision of a qualified physiotherapist**.

Likewise, qualified physiotherapists sometimes find themselves working alongside students to cover events and tournaments. If they are not happy to take on the responsibility of supervising students in this situation, this needs to be made clear to the organizers and alternative arrangements should be discussed. Having responsibility for students does not mean taking responsibility for any mistakes, but it does mean understanding the students' level of competency and ensuring they are expected to practise only within these limits, as would be the case in a clinical setting.

In addition, the opposition team should never be relied on to provide medical support, as the level of cover may very well be insufficient or inadequate.

In recent years, sport has become an increasingly litigious arena. Clinicians need to be mindful that actions which contravene the rules and codes of the sport they are covering may actually also have legal ramifications and/or place their professional registration in jeopardy.

---

## Know your sport

Confidence in dealing with any situation improves with familiarity. If you are unfamiliar with a sport you are covering it is worth reading up on or discussing with a



knowledgeable individual the nature and nuances of the game, the various positions played and the specific demands of these. It is also worthwhile discussing the physical demands and likely injuries with a colleague who has worked in the sport.

If you are working with a sport that is conducted in unusual settings, such as ice skating, skiing, swimming or sailing, special consideration for dealing with injuries, retrievals and evacuations is necessary to ensure you are prepared for these possibilities.

For physiotherapists serious about developing a role within professional sport some national bodies have a structured accreditation process. For example, in the UK the Association of Chartered Physiotherapists in Sports Medicine (ACPSM; [www.acpsm.org](http://www.acpsm.org)) has a process in place that incorporates mentorship. Elements of the continuing professional development process include shadowing and observation.

It is not always necessary for your mentor to be involved in the same sport that you are working in; however, as some scenarios and the rules governing them are very sport specific it is worthwhile spending some time with more experienced people working in the same sport.

Scenarios and rules that are specific to certain sports include:

- Dealing with a blood injury – does the player need to leave the field? Can they return to the field of play?
- Treating an injury on/off field – can a player leave the field/court for treatment and return?
- Are substitutions permitted for injuries?
- Is the trainer permitted into the field of play to assess an injury and for how long? For example, in tennis, the trainer must be escorted onto the court by an official. They are permitted as long as necessary for assessment of the injured player but only 3 minutes for treatment once a diagnosis has been made.
- Similarly, Judo has several rules governing medical disqualifications and the presence of medical staff on the mat.