PROGRAMME AND ABSTRACTS

University of Bedfordshire

ISPAR
Institute for Sport & Physical Activity Research
Conference | 2018

CONTENTS

WELCOMES

Following the big success of the previous two ISPAR Conferences, I know we are all looking forward to the third iteration. Enjoy hearing about the great research that staff and students are doing right now, and celebrate the difference the institute/school makes to athletes and the wider population.

DR SALLY BENTLEY
Executive Dean, Education and Sport

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

This year's conference showcases the varied research we conduct in both ISPAR, and the University as a wider community. From pedagogy to physiology and psychology to behaviour change, our staff and students will present the research they are undertaking in either an oral or poster format.

I trust you will enjoy not only the academic, but also the social element to the conference. Take some time to get to know someone new, share ideas and catch up with colleagues - I hope you feel inspired and energised. Enjoy the event!

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

PROGRAMME

12:30 REGISTRATION
Gateway Building, ground floor

12:45 WELCOME
Dr Andrew Mitchell, Director of ISPAR

13:00 KEYNOTE
Professor Gurch Randhawa, Institute for Health Research, University of Bedfordshire
#stairsnotlift

13.30 ACTIVITY

13:35 DR ANGEL CHATER | Chair: Dr Daniel Bailey
Reader in Health Psychology and Behaviour Change, University of Bedfordshire
'Active Herts': A community physical activity programme for inactive adults with cardiovascular disease risk and/or mental health concerns

13.50 ADAM DIVNEY AND MATT CORDER | Chair: Dr Daniel Bailey
Luton Borough Council and Active Luton
Luton's approach to health, wellbeing, and inactivity

14:05 - 14:45
POSTER SESSION AND COFFEE BREAK
Gateway Building, ground floor

14:45 MARSHA BRIERLEY (PhD student) | Chair: Dr Joanne Hill
The effects of sedentary workplace interventions on cardiometabolic risk markers in adult employees: a systematic review

14:55 DIANA SOARES (PhD student) | Chair: Dr Joanne Hill
Effects of midsole thickness on single leg drop landing ground reaction force and dynamic stability

15:05 CHRISTOPHER LONG (PhD student) | Chair: Dr Joanne Hill
Postural stability in rugby union: a systematic review

15:15 JANE WILLIAMS (PhD student) | Chair: Dr Joanne Hill
What are the current physical activity provisions for young people who have been bereaved? The BABY STEPS Project

15:25 DAVID PEARS (PhD student) | Chair: Dr Joanne Hill
Understanding coaches' naturalistic decision making in elite youth sport

15:35 HANNAH KETTLEY-LINSELL (MA student) | Chair: Dr Joanne Hill
The influence of power relations on gender stratification in Physical Education

15:45 - 16:00
COFFEE BREAK
Gateway Building, ground floor

16:05 **PETER McDONALD** (MSc by Research student) | Chair: Dr Julia Fruer
The singular and combined effect of neck and vest cooling on physical performance, physiological and perceptual responses during simulated soccer performance in a hot environment

16:10 **JOSH THORLEY** (MSc by Research student) | Chair: Dr Julia Fruer
Upper-respiratory symptoms and cytokine responses in overreached and overtrained athletes

16:15 **RYAN COOMBS** (MSc Clinical Exercise Physiology student) | Chair: Dr Julia Fruer
The relationship between left ventricular systolic function and body composition in an adult male population

16:20 **PHIL LONERGAN** (MSc by Research student) | Chair: Dr Julia Fruer
The effects of different volumes of water consumed immediately pre-meal on energy intake in adults

16:25 **BOGDANA HIRLAV-TIFREA** (MSc by Research student) | Chair: Dr Julia Fruer
Breaking up prolonged sitting time in office workers with sit-stand desks: A pilot cluster randomised controlled (RCT) trial

16:30 **KAMALESH DEY** (PhD student) | Chair: Dr Julia Fruer
Effects of breaking up prolonged sitting on postprandial cardiometabolic disease risk markers in South Asian adults

16:35 **LI-WEN HUANG** (MA student) | Chair: Dr Julia Fruer
How Physical Education teachers can regain enthusiasm in their job role after experiencing a loss of motivation

16:40 **HOPE EMILY GRANT** (MA student) | Chair: Dr Julia Fruer
How do teachers deal with the positive and negative aspects of competition in Physical Education, and what impact does this impose on meeting classroom learning objectives?

16:45 **CLOSING AND AWARDS**
Dr Andrew Mitchell, Director of ISPAR
The awards are funded by **The Connolly Foundation**, a major Bedfordshire charity supporting local causes and organisations.
Awards presented for: Best Student Oral Presentation
Best Student Poster Presentation

17:00 **CLOSE**

SOCIAL EVENT

We welcome you to join us in continuing our conversations from the conference at the White Horse Pub, 84 Newnham Ave, Bedford MK41 9PX.

INSTITUTE FOR SPORT & PHYSICAL ACTIVITY RESEARCH (ISPAR)

ISPAR embraces a wide range of multi-disciplinary perspectives from the life and biomedical sciences to the social sciences, to seek solutions to the physical inactivity epidemic and enhancement of human performance in a variety of sectors related to sport, education, health and wellbeing. Our work spans the life-course, working with children and young people, often in a school setting, through to adults and older adults within community, workplace and health care settings. ISPAR has three Research Centres, described below that are comprised of staff and postgraduate research students from the School of Sport Science and Physical Activity, alongside members of the wider university community with whom we collaborate*. We would be delighted to work with you on your research, training and consultancy needs and encourage you to get in touch.

All staff contact information is available here: unibeds.info/SSPAstaff

INSTITUTE FOR SPORT AND PHYSICAL ACTVITY RESEARCH

CENTRE FOR PHYSICAL EDUCATION, SPORT & HUMAN MOVEMENT

Lead: Dr Joanne Hill
Deputy: Michelle Flemons

PEDAGOGY & YOUTH SPORT

Lead
M Flemons

Members
A Baird
M Bowler*
L Croft
D Golding
J Hill
H Ives
S Keyworth*
D Pears
P Sammon*
A Stewart

EDUCATION & SPORT POLICY

Lead
S Wilson

Members
H Ives
A Chater
M Flemons
J Hill

SOCIO-CULTURAL STUDIES

Lead
P Craig

Members
J Hill
A Jones
S Robinson
A Stewart
P Wu

POSTGRADUATE STUDENTS

Thomasina Charlish (PhD)
Max Smith (MA by Research)
Amber-Louise Worth (MA by Research)

CENTRE FOR HEALTH, WELLBEING & BEHAVIOUR CHANGE

Lead: Dr Angel Chater
Deputy: Dr Lindsey Smith

SPORT, PHYSICAL ACTIVITY & HEALTH PSYCHOLOGY

Lead
S Kozub

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

BEHAVIOUR CHANGE INTERVENTION DESIGN & COMM.

Lead
A Chater

Members
D Bailey
P Craig
L Croft
J Fruer
D Kukucska
L Smith

PREVENTION & MANAGEMENT OF CHRONIC DISEASE

Lead
L Smith

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

POSTGRADUATE STUDENTS

Marsha Brierley (PhD)
Neil Howlett (PhD
Samson Ojo (PhD)
Jane Williams (PhD)
James Yates (MSc by Research)

CENTRE FOR PHYSICAL ACTIVITY & SPORTS PERFORMANCE

Lead: Dr Daniel Bailey
Deputy: Dr Iain Fletcher

SPORTS PERFORMANCE & BIOMECHANICS

Lead
I Fletcher

Members
J Aldous
L Charalambous
R Jones
J McKeown*
A Mitchell
J Richards

SEDENTARY BEHAVIOUR AND HEALTH

Lead
D Bailey

Members
L Charalambous
A Chater
L Croft
F Dong*
I Fletcher
J Fruer
D Hewson*
L Smith
T Withers

PHYSICAL ACTIVITY, NUTRITION & METABOLISM

Lead
J Fruer

Members
D Bailey
A Chater
L Croft
J Hough
R Jones
L Smith

POSTGRADUATE STUDENTS

Marsha Brierley (PhD)
Kamalesh Dey (PhD)
Bogdana Hirlav-Tifrea (MSc by Research)
Phil Lonergan (MSc by Research)
Chris Long (PhD)
Peter McDonald (MSc by Research)
Samson Ojo (PhD)
Diana Soares (PhD)
Josh Thorley (MSc by Research)
James Yates (MSc by Research)

ISPAR SEMINAR SERIES 2017-18

ISPAR regularly invites experts in the field to speak as part of on an ongoing lecture series. The 2017-18 series included:

From advanced injury treatments to gene doping: how advances in gene medicine will transform sports science.
Dr Darren Nesbeth, University College London.

Appetite and energy balance responses to exercise, nutrition, and environmental interventions.
Dr Kevin Deighton, Leeds Beckett University

University sport and policy reform in China.
Dr Shushu Chen, University of Birmingham

The extra-time period of football: implications for physiology and performance.
Dr Liam Harper, University of Huddersfield

Maximising the output from pilot and feasibility studies: an example of an online intervention to reduce alcohol consumption.
Dr Gillian Shorter, University of Ulster

Tackling childhood obesity – what's holding us back?
Dr Fiona Gillison, University of Bath

The science behind breakfast.
Dr James Betts, University of Bath

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

10 MINUTE PRESENTATIONS

The effects of sedentary workplace interventions on cardiometabolic risk markers in adult employees: a systematic review

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

The way we work has changed over the last 60 years, with work responsibilities becoming increasingly deskbound and dependent on technology. Office workers have been shown to spend up to 77% of their employed hours sedentary, with almost half of this time accrued in prolonged bouts of sitting (>20 minutes at a time). Prolonged occupational sitting is a risk factor for developing cardiovascular disease, obesity, type II diabetes, some cancers, and premature death. There is a need to elucidate the effects of workplace interventions on cardiometabolic risk markers – biological markers that identify individuals at risk of cardiometabolic disease – and identify the active behaviour change techniques by which these interventions work. A systematic search of 11 electronic databases was conducted on 27 June 2017. The qualitative synthesis included 21 published studies composed of 22 interventions (and 8 active control groups) of varying study design. For inclusion, interventions had to be conducted in the workplace with full-time employees over the age of 18, report outcomes on at least one cardiometabolic risk marker, and be published in English. Data related to study, sample and intervention characteristics were extracted along with cardiometabolic risk marker and sedentary behaviour outcomes. Interventions were coded in accordance with the Behaviour Change Technique (BCT) Taxonomy v1. Risk of bias was high for blinding, allocation concealment, and baseline differences, but low for outcome assessment (cardiometabolic risk markers). Overall, cardiometabolic risk marker improvements varied across studies. Five interventions were effective at improving at least one cardiometabolic risk marker compared with a control group and baseline (Very Promising), 12 interventions improved at least one cardiometabolic risk marker compared to baseline or a control group (Quite Promising), and 5 interventions showed no significant within or between group differences (Non-Promising). The BCTs of 'demonstration of the behaviour', 'habit formation', and 'adding objects to the environment', were at least four times more likely to be present in Promising interventions than Non-Promising ones. Workplace interventions to reduce sitting time show promise for improving cardiometabolic risk but are at high risk of bias and of short duration. There is a need for high quality trials that are sufficiently powered to detect cardiometabolic risk marker changes over the short and long term in order to be able to draw stronger conclusions. Promising BCTs ascertained by this review should be considered for future interventions aiming to reduce cardiometabolic risk markers.

Effects of midsole thickness on single leg drop landing ground reaction force and dynamic stability

Soares D[1], Charalambous L[1], Pedro Rodrigues[1,2], and Mitchell ACS[1]
[1]*Institute for Sport and Physical Activity Research (ISPAR), University of Bedfordshire*
[2]*Polytechnic Institute of Guarda, Portugal*

Athletic footwear can affect balance and ground reaction forces (GRF) during exercise. Dynamic instability and high loading rates are associated with athletic injuries. Some research has suggested exercising barefoot or wearing minimalist footwear might decrease instability, landing peak vertical force (PVF) and rate of loading (RL) (Bowser et al., 2017, *International Journal of Sports Medicine*, 38, 481-486). Conversely, others have reported lower PVF and RL in more cushioned shoes (Malisoux et al., 2017, PloS one, 12, 1-12) or no difference between barefoot and shod double-leg landing PVF (Yeow et al., 2011, *The Knee*, 18, 407-411). The aim of this study was to investigate the effect of athletic footwear midsole thickness on PVF, RL and dynamic stability in single leg 0.25 m drop landings. Eleven male field sports players participated (21.8±1.7 yrs; 1.78±0.05m; 76.5±13.5 kg, UK shoe size 9) and completed a health screen, foot and ankle ability questionnaire, warm up and a familiarisation test. Dominant leg was established using a 17 task limb dominance assessment. In a randomised order, single leg drop landings in five conditions were performed - barefoot and four shod, differentiated by midsole thickness: minimal (12 mm); moderate (21 mm); thick (27 mm) and oversized (32 mm). Drop landings were performed five times on each leg from a 0.25 m bench on to a force plate (Kistler 9281C; 1000 Hz). The variables calculated (Microsoft Excel) for each trial were PVF (N), RL (landing PVF divided by time taken; N/s) and

maximum displacement of the Centre of Pressure (CoP) in the anteroposterior (AP) and mediolateral (ML) directions. In SPSS (SPSS version 22.0, SPSS inc, Chicago), a repeated measures ANOVA with Bonferroni post-hoc tests analysed differences between the footwear conditions ($p < 0.05$). In the non-dominant leg, PVF and RL were significantly greater in the barefoot than the thicker mid-soled shoes and in the minimal shoe than the oversized shoe. Peak AP CoP was significantly greater barefoot and in the minimal shoe than the oversized shoe. In the dominant leg, PVF was significantly greater in the barefoot than all shoes and in the minimal than the oversized shoe. RL was significantly greater in the barefoot compared to thick and oversized shoes. Larger midsole thickness reduced PVF and RL when drop landing from 0.25 m, potentially reducing lower limb injury risk such as stress fractures.

Postural stability in rugby union: a systematic review

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

Rugby Union performance is influenced by an ability to move the ball past the opponent's defensive line into open field (called a line break). Increasing the stability of players in contact may allow them to break tackles and/or offload the ball more effectively when they are tackled by the defence, leading to more line breaks and more points scored. Many frequently performed rugby actions, such as running, sidestepping, tackling and scrummaging fatigues the neuromuscular system, reducing players ability to remain stable. Studies have tested different aspects of stability and balance in rugby players of different abilities, using a range of test apparatus. This review aimed to identify which aspects of postural stability had been investigated in rugby populations and bring them together to summarise the current research landscape in the field. Study design and methods in the current body of research were compared to inform methodology for future studies. SPORTDiscuss, Medline, PubMed, CINAHL and Web of Science were searched for original research articles investigating rugby union and stability. 237 articles were screened according to PRISMA guidelines. Duplicates, articles not relevant to rugby, balance or stability and articles with subjects suffering or recovering from concussion or lower limb injury were removed. 10 articles were included in the analysis. Methods, subjects and units of measurement were too varied to perform data synthesis. Rugby players are shown to be less stable in bilateral and unilateral standing than non-athletes, but more stable than athletes from other sports. Forwards are less stable in static and dynamic measures than backs in all but one study in which the groups were compared. Test apparatus and methods make application of findings difficult in community and elite settings. Standardised test methods for stability replicable in field settings will benefit stability research. Aspects of stability being tested need to be made clear by researchers, with direct reference to relevant match actions, to help practitioners. Positional differences, between forwards and backs and sub-groups within those units, should be investigated to establish a need to split the groups.

What are the current physical activity provisions for young people who have been bereaved? The BABY STEPS Project

Williams J[1], Zakrzewski-Fruer JK[1], Shorter GW[2], Chater A[1]
[1]*Institute for Sport and Physical Activity Research (ISPAR), University of Bedfordshire*
[2]*University of Ulster*

Nearly 600,000 people in the United Kingdom died in 2016, leaving family and friends to grieve their death. In 2015, roughly 780 children per week experienced the death of a parent, with 41,000 over the course of the year. Individuals can suffer from both cognitive and behavioural symptoms of grief (i.e. depression, anxiety, suicide attempts, isolation). There are national bereavement services readily available to support children and young people. Most services cater for those aged 2-18 years and offer a variety of bereavement support, including 24/7 contact, individual and family sessions. Despite this current support, it is unknown how many bereaved young people use these services and there is no research to our knowledge of bereavement support that focuses on physical activity. Physical activity can positively support grief symptoms (depression, anxiety, isolation etc.), however there is no published data of services specifically providing this service. A comprehensive search of bereavement organisations was conducted using the top 5 search engines: Google, Bing, Yahoo, Ask.com, Aol.com. The following keywords were used: "bereavement services", "children", "UK", "England", "Wales", "Scotland" "Northern Ireland". The top 100 results were systematically searched for appropriate organisations which provide

bereavement support to young people (10-24years). A total of 379 organisations were identified, each organisation was contacted to complete an online questionnaire. Organisations are asked to provide details on the number of young people who use their services, the type of services they provide, if physical activity is used to support young people who have been bereaved and finally their views on using physical activity to support bereaved young people. After gaining ethical approval data collection began in February 2018. A total of 55 organisations completed the online questionnaire, 16 opted out of participating. From the available results, 9 out of the 71 responses use physical activity to support bereaved young people. These organisations use a variety of yoga, dance and activity days. The remaining 308 will be contacted for a telephone interview. Data collection will be complete in May 2018. Findings will inform the next stage of a feasibility intervention. Development of a physical activity program that aims to enhance belonging and a sense of well-being and reduce the symptoms of grief, in those who have been parentally bereaved by bringing those who have similar experiences together.

Understanding coaches' naturalistic decision making in elite youth sport

Pears D[1], Mitchell ACS[1], and Hill J[1]
[1]*Institute for Sport and Physical Activity Research (ISPAR), University of Bedfordshire*

There is an increasing acceptance of the complex nature of sports coaching and the perceived importance of decision-making (DM) for effective sports coaching. Despite this there has been very little empirical investigation into the DM of coaches. The optimisation of the process of decision making is still contested and the establishment of sound advice for decision making has been hard to pin down and a range of perspectives have been proposed that have sought to advance understanding of how experts make decisions. Recent literature has proposed the Naturalistic Decision-Making (NDM) framework as a potentially useful lens through which to better view DM of sports coaches. NDM describes "how people actually make decisions in real world settings" (Klein, 2008, p.456) and is based on research on practice of expert decision makers where decisions are complex, time constrained, where the stakes may be high, where the goals are vague, where the landscape is constantly changing and not all of the information needed is available. This study sought to examine the suitability of NDM as a framework for understanding coach DM in this context. A season long case study was conducted to explore the decision making of coaches (n=8) working in a Football Association (FA) Girls' Centre of Excellence (GCoE). The coaches were interviewed about their coaching biography and philosophy and stimulated recall interviews were conducted to explore decision making relating to critical coaching incidents in training and matches. The data was organised, coded and analysed using NVivo 11 (QSR International, London). Although there was some evidence of the use of NDM type decisions these were not frequent and the results are somewhat inconclusive. There are two possible reasons as to why the results are inconclusive. Firstly, the context does not require this type of decision making. FA and GCoE rules relating to equal playing time, rotation of positions and substitutions may have resulted in removing or reducing match day DM. Additionally, the emphasis of both the FA and GCoE is on long term player development and therefore the time constraints on coaches are removed. The second rationale is that the coaches did not have sufficient expertise to make these seemingly intuitive decisions. Expertise is an important factor in NDM research as proficient decision making is compelled by experiential knowledge. Further research is needed in order to provide a greater understanding of coaches' decision making using the NDM paradigm.

The influence of power relations on gender stratification in Physical Education

Kettley-Linsell H[1], Hill J[1]
[1]*School of Sport Science and Physical Activity, University of Bedfordshire*

It is widely recognised that gender inequalities in physical education and sport are a common characteristic of social and cultural life and that male domination of sporting environments are a widespread phenomenon. Despite this, gender stratification, or the 'gender gap', in sport has begun to close, however it remains due to societal and cultural influences. Both girls and boys experiences of sport is one of constant negotiation of gendered power relations. The present study investigated how power relations reinforce gender stratification within a physical education setting; to gain insight into how the curriculum enforces gender stratification. The data draws from a six-week case study conducted with male and female students, from years seven to ten, in a predominantly white British secondary school in the UK. Numerous observations were conducted focusing upon observable signs of gender power

relations within a physical education classroom environment. Seven participants, three girls and four boys, were randomly selected for the interview process. Students were asked to discuss their experiences of physical education, focusing upon the sports they have been exposed to, the predominance of mixed sex classes and any factors affecting their participation in sports not stereotypically categorised as gender appropriate. Documents, including the school curriculum, were also used as sources of data and were critically analysed in order to enhance the credibility of the data set. Ethical approval has been granted and data collection commenced in February 2018 for a six week period. Data collection ceased once the researcher experienced saturation of the data set. Following this period, the data set was input into the computer software Nvivo, whereby data analysis is currently taking place. Distinguishing how power relations reinforce gender stratification within physical education will help to aid further change in perceptions of sport which are not determined by patriarchal ideals which categorise sports as masculine or feminine. Findings will aid in the development of a curriculum where gender norms do not dictate the sports in which young people participate in. The removal of gender power relations will allow for a higher level of equity within physical education settings which, in time, should have an effect upon the acceptance of both genders competing in sports which are not currently classified as being appropriate for both genders.

3 MINUTE PRESENTATIONS

The singular and combined effect of neck and vest cooling on physical performance, physiological and perceptual responses during simulated soccer performance in a hot environment

McDonald PM[1], Hough J[1], Tyler C[2], and Aldous J[1]
[1]*Institute for Sport and Physical Activity Research (ISPAR), University of Bedfordshire*
[2]*University of Roehampton*

The negative effects of heat-stress on physical performance (e.g. high-speed and total distance covered) during soccer match-play are well-documented within the literature. These reductions in soccer-specific performance are associated with elevated body temperatures (e.g. core body and skin temperature) and increases in perceptual stress (e.g. rate of perceived exertion and thermal sensation). Therefore, practically valid ergogenic interventions are typically employed to reduce decrements in soccer performance and alleviate the risk of exertional heat illnesses, such as cooling manoeuvres. Cooling during the pre-match warm-up and throughout the half-time interval is most practical due to no governing body dictations during these periods. Cooling vests have been previously shown to reduce physiological strain and improve physical performance whilst neck collars have been reported to reduce perceptual stress and enhance performance during simulated soccer performance, respectively. However, no study has combined these practical cooling manoeuvres or compared their singular affect during a pre-match warm-up and during the half-time interval on a valid and reliable soccer-specific simulation in the heat (32°C & 60% rH). Eight male soccer players aged between 18-40 years with a maximal oxygen uptake (VO_{2max}) ≥45 mL.kg^{-1}.min^{-1}, body mass between 70-85 kg and ≥ 3 years' experience playing soccer will be recruited for this study. Participants will be required to complete 7 visits to complete this study. Visit 1: A Yo-Yo intermittent recovery test level one, to estimate participants maximal oxygen uptake (VO_{2max}). Visit 2: A familiarisation session requiring participants to complete a 9 and 13 min protocol followed by 45 min of the intermittent soccer performance test (iSPT). Visit 3: A peak speed assessment (PSA) followed by the full 90 min of the iSPT, a minimum of four-seven days after visit 2. Visit 4-7: Four randomised, counterbalanced, controlled experimental trials. The four trials will consist of the iSPT, following one of three pre-match and half-time cooling manoeuvres: (1) Ice Vest; (2) Neck Cooling (3); Ice Vest and Neck Cooling used concurrently; or with no-cooling. Statistical analyses will be completed using SPSS software version 22.0 for Windows (SPSS, Inc., Chicago, IL). Ethical approval has been granted. Six participants have completed visit one. Remaining participants are being recruited with the aim of completing data collection by the end of July 2018. The addition of neck cooling to vest cooling could provide a practical and additive benefit of improving physical performance measures (e.g. high-speed and sprint distance covered) which are important during soccer match-pay due to their association with game defining moments.

Cytokine responses and upper-respiratory symptoms in overreached athletes

Thorley J[1], Furmanski A[2], Aldous J[1], Hough J[1]
[1]*Institute for Sport and Physical Activity Research (ISPAR), University of Bedfordshire*
[2]*Institute of Biomedical and Environmental Science and Technology (iBEST), University of Bedfordshire*

Increased training stress over a short period can lead to a state of non-functional overreaching (NFOR). Recovery from this state can take months to years. Unfortunately, NFOR is currently difficult to diagnose. It has been reported that athletes who have developed NFOR experience an impaired ability to regulate inflammation and increased upper respiratory symptoms (URS)(e.g. cough, cold). This inability to regulate inflammation may be highlighted in alterations in anti- and pro-inflammatory cytokine responses to bacterial stimulation and in response to an exercise stress test. The primary aim of this study is to determine if an impaired inflammatory cytokine response can be highlighted at rest and following a 30-minute high-intensity treadmill exercise following 12-days of intensified training. The secondary aims of this study are to examine a link between inflammatory responses and hormonal alterations (specifically the hormone cortisol). In addition are any immune alterations highlighted linked to increased URS in our participants. 10 healthy, physically active males will complete a 12-day intensified training period, interspersed between 2 main trials. The main trials will consist of a 30-minute self-paced treadmill run. Blood (via venepuncture) and saliva samples will be collected before, after and 30-minutes following the treadmill run. Bacteria stimulated cytokine responses and their responses to exercise will be examined. Plasma and saliva cortisol concentrations will also be measured to support the secondary aim of this study. Ethical approval has been granted. 8 participants have been completed. An altered cytokine response at rest and/or following exercise could be used as a biological marker to identify the onset of NFOR. Changes to cortisol concentration can modulate an impairment to inflammatory regulation.

The relationship between left ventricular systolic function and body composition in an adult male population

Coombs RJ[1], and Richards J[1]
[1]*School of Sport Science and Physical Activity, University of Bedfordshire*

Left ventricular (LV) function is the interaction of four variables: myocardial contractile state, end-diastolic length, pressure overload and left ventricle mass (LVM) (Reichek et al., 1982, *Circulation*, 65, 99–108). Impaired cardiac function has been reported to correlate with BMI and the duration of obesity, more specifically, abnormal diastolic function without consistent association with systolic function (Wong et al., 2004, *Circulation*, 110, 3081–3087). The aim of this study was to examine the relationship between body composition, blood lipids and left ventricular systolic function. Thirty males with no history or cardiac disease or event were examined during this study. Participants attended the sport science laboratory on one occasion; echocardiographic images were taken from the parasternal long axis view, apical 4 chambers view and apical 2 chambers views as shown in previous research (Lang et al., 2005, *European Journal of Echocardiography*, 7, 79–108; Lang et al., 2015, *Journal of the American Society of Echocardiography*, 28, 1–39). Interventricular septum wall thickness (IVS), left ventricular diameter (LVD) and posterior wall thickness (PW) were measured in systole and diastole from M-mode images. Ejection fraction and stroke volume were measured from both the apical 2 & 4 chamber images. Systolic blood pressure was measured whilst images were obtained. Participant's body fat percentage (BF%) and fat free mass (FFM) using a Bod Pod. Total cholesterol (TC), low-density lipoproteins (LDL) and high-density lipoproteins (HDL) were measured and recorded from a finger prick blood sample. This study was given ethical approval by the University of Bedfordshire's Ethics Board. 12/30 participants complete, no current analysis of data. If an association is found between blood lipids and LV function or body composition and LV function it could suggest that simple lifestyle changes in regard to physical activity and diet may improve LV function.

The effects of different volumes of water consumed immediately pre-meal on energy intake in adults

Lonergan PW[1], Hough J[1], Zakrzewski-Fruer JK[1]
[1]*Institute for Sport and Physical Activity Research (ISPAR), University of Bedfordshire*

The increasing prevalence of obesity-related cardimetabolic disease (e.g. cardiovascular disease and type 2 diabetes) is having a profound impact on modern societies. Treatment strategies for obesity, such as surgery, are often costly, while lifestyle interventions that aim to reduce energy intake or increase energy expenditure for obesity prevention

or treatment are often ineffective. A novel method to reduce *ad libitum* energy intake in adults is to consume >500 ml of water either immediately or approximately 30 minutes before eating. It is not known whether consuming smaller quantities of water, which may be more feasible, would be equally as effective in reducing energy intake in overweight and non-overweight adults. Using a randomised crossover, Latin square design, participants (25 males and 25 females) will complete a familiarisation session followed by three main conditions where 0 ml (control), 250 ml or 500 ml water pre-loads will be consumed immediately before an *ad libitum* porridge breakfast. Participants will be instructed to eat until they are "comfortably full and satisfied" and *ad libitum* energy intake will be quantified. Perceived appetite will be assessed using visual analogue scales (VAS) before the breakfast and immediately and 30 min after the breakfast. One-way (for energy intake) or two-way (for VAS), repeated measures analysis of variance will be used to compare main effects of condition (between control, 250 ml, 500 ml) and time (for VAS) and between-condition interaction effects for sex and weight status (i.e., overweight vs. non-overweight). Ethical approval has been granted and the researcher is preparing to test participants. This research will identify whether consuming a small volume water than used in previous research is sufficient to reduce energy intake during a subsequent meal, and whether such effects are consistent between men and women and between overweight and non-overweight adults. The findings will help provide cheaper and simpler solutions to aid obesity prevention and treatment and thus reduce the prevalence of obesity-related cardiometabolic disease that places a significant economic burden in the UK and across the globe.

Breaking up prolonged sitting time in office workers with sit-stand desks: a pilot cluster randomised controlled (RCT) trial

Hirlav-Tifrea B[1], Ojo SO[1], Hewson DJ[2], Chater AM[1], Bailey DP[1], Smith LR[1]

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Sedentary behaviour represents an important risk factor for type 2 diabetes, cardiovascular disease and all-cause mortality, independent of leisure-time physical activity. Office workers can spend up to 77% of their working time sedentary. Modification to the office environment in order to make them more active-permissive might aid in reducing sitting time among office workers. Currently, no other chronic study has assessed the effects of breaking up sedentary time with an accumulated 2 h progressing to 4 h of standing in a single workday. Therefore, the present study will chronically assess the effects of interrupting sitting by this amount of standing during work hours over an 8 week period. A pilot cluster RCT, with offices as the unit of randomization, will take place in University of Bedfordshire and Bedford Borough Council offices. The recruitment goal is 46 office workers, aged 18-65 years who work shifts lasting ≥6h for at least 3 days/week and spend ≥75% of their working time sitting. In the intervention group, each participant's desk will be fitted with a sit-stand workstation. They will be asked to stand for 20 min/h during each shift (min 6h) for the first 4 weeks progressing to 40 min/h of standing for the last 4 weeks of the intervention. Prompt software will be installed in each intervention participant's computer/ laptop to provide popup reminders to change their posture. The control group will be instructed to work as usual. At two assessment time points (baseline and during week 8) sitting, standing and stepping will be objectively measured with an activPAL activity monitor. At baseline and post-intervention, health measurements will be taken: body composition; cardiometabolic risk markers (blood pressure, blood glucose, lipid profile); sleep quality and quantity; mental wellbeing; and work-related health and psychosocial measures. Ethical approval has been obtained by the Institute for Health Research at the University of Bedfordshire. The study will be recruiting participants in May 2018. This cluster RCT will be the first chronic intervention to assess the effects of breaking up sedentary time with an accumulated 2 h progressing to 4 h of standing per workday. Any positive results from the intervention might aid in a future modification of workplace policy.

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

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South Asians (Bangladesh, India, Pakistan, Sri-Lanka, and Nepal) are the largest growing population (1.7 billion) in the world and the largest ethnic minority group (~ 4.1% of the total population) in the United Kingdom. Prolonged sitting is associated with

cardiometabolic diseases including cardiovascular disease and Type 2 diabetes. Postprandial glucose concentrations are significantly higher in Caucasians during prolonged sitting compared to interrupted sitting with 2 min bouts of light or moderate intensity walking every 20 min. However, the effects of interrupting prolonged sitting with light intensity physical activity (walking) on cardiometabolic health in South Asians are unknown. This study design will be a two-condition randomised cross-over trial. The following preliminary testing will be completed before main conditions: height, weight, waist circumference, blood pressure, and treadmill walking habituation. Based on G Power sample size calculations (P=0.05; power=90%), 16 healthy South Asian men and women will be recruited for two conditions: (1) uninterrupted prolonged sitting and (2) interrupted prolonged sitting (seated with 2 min bouts of light intensity walking (3.2 km/h) every 20 min). Two standardised test meals (total 110.1 g carbohydrate, 13.6 g protein, and 8.5 g fat) will be provided after an initial 1 h period of uninterrupted prolonged sitting. Blood pressure, blood glucose, triglyceride, and high-density lipoprotein will be measured 30 min after each meal. Total area under the curve (AUC) and incremental area under the curve (iAUC) will be calculated for glucose concentration, systolic blood pressure and diastolic blood pressure, and lipid parameters for each pre- and post-condition. In addition, linear mixed models will be used to determine the differences between two main conditions. Ethical application is in progress. After obtaining ethical approval, participants will be recruited from June to August 2018. Data analysis will start in July 2018. This study will determine the effects of prolonged sitting on postprandial cardiometabolic risk markers in South Asians, which might establish the effectiveness of interrupting sitting with walking breaks on cardiometabolic health in this population. If interrupting sitting with walking breaks can improve postprandial responses that might improve cardiometabolic health, this might have importance in the design of effective interventions to reduce cardiometabolic risk in this ethnic group.

How Physical Education teachers can regain enthusiasm in their job role after experiencing a loss of motivation

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The purpose of this research is to investigate the challenges faced by secondary school Physical Education (PE) teachers in UK, and the way in which they may be overcome. The focus will be on PE teachers' morale and motivation, or lack of it. Three main questions will be discussed: what is the nature of the challenges faced by PE teachers? Are they motivated? How can they be supported in their roles? A series of government reports, books and articles were read to find answers to the above questions. The research will follow an exploratory process. Participants in this research will be secondary school PE teachers who teach children from the ages of 11 to 18 in Bedford. Participants will be randomly selected but will represent various lengths of teaching experience, including under 5 years, over 5 years and nearing retirement age. Semi- structured interviews will be conducted to allow the participant to voice in detail their unique personal experience. Three interviews will be carried out with each participant and after each interview the researcher will read and analyze the transcripts to formulate new questions for exploration. Thematic narrative analysis will be used to analyse the data collected. Ethical approval has been granted. Two participants are currently completing the study and the remaining participants are being recruited with the aim of completing data collection by July 2018. Following a socially constructed philosophy, this qualitative research will draw upon thematic analysis of this interview data. The findings will be helpful, not just for PE teachers, but could also illuminate and alleviate the issues in education of recruiting and retaining staff both in the UK and globally.

How do teachers deal with the positive and negative aspects of competition in Physical Education, and what impact does this impose on meeting classroom learning objectives?

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The inclusion and implementation of competition within the National Curriculum Physical Education, is and has been a highly contested area of debate amongst many researchers. With key theorists highlighting the significant positive and negative outcomes, competitive elements can impose on those who participate within the subject. However,

an area of neglect which repeatedly gets missed, is the teaching practice and methods used by Physical Educators when including competitive episodes within their lessons. This study acclaims a focus on the emotional consequences felt by Physical Educators within their lessons as a result of including competition. In measuring how teachers cope, the researcher intends to operate within an interpretive paradigm. To allow for the use of a relativist ontology, a constructivist epistemological approach will be applied allowing the researcher to consider multiple realities as well as elicit 'perceptions' from participants. To inform this research, three ethnographic methods have been chosen; observations, questionnaires and focus groups to produce an in-depth account of a multitude of social phenomena. Students from three separate year groups, the years seven, nine and eleven will be observed within a variety of Physical Education lessons completing a variety of different activities and sports. Before a selected group from each year will be subjected to semi-structured interviewing through focus groups, whereas, Educators shall be the subject of questionnaires, and observations. Ethical Approval has been granted and data collection is scheduled to commence in June 2018. Complete datasets are currently unavailable, with the researcher at current working on entering an educational setting as well as the meta-analysis backgrounding for the study, with the aim of completing data collection by the end of July 2018. Preliminary analyses indicate trends in the literature, that many Physical Educators follow the teaching methods they witnessed in their acculturation phase of Occupational Socialisation, whether students enjoy competition or not. Exploring and taking into concept the tools of practice used to implement competitive activities, will provide an insight into the true effect competition imposes on meeting learning objectives within the classroom. Therefore, the findings from the present study will have important implications for the way competition is taught in Physical Education lessons and shall question the major role competition plays within the National Curriculum.

POSTER PRESENTATIONS

HEIDI ANUKAM BSc Sport Science and Personal Training student
Effect of breakfast consumption and breakfast omission on free-living physical activity energy expenditure in adolescent girls who habitually skip breakfast

VICTORIA ASHLEY BA Sport and Physical Education student
"Pretty girls make me feel average" The social construction of young women's bod(ies)

OLUWATOSIN BAIYEROJU MSc Clinical Exercise Physiology student
Effect of age and physical training on left ventricular mass and wall stress

EMILY JANE BOUSFIELD BSc Health, Nutrition and Exercise Science student
Does 3 mg·kg-1 of caffeine alter 5 km running performance on females in the cold?

NYLE CARTWRIGHT MA Physical Education and Sport Pedagogy student
Does gender-bias exist in Physical Education?

OPIE PHOENIX CHARLETT BSc Sport and Physical Education student
Effects of breaking up prolonged sitting with bodyweight resistance exercise on postprandial triglycerides in healthy adults

AIMEE JEAN CLARKE BSc Health, Nutrition and Exercise Science student
"Mind over Movement" - does physical activity enhance mood and wellbeing?

SARAH JOANNE CLARKE BA Sport and Physical Education student
An uneven playing field: differences in school sport competition in state and private schools

CHLOE MAY CORDEN BA Sport Development and Management student
Women managers in sports organisations: a study of women's experiences within sports managerial roles

SARAH CROSS BA Sport and Physical Education student
Girls' perceptions of women's bodies in the media and how it impacts them in Physical Education lessons

ABIGAIL HOLLY FORD BA Sport and Physical Education student
Why girls learn to love or learn to hate Physical Education after primary school?

ANDREW GEDNY BSc Sport and Physical Education student
Does breaking up prolonged sedentary time with resistance activities improve the resting blood pressure of healthy young adults?

MEGAN MADDISON BA Sport and Physical Education student
Empowering girls in embodiment issues within Physical Education through activist inquiry

ELEFTHERIA MILESI MSc Clinical Exercise Physiology student
The effects of physical training on cardiovascular health

JAMIE MITCHELL MA Physical Education and Sport Pedagogy student
What is keeping females in sport?

VICTORIA MORARI BSc Sport Science and Personal Training student
The effects of breaking up prolonged sitting with body-weight resistance exercises on cognitive function

JACK POULTON MA Physical Education and Sport Pedagogy student
How can technology influence teacher's pedagogy and practice within inclusive Physical Education for those with physical impairments?

ELEANOR STAPLEY BA Sport and Physical Education student
How sportswomen are represented in photographic images in the media and if it effects girls participation in physical activity

HANNAH THOMPSON MSc Clinical Exercise Physiology student
Validation of acceleration of left ventricular contraction as a measure of diastolic function

MORGAN WARD BA Sport and Physical Education student
"I had to change to fit in..." How are women's university sports teams socially constructed?

HANNAH-MAY WEAVER BSc Sport and Physical Education student
Is a child's habitual breakfast frequency associated with time spent in physical activity and sedentary behaviours?

NATASHA WING BSc Sport and Physical Education student
The effects of carbohydrate mouth rinse on intermittent sprint performance in female football players

SIDNEY WRIGHT BSc Sport and Exercise Science student
Muscle reaction times during a simulated lateral sprain after cold water immersion or hot water immersion

LEWIS WYNNE BA Sport and Physical Education student
A sociological study of The Last Leg programme's impact on young people's perceptions of Paralympic sport and athletes with disability

JAMES YATES MSc by Research student
Factors of hypertension, metabolic syndrome and musculoskeletal injury risk in the Bedfordshire police force

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- Education and Sport Policy
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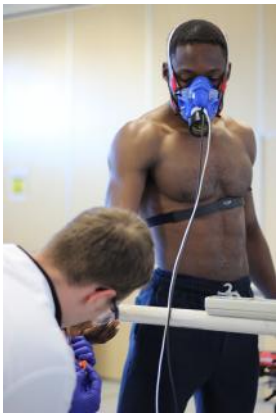
Kayamba Prospere
Boxer



"It's been amazing - the guys have been fantastic in looking after me. It's not just been physical, they've given me plenty of advice on coping mentally and assuring me that my preparation is going the right way when I haven't perhaps felt at my best. Their time has been very much appreciated, and the facilities have been amazing, and my time here will stand me in good stead for achieving my goal.
Ian Hammett
Team GB Spartathlon runner


Dr Jeff Aldous


Dr Jo Richards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