

# PhD Opportunity

The INDICO-II Study – Effects of body composition and dietary improvement on cell membrane dynamics and their relationship with the development of type II diabetes

## Supervisory team

This project is led by Dr Allain Bueno and by Dr Emma Edwards at the School of Sciences and the Environment. International collaborators from Spain and Brazil will also be involved in the research.

**Director of Studies:** Dr Allain Bueno

**Supervisors:** Dr Emma Edwards

**Research Group:** [Worcester Biomedical Research Group \(WBRG\)](#)

## The PhD Opportunity

The InDiCo Study (Inflammation, Diets, Body Composition) is a pre-clinical study currently conducted at the University of Worcester. The study investigates links between dietary habits, biomarkers of cell function, and body composition. More information about the study can be found here: [The InDiCo Study](#).

The InDiCo-II study builds on the findings of the original InDiCo study, focusing specifically on how dietary habits and body composition modulate the onset of type II diabetes.

In the UK, one in ten people over the age of 40 are currently living with a type II diabetes diagnosis [1]. The disease is metabolically damaging, reduces quality of life, and shortens life expectancy [2–5]. Poor diet represents a significant burden, costing the NHS £10 billion annually, and society in general an additional £27 billion. Dietary risks remain among the largest contributors to the development of chronic metabolic diseases, including type II diabetes [6].

Our research aims to explore the metabolic changes associated with dietary improvements in individuals at risk of developing type II diabetes. The goal is to better understand how dietary interventions can reduce disease risk.

This project includes a pre-clinical component in which the PhD candidate will work directly with healthy adults at risk of type II diabetes. The candidate will collect body composition data and blood samples from consenting participants. Full training will be provided.

Applications are welcome from nutritionists, dietitians, clinical biochemists, or biomedical scientists.

### References

1. [Number of people with diabetes reaches 4.7 million | Diabetes UK](#)
2. [Lower extremity muscle strength is reduced in people with type 2 diabetes, with and without polyneuropathy, and is associated with impaired mobility and reduced quality of life - PubMed \(nih.gov\)](#)
3. [Association between reduced quality of life and depression in patients with type 2 diabetes mellitus: a cohort study in a Mexican population - PubMed \(nih.gov\)](#)
4. [Type 2 diabetes, socioeconomic status and life expectancy in Scotland \(2012-2014\): a population-based observational study - PubMed \(nih.gov\)](#)
5. [Associations between multimorbidity, all-cause mortality and glycaemia in people with type 2 diabetes: A systematic review - PubMed \(nih.gov\)](#)
6. [The Lancet: Global Burden of Disease](#)

### Additional costs

Given that this is a laboratory-based project, bench fees will apply to cover the procurement of materials essential to delivering the research objectives. This will include consumables for the handling and processing of blood samples.

### 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 3<sup>rd</sup> 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 stations.
- a comprehensive Researcher Development Programme for students and their supervisors.
- a programme of student-led conferences and seminars.

### **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.

**For further information or an informal discussion on this project, please contact Dr Allain Bueno ([a.bueno@worc.ac.uk](mailto:a.bueno@worc.ac.uk))**