

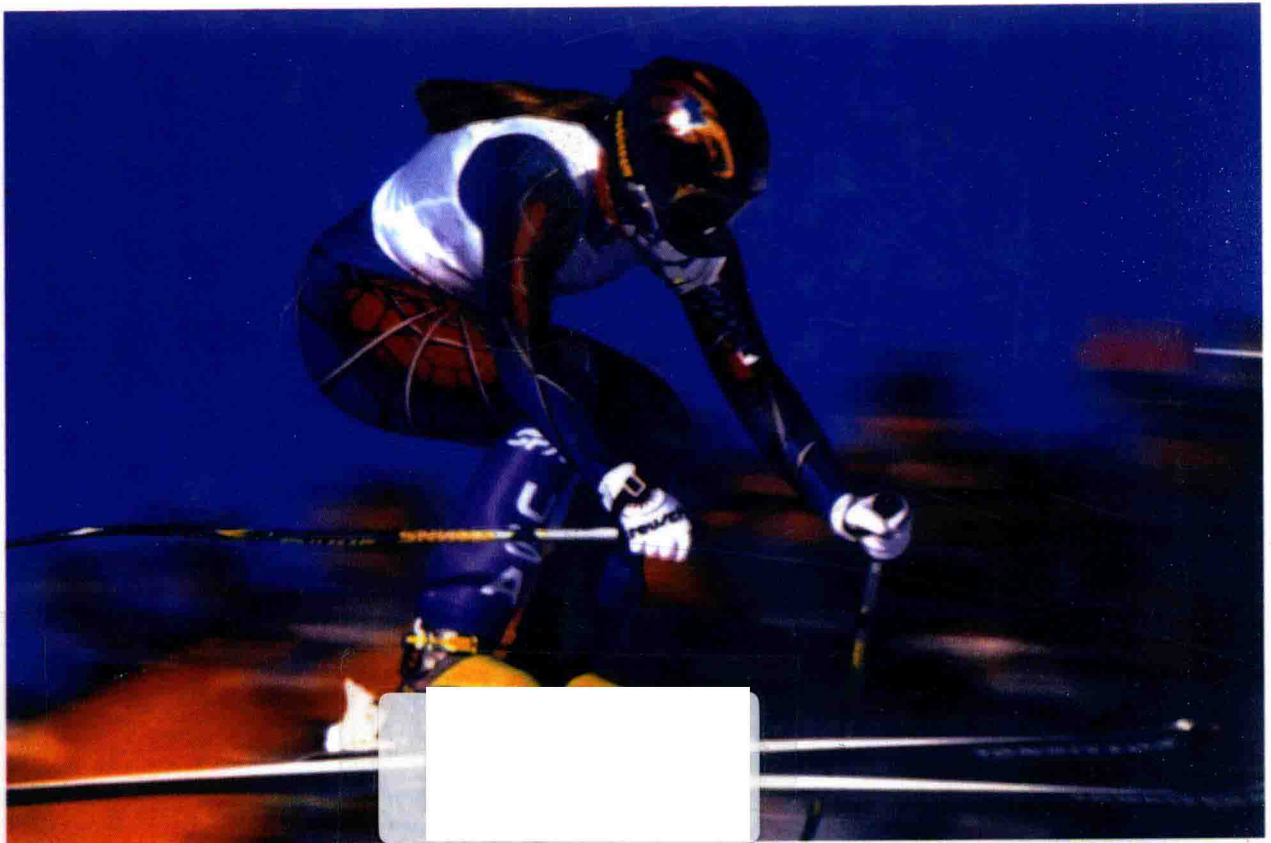
# WOMEN IN SPORT

EDITED BY BARBARA L. DRINKWATER

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THE ENCYCLOPAEDIA OF SPORTS MEDICINE  
AN IOC MEDICAL COMMISSION PUBLICATION  
IN COLLABORATION WITH THE  
INTERNATIONAL FEDERATION OF SPORTS MEDICINE



BLACKWELL SCIENCE

# WOMEN IN SPORT

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VOLUME VIII OF THE ENCYCLOPAEDIA OF SPORTS MEDICINE

AN IOC MEDICAL COMMITTEE PUBLICATION



IN COLLABORATION WITH THE

INTERNATIONAL FEDERATION OF SPORTS MEDICINE



EDITED BY

BARBARA L. DRINKWATER

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# Forewords

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On behalf of the International Olympic Committee, I should like to welcome Volume VIII of the Encyclopaedia of Sports Medicine series. This new volume is devoted to women in sport. The advancements made in women's sports during the last quarter century have been astounding. The end result has been a consistent increase in the quality of performance at all ages and levels of competition and an improvement in national, regional and Olympic records. This volume addresses both the basic science underlying the performance of the woman athlete and the special issues involved in sports training and sports participation.

I should like to thank all those involved in the preparation of this volume whose work is highly respected and appreciated by the whole Olympic Family.

JUAN ANTONIO SAMARANCH

*Marqués de Samaranch*

As opportunities for competitive participation and access to skilled coaching were presented, girls and women came in increasing numbers to experience sport competitions. Women clinicians and scientists identified special issues and needs for these athletes and diligent researchers have provided a strong foundation of science as related to conditioning, nutrition, competitive performance, injury prevention and treatment, and general health issues.

On behalf of the International Olympic Committee and its Medical Commission I should like to thank Professor Barbara Drinkwater and over 50 internationally recognized sports medicine clinicians and sports science researchers who cooperated to produce this important volume. *Women in Sport* will stand as the single best source of information on the topic for many years to come.

PRINCE ALEXANDRE DE MERODE

Chairman, IOC Medical Commission

# Preface

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The Sydney Olympics in the year 2000 will mark the 100th anniversary of women's participation in the Olympic Games. Although the modern Olympic Games actually began in 1896, women were not permitted to participate. If the father of the modern Olympics, Baron Pierre de Coubertin, had prevailed the Olympics would have remained the '...solemn and periodic exaltation of male athleticism, with internationalism as a base, loyalty as a means, art for its setting and female applause as reward'. Women's lack of enthusiasm for their assigned role led them to challenge the status quo and undertake the long and arduous task of achieving acceptance as athletes and equal participants in the Games. Year by year the number of events open to women and the number of female athletes has increased. In the Atlanta Games, two-thirds of the competitors were women competing in 58% of the events. Even better representation is expected in the Sydney 2000 Games.

Support for increasing women's representation on IOC committees and other decision-making positions has come from an unexpected source. IOC President Samaranch initiated and led an effort to achieve gender equality in these positions by establishing the goal of increasing women's representation in leadership roles within the IOC, National Olympic Committees and International Federations to 10% by the end of the year 2000 and to 20% by the end of 2005. The recommendation was approved by the General Session of the IOC in Atlanta.

Now it will be up to each of these groups to implement these initial steps toward gender equity.

Along with the increase in the number of women athletes has come a parallel increase in the number of women sports medicine physicians and exercise physiologists. Many of these women had their initial experience with sport as athletes and later chose a career that combined a commitment to sport with their professional path. Twenty years ago it would have been difficult to find women scientists and physicians to write chapters for this volume, *Women in Sport*. For this publication it was a matter of selecting a few women from among many equally qualified to write about medical issues specific to women.

The volume is divided into eight sections. Part 1 surveys the history of women's participation in the Olympic Games. Today's young athletes would do well to read about how their opportunities today came about through the efforts of strong and determined women long before they were born. Part 2 examines the physiology of female athletes. Are there gender differences in the qualities that mark the skilled athlete? How does she respond to environmental challenges and how does the menstrual cycle affect her performance? In Part 3 the authors look at the basic factors involved in training an athlete, whether they differ between women and men, and if so how this affects training regimens. The growth of masters' competition has extended the competitive career of many women. Part 4 discusses how

the physiological changes that occur with ageing may affect a woman's performance and how the hormonal changes following menopause may affect her success. There are a number of medical issues that are specific to the female athlete as well as areas of general concern which have unique factors relating to gender. These are covered in Part 5. The potentially serious consequences of a preventable problem, the female athlete triad, are covered in Part 6. In Part 7, three psychosocial areas are explored: the psychological effect of intense competition and parental involvement on the child athlete; ethical issues affecting women in sport and sports medicine; and the increasing presence and influence of

women on sports governing bodies. Finally, in Part 8, physicians apply their experience treating women athletes in discussing injuries that are specific to or more common to women in 12 different sports. Although space limited the number of sports that could be included, an effort was made to select events from both team and individual events representing the Summer and Winter Games.

It has been a pleasure to work with so many outstanding authors from around the world to add this volume, *Women in Sport*, to the IOC series, *The Encyclopaedia of Sports Medicine*.

## Dedication

Finally, I would like to dedicate this volume to Wendy Ey (1938–1997), who exemplified the passion and dedication of all the women who have furthered the cause of women's sport. Wendy was a Commonwealth Games silver medallist in 1958, a state sprint and hurdles champion in Australia from 1954 to 1960, and a masters world champion. An author, administrator and untiring advocate for women athletes of all ages, she was the first woman to manage an Australian track and field team at the Commonwealth and Olympic Games. For her services to sport, Wendy received an Award of Merit from the Confederation of Australian Sport and the British Empire Medal in 1977. Although

very ill, Wendy travelled from Australia to the United States to speak at the 1996 Pre-Olympic Congress in Dallas to dispute what she considered an unfair application of the doping regulations to postmenopausal women on hormone therapy. Chapter 11, addressing that topic, was written during her final illness. Wendy was an outstanding athlete and an extraordinary woman. In his eulogy to Wendy, Dr John Daly included this appropriate quotation, '... don't grieve at the loss of a friend, rejoice at having been privileged to have known them... learn something from their courage, their commitment, their life...'. '

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# PART 1

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## HISTORY





# Chapter 1

## Women and the Olympic Games

GERTRUD PFISTER

### Introduction

For a long time women played no more than a marginal role in the Olympic movement. Even in 1992 women represented less than 30% of the competitors at the Summer Olympic Games. On their way to Olympia women were faced with a great number of obstacles. The opposition which they met was directed at not only women's participation in sport but also the masculinization that this was alleged to produce as well as the 'emancipation' of women and the perceived threat of change in the gender order itself. In an age when the ideals, duties and roles of the two sexes in everyday life were being radically transformed by processes of modernization, it was hoped that sport and the Olympic Games might contribute towards upholding the myth of the male as the 'stronger sex'.

The main parties in the controversy over the participation of women in the Olympic Games were groups with divergent interests, such as the International Olympic Committee (IOC), the international sports federations and the international women's sport federation. The demands, strategies and ideologies of these various groups are examined in this chapter. In the reconstruction of the controversy it becomes apparent that, even among the women who took part in the debate, the integration of women into the male-dominated world of the Olympic Games did not go unquestioned.

### Onlookers at the Olympic Games: 1900–12

In the 19th century, women, like the ovens they cooked on, belonged in the home and not on the sportsground. This was true of both Europe and the USA. It lay 'in the nature of things' that girls should be excluded from the first initiatives and concepts of physical education which, like German *Turnen* or Swedish gymnastics, began to appear in the early 19th century. Girls and women, for example, were not allowed on the first German *Turnen* grounds opened in 1811 in a Berlin park known as Hasenheide; they could only admire the feats of the *Turner* from the perimeter (Pfister, 1996a). Modern sport of English origin was, in its early phase, also an exclusively male domain. Although physical exertion and competition were held to be contrary to a woman's nature, by the end of the 19th century a few women did take part in bicycle racing, swimming contests and even in parachuting or ski jumping, much to the horror of the public (Hargreaves, 1994; Hult, 1996; Pfister, 1996b).

It was no wonder then that the Olympic Games were considered to be a male preserve as they had been in ancient Greece. Throughout his life, de Coubertin, a typical man of his times, thought that women should not sully the Games with their sweat but should merely crown the victors (Leigh, 1974; Simri, 1977; Boutilier & San Giovanni, 1991; Welch & Costa, 1994; Wilson, 1996). However, he only succeeded in excluding



women once, in 1896. The bold intention of a Greek woman to compete in the first Olympic marathon was firmly rejected. However, she was not to be deterred from carrying out her plan and ran the full distance of 42 km 194 m alone some days before the Games began. She completed the course in 4.5 hours. Another woman, a 35-year-old mother of seven children, was so excited about the victory of Spyros Louis that after the games she tried to emulate him. She, too, was able to run the full distance without any difficulty in 5.5 hours (Odenkirchen, 1996).

Since the following Games in 1900 and 1904 were connected with World Fairs, the selection of events to be included in the Olympic programme was mainly in the hands of the Fairs' organizing committees and thus to a large extent beyond the control of the IOC. Therefore, in many respects, a move was made away from the 'Olympic spirit'. One of the developments that de Coubertin criticized as 'incompatible with the Olympic idea' was the participation of women in a festival which he described as 'l'exaltation solennelle et périodique de l'athlétisme mâle' (de Coubertin, 1912). As early as 1900, at the second Olympic Games in Paris, 12 women took part in the tennis and golf competitions, typical upper-class sports (Fig. 1.1). Seven of them were Americans and all seven came from rich families. They had all come to Europe more or less by chance and regarded golf and tennis mainly as social events (Welch & Costa, 1994). In 1900 women were also allowed to take part in sailing, a so-called 'mixed' event, and it was here that a woman first won a gold medal as a crew member of one of the winning yachts (Wilson, 1996).

However, women participated in the Games 'without the official consent of or comment from the IOC' (Mitchell, 1977; Simri, 1977). At the St Louis Games in 1904 only eight American women represented their country, this time in archery, although IOC members, who were strong opponents of competitive sport for women, declared the archery competition to be an exhibition only (Welch & Costa, 1994). It was not until 1908, when the Olympic Games were held in England, the birthplace of modern



Fig. 1.1 Charlotte Cooper (1870–1966), Great Britain, won a gold in tennis singles and a gold in tennis mixed doubles outdoors at the 1900 Olympic Games in Paris.

sport, that women's sports achieved a modest upswing, with women competing in four disciplines – tennis, sailing, ice-skating and archery – all of them sports with high social prestige. The battle for metres and seconds was first opened to women in 1912 when, according to the minutes of the IOC assembly in 1911, the 'feminist' Swedes allowed women to compete in swimming events (Mitchell, 1977). The inclusion of such a popular sport as swimming in the women's programme contributed considerably to the participation of women athletes from many other countries, and 11 nations sent women athletes to Stockholm. As many as 55 women, representing 2.2% of all competitors, took part in these Olympic Games. Nevertheless, women's sports remained a marginal phenomenon and were still not officially recognized by the IOC. Furthermore, women were not allowed to compete in those sports that involved visible exertion, physical strength or bodily contact. The