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BASES Conference 2019 – Programme and Abstracts

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Prof Richard Tong FBASES

Scientific Programme Committee

- Prof John Saxton FBASES (Chair),
 Northumbria University
- Dr Stuart Beattie FBASES, Bangor University
- Dr David Broom FBASES,
 Sheffield Hallam University
- Prof Florentina Hettinga,
 Northumbria University
- Prof Lars McNaughton FBASES, Edge Hill University
- Prof David Stensel, Loughborough University
- Prof Craig Twist FBASES,
 University of Chester

Welcome



from Prof Richard Tong FBASES

Chair of the British Association of Sport and Exercise Sciences (BASES)

On behalf of the British Association of Sport and Exercise Sciences, I am pleased to welcome you to BASES Conference 2019. This year's programme promises to be highly stimulating and informative. The keynote speakers, parallel symposia, posters and free communications look set to provide a variety of compelling and inspirational sessions that will undoubtedly live up to the high standard of conference that we are accustomed to. We are delighted to welcome Cambridge Nutritional Sciences, Wattbike, The Physiological Society and Routledge as our official gold supporters.

This year's conference is packed with content and insight, covering an array of topics and presentation formats. The BASES Scientific Programme Committee, chaired by Professor John Saxton FBASES, has secured over 35 expert speakers to deliver keynote lectures and parallel symposia sessions, bringing together a wealth of expertise, experience and passion for sport and exercise science in both research and applied settings. I would like to extend my thanks on behalf of BASES to the Scientific Programme Committee for preparing such an excellent programme.

We extend a special welcome to our invited keynote speakers: Professor Carl Foster from the University of Wisconsin-La Crosse, USA, Professor Mike Weed from Canterbury Christ Church University and Sarah Ruane from Sport England. With combined experience of over 50 years in applied sports science and public health contexts respectively, both opening and closing sessions will undoubtedly be packed with thought-provoking insight, extensive knowledge and topical debate. We also welcome two distinguished overseas speakers as part of this year's programme of parallel symposia: Professor Catherine Sabiston from the University of Toronto, Canada and Professor Fabrizio Benedetti from the University of Turin, Italy.

I would like to extend a sincere thank you to all of our exhibitors. Walkers Hall will house all our supporters and exhibitors, in addition to refreshments and posters, making this a vibrant networking hub to spend your time outside of the scheduled conference sessions. Please take time to visit the exhibition stands and speak to our conference sponsors, who will be showcasing a range of innovative and industry-leading products, services and publications.

Seven prestigious awards will be contested at this year's conference, which seek to reward outstanding contributions to sport and exercise sciences by BASES members. We would like to thank our award sponsors: Cranlea, Human Kinetics, Routledge/Taylor and Francis and Sportesse.

Opportunities for socialising and networking play a key part in this event. To facilitate this, we have scheduled plenty of breaks and extended lunch periods, so please utilise these to talk to your fellow delegates and renew old acquaintances. Following the BASES Annual General Meeting on day one, delegates will have a chance to let their hair down at our annual gala drinks reception and conference dinner, which takes place in the Keith Weller Lounge.

And finally thank you for taking time out of your busy schedule to attend this conference and for being part of BASES signature annual event. I hope you take the time to share your extensive knowledge with other delegates and that your time at the conference is worthwhile and enjoyable.

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Programme overview

from Prof John Saxton FBASES

Chair of the Scientific Programme Committee

On behalf of the Scientific Programme Committee, it is my pleasure to welcome you to BASES Conference 2019. After last year's jaunt to the beautiful North Yorkshire town of Harrogate, this year our annual flagship event returns to the Midlands. The King Power Stadium in Leicester is the home of the 2015-16 Premier League Champions, Leicester City Football Club, and encompasses a modern, purpose-built conference venue with superb facilities that will be a fitting backdrop to the UKs premier sport and exercise sciences conference.

The 2019 programme reflects the broad range of interests of BASES members, and includes presentations by world-leading researchers, academics and practitioners from around the globe. I am delighted that the Scientific Programme Committee has secured outstanding opening and closing keynote sessions that you will not want to miss. Professor Carl Foster from the University of Wisconsin-La-Crosse will be drawing upon his vast experience to present the opening conference keynote on translating science to coaching in performance sport. Our closing keynote session will be presented by Professor Mike Weed from Canterbury Christ Church University and Sarah Ruane, National Strategic Lead for Health at Sport England, whose work is at the cutting-edge of physical activity and public health policy. They will be addressing the important question of whether it is possible to shift the curve of sport and physical activity participation at the population level.

The BASES Annual General Meeting (AGM) will be held at the end of the first day. A full attendance at any AGM is always a challenge after a packed day of presentations, but please remember that attending the BASES AGM provides a unique opportunity to comment on a range of issues that not only have an impact on the Association, but also on the standing of sport and exercise sciences in the UK. It is in all our interests to participate in discussions that will shape the future direction of the Association.

The essence of any scientific conference is sharing research findings. This is effectively achieved via free communications and poster presentations. These sessions should be a two-way process, with authors presenting their research findings, followed by constructive exchanges that provide opportunities to discuss, challenge and debate. This not only enhances our knowledge and understanding of phenomena, but also uncovers new and innovative avenues for research. I would therefore encourage you all to support your fellow researchers by attending and participating in the free communication presentations, 5 slides in 5 minutes presentations, and poster viewing sessions that take place across the two days

Finally, on behalf of the Scientific Programme Committee, I hope you find the next two days collegial, enjoyable and informative, and that you leave the conference inspired and enthused about your commitment to making a difference within your realm of professional activity.



Prof John Saxton FBASES

Abstract Reviewers

- Dr Anna Myers
- Dr Anthony Papathomas
- Dr Audrey Duncan
- Dr Mike Price FBASES
- Prof Michael Duncan FBASES
- Dr Neil Clarke
- Dr Mathew Hill
- Dr Adam Gledhill FBASES
- Dr Adam Grainger
- Adam Hawkey FBASES
- Dr Doug Thake
- Prof Brendan Cropley FBASES
- Dr Camilla Knight
- Prof Costas Karageorghis FBASES
- Dr David Broom FBASES
- Dr Daniel Bailey
- Dr Denise Hill
- Dr Emma Kavanagh
- Franky Mulloy
- Dr Ibrahim Akubat
- Dr James Hopker
- Dr Kiara Lewis FBASES
- Dr Lindsay Bottoms
- Dr Mark Faghy
- Dr Matthew Pain
- Dr Mustafa Sarkar
- Dr Paul M. Smith
- Richard Taylor
- Prof Richard Thelwell FBASES
- Dr Stuart Beattie FBASES
- Shaun McLaren
- Shane Malone
- Dr Theodoros Bampouras
- Prof Zoe Knowles FBASES





DAY I - TUESDA	AY 19 NOVEMBER 2019					
08:30	Registration and refreshment	ts				
09:00-09:45	Special roundtable: Promoting the breadth and impact of special roundtable: Promoting the breadth and impact of special Research Prof Mike Tipton, University of Portsmouth, Dr Chris Gaffney, Lad De Montford University Chair: Prof John Saxton FBASES Sport and exercise science continues to see significant growth in both its application of the skills sport and exercise science fosters amongst graduates can often be a breadth of sport and exercise science and how education programmes can be a special Research Promoting Times and Promoting Times T			caster University, Dunction and in student numbers arrow and outdated. In this re	in higher educ	Emsi and Prof Joan Taylor, tation. However, public understanding sion, presenters will explore the s.
00.50	0 1 11 11 1	DACEC C	D (D) IT	EDACEC		D1.S1. Legends Lounge
09:50 10:00-11:00	Invited keynote: Translating s Prof Carl Foster, University of W Chair: Prof Florentina Hettinga Exercise science has a long tradition of those scientific findings to an end user- environments to discuss how more fun	Opening address Welcome from BASES Chair, Prof Richard Tong FBASES Invited keynote: Translating science to coaching in performance sport Prof Carl Foster, University of Wisconsin-La Crosse, USA Chair: Prof Florentina Hettinga Exercise science has a long tradition of trying to understand the fundamental processes that contribute to human movement; sport science aims to translate those scientific findings to an end user - the coach. In this keynote lecture, Prof Carl Foster will draw upon his extensive experience working in performance environments to discuss how more fundamental knowledge must be distilled to a focused common denominator to help the coach make decisions about the planning and execution of training programmes for athletes. D1.S2. Keith Weller Lounge				
11:00-11:30	Poster viewing, exhibition and	d refreshm	ients			Walker's Hall
11:30-12:30	Parallel invited symposia: Physical activity and heart he cardiovascular adaptation and cardiac death Dr David Oxborough, Liverpool	d sudden John	Health and mental in performance spo interdisciplinary ap Dr Andy Kirkland, Ur Dr Hayley McEwan, I	ort: an proach niversity of Stirling,	: an workshop: applications of cycle-bas oach exercise for team sport athletes	
	Sharma, St George's, University of London Chair: Prof John Saxton FBASES Sudden cardiac death is a rare but tragic event that can occur in athletes. This session will cover the multifactorial nature of physiological adaptation in the athlete's heart highlighting the impact of exercise training on structure and function of the cardiac chambers. Causes of sudden cardiac death will be discussed and the differentiation of the "athlete's heart" from pathology will be explored. of Scotland and Dr Pa University of Portsmo		tile FBASES Chair: Dr Adam Grainger Practitioners use "off feet" conditioning in an to deliver an alternative training stimulus whill reducing mechanical loading. These practices often employed in-season to enhance or maphysical qualities and in rehabilitation after injusted to draw upon and ces and expertise relating to king environment. Wattbike Chair: Dr Adam Grainger Practitioners use "off feet" conditioning in an to deliver an alternative training stimulus whill reducing mechanical loading. These practices often employed in-season to enhance or maphysical qualities and in rehabilitation after injusted to draw upon and cession explores the theoretical and practical application of cycle-based training in conditioning practices of team athletes.		Adam Grainger use "off feet" conditioning in an attempt alternative training stimulus while schanical loading. These practices are yed in-season to enhance or maintain ities and in rehabilitation after injury. oles from high-performance sport, this ores the theoretical and lication of cycle-based training in the	
12:30 -14:00	Lunch, poster discussions and exhibition					Walker's Hall
14:00-15:30	Parallel free communication s	sessions				DI.S4.
15:30-16:00	Exhibition and refreshment b	reak				Walker's Hall
16:00-17:00	Parallel invited symposia:					
	Biomechanics of wheelchair mobility: elite athletes and clinical populations Prof Vicky Tolfrey FBASES, Loughborough University and Prof Florentina Hettinga, Northumbria University	influence physical a wellbeing Prof Keith Hallam Ur	exercise": the of environment on activity, health and 3 Davids, Sheffield niversity and Dr adwell, University	Wearable technology friend or foe? Dr Grant Abt FBASES John Toner, University Chair: Prof Lars McNau FBASES	and Dr	Nutrition, supplement use and prohibited substances in sport: issues, challenges and solutions Irene Riach, sportscotland Institute of Sport and Liam Jefferson, UK Anti-Doping
	Chair: Adam Hawkey FBASES Gait analysis is a widely used method to assess gait characteristics of clinical populations, however, less is known on the biomechanics of wheelchair mobility. This session will firstly explore performance and biomechanics in elite wheelchair sport, before focusing on wheelchair propulsion in daily life and the wider context of physical activity engagement of special populations.	of Essex Chair: Dr / Exercising in provides mu addition to n physical activ Valerie Glady physiological changes that between the exercise and on health an Davids will th dynamics pe exercise".	Miranda Armstrong natural environments Itiple health benefits, in notivating and facilitating ity. In this session, Dr well will examine the and psychological result from interactions e environment and the resultant impact d wellbeing. Prof Keith hen explore the ecological rspective of "green	This session will explore the of consumer wearable tect for monitoring physical actipesenters will draw on the expertise in this area to disvalidity of devices for measphysical activity, together wof the research examining engage with these technol Delegates will leave with a understanding and appreciate opportunities and chall working with wearable tecrelation to both research as	hnology vity. The eir extensive cuss the ruring vith a review how users ogies. greater ation of enges of hnology in nd practice.	Chair: Dr Mike Price FBASES There are significant risks for athletes associated with the use of sports foods, energy drinks, vitamins and supplements. This roundtable session will bust myths around the use of supplements and highlight the importance of a "food first" approach. Featuring an update on the upcoming changes to the World Anti-Doping Code and Prohibited List in 2020, the session will explore which ADRV's apply to athlete support personnel and how practitioners can protect themselves and their athletes.
	D1.S5.1. Legends Lounge		.S5.2. Rowley Suite	D1.S5.3. Gal	lery Suite	D1.S5.4. Premier Lounge 2
17:15-18:00	BASES Annual General Meet	_		Rowley Suit		
19:00	Gala drinks reception / Conference dinner				Galler	ry Suite / Keith Weller Lounge









DAY 2 - WEDNES	SDAY 20 NOVEMBER 2019						
08:15	Registration and drinks						
09:00-09:55	Parallel 5 slides in 5 minutes free communication sessions D2.S1.						
10.00-11:00	Parallel invited symposia:						
	Rugby World Cup 2019 special: the role of the sport scientist in player development and preparation for elite team sport competitions Dr Martin Roderick, Durham University and Jon Clarke, England RFU Chair: Prof Craig Twist FBASES Placebo effects in sport and exe Prof Chris Beedie, University of Kerand Prof Fabrizio Benedetti, University of Turin Chair: Dr Grant Abt FBASES The need for conceptual clarity, methodols incur and the all girld tion of pourshields in pure and the all girld tion of pourshields in pure and the all girld tion of pourshields in pure and the all girld tion of pourshields in pure and the all girld tion of pourshields in pure and the all girld tion of pourshields in pure and the all girld tion of pourshields in player.		Kent versity	expert corecommon. Dr Kather Loughbor Skelton, Core	for osteoporosis - a new onsensus statement with endations rine Brooke-Wavell, rough University and Prof Dawn Glasgow Caledonian University David Broom FBASES		
	Providing an academic, practitioner and perspective, this interactive discussion v explore the support processes provide rugby players and the extent to which toffer effective strategies for enhancing performance and health. Practitioners a researchers will gain a deeper understathe athlete support process, the role of scientist and the broader impact on the in the development and preparation of teams for major competitions. D2.S2.1. Keith Weller Lounger	interactive discussion will port processes provided to elite d the extent to which these ategies for enhancing practice, d health. Practitioners and gain a deeper understanding of ort process, the role of the sport broader impact on those involved ent and preparation of elite sports competitions.		n sport and t consensus urnal of of the nt will share provide and Il expand	This session will describe the evidence base for the Strong, Steady & Straight Consensus Statement from the Royal Osteoporosis Society. Dr Katherine Brooke-Wavell and Prof Dawn Skelton will explain the importance of progressive strength training, impact and falls prevention exercise for improving bone strength and reducing falls risk. The importance of exercise in "caring" for the spine will be discussed, including techniques for moving and lifting, and for posture and pain following vertebral fractures. D2.S2.3. Legends Lounge		
11:00-11:30	Poster viewing, exhibition and	d refreshm	nents				Walkers Hall
11:30-12:45	Parallel free communication sessions				D2.S3.		
12:45-14:00	Lunch, poster discussions and exhibition Walkers H					Walkers Hall	
14:00-14:55	Parallel invited symposia:						
	Exercise and health psychology: innovative intervention strategies to improve health and psychosocial outcomes Prof Catherine Sabiston, University of Toronto and Prof Amanda Daley, Loughborough University Chair: Prof Zoe Knowles FBASES In this session Prof Catherine Sabiston and Prof Amanda Daley will present evidence about how innovative interventions can be used to encourage the population to participate in increased physical activity to improve psychological and wellbeing outcomes. The first presentation will focus on collaborative research landscapes for implementing physical activity interventions to improve psychosocial wellbeing for individuals with cancer. The second will focus on how the population can be "nudged" into making better decisions about their health and wellbeing, using physical activity calorie equivalent labelling as an exemplar. D2.S4.1. Keith Weller Lounge	function Prof Neil University Bishop, Le University Chair: Prof This session immune def good, the ba Neil Walsh a will demons has led to cu subject and a changes see matter clinic consider wh paradigm to illness on pe in mind, exp nutritional in athlete healt	F David Stensel will focus on exercise, ence and illness; the ad and the ugly. Prof and Dr Lettie Bishop trate how past research urrent thinking on the ask the question: do the in in immune defence ally? The presentations will ether it is time for a new minimise the impact of rformance and, with this lore new perspectives on teractions for	walking be patterns: and impli Dr Brook University Research I Siobhán St Roehampt Chair: Ada This session impact and a walking/runn patterns. Dr explore the comovements, relevant in sp dynamic task in rehabilitatic (transtibial an Galna will the walking beha persons living conditions, ai potential for monitoring a	Galna, Never Clinical Agunit and Drutrike, Universion m Hawkey I will explore the pplications of a faing behaviour a: Siobhán Strike challenges of as as this is participort (such as turn and air in disabnutations). Dren explore the viour and gair the viour and gair the properties of the properties	rsity of FBASES e research, nalysing and gait will ymmetric uldarly ming, pevres), ility sport Brook analysis of oatterns in nerative on its ression is.	Multidisciplinary team approach to supporting exercisers with relative energy deficiency in sport (RED-S) Dr Nicky Keay, Durham University and Renee McGregor, EN:SPIRE Clinic Chair: Prof Lars McNaughton FBASES Low energy availability due to relative energy deficiency in sport (RED-S) results in adverse clinical outcomes on health and performance affecting a wide range of exercisers. Effective identification and management of individuals at risk of RED-S requires collaboration from members of multidisciplinary teams: medical doctors, clinical dieticians, healthcare professionals and coaches. The presenters will discuss best clinical practice to support exercisers at risk of RED-S, drawing on recent and ongoing research into the condition.
15:00-16:00			-		_	ounge	D2.54.4. Premier Lounge 2
	Invited keynote: Shifting the curve of sport and physical activity participation Prof Mike Weed, Canterbury Christ Church University and Sarah Ruane, Sport England. Chair: Prof John Saxton FBASES In this interactive keynote session, Prof Mike Weed will present national survey and intervention data as a means to explore whether participation levels could be saturated, from a comparison of changes in individual participation versus changes in the population curve, prior to addressing the implications for future policy and implementation. Sarah Ruane will then share the latest insight and trends in participation, before considering what must change and what can be built-on to increase participation in the context of what is shaping our society's physical activity behaviours.						
16:00-16:10	Awards ceremony and closing	g address					D2.S5. Keith Weller Lounge Keith Weller Lounge
	,						

Day I. Parallel free communication sessions

Physical Activity for Health

Dr David Broom FBASES

14:00-15:30, **D1.S4.I Gallery Suite**

14:00	DI.S4.I(I)	Associations of total daily sitting time with cardiovascular disease and diabetes incidence: a systematic review and meta-analysis of prospective studies Daniel P Bailey, David J Hewson, Rachael B Champion & Suzan M Sayegh
14:15	D1.S4.1(2)	Development of a sedentary behaviour workplace intervention for police staff using the behaviour change wheel Marsha L Brierley, Angel M Chater, Lindsey R Smith & Daniel P Bailey
14:30	D1.S4.1(3)	Using accelerometery to classify physical activity intensity in older adults: what is the optimal wear-site? Michael J Duncan, Alex Rowlands, Chelsey Lawson, Sheila Leddington-Wright, Matt Hill, Martyn Morris, Emma Eyre & Jason Tallis
14:45	D1.S4.1(4)	Effectiveness of an 8-week exercise intervention on coping skills, resilience and physical fitness in drug addicts Gianpiero Greco, Stefania Cataldi, Piergiorgio Di Terlizzi & Francesco Fischetti
15:00	D1.S4.1(5)	The effect of high impact exercise on bone marrow lesions in postmenopausal women Chris Hartley, Robert Kerslake, Jonathan P Folland & Katherine Brooke-Wavell
15:15	D1.S4.1(6)	Compensation for intended diet-induced weight loss: appetite or physical activity? Anna Myers, Nicola Buckland, Graham Finlayson & John Blundell

Physiology and Nutrition

Chair: Prof Craig Williams FBASES

14:00-15:30, **D1.S4.2 Premier Lounge 2**

14:00	D1.S4.2(I)	Post-exercise supplementation of sodium bicarbonate improves acid base balance recovery and subsequent high-intensity boxing specific performance Lewis A Gough, Steven Rimmer, Andy Sparks, Lars R McNaughton & Matthew Higgins
14:15	D1.S4.2(2)	The dose-response effect of sodium bicarbonate on cycling to exhaustion performance and gastrointestinal discomfort William H Gurton, Lewis A Gough & Katharine E Reed
14:30	D1.S4.2(3)	Protein supplementation increases gains in maximal oxygen uptake and impacts skeletal muscle adaptations during prolonged endurance training Pim Knuiman, Roland Hangelbroek, Mark Boekschoten, Luc van Loon, Jeroen Wouters, Renger Witkamp, Maria Hopman & Marco Mensink
14:45	D1.S4.2(4)	The BASES Expert Statement on Extracellular Buffering Agents Lars McNaughton, Sanjoy K. Deb, Lewis A. Gough, Matt Higgins, Mike Price, Craig Sale & Andy Sparks
15:00	D1.S4.2(5)	Flow resistive face masks worn during high-intensity interval training sessions do not improve 5-kilometre running performance Mark A Faghy, JP Mayes, Peter I Brown, James Keenan & Tom M Maden-Wilkinson
15:15	D1.S4.2(6)	Hypertension and metabolic syndrome prevalence and contributing factors observed in a territory police organisation in England James Yates, Jeffrey Aldous, Andrew Mitchell, Daniel Bailey & Joanna Richards

Psychology

Chair: Dr Ian Taylor

14:00-15:30, **D1.S4.3.** Legends Lounge

14:00	D1.S4.3(I)	How does anyone know when they're really ready? Understanding competitive athletes' perceptions of psychosocial readiness to return to sport Adam Gledhill, Andrew Manley & Matthew Allanson
14:15	D1.S4.3(2)	The BASES Expert Statement on Mental Health Literacy in Elite Sport Paul Gorczynski, Kass Gibson, Richard Thelwell, Anthony Papathomas, Chris Harwood & Florence Kinnafick
14:30	D1.S4.3(3)	Exploration of psychological resilience during a 25-day endurance challenge in an extreme environment David W Harrison, Mustafa Sarkar, Chris Saward & Caroline Sunderland
14:45	D1.S4.3(4)	When it HIITs you, you feel no pain: psychological effects of respite–active music in HIIT Costas I. Karageorghis, Leighton Jones, Luke W. Howard, Rhys M. Thomas, Panayiotis Moulashis & Sam J. Santich







Psychology - continued

Chair: Prof Zoe Knowles FBASES

14:00-15:30, **D1.S4.3.** Legends Lounge

15:00	D1.S4.3(5)	The BASES Expert Statement on Burnout in Sport Daniel Madigan, Henrik Gustafsson, Alan L. Smith, Thomas D. Raedeke & Andrew P. Hill
15:15	D1.S4.3(6)	Exercise addiction prevalence and correlates in the absence of eating disorder symptomology. A systematic review and meta-analysis Mike Trott, Sarah Jackson, Joseph Firth, 4, 5, Abigail Fisher, James Johnstone, Amit Mistry, Brendon Stubbs & Lee Smith

Sport and Performance (Session I)

Chair: Prof Craig Twist FBASES

14:00-15:30, **D1.S4.4.** Keith Weller Lounge

14.00-1	3.30, D1.34.4.	Keith Weller Lounge
14:00	DI.S4.4(I)	Do practical cooling manoeuvres utilised during a soccer-specific warm-up and at half time improve simulated soccer performance at 28°C WBGT? Jeffrey W. Aldous, Peter McDonald, Liam P. Sweeney, Nicole Raffermati, Joanna Richards, John Hough & Christopher Tyler
14:15	D1.S4.4(2)	Rugby-specific static activities: are they actually high-intensity? Eddie J Bradley, Elisabeth Board, Will Evans & David Archer
14:30	D1.\$4.4(3)	An exploratory case study examining the training loads and effects of mixed martial arts competition preparation Christopher Kirk, Dave Clark, Carl Langan-Evans & James Morton
14:45	D1.S4.4(4)	Repeated-sprint training in soccer: should we use straight-line and shuttle sprints interchangeably? Jonathan M Taylor, Shaun J McLaren, Tom W Macpherson, Iain R Spears & Matthew Weston
15:00	D1.S4.4(5)	A comparison of a sports-specific, foot-mounted inertial measurement system and three commercial Global Positioning Systems to quantify soccer-specific movement patterns Mark Waldron, & Jamie Harding
15:15	D1.S4.4(6)	A comparison of match demands for professional soccer players versus elite youth soccer players using ball-in-play Joshua D Wass

Sport and Performance (Session 2)

Chair: Prof Clyde Williams FBASES

14:00-15:30, **D1.S4.5.** Rowley Suite

14:00	D1.S4.5(I)	Incidence and prevalence of lumbar stress fracture in English County Cricket fast bowlers, association with bowling workload and seasonal variation Peter Alway, Katherine Brooke-Wavell, Ben Langley, Mark King & Nicholas Peirce
14:15	D1.S4.5(2)	The minimum effective training dose required to increase IRM strength in resistance-trained men: a systematic review Patroklos Androulakis-Korakakis, James P Fisher & James Steele
14:30	D1.S4.5(3)	The influence of cornering on track cycling aerodynamics Shaun Fitzgerald, Richard M Kelso, Paul N Grimshaw & Andrew Warr
14:45	D1.S4.5(4)	The effects of age and body fat content on post downhill run recovery following whole body cryotherapy Adnan Haq, William J Ribbans, & Anthony W Baross
15:00	D1.S4.5(5)	A meta-analysis of the acute effect of strength training on speed running performance José F Barquero Jiménez & Walter Salazar Rojas
15:15	D1.S4.5(6)	The relationship between integrated external:internal load ratios and next-day subjective wellbeing in academy rugby union players Richard Taylor, Tony Myers & Ibraham Akubat





Day 2. Parallel free communication sessions

Biomechanics and Motor Behaviour Chair: Prof Florentina Hettinga FBASES

11:30-12:45, **D2.S3.1 Premier Lounge 2**

	•	· ·
11:30	D2.S3.I(I)	A kinetic and kinematic analysis of the rear foot elevated split squat five repetition maximum Mark Helme, Stacey Emmonds & Chris Low
11:45	D2.S3.1(2)	Investigation of running-related injury prevalence and trends in short, middle and long-distance recreational runners Anna Kosciuk, Nicola Swann & Hannah Moir
12:00	D2.S3.I(3)	Neuromechanics of different resistance training contractions in older adults Emmet McDermott, Thomas Balshaw,, Katherine Brooke-Wavell,, Thomas Maden-Wilkinson & Jonathan Folland,
12:15	D2.S3.I(4)	The effect of neuromuscular training combined with electroacupuncture on the knee joint stiffness characteristics in young recreational athletes Dan Wang, Peng Yuan, Yilin Xu, Yunchuan Wu, Weiwei Yang, Daniel Fong & Eamonn Delahunt
12:30	D2.S3.I(5)	Static posture and competition level do not predict dynamic pelvic posture in equestrian riders Celeste A Wilkins, Kathryn J Nankervis, Laurence Protheroe & Stephen B Draper

Physical Activity for Health

Chair: Dr Daniel Bailey

11:30-12:45, D2.S3.2. Gallery Suite

11:30	D2.S3.2(I)	The efficacy of school-based interventions to increase MVPA and MBSE outcomes in adolescent males: a systematic review and meta-analysis Ashley Cox, Stuart Fairclough, Maria-Christina Kosteli & Robert J Noonan
11:45	D2.S3.2(2)	Exploring the impact of physical activity on the health-related quality of life (HRQoL) and wellbeing of young people attending a pupil referral unit Louisa Horner
12:00	D2.S3.2(3)	Effects of brain-breaks on sustained attention among Malaysian primary school children Garry Kuan, Mawar Hajar, Hussein Rizal, Ayu Muhamad & Yee Cheng Kueh
12:15	D2.S3.2(4)	Effect of two weeks self-regulated high-intensity interval training on cardiorespiratory fitness, exercise enjoyment, and intentions to repeat Shaun M Phillips & Jennifer M Campbell
12:30	D2.S3.2(5)	The relationship between motor competence and core executive functions in typically developing school children Richard Tyler, Cassandra Richardson & Stuart J Fairclough

Psychology (Session 1)

Chair: Prof Costas Karageorghis FBASES

11:30-12:45, **D2.S3.3 Legends Lounge**

11:30	D2.S3.3(I)	An interdisciplinary approach to athlete selection: a case study of W-Series Brian Cameron, Kotryna K. Fraser, Norbert Filippits, Marisa Dawes, Lara Carlson & Tony Turner
11:45	D2.S3.3(2)	The BASES Expert Statement on Reflective Practice: the Key to Experiential Learning Emma Huntley, Brendan Cropley, Zoe Knowles & Andy Miles
12:00	D2.S3.3(3)	Coach learning and practice in endurance sport: why context matters to sports scientists Andrew Kirkland
12:15	D2.S3.3(4)	Perceptions of the talent development environment across English academy football: a level analysis Tom Mitchell, Adam Gledhill & Kevin Till
12:30	D2.S3.3(5)	An ecologically informed approach to applied sport psychology practice within an elite youth football academy Lewis Charnock, Martin Littlewood, Rob Morris & Mark Nesti





Psychology (Session 2)

Chair: Dr Adam Gledhill FBASES

11:30-12:45, **D2.S3.4 Rowley Suite**

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11:30	D2.S3.4(I)	Effects of personality on decision accuracy of football field referees and VARs Andreas Graefe, Alexander Bauer & Guido Ellert
11:45	D2.S3.4(2)	An evaluation of UK Athletics' clean sport intervention in preventing doping in junior elite athletes Philip Hurst, Christoper Ring & Maria Kavussanu
12:00	D2.S3.4(3)	The influence of rational and irrational language on psycho-physiological indices of challenge and threat appraisal states in varsity netballers Callum A O'Malley, & Andrew L Evans
12:15	D2.S3.4(4)	Effect of eye dominance on coincidence anticipation in professional rugby players and non-athletes Zoe L Wimshurst & Greg Neil
12:30	D2.S3.4(5)	Performance strategies' moderation of the interaction between adaptive and maladaptive narcissism on athlete training Shuge Zhang, Ross Roberts, Amanda Pitkethly & Cedric English

Sport and Performance

Chair: Prof Andrew Edwards FBASES

11:30-12:45, D2.S3.5 Keith Weller Lounge		
11:30	D2.S3.5(I)	The anthropometric and performance characteristics of starters and non-starters in elite Gaelic Football Kieran Collins & Barry Horgan
11:45	D2.S3.5(2)	The association of relative age and physical profile with players awarded professional contracts in an elite Scottish soccer academy Thomas P. Craig & Paul A. Swinton
12:00	D2.S3.5(3)	A comparison of anthropometric and performance profiles between elite and sub-elite hurlers John Keane, Kieran Collins, Damien Young & Giuseppe Coratella
12:15	D2.S3.5(4)	Profiling rugby sevens: physical and perceptual responses to travel and performance Fraser Menzies, Derrick Speirs, Andy Boyd & Anthony Turner
12:30	D2.S3.5(5)	Effects of training and competition on the sleep of elite athletes: a systematic review and meta-analysis Spencer S Roberts, Wei-Peng Teo, & Stuart Warmington



Day 2. 5 slides in 5 minutes free communication sessions

Physical Activity for Health **Chair: Dr Kiara Lewis FBASES**

09:00-09:55, D2.S1.I. Gallery Suite

09:00	D2.S1.1(1)	Effect of robotic-assisted gait training on arterial stiffness in chronic stroke James Faulkner, Keeron Stone, Simon Fryer, Amy Wright, Lee Stoner, Louis Martinelli, Helen Hobbs & Danielle Lambrick
09:08	D2.S1.1(2)	Determinants of physical activity are stronger predictors of health-related quality of life in women with polycystic ovary syndrome than physical activity behaviours Chris Kite, Ian Lahart, Ioannis Kyrou, Harpal Randeva & James Brown
09:16	D2.S1.1(3)	Physical activity in physical education and school recess: different sides of the same coin? Luis M Moral-Moreno
09:24	D2.S1.1(4)	WheelNess - reducing health inequalities in Inverness by widening access to cycling Donna Nicholas & Emily Ryder
09:32	D2.S1.1(5)	Accelerometer based physical activity levels differ between week and weekend days in British preschool children Clare M Roscoe, Rob S James & Michael J Duncan
09:40	D2.S1.1(6)	Association between central adiposity and muscle strength in adult women attending an activity program in Bogota, Colombia Oscar F Rubiano, Isabel A Sanchez, Edgar R Acosta, Cristian E Carrilo, Edwin A Valencia, Jaime O Rodriguez, Juan P Vargas, Cristian Ávila, Samuel Jiménez, Natalia S Morales, Luis A Garcia, Manuel A Riveros, Pedro Galvis, Leidy L Moreno, Carolina Garcia, Daniela Barragán, Juan C Pico, Cristian J Ramírez & Paula Zamora
09:48	D2.S1.1(7)	Exploring the facilitators and barriers to establishing regular physical activity through exercise referral: a qualitative study Alyx Taylor, Phill Heritage, Jack Humphrey & Kate Rogers

Physiology and Nutrition

Chair: Dr Mike Price FBASES

09:00-09:55, **D2.S1.2. Premier Lounge 2**

09:00	D2.S1.2(I)	Thermoregulatory demands of epée fencing performance during competition Luke Oates, Ian Campbell, Michael Price & Lindsay Bottoms
09:08	D2.S1.2(2)	Co-creation of a soccer-specific nutrition education curriculum grounded in the capability, opportunity, motivation and behaviour change wheel theory Daniel Carney, Martin Littlewood, Graeme Close & Rebecca Murphy
09:16	D2.S1.2(3)	The relationship between lumbar spine bone mineral and age in adolescent cricket fast bowlers Laura Keylock, Katherine Brooke-Wavell, Peter Alway, Nicholas Peirce & Mark King
09:24	D2.S1.2(4)	The acute impact of breakfast consumption and omission on postprandial metabolic responses during rest and exercise in adolescent girls Victoria Morari, Louise Croft, Daniel P Bailey, Rebecca L Jones & Julia K Zakrzewski-Fruer
09:32	D2.S1.2(5)	Peak oxygen consumption of highly trained cyclists: is there a difference between lab and field testing? Phillip Smith & Nicolas Berger
09:40	D2.S1.2(6)	Delayed carbohydrate feeding during endurance exercise maintains the high fat oxidation rates observed with training under conditions of low carbohydrate availability Tim Podlogar, Bonnie Free & Gareth A Wallis
09:48	D2.S1.2(7)	Determination of muscle hypertrophy using surface anthropometry during short-term resistance training in untrained participants Helen J Ryan-Stewart, James Faulkner, Eloise Paine, Edward Tasker & Simon Jobson

Prof Stuart Beattie FBASES Psychology

09:00-09:55, **D2.S1.3.** Legends Lounge

09:00	D2.S1.3(I)	Supporting conversations about the menstrual cycle Natalie Brown, Camilla Knight, & Laura Forrest
09:08	D2.S1.3(2)	Motivation of Special Olympics volunteers: what keeps them coming back? Liz Carlin & David Hassan







09:16	D2.S1.3(3)	Coaching through principles of play: a conceptualisation of coaches' process of knowledge generation Renzo Kerr Cumbo
09:24	D2.S1.3(4)	Relationship between perceived availability of social support, re-injury anxiety in return to sport and psychological readiness to return to sport in competitive cheerleaders Megan Lambert & Adam Gledhill
09:32	D2.S1.3(5)	Effects of virtual reality imagery modelling on novice taekwondo athletes' imagery abilities and anxiety level Garry Kuan, Yee-Cheng Kueh & Nur Haida Ariffin
09:40	D2.S1.3(6)	Influence of a novel mental fatigue protocol on mental fatigue and psychophysiological and performance responses to a 3 km time-trial in trained runners Shaun M Phillips, Rachel Webb & Hugh Richards
09:48	D2.S1.3(7)	Mindful sport performance enhancement in action: a case study with an elite category one football academy Amy L Spencer, Keith A Kaufman, Carol R Glass, Tim R Pineau, Stewart T Cotterill & Tim Holder

Sport and Performance (Session I)

Chris Barnes FBASES

09:00-09:55, **D2.S1.4.** Rowley Suite

09:00	D2.S1.4(I)	Seasonal changes in glenohumeral joint isokinetic strength in professional rugby league players Matthew Haines, Michael Fish & David O'Sullivan
09:08	D2.S1.4(2)	The reliability of a battery of fitness assessments when performed around habitual in-season training in youth elite soccer players Kevin J Enright, James Morton, John Iga, Daniel Lothian, Simon Roberts & Barry Drust
09:16	D2.S1.4(3)	Competitive engineering for enjoyment in age-grade rugby Ben Jones, John Mills & Gavin Sandercock
09:24	D2.S1.4(4)	Performance related feedback in elite English soccer Tom Page, Barry Drust, Zoe R Knowles, Matt Green & Matthew Andrew
09:32	D2.S1.4(5)	Comparison of wearable GPS devices for workload monitoring across different weather conditions and time slots Shobhit Raizaday, & Nairn Scobie
09:40	D2.S1.4(6)	Changes in eccentric hamstring strength following competitive soccer match play Owain Rowat & Damian Harper
09:48	D2.S1.4(7)	Physical fitness characteristics during a selection event for a female racing driver series Anthony Turner, Marisa Dawes, Lara Carlson & Peter McKnight

Sport and Performance (Session 2)

Chair: Dr Adam Grainger

09:00-09:55, **D2.S1.5.** Keith Weller Lounge

07.00-07.33, D2.31.3. Reith Weller Lounge		
09:00	D2.S1.5(I)	Does bio-banding influence physical performance profile in youth basketball? Jorge Arede, Sean Cumming & Nuno Leite
09:08	D2.S1.5(2)	Workload assessment and time-loss incidence in elite rugby union players Ben Cousins, John Morris, Caroline Sunderland, Anthony Bennett, Golnaz Shahtahmasseb & Simon Cooper
09:16	D2.S1.5(3)	The association between contact injuries and training load indices in elite soccer players Caoimhe Tiernan, Mark Lyons, Tom Comyns, Alan Nevill & Giles Warrington
09:24	D2.S1.5(4)	Predictive models for isokinetic ankle muscle strength relating to age, mass, stature, sex and shoe size Michael Fish, Matthew Haines, James Milligan & Jenny Killey
09:32	D2.S1.5(5)	Vertical and horizontal ground reaction force post-activation potentiation following flywheel eccentric overload half squat exercise Stuart McErlain-Naylor & Marco Beato
09:40	D2.S1.5(6)	Lifting straps do not affect mean velocity during deadlifts performed with submaximal loads Dan Omcirk, Jan Malecek, Ivan Jukic & James Joseph Tufano
09:48	D2.S1.5(7)	The relationship between handgrip strength and upper body pushing and pulling performance in Brazilian Jiu-Jitsu athletes Shaher Shalfawi





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systematically identified and selected. The resulting multicomponent sedentary behaviour intervention is tailored to police staff and ready for pragmatic delivery in their workplace. Explicit use of behaviour change theory in multi-component intervention design will allow for researchers to better assess the relative effectiveness of component BCTs and improve evidence-based practice.

D1.S4.1(3). Using accelerometery to classify physical activity intensity in older adults: what is the optimal wear-site?

MICHAEL DUNCAN^{1*}, ALEX ROWLANDS², CHELSEY LAWSON¹, SHEILA LEDDINGTON-WRIGHT¹, MATT HILL¹, MARTYN MORRIS¹, EMMA EYRE¹ & JASON TALLIS¹

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In the context of an ageing society accelerometry is particularly appropriate to assess physical activity (PA) and sedentary behaviour (SB) in older adults as accelerometry requires no user input during monitoring resulting in greater wearer compliance in older adults, as compared to younger age groups (Doherty et al., 2017, PLOS ONE, 12, e0169649.). Although accelerometry is becoming more common in assessing PA and SB in older adults (Wullems et al., 2017, PLOS ONE, 12, e0188215), few studies have calibrated accelerometer cutpoints with an older adult population and the predominant approach has been to apply cutpoints calibrated in younger adults (Falck et al., 2016, British Journal of Sports Medicine, 51, 800-811). This study aimed to address this issue by determining the optimal accelerometer wear-site specific cut-points for discrimination of SB, light PA and moderate-to-vigorous PA (MVPA) in older adults. Twenty-three adults (14 females) aged 55 to 77 years wore a GENEActiv accelerometer (Activinsights, Cambridge, UK) on their non-dominant wrist, dominant wrist, waist and dominant ankle whilst undertaking eight, five-minute bouts of activity: lay supine, seated reading, slow walking, medium walking, fast walking, folding laundry, sweeping and stationary cycling. VO₂ was assessed concurrently using indirect calorimetry (Cortex Metalyser, Cortex, Leipzig, Germany). Receiver-operating-characteristic (ROC) analyses were used to derive wear-site specific cut-points for classifying intensity. Being lay supine and seated reading were classified as sedentary (<1.5 METs), laundry as light (1.51-2.99 METs) and sweeping, slow, medium and fast walking and cycling all classified as moderate intensity (>3 METs). Areas under ROC curves (AUC) indicated that classification of sedentary activity was good for the non-dominant wrist and excellent for all other wear sites. Classification of moderate-to-vigorous physical activity (MVPA) was excellent (AUC ≥ 0.90) for the waist and ankle, good (AUC = 0.80-0.89) for the waist and poor (AUC < 0.70)for the dominant and non-dominant wrists. Overall, the ankle location performed better than other locations. This study presents novel data quantifying energy expenditure in different tasks indicative of daily living and calibrating the GENEActiv accelerometer during these activities when

worn at different body locations. The results of the current study suggest that GENEActiv accelerometers demonstrated acceptable criterion validity to assess SB and MVPA. Ankle worn accelerometry appears to provide the most suitable wear location to quantify MVPA and waist worn accelerometry provides the most suitable wear location to quantify SB, in apparently healthy older adults.

D1.S4.1(4). Effectiveness of an 8-week exercise intervention on coping skills, resilience and physical fitness in drug addicts

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Drug addiction may cause health problems and social exclusion (Neale, 2006, In R. Hughes (Ed.), Drugs, policy and politics (pp. 201-226). Maidenhead: McGraw-Hill/Open University Press). Although studies indicate that physical activity levels are inversely related to substance use disorders, it is not clear the role of exercise during drug abuse treatment (Weinstock, Barry, & Petry, 2008, *Addictive Behaviors*, 33, 1072–1075). Therefore, the purpose of this study was to investigate the effects of 8-week exercise intervention, as an adjunct to treatment for drug dependent patients (cannabis, opiates, amphetamines, cocaine and heroin addicted), on psychological and physical fitness variables. With institutional ethics approval, 34 male participants (mean age: 45.2 ± 12.6 years; stature: 1.77 ± 0.06 m; body mass: 74.2 ± 9.7 kg) were assigned to an experimental group (n = 17) that performed exercise intervention (i.e., aerobic-anaerobic exercise at moderate-intensity plus behavioural training), or a control group (n = 17). At baseline and after 8-week, COPE-NVI (60-item self-report questionnaire), CD-RISC (10-item scale) and physical fitness tests (i.e., Stork balance stand, functional reach, lateral sidestep and push-up tests) assessed coping skills, resilience and fitness levels, respectively. A 2-way analyses of variance (ANOVA) with repeated measures and paired t-test analysis were performed to locate between- and within-trial variance, and the magnitude of significant effects was determined using Cohen's d effect sizes. Statistical significance level was set at P < 0.05. Adherence to exercise was 94 \pm 2,6% and after intervention significant improvements in the skills and strategies adopted to cope with stressful events (P < 0.01, d = 0.80) and in ability to deal with negative experiences (P < 0.01, d = 0.87) were found. In addition, the physical fitness components as static (P < 0.01, d = 0.96) and dynamic balance (P < 0.01, d = 0.75), anaerobic power and coordination (P < 0.01, d = 0.89), and endurance of the upper body musculature (P < 0.01, d = 0.58) are significantly improved in the experimental group. No relevant changes were found in the control group. Findings highlighted the positive relationship between increased physical fitness and improved functional and adaptive modalities used to cope with stressful events and negative experiences. Therefore, exercise intervention was effective to improve mental and physical wellbeing in drug addicts.



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