

# PhD Opportunity

## Clinical Significance and Diagnostic Accuracy of Special Tests in Rotator Cuff Related Shoulder Pain

### Supervisory team

#### Director of Studies

Dr Konstantinos Papadopoulos (Head of Department for Occupational Therapy, Physiotherapy and Nutritional Therapy courses) LWLTC co-lead, Living with Long Term Conditions Research Group, School of Allied Health and Community, University of Worcester

#### Supervisors

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**Research Group:** [Living Well with Long-Term Conditions Research Group](#)

### The PhD Opportunity

Special tests are typically used to assist in the diagnostic process by implicating specific tissue structures that are either dysfunctional, pathological, or lack structural integrity, confirming the findings from the physical assessment and providing a tentative diagnosis (Magee, 2014). Special testing of the shoulder is generally performed following a full examination of the shoulder (Biederwolf, 2013). Reproduction of pain, and weakness during these special tests are considered clinically diagnostic.

A recent systematic review identified a lack of high-quality studies evaluating inter-rater as well as intra-rater reliability of 62 specific special tests for the diagnosis of shoulder pathologies (Lange et al., 2017). Another study (Ujsasi et al., 2022) reviewed the applicability of special tests in the diagnosis of rotator cuff muscle Injuries of university athletes after comparing the results with ultrasonographic testing of the muscles and concluded that special tests are good predictors of soft tissue changes in the muscles of the rotator cuff of the shoulder; however, they call for further monitoring and analysis on larger numbers.

In contrast, other researchers have questioned the validity and usefulness of the shoulder special tests; suggesting they should be put out to pasture (Salamh & Lewis, 2020).

We are looking for a PhD student who would like to develop an in-depth mixed-methods study to enhance our understanding of: (i) which special tests are currently

used by NHS physiotherapists and (ii) the evidence of their diagnostic accuracy. This multi-disciplinary, collaborative study will be conducted across both UW and NHS environments, offering an opportunity for the successful applicant to develop an applied, impactful research study which could enhance physiotherapy practice and patient experience and outcomes in this important area.

### References

1. Biederwolf NE. A proposed evidence-based shoulder special testing examination algorithm: clinical utility based on a systematic review of the literature. *International Journal of Sports Physical Therapy*. 2013 Aug;8(4):427.
2. Lange T, Matthijs O, Jain NB, Schmitt J, Lützner J, Kopkow C. Reliability of specific physical examination tests for the diagnosis of shoulder pathologies: a systematic review and meta-analysis. *Br J Sports Med*. 2017 Mar;51(6):511-518. doi: 10.1136/bjsports-2016-096558. Epub 2016 Dec 19. PMID: 27993843.
3. Magee, D. Shoulder. Chapter 5 In: *Orthopedic Physical Assessment*. Elsevier, 2014
4. Salamh P, Lewis J. It Is Time to Put Special Tests for Rotator Cuff-Related Shoulder Pain out to Pasture. *J Orthop Sports Phys Ther*. 2020 May;50(5):222-225. doi: 10.2519/jospt.2020.0606. Epub 2020 Apr 9. PMID: 32272031.
5. Ujsasi D, Filipović K, Zvekić-Svorcan J, Nemet M, Đuričin A, Jokšić-Mazinjanin R, Pavlović S, Jovanović S, Popović B, Štajer V, Radanović D, Marinković D, Cvetković M. The Applicability of Provocative Functional Tests in the Diagnosis of Rotator Cuff Muscle Injuries of the Best University Athletes. *Biomed Res Int*. 2022 Oct 13;2022:7728277. doi: 10.1155/2022/7728277. PMID: 36277881; PMCID: PMC9584688.

### 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 station.
- a comprehensive Researcher Development Programme for students and their supervisors.
- a programme of student-led conferences and seminars.

### **Living Well with Long-Term Conditions Research Group**

Approximately 15 million people in England, representing 1 in 4 adults, have one or more long-term conditions (LTCs). A LTC is an illness that cannot be cured but may be controlled with medicines or other treatments. People living with LTCs face considerable challenges around the management of their long-term physical and mental health.

The 'Living Well with Long-Term Conditions' Research Group aims to facilitate the development and implementation of high-quality research and knowledge exchange, targeted at helping people with long-term conditions and their families to live well.

### **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 Konstantinos Papadopoulos (Direct of Studies) via email at [k.papadopoulos@worc.ac.uk](mailto:k.papadopoulos@worc.ac.uk)

