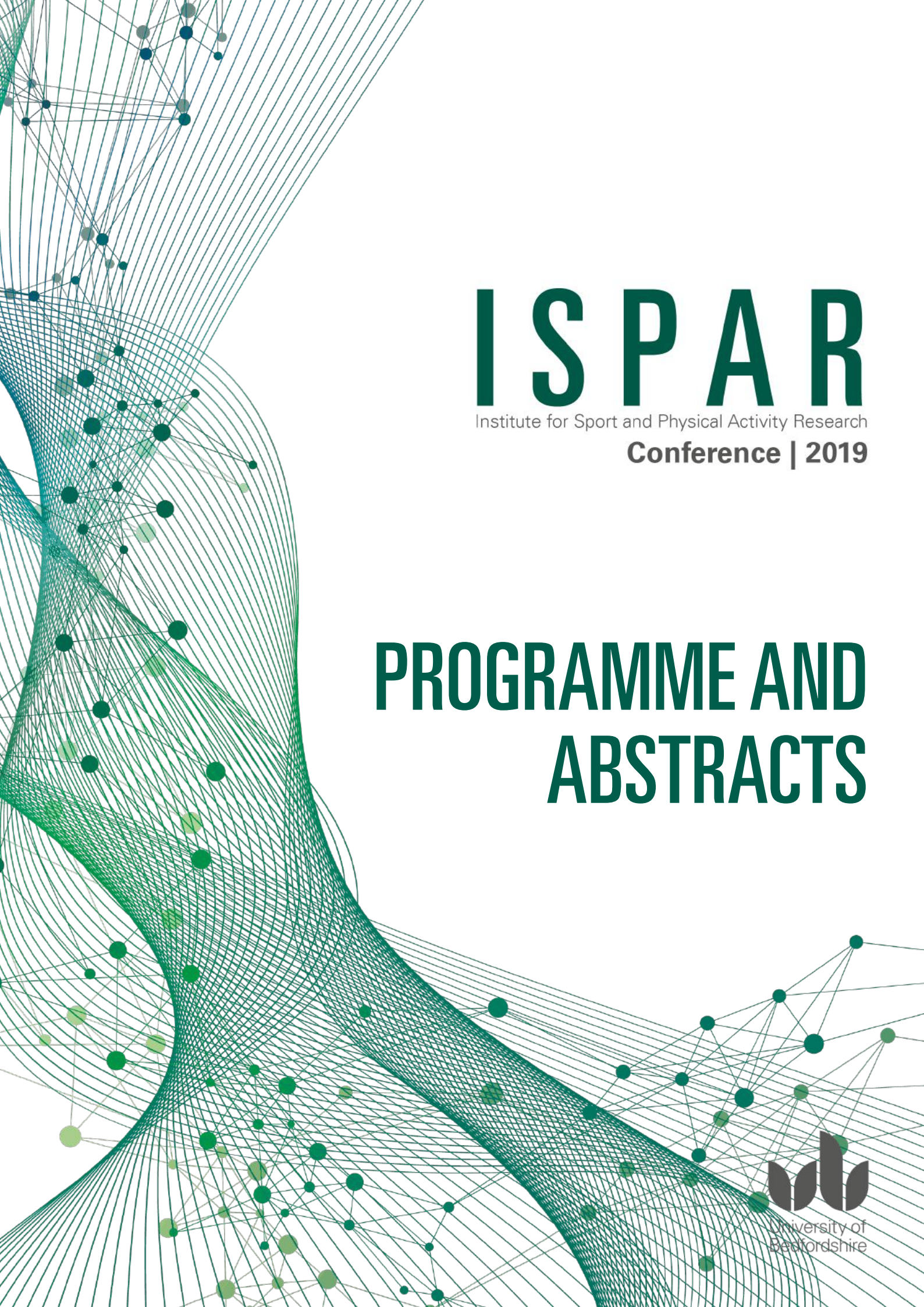

ISPAR

Institute for Sport and Physical Activity Research

Conference | 2019

PROGRAMME AND ABSTRACTS

University of Bedfordshire

CONTENTS

WELCOME

On behalf of the Institute for Sport & Physical Activity Research, welcome to the fourth Annual ISPAR Conference.

The conference showcases the cutting edge and impactful research our staff and students are carrying out and is packed with high quality content and insight, with an exciting variety of topics and presentation formats. We start with an exciting keynote lecture from Dr Sophie Killer sharing her experiences within Premier League football and the 2016 Rio Olympic Games. This is followed by a series of oral presentations, 3-minutes theses and poster presentations, with lots of time set aside for networking and movement as part of our #ActiveCampus project.

I encourage you to make new contacts and renew acquaintances, with a view to exploring new research opportunities. I hope you'll leave feeling energised and inspired by the research you see presented and the conversations you have throughout the day.

Enjoy the conference and do pop along to the White Horse Pub for the social event after the closing ceremony. I look forward to meeting you.

DR ANDREW MITCHELL
Head of School, Sport Science & Physical Activity
Director, Institute for Sport & Physical Activity Research

PROGRAMME

09:30 REGISTRATION
Gateway Building, ground floor

10:00 WELCOME
Dr Andrew Mitchell, Director of ISPAR

10:15 KEYNOTE
Dr Sophie Killer, Lecturer in Exercise Physiology, University of Bedfordshire
Insights into Elite Sport

10:45
INTERACTIVE DISCUSSION, NETWORKING & MOVEMENT - #ACTIVECAMPUS
Chair: Dr Daniel Bailey

11:00 CHRIS LONG PhD student | *Stabilisation in elite male rugby players during a single leg standing task*

11.15 DR DANIEL BAILEY Senior Lecturer | *Acute effects of breaking up prolonged sedentary time on cardiovascular disease risk markers in adults with a spinal cord injury*

11:30 OPIE CHARLETT PhD student | *A systematic review examining the association between total daily sedentary time and cardiometabolic risk markers in older adults*

Chair: Marsha Brierley

11:45
NETWORKING & MOVEMENT - #ACTIVECAMPUS
Lead: Marsha Brierley, Abbie Bell

12:00 ABBIE BELL PhD student | *Reducing sedentary behaviour as a tool for secondary prevention of cardiovascular disease*

12:06 VICTORIA MORARI MSc by Research student | *The acute impact of breakfast consumption and omission on postprandial metabolic responses during rest and exercise in adolescent girls*

12:12 NATASHA WING MSc by Research student | *The effects of static water immersion in different postures on the cardiovascular system in healthy participants*

12:18 ALEX BAIRD Lecturer | *Understanding female newcomers in non-senior roles in a post-1992 university*

12:24 DR JOANNE HILL Senior Lecturer | *I had to pop a wheelie and pay extra attention in order not to fall: The embodied experiences of two wheelchair tennis athletes in disability sport and university spaces*

12:30 KAMALESH DEY PhD student | *Effects of breaking up sitting time on postprandial cardiometabolic disease risk markers in South Asian adults*

12:36 OPEN DISCUSSION Final thoughts and questions

Chair: Opie Charlett

13:00 LUNCH

14:00 WELCOME BACK
Dr Andrew Mitchell, Director of ISPAR

14:05 DR DANIEL BAILEY Senior Lecturer | *Being a #ActiveCampus: What is an active campus and what does it mean to you?)*

14:10 JAMES YATES MSc by Research student | *Factors of Hypertension, Metabolic Syndrome and musculoskeletal injury risk in the Bedfordshire police force*

14:25 DR ANGEL CHATER Reader in Health Psychology and Behaviour Change | *Understanding the psychological health and wellbeing of police staff: The PHeW project*

14:40 MARSHA BRIERLEY PhD student | *Development of a sedentary behaviour workplace intervention for police staff using the behaviour change wheel*

Chair: Jane Williams

15:00
POSTER PRESENTATIONS & COFFEE BREAK
Gateway Building ground floor

15:45 WELCOME BACK
Dr Angel Chater, Reader in Health Psychology and Behaviour Change

15:50 JANE WILLIAMS PhD student | *Supporting young people who have been parentally bereaved: Can physical activity help and what services are available?*

16:05 JACK WELLS PhD student | *The effects of an 8-week strength vs. plyometric intervention on clubhead velocity and vertical ground reaction forces*

16:20 DORA KUKUCSKA MSc by Research student | *Understanding and improving the health behaviours and psychological wellbeing of the Bedfordshire police force using brief positive psychological interventions*

16:26 NICOLE RAFFERMATI MSc by Research student | *Do high ambient temperatures effect physical performance following 120 min of simulated soccer performance compared with a temperate environment?*

Chair: Chris Long

16:35 CLOSING AND AWARDS
Dr Andrew Mitchell, Director of ISPAR
Awards presented for: Best Oral Presentation and Best Poster Presentation

SOCIAL EVENT
White Horse Pub

INSTITUTE FOR SPORT AND PHYSICAL ACTVITY RESEARCH (ISPAR)

DIRECTOR OF THE INSTITUTE

Dr Andrew Mitchell

DEPUTY DIRECTOR OF THE INSTITUTE

Dr Angel Chater

CENTRE FOR PHYSICAL EDUCATION, SPORT & HUMAN MOVEMENT

Lead: Dr Joanne Hill
Deputy: TBC

PEDAGOGY & YOUTH SPORT

Lead
TBC

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M Bowler*
L Croft
D Golding
J Hill
H Ives
S Keyworth*
D Pears
P Sammon*
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Deputy: Dr Lindsey Smith

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S Kozub

Members
C Birtwistle
A Chater
E Cook*
D Golding
D Pears
F Powell*
K Wyld

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Lead
A Chater

Members
D Bailey
L Croft
J Fruer
N Howlett*
Y Pappas*
L Smith
C White

PREVENTION & MANAGEMENT OF CHRONIC DISEASE

Lead
L Smith

Members
D Bailey
A Chater
J Fruer
D Hewson*
L Smith
K Wyld

CENTRE FOR PHYSICAL ACTIVITY & SPORTS PERFORMANCE

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Deputy: Dr Iain Fletcher

SPORTS PERFORMANCE & BIOMECHANICS

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I Fletcher

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C Barford
L Charalambous
M Dwyer
R Jones
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J Richards

SEDENTARY BEHAVIOUR AND HEALTH

Lead
D Bailey

Members
M Bowler*
L Charalambous
A Chater
L Croft
F Dong*
I Fletcher
J Fruer
D Hewson*
H Ives
G Kinman*
A Mitchell
J Richards
R Jones
P Sammon
L Smith

PHYSICAL ACTIVITY, NUTRITION & METABOLISM

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J Fruer

Members
D Bailey
A Chater
L Croft
R Jones
L Smith
C White

POSTGRADUATE STUDENTS

Elizabeth Durden-Myers (PhD)
Hope Grant (PhD)

Rianna Price (MA by Research)
Max Smith (MA by Research)

POSTGRADUATE STUDENTS

Katherine Finlay (Stage 2 Trainee)*

Marsha Brierley (PhD)
Fani Liapi (PhD)
Samson Ojo (PhD)
Jane Williams (PhD)

Rachael Champion (MSc by Research)
Dora Kukucska (MSc by Research)
James Yates (MSc by Research)

POSTGRADUATE STUDENTS

Abbie Bell (PhD)
Marsha Brierley (PhD)
Opie Charlett (PhD)
Kamalesh Dey (PhD)
Chris Long (PhD)
Ben Maylor (PhD)
Samson Ojo (PhD)
Diana Soares (PhD)
Jack Wells (PhD)

Rachael Champion (MSc by Research)
Lauren Howard (MSc by Research)
Oliver Lilley (MSc by Research)
Peter McDonald (MSc by Research)
Victoria Morari (MSc by Research)
Nicole Raffermati (MSc by Research)
Josh Thorley (MSc by Research)
Natasha Wing (MSc by Research)
James Yates (MSc by Research)

*Member outside of the School of Sport Science and Physical Activity (SSPA). All SSPA staff contact information is available here: unibeds.info/SSPAstaff

ISPAR SEMINAR SERIES 2018-19

ISPAR regularly invites experts in the field to speak as part of on an ongoing lecture series. The 2018-19 series included:

Exercise in the fasted vs. fed state for metabolic health and body composition
Dr Javier Gonzalez University of Bath

Benefits of exercise for cancer
Professor Robert Thomas, Professor of Exercise & Biological Science Coventry University

Postural control and stability in older adults: findings from the Active Ageing Research Group studies
Dr Theodoros Bampouras, Lancaster University

Digital technology in (physical) education: what has been? Where are we now? What does the future hold?
Dr Julia Sargent, The Open University

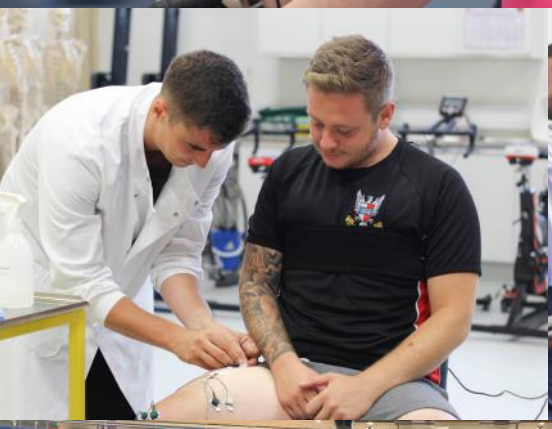
Are interventions implemented as intended? Assessing fidelity of interventions to increase physical activity
Dr Fabiana Lorencatto, University College London

Testing physically active lessons to improve activity and educational outcomes in primary-school children
Dr Emma Norris, University College London

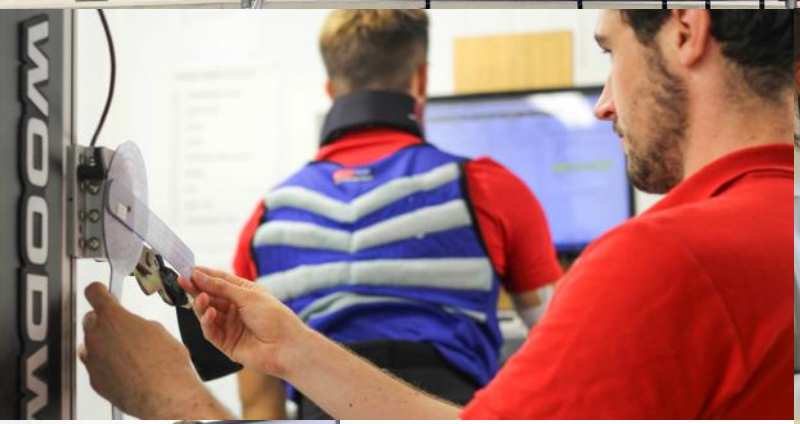
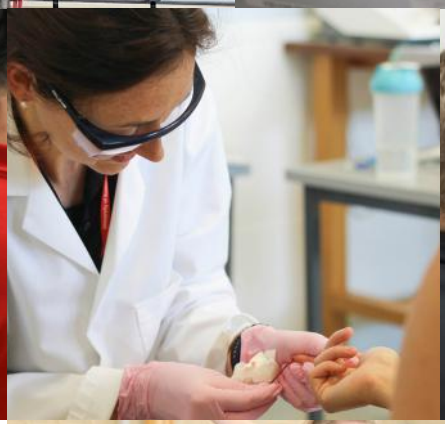
Undergraduate Student Identities in Dance and Gymnastics Education
Dr Gavin Ward, University of Wolverhampton

We are currently in the process of organising next year's series, and welcome your input. To suggest a speaker, get in touch via **ispar@beds.ac.uk**









HIGHLIGHTS FROM THE PAST YEAR

ORAL PRESENTATIONS

KEYNOTE

Insights into Elite Sport

Killer, S[1]
[1] *Institute for Sport and Physical Activity Research (ISPAR), University of Bedfordshire*

Dr Sophie Killer is Performance Nutrition consultant in elite sport, having worked as the Head of Performance Nutrition at Tottenham Hotspur FC and as a senior member of the English Institute of Sport Performance Nutrition Team where she's was the Lead Nutritionist for British Athletics, supporting the Olympic and Paralympic Track & Field athletes throughout the Rio 2016 Games. Sophie has gained a wealth of experience working as a consultant for a range of elite athletes from cyclists, runners and triathletes through to team sports, including British Basketball during the London 2012 Olympic Games and having spent 5 seasons working in the Premier League. Sophie will be sharing insight into what it's like to work with some of the world's best athletes and how we can bridge the gap between Sport Sciences and applied practice.

ORAL PRESENTATIONS

Stabilisation in elite male rugby players during a single leg standing task

Long, CS,[1] Fletcher, IM, [1] Charalambous, L,[1] Mitchell, ACS,[1]
[1] *Institute for Sport and Physical Activity Research (ISPAR), University of Bedfordshire*

Differences in static balance and stability between the two principle position groups in rugby union (forwards and backs) have been reported in the literature (Brown et al, 2018, Semple et al, 2012). The cause of this is unknown but may be due to extreme differences in height and mass (Stoop et al, 2018). It is not presently known whether these differences exist in dynamic conditions. This uncertainty suggests a need to find a measure of stability that is not susceptible to positional variance. This will allow for increased confidence in conclusions drawn from research in this population, and has implications for study design, statistical power and data analysis. 22 professional male rugby union players (9 forwards and 12 backs) currently competing in the English premiership performed a hop and hold landing task. Leg dominance factors were controlled by ensuring that all participants were right foot dominant. After familiarisation, participants performed a forward hop on both left and right feet from 40% of their height away from a force plate (Kistler 9260AA, Kistler, Switzerland) and held there landing for 5 seconds. Time to Stabilisation was calculated with MARs software. No significant differences were found in Time to Stabilisation (TTS) between forwards and backs in the right ($F(1,20) = 0.219$, $P = 0.645$) or left ($F(1,20)$, $P = 0.627$) footed landing. No differences in time to stabilisation between forwards and backs were evident in this study when landing on either foot. Using TTS as a measure of stability rather than static measures of balance may be of benefit, as TTS does not appear to be influenced by positional variances and may be more relevant to match actions.

Acute effects of breaking up prolonged sedentary time on cardiovascular disease risk markers in adults with a spinal cord injury

Bailey, D,[1] Croft, L[1]
[1] *Institute for Sport and Physical Activity Research (ISPAR), University of Bedfordshire*

Elevated levels of cardiovascular disease (CVD) risk markers are highly prevalent in people with a spinal cord injury (SCI). Breaking up sedentary time with short, regular bouts of physical activity can reduce postprandial glucose and lipid levels in able-bodied individuals, but effects in people with SCI are unknown. This study examined the acute CVD risk marker responses to breaking up prolonged sedentary time in individuals with SCI. Secondary aims were to explore effects on psychological outcomes. This was a randomised crossover design trial. Fourteen participants with a chronic SCI took part in the following two, 5.5 h conditions: (1) uninterrupted sedentary time (SED), and (2) sedentary time interrupted with 2 min of moderate-intensity arm crank ergometer physical activity every 20 min (SED-ACT). Glucose, insulin, triglyceride and blood pressure were compared between conditions using linear mixed models. Glucose incremental area under the curve (iAUC) was significantly lower during the lunch postprandial period in SED-ACT versus SED (iAUC 112.3 mmol/L·2.5 h [95% CI 60.4, 164.3) and 179.3 [127.4, 231.3], respectively, $p=0.015$, $d=0.68$). There were no differences between conditions for the breakfast or total 5.5 h postprandial periods ($p>0.05$). There was a trend for positive affect increasing during SED-ACT ($p=0.055$) with no change in SED and a significant main effect of condition ($p=0.008$) for

mental wellbeing in favour of SED-ACT. Breaking up sedentary time with short bouts of physical activity attenuates lunch postprandial glucose in people with SCI. This may have clinical relevance for reducing CVD risk in this population.

A systematic review examining the association between total daily sedentary time and cardiometabolic risk markers in older adults

Charlett, OP[1], Jones, RL[1], Hewson, DJ[2], and Bailey, DP[1]

[1]*Institute for Sport and Physical Activity Research (ISPAR), University of Bedfordshire*

[2]*Institute for Health Research (IHR), University of Bedfordshire*

Older adults engage in larger quantities of sedentary time than any other age group. Many studies have reported an association of sedentary time with cardiometabolic risk in working aged adults; however, the evidence on this association in the ageing population has not been systematically reviewed. This systematic review aims to summarise the evidence regarding the association of total daily sedentary time with cardiometabolic risk in older adults. PubMed, CINAHL, MEDLINE, Web of Science, Global Health, SPORTDiscus, and PsychINFO were systematically searched using two tiers of search terms: keywords relating to (1) sedentariness; and (2) cardiometabolic risk markers. Studies were included if they were published in English in a peer-reviewed journal, reported associations between total daily or weekly sedentary time and ≥1 cardiometabolic risk marker in adults aged ≥ 60 years. Studies that did not differentiate between sedentary behaviour and physical inactivity, or sedentary behaviour and television viewing, were excluded. Total daily sedentary time, cardiometabolic risk markers measured, and the hazard ratios or odds ratios comparing the highest and lowest group of sedentary time were extracted from eligible articles. Linear associations were also extracted. All articles will undergo quality assessment using the GRADE framework. A meta-analysis will be conducted using pooled risk ratios if sufficient synonymous data is available. This systematic review will help clarify the relationship between total daily sedentary time and cardiometabolic risk in the older adult population. This review will help to inform future studies and public health interventions in older adults.

Reducing sedentary behaviour as a tool for secondary prevention of cardiovascular disease

Bell, A[1], Richards, J[1], Bailey, D[1]

[1]*Institute for Sport and Physical Activity Research (ISPAR), University of Bedfordshire*

Approximately 7 million people in the UK are living with cardiovascular disease (CVD) (British Heart Foundation, 2018). Following a cardiovascular event, there is an increased risk of secondary CVD. Cardiac Rehabilitation is an exercise-based intervention used to prevent this. However, it focuses on increasing physical activity, as opposed to reducing sedentary behaviour. High amounts of sedentary time are an independent risk factor for CVD (Tremblay, et al., 2017). Breaking up sitting time with light-intensity physical activity improves cardiometabolic risk markers in healthy and diabetic populations over a single day (Peddie et al., 2013; Dempsey et al., 2016) but the effects in cardiac patients are unknown. The aim of this study is to evaluate the effects of breaking up sitting time on cardiometabolic risk markers and cardiac function in cardiac patients. A randomised cross over trial design will be used. Cardiac patients (n=23) will take part in three experimental conditions: (i) uninterrupted sitting; (ii) sitting with 5 minutes of standing every 30 minutes; (iii) sitting with 5 minute bouts of light stepping to a metronome every 30 minutes. Outcomes are postprandial glucose, insulin, triglycerides, high density lipoprotein cholesterol and C-reactive protein; in addition to global strain and ejection fraction. Submission to NHS Research Ethics Committee in progress. The findings will identify if breaking up sitting could be effective for improving cardiometabolic health in cardiac patients and will inform a feasibility study of a chronic intervention to reduce sitting in this population.

The acute impact of breakfast consumption and omission on postprandial metabolic responses during rest and exercise in adolescent girls

Morari, V[1], Croft, L[1], Bailey DP[1], Jones, RL[1], Zakrzewski-Fruer, JK[1]

[1]*Institute for Sport and Physical Activity Research (ISPAR), University of Bedfordshire*

Breakfast consumption (BC) frequency declines from childhood to adolescence and is associated with poor metabolic health. This research aimed to analyse whether BC versus breakfast omission (BO) affects substrate oxidation during rest and during the exercise bout performed later in the day in adolescent girls. It also examined whether such responses are associated with changes in glycaemia

and insulinemia. 16 overweight/non-overweight girls, mean age 13.23 (SD= 0.72), breakfast consumers were recruited. Two experimental trials were completed in a randomised order: BC and BO. A standardised lunch was provided three hours after breakfast. Blood samples for the analysis of plasma glucose and plasma insulin and expired gas samples for the analysis of substrate oxidation were taken throughout the trials. An incremental cycling exercise test was performed 2 h after lunch for the determination of maximum fat oxidation (MFO) and intensity at which MFO occurred (Fat_{max}). Fat oxidation during rest for both breakfast and lunch postprandial periods was significantly higher ($P< 0.001$) during BO compared to BC. Also, significantly higher MFO ($P= 0.008$) and lower Fat_{max} ($P= 0.03$) were found during BO compared to BC. Furthermore, plasma insulin concentrations total and incremental area under the curve were 6% higher in BO than BC (based on data from 8 participants). Ultimately, the findings of this study will assist in understanding further the effects of BC vs BO on adolescents' metabolism. This may have important implications in the prevention of obesity and type 2 diabetes.

The effects of static water immersion in different postures on the cardiovascular system in healthy participants

Wing, N[1], Richards, J[1], and Croft, L[1]
[1]*Institute for Sport and Physical Activity Research (ISPAR), University of Bedfordshire*

Water has a higher density than air, creating a hydrostatic pressure on the body when immersed (Bove, 2002). This hydrostatic pressure redirects blood from the extremities to the thoracic cavity (Lange et al., 1974) leading to an increase in cardiac output and stroke volume and a decrease in heart rate, systolic and diastolic blood pressure (Šrámek et al., 2000). However, the research in this area is outdated and lacks a full echocardiographic assessment. Further to this it is unknown if posture has the same effect in water, as it does out of water (Christie et al., 1990). Methods: 8 healthy males and 8 females volunteers will be immersed to the neck in waters of 30□C in a seated, laying and standing positions for 20 minutes each. Blood pressure (BP), heart rate (HR) and an echocardiogram will be performed to measure end diastolic and systolic volumes (EDV, ESV), stroke volume (SV), ejection fraction (EF), wall stress (WS), left ventricle mass (LVM) and cardiac output (Q) . This will be recreated on land and the effects will be compared. Hypothesis: BP and HR will significantly decrease in all water trials compare with land; EDV, ESV, SV, EF, Q, LVM, WS will significantly increase in water compared to land. The greatest improvements in left ventricular function will be evident in the seated position, whilst immersed in water.

Understanding female newcomers in non-senior roles in a post-1992 university

Baird, A[1]
[1]*Institute for Sport and Physical Activity Research (ISPAR), University of Bedfordshire*

The gender pay gap between males and females working in Higher Education remains evident. Occupational and vertical segregation, influenced by gender socialisation and the cultural climate of the work setting, are two contributory causes. The case study University gender pay gap is 14.6%, higher than the national average at 8.6%. The gap was attributed to a larger number of females in roles for which both males and females earn lower salaries. Interviews were conducted with two females who hold non-senior roles and had been in role for less than two years at the University. The female participants were representative of differing ages and job titles. Social Role Theory (Eagly, 1987) as well as five emerging inter-connecting codes: commitment to new role; contrast to former role; transition to role; validation and vulnerability in role appeared. Similarities as well as differences in relation to these codes were interpreted as resulting from the variance in the women's ages, past-experience, personality traits and specificity of job role. Identity became a prominent theme within the analysis of the discourse and the impact this had on behaviour which led to commitment and satisfaction in their role. Hindrances to vertical progression: barriers; lack of validation; isolation within the wider University remains evident and still needs to be rectified. In addition, Beth's unique transition to lecturing, which entailed an ambiguous identity and conflict of values, necessitates specific support. Both interviewees transpired to be career changers identifying another possible cause of the gender pay gap.

"I had to pop a wheelie and pay extra attention in order not to fall:" The embodied experiences of two wheelchair tennis athletes in disability sport and university spaces

Lynch, S[1], Hill, J[2]
[1] University of East London
[2]*Institute for Sport and Physical Activity Research (ISPAR), University of Bedfordshire*

Dis/ability sport, able-bodied sport and able-bodied university spaces have been under-researched areas when considering how the body moves throughout these spaces for elite wheelchair athletes taking part in university courses. This paper shares an insight into how two athletes with dis/abilities transgressed abled and gendered norms and how they positioned themselves as athletic bodies and disabled bodies in different spaces. A critical ethnography was employed over 12 months by the principal researcher, with two elite wheelchair tennis players in a large south-eastern United States public university. The participants each created a physical activity timeline, collected photographs of their experiences in sport and university spaces, and engaged in interviews with the researcher, who also kept field notes of her non-participant observations. Data were analysed using a feminist post-structuralist perspective. In abled spaces, the participants were rendered dis/abled by their surroundings. The institutional structures of the university, where sporting achievement is ostensibly celebrated, dictated the physical spaces the athletes entered or were excluded from, based on ableist ideologies. Wheelchair tennis largely offered affirming spaces to celebrate dis/ability visibility and diversity where the participants were able to define themselves as athletes. A dis/abled body is in constant flux as to when it feels marginalised and when it feels included, valued, and strong. We argue that institutions have a moral obligation to redesign their structures so that all students have equitable access and support is offered for students' physical and financial needs, along with dis/ability education to challenge ableist perspectives.

Effects of breaking up sitting time on postprandial cardiometabolic disease risk markers in South Asian adults

Dey, KC[1], Zakrzewski-Fruer, JK[1], White C[1], Bailey, DP[1]

[1] *Institute for Sport and Physical Activity Research (ISPAR), University of Bedfordshire*

South Asians are the largest ethnic minority group in the UK. They have the highest risk of heart disease and Type 2 diabetes of any ethnicity in the UK. Breaking up sitting time with 2 min bouts of light or moderate intensity walking every 20 min can improve postprandial glucose responses in Caucasians. However, the effects of breaking up sitting with light intensity walking on cardiometabolic disease risk markers in South Asians are less known. This is a two-condition randomised crossover trial. Based on sample size calculations, 52 normal weight and overweight/obese South Asians are being recruited to take part in two conditions: (1) Prolonged sitting, and (2) Breaking up sitting with 5 min bouts of light intensity walking every 30 min. Two standardised test meals (58% carbohydrate, 28% fat, and 13% protein) are being provided. Blood pressure, expired air samples, and blood samples are being taken to analyse blood glucose, triglyceride, and insulin, in addition to carbohydrate, and fat oxidation. Area under the curve will be calculated for glucose, triglycerides, and insulin concentration using the trapezoidal method. Linear mixed models will be used to compare the main effect between two conditions and weight status (overweight/obese vs. normal weight) and the condition by group interaction for outcomes. 27 participants have been recruited. 4 datasets are completed and 5 are in progress. 12 datasets should be ready for analysis by September. If breaking up sitting with walking breaks improves postprandial cardiometabolic responses, this might have importance in the design of future interventions to reduce cardiometabolic disease risk in this ethnic group.

Factors of hypertension, metabolic syndrome and musculoskeletal injury risk in the Bedfordshire Police Force

Yates, J[1], Aldous, J[1], Bailey, D[1], Mitchell, A[1], Richards, J[1]

[1] *Institute for Sport and Physical Activity Research (ISPAR), University of Bedfordshire*

Compromises in individual's health (Elliott-Davies et al., 2016) and absenteeism rates increases are resultant from reduced operational police numbers (Houdmont and Elliot-Davies, 2016). The aim of this study was to assess Bedfordshire Police with particular focus on three main health themes; hypertension, metabolic syndrome (METSYN) and musculoskeletal injury risk (MSK). 137 Bedfordshire police employees completed a variety of physiological, lifestyle and occupational measures. The sample was divided by gender and into non-operational and operational personnel, for comparisons between groups. A significant main effect of gender existed for systolic blood pressure (SBP) ($P < 0.05$). A significantly higher ($P < 0.001$, 95%CI: 8 to 25 mmHg) SBP was observed in males (136 ± 11 mmHg) compared with females (119 ± 13 mmHg) in non-operational personnel. No significant main effect of job type existed in SBP ($P > 0.05$). No significant main effect of job type or interaction effect existed between gender and job type in MSK, METSYN and diastolic blood pressure ($P > 0.05$). METSYN was significantly greater in males than females ($P < 0.05$). These findings show that SBP is

greater in non-operational males than females and METSYN is more prevalent amongst males across both job types. Various factors predict hypertension, METSYN and MSK presence in police workers, body composition in particular. These findings could inform interventions to reduce hypertension and METSYN prevalence in police workers.

Understanding the psychological health and wellbeing of police staff: The PHeW project

Chater, A[1], Yates, J[1], Kukucska, D[1], Richards, J[1] Mitchell, A[1], Aldous, J[1], Shorter, G[2], Howlett, N[2,3], Wyld, K[1]
[1]*Institute for Sport and Physical Activity Research (ISPAR), University of Bedfordshire*
[2]*Ulster University,* [3]*University of Hertfordshire*

Police staff are at particular risk for developing psychological health issues due to the nature of their occupation. Anxiety, depression and stress are commonly cited as reasons for absence from work, and are often combined with behavioural issues such as substance misuse. Prior to intervention development, there is a need understand these relationships further. Data was collected from 151 police staff (65% female) aged between 21-71 years (Mean = 42.92; SD= 10.82). Measures included physical activity, fruit and vegetable (F&V) intake, alcohol use and smoking behaviour, positive and negative affect, stress and wellbeing. Mean BMI was 27.30 (SD=4.89); 61% classified as either overweight (35%) or obese (26%). A minority showed pre-clinical signs of anxiety (14%) and depression (11%), while stress levels were high with 43% showing moderate-high operational stress and 48% showing moderate-high organisational stress. 59% met the government recommendations of 150 minutes moderate to vigorous physical activity (MVPA) per week. However, 21% were found to be inactive (less than 30 minutes) and 20% fairly active (30-149 minutes) weekly. 29% achieved the daily 5-a-day F&V target; 11% were smokers, and 39% were at increased (33%) or higher (6%) risk of alcohol dependency. Overall wellbeing was significantly ($p<.05$) related to higher levels of MVPA, F&V intake and lower levels of negative affect and stress. Evidence presented here highlights the need for future intervention to support behaviour change and psychological health within police employees. Interventions that enhance physical activity could go some way in enhancing mood and wellbeing while reducing levels of stress.

Development of a sedentary behaviour workplace intervention for police staff using the behaviour change wheel

Brierley, ML[1], Chater, AM[1], Smith, LR[1], Bailey, DP[1]
[1]*Institute for Sport and Physical Activity Research (ISPAR), University of Bedfordshire*

Prolonged sedentary behaviour (sitting) is associated with higher incidences of chronic disease. A recent study involving 5,000 British police reported that 30% of employees were office-based (Gibson et al., 2017), a known environment for prolonged sitting. Workplace interventions can be effective at reducing prolonged sitting, but a recent systematic review found that the majority (20 out of 30) lacked an explicit theoretical framework (Brierley et al., 2019). The aim of this study was to use the behaviour change wheel (Michie et al., 2011) to develop an intervention to reduce prolonged sitting and improve cardiometabolic risk markers in police staff. A mixed methods approach involved the use of semi-structured interviews with police, interviews with participants of a recent sedentary behaviour workplace intervention, and findings from a systematic review (Brierley et al., 2019). Resulting behaviour change techniques (BCTs), functions, and policies were evaluated using APEASE criteria (Michie, Atkins & Robert, 2014). BCTs concerning social influence, goal setting, and behaviour habits were found in effective interventions (Brierley et al., 2019). Barriers for police staff indicated a lack of psychological capability, social/physical opportunity, and reflective/automatic motivation. Former intervention participants described using resources differently according to individual preference. Intervention functions (e.g., environmental restructuring) and policies (e.g., service provision) were perceived favourably with suggestions for personalisation in future interventions. The resulting intervention is tailored to police staff with capacity for individual personalisation utilising training, computer prompts, smartphones, and competition. Use of behaviour change theory in intervention design will allow researchers to improve evidence-based practice.

Supporting young people who have been parentally bereaved: Can physical activity help and what services are available?

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[2]Ulster University, [3]University of Hertfordshire

Annually, 41,000 UK children and young people are parentally bereaved. Grief is an individual process and must be supported properly. Many mental health aspects that cross over with grief outcomes (i.e. anxiety and depression) can be improved through physical activity. Yet there is limited research investigating whether physical activity can support bereaved individuals with their grief and what services are currently available. A systematic review of the literature (10 databases) and service provision (5 search engines) was performed. Empirical studies (qualitative and quantitative) had used physical activity (of any type) to help individuals (of any age) who had experienced a bereavement (of any human, other than national loss). Organisations which provide bereavement support to young people were contacted (via questionnaire and telephone) to record details about their service and if they offer physical activity support. From 564 studies screened, 20 met the inclusion criteria, with 5 reporting using physical activity to support parental bereavement. Running and martial arts were noted as types of beneficial activity. Of the 373 organisations identified, 26 provided physical activity (i.e. residential retreats, football) support for bereaved young people. From this review, there is evidence that physical activity can support young people who have been parentally bereaved. However, this evidence is limited, with just a small number of organisations offering physical activity. There is a clear need for more work in this area, to understand and increase the use of physical activity to support young people following the death of their parent.

The effects of an 8-week strength vs. plyometric intervention on clubhead velocity and vertical ground reaction forces

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[2]The Professional Golfers' Association

Clubhead velocity (CHV) is inextricably linked to ball velocity and drive distance. Golfers can increase their CHV through engaging in appropriately designed strength and conditioning, which, is suggested to be brought about by increasing the magnitude of vertical ground reaction forces. However, there is currently no evidence that has sought to investigate the effects different exercise interventions have on CHV and ground reaction forces. The aim of this study was to assess the effects an 8-week strength or plyometric exercise programme had on CHV, countermovement jump (CMJ) impulse and isometric mid-thigh pull (IMTP) peak force (PF). Twenty-six male golfers performed three CMJs and IMTPs on force platforms. Impulse was measured from the CMJ, with PF measured during the IMTP. CHV was measured using a TrackMan launch monitor at The Belfry driving range. For the 8-week intervention, participants were assigned to either a control (n = 8), strength (SG) (n = 9) or plyometric group (PG) (n = 9). A 2 x 3 mixed design ANOVA with Bonferroni post hoc analysis compared mean differences between groups. The SG displayed an increase in CHV (1.01 m/s, d=0.45), CMJ PI (8.81 N.s, d=0.16) and IMTP PF (321.23, d=1.44). The PG displayed an increase in CHV (1.39 m/s, d=0.34), CMJ PI (16.98 N.s, d=0.33) and IMTP PF (296.64 N, d=0.8). Golfers are able to increase their CHV though engaging in an 8-week intervention, however, Cohen's d suggest that strength training offers greater benefits through increasing IMTP PF.

Understanding and improving the health behaviours and psychological wellbeing of the Bedfordshire Police Force using brief positive psychological interventions

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[1]*Institute for Sport and Physical Activity Research (ISPAR), University of Bedfordshire*
[2]University of Hertfordshire, [3]Ulster University

The study will assess the current health behaviours (physical activity, sedentary behaviour, fruit and vegetable consumption, breakfast consumption, alcohol consumption, substance use) and psychological wellbeing (police work-related stress levels, general perceived stress levels, self-efficacy, positive and negative affect, mood, anxiety and depression) of the Bedfordshire Police Force and attempt to improve these through brief positive psychological interventions. Mixed methods will be employed; repeated measures will be applied to assess current health behaviours and psychological wellbeing of Police staff pre- and post- intervention. Qualitative methods (interview) will be used to gain more in-depth understanding of barriers and motivation to change health behaviours. Bedfordshire Police staff will be invited to participate via email with a link to the questionnaires. Once questionnaires are completed, participants will be randomized into one of three groups for the next 4 weeks; Positive mantras (using positive, meaningful phrases such as 'Iwillexercisemore' as passwords), 3 good things (writing down three good things that happened that

day) or no intervention. At the end of the 4 weeks and 12 weeks post-intervention participants will be invited to complete follow up questionnaires. Following the intervention completion a small sample of participants (N=20) will be invited to take part in interviews about their experience of the intervention. Expected results are increased motivation, increased physical activity levels, increased fruit and vegetable intake, more regular breakfast consumption, improved mood, improved self-efficacy, decreased depressive symptoms and anxiety, decreased work-stress and general stress, decreased sitting times, decreased alcohol consumption.

Do high ambient temperatures effect physical performance following 10 min of simulated soccer performance compared with a temperature environment?

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[2]University of Huddersfield

During certain elite soccer competitions if the score is tied after 90-minutes an additional 30-minutess of extra time (ET) is required to determine a winner (Harper et al., 2016). Research has demonstrated a decline in key physical performance measures during the latter stages of 90-minute match-play and this decline is exacerbated during ET (Mohr, Krustrup & Bangsbo, 2003; Russell et al., 2015). Soccer competitions are played throughout the months of June and July in countries including Brazil and Portugal where temperatures can often exceed 30°C (Nassis et al., 2015). Numerous studies have observed decrements in key physical performance measures during 90-minute match-play in hot environments (Mohr et al., 2010; Mohr et al., 2012). Despite the effects of high ambient temperatures on 90-minute soccer match-play being well researched, as of yet no previous match-play data has researched the collective effect of soccer performance in ET in the heat. A sample of eight male university soccer players will participate in the study. Participants will visit the laboratory on seven occasions compromising of one preliminary visit, three familiarisation sessions, and three experimental trials of the intermittent soccer performance test (iSPT) (2 CON; 1 HOT). Total distance covered; high-speed distance covered, variable run, sprint distances covered, low-speed distance covered, heart rate, rectal temperature, skin temperature and blood lactate will be measured every 5-minutes throughout the iSPT. The 120-minute duration of the iSPT will demonstrate good to excellent test re-test reliability and validity compared to previous match-play data for key physical performance and physiological responses. There will also be a significant reduction to physical performance, and physiological responses will be strained during 120-minutes of simulated soccer performance in HOT compared with CON.

NOTES

POSTER PRESENTATIONS

SHRIYA BHOGAITA
Beyond 2012; the role of Swim England in creating a participation legacy for swimming.

KYRIACOS GEORGIOU
To what extent does community based projects and programmes in football tackle the wider social issues that lead to increased levels of community cohesion for young people?

JOHNATHAN PANG
The comparison of left ventricular global longitudinal strain between professional rugby player and sedentary controls

PEDRO PINHEIRO
How is Team Beds&Luton led and developed with their partners in order to achieve higher levels of physical activity?

SHANNON ROSS
The role of sport in Further Education

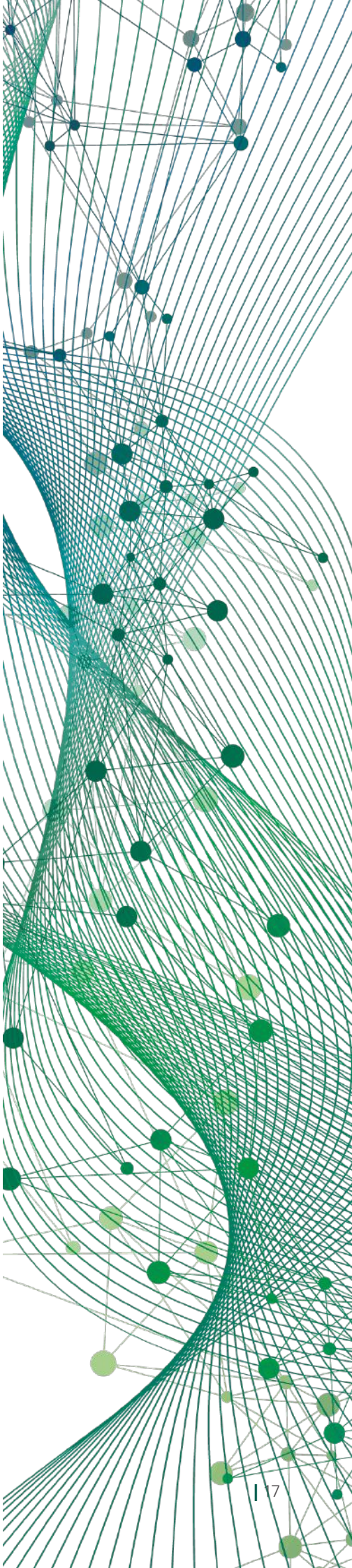
ABI SAUNDERS
Left ventricular wall stress during lower body resistance exercise

DELANO STEWART-JONES
Why is there underrepresentation of BAME professionals within sport management and leadershop in the United Kingdom?

SHAUN TURNER
To what extent is there a culture of whiteness in rowing and how does that culture affect the participation of BAME groups?

MORGAN WARD
Perceptions of Netball and its effect on Women's Participation

NOTES



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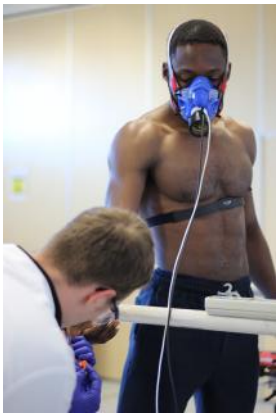
Kayamba Prospere
Boxer



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Ian Hammett
Team GB Spartathlon runner


Dr Jeff Aldous


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Kevin Wyld

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