



BASES Conference 2018 – Programme and Abstracts

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Programme and Abstracts



Sport and exercise science: *from insight to impact*

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DAY 1 - TUESDAY 27 NOVEMBER 2018

07:30-08:45	Exhibitor set up		
09:00	Registration and refreshments		
10:00	Opening address Welcome from Prof Richard Tong FBASES, Chair of BASES		Queen's Suite
10:10-11:10	Invited keynote: Physical activity for health: the past, the present and the future Prof Steven N. Blair, University of South Carolina, USA <i>Chair: Prof Ken Fox FBASES</i> This keynote lecture will discuss the pioneering and landmark studies that demonstrate a link between physical activity/sedentary behaviour and health. Prof Steven N. Blair will then highlight and discuss key topical issues, challenges and controversies in the field, before speculating on potential future research directions and developments.		
	DI.S1. Queen's Suite		
11:10-11:30	Poster viewing, exhibition and refreshments		
	Hall D		
11:30-12:45	Parallel invited symposia:		
	Diet, exercise and health: is sugar the enemy? Prof Jason Gill FBASES, University of Glasgow and Dr Trudi Deakin, X-PERT Health <i>Chair: Prof Marie Murphy FBASES</i> In this session, Prof Jason Gill and Dr Trudi Deakin will outline and debate the latest evidence and research exploring the relationship between diet, exercise and health, with a focus on the role played by sugar consumption in the prevention and management of obesity and cardio-metabolic disease.	Applications of interval training to health and high performance Dr Kathryn Weston, University of Teesside and Prof Jens Bangsbo, University of Copenhagen, Denmark <i>Chair: Prof Craig Twist FBASES</i> Repeated bouts of intense exercise interspersed with short periods of recovery has gained acceptance in a number of health, community and sports performance settings. This session will explore the efficacy and effectiveness of various interval training approaches, the proposed mechanisms of action and how they might be incorporated within the broader exercise strategy to improve an individual's health and performance capability.	Self-control in sport and exercise settings Dr Ian Taylor, Loughborough University and Dr Chris Englert, University of Bern, Switzerland <i>Chair: Prof Tracey Devonport FBASES</i> From regulating anxiety and controlling impulsive behaviour, to maintaining motivation to go to the gym, at some point in our lives we all rely on self-control. In this session Dr Ian Taylor and Dr Chris Englert will explore the ways in which practitioners can apply self-control strategies in everyday practice to advance performance and will present potential future avenues for research.
	DI.S2.1. Queen's Suite	DI.S2.2. King's Suite	DI.S2.3. Suite I
12:45-13:45	Lunch		
13:00-14:00	Poster discussions and exhibition		Hall D
14:00-15:30	Parallel free communication sessions		DI.S3.
15:30-16:00	Exhibition and refreshment break		
16:00-17:15	Parallel invited symposia:		
	Concussion and impact injuries in sport: key issues and controversies Prof Carolyn Emery, University of Calgary, Canada and Dr Willie Stewart, Queen Elizabeth University Hospital, Glasgow <i>Chair: Dr Neal Smith</i> In this session Prof Carolyn Emery will discuss concussion and impact injury prevention, exploring risk factors and prevention strategies for reducing the risk of injury in sport and recreation. Dr Willie Stewart will explore some of the key issues and controversies related to his team's work investigating the range of pathologies that occur in people exposed to repetitive traumatic brain injury in sport.	Clinical exercise physiology: new insights into the role of exercise in cardiac and pulmonary rehabilitation Prof Sally Singh, University Hospitals of Leicester NHS Trust and Dr Gavin Sandercock, University of Essex <i>Chair: Prof John Saxton FBASES</i> This session will address state-of-the-art evidence concerning the potential of physical activity in rehabilitating people who have cardiovascular and/or respiratory conditions. Prof Sally Singh and Dr Gavin Sandercock will highlight both the benefits and limitations of exercise as a component of rehabilitation programmes and will summarise recent recommendations for the role that exercise can play in cardiac and pulmonary rehabilitation.	Inter-individual variability in sport and exercise: implications for training programmes and precision medicine Prof Yannis Pitsiladis, University of Brighton and Prof Greg Atkinson, University of Teesside <i>Chair: Prof David Stensel</i> In the era of personalised exercise medicine, two important questions are whether individual differences exist in the magnitude of response to exercise training; and to what extent certain phenotypes and/or genotypes explain this response heterogeneity. In this session Prof Greg Atkinson will address the first of these questions, while Prof Yannis Pitsiladis will address the latter.
	DI.S4.1. King's Suite	DI.S4.2. Suite I	DI.S4.3. Suite 2
17:30-18:30	BASES Annual General Meeting		King's Suite
19:00	Gala drinks reception		Queen's Suite Foyer
19:30	Conference dinner After-dinner speaker: Victoria Gosling (British Ski and Snowboard; former CEO of the Invictus Games)		Queen's Suite

DAY 2 - WEDNESDAY 28 NOVEMBER 2018

08:30	Registration and drinks		
09:00-09:55	Parallel 5 slides in 5 minutes free communication sessions		D2.S1.
10.00-11:10	Parallel invited symposia:		
	<p>Physical activity: challenges in global and national health to that of the individual person</p> <p>Prof Ken Fox FBASES, University of Bristol, Prof Steven N. Blair, University of South Carolina, USA and Prof John Buckley FBASES, University Centre Shrewsbury</p> <p><i>Chair: Dr David Broom FBASES</i></p> <p>In this roundtable session, Prof Steven N. Blair will elaborate on content from his keynote lecture regarding research and policy needs at the international level; Prof Ken Fox will address support needs for activity interventions and their evaluation at the local level in the UK; and Prof John Buckley will explore issues relating to exercise needs at the individual level, with particular reference to sedentary behaviour and light intensity physical activity.</p> <p style="text-align: right;">D2.S2.1. Queen's Suite</p>	<p>Exploring the "grey area" between mentally tough environments and perceptions of bullying</p> <p>Prof Lew Hardy FBASES, Bangor University, Dr Emma Kavanagh, University of Bournemouth and David Young, England and Wales Cricket Board</p> <p><i>Chair: Dr Stuart Beattie FBASES</i></p> <p>Competing in elite level sports is a tough environment. Coaches often attempt to prepare athletes to deal with such environments, however, recent articles in the media have drawn attention to the issue of athlete well-being and instances of "abusive" coaching practices. This session will examine the fine line between developing tough training environments and coaching practices that could be perceived as over-stepping the line.</p> <p style="text-align: right;">D2.S2.2. King's Suite</p>	<p>The biomechanics of football: from performance to injury mechanisms and rehabilitation</p> <p>Dr Neal Smith, University of Chichester and Prof Jim Richards, University of Central Lancashire</p> <p><i>Chair: Adam Hawkey</i></p> <p>In this session Dr Neal Smith will reflect on the biomechanics of kicking and goalkeeping performance, in addition to injury mechanisms caused at the anterior cruciate ligament from changes of direction and landing tasks, as well as considering sub-concussive trauma from soccer heading. Prof Jim Richards will then discuss the challenges in rehabilitation of knee injuries that can occur in football, focusing on what biomechanics can tell us and how this relates to injury mechanisms and potential interventions for the prevention of injury, re-injury and rehabilitation.</p> <p style="text-align: right;">D2.S2.3. Suite I</p>
11:10-11:30	Poster viewing, exhibition and refreshments		Hall D
11:30-12:45	Parallel free communication sessions		D2.S3.
12:45-13:45	Lunch		
12:50-13:45	Poster discussions and exhibition		Hall D
13:45-14:45	Parallel invited symposia:		
	<p>Research Excellence Framework 2021: criteria and working methods</p> <p>Prof Marie Murphy FBASES, University of Ulster and Prof Bill Baltzopoulos FBASES, Liverpool John Moores University</p> <p><i>Chair: Prof Clyde Williams FBASES</i></p> <p>This session will provide an overview of REF 2021 and will outline the criteria and working methods which will be used by sub-panel 24 (Sport and Exercise Sciences, Leisure and Tourism) to assess outputs, impact and environment. The outcomes of the public consultation on the draft guidance and criteria will be presented and participants will have an opportunity to seek clarification on the proposed methods to be used.</p> <p style="text-align: right;">D2.S4.1. Queen's Suite</p>	<p>Talent identification in elite sport settings</p> <p>Dr Marije Elferink-Gemser, University of Groningen, Netherlands and Elliott Newell, English Institute of Sport</p> <p><i>Chair: Dr Florentina Hettinga</i></p> <p>Multiple factors are important for the development of athletes throughout adolescence. Some of these are sport specific, but there are also more generic skills that are relevant to most sports, such as self-regulation. This session will explore what determines the future success of youth athletes and how we can use that to optimally guide our talented athletes towards success.</p> <p style="text-align: right;">D2.S4.2. King's Suite</p>	<p>The gut microbiome: a new focus for exercise, nutrition and health</p> <p>Dr Sharon Madigan, Irish Institute of Sport and Dr Jamie Pugh, Liverpool John Moores University</p> <p><i>Chair: Prof Lars McNaughton FBASES</i></p> <p>The optimisation of the gut microbiome for athlete health can have indirect benefits for performance; and research investigating performance benefits from alterations in the gut microbiome and gastrointestinal environment is emerging. This session will explore the impact of commensal bacteria on sports performance, as well as mechanisms of action within the small intestine. Preliminary data from a range of athletes and sports will examine differences in diversity and investigate the potential use of gut microbiome as a biomarker for certain clinical situations.</p> <p style="text-align: right;">D2.S4.3. Suite I</p>
14:50-15:50	<p>Invited keynote: Training of top-class soccer players: coaching physiology at the elite level</p> <p>Prof Jens Bangsbo, University of Copenhagen, Denmark <i>Chair: Dr Chelsey Dempsey</i></p> <p>Based on his extensive research and experiences as a top-flight coach, Prof Jens Bangsbo will explore how the physiology of soccer can be translated to inform the practices of elite coaches and players in the field. Particular emphasis will focus on the potential causes of fatigue and how different training approaches can be combined to encourage specific physiological adaptations to optimise soccer performance.</p> <p style="text-align: right;">D2.S5. Queen's Suite</p>		
15:50-16:00	Awards ceremony and closing address		Queen's Suite
	Prof Richard Tong FBASES, Chair of BASES		

Day I. Parallel free communication sessions

Physical Activity for Health

Chair: Prof Andy Smith FBASES

14:00-15:30, DI.S3.1. Suite I

14:00	DI.S3.1(1)	The effects of discontinuous exercise on 24-hour glycaemic response in pregnancy: a pilot study Angela Douglas, Theresa Larkin & Herb Groeller
14:15	DI.S3.1(2)	The effect of a 6-week object control skill based intervention on actual and perceived fundamental movement skills in children in early and middle childhood Michael Duncan, Josh Hurst, Emma Eyre, Chelsey Lawson, Alexandra Dobell & Mark Noon
14:30	DI.S3.1(3)	'Going out-and-about' after a sedentary lifestyle: impact on physical function in older adults Peter Edholm, Fawzi Kadi & Andreas Nilsson
14:45	DI.S3.1(4)	Heterogeneity of perceived effort at accelerometry-based moderate intensity walking in older adults Laura Karavirta, Timo Rantalainen, Milla Saajanaho, Erja Portegijs & Taina Rantanen
15:00	DI.S3.1(5)	The associations of vigorous physical activity and the size and shape of subcutaneous adiposity among NHANES III male children Hankook Kim, Ines Varela-Silva & Emily Petherick
15:15	DI.S3.1(6)	Does availability of playground in schools affect physical fitness in children? A test of multiple fitness components Tariq Mehmood Sidhu & Muhammad Talha Iftikhar

Physiology and Nutrition

Chair: Prof Dylan Thompson FBASES

14:00-15:30, DI.S3.2. King's Suite

14:00	DI.S3.2(1)	A periodised carbohydrate dietary intervention in an international race walk athlete: translating research to practice Robert Condliffe, Andrew Drake & Felicity Hares
14:15	DI.S3.2(2)	The BASES expert statement on the role of breakfast-physical activity interactions for energy balance and metabolic health Javier T. Gonzalez, Emma J. Stevenson, Lewis J. James, James A. Betts & David J. Clayton
14:30	DI.S3.2(3)	Influence of sodium bicarbonate ingestion on 4-km time trial performance and post-exercise acid base balance recovery in acute moderate hypoxic conditions Lewis Gough, Sanjoy Deb, Danny Brown, Andy Sparks & Lars McNaughton
14:45	DI.S3.2(4)	Maltodextrin-fructose co-ingestion enhances short-term recovery of endurance capacity Ed Maunder, Tim Podlogar & Gareth A. Wallis
15:00	DI.S3.2(5)	The effects of an acute dose of New Zealand blackcurrant extract on endurance running performance Samantha Moss, Edward Brindley & Richard Bott
15:15	DI.S3.2(6)	The dietary status and practices of Pakistani sprinters Ali Yasir Rai & Muhammad Talha Iftikhar

Psychology (Session 1)

Chair: Prof Zoe Knowles FBASES

14:00-15:30, DI.S3.3. Suite 2

14:00	DI.S3.3(1)	Grit: a domain-general or domain-specific construct? John Dunn, Danielle Cormier & Janice Causgrove Dunn
14:15	DI.S3.3(2)	Perfectionism and athlete engagement: a multi-sample test of the 2 x 2 model of perfectionism Andrew Hill, Daniel Madigan, Gareth Jowett & Sarah Mallinson-Howard
14:30	DI.S3.3(3)	Developing performance under pressure in male academy football: an age group intervention Sofie Kent, Tracey Devonport, Wendy Nicholls & Andrew M. Lane

Psychology (Session 1 - continued)**Chair: Prof Zoe Knowles FBASES**14:00-15:30, **DI.S3.3. Suite 2**

14:45	DI.S3.3(4)	Developing mental toughness: the feasibility of the Mindfulness-Acceptance-Commitment (MAC) approach in a group of elite, academy rugby union players Stephen Leckey, Victoria Penpraze, Ross White & Niall Macfarlane
15:00	DI.S3.3(5)	Developmental antecedents of perfectionism in junior athletes: a three-sample study examining parental and coach pressure Daniel J. Madigan, Thomas Curran, Joachim Stoeber, Andrew P. Hill, Martin M. Smith & Louis Passfield
15:15	DI.S3.3(6)	For better or worse? The relationship between perfectionism and sports-related performance Sarah Mallinson-Howard, Daniel J. Madigan, Andrew P. Hill & Gareth E. Jowett

Psychology (Session 2)**Chair: Prof Chris Harwood FBASES**14:10-15:30, **DI.S3.4. Suite 3**

14:00	DI.S3.4(1)	The competitive sporting environment, mental health and help-seeking behaviour: a qualitative investigation of male athlete perceptions Matthew Middleton, Catherine Regan & Hannah Butler-Coyne
14:15	DI.S3.4(2)	Areas of work life as a predictor of well-being in Australian high performance coaches Fraser Carson, Julia Walsh, Luana C. Main, Mary Malakellis & Peter Kremer
14:30	DI.S3.4(3)	Football coaches' roles in achieving player and team medical outcomes of (re)injury prevention and successful return to performance: a realist synthesis Adam Gledhill & Dale Forsdyke
14:45	DI.S3.4(4)	Social support and psychological readiness to return to sport after injury in soccer players: the mediating role of re-injury anxiety Dale Forsdyke, Andy Smith, Adam Gledhill & Daniel J. Madigan
15:00	DI.S3.4(5)	Investigating Australian elite level athletes' imagery use within different performance contexts James Bieron, Adam Gorman, Michael Lloyd, Alexandra Gorman, John Parker & Geoff Lovell
15:15	DI.S3.4(6)	Teammate influences on athletes' eating and exercise attitudes: a longitudinal social network analysis Charlotte Scott, Emma Haycraft & Carolyn Plateau

Sport and Performance**Chair: Dr Adam Grainger**14:00-15:30, **DI.S3.5. Queen's Suite**

14:00	DI.S3.5(1)	The effect of a 6-week, four square, plyometric intervention programme, on 20m sprint time, ground contact time and change of direction performance in female GAA players Colin Coyle & Kerrie Dillon
14:15	DI.S3.5(2)	Physical demands of rugby union referees in domestic club rugby Brett Igoe & Declan Browne
14:30	DI.S3.5(3)	Differences between selected and non-selected young soccer players in gross motor skills and physical abilities Ivan Jukić & Sanja Šalaj
14:45	DI.S3.5(4)	Training load, monotony and strain and the relationship with changes in aerobic fitness and performance in road cyclists Dajo Sanders, Richard J. Taylor & Ibrahim Akubat
15:00	DI.S3.5(5)	Key performance indicators of ice hockey sprint performance Mikael Swarén, Fredrik Hillergren, Andreas Larsson & Glenn Björklund
15:15	DI.S3.5(6)	A novel cycling protocol to estimate critical power and the finite work capacity James Wright & Simon Jobson

Day 2. Parallel free communication sessions

Biomechanics and Motor Behaviour

Chair: Adam Hawkey

11:30-12:45, D2.S3.1. Suite 3

11:30	D2.S3.1(1)	The effect of the bend on global kinetic and temporal variables during the block phase of the sprint start Ashley Bagley, Sarah Churchill & Jonathan Wheat
11:45	D2.S3.1(2)	Recalibration to changes in action capabilities: are there any age-related differences? Milou T. Brand, Darren C. James, Rita F. de Oliveira
12:00	D2.S3.1(3)	Propulsion biomechanics during wheelchair turning manoeuvres in young able-bodied men Dhissanuvach Chaikhot, Matthew J. Taylor & Florentina Hettinga
12:15	D2.S3.1(4)	Metatarsophalangeal joint push-off axis during sprinting on the bend and straight Laura Judson, Sarah Churchill, Andrew Barnes, Joseph Stone & Jon Wheat
12:30	D2.S3.1(5)	Effects of inter-positional anthropometric factors on balance and stability research in elite male rugby union players Christopher Long, Lee Daggett, Iain Fletcher, Andrew Mitchell & Laura Charalambous

Physical Activity for Health

Chair: Dr Kiara Lewis

11:30-12:45, D2.S3.2. Suite 1

11:30	D2.S3.2(1)	A mobile phone app for reducing prolonged sedentary behaviour in Type 2 diabetes: a randomised controlled feasibility study Daniel Bailey, Feng Dong, Lucie Mugridge & Angel Chater
11:45	D2.S3.2(2)	Low-load resistance training with blood flow restriction improves clinical outcomes in musculoskeletal rehabilitation: a single-blind randomised controlled trial Russell Coppack, Peter Ladlow, Shreshth Dharm-Datta, Dean Conway, Edward Sellon, Stephen Patterson & Alexander Bennett
12:00	D2.S3.2(3)	A passive dynamic ankle foot orthosis improves medium-term functional and psychosocial outcomes after severe lower extremity trauma Peter Ladlow, Nicole Bennett, Rhodri Phillip, Shreshth Dharm-Datta, Louise McMenemy & Alexander Bennett
12:15	D2.S3.2(4)	Is resistance training feasible and beneficial for adults living with muscular dystrophy? Dawn O'Dowd, Christopher Morse, Emma Bostock, Dave Smith & Carl Payton
12:30	D2.S3.2(5)	The BASES expert statement on exercise training for people with intermittent claudication due to peripheral arterial disease Garry Tew, Amy E. Harwood, Lee Ingle, Ian Chetter & Patrick Doherty

Physiology and Nutrition

Chair: Dr Lisa Board FBASES

11:30-12:45, D2.S3.3. Suite 2

11:30	D2.S3.3(1)	Custom fitted compression garments provide more consistent pressures and enhance recovery from muscle damage in rugby players Freddy Brown, Owen Jeffries, Conor Gissane, Glyn Howatson, Ken van Someren, Charles Pedlar & Jessica Hill
11:45	D2.S3.3(2)	Evaluation of physiological and nutritional risk factors for upper respiratory illness using a zero-inflated negative binomial model Helen Hanstock, Andrew Govus, Thomas Stenqvist, Anna Melin, Øystein Sylta & Monica Torstveit
12:00	D2.S3.3(3)	The 12-lead electrocardiogram of the elite female football player: the impact of different interpretational criteria used in pre-participation screening Aleah Mohammad, Keith George, David Oxborough & John Somauroo
12:15	D2.S3.3(4)	Skin blood flow during incremental upper body and lower body exercise Mike Price & Jake Hilliard
12:30	D2.S3.3(5)	Heat strain affects rate of torque development in electrically stimulated but not maximal voluntary contractions Padraig Spillane & Theodoros Bampouras

Psychology

Chair: Prof Susan Backhouse FBASES

11:30-12:45, D2.S4.4. King's Suite

11:30	D2.S3.4(1)	Teaching the (Athena) swans to fly: narratives of self-identity and their implications for the career aspirations of female adolescents Tracey Devonport, Kate Russel & Kath Leflay
11:45	D2.S3.4(2)	Turning weaknesses to strength: the psychology of successful talent development among Nigerian athletes Adeboye Israel Elumaro, Georgios Andronikos, Russell J.J. Matindale & Tony Westbury
12:00	D2.S3.4(3)	Loosening the leash: exploring experiences of becoming an applied sport and exercise scientist Andrew Hooton, Alison Rodriguez, Chris Sellars & Jane Tobbell
12:15	D2.S3.4(4)	Music applications in exercise and sport: a critical evaluation of theoretical evolution (1995-2018) Costas Karageorghis
12:30	D2.S3.4(5)	Executive function and athlete expertise: a longitudinal study over a playing season Robert Vaughan, Jack Hagyard, Elizabeth Edwards & Martin Smith

Sport and Performance

Chair: Prof Colin Boreham FBASES

11:30-12:45, D2.S3.5. Queen's Suite

11:30	D2.S3.5(1)	Physiological characteristics and acute fatigue associated with position specific speed endurance soccer drills: production versus maintenance training Jack Ade, Barry Drust, Oliver Morgan & Paul Bradley
11:45	D2.S3.5(2)	Effect of external counterpulsation on recovery from high intensity exercise in team sport athletes Ruben Collins, Denise McGrath, Katy Horner, Silvia Eusebi & Massimiliano Ditroilo
12:00	D2.S3.5(3)	Thinking inside the box: the effect of player numbers on locomotor activity and skill behaviour during competitive match-play in under-9 English academy football Adam Kelly & Mark Wilson
12:15	D2.S3.5(4)	The relationship between motion capture movement screening scores, performance and anthropometric measures in young soccer players Mihkel Laas, Guy Parkin, Iain Spears & Matt Portas
12:30	D2.S3.5(5)	The internal and external loading differences between part and full-time elite English academy footballers Ben Thorne, Jonathan Taylor & Stuart Brown

Day 2. 5 slides in 5 minutes free communication sessions

Biomechanics and Motor Behaviour

Chair: Dr Florentina Hettinga

09.00-09:50, D2.S1.1. Suite 3

09:00	D2.S1.1(1)	Differences between upper and lower lumbar spine kinematics in cricket fast bowling Peter Alway, Paul Felton, Nicholas Peirce, Katherine Brooke-Wavell & Mark King
09:09	D2.S1.1(2)	Reliability and validity of a wearable accelerometer to predict vertical ground reaction force Elliott Fullerton, Katherine Brooke-Wavell, Paul Sanderson, Massimiliano Zecca & Dale Eslinger
09:18	D2.S1.1(3)	Stress fracture of the metatarsal-phalangeal tibial sesamoid bone: a case study evaluating symptoms, diagnosis and treatment Adam Hawkey
09:27	D2.S1.1(4)	Gait speed in young adults in Qatar as an indicator of health: relationship to body mass index Lina Majed, Bahaa Aboghaba, Mohammad Prince, Mohammed Al-Jarmal, Mohamed Abdelkawy, Aya Sewefy, Dhoha Abdelrahman, Somaia Gabr, Ranad Marzuq & Bryna Christmas
09:36	D2.S1.1(5)	The effect of running speed on joint kinetics in high-performing endurance runners Chelsea Starbuck, Christopher Bramah, Stephen Preece, Stephen McGregor & Richard Jones
09:45	D2.S1.1(6)	The effects of attentional focus on performance during a barbell jump squat Michael Starkey, Matthew Sedgwick & Jon Radcliffe

Physical Activity For Health

Chair: Prof Mike Duncan FBASES

09.00-09:50, D2.S1.2. Suite 2

09:00	D2.S1.2(1)	Using wearable technology increases exercise frequency and duration in a physical activity referral scheme David Broom, Philip Truby, David Birds & Ciara O'Hagan
09:09	D2.S1.2(2)	Are currently published cut points accurate for use with ActiGraph GT3X in a British preschool population during free living activity? Alexandra Dobell, Emma Eyre, Jason Tallis, Mai Chin A Paw, Teatske Altenburg & Michael Duncan
09:18	D2.S1.2(3)	Feasibility and acceptability of procedures for a pragmatic trial of reduced-exertion, high-intensity interval training with non-diabetic hyperglycaemia patients within a National Health Service practice setting Matthew Haines
09:27	D2.S1.2(4)	The effects of multidisciplinary exercise-based interventions for improved quality of life following a traumatic brain injury: a systematic review Grace O'Carroll, John Perry, Sean Carroll, Stephanie King & Natalie Vanicek
09:36	D2.S1.2(5)	A pilot study investigating the impact of glycogen storage disease (type III) on skeletal muscle properties and habitual physical activity patterns in young and middle-aged adults David Tomlinson, Elaine Murphy & Philip Hennis
09:45	D2.S1.2(6)	Prevalence of active gaming in Spanish youths with cystic fibrosis Alexandra Valencia-Peris, Jorge Lizandra, Joan Úbeda-Montaner, Elena López-Cañada, Fernando Gómez-Gonzalvo & Miquel Pans

Physiology and Nutrition

Chair: Dr Mike Price FBASES

09.00-09:50, D2.S1.3. Suite 1

09:00	D2.S1.3(1)	Physiological assessment of a high altitude trek: association between Borg's rating of perceived exertion and heart rate Josh Bakker-Dyos, Karl Cooper, Phyl Scott, John O'Hara, Chris Boos & Adrian Mellor
09:09	D2.S1.3(2)	The physiological response to simulated hurling match-play Kieran Collins, James Morton, Alistair McRoberts & Dominic Doran

Physiology and Nutrition (continued)

Chair: Dr Mike Price FBASES

09.00-09:50, D2.S1.3. Suite 1

09:18	D2.S1.3(3)	The effect of acute, high-fat overfeeding on circulating hepatokine concentrations Scott A. Willis, James A. King, Si�n A. Parry, Rachel M. Woods, Jack A. Sargeant & Carl J. Hulston
09:27	D2.S4.4(4)	The ramp all-out exercise test to determine critical power: validity and robustness to manipulations in exercise mode Richie Goulding, Denise Roche & Simon Marwood
09:36	D2.S4.4(5)	A case study on the effects of a three-week restricted carbohydrate diet on exercise metabolism and performance of three cyclists Paul Hough
09:45	D2.S4.4(6)	Hepcidin and iron status across a menstrual cycle in elite and low-active females Alexandra L. Shill, Amber Leonard, Kerry Rosenthal, Nancy Day, Shelley Taylor, Emma O'Donnell, Richard J. Burden & Nicolette C. Bishop

Psychology

Chair: Dr Stuart Beattie FBASES

09.00-09:50, D2.S1.4. King's Suite

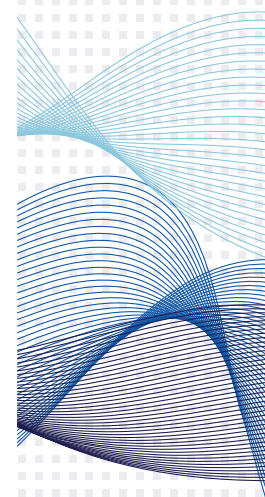
09:00	D2.S1.4(1)	A longitudinal examination of the relationships between perfectionism and coping tendencies in male soccer players Luke F. Olsson, Dale Forsdyke, Andy Smith & Daniel J. Madigan
09:09	D2.S1.4(2)	Intervention study on ethical decision making, doping attitudes, moral disengagement, and achievement motivation of young talented athletes Brigitte Claessens, Tirza van Noorden & Erik Duiven
09:18	D2.S1.4(3)	Development of a psychological development programme to support youth professional footballers in a Premier League football academy Lewis Charnock, Rob Morris, Mark Nesti & Martin Littlewood
09:27	D2.S1.4(4)	A test of self-determination with the 'RunSmart' couch to 5km running programme Laura Houghton, David Marchant, Lorcan Cronin & Emma Huntley
09:36	D2.S1.4(5)	Player perceptions of the talent development environment in elite English youth soccer academies using the Talent Development Environment Questionnaire-25 Tom Mitchell, Ross Shand & Kevin Till
09:45	D2.S1.4(6)	Determining factors related to increased cortisol levels in Australian rules football players Billymo Rist & Alan Pearce

Sport and Performance

Chair: Prof Craig Twist FBASES

09.00-09:50, D2.S1.5. Queen's Suite

09:00	D2.S1.5(1)	Research towards the first iteration of an internationally recognised evidenced-based physical disability classification system: key determinants of T20 physical disability cricket Emma Foden, Mark Connick, Barry Drust, Mark Robinson & Zoe Knowles
09:09	D2.S1.5(2)	Relationships between Nordic eccentric hamstring strength and sprinting performance in elite youth female soccer players Damian Harper, Thomas Comyns & Chris Brogden
09:18	D2.S1.5(3)	Differences between coach prescribed and player reported exertion exist for physical and technical scores Tom Macpherson, Shaun McLaren, Iain Spears, Barry Drust, Matthew Portas & Matthew Weston
09:27	D2.S1.5(4)	Perspectives of applied collaborative sport science research within professional team sports James Malone, Liam Harper, Ben Jones, John Perry, Chris Barnes & Chris Towilson
09:36	D2.S1.5(5)	Physical fitness assessment of young artistic gymnasts Stefan Kolimechkov, Iliya Kiuchukov, Lubomir Petrov, Albena Alexandrova, Iliya Yanev, Dilyana Zaykova & Emil Stoimenov
09:45	D2.S1.5(6)	The relationship between internal and external load measures and next-day subjective wellbeing of academy rugby union players Richard Taylor, Dajo Sanders & Ibrahim Akubat



"fast" informal research dissemination compared to the "slow" quality control approach of academics.

D2.S1.5(5). Physical fitness assessment of young artistic gymnasts

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Artistic gymnastics is one of the few sports which can be practised from early primary school age, and which develops all components of physical fitness. The aim of this study was to assess the physical fitness qualities of young competitive artistic gymnasts from different regions in Bulgaria. A total of 131 gymnasts (77 females and 54 males) between the ages of 5 and 16, and with an average sports experience of 29.5 months (from 12 to 120 months), took part in this study. With institutional ethics approval, participants completed the Alpha-Fit physical fitness test battery: body composition (stature, body mass, waist circumference, triceps and subscapular skinfolds), musculoskeletal fitness (handgrip strength and standing long jump), cardiorespiratory fitness (VO_{2max} was calculated from the 20 m multistage fitness test results by using Leger's equations for children and adolescents), and motor fitness (4x10 m shuttle run test). Additionally, BMI and body fat percentage were also calculated. WHO Anthro+ software was used to compute the percentile scores (PRs) of stature, body mass and BMI. European physical fitness norms were applied to calculate PRs scores for each fitness test. Results showed that gymnasts were slightly shorter in stature (PRs 41.1 ± 28.5 , which significantly differ from the 50th PRs of children of the same age and sex ($P = 0.005$)), but Cohen's effect size value suggested a small practical significance ($d = 0.31$). The gymnasts' body mass (PRs 51.5 ± 26.5) and BMI (PRs 53.9 ± 25.6) did not differ significantly from their peers. The BMI assessment suggested that 12 gymnasts were overweight (PRs > 85), and 3 were obese (PRs > 97). However, gymnasts showed substantially lower body fat (PRs 16.8 ± 23.1), significantly different from the 50th percentile ($P < 0.0001$), with very large practical significance ($d = 1.44$), with only 1 gymnast assessed as overweight, and 2 obese. Surprisingly, the handgrip strength PRs score, being only 30.47 ± 26.28 , differed from the 50th percentile ($P < 0.0001$, $d = 0.74$). PRs scores for the VO_{2max} (64.8 ± 22.1) and 4 x 10 m shuttle run test (66.7 ± 23.9) were significantly higher ($P < 0.0001$) than the 50th percentile with medium effect size ($d = 0.66$ and $d = 0.70$, respectively). The standing long jump PRs score (87.6 ± 15.7) was also higher than the 50th percentile ($P < 0.0001$), effect size $d = 2.40$. The results showed that,

although practising an anaerobic sport, gymnasts had better physical fitness, including higher aerobic capacity, compared with their peers.

D2.S1.5(6). The relationship between internal and external load measures and next-day subjective wellbeing of academy rugby union players

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An improved understanding of how to manage players' fatigue and recovery could reduce the risk of players underperformance on match day (McLean et al., 2010). Therefore, the aim of this study is to identify the relationship with different internal and external training load (TL) measures and next day subjective wellness questionnaires responses. Methods: With institutional ethics approval, ten academy rugby union players (Five forwards, and five backs) from a local National League One club competing in the Association of Colleges Elite League agreed to participate in the study (aged; 18.4 ± 1.0 years, height; 181.3 ± 5.9 cm, body mass 85.9 ± 13.0 kg, VO_{2max} 56.2 ± 6.8 mL.kg⁻¹.min⁻¹). Before the 6-week in-season data collection period, participants completed an incremental threshold/maximal test to determine heart rate at maximal oxygen uptake, 2 mmol·L⁻¹ (LT) and 4 mmol·L⁻¹ (OBLA). These variables were used to calculate the internal TL measures; Banister's TRIMP (bTRIMP), Edward's TRIMP (eTRIMP), Lucia's TRIMP (luTRIMP), individualised TRIMP (iTRIMP). Session-RPE (sRPE) was the final internal load measure collected. External TL measures were GPS-based measures; total distance (TD), player load (PL), high-speed distance $> 18\text{km}\cdot\text{h}^{-1}$ ($> 18\text{HSD}$), metabolic power (MP) and individualised high-speed distance based on each player's velocity at OBLA (iHSD). On arrival and prior to all training sessions players completed the Athlete Wellness Questionnaire (AWQ) (McLean et al., 2010, Moalla et al., 2016) to assess their subjective wellbeing. Results: Bayesian linear mixed model analysis identified negative associations between iTRIMP, bTRIMP, sRPE, HSD, iHSD and VHSD load measures and changes in next day AWQ total score (AWQ^{TS}). To predict a change of 1 in the AWQ^{TS} these load measures required a change in load of 43% to 100% of their respective daily mean TL, with a 93% to 99% probability that any change will be < 0 . For all other internal and external load measures the required load to predict a change of one in the AWQ was greater than the daily mean load. **Conclusions:** A range of internal and external load measures combined with AWQ total score provide practical tools for objectively monitoring players TL and their next-day perceived wellness in academy rugby union players. Reductions in TL could potentially be implemented as part of the weekly tapering strategy to optimise match-day performance.