

Sports Rehabilitation and Injury Prevention

Edited by

Paul Comfort

School of Health, Sport & Rehabilitation Sciences, University of Salford, Salford, UK

Earle Abrahamson

London Sport Institute at Middlesex University, UK

 **WILEY-BLACKWELL**

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Preface

The concept for this book is based on the expanding field of sports rehabilitation and injury prevention. Evidence of this expansion includes an increasing amount of research and publications related to sports rehabilitation and allied fields of practice such as sports therapy, athletic training and sports physiotherapy.

Despite the number and volume of publications in sports rehabilitation, there appears to be limited resources that accurately and effectively account for evidence-based practices. Whilst some resources expand evidence-based practice knowledge, there is a need to develop a complete resource that fully explains and articulates these important principles. This current text has used an evidence-based practice approach to fully acknowledge the many diverse areas, applications and management strategies that are often unique to sports rehabilitation, but distinctly different from similar fields of practice and study.

Few sports rehabilitation programmes currently provide students with the breadth of information and practical application required for professional practice. This text has attempted to bridge the knowledge and practice gap, by considering the functional development of the sports rehabilitator's knowledge and practice requirements for professional competency. The text provides an up-to-date look at different evidence-based practice protocols and initial assessment strategies for the screening of injury and pathological conditions.

The first few chapters introduce the scope of practice for sports rehabilitation, and then describe, explain and evaluate the initial assessment and screening procedures necessary for decision making and clinical practice. These chapters further provide analysis on musculoskeletal function and dysfunction in relation to systemic organisation. The next

set of chapters combine a useful integration of applied areas and practices of study relevant to sports rehabilitation practice. These include, amongst others, nutritional analysis, psychological considerations in injury management and prevention, clinical reasoning development, and strength and conditioning principles. The book concludes with a range of chapters devoted to different injury conditions and body regions. These chapters detail the more common injuries and pathologies and argue for best management strategies based on research and applied evidence.

Each chapter also contains several practical application boxes that provide additional information summarising unique chapter-specific information. The majority of chapters contain applied examples and case studies to illustrate the processes and decisions necessary for clinical action and management. Each case study has been carefully developed to facilitate group discussion in the classroom, or for the clinician to consider as part of continued professional development.

In addition to serving as an upper level undergraduate or graduate textbook for students or clinicians in practice, the book is an excellent resource guide, filled with useful information and evidence-based practice considerations and applications. You will want to have this textbook on your desk or bookshelf. The features of consistent organisation, case studies, discussion questions, up-to-date references, research evidence and practical application boxes are designed to provide information required for effective study as well as directing clinical practice.

The design of this text can be compared to building a house, in that each component of both the text and house building can be modelled on individual building blocks. In the case of the house building

these units are represented by the bricks, whereas in the text, the individual chapters are synonymous with these units. Before one commences the building process, there is a carefully constructed visual or diagrammatic plan to navigate the process; so too does this planning apply to the design and shaping of this text. In the building process, consideration is given to the foundation, in terms of its shape, depth, form, and length. This text has a number of foundation chapters that secure the content for future development of the other chapters. The main foundation knowledge is the understanding of anatomical application, and using this knowledge to guide assessment. This anatomical foundation knowledge informs the decisions necessary for clinical action in terms of injury management. Whilst bricks are important in terms of informing the structure of a building, it is the cement that ensures that each brick is secured and articulates with other bricks and structures. In this text, the cement is represented by underpinning themes, such as clinical reasoning skills and abilities, that traverse the chapters and ensures that each chapter although perceptively different, is able to articulate with other chapters and develop this consortium of knowledge.

After completion, houses take on a new shape and design, one which may have transformed the original landscape; however there is always room for

change, improvement or refinement. This text, in its final form, has orchestrated the journey of clinical practice from consideration of the scope of practice, through to the essential skills necessary for decision making, and concluding with a consideration of how to manage a range of injuries and pathologies. The text is coated with an evidence-based approach to using and applying knowledge. The true advantage of developing the text within an evidence-based context is that it allows the reader to consider the existing knowledge and evidence; challenge the research; and move towards asking different types of questions to consider new ways of dealing with client management issues. As new research becomes available, clinical practice will be questioned. The contents of this text will evolve and change to accommodate and explore new ideas and advances in clinical research. This book provides the architecture necessary to consider the real issues current to clinical practices. It is important to use it as a map for navigating the concepts, principles, challenges and decisions of clinical practice.

We hope that this book is a valuable resource both for teaching and as a reference for sports rehabilitators and clinicians.

Paul Comfort
Earle Abrahamson

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Thank you to all of the authors involved with the development of this text, including those who provided advice and feedback on each of the many drafts. Without the expertise, dedication and effort of each of these individuals, this text would not have been possible.

Thank you to my family, especially my children, for putting up with my 'absences' and long hours staring at the laptop, during the development of this book. Your support and understanding has been more than I should have asked for.

Paul Comfort

A special thanks to the many contributors who worked so diligently, often under difficult and pressurised circumstances, to write this text and to those who provided expert reviews. Also to my many

students who taught me so much about how to articulate concepts, theories and applications in a learner friendly manner, which helped shape the landscape of this book.

To my wonderful wife, Emma, and my adorable son, Benjamin, thanks for putting up with me and providing much love, support and understanding.

To my father, Charles, and my brother, Michael, thanks for always believing in me and encouraging me to succeed and achieve in life.

Last but not least, I would like to dedicate my contribution to this book, to the memory of my late mother, Josephine, whose support, inspiration, kindness and generosity, will forever be cherished and respected. Thank you for believing in me and supporting my academic and professional development.

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Earle Abrahamson (B Phys Ed, BA Hons, MA, BPS, BASRaT, FRSM, BRCP, AHPCSA, HPCSA, PsySSA) is a principal lecturer, teaching fellow and programme leader for the Sports Rehabilitation and Injury Prevention programme at Middlesex University. Through his programme leadership and teaching fellowship duties, Earle has developed an inter-

est in student learning and thinking. Earle spent the majority of his life in South Africa, studying and working, and moved to the UK in 2002. He is a South African-registered therapist and psychologist and has membership and professional registration with a number of UK authorities. Earle has worked extensively as a sports rehabilitator with national and international teams, including the world strongest man event. Earle sits on the executive committee of the British Association of Sports Rehabilitators and Trainers (BASRaT), as their student liaison officer. In this role he deals with and promotes the BASRaT student experience. Earle is the Middlesex University representative for the higher education academy's hospitality, leisure, sport and tourism sector. He is currently working on a professional doctorate investigating different learning approaches in the development of clinical reasoning skills on undergraduate sports rehabilitation programmes.

Earle is married to Emma and has a son, Benjamin. In his spare time he enjoys sport and is an active cricketer and tennis player. He further enjoys reading and music.

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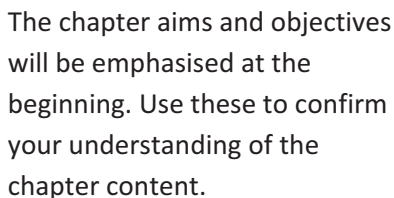
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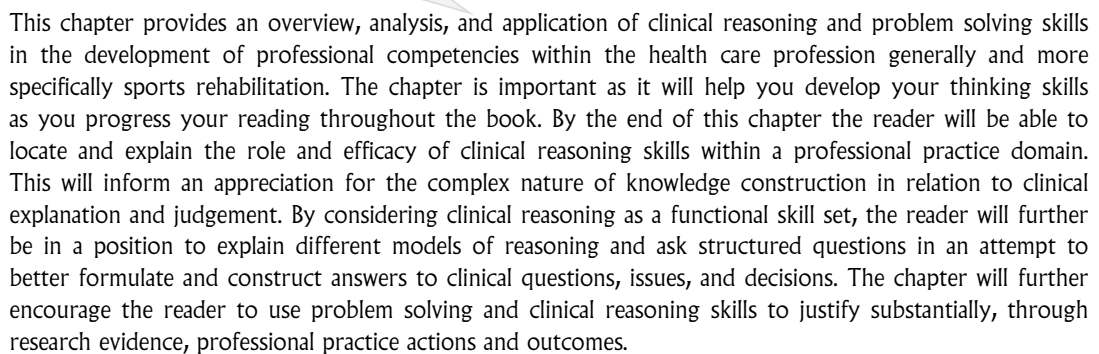
How to use this book

The text has been designed to allow the reader to consider and understand important themes, principles and applications that inform clinical practice. Each chapter begins with an introductory paragraph (see below) that identifies and outlines the aims and outcomes for that chapter.

uses a schema diagram to illustrate how the sports rehabilitator works with other sport medicine practitioners to manage injury. When reading this initial chapter, consider how your scope of practice and professional identity is formed. Use the chapter to help you reinforce your code of practice and reflect



The chapter aims and objectives will be emphasised at the beginning. Use these to confirm your understanding of the chapter content.



This chapter provides an overview, analysis, and application of clinical reasoning and problem solving skills in the development of professional competencies within the health care profession generally and more specifically sports rehabilitation. The chapter is important as it will help you develop your thinking skills as you progress your reading throughout the book. By the end of this chapter the reader will be able to locate and explain the role and efficacy of clinical reasoning skills within a professional practice domain. This will inform an appreciation for the complex nature of knowledge construction in relation to clinical explanation and judgement. By considering clinical reasoning as a functional skill set, the reader will further be in a position to explain different models of reasoning and ask structured questions in an attempt to better formulate and construct answers to clinical questions, issues, and decisions. The chapter will further encourage the reader to use problem solving and clinical reasoning skills to justify substantially, through research evidence, professional practice actions and outcomes.

The first chapter provides an overview of the scope of practice for the sports rehabilitator and/or allied health care professional. Within this chapter careful consideration has been given to the position of the sports rehabilitator within a sport and exercise medicine team. The chapter further deals with issues around medical, ethical and legal concerns, and

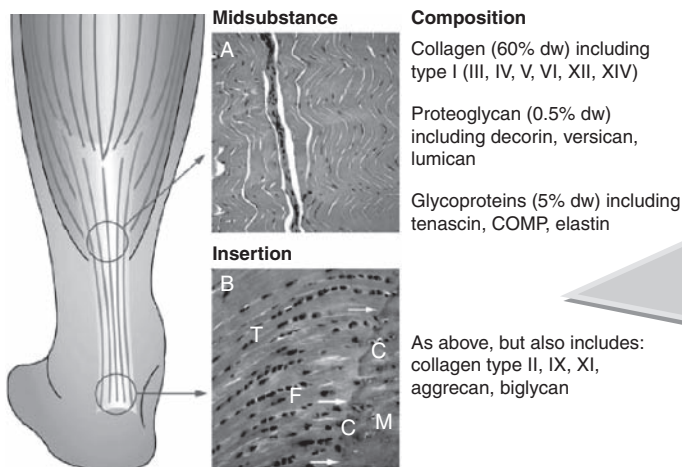
on the medical ethical and legal requirements for your profession.

The following chapters deal with issues around injury screening and performance assessment. These chapters introduce and debate issues concerning assessment and screening, and present research evidence to validate claims. It is useful when reading

these chapters to consider how screening and assessment work to accommodate a range of athletes from different sports. Clinicians who simply follow a set programme or protocol for assessment may find it difficult to defend clinical actions and decisions should the athlete not improve following the intervention delivered. It is important to be able to relate the content of the chapter and decide on how best to screen or assess an athlete based on evidence from research studies.

Chapters 4–8 introduce and evaluate the pathophysiology of musculoskeletal components. These chapters are crucial when considering injury management as well as prevention strategies. Each of these chapters makes use of diagrammatic representations of the key musculoskeletal components (see below) and highlights the healing and repair stages of musculoskeletal injuries.

precipitate the sport sciences and how an understanding of principles of strength and conditioning, psychology, nutrition, performance assessment and clinical reasoning could be used to highlight areas of concern and move the practitioner to a more complete evaluation and treatment of the athlete. The design of these chapters, have been carefully considered to ensure that you, as reader and clinician, can use important conceptual applications in the management of the client. The themes explored within these chapters are not unique to the chapter per se, but rather form an important thread throughout the text. Exploring the themes within these chapters will hopefully allow the reader to conceptualise sports rehabilitation and injury prevention as a functional ongoing and working operation that requires thought and research evidence to fully appreciate the merit of treatment and rehabilitation.



The pathophysiological chapters make use of diagrams and illustrations to highlight key anatomical landmarks and pathological concerns that could impact healing and prolong recovery.

Reference to later chapters and consideration of specific treatment strategies supported by research is evident. When reading these pathophysiological chapters it is useful to consider the primary anatomy of the structure and its normal functional state. Consider how this functional state changes or compensates movement as a result of trauma or pathology. Use this knowledge as a precursor to injury management and a way to shape clinical decisions and actions.

The next seven chapters encompass important themes necessary for effective clinical decisions and management options. Use these chapters to help ap-

The final section of the text is dedicated to joint-specific injuries and pathologies. These chapters introduce the injuries and specific assessment techniques by considering evidence-based practice protocols. These chapters tie together the important consideration for injury prevention and management. The chapters culminate in applied case studies (see below) that are used to illustrate the thought process and clinical decision mapping necessary for effective injury management. It is important to consider how decisions are reached and what processes need to be examined as opposed to simply reaching a decision.

Case Study 20.2

A 24 year old male sprinter with left sided groin discomfort since a plyometric session three months before this initial consultation had resulted in discomfort after every training session.

- Lower abdominal and medial anterior groin pain following activity that is becoming progressively longer to improve with rest.
- Becomes very low grade and almost unnoticeable with rest.
- There is irritable pain when coughing and sneezing.
- Feels 'sore' in the groin when sitting upright for a while.
- Pain in the deep inner groin when squeezing the legs together, particularly in bed.

Pain was described as exercise related and variable between 1 and 7 on the IO point scale.

There were minimal impingement signs with hip flexion-adduction.

On inverting the scrotum and placing the little finger in both superficial inguinal rings, the left side appeared more tender and dilated than the right, with a cough impulse.

The left adductor was relatively weaker than the right and painful in resisted adduction lying with straight legs, but not with legs bent in flexion.

There was no discomfort on stretch.

Stork views of the pelvis, standing on one leg and then the other excluded pelvic instability, pubic symphysis and hip pathology.

Each injury-specific chapter makes use of an applied case study to frame the clinical issues and consider appropriate and evidence-based treatment and rehabilitation programmes. Use these studies to check your own understanding and decide on whether you agree with the clinical management and/or decisions discussed within the study.

The patient was referred to a surgeon for opinion.

During surgery the following groin disruption was identified in the operative report:

- torn external oblique aponeurosis
- the conjoined tendon was torn from pubic tubercle
- dehiscence between conjoined tendon and inguinal ligament

Each element of this groin disruption was repaired surgically.

Treatment and rehabilitation

Normal protocol for the first day post operation included stand and walking with gentle stretching and stability exercises.

Five days post operative ultrasound ascertained core stability to be poor and Transversus Abdominis activation (Cowan 2004) was achieved with practice, using patient visualisation of the ultrasound real-time image for re-education.

Adductor exercises (Figures 20.4–5) were encouraged one week post op, several times per day.

Closed chain exercises for stability (e.g., Figures 20.6–9) combined with slow controlled squats progressing to single leg squats, were developed two weeks post op with hydrotherapy for flexibility and stability.

Swimming, cycling and cross-trainer elliptical exercise developed in the third week.

After four weeks he started straight line running build ups alternate days.

Conclusion

This athlete returned to relatively full training after two months and competed internationally six months after the surgery.

Discussion

- At what time should an athlete with groin discomfort be referred to a surgeon to consider operative intervention.
- Should a longer period of conservative treatment and rehabilitation take place before referral for surgery.
- Should the patient have been referred for other investigations, e.g. ultrasound scan or MRI.
- What other areas of the body may contribute towards this athletes injury.

In summary, the contents of this book, are designed to evoke clinical decisions based on research evidence. The chapters are sequenced to allow the reader to develop an appreciation for understanding and analysing clinical practice and actions. Individu-

ally the chapters provide a framework for conceptualising different scientific applications and practices, but collectively they form a compendium of clinical knowledge, cemented by clinical practice and framed within an evidence-based context.

Part 1

Introduction to sports rehabilitation

1

Introduction to sport injury management

Jeffrey A. Russell

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Introduction and aims

The popularity of physical activity in all of its forms continues to steadily increase. More than just the domain of elite or professional athletes, the populace enjoys a variety of recreational pursuits from hiking and running to skiing and surfing, from badminton and tennis to cricket and hockey. In such endeavours many participants find that injury is inevitable. Unfortunate circumstances are not confined to those engaging in rugby or “X games”, daredevil sports like Parkour, kitesurfing or acrobatic bicycle jumping, although clearly these carry a high cost in physical trauma (Young 2002; Spanjersberg and Schipper 2007; Miller and Demoigny 2008). Young footballers and senior golfers alike are prone to injury, as are Olympic performers and “weekend warriors” because injury does not discriminate (Delaney et al. 2009; Falvey et al. 2009). Likewise, non-traditional athletes such as dancers (Fitt 1996; Stretanski 2002; Koutedakis and Jamurtas 2004) will not escape injury (Bowling 1989; Garrick and Lewis 2001; Bronner, Ojofeitimi and Spriggs 2003; Laws 2005).

Whether they are pursuing gold medals or leisure, those who participate in physical activity require both proper preventive training and proper health-care; they will benefit greatly from experts who can deliver these. Sport rehabilitators and other allied

health professionals have much to offer physically active people. This chapter aims to:

- define the role of the sport rehabilitator as a member of the sport injury care team;
- promote individual and organisational professionalism within the field of sport rehabilitation;
- provide a framework for ethical conduct of sport rehabilitators and related professionals;
- describe legal parameters that must be considered by those in sport rehabilitation and related fields.

The role of the sport rehabilitator

Preparing an individual to successfully participate in sport requires, by its very nature, expertise from multiple specialities. Managing the injuries that occur to sport participants also requires input from many specialists. Thus, at any given point the athlete may be surrounded by a team of professionals, including the coach, club manager, conditioning specialist, biomechanist, physiotherapist, nutritionist, exercise physiologist, chiropodist, chiropractor,

Table 1.1 The variety of sport medicine team members who work with athletes (see also Figure 1.1)

Medicals and surgeons	Para-medicals	Sport scientists	Sport educators
GP	Sport rehabilitator	Biomechanist	Coach
Chiropodist	Physiotherapist	Exercise physiologist	Conditioning specialist
Sport dentist	Osteopath	Sport psychologist	Physical educator
<u>Consultants:</u>	Chiropractor	Nutritionist	Club manager
Orthopaedic surgeon	Massage therapist	Kinesiologist	
General surgeon	Sport optometrist		
Neurosurgeon	Acupuncturist		
Cardiologist	First responder		
Radiologist	Alternative therapy practitioner		
Physiatrist			
Neurologist			

osteopath, sport optometrist, sport psychologist, sport dentist, GP, consultant and, indeed, sport rehabilitator (Table 1.1 and Figure 1.1). Depending on the sport, an athlete’s level in the sport and the venue, all of the listed professionals may not be involved in care. Further, some professionals may be qualified to administer more than one care speciality. However, regardless of the situation the management of sport injury is a team activity, and the sport rehabilitator plays a key role.

The British Association of Sport Rehabilitators and Trainers (BASRaT) administer the credential “Graduate Sport Rehabilitator,” which is abbreviated

to “GSR.” According to this professional society, “a Graduate Sport Rehabilitator is a graduate level autonomous healthcare practitioner specialising in musculoskeletal management, exercise based rehabilitation and fitness” (British Association of Sport Rehabilitators and Trainers 2009b). Further, BASRaT outline the skill domains of a Graduate Sport Rehabilitator as being:

- professional responsibility and development
- prevention
- recognition and evaluation of the individual
- management of the individual–therapeutic intervention, rehabilitation and performance enhancement
- immediate care

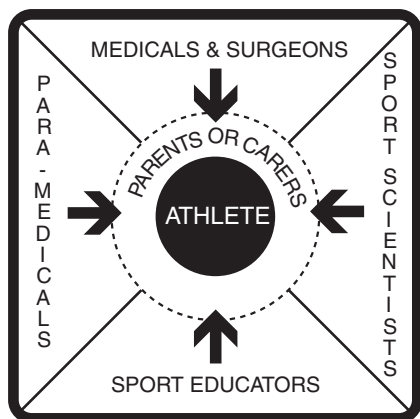


Figure 1.1 Diagram showing the breadth of sport injury management. Note that in the situation of an athlete who is a minor child, the parents or carers become part of the management scenario.

Whilst prevention of injury is certainly desirable, the reality that athletes will be injured is part of sport participation. Thus, the sport rehabilitator must always be prepared to administer the care for which they are trained. The ideal place to begin providing this care is pitchside or courtside where the circumstances surrounding the injury have been observed and evaluation of the injury can be performed prior to the onset of complicating factors such as muscle spasm. Any sport rehabilitator who expects to offer this type of care must possess the proper qualification and additional credentials to support it. Minimum

Table 1.2 Components of the British Association of Sport Rehabilitators and Trainers (2009b) skill domains

Skill Domain	Components
Professional responsibility and development	Record keeping Professional practice – conduct and ethical issues Professional practice – performance issues
Prevention	Risk assessment and management Pre-participation screening Prophylactic interventions Health and safety Risks associated with environmental factors
Recognition and evaluation of the individual	Subjective evaluation Neuromusculoskeletal evaluation Physiological and biomechanical evaluation Nutritional, pharmacological, and psychosocial factors Health and lifestyle evaluation Clinical decision making Dissemination of assessment findings
Management of the individual – therapeutic intervention, rehabilitation and performance enhancement	Therapeutic intervention Exercise based rehabilitation Performance enhancement Factors affecting recovery and performance Monitoring Health promotion and lifestyle management
Immediate care	Emergency first aid Evaluation Initiation of care

abilities include cardiopulmonary resuscitation, first aid, blood-borne pathogen safeguards, strapping and bracing, and practical experience (in a proper clinical education programme) with the variety of traumatic injuries that accompany sport participation. Furthermore, working with certain sports – such as cricket, ice hockey and North American football – requires specialised understanding of protective equipment that includes how to administer care in emergency situations when the injured athlete is encumbered by such equipment.

BASRaT's (2009b) *Role Delineation of the Sport Rehabilitator* document details the implementation of the skill domains listed above into a scope of practice. Table 1.2 outlines the components of each domain; these are further subdivided into knowledge components and skill components to create a framework both for the education of sport rehabilitators and the extent of their capabilities to serve as health-care professionals.

A brief introduction to a similar type of sport healthcare provider in the United States of America is useful here as a comparison. Certified Athletic Trainers (denoted by the qualification "ATC") are "health care professionals who collaborate with physicians to optimize activity and participation of patients and clients. Athletic training encompasses the prevention, diagnosis, and intervention of emergency, acute, and chronic medical conditions involving impairment, functional limitations, and disabilities" (National Athletic Trainers' Association 2009b). The National Athletic Trainers' Association, the professional body of Certified Athletic Trainers, has existed since 1950. Standards of practice are set and a certification examination is administered by the Board of Certification (2009) to ensure that the profession is properly regulated. Most individual states in the USA also require possession of a licence in order to practice as an athletic trainer. Comparable to the role

delineation skill domains for sport rehabilitators listed above, the requisite skills of Certified Athletic Trainers are categorised into 13 content areas (National Athletic Trainers' Association 2009a):

1. foundational behaviours of professional practice
2. risk management and injury prevention
3. pathology of injuries and illnesses
4. orthopaedic clinical examination and diagnosis
5. medical conditions and disabilities
6. acute care of injuries and illnesses
7. therapeutic modalities
8. conditioning and rehabilitative exercise
9. pharmacology
10. psychosocial intervention and referral
11. nutritional aspects of injuries and illnesses
12. health care administration
13. professional development and responsibility

These content areas define how Certified Athletic Trainers are educated and how they retain the ATC credential via continuing professional development hours (called continuing education in the USA, with the participation increments called CEUs, or continuing education units). As with Graduate Sport Rehabilitators, accountability to such standards is imperative for sustaining the integrity of the profession.

Continuing professional development

There is no place pitchside for healthcare practitioners who cannot perform the required duties that arise under the pressure of managing injury during sporting competition. Therefore, a fundamental responsibility of the sport rehabilitator – or any other healthcare practitioner – is to secure a high standard in their education. Certainly this encompasses the undergraduate and postgraduate courses and the

motivation to embrace diligence and excellence in all required modules, work placements, internships and the like. The knowledge required and tasks allowed for specific professional qualifications are usually dictated by professional organisations. As mentioned above, BASRaT hold sport rehabilitators to a high standard of education. Once a qualification is attained, however, another educational process ensues: professionals must engage in continuing professional development (CPD). The importance of this cannot be overstated. CPD helps the sport rehabilitator not only maintain their skills, but acquire new ones that broaden one's ability to offer high quality healthcare to athletes, clients and patients. Moreover, knowledge in sport science and sport medicine is constantly evolving as further basic and applied research is undertaken. Adequate CPD helps the sport rehabilitator stay abreast of these developments.

CPD courses afford exciting opportunities for personal enrichment. Many topics are germane to the field and a veritable subculture exists to provide adequate chances for professionals to enlist in training courses that match every ability, need and desire. Most professional societies, including BASRaT, advise their members about suitable courses and the required quantity of CPD hours. Advanced life support, manual therapy, pitchside emergency care, strength training, exercise testing, specialised joint examinations, rehabilitative exercise and management of non-orthopaedic injuries and conditions are only a few topics representative of the wide gamut of offerings.

A qualification in basic cardiopulmonary resuscitation for healthcare providers (i.e. BLS/AED – Basic Life Support/Automated External Defibrillation) is considered a minimal credential that should be kept up to date by periodic skills retraining. The Resuscitation Council (UK) and the European Resuscitation Council publish the appropriate standards for BLS and AED training (European Resuscitation Council 2009; Resuscitation Council (UK) 2009); the latter also maintains a calendar of many life support courses offered around Europe, including the United Kingdom.

Knowledge, ability and wisdom

It is important for professional healthcare providers to distinguish amongst knowledge, ability and wisdom. These are distinct, yet interrelated,

characteristics that all sport rehabilitators must strive for as they provide care to the public. Knowledge is the learning and understanding of facts that form the basis for practice. It provides the information on which a successful career is built. Ability is the application of knowledge. Thus, knowledge really is not useful until a person accomplishes a task by applying it.

Wisdom, though, is like the glue that holds a professional career together. It is the most difficult – but also the most significant – of the three to garner because it is gained over time as one matures and is exposed to an ever-widening variety of experiences. Wisdom considers both the available knowledge and ability, mixing them in the right proportion to elicit the best result within a given set of present circumstances. Whilst this may seem somewhat esoteric, the three characteristics are fundamental to success and all healthcare professionals draw on each of them everyday.

Ethical considerations

Ethics refers to a set of concepts, principles and laws that inform people's moral obligation to behave with decency. Part of this is the necessity to protect people who are in a relatively vulnerable position, such as a patient or client in a healthcare setting. Similar to other professionals, each sport rehabilitator must consider themselves a healthcare practitioner and, therefore, under an ethical obligation for inscrutable professional conduct. Sport medicine presents challenging parameters within which to apply an ethical framework (Dunn *et al.* 2007; Salkeld 2008), due largely to the high public visibility of sport itself. This is perhaps an even more significant reason for the sport rehabilitator to ardently ensure that their practice falls under appropriate accountability.

Unfortunately ethical dilemmas do not always lend themselves to clear, objective dispensation; thus, governing bodies codify guiding principles for conduct. The Code of Ethics of the British Association of Sport Rehabilitators and Trainers, shown in Table 1.3, is an example of guidelines that promote proper behaviour.

In healthcare the field of ethics sets appropriate and acceptable standards to protect the public from damages incurred at the hands of unscrupulous or incompetent practitioners and the deleterious effects of unwarranted or dangerous diagnostic or therapeutic

interventions. Respect for the dignity of humans is placed foremost and healthcare practice must accommodate to this high standard. There are a number of circumstances that occur in sport that can strain the typical application of ethics; areas where difficulties arise include:

- decisions about return to sport activity with a persisting injury
- pharmaceutical therapies to assist participation
- participation of children, especially in high-risk sport
- sharing of confidential athlete medical information amongst practitioners, or between practitioners and public representatives, such as the press
- ergogenic aids, such as anabolic steroids and blood “doping.”

Of these, treating an athlete's medical information with confidentiality is likely to be the most difficult and frequently compromised, particularly in the pitchside environment (Salkeld 2008). Salkeld suggests that several competing challenges and pressures collide pitchside to create ethical dilemmas: the close proximity of an injured player to other players and coaches when being examined, the public visibility of an injury, the interests of the sporting club and the desire of the coaching staff to receive information about the injury coupled with the concomitant desire of the player to shield this information from the coaches. Additional areas of contemporary ethical challenges for practitioners caring for athletes include informed consent for care, drug prescription and use of innovative or emerging technologies (Dunn *et al.* 2007).

The most appropriate way for the sport rehabilitator to manage potentially difficult ethical predicaments is to practise diligently under an approved ethical code, such as that of the British Association for Sport Rehabilitators and Trainers, and to decide how individual ethical quandaries will be handled *prior* to being confronted by them. The consequences of infractions are severe and have resulted in revoked professional licences, registrations and certifications, and have ended careers in particularly egregious cases.

Table 1.3 The Code of Ethics of the British Association of Sport Rehabilitators and Trainers (2009a)

PRINCIPLE 1: Members shall accept responsibility for their scope of practice

- 1.1 Members shall not misrepresent in any manner, either directly or indirectly, their skills, training, professional credentials, identity or services
- 1.2 Members shall provide only those services of assessment, analysis and management for which they are qualified and by pertinent legal regulatory process
- 1.3 Members have a professional responsibility to maintain and manage accurate medical records
- 1.4 Members should communicate effectively with other healthcare professionals and relevant outside agencies in order to provide an effective and efficient service to the client

Supporting Legislation: Data Protection Act 1998; Human Rights Act 1998

PRINCIPLE 2: Members shall comply with the laws and regulations governing the practice of musculoskeletal management in sport and related occupational settings

- 2.1 Members shall comply with all relevant legislation
- 2.2 Members shall be familiar with and adhere to all British Association of Sport Rehabilitators and Trainers' Guidelines and Code of Ethics
- 2.3 Members are required to report illegal or unethical practice detrimental to musculoskeletal management in sport and related occupational settings

PRINCIPLE 3: Members shall respect the rights, welfare and dignity of all individuals

- 3.1 Members shall neither practice nor condone discrimination on the basis of race, creed, national origin, sex, age, handicap, disease entity, social status, financial status or religious affiliation. Members shall comply at all times with relevant anti-discriminatory legislation
- 3.2 Members shall be committed to providing competent care consistent with both the requirements and limitations of their profession
- 3.3 Members shall preserve the confidentiality of privileged information and shall not release such information to a third party not involved in the client's care unless the person consents to such release or release is permitted or required by law

PRINCIPLE 4: Members shall maintain and promote high standards in the provision of services

- 4.1 Members shall recognise the need for continuing education and participation in various types of educational activities that enhance their skills and knowledge
- 4.2 Members shall educate those whom they supervise in the practice of musculoskeletal management in sport and related occupational settings with regard to the code of ethics and encourage their adherence to it
- 4.3 Whenever possible, members are encouraged to participate and support others in the conduct and communication of research and educational activities, that may contribute to improved client care, client or student education and the growth of evidence-based practice in musculoskeletal management in sport and related occupational settings
- 4.4 When members are researchers or educators, they are responsible for maintaining and promoting ethical conduct in research and education

PRINCIPLE 5: Members shall not engage in any form of conduct that constitutes a conflict of interest or that adversely reflects on the profession

- 5.1 The private conduct of the member is a personal matter to the same degree as is any other person's, except when such conduct compromises the fulfillment of professional responsibilities
 - 5.2 Members shall not place financial gain above the welfare of the client being treated and shall not participate in any arrangement that exploits the client
 - 5.3 Members may seek remuneration for their services that is commensurate with their services and in compliance with applicable law
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