

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.

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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

ORGANISATION.....	3
WELCOME.....	7
TABLE OF CONTENTS	9
WEDNESDAY, JULY 2ND, 2014.....	17
13:00 - 14:00	17
MO-PM01 NU Ergogenic Supplements 1.....	17
MO-PM02 HF Obesity	19
MO-PM03 PH High Intensity Interval Training.....	22
MO-BN01 BM Running.....	25
MO-PM04 Molecular Biology & Strength.....	29
MO-SH01 Psychology & Soccer.....	32
MO-PM05 Physical Education & Body Composition.....	34
MO-PM06 TT Teamsport.....	38
MO-BN02 BM Kinematics.....	41
MO-PM07 TT HR Recovery & Variability	44
MO-PM08 SM Exercise=Medicine.....	47
MO-PM09 TT Agility.....	50
MO-PM10 Thermoregulation 1.....	53
MO-PM11 Physical Activity in Children 1.....	57
MO-SH02 Sport Psychology & Physical Education.....	60
MO-BN03 BM Cyclic Sports	63
MO-SH03 Athletes & Achievements.....	67
14:00 - 15:00	69
MO-PM12 PH Resistance Exercise	69
MO-PM13 TT Clinical 1.....	73
MO-PM14 PH Fatigue.....	76
MO-BN04 BM Balance & Stability.....	78
MO-PM15 Molecular Biology & Endurance	82
MO-SH04 Psychology of Team Performance.....	85
MO-SH05 Physical Education & Sociology.....	88
MO-PM16 TT Soccer.....	90
MO-BN05 Neuromuscular Performance.....	92
MO-PM17 TT Endurance Exercise 1	93
MO-PM18 SM Epidemiology.....	96
MO-PM19 TT Strength Training.....	99
MO-PM20 Thermoregulation 2.....	102
MO-PM21 HF Physical Activity in Children 2.....	105
MO-SH06 Sportmarketing & Consumersatisfaction	108

MO-BN06 Physical Education, Motor Skills & Dance	110
MO-SH07 Sport & Motivation	114
15:00 - 16:30	117
IS-PM02 Control of skeletal muscle mass with ageing: Effects of exercise, inactivity and inflammation *	117
IS-BN01 Maximizing wheeling performance! *	118
IS-PM01 Asthma in the athletes *	119
OP-PM01 Muscle Protein Synthesis & Balance	120
OP-BN01 Neuromuscular Physiology	123
OP-PM02 Alternative Exercise Training	125
IS-SH01 FEPSAC symposium - Knowing what we want tomorrow in order to prepare for it today: Career development and transitions of talented, elite and retired athletes	127
OP-SH01 Sports Policy and Statistics	128
OP-PM03 Lifestyle Research	130
OP-BN02 Kinematics	133
17:00 - 18:15	135
PS-PL01 Women versus men in sport and exercise	135
THURSDAY, JULY 3RD, 2014	137
08:30 - 10:00	137
OP-PM04 Nutrition & Supplements	137
OP-BN03 Biomechanics	139
OP-PM05 Sports Medicine & Exercise Therapy	141
OP-PM06 High Intensity Intermittent Training (HIT)	144
OP-BN04 Motor Control & Learning	146
OP-PM07 Vascular Biology	149
OP-SH02 Sports Sociology	151
OP-SH03 Sports Psychology	153
OP-PM08 Physical activity in children	155
OP-PM09 Chronobiology & Exercise	157
10:20 - 11:50	159
IS-PM06 Handcycling: from rehabilitation to elite sports performance *	159
IS-BN02 The Power-Duration Relationship: Physiological Determinants and Implications for Performance Assessment and Exercise Prescription sponsored by adidas *	160
IS-PM03 The beneficial effects of exercise training on muscle microvascular endothelial function in health and disease *	162
IS-PM12 Efficiency in endurance sports	163
IS-BN03 Muscle contractile mechanics of human multi-joint movements	164
OP-PM10 Exercise Metabolism	165
IS-SH02 Sport organizations in Europe – opportunities and challenges	167
IS-SH04 Tactical performance analyses in soccer: what approach matches?	168
OP-PM11 Ageing and Exercise Training	169
OP-PM12 Cardiovascular Exercise Physiology 1	172
12:00 - 13:15	174
PS-PL04 Who has the future in public health – young or old?	174

14:00 - 15:00	175
MO-PM22 Exercise & Muscle Metabolism	175
MO-BN07 Biomechanics	179
MO-PM23 Vascular Biology	182
MO-PM24 TT High Intensity Interval Training.....	186
MO-BN08 Motor Control & Learning 1.....	189
MO-PM25 Age-related Physiology.....	193
MO-SH08 Sport Statistics & Analysis 1.....	196
MO-SH09 Physical Education & Pedagogics.....	199
MO-PM26 TT Small Sided Games.....	202
MO-BN09 Motor Control & Learning 2.....	205
MO-PM27 TT General.....	208
MO-PM28 SM Upper Body Related Activity.....	212
MO-PM29 TT Endurance Exercise 2	214
MO-PM30 Health & Fitness	217
MO-PM31 Physical activity	220
MO-SH10 Sport Statistics & Analysis 2	224
MO-BN10 BM Injury Prevention.....	227
MO-SH11 Sport, Stress & Anxiety	230
15:00 - 16:00	234
MO-PM32 Exercise, Nutrition & Metabolism.....	234
MO-BN11 Neuromuscular Physiology.....	238
MO-PM33 Physical Disabilities & Activity.....	242
MO-PM34 Physical Activity & Exercise Training.....	244
MO-BN12 BM Muscle Function.....	248
MO-PM35 Nutrition & Body Composition	251
MO-SH12 Sport Psychology	255
MO-SH13 Psychological Interventions.....	258
MO-PM36 TT Talent.....	260
MO-BN13 Motor Control Learning 3	263
MO-PM37 TT Overhead Sports.....	267
MO-PM38 SM Lower Body Related Activity.....	269
MO-PM39 Vascular Physiology	273
MO-PM40 HF Ageing.....	275
MO-PM41 HF Health.....	278
MO-SH14 Sportpolicy & Management	281
MO-BN14 BM Athletics & Skiing	283
MO-SH15 Talent & Career Development.....	286
16:20 - 17:50	289
IS-PM08 Muscle stem cells and skeletal muscle plasticity.....	289
IS-BN05 Rate of force development: methodological, physiological and practical issues.....	290
IS-PM04 Pacing strategy: the key to optimal endurance performance of athletes and clinical populations	291
IS-PM07 Ischaemic preconditioning: Impact on exercise performance and the cardiovascular system *.....	292
IS-BN04 Inside the Moving Brain: Different Approaches to Study the Interaction of Brain and Complex Whole Body Movements.....	293

OP-PM13 Muscle Damage & Regeneration	293
IS-SH03 New perspectives with respect to the route of expertise	296
OP-SH04 Coaching	297
OP-PM14 Exercise & Training Effects	298
OP-PM15 Exercise Response in Obesity	301
18:00 - 19:30	303
OP-PM16 Healthy Ageing	303
OP-BN05 Balance & Training	305
OP-PM17 Cancer & Exercise	308
OP-PM18 Time-trial Performance	310
OP-BN06 Sleep & Motor Performance	312
OP-PM19 Exercise with Blood Flow Restrictions	314
OP-SH05 Sociology & Gender	317
OP-PM20 Exercise Therapy	319
OP-PM21 Teamsport Basketball & Volleyball	321
OP-BN07 Injury Incidence	323
FRIDAY, JULY 4TH, 2014	327
08:30 - 10:00	327
OP-PM22 Critical Power	327
OP-BN08 Running Research	329
OP-PM23 Obesity & Exercise	331
OP-PM24 Sport Nutrition	334
OP-BN09 Neuromuscular Activation	336
OP-PM25 Molecular Training Responses	338
OP-SH06 Sports Management	341
OP-PM26 Respiratory Physiology	342
OP-PM27 Spinal Cord Injury & (hand)cycle Exercise	344
OP-PM28 Endurance & Performance	347
10:20 - 11:50	349
IS-PM10 Concurrent training for peak power and endurance	349
IS-BN06 Core stability: What is it, does it matter, how can it be assessed?	350
IS-PM05 Exercise in cancer patients - study approaches and results from 3 European countries *	351
IS-PM13 JSPFSM-ECSS Exchange lecture: Physical Activity Guidelines: Japan and Europe by the example of the Netherlands	352
IS-BN07 Physiological characteristics of small-sided games	353
OP-PM29 Health & Fitness (ESSA Exchange)	354
IS-SH05 Interface problems of physical activity research and public health challenges *	356
IS-SH06 Perceptual training in sport	357
OP-PM30 Heart Rate Recovery & Variability	358
OP-PM31 Energy Balance & Expenditure	361
12:00 - 13:15	362
PS-PL02 Interaction between thermal environment, mental and physical status of the athlete and power output *	362

14:00 - 15:00	363
MO-PM42 NU Ergogenic Supplements 2	363
MO-BN15 Muscle Strength	367
MO-PM43 TT Clinical 2.....	370
MO-PM44 TT Strength & Power	373
MO-BN16 BM Jumping & Squatting.....	377
MO-PM45 Vitamins & Minerals.....	381
MO-SH16 Coaching 1	384
MO-SH17 Exercise Psychology	386
MO-PM46 TT Injury Prevention.....	389
MO-BN17 Motor Control & Learning 4.....	392
MO-PM47 Sport Injuries.....	395
MO-PM48 SM Exercise Responses.....	397
MO-PM49 Cardiovascular Physiology	400
MO-PM50 HF Aging Exercise	403
MO-PM51 HF Training	407
MO-SH18 Physical Activity & Age.....	410
MO-PM52 Sports Medicine 1.....	412
MO-SH19 Athletes, Achievements & Development.....	415
15:00 - 16:00	418
MO-PM53 PH Endurance Exercise	418
MO-BN18 Muscle Fatigue	421
MO-PM54 Biochemistry	424
MO-PM55 TT Fatigue.....	427
MO-BN19 BM Ageing.....	430
MO-PM56 Nutrition & Energy Metabolism	433
MO-SH20 Coaching 2.....	436
MO-SH21 Skill Acquisition	438
MO-PM57 TT Body Composition	441
MO-BN20 Motor Control & Learning 5.....	444
MO-PM58 PH Fat & Glucose Metabolism	447
MO-PM59 Physical Education & Health.....	450
MO-PM60 PH Performance Modification	454
MO-PM61 HF Ageing Cognitive.....	456
MO-PM62 Sports Physiology.....	460
MO-SH22 Social Significance of Sports	463
MO-PM63 Sports Medicine 2.....	464
MO-SH23 Intellectual Disabilities & Activity.....	467
16:20 - 17:50	469
IS-PM11 The Future of Sports Nutrition sponsored by GSSI *	469
IS-BN08 Developmental changes of neuromuscular control and muscle-tendon mechanics in children: implications for muscular force production and movement performance	470
IS-SH08 Applying the Exercise Science Model to the Prevention of Chronic Disease * - Sponsored by: The Coca Cola Company.....	471

IS-PM14 Interval Training revisited *	472
IS-BN09 Propulsion in swimming and rowing	473
OP-PM32 Training and Testing	473
IS-SH07 Long-term Follow-up & Implementation of School-based PA-Interventions: Myth or Fact? * - Sponsored by: The Coca Cola Company	476
OP-PM33 Cardiovascular Exercise Physiology 2	477
OP-PM34 Exercise Therapy in children with CP & COPD	479
OP-PM35 Team Sports	481
18:00 - 19:30	483
OP-PM36 Exercise training	483
OP-BN10 Balance Control	486
OP-PM37 Exercise Therapy & Insuline	488
OP-PM38 Muscle Signaling & Protein Synthesis	490
OP-BN11 Jumping Research	492
OP-PM39 Muscle Force, Damage & Metabolism	495
OP-SH07 Attention & Sport Performance	497
OP-SH08 Sport Psychological Interventions	499
OP-PM40 Teamsport Soccer & Rugby	501
OP-PM41 Exercise in the Heat	503
SATURDAY, JULY 5TH, 2014	507
08:30 - 10:00	507
OP-PM42 Supplementation & Performance	507
OP-BN12 Muscle Biomechanics	509
OP-PM43 Sports Medicine	511
OP-PM44 Central & Peripheral Fatigue	513
OP-BN13 Motor Learning	515
OP-PM45 Metabolic Adaptation to Exercise	517
OP-SH09 Education & Pedagogics	520
OP-SH10 Sport & Cognition	521
OP-PM46 ACL Reconstruction & Exercise	524
OP-PM47 Exercise & Cooling	526
10:20 - 11:50	528
IS-PM15 Ultra endurance exercise; physiological limitations and performance	528
IS-BN10 What do we know about intermuscular force transmission?	529
IS-PM09 Cardiovascular Adaptation in Athletes: What's New? *	530
IS-SH09 ECSS - ACSM exchange symposium : ActivEarth	531
OP-BN14 Injury Prevention	532
OP-PM48 Training & Adaptation	534
IS-SH10 Sitting, activity and health at work * - Sponsored by: The Coca Cola Company	536
IS-SH11 Sports law: the integrity of sports	537
OP-PM49 Cardiovascular Exercise Physiology 3	538
OP-PM50 Blood Markers of Fatigue & Inflammation	540

12:00 - 13:15	541
PS-PL03 Challenges for the Paralympic Games: fairness and identity *	541
E-POSTER	543
PP-UD01	543
Adapted Physical Activity	543
Biochemistry	548
Biomechanics	551
Coaching	568
Health and Fitness	573
History	604
Molecular Biology	604
Motor Learning	607
Neuromuscular Physiology	611
Nutrition	616
Philosophy and Ethics	627
Physical Education and Pedagogics	628
Physiology	636
Physiotherapy	662
Psychology	663
Rehabilitation	677
Sociology	680
Sport Management	682
Sport Statistics and Analyses	683
Sports Medicine	685
Training and Testing	700
AUTHORS INDEX	732

* *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

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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 ± 3.4 yr, length: 189.2 ± 10.7 cm, weight: 82.9 ± 13.0 kg) 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 (Mdiff = $-.203$, $SD = 0.78$) 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

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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: $30 (\pm 3.74)$ yrs; height: $177 (\pm 6.63)$ cm; weight: $79.29 (\pm 7.63)$ kg) were enrolled and underwent to a 30 minutes exercise at constant speed on a cycloergometer at a workload intensity corresponding to 70% of the ventilatory threshold. Energy expenditure was evaluated in 3 experimental 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, VO_2 was measured breath by breath by means a metabolimeter (K4b2, Cosmed, Rome, Italy). Results: The total oxygen consumptions (EE tot) calculated as $\int (V O_2)$, scaled by body mass, were: $569 (\pm 108.9)$ ml/kg, $532 (\pm 97.6)$; $521 (\pm 110.8)$ ml/kg; $526 (\pm 97.9)$ ml/kg in AS, AC, VS respectively. Statistical analysis showed that EE tot in AC and VS were different by AC. In particular $93.70\% (\pm 3.83)$ and $92.64\% (\pm 4.02)$ 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) Cl 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: lenne.daniela@libero.it