PROFESSOR LEIGH BREEN, Ph.D., FHEA, FECSS E-mail: L.breen@bham.ac.uk
Current position: Professor in Translational Muscle Physiology
Affiliations: [1]School of Sport, Exercise & Rehabilitation Sciences, [2]NIHR Biomedical Research Centre,
Key roles: Director: Centre for Movement and Wellbeing

EDUCATION

Ph.D. Exercise Metabolism & Nutrition	University of Birmingham	2007-2010
M.Sc. Exercise Physiology (distinction)	Manchester Metropolitan University	2006-2007
B.Sc. (hons) Sport & Exercise Sciences	Manchester Metropolitan University	2003-2006

PREVIOUS POSITIONS

- Reader (2019-22), Senior Lecturer (2017-19) and Lecturer (2013-16) in Muscle Physiology and Metabolism, School of Sport, Exercise and Rehabilitation Sciences, University of Birmingham (2017-19).
- Post-Doctoral Research Fellow, Department of Kinesiology, McMaster University (2010-13).

RESEARCH OVERVIEW

My group work under the auspices of the Medical Research Council/Versus Arthritis Centre for Musculoskeletal Ageing Research and NIHR Biomedical Research Centre for Inflammation. I am also the Lead the Metabolic and Molecular Physiology Group (MMPG) and am the Director of the Centre for Movement and Wellbeing (MoveWell). The overarching goal of my research is to understand cellular mechanisms of skeletal muscle plasticity and how exercise and nutrition modulate muscle remodelling, function and performance in health and disease. My work is fundamentally translational and utilises innovative biochemistry and physiology experimental techniques, centred around wide-ranging interdisciplinary collaborations to maximize impact and influence. My research is supported by extensive research funding from UKRI, charitable foundations, healthcare bodies and industry partners. I also lead the UKRI-funded 'ATTAIN' Network, which focuses on transformative healthy ageing research through physical activity in those most affected by health inequalities. I have published over 95 peer-reviewed articles (H-index 39, i10 index 65, >10,000 citations) and am a regular invited speaker at national and international conferences.

SELECTED RESEARCH FUNDING (from >£3.5 million since 2013)

- 2024-2026: Understanding the musculoskeletal and physiological effects of Vortex Wave Circulation technology in older adults: West Midlands Healthcare Technology Innovation Accelerator - £130,352. *Role: Principal Investigator*.
- 2024-2027: Establishing the role of adipose tissue inflammation in the regulation of muscle mass in older people. BBSRC - £858,820 (submitted April 2023). Role: Co-Investigator (~£30k to UoB).
- 2024-2026: Whey protein dose-response on daily glycaemic excursions in older individuals with type 2 diabetes. National Dairy Council - £210,900. *Role: Principal Investigator*.
- 2023-2027: NIHR Biomedical Research Centre – Sarcopenia and Multimorbidity Theme. NIHR Central Commissioning Facility - £1,289,015. *Role: Co-Investigator* - *Primary supervisor to 1 x Post-Doctoral Fellow within the BRC framework.*
- 2022-2025: Lifelong Physical AcTivity TArgeting INequalities (ATTAIN): A Transformative Network for Healthy Ageing. BBSRC-MRC Cross-Council Call. £314,560. *Principal Investigator.*
- 2022-2026: Fit4Surgery 2: A randomised controlled trial to investigate an App-based, motivation-theory versus usual care to enhance recovery of physical function and reduce complications after lung cancer surgery. NIHR £1,610,688. Co-Investigator.
- 2021-2024: Novel protein sources for exercise-induced skeletal muscle recovery and adaptive remodelling. Myprotein - £180,407. Principal Investigator.

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- 2021-2024: Sustainable biomarine protein for exercise-induced skeletal muscle recovery and adaptive remodelling. Biomega Group- £111,375. Principal Investigator.
- 2018-2022: Understanding the role of obesity in the deterioration of skeletal muscle mass and quality in older age: New mechanistic insights. Dunhill Medical Trust - £252,362. *Role: Principal Investigator.*
- 2017-2022: NIHR Biomedical Research Centre - Sarcopenia Theme. NIHR Central Commissioning Facility - £812,244. *Role: Co-Investigator* - *Primary supervisor for 1 x PhD student and mentor to 1 x Post-Doctoral Fellow within the BRC framework.*
- 2016-2020: Exercise 'prehabilitation': A novel intervention to protect against disuse-induced muscle atrophy and sarcopenia in the old. BBSRC New Investigator - £545,776. *Role: Principal Investigator.*

RESEARCH SUPERVISION (past 5 years)

Summary: PhD lead supervisor – 7 completed, 5 ongoing; PhD co-supervisor – 9 completed, 3 ongoing; MRes lead supervisor - 1 ongoing, 12 completed. *Student achievements:* >60 conference presentations (oral/poster) at national and international meetings by PhD/MRes students and Fellows in my group. Seven postgraduate student award winners at national and international conferences (including, European College of Sports Sciences, International Society of Exercise and Immunology, Rank Nutrition Prize, Physiological Society).

INVITED TALKS/SYMPOSIA (selected from >50 since 2014)

- Healthy Muscle Ageing Conference, Sept 2023. Invited symposium presentation; title: 'Combatting muscle disuse atrophy in the quest for healthy ageing'.
- British Society for Research on Ageing, Sept 2023. Invited symposium presentation; title: Obesity and musculoskeletal ageing – a weight matter'.
- British Geriatric Society, Nov 2022. Invited symposium presentation; title: 'Unravelling the role of inactivity and obesity on age-related muscle deterioration'.
- European College of Sports Sciences. September 2021. Invited symposium presentation: title – Prehablitation to counteract disuse-induced muscle deterioration in older adults.
- Royal Society of Medicine, 'Future Nutrition for an Ageless Society'. November 2019. Invited symposium presentation; title – Animal or plant-based proteins for muscle health in older age.
- Royal College of Anaesthetists, Birmingham, March 2018. Invited symposium; title - Exercise and Nutrition for Skeletal Muscle Remodelling: A Focus on Disuse in Patient Populations.
- Society for Experimental Biology, HumaNature meeting, London, UK, Nov 2017. Invited symposium presentation. Title: Disuse, Inactivity and Musculoskeletal ageing'.

SELECTED EXTERNAL ENGAGEMENTS (peer-review, committees & collaborations)

- Peer reviewer for >30 scientific journals in the field of integrative physiology, nutrition, metabolism, ageing and gerontology (impact factors 3-24).
- National grant reviewer for BBSRC, MRC, Diabetes UK, Kidney Research UK, Dunhill Medical Trust, Lister Institute of Preventative Medicine (2015-present). International grant reviewer for Innovation Fund Denmark (2015), Dairy Farmers of Canada (2017), Austrian Science Fund FWF (2017), Netherlands Organisation for Health Research and Development (2018), Research Council of Norway (2018/19).
- Fellow (2019) and Scientific Committee (2021) member - European College of Sport Science.
- External PhD examiner for 29 PhD theses, at institutes including Maastricht University, University of Nottingham, University of Auckland, University of Toronto, University of Copenhagen, Karolinska Institute Stockholm, University of Glasgow.
- Active collaborations with leaders in metabolic and molecular muscle physiology, including Professor Philip Atherton and Dr Daniel Wilkinson (University of Nottingham), Professor Luc van Loon (Maastricht University), Professor Jamie McPhee (Manchester Metropolitan University), Dr Joachim Nielsen (University of Southern Denmark).

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