

## **EDITORIAL STAFF**

### EDITOR IN CHIEF

C. Harmon Brown, M.D., FACP  
USA Track and Field  
San Mateo, CA USA

### TECHNICAL EDITORS

Martha T. Brown  
William B. Tyler  
Santa Cruz, CA USA

## **IAAF MEDICAL AND ANTI-DOPING COMMISSION AUTHORS**

C. Harmon Brown, M.D., FACP  
San Mateo, CA USA

Louise Burke, PhD  
Melbourne, Australia

Frédéric Depiesse, M.D.  
Tournefeuille, France

Professor Eduardo DeRose, M.D.  
Porto Alegre, Brasil

Giuseppe Fischetto, M.D.  
Roma, Italy

Birgir Gudjónsson, M.D., FACP, FRCP  
Reykjavik, Iceland

Dr. M. Jegathasan, MBBS, FRCP  
Kuala Lumpur, Malaysia

Karóly Pikó, M.D.  
Debrecen, Hungary

Fumihiko Yamasawa, M.D.  
Tokyo, Japan

## **CONTRIBUTING AUTHORS**

Bob Adams, D.O.  
Redmond, WA USA

Gary Geissler, M.S., P.T.  
Boston, MA USA

Karen Middleton Griffin, M.S., P.T.  
Antioch, TN USA

Keith Henschen, PhD  
Salt Lake City, Utah USA

Jack Ransone, PhD, AT,C  
San Marcos, Texas USA

Betty J. Wenz, Ph.D. (*deceased*)  
Hayward, CA USA

Paul Wilson, B.S., P.T.  
Auckland, NZ

## **REVIEWERS**

Ana Cintron, M.D.  
San Juan, Puerto Rico

Stephane Bermon, M.D.  
Nice, France

# IAAF MEDICAL AND ANTI-DOPING COMMISSION

## *Chairman*

Dr. Juan Manuel Alonso

## *Members*

Dr. Harold Adams

Prof. Christiane Ayotte

Dr. Brahim Baba

Dr. Stephane Bermon

Dr. Harmon Brown

Prof. Louise Burke

Dr. Eduardo Henrique deRose

Dr. Frédéric Depiesse

Dr. Herbert George Elliott

Dr. Giuseppe Fischetto

Dr. Birgir Guðjónsson

Dr. Manikavasagam Jegathesan

Dr. Karóly Pikó

Dr. Fumihiko Yamasawa

# CONTENTS

**President's Message**

**Foreword**

**Preface**

**1. THE FEDERATION MEDICAL ORGANISATION**

*C. Harmon Brown and Bob Adams*

1. National Sports Medicine Structures
2. The Federation Medical Officer
3. Planning International Travel

**2. SPORTS AND MEDICINE**

*C. Harmon Brown and Birgir Gudjónsson*

1. Principles and Ethical Guidelines
2. The Sports Medicine Team
3. Pre-participation Examination
4. Sports Rules and Athlete Safety

**3. TRAINING**

*C. Harmon Brown*

1. Principles of Training
2. Restoration, Recovery, and Overtraining

**4. GROWTH AND DEVELOPMENT**

*C. Harmon Brown*

1. Specific Considerations for the Child and Adolescent Athlete

**5. SPORTS PSYCHOLOGY**

*Betty Wenz and Keith Henschen*

1. Sports Psychology
2. Athlete's Competition Day Preparation

**6. NUTRITION**

*Louise Burke and C. Harmon Brown*

1. Nutrition and Athlete Health
2. A Rational Approach to Supplements

7. **INJURY PREVENTION**  
*Karen Middleton Griffin and Jack Ransone*
  1. Principles of Injury Prevention
8. **EMERGENCY CARE**  
*Jack Ransone and Károly Pikó*
  1. Triage and Action Plans
  2. First Aid Management of Acute Sports Injuries
9. **SOFT TISSUE DAMAGE AND HEALING**  
*Jack Ransone, Gary Geissler, Paul Wilson, and Bob Adams*
  1. Soft Tissue Damage and Healing: Theory and Techniques
  2. Principles of Rehabilitation of the Injured Athlete
  3. Therapeutic Modalities
10. **SPECIFIC INJURIES BY ANATOMIC SITE**  
*Bob Adams and Frédéric Depiesse*
  1. Ankle and Foot Injuries
  2. Lower Extremity Injuries
  3. Knee Injuries
  4. Spinal Injuries
  5. Upper Extremity Injuries
11. **ENVIRONMENTAL FACTORS AFFECTING HUMAN PERFORMANCE**  
*Fumihiko Yamasawa and C. Harmon Brown*
  1. Heat and Cold
  2. Altitude
  3. Air Pollution
  4. Jet Lag
12. **INFECTIOUS DISEASES**  
*Birgir Gudjónsson*
  1. Infections Associated with Sports
  2. Infections at Large

**13. SPECIAL ISSUES OF WOMEN ATHLETES**

***C. Harmon Brown and M. Jegathesan***

1. Endocrine/Menstrual Factors
2. Gender Verification and Sex Reassignment Policy

**14. SPECIAL MEDICAL PROBLEMS**

***C. Harmon Brown and Giuseppe Fischetto***

1. Cardiovascular Evaluation
2. Asthma and Exercise-Induced Bronchospasm (EIB)
3. Headaches and Exercise-Induced Anaphylaxis

**15. DRUGS IN SPORTS/DOPING CONTROL**

***Birgir Gudjónsson***

1. Drugs in Sports
2. Doping Control

**16. APPENDICES**

***C. Harmon Brown, Louise Burke, Frédéric Depiesse, Birgir Gudjónsson, M. Jegathesan, Jack Ransone, Fumihiko Yamasawa***

1. Olympic Movement Medical Code
2. Planning International Travel
3. Preparticipation Physical Evaluation
4. American College of Sports Medicine Position Statement on Heat and Cold Illnesses During Distance Running
5. IAAF Policy on Fluid Replacement
6. On-Site Medical Supplies for Injury Prevention and First Aid
7. Cardiopulmonary Resuscitation (CPR)/Adult Basic Life Support
8. Differential Diagnosis and Treatment of Exertional Heat Stroke and Heat Exhaustion on Site
9. Differential Diagnosis and Treatment of Exertional Heat Stroke, Heat Exhaustion, and Hyponatremia in a Clinic Setting
10. Recommendations for Minimising Jet Lag
11. General Health and Hygiene: Recommendations for Athletes
12. Respiratory Tract Infections
13. Process for the Management of Gender-Related Issues



## **PRESIDENT'S MESSAGE**

The IAAF recognizes that the well-being of the athletes of our member Federations is one of its prime responsibilities. I am pleased that the members of the Medical and Anti-Doping Commission have worked hard to provide the health professionals of our member Federations with this newly-updated Medical Manual, and to design education programmes at the Regional Development Centres to aid them in caring for their athletes.

I would like to thank the members of the Medical and Anti-Doping Commission and the other contributors for their efforts in revising this Manual, and to Dr. Harmon Brown, Medical and Anti-Doping Commission member, and to the IAAF staff for their editorial work.

Lamine Diack  
*IAAF President*

## CHAIRMAN'S MESSAGE

The IAAF Medical and Anti-Doping Commission recognises that one of its major tasks is to assure the highest quality of athlete care provided by the health professionals in its member Federations, and is pleased to present this revised and updated edition of the IAAF Medical Manual. This Manual is intended for use as a resource for sports physicians and physiotherapists, and as a primary textbook for sports medicine and anti-doping courses given at the IAAF's Regional Development Centres.

We hope that this programme will continue to stimulate the continuing education of sports medicine professionals who work with all athletes in athletics, from novice to elite levels.

Juan-Manuel Alonso

*Chair, IAAF Medical and Anti-Doping Commission*



## PREFACE

In recent years the IAAF has recognised that health care of all the athletes in its member Federations is an area which must be addressed if athletics is to continue to grow as a world-wide sport.

The role of the IAAF's Medical and Anti-Doping Commission is to aid all of its member Federations in providing for the health and safety of all athletes, from novices to world-class competitors.

The Medical and Anti-Doping Commission has prepared this revised and updated Medical Manual as part of a programme of medical and anti-doping education that is held at its various Regional Development Centres. The objectives of this programme are to aid each member in strengthening its medical organisation, and to provide its health care providers (physicians and physiotherapists) with updated information on sports medicine and doping, particularly as it relates to the sport of athletics.

We wish to thank Dr. Manuel Alonso, Chair of the Medical and Anti-Doping Commission, for his continuing support of this project, to the many members of the Commission and the other contributors for making this Manual a valuable sports medicine educational tool, and to the staff of the IAAF Anti-Doping Department for their work in assuring its finalisation. We would especially like to acknowledge Dr. Luc Magnus and Chris Butler of the IAAF for their thorough review of the manuscript and suggestions for its improvement.

A special thanks to the Technical Editor, Martha T. Brown, for making the text a readable entity. Any errors or omissions should be laid at the door of the Editor. We welcome any recommendations for future improvements.

C. Harmon Brown, M.D.

*Editor*

*Member, IAAF Medical and Anti-Doping Commission*

*San Mateo, California, USA*

