CASES Physical Activity for Health Division Day

Programme and Abstract

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1300 Welcome and Intro to the keynote by Dr Daniel Bailey HonFCASES

1305 Keynote - Professor Mark Faghy, FCASES, Loughborough University, *"Rethinking Physical Activity Prescription in Long COVID and Energy-Limiting Conditions: From Exercise Promotion to Energy Management"* (Chair: Dan Bailey)

1350 Member Presentations (Chair: Hayley Mills)

Anne Fischer, Manchester Metropolitan University. *"Confidence in Pelvic Floor Muscle Training and Symptoms of Stress Urinary Incontinence in Active Nulligravid Women: Insights from a Cross-Sectional Survey"*

Mandeep Singh, Queen Mary University. *"Prevalence of Physical Activity in diverse populations with Parkinson's disease in East London"*

Daniel Cooper, City St George's, University of London. *"Co-adaptation of a walking exercise behaviour change intervention for people with peripheral artery disease for delivery in primary and community care: The MOSAIC2 intervention"*

Abbie Bell, University of Bedfordshire. *"Effects of breaking up sitting time on cardiometabolic risk markers and left ventricular function and structure following myocardial infarction"*

Tim Grove, Brunel University London. *"Percentile values for the 2-minute walk test in community dwelling older Ghanian adults according to sex and age"*

1500 Comfort break

1510 Debate - 'Should the government pay people to be physically active?' (Chair: Dr Stephanie Stockwell)

1600 Presentation of Awards / Discussion/ Feedback to the Division Committee (Chair: Dr Miranda Armstrong)

1630 Close

KEYNOTE

Rethinking Physical Activity Prescription in Long COVID and Energy-Limiting Conditions: From Exercise Promotion to Energy Management

Professor Mark Faghy, FCASES, Loughborough University

Abstract

Physical activity is a cornerstone of health and rehabilitation. However, for people living with Long COVID and other energy-limiting conditions, traditional approaches to physical activity prescription may be ineffective or, in some cases, contribute to symptom exacerbation and relapse. Growing evidence highlights the challenges of applying conventional exercise paradigms to populations characterised by fatigue, post-exertional symptom exacerbation (PESE), and fluctuating activity tolerance.

This presentation will explore why established physical activity recommendations may not be appropriate for all patient groups and discuss the need to rethink how activity is prescribed, managed, and monitored. Drawing on research and clinical experience, the session will examine strategies such as pacing, energy envelope management, symptom-contingent activity planning, and the use of objective and subjective monitoring tools. The talk will discuss how professionals can balance the recognised benefits of physical activity with the risks of overexertion, supporting individuals to engage in meaningful activity while minimising symptom deterioration. Ultimately, the presentation will propose a more personalised and responsive framework for physical activity management in Long COVID and related energy-limiting conditions.

Confidence in Pelvic Floor Muscle Training and Symptoms of Stress Urinary Incontinence in Active Nulligravid Women: Insights from a Cross-Sectional Survey

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Background: Urinary incontinence affects 42% of British women, and stress urinary incontinence represents a recognised barrier to exercise. Pelvic floor muscle training (PFMT) remains the primary treatment, but little is known about practice in active, nulligravid women.

Methods: Ethical approval was granted by Manchester Metropolitan University; participants gave informed consent. This cross-sectional survey aimed to characterise prevalence and impact of urinary incontinence, and PFMT confidence and practice in active women, aged 20-40 years. Women completed the validated International Consultation on Incontinence Questionnaire (ICIQ) Urinary Incontinence Short Form (ICIQ-SF), Female Lower Urinary Tract symptoms (ICIQ-FLUTS), and Lower Urinary Tract Symptoms Quality of Life (ICIQ-LUTSqol), the Prolapse and Incontinence Knowledge Questionnaire, urinary incontinence scale (PIKQ-UI) and items on PFMT confidence, information and practice, besides demographic and lifestyle items. Groups were compared using chi-square, Fisher´s exact and Mann-Whitney U tests; associations used Spearman´s rank correlation.

Results: Of 100 women who responded, 60% reported regular urine leakage (ICIQ-SF score: 11.1±3.9) with significant negative impact on quality of life compared with continent participants (ICIQ-LUTSqol: 27.8±6.5; $p<0.001$). Although pre-emptive voiding increased significantly with symptom severity, 33% of symptomatic women had not attempted any symptom management, notwithstanding reporting substantial negative impact. All women agreed that PFMT could help, yet 60% had never tried it; 19% had tried and stopped and only 21% practiced regularly. Just 32% of women were confident performing PFMT correctly, despite most women exercising 2-15 hours per week. Confidence was higher among women who had accessed PFMT information (58% vs 4%), but 42% of those who had accessed information lacked confidence with execution. Across all participants, PFMT enjoyment was low (4±3 of 10), despite high perceived importance (9±2 of 10).

Conclusion: Stress urinary incontinence emerged highly prevalent and negatively impactful in active, nulligravid women, while PFMT-confidence was limited. Confidence in correct execution emerged as the main barrier to PFMT, not belief in its

value, and regular exercise did not appear to facilitate skill acquisition. Information about PFMT alone was insufficient. Exercise professionals may be well placed to build confidence through practical, supported teaching and to open conversations about pelvic floor health before women disengage.

Prevalence of Physical Activity in diverse populations with Parkinson's disease in East London

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Background: Parkinson's disease (PD) adversely affects health and quality of life. Physical activity (PA) improves motor and non-motor outcomes in PD, yet ethnically diverse populations remain underrepresented in research. Understanding PA and sitting time (ST) is important for informing equitable care.

Objective: To compare PA and ST between people with PD and healthy controls (HC) and explore ethnic differences within the PD group in East London.

Methods:
This cross-sectional study, part of the East London Parkinson's Disease Project, recruited participants from the Royal London Hospital and community settings. Ethics approval was granted on 29 November 2018 by the Southwest–Central Bristol Research Ethics Committee (reference 39/SW/0255; IRAS ID 242395). PA and ST were assessed using the International Physical Activity Questionnaire. Group differences were examined using Mann-Whitney U and Kruskal-Wallis tests and general linear models adjusted for age and sex.

Results:
204 participants were recruited, including 131 with PD and 73 HC. Men comprised 62.5% of the PD group and 45.2% of HC. Mean ages were 69.4 ± 10.4 and 67.5 ± 9.8 years, respectively. The PD group included White (30.5%), South Asian (49.6%) and Black (9.9%) participants; proportions among HC were 38.4%, 43.8% and 8.2%. Compared with HC, participants with PD reported lower median PA (30 vs. 180 min/day) and greater ST (840 vs. 540 min/day; $p < 0.001$). Within the PD group, PA differed across ethnic groups ($p=0.006$), with higher PA among White than South Asian participants (adjusted $p=0.014$). The association remained significant after adjustment

for age and sex ($p < 0.001$). Ethnicity was not associated with ST before or after adjustment ($p>0.166$).

Conclusion: People with PD reported lower PA and greater ST than HC. PA varies across ethnic groups. These findings highlight the importance of inclusive research and tailored strategies to promote PA in diverse PD populations.

Keywords: Parkinson's disease; physical activity; sedentary behaviour; ethnicity; South Asian; International Physical Activity Questionnaire.

Co-adaptation of a walking exercise behaviour change intervention for people with peripheral artery disease for delivery in primary and community care: The MOSAIC2 intervention

Daniel L. Cooper, John Weinman, Louise Hull, Mandeep Sekhon, Graham Fisher, James A. Haley, Lindsay M. Bearne, MOSAIC2 Research Team

Introduction:

In the MOtivating Structured walking Activity for Intermittent Claudication (MOSAIC1) trial, a hospital-based, physiotherapist-led walking exercise, behaviour-change programme improved walking capacity in people with intermittent claudication (IC) caused by peripheral artery disease (PAD). This study aimed to adapt MOSAIC1 for delivery by diverse practitioners in primary and community services (MOSAIC2).

Methods:

This multi-methods study included: (1) framework analysis of 20 patient and 14 physiotherapist MOSAIC1 trial interviews to understand the factors that influenced walking exercise and implementation; (2) explore interrelationships between MOSAIC1 walking-related outcomes and psychological outcomes using multiple regression and structured equation models (n=118); (3) iterative co-design workshops with 21 people with IC and carers, and 21 practitioners and service planners. Intervention content and implementation options were mapped onto behaviour change and implementation frameworks to adapt MOSAIC1. Ethical approval was granted from a St George's Research Ethics Committee (2025.0158).

Results:

Walking exercise was influenced by pain, comorbidities, fear or embarrassment and not considering walking a treatment. MOSAIC1 changed participants PAD and walking treatment beliefs, which were linked with changes in walking-related outcomes. Co-design participants suggested more sessions with expanded content and resources. MOSAIC2 includes six one-to-one sessions with a trained practitioner addressing: beliefs and experiences of walking exercise, setting walking goals, action planning strategies to develop walking exercise habit, and problem-solving personal barriers and facilitators underpinned with behaviour change principles and a motivational interviewing approach.

Conclusions:

MOSAIC2 was co-adapted for delivery in primary and community services by diverse practitioners. The clinical and cost effectiveness of MOSAIC2 will be evaluated in a randomised controlled trial prior to NHS roll out (NIHR208123).

Effects of breaking up sitting time on cardiometabolic risk markers and left ventricular function and structure following myocardial infarction

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Background: Following myocardial infarction (MI), managing cardiometabolic risk factors is important for secondary prevention. Myocardial infarction can also lead to adverse left ventricular (LV) remodelling. This study investigated the acute effects of interrupting sitting with standing and light-intensity walking on cardiometabolic risk markers and LV function and structure in adults post-MI.

Methods: Thirteen men post-MI aged 58 ± 8 years completed three, six-hour experimental conditions in a randomised crossover design: uninterrupted sitting (SIT), sitting interrupted by five-minute bouts of standing every 30 minutes (STAND), and sitting interrupted by five-minute bouts of light-intensity walking every 30 minutes (WALK). Postprandial glucose, insulin, lipids and blood pressure were measured. Left ventricular function and structure were assessed using echocardiography pre and post each condition. Linear mixed models were employed to test the main effect of condition for cardiometabolic biomarker outcomes and condition x time interactions for cardiac structure and function. The study was approved by the East of Scotland National Health Service Research Ethics Committee (reference number 20/ES/0050). Clinicaltrial.gov.uk ID: NCT05193175.

Results: No significant between-condition differences were found for cardiometabolic risk markers. In WALK, significant condition x time interactions were found for pre-post changes in end-systolic wall stress (21.8% reduction, $p=0.01$), LV internal diameter at diastole (11.9% reduction, $p<0.01$), LV internal diameter at systole (12.2% reduction, $p<0.01$), and in E-wave velocity (10.3% increase, $p=0.03$). E-wave velocity was 14% higher following WALK than STAND post condition ($p=0.01$).

Conclusion: Interrupting prolonged sitting with regular bouts of light-intensity walking led to acute improvements in LV function and structure in adults following MI. These findings suggest that breaking up sitting should be explored as a potential intervention for secondary prevention of cardiovascular disease.

Percentile values for the 2-minute walk test in community dwelling older Ghanian adults according to sex and age

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Introduction: Normative values for the 2-minute walk test (2MWT) provide age- and sex-specific reference points for assessing functional capacity. However, most available reference data are derived from high-income countries, with limited evidence from low- and middle-income settings. This study aimed to establish age- and sex-specific normative percentile values for 2MWT distance in community-dwelling older adults living in Accra Ghana.

Methods: A total of 102 participants (53% male; mean age 70.3 ± 6.0 years) completed a 2-minute walk test (2MWT), assessing total walking distance and submaximal heart rate responses. Participants were stratified by sex and into three age groups (60–69, 70–79 and 80–89 years), with age- and sex-specific percentile rankings calculated for walking distance. Heart rate reserve (HRR) was calculated to determine whether walking intensity during the 2MWT reached the recommended 40–70% HRR range. Continuous variables were summarised as mean ± SD or median (IQR), and categorical variables as frequencies and percentages. Between-sex differences in 2MWT distance, exercise heart rate and percentage HRR were assessed using independent-samples *t*-tests, with 95% confidence intervals (CIs) and $p < 0.05$ considered statistically significant. Normative reference values for 2MWT distance were derived from the 5th, 10th, 25th, 50th, 75th and 90th percentiles. Ethical approval was obtained from the School of Biomedical and Allied Health Sciences Ethics Review Committee, University of Ghana, and all participants provided informed consent.

Results: Overall, the mean distance walked during the 2MWT was 159.8 ± 34.3 metres. Men walked, on average, 28.8 metres further than women (95% CI 13.6–39.0; $p < 0.001$). Despite this, women demonstrated a significantly higher exercise heart rate at the end of the 2MWT compared with men (106.0 ± 18.1 vs. 97.6 ± 22.7 beats per minute (bpm); mean difference 8.6 bpm, 95% CI 0.3–17.0; $p < 0.04$). Women also achieved a higher percentage of their HRR during the test than men (42.5 ± 15.9% vs. 39.2 ± 17.4%), indicating a greater relative cardiovascular response to the 2MWT.

Conclusion: This is the first study to establish age- and sex-specific normative percentile values for the 2MWT in a low- to middle-income country. These data will support clinicians and researchers in interpreting test performance, identifying impaired functional capacity, monitoring age-related functional decline, and evaluating rehabilitation and exercise outcomes.