

# ISPAR

Institute for Sport and Physical Activity Research

**Conference 2021**

## IMPROVEMENT THROUGH MOVEMENT

Performance, health and wellbeing across the lifespan

# PROGRAMME AND ABSTRACTS



University of  
Bedfordshire



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# WELCOME

On behalf of the Institute for Sport & Physical Activity Research, welcome to our sixth Annual ISPAR Conference with the theme of 'Improvement through Movement: Performance, health and wellbeing across the lifespan'.

Our conference will showcase the impactful research that our staff, postgraduate students and collaborators are engaged in within each of our three research centres, across three days. We have three exciting keynotes and experts in the field, and welcome back three former graduates featured as our Alumni keynotes.

The Centre for Health, Wellbeing and Behaviour Change will kick off day one, with a focus on 'Moving medicine for the benefit of physical health and psychological wellbeing'. We will feature our first REF-submitted Impact Case Study to Unit of Assessment 24 on 'Changing sedentary behaviour, inactivity, health and well-being through influencing policy, training and practice'. Our experts in exercise physiology, nutrition, psychology and behaviour change will discuss their research into the role of physical activity in long-term conditions. We will look at the role behavioural science has to play in public health. Followed by our research related to taking a whole-systems approach to obesity and weight management, diabetes management, glycaemic control, cardiometabolic health, and cardiac rehabilitation. We will also look at how positive psychology interventions can benefit psychological wellbeing in the police, and how physical activity can support individuals who have experienced the death of a parent. This work informs our work with the local community through our UoB Exercise Clinic, where we offer exercise sessions to individuals to help with their long-term health conditions.

Day two will be hosted by our Centre for Physical Education, Sport and Human Movement focusing on social justice and equality in physical education and sport. Sessions will discuss issues related to race, gender and inclusion, taking a look at specific populations and topics such as black and ethnic minority students experiences beyond football, girl's participation of sport and physical activity, empowerment of young athletes, physical activity at home during COVID-19 and teachers' reflections on gender, sexualities and relationships within primary school.

The Centre for Physical Activity and Sports Performance will host our final day. Experts in the field will discuss a variety of aspects to optimise human performance, such as sleep quality in firefighters, and cooling modalities in endurance and team sports that are played in the heat. Our cardiology specialists will discuss cardiac structure and function in resistance-trained athletes and you will hear from our bio-mechanists and strength and conditioning teams on postural stability, cognitive function and muscle use. This day will conclude with our second REF-submitted Impact Case Study on 'Enhancing golf performance through biomechanical analysis'.

We hope our research will inspire various ways to reach improvement through movement. We encourage you to connect with us during and after the conference, with a view to exploring new and continuing research opportunities and collaborations.

## PROFESSOR ANGEL CHATER

Director, Institute for Sport & Physical Activity Research



## MARTYN MORRIS

Deputy Director of ISPAR & Head of School of Sport Science and Physical Activity



## JULIET FERN

Dean of Faculty of Education, English and Sport



With special thanks to the ISPAR 2021 Organising Committee: Angel Chater, Julia Fruer, Rebecca Jones, Iain Fletcher, Joanne Hill, Jeff Aldous, Laura Charalambous, Mike Newell, Jane Williams, Jamie Whitehall, Jake Scott and Abi Saunders.

# PROGRAMME

21<sup>st</sup> - 23<sup>rd</sup> September 2021

21st September 2021 (10:00-13:00)

## ISPAR Centre for Health, Wellbeing and Behaviour Change

### 10:00 WELCOME

**Professor Angel Chater**, Director of ISPAR, Lead of Centre for Health, Wellbeing and Behaviour Change

### 10:10 KEYNOTE : MOVING MEDICINE: PHYSICAL ACTIVITY FOR THE BENEFIT OF LONG-TERM CONDITIONS AND PUBLIC HEALTH WITHIN AN AT-RISK OCCUPATIONAL GROUP

**Dr Stacy Clemes**, Reader in Active Living and Public Health, Loughborough University

### 10:40 CHANGING SEDENTARY BEHAVIOUR, INACTIVITY, HEALTH AND WELL-BEING THROUGH INFLUENCING POLICY, TRAINING AND PRACTICE. [ISPAR REF UOA24 IMPACT CASE STUDY 1]

**Chater, A.**, Bailey, D. & Smith, L., Professor of Health Psychology and Behaviour Change

10:55 - 11:00 BREAK

### 11:00 USING BEHAVIOURAL SCIENCE WITHIN LOCAL AUTHORITY PUBLIC HEALTH

**Moffat, A.**, Cook, E. & Chater A.M. **PhD Candidate**

### 11:10 FACTORS THAT FACILITATE OR HINDER WHOLE SYSTEM INTEGRATED CARE FOR OBESITY AND MENTAL HEALTH

**Liapi, F.**, Chater, A.M., Randhawa, G. & Pappas, Y. **PhD Candidate**

### 11:20 OBESITY-RELATED BEHAVIOUR CHANGE TRAINING (ORBIT) FOR HEALTH CARE PROFESSIONALS

**Whitehall, J.**, Zakrzewski-Fruer, J.K. & Chater, A.M. **PhD Candidate**

### 11:30 CAN PHYSICAL ACTIVITY SUPPORT GRIEF OUTCOMES IN INDIVIDUALS WHO HAVE BEEN BEREAVED? A SYSTEMATIC REVIEW

**Williams, J.**, Shorter, G.W., Howlett, N., Zakrzewski-Fruer, J.K. & Chater A.M. **PhD Candidate**

### 11:40 QUESTION & ANSWER SESSION

11:50 - 12:00 BREAK

### 12:00 POSITIVE PSYCHOLOGY INTERVENTIONS (PPIS) TO IMPROVE THE HEALTH AND WELLBEING OF POLICE STAFF

**Kukuscuka, D.**, Wyld, K., Whitehall, J., Shorter, G., Howlett, N. & Chater, A.M.  
**ISPAR MSc by Research Graduate**

### 12:10 POSTPRANDIAL GLUCOSE RESPONSES TO STANDARDISED MEALS CONSUMED AFTER MODERATE- AND HIGH-INTENSITY EXERCISE BOUTS IN HEALTHY, FREE-LIVING ADOLESCENTS

**Afeef, SM.**, Barrett, L., Zakrzewski-Fruer, J.K. & Tolfrey, K. **PhD Candidate**

### 12.20 EFFECTS OF BREAKING UP SITTING TIME ON POSTPRANDIAL CARDIOMETABOLIC DISEASE RISK MARKERS IN OVERWEIGHT/OBESE SOUTH ASIAN ADULTS

**Dey, K.C.**, Zakrzewski-Fruer, J.K., Smith L., Jones, R.L. & Bailey, D.P. **PhD Candidate**

**12:30 SITTING TIME AND GLYCEMIA POST-MYOCARDIAL INFARCTION**

**Bell, A. C.,** Zakrzewski-Fruer, J.K., Smith L., Bailey., D. P. & Richards, J. **PhD Candidate**

**12:40 ALUMNI KEYNOTE : MULTI-COMPONENT BEHAVIOUR CHANGE INTERVENTIONS TO REDUCE SITTING TIME IN OFFICE WORKERS: FINDINGS FROM 2 CLUSTER RANDOMISED-CONTROLLED TRIALS**

**Dr Ben Maylor,** Diabetes Research Centre, University of Leicester, **ISPAR PhD Graduate**

**12:50 QUESTION & ANSWER SESSION**

**12:55 THANKS AND CLOSE**

**Professor Angel Chater,** Director of ISPAR, Lead of Centre for Health, Wellbeing and Behaviour Change



# PROGRAMME

21<sup>st</sup> - 23<sup>rd</sup> September 2021

22nd September 2021 (16:00-18.00)

## ISPAR Centre Physical Education, Sport and Human Movement

### 16:00 WELCOME

**Dr Joanne Hill**, ISPAR Centre Lead for Physical Education, Sport and Human Movement

### 16:05 KEYNOTE : TEACHING CULTURALLY RESPONSIVE PE

**Albert Adeyemi**, Physical Education and Maths Teacher, Practitioner

### 16:25 BLACK AND MINORITY ETHNIC STUDENTS ACHIEVING BEYOND FOOTBALL

**Maylor, U.**, Belas, O. Butler, C., Hill, J. & Hopkins, N. **Academic**

### 16:35 TEACHERS' REFLECTIONS ON GENDER, SEXUALITIES AND RELATIONSHIPS WITHIN AND BEYOND RELATIONSHIPS, SEX AND HEALTH EDUCATION (RSHE) IN AN ENGLISH PRIMARY SCHOOL

**Baird, A.** EdD & Academic

16:45-16:50 BREAK

### 16:50 EXTERNAL SPEAKER : WHY NOT PE TOO? SOCIAL JUSTICE TEACHINGS

**Janelle Meisenheimer**, Physical Education Teacher, Practitioner

### 17:10 SHE GOT GAME! AN INTERNATIONAL PROJECT TO INCREASE GIRLS' ENGAGEMENT IN SPORT

**Wilson, S.** Academic

### 17:20 MEANINGFUL AND SUSTAINABLE ENGAGEMENT IN PHYSICAL ACTIVITY AT HOME

**Hill, J.**, Flemons, O. and Hunter, E. Academic & Undergraduates

17:30-17:35 BREAK

### 17:35 ALUMNI KEYNOTE : SOCIALISED PRACTICE AND ITS INFLUENCE ON OUR APPROACHES TOWARDS THE HOLISTIC DEVELOPMENT OF YOUNG PEOPLE THROUGH SPORT AND PHYSICAL EDUCATION

**Dr Michelle Flemons**, Academic & ISPAR PhD Graduate

### 17:55 THANKS AND CLOSE

**Dr Joanne Hill**, ISPAR Centre Lead for Physical Education, Sport and Human Movement



23rd September 2021 (10:00-13:00)

## ISPAR Centre for Physical Activity and Sports Performance

### 10:00 WELCOME

**Dr Rebecca Jones & Dr Jeff Aldous**, Co-leads of ISPAR Centre of Physical Activity and Sport Performance

### 10:05 KEYNOTE: SPORT SCIENCE RESEARCH ON THE H'S — HEAT, HYDRATION, HUNGER, HIGH PERFORMANCE, AND HEALTH

**Dr Ruth James**, Principal Lecturer in Sports Nutrition & Exercise Physiology at Nottingham Trent University

#### 10:35-10:45 BREAK

### 10:45 THE PREVALENCE OF METABOLIC SYNDROME IN FIREFIGHTERS: A SYSTEMATIC REVIEW AND META-ANALYSIS

**Beckett, A.**, Chater A.M. & Aldous, J. **PhD Candidate**

### 10:55 THE PERCEPTIONS AND USAGES OF COOLING MODALITIES IN ENDURANCE AND INTERMITTENT/TEAM SPORTS IN THE HEAT

**Scott, J.**, Bousfield, E., Gordon, R., Mitchell, A., Tyler, C. & Aldous, J. **PhD Candidate**

### 11:05 WHAT IS THE EFFECT OF HOT, COLD, AND HYPOXIC ENVIRONMENTS ON COGNITIVE FUNCTION AND PHYSICAL PERFORMANCE DURING INTERMITTENT EXERCISE IN HEALTHY MALE AND FEMALE TEAM SPORTS MEMBERS?

**Griffiths, J.**, Jones, R.L. & Aldous, J. **PhD Candidate**

### 11:10 QUESTION & ANSWER SESSION

#### 11:20-11:30 BREAK

### 11:30 INTRA AND INTERSESSION RELIABILITY OF CENTRE OF PRESSURE MEASURES IN HEALTHY OLDER ADULTS DURING BIPEDAL STATIC POSTURAL CONTROL TESTS

**Soares, D.**, Fletcher, I.M., Mitchell, A. & Charalambous L. **PhD Candidate**

### 11:40 TRUNK MUSCLE ONSET IN RESPONSE TO AN UNEXPECTED LOWER BODY PERTURBATION IN YOUNGER ADULTS AND OLDER ADULTS

**Barford, C.**, Richards, J. & Fletcher, I.M. **PhD Candidate**

### 11:50 QUANTIFYING STABILISATION RESPONSE TO IMPACT — IMPLICATIONS ACROSS THE LIFESPAN

**Long, C.S.**, Fletcher, I.M., Charalambous L. & Mitchell, A. **PhD Candidate**

### 12:00 ASSESSING LEFT VENTRICULAR WALL STRESS AND MOUTH PRESSURE DURING ISOMETRIC HANDGRIP EXERCISE IN SEDENTARY AND STRENGTH TRAINED MEN

**Russell, L.**, Saunders, A. & Richards, J. **MSc Taught**

### 12:05 QUESTION & ANSWER SESSION

#### 12:15-12:25 BREAK

### 12:25 CARDIAC STRUCTURE AND FUNCTION IN RESISTANCE TRAINED ATHLETES AND UNTRAINED CONTROLS: A CROSS-SECTIONAL ANALYSIS

**Saunders, A.**, Jones, R.L. & Richards, J. **PhD Candidate**

### 12:35 ALUMNI KEYNOTE : ENHANCING GOLF PERFORMANCE THROUGH BIOMECHANICAL ANALYSIS [ISPAR REF UOB24 IMPACT CASE STUDY 2]

**Dr Jack Wells**, The Professional Golfers' Association (PGA). **ISPAR PhD Graduate**

### 12:55 THANKS AND CLOSE

**Dr Rebecca Jones & Dr Jeff Aldous**, Co-leads of ISPAR Centre of Physical Activity and Sport Performance

# INSTITUTE FOR SPORT AND PHYSICAL ACTIVITY RESEARCH (ISPAR)

## DIRECTOR OF INSTITUTE

Professor Angel Chater

## DEPUTY DIRECTOR OF INSTITUTE

Dr Martyn Morris

### CENTRE FOR PHYSICAL EDUCATION, SPORT & HUMAN MOVEMENT

Lead: Dr Joanne Hill

### CENTRE FOR HEALTH, WELLBEING & BEHAVIOUR CHANGE

Lead: Professor Angel Chater

### CENTRE FOR PHYSICAL ACTIVITY & SPORTS PERFORMANCE

Lead: Dr Rebecca Jones & Dr Jeffery Aldous

## SPECIAL INTEREST GROUPS

PEDAGOGY & YOUTH SPORT

EDUCATION & SPORT POLICY

SOCIO-CULTURAL STUDIES

SPORT, PHYSICAL ACTIVITY & HEALTH PSYCHOLOGY

BEHAVIOUR CHANGE INTERVENTION DESIGN & COMMUNICATION

PREVENTION & MANAGEMENT OF LONG-TERM CONDITIONS

SPORTS PERFORMANCE & BIOMECHANICS

SEDENTARY BEHAVIOUR AND HEALTH

PHYSICAL ACTIVITY, NUTRITION & METABOLISM

If you are interested in completing research with us (e.g., a collaborative project or research degree) in any of the areas above, please email [ISPAR@beds.ac.uk](mailto:ISPAR@beds.ac.uk). You can also access an overview of our research centres on our ISPAR website at [unibeds.info/ISPAR](http://unibeds.info/ISPAR) and our staff profiles on the University website at [unibeds.info/SSPAstaff](http://unibeds.info/SSPAstaff) and enquire with individual members of staff directly.

# ISPAR

Institute for Sport and Physical Activity Research

# ISPAR SEMINAR SERIES 2020-21

ISPAR regularly invites experts in their field to speak as part of our annual ISPAR lecture series. The 2020-2021 series included:

## Health and well-being of the occupational athlete

Dr Anthony Walker, ACT Emergency Services Agency  
- Canberra Australia

## Exploring perceived benefits of exercising in public places

Dr Francis Quinn, The Robert Gordon University

## Protein from animal and plant-based proteins: What's the difference for muscle growth

Dr Oliver Witard, Kings College London

## Sport Engineering: from tibia to trampolines.

Dr Olivia Brown, University of Lincoln

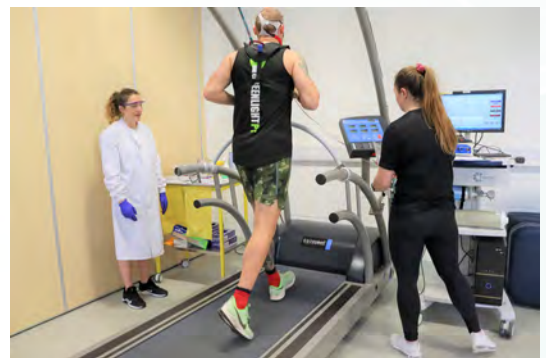
"Yeah, congratulations!

You look like a cis person, well done!"

## Understanding the politics of passing for trans and non-binary people in physical activity in the UK.

Dr Abby Barras, Researcher, Mermaids/University of Brighton

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](mailto:ispar@beds.ac.uk)



# KEYNOTE BIOGRAPHIES

PRESENTING ON SEPTEMBER 21st at 10:10

MOVING MEDICINE: PHYSICAL ACTIVITY FOR THE BENEFIT OF  
LONG-TERM CONDITIONS AND PUBLIC HEALTH WITHIN AN  
AT-RISK OCCUPATIONAL GROUP



## Dr Stacy Clemes

Reader in Active Living and Public Health  
Loughborough University

**Abstract:** Dr Stacy Clemes is a Reader in Active Living and Public Health at Loughborough University. Her expertise focuses on the development and evaluation of interventions to promote healthy behaviours across the life course. She is currently leading a NIHR Public Health Research funded study examining the impact of a multicomponent health behaviour intervention ('the SHIFT programme') in heavy goods vehicle drivers. She also leads research examining the impact of sit-to-stand desks on health and learning outcomes in the school environment, and more recently has started to explore the mental and physical health impacts of remote working. Dr Clemes was part of the Sedentary Behaviour Expert Working Group for the 2019 UK Chief Medical Officers' Physical Activity Guidelines review. Her talk will focus on the development, implementation, and evaluation of the 'Structured Health Intervention For Truckers' (SHIFT) programme.

PRESENTING ON SEPTEMBER 21st at 12:40

MULTI-COMPONENT BEHAVIOUR CHANGE INTERVENTIONS TO REDUCE SITTING TIME IN  
OFFICE WORKERS: FINDINGS FROM 2 CLUSTER RANDOMISED-CONTROLLED TRIALS

## Dr Ben Maylor

Diabetes Research Centre, University of Leicester,  
ISPAR PhD Graduate

**Abstract:** Dr Ben Maylor is an ISPAR graduate, who was awarded his PhD early in 2021. He is now a post-doctoral researcher at the Diabetes Research Centre at the University of Leicester. His research interests focus particularly on the role of sedentary behaviour and physical activity in the prevention and treatment of chronic diseases, in addition to the development and assessment of analytical methods which aim to improve the interpretation of quantifying physical behaviours.



PRESENTING ON SEPTEMBER 22nd at 16:05

TEACHING CULTURALLY RESPONSIVE PE

## Albert Adeyemi

Physical Education and Maths Teacher, Practitioner

**Biography:** Albert Adeyemi is a teacher of PE & Maths in Bedfordshire, as well as Head of Year 7. Passionate about pastoral care and enhancing outcomes for students from challenging backgrounds, Albert advocates for mentoring as early intervention and alternate provision in schools. Albert also aims to provide young people with as many opportunities to play and participate in sport and physical activity eliminating barriers which would normally prevent them.



PRESENTING ON SEPTEMBER 22nd at 16:50

EXTERNAL SPEAKER : WHY NOT PE TOO? SOCIAL JUSTICE TEACHINGS

## Janelle Meisenheimer

Physical Education teacher, Practitioner

**Biography:** Janelle Meisenheimer is an Elementary PE teacher, varsity girls soccer coach, and curriculum coordinator for Global Nomads World Sports. In education, she engages in an online PE community incorporating Social Justice Issues in PE curriculums (<https://padlet.com/jmeisenheimer/SJEinPE>) and supports the social justice curriculum group at her school by helping set up professional development for the staff.

During her time in university she worked at a summer camp with The Y and had a work study job at the Boys and Girls Club in Tacoma. She was born in Keizer, Oregon, USA, but is currently living in Brussels, Belgium as an international teacher and has also lived and taught in the United Arab Emirates and Dominican Republic. She is also enrolled on the MA Social Justice of Community Organizing program at Prescott College in Arizona, USA.

PRESENTING ON SEPTEMBER 22nd at 17:30

EMPOWERING YOUNG ATHLETES THROUGH HOLISTIC

APPROACHES TO COACHING

## Dr Michelle Flemons

Academic & PhD ISPAR Graduate

**Biography:** Dr Michelle Flemons completed her PhD at the University of Bedfordshire in 2018. She is an experienced senior lecturer in higher education and a former physical education teacher. Her research centres on physical education teacher socialisation, beliefs and practice. She is an advocate of social justice, collaboration and interdisciplinary research to increase physical activity and life chances for all. Her current projects cover socialised behaviours in teaching and coaching, holistic athlete development, and teachers as gatekeepers to the profession.



PRESENTING ON SEPTEMBER 23rd at 10:05

SPORT SCIENCE RESEARCH ON THE H'S – HEAT, HYDRATION,  
HUNGER, HIGH PERFORMANCE, AND HEALTH



## Dr Ruth James

Principal Lecturer in Sports Nutrition & Exercise Physiology at Nottingham Trent University

**Biography:** Dr Ruth James is a Principal Lecturer in Sports Nutrition & Exercise Physiology at Nottingham Trent University, with ongoing research interests in sport and health nutrition and environmental exercise physiology. Ruth completed her PhD at Loughborough University under the supervision of Professor Ron Maughan, she then worked as a Research Fellow for NTU and the British Army for 3 years before moving into her current academic position.

Ruth is currently running a large, interdisciplinary project looking at student health, and is also involved in research on nutritional interventions for health and sport performance and exercise performance in hot and cold environments. Ruth has over 20 research publications, with recent publications including sodium bicarbonate ingest on 4-km cycling time trial performance (doi: 10.1123/ijssp.2020-0743) and longitudinal research examining student mental health and movement behaviours (doi: 0.3390/ijerph18062930). Ruth has presented her work nationally and internationally and was also an invited consultant to the Diet and Physical Activity Program within the Ministry of Health in Saudi Arabia.

PRESENTING ON SEPTEMBER 23rd at 12:35

ENHANCING GOLF PERFORMANCE THROUGH  
BIOMECHANICAL ANALYSIS



## Dr Jack Wells

Sport Scientist at The Professional Golfers' Association (PGA)

**Biography:** Dr Jack Wells is a sport scientist from The PGA where he delivers cutting edge sports science material aimed at developing aspiring golf coaches. In 2020 Jack completed his PhD research with the University of Bedfordshire. Specifically, his research focused on Biomechanics and Strength and Conditioning for Golf and was supervised by Dr Iain Fletcher, Dr Laura Charalambous and Dr Andrew Mitchell. Jack has several publications within golf and his main interest has been to establish robust profiling procedures that can be used to physically assess golfers. The success of his research has led to the European Tour employing these procedures to physically profile some of the best golfers in the world. Aside from academia, Jack applies his research as a consulting strength and conditioning coach with the U18 and U16 regional squads at England Golf. Jack has also recently set-up and co-founded the Golf Performance Network which is an educational organisation seeking to enhance practitioners understanding of golf performance support.

Twitter & Instagram

• @jackwells009

Email:

• jack.wells@pga.org.uk

# ISPAR REF (UoA 24) Impact Case Study 1

## **Changing sedentary behaviour, inactivity, health and well-being through influencing policy, training and practice.**

Chater, A. M., Bailey, D. P., & Smith, L.  
*Institute for Sport and Physical Activity Research,  
University of Bedfordshire*

### **Summary of the Impact:**

Sedentary behaviour and physical inactivity are distinct factors associated with an increased risk of obesity, type 2 diabetes, cardiovascular disease, poor mental health and premature death. Traditionally, guidelines, policy, training and practice have promoted the engagement of 150 minutes of moderate to vigorous physical activity (MVPA) per week, yet this does not address sedentary behaviour, and is not always achievable for large sections of the population. Research from this team has led to:

- *revisions to and the development of international and national guidelines* e.g. by the World Health Organization, Qatari public health, and the British Psychological Society, with recommendations specifically to limit sedentary behaviour;
- *professional bodies that aim to change behaviour identifying barriers to decreasing sedentariness in education, training and practice* e.g. the Swiss Tropical and Public Health Institute; University College London's Centre for Behaviour change, numerous Active Partnerships;
- *changes in occupational health and public health practices, and health outcomes* for desk-based employees and those in healthcare settings;
- *widening societal awareness* e.g. engaging with politicians, Sport England, the Richmond Group of Charities, the media and the public.

### **Underpinning research:**

**Bailey, D. P.,** Hewson, D. J., **Champion, R. B.** & Sayegh, S. M. (2019). Sitting time and risk of cardiovascular disease and diabetes: a systematic review and meta-analysis. *American Journal of Preventative Medicine*, 57(3), 408-416.

**Bailey, D. P.,** & Locke, C. D. (2015). Breaking up prolonged sitting with light-intensity walking improves postprandial glycemia, but breaking up sitting with standing does not. *Journal of Science and Medicine in Sport*, 18(3), 294-298.

Christmas, B. C., Taylor, L., Cherif, A., Sayegh, S., Rizk, N. M., El-Gamal, A., Allenjawi, S. H. & **Bailey, D. P.** (2019). Postprandial insulin and triglyceride concentrations are suppressed in response to breaking up prolonged sitting in Qatari females. *Frontiers in Physiology*, 10(706). [cited 4 times]

**Ojo, S. O., Bailey, D. P., Brierley, M. L.,** Hewson, D. J., & **Chater, A. M.** (2019). Breaking barriers: using the behavior change wheel to develop a tailored intervention to overcome workplace inhibitors to breaking up sitting time. *BMC Public Health*, 19(1), 1-17.

**Brierley, M. L., Chater, A. M., Smith, L. R., & Bailey, D. P.** (2019). The effectiveness of sedentary behaviour reduction workplace interventions on cardiometabolic risk markers: a systematic review. *Sports Medicine*, 49(11), 1739–1767.

# ISPAR REF (UoA 24) Impact Case Study 2

## Enhancing golf performance through biomechanical analysis

Mitchell, A., Charalambous, L. & Fletcher, I.  
*Institute for Sport and Physical Activity Research,  
University of Bedfordshire*

### Summary of the Impact:

Our research has established new assessment methods and physical profiling tests for clubhead velocity in golf and have been adopted by both the Professional Golfers' Association (PGA) European Tour Performance Institute (ETPI) and England Golf to profile their elite golfers. These tests now form the basis for the way in which elite and recreational golfers' training programmes are designed, delivered and evaluated. In order to carry out these tests, new coaches have been employed, new equipment has been purchased and provision of our assessment and physical profiling is now implemented by the ETPI in new facilities at 37 European Tour events across the world per year, in addition to the recent 2018 & 2019 Open Championships and the 2018 Ryder Cup.

### Underpinning Research:

**Wells, J.E.T., Mitchell, A.C.S., Charalambous, L.H., Fletcher, I.M.** (2018). Relationships between highly skilled golfers' clubhead velocity and force producing capabilities in vertical jumps & an isometric mid-thigh pull. *Journal of Sports Sciences*, 36(16), 1847-1851.

**Wells, J.E.T., Charalambous, L.H., Mitchell, A.C.S., Coughlan, D., Brearley, S.L., Hawkes, R.A., Murray, A.D., Hillman, R.G., Fletcher, I.M.** (2019). Relationships between Challenge Tour Golfers' clubhead velocity and force producing capabilities during a countermovement jump and isometric mid-thigh pull. *Journal of Sports Sciences*, 37(12), 1381-1386.

Wells, J.E.T., Mitchell, A.C.S., Charalambous, L.H., Fletcher, I.M. (2020). Relationships between highly skilled golfers' clubhead velocity and vertical ground reaction force asymmetry during vertical jumps & an isometric mid-thigh pull. *Journal of Strength & Conditioning Research*, 34(10), 2824-2831.



# SPEAKER ABSTRACTS

## ABBY MOFFAT

### UNDERSTANDING THE INFLUENCES ON THE USE AND INTEGRATION OF BEHAVIOURAL SCIENCE IN PUBLIC HEALTH

*Moffat, A.,<sup>1</sup> Cook, E.,<sup>1</sup> & Chater, A.M.<sup>1</sup>, <sup>1</sup>Institute for Sport and Physical Activity Research, University of Bedfordshire*



**Abstract:** Behavioural science and its contribution towards improving public health is receiving increased recognition. Yet, the translation of these insights into public health practice can often be limited, the reasons for which have not been fully explored. The current study aimed to establish the factors influencing the use and integration of behavioural science within public health at a local authority level.

**Method:** Fifteen local authority staff in the south of England participated in semi-structured interviews, which were analysed inductively to identify key themes.

**Results:** Eight themes were identified as factors that influence the use of behavioural science in a public health setting: (1) 'Awareness of need', (2) 'Generating buy in', (3) 'Collaborative whole systems approaches', (4) 'Organisational culture and political landscape', (5) 'Automaticity of use' (6) 'Translational gap from theory-to practice', (7) 'Investment in Behavioural Science', (8) 'Lack of time'.

**Conclusion:** For behavioural science to be successfully used and integrated within local authority public health there must first be an awareness that its incorporation is necessary. Once achieved, there is a need for system-wide buy-in and collaborative working, which can be attained through changing the organisational culture. Currently the use of behavioural science in routine practice is limited due to the presence of a theory-practice gap. To overcome this, individuals would benefit from guidance and time to fully understand how to integrate this into everyday working, which can be supported through the provision of tailored training within public health teams and the wider organisation.

## FANI LIAPI

### FACTORS THAT INFLUENCE WHOLE SYSTEM INTEGRATED CARE FOR OBESITY AND MENTAL HEALTH

*Liapi, F.,<sup>1, 2</sup> Chater, A.M.,<sup>2</sup> Randhawa, G.,<sup>1</sup> and Pappas, Y.<sup>1</sup>, <sup>1</sup>Institute for Health Research, University of Bedfordshire; <sup>2</sup>Institute for Sport and Physical Activity Research, University of Bedfordshire*



**Abstract:** Integrated care aims to improve population health. Obesity and mental health are major health issues worldwide. The complexity of the multifactorial drivers of these public health problems has led to the adoption of a whole system approach (WSA). This review aimed to highlight factors that influence the planning, implementation, and evaluation of whole system integrated care for these conditions.

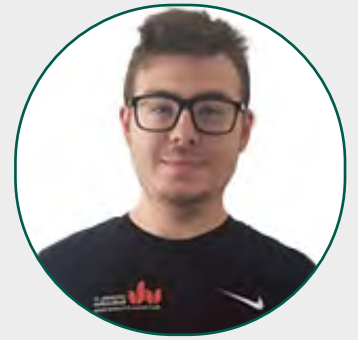
**Results:** Nineteen studies of the 26,534 screened records were included in the review. Identified influences on the use of a whole system approach to integrated care were: 1) Development of local partnerships and networks, 2) Governance structures, 3) Resources, 4) The setting, 5) Conceptualization of the programme, 10) Responsiveness to local concerns, 6) Recognition of cultural variation, 9) Multidisciplinary approach and case management, and 8) Communication and normative aspects.

**Conclusion:** These findings extend knowledge in this area, to inform stakeholders, policymakers and commissioners when designing, delivering and evaluating whole-system integrated care interventions. Further high quality research is needed, which enables the development of agreed definitions and conceptualisations of whole system integrated care.

## JAMIE WHITEHALL

### OBESITY-RELATED BEHAVIOUR CHANGE INTERVENTION TRAINING (ORBIT) FOR HEALTH PROFESSIONALS

*Whitehall, J.,<sup>1</sup> Zakrzewski-Fruer, J.K.,<sup>1</sup> and Chater, A.M.,<sup>1</sup> <sup>1</sup>Institute for Sport and Physical Activity Research, University of Bedfordshire*



**Abstract:** The global prevalence of obesity continues to be a public health concern. Obesity can have significant adverse effects on an individual's life and despite having a reasonably simplistic definition of a body mass index  $\geq 30$  kg/m<sup>2</sup>, obesity is a complex multifactorial issue. Weight-related stigma is often experienced by individuals living with obesity in healthcare settings and can have a significant adverse contribution to psychological health and behaviour. The use of behavioural science and person-first language can reduce weight-related stigma. This programme of research aims to assess need and build capacity related to health professional's capability, opportunity and motivation to use behavioural science (COM-B) when working with individuals living with obesity.

**Method:** A mixed-methods approach will be taken. A systematic review on obesity-related behaviour change training for health professionals will be conducted, followed by interviews with health professionals, trainees and patients, to develop a needs assessment for future training. This will further be informed by a survey of healthcare professionals and observations of obesity consultations. This work will conclude with the delivery and evaluation of an Obesity-Related Behaviour change Intervention Training programme, entitled ORBIT, to assess knowledge and confidence in using behavioural science, consultation skills in practice and patient satisfaction.

**Conclusion:** This research will produce co-created training for health professionals to effectively communicate on the topic of weight. This is envisaged to include the ability to perform a needs analysis using COM-B, provide appropriate and opportunistic behavioural support for those living with obesity, and to refer and signpost to appropriate services.

## JANE WILLIAMS

### CAN PHYSICAL ACTIVITY SUPPORT GRIEF OUTCOMES IN INDIVIDUALS WHO HAVE BEEN BEREAVED? A SYSTEMATIC REVIEW

*Williams, J.,<sup>1</sup> Shorter, G.W.,<sup>2</sup> Howlett, N.,<sup>3</sup> Zakrzewski-Fruer J.K.<sup>1</sup> and Chater A.M.<sup>1</sup>, <sup>1</sup>Institute for Sport and Physical Activity Research, University of Bedfordshire. <sup>2</sup> School of Psychology, Queen's University Belfast. <sup>3</sup> School of Life and Medical Sciences, University of Hertfordshire.*



**Abstract:** In 2018, there were 616,014 registered deaths in the United Kingdom (UK). Grief is a natural consequence. Many mental health concerns, which can be identified as grief outcomes (i.e., depression) in those who have experienced a bereavement, can be improved through physical activity. The objective of this review was to identify from the existing literature if physical activity can benefit grief outcomes in individuals who have been bereaved.

**Method:** A systematic review of nine databases was performed. Included studies (qualitative and quantitative) explored physical activity to help individuals (of any age) who had experienced a human bereavement (excluding national loss).

**Results:** From 1299 studies screened, 25 met the inclusion criteria, detailing eight types of bereavement (parental (n=5), spousal (n=6), patient (n=4), pre-natal (n=3), later life (n=1), caregiver (n=1), multiple (n=4) and non-defined (n=1). Activities including yoga, running, and martial-arts were noted as beneficial. Physical activity allowed a sense of freedom, to express emotions, provided a distraction and an escape from grief, whilst enhancing social support.

**Conclusion:** There is evidence that physical activity may benefit the physical health and psychological wellbeing of those who have been bereaved, including when the loss has happened at a young age. This review is timely, given the wide-scale national loss of life due to COVID-19 and extends knowledge in this area. More research is needed to explore the benefits of physical activity for those who have been bereaved. In particular, there is a need for well-designed interventions.

## DORA KUKUCSKA

### THE USE AND EFFECTIVENESS OF POSITIVE PSYCHOLOGY INTERVENTIONS (PPIS) TO IMPROVE THE HEALTH AND WELLBEING OF POLICE STAFF: A SYSTEMATIC REVIEW

*Kukucska, D.,<sup>1</sup> Wyld, K.,<sup>1</sup> Whitehall, J., Shorter, G.W.,<sup>2</sup> Howlett, N.,<sup>3</sup> & Chater, A.M.<sup>1</sup>, <sup>1</sup> Institute for Sport and Physical Activity Research, University of Bedfordshire, <sup>2</sup>Queens University, Belfast, <sup>3</sup>University of Hertfordshire*



**Abstract:** Positive Psychology Interventions (PPIs) can have a beneficial impact on health and wellbeing. This review aimed to assess the effectiveness of using PPIs, such as practicing positive mantras, expressive writing, or gratitude diaries, to improve the psychological wellbeing, health, and/or health behaviours of a specific population: police employees.

**Method:** A review protocol was registered on PROSPERO (CRD42019159626). Sixteen electronic databases were searched from the period between January 1999-February 2021. Studies that offered Positive Psychology Interventions (PPIs) to improve either the physical health (e.g. weight, blood pressure), health behaviours (physical activity, sitting, diet, alcohol, or tobacco use) or psychological wellbeing (stress, anxiety, depression, mood) were included. The MMAT assessment tool was used to assess the risk of bias.

**Results:** The search yielded 4,393 results; 3,239 papers remained after duplicates were removed, of these 12 studies were included in the final review. Intervention types included mindfulness-based resilience training (n=8), role-play and scenario-based interventions (n=2), expressive writing (n=1) and a Pythagoren self-awareness intervention (n=1). Included studies showed improvements in perceived and occupational stress, anxiety, negative affect, quality of life, alcohol use and sleep quality in police employees.

**Conclusion:** Evidence here confirmed that PPIs can improve psychological wellbeing in police employees, particularly stress, anxiety and negative mood, while evidence for improvements in depression were inconsistent. Positive Psychology Interventions could offer a low-cost approach to supporting psychological wellbeing in police employees, however, more quality research is needed.

## SAHAR AFEEF

### POSTPRANDIAL GLUCOSE RESPONSES TO STANDARDISED MEALS CONSUMED AFTER MODERATE- AND HIGH-INTENSITY EXERCISE BOUTS IN HEALTHY, FREE-LIVING ADOLESCENTS

Afeef, S.M.,<sup>1,2</sup> Barrett, L.,<sup>1</sup> Zakrzewski-Fruer, J.K.<sup>3</sup> and Tolfrey, K.<sup>1</sup>

<sup>1</sup> Paediatric Exercise Physiology Group, Loughborough University, <sup>2</sup> King Abdulaziz University, <sup>3</sup> Institute for Sport and Physical Activity Research, University of Bedfordshire



**Abstract:** Large glycaemic excursions after meals can have harmful effects on cardiovascular health. Yet, the potential for exercise to moderate postprandial glycaemia in adolescents is poorly understood and has not been examined under free-living conditions. This study aimed to assess the acute effect of moderate- (MIE) and high-intensity intermittent (HIIE) exercise bouts on subsequent postprandial glycaemic responses after consuming standardised meals under free-living conditions.

**Method:** Fourteen healthy adolescents (6 girls) aged  $13 \pm 1$  years completed three conditions in the following order: 1) MIE (30-min continuous brisk walking); 2) no-exercise control (CON); 3) HIIE (30-min of 10 x 30 s sprints interspersed with 2.5 min brisk walking bouts). Participants consumed three standardised meals (breakfast, lunch and dinner) after each condition at standardised times. Glucose concentrations (FreeStyle Libre, Abbott), energy intake (diet records), and physical activity (accelerometer) were assessed under free-living conditions. Linear mixed models were used to compare glucose outcomes between conditions and across the three meals.

**Results:** There was no significant effect for condition on 2-h incremental and total glucose area under the curve after each meal (main effect of condition:  $P \geq 0.664$ ; condition by meal interaction:  $P > 0.111$ ). The 24-h mean glucose was stable at approximately  $5.4 \text{ mmol} \cdot \text{L}^{-1}$  across the conditions. There were no significant main effects for condition on glycaemic variability indices including standard deviation ( $P = 0.585$ ) and mean amplitude of glycaemic excursion ( $P = 0.822$ ) calculated over 24-h after the onset of exercise for each condition.

**Conclusion:** Thirty-minute bouts of MIE and HIIE did not change postprandial glycaemia or 24-h glycaemic variability in healthy, free-living adolescents.

## KAMALESH DEY

### EFFECTS OF BREAKING UP SITTING TIME ON POSTPRANDIAL CARDIOMETABOLIC DISEASE RISK MARKERS IN OVERWEIGHT/OBESE SOUTH ASIAN ADULTS

Dey, K.C.,<sup>1</sup> Zakrzewski-Fruer, J.K.,<sup>1</sup> Smith, L.R.,<sup>1</sup> Jones, R.L.,<sup>1</sup> and Bailey, D.P.,<sup>2</sup> <sup>1</sup> Institute for Sport and Physical Activity Research, University of Bedfordshire; <sup>2</sup> Sedentary Behaviour, Health and Disease Research Group, Brunel University London



**Abstract:** South Asians have the highest risk of cardiometabolic diseases of any ethnicity in the UK. Breaking up sitting with 2 to 5-min bouts of light or moderate-intensity walking every 20-30-min can improve postprandial glycaemia and insulinaemia in Caucasians, but data in South Asians is lacking.

**Method:** Nineteen overweight/obese [body mass index (BMI) > 23 kg.m<sup>-2</sup>] South Asians [(5 males and 14 females); age: 50±14 years; BMI: 26.4±2.5 kg.m<sup>-2</sup>] completed two 5-h conditions in a counter-balanced order: prolonged sitting (SIT) and breaking up sitting with 5-min bouts of light-intensity walking every 30-min (INT-SIT). Blood samples (to analyse blood glucose, triglyceride, and plasma insulin concentrations) and resting expired air samples (to estimate carbohydrate and fat oxidation, and resting energy expenditure) were taken throughout. Statistical analyses were completed using linear mixed models.

**Results:** Compared with SIT [1.73 (95% CI 1.40, 2.06) mmol.L<sup>-1</sup>.5h<sup>-1</sup>], INT-SIT [1.52 (95% CI 1.21, 1.85) mmol.L<sup>-1</sup>.5h<sup>-1</sup>] attenuated postprandial glycaemia incremental area under the curve (iAUC) (P = 0.08; d = 0.36). Compared with SIT [0.17 (95% CI 0.13, 0.22) kcal.5h<sup>-1</sup>], INT-SIT [0.22 (95% CI 0.17, 0.27) kcal.5h<sup>-1</sup>] significantly increased postprandial resting energy expenditure iAUC (P = 0.04; d = 0.53). There was no significant difference in postprandial iAUC between SIT and INT-SIT for all other variables (P > 0.05).

**Conclusion:** Breaking up sitting with 5-min bouts of light-intensity walking every 30-min acutely improved postprandial glycaemia and resting energy expenditure in overweight/obese South Asians. This intervention could contribute improving cardiometabolic health in this community.

## ABBIE BELL

### REDUCING SITTING TIME WITH STANDING AND LIGHT ACTIVITY IN FREE-LIVING CONDITIONS ON GLYCEMIA POST-MYOCARDIAL INFARCTION.

Bell, A.C.,<sup>1</sup> Zakrzewski-Fruer, J.K.,<sup>1</sup> Smith, L.,<sup>1</sup> Bailey, D.P.<sup>2</sup> & Richards, J.<sup>1</sup>,  
<sup>1</sup>Institute for Sport and Physical Activity Research, University of Bedfordshire, <sup>2</sup>Sedentary Behaviour, Health and Disease Research Group, Brunel University London



**Abstract:** Prolonged sitting is an independent risk factor for cardiovascular disease (Tremblay et al., 2017). Breaking up sitting with light-intensity activity improves cardiometabolic risk markers in healthy and diabetic populations within a free-living environment (Dempsey et al., 2016; Duvivier et al., 2017). Yet, the effects in cardiac patients, a highly relevant population, are unknown. The aim of this study, therefore, is to determine the effects of reducing and breaking up sitting time on glycemia under free-living conditions in participants following a myocardial infarction.

**Method:** A repeated measures, randomised cross over study design will be used, under free-living conditions. Cardiac patients (n=20) will take part in two experimental conditions across 11 days: (i) uninterrupted sitting; (ii) sitting with 5 minutes of standing and light intensity physical activity every 30 minutes (3 hours light activity; 2 hours standing each day). Outcomes are interstitial glucose, blood pressure and mood and wellbeing. Statistical analyses will be conducted using SPSS Version 23 (IBM, Armonk, NY, USA). Postprandial glucose and blood pressure incremental area under the curve will be calculated for each condition using the trapezoidal rule and Cohen's d effect sizes will be calculated to describe the magnitude of each condition.

**Current Status of Project:** This study has received approval from the Health Research Authority and data collection has commenced.

**Implication of the findings:** The findings will identify whether reducing and breaking up sitting could be effective for improving cardiometabolic health in cardiac patients. It will also inform a feasibility study for a chronic intervention to reduce sitting in this population.

## ALEXANDRA BAIRD

### TEACHERS' REFLECTIONS ON GENDER, SEXUALITIES AND RELATIONSHIPS WITHIN AND BEYOND RELATIONSHIPS, SEX AND HEALTH EDUCATION (RSHE) IN AN ENGLISH PRIMARY SCHOOL



**Abstract:** Relationships and Health Education (RHE) became mandatory in all English primary schools from Summer 2021 (DfE, 2017). RSHE Regulations (DfE, 2017) and Guidance (DfE, 2019) represents the first change in nearly twenty years to preceding Sex and Relationship Education (SRE) (DFEE, 2000). New Guidance clarifies that parents no longer have the right to withdraw their child from either Relationships Education or Health Education although may from Sex Education (if the school has elected to deliver it). A critical addition to RHE Guidance includes LGBT content which according to DfE (2019, p.4) raises 'understandable and legitimate areas of contention'. In response to such 'contention' RSHE guidance simply outlines what pupils should know by the end of primary school, placing the responsibility and risk onto schools (senior leadership, wider school staff and governors) to decide how to reflect all pupils' backgrounds and meet all pupils' individual needs.

**Method:** Participants included five (non-LGBT identifying) teachers from the case study school who held a variety of positions, roles and experience but all were currently teaching in Key Stage 2 and all had previously taught RSHE. Participants were asked to reflect on lessons and the school culture via semi-structured online interviews. RSHE lessons and additional lessons were observed by the researcher. Teacher's reflections of lessons were guided by questions and gathered after observation during an informal discussion. The researcher attempted to 'Think with (Queer) Theory' to 'plug' into the data, working 'within and against interpretivism' to make new connectives (Jackson and Mazzei, 2012 p.vii).

## ASHLEY BECKETT

### THE PREVALENCE OF METABOLIC SYNDROME IN FIREFIGHTERS: A SYSTEMATIC REVIEW AND META-ANALYSIS

*Beckett, A.,<sup>1</sup> Chater, A.M.<sup>1</sup> and Aldous, J.<sup>1</sup>, <sup>1</sup> Institute for Sport and Physical Activity Research, University of Bedfordshire*



**Abstract:** Cardiovascular disease (CVD) accounts for ~45% of on-duty fatalities among firefighters, occurring primarily in firefighters with excess modifiable CVD risk factors in patterns resembling the metabolic syndrome (MetSyn). Additionally, firefighters have a high prevalence of obesity and hypertension suggesting that MetSyn is also common, with older firefighters at a significantly higher risk of poor health outcomes. A pooled estimate for the prevalence of MetSyn is needed to inform the direction for appropriate preventative strategies tailored to firefighters' needs.

**Method:** A systematic literature search in PubMed/MEDLINE, Web of Science and EBSCO was conducted. Original articles, with the primary aim of assessing MetSyn in firefighters, were selected. From an initial sample of 436 studies, 15 articles were included in the meta-analysis (to date).

**Results:** Preliminary findings show the pooled prevalence of MetSyn was 20% (95%CI: 15 – 25%). Older firefighters (> 50 y) showed the highest prevalence (29%, 95%CI: 23 – 36%) whereas younger firefighters (< 30 y) showed the lowest (6%, 95%CI: 4 – 9%). Heterogeneity among studies was high ( $I^2 = 83\%$ ). No moderator analysis has been conducted yet. Speculatively, the high heterogeneity may be explained by diagnostic methods used to assess MetSyn, sample sizes and geographical location.

**Conclusion:** Approximately one in five firefighters meet the criteria for MetSyn. Future studies should investigate behaviours that are significant risk factors for developing MetSyn in firefighters. Given the unpredictable bursts of high intensity, and potentially life-threatening activities firefighters are exposed to, preventative strategies are needed to reduce MetSyn and the onset of CVD.

## JAKE SCOTT

### THE PERCEPTIONS AND USAGES OF COOLING MODALITIES IN ENDURANCE AND INTERMITTENT/TEAM SPORTS IN THE HEAT

Scott, J.,<sup>1</sup> Bousfield, E.,<sup>1</sup> Gordon, R.,<sup>1</sup> Mitchell, A.,<sup>1</sup> Tyler, C.,<sup>2</sup> and Aldous, J.<sup>1</sup>, <sup>1</sup>Institute for Sport and Physical Activity Research, <sup>2</sup>Department of Life Sciences at the University of Roehampton



**Abstract:** Lately, the development of practical strategies for sporting performance in hot conditions has received attention, especially in the lead up to Tokyo Olympics 2020, which is expected to be the hottest in modern history. This study aimed to seek a global insight into the usages and understanding of different cooling modalities from intermittent and endurance-based athletes, coaches, and practitioners.

**Method:** 123 athletes (65 endurance-based, 53 intermittent-based, and 5 other) and 44 coaches/practitioners (13 endurance-based, 28 intermittent-based, 1 both and 2 other) (Aged:  $31 \pm 12$  years; Gender: 119 male, 48 female; Residency: 79% UK, 7% US, 5% Australia, 9% other) completed the 'heat stress prevention, and cooling modality questionnaire' (recruitment rate 61%; duration ~25 minutes). Responses were separated by the above dependent variables (also, level of sport, experience and specific sport) to analyse relationships (X2).

**Results:** 29% and 60% of athletes compete in the heat ( $\geq 25^\circ\text{C}$ ) regularly (weekly-monthly) and occasionally (bimonthly-yearly), but only 11% had never competed in this environment. Alarming, 27.5% had never used any type of cooling modality when competing, otherwise, 31%, 26%, 32%, and 55%, use pre-, per-(during), per-(break) or post-cooling, respectively. The most popular pre-cooling modality was cold-water ingestion (65%), the same conclusion was reached at a greater extent for per-cooling (70-91%). The main aim of cooling was to improve thermal comfort (38%). Further, 43% of coaches'/practitioners' strongly agreed with the statement 'pre-cooling improves physical performance', whereas only 10% of athletes reported this.

**Conclusion:** Evidence presented here potentially impacts decisions going forward when athletes are training/competing in the heat because, at least 16.5% are ill-prepared for competition in the heat.

## JACK GRIFFITHS

### WHAT IS THE EFFECT OF HOT, COLD, AND HYPOXIC ENVIRONMENTS ON COGNITIVE FUNCTION AND PHYSICAL PERFORMANCE DURING INTERMITTENT EXERCISE IN HEALTHY MALES AND FEMALES TEAM SPORTS MEMBERS?

*Griffiths, J.,<sup>1</sup> Jones, R.L.<sup>1</sup> and Aldous, J.<sup>1</sup>, <sup>1</sup>Institute for Sport and Physical Activity Research, University of Bedfordshire*



**Abstract:** Cognitive function has been shown to be exacerbated by external factors such as environmental conditions (Taylor et al., 2016) including hot, cold, and hypoxic environments. Makinen et al., (2006) highlighted that exposure to cold temperatures was a significant predictor of longer response times and a reduction in complex cognitive skills of an athletes working memory and sustained attention. Additionally physical performance is also influenced when performing in extreme environments. For example, soccer players typically suffer from fatigue and cover lesser distances in hotter environments compared to when performed at cooler temperatures (Mohr et al., 2012). Now more than ever, team sports are being exposed to a variety of extreme environments with examples ranging from extreme heat to cold and hypoxic environments. This review aims to examine and synthesise the current literature cognitive function and physical performance responses during intermittent exercise in hot, cold, and hypoxic environments.

**Method:** Ethical approval has been obtained (2021ISPAR008). Six electronic databases (PubMed, MEDLINE, Web of Science, EBSCO, ProQuest, and Scopus) will be searched. Studies will be required to be peer-reviewed and published in English, including team sports (e.g., soccer, futsal, hockey, basketball) during either laboratory or field (e.g., match-play) based settings. The primary outcome includes cognitive performance (e.g., reaction time, working memory) and physiological variables (e.g., core and skin temperature, heart rate, post urine specific gravity etc.). Study quality will be evaluated using the six-point Cochrane Collaboration (Higgins et al., 2011) and funnel plots will examine potential publication bias (Begg and Mazumdar, 1994).

**Current Status of Project:** Searches and title/abstract screening are being conducted.

## DIANA SOARES

### INTRA AND INTERSESSION RELIABILITY OF CENTRE OF PRESSURE MEASURES IN HEALTHY OLDER ADULTS DURING BIPEDAL STATIC POSTURAL CONTROL TESTS

*Soares, D.,<sup>1</sup> Fletcher, I.M.,<sup>1</sup> Mitchell, A.<sup>1</sup> and Charalambous L.<sup>1</sup>, <sup>1</sup>Institute for Sport and Physical Activity Research, University of Bedfordshire*



**Abstract:** Research investigating test-retest reliability of centre of pressure (CoP) variables in older adults is sparse. This study investigated the intra and intersession reliability of nine CoP variables in participants aged 65 to 79 years, to determine the number of trials and time needed to obtain an acceptable coefficient of variance (CoV%).

**Methods:** Eleven participants ( $70\pm 3$  years) performed a bipedal static postural control test with eyes open (EO) and eyes closed (EC). Participants stood barefoot on a force plate while looking at a black mark on a white board. Five 30 second trials were conducted with seated rest periods of 1 min in each condition. After 1 hour of seated rest, the session was repeated to evaluate same day reliability and one week later to test intersession reliability. Intra and intersession reliability was evaluated using the CoV% ( $SD/mean*100$ ).

**Results:** In both EO and EC, an acceptable intersession reliability was found ( $CoV\% < 20\%$ ) but not intrasession ( $CoV\% > 20\%$ ) in all CoP variables. Sway path, mean speed, anteroposterior and mediolateral mean velocity presented acceptable intra and intersession reliability ( $CoV\% < 20\%$ ) when three trials of 10 seconds were averaged. A high variability between participants was found overall in all CoP variables.

**Conclusion:** Three trials of 10 seconds were sufficient to obtain good intra and intersession reliability in sway path, mean speed, anteroposterior and mediolateral mean velocity in both conditions. Further investigation is needed to explain the differences of some CoP variables in terms of reliability.

## CHERYL BARFORD

### TRUNK MUSCLE ONSET IN RESPONSE TO AN UNEXPECTED LOWER BODY PERTURBATION IN YOUNGER ADULTS AND OLDER ADULTS

*Barford, C.,<sup>1</sup> Richards, J.<sup>1</sup> and Fletcher, I.M. <sup>1</sup>, <sup>1</sup> Institute for Sport and Physical Activity Research, University of Bedfordshire*



**Abstract:** Successful recovery from unexpected perturbations can reduce the risk of falling in older populations. Since the role of the torso musculature in such actions is still unclear, the purpose of this study was to compare onset of older and younger adults who underwent an unexpected lower body perturbation.

**Method:** A device applied an unexpected perturbation representing a slip action to a healthy population of 25 young adults (age  $21\pm 2$  years) and 17 older adults (age  $70\pm 6$  years). The onset of External Oblique (EO), Lumbar Multifidus (LM) and Erector Spinae Longissimus (ESL) were obtained with surface electromyography (sEMG). Simultaneously, Internal Oblique (IO), Transversus Abdominis (TrA) and EO onset were measured using Rehabilitative Ultrasound imaging (RUSI) in motion mode (M-Mode) to capture tissue deformation after perturbation. Data was normally distributed (Shapiro Wilks)  $p>0.05$  and a mixed ANOVA was conducted using SPSS statistical software (IBM, SPSS Version 26).

**Results:** In right side trials, ESL, LM, EO, IO and TrA onset were significantly earlier in younger adults ( $p=0.001$ ). Younger participants recruited torso muscles between 36 ms and 73 ms faster than older. Both older and younger participants recruited muscles within a similar window (17-18 ms), however younger participants first and last torso muscle onsets were significantly earlier than older (younger RES  $71.67\pm 29.0$  ms to LEO  $88.33\pm 34.3$  ms versus older RES  $135\pm 41.63$  ms to LEO  $150.44\pm 29.9$  ms).

**Conclusion:** Torso muscles were activated within a similar window of time in older and younger participants but the onset of ESL, LM, EO IO and TrA were significantly later in older participants compared to younger. Further research is needed to identify whether motor control training will enhance muscle onset times for older adults as part of a strategy to reduce the risk of falling in older adults.

## CHRIS LONG

### QUANTIFYING STABILISATION RESPONSE TO IMPACT – IMPLICATIONS ACROSS THE LIFESPAN

Long, C.S.,<sup>1</sup> Fletcher, I.M.,<sup>1</sup> Charalambous, L.<sup>1</sup> and Mitchell, A.C.S.<sup>1</sup>

<sup>1</sup>Institute for Sport and Physical Activity Research,  
University of Bedfordshire



**Abstract:** Stability monitoring is used as a predictor of injury, a diagnostic tool in a range of conditions including diabetes and concussion, and as a measure of fatigue. The response to challenges to stability, such as trips and falls, are well documented, however measurement of response to impacts and collisions lacks standardisation and reliability of methods. This study aimed to establish the reliability of a new device for delivering controlled impacts.

**Method:** A novel impact machine was built to deliver standardised impacts at heights between 2 cm and 200 cm from the ground. A force transducer (Kistler Force Link 9331A, Kistler, Winterthur, Switzerland) was embedded in the laboratory wall to measure impact force. Bag mass (3 kg, 5.2 kg, 9.6 kg, 11.8 kg and 20.6 kg) and release angle (5-degree intervals from 55 to 85°) were adjusted independently to manipulate impact force. Ten trials were conducted at each mass and angle on two trial sessions. Within-session was calculated using Coefficient of Variance (CV) and between-sessions reliability using inter class correlation coefficient (ICC).

**Results:** The impact machine delivered CoV of <5% at all masses and release angles. A 3 kg mass returned CoV values of <4% at all release angles (55° = 1275 +/- 20 N, CV = 2%; 60° = 1383 +/- 29 N, CV = 2%; 65° = 1462 +/- 27 N, CV = 2%; 70° = 1473 +/- 21 N, CV = 1%; 75° = 1618 +/- 29 N, CV = 2%; 80° = 1786 +/- 25 N, CV = 1%; 85° = 1770 +/- 62 N, CV = 3%). Each bag mass released from 70° returned CoV values of <5% (3 kg = 1518 +/- 32 N, CV = 2%; 5.2 kg = 1648 +/- 34 N, CV = 2%; 9.6 kg = 1798 +/- 30 N, CV = 2%; 11.8 kg = 2169 +/- 54 N, CV = 2%; 20.6 kg = 2693 +/- 132 N, CV = 4%). Between sessions ICC at 70° release angle was 0.85.

**Conclusion:** The impact machine delivers a known amount of force to a participant at a known height. This allows researchers to deliver bespoke force in a safe and consistent manner and measure stabilisation response appropriately. This could have applications in contact/collision sport, understanding the aging process and in reducing falls caused by minor impacts amongst the elderly.

## LUCY RUSSELL

### ASSESSING LEFT VENTRICULAR WALL STRESS AND MOUTH PRESSURE DURING ISOMETRIC HANDGRIP EXERCISE IN SEDENTARY AND STRENGTH TRAINED MEN

Russell, L.,<sup>1</sup> Saunders, A.,<sup>1</sup> and Richards, J.,<sup>1</sup> <sup>1</sup>Institute for Sport and Physical Activity Research, University of Bedfordshire



**Abstract:** Resistance training (RT) has been shown to alter left ventricular (LV) morphology, namely through increased LV wall thickness with a maintained internal capacity (Haykowsky et al., 2000). This is understood to be due to the transmural pressure gradient across the LV wall, based on the Law of LaPlace. However, during RT, contractions of >80% Maximal Voluntary Isometric Contraction (MVIC) a Valsalva manoeuvre is naturally performed (MacDougall et al., 1985). The purpose of this study is to measure LV wall stress and mouth pressure (as a surrogate of intrathoracic pressure) concurrently to establish if there is any effect of Valsalva on wall stress during RT exercise.

**Method:** Strength trained and sedentary normotensive (140/90 mmHg) males will be recruited, to control for the confounding effects of hypertension. Following height and mass measurements, an isometric handgrip MVIC be assessed in the right hand. Participants will then maintain an isometric handgrip at 50%, 80% and 90% of MVIC for 10 seconds. During this isometric contraction mouth pressure and blood pressure will be measured whilst a parasternal long axis view is acquired using echocardiography.

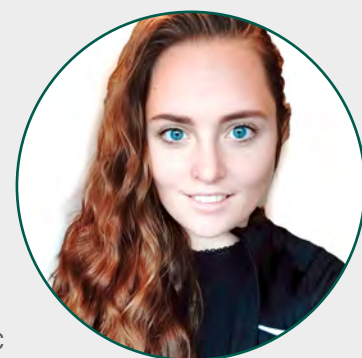
**Expected Results:** Strength trained group should have greater wall thickness, and therefore lower wall stress compared to the sedentary group at all intensities. Mouth pressure should be significantly greater at intensities >80% MVIC.

**Conclusion:** The transmural pressure gradient during RT could lead to this increased wall thickness. However, at higher intensities (80% MVIC) if Valsalva occurs and there is an increase in ITP, there should be a reduction in transmural pressure.

## ABI SAUNDERS

### CARDIAC STRUCTURE AND FUNCTION IN RESISTANCE TRAINED ATHLETES AND UNTRAINED CONTROLS: A CROSS-SECTIONAL ANALYSIS

Saunders, A.,<sup>1</sup> Jones, R.L.,<sup>1</sup> & Richards, J.<sup>1</sup>, <sup>1</sup>Institute for Sport and Physical Activity Research, University of Bedfordshire



**Abstract:** The 'Athlete's Heart' may be described as a compensatory change in the proportions of the heart in response to the haemodynamic demand of physical exercise. However, whilst a consensus has appeared in relation to dynamic exercise (Mihl, Dassen and Kuipers, 2008), research regarding the influence of resistance exercise on cardiac structure and function, especially within older adults is limited. The aim of this study is to investigate whether differences in left ventricular (LV) parameters are observed between resistance trained and untrained controls in a younger and older adult population.

**Method:** Anthropometric data, blood pressure and echocardiographic measures will be obtained from four groups (young resistance trained (RTY), young untrained (UTY), resistance trained older adults (RTO) and untrained older adults (UTO) whilst at rest. The young adults will be defined as 18-40-year-old males, whilst the older adult population will be classified as 'medically stable' 60-80 years old males. All participants should have no previous history of cardiovascular disease, refrain from taking prescribed medications likely to impact cardiovascular mechanisms and must be normotensive.

**Results:** Previous work from Morganroth *et al.* (1975) found athletes engaged in resistance training displayed a concentric pattern of LV hypertrophy. Therefore, we would expect to find higher LV mass as a result of greater wall thickness in resistance trained individuals compared to untrained individuals.

**Conclusion:** Resistance trained individuals display a concentric pattern of LV hypertrophy, which is more pronounced in the younger adult population.

## DR JOANNE HILL

### MEANINGFUL AND SUSTAINABLE ENGAGEMENT IN PHYSICAL ACTIVITY AT HOME

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**Abstract:** This project concerns adults who have been engaging in physical activity (PA) at home. Since March 2020, in the UK the COVID-19 pandemic has resulted in the enforcement of various lockdown and social distancing measures which have restricted organised leisure, sport and PA access. This meant the home, garden and local spaces became focal point. Restrictions are currently (September 2021) eased but longer term changes to PA patterns may be occurring.

**Method:** Between June and September 2021 adult participants (n=12, age range 21-65) were recruited for a mixed-method, predominantly qualitative, study regarding their PA at home. Elements of visual ethnography were used to support immersion in the research while maintaining physical distance. One-to-one video interviews (average length 60 minutes) explored the types of physical activity participants engaged in at home before, during and after lockdown; and how PA at home was personally meaningful to them. Participants were then invited to create a photo or text diary for four to six weeks about their PA at home. After the diary, each participant was interviewed a second time using elicitation techniques.

**Results:** Thematic and discourse analyses are ongoing and suggest that the home remains a significant place of PA post-COVID-19 restrictions, mainly for those who have knowledge of multiple ways in which they can be physically active in short time periods and who have been able to adapt their home to accommodate PA. The value of social interaction during PA at home is being explored.

**Conclusion:** This work will inform work in sport development and physical education to support meaningful, sustainable PA at home as part of a physically active life.

## PROFESSOR UVANNEY MAYLOR

### BLACK AND MINORITY ETHNIC STUDENTS ACHIEVING BEYOND FOOTBALL

Maylor, U., Belas, O., Butler, C., Hill, J. & Hopkins, N.



**Abstract:** Black footballers are well represented in English football, but few are known to have a degree. Yet academic study beyond compulsory schooling is closely tied to progression to a career in professional sport in America and some European countries (NCAA 2021). This contrasts with England whereby the focus in youth academy football is on developing the football skills necessary to become a professional player. However, few progress from academy football to become professional footballers (Baker and Hawkins, 2016; Hague and Law, 2021). Global Black Lives Matter protests in 2020 brought greater attention to the academic ability/employment roles of Black and Minority Ethnic students/people.

**Proposed Method:** Considering this, this paper discusses a proposed collaborative research project between education and sport colleagues in IRED and ISPAR, which seeks to understand the influence of intersectional identities alongside the academic abilities of racialised communities attending youth academy football clubs in England, and map how their academic interest/abilities can be fostered to enable them to pursue under/postgraduate study whilst maintaining careers in football and/or undertake alternative careers that require highly rated academic qualifications. In part the emphasis on academic qualifications is an attempt to challenge an OECD (Organization for Economic Cooperation and Development) report by Mann et al., (2020) which found that students most wanting to become a sportsperson were identified as 'low performers' and research supporting such a view which suggests that Black boys are not academically gifted and therefore are only suited to playing football/sports (Turner, 2020).

# SELECTED PUBLICATIONS 2020-2021

## 2021

Bailey, D. P., Edwardson, C. L., Pappas, Y., Dong, F., Hewson, D. J., Biddle, S. J., **Brierley, M. L.** & **Chater, A. M.** (2021). A randomised-controlled feasibility study of the Regulate your Sitting Time (RESIT) intervention for reducing sitting time in individuals with type 2 diabetes: study protocol *Pilot and Feasibility Studies*, 7(1), 1-11.

Bottoms, L., Howlett, N., **Chater, A.M.**, Jones, A., Jones, J., Wyatt, S., Mengoni, S. E., Sharma, S., Irvine, K., Trivedi, D. & Wellsted, D. (2021). Energy Matching of a High Intensity Exercise Protocol with a Low Intensity Exercise Protocol in Young People. *Sport Sciences for Health* <https://doi.org/10.1007/s11332-021-00774-3>

**Chater, A. M.**, Milton, S., Green, J., Gilworth, G., & Roposch, A. (2021). Understanding physician behaviour in the 6–8 weeks hip check in primary care: a qualitative study using the COM-B. *BMJ Open*, 11(3), e044114.

Courtenay, M. & **Chater, A. M.** (2021). Antimicrobial stewardship: a competency framework to support the role of nurses. *Primary Health Care*, 31(2). doi: 10.7748/phc.2021.e1709

Finlay, K. A., Hearn, J. H., & **Chater, A. M.** (2021). The impact of neurological disability and sensory loss on mindfulness practice. *Disability and Rehabilitation*, 1-9. doi.10.1080/09638288.2021.1887946

Howlett, N., Bottoms, L., **Chater, A. M.**, Clark, A.B., Clarke, T., David, L., Irvine, K., Jones, A., Jones, J., Mengoni, S.E., Murdoch, J. Pond, M., Sharma, S., Sims, E. J., Turner, D. A., Wellsted, D. Wilson, J., Wyatt, S. & Trivedi, D. (2021). A randomised controlled trial of energetic activity for depression in young people (READY): a multi-site feasibility trial protocol. *Pilot and Feasibility Studies*, 7(1), 1-19.

**Jones, R. L.**, Stellingwerdd, T., Swinton, P., Artiolo, G. G., Saunders, B. & Sale, C. (2021). Warm-Up Intensity Does Not Affect the Ergogenic Effect of Sodium Bicarbonate in Adult Men. *International Journal of Sport Nutrition and Exercise Metabolism*. Advance online publication. <https://doi.org/10.1123/ijsnem.2021-0076>.

Lawes-Wickwar, S, Ghio, D., Tang, M.Y., Keyworth, C., Stanescu, S., Westbrook, J., Jenkinson, E., A.P., Kassianos, Scanlan, D., Garnett, N., Laidlaw, L., Howlett, N., Carr, N., Stanulewicz, N., Guest, E., Watson, D., Sutherland, L., Byrne-Davis, L., **Chater, A. M.**, Hart, J., Armitage, C., Shorter, G., Swanson, V. & Epton, T. (2021). A rapid systematic review of public responses to health messages encouraging vaccination against infectious diseases in a pandemic or epidemic. *Vaccines*, 9(2), 72.

Liapi, F., **Chater, A.M.**, Randhawa, G., & Pappas, Y. (accepted 2-7-21). Factors that facilitate or hinder whole system integrated care for obesity and mental health: a scoping review protocol. *BMJ Open*. <https://bmjopen.bmj.com/content/11/8/e050527>

McBride, E., Arden, M., **Chater, A. M.**, & Chilcot, J. (2021). The impact of COVID-19 on health behaviour, well-being, and long-term physical health. *British Journal of Health Psychology*. <https://doi.org/10.1111/bjhp.12520>

Neale, J., Werthern, H., Alhusein, N., **Chater, A. M.**, Scott, J. & Family, H. (2021). Contraceptive choice and power amongst women receiving opioid replacement therapy: qualitative study. *Drugs: Education, Prevention & Policy*. <https://doi.org/10.1080/09687637.2021.1954599>

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Spillane, D., Courtenay, M., **Chater, A. M.**, Family, H., Whitaker, A., & Acton, J. H. (2021). Factors influencing the prescribing behaviour of independent prescriber optometrists: a qualitative study using the Theoretical Domains Framework. *Ophthalmic and Physiological Optics*. <https://doi.org/10.1111/opo.12782>

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**Williams, J.**, Shorter, G. W., Howlett, N., **Zakrzewski-Fruer, J.**, & **Chater, A. M.** (2021). Can physical activity support grief outcomes in individuals who have been bereaved? A systematic review. *Sports Medicine Open*, 7(1), 1-17. <https://doi.org/10.1186/s40798-021-00311-z>

**Yates, J. D., Aldous, J. W.**, Bailey, D. P., **Chater, A. M.**, **Mitchell, A.**, & **Richards, J. C.** (2021). The Prevalence and Predictors of Hypertension and the Metabolic Syndrome in Police Personnel. *International Journal of Environmental Research and Public Health*, 18(13), 6728.

**Zakrzewski-Fruer, JK.**, Horsfall, R., Cottrill, D., & Hough, J. (2021). Acute exposure to a hot ambient temperature reduces energy intake but does not affect gut hormones in men during rest. *British Journal of Nutrition*, 125(8), 951-959.

## 2020

Abdulaziz Almanasef, M., Portlock, J. & **Chater, A. M.** (2020). Qualitative Investigation of the Flipped Classroom Teaching Approach as an Alternative to the Traditional Lecture. *Pharmacy Education*, 20(1), 142-150

**Bailey, D., Mugridge, L.**, Dong, F., Zhang, X. & **Chater, A. M.** (2020). Randomised controlled feasibility study of the MyHealthAvatar-Diabetes smartphone app for reducing prolonged sitting time in Type 2 diabetes mellitus. *International Journal of Environmental Research and Public Health*, 17(12), 4414; <https://doi.org/10.3390/ijerph17124414>

**Bowler, M. & Sammon, P.** (2020). Health-Based Physical Education – a framework for promoting active lifestyles in children and young people. Part 1: Introducing a new pedagogical model for Health-Based Physical Education', *Physical Education Matters*, 15(3), pp.60-63.

**Bowler, M.**, Bassett, S. & Newton, A. (2020). Assessing pupils' learning in Capel, S., Cliffe, L. & Lawrence, J. (eds.) *A Practical Guide to Teaching Physical Education in the Secondary School* (3rd edn.) London: Routledge. pp.191-201.

**Bowler, M.**, Newton, A., **Keyworth, S.** & McKeown, J. (2020). Secondary School Physical Education' in Capel, S. & Blair, R. (eds.) *Debates in Physical Education* (2nd edn.) London: Routledge. pp.170-189.

Bull, E., Newman, K., Cassidy, T., Anderson, N. & **Chater, A. M.** (2020). Reflecting on the Stage 2 Health Psychology independent training route: A survey of trainee and graduate experiences of employability. *Health Psychology Update*, 29(2), 19-30.

Chapman, S., Sibelli, A., St-Clair Jones, A., Forbes, A., **Chater, A. M.** & Horne, R. (2020). Personalised adherence support for maintenance treatment of inflammatory bowel disease: A tailored digital intervention to change adherence-related beliefs and barriers. *Journal of Crohn's and Colitis*. <https://doi.org/10.1093/ecco-jcc/jjz034>

**Chater, A. M.** (2020). Does intentional asphyxiation by strangulation have addictive properties? *Addiction*, 116(4), 718-724

**Chater, A. M.** (2020). Psychological perspectives on obesity: Addressing policy, practice and research priorities. *South West Review, Summer*, 48-55.

**Chater, A. M.** (2020). Let's talk about death openly: When the world is grieving, please don't walk on eggshells. *The Psychologist*, 33, 23-25. <https://thepsychologist.bps.org.uk/when-world-grieving-please-dont-walk-eggshells>

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**Chater, A. M., Williams, J.**, Shorter, G. & Howlett, N. (2020). Physical activity for the benefit of mental health outcomes in young people: a focus on parental bereavement. *The Sport and Exercise Scientist*, 64, 16-17

**Chater, A. M.**, Whittaker, E., Lewis, L., Arden, M. A., Byrne-Davis, L., Chadwick, P., Drury, J., Epton, T., Hart, J., Kamal, A., McBride, E., O'Connor, D., Shorter, G., Swanson, V. & Armitage, C., (2020). Health psychology, behavioural science, and Covid-19 disease prevention. *Health Psychology Update*, 29 SI, 3-9

Christmas, B.C.R., **Fletcher, I.** & Hogben, P. (2020). Changes in peak force output, rate of force development, and jump performance across a full season in elite English rugby union players. *Sport Performance & Science Reports*. <https://sportperfsci.com/changes-in-peak-force-output-rate-of-force-development-and-jump-performance-across-a-full-season-in-elite-english-rugby-union-players/>

Gilworth, G., Milton, S., **Chater, A. M.**, Nazareth, I., Roposch, A., & Green, J. (2020). Parents' expectations and experiences of the 6-week baby check: a qualitative study in primary care. *British Journal of General Practitioners out Open* 4(5), DOI: <https://doi.org/10.3399/bjgpopen20X101110>

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Howlett, N., Schulz, J., Trivedi, D., Troop, N. & **Chater, A. M.** (2020). Determinants of weekly sitting time: Construct validation of an initial COM-B model and comparison of its predictive validity with

the Theory of Planned Behaviour. *Psychology and Health*.  
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Lim, R., Courtenay, M., Deslandes, R., Ferriday, R., Gillespie, D., Hodson, K., Reid, N., Thomas, N. & **Chater, A. M.** (2020). Theory-based electronic learning intervention to support appropriate antibiotic prescribing by nurse and pharmacist independent prescribers: an acceptability and feasibility experimental study using mixed methods. *BMJ Open*, 10(6), p.e036181.

Lynch, S & **Hill, J** (2020). 'I had to pop a wheelie and pay extra attention in order not to fall:' embodied experiences of two wheelchair tennis athletes transgressing ableist and gendered norms in disability sport and university spaces, *Qualitative Research in Sport, Exercise and Health*, DOI: 10.1080/2159676X.2020.1731575

Martínez Bello, V. E., & **Hill, J.** (2020). Gender, age and physical activity representation in children's colouring books / Representación del género, la edad y la actividad física en libros para colorear infantiles. *Cuestiones de Género: De La Igualdad y La Diferencia*, 15, 291–312.

**Newell, M. L.**, Macgregor, L. J., Galloway, S. D., & Hunter, A. M. (2020). Prolonged cycling exercise alters neural control strategy, irrespective of carbohydrate dose ingested. *Translational Sports Medicine*. <https://doi.org/10.1002/tsm2.187>

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Thomas, R., Williams, M., Smit, G., & **Chater, A. M.** (2020). Replacing sugary snacks with fruit, nuts and seeds at nurses' stations within a UK oncology unit: a pilot intervention study. *British Journal of Medical Practitioners*, 13(2), a013.

**Wells, J. E., Mitchell, A. C., Charalambous, L. H., & Fletcher, I. M.** (2020). Relationships Between Highly Skilled Golfers' Clubhead Velocity and Vertical Ground Reaction Force Asymmetry During Vertical Jumps and an Isometric Midthigh Pull. *The Journal of Strength & Conditioning Research*, 34(10), 2824-2831.

# CONFERENCE PRESENTATIONS

**Bell, A.**, *Impact Of Reducing Sedentary Behaviour For Cardiometabolic Health In Different Populations: Cardiac Rehabilitation*. ISPAR Annual Conference (Online, September, 2020)

**Brierley, M. L., Smith, L. S., Chater, A. M.**, & Bailey, D. P. *The A-REST (Activity to Reduce Excessive Sitting Time) Study: Preliminary efficacy in police staff*. Institute for Sport and Physical Activity Research (ISPAR) Annual Conference (Online, September, 2020)

**Chater, A. M.** *Health Psychology's role in health and social care systems: Opportunities to enhance the translation and application of behavioural science through research, policy and practice*. Behavioural Science and Public Health Network Event 'What every commissioner needs to know'. (Online, September, 2020).

**Chater, A. M.** *How to develop and deliver physical activity and sedentary behaviour interventions during COVID-19*. Brunel University Event 'Physical activity and sedentary behaviour interventions in COVID-19'. (Online, May, 2021).

**Chater, A. M.** & McBride, E. on behalf of the BPS COVID-19 Behavioural Science and Disease Prevention Taskforce. *Health psychology for the political landscape: Policy guidance and the Psychological Government initiative*. BPS Division of Health Psychology Annual Conference (Online, June, 2020)

**Chater, A. M.** on behalf of the BPS COVID-19 Behavioural Science and Disease Prevention Taskforce. *Advising policy makers and public health on behavioural science and Covid-19 disease prevention*. British Psychological Society Annual Conference (Online, June, 2020)

**Chater, A. M.** & **Wyld, K.** *A patient voice: The University of Bedfordshire exercise clinic*. Institute for Sport and Physical Activity Research (ISPAR) Annual Conference (Online, September, 2020)

**Dey, K.** *Impact Of Reducing Sedentary Behaviour for Cardiometabolic Health In Different Populations: South Asian Communities*. ISPAR Annual Conference (Online, September, 2020)

**Dey, K.C., Zakrzewski-Fruer, J.K., Smith, L., Jones, R.L.**, & Bailey, D.P. (2021). *Effects of breaking up sitting time on postprandial cardiometabolic disease risk markers in overweight/obese South Asian adults*. BASES Student Conference 2021.

**Dey, K.C., Zakrzewski-Fruer, J.K., Smith, L., Jones, R.L.**, & Bailey, D.P. (2021). *Effects of breaking up sitting time on postprandial cardiometabolic disease risk markers in overweight/obese South Asian adults*. International Conference on Advancement of Life Sciences 2021

**Golding, D., Keyworth, S.** *The Future Of Physical Education Is In The Mix: Establishing The DJ As A Metaphor For Innovative Curriculum*. ISPAR Conference (Online, September, 2020)

**Hill, J.** *The Importance Of Home For Girls' Physical Activity*. ISPAR Annual Conference (Online, September, 2020)

**Long, C.** *Return To Rugby: Professional Practice For The Community Game*. ISPAR Annual Conference (Online, September, 2020)

**Saunders, A., Richards, J. & Jones, R.L.** (2021). *Left ventricular wall stress during lower body resistance exercise in trained and untrained adult males*. BASES Student Conference 2021.

**Williams, J.,** Howlett, N., Shorter, G., **Zakrzewski-Fruer, JK.** & **Chater, A. M.** What roles does physical activity play in the lives of young people following the death of a parent? A qualitative investigation using the TDF and COM-B. Institute for Sport and Physical Activity Research (ISPAR) Annual Conference (Online, September, 2020)

**Zakrzewski-Fruer, JK.** *Acute cardiometabolic and exercise responses to breakfast consumption versus breakfast omission in adolescent girls: A crossover trial.* Paediatric Work Physiology 2021 Virtual Conference (Online, September 2021).

**Zakrzewski-Fruer, JK.** Breakfast Consumption, Physical Activity and Glycaemic Control In Adolescent Girls. ISPAR Conference (Online September 2020)

# SELECTED SCIENTIFIC REPORTS, GUIDANCE DOCUMENTS, GOVERNMENT BRIEFINGS 2021

Arden, M. A., Armitage, C. Lewis, L., Whittaker, E., Hart, J., O'Connor, D., Swanson, V., Epton, T., Byrne-Davis, L., Shorter, G. Drury, J., Kamal, A., Chadwick, P., McBride, E., & **Chater, A.M.** (2021). *Guidance following first vaccination dose.* Leicester: British Psychological Society.

**Chater, A. M.,** Shorter, G. W., Swanson, V., Kamal, A., Epton, T., Arden, M .A., Hart, J., Byrne-Davis, L., Drury, J., Whittaker, E., Lewis, L., McBride, E., Chadwick, P., O'Connor, D. B. & Armitage, C. J. (2021). Template for Rapid Iterative Consensus of Experts (TRICE). PsyArXiv Preprints. <https://psyarxiv.com/uqn9w>

Epton, T., Lawes-Wickwar, S., Ghio, D., Shorter, G., Whittaker, E., Arden, M., Armitage, C. J., Byrne-Davis, L., Chadwick, P., Drury, J., Hart, J., Lewis, L., McBride, E., O'Connor, D., Swanson, V., Kamal, A., & **Chater, A.M.** (2020). Optimising vaccination uptake for Covid-19. Leicester: British Psychological Society.

McBride, E., Hart, J., O'Connor, D., Shorter, G., Arden, M .A., Armitage, C. J., Epton, T., Byrne-Davis, L., Chadwick, P., Drury, J., Kamal, A., Lewis, L., Swanson, V., Whittaker, E. & **Chater, A.M.** (2021). *Behavioural science investment needed to mitigate long-term health impacts of COVID-19.* Leicester: British Psychological Society.

**Zakrzewski-Fruer, JK.** International Life Sciences Institute (ILSI) Europe/ Dietary Carbohydrate Taskforce: Expert Group and workshop organisation group member on the 'Health relevance of lowering post-prandial glycaemia in children and adolescents through diet' (30th June to 1st July 2021). [https://www.youtube.com/watch?v=mfiEHzdtqRA&list=PLS4E5HMsZ8tTCE1tVCg\\_ZvOpf-54pyAsG2&index=12](https://www.youtube.com/watch?v=mfiEHzdtqRA&list=PLS4E5HMsZ8tTCE1tVCg_ZvOpf-54pyAsG2&index=12)

Arden, M. A., Armitage, C. J., Byrne-Davis, L., Hart, J., O'Connor, D. B., Chadwick, P., Drury J., Lewis, L., McBride, E., Perriard-Abdoh, S., Shorter, G. W., Swanson V., Thompson, S., Whittaker, E. & **Chater, A.M.** (2020). Behavioural science and success of the proposed UK digital contact tracing application for Covid-19. London: British Psychological Society.

Arden, M. A., Armitage, C. Lewis, L., Whittaker, E., Hart, J., O'Connor, D., Chadwick, P., Drury, J., Swanson, V., Byrne-Davis, L., McBride, E., Perriard-Abdoh, S., Shorter, G. Epton, T., Kamal, A. & **Chater, A.M.** (2020). Encouraging self-isolation to prevent the spread of COVID-19. Leicester: British Psychological Society.

Arden, M., Byrne-Davis, L., **Chater, A.M.**, Hart, J., McBride, E. & Chilcot, J. (2020). The vital role of health psychology in the response to Covid-19. *British Journal of Health Psychology*, 25,(4), 831-838. doi: 10.1111/bjhp.12484

Byrne-Davis, L., **Chater, A.M.**, Arden, M., Armitage, C., Chadwick, P., Drury, J., Epton, T., Hart, J., Kamal, A., Lewis, L., McBride, E., O'Connor, D., Perriard-Abdoh, S., Shorter, S., Swanson, V., Whittaker, E., Kilpatrick, C. & Storr, J. (2020). Encouraging hand hygiene in the community. Leicester: British Psychological Society.

**Chater, A. M.**, Abdin, S., Dryden, J., Lewis, L., Shorter, G., Arden, M. A., Chadwick, P., Hart, J., Armitage, C., Byrne-Davis, L., Epton, T., Kamal, A., Drury, J., McBride, E., O'Connor, D., Swanson, V., Thompson, S., Whittaker, E., Howlett, N. (2020). COVID-19 Public Health Road Map: Physical Activity. Leicester: British Psychological Society.

**Chater, A. M.**, Abdin, S., Shorter, G., Lewis, L., Hart, J., Armitage, C., Epton, T., Byrne-Davis, L., Arden, M. A., Chadwick, P., Kamal, A., Drury, J., McBride, E., O'Connor, D., Swanson, V., Thompson, S., Whittaker, E., Howlett, N. (2020). COVID-19 Public Health Road Map: Sedentary Behaviour. Leicester: British Psychological Society.

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Jenkinson, E., Ellis, J., **Chater, A.M.**, Whittaker, E., Hart, J., Byrne-Davis, L., Armitage, C., Kamal, A., Epton, T., Arden, M. A., Drury, J., McBride, E., O'Connor, D., Swanson, V., Thompson, S., Chadwick, P., Lewis, L., Shorter, G. (2020). COVID-19 Public Health Road Map: Sleep Hygiene. Leicester: British Psychological Society.

Knowles, N., **Chater, A. M.**, Lewis, L., Jenkinson, E., Byrne-Davis, L., Hart, J., Armitage, C., Epton, T., Arden, M. A., Kamal, A., O'Connor, D., Whittaker, E., Chadwick, P., Swanson, V., McBride, E., Thompson, S., Drury, J., Shorter, G. (2020). COVID-19 Public Health Road Map: Stopping smoking. Leicester: British Psychological Society.

Rooney, N., **Chater, A. M.**, Dow, B., Duffy, F., Jones, T., Johnston, E., Kaiser, P., Kasket, E., Meekin, S., Waites, B. & McWilliams, E. (2020). The end of life care pathway during the Coronavirus pandemic. Leicester: British Psychological Society.

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# SELECTED PUBLIC APPEARANCES

Our Centre for Physical Activity and Sport Performance and Human Performance Centre leads **Dr Rebecca Jones and Dr Joanne Richards** appeared on the Channel 4 programme '21 Day turnaround with Dr Michael Mosley'. <https://t.co/F3rrodZN5f?amp=1>

Our ISPAR director **Professor Angel Chater** featured on the BBC Science Series 'The Truth About... Improving Your Mental Health' (first aired 20th Jan 2021; 9pm). Discussing behaviour change, COM-B and the Active Herts programme. <https://www.bbc.co.uk/iplayer/episode/m000rhg8/the-truth-about-improving-your-mental-health>



**Professor Angel Chater** featured on BBC Look East (31st Mar 2021), discussing the BPS COVID-19 Behavioural Science and Disease Prevention Taskforce Psychological Guidance and debate on vaccine equality.

Our Centre for Physical Education, Sport and Human Movement lead **Dr Joanne Hill** appeared on BBC News programme 'Outside Source' (7th June 2021) discussing the England men's football team taking a knee before a match.

# CONGRATULATIONS

Congratulations to **Victoria Morari**, awarded her MSc by Research investigating the acute impact of breakfast consumption versus omission on postprandial metabolic responses during rest and exercise in adolescent girls. Supervisors: Dr Julia Zakrzewski-Fruer, Dr Rebecca Jones, Dr Louise Croft, and Dr Daniel Bailey.

Congratulations to **Dr Ben Maylor** awarded his PhD investigating the effect of breaking up sitting time on health markers and its implication for the workplace, Supervisors: Dr Daniel Bailey, Dr Julia Zakrzewski-Fruer and Dr Andrew Mitchell.

Congratulations to **Dr Jack Wells** awarded his PhD investigating the associations between clubhead velocity and kinetic variables during vertical jumps and an isometric mid-thigh pull in golfers. Supervisors: Dr Andrew Mitchell, Dr Laura Charalambous and Dr Iain Fletcher.

Congratulations to **Dr Marsha Brierly** awarded her PhD investigating Changing Sedentary Behaviour in the Workplace. Supervisors: Dr Lindsey Smith, Dr Daniel Bailey, and Prof Angel Chater.

Congratulations to **Dr Jane Williams** awarded her PhD investigating the role of physical activity following the death of a parent: the BABYSTEPS project. Supervisors. Professor Angel Chater, Dr Julia Zakrzewski-Fruer, Dr Gillian Shorter; Advisor: Dr Neil Howlett

Congratulations to ISPAR Deputy Director **Dr Martyn Morris** becoming review editor for Frontiers in Network Physiology - Network Physiology of Exercise.

Congratulations to **Dr Julia Zakrzewski-Fruer** for being appointed to the British Association of Sport and Exercise Science (BASES) Climate Change Action Team.

# SPORT SCIENCE AND PHYSICAL ACTIVITY

## POSTGRADUATE RESEARCH AND TAUGHT MASTERS DEGREES

### **PhD and MA/MSc BY RESEARCH**

Students benefit from an opportunity to be supervised by eminent researchers in the field and to contribute to policy and practice.

All postgraduate research students will complete an independent piece of novel research under the supervision of a team of experts from ISPAR, which will be externally examined through a written thesis and an oral viva.

For more information on our research degrees and how to apply, please visit:

**[www.beds.ac.uk/rgs/apply/](http://www.beds.ac.uk/rgs/apply/)**

For information on specific projects within ISPAR, please visit:

**[www.beds.ac.uk/ispar/research-degrees/](http://www.beds.ac.uk/ispar/research-degrees/)**

### **RESEARCH AREAS**

ISPAR welcomes applications from PhD and MA/MSc by Research candidates in the following areas:

- Sport, Physical Activity and Health Psychology
- Behaviour Change
- Intervention Design and Communication
- Prevention and Management of Long-Term Conditions
- Physiology of Sedentary Behaviour
- Physical Activity, Nutrition and Metabolism
- Sports Performance and Biomechanics
- Pedagogy and Youth Sport
- Education and Sport Policy
- Socio-cultural Studies
- Environmental Physiology
- Children and Young People

### **GET IN TOUCH**

If you would like more information on our courses, or are interested in studying with us, you can get in a number of ways:

Web: [unibeds.info/SSPAPG](http://unibeds.info/SSPAPG)

Email: [ispar@beds.ac.uk](mailto:ispar@beds.ac.uk)

Twitter: @UoB\_SSPA @ISPAR\_UoB

Instagram: @bedssportsci



# TAUGHT MASTERS DEGREES

## PHYSICAL EDUCATION AND SPORT MA

This intellectually demanding programme is designed to support you in becoming a more critical and reflective teacher or youth/community sports coach, using intensive, compressed teaching time combined with flexible asynchronous guided learning to fit around your work in a school or youth sport setting. It is research-led and research-informed, grounding the theoretical study of physical education, sport pedagogy, and leadership in your practical work place experience. There are two routes: one for recent graduates (Pedagogy), and one for experienced teachers/coaches (Leadership).



## CLINICAL EXERCISE PHYSIOLOGY PgCert/PgDip/MSc

The course involves the detailed study of the physiological consequences of chronic debilitating diseases and highlights the changes that these different diseases cause during exercise testing. This unique course gives you a solid grounding in theory and application of physiological tests in clinical populations including: graded cardiopulmonary exercise testing; cardiac ultrasound; vascular ultrasound; and muscle function analyses. Throughout the course you will actively participate in practical sessions designed to increase your skills, with supervised practice sessions working alongside University sports teams and the Community Exercise Clinic.

## SPORT AND PHYSICAL ACTIVITY (LEADERSHIP AND MANAGEMENT) MA

The sport and physical activity industry has an innovative and dynamic workforce and this course will support you in developing the knowledge and skills required to gain entry to the sector. Taking a practical, research based approach, this course will give you the opportunity to review and analyse examples of best practice, develop sustainable sport participation programmes and undertake research into a sport and physical activity topic area of your choice.

## SPORT AND PHYSICAL ACTIVITY (EXECUTIVE LEADERSHIP) MA

Taking a reflective, analytical and research based approach, this course will inspire you to think differently about how organisations in sport and physical activity respond to the challenges set and how they can best deliver pioneering solutions. In doing so, the course support you in developing your executive leadership skills and will offer the professional and personal development required in order for you to take the next step and become an industry leader.

## PHYSICAL ACTIVITY, NUTRITION & BEHAVIOUR CHANGE MSc

In addition to developing a firm understanding of the links between physical activity, nutrition, health and behaviour change, this course offers invaluable opportunities to further career prospects during placement and research project units. With relevant experience, we will also support you in registering as an Associate Nutritionist or converting to full registration as a Nutritionist/ Public Health Nutritionist.

## STRENGTH & CONDITIONING MSc

If you wish to work with sports performers as a strength and conditioner, or applied sports scientist, this innovative course is for you. Designed to meet the needs of students interested in the optimisation of fitness capacities required for high level performance in sport, it will provide the theory and foundation knowledge and skills you need to pursue professional accreditation with a number of bodies including the British Association of Sport and Exercise Sciences (BASES); the United Kingdom Strength and Conditioning Association (UKSCA).

# INSTITUTE FOR SPORT & PHYSICAL ACTIVITY RESEARCH

PHD, MSc BY RESEARCH & STAGE 2 HEALTH PSYCHOLOGY  
OPPORTUNITIES IN THE AREA OF BEHAVIOUR CHANGE

## 1) EVALUATION OF COMMUNITY PHYSICAL ACTIVITY PROGRAMMES FOR THE BENEFIT OF LONG-TERM CONDITIONS

The University of Bedfordshire hosts an exercise clinic for the local community to support health and wellbeing through the engagement of physical activity. With excellent links to the health and wellbeing services and hospitals across three local authorities, there is an opportunity to evaluate and further develop physical activity programmes, both within the university and regionally, to understand the benefit to long-term conditions (e.g. diabetes, cancer, cardiovascular disease, mental health). Using behaviour change methodologies, this research will further develop support services in this area and aim to optimise their performance to benefit physical and psychological health.

## 2) HEALTH PROFESSIONAL BEHAVIOUR FOR EXERCISE REFERRALS

Physical activity can significantly enhance health and wellbeing, optimising health status. Yet there are a large number of people not currently meeting government recommendations. With the promotion of physical activity being given more importance in the new government obesity initiative and 'Better Health' app, there is a need to ensure that those who are working with individuals to promote physical activity are equipped with the skills in behaviour change. This includes those who may refer on to an exercise on referral programme such as general practitioners, and those who deliver the service, such as registered exercise professionals. This research will assess the current need for training and develop a programme of training and evaluation that can be replicated and rolled out nationally/internationally.

The specific nature of the projects are open for discussion and development with the research student. Please contact Prof Chater, [Angel.Chater@beds.ac.uk](mailto:Angel.Chater@beds.ac.uk) if you have any questions.



# INSTITUTE FOR SPORT & PHYSICAL ACTIVITY RESEARCH

PhD & MSc BY RESEARCH OPPORTUNITIES IN PHYSICAL ACTIVITY, NUTRITION  
& METABOLIC HEALTH IN CHILDREN & ADOLESCENTS

## 1) DOES BREAKFAST CONSUMPTION VERSUS BREAKFAST OMISSION AFFECT PHYSICAL ACTIVITY, DIETARY INTAKES AND CARDIOMETABOLIC HEALTH OUTCOMES IN CHILDREN AND ADOLESCENTS?

Breakfast is believed to be the 'most important meal of the day' and is associated with favourable health outcomes in children and adolescents. Yet, the available evidence on breakfast and health does not allow us to establish cause-and-effect. This project will focus on conducting experimental research to identify whether breakfast consumption can help to improve physical activity levels, dietary intakes and cardiometabolic health (e.g., glycaemic control) in children and adolescents when compared with breakfast omission.

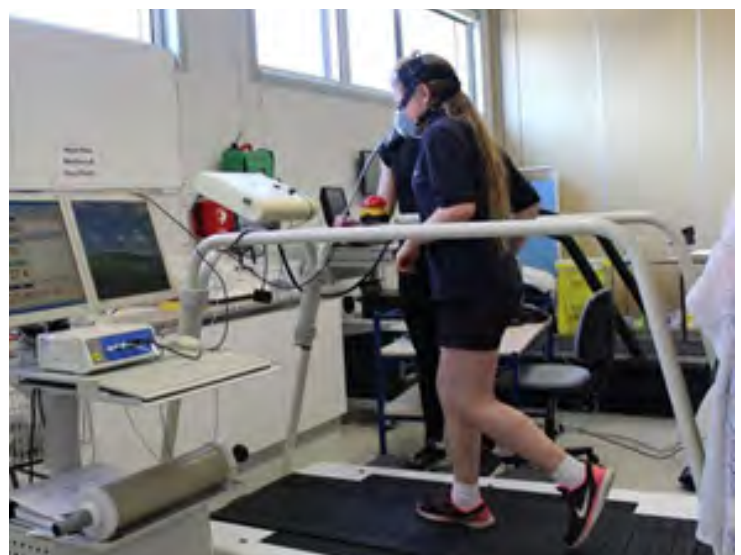
## 2) BREAKFAST COMPOSITION AND TIMING IN CHILDREN AND ADOLESCENTS: IMPACT ON ENERGY BALANCE AND CARDIOMETABOLIC HEALTH OUTCOMES

This project will focus on conducting experimental research to identify whether there is a specific type of breakfast (e.g., macronutrient composition) and time of day that breakfast should be consumed to improve physical activity levels, dietary intakes and cardiometabolic health (e.g., glycaemic control) in children and adolescents.

## 3) IMPROVING GLYCAEMIC CONTROL AND INSULIN SENSITIVITY THROUGH PHYSICAL ACTIVITY AND NUTRITION IN NON-OVERWEIGHT, OVERWEIGHT, AND OBESE CHILDREN AND ADOLESCENTS

With childhood and adolescence being an important time of life to target for the prevention of type 2 diabetes, this project aims to identify how manipulations in exercise and nutrition can improve glycaemic control and insulin sensitivity in this under-researched population. The impact of overweight and obesity on the research outcomes will also be investigated.

The specific nature of the project is open for discussion and development with the research student. Please contact Dr Fruer, [Julia.Fruer@beds.ac.uk](mailto:Julia.Fruer@beds.ac.uk) if you have any questions.



# INSTITUTE FOR SPORT & PHYSICAL ACTIVITY RESEARCH

## PhD & MSc BY RESEARCH OPPORTUNITIES IN HEALTH & EXERCISE PHYSIOLOGY

### 1) BETA-ALANINE SUPPLEMENTATION, CARDIAC AND SKELETAL MUSCLE FUNCTION IN OLDER ADULTS.

Carnosine, a dipeptide consisting of  $\beta$ -alanine and L-histidine, is evident in both skeletal and cardiac muscle. Emerging, although limited research reports improvements in exercise performance measures following  $\beta$ -alanine supplementation in older adults. Cardiac muscle produces carnosine and related derivatives of histidine, and although unsupported,  $\beta$ -alanine should have access to cardiomyocytes. Therefore,  $\beta$ -alanine has the potential to increase cardiac stores of carnosine. Surprisingly there remains little scientific evidence on the role of histidine containing dipeptides in the cardiovascular system. Proposed research projects will examine the effect of  $\beta$ -alanine supplementation on cardiac and skeletal muscle function in older adults, thereby furthering our understanding of the mechanisms of action of carnosine.

### 2) BETA-ALANINE SUPPLEMENTATION, CARDIOMETABOLIC HEALTH AND COGNITIVE FUNCTION IN INDIVIDUALS WITH DIABETES.

Type 2 diabetes (T2DM) is a global health challenge, the prevalence of diabetes in older adults is widespread, with ~20% of those aged over 75 years affected. Worryingly, age-related insulin resistance appears to be primarily associated with adiposity, sarcopenia, and physical inactivity. It is therefore vital that low-cost and safe approaches are identified to prevent and treat T2DM. Carnosine, a dipeptide consisting of  $\beta$ -alanine and L-histidine, has been identified in numerous tissues within the human body, including skeletal muscle, cardiac muscle, and the brain. Increasing the availability of carnosine could alter how these tissues function. Carnosine has significant potential for the prevention and treatment of long-term health conditions including T2DM, cardiovascular and neurodegenerative diseases. Proposed research will be investigating the effects of  $\beta$ -alanine supplementation on cardiometabolic health and cognitive function in older adults with and without diabetes.

The specific nature of the project is open for discussion and can be developed with other members of the ISPAR research centre. Please contact Dr Jones, [Rebecca.Jones@beds.ac.uk](mailto:Rebecca.Jones@beds.ac.uk) if you have any questions.





# HUMAN PERFORMANCE CENTRE

## WHO WE ARE

We offer a range of health, fitness and wellness services aimed at optimising your overall wellbeing. Whether your goal is to lose weight or improve your athletic performance, our state of the art facilities and highly trained sport and exercise scientists can assist to achieve your fitness goals.

- Environmental Training
- Health, Wellness, & Metabolic Assessment
- Strength and Conditioning
- Team Sport Assessment
- Fitness Assessment
- VO<sub>2</sub> Max Testing
- Lactate Threshold Profiling
- Anthropometry Testing
- Biomechanical Testing
- Nutrition Assessment and Support
- Behaviour Change Support and Training



### Kayamba Prospere, Boxer

"The service provided by the human performance centre has been exceptional. I was able to have the fitness testing tailored to meet my needs and the results were relayed back to me in a clear and understandable format. The staff at the Human Performance Centre are very friendly, knowledgeable and professional, making the experience very worthwhile."



### Ian Hammett, Team GB Spartathlon runner

"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."

For more information on other testing we provide, visit  
[www.beds.ac.uk/humanperformance](http://www.beds.ac.uk/humanperformance)

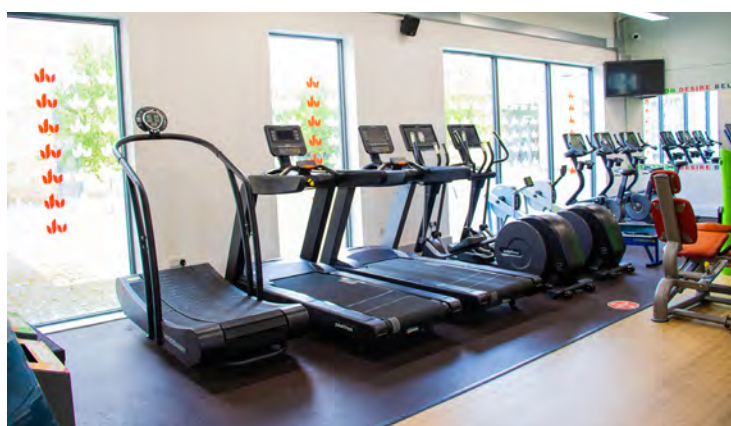
01234 400400 | [humanperformanceinfo@beds.ac.uk](mailto:humanperformanceinfo@beds.ac.uk) | @UoB\_HPC

# COMMUNITY EXERCISE CLINIC

The University of Bedfordshire's Community Exercise Clinic was set up in April 2017 in conjunction with the local Diabetes UK support group. Its aim is to support those in the local community diagnosed with Type 2 Diabetes in managing their condition through exercise and encourages behaviour change through education, motivation and providing a supportive environment. Since then, the Community Exercise Clinic has expanded to support those in the local community who have been diagnosed with any disease or condition that their GP or hospital consultant believes exercise will help. The clinic is currently working with clients with cancer, weight management issues, cardiac rehabilitation, mental health, lower back problems, and early onset dementia helping improve their quality of life and improve their health.

Sessions are completed as an exercise circuit, but this can be adapted if individuals want one-to-one sessions. The circuit comprises of 8-10 exercise stations, each having a choice of exercises with differing levels of difficulty. Trained University of Bedfordshire students support the sessions to gain practical experience whilst being guided by a qualified staff member and Exercise Referral Specialists.

To enter onto the Community Exercise Clinic programme clients need to approach their GP consultant or health professional and ask to be referred through the Lifestyle Hub. Once referred, clients will be contacted by the Community Exercise Clinic and invited to join one of our sessions. Please contact Kevin Wyld ([Kevin.Wyld@beds.ac.uk](mailto:Kevin.Wyld@beds.ac.uk)) if you have any questions.



# ISPAR STAFF



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DR LOUISE FERRANDINO



DR MARK BOWLER



MICHAEL DWYER



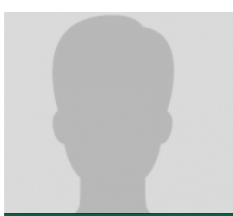
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KAMALESH DEY



LAUREN HOWARD



LAUREN WORMACK



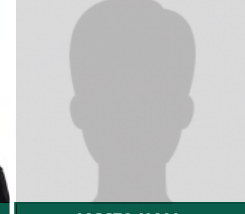
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NATASHA WING



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VICTORIA MORARI

