Current Research in Sports Sciences

An International Perspective

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PREFACE

There are two main reasons for pursuing research in the Sports Sciences. Firstly, by studying responses to exercise, we learn about the normal function of the tissues and organs whose function allows exercise to be performed. The genetic endowment of elite athletes is a major factor in their success, and they represent one end of the continuum of human performance capability: the study of elite athletes also demonstrates the limits of human adaptation because nowhere else is the body subjected to such levels of intensive exercise on a regular basis. The second reason for studying Sports Science is the intrinsic interest and value of the subject itself. Elite performers set levels to which others can aspire, but even among spectators, sport is an important part of life and society.

Apart from the study of top sport and elite performers, there is also another reason for medical and scientific interest in sport. There is no longer any doubt that lack of physical activity is a major risk factor for many of the diseases that affect people in all countries: such diseases include coronary heart disease, obesity, hypertension, and diabetes. An increased level of recreational physical activity is now an accepted part of the prescription for treatment and prevention of many illnesses, including those with psychological as well as physical causes. An understanding of the normal response to exercise, as well as of the role of exercise in disease prevention, is therefore vital.

Although there is little doubt as to the physical and psychological benefits that can follow from a regular exercise programme, there are also possible negative consequences. The risk of injury associated with the repetitive strain on muscles, joints, and other tissues is obvious. While this may be an acceptable risk in the mature individual, there may be special problems for youngsters who train intensively. The identification of sporting talent in youngsters and its development so that potential is realised without compromising physical and psychological development poses special problems.

To address some of these issues, a major international Conference was held in association with The Goodwill Games in St. Petersburg, Russia, in July 1994. This Conference was unique in many respects, as it was the first in the field of exercise science and sports medicine to bring together scientists and clinicians from Western and Eastern Europe, North America, the Republics of the Former Soviet Union, and from the rest of the world. More than 400 participants from 42 countries contributed to the meeting. For many years, the fiercely competitive nature of international sport had stimulated interest and speculation about the advances made in Sports Science in other countries and had provided an impetus to research in this area. This conference offered an opportunity for a free exchange of information and ideas, and these proceedings are a permanent record of the presentations made.

The programme of the conference focused on three broad areas: (1) the identification and development of sporting talent, (2) reaching and maintaining peak performance, and (3) the relationships between physical activity and wellness. This volume contains selected papers in all of these areas, providing a broad overview of key issues in Sports Science, including much information that has not been available until now.

Thanks are due to many people for the contributions that made a success of the conference and who have allowed the production of these proceedings. Much of the editorial work was accomplished with the help of Susan Shirreffs in Aberdeen. Special thanks are due to Mars Incorporated for their major commitment to support high quality research and education in exercise science and sports nutrition, for their sponsorship of the meeting, and for the organisational skills that helped to ensure its smooth running.

V.A. Rogozkin and R.J. Maughan

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