SESNZ
SPORT & EXERCISE SCIENCE
NEW ZEALAND

ABSTRACTS FROM THE 2018 ANNUAL CONFERENCE

26th-27th October 2018
University of Otago,
Dunedin, New Zealand

Programme

Day One: Friday 26th October (Hutton Theatre)		
7:45 – 8:45	Registration and refreshments	
8:45-9:00	Welcome	
9:00-10:00	**Keynote Speaker: Professor Kathryn Schmitz,** Professor of Epidemiology, Penn State University and President of the ACSM.	
10:00-10:25	**Morning Tea**	
Parallel Sessions	Hutton (Clinical Exercise Physiology)	Barclay (Training load)
10:30	Effects of high intensity interval vs moderate intensity continuous training on fitness and body composition in active breast cancer survivors. *Richard Bell*	The effects of heavy-sled sprint training on acceleration capabilities in female rugby sevens athletes: A pilot study. *Francesco Sella*
10:45	Protein, insulin-like growth factor (igf-1) and exercise: a systematic review. *Colleen Gulick*	An exploration of the term "training density", what it means, how it's measured and how it's applied to rugby union training. *Tiaki Brett Smith*
11:00	Heat conditioning for health in arterial disease. *Ashley Akerman*	The effects of morning preconditioning protocols on testosterone, cortisol and afternoon sprint cycling performance. *Kerin McDonald*
11:15	Blood pressure responses to different modes of heating. *Holly Campbell*	Physical characteristics of NZ Army, Navy and Airforce officer trainees pre and post a 6-week joint officer induction course. *David Edgar*
11:30- 12:30	**Lunch**	
12:30-13:30	**Keynote Speaker: Professor John Hawley,** Professor of Exercise Physiology and Nutrition, Australian Catholic University.	
Parallel Sessions	Hutton (Sports Nutrition)	Barclay (Sport Performance)
13.30 – 13.45	Effects of glucose ingestion and exercise on cerebrovascular. Function. *Ben Smith*	Evaluating the effectiveness of plyometric training plan for improving the serve

7.The Effects of Morning Preconditioning Protocols on Testosterone, Cortisol and Afternoon Sprint Cycling Performance.

[1]**McDonald, K**, & [1]Maulder P.

[1]*Wintec*

Opportunity exists for athletes to undertake morning exercise protocols in an attempt to potentate afternoon performance. Four track sprint cyclists involved with Cycling NZ's development programme completed either a morning cycling (Cyc) or weights (W) based protocol (P) prior to an afternoon 500m cycling time trial. Heart rate, testosterone (T) and cortisol levels were measured along with peak power (PP) in the morning and afternoon. The WP produced significantly ($P = 0.018$) faster times between 250-500m in comparison to CycP. The anticipated circadian decline of T was observed after the CycP but was however mitigated following the WP. While slight decreases in 500m times were experienced during the WP, they are considered within the normal variations experienced between performances by elite athletes. Differences in morning T levels between protocols may be due to athlete's motivation to complete each protocol. The effect of the WP on the circadian rhythm of T could be linked to a greater recruitment of muscle fibres. The use of a heavy resistance morning exercise protocol is recommended for positively effecting testosterone levels in the afternoon. Possible gender and individual responses from conducting a W over Cyc protocol may exist but requires further investigation.

8.Physical characteristics of New Zealand Army, Navy and Airforce officer trainees' pre and post a 6-week joint officer induction course (JOIC).

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Introduction: Fitness levels of officers entering militaries worldwide has become a major focus. A plethora of research exists from other countries, but fitness data on the New Zealand Defence Force (NZDF) is lacking. This study intended to characterise NZDF officer trainees' pre and post a 6-week JOIC. **Methods:** 116 participants (Army; n=75, Navy; n=25, Airforce; n=16) were tested pre and post a 6-week JOIC, consisting of; a 2.4km-run, upper-body strength-endurance (press-ups and curl-ups) and Y-balance musculoskeletal-screening. **Results:** At baseline, Army performed better in the 2.4km-run and press-ups compared to the other services ($p<0.05$), Navy performed better in curls-ups. Across all services, there were significant pre to post improvements in 2.4km run time (676 ± 83s to 625 ± 82s, $p=0.02$), press-ups (25 ± 11 to 32 ± 11, $p=0.04$) and curl-ups (41 ± 21 to 56 ± 38, $p=0.01$). **Conclusion:** Army officers possessed superior baseline fitness compared to Navy and Airforce. Across all services, following a 6-week JOIC, significant improvements were found for aerobic-fitness, upper-body and core strength/endurance. **Take Home Message:** Appropriate training program design is critical to ensure significant improvements across all measures of fitness following a 6-week JOIC.