

PhD Opportunity

Heat mitigation and management for females.

Supervisory team: Dr Jessica Mee & Dr Ben Duncan

Director of Studies: Dr Jessica Mee

Supervisors: Dr Ben Duncan

Research Group

This project will span across both the [Inclusive Sport and Physical Activity Research Group](#) and the [Human Performance Research Group](#)

The PhD Opportunity

Global warming is causing a sustained increase in temperatures each decade, and an increase in the frequency and intensity of heat waves, which collectively is harming human health. Heat illness due to exertional activity or passive heat gain (e.g., during a heat wave) carries a high risk of morbidity and mortality. Whilst mitigating climate change is an essential step, heat illnesses are largely avoidable with the implementation of effective heat mitigation and management strategies, combined with appropriate education. Prior to relocation or exposure to hot conditions, current recommendations are to complete heat acclimation, involving exercising in the heat for at least 14 occasions, where core and skin temperatures are elevated, and sweating is initiated. Upon relocation to a hot climate, recommendations are to adopt cooling procedures using electric fans, ice towels, cold-water immersion, and ice-slurry ingestion. Collectively these strategies reduce thermoregulatory strain, and improves thermal comfort, cognitive function, and physical performance. To date, heat mitigation guidelines are underpinned almost exclusively by research conducted in men, without consideration of issues associated with the biological and phenotypical sex differences and often protocols are not accessible or sustainable.

This PhD and programme of study will aim to assess the utility of sustainable and accessible heat mitigation or management strategies in females across the lifespan.

For informal discussion, please do not hesitate to contact Dr Jessica Mee j.mee@worc.ac.uk.

References

Gibson, O.R., *et al.*, (2020). Heat alleviation strategies for athletic performance: A review and practitioner guidelines. *Temperature*. 7(1). 3-36.

DOI: [10.1080/23328940.2019.1666624](https://doi.org/10.1080/23328940.2019.1666624).

Kelly M.K., *et al.*, (2024). Auditing the Representation of Females Versus Males in Heat Adaptation Research. *International Journal of Sport Nutrition and Exercise Metabolism*. 34(2) 111-121. DOI: [10.1123/ijsnem.2023-0186](https://doi.org/10.1123/ijsnem.2023-0186)

Mee, J.A., *et al.*, (2015). Sex differences in adaptation to short- and long-term heat acclimation. *Scandinavian Journal of Medicine and Science in Sports*, 25 (Suppl. 1), 250-258. DOI: [10.1111/sms.12417](https://doi.org/10.1111/sms.12417).

Application Process

To begin the application process please go to <https://www.worc.ac.uk/research/research-degrees/applying-for-a-phd/>.

The Interview

All successful applicants will be offered an interview with the proposed Supervisory Team. You will be contacted by a member of the Doctoral School Team to find a suitable date. Interviews can be conducted in person or over Microsoft Teams.

Funding your PhD

For information about Doctoral Loans please visit: <https://www.worc.ac.uk/study/fees-and-finance/doctoral-loans.aspx>

During your PhD you can access the Research Conference Support Scheme to support the costs of presenting your research at an external conference.

Research at the University of Worcester

Research is central to the University's mission to make a difference in everything that we do. We are committed to delivering excellent research which extends the boundaries of human knowledge but which also improves people's lives by enabling better health outcomes, improving food security, developing environmentally sustainable solutions for crop production and socially sustainable solutions to our ageing population, enhancing public knowledge and understanding of the past and present.

The University hence focuses its research around five high-level challenges facing society, locally, nationally and globally:

- [Human Health and Wellbeing](#)
- [Sustainable Futures](#)
- [Digital Innovation](#)
- [Culture, Identity and Social Exclusion](#)
- [Professional Education](#)

The success of our research is reflected in our continuous improvement in external research assessment processes. In the most recent Research Excellence Framework, REF 2021, the University saw a near 50% increase in the scale of its research and 12% increase in quality, building on its performance in REF 2014 when it was the UK's most improved university in terms of Research Power, a combination of scale and quality.

Research Degrees at Worcester

Our research students are central to our overall mission for research. They are working at the cutting edge of their disciplines and driving forward the quality of our research whilst enriching our research culture. We are looking to increase our research student numbers as a strategic imperative.

Our commitment to our students is reflected in the results of the Postgraduate Research Experience Survey 2023 in which we ranked 3rd for overall research student satisfaction nationally. Key to our success in this area is the Doctoral School, a focal point for all our research students.

It provides:

- day-to-day support for our students, both administrative and practical, through our dedicated team.
- a Research Student Study Space with both PCs and laptop docking station.
- a comprehensive Researcher Development Programme for students and their supervisors.
- a programme of student-led conferences and seminars.

Research Group

The Inclusive Sport and Physical Activity Research Group aims to support excluded and marginalised individuals and communities through ethically and socially responsible research. The Group is a collective of passionate, supportive, community-oriented individuals, all working towards developing meaningful, ethically responsible, high-quality interdisciplinary research within and around the broad area of Inclusive Sport and Physical Activity.

Widening Participation

As part of its mission statement the University is committed to widening participation for its higher degrees. Although most candidates will have an undergraduate and / or a Masters degree, the University is happy to accept applications from candidates with relevant professional qualifications and work related experience.

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