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Author: Sean M Tweedy Emma M Beckman

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Author: Tim J Geraghty

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Author: Daniel Theisen

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Author: Claudio Perret

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Author: Lisa A Harvey

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Author: Yves C Vanlandewijck

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Title: Response to Letter to the Editor Re: Exercise and Sports Science Australia (ESSA) Position Statement on Exercise and spinal cord injury.

Authors: Sean M Tweedy<sup>a</sup>, Emma M Beckman<sup>a</sup>, Tim J Geraghty<sup>b</sup>, Daniel Theisen<sup>c</sup>, Claudio Perret<sup>d</sup>, Lisa A Harvey<sup>e</sup>, Yves C Vanlandewijck<sup>f</sup>

<sup>a</sup> The University of Queensland, School of Human Movement Studies, Australia

<sup>b</sup> Queensland Spinal Cord Injuries Service, Princess Alexandra Hospital, Metro South Health, Brisbane, Australia

<sup>c</sup> Sports Medicine Research Laboratory, Public Research Centre for Health, Luxembourg, Grand-Duchy of Luxembourg

<sup>d</sup> Institute of Sports Medicine, Swiss Paraplegic Centre Nottwil, Switzerland

<sup>e</sup> John Walsh Centre for Rehabilitation Research, Sydney Medical School/Northern, University of Sydney, Australia

<sup>f</sup> Katholieke Universiteit Leuven, Faculty of Kinesiology and Rehabilitation Sciences, Belgium

We would like to thank our colleague for her thought-provoking comments on our paper<sup>1</sup> and for providing us with the opportunity to highlight and expand upon some important points. We begin by conceding that the aerobic exercise recommendations in the *Physical Activity Guidelines for Adults with Spinal Cord Injury*<sup>2</sup> were not “re-published” by the American Congress of Rehabilitation Medicine (ACRM)<sup>3</sup>. However the minimum frequency, intensity and duration of aerobic exercise recommended – at least 20 minutes of moderate to vigorous intensity activity on two days per week – are the same in both publications and, in the interests of balance, our intention was to inform the reader that, while the 2011 Guidelines were several years old, they had received recent support from a reputable, independent authority. The rigour of the 2011 Guideline development process together with the ACRM reiteration indicate that this aerobic exercise recommendation deserves serious consideration. However international health authorities including, but not limited to, the World Health Organisation<sup>4</sup> and Centers for Disease Control and Prevention<sup>5,6</sup> recommend that, for good health, people with disabilities – which, by definition, includes people with SCI – should complete more than 3 times that volume:  $\geq$  30 minutes of moderate aerobic exercise on  $\geq$  5d/week. In developing the ESSA Position Statement<sup>7</sup> we considered both these aerobic exercise recommendations, as well as the evidence underpinning them, with the aim of providing practitioners with prudent, clinically-relevant, evidence-based recommendations for assisting their clients with SCI to achieve good health.

An important difference between the 2011 Guidelines and the ESSA Position Statement is not the discrepancy between the volume of aerobic exercise recommended, but the aims: the aim of the Position Statement is to recommend the volume of aerobic activity required for good health, while the aim of the 2011 Guidelines was to recommend “... the minimum frequency, intensity, duration and type of training needed to generate fitness benefits among people with SCI”. Our decision to recommend the volume required for good health was taken because that ESSA Position Statement is explicitly addressed to professional practitioners and we felt it was critical for us to provide a guide as to the volume of aerobic activity required for their clients to achieve good health. Moreover, based on what is known about the dose-response relationship between physical activity and health, we were persuaded that recommending a minimum volume was problematic. Specifically, we concur with Powell et. al.

who stated that the belief that there is a threshold of activity that must be achieved before benefits accrue is common but inaccurate. There is no lower threshold for benefits: something is better than nothing<sup>8</sup>.  
p.353. Recent public physical activity guidelines for both the general population<sup>9</sup> and people with disabilities<sup>5,6</sup> reflect this evidence by including the message that “Something Is Better Than Nothing” at the beginning of their guidelines, prior to recommending the volume of aerobic activity required for good health. Inclusion of this message ensures the guidelines are relevant for even the most profoundly inactive.

In her letter Martin Ginis makes a most important point that we agree with entirely – strong evidence indicates that many people with SCI are profoundly inactive<sup>1</sup>. In fact, some of the strongest evidence that people with SCI are profoundly inactive comes from the systematic review on which the 2011 Guidelines were based<sup>2,10</sup>. Findings from this review indicate that participants with SCI who met the inclusion criteria for the studies that were reviewed were so profoundly inactive at baseline that, on balance, a dose as small as 20 minutes of moderate intensity physical activity on two days per week was sufficient to increase physical capacity. If this had not been the case and participants had been doing more than this volume at baseline (e.g., meeting WHO guidelines), completion of this reduced volume would not have induced improvements in physical capacity.

Therefore, because activity levels among people with SCI are so low, the ESSA Position Statement not only provides an aerobic recommendation that will achieve good health, but provides professionals with a framework for appropriate clinical application of the recommendation. Specifically, we advise practitioners to stratify clients into “beginning”, “intermediate” and “advanced”. We define Beginning Clients as those who are “not currently completing the recommended exercise volume for good health and, based on conventional and safe rate of exercise progression will be unlikely to reach that exercise volume in the next three months”. We alert practitioners to the fact that a high proportion of clients with SCI will fall into this group and advise them that, for such clients, very modest goals (e.g., increasing by 5 minutes of moderate intensity activity per day) may be appropriate. It is notable that the volume of activity in the example we provide is lower than the minimum volume recommended in the 2011

Guidelines and therefore likely to be more achievable for those with many with SCI (e.g., those with tetraplegia and/or co-morbidities, the chronically inactive, or a combination of these characteristics). Overall, we believe the ESSA Position Statement achieves its aim, providing practitioners with prudent, clinically-relevant, evidence-based recommendations for assisting their clients with SCI to achieve good health.

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