19th annual Congress of the

EUROPEAN COLLEGE OF SPORT SCIENCE

2nd - 5th July 2014, Amsterdam – The Netherlands

BOOK OF ABSTRACTS

Edited by:
De Haan, A., De Ruiter, C. J., Tsolakidis, E.

Hosted by the
VU University Amsterdam & VU University Medical Center Amsterdam

ISBN 978-94-622-8477-7

European College of Sport Science:
Book of Abstracts of the 19th Annual Congress of the
European College of Sport Science – 2nd - 5th July 2014, Amsterdam – The Netherlands.
Edited by De Haan, A., De Ruiter, C. J., Tsolakidis, E.
ISBN 978-94-622-8477-7

Conception, DTP: SporTools GmbH – Data management in sports
Corrections: Patera, N., Zappa, I., Tsolakidis, K., Kotidis, K.
Printed by Digital Printing Partners, Utrecht, The Netherlands

supported by

SPORTOOLS
Data management in sports

Feldblumenweg 26, 50858 Cologne, Germany
www.SporTools.de

Organisation

Congress President

- Arnold de Haan (NED)

ECSS Executive Board

- Marco Narici - President (GBR)
- Sigmund Loland – Past President (NOR)
- Tim Cable –President Elect (GBR)
- Joan L. Duda (GBR)
- Stephen Seiler (NOR)
- Gisela Sjøgaard (DEN)

ECSS Scientific Board

- Anton Wagenmakers - Chair (GBR)
- Flemming Dela - Co-Chair (DEN)
- Jan Cabri - Secretary (NOR)
- Paul Greenhaff (GBR)
- Martin Halle (GER)
- Susanna Hedenborg (SWE)
- Luc van Loon (NED)
- Jose Antonio Lopez Calbet (ESP)
- Abigail Louise Mackey-Sennels (DEN)
- Erich Müller (AUT)
- Nicole Wenderoth (SUI)

ECSS Scientific Committee

- Natalia Balague (ESP)
- Wilhelm Bloch (GER)
- Annalisa Cogo (ITA)
- Wim Derave (BEL)
- Peter Federolf (NOR)
- Taija Finni (FIN)
- Daniel Green, FECSS (GBR)
- Michael Grey (GBR)
- Markus Gruber (GER)
- Jørn Wulff Helge (DEN)
- Ylva Hellsten (DEN)
- Pierre-Nicolas Lemyre, (NOR)
- Johannes van Lieshout, (NED)
- Mike McNamee, FECSS (GBR)
- Maria Francesca Piacentini (ITA)
- Afroditi Stathi (GBR)
- Cecilie Thogersen-Ntouman (GBR)
- Janice L. Thompson (GBR)

ECSS Office

- Thomas Delaveaux
- Elias Tsolakidis
- Steffen Neubert
- Tuulia Hokkanen
- Juliane Melber

Local Scientific Committee

- Allard van der Beek
- Peter Beek
- Maarten van Bottenburg
- Maarten Bobbert
- Koen Breedveld
- Hein Daanen
- Jaap van Dieën
- Karin Gerrits
- Arnold de Haan
- Ivo van Hilvoorde
- Thomas Janssen
- Richard Jaspers
- Jos de Koning
- Koen Lemmink
- Willem van Mechelen
- Mireille van Poppel
- Jo de Ruiter
- Geert Savelsbergh
- Knoek van Soest
- Evert Verhagen
- Floris Wardenaar

Additional reviewers

- Cécile Boot
- Gertjan Ettema
- George Havenith
- Han Houdijk
- Vana Hutter
- John van der Kamp
- Willem van der Laarse
- Koen Levels
- Huub Maas
- Dionne Noordhof
- Raoul Oudejans
- Rob Pijpers
- Hidde van der Ploeg
- Karin Proper
- Bart Roelands
- Dick Thijssen
- Yves Vanlandewijck
- Lex Verdijk
- Rob Wüst
- Herman IJzerman

Organizing Committee

- Irene van Baardwijk
- Peter Beek
- Allard van der Beek
- Carien Damen
- Arnold de Haan
- Herman IJzerman
- Thomas Janssen
- Jos de Koning
- Romke Langezaal
- Solveig Lund
- Willem van Mechelen
- Hidde van der Ploeg
- Jo de Ruiter
- Eric van Rossum
- Thom Veeger
- Evert Verhagen

Welcome

On behalf of the European College of Sport Science (ECSS) and VU University Amsterdam we welcome you to Amsterdam for the 19th annual congress of the ECSS.

The two hosting partners, VU University Amsterdam and VU University Medical Center Amsterdam, have a long-standing reputation with excellent research in sport science. We have MOVE research institute amsterdam, which performs fundamental research on human movement with focus on rehabilitation, regenerative medicine and sports.

Besides that there is the Institute for Health & Care Research (EMGO+) with research is on public health, primary care and long-term care. We combine various fields of study and innovative techniques with focus on implementation and use in society.

The Amsterdam congress provides an outstanding scientific programme that emphasizes the current state of knowledge in sport science. The congress will feature four plenary sessions and 36 invited symposia on topical issues in the field. In total more than 2400 abstracts have been submitted from 67 countries. Free communications have been distributed among 74 oral and 106 mini-oral sessions. There are also 500 undebated E-posters, which can be viewed on large screens.

The capital of The Netherlands, host city for this 19th congress, is known for its beauty and historic significance. No-one can visit Amsterdam without having mounted on a boat for a trip on the cosy canals. Viewing the city from the water gives a total different experience.

Enjoy the finest works of art, the fruit of the blossoming 17th century in the Netherlands. In that time Amsterdam was a center where intellectual, artistic and trading activities converged. Rembrandt, Vermeer and other successful painters made the city Europe's leading center of art. Later, freethinkers like the philosopher Baruch de Spinoza found a warm welcome in Amsterdam, where religious tolerance was an important issue. You can learn about it in, amongst others, the Rijksmuseum and the Spinoza House.

Amsterdam will offer you a high-quality scientific programme, we anticipate that the 19th annual congress of the ECSS will be outstanding. On behalf of the ECSS and the local organizers we wish you great stay in Amsterdam. Enjoy sport science around the canals.

Prof. A. de Haan (VU University Amsterdam)

Table of Contents

** Clinical track*

items developed concerning players' perceptions of club support for off-field life and the adequacy of their free time. In addition estimated time spent in social, recreational, and family based activities were recorded. Multiple hierarchical regression was used to identify those variables best able to predict athletic engagement. Results Players' perceptions of club support for off-field life, the adequacy of their free time, and time spent engaging in social activities predicted 13% (P = < .05) of the variance in players' athletic engagement scores after controlling for the strength of athletic identity and team success at the time of data collection. Discussion This study provides some initial evidence that clubs' support for players' off-field lives and the adequacy of players' free time are associated with professional AFL players' quality of on-field engagement. These results add some support to the argument for a beneficial link between the work life balance experienced by professional athletes and their on-field effort and performances. Players' perceptions of being supported in their off-field life and the adequacy of their free time were stronger predictors than simply the amount of time spent in non-football related activities. Although limited by its reliance on self-reported measures and the inability of cross-sectional analyses to show cause and effect relationships, the present study provides support for the notion that AFL clubs looking for a competitive advantage would be wise to continue to strengthen their support for players' off-field lives as part of a prudent high performance strategy. References Brewer, B, Cornelius, A. (2001). Academic Athletic J, 15(2), 103-113. Lonsdale, C, Hodge, K, Jackson, S.A. (2007). International J Sport Psych, 38(4), 471-492. Contact Matthew.Pink@acu.edu.au

CHANGES IN PSYCHOSOCIAL STRESS AND RECOVERY AND INJURY OCCURRENCE: A ONE-YEAR PROSPECTIVE STUDY

van der Does, H., Brink, M.S., Lemmink, K.A.P.M.

Hanze University of Applied Sciences

Introduction Indoor team sport players have a high injury risk (Theisen et al., 2012). It is assumed that psychosocial stress and recovery have an impact on this risk (Jung, 2000). The aim of this study is to investigate if changes in psychosocial stress and recovery during the course of a season are related to injury occurrence. Methods During the 2011-2012 competitive season 66 male and female indoor team sport players (age:22.2±3.4yr, lenght:189.2±10.7cm, weight:82.9±13.0kg) participated in this study. To assess psychosocial stress and recovery the players completed the Dutch version of the RESTQ-Sport (Nederhof et al., 2008) every three weeks. Difference scores were calculated for each three-week period for the 19 subscales of the RESTQ-Sport. Injuries were registered during the course of the season by the medical staff of the team according to the FIFA registration system (Fuller et al., 2006). Comparisons were made between injured and non-injured players for the mean difference (Mdiff) scores on the 19 subscales of psychosocial stress and recovery. The mean difference was taken over the two 3 week periods before the injury for the injured players and the mean difference over the remaining periods was taken for the non-injured players. Results Fifty-three injuries (80%) were reported, resulting in an average of 15.6 days of medical attention and 16.7 days of time loss. A significant ($p<0.05$) larger decrease in perceived "fitness/being in shape" was found for injured players (Mdifff=-.203, SD=0.78) over the 3 weeks before the injury compared to the non-injured group (Mdiff=0.003, SD=0.73). The other 18 subscales showed no difference between injured and non-injured players. Discussion Three weeks before the occurrence of an injury, players perceive a decreased fitness and felt less in shape. It seems that players already felt discomfort but still participated in sport until they were forced to quit. As a result, injuries may become more severe and lead to more time loss. The RESTQ-Sport seems a useful tool to track changes in stress and recovery and detect players at risk, which makes it possible to prevent them from becoming injured. References Fuller CW, Molloy MG, Bagate C, Bahr R, Brooks JH, Donson H, Kemp SP, McCrory P, McIntosh AS, Meeuwisse WH, Quarrie KL, Raftery M, Wiley P (2006) Clin J Sport Med 17(3):177-81 Junge A (2000) Am J Sports Med 28:S10-5 Nederhof E, Brink MS, Lemmink KAPM (2008) Int J Sport Psychol 39(4):301-11 Theisen D, Frisch A, Malisoux L, Urhausen A, Croisier J, Seil R (2012) J Sci Med Sport 16(3):200-4 Contact h.t.d.van.der.does@pl.hanze.nl

INFLUENCE OF "ACOUSTIC AND VISUAL PACESETTERS" ON PERFORMANCE

Lecce, D.1, Cortis, C.1, Sanuheza Alfaro, S.P.1, Fattorini, L.2, Pasquali, M.2, Rodio, A.1

1 University of Cassino and Lazio Meridionale; 2 Sapienza University of Rome

Introduction:Appropriate acoustic stimuli may be induce ergogenic effects or decrease the perception of fatigue during exercise (1).Before the exercise, the listening music can be used to improve performance modifying the motivational state (2).Furthermore, it has been demonstrated that music tempo matching with the exercise cadence can induce an auditory-motor synchronization that optimize exercise efficiency (3).Besides acoustic, the visual stimuli have been also proven capable to improved the tolerance of high intensity exercise (4).The aim of this study was to assess the influence of acoustic and visual pacesetters synchronized with exercise cadence with regard to energy expenditure. Methods:Seven health male subjects(age: 30(±3.74) yrs; height: 177 (±6.63) cm; weight: 79.29 (±7.63) kg) were enrolled and underwent to a 30minutes exercise at constant speed on a cycloergometer at a workload intensity corresponding to 70% of the ventilatory threshold.Energy expenditure was evaluated in 3experimental conditions: ASEPTIC (AS), no stimulus; ACUSTIC (AC),sound at 120 beat per min; and VISUAL (VS), image sequence at 120 frames per min. In all trials, VO2was measured breath by breath by means a metabolimeter (K4b2, Cosmed, Rome, Italy). Results:The total oxygen consumptions (EE tot) calculated as ∫(V ̇O_2)], scaled by body mass, were: 569 (±108.9) ml/kg, 532 (±97.6); 521 (±110.8) ml/kg; 526 (±97.9) ml/kg in AS, AC, VS respectively. Statistical analysis showed that EE tot in AC and VS were different by AC. In particular 93.70% (±3.83) and 92.64% (±4.02) were the percentage of EE tot in AC and VS when compared with AS. Discussion:The effect of acoustic or visual pacesetters on EE tot in a speed constant cycling exercise at submaximal workload was evaluated in comparison with a same exercise without stimuli. In particular, it was obtained that the subject's engage decrease when a rhythmic stimulus, acoustic or visual, is present. The results of this study could be used for the development of new training modalities and tool. Reference: 1) CI Karageorghis et al. (1997) The psychophysical effects of music in sport and exercise. J Sport Behav 20: 415-419. 2) DT Bishop et al. (2013) Tempo and intensity of pre-task music modulate neural activity during reactive task performance Psychol Music. 49-52 3) RJ Bood et al. (2013) The Power of Auditory-Motor Synchronization in Sports: Enhancing Running Performance by Coupling Cadence with the Right Beats. Plos on line; Volume 8. 81-98 4) MJ Barwood et al. (2009) A motivational music and video intervention improves high-intensity exercise performance. J Sports Sci Med;8: 435-442. Contact: lecce.daniela@libero.it