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COMMENTARY

Dr. Roy J. Shephard: A Pioneer in Physical Activity and Preventive Medicine

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In every domain of scientific endeavour, there are individuals whose commitment, intellectual acumen, and perseverance create a body of work that has a profound effect on their respective field. In the realm of physical activity and preventive medicine, Dr. Roy J. Shephard is one such luminary. Throughout his sixty-year career, his love of science, health and medicine were evident through his unique contributions. His achievements have touched almost every aspect of the science of physical activity and its effects on health and well-being.

The wide-spectrum of his accomplishments has altered not only the content, but also the direction of the fields of preventive medicine and exercise science.

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Roy is a pioneer in physical activity, exercise and public health. In 1964, he established Canada's first doctoral program in exercise physiology at the University of Toronto (Blackburn-Evans, 2006). That program, now known as the Exercise Sciences in the Faculty of Physical Education and Health, has graduated many of Canada's top exercise and health scientists.

In his dual roles as research mentor and faculty member, he supervised a generation of exercise scientists who ventured forth to become faculty at universities across Canada and around the world. Roy was one of the first modern researchers to write about the harmful effects of inactivity and grasp the detrimental effects of sedentarism on cardiorespiratory fitness and cardiovascular physiology (Shephard, 1965; Shephard and McClure, 1965). His seminal writings in the 1960s on "man's current inactivity", "the desk-bound office worker" (Shephard, 1967a) and the influences of posture on energy expenditure (Shephard, 1967a; Yamaji et al., 1978) were harbingers of the new and burgeoning field of inactivity physiology (Blair, 2009; Blair et al., 1999; Hamilton et al., 2004).

As a medical doctor with extensive training in public health and the physiology of exercise, he understood the need to improve the dialogue between physician and exercise scientist (Shephard, 1967a). He knew that to create a confluence of these two disciplines required the acknowledgement that each had its own language and sacred cows (Shephard, 1967b); he often commented on the fact that the basic philosophies of physicians and exercise scientists are often quite disparate. One of his apt caricatures was that exercise scientists held that physical activity must be beneficial for any given individual, while physicians had "*a vested interest in seeking out occasional ill effects of such enthusiasm*" (Shephard, 1967a).

The furor following the death of renowned runner and author Jim Fixx in 1984 epitomized the intellectual divide that separates physician from exercise scientist. Fixx was a strong proponent of running and the health effects of jogging. Fixx suffered an acute myocardial infarction during his daily training run near his home in Hardwick, Vermont. His death brought about a deluge of academic and popular media reports on the dangers of exercise (Northcote and Ballantyne, 1984; Thompson and Mitchell, 1984; Virmani et al., 1985). Roy led the counterattack by presenting the case that the occurrence of a cardiac event during exercise was sufficiently rare that the greater risk was that of *not exercising* (Shephard, 1986). His writings demonstrated that fears of PA and vigorous exercise were unfounded. Even before Fixx's death, Roy attempted to help physicians and the general public understand that the costs of exercise were minimal when compared to the dangers of sedentarism; and that the benefits of physical activity were not limited to human physiology and health but extended to society at large via the economic benefits from an exercising populace (Shephard, 1990).

Almost from the beginning of his career, Roy knew that improvements in public health could result from an improved knowledge of the science of physical activity and exercise. Given that measurement is the basis of empiricism, his critical analysis of assessment techniques was a foundational element in his pursuit of an improved exercise science. As early as 1955, Roy began investigations into objective measures of cardiorespiratory fitness (CRF) (e.g., Douglas bag technique) (Shephard, 1965, 1966) and sought to create a safe and effective preliminary screening tool for candidates for exercise testing and prescription (Shephard, 1972, 1985). He recognized that one of the major limitations to the field of exercise science research was the impossibility of objectively measuring large segments of the population in clinical settings (Shephard, 1972). This realization led to his work with Fitness Canada on the development of a number of alternatives to clinical assessments of CRF. He and his colleagues' efforts led to the Canadian Home Fitness Test (CHFT) (Shephard, 1988) and revisions of the physical activity readiness questionnaire (PAR-Q) (Thomas et al., 1992). These revisions reduced the large number of unnecessary exclusions that plagued the earlier version and helped inform clinicians about the tools available for exercise testing and prescription.

Over the past 60+ years, Dr. Roy Shephard has published nearly 100 books and over 1,000 research papers on topics ranging from biochemistry, immunology and basic physiology to cardiac rehabilitation, the economics of public

health and lifestyle medicine. His longstanding commitment to a wide spectrum of research paths has helped shape the fields of exercise science and preventive medicine while furthering the public's understanding of the role of physical activity in health and well-being. His contributions continue to inform and enlighten today almost as much as his sense of humour has cheered his colleagues for the last seven decades.

Qualifications

The authors' qualifications are as follows: Edward Archer MS., Steven N. Blair P.E.D., FACSM

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