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## COMMENTARY

### The Legacy of Dr. Roy Shephard: Canada's New Risk Stratification Strategy and Clinical Exercise Prescription Guidelines

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#### Abstract

Dr. Roy Shephard is regarded widely as the leading authority in the exercise sciences and health promotion. His influence is legendary, including in the promotion of the health benefits of physical activity for those living with chronic disease and disability. His esteem within the field has in large part affected the way in which the medical community accepted exercise science as a viable and essential therapeutic intervention. His research challenged directly theories that were held to be true, demonstrating clearly the need for exercise in the effective secondary and tertiary care of chronic disease. The result of his influence can be measured directly by the establishment of clinical exercise rehabilitation programs across Canada (and the world) for a variety of chronic conditions. His work also highlighted the clear need for clinical practice guidelines for various chronic conditions. The development of Canada's new clinical exercise guidelines is in large part owing to the pioneering work of Dr. Shephard. His work on the new risk stratification strategy (i.e., the PAR-Q+ and ePARmed-X+) and related clinical guidelines reflect his continued influence and importance to the field. All exercise scientists and young Canadian academics owe an enormous amount of gratitude to Dr. Shephard for his vision, dedication, innovation, and compassion for others.

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#### Introduction

I would like to preface this commentary by stating how highly I regard Dr. Roy Shephard and his influence on so many careers (including my own). He is simply one of Canada's pre-eminent figures in any field of study. His influence cannot be appreciated completely owing to the breadth of his work; however, as this tribute series attests his impact on various fields of research is extraordinary. I am pleased to be a small part of this Festschrift, honouring Dr. Roy Shephard. As outlined throughout this two part series this celebratory writing contains numerous articles by Dr. Shephard's close colleagues and many former research trainees. What is particularly revealing is the impact that Dr. Shephard has had on individuals that were not his trainees. Dr. Shephard is truly a remarkable academic and more importantly a great person who endears himself to everyone that meets him.

#### *My Experiences*

As a student working with Dr. Norman Gledhill and Dr. Veronica Jamnik at York University I became well aware of the early pioneering work of Dr. Roy Shephard. Dr. Shephard was regarded as one of the most influential thinkers in the exercise sciences. In conversations with

fellow graduate students it became apparent that many of the seminal works in various fields of research were conducted by Dr. Shephard and colleagues. His regard at York University and the University of Toronto were unparalleled.

When conducting research at the University of Toronto with Dr. Scott Thomas it became readily evident the regard of Dr. Shephard's influence on the University of Toronto program (as discussed by Drs. Goodman and Thomas in this issue (2011)) and the exercise sciences as a whole (as discussed throughout this series by others).

As a graduate student, I did not know Dr. Shephard personally. However, his example of productivity and influence became the benchmark to which I aspired. A lofty goal certainly for any academic. As outlined by Drs. Gledhill and Jamnik (2011), Dr. Shephard has published over 1800 peer-reviewed works, and continues to be as productive as any researcher in the field. It is hard to imagine any other academic (irrespective of discipline) that has achieved so much in a career.

It was not merely the numbers of articles, it was the breadth and quality of the work. In my readings it was evident that much of the early work in the exercise sciences and health promotion were conducted by Dr. Shephard. Having now completed various systematic reviews, I often remark to my trainees how frequently the seminal works in various fields are from Dr. Shephard and his colleagues. This is truly a reflection of the innovative work that Dr. Shephard conducted and his influence on diverse research areas. For instance, I was tasked recently with creating a case for the implementation of a comprehensive workplace wellness program in the

province of British Columbia. To address this issue effectively and receive buy-in from the city employers it was clear that a cost effectiveness argument was needed to supplement the clear health benefits of a comprehensive workplace wellness program. During this literature search, I once again found that I was citing the work of Dr. Shephard to make my argument. It is not surprising to note that his early estimates for the costs savings associated with a workplace wellness intervention have been supported by numerous researchers. These estimates were based largely on Dr. Shephard's analysis of the limited data of the literature available at the time. The fact that he was able to predict values (based on a very limited body of literature) that are similar to recent estimates provides a great example of the remarkable capacity of Dr. Shephard.

### ***Clinical Exercise Prescription and Guidelines***

I have been honoured to work closely with Dr. Shephard in recent years on various projects. This includes working with him on the critical evaluation of the health benefits of physical activity in asymptomatic and symptomatic individuals. When working on the evaluation of Canada's physical activity guidelines for adults (Warburton et al., 2007) it was clear that the sage advice of Dr. Shephard was needed. The systematic evaluation of the effects of routine physical activity on the primary prevention of various conditions (including coronary heart disease, stroke, obesity, type 2 diabetes, hypertension, breast cancer, colon cancer, and osteoporosis) was certainly a lofty goal, involving tens of thousands of articles. This simply could not have been achieved without the guidance and support of Dr.

Shephard. For this work we had to review carefully thousands of articles and synthesize the findings into a meaningful and understandable format. Dr. Shephard's expertise and understanding of the literature were invaluable resources for our team. I am in particular grateful for his timely and meticulous revision of our paper. Dr. Shephard was able to review a paper that was over 200 pages in length in a few days, and his comments were instrumental in creating a document that we are proud to say formed the foundation for the revision of Canada's Physical Activity Guidelines for adults.

I have been honoured to collaborate with Dr. Shephard on various other projects in recent years. For instance, Dr. Shephard was at the top of the list when we thought of those individuals that would be best for the Consensus Panel for Canada's new risk stratification and physical activity participation clearance strategy (i.e., the PAR-Q+ and ePARmed-X+). We could think of no one more suited to guide the new PAR-Q+ and ePARmed-X+ forms, and the related clinical exercise prescription guidelines. Through our various reviews of the literature, it became apparent that the seminal works in the field often involved Dr. Shephard. For instance, his research in clinical exercise rehabilitation provided the foundation for those working with persons living with coronary artery disease, stroke, spinal cord injury, cancer, disability, and/or hypertension (to list a few of the conditions). Moreover, his early reviews of the literature on the health benefits of physical activity for various chronic conditions were the benchmark for all others to compare. In fact, his critical appraisal of the literature met and exceeded current guidelines for systematic reviews of the literature well

before these guidelines were operationally defined. This provides another example of Dr. Shephard's work being ahead of its time.

As outlined by Dr. Kavanagh in this series Dr. Shephard's influence can be measured directly by the establishment of clinical exercise prescription programs across Canada (and the world) that were based on the model developed by Dr. Shephard and his colleagues (Kavanagh, 2011). It should be highlighted that prior to his early work that the advice given to most patients with heart disease was the avoidance of exercise in favour of bed rest. I believe strongly that all individuals and practitioners involved in clinical exercise rehabilitation owe a great debt of gratitude to Dr. Shephard for his pioneering work in the field. In fact, Dr. Shephard was promoting "exercise as medicine" well before this term became mainstream.

I am particularly grateful to Dr. Shephard for his invaluable contributions to the current revision and development of the PAR-Q+ and ePARmed-X+ (Warburton et al., 2011a; Warburton et al., 2011b; Warburton et al., 2011c; Warburton et al., 2011d; Warburton et al., 2011e). He has been a major driving force behind ensuring that the new risk stratification and physical activity participation clearance strategy meets the burden of the medical community and reduces the barriers to physical activity participation for all Canadians (including those living with chronic disease and/or disability). As one of the original authorities involved with the design and subsequent revision of the Physical Activity Readiness Questionnaire (Shephard, 1988; Shephard, 1994; Shephard et al., 1981; Thomas et al., 1992) Dr. Shephard's expertise and knowledge were second to none. Through

our various planning and consensus meetings, I was able to learn a great deal from Dr. Shephard about how international initiatives should be conducted. Through these meetings I was able to observe directly the respect that Dr. Shephard has earned from his colleagues, and more importantly his compassion for others. I can think of no other academic that is so welcoming and considerate of others. When Dr. Shephard has an opposing opinion he does not take an antagonistic approach. Rather he graciously acknowledges the viewpoints of his adversary highlighting how the evidence would point in the other direction. As supported by Dr. Bouchard's article in this issue, Dr. Shephard has the unique capacity to consider the opinions of others to make a well-informed decision (Bouchard, 2011).

I have always valued Dr. Shephard's insightful perspective and feel that my research program has been strengthened greatly with our collaborations. In designing and running our Consensus meetings we can always rely on the wisdom of Dr. Shephard who had previously organized international congresses that had set the standard for the field (see (Gledhill and Jamnik, 2011)). He also has the unique advantage of being amongst the rare group of individuals that was there at the foundation of the field of exercise sciences. A testament to the influence of Dr. Shephard can be seen during major consensus meetings. For instance, when Dr. Shephard makes a comment all in attendance will cease their current conversations and listen to the insight provided by Dr. Shephard. Young academics will often reach for their note pads, as Dr. Shephard's advice is filled with insight that is of great assistance to current research programs. I personally have formulated research questions for

upcoming initiatives based on the advice given by Dr. Shephard.

Dr. Shephard's contributions to our various initiatives have been remarkable. I consider these works as some of the most influential and important works that I have had the honour to participate in, and believe that Dr. Shephard's insight has allowed each initiative to move beyond anticipated goals. For instance, we now envision the new risk stratification and physical activity participation clearance strategy will be used by 50 million individuals worldwide. Dr. Shephard has also been a major driving force for the development of exercise prescription guidelines for various medical conditions. We anticipate that this work will lead to a major advancement in the treatment of persons living with chronic medical conditions and/or disability. As such, Dr. Shephard's legacy will continue to grow

On a more personal note, I have learned a great deal from working Dr. Shephard and observing his interactions with others. I was not a trainee of Dr. Shephard; however, at all times he has treated me with the utmost respect and provided remarkable mentorship. He has exhibited the importance of compassion and respect for others. He has also demonstrated a work/life balance that is exemplary. For everyone that collaborates with Dr. Shephard it is clear that he views his family (i.e., his two daughters and wife) as his greatest achievement. In academia all too often professors seem to lose sight of the most important things in life. Despite being one of the world's most prolific researchers, all that know Dr. Shephard realize that his family comes first and foremost. Moreover, his commitment to his community is remarkable as exemplified by the glowing acknowledgements from

fellows members of the United Church of Canada, in Squamish, British Columbia. Dr. Shephard is one of the rare academics that has figured out how to balance life with work, without compromising either. This is no small task, and an example that I look up to. I recall meeting Muriel Shephard (Dr. Shephard's loving wife) and thinking how special of a relationship that they had. The conversations that we had sitting over dinner still resonate to this day, reflecting the remarkable journey that Muriel and Dr. Shephard have taken. I believe sincerely that Dr. Shephard has provided a shining example of how an academic can succeed in their professional and personal life.

### Summary

As outlined in this editorial and the numerous other articles that form this series, Dr. Shephard is a remarkable person. I feel truly blessed to have been able to collaborate with Dr. Shephard. He brings a unique perspective to issues that cannot be paralleled. As Drs. Gledhill and Jamnik stated Dr. Shephard is clearly one of Canada's national treasures. We are so fortunate to have had him lead the exercise sciences in Canada, and owe him a great deal of gratitude for moving Canada's research in the field for more than 60 years. I personally am grateful for the years of mentorship and guidance he has provided during our various research projects and publications. I am honoured to consider Dr. Shephard as one of my mentors, and feel that my life has been enriched greatly by getting to know him. Dr. Shephard is simply the sort of academic by which all others should compare.

### Qualifications

The author's qualifications are as follows: Darren E. R. Warburton Ph.D., CSEP-CEP, CSEP-CPT ME.



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