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Editorial

International Congress on Soldiers' Physical Performance 2017 (ICSPP2017) Special Issue



This special issue of the Journal of Science and Medicine in Sport originates from the 4th International Congress of Soldiers' Physical Performance (ICSPP2017) which was hosted by the Defence Science and Technology Group in Melbourne, Australia from 28 November to 1 December 2017. The ICSPP is the most important international conference in applied military human performance research and therefore attracts experts from all over the world. ICSPP2017 had a record attendance of 502 delegates from 32 countries (Fig. 1). ICSPP2017 included 8 invited keynote lectures (Table 1), 23 featured science session, 17 oral free communication sessions, 9 thematic oral poster sessions, and 3 poster free communication sessions. In addition, an interactive case study on dismounted soldier performance assessment and a roundtable on resilience for military readiness and preparedness was conducted. Overall, the topics covered were comprehensive and included physical training programs and adaptations, occupational and physical performance testing and assessment, injury prevention, public health practices, nutritional considerations, human factors, ergonomics, equipment design, biomechanics, load carriage, gender integration issues, environmental issues, health promotion and wellness, deployment concerns, pedagogy, psychological, and cognitive factors, leadership, and social factors. Accepted congress abstracts were made available through an online Journal of Science and Medicine in Sport supplement.¹

This special issue contains 9 manuscripts focused on aspects of military physical performance. Three manuscripts are invited reviews from ICSPP2017 keynote speakers and cover important topic areas which have been developed and refined through many years of primary research in the military context, including, optimising training adaptations and performance (Kyröläinen et al., Finland), a public health approach to prevent musculoskeletal injuries (Jones et al., United States of America) and physiological monitoring (Friedl, United States of America). The special issue also contains 2 invited manuscripts which provide important methodological guidance in the military context for the testing and evaluation of exoskeletons (Mudie et al., Australia) and for the development of organisation-wide physical employment standards (Carstairs et al., Australia). Two further papers are dedicated to important areas of primary research including the variability in physical fitness adaptations during military training (Burley et al., Australia) and the association between obesity related health risk and fitness test results (Sanderson et al., United Kingdom). The final 2 manuscripts present important international per-

spectives on resilience for military readiness and preparedness (Nindl et al., United States of America) and military research priorities and gaps (Lovalekar et al., United States of America). The later manuscript provides important guidance to researchers and practitioners about the current and future research priorities across the service members operational lifecycle.

The articles in this issue identify some of the latest findings, methodologies and international perspectives pertinent to military physical performance. The manuscripts add to the knowledge-base and provide guidance on how to leverage and translate human performance research well beyond the military, with applications in many other physically demanding occupations and to sport. As such, the Journal of Science and Medicine in Sport is pleased to be able to publish high quality research in the field of military human performance. Synergies of research methodology and the focus on human performance outcomes have resulted in increasing dialogue between military and sport researchers. The dual focuses of the journal, namely sport science and sports medicine, are highly relevant to the military environment, where enhanced human performance and reduced injury risk are as critical to mission success as they would be to sports performance.

Table 1

Invited keynote speakers for the 4th International Congress on Soldiers' Physical Performance.

Speaker	Presentation title
Professor Romain Meeusen (BEL)	The underlying mechanisms of overtraining and management strategies in the military environment
Dr Bruce Jones (US)	Managing musculoskeletal injuries in the military environment
Professor Heikki Kyröläinen (FIN)	Optimising physical training adaptations and military performance
Professor Sam Marcora (UK)	Limits to exercise tolerance in humans – mind over muscle?
Professor Maria Fiatarone-Singh (AUS)	Resistance training, it's a no brainer...
Professor Louise Burke (AUS)	Supporting training and performance in the military environment through nutrition and supplementation
Dr Karl Friedl (US)	Role and benefits of wearable physiological sensors in the military
Associate Professor Thor Besier (NZ)	The application of wearable technologies in the military context

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Fig. 1. Countries represented at the 4th International Congress on Soldiers' Physical Performance.

Table 2

Recipients of the inaugural International Congress on Soldiers' Physical Performance (ICSPP) – International Military Sports Council (CISM) Awards.

Award	Recipient
ICSPP–CISM Lifetime Achievement Award	<ul style="list-style-type: none"> • Karl Friedl (United States of America) – Recognising leadership and distinguished service across a lifetime in military physical and physiological performance research.
ICSPP–CISM Best Oral Presentation Award	<ul style="list-style-type: none"> • Thor Anders Kilen (Denmark) – The effect of training frequency and initial training status on adaptation amongst basic army conscripts.
ICSPP–CISM Best Thematic Oral Poster Presentation Award	<ul style="list-style-type: none"> • Heather Bowes (Australia) – A contribution to understanding the impact of variations in body mass on fractioning the metabolic burden of military load carriage.
ICSPP–CISM Best Poster Presentation Award	<ul style="list-style-type: none"> • Christopher Vine (United Kingdom) – A job task analysis to quantify the physical demands of load carriage duties conducted by ground close combat roles in the UK Armed Forces. • Shawn Eagle (United States of America) – Asymmetrical landing patters combined with heavier body mass increases lower extremity injury risk in Special Operation forces.
ICSPP–CISM Student Travel Grant Awards	<ul style="list-style-type: none"> • Anne Beethe (United States of America) – Comparing lower extremity strength with aerobic and anaerobic capacity to predict novice combat swimmer 500 m time trial performance. • Lopes Thiago (Brazil) – Phase one of a musculoskeletal injury prediction model validation: a prospective study in Navy cadets. • Jeremy McAdam (United States of America) – Impact of whey protein supplementation on fitness performance, body composition and injury rates in Army initial entry soldiers. • Nilton Gomes Rolim Filho (Brazil) – Serum creatine kinase and immune system relationship in different Brazilian biomes during the 2012 Commandos Special Operations Course.

Through an Agreement of Cooperation between the Defence Science and Technology (DST) Group and the International Military Sports Council (CISM) for ICSPP2017 a number of congress awards and travel grants were established. The congress awards acknowledge the outstanding contributions of individuals and organizations and recognises excellence in military physical and physiological performance research. Recipients of each award are provided in Table 2. The inaugural ICSPP–CISM Lifetime Achieve-

ment Award was awarded to Dr Karl Friedl (United States of America). Karl has inspired, provided strong leadership and positively influenced other researchers from around the world over several decades, and in doing so has served to advance soldiers' physical performance on an international scale.

As guest editors, we are confident that you will find papers in this supplement of scientific substance and of military relevance. Finally, we encourage your attendance and participation at

ICSPP2020 from 11 to 14 February 2020 in Quebec City, Canada (<http://www.icspp2020.ca/>).

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Reference

1. ICSPP2017 Abstracts. *J Sci Med Sport* 2017; 20(Suppl. 2):S1–S178.

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