

SPORT MEDICINE

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Sport Medicine History

The origins of Sport Medicine lie in 5th century BC Greece and Rome where physical education was a necessary aspect of youths' training and athletic contests first became a part of everyday life. It was not until in 1928 at the Olympics in St. Moritz, when a committee came together to plan the First International Congress of Sports Medicine, that the term itself was coined. In the 5th century, however, the care of athletes was primarily the responsibility of specialists. They were trainer-coaches and were considered to be experts on diet, physical therapy, and hygiene as well as on sport specific techniques. The first use of therapeutic exercise is credited to Herodicus, who is thought to have been one of Hippocrates' teachers. Until the 2nd century AD, when the first "team doctor", Galen, was appointed to the gladiators, the physician only became involved if there was an injury.

Whether or not there was good communication or rapport between the trainer-coaches and the team physician back then is a matter of speculation. What is clear however, is that from its beginnings, Sport Medicine has been multidisciplinary with the obligation not only to treat injuries but also to instruct and prepare athletes. This link with physical education has remained in place throughout its evolution.

Sport Medicine Today

Sport Medicine has always been difficult to define because it is not a single specialty, but an area that involves health care professionals, researchers and educators from a wide variety of disciplines. Its function is not only curative and rehabilitative, but also preventative, which may actually be the most important one of all. Despite this wide scope, there has been a tendency for many to assume that sport related problems are by default musculoskeletal and that Sport Medicine is an orthopaedic specialty.

There is much more to Sport Medicine than just musculoskeletal diagnosis and treatment. Illness or injury in sport can be caused by many factors – from environmental to physiological and psychological. Consequently, Sport Medicine can encompass an array of specialties - cardiology, orthopaedic surgery, biomechanics, traumatology, etc. For example, heat, cold or altitude during training and competition can alter performance or may even be life threatening. What about the female triad of disordered eating, menstrual and bone density problems, and the pregnant or the aging athlete? *In addition, the management of dermatological and endocrinological diseases and other such problems in the athlete demands expertise and sport specific knowledge.* The use of supplements, pharmacological or otherwise, and the topics of doping control and gender verification present complex moral, legal and health related difficulties. Then there are the particular problems associated with international sporting events, such as the effects of travel, acclimatization and the attempt to balance an athlete's participation and his/her health. Much of this represents new fields of study where extensive clinical and basic science research is burgeoning. Finally, prevention is an area of increasingly specialized knowledge, interest and expertise.

The Future of Sport Medicine

I believe that Sport Medicine will make its most significant future contributions in the area of prevention. According to Dr. David Janda, orthopaedic surgeon and director of The Institute for Preventative Medicine in Michigan, prevention is Sport Medicine's final frontier. The risk of injury will never be entirely eliminated. But modifications in training techniques, equipment, sports venues and rules based on outcomes of meaningful research have shown that it can be lowered. One rapidly advancing field with great potential for applications in prevention is the study of the body's neuromuscular adaptations. For example, a study of specific preseason neuromuscular training in soccer players demonstrated a significant decrease in the incidence of anterior cruciate ligament tears. In another investigation by Janda et al., serious injuries in recreational softball were reduced by 98% when breakaway bases were used.

Sport Medicine at Western

The beginnings of Sport Medicine and physical education were humble at Western. Professor Jack Fairs, who currently coaches the squash team, taught exercise physiology to the first graduating class of the Honours Program in Physical and Health and Education in 1950. The school's athletic trainer, Murray McNie, who was also the track coach, was a dedicated individual whose education and training was primarily "on-the-job". And in 1965, Dr Vince Callaghan, a general surgeon at St Joseph's Hospital who had been the football team's physician, retired and was replaced by Dr. J.C. Kennedy, an orthopaedic surgeon.

During the time of Professor Fairs and Murray McNie, injured football players were assessed and received hydrotherapy in a whirlpool connected to a shower in the J.W. Little Stadium locker room. When the football season was over, the whirlpool was relocated in the men's shower room and this, of course, excluded women from this particular treatment. Other student athletes were seen and treated in what is currently the men's visitor dressing room in Thames Hall.

Mr. McNie retired in 1968 and David Wise, a certified therapist from Kent State, became head athletic therapist. During his service at Western he completed his B.Sc. in physiotherapy and introduced the concept of student trainers. Currently, a network of student trainers, athletic therapists and physiotherapists administer to intercollegiate teams.

When discussing the development of Sport Medicine at Western it is important to recognize the vision and contributions of Dr. J. C. Kennedy. While watching his daughter Louise swim at the 1968 Olympics in Mexico City, Dr. Kennedy concluded for a variety of reasons, that competing athletic teams from Canada should be accompanied by qualified and well organized medical care. This belief led him to be a founding father of the Canadian Academy of Sport Medicine. One of the primary mandates of this society was to provide expert care to Canadian athletes, and in 1972 he was appointed chief medical officer of the first "true" medical team at the Munich Olympics. Other countries soon followed this example and assigned medical teams to Olympic athletes.

Dr. Kennedy's vision was not limited to travelling Canadian athletes. At a time when Sport Medicine clinics were unheard of in Canada, he convinced Western's administration to convert Room 20 in Thames Hall, known as the "combatives" room,

into The Athletic Injuries Clinic that officially opened in 1972. The first Nautilus equipment in Canada was purchased from funds raised to outfit this clinic. Dr. Kennedy inspired and fostered an interest in research in Sport Medicine, for which The University of Western Ontario (UWO) and London have become known. *For the past several decades, beginning with his studies of the anatomy, pathophysiology and biomechanics of the knee, contributions from Western have been both prolific and significant.*

Today at Western, a symbiosis between the new Faculty of Health Sciences and the Sport Medicine Clinic reflects the vital and dynamic state of Sport Medicine. Both areas have grown tremendously. The Faculty of Health Sciences now encompasses the schools of Physiotherapy and Kinesiology. Kinesiology has broadened to include many related resources such as The Centre for Activity and Aging, The Wiedner Nutrition Laboratory and The Exercise and Pregnancy Laboratory. The Sport Medicine Clinic is a multidisciplinary centre that provides primary care, imaging (ultrasound, x-ray), orthopaedics, physiotherapy, kinesiology and pedorthics for patients within and outside the UWO community. Academically, residency and fellowship training in the majority of these fields are offered. Graduate students in kinesiology and physiotherapy have the opportunity to plan and carry out research studies at the clinic under the guidance of the clinical staff and with the *direct involvement* and cooperation of patients. Presently, there is a Master's thesis project *in progress* designed to determine if there is a familial predisposition to the anterior cruciate ligament rupture, one of the most common activity related knee injuries. Projects such as these are facilitated by the interaction of disciplines and are beneficial to all participants. Other research in progress includes a Medical Research Council funded randomized clinical trial studying the efficacy of

arthroscopy in the treatment of osteoarthritis of the knee, and a prospective trial to evaluate the effectiveness of knee bracing following anterior cruciate ligament reconstruction.

Participation in all forms of physical activity at all levels is a huge part of everyday modern life and its benefits to health and quality of life are clear. Sport Medicine will continue to grow and develop so that these benefits can be fully and safely realized.