
Football Traumatology

Piero Volpi
Editor

Football Traumatology

New Trends

Second Edition

 Springer

Editor

Piero Volpi
Knee Orthopedics and
Sport Traumatology Unit
Humanitas Clinical Institute IRCCS
Milan
Italy

Head of Medical Staff FC
Internazionale Milan
Milan
Italy

ISBN 978-3-319-18244-5 ISBN 978-3-319-18245-2 (eBook)
DOI 10.1007/978-3-319-18245-2

Library of Congress Control Number: 2015944540

Springer Cham Heidelberg New York Dordrecht London
© Springer International Publishing Switzerland 2015

This work is subject to copyright. All rights are reserved by the Publisher, whether the whole or part of the material is concerned, specifically the rights of translation, reprinting, reuse of illustrations, recitation, broadcasting, reproduction on microfilms or in any other physical way, and transmission or information storage and retrieval, electronic adaptation, computer software, or by similar or dissimilar methodology now known or hereafter developed.

The use of general descriptive names, registered names, trademarks, service marks, etc. in this publication does not imply, even in the absence of a specific statement, that such names are exempt from the relevant protective laws and regulations and therefore free for general use.

The publisher, the authors and the editors are safe to assume that the advice and information in this book are believed to be true and accurate at the date of publication. Neither the publisher nor the authors or the editors give a warranty, express or implied, with respect to the material contained herein or for any errors or omissions that may have been made.

Printed on acid-free paper

Springer International Publishing AG Switzerland is part of Springer Science+Business Media
(www.springer.com)

Foreword I

Football is not only a fantastic and unique sport with benefits in terms of cultural diversity, social and ethnic mix, and education; it also has numerous positive effects on well-being and health. Many conditions, such as obesity and drug addiction, can be combated through the promotion of football activities. This has recently been recognized by FIFA's original and promising program "FIFA for Health." The prevention of disease is a key aspect of participation in football, and on a related note, some famous players have been involved in promoting vaccinations and other actions.

On the other hand, it is self-evident that participation in the sport can be halted at any moment by a serious injury. For many years, medical doctors, physios, coaches, and players have therefore been keen to identify effective treatments that will enable return to full sporting activity within the shortest possible time. This book identifies those treatments that are most appropriate in different circumstances, providing state-of-the-art descriptions of surgical and medical treatment options relating to, for example, particular joints or specific types of injury. It also addresses two other crucial aspects: prevention of injuries and long-term outcomes. When speaking of the "health" of the footballer, it is necessary to consider not only the period during which the sport is played but the entire lifetime of the player.

Taking into account the fact that football is played everywhere in the world by males and females and by amateurs and professionals, there is no doubt that the management of traumatic injuries, from prevention to treatment and return to the pitch, must be performed by educated and informed professionals. This book, written by recognized experts and coordinated by an outstanding staff, offers a unique contribution to the current knowledge of sports traumatology in football and will be of great practical value.

Philippe Neyret
Académie Médicale du Football de Lyon,
ISAKOS President,
Lyon, France

Foreword II

As a past professional footballer and current President of the Italian Footballers' Association, I am naturally interested in all aspects of injuries to players, including prevention, treatment, and rehabilitation. During my footballing career I had personal experience of injuries, both minor and very serious, including one major injury suffered when I was 30. That injury did, however, have one positive outcome in that it enabled me to understand the consequences of serious injury for the player, including the psychological impact, in a way that otherwise would not have been possible. I recovered and returned to play with even more energy (if that was possible!) than previously, but I did so with a particular sensitivity to the disruption that a traumatic event can cause to a successful professional career.

Within football, injuries are unfortunately a constant and recurring event. As an executive and a former professional player, I have observed that the limited time devoted to injury prevention is playing an important role in the increase in muscle injuries and trauma. Regrettably, sport activity planning too rarely takes account of the player as an athlete, being oriented instead to the footballer as a showman. Thus the player has more games, including more luxury friendly matches, and spends more time touring while devoting less time to training, preparation, and recovery – and recovery has been the subject of our recent conversations with players. In this context, last season we produced a short but very informative video on overmedication. Our goal has been, and continues to be, to persuade athletes, who are often very young and focused on other matters, to take care of their bodies. Each athlete has to work with his or her own body, and looking after it properly is the first rule that must be followed in order to become a true professional.

Excessively hasty return to playing following an injury and the use of drugs and therapies to accelerate a return or to enhance the capacity for training and exercise may have serious repercussions after a professional career is over. It is essential both to allow the correct recovery time after a traumatic event and to realize the potential long-term impacts of heavy use of drugs and “invasive” therapies.

This is a hot issue since playing at all costs often appears to be in everybody's interest: the player's, the coach's, the doctor's, the supporter's, and the president's. It is difficult but necessary work to gain a sufficiently deep knowledge of the risks and benefits of different therapies and approaches, and of their contraindications, as a sound basis for decision making.

The Italian Footballers' Association has always been attentive to the issue of the health of players, and we are most grateful to Dr. Volpi for his valuable work in this field. This publication bears witness to his extremely high levels of competence and professionalism. The in-depth analysis in this book, which brings together expertise from several countries, is most welcome and should significantly raise awareness of issues surrounding the prevention of injuries, as well as their evaluation, treatment, and rehabilitation.

Finally, I would like to offer a bitter reflection that may nevertheless also offer hope for the future. If we are unable to take care of footballers' bodies through appropriate preventive and rehabilitative strategies, the high number of absences of "showmen" players will continue unabated. Perhaps even the cynical business interests in the sport will come to realize that impacts are to be felt not only on the health of the athlete but also on the quality and profitability of events.

Damiano Tommasi,
President, Italian Footballers' Association,
Vicenza, Italy

Preface

Over recent decades, much has been done in football to promote health protection, particularly in the context of sports trauma prevention. Significant progress has been made in sports medicine as applied to football, with the introduction of innovative diagnostic tests and therapeutic methods. Furthermore, the knowledge of the medical staff of football teams with respect to trauma prevention and management has improved significantly.

The desire to decrease the incidence of trauma in professional and amateur sportspeople reflects the primary need to preserve their physical integrity and health, even after the end of their sporting careers. With regard to football, recent data show a constant increase in the frequency and severity of trauma during both matches and training. This is particularly true for athletes of high-level professional teams due to the pressures of additional national and international matches. The high number of matches restricts the opportunity for rest between matches and hinders regular and effective training. However, similar problems are also reported by footballers who play on a weekly basis. Moreover, modern football differs in many respects from football in the past: the game is more intense, the players' movements are faster and more explosive, and their physical structure is more powerful.

On the regulatory front, there have been several interesting proposals, for instance, to increase the number of substitutions permitted during a match. At the same time, early season preparation tends to be too short, with too many official engagements. Furthermore, many athletes would prefer a longer winter break in order to ensure a proper recovery for the second part of the season.

Football needs not only competence and professionalism but also passion. Only those who love this sport, experience its fascination, rejoice in victory, and suffer the inevitable setbacks can express their feelings on the field and help football to mature further. Passion will be essential in order to innovate and to maintain and defend the values that are the essence of this marvellous sport.

Piero Volpi
Knee Orthopedics and Sport Traumatology Unit,
Humanitas Clinical Institute IRCCS,
Milan, Italy
Head of Medical Staff FC Internazionale Milan,
Milan, Italy

About the Editor

Piero Volpi is an Orthopedic Surgeon and Sports Medicine Specialist and Director of the Knee Surgery and Sport Traumatology Unit at Humanitas Clinical Institute IRCCS, Milan. He played professional football from the beginning of the 1970s until 1985 while maintaining his medical studies. He is now Head of Medical Staff FC Internazionale Milan, Italy, and is also Responsible Physician of the Italian Association of Football Players (AIC). He has also recently been appointed as member of U.E.F.A. Medical Committee. Dr. Volpi is Teaching Professor at the Specialty School of Orthopedics and Traumatology at the University of Milan. He is also Vice-President of Italian Arthroscopy Society (SIA) and member of several national and international scientific societies: SIOT, SIGASCOT, FMSI, ISAKOS, ESSKA, AND EKA. He is the author of more than 300 publications and over 600 contributions, including book chapters, articles, and presentations to scientific national and international meetings. He is Editor in Chief of the *Journal of Sports Traumatology* and Member of Editorial Board of *Medicina dello Sport Journal*.

Contents

Part I General Concepts

1 Epidemiology in Professional Footballers	3
Cristiano Eirale	
2 Epidemiology in Young Football Players	11
Oliver Faude and Roland Rössler	
3 Epidemiology in Female Football Players	21
Astrid Junge	
4 Risk Factors	29
Piero Volpi and Cristiano Eirale	
5 Football Injury Prevention	35
Mario Bizzini and Jiri Dvorak	
6 Preseason Evaluation	47
Fabrizio Tencone	
7 Trauma Management in the Field	51
Porcelli Simone, Daniele Casalini, Alessandro Corsini, Gian Nicola Bisciotti, and Piero Volpi	

Part II Specific Injuries

8 Muscle Lesions	65
Ian F.R. Beasley	
9 Hamstring Injuries	77
Gianluca Melegati and Davide Tornese	
10 Patellar and Quadriceps Tendinopathy	93
Andrea Ferretti	
11 Return to Play After a Muscle Lesion	99
Gian Nicola Bisciotti	
12 Shoulder Injuries in Goalkeepers	109
Raffaele Garofalo, Piero Volpi, Giacomo Delle Rose, Dario Pitino, and Alessandro Castagna	

13	Acromioclavicular Dislocation	119
	Gianezio Paribelli, Stefano Boschi, Alfonso Massimiliano Cassarino, and F. Leonardi	
14	Knee Medial Collateral Ligament Injuries	127
	Luis Pedro Duarte Silva, C. Desai, N. Loureiro, H. Pereira, and J. Espregueira-Mendes	
15	Injuries of the Lateral Collateral Ligament and Posterolateral Corner of the Knee	135
	Andrea Campi and Stefano Campi	
16	Anterior Cruciate Ligament (ACL) Lesions	145
	Pier Paolo Mariani, Guglielmo Cerullo, Germano Iannella, and Marco Giacobbe	
17	Anterior Cruciate Ligament Lesions in Adolescent	157
	Corrado Bait, Matteo Denti, A. Orgiani, G. Carimati, and Piero Volpi	
18	ACL Revision	165
	Jonathan G. Robin, Elvire Servien, and Philippe Neyret	
19	PCL Lesion	179
	Philippe Landreau and Jaleddine Belhaj Ahmed	
20	Knee: Multiligament Injuries	191
	Francesco M. Benazzo, Giacomo Zanon, and Loris Perticarini	
21	Lateral Meniscus Injuries	201
	Rene Verdonk	
22	Medial Meniscus Injuries	213
	Giancarlo Coari, Francesco Miele, Alessandro Emanuele Tripodo, and Filippo Troiani	
23	Anterior Knee Pain in Football	231
	Paulo Renato Fernandes Saggin and David Dejour	
24	Patellar Instability in Football Players	241
	Alexis Lion, Alexander Hoffmann, Caroline Mouton, Daniel Theisen, and Romain Seil	
25	Knee Cartilage Repair	253
	Lars G. Peterson and Haris S Vasiliadis	
26	Patellar Tendon Lesions	267
	E. Prospero, M. Denti, A. Quaglia, L. Pulici, L. Brambilla, and Piero Volpi	
27	PRP in Football Players	275
	Ramon Cugat, Xavier Cusco, Roberto Seijas, Pedro Alvarez, Gilbert Steinbacher, and Marta Rius	

28	Knee Arthritis in Ex-Footballers	293
	Stefano Zaffagnini, Tommaso Roberti di Sarsina, F. Raggi, A. Grassi, T. Bonanzinga, G. Marcheggiani Muccioli, and M. Marcacci	
29	Groin Pain	303
	Nicola Maffulli, Alessio Giai Via, and Francesco Oliva	
30	Femoroacetabular Impingement (FAI) in Football Traumatology	317
	Raul Zini and Manlio Panascì	
31	Achilles Tendon Lesions in Soccer Players	325
	Jón Karlsson, Nicklas Olsson, and Katarina Nilsson Helander	
32	Ankle Ligament Lesions	333
	C. Niek van Dijk and Gwendolyn Vuurberg	
33	Ankle Osteochondral Lesions	343
	Sandro Giannini, Roberto Buda, Laura Ramponi, Francesco Castagnini, Silvio Caravelli, Giuseppe Gianluca Costa, and Francesca Vannini	
34	Ankle Osteoarthritis in Ex-Professional Footballers	351
	Vincent Gouttebauge and Gino M.M.J. Kerkhoffs	
35	Foot Problems in Football	359
	Pieter PRN d'Hooghe	
36	Stress Fractures of the Foot in Footballers	371
	Palmanovich Ezequiel, Keltz Eran, Kots Eugene, Marom Niv, Hetsroni Iftach, Nyska Meir, and Mann Gideon	
37	New Trends in Rehabilitation	385
	Stefano Della Villa, Francesco Della Villa, Margherita Ricci, and Stefano Respizzi	
	Erratum	E1