SPORT
MEDICINE MANUAL

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A. Introduction

Throughout the modern world, a great variety of sport and physical recreational activities are being practiced by increasingly larger numbers of individuals of all ages. Many are training regularly for competitions at schools, clubs and at every level up to the Olympic Games. Whatever their age, or sporting activity, or seriousness about training, at one time or another, they all experience injuries or illnesses or require medical advice that is specifically directed to improving their ability to train or compete.

A decade has passed since the first edition of the IOC Sport Medicine Manual was written. The illnesses and injuries that afflict athletes do not change but the technology used in diagnosis (for example the more sophisticated MRI imaging) and the advances in management will be updated. New developments in medications and supplements, rehabilitative principles and changes in anti-doping rules will be discussed.

Physicians and surgeons are not specifically trained in their formal education to provide specialized advice concerning many medical issues relating to sport. Their knowledge of sport medicine is developed through their involvement with athletes and coaches and learning of their special problems and needs, by attending sport medicine and sport science courses, by reading specialist journals and publications, and by talking with other health care specialists, including physicians, physiotherapists, athletic therapists, nutritionists, masseurs and sport scientists. At this time, a major body of knowledge pertaining specifically to medical care and considerations for physically active individuals has developed. It is the purpose of this manual to expose this knowledge, in a practical overview, to health care professionals who wish to learn more about working with athletes.

What qualities or skills, or specialized knowledge does a sport medicine specialist possess? The sport medicine specialist provides medical care to athletes and those undertaking physical recreational activities. Care of the athlete involves a number of factors, including:

- pre-participation medical examination
- injury diagnosis and management
- health monitoring and management
- monitoring to detect and prevent staleness
- assessment of diet, strength, flexibility, anthropometry and aerobic and anaerobic factors
- assessment of joint stability and lower extremity alignment

Different sports require different types of training and have their own specific stresses, training requirements, needs and health concerns. The sport medicine specialist must understand these variations and one way to do this is to attend athlete training sessions and competitions.

As patients, athletes usually feel great pressure to get better or rehabilitate immediately so that they can continue their training or competition. The physician must be sensitive to this and understand effective methods of rehabilitation and alternate training activities.

Indeed, the sport physician must have knowledge not normally required by physicians, which includes biomechanics, exercise physiology, sport psychology, nutrition for athletes, environmental hazards for training and competition, and sports equipment and safety.

It is clearly a myth that all athletes are healthy. They are susceptible to all common medical illnesses and complaints and face many medical problems as a result of their training. The sport physician is trained to recognize that minor injuries may have major consequences to an athlete's training or performance.

B. The Sport Medicine Team

1. The Sport Medicine Team

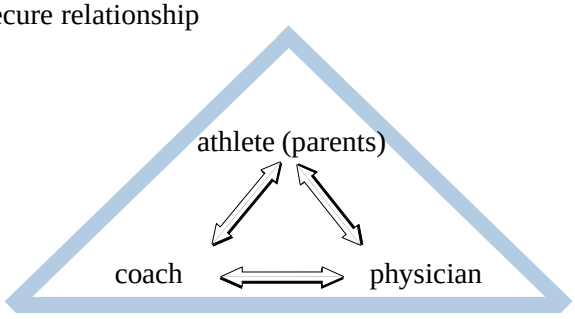
The complexities of training for Olympic competition require the support of a consulting group of sport medicine and sport science specialists to aid in the quest for maximal performance. Throughout the preparation period, this team may include, amongst others:

- physician/surgeon/specialists (ie. cardiologist, neurologist, dermatologist)
- physiotherapist
- physiologist
- psychologist
- athletic therapist
- massage therapist
- strength consultant
- exercise therapist (kinesiologist)
- stretch or yoga specialist
- nutritionist/dietician
- podiatrist
- optometrist
- biochemist
- dentist

The triad of the athlete, coach and physician is likely to be the decision-making committee in coordinating the services of these consultants. It may also be appropriate to consult with the parents of the athlete.

2. Communication

It is necessary for a trusting and secure relationship to exist between:



At the onset, there must be agreement by the athlete and the coach as to the ultimate authority of the physician on medical matters. This is of particular importance when the future health of the athlete may be endangered by continuing competition or training.

The coach is ultimately responsible for coordinating and interpreting information for the athlete, from information received concerning health, performance, rehabilitation, strength training, psychology and other areas. Effective communication between the advisors and the coach is as important as between the coach and the athlete.

3. Coordination

Physician and Coach

The physician should be knowledgeable in the sports that he or she is serving. Experience as a participant in that sport would be an obvious advantage. Attending team events such as goal setting sessions, practices and competitions, aids in understanding the challenges and the environment of the athlete.

Communication will be most effective when medical and technical factors can be clearly understood by both the physician and the coach. This allows for the development of mutual respect and understanding. The physician should link with the coach during training camps and be involved in the planning of periodization of training to avoid overtraining and integrate adequate recovery and cross-training sessions (ie. pool running).

Physician and Paramedical Personnel

The ultimate welfare of both athlete and team is highly dependent on direct communication between physicians and the paramedical team including the physiotherapist, athletic trainer, massage therapist and psychologist. Specific recommendations should be communicated carefully so the treatment plan is clear to all members of the team. The athlete and coach are very sensitive to apparent differences in opinion or approaches between members of the team. Any perceived difference may weaken the optimal therapeutic milieu for the athlete.

Physician and Sport Scientist

The coach will obtain the best results from functional and medical monitoring of the athlete in the training period when the plan is jointly coordinated with the physician and the sport scientist. The physician should also select specific tests that monitor recovery from injuries (ie. specific strength measures such as concentric and eccentric power measures in the jumping athlete with patellar tendinitis). In addition, the physician should be developing, with the sport scientist, tests that could be indicative of overtraining (ie. weight loss, elevated resting and recover heart rates, and high recovery and resting levels of CPK). These results are then communicated by the physician to the coach for training modification. Proper interpretation of scientific data requires the sport scientist and the physician to be familiar with the technical demands of the sport. Effective communication between the sport scientist and the physician will improve their ability to assist the athlete.

Physician and Medical Consultants

Access to specialized medical and surgical attention in many parts of the world may normally involve delays that may be measured in months. The goals set by the coach and athlete will be served more effectively when the physician can act as an advocate for the athlete and achieve rapid specialized medical consultation. This will require the physician to develop a team of medical and surgical consultants who will preferentially recognize the need for quick access to diagnostic tools and surgical measures. In addition, when teams are having the training camp out of their home country, the physician needs to establish a network of medical and paramedical consultants to assist the team.

Physician and Team Management

A clear understanding must exist between the physician, the athlete (her/his parents) and team management as to what information remains confidential. The optimal situation exists when the athlete/physician relationship is privileged. Only with direct permission from the athlete should the physician communicate medical information to the coach, team management, or media. This policy requires clarification between all parties so that no confusion exists.

Travel plans, accommodation, meals, and competition schedules need coordination between physician, coach and management. Management can also arrange for specific requirements as needed by the physician and therapists when travelling, such as longer beds for the taller athletes, a specific room for your medical-therapy clinic, a ready supply of ice and fluid replacement for practice and games plus a van or car for the medical team.

Physician and Family Physician

Many times the team physician will deal with athletes who most of the year will have medical care from another physician. This requires open communication between the athlete's regular physician and the team doctor on all aspects affecting the athlete's welfare. Updated medical test results and medical histories are essential for the sport physician. In addition, immunization for upcoming travel will often be more easily administered by the family physician rather than the team physician prior to major games.

C. Ethical Guidelines for Health Care in Sports Medicine

The Medical Commission of the International Olympic Committee recommends the following ethical guidelines for physicians and allied health professionals (henceforth termed physicians) who care for athletes and sports participants (henceforth termed athletes). These have been modified from those prepared by the World Medical Association (World Medical Journal, 28:83, 1981), include some principles contained in the 1997 Ethics statement of the Federation Internationale Medicine Sportive (FIMS) and recognise the special circumstances in which medical care and guidance are provided for participants in sports.

1. All physicians who care for athletes have an ethical obligation to understand the physical mental and emotional demands placed upon athletes during training for and participation in their sport(s).

2. When the sports person is a professional athlete and derives a livelihood from sport, the physician should pay due regard to the occupational medical aspects involved.

3. A fundamental right of all patients including athletes is to seek a second opinion. Athletes whatever their status must never be denied this right. It is recommended that this is undertaken with the knowledge of and referral from the treating physician.

4. It is the responsibility of all physicians who care for athletes to ensure that they are cognizant of the changes that have and continue to occur in the medical management of athletes. This is to ensure that they provide optimal care for their athlete patients.

5. An essential principle that must never be compromised is that advances in sports medicine and related disciplines must be published or disseminated and must never withheld to benefit selected athletes.

6. When the sports participant is a child or adolescent, the physician must ensure that the training and competition are appropriate for the stage of growth and development. Sports training and/or participation that may jeopardise the normal physical or mental development of the child or adolescent should not be permitted.

7. In sports medicine, as in all other branches of medicine, professional confidentiality must be observed. The right to privacy relating to medical advice or treatment that the athlete has received must be protected.

8. When serving as a team or sports federation physician, it is acknowledged that he/she has a responsibility to both athletes and team administrators. Each athlete must be informed of that responsibility and requested to authorise disclosure of otherwise confidential medical information; but only to specified and responsible persons and solely for the purpose of determining the fitness or unfitness of that athlete to participate.

9. At sports venues, it is responsibility of the team or contest physician to determine whether an injured athlete may continue in or return to the game. This decision should not be delegated to other professionals or personnel. In the physician's absence, these individuals must adhere strictly to the guidelines that have been provided. At all times, the priority must be to safeguard the athlete's health and safety. The outcome of the competition must never influence such decisions.

10. Physicians should publicly oppose and in practice refrain from using any:
    - substance or any method that has been prohibited by the WADA, the IOC or the International Sports Federation concerned
    - method that is not in accord with professional ethics
    - procedure that may be harmful to athletes, especially doping which is unethical and unprofessional; physicians who advocate or who practice doping are ineligible to be accredited as a team or sports physician
    - procedure that masks pain or other protective symptoms, and which if used, enable the athlete to compete with an injury or illness; whereas in the absence of such procedures, participation would be inadvisable or impossible
    - encouragement of training and/or competing when to do so is incompatible with the preservation of the individual's health, fitness or safety

11. The physician should inform the athlete, those responsible for him or her and other relevant parties of the consequences of these procedures that he is opposing. The physician should guard against their use by others, enlist the support of other physicians and organisations with similar aims, protect the athlete from any pressures that may induce him or her to use these methods and assist with the supervision against these procedures.

12. Physicians who advocate or use any of the above mentioned unethical procedures are in breach of this code of ethics and are unsuited to be accredited as a team or sports physician.

13. To undertake these ethical obligations, the physician must insist on professional autonomy over all medical decisions concerning the health and the safety of the athlete, neither of which should be prejudiced to assist the interests of any third party.

14. When physicians accompany national teams to international competitions in other countries, they should be accorded the rights and privileges necessary to undertake their professional responsibilities to their athletes while abroad.

15. It is strongly recommended that a sports physician is involved in framing sports regulations.

16. Research in sports medicine should always be conducted using accepted ethical guidelines. Research must never be undertaken in a manner that may injure athletes or jeopardise their performance.