



JUNE 2022

CONTRIBUTION OF PHYSIOLOGY EDUCATION AND TRAINING TO THE WELSH WORKFORCE

Factsheet

To download the key findings report and the full report please visit physoc.org/policy/higher-education/physiology-education

The Physiological Society, the largest network of physiologists in Europe, and the Academy for Healthcare Science, commissioned Emsi Burning Glass to measure the economic value of higher education provision of which physiology is a core component of the Welsh and UK economy.

Many students who study these courses go on to have successful careers in health and care occupations. One in six jobs in Wales are in health and care occupations, which highlights physiology's importance to the nation's economy and health and wellbeing of its residents.

Emsi Burning Glass completed a study in early 2022 focused on the economic contribution of current and former students. This study uses a two-pronged approach of an economic impact analysis and a benefits analysis. A link to the full report can be found on the websites of both The Physiological Society and Academy for Healthcare Science. This document focuses on jobs of which physiology skills are a core component in Wales.

Figure 1 shows labour market data for Wales on the top occupations in which students who study courses of which physiology is a core component are employed.

- Out of the top five occupations, and as shown in Figure 1, the greatest number of graduates who study courses of which physiology is a core component go on to work as nurses.
- The occupations included in Figure 1 are projected to grow at 4% over the next decade, over twice the rate of all other occupations in Wales.
- Of these occupations medical radiographers expected to

experience the highest percent change in jobs, followed by midwives and nurses.

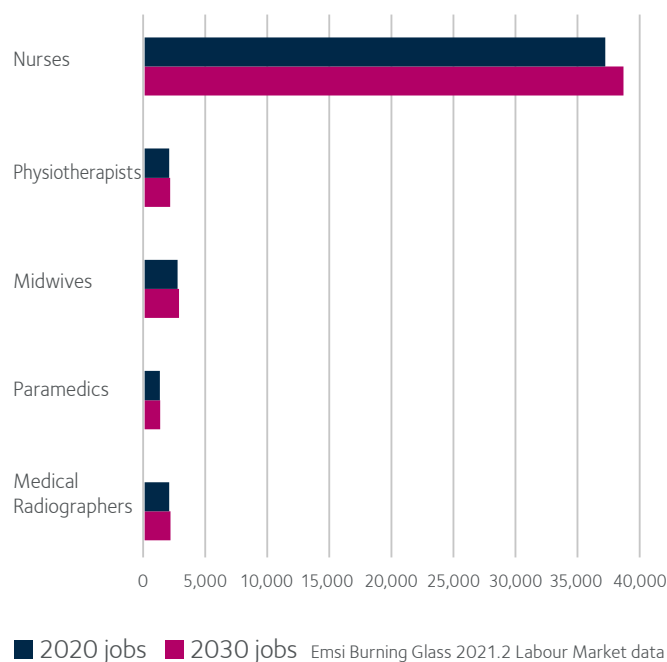


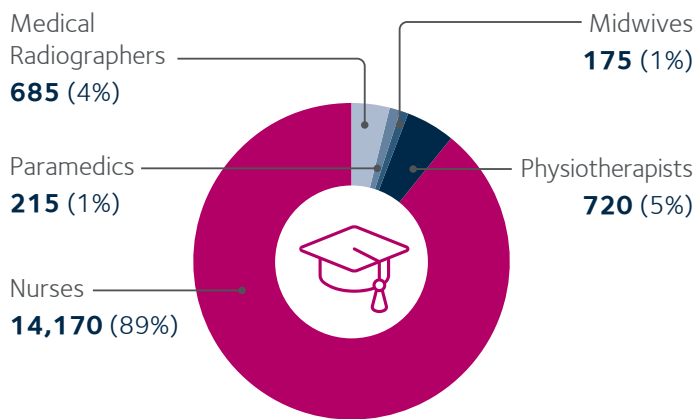
Figure 1 Current and projected jobs in Wales for top target occupation groups, 2020 and 2030

We can also look at occupations of students who study courses of which physiology is a core component in terms of job postings, or online advertisements for jobs posted by companies trying to attract applicants. The jobs data in Figure 1 are insightful given the standardised data collection method, but job postings data allow for more

real-time analysis of job demand. Figure 2 displays job posting information for the occupations of students who study courses of which physiology is a core component.

- Nurses comprised 89% of the job postings related to the top five occupation groups employing graduates with physiology education or training, or 14,170 unique job postings from March 2021 to February 2022.
- The job postings data shows that these occupations are in high demand, with employers typically posting three job postings for every one position that needs filled, all other positions across Wales typically have two job postings for every one position that needs filled.
- Medical radiographers, which is the fifth largest occupation graduates included in the analysis, is the third largest occupation in term of job postings.

Figure 2 Unique job postings in Wales for top occupations of graduates included in the analysis, March 2021 to February 2022



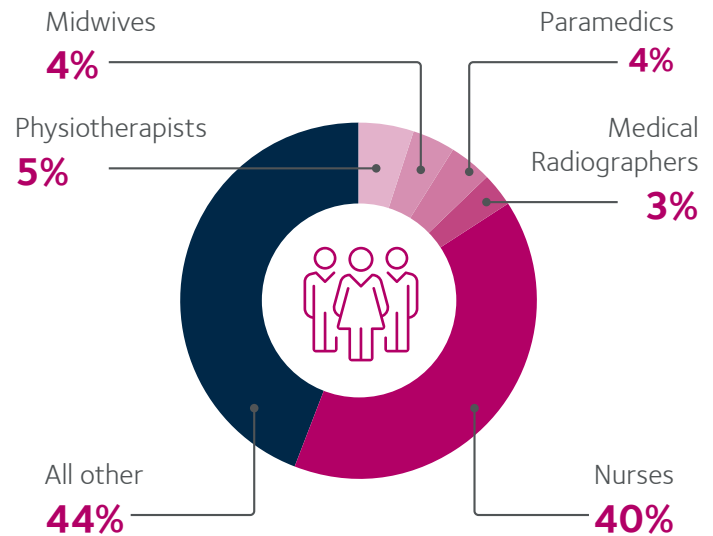
Source: Emsi Burning Glass 2021.2 Job Postings data

Top occupations of students who study courses of which physiology is a core component in the UK

Figure 3 shows the top occupations graduates who study courses of which physiology is a core component are employed in six months after receiving a qualification. It is based on the *Graduate Outcomes* survey and represents all students who study courses of which physiology is a core component, not just Welsh students who study courses of which physiology is a core component.

- Students who study courses of which physiology is a core component, work in a variety of occupations after leaving university. Graduates who study courses of which physiology is a core component are in a range of exciting and fulfilling careers that put their education into practice.
- The largest occupations for graduates who study courses of which physiology is a core component are nurses (40%), physiotherapists (5%), and midwives (4%).

Figure 3 Top occupation groups



Source: HESA Graduate Outcomes data





Physiology of sports concussion: cells to systems

Physiological research conducted by members of the Neurovascular Research Laboratory at the University of South Wales led by Professor Damian Bailey focuses on the integrated molecular-haemodynamic mechanisms underpinning accelerated neurodegeneration (loss of brain function) caused by recurrent concussion in contact sports such as rugby.

Studies related to the project include a longitudinal observation of professional rugby union players across one season and a comparison of retired rugby union players with a non-concussed control group. The findings of the studies suggest that sports-related concussion serves as a model of accelerated brain ageing and may increase a person's trajectory towards neurodegenerative disease in later life. Published findings from the studies have identified novel mechanisms and biomarkers of sports concussion that have helped better guide and inform clinical management of players. These biomarkers have translational relevance across the spectrum of health and neurodegenerative disease. Professor Bailey has contributed to a number of televised science documentaries highlighting

that the benefits of physical activity for the brain can be reversed due to the underlying damage caused by recurrent sports concussion.

The research has raised public and player awareness to the long-term neurological complications caused by recurrent sports concussion. The projects' science has contributed to establishment of 'Head for Change', a charitable Foundation pioneering positive change for brain health in sport focused specifically on supporting ex-players who are affected by neurodegenerative disease as a result of their professional sporting career in football or rugby.

Additionally, World Rugby has recently changed professional rugby union laws and guidance with a specific aim to reduce contact especially during training sessions prior to a game.



Professor Damian Bailey
University of South Wales, UK



Photo credit: University of South Wales