WELSH INSTITUTE OF PERFORMANCE SCIENCE
SEFYDLIAD GWYDDORAU PERFFORMIO CYMRU

The Welsh Institute of Performance Science

ANNUAL REPORT 2025

sportwales chwaraeoncymru

THE NATIONAL LOTTERY

The purpose of the Welsh Institute of Performance Science is to conduct multi-disciplinary, world-leading applied performance science projects that enhance the performance of Welsh athletes and businesses, improves the performance pathway, and builds capacity in these areas for the future. Additionally, WIPS aims to train future scientists, and increase strategic collaboration between Welsh sport, academia, and business.

Foreword

In 2025, the Sport Wales Institute launched a clear ambition: to create the most science-informed sporting system in the world. Delivering that ambition depends on the strength of our partnerships with sports and a shared commitment to evidence-led practice.

The Welsh Institute of Performance Science plays a vital role in enabling sports to tackle complex performance challenges with clarity and confidence. WIPS ensures that the questions raised by sports, coaches and practitioners are met with scientific rigour, robust methodology, and applied insight. Research does not sit alongside sport; it is embedded within it.

This year's projects demonstrate that intent in action. Safe Weight has strengthened the evidence base around weight-making in adolescent pathways, helping sports protect young athletes while sustaining performance. Insights 360 is providing structured, multi-stakeholder insight into training and competition environments, enabling targeted improvements that support athletes to thrive. When sports are supported by credible research, decisions become clearer, interventions more effective, and environments more resilient. Scientific rigour is not an academic exercise. It is what allows performance, health, and well-being to coexist sustainably.

Thank you to the Research Steering Group, our university partners, practitioners, and National Governing Bodies who continue to engage with openness and ambition. In particular, Liam and Esther's leadership ensures that research remains purposeful, applied, and grounded in the realities of sport.

This is how we strengthen Welsh sport. This is how we ensure success is built on evidence, not assumption.

Dan Farmer

Head of Sport System Institute Services and Data, Sport Wales

The year in review

2025 has been another productive year for WIPS and our partners, celebrating a decade of WIPS. We continue to work on 19 projects, including 14 new projects initiated this year. These span the three themes of Athlete Health and Wellbeing, Athlete Development and Athlete Environments, and support Sport Wales in progressing both system and sport projects.

We have completed six projects and shared the learning from these with practitioners and coaches. Particular highlights include the WIPS lunch and learn series, where WIPS members delivered talks on several of the projects featured in this report.

We also secured another year of funding from Sport Wales to continue ongoing projects and to generate further insights that support the growth and development of athletes across Wales. This extended support demonstrates the value of WIPS to athletes, coaches, and practitioners, and we are extremely grateful to everyone who has engaged with and supported our projects through 2025. We look forward to what we can all achieve together in 2026.

Executive summary of 2025

- Funding secured to extend to March 2026; and additional funding to extend to March 2027 is in progress.
- New website launched in December: www.wips.uk
- WGSSS PhD funding collaboration between Sport Wales, Bangor and Swansea University.
- Collaboration between WIPS and Sport Wales practitioners to deliver the SHE Thrives event in March, attended by over 100 practitioners, coaches and athletes.
- Six new RSG members appointed, covering: Sports Injury/Physiotherapy (Dr Julian Owen), Youth Sport (Dr Jonathan Hughes and Dr Kurtis Pankow), S&C (Dr Jason Pedley) and Disability Sport (Dr Lisa Trainor and Nathan Stephens) – A full list of RSG members is availble on our website: www.wips.uk
- Twelve research articles published

Read: A decade of WIPS

Following the 10-year anniversary of WIPS, we documented WIPS's approach to working with Sport Wales and its various stakeholders to ensure the project has maximum impact and to provide a template for best practice:
Knight C, Pankow K, Shearer DA, Bringer JD, Davies BR, Lewis OC, Woodfine ST & Kilduff LP. The Welsh Institute of Performance Science: a decade of integrated knowledge translation in elite sport. Sports Med. 2025, 55(6), 1329-1338.

Spotlighted projects

Athlete development

Safe Weight: Safeguarding Adolescent Futures through Evidence: Weight-making Environments and Impact on Growth, Health and Transitions

Dr Thomas Love (Swansea University), Dr Vicky Gottwald (Bangor University), Matt Archer (Sport Wales), Kathryn Brown (Sport Wales), Dr Lisa Trainor (Swansea University), Dr Kurtis Pankow (Swansea University)

Aims:

Weight-making is common in weight-category and weight-sensitive sports, where athletes manipulate body mass to meet competition requirements. but its early use in adolescent high-performance pathways raises concern for health, development, and long-term participation in sport.
Sport Wales has identified acute weight-making as an emerging welfare and performance issue within several Welsh sporting pathways. This project aims to build an evidence base on adolescent weight-making practices to inform safe, effective, and context-specific guidance for athletes and their support networks.
This initial phase consolidates existing evidence through a literature review to guide subsequent stakeholder-focused research and, subject to funding, the design and evaluation of interventions.

Outcomes:

The literature review synthesised evidence on: (1) policies and governance, (2) experiences of athletes, coaches, and parents, and (3) health and performance consequences of acute and chronic weight manipulation. The review highlights that adolescents are routinely exposed to adult weight-making practices, despite greater vulnerability due to growth, maturation, and psychosocial development.
Across sports, harmful acute methods such as dehydration, severe energy restriction, and rapid weight cycling are widely used, shaped by culture and informal knowledge rather than professional guidance. Some policy frameworks (e.g. collegiate wrestling) show that harmful practices can be reduced, but enforcement and age-specific protections are inconsistent. Clear gaps remain in understanding how athletes, coaches, and parents in youth performance systems experience and justify weight-making, supporting the need for qualitative stakeholder research and applied intervention work, pending further funding.

Impact:

This project establishes a robust evidence base for addressing weight-making in adolescent high-performance sport in Wale, informing discussion with Sport Wales and National Governing Bodies on policy alignment, education needs, and risk identification.
With external funding, it will progress to a multi-phase programme involving stakeholder engagement and the development of targeted tools for athletes, coaches, and parents. This phased approach offers a scalable model, beginning with low-cost evidence synthesis and progressing toward applied, system-level impact aimed at improving athlete welfare while supporting sustainable performance development across key developmental transitions.

Athlete development - FAW Centre for Football Research

‘What Does a World-Class Coach Educator Look Like?’ Exploring Effective Coach Education Within a European Context

Prof Brendan Cropley (USW); Dr Alan McKay (USW); Dr Lee Baldock (USW); Toby Nichols (Cardiff Metropolitan University); James Rowberry (FAW); and Dr David Adams (FAW)

PROJECT FUNDED BY THE UEFA RESEARCH GRANT PROGRAMME

Aims:

The aim of this project was to provide a rigorous examination of current UEFA Level 4 (A Licence) and 5 (Pro Licence) coach education programme delivery. Specifically, this study sought to:

(a) identify and examine principles of effective education, particularly the role of adult learning principles
(b) better understand the nature, role, and characteristics of the coach educator;
(c) critically examine the barriers impeding optimal learning experiences.

Outcomes:

UEFA National Associations need to prioritise building coach education programmes around andragogical principles of learning, towards adult-centred learning where coach educators work collaboratively with coaches. Thus, coach educators need to adopt a flattened hierarchy, working with learners to co-construct individual development plans, context-relevant learning tasks, and provide support through mentoring.
Effective coach education should focus on the holistic development of coaches, encompassing both their professional and personal competencies.
Coach educators play crucial roles as educators and developers.
Individuals’ transition into the coach educator role must be carefully considered to ensure that they are appropriately equipped philosophically, physically, and cognitively to be able to integrate principles of coach development (e.g., facilitating holistic growth; ongoing mentoring; facilitating the transfer of learning) into formal education programmes.

Impact:

This project will be fed back to UEFA, where it will be advised that UEFA National Associations consider their coach education offering based on the findings of this report, which highlight that effective coach education at Levels 4 and 5 is centre around personalised, immersive and reflective learning, grounded in peer interaction and real-world coaching scenarios.
It is anticipated findings will be used to: (a) support the creation of more focused coach educator training programmes to facilitate the development of an expert coach education workforce able to support effective learning and development; (b) profile existing coach educators to identify strengths and areas for development; (c) provide a frame to support coach educators’ reflective practices as a way of focusing ongoing learning and development; and (d) facilitate the integration of andragogy into programme content and delivery.

Spotlighted projects

Athlete environments

Developing an evidence-based model of knowledge translation for elite sport

Dr Kurtis Pankow (Swansea University), Dr Natalie Brown (Swansea University), Prof Camilla Knight (Swansea University), Prof Liam Kilduff (Swansea University)

Aims:

Practitioners and researchers are often looking for ways to integrate practice and research to maximise performance, health, and well-being outcomes for athletes. However, most of the current guidance for this type of work, called knowledge translation, comes from healthcare systems and might not capture the intricacies of doing this work in elite sport environments. With over a decade of high-impact WIPS projects completed, the aim of this project was to understand "what worked" in successful WIPS projects to refine WIPS' knowledge translation processes moving forward.

Outcomes:

Successful WIPS projects broadly followed the 5 steps recommended by WIPS, and this work highlighted some nuance in the process. These steps did not flow neatly from one to the next one but depended on specific conditions that needed to be met to progress. The steps and conditions were influenced by intra- and inter-personal attitudes of practitioners and researchers as well as organisational culture.

Impact:

This project has highlighted potential targets for researchers and practitioners to focus on improving (i.e., the conditions, attitudes, and organisational cultural) to maximise the likelihood of WIPS projects having a meaningful performance, health, or well-being outcome.

Athlete environments

Insights 360: Experience and environments

Dr Iwan Rowlands (USW), Dr Simon Middlemas (Sport Wales), Prof. David Shearer (USW)

Aims:

Making a sporting environment truly great requires an in-depth understanding of athletes' experiences. Yet previous Sport Wales projects were limited by inconsistent methodologies and single-stakeholder perspectives.

Building on the Thriving Position Statement and previous single-stakeholder work, six key features were identified as fundamental to athlete environments: safety, performance, autonomy, connection, enjoyment, and role models. These dimensions now drive every aspect of the project's design.

The project aims to:

- Capture multi-stakeholder perspectives to build holistic pictures of athlete environments across Welsh performance pathway sports
- Identify what's working well and where targeted improvements can make the biggest difference
- Equip Sport Wales practitioners with evidence-based, sport-specific recommendations to enhance their support

Outcomes:

Following successful piloting with Swim Wales, data collection is now underway with Boccia - the first sport to receive the full insights-gathering process. The structured methodology ensures consistency and rigour across multiple sports, with each receiving a tailored report highlighting strengths, areas for improvement, and actionable recommendations. Once multiple sports have been assessed, a system-wide report will reveal athlete environments across Welsh performance pathways.

Impact:

Insights 360 gives sports something they've never had before: a comprehensive, evidence-based view of their environment from every angle. By identifying both what's working and where intervention is needed, this project aims to improve experiences for athletes, coaches, parents, and PDs across Welsh sport.

Athlete health & wellbeing

Perceptions, awareness and disclosure of stress urinary incontinence in sport

Sian Vaughan-Evans (Sport Wales), Dr Natalie Brown (Swansea University), Dr Lisa Trainor (Swansea University), Dr Laura Mason (Swansea University), Gillian McCabe

Aims:

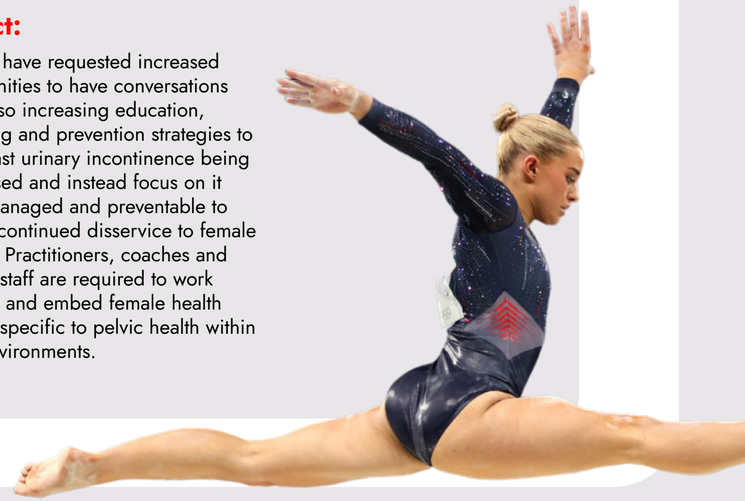
Recent research has recommended exploration of pelvic floor dysfunction (PFD) among elite female athletes, as existing evidence does not consider the in-depth lived experience and perceptions of highly trained female athletes needed to understand why PFD remains a largely unspoken topic in sport. Therefore, the aim of this study was to understand SUI perceptions, awareness and disclosure in female athletes. This will help heighten awareness and understanding of support to female athletes and PFD in sport.

Outcomes:

Three key themes emerged from the research; 1) limited understanding of urinary incontinence 2) silencing experiences and missing realities and 3) sport-specific normalisation, suffering is the standard. These themes highlighted that there is little understanding and awareness of PFD, athletes would manage symptoms in silence other than in sports with a high prevalence of urinary incontinence where the symptoms have been normalised.

Impact:

Athletes have requested increased opportunities to have conversations whilst also increasing education, screening and prevention strategies to move past urinary incontinence being normalised and instead focus on it being managed and preventable to avoid a continued disservice to female athletes. Practitioners, coaches and support staff are required to work together and embed female health support specific to pelvic health within sport environments.



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Thank you to all the members of the Research steering group and Senior management board for their contributions. Thank you to Bangor University, Cardiff Metropolitan University, Swansea University, University South Wales, Football Association Wales, National Governing bodies, Sport Wales, and Home Nation Institutes.

For more information including the structure of WIPS, previous projects and resources, and to submit and Expression of Interest: www.wips.uk

The Welsh Institute of Performance Science

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New projects in 2025

Athlete development

- How can a sporting system that equally prioritises health, wellbeing, and performance best support athletes of all ages in achieving their full potential.
- Why and to what extent do growth and maturation related factors influence entry onto and exit from national development.
- The growth of the 'coach-analyst': Exploring perceptions of the changing role of the performance analyst within international football.
- Pathway Mapping in Wales: a literature review of important variables in talent development and on sporting pathways.
- Effective load and overload monitoring practices to aid injury prevention for youth female footballers during maturation.
- Living on the edge: a multidisciplinary investigation into weight making practices in adolescent high performance sporting pathways.

Athlete environments

- Understanding the athlete environment: a mixed-method approach integrating athlete, parent, and performance staff perspectives (Insights 360: Experience and Environments).

Athlete health & wellbeing

- The effect of menstrual cycle phase on cognitive-motor abilities.
- Low energy availability screening tool – a qualitative review of it's use in Welsh Triathlon.
- Actif Period Project – addressing barriers to physical activity created by period pain and heavy bleed in young women and girls.
- Establishing Return-to-Sport Criteria Following Isolated Meniscal Repair.
- Longitudinal changes in DXA associated with performance in Welsh athletes.
- Assessment and management of stress urinary incontinence in female athletes

FAW Centre for Football Research

- Understanding sports performers' mental well-being and performance: The role of reflective practice in facilitating hedonic and eudaimonic factors through needs satisfaction and self-regulation (FAW).
- The growth of the 'coach-analyst': Exploring perceptions of the changing role of the performance analyst within international football.