ISESA 2025 Conference Book of Abstracts

The Past, Present and Future of Sport and Exercise Sciences Research and Applied Practice in Ireland.

22nd and 23rd May 2025

South East Technological University (SETU)
O'Connell Bianconi Building
Waterford

IRISH SPORT AND EXERCISE SCIENCES ASSOCIATION

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ISESA Chair Address

As Chair of the Irish Sport and Exercise Sciences Association you are very welcome to the Inaugural ISESA conference in SETU Waterford. This is a momentous occasion for the ISESA and we were delighted to have developed the association since our launch in November 2023 and to be here with you all at our first national conference. Thank you all for your continued support for the growth and development of our sport and exercise sciences community and association in Ireland.

We have an exciting two days ahead and we look forward to postgraduate students, undergraduate students, industry experts, researchers, practitioners and academics sharing their work, experiences and research with us all. Professional development, networking and collaboration is at the core of the ISESA. This conference would not have been possible without the support of the committee and board members of the ISESA, our administrator, the speakers, the postgraduate and undergraduate students, SETU Waterford, our HEI organisational members, our exhibitors and our sponsors. Thank you all for supporting our Inaugural Conference.

Since our launch in November 2023 the ISESA has worked on expanding and developing the ISESA in line with our mission and vision. We have continued to provide valuable professional development in sport and exercise sciences through our ISESA Blog Series, our ISESA Podcast Series, and our ISESA Webinar Series. We have run three rounds of our Advanced Sport Science Accreditation and have just completed a 12 month project where we have developed a scope of practice and standards document for an Accredited Sport and Exercise Scientist. This accreditation is targeted at graduates from Level 8 Sport and Exercise Science courses and we are excited to launch this document at the Inaugural Conference. We aim to open applications for this new accreditation in late 2025. Another significant development for the ISESA has been the approval of a new constitution for the association and the development of a new website. This new website will include new branding and a member login area and we look forward to the launch of the website together with our individual membership options and member area over the coming months.

Finally thank you to you all for taking the time to be here with us in Waterford for our Inaugural Conference. The ISESA is here to be our representative association and it is fantastic to see such support for the continued growth of our young association.

Yours,
Prof Tom Comyns, Chair of the ISESA

Welcome Address and Committee Chair Address

ISESA are thrilled and honoured to host our inaugural event in SETU Waterford from 22nd to 23rd May 2024. Founded in 914 AD, Waterford is Ireland's oldest city. During its 1110 year history, Waterford has contributed significantly to Irish cultural heritage. Perhaps most importantly, Waterford was the birthplace of Thomas Francis Meagher who, in 1848 returned from France with the first Irish tricolour flag which was flown in public for the first time at number 33 The Mall in Waterford City. That flag is flown worldwide on St Patrick's day - a celebration that can also be traced back to Waterford. The St Patrick's day feast was first placed on the church's calendar in the early 1600's thanks to Waterford born friar, Luke Wadding - whose name adorns the library here on campus.

From a sporting perspective, Waterford was also home to one of the earliest athletic competitions held under the auspices of the GAA back in 1885. In more recent memory, Waterford has celebrated the success of many athletes including John Treacy who won silver in the 1984 Olympic marathon in LA, Sean Kelly who is considered one of the finest cyclists of the 1980's and early 90's, John O'Shea who is one of the most decorated Irish footballers of all time, Niamh Briggs who has won 2 Women's 6 nations championships and Henry de Bromhead who has trained over 25 Cheltenham Festival Winners.

The congress will take place in SETU Waterford Campus, with this venue close to hotel accommodation and is a short distance from Waterford's City Centre. The Past, Present and Future of Sport and Exercise Sciences Research and Applied Practice in Ireland is the theme for the ISESA conference in Waterford and reflects a broad programme of scientific presentations across all sport and exercise disciplines, bringing together students, academics, the sports business industry and the scientific community.

We invite you to ISESA 2025 in SETU Waterford and look forward to providing a great learning event, including many networking and social opportunities.

Yours in Sport and Exercise Sciences,

The ISSESA 2025 Conference Planning Group
Dr Adam Grainger (Conference Chair)

Conference Programme

Day 1 - Thursday 22nd May 2025

09:00 **Registration, poster viewing, exhibitor viewing, networking and refreshments**

09:45 **Opening Address** **Main Auditorium**

Welcome from Dr Adam Grainger, (ISESA Conference Chair)
& Prof Tom Comyns (ISESA Chair)

09:50 **Opening Keynote:** **Main Auditorium**

Dr Diane Cooper (CEO and Founder of EduFit)

From Research to Real-World Impact:
The Evolution of Exercise Science in Health, Ageing, and Chronic Disease Management

This keynote is kindly sponsored by

Athletic Rehabilitation Therapy
IRELAND

10:30 **Transition time to breakout rooms**

10:40 **Parallel invited symposia**

Empowering Diverse Groups in Sport and Exercise
– Enhancing Participation and Performance

Football is Medicine: Harnessing the Power of the Game for Adult Male Health and Well-Being in the Community

Dr Paula Carroll (SETU Waterford) and Steven O'Connell (Football Cooperative)

Room: G17

Optimising Performance in Paralympic Sport: Pathways to Excellence

Brian Hughes (Paralympics Ireland) and Dr Ciara Losty (SETU Waterford & Sport Ireland Institute)

Main Auditorium

Closing the Gap: Advancing Research about Women in Sport

Dr Aoife Lane (TUS Athlone) and Dr Patricia Jackman (University of Lincoln)

Room: G18

11:20 Refreshment break, poster viewing, networking and exhibitor viewing

11:50 Postgraduate presentations

Discipline area: Applied Sports Performance

Room: G17

Discipline area: Sports Medicine & Athletic Therapy

Room: G18

Discipline area: Advances in Data Analytics & technology for injury & performance

Room: G19

Discipline area: Exercise & Chronic Conditions

Room: G20

12:40 Postgraduate poster presentations

13:15 Lunch

14:00 Elite Athlete Panel Discussion **Main Auditorium**

Involving Tom Barr (Irish 400m Hurdles Olympian),
Laura Treacy (County Camogie Player),
Tiarnán O'Donnell (Irish Rowing Paralympian)
led by Bruce Wardrop (SETU Waterford)

14:35 **Invited symposium:**

Prof Brian Caulfield (University College Dublin) **Main Auditorium**

Extracting meaningful insights from wearable sensor data

This symposium is kindly sponsored by

15:10 **Refreshment break, networking and exhibitor viewing**

15:40 **Parallel invited symposia**

Bridging the Gap from Theory to Practice:
Approaches in Sport and Exercise Sciences

Promoting Physical Activity in Adolescence – 15 Years of Y-PATH Evidence.	**Sports Science: Past, Present, and Future**	**Nutrition, Exercise and Health: Bridging Multidisciplinary Research and Practice**
Dr Wesley O'Brien (University College Cork)	Phil Moore, Paul Carragher, Dr Ciara Sinnott O'Connor Sport Ireland Institute	Dr Catherine Norton (University of Limerick)
Room: G17	**Main Auditorium**	**Room: G18**

16:20 **Transition time**

16:30 **Invited symposium** **Main Auditorium**

Leading Sports and Data Science: Exploring the Past, Present, and Future
Dr Brian Moore (Orreco), Charlie Pedlar (Orreco and St Mary's

University) and Kerry McGawley (Orreco and Mid Sweden University)

17:30 **Closing Day 1**

19:00 **Social gathering at the "Revolution" in Waterford**
Registration required for the social evening with music and finger food available
Please bring your name badge / e-ticket for the evening.

Day 2 - Friday 23rd May 2025

07:00 **Social Jog at SETU Arena**
Meeting Point Waterford Greenway, SETU West Campus Car Park

08:30 **Registration, poster viewing, exhibitor viewing, networking and refreshments**

09:00 **Opening reflection from Day 1** **Main Auditorium**
Dr Adam Grainger (ISESA Conference Chair)

09:15 **Opening Keynote: Dr John Kiely (University of Limerick)** **Main Auditorium**
The Future of Contemporary Sports Science:
Where It's Headed, Where It Needs to Go, and Why.

This keynote is kindly sponsored by

UPMC | SPORTS MEDICINE

09:50 **Transition time to breakout rooms**

10:05 **Parallel invited symposia**
Shaping Careers and Innovation in Contemporary Sport and Exercise

Artificial Intelligence **Realities** **Exercise and Chronic**

- Breaking Barriers and Shaping the Future of Sport.

Dr Kieran Collins
(TU Dublin)

Room: G17

of Embedded High-Performance Sport: Translating Theory into Practice.

Dr Michael Cahill
(COO Setanta)

Room: G18

Disease: Advancing Health through Sport and Exercise Science.

Dr Ciara McCormack
(National University of Ireland, Maynooth)

Main Auditorium

10:45 Refreshment break, poster viewing, networking and exhibitor viewing

11:15 Invited symposium **Main Auditorium**

High-Performance Research and Application:
From the Pitch to Performance Apparel - Dr Peter Tierney

This symposium is kindly sponsored by

11:50 **Careers Panel** **Main Auditorium**

Orla Hayes (Leinster Rugby), Dr Arthur Dunne (SETU and Sport Ireland Institute) and Dr Fiona Skelly (TUS)
Session Chair: Prof Tom Comyns

12:40 Lunch and exhibition (Undergraduate poster presentations 13:20 - 13:50)

14:00 Postgraduate presentations

Discipline area: Physical Activity & Health

Discipline area: Physiology & Nutrition

Discipline area: Sports Psychology

Discipline area: Women in Sport

Room: G17	Room: G18	Room: G19	Room: G20

14:50 **Transition time**

15:00 **Closing Panel** **Main Auditorium**

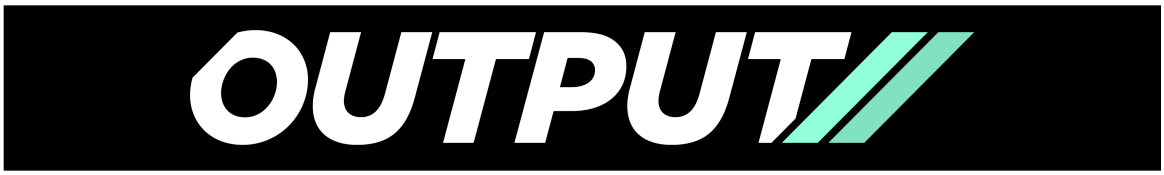
Navigating the Realities of Multidisciplinary Practice:
In Sport and Exercise Performance
Dr John Kiely, Dr Aoife Lane, Dr Peter Tierney, Dr Ciara McCormack
Session Chair: Prof Giles Warrington

15:40 **Awards ceremony and closing address** **Main Auditorium**

ISESA Chair Prof Tom Comyns

16:00 **Close.**

This event is kindly supported by:



Our exhibitors are:

DANU

FITNESS EQUIPMENT IRELAND

KineMo

kinetikIQ
POWERED BY PRECISION SPORTS TECHNOLOGY

TIMING IRELAND

Our HEI exhibitors are:

Atlantic Technological University

Maynooth University

Munster Technological University

Setanta College

Technological University of the Shannon

University College Dublin

University of Limerick

PG Oral Presentations

Friday Summary - Further abstract details below.

Physical Activity and Health - G19

Alan Dineen	Gateways to Growth: The Athlete Experience of Gateways in Irish Para Sports
Aoife Langford	The Reliability of an Obstacle Course to Assess Irish Primary School Children's Fundamental Movement Skills
Sarah Dillon	Exploring Teenage Girls' Preferences and Perspectives towards Physical Activity and Dance
Lawrence King	The potential role of volunteer peers in delivery of community-based resistance training for older adults
Christopher McDermott	Football Cooperative, a community-based physical activity social intervention for men: The development of an implementation strategy for scale-up

Physiology and Nutrition - G18

Maeve Mannion	Identification of Weight Making Practices in Naturally Menstruating Female Athletes Competing in Weight Category Sports
Lorcan Mason	The Sleep, Recovery, and Nutrition Characteristics of Elite Adolescent Athletes
Aoife Russell	The effect of competitive female Gaelic games match play on neuromuscular function
Joelle Azzam	Prevalence, Practices and Influences of Rapid Weight Loss Among Adolescent Combat Sport Athletes in Ireland: A Cross-Sectional Study

Jemima Turley	Body composition changes in jockeys overtime: A Systematic Review

Sports Psychology - G17

Jennifer Rice	The effects of acute resistance exercise on anxiety related responses in young women with analogue generalized anxiety disorder and their associations with expected psychological outcomes
Claire McDonald	Mental health in thoroughbred horse breeding: Prevalence and risk factors
Laura Linnane	A qualitative study to explore of the experiences of pregnancy and motherhood on elite Irish athletes
Georgia Tobin	Stable Minds: An Investigation into the Mental Health and Risk Factors among Trainers and Stable Staff in Thoroughbred Horse Racing
Darragh O'Sullivan	Acute and Chronic Effects of Guidelines-Based Progressive Resistance Exercise Training compared to a Low-Intensity Sham Attention-Control on Depressive Symptoms among Young Adult Women with Analogue Generalized Anxiety Disorder: Design and Methods for a Randomized Controlled Trial
Conor Whelan	Exploring the Role of Mentorship in Supporting Mental Health and Well-Being Among Elite Gaelic Games Student-Athletes

Women in Sport - G20

Killian Bibby	How to Develop And Assess An Education Intervention On Female Breast Health In Rugby Union: A study protocol

Dairine White	A longitudinal study into the confounding factors of hamstring strain injury in female field-sport athletes over one playing season
Mary O'Donnell	Not Small Men: The absence of female reference in sports engineering research
Niamh Bradley O'Connor	Balancing Rigour and Reality: Practical Insights and Considerations for Menstrual Cycle Research
Sarah Doran	Factors Affecting Development of Kicking Techniques in Ladies Gaelic Football: A Cross – Sectional Study of Nine Senior Intercounty Games and Reflections of Five Female GAA Development Officers
Yvone O'Connell	An investigation into the participation of women across all aspects of martial arts on the island of Ireland

Theme: Advances in Data Analytics & Technology for Injury & Performance

Concussion Recovery Time, Return-to-Play Protocols, and Mandated Sit-Out Periods among Adult Amateur Contact Field Sports: A Systematic Review

Authors: Power, L. [1,2,3]; Kenny, I. [1,2,3,4;] Zynda, A.J. [5], John Mulvihill, J. [2,3,6]; Collins, M.W. [5]; Anthony P. Kontos A.P. [5]; Comyns,T [1,2,3]

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5. Department of Orthopaedic Surgery, University of Pittsburgh; University of Pittsburgh Medical Center Sports Medicine Concussion Program;
6. School of Engineering and Bernal Institute University of Limerick

Background/Introduction: Field-based contact sports, including American football, Rugby, soccer, and lacrosse, are among those with the highest sport-related concussion (SRC) rates [1,2]. Regarding SRC treatment, a gradual return-to-play (RTP) protocol is commonly used [3]. However, variability in RTP protocols between sporting bodies and scholastic institutions [4] makes accurately interpreting published SRC severity data difficult. This systematic review aims to compare recovery times, RTP protocols, and mandated sit-out period duration among adult amateur contact field sports.

Methodology: Database sources (MEDLINE, CINAHL Complete, SPORTDiscus, APA PsycInfo, and APA PsycArticles) were searched through EBSCOhost Web on May 13th, 2024. Eligibility criteria included: published in English in a peer-reviewed journal from 2015-2024, adult population (≥ 18 years), amateur field-based contact sport athlete population, diagnosed and/or suspected SRC, and recovery time (days/weeks) data available.

Results: 19/6085 (<1%) studies comprising 58 datasets met all inclusion criteria. The studies comprised American football (10/19, 52.6%), field-hockey (5/19, 26.3%), lacrosse (9/19, 47.4%), ladies Gaelic football (1/19, 5.3%), Rugby (8/19, 42.1%), soccer (10/19, 52.6%), and sprint football (1/19, 5.2%). Mandated sit-out periods ranged from 0-21 days across sports, and RTP protocol durations ranged from 5-21 days. The most common RTP protocol duration was 7 days (n=31/58), and the mandated sit-out period was no same-day return on the day of injury (n=25). Rugby had the longest reported SRC recovery duration (34 days) and mandated sit-out period (21 days).

Discussion: This systematic review illustrates variability in SRC recovery time across amateur adult contact field sports, with clear trends of consistently longer RTP times in Rugby (18.5-34 days) than in American football (7-16 days). The frequent use of mandated sit-out periods in Rugby Union internationally of >10 days may be one confounding factor for these longer SRC recovery data. Access to medical involvement or support staff within the studies varied, possibly affecting enforcement of and compliance with mandated sit-out periods and full completion of RTP protocols.

Conclusion: Recovery time following concussion in contact sports should be interpreted in light of sport type, mandated sit-out policies, and RTP protocols. Empirical evidence should drive decisions in RTP protocols and sit-out periods, which are currently inconsistent between sports.

References:

1. Harmon KG, Drezner JA, Gammons M, Guskiewicz KM, Halstead M, Herring SA, et al. American Medical Society for Sports Medicine position statement: concussion in sport. Br J Sports Med. 2013 Jan;47(1):15–26.

2. Matias-Soto J, Infante-Cano M, García-Muñoz C, Pineda-Escobar S, Martinez-Calderon J. Concussion Incidence by Type of Sport: Differences by Sex, Age Groups, Type of Session, and Level of Play An Overview of Systematic Reviews With Meta-analysis. J Orthop Sports Phys Ther. 2024 Nov;54(11):1–9.

3. Patricios JS, Schneider KJ, Dvorak J, Ahmed OH, Blauwet C, Cantu RC, et al. Consensus statement on concussion in sport: the 6th International Conference on Concussion in Sport–Amsterdam, October 2022. Br J Sports Med. 2023 Jun 1;57(11):695–711.

4. Prock M, O'Sullivan DM, Tiernan S. Comparing return to play protocols after sports-related concussion among international sporting organisations. Phys Sportsmed. 2024;0(0):1–11.

A six-month prospective self-recording injury surveillance study in Irish amateur golf

Authors: Gallagher, T. [1], Kenny, I.C. [1,2,3,4] and Warrington, G.D. [1,2,3]

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3. Health Research Institute, University of Limerick, Ireland
4. Lero, the Research Ireland Centre for Software

Background/Introduction: In 2020, the International Olympic Committee (IOC) published a Consensus statement calling for ''sport-specific statements with more detailed recommendations relevant for the sports and/or setting''1. A subsequent consensus statement from the International Golf Federation (IGF) provided researchers with the tools to assist in data collection and research in relation to golf injuries and illness, which is designed to encourage consistency in recording and reporting epidemiological data of same2. The Amateur Golf Injury Surveillance project (AGIS) aims to assess Irish amateur golf using this injury surveillance framework.

Method: The study sought to design and develop a secure, web-based system, capable of collecting data as part of a longitudinal injury surveillance programme. Participants registered their interest in partaking in AGIS at the end of a previous survey which investigated current injury surveillance practices. Data were logged weekly by each participant with a reminder email sent each week. Participants were provided with training on

how to complete the weekly data collection using the web-based system, including interpretation of the clinical Orchard OSIICS classifications.

Results: During the six-month data collection study, 21 participants completed the study with 81% of these fully compliant. Sixty two percent of participants reported experiencing an injury or illness that affected their ability to play golf, with 137 injuries and 9 illnesses documented. New injuries/illnesses accounted for 34% of these, while the remaining 66% were recurring or previously reported.

Discussion: The current study enabled reliable documentation of clinically relevant injury and illness to aid golfers and clinical practitioners and in player welfare decision-making.

Conclusion: To enable coaches, practitioners, and Golf Ireland the sport's national governing body (NGB) to implement evidence-based injury prevention programmes for golfers, ongoing comprehensive injury surveillance is required in Irish amateur golf.

References:

1. 'International Olympic Committee Consensus Statement: Methods for Recording and Reporting of Epidemiological Data on Injury and Illness in Sports 2020 (Including the STROBE Extension for Sports Injury and Illness Surveillance (STROBE-SIIS))', (2020) Orthopaedic Journal of Sports Medicine, 8(2), 1-33, available: http://dx.doi.org/10.1177/2325967120902908.

2. Murray, A., Junge, A., Robinson, P.G., Bizzini, M., Bossert, A., Clarsen, B., Coughlan, D., Cunningham, C., Drobny, T., Gazzano, F., Gill, L., Hawkes, R., Hospel, T., Neal, R., Lavelle, J., Scanlon, A., Schamash, P., Thomas, B., Voight, M., Wotherspoon, M. and Dvorak, J. (2020) 'International consensus statement: methods for recording and reporting of epidemiological data on injuries and illnesses in golf', British journal of sports medicine, 54(19), 1136-1141, available: http://dx.doi.org/10.1136/bjsports-2020-102380.

The Use of, and User Experience of Data at Elite Level Gaelic Games

Authors: Kavanagh, K, Middleton, L., Collins K

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Background/Introduction: Data and technology is revolutionising the way athletes reach peak performance and compete. Digital literacy is the general understanding of data while making evidence-based decisions to practically apply these insights to real-world decisions. Technology is one of the main driving forces within an

organisation. An insufficient level of research is available on digital and data literacy in the sporting domain. By investigating how practitioners gather, analyse, and communicate their data, we can better understand the individual and organisational factors that make data literacy practices within the sporting domain productive and practical. The aim of the current study was to evaluate the use of, and user experience of data at elite level Gaelic games.

Methods: A qualitative methodological approach was followed with an exploratory-correctional scope using semi-structured interviews questions followed by a thematic analysis on eight ((n = 7 male; n = 1 female) > 21 years old voluntarily recruited) experienced practitioners. Participants were currently or previously employed by an inter-county GAA team for minimum of one season. Interviews were conducted via Microsoft Teams and transcripts were coded using the ATLAS.ti v.22 qualitative data analysis software.

Results: The results highlight the need for and possible lack of basic data analyses measures and expertise to generate these analyses, followed by an appropriate data feedback system in the organisation to ensure all stakeholders are informed of the decision-making process. Operations must be time efficient which can be done through centralisation as well as the need for consistent technology to help with data collection and fluency in all departments.

Conclusion: Insight into the function of digital literacy and provides evidence for the most important areas that require assistance. The findings of the current study present opportunities for practitioners and coaching staff alike in sporting organisations to consider the influence of organisational and technological contexts on data practices. The pilot work can guide the next stages needed to understand the opportunities available to develop experiences and learning tools for data literacy in the sporting domain.

References:

Braun, V., & Clarke, V. (2006). Using thematic analysis in psychology. Qualitative Research in Psychology, 3(2), 77–101. https://doi.org/10.1191/1478088706qp063oa

Data Analysis of an Elite Rugby Sevens Dataset

Authors: Finnegan, C. [1,] O'Hagan, A.D. [1], Bezbradica, M. [2], Scriney, M. [2,] Walsh, J.C. [3].

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2. School of Computing, Dublin City University.
3. School of Psychology, University of Galway

Background/Introduction: The increasing use of data analytics has significantly improved performance analysis (PA) and decision-making in elite sports (Millington and Millington 2015). Rugby sevens is a high-intensity sport, with matches played in quick succession, requiring time-efficient PA (West et al. 2014). Machine learning (ML) can enhance PA by identifying key patterns that contribute to success (Bunker and

Susnjak 2019). However, the reliability of such models depends on the dataset quality (Côté et al. 2024). Poorly structured or unclean data leads to misleading insights, affecting the validity of performance-based decisions. This work focuses on the data analysis applied to an elite rugby sevens dataset, detailing the necessary steps for data cleaning, exploratory analysis, and correlation assessment. By ensuring a high-quality dataset, this work lays the groundwork for future ML applications in rugby sevens.

Method: Utilising pandas, seaborn, and matplotlib, this work demonstrates an approach to preparing rugby sevens data for advanced PA through ML. The dataset includes match performance metrics from elite-level rugby sevens competitions, including GPS-derived game demands and key performance indicators. A crucial aspect involved merging and aligning these two datasets, a task that requires careful handling to ensure consistency and accuracy. Pre-processing involves data cleaning, handling missing values, and outlier detection to improve data integrity and consistency (Côté et al. 2024). Exploratory data analysis is conducted to identify patterns in player and team performance. Correlation analysis evaluates relationships between different performance metrics, providing insights into performance drivers in rugby sevens.

Expected Outcomes: This work aims to produce a standardized and cleaned dataset, ensuring reliability for future ML applications. The correlation analysis is expected to highlight performance relationships that can inform future works on the integration of datasets in the analysis of performance in rugby sevens.

Discussion: The results will emphasize the importance of high-quality data pre-processing in sports science research, highlighting the necessity of rigorous data preparation before applying ML techniques.

Conclusion: This study outlines a structured approach to data cleaning, exploratory analysis, and correlation assessment in rugby sevens. Through leveraging non-traditional sports science tools, this work contributes to the development of data-driven PA methodologies in rugby sevens.

References:

1. Bunker, R. and Susnjak, T., 2019. The Application of Machine Learning Techniques for Predicting Results in Team Sport: A Review.

2. Côté, P.-O., Nikanjam, A., Ahmed, N., Humeniuk, D., and Khomh, F., 2024. Data cleaning and machine learning: a systematic literature review. Automated Software Engineering, 31 (2), 1–75.

3. Millington, B. and Millington, R., 2015. 'The Datafication of Everything': Toward a Sociology of Sport and Big Data. Sociology of Sport Journal, 32 (2), 140–160.

4. West, D.J., Cook, C.J., Stokes, K.A., Atkinson, P., Drawer, S., Bracken, R.M., and Kilduff, L.P., 2014. Profiling the time-course changes in neuromuscular function and muscle damage over two consecutive tournament stages in elite rugby sevens players. Journal of Science and Medicine in Sport, 17 (6), 688–692.

Embodiment in VR for motor learning – how does the perspective in VR (1st person versus 3rd person) during AOMI technique influence performance?

Authors: Svetek T.

Department of Psychology, University of Limerick, Limerick, Ireland

Background/Introduction: The integration of mental imagery with action observation (AOMI) has demonstrated very clear and meaningful benefits in learning, rehabilitation and performance enhancement (Binks et al., 2023; Eaves, 2016). Taking AOMI a step further, and with the advent of technologies one can use virtual reality (VR), which offers full body immersion, potentially making mental imagery more effective than ever before. This study aims to ivestigate the influence of AOMI intervention on first person versus third person perspectives in VR on learning a new motor task – knot tying. The implementation of the findings could be used in athletes' performance enhancement, rehabilitation or acquisition of new skills. Given that VR is a rapidly evolving field, research in this area is both prevalent and necessary to fully understand its benefits and implications.

Method: Randomised controlled trial, with 2 conditions and a control group will be performed among 54 participants. After a baseline test, they will perform an intervention of watching a 360 VR video, followed by a performance test. Retention test will be performed two weeks later. Factorial 3 (FPP, TPP, Control) x 3 (Pre, Post, Retention) ANOVA will be used for comparison of the results between and within the groups.

Expected outcomes: It is expected for 1st person perspective group to outperform the 3rd person perspective group and the control group. It is also expected for 3rd person perspective group to outperform the ocntrol group. The control group is expected to improve because of the learning effect.

Discussion: This study aims to provide insights into the effects of first-person versus third-person perspectives in virtual reality on motor skill acquisition. By addressing a gap in the literature, this research has the potential to inform future applications of VR in sports performance and rehabilitation. Athletes could then experience immersive simulations and prospectively train more efficiently, even during recovery periods, and potentially learn new skills faster.

Conclusion: The anticipated findings will contribute to understanding how immersive virtual reality can enhance motor learning, potentially offering cost-effective and innovative methods for improving sports performance and rehabilitation practices.

References:

1. Binks, J. A., Wilson, C. J., Van Schaik, P., & Eaves, D. L. (2023). Motor learning without physical practice: The effects of combined action observation and motor imagery practice on cup-stacking speed. Psychology of Sport and Exercise, 68, 102468.

2. Eaves, D. L., Riach, M., Holmes, P. S., & Wright, D. J. (2016). Motor imagery during action observation: a brief review of evidence, theory and future research opportunities. Frontiers in neuroscience, 10, 514.

3. Fusco, A., & Tieri, G. (2022). Challenges and perspectives for clinical applications of immersive and non-immersive virtual reality. Journal of Clinical Medicine, 11(15), 4540.

4. Pastel, S., Petri, K., Chen, C. H., Wiegand Cáceres, A. M., Stirnatis, M., Nübel, C., ... & Witte, K. (2023). Training in virtual reality enables learning of a complex sports movement. Virtual Reality, 27(2), 523-540.

Validation of a novel motion capture system for movement and sports assessment: The Precision Study

Authors: Luke Conroy [1,2], Eamon Laird [3,4.]

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2. Department of Environmental Sciences, Atlantic Technological University, Sligo, Ireland.

3. Department of Health and Nutritional Science, Atlantic Technological University, Sligo, Ireland.

4. School of Nursing & Midwifery, Trinity College Dublin, Ireland

Background/Introduction: Approaches to measuring movement competency include wearable inertial monitoring units (WIMUs) and laboratory grade multi-camera marker-based motion capture systems (MOCAP)1. The latter systems require dedicated calibrated MOCAP lab space, multi-camera rigs, capture hardware and technicians. Marker-based MOCAP systems are often out of reach for the majority of sport and exercise science professionals 2. A novel motion capture system has been developed that uses a single LiDAR-enabled mobile device, suitable for use 'in the field' by sport and exercise professionals. The aim of this study was to compare and validate this new capture system against the current gold standard.

Methods: Participants were selected to undertake 5 defined movements (with 5 repeated measures) including shoulder external rotation, hip internal rotation etc. These were conducted under strict laboratory conditions at ATU, Galway Biomechanics Lab. The gold standard selected was a BTS Bioengineering eight camera system in a controlled environment of specific lighting conditions. The test motion capture system

was the LiDAR-enabled system 'KinetikIQ' from Precision Sports Ltd, Galway City. Accuracy in Range of Motion ROM) assessment was investigated, comparing KinetikIQ against the gold standard.

Results: The results indicated that the KinetikIQ was capable of a consistent high level of agreement with the gold-standard system for calculation of ROM metrics e.g. in calculation of shoulder external rotation (left) the KinetikIQ system was within 1-2% of the ROM value calculated using the marker-based system. The study also revealed that accuracy was dependent on the orientation of the LiDAR camera. Lower levels of accuracy in other movements were linked to camera placement that resulted in (partial) occlusion of anatomical landmarks of interest.

Discussion: The study revealed that in order to achieve comparable levels of accuracy it is necessary to have consistency in adhering to optimal camera orientation during movement capture (guidelines for which are provided by the manufacturer).

Conclusion: Early results suggest that LiDAR mobile based mocap can be comparable to the gold standard and provides a system that is significantly more accessible. This methodology requires further validation against a wider range of exercises and environmental conditions.

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Theme: Applied Sports Performance

Academy Coaches' Experiences of Managing Individual Differences in the Maturity of Gaelic Football Players

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Background/Introduction: In Gaelic football, player selection is based upon subjective assessments of player ability and potential (i.e., the 'coaches' eye'), which may be confounded by individual difference in biological maturation (Fitzgerald et al., 2024). Little is known about coaches' perceptions and understanding of growth and maturation, particularly in relation to the processes of player selection and development. This study explored coaches' knowledge, beliefs and experiences related to the impact of growth and maturation upon player selection and development in Gaelic football.

Method: Using qualitative methods, 16 coaches from an academy in Ireland participated in focus groups to explore their beliefs and experiences related to this topic. Data were analysed using reflexive thematic analysis to identify key themes. Rigour was promoted through the use of a critical friend and a reflexive diary.

Results: The findings indicated that coaches were aware of the physical and functional changes that occur during puberty and the differing performance trajectories of early- and late-maturing players. Similarly, they identified challenges in initial selection of players, including maturity and size-based biases, and the long-term implications of maturation upon success at the adult level. A gap emerged between coaches' knowledge of growth and maturation and their ability to design and implement effective support strategies, with approaches varying among coaches. Additionally, all coaches expressed a strong desire for further education on this topic.

Discussion: There is a need for bespoke educational initiatives for academy coaches focused on developing a rich set of strategies to support players of varying maturation through identification and development, as well as a process for identifying the optimal strategy for the context. This study contributes to the literature by highlighting coaches' knowledge, awareness, and practices regarding maturation differences in Gaelic football at the grassroots level, complementing existing research in professional and elite environments.

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Does the Stretch-Shortening Cycle Contribute to Rowing Performance? A Narrative Review

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Background/Introduction: The stretch-shortening cycle (SSC) is a mechanism that enhances force and power production in movements such as running and jumping (Komi 2003). However, its role in rowing is unclear. Unlike weight-bearing sports, rowing involves minimal eccentric contractions that would contribute to the SSC mechanism. This narrative review examines whether the SSC contributes to rowing performance by exploring muscle activity related to the SSC during the rowing stroke, the relationship between SSC activities and rowing performance, and the effects of plyometric training on rowing performance.

Methods: A narrative review was conducted using the Scale for the Assessment of Narrative Review Articles (SANRA) (Baethge et al. 2019) guidelines. Thirteen studies met the inclusion criteria.

Results: Evidence suggests that rowing utilises a slow SSC, that only occurs at higher rowing intensities and stroke rates. Unlike fast SSC activities (e.g., sprinting), rowing lacks significant pre-activation and reflex activity, limiting the potential for elastic energy return seen in other sports. The strongest correlations were found between power output in countermovement jumps (CMJ) and rowing performance, reinforcing the notion that a slow SSC function in rowing is utilised. However, plyometric training interventions demonstrate mixed results, some studies report improvements in short-distance rowing performance (<500 meters) rather than the competitive distance (2000 meters), while others found no additional benefit when compared to strength training only.

Discussion: The SSC enhances power output in high-intensity rowing efforts, but its function differs from weight-bearing sports. Since rowing lacks rapid muscle contractions, slow SSC adaptations may be more relevant. While some studies suggest that plyometric training may enhance rowing power output, evidence remains inconclusive. Future research should determine whether SSC-targeted plyometric training provides additional benefits beyond strength training alone.

Conclusion: The SSC plays a role in rowing performance. Training should focus on slow SSC mechanisms, incorporating high-intensity rowing efforts and slow SSC plyometric exercises such as CMJs or box jumps, that mimic the force-velocity demands of rowing.

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The Work Rate of Substitutes in Elite Hurling Match Play

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Background/Introduction: In team invasion sports, coaches strategically use substitutions to maintain physical performance in sports such as soccer (Bradley, Lago-Peñas and Rey, 2014; Padrón-Cabo et al., 2018), rugby (Lacome et al., 2016) and Gaelic football (Boyle et al., 2020). Research indicates that substitutes often exhibit a higher work rate upon entering the pitch compared to those who play the full game. This study aimed to investigate the work-rate profiles of substitutes within elite senior hurling match-play, comparing substitution status and playing position.

Method: GPS (10-Hz STATSports, Apex GNSS) were used to collect data from 72 elite hurlers across 2 teams and 2 seasons (2022 and 2023). Players were categorised according to game status (full-game, subbed-off, subbed-on) and playing position (full-back, half-back, midfield, half-forward, full-forward). A total of 544 match samples were obtained from 30 games (National Hurling League and Championship). Relative total, walking (≤ 6.9 km.h-1), jogging (7-11.9 km.h-1), running (12-16.9 km.h-1), high-speed running (HSR; 17-21.9 km.h-1), sprint (≥ 22.0 km.h-1) and high-metabolic-load distance (HML), max velocity (km.h-1) and sprints per minute (n) were analysed.

Results: Subbed-on players covered greater relative total distance (p < 0.001 and < 0.001, respectively), running (p < 0.001 and < 0.001, respectively), HSR (p < 0.001 and < 0.001, respectively), sprint (p < 0.001 and < 0.001, respectively), HML distance (p < 0.001 and < 0.001, respectively) and sprints per minute (p = < 0.001 and < 0.001, respectively) compared to full-game and subbed-off players. Subbed-on midfielders covered greater relative total (p = 0.010), jogging (p = 0.006) and running distance (p = < 0.001) compared to subbed-on full-forwards.

Discussion: Subbed-on players exhibited higher work-rate profiles, including greater relative total-, running-, HSR-, sprint-, HML-distance and sprints per minute, compared to both full-game and subbed-off players. Positional differences in running demands were observed when comparing game status across positions, with further differences noted among subbed-on players based on their positions.

Conclusion: Subbed-on players increased work-rate upon entry to the field, with these findings presenting key information for coaches around substitution strategy. Midfielders were found to increase work-rate more than full-forwards.

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Association of sleep and cycle-related symptoms with Stroop task performance in professional female soccer players

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Background/ Introduction: Sleep and sports performance are linked, with associations between sleep loss and cognitive performance widely reported. The menstrual cycle (MC) can have implications for sleep, with disturbances to sleep reported before and during menstruation, as well as mid-cycle. This study aimed to examine the association of sleep measures and cycle-related symptoms with cognitive performance, alongside investigating the differences between MC phases for sleep and performance.

Methods: Eleven naturally menstruating players from an English FA Women's Super League (WSL) team were recruited. Sleep was tracked using the Oura ring, as well as a sleep diary and Daily Readiness Questionnaire. Participants tracked their MC using the FitrWoman app, logging menstrual bleeding and presence of cycle-related symptoms. Ovulation was confirmed using urinary testing kits. Cognitive performance was measured using the colour-word Stroop task, completed weekly for the duration of the study. Monitoring took place for approximately five months.

Results: An average of 3-night sleep prior to Stroop task completion was used for the analysis of cognitive performance. Slower congruent trial RT was associated with increased mean HR (r=0.244), subjective awake time (r=0.213), and number of symptoms reported (r=0.383). Congruent trial accuracy was positively associated with increased time in bed (r=0.211). Slower incongruent trial RT was associated with increased mean HR (r=0.203), get-ups (r=0.250), subjective wake events (r=0.260), subjective awake time (r=0.247), and number of symptoms reported (r=0.494). Incongruent trial accuracy was negatively associated with subjective wake events (r=-0.229) and number of symptoms reported (r=-0.372) and positively associated with subjective sleep quality (r=0.372). There were no differences between MC phases for any sleep or performance measure.

Discussion: Positive performance outcomes were associated with superior sleep measures, while increased prevalence of cycle-related symptoms, and sleep disturbances were associated with worse performance outcomes. These may have negative implications for on-field performance in the presence of sleep loss.

Conclusion: There is clear rationale for the investigation into the effect of sleep interventions on the cognitive performance of this population, which could provide athletes with tools to achieve maximal cognitive ability for competition.

Quantifying the Locomotor Demands, Physiological Responses and Session-to-Session Variation Associated with Game-Based Approach Practices Among Sub-Elite Gaelic Football Players.

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Background/Introduction: Game-Based Approaches (GBAs) are proven to be effective in enhancing player decision-making, tactical awareness, perceived enjoyment and social development (Kinnerk et al., 2018). For amateur team-sport athletes such as Gaelic Football players, GBAs potentially represent a holistic and time-efficient training framework, harnessing technical, tactical and physical abilities concurrently. That said, there is an absence of research examining the physical and physiological stimulus imposed by GBA sessions. This study aimed to quantify the locomotor and physiological responses to GBA practices.

Methodology: Male Adult (MA), Female Adult (FA), Male Youth (MYT) and Female Youth (FYT) Gaelic football players (n = 101) completed three GBA sessions. Sessions were designed using pedagogical principles

underpinning GBAs (Harvey et al., 2010). Session duration, game prescription, relative playing area and target principles of play remained consistent for each session. Global positioning satellite technology and heart-rate monitors were used to record locomotor and physiological responses.

Results: Mean absolute total distance (m) accumulated ranged from 5407.1 ± 733.4 to 8373.5 ± 802.8. Mean High-speed running distance (m) ranged from 488.8 ± 292.0 to 1895.6 ± 421.9. Relative average heart-rate (%HRavg) ranged between 74.3 ± 6.6% - 79.3 ± 5.7% whilst percentage of max heart-rate (%HRmax) achieved ranged between 98.0 ± 4.7% - 101.3 ± 4.4%. MA players reported significantly greater locomotor responses compared to FA, MYT and FYT groups. HR responses were highest among MYT participants. High-speed running, high-intensity accelerations and decelerations, time accrued in heart-rate zone 5 and zone 6 displayed the largest variability (CV >20%).

Discussion: Significant between-group differences in locomotor and physiological demands during GBA sessions are likely explained by varying player motivation, fitness, playing level and logistics (Dellal et al., 2011). Large inter-session variation within high-intensity metrics poses challenges for coaches in monitoring training load and ensuring a consistent stimulus for fitness adaptations. The inclusion of isolated conditioning methods alongside GBAs is likely warranted.

Conclusions: Gaelic football Coaches may adopt GBA principles with a view to expose players to physical, technical and tactical components of competition. Reported session-to-session variability within high-threshold measures may lead to substantial heterogeneity in training responses over time. Future research should aim to examine this concern.

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The Comparison of Speed and Strength Training on Running Economy in Trained Distance Runners

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Background/Introduction: Middle- and long-distance running performance requires a unique blend of physiological characteristics; VO2max; lactate threshold (LT), anaerobic capacity (sprinting ability) and running economy (RE) (Mc Laughlin et al, 2010). There has been substantial research demonstrating the beneficial role of the neuromuscular adaptations from strength training on improving RE in distance runners (Blagrove et al 2018). However, the neuromuscular changes from sprint training are similar to those induced by strength training (Lum et al., 2016). Therefore, sprint training may offer a more sport-specific stimulus to enhance RE in runners. The aim of the systematic review with meta-analysis was to compare the effect of specific strength training and speed training modalities on RE in highly trained (well-trained male 55–65 ml/kg/min, female 45–55 ml/kg/min or highly trained ≥ 65 ml/kg/min, ≥ 55 ml/kg/min) distance runners.

Method: An electronic search was performed to identify relevant articles (i.e. PubMed etc). A total of 16 studies met the inclusion criteria. The systematic review with meta-analysis was conducted in accordance with the preferred reporting items for systematic reviews and meta-analyses (PRISMA) guidelines.

Results: There was a large effect on RE from combined-strength training (-0.87 SMD, P-value = 0.0600) and a small effect from speed (-0.46 SMD, P-value = 0.6432), maximal- (-0.33 SMD, P-value = 0.2202) and reactive-strength training. However, only reactive-strength training was statistically significant (-0.46 SMD / P-value = 0.0328)

Discussion: Reactive strength training had a small effect on RE but was statistically significant, whereas combined training shown potential without statistical significance. Maximal strength and speed training had a small effect. These results are similar to previous reviews indicating that both combined strength training (Lagos et al., 2023, P-value 0.018) and explosive strength training (Dendai, 2017, P-value 0.001) enhance RE. The performance level of included subjects in this study exceeds those of prior research, which meant a smaller sample size, so results require contextualisation.

Conclusion: Both strength and speed training modalities enhance RE in trained runners. However, due to the limited studies available on the role of speed training in trained distance runner, more research is necessary.

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Theme: Athletic Medicine and Sports Therapy

Influence of Mental Fatigue on Performance and Its Assessment in Football – A Systematic Review

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Background/Introduction: Mental Fatigue (MF) is a psychophysiological condition caused by prolonged cognitive demands (Kunrath et al., 2020). MF is demonstrated to exert a negative impact on cognitive and motor behaviour during sports performance. In professional football MF reduces passing precision, interferes with decision-making efficacy and increases psychoemotional stress responses (Smith et al., 2016; Sun et al., 2022). Despite these documented negative impacts, however, there is no consensus on how best to monitor and/or assess MF. This systematic review is the first to explore the methods currently being deployed, in professional football contexts, to assess MF.

Methodology: Searches were conducted using PRISMA2020 guidelines in PubMed, Web of Science, SportDiscus, Scopus, and Springer Nature databases. Inclusion criteria were football-specific studies published between January 2014 and December 2024 in English, Portuguese, Spanish, or French; that detailed methods used to quantify MF. The search strategy included the following terms: “mental fatigue” AND (“football” OR “soccer”) AND “performance” AND (“monitor” OR “assess” OR “track”). The Mixed-Methods Appraisal Tool (MMAT) was used to evaluate the methodological quality of the studies.

Results: After screening, twenty-two studies were included in the analysis. Most methods were subjective in nature (predominantly fatigue perception scales). Objective measures included heart rate variability and Near-Infrared Functional Spectroscopy (NIRS). Notably, the high heterogeneity of protocols and the absence of a gold standard make it challenging to compare studies and directly translate findings to practice.

Discussion: This absence of standardized MF assessment approach is a barrier to integrating MF data collection into football-specific monitoring batteries. The nature of subjective self-reported data entail there

are issues with data validity, reliability, and objectivity. Simultaneously, however, there are limited objective assessment options currently available. This observation clearly suggests a pressing need for a standardized, and validated, MF assessment.

Conclusion: Although evidence suggests MF is a prevalent and performance-limiting phenomenon, the absence of a reliable assessment tool entails that currently there is no standardised best practice for tracking MF in professional football. Monitoring of MF in real-time would lead to better load management, recovery, and tactical decisions. Emerging technologies may provide reliable, efficient and pragmatic tools for assessing MF.

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Investigation of the effectiveness of a single group-based education session on sleep measures, nutrition knowledge and recovery practices in athletes.

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Background/Introduction: Both sleep and nutrition are regarded as fundamental to recovery in athletes and are integral to performance and injury risk in athletes [1–4]. Research has indicated that insufficient sleep and poor nutrition knowledge are common in athletes [3,4]. Athletes often overlook recovery strategies which are established in the literature due to their perceptions and beliefs [3]. Moreover, research has indicated that providing education to athletes is an effective strategy for improving their sleep hygiene and dietary behaviours to support recovery [1]. Thus, this research aimed to investigate the efficacy of a single group-based education session on sleep measures, nutrition knowledge and recovery practices in athletes.

Methods: A pre-post intervention design was utilised in this investigation whereby eight university sport scholarship athletes were monitored using research-grade actigraphy devices for a period of seven nights and completed a battery of previously validated and reliable questionnaires investigating their sleep characteristics, nutrition knowledge, and recovery practices pre and post an education workshop.

Preliminary Results: Actigraphy analysis showed a significant increase in Total Sleep Time (TST) by 35.73

minutes (363.74 ± 50.39 min vs. 399.47 ± 20.90 min; Δ = 9.82%; p = 0.039; ES = 0.083). Total Wake Time (TWT) increased by 12.56 minutes (Δ = 9.99%; p = 0.403; ES = 0.315), while Sleep Efficiency (SE%) remained stable (-0.05%; p = 0.970; ES = -0.014). General Nutrition Knowledge (GNK) significantly improved by 1.50 scores (Δ = 24.49%; p = 0.003; ES = 1.620). Sport Nutrition Knowledge (SNK) increased by 1.38 scores (Δ = 11.96%; p = 0.188; ES = 0.515) but was not statistically significant. Total Nutrition Knowledge (TNK) increased by 2.88 scores (Δ = 16.31%; p = 0.052; ES = 0.826).

Conclusions: This study demonstrates that a single group-based educational session can lead to significant improvements in TST and GNK in athletes, with knowledge domains showing greater responsiveness than behavioural sleep patterns. These findings suggests that while brief educational interventions effectively enhance sleep duration and nutrition knowledge, more tailored approaches may be necessary to improve sleep quality measures in athletes.

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Evaluating Fast Stretch-Shortening Cycle Fatigue Using a Novel 30-Second Repeated Jump Test

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Background/Introduction: Rebound jumping is widely used to assess fast stretch shortening cycle (FSSC) mechanics in athletes, as it plays a crucial role in sprinting, jumping and changing direction [1]. Athletes' FSSC capacity is often referred to as reactive strength (RS). While practitioners typically evaluate maximal FSSC and RS capacity using short duration tests with fewer than 10 ground contacts [2], tests with higher number of ground contacts provide an opportunity to assess both maximal FSSC and the impact of fatigue on FSSC. This study aims to investigate changes in FSSC performance during a continuous 30 second rebound jumping test.

Methodology: Thirty elite male soccer players (21.10 ± 1.61 years; height 181.01 ± 6.45 cm) completed a 30-second repeated jumping trial (30RJT). Participants were instructed to jump maximally, minimizing ground contact time (CT) and maximizing jump height (JH). Three-dimensional force data were collected at 2000 Hz using four floor-integrated force plates (AMTI BP400600, Massachusetts). Performance was evaluated using the Reactive Strength Index (RSI), calculated as JH divided by CT, along with peak force (PF) and time to peak force (TTPF) during the first and last 10 jumps of the test. A one-sample t-test was used to determine whether the relative changes in performance metrics were significantly different from zero.

Results: Participants completed 46±3 jumps. For the first 10 jumps, averages for RSI, JH and CT were 1.70±0.12, 27.91±1.62cm, and 166.70±8.04ms respectively. Average ground contact time ranged from 127.6ms to 222.3ms for the first 10 jumps, and 138.7ms to 229.9ms for the last 10. Comparisons between the first and last 10 jumps showed a drop of 13.80±8.66% for the RSI ($p<0.001$), increase in CT of 4.82±3.74% ($p<0.001$), and drop in JH of 8.11±7.49% ($p<0.001$). Investigating the force traces in more detail, PF dropped by 6.91±5.46% ($p<0.001$), while the change in TTPF was not significant (increase of 1.21±12.38%, $p=0.601$).

Discussion & Conclusion: The 30 second jump induced fatigue, evidenced by significant decreases in RSI, JH and PF. Despite the fatigue, participants were able to sustain CTs under 250ms, ensuring we tested the FSSC. Changes in RSI were predominantly due to changes in JH. Changes in TTPF were highly variable between participants and should not be used to assess fatigue in RS and FSSC performance.

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Does increasing lean red meat intake improve iron status in iron-deficient physically-active females?

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Background/Introduction: Female athletes and active adult females engaging in high volumes of exercise are at increased risk of compromised iron status due to heightened iron losses through menstruation, as well as exercise-induced mechanisms associated with physical training [1,2]. Oral iron supplementation is commonly employed in the treatment of iron deficiency but has been criticised because of related side effects. There is increasing interest in the use of food-based approaches for improving and maintaining iron status in females [3,4]. Therefore, the aim of the present study was to investigate the effects of increased lean red meat consumption on iron status in iron-deficient physically-active females in comparison to a habitual diet or an oral iron supplement.

Methods: Following preliminary screening for iron status, 33 physically-active iron-deficient non-anaemic females were randomised to either a control condition (habitual diet) (CON) (n=8), oral iron supplementation (325 mg dried ferrous sulphate, equivalent to 105 mg elemental iron ingested on alternate days) (SUPP) (n=13), or an increase in lean red meat consumption (120 g cooked weight consumed on alternate days) (MEAT) (n=12) for 12 weeks. Blood markers of iron status, body composition, dietary intake, and mood states were measured before (week 0), during (weeks 4 and 8) and after (week 12) the intervention period.

Results: Serum ferritin concentrations increased in both the SUPP (△33.79 [15.44, 52.14] ug/L; p=0.007) and MEAT (△7.17 [3.16, 11.12] ug/L; p=0.02) groups between pre and post intervention, with the greatest improvement observed in SUPP. Haemoglobin, serum iron, and transferrin saturation also improved from baseline in SUPP (all $p<0.05$), but not MEAT or PLA. No differences in dietary iron intake from baseline were observed in any condition as a result of the intervention. Mood states were significantly improved after 12 weeks in MEAT (p=0.02), but not SUPP or PLA.

Conclusion: Increasing red meat intake improves iron status in iron-deficient physically-active females as indicated by increases in serum ferritin concentrations, but the extent to which such increases are clinically meaningful remains to be established.

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Heart rate variability across menstrual cycle phases and reproductive life stages measured by wearables: a systematic review

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Background/Introduction: Heart rate variability (HRV) reflects the balance between the parasympathetic and sympathetic system and is suggested to give information about health and wellbeing. Wearable devices are increasingly popular in sports and exercises settings. However, the effects of ovarian hormone profiles on biometric data derived from wearables, such as HRV remains limited. Aim: To examine the influence of ovarian hormone profiles on wearable device measured HRV.

Methodology: The study was pre-registered on Open Science Framework (https://doi.org/10.17605/OSF.IO/S4RYW). A systematic search was conducted in PubMed, Web of Science, IEEE Xplore, SPORTDiscus, and Embase. All studies were independently double screened by title & abstract, and full text. Studies were included if they examined differences in wearable device measured HRV across the menstrual cycle in naturally menstruating females, in response to exogenous ovarian hormones, or across other ovarian hormone state such as menopause or pregnancy. Quality was assessed using the Newcastle-Ottawa Scale for cohort studies.

Results: From 279 identified records, 14 studies were included. In naturally menstruating females, HRV was higher at the beginning of the cycle and lower towards the end, with differences in time-domain HRV ranging from 3% to 9%. Hormonal contraceptives users exhibited lower HRV, particularly in the late cycle. Additionally, HRV tended to decline around menopause. The quality of evidence of this review was moderate (7 / 9).

Conclusions: Wearable-derived HRV is influenced by ovarian hormone profiles and should be considered when presenting HRV metrics to female users. This may improve the interpretation of data for female athletes.

The reliability of field tests to assess trunk muscle strength and endurance in field athletes

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Background/Introduction: Despite the important role of the trunk muscles in athletic performance and the onset of injury, consensus is lacking as to the best methods to assess trunk strength and endurance in athletic populations for practitioners in the field.

Methods: This study investigated the intra-tester reliability (relative and absolute) of tests to assess the isometric trunk strength using a hand-held dynamometer (HHD) and isometric trunk endurance using the

McGill protocol and novel 'long-lever' tests. 23 male field-athletes (age: 26.4 ± 5.6 years) took part in the study and were tested on 2 separate occasions, 2-5 days apart.

Results: For relative reliability, good to excellent results were found for all HHD strength tests (ICC = 0.70-0.91). Relative reliability for trunk endurance tests showed excellent results for the McGill protocol (ICC = 0.80-0.89) and moderate to excellent reliability for the long-lever tests (ICC = 0.57-0.96) By comparison, the V-Sit test and isometric lateral flexion strength tests, showed lower absolute reliability with relatively high standard error of measurement (SEM) values.

Conclusions: Therefore, we would recommend practitioners to assess athlete trunk function by using a HHD to evaluate isometric flexion, extension and rotation trunk strength and the Biering-Sorenson, side-bridge and long-lever flexion tests to assess trunk endurance.

Theme: Exercise and Chronic Conditions

Quantifying the impact of Community-Based Physical Activity Programmes for Populations with Chronic Conditions: An SROI analysis of ExWell.

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Background/Introduction: Disability resulting from chronic conditions (CC) is a significant contributor to global disease burden and healthcare costs. Extensive evidence has consistently demonstrated that exercise prescription plays a crucial role in CC management (Thompson et al., 2020). 'ExWell' a community-based physical activity programme for populations with CC has demonstrated efficacy, in improving physical fitness, strength, and health-related quality of life (Kehoe et al., 2020). However, more longitudinal data capturing broader concepts of wellbeing are needed. This study aims to conduct an SROI analysis of ExWell's community-based exercise classes, evaluating social, economic and health impacts of the programme to evaluate its effectiveness and scalability in community and GAA settings.

Method: This longitudinal mixed-methods study follows the six-stage SROI framework (scope definition, outcome mapping, valuation, impact establishment, SROI calculation, and stakeholder reporting). A Theory of Change (ToC) will be developed for each stakeholder group following participatory workshops. ExWell participants (primary stakeholders) will complete baseline and follow-up questionnaires measuring physical assessments and health and wellbeing over 12-months to track key outcomes. Cross-sectional surveys will be administered to secondary stakeholders (e.g., significant others, ExWell facilitators, healthcare referrers) to provide a holistic view of programme impact. Data will be continuously analysed to quantify social value and determine programme effectiveness.

Expected outcomes: Expected outcomes of this study include capturing broader concepts of value including reduced inequalities and integration of social, economic and environmental benefits. For ExWell, the SROI

analysis is anticipated to highlight social impact of the programme, support evidence-based decision-making, and demonstrate improvements in social cohesion alongside reductions in healthcare costs.

Discussion: With increasing pressure on healthcare systems and community resources, demonstrating cost-effectiveness of community-based interventions is essential for policy and funding decisions. An SROI framework provides a comprehensive, stakeholder-driven analysis of the tangible and intangible benefits of ExWell, offering valuable insights into its role in CC management and community health promotion.

Conclusion: An SROI is an innovative way of capturing the value of an initiative from multiple stakeholders' perspectives. Demonstrating the cost-benefit of the programme is crucial, as it allows for assessment of ExWell's scalability, effectiveness and its potential for expansion into new settings

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Test-retest Reliability of Remote Physical Testing in Community-dwelling Older Adults

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Background/Introduction: Homebased training interventions (HBTIs) are scalable, and as such are often used to engage older adults with exercise (Thiebaud et al., 2014). Traditionally, the effects of HBTIs on physical performance in older adults are determined using in-person assessments, but this limits scalability. This could potentially be alleviated by using remote methods of assessment. The aim of this study was to investigate test-retest reliability of remote physical performance testing in community-dwelling older adults.

Methodology: Seventeen participants (67.7 ± 3.6 years, 47% male / 53% female) completed 2 physical performance testing sessions, with 1 week between sessions. The sessions included the 30s Chair Stand (30CS), Timed Up-and-Go (TUG) and 30s Arm Curl (30AC) tests. Participants completed the sessions from home, with the sessions facilitated using Zoom communications software. Tests were scored afterwards from the video recordings. Absolute test-retest reliability for each test was determined using paired samples t-tests. Relative reliability was determined using intraclass correlation coefficients (ICCs).

Results: There was a significant difference between testing sessions for 30CS (15.56 ± 3.37 stands vs 16.67 ± 3.93 stands, p = 0.04), but not TUG (9.89 ± 2.59s vs 9.97 ± 2.46s, p = 0.80), or 30AC (17.71 ± 3.96 arm curls vs 18.35 ± 3.48 arm curls, p = 0.25). There was moderate to excellent reliability for 30CS (ICC = 0.80; 0.51 – 0.92) and TUG (ICC = 0.90; 0.74 – 0.96), and poor to good reliability for 30AC (ICC = 0.65; 0.26 – 0.85).

Discussion: The reliability of remote physical testing depends on the test. The 30CS and 30AC tests appear to have been affected by learning effects, and variance in technique(s) used. First, 30CS performance improved in testing session 2 suggesting that a learning effect may have occurred. Secondly, it was observed that the technique(s) used to perform the 30AC varied between participants and between testing sessions. The inclusion of familiarisation remote testing sessions may prevent learning effects from occurring, and promote consistency in technique(s) used in tests.

Conclusion: The reliability of remote physical performance testing could be improved with the inclusion of familiarisation sessions. Remote physical performance testing may facilitate the scalability of HBTIs for older adults.

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Exploring Irish Healthcare Professionals' Experiences and Practices to Physical Activity Promotion for Menopausal Women.

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Background/Introduction: The menopausal transition is a critical phase of female aging where targeted interventions can improve women's health. Physical activity (PA) is a crucial non-medicated intervention, benefiting cardiovascular health, bone density, and overall wellbeing (Lin & Lee, 2018). Healthcare professionals (HCPs) play a vital role in PA promotion (Money et al., 2024), yet research on their practices in Ireland, specifically for menopausal women, is limited. Therefore, this study aims to explore HCPs' perspectives, knowledge, practices, and barriers to PA promotion.

Methodology: Irish HCPs who engage with menopausal women are currently being recruited for an online survey. Informed by previous research (O'Brien et al., 2019; Cantwell et al., 2018), the survey includes four sections: Participant Characteristics, Knowledge of PA, Clinical Practices and Attitudes, and Motivators, Barriers and Strategies. Recruitment methods include email outreach, social media, in-person visits, and attendance at relevant events. Data was analyzed using descriptive statistics.

Results: Recruitment is ongoing, with 32 HCPs surveyed to date (47% aged 41-50, 91% female). Over half

(53%) have never read or are unaware of PA guidelines, and 28.1% have never received PA training. Additionally, 59.4% and 56.3% lack PA training for perimenopause and postmenopause, respectively. While 46.9% inquire about patients' PA behaviors, only 40.6% and 43.8% provide verbal recommendations for perimenopausal and postmenopausal women, respectively, and 15.6% offer written recommendations. Low confidence in recommending PA was reported by 40.7% and 46.9% of HCPs for perimenopause and postmenopause, respectively.

Discussion: Preliminary findings reveal gaps in HCPs' education and practices in promoting PA for menopausal women. A large proportion of HCPs are unfamiliar with PA guidelines and have received limited training. Most do not provide written PA recommendations, highlighting the need for better resources and education. Further responses will enhance these insights and inform targeted interventions. These findings align with O'Brien et al. (2019), emphasizing the need for improved PA counselling training in Ireland. Finally, addressing HCPs low confidence in promoting PA to this population should be explored further.

Conclusion: In conclusion, there is a need for improved training and knowledge among Irish HCPs to effectively promote PA for menopausal women.

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Availability of Free Online Resources for Physical Activity Education and Self-management of Cancer Survivors

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Background/Introduction: Physical activity (PA) helps cancer survivors manage fatigue, anxiety, depression, and functional decline, yet adherence to recommended PA levels remains low (Elshahat et al., 2021, p 2). Barriers include limited awareness of PA guidelines, benefits, and a lack of behaviour change strategies (Sylvester et al., 2017). Online resources such as websites and mobile applications cater survivors' diverse

needs (Williams et al., 2023, Changrani et al., 2024). However, their content and reliability vary. Assessing freely available online PA resources is crucial to identifying gaps in evidence- and theory-based guidance.

Methodology: An environmental scan was conducted (December 2024–February 2025) to identify freely accessible PA resources for cancer survivors aged >18, regardless of treatment stage. Eligible formats included booklets, pamphlets, websites, apps, and interactive platforms.

Results: The online search yielded 573 results. After duplicated removal and screening for relevance, 78 resources were included in the data extraction process. Websites were the most common format, followed by booklets and pamphlets. Most resources were developed in the USA and the UK, followed by Ireland, Australia and Canada. Two resources originated from international collaborations. Only two avatar-based platforms and one mobile app were identified. Most resources originated from research institutions, healthcare providers, charities, or government organisations. However, few were tailored to specific ages or cancer types. The analysis of the content showed that PA definition and recommendations on sedentary behaviour were infrequent, though PA guidelines were commonly mentioned. Most resources emphasised PA benefits, along with practical advice on setting goals and overcoming barriers. Few provided safety precautions, and most resources lacked a clear editorial policy or references.

Discussion: Online resources available for cancer survivors included both websites and printable material. Resources tailored by treatment stage and age are scarce. While most resources stress PA benefits, potential risks and precautions are often omitted. Furthermore, only two platforms providing tailored information were found.

Conclusion: Despite the availability of online PA resources, a gap exists in personalised guidance for cancer survivors. Resources for younger and male users are particularly lacking. Freely accessible platforms using if-then algorithms could enhance the relevance and effectiveness of PA guidance.

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Enhancing health and wellbeing in socially disadvantaged communities – optimising data analytics to understand the effectiveness of health programmes

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Background/Introduction: Socially disadvantaged communities are known to have poorer health outcomes, higher incidence of chronic disease and risk of all-cause mortality. Sport, physical activity (PA) and wellbeing initiatives mitigate some health disparities by promoting PA, mental health, and community cohesion (Bailey et al., 2013). However, monitoring impact of these programmes is a challenge. Systematically collecting and analysing health and wellbeing related data can identify trends, gaps, and opportunities for targeted interventions. Focussing on one specific inner city area of Dublin, this project aims to use systematic data monitoring to optimise the delivery and effectiveness of existing health and wellbeing programs.

Methods: Forty-three organisations delivering health and wellbeing programmes in Dublin were invited to complete a survey assessing programme characteristics and organisational health literacy. Demographic and programme-specific survey information focussed on primary and additional target populations, programme duration, primary objectives, observed impacts, retention efforts, and total participant numbers. Organisational health literacy was assessed using HELLO-TaS (HELLO-TaS Tool, 2016).

Results: Preliminary findings indicate 48% of programmes primarily target primary school-aged children. Additionally, programmes operating once a week over a 6–8 weeks were associated with higher incidence of

participation. While the main objective reported was sport development (24%), the predominant impact observed across programmes was enhanced PA (38%). HELLO-TaS results revealed programmes achieved a mean score of over 70% across all six categories. Notably, communication in organisational health literacy was scored highest (87.2%) for all programmes sampled.

Discussion: Tailoring programme duration and frequency may play a crucial role in participant retention and engagement. However, discrepancy between intended objectives (sport development) and the primary impact (enhanced physical activity) highlights the need for further exploration into programme implementation and outcome alignment. Robust health literacy scores across organisations indicate a promising capacity to deliver effective health and wellbeing initiatives, although areas with lower scores (<50%) warrant targeted improvement or exploration.

Conclusion: The study provides baseline data on health and wellbeing initiatives in a socially disadvantaged community in Dublin. Feasible ongoing monitoring of these programmes, using data analytics, can support further insight into these initiatives with a further phase recommended to validate these findings and refine programme strategies to maximize impact.

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DEFRAIL@Home: A feasibility study on a remotely delivered diet and exercise intervention for frailty

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Background/Introduction: Evolving models of healthcare, in particular post Covid-19, are prioritising community-based care. Exercise and dietary interventions lend themselves to community-based delivery and are gaining increased attention as a potential solution to address frailty outcomes in older adults. This is particularly in light of the growing prevalence of frailty, which presents challenges such as resourcing,

accessibility and convenience, and scalability. Majority of interventions are delivered in supervised community settings. Home-based exercise programmes provide an alternative delivery model that has the potential to increase the availability, accessibility and acceptability of interventions. However, home-based delivery presents challenges with engagement and adherence. Integrating models of behaviour change in the intervention design is likely to support the initiation and maintenance of health behaviours. Intervention design also requires piloting and assessment of feasibility to consider implementation factors and acceptability of the intervention. Therefore, our study aims to determine the feasibility of a remotely monitored theory-based exercise and protein supplement intervention for frailty.

Methods: A single arm feasibility trial is being conducted. Older adults aged >65years who have been referred to a multidisciplinary team for frailty assessment are recruited from a geriatric medicine clinic. Participants will undertake a 12-week home-based exercise and protein supplement programme. This will include induction training, support materials, telecommunication support and health coaching sessions followed by a 6-week maintenance phase. The exercise programme includes balance, aerobic and strength training. The protein supplement is a commercially available milk, offering an additional 33g protein daily. Feasibility domains include i)implementation; assessed through research field notes, ii) demand; recorded via recruitment, retention, intervention compliance and adherence; iii) acceptability and practicality via post intervention questionnaire and semi structured interviews; and iv) preliminary effectiveness, assessed by the Fried Frailty Criteria, accelerometery, field-based measures of aerobic capacity, strength and falls risk and questionnaires assessing fear of falling, health-related QoL and exercise self-efficacy. Recruitment is on-going.

Conclusions: Home based programmes address barriers of community programmes, such as accessibility, but often programmes do not include patients in the decision-making process and lack informed theory, affecting sustained change. It is proposed, this research will provide valuable information regarding the feasibility of the home-based intervention.

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Theme: Physical activity and Health

Gateways to Growth: The Athlete Experience of Gateways in Irish Para Sports

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Background/Introduction: This study explored how Para Sport athletes experienced entry into Para Sports (i.e., gateways) in Ireland, with a particular focus on factors that may enhance recruitment and retention of these athletes.

Methods: A mixed-methods design was used including semi-structured interviews (n =18) and a survey (n=123) with Para Sport athletes. Qualitative data were analysed via reflexive thematic analysis (Braun & Clarke, 2006) and descriptive statistics were computed for quantitative data. Data were integrated via joint display tables.

Results: The study sample consisted of survey respondents (65% male, mage = 31.03 ±9.86, representing 19 Para sports) and interviewees (61% male, mage = 27±8.87). The primary motivators for initial participation in

Para Sport were enjoyment (81[65.9%]) and competition (67 [54.5%]). The importance of these motivating factors were echoed in the qualitative findings. Athletes were most commonly introduced to Para Sport via rehabilitation/physio programmes (33 [26.8%]), family and friends (46 [37.4%]) and online searches (28 [22.8%]). The most prevalent barriers to initial participation were the high expense associated with participation (46 [37.4%]) and the lack of appropriate facilities (38 [30.9%]). Qualitative data suggests that expense-related barriers often related to the purchasing of sports wheelchairs.

Discussion: This study identified significant elements influencing the gateway experiences of PS athletes in Ireland. Enjoyment and competition emerged as primary motivators for participation, underscoring the significance of intrinsic motivation in Para Sport athletes. The findings highlight the important roles of healthcare providers (e.g., rehabilitation programmes) and social support systems for increasing awareness for Para Sport. Barriers such as high costs and inadequate facilities were evident; costs related to specialized equipment like sport specific wheelchairs were identified. By fostering support systems and reducing barriers, a more inclusive environment for Para sport athletes can be established, promoting greater recruitment and retention of athletes.

Conclusion: This study provides a comprehensive account of how Irish Para Sport athletes become aware of and enter the Para Sport system. Factors that make potential athletes aware of and motivated for Para sports are highlighted, as are barriers that hinder early participation.

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Ireland Lights Up': Evaluating the demographic characteristics of participants in a sports-club based walking initiative

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Background/Introduction: Sports clubs are increasingly recognised as valuable settings for promoting physical activity (PA) and social connection, extending their impact beyond traditional sporting populations [1]. Walking initiatives, such as 'Ireland Lights Up' (ILU), offer an effective way to engage communities in PA, but evidence on their long-term impact remains limited. Despite the growing adoption of the health-promoting sports club (HPSC) model [2], there is a lack of research evaluating the reach of walking initiatives in these settings, particularly in terms of participant characteristics. This study aims to assess the effectiveness of such initiatives in reaching diverse populations, including those typically underserved by traditional PA programmes.

Methodology: Utilising a hybrid type-two effectiveness-implementation design, based on the RE-AIM framework, qualitative data was collected through observational site visits in implementing clubs (n=10) and snapshot semi-structured interviews with participants (n=30). Quantitative data was obtained through participant questionnaires distributed to all ILU-participating clubs over a five-week period (n=1226).

Results: Findings indicate that 84% of ILU participants are GAA members, with the majority female (76.5%) and living in rural areas (80%). Participant ethnicity is 99.5% White, with a median age of 47, and 80% of participants have attained third-level or postgraduate education. Participants reported a mean of four days of PA per week and two sessions of strength training, indicating that most are meeting recommended PA guidelines. Qualitative findings suggest that ILU effectively combines social, physical, and mental health benefits, with participants reporting an increase in social connection and overall wellbeing.

Discussion: ILU provides significant social, physical, and mental health benefits to those who participate, particularly GAA members, women and rural populations. However, underserved populations, including ethnic minorities, lower-income groups, and those without prior club affiliations, are not being adequately reached. This suggests potential barriers to participation, such as limited awareness or perceived lack of inclusivity.

Conclusions: Further research is needed to identify targeted strategies for recruiting and retaining populations currently 'not yet reached' by initiatives such as ILU. These may include tailored approaches, partnerships with community organisations, engaging local leaders, and cultural adaptations to ensure the initiative is accessible to more diverse populations.

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The Reliability of an Obstacle Course to Assess Irish Primary School Children's Fundamental Movement Skills

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Background/Introduction: Fundamental movement skills (FMS) are the basic movement skills that act as precursors to more complex and coordinated movements. High FMS proficiency is positively correlated with physical activity (PA) participation (Holfelder & Schott, 2014). Many FMS assessment tools are product-oriented and do not capture movement quality (Gavigan et al., 2022). Many process-oriented tools are long and unfeasible for large groups. Therefore, an obstacle course (OC) was designed to be time-efficient, product- and process-oriented to assess children's FMS in Irish PA contexts.

Methods: Participants (n=215) completed two OC trials and were scored on time and skill performance. OC1 (n=117; 40.2% female) for participants aged 4-8 years (mean age 7.45 ± 1.36 yrs). OC2 (n=82; 50% female) for participants aged 9-12 years old (mean age 10.55 ± 1.21 yrs). The skills assessed were running, balancing, jumping, hopping, striking, dribbling, kicking, throwing and catching. Each skill had two criteria. Participants were scored over two trials for intra-session reliability. Two assessors independently scored participants (n=138) for inter-rater reliability. Participants (n=116) were retrospectively scored for intra-rater consistency. Intra-class Correlation Coefficient (ICC) analysis was completed in SPSS.

Results: The mean time for OC1 was 39.20 ± 9.71s and OC2 was 31.24 ± 5.27s. The mean score for OC1 was 43.93 ± 7.71 and OC2 was 50.44 ± 5.61points. One-way random ICC for intra-session reliability of scores in OC1 was .931 and OC2 was .894. Two-way random ICC for inter-rater reliability was .921 for scores in OC1 and .793 in OC2. Two-way mixed absolute agreement ICC for intra-rater for OC1 scores was .930 and OC2 was .900.

Discussion: Intra-session reliability for scores in OC1 and OC2 is good to excellent. The intra-rater reliability for OC1 and OC2 was excellent, confirming consistency between rating live and on video. The inter-rater reliability for OC1 was excellent but good for OC2. It may be more difficult to score older participants due to skill speed. Formal training may be needed for raters.

Conclusion: Whilst the reliability of both OC's is good to excellent, future research is needed for inter-session reliability and validity of the OC. Future modifications to the layout and criteria are being considered.

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Exploring Teenage Girls' Preferences and Perspectives towards Physical Activity and Dance

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Background/Introduction: Reports have shown that as adolescent girls transition from primary to post primary school their physical activity (PA) levels drop significantly (Woods et al., 2022.) This stems from the barriers that these girls face including the belief that they are not 'sporty' enough and that they don't belong in traditional sports (Sport Ireland, 2021), resulting in low motivation, societal pressure and limited opportunities (Corr et al., 2019; Cowley et al., 2021). It is crucial that these barriers are further understood to gain greater knowledge of their full complexity. Dance has been recognised as an alternative form of PA that can be delivered in a fun, non-competitive way (Sport Ireland, 2021). This study aimed to explore preferences and perspectives of teenage girls towards PA and dance.

Method: Adolescent girls from secondary schools in Cavan were recruited to take part in the focus groups. The focus groups were designed using the COM-B model to help explore barriers and preferences towards PA. They followed a semi-structed style, using open ended questions to facilitate the discussion. The data was transcribed verbatim, and content analysis was conducted to identify emerging themes.

Results: A total of 27 girls participated in the focus groups, all year groups were represented, and each focus group ranged from 30-50 minutes. Five themes emerged from the content analyses. Girls faced barriers such as lack of facilities, low self-esteem, and time constraints. Their motivation towards PA was inspired by role models and family support. Girls' preference towards physical activity was non-competitive, and in an all-girls setting. Findings identified that social media can both enhance and hinder PA levels. Additionally, peer support was identified as crucial for encouraging PA among this cohort.

Discussion: The results highlighted unique barriers that adolescent girls face regarding being physically active. Moreover, supporting adolescent girls through unconventional, non- competitive forms of PA such as dance, can still offer alternative pathways for success. Interventions targeted to specific cohorts mitigate the risk of low levels of PA.

Conclusion: Understanding adolescent girl's barriers and preferences towards physical activity will enhance in the development of an intervention tailored for this cohort.

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The potential role of volunteer peers in delivery of community-based resistance training for older adults

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Background/Introduction: Involving peer supporters in resistance training (RT) programmes for older adults can contribute to improving physical function (Bouchard et al. 2021; Burton et al. 2023); peer- delivery of RT, may encourage adherence but the effects on developing muscular strength are unclear, perhaps because of relatively low training intensities typically employed (Burton et al., 2018). The aim of this study was therefore to investigate the effect of a peer-delivered high intensity RT programme on strength and psychosocial outcomes in older adults.

Methods: Eighty-five community dwelling older adults (66.5 ± 4.4 years, 87% female) were randomly allocated to complete 10 weeks of RT supervised by either a peer (PEER) or a professional instructor (PRO). Peer instructors (n = 6, 68 ± 4 years, 50% female) had completed 23 hours of bespoke preparatory workshops. Hip and knee maximum voluntary isometric contraction (MVIC) and health-related quality of life measured via the SF-36 were assessed at pre, mid, and post intervention. Participants' perceptions of the programme were obtained through focus groups at post-intervention.

Results: There were no between-group differences in adherence (PEER: 76%, PRO 75%,) or retention (PEER: 90%, PRO: 92%). There were significant improvements in knee (PEER: + 5.5kg, p = .001, PRO: + 5.4 kg, p = .001) and hip MVIC (PEER: + 2.5kg, p = .001, PRO: +5.4kg, p = .001), with no between-group differences. The physical (PEER: +2.3, PRO: +3.6), and mental (PEER: +5.4, p = .001, PRO: +0.6) component score of SF-36

improved in both groups. Participants in PEER valued the peer-instructors' shared experiences of beginning resistance training later in life while participants in PRO valued the competence of their instructors.

Discussion: This data supports previous reports of peers involved in RT interventions having adherence rates over 70% (Bouchard et al. 2021; Burton et al. 2023). This data shows peer-delivery is as effective as professional delivery in improving muscular strength and some aspects of quality of life.

Conclusion: A short preparation programme is sufficient to enable peers to deliver effective and engaging resistance training for community dwelling older adults.

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Football Cooperative, a community-based physical activity social intervention for men: The development of an implementation strategy for scale-up

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Background/Introduction: The Football Cooperative (FC) offers accessible recreational football sessions to support men's health. Participation provides physical benefits such as improved metabolism, cardiovascular and musculoskeletal fitness, as well as health improvements like lower blood pressure and fat mass, and increased bone density (Bennike et al., 2024; Milanović et al., 2015). Despite this, few studies have explored how initiatives like FC can be sustainably scaled using implementation science approaches.

Method: This study aims to develop an implementation strategy to support the national scale-up of FC by analysing processes and practices and understanding the characteristics of similar successful initiatives across Ireland and Europe. The Consolidated Framework for Implementation Research (CFIR) guided data collection

and analysis across multiple ecological levels. Techniques included semi-structured and ad hoc interviews, focus groups, and reflective logs. Participants included FC founders, players, policymakers, and coordinators of comparable models, allowing insight into system-level dynamics within and beyond FC's setting.

Results: Barriers to participation included discomfort caused by pitch surfaces, inconsistent team selection, and difficulties accessing venues, particularly linked to start times and transport. Facilitators included the use of 3G pitches as a suitable surface, a technological solution to support logistics and team organisation, and aligning games with public transport. Internally, effective communication structures and clearly defined volunteer roles were crucial to delivery.

Discussion: The findings highlight the value of implementation science in identifying contextual, structural, and interpersonal factors that shape delivery. This research contributes to implementation literature by applying CFIR and ecological theory to a social enterprise initiative to improve men's health.

Conclusion: This study informs the development of a scalable implementation strategy for FC. Key considerations include: (1) a robust organisational and communication structure, (2) a digital solution to support delivery, (3) accessible, appropriate facilities, and (4) volunteer recruitment and training. The strategy provides a framework to support the scale-up of community-based physical activity interventions for men's health in Ireland.

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Theme: Physiology and Nutrition

Identification of Weight Making Practices in Naturally Menstruating Female Athletes Competing in Weight Category Sports.

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Background/Introduction: Weight category sports (WCS) require an athlete to be a specific body weight to be eligible for competition (Burke et al., 2021). Weight making practices (WMP) are completed to allow athletes to decrease their body mass prior to competition (Burke et al., 2021). The menstrual cycle (MC) can see a fluctuation in body weight (Langan-Evans et al., 2022), which may impact a female athlete's ability to "make-weight". The study aimed to identify WMP and the impact of the menstrual cycle in females competing in WCS.

Methods: Weight category athletes were invited to complete an anonymous online questionnaire. The Rapid Weight Loss Questionnaire (RWL-Q) was used to identify WMP (Artioli et al., 2009). The inclusion criteria for this study were: (1) female athletes competing in a WCS (2) aged between 18-50 (3) self-reported naturally menstruating for at least 12 months prior to the survey (4) free from hormonal contraceptives and

performance enhancers in the last 12 months, and (5) have reduced body weight for competition in the 12 months.

Results: Eighty-nine respondents accepted the study invitation and completed the questionnaire. Sixty-six participants meet the inclusion criteria and were included in the analysis. Participants included: powerlifters (n=21), Olympic weightlifters (n=14), rowers (n=1) and combat sports (n=30). Gradual dieting was the most common practice used by 94% of participants. Coaches were the most influential figures in weight-making decisions. Fifty-five percent of participants reported feeling their MC affected their ability to make weight and 35% of participants considered their MC when selecting a WMP.

Discussion: Participants reported feeling the MC affected their ability to make weight and that they took their MC into consideration when selecting a WMP. There is limited research available for female athletes making weight across the MC phases. Oestrogen and progesterone influence cardiovascular, metabolic, and respiratory systems (McNulty et al., 2019), potentially affecting body weight and a female athlete's ability to make weight (Langan-Evans et al., 2022)

Conclusion: Athletes and Coaches may benefit from future research on exploring the experience of making weight and provision of MC educational resources.

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The Sleep, Recovery, and Nutrition Characteristics of Elite Adolescent Athletes

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Background/Introduction: Elite sport participation creates a significant burden on adolescent athletes due to demanding training schedules, high training intensities, and the complexity of puberty [1–3]. As such, an athletes' ability to effectively balance stress and recovery is essential for their athletic performance and requires appropriate management throughout the competitive season [4]. This research aimed to investigate: (i) the quantity, quality, and timing of sleep; (ii) general and sport-specific nutrition knowledge; (iii) recovery

practices; and (iv) the relationships between sleep, nutrition, and recovery practices in elite adolescent athletes.

Methods: Fifty-one elite youth team-sport athletes completed a battery of previously validated and reliable questionnaires which investigated their sleep characteristics, nutrition knowledge, and recovery practices.

Results: Participants scored lower in sport nutrition knowledge (36.10 ± 12.13%) and total nutrition knowledge (40.25 ± 11.18%) compared to general nutrition knowledge (49.53 ± 16.46%). Overall, the sample scored below 50% in all nutrition knowledge domains. Mean PSQI global scores were 4.27 ± 2.47. 63% (n = 32) of participants were identified as good sleepers and 37% (n = 19) as having poor sleep quality based on the PSQI. Furthermore, 94% of the sample reported their sleep quality as "fairly good" (n = 30) or "very good" (n = 18). The Consensus Sleep Diary—Core showed significant differences in total sleep time (TST) between training days (9.47 ± 1.31 hours) and rest days (10.52 ± 1.30 hours). Moreover, athletes demonstrated moderate levels of general (1.50 ± 0.86) and sport-specific stress (1.57 ± 0.85). They also reported high levels of general recovery (3.92 ± 0.74) and sport-specific recovery (3.72 ± 0.96). Correlations between measures revealed statistically significant correlations between the PSQI global score, Sleep Difficulty Classification (SDC), and REST-Q scales (Pearson's r = 0.3-0.67). Small significant correlations were observed between the SDC and REST-Q recovery scales. Importantly, no significant correlations were found between A-NSKQ scores, PSQI global scores, SDCs, or REST-Q scales.
Conclusions: The research provides evidence that steps must be taken to improve athletes' knowledge of the fundamental aspects of recovery, including sleep and nutrition, to support their athletic performance and well-being. This is particularly important for adolescent athletes facing unique developmental and training demands. Moreover, this study highlights the necessity of further investigating the effect of educational strategies on improving sleep, nutrition, and recovery knowledge in athletes to aid recovery and dietary behaviours.

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The effect of competitive female Gaelic games match play on neuromuscular function

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Background/Introduction: Gaelic games match play includes intervals of lower intensity activities interspersed with repeated high-intensity bouts which often leads to fatigue [1,2]. Despite this, no study has comprehensively investigated the effect of competitive match play on fatigue in female Gaelic games athletes. The purpose of this study was to examine the post-match changes in neuromuscular function following competitive female Gaelic games.

Methodology: Twelve collegiate female Gaelic games players (age: 21±1 yrs, height: 170.5±4.5 cm; body mass: 66.2±8.1 kg) were recruited for this study. The following were collected pre- and post- competitive match, and again at 12h, 36h, and 60h post-match: reactive strength index (RSI), countermovement jumps (CMJ) and maximal isometric relative torque during knee extension (KE) and flexion (KF) paired with surface electromyography (eEMG), plasma interleukin-6 (IL-6) as well as Global positioning systems (GPS) recording match play. Data were analysed using one-way repeated measures ANOVA and paired T-tests to examine changes.

Results: The mean distance covered was 4812.5±1315.8 m. CMJ height decreased from immediately post- to 12h post-match (226.9±5.0 to 24.7±4.2 cm, P=0.006, ηp2= 0.356). Neither Vastus Lateralis (VL) or Biceps Femoris (BF) peak amplitude, RSI or KF changed over time (P>0.05). There was a main effect of time on KE (P=0.006), which decreased from 2.56±0.63 Nm.kg-1 post- to 2.25±0.62 Nm.kg-1 60h post-match (P=0.026), with a large effect (ηp2 = 0.274) and did not return to baseline (2.48±0.12 Nm.kg-1) at 60h post-match. There was a main effect of time on blood plasma IL-6 pg.mL-1 (P=0.019). IL-6 increased from 1.36±2.59 pre- to 3.91±3.26 pg.mL-1 post-match (P=0.030). IL-6 decreased from 3.91±3.26 post- to 0.95±1.60 pg.mL-1 12h post-match, with a large effect (ηp2 = 0.410), and remained at baseline until 60h post-match (P=0.448).

Discussion: The reductions in neuromuscular function up to 60h post-match, indicates the fatigue induced by female Gaelic games players. This is similar to male Gaelic games players who experience fatigue up to 48h post-match [3].

Conclusion: Although the systematic inflammation dissipates quickly (<12 h), the neuromuscular system remains suppressed until 36h and in some respects 60h, which has implications for training and match schedules where optimising performance is crucial.

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Case Study: A time-course observation of reductions in lean body mass following surgery in Elite Rugby Union

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Background/Introduction: The current case study details the changes in body composition observed following a left shoulder contact injury and subsequent Latarjet surgical procedure. within elite rugby union. Following a Latarjet procedure, return to play (RTP) rates among collision athletes are 88.2 %, with 69.5 % returning to the same level of play (Hurley, et al., 2019). A progressive loss of fat-free mass, reduction in functional strength, and an alteration in metabolic responses and fat depositions can occur during these immobilisation periods (Wall et al., 2014) with this likely due to a combination of resistance of muscle to protein ingestion following immobilisation (Wall, et al., 2013) and the lack of muscle stimulation during the period of injury.

Method: The player specific nutritional intervention aimed to maximise healing with the secondary aim of increasing lean body mass and decreased fat mass when compared to baseline values. Post the contact injury the player underwent dual x-ray absorptiometry (DXA) scans, two-days prior to a Latarjet surgical procedure (DXA0d), seven days post-surgery (DXA7d), and one-month post-surgery (DXA30d). Sum of 7 sites skinfold thickness (ΣS7) was recorded throughout and provide a view of the player's response to the training and nutrition interventions during the return to train phase.

Results: These scans showed a 1.3 kg loss of total body lean mass during the first seven days following surgery, with a subsequent 0.8 kg loss in the following 23 days. Regional analysis showed overall losses of lean body mass from the arms (7.8 %), legs (3.2 %), and trunk region (2.2 %), with the greatest losses occurring in the first seven days. Sub-regional analysis indicated greater losses of lean body mass in the injured limb (12.8%), with greatest losses observed between day 7 and day 30.

Discussion: Despite hypercaloric conditions and elevated protein intake during the intervention, these processes did not appear sufficient to improve muscle retention within the current injury nutritional case study analysis of a rugby union player.

Conclusion: Identifying appropriate caloric and specific nutrient requirements is still difficult during immobilization and the rehabilitation period following an injury.

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Prevalence, Practices and Influences of Rapid Weight Loss Among Adolescent Combat Sport Athletes in Ireland: A Cross-Sectional Study

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Background/Introduction: This study investigated the prevalence, methods, and influencing factors of rapid weight loss (RWL) among adolescent combat sports athletes in Ireland. Despite known risks, RWL remains widely practiced in weight-category sports, yet limited data exists on adolescent athletes in Ireland.

Methods: A total of 37 athletes (28 males, 9 females) aged 13–19 years old participated in this cross-sectional study, completing the validated Rapid Weight Loss Questionnaire (RWLQ). Descriptive statistics were used to assess RWL prevalence and weight-loss methods, while inferential tests, including t-tests, ANOVA, and Friedman/Wilcoxon tests, were conducted to evaluate differences between groups and rank sources of influence.

Results: The prevalence of RWL was 67.6%, with male athletes exhibiting a higher prevalence (71.4%) than females (55.6%). Most participants reported losing 5.0–9.9% of body weight per competition. Dehydration-based methods were frequently employed, with 43% of participants using fluid restriction, 39% training in heat, and 32% using saunas “always” or “sometimes.” Extreme methods, such as diet pills and

diuretics, were infrequently used, with over 80% of participants reporting they “never” or “do not use anymore” these practices. Coaches (mean rank = 5.14) and peers (mean rank = 4.98) were ranked as the most influential sources guiding weight-loss practices, while healthcare professionals, including nutritionists (mean rank = 3.72), were considered less influential. Significant differences in influence rankings were observed among external sources ($\chi^2(6) = 50.481$, $p < 0.001$), with coaches ranking significantly higher than medical doctors ($Z = -4.047$, $p < 0.001$).

Discussion: These findings highlight the prevalent use of RWL practices in this population and emphasize the need for targeted education to promote safer weight management strategies. Greater involvement of medical professionals, particularly dietitians and sports nutritionists, is critical to mitigating the risks associated with RWL in adolescent athletes.

Conclusion: RWL is widely practiced among adolescent combat sport athletes in Ireland, with dehydration-based methods often starting at a young age and influenced mainly by coaches and peers. Health professionals had minimal involvement. These findings highlight the need for early education, structured recovery protocols, and greater engagement from multidisciplinary teams. Combat sport organisations must provide evidence-based resources and professional support to promote safer weight management in youth athletes.

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Body composition changes in jockeys overtime: A Systematic Review

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Background/Introduction: Jockeys must maintain a low body mass to meet specific racing weights, which often encourages the use of unhealthy weight making practices. Research suggests jockeys body fat percentage (BF%), assessed by Dual Energy X-ray Absorptiometry (DXA), has increased in recent years raising concerns for weight category athletes where low body mass is crucial. This systematic review aimed to evaluate the body composition changes in jockeys.

Methodology: This systematic review was reported in accordance with the PRISMA (Preferred Reporting Items for Systematic Reviews and Meta-Analyses) 2020 guidelines (1). A systematic search of PubMed and Web Of Science (WOS) was conducted using the PEO (Population, Exposure, Outcome) framework. Inclusion criteria were: studies that reported body composition data on professional jockeys from 2008 to 2025, assessed using DXA (BF%, lean mass (kg), fat mass (kg)) or skinfold measurements (sum of 7 or 8), in the English language. Risk of bias was evaluated using the Newcastle-Ottawa Quality Assessment Scale.

Results: An initial search identified 94 and 134 results in PubMed and WOS, respectively. Duplicates were removed, resulting in 173 studies for title and abstract screening. This screening process resulted in 26 studies for full-text screening, where 16 studies were included in the review. BF% reported in studies from 2008 to 2025 had increased from 8-15%. Sum of 7 skinfolds had consistently ranged from 42mm to 56mm and sum of 8 skinfolds from 44mm to 47mm.

Discussion: Findings displayed a clear increase in BF% measured by DXA from 2008 to 2025. However, sum of skinfolds using skinfold measurements did not increase. Findings from this study have implications on the messaging that BF% in jockeys is increasing over the years, when subcutaneous fat is remaining constant.

Conclusion: This review highlights the inconsistencies between DXA and skinfold measurements of BF in professional jockeys. Future research should focus on determining factors contributing to these differences in indicators of BF which subsequently impact the understanding of dietary and exercise interventions to aid in weight management for racing.

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Theme: Sport Psychology

The effects of acute resistance exercise on anxiety related responses in young women with analogue generalized anxiety disorder and their associations with expected psychological outcomes.

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Background/Introduction: Generalized anxiety disorders (GAD) are the most common type of anxiety disorders seen in primary health care settings (Hoge et al., 2012), with young females twice as likely to experience GAD than males (Kessler et al., 2012). GAD is often characterized by elevation in anxiety and other related anxiety outcomes, such as feelings of anxiety-tension (Herring et al., 2011). Examining acute psychological responses to resistance exercise (RE) is crucial as it can serve as a predictor for future engagement with exercise. Previous research has lacked mode specific measurements of expected psychological outcomes of acute RE and how these expectations influence psychological responses to acute RE.

Methods: This study quantified the effects of a single bout of World Health Organization (WHO, 2010) and American College of Sports Medicine (ACSM, 2009) guidelines-based moderate-to-high intensity RE compared to a low-intensity sham on state anxiety and feelings of anxiety-tension amongst young women with analogue

generalized anxiety disorder (AGAD). It also examined the potential associations between expected psychological outcomes of acute RE and actual observed responses to acute RE. An acute 45-minute bout was nested within a ten-week trial design for moderate-to-high (n=35) and low-intensity sham (n=31). A two (groups) x two (time-points) RM-ANOVA examined differences between groups. Spearman's rho quantified associations between expectations and anxiety related responses.

Results: The group X time interaction was not significant for anxiety related outcomes (d=-0.12 to 0.30, all p≥0.10). Within group changes were significant with moderate-to-large effect sizes (d: 0.52 to 0.77). There were no associations in both groups between expectations and psychological response (all rho: -0.06 to 0.75).

Discussion: Acute guidelines-based RE significantly reduced state anxiety and feelings of anxiety-tension in young women with AGAD, ten minutes post-RE in both groups with no significant differences between groups. There were no associations between expectations and psychological response. These findings suggest that both moderate-to-high and low-intensity RE are effective in significantly reducing anxiety related outcomes in young women, independent of any potential associations of expectations of psychological outcomes and responses.

Conclusion: Both acute mod-to-high and low-intensity RE significantly reduced anxiety symptoms in young women with AGAD.

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Mental health in thoroughbred horse breeding: Prevalence and risk factors.

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Background/Introduction: The horseracing industry faces issues of staff retention which may be attributed to a high workload, poor work-life balance, and a lack of career progression (Juckes et al., 2021). Working conditions contribute to mental health and turnover intention in other industries and sporting organisations (Cho & Lee, 2020). Staff on thoroughbred breeding farms work long hours with limited job control (Mc-Conn-Palfreyman et al., 2019). Despite this, research on mental health in the breeding sector is lacking.

Method: Thoroughbred breeders and stud farm staff (N = 99) were recruited for an anonymous online survey. Validated self-report questionnaires assessed the prevalence of Common Mental Disorders (CMDs) including depression, anxiety and substance use. Predictor variables including career satisfaction, job control and workplace bullying were also assessed. Data were analysed to explore associations between CMDs and risk factors.

Results: Preliminary findings show high prevalence rates for CMDs in breeding staff. 49.5% of breeding staff met the criteria for depression, 38% for psychological distress, 28% for anxiety, and 26% for adverse alcohol use. Lower career satisfaction was related to higher turnover intentions, $F(2, 41.71) = 19.63$, $p < .001$. Lower job control was associated with higher psychological distress ($r = -.335$, $n = 99$, $p = < .001$). Workplace bullying was strongly associated with increased anxiety ($r = .565$, $n = 99$, $p = < .001$). Female staff ($M = 45.40$, $SD = 22.28$) were significantly more likely to experience workplace bullying than males ($M = 34.14$, $SD = 14.33$); $t(94.90) = 3.026$, $p = .003$.

Discussion: Findings indicate that breeding staff report similar CMD prevalence to racehorse trainers and jockeys (King et al., 2021). High prevalence rates of CMDs are influenced by working conditions in thoroughbred breeding. Working conditions also influence staff leaving intentions. Preliminary results indicate gender differences in working conditions in the breeding industry.

Conclusion: This novel research increases understanding of factors influencing mental health in the breeding sector. Research on working conditions and mental health of breeders and stud farm staff is necessary to inform policy and interventions aimed at improving staff mental health and retention in the thoroughbred breeding industry.

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A qualitative study to explore of the experiences of pregnancy and motherhood on elite Irish athletes

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Background/Introduction: The voice of female athletes is underrepresented throughout sport literature and athlete-mothers constitute a fraction of that research. The primary aim of this study was to examine the experiences of pregnancy and motherhood in elite Irish athletes with a view to highlighting the steps needed in policy, practice and research to support these athletes.

Methods: The participants for this study were elite female athletes who competed at national or international level in their respective sport. Ten (n=10) elite athlete mothers were interviewed. Participants were Irish and experienced pregnancy whilst competing at elite level, and following their pregnancy returned to compete at elite level or have done so, in the last five years. Interviews were transcribed verbatim and analysed using interpretive phenomenological analysis.

Results: The results produced two overarching themes for the experiences of pregnancy and motherhood in elite athletes; Identity and Support. Pregnancy further produced the theme psychological challenges, with motherhood producing two distinct themes; Biopsychosocial factors and Breastfeeding. The most supportive environments prioritised open communication, placed female issues to the fore, were empathetic and inclusive of the athlete and their child. The findings suggested National Governing Bodies in Ireland lack policy and guidance for athletes and coaches. This is regarding pregnancy disclosure, supporting the athlete during pregnancy and on return postpartum and provisions for the inclusion of the child and a support person within the elite set up.

Discussion: The study provides actionable recommendations and future research directions to support mothers returning to elite environments.
Conclusion: No literature currently exists from an Irish perspective examining the experiences of pregnancy and motherhood in elite athletes.

Conclusion: No literature currently exists from an Irish perspective examining the experiences of pregnancy and motherhood in elite athletes.

Stable Minds: An Investigation into the Mental Health and Risk Factors among Trainers and Stable Staff in Thoroughbred Horse Racing

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Background/Introduction: Research has shown that stable staff and trainers experience mental health challenges with 80% suffering from stress, anxiety, and depression (McConn-Palfreyman et al., 2019), in addition to high rates of occupational injuries, poor sleep quality and substance misuse (Davies et al., 2023; King et al., 2021). The purpose of this study is to investigate the prevalence of symptoms related to common mental disorders (CMDs) among Irish stable staff and trainers.

Method: A cross-sectional survey design was employed. The participants (n=152) included 42 licensed trainers and 110 stable staff. Recruitment was conducted through social media, governing bodies, and industry gatekeepers. Participants completed an anonymous self-reported survey assessing demographics, common mental disorders, career satisfaction, social support, sense of agency, workplace bullying, help-seeking, sleep quality, alcohol & drug use, and coping strategies.

Results: Preliminary findings revealed that 28% of participants met the criteria for mild anxiety, and 16% for severe anxiety. Depressive symptoms were reported for 57% of participants with 23% experiencing severe psychological distress. Hazardous alcohol use was identified in 62.5% of participants, while 9% showed signs of drug-related problems. Career dissatisfaction was reported by 84% of participants. Additionally, 15% experienced moderate exposure and 11% high exposure to workplace bullying.

Discussion: These findings highlight the high prevalence of anxiety, depression, and psychological distress among Irish racehorse trainers and stable staff. The results also show considerable levels of career dissatisfaction, hazardous alcohol use, and workplace bullying exposure. Compared to previous research (King et al., 2021; McConn-Palfreyman et al., 2019) career dissatisfaction and hazardous alcohol use appear significantly higher. Further analysis will explore the associations between age, gender, career satisfaction, financial pressure, bullying, job role and the prevalence of common mental disorders.

Conclusion: In conclusion, these preliminary findings highlight the urgent need for mental health support for racehorse trainers and stable staff in Ireland. The findings of this study provide clear insights into the

prevalence of common mental disorders among Irish racehorse trainers and stable staff, serving as a foundation for developing effective evidence-based mental health interventions.

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Acute and Chronic Effects of Guidelines-Based Progressive Resistance Exercise Training compared to a Low-Intensity Sham Attention-Control on Depressive Symptoms among Young Adult Women with Analogue Generalized Anxiety Disorder: Design and Methods for a Randomized Controlled Trial

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Background/Introduction: Young women are at-risk for first-onset Generalized Anxiety Disorder (GAD), Major Depressive Disorder (MDD), and their comorbidity. Evidence supports the benefits of progressive, moderate-to-high-intensity, guidelines-based resistance exercise training (PRET) over a waitlist control for depressive symptoms in young adults with analogue GAD (AGAD). However, the true PRET effect on depressive symptoms, without non-PRET-specific social and psychological benefits of the intervention, remain unclear. This randomized controlled trial (RCT) controlled for these benefits by comparing PRET to a low-intensity sham RET attention control (SHAM).

Methods: This ten-week RCT compared PRET to a SHAM among young adult women (18-40y) with AGAD. Cut-scores on both the Psychiatric Diagnostic Screening Questionnaire GAD subscale (≥6) and the Penn State Worry Questionnaire (≥45) determined AGAD status. Full-body PRET was designed in accordance with World Health Organization and American College of Sport Medicine guidelines, with two sets of 8-12 repetitions of eight exercises at moderate-to-high-intensity (70-80% 1 repetition maximum (1RM)). SHAM participants completed an identical program at low-intensity (20% 1RM). Depressive symptoms were measured using the Quick Inventory of Depressive Symptomatology (QIDS) at baseline, pre-week 1, week 4, 8, and one-month

follow-up. Two acute resistance exercise trials were nested in at weeks one and eight; the Profile of Mood States Brief Form-Depression/Dejection subscale measured depressed mood state immediately before, and approximately 10 minutes after resistance exercise.

Expected Outcomes: The mean age of PRET and SHAM participants was 21.8±1.9 and 21.7±2.4 years, respectively. Moderate severity depressive symptoms (QIDS: PRET=10.3±3.6; SHAM=11.1±4.6) and comorbid analogue MDD (PRET=9(33%); SHAM=13(46%)) were indicated at baseline. A small-magnitude (Hedges' d=0.30) antidepressant effect of PRET compared to the SHAM was expected.

Discussion: This is the first RCT to examine the effect of PRET on depressive symptoms among at-risk young women while controlling for potential social and psychological benefits of engaging with the intervention. Inclusion of the SHAM group will also facilitate novel examinations of a potential minimal effective dose for meaningful improvement from PRET.

Conclusion: This RCT examined the acute and chronic effects of PRET compared to a SHAM on depressive symptoms and depressed mood state among young women with AGAD.

Exploring the Role of Mentorship in Supporting Mental Health and Well-Being Among Elite Gaelic Games Student-Athletes

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Methods: Quantitative findings indicate that mentorship had a positive effect on mentee mental health & Well-being. Thematic analysis identified core themes of informal support as a key ingredient to support student athlete well-being, development of time management practices to reduce stress and burnout and goal setting to assist student athletes with progressing in both academia and sport.

Results: The findings contribute to the limited empirical research on mental health interventions for Gaelic games student-athletes, reinforcing the importance of structured mentorship as a well-being support mechanism. The study aligns with global literature on athlete well-being (Hallmann et al., 2023; Rice et al., 2016), while also addressing a key research gap within the Gaelic games context (Jackman et al., 2024). The results highlight the need for continued investment in tailored mentorship initiatives to support dual-career athletes effectively.

Conclusion: Mentorship presents a promising intervention for enhancing well-being among elite Gaelic games student-athletes. Given the lack of structured mental health interventions in this cohort, further research should explore long-term impacts and scalability within the Gaelic games framework.

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Theme: Women in Sport

How to Develop And Assess An Education Intervention On Female Breast Health In Rugby Union: A study protocol

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Background/Introduction: Rugby Union, (hereafter Rugby), has reported a 28% rise in female player registrations since 2017, now comprising a quarter of the total playing population in the sport worldwide (1).

Female Rugby players are exposed to a notable risk of a contact breast injury (CBI), or exercise induced breast pain (EIBP), or both, during their career, with the latter potentially affecting over half of female players. Additionally, the overall knowledge and awareness amongst players and support staff (coaches, S&C, and medical support staff such as physiotherapists, athletic trainer or team doctors) around breast health issues and their potential related future health complications is lacking (2).

Methods: Active female amateur Rugby players and support staff will be invited to participate in an online education intervention (EI) on breast health in Rugby. The EI will consist of multiple components (educational videos, multiple-choice questions (MCQ) and pre and post surveys) embedded into a webinar. Pre and post EI surveys entail components such as the rating of participant knowledge, awareness and importance of breast health, and participant likeliness to report or record breast pain or injury. Quantitative responses from the pre and post survey questionnaires will be analysed via a paired sample t-test to compare any changes of knowledge and awareness the education elicits. Effect size (Cohen's d) will be calculated to assess the magnitude of any difference.

Proposed outcome: The proposed outcome of this study is the development of an EI to enhance the knowledge and awareness of breast health issues in women's Rugby amongst players and support staff.

Discussion: EIs are an established method in sporting environments to enhance knowledge and awareness around topics such as the female athlete triad (3). As previous EIs on breast health and breast issues among young equestrians (4) showed significant positive pre- and post-intervention changes regarding topic knowledge and awareness, this study aims to replicate these outcomes in a female Rugby environment.

Conclusion: There is overall limited availability of sport specific information on breast health issues. This study will aim to address the dearth of EIs through a multicomponent Rugby specific EIs on breast health issues.

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A longitudinal study into the confounding factors of hamstring strain injury in female field-sport athletes over one playing season.

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Background/Introduction: Hamstring strain injuries (HSI) are one of the most common injuries seen in women's sports and can impose a considerable burden on the player, the team and the healthcare system (Amundsen, et al., 2024; Roe, et al., 2018). However, most studies in this area have been conducted on male athletes. This study aims to perform longitudinal tracking of the confounding factors of HSI and investigate their association with the incidence of HSI in female sports.

Methodology: Female field-sport athletes aged 16 years and over, who are a member of a club competing in a National/Intercounty league in Ireland will be invited to participate. Players will complete a baseline medical questionnaire, detailing age, body mass, previous injury, current injury, playing position and dominant leg. Training exposure and player wellness will be monitored weekly. At three timepoints throughout the playing season, physical testing will be conducted and a questionnaire regarding players' opinions on communication within the club will be conducted.

Expected Outcomes: This study is expected to reflect the results of previous research, which found poor flexibility, muscle imbalances, inadequate strength, overtraining or sudden increases in training volume, and inadequate rest and recovery times between training sessions or games to be modifiable risk factors for HSI (Green et al., 2020). Ekstrand et al., (2023) found that lack of communication between medical staff and coaching staff, and a lack of interest in prevention strategies by the club to be extrinsic risk factors for HSI.

Discussion: This is the first study to assess both intrinsic and extrinsic risk factors of HSI in multiple female field-sports. This study is expected to provide greater insight into the modifiable risk factors for HSI and the monitoring of training load in female athletes, across multiple sports. The findings will contribute to a deeper understanding of the multifaceted nature of HSI in female sports. By addressing these confounding factors, we can prompt a re-evaluation of these factors to inform future interventions.

Conclusion: This research is expected to serve as a valuable resource for practitioners working in female sports, providing insight into HSI injury risk reduction strategies.

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Not Small Men: The absence of female reference in sports engineering research

O'Donnell, M

Background/Introduction: The adage 'women are not small men' crops up in a multitude of ways within the sports industry. In physiological capabilities, training styles, nutrition, and now, with the rise of computational modeling and 3D-scanned figures, sports engineering. However, within each of these industries, there appears to be a significant lack of reference to female studies. With a particular focus on sports engineering, modeling, and cycling as a reference activity, this research aims to highlight this absence and how female-specific anatomy and physiology must be considered, for example, in high-performance cycling and bike fitting.

Method: In-depth, unstructured online interviews were conducted with 5 individuals selected through professional networks, industry-specific research, and sporting bodies. Participants were also selected from reference to the authors Masters in Aeronautical Engineering thesis as applicable to this research. The participants have been involved with sports engineering research and female athlete research and worked with amateur and professional athletes within the last ten years. From the data collected, a thematic analysis approach was used where emerging themes were identified.

Expected Outcomes: It is expected that the research will demonstrate a lack of female participation and acknowledgement within the sports engineering industry, and it will be discussed as to how this can change. There will be a comparison to female and male athlete requirements and why certain assumptions cannot be made in areas such as 3D body scanning, aerodynamic flow topology, and anatomical capabilities. This research is set as a call to action within engineering to include more female references.

Discussion: The conversation so far shows that a holistic approach is required to solve this problem, with hopes this research will further highlight that. A societal change is required, alongside adequate funding, participation, and support for both female athletes and engineers. Interdisciplinary research is required, which includes involving national governing bodies and industry.

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Balancing Rigour and Reality: Practical Insights and Considerations for Menstrual Cycle Research

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Background/Introduction: Practical challenges are the main hindrance to impactful menstrual cycle (MC) research. Focus is placed on the required gold-standard methods (Elliott-Sale et al, 2021), but less often on practical considerations for challenges associated with study design. This study aimed to describe MC characteristics, highlight constraints experienced during gold-standard MC data collection and provide practical recommendations.

Method: Eleven tier-2 trained females participated in the study (23.0±3.0 years and 65.8±7.3 kg). Participants reported having nine or more consecutive periods a year. Cycle mapping, urine ovulation predictor kits (OPK) and venous blood sampling was used throughout three MCs. Cycle tracking began on day one of period, OPK was used at predicted time of ovulation and blood samples were collected seven days post positive OPK. Blood samples were analysed for mid-luteal progesterone concentration to confirm ovulation.

Results: Almost half (46%) of participants completed the study over four MCs due to methodological issues. A positive OPK was not detected in 1 participant in cycle one, 2 participants in cycle two and 3 participants in

cycle three. Of all 11 participants, 11 had a blood draw in cycle one, 8 in cycle two and 10 in cycle three. In cycle one, 8/11 blood samples met the conservative progesterone limit of 16 nmol/L confirming ovulation, followed by 6/8 in cycle two and 8/10 in cycle three.

Discussion: Large intra-individual variation was present from cycle to cycle. Due to variability, challenges were encountered which reduced the quality of the data. Challenges experienced were attributed to lack of or incorrect OPK result, mid-luteal phase identification and not meeting the progesterone limit. Organisational skills, constant contact with participants and the use of available previous MC characteristics are some of the practical recommendations suggested when conducting MC research.

Conclusion: There are several caveats pertaining to high-quality MC research. Sharing experiences throughout data collection can help build a better framework for researchers to overcome challenges throughout MC research.

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Factors Affecting Development of Kicking Techniques in Ladies Gaelic Football: A Cross – Sectional Study of Nine Senior Intercounty Games and Reflections of Five Female GAA Development Officers.

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Background/Introduction: The Punt Kick (PK) may be overused in women's football to the determined of developing other kicking techniques. Most gender based kicking studies display problematic methodologies or stereotyping of female biomechanical abilities (Boyne et al. 2021). This combined with the emerging understanding of how societal factors effect motor skill development, and how biomechanical gender differences diminish if not totally disappear when skill level is improved (Nimphius, 2020), lead to the hypothesis that lack of kicking technique development in women's football could be sociologically based.

Method: A mixed methods approach of quantitative performance analysis of nine Senior All Ireland finals from 2000-2023 and qualitative semi structured interviews with five female GAA development officers with a combined 70+years professional experience. Every kick was analysed by scenario and technique, and thematic analysis was conducted on the interview transcripts.

Results: PK usage decreased by 25% and 33% in overall and deadball pass use respectively with a 19% and 32% increase in inside of the boot use for the same scenarios. Shooting from play PK reduced by 9%, and 11% from scoreable frees, while hook kicks increased by 8% and 6% in the same. Elevated ground striking reduced by 35%, and an overall 23% reduction in kicking was witnessed. Lack of exposure females have to learn and

develop the various kicking techniques compared to their male counterparts was the main theme evident in the interviews.

Discussion: When looking further into the development of kicking techniques from decade to decade, interesting trends where visible. The development of the IB before the HK, and the development of these techniques sooner in Goalkeepers who accounted for 41% of these techniques in the 2020s. Interviewees discussed the potential effects of Gendered Embodiment on skill development as one element linked to a lack of exposure which becomes evident at every layer of the ecological framework.

Conclusion: It is proposed from this study that females do not struggle biomechanically to get into the required positions to perform these kicking techniques as is traditionally believed. Rather it may sociological factors that has prevented the development of these techniques in women's football.

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An investigation into the participation of women across all aspects of martial arts on the island of Ireland.

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Background/Introduction: There is limited research into the experiences of females in combat sport (Matthews et al., 2016) and none in Ireland. Martial arts (MA) is growing in popularity and female participation in the sport is on the rise (Ciaccioni et al., 2024), yet dropout rates in Irish sport remain disproportionately high compared to male counterparts (Sport Ireland, 2023). Insights into where females currently stand within MA may enhance their experience and aid in the growth of the sport (Spencer, 2014).

Method: The Women in Sports Committee of the Irish Martial Arts Commission (IMAC) devised and distributed a 136-question survey consisting of closed- and open-ended questions relating to member profile, club experiences, coaching, training, volunteering, governance, leadership and officiating. Participants (n = 107) were all female members of IMAC-affiliated clubs.

Results: Female IMAC administrative members include coaches or instructors (42%), referees or umpires (29%), examiners (18%), and other official roles (14%). Forty-six percent of participants reported that they do not compete in their martial art. A statistically significant relationship was identified between age and competitive status ($p < 0.05$). However, no significant relationship was found between the support of female coaches and instructors and competitive status ($p > 0.05$). Findings suggest that a significant proportion of female practitioner's experience fluctuations in confidence levels ($p < 0.05$), with perceived coaching quality and access to female mentorship being key contributors. Dropout rates were noted high among younger participants and those lacking consistent support structures.

Discussion: Subjective data collected from the questionnaire highlighted different areas for improvement and suggested actions that may be taken to enhance the female MA practitioner's experience. Addressing barriers related to gender representation in coaching and governance could further enhance engagement and participation rates.

Conclusion: A limited yet meaningful proportion of female IMAC members hold key roles within their clubs. Providing greater support and training could enhance their experience, boost their confidence, and encourage higher-level participation. The insights from this study can inform the development of targeted initiatives to support female practitioners, ensuring a more equitable and engaging competitive environment.

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PG Poster Presentations

A systematic review of sex-based differences in concussion/mTBI incidence and post-injury recovery.

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Background/Introduction: Mild traumatic brain injury (mTBI) or concussion is considered a temporary alteration of consciousness or cognitive function of the brain due to external force. This accounts for most TBI-related morbidity and mortality worldwide. However, the pathophysiology behind mTBI is unclear [1]. It is known that there are sex-based differences in symptomology and severity of symptoms post mTBI. It is hypothesised that functional and structural differences in male and female brains may play a role in mTBI management at the time of impact and during the recovery phase [2]. Hence, this systematic review focuses on assessing the sex-based implications of mTBI incidence, severity, and post-injury recovery of patients aged 18 and over.

Method: This systematic review follows the Preferred Reporting Items for Systematic Review and Meta-Analysis guidelines. An initial keyword search was conducted in four databases (PubMed, SportDiscuss, Web of Science, and Scopus) for articles published from 2000 to 2024. The articles are included if they satisfy the inclusion criteria; participants are healthy males and females ages 18 and over diagnosed with mTBI/ concussion due to contact/non-contact sports, trauma, collision, whiplash or blast related injuries. Concussion/mTBI diagnostic and prognostic outcomes with quantifiable data will be observed and reviewed for the male and female patients according to the inclusion criteria. The protocol registration number is CRD420251011379.

Results and Discussion: 21610 number of papers were identified through database searches. 14682 were excluded following 1st pass and 6928 are currently being reviewed. Up to date 612 articles are included for sex-based variation across the concussion/mTBI incidence, severity, and post-injury recovery will be reviewed in detail. Understanding the sex-based factors can be incorporated into injury severity diagnosis, prognosis, and post-recovery management. These stages will be further examined under different subcategories of cognitive, motor control, visual, and vestibular.

Conclusion: A thorough understanding of sex-based factors can guide effective treatment interventions and post-injury management. It will eventually reduce the incidence of neurodegenerative diseases among the impacted population while enhancing health and well-being.

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Low Energy Availability (LEA) in Elite Adult Team Ball Sport Athletes: A Systematic Review

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Background/Introduction: Low Energy Availability (LEA) occurs when an individual's dietary energy intake is insufficient to support their energy needs. Whilst LEA research initially focused on female athletes competing in aesthetic, endurance, or weight-restricted sports, it is now recognised to be a relevant issue for male athletes and those competing in team ball sports. Therefore, this systematic review aimed to investigate prevalence of LEA in elite team ball sport athletes, with a specific focus on the methods used to assess prevalence.

Methodology: A comprehensive search of PubMed, CINAHL, SPORTDiscus, Web of Science, Embase, and Scopus, limited to original articles published in English from 2005 onwards, was completed in October 2024. The eligibility criteria included studies involving elite team ball sport athletes aged ≥ 18 years, where prevalence of LEA was measured. Study designs included those suitable to assess free-living LEA (cross-sectional, case, longitudinal, or cohort).

Results: The 11 eligible studies (n = 1 case; n = 2 longitudinal; n = 8 cross-sectional), included 190 athletes (n = 56 males; n = 134 females) representing 10 team ball sports (Australian Rules Football, basketball, hockey, Gaelic football, netball, Rugby, Rugby Union, soccer, volleyball, water polo). Across the 10 included cross-sectional and longitudinal studies, two methods were used, identifying LEA prevalence as 26.3-80.0%. Seven studies used energy availability (EA) calculations, identifying clinical LEA (< 30 kcal · kg FFM · day−1) prevalence as 26.3-63.6% (Loucks, 2004). The Low Energy Availability in Females Questionnaire (LEAF-Q) was used in four studies, identifying LEA in 29.6-80.0% of participants.

Discussion: A combination of EA calculations and the LEAF-Q were used in two of the eligible studies. EA calculations identified 5 of 10 (50%) and 0 of 1 (0%) participants with clinical LEA, whilst 8 of 10 (80%) and 1 of 1 (100%) were flagged by the LEAF-Q. Both studies suggest that the LEAF-Q may overestimate the prevalence of clinical LEA.

Conclusion: Whilst LEA appears to be ubiquitous in elite adult team ball sports, research on this cohort remains limited. This review underscores the need for further investigation of LEA in team ball sport athletes, representing the largest sport playing population.

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A Systematic Review of Emerging Technologies for Surveillance and Identification of Sport-Related Injuries

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Background/Introduction: Sport injury recognition and management is rapidly evolving with the integration of emerging technology. This systematic literature review aimed to identify and analyse the current emerging technologies in injury detection.

Method: A comprehensive database search was conducted using PUBMED, Sport Discus, Web of Science and, ScienceDirect. This Systematic review followed the PRISMA 2020 Guidelines (Page et al., 2021). The study was registered on Prospero (ref. CRD42024608964) on November 1st, 2024. Inclusion criteria comprised of prospective studies involving athletes (children and adults) evaluating tools directly identifying injuries during sport participation. Studies that were retrospective, conceptual, or fatigue-focused were excluded. Full articles were scored for Bias using the CASP tool (CASP UK, 2024). Upon completion, QUADAS-2 (Whiting, 2011) was used to assess the process completed by the research team.

Results: 4283 articles were identified from database searches. From this, 70 articles were retrieved in full and were assessed for eligibility. In total, 24 interventions were included in this review. All included studies directly identified the occurrence of an injury in a sport setting. Technologies were grouped into neuroimaging (Muscular resonance Imagery, Diffusion Tensor Imaging, Quantitative Susceptibility Mapping) . Biomarkers (Neurofilament Light Chain, Tau protein, Glial Fibrillary Acidic Protein), sideline cognitive assessments (King-Devick test, structured video analysis), and wearable sensors integrated with machine learning (Instrumented Mouth Guards). Biomarkers highlighted subclinical injuries (Salivary MicroRNAs), and cognitive assessments(King Devick-Test, Multiple Balance error Scoring System) demonstrated feasibility for immediate sideline identification. Studies were assessed using the CASP Bias tool where no Low-quality findings were reported. 7 Studies had moderate bias due to study design.

Discussion: This systematic review highlights that a variety of different technologies are currently being used

for injury detection. Studies were impacted by design limitations, with lack of control groups, cross sectional designs, small sample sizes and attrition both impacting statistical power of outcomes.

Conclusion: This is the first systematic review to assess prospective and live injury detection systems in a sport setting. Future research should adopt rigorous methodologies, incorporating larger and more diverse samples, validated protocols, controlled experimental designs, and appropriate follow-up periods to ensure practical relevance and reproducibility.

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A Qualitative Exploration of the Lived Experiences of Key Stakeholders in Para Athletics

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Background/Introduction: Para sport development programs must account for unique factors such as impairment-specific characteristics and age of engagement, avoiding generalised pathways [1]. This research gathers qualitative data from key stakeholders to explore the unique challenges and experiences in Para athletics. The aim of this project is to understand the lived experiences of key stakeholders in Para athletics, namely athletes, their coaches and their caregivers, and to determine what makes a positive development experience and design such pathway programs.

Methodology: This project is an exploratory qualitative study which will utilize a constructive grounded theory approach. Data from 22 stakeholders has been collected via semi-structured interviews. A grounded theory approach is being used for analysis.

Results: To date, 8 athletes, 8 coaches, and 6 caregivers have been interviewed.Athlete participants represent various track and field events and classifications. The majority (n = 6) of the athletes have represented their country at Paralympic level. Impairments are a mix of acquired (n = 3) and congenital (n = 5). Coach participants have various reasons for involvement in Para athletics including being a retired athlete (n = 2); living with an impairment (n = 2); a background in able-bodied athletics (n = 4) and supporting a specific athlete (n = 2). All caregivers are supporting an athlete who is currently competing.

Discussion: Preliminary findings highlight the complex and multifaceted nature of Para athletics development. Athletes emphasized the role of intrinsic and extrinsic motivation in their progression, with Paralympic aspirations often driving long-term engagement. Coaches, on the other hand, highlighted the need for impairment-specific knowledge and greater structural support to optimize athlete development. Caregivers played a crucial role in facilitating athlete participation, with familial influence emerging as a significant factor in early engagement and sustained involvement. These insights underscore the need for tailored development pathways that account for the diverse and individualized experiences within Para athletics.

Conclusion: Preliminary analysis of data has allowed a number of themes to emerge. Themes such as lack of resources and unique considerations are common to all participant groups, while other themes were specific to the participant pool, such as motivation in the athlete cohort and familial influence in the caregiver cohort.

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Relationship between match-play running demands and years of playing experience in elite hurling

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Background/Introduction: Total distance (TD), high speed running (HSR) and sprint distance (SD) metrics are commonly used when reporting on the running characteristics of hurling and aid in the prescription of training preparing athletes for match-play demands (Young et al. 2019). Current literature has examined the difference in match play running demands between elite and sub-elite squads (Keane et al. 2023, Collins et al. 2022). There is however no research on the comparisons between match play and playing experience at elite level. The aim of this study is to examine the relationship between match play running demands and years of playing experience in elite hurling squads.

Methodology: Sixty-eight male elite inter-county hurlers participated. Each participant wore a global positioning system unit (GPS) sampling at 10 Hz (STATSports, Apex, Northern Ireland). Metrics analysed in the current study were TD, HSR (>5.5m/s), SD (>7m/s) and high metabolic load distance (HMLD). Each game where an athlete played for more than 70 mins was included for analysis in both the national hurling league and senior hurling championship across the seasons of 2021-2023 inclusive. Participants were split into years of experience groups based on the amount of years they were on an elite panel for each season.

Results: The preliminary findings from the current study indicate that in early years in elite hurling squads, participants high intensity running metrics in full games such as HSR and SD are lower than that of their senior counterparts who have been on squads longer. As participants on the squad surpassed six years of playing experience, they experienced decrements in total volumes of HSR and SD.

Discussion: When athletes enter elite hurling squads, they are being exposed to match demands that they have not previously been accustomed to in sub-elite levels of play. As they remain on elite squads, they adjust to the intensity and volume requirements of the game as they gain more years of experience.

Conclusion: Further research must be conducted with regard to the injury profile of elite players with respect to years of experience to implement training strategies to transition sub-elite athletes into elite squads.

Results: The preliminary findings from the current study indicate that in early years in elite hurling squads, participants high intensity running metrics in full games such as HSR and SD are lower than that of their senior counterparts who have been on squads longer. As participants on the squad surpassed six years of playing experience, they experienced decrements in total volumes of HSR and SD.

CMRJ Test: Examining the within-session reliability of the combined countermovement and rebound jump using field-based testing methods.

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Background/Introduction: The countermovement rebound jump (CMRJ) test integrates aspects of the countermovement jump (CMJ) and rebound jump (RJ) to assess both slow and fast stretch-shortening cycle (SSC) capacities in a field-based setting. While previous research has examined the test's validity and reliability in laboratory environments[1-3], no studies have assessed its reliability using commercially available field-based technology. This study aimed to determine the within-session reliability of the CMRJ test among collegiate athletes using portable, convenient equipment.

Method: Fifty-eight athletes (31 female, 27 male) performed the CMRJ test using the Optojump™ system, which measured jump height (JH), ground contact time (GCT), flight time (FT), and reactive strength index (RSI). Participants completed a familiarization session and a testing session separated by 48 hours. Reliability was analysed using the Hopkins Reliability Sheet, with intraclass correlation coefficients (ICC) and coefficients of variation (CV) used to assess consistency. Analysis was conducted separately for male and female participants.

Results: Results of the reliability analysis showed little differences in reliability between male and female participants. In the instances of CMJ JH, RJ GCT, and RJ JH males and females displayed high levels of within-session reliability (ICC ≥ 0.8, CV ≤ 10%). CMJ JH indicated highest reliability (ICC, M = 0.97, F = 0.95; CV% M = 4.7, F = 3.8) The results pertaining to RJ RSI demonstrated unsatisfactory reliability, returning CV values more than 10% (M = 10.1%, F = 11.1%).

Discussion: These findings contrast with Xu et al. [1], who found the CMRJ test reliable in a lab-based setting. The lower reliability observed here may stem from participants' limited experience with fast-SSC movements. The results suggest that while the CMRJ test is a practical field-based alternative, its reliability, particularly for fast-SSC measures, requires further refinement. Enhanced familiarisation protocols may improve reliability, especially for athletes less accustomed to reactive strength jumps.

Conclusion: Practitioners should ensure adequate familiarization before implementing the CMRJ test, particularly for those with limited fast-SSC experience. Future research should refine the test protocol, compare it against lab-based measures, and explore its applicability across athletic populations.

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Establishing Injury Prevention Programme Guidelines for Ladies Gaelic Football Using the Delphi Method

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Background/Introduction: Injury rates have remained high in ladies Gaelic football (LGF) over the last decade, even as injury prevention (IP) programmes have been launched (O'Connor et al., 2023). These IP programmes have struggled to achieve widespread adoption (Teahan et al., 2023), and qualitative research with LGF stakeholders has explained that current programmes are time-consuming, boring, difficult to implement, and not LGF-specific (Corrigan et al., 2023). This study aimed to elicit the opinion of academics and practitioners on the content and format of IP programmes for LGF.

Methodology: Twenty-four experts from the fields of IP, coaching science, athletic therapy/training, and physiotherapy took part in this Delphi study. Experts completed 6 questionnaires across three rounds, with a response rate above 70% (83-100%) for each questionnaire, which is recommended for Delphi findings to be considered valid (Gavigan et al., 2022). All questions were reviewed by the research team who have clinical and research experience within IP. For each question, consensus was defined as 67% or greater agreement among experts, as this was reported to be the median threshold used across health science Delphi studies (Gavigan et al., 2022).

Results: There was consensus for 17 IP components (e.g., agility) and 13 design features (e.g., pictures) to be included in LGF IP programmes. Experts indicated IP programmes should take a semi-structured format, where recommendations are provided but implementation is flexible (75%). Programmes should require minimal/no equipment (71%), last 10-15 minutes (83%), and offer 3-4 variations of each exercise (83%). Youth programmes should focus on fun and technique (75%) while also considering training age, physical characteristics, and development (100%). Experts suggested exercises for LGF IP programmes, as well as gym-based options.

Discussion: Expert consensus highlights a shift towards flexible, engaging, and sport-specific programmes that consider the implementation context and end-users. Many of the findings, such as the implementation approach, duration, and layout, are likely applicable to other sports in community or low-socioeconomic settings.

Conclusion: This study offers guidelines to support the development of IP programmes for LGF. Future research should examine whether programmes designed using these findings can effectively reduce injury risk and achieve long-term adoption.

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Guessing Games: Could Concussion Recognition Questions Mislead True Understanding?

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Background/Introduction: Concussion knowledge in jockeys is typically assessed by recognising concussion signs and symptoms. Previous research found that jockeys report high scores (16.0±3.6 out of 19) for identifying correct concussion signs and symptoms (O'Connor et al., 2018). However, these recognition-based assessments have been criticised for their limited validity (Hosakawa et al., 2023; Kerr et al., 2021; Rhodes et al., 2019). This study investigates the efficacy of both recognition and open-ended questions in evaluating jockeys' concussion knowledge.

Methods: A cross-sectional survey was conducted with 28.9% (n=197) of licensed professional and amateur jockeys (professional n=55; amateur n=125; male n=126; female n=54). Participants were first tasked with naming as many concussion signs and symptoms as possible in an open-ended question format, followed by recognition questions with both correct options and incorrect distractors. The participants' performance was evaluated by summing the number of correctly identified true signs and symptoms and falsely identified ones.

Results: The mean number of symptoms recalled in an open-ended question format was only 2.5±1.8. Participants scored a mean of 17.1±2.7 out of a possible 19 on the recognition task, though there was considerable variability in scores (variability= 16.0). Error rates in selecting incorrect distractors ranged from 6.8% to 39.5%.

Discussion: Findings indicate a significant gap in jockeys' ability to recall concussion signs and symptoms from long-term memory, essential for real-life application. Variability within the sample, and error rates in recognition tasks suggest jockeys may rely on guesswork, raising questions about the accuracy of previous findings which relied heavily upon recognition tasks. The current findings underscore the importance of integrating open-ended questions for a more comprehensive understanding of true knowledge. A dual-method approach, combining recognition and recall tasks, can identify knowledge gaps and reveal potential misconceptions that could be detrimental in real-life settings where accurate concussion recognition is essential for safety.

Conclusion: These findings have broader implications beyond just horseracing, highlighting optimal methods for assessing true knowledge suggesting that educational programmes should focus on improving knowledge retention and application in high-stakes situations.

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Using a Modified Delphi Approach to Understand Sex and Gender Experiences of Female Intercounty Gaelic Games Players.

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Background/Introduction: Research into sex-specific female experiences in sport is lacking, with recent studies reporting just 6% of sports science research is carried out solely on female athletes (Cowley et al., 2021). In traditionally male-dominated sports like Gaelic Games, female-centred research is scarce, leading to inadequate training practices based on male-derived evidence that overlooks female-specific needs due to endocrinological, physiological and anatomical differences (Emmonds et al., 2019). Gender can also influence the sporting experience of female athletes by affecting access to experienced sports sciences practitioners, potentially limiting athlete development or compromising health and well-being (Emmonds et al., 2019). The aim of this study is to develop a survey tool through a Modified Delphi approach to examine the sex and gender-based experiences of elite female Gaelic games players regarding menstrual, breast, and pelvic floor health.

Methods: A 76-question anonymous survey was designed from an extensive literature review with sections covering: Personal Characteristics, Training Profile, Breast Health and Injury, Menstrual Health, Pelvic Floor Function and Dysfunction, Training and Support Environment, Athlete Identity and Future Directions and Education. To conduct the modified Delphi technique, a panel of 16 expert academics and practitioners are anonymously and independently rating each question and providing feedback for adjustment and improvement where necessary across three rounds. Questions that achieve 80% consensus will be removed from the subsequent feedback round, while those without will be amended and redistributed to the panel in the following round (Lecours, 2020). Following this iterative process, the survey will be piloted with a small group of target participants, before distribution via the Gaelic Players Association to all current adult female intercounty Gaelic games players.

Expected Outcomes and Conclusion: A robust survey tool is required to gain deeper understanding of the sex and gender experiences of an underrepresented population. It is anticipated that using the modified Delphi approach will result in a validated survey tool that can be used to gain greater insights into the health literacy, sex and gender experiences of intercounty female Gaelic games players allowing for greater support through future research, applied practice and education development.

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Interview protocol: Expert insights on factors influencing the collection of high-quality multi-site data on physical activity behaviours.

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Background/Introduction: Physical inactivity remains a significant public health concern, with a high prevalence of inactivity levels prominent across all ages world-wide (1). The limited availability of high-quality data addressing determinants of physical activity behaviours (PABs) presents major challenges to intervention development (2). To date, interventions targeting PABs often focus on single influencing factors, such as intrapersonal or environmental factors. However, to increase effectiveness, interventions should adopt an approach that comprehensively considers multiple socio-ecological levels, including biological and political factors. To address this shortcoming, harmonising multi-site and multi-level data is suggested. Harmonised data collection allows for larger datasets to be analysed, increasing study power and efficiency (3). Moreover, achieving robust high-quality harmonised data for PABs and their associated determinants will strengthen intervention development and delivery (2,4). Therefore, this study aims gain expert insights into factors influencing the collection of high-quality PAB data in multi-site studies.

Method: A total of 12-15 individuals who have led large-scale multi-site data collection (MSDC) for PABs will be recruited for one-to-one online interviews. These experts will be identified through a systematic search of relevant projects, and will be invited to participate in a 60-minute semi-structured interview. Interviews will be audio-visually recorded, transcribed verbatim, and de-identified. A reflexive thematic analysis will be conducted to identify common themes and patterns within the qualitative dataset.

Expected outcomes: This research will provide deeper insights into practical strengths and challenges experienced by experts during MSDC. These findings will help inform the development of a standardised operating procedure for conducting MSDC on PABs and their associated determinants. This will be applied within the INDEEP project, however, beyond this project, these findings may serve as a methodological framework for future public health research.

Discussion: Achieving homogeneity across study-specific factors, such as the target populations and standard operating procedures used, enhances the potential to harmonise data (3). Additionally, this can optimise resource use, facilitate cross-site collaboration, and improve data relevance and usability (3).

Conclusion: This study will provide expert insights into methodologies used to collect high-quality harmonised data on PABs (and its associated determinants) at multiple sites. This will support future large-scale data

collection, the development of more effective interventions, and encourage policies to be informed by comprehensive high-quality data.

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Road to Olympics; Investigation of the impact of multiple object tracking on attentional control in Ukrainian high-performance athletes

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Background/Introduction: On February 24th, 2022, Russia's invasion of Ukraine resulted in widespread casualties, displacement, and psychological distress (IOM-UN Migration, 2024). War-induced stress and anxiety can impair athletes' performance by disrupting attention control that is crucial for optimal sports performance (Pachón-Blanco et al., 2022). Evidence suggests that adult populations in the Ukraine are currently experiencing several war related stressors and demonstrate symptomology consistent with post-traumatic stress disorder (PTSP) (Ho et al., 2023; Krupelnytska et al., 2024). This study aims to explore the impact of the conflict on the levels of trauma (if any) experienced by a cohort of Ukrainian elite performance athletes. Additionally, it will explore baseline subjective and objective measures of attentional control, investigating any potential relationships with trauma to gain a deeper understanding of how the war has affected Ukrainian high-performance athletes.

Methods: 21 Ukrainian elite performance athletes were purposively sampled to participate in the study, (9 males, 12 females) age 21 ± 6 years. Participants represented various sports, including modern pentathlon, archery, taekwondo, rhythmic gymnastics, canoeing, handball, snowboarding, rowing, and judo and were current members of the national Olympic team or a reserve of the national team. Baseline attention scores (objective measure) were obtained using the NeuroTracker (CogniSens, Canada) multiple object tracking

(MOT) system. Subjective attention was measured using the Sports Situation Attention Questionnaire (Mastagli et al., 2021). Trauma scores were assessed using the Impact of Event Scale-Revised (IES-R) (Miller et al., 2009; Weiss, 2019) and the International Trauma Questionnaire (ITQ) (Christy et al., 2021; Cloitre et al., 2021). Baseline attention and trauma scores were collected simultaneously. ITQ, IES-R and Sports Situation Attention Questionnaire were completed using Google Forms. The responses and objective attention scores were exported to Excel and analysed using SPSS version 28.0 (SPSS, Inc., Chicago, IL, USA).

Results: Data analysis is currently ongoing, and results will be available when submitting poster presentation if successful. It is anticipated that athletes will report elevated rates of PTSD symptoms, with some exhibiting impaired attentional control. Additionally, higher levels of PTSD are expected to be consistent with reduced attentional control.

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Injury reporting in elite ladies Gaelic football and camogie- perspectives of athlete support personnel

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Methods: A mixed-methods design was employed, comprising an online survey and follow-up interviews. Forty-two ASP, currently or recently (within two years) involved in elite ladies' Gaelic games, completed the survey. Eighteen personnel subsequently participated in semi-structured interviews. Quantitative survey data were analysed using frequency analysis, while interview transcripts were subjected to framework analysis.

Results: A significant proportion of ASP (43%) somewhat or strongly disagreed that players report all injuries. Most respondents (95%) agreed that players often avoid reporting injuries to prevent losing playing time, while 95% cited player fear of being sidelined as a key factor. Furthermore, 93% agreed that players are more likely to report injuries when immediate access to medical personnel, such as team doctors or physiotherapists, is available. Notably, 66% disagreed with the perception that managers view players as weak for reporting injuries, while 19% somewhat or strongly agreed with this notion.Qualitative findings corroborated these results and identified three overarching themes influencing injury reporting: player factors, organisational influences, and environmental conditions. Individual factors included a competitive environment that prioritised maintaining team positions over health, with experienced players exhibiting greater confidence in reporting injuries compared to younger players, who often perceived management as hierarchical and less approachable. Immediate, consistent access to physiotherapists and other medical professionals was highlighted as a critical enabler of injury reporting. Trust in ASP, built through visible involvement and positive relationships, emerged as a key determinant. Additionally, a supportive team culture that prioritises player well-being over performance outcomes was identified as essential for encouraging open injury reporting.

Conclusion: Injury underreporting is a significant issue among elite ladies' Gaelic games players, driven by personal, organisational, and environmental factors. To address this, clubs and organisations should enhance education on injury management, provide improved medical access, and foster stronger, trust-based relationships between players and ASP. Creating a team culture that prioritises individual well-being over competitive success is crucial for improving injury reporting practices.

Ethical Approval: Ethical approval for the study was granted by the Education and Health Sciences Research Ethics Committee (2024_04_03_EHS) at the University of Limerick.

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Perceived Advantages and Information Sources for Super Sprint Spikes Among Athletes and Coaches

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Background/Introduction: Super sprint spikes (SSS) featuring advancements like carbon fibre plates and cushioning are believed to enhance sprint performance. While laboratory studies provide biomechanical insights, race performance comparisons may offer a more practical assessment (Healey et al., 2022). Attributing improvements solely to footwear is challenging due to factors like training advancements, recovery effects, and possible performance-enhancing drug use (Willwacher et al., 2024). Despite their growing adoption and perceived benefits, further understanding of athlete and coach perspectives on SSS is required. This study explores athlete and coach perceptions of SSS and the key information sources influencing their adoption.

Methodology: An anonymous survey was conducted with 46 participants (25 sprint athletes and 21 coaches). The survey was developed in consultation with two external academics in biomechanics to ensure relevance and clarity. Participants provided open-ended responses on perceived advantages and selected multiple information sources from a predefined list. Content analysis was used to categorise responses into subcategories, with frequencies and percentages calculated for each.

Results: Athletes identified Energy Return/Propulsion (72%), Ground Contact/Feedback (32%), and Comfort/Fit (32%) as key advantages, while Psychological Confidence ranked at 28%. Their primary information sources were Personal Experience (88%), Other Athletes (76%), and Social Media (60%). Coaches also highlighted Energy Return/Propulsion (43%) but emphasised Speed more than athletes (33% vs. 24%). Unlike athletes, coaches did not mention Comfort/Fit (0%) or psychological benefits (0%). Their main information sources were Personal Experience (71%), Other Coaches (57%), and Academic Journals (38%).

Discussion: Athletes prioritise subjective advantages like comfort, propulsion, and psychological confidence, influenced by personal experience, peers, and marketing, while coaches focus on more objective metrics like speed and stride length. Athletes prefer social media for information, while coaches prefer academic sources, showing how subjective impressions can outweigh scientifically proven data. With limited research on SSS (Klein et al., 2023), companies market experience-driven narratives over proven performance benefits, influencing athletes more than coaches.

Conclusion: Athletes and coaches regard SSS as beneficial, though different information sources shape their perspectives. These differences suggest that athletes may benefit from education on potential technical advantages, while coaches could consider athletes' experiences and perceptions when considering SSS.

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Physical education teachers' uses of and attitudes towards physical fitness testing in schools - a national survey

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Background/Introduction: Physical education (PE) offers an efficient way to track adolescent physical fitness (PF) through fitness testing (Lubans et al. 2011). Despite WHO recommendations, and unlike several countries internationally, Ireland does not have a standardised fitness test battery for use in schools (O'Keeffe et al. 2020). This study examines the fitness testing practices of secondary school teachers in Ireland and explores their readiness to integrate digital technology into their PE programmes.

Methodology: A survey designed specifically for the purposes of this study was developed. Survey items were generated from previously published work, and reviewed by five experts in sport pedagogy for content validity. A pilot test involving 22 PE teachers was conducted to confirm internal consistency. The final survey

was then distributed through Qualtrics to 722 schools for data collection.

Results: A nationally representative sample of 280 PE teachers (54% male) from 215 schools completed the survey. In total, 94% included PF testing in their PE programme. The majority (80%) provide fitness testing feedback to students, however, only 21% give feedback to parents. Cardiorespiratory endurance is the most tested component of health-related PF at both the junior and senior cycle. Teachers feel knowledgeable and enthusiastic about using fitness tests, and most are confident using digital technology. Many teachers highlight the need for a standardised approach to PF testing in Irish schools. Notably, 84% expressed interest in using a digital platform to store, monitor, and report on students' PF.

Discussion: Similar to other countries (Bianco et al. 2015), fitness testing is widely used in secondary schools in Ireland. Most PE teachers include fitness testing in their programmes with many calling for a more standardised approach to fitness testing across the country. Consideration should be given to the development of a digital platform to facilitate monitoring and reporting student PF, using a standardised fitness test battery.

Conclusion: PF testing is highly prevalent in secondary PE programmes in Ireland. It is evident that there is a need for the development of a digital platform to facilitate the monitoring and reporting of students' PF, using a standardised fitness test battery.

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Coaching Pedagogy & Skill Acquisition Framework for Coaching Brazilian Jiu-Jitsu.

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Background/Introduction: Brazilian Jiu-Jitsu (BJJ) coaching traditionally follows an informal mentor-apprentice model, while lacking formal pedagogical frameworks to inform practice design (Davids, 2015). This aligns with research highlighting the lack of understanding of the 'why' behind certain practice activities, leading to regurgitation of content from anecdotal sources (Smith et al., 2023). Despite some potential alignment with an evidence-based approach in coaching BJJ, further research is needed to determine the levels of awareness and understanding coaches have in relation to skill acquisition theory and practice and how it may inform their coaching.

Method: This study will adopt a mixed-methods approach comprising of three research phases. Phase one will consist of a nationwide survey of 100+ BJJ coaches, which will explore coach demographics, practice design preferences and coaches' awareness of skill acquisition theory and research. Phase two will include semi-structured interviews with 15 of the survey participants for a more in-depth exploration of the key findings of the survey. The third phase will involve observation of practical training sessions in order to assess the alignment with coaches' self-reported approach and their actual practical approach.

Expected Outcomes: Findings are expected to reveal a varying level of engagement with skill acquisition theory and research among BJJ coaches in Ireland. It is also expected to reveal variability in practice activity preference and sequencing. Findings may also highlight a misalignment between coaches' self-reported practice design and their actual (i.e., observed) practical approach. Findings may contribute to a broader understanding of how BJJ coaches approach practice design and implementation.

Discussion: The study aims to contribute to a dearth of research exploring practice design in BJJ and combat sports. Research in this field may contribute towards discussion around coach education in the sport. Identifying trends in coach behaviours and practices may provide practical recommendations for structuring training that enhances skill acquisition in a context-relevant environment.

Conclusion: The research may offer valuable insight into the pedagogical practice of BJJ coaches in Ireland, potentially contributing to the implementation of coaching frameworks. The findings may also support the advancement of evidence-based coach education that is contextually relevant to BJJ.

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The Co-Creation of a Personal Development Framework within a Gaelic Games Talent Academy

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Background/Introduction: The quality of talent development environments significantly influences youth athletes' development and performance, as well as their mental health (Hill et al., 2016) and wellbeing (Ivarsson et al., 2015). Researchers and practitioners are increasingly encouraged to promote positive youth development within organised youth-sport programs (Côté & Fraser-Thomas, 2007). This research aims to identify key areas of health, lifestyle and psychosocial development to inform the creation of a personal development framework tailored for Gaelic Games Talent Academies. Additionally, it will aim to determine essential content within these key areas and explore the most effective modes of delivery.

Methods: A qualitative approach, using semi-structed interviews and focus groups, will be adopted to conduct a "needs analysis". Key stakeholders, including athletes, coaches, parents, and administrative staff, will be consulted to assess current knowledge, behaviours, and practices related to health, lifestyle, and psychosocial development. These key stakeholders, along with experts in the field, will contribute to a co-creation process to develop a novel personal development framework for implementation in a Gaelic Games Talent Academy setting.

Expected Outcomes: Findings will serve to inform the development of an intervention based on the co-created framework. This intervention will be implemented within a Gaelic Games Talent Academy, targeting coaches, mentors, parents/guardians and athletes, with the overall aim of enhancing Gaelic Games Talent Academy athletes' health, lifestyle and psychosocial development.

Discussion: By identifying key developmental needs and incorporating stakeholder perspectives, this research has the potential to bridge existing gaps in athlete support within Gaelic Games Talent Academies. The co-created framework may serve as a model for enhancing holistic athlete development, fostering positive behaviours, and strengthening support systems. Furthermore, insights from this study could contribute to best practices in talent development, offering a structured approach to integrating health, lifestyle, and psychosocial development in youth sport.

Conclusion: This study will contribute to the complex area of youth athlete development by introducing a structured, stakeholder-informed framework. The intervention may provide practical strategies to enhance athlete health, lifestyle and psychosocial factors, with potential applications beyond Gaelic Games Talent Academies, informing broader talent development practices.

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The Hydration Status and Sweat Rates of Elite Male Intercounty Gaelic Football Players

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Background/Introduction: Optimal hydration is crucial to athletic performance, influencing both physiological and cognitive outcomes. Due to the intermittent high-intensity demands of Gaelic football, appropriate fluid replenishment strategies are critical to sustaining optimal athletic performance (Beasley, 2015). This study assessed the hydration status, sweat rates, and fluid replacement practices of elite male intercounty Gaelic football players across multiple training sessions.

Methods: Forty-four elite male intercounty Gaelic football players (age = 22.4 ± 2.6 years; height = 183.2 ± 6.5 cm; body mass = 83.6 ± 7.3 kg) participated voluntarily in data collection over ten weeks, covering thirteen training sessions. Hydration status was assessed pre-exercise through urine specific gravity (USG) and urine colour, while sweat rates were calculated based on body mass changes and recorded fluid intake during sessions.

Results: Players generally commenced training sessions optimally hydrated (mean USG = 1.0071 ± 0.0056), with 75% of tests confirming euhydration. However, fluid replacement strategies during exercise were suboptimal; players replaced approximately 34% (0.33 ± 0.25 L) of fluids lost (mean loss 0.96 ± 0.52 kg). Consequently, significant body mass loss post-exercise was observed (0.95 ± 0.41 kg, $p < 0.001$), corresponding to an average relative body mass loss of 1.1%. Post-session dehydration (relative body mass loss >1%) occurred in 58% of instances. The mean sweat rate was 0.86 ± 0.39 L/hr, with substantial inter-individual variability (range: 0.1–2.2 L/hr). Statistical analyses revealed minimal and non-significant correlations between sweat rate and environmental temperature ($r = 0.067$, $p = 0.297$), relative humidity ($r =$

0.066, p = 0.297), and session duration (r = 0.067; p = 0.297), suggesting these factors were not primary determinants of sweat rate variability under the studied conditions.

Discussion: Given the considerable inter-individual differences identified in sweat rates and fluid replacement needs, generalised hydration guidelines may not adequately address individual player requirements.

Conclusion: The current findings underline the importance of individualised hydration strategies tailored to each athlete's physiological characteristics and session demands. Future research should further investigate sweat rate determinants, including metabolic demands and competition scenarios, to refine hydration recommendations effectively.

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An Investigation into Sex and Gender Specific Considerations in Youth Female Athletes in Ireland

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Background/Introduction: In Ireland, young males are more likely to play sport than females and the decline in sport participation across adolescence is consistently stronger among young females (Woods et al., 2023). Development pathways in female sport are therefore essential to sustain interest, engagement and participation. However, key female specific health considerations such as breast health, menstrual health and pelvic floor health, are often overlooked and are also significantly underrepresented in research. The aim of this study is to investigate sex and gender specific experiences of youth female athletes in development pathways in Ireland.

Method: A self-administered online questionnaire was developed consisting of 90 questions across six sections, namely: demographics, strength training, menstrual health, pelvic floor health, breast health and

environment. The content validity of the questionnaire will be determined by a panel of expert academics and practitioners (n=15) using a modified Delphi approach (Lecours, 2020). Through Microsoft Forms, panelists will be asked to anonymously rate each question for 'clarity' and 'relevance', using a four-point ordinal scale (not clear/relevant, somewhat clear/relevant, quite clear/relevant, very clear/relevant). Panelists can also provide optional feedback to each question in an open text box. A priori consensus has been set at 80% agreement and therefore the questionnaire will be modified according to the panel feedback and redistributed to the panelists for round 2. This iterative approach will be continued until 80% consensus is reached. Once validation is complete, the questionnaire will be piloted with a sample group of athletes (n=10) to ensure that questions are clear, and the structure is comprehensive. The questionnaire will then be distributed to youth female athletes (aged 15-20) across national governing bodies.

Expected Outcomes and Discussion: It is expected that the use of the modified Delphi technique and a panel of experts will result in a robust, validated questionnaire. It is anticipated that the results of this questionnaire will provide insights into sex and gender specific experiences of youth female athletes. These findings can help inform future support practices for youth female athletes and inform policy when devising development pathways programmes catering for the unique female specific physiological needs.

Discussion: It is expected that the use of the modified Delphi technique and a panel of experts will result in a robust, validated questionnaire. It is anticipated that the results of this questionnaire will provide insights into sex and gender specific experiences of youth female athletes. These findings can help inform future support practices for youth female athletes and inform policy when devising development pathways programmes catering for the unique female specific physiological needs.

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A novel mixed-methods investigation into the health and wellbeing parameters of a cohort of elite Gaelic games coaches.

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Background/Introduction: Elite sports coaching is an inherently pressurised environment (Altfeld & Kellmann, 2015). Coaches are expected to manage the unpredictable, uncontrollable, and nonlinear essence of elite sport, with resultant exposure to a multitude of psychological stressors (Altfeld et al., 2015). A study, rooted within the 'Areas of Work Life Model' by Carson et al. (2018), described excessive workloads and a lack of work-life balance as key contributors to coaches' exhaustion and ill-being. Those with higher perceived workload levels were more likely to experience work-home interference, increasing their risk of burnout (Carson et al., 2018). Surprisingly however, there remains a dearth of research pertaining to the health and wellbeing of elite coaches. Therefore, the current study proposes to investigate the health and wellbeing of elite level Gaelic games coaches and to examine the psychological stressors they experience.

Methods: This research will adopt a mixed methods (QUAN-QUAL) design. Target participants (N=124) will be comprised of both current and retired senior inter-county Gaelic games coaches and/or managers. Coaches who agree to participate will be requested to complete a fully anonymised web-based survey instrument (Qualtrics), that will explore a range of correlates of health and wellbeing across a typical GAA season. The questionnaire will be informed and guided by the socioecological model of health. The subsequent qualitative phase will involve in-depth interviews with a sub-sample of participants (n=12) to enable further exploration of baseline data from a socio-ecological perspective.

Expected Outcomes/ Discussion:The current research will be the first of its kind to investigate the health and wellbeing of elite inter-county Gaelic games coaches. Findings from the proposed research will be used to guide National Governing Bodies (NGBs), such as the GAA, in the development of appropriate supports, interventions, and education programmes with the aim of improving the overall wellbeing of their coaching and management teams. This research will also serve to align with the ethos of the 'Healthy Club' initiative that has been championed at grassroots level within the GAA (Lane et al., 2021).

Conclusion: Given the dearth of existing research on the health and wellbeing of elite Gaelic games coaches, findings from the research will be crucial for developing the appropriate supports and interventions required by this cohort.

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An examination of ability-grouping in Gaelic games through the GAA Go Games initiative

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Background/Introduction: Go Games are modified, small-sided versions of Gaelic games which cater for the development needs of children aged 7-12 years, played in a club, school and/or community setting. Go Games are inclusive, structured to cater for the needs, abilities and backgrounds of all participants. It is a key principle of Go Games that all children play in the game. Grouping of children based on ability is discouraged (Cassidy, 2022), with players divided up evenly regardless of ability to ensure we live by the principle of as good as possible, for as many as possible, for as long as possible. The games, rules, pitch dimensions, and scoring guidelines of Go Games have been informed by research and supported by the GAA (2020), and internationally by experts in coaching and academia (Ward et al., 2018). However, there remains an absence of research into the organisation and administration of Go Games between club and county and how these experiences impact players, parents, coaches, match officials and other stakeholders.

Methods: A qualitative approach will be used, and data will be collected through three modalities:

1. Documentary analysis of information provided by the club on websites or publicly available documents (e.g., club coaching philosophy, club coaches code of conduct).

2. Observation and video of Go Games training sessions and Go Games matches.

3. Formal interviews and focus groups with relevant stakeholders (i.e., club committee members, coaches, parents, guardians and players) from rural, urban and differing size clubs.

Expected Outcomes: Our findings should highlight what is currently happening within clubs and schools regarding ability grouping during Go Games and what are the views of the stakeholders on current practices.

Discussion: A comparison between ability-grouping in sport and education may emerge in the discussion to determine potential best-practice guidelines for games development coordinators, volunteer coaches, and parents.

Conclusion: The study may contribute to the topic of ability grouping in child sport. It may also inform what the next stages of research should be in order to broaden understanding of ability grouping within Gaelic games across Ireland in a variety of different club contexts.

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Sport for all: Using football clubs to promote health and well-being amongst special population groups.

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Funded by FAI and Healthy Ireland

Background/ Introduction: Sports clubs can act as important catalysts for creating a sense of community and providing a safe place for individuals to exercise and socialise. In Ireland multiple sporting bodies promote health and well-being through grassroot level clubs [1,2]. The football association of Ireland (FAI) recently developed an initiative known as "More Than a Club" (MTC) to promote social responsibility and community engagement within League of Ireland (LOI) football clubs and local communities. The initiative, currently implemented in n=5 LOI clubs, deliver a range of health and well-being offerings, targeting vulnerable population groups. The aim of this research is to evaluate the impact of MTC on health and well-being and community support**.**

Methodology: The study will employ a mixed-methods research design. In addition to case studies on exemplar initiatives across sites, retrospective cross-sectional participant surveys will be used. This will measure the biopsychosocial impacts on participants across the clubs. A cross-sectional community survey will also be used to evaluate the effectiveness of the programmes in fostering goodwill in the respective communities. Semi-structured interviews will be carried out with key stakeholders (e.g. MTC officers, volunteers) to identify the barriers and facilitators for the potential scale up to other clubs and or sporting organisations.

Expected outcomes: There are several important outcomes anticipated from this research. Firstly, the impact data will indicate whether the programmes have demonstrated effectiveness either individually or collectively. The community survey will gauge community support for LOI clubs implementing this type of work. This is essential for the sustainability and scalability of the programme. Similarly, the stakeholder interviews will identify key determinants likely to influence the scalability of the initiative. Lastly, the case studies will generate further impact data and help to identify the most effective and feasible programmes and implementation mechanisms.

Discussion/Conclusion: The aim of this research is to provide a comprehensive understanding of how MTC can improve health outcomes for these vulnerable groups. It is also important to ensure long term success and scalability across a broader population. By focusing on both impact and implementation, this research seeks to inform future health promotion efforts and enhance the role of sports clubs in community well-being**.**

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To Identify Internal and External Stressors along with Preferred Mental Well-Being Support Networks of Senior Inter-County GAA Performance Analysts

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Background/Introduction: Literature investigating the Performance Analyst (PA) as a person is limited across all sports including GAA. Martin et al. (2021) found that the role of PA is a frequently misunderstood and undervalued discipline, while they operate in a very demanding and pressurised environment with limited career progressions. Previous research focused on mental well-being (MWB), stressors and support networks among other support personnel disciplines. Therefore, a study is required to further investigate these factors within the PA discipline.

Method: 26 Senior Inter-County GAA PAs completed a questionnaire on the Qualtrics platform at the beginning of a competitive season to identify both internal and external stressors along with exploring their preferred types and sources of support networks. Data was analysed via SPSS (quantitative) and NVivo using thematic analysis (qualitative)

Results: The three main internal stressors consist of time management, time pressures and dealing with management while the three main sources of external stressors relate to main occupation, impact on personal time and relationships, along with college/university stresses. PAs showed no preference for either internal or external GAA MWB supports to be provided, while only two participants knew/previously availed of existing MWB support resources. The top three preferred types of support consisted of digital/online supports, information during the accreditation process and access to regular health checks. PAs support networks mainly consist of family members, friends and other PAs.

Discussion: It is evident that there is little knowledge/awareness/usage of the current MWB supports available to PAs through the GAA organisation. A variety of preferred MWB supports were identified which the GAA organisation could provide in the future. PAs experience a wide range of both internal and external stressors as part of their role largely relating to time pressure, time management along with balancing other external time commitments. Current MWB support networks consist mainly of family, friends and other PA colleagues whom they trust.

Conclusion: This study identified the key internal and external stressors of a senior inter-County GAA PA. It also identified the lack of awareness surrounding current MWB supports available along with identifying their preferred type of MWB supports and current support networks.

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Athlete, coach, and family perspectives on the impact of social support on athlete transitions from a national football academy to professional football.

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Background/Introduction: Elite football academies are extremely competitive environments. Bourke (2002) found that a lack of preparedness for transition led to many young Irish athletes returning home from English clubs. Support for athletes going through within-career transitions comes from family, coaches, and academy support staff. These groups support athletes' psychosocial development along with their athletic, psychological, and academic/vocational development (Wylleman & Lavallee, 2004). This study used a holistic approach to transition to explore athlete's experiences within a football academy, alongside school and social experiences outside of the academy, to establish what, if any, impact their support network provided across

these environments.

Methodology: Semi structured interviews (n=24, M=20, F=4) were conducted with three participant groups, athletes (n=10, M=10), athletes' family members (n=6, M=4, F=2), and academy coaches/support staff (n=8, M=6, F=2). Interviews were coded and analysed using abductive thematic analysis within the Developmental Model (Wylleman & Lavallee, 2004).

Results: Initial analysis of the athlete population established 3 higher order themes, Pre-Academy, Academy, and Post-Academy, with 15 sub-themes. These themes were then abductively linked to the Developmental Model levels (Wylleman & Lavallee, 2004). At Pre-Academy, athletes highlighted influence from Broader Sporting Experiences and Family Support. During the Academy, athletes mentioned Inter-Academy Challenges, psychological development from Maturing, and Living Away from Home, along with Family, Peer, and Coach/Support Staff Support. School experience, either changing or not changing school to join Academy was also shown. Finally, Post-Academy, athletes explored themes of Professional Athlete Experiences, 'Moving Across the Water', Family, Peer, and Coach/Support Staff Support after Academy, and Returning to Education post-professional football.

Discussion: The findings from the athlete population correlate to within-career transition research across different sports. Athletes experienced transition events across various aspects of their life, and the support provided by coaches/support staff, family, and peers influenced how the athletes manage these events. Further analysis across all participant groups will allow more detailed and holistic analysis of support provided to help athletes' transition from academy to professional football.

Conclusion: The findings may inform football academy policy on the importance of social support for players undertaking this transition in football and across different sporting contexts.

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Exploring Adolescent Girls' Motivation for Physical Activity in Community-Based Programmes

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Background/Introduction: Adolescent girls consistently engage in lower levels of physical activity (PA) than boys, with participation declining significantly during adolescence (Woods et al., 2023). Barriers such as social pressures, fear of judgement, and limited opportunities hinder engagement, particularly in community settings (Sport Ireland, 2021). Understanding motivational factors through theoretical frameworks such as Self-Determination Theory and the COM-B model can inform strategies to enhance participation, future programme design and long-term PA adherence.

Methodology: Focus groups (n=10) were conducted with adolescent girls (13-17 years) participating in community-based physical activity (PA) programmes across urban and rural settings. Participants (n=108) were purposively sampled to explore the factors that influence their motivation for PA in community-based settings. These semi-structured discussions were thematically analysed using NVivo 15 and interpreted within the Self-Determination Theory (SDT) and the COM-B theoretical frameworks of motivation.

Results: Findings highlight the importance of peer support, perceived competence, and autonomy in shaping motivation for PA programmes in community settings. Social support from peers was a key facilitator, fostering relatedness and sustained participation. Enjoyment and achievement were crucial for continued engagement, with many participants preferring non-competitive and varied activities tailored to their interests. Additionally, rural participants reported fewer facilities and structured opportunities, limiting their ability to engage in PA. Participants also noted that girls receive less encouragement and support than boys, reinforcing gender disparities in participation.

Discussion: This study reinforces the relevance of SDT and the COM-B model in understanding adolescent girls' PA motivation. While environmental and social barriers persist, autonomy-supportive environments that emphasise enjoyment and peer engagement can enhance participation. Rural participants face greater challenges related to access, transport, and programme availability. Gender differences also played a role, with girls receiving less support than boys, further discouraging PA involvement. Programmes that prioritise autonomy, peer support, enjoyment, and inclusive community engagement are more effective in promoting long-term PA participation among adolescent girls.

Conclusion:
Addressing the decline in PA among adolescent girls requires a multifaceted approach that considers environmental, social, and gender-related barriers. This study highlights the need for PA programmes that foster autonomy, enjoyment, and peer support while addressing disparities in access and availability.

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Exploring the Support Networks of High-Performance Irish Youth Athletes

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Background/Introduction: In comparison to their adult counterparts, there has been far less research attention paid to the mental wellbeing of youth athletes participating in high-level sport (Purcell et al., 2023). Social support appears to be one of the most important factors for improving the mental wellbeing of high-performance athletes (Kuttel, Pedersen and Larsen, 2021). This study aimed to investigate the experiences of athletes on Ireland's underage national basketball teams with regard to support received and the effects of this support on their development and wellbeing.

Methodology: Semi-structured, audio-recorded interviews were conducted with 11 athletes currently on an Irish underage national basketball team, and 10 members of their support network (e.g. team staff, parents). These interviews were transcribed and coded. Themes were identified and analysed using interpretative phenomenological analysis. A combination of Guba's (1990) critical theory paradigm and Burrell and Morgan's (1979) interpretive paradigm was adopted as we felt that these two paradigms were the most suitable for examining and interpreting the effect of the phenomenon being studied on the lived experiences of the participants.

Results: A perceived lack of emphasis placed upon the mental wellbeing of athletes was among the most common themes seen in interviews with both participant groups; in particular the lack of education pertaining to the provision of support and the need for sport psychologists and mental health professionals to refer to. The challenge of social media and the financial burden of the cost of national basketball team programmes were both frequently mentioned themes across both participant groups.

Discussion: Participants from both groups felt that there needed to be more emphasis on providing supports to athletes and upon their wellbeing. Psychological support and psychological skills training appears to be

overlooked with Ireland's national underage basketball teams, which may negatively impact both performance and wellbeing outcomes. Education on combatting the negative effects of social media and efforts to reduce the financial burden on the families of athletes are other apparent areas of need.

Conclusion: High-performance youth athletes appear to experience a range of stressors relating to the high-level nature of their sporting participation. There is a clear need for further research into this population, as these stressors may vary from sport to sport and country to country.

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Football Cooperative, a community based physical activity social intervention for men: An assessment of effectiveness when replicated at scale using a social return on investment (SROI) framework

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Background/Introduction: Men across the Western world exhibit lower life expectancy and higher mortality rates than women. The Football Cooperative (FC) initiative provides social 'pick up football' games for men aimed at reducing social isolation among men and improving their overall health and wellbeing. Since 2021, FC has undergone a feasibility study for scale-up [Stage 1] and an implementation science study to develop a strategy for large-scale delivery [Stage 2]. Findings from Study 1 revealed that FC games engage men who are at a high cardiovascular disease (CVD) risk (Daly et al, 2024) and the social return for every €1 invested in the games is €17.60. This ratio demonstrates equivalent social value and cost effectiveness as per the single-site evaluation and is favourable for scale up. The aims of this study are to: a) Conduct a SROI evaluation to assess the social return for all stakeholders involved in the FC initiative b) Assess the biopsychosocial health impact of participation in the FC initiative on playing members and c) Assess the health economic impact of participation in the FC initiative on playing members.

Methodology: The study employs different methodological approaches on each step of the SROI framework.

Steps 1–3 involve qualitative inductive-deductive methods to develop stakeholder maps, conduct consultations with all identified stakeholders, and establish theories of change (ToC) for each stakeholder group. Step 4 involves measuring outcomes; this will involve a pragmatically controlled pretest-posttest design to measure outcomes for participant stakeholders and a comparison group, while other stakeholders will be assessed through self-reported cross-sectional surveys at 12M. Steps 5–6 involve further surveys to evaluate outcome values and their relative importance. Step 7 will involve the calculation of the final SROI.

Conclusion: The study will inform fidelity of delivery and equitable benefits as FC scales nationally and internationally.

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Examining the symptoms of Common Mental Disorders among players in the League of Ireland.

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Background/Introduction: The past decade has observed an increase in the attention toward the mental health of elite athlete research. However, in football, the level of research is scarce when compared to the level of research in the area of the physical health of elite athletes. In Ireland, this research is even more scarce. Thus, the primary aim of this study was to conduct the country's first examination of common mental disorders with football players in Ireland's three elite divisions.

Methods: Quantitative. A cross-sectional study design was used to determine the prevalence of common mental disorders. 219 players completed an online questionnaire to explore symptoms of general distress, anxiety/depression, sleep disturbance and adverse alcohol use. Additionally, the questionnaire collected demographical data and measured athlete burnout as a risk factor to common mental disorders. The study then compared results to highlight possible associations between the common mental disorder prevalence and the demographic/risk-factor data.

Results: Almost two thirds (63%) of participants in the study met the caseness for at least on common mental disorder, indicating probable or potential mental ill-health. The highest prevalence rates of symptoms related to common mental disorders were 42% (Women's Premier Division) for general distress, 33% (Women's Premier Division) for anxiety/depression, 27% (Women's Premier Division) for sleeping disturbance, and 30% (Men's Premier Division) for adverse alcohol behaviour. The odds for athletes experiencing athlete burnout in meeting the threshold for general distress were observed to be considerably strong, and the correlation between athlete burnout and various common mental disorder symptoms was found to be significant.

Conclusion: The primary contribution of the present study is that, currently, it is the first and only national study examining the prevalence of symptoms related to common mental disorders among footballers within the League of Ireland, while also extending the knowledge of the wider body of athlete mental health literature. It is the hope of the author that this study will act as a foundation for further research in the area of mental health within the League of Ireland which includes all football stakeholders; players, officials, coaching staff and beyond.

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Assessing the magnitude and practices of weight-making in the Irish horseracing industry

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Background/Introduction: Prevalence of rapid weight-loss has previously been assessed in the Irish jockey population with results indicating a high engagement in practices of rapid weight-loss(Dunne et al., 2022). However, both of these previous studies did not utilise validated measure to assess prevalence. Therefore, the

purpose of this study is to assess the prevalence of rapid weight-loss in the horseracing industry through the validated Rapid Weight Loss Questionnaire (Artioli et al., 2010).

Methods: Irish jockeys (n=109) were recruited to complete and online survey. Seventy-six participants were male (69.7%) and thirty-three were female (30.3%). Participants were requested to anonymously complete the Rapid Weight Loss Questionnaire (RWLQ). Data analysis was conducted to assess for prevalence rates, methods employed and social influences of weight-making.

Preliminary findings: Eighty-two (75%) participants stated they engage in weight-making practices in order to compete. Fellow jockeys appear to be the most significant influence on weight-making practices followed by nutritionists and horse trainers. Male jockeys RWLQ score (41.01±12.05) was significantly greater than that of female jockeys (32.18±7.48);); $t(36.83)= -3.684$, $p<.001$. Jockeys who began to engage in weight-making practices aged 18 or younger (41.41±12.06) scored significantly higher on the RWLQ compared to those who were 19 years or older (35.61±10.81); $t(80)=2.175$, $p=.03$.

Discussion: Findings indicate similarity between the prevalence rates in this study compared to previous research (Dunne et al., 2022). The age at which jockeys begin cutting weight can impact the severity to which they make-weight as they get older, with similarities seen in other weight-category sports (Stangar et al., 2022). Jockeys are the key sources of weight-making information, suggesting a tight-knit culture where the beliefs of the in-group are most prevalent (Martin et al., 2017).

Conclusion: This study utilised a highly validated measure of rapid weight loss, within the horseracing industry, allowing for easier comparison of prevalence rates and severity of weight-making practices with other sports. This study also brings to light age as a significant determinant of weight-making later in a jockeys career, and the tendency for jockeys to learn their weight-making practices primarily from other jockeys.

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How does the stroke differ? - An investigation into stroke metrics across classifications in Para swimming

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Introduction: Swimming competitions can be won by as little as one hundredth of a second, therefore it is vital an athlete's stroke technique is perfect to prevent any time-consuming mistakes which could cost them a medal. There is a dearth of literature relating to reliable methodologies on performance analysis in Para swimming. Current literature within uses methodologies that are more suited to able-bodied swimming. Due to the restrictions that are caused by some disabilities, comparing analysis for able-bodied to Para swimmers has many flaws. This research focused on the analysis of stroke metrics (stroke rate, distance per stroke and stroke count) in elite female Para swimmers and investigated how they may differ across classifications.

Methodology: An observational analysis was conducted to compare stroke rate, distance per stroke and stroke count across classifications for all 50-meter female events. Data was collected across multiple Para swimming competitions including; the 2023 Kem Demchuk International Invitational, the 2024 Citi Para World Series, Melbourne, the 2024 European Open Championships and the 2024 Paralympic Games.

Results: Significant differences were found between classifications in all three stroke metrics. Differences in SR were found in the backstroke, breaststroke, butterfly and freestyle. Differences in DPS were found in the breaststroke, butterfly and freestyle. Differences in SC were found in the backstroke, breaststroke and freestyle.

Discussion: The results from this research highlight the impact impairments have on one’s stroke technique and performance. Large standard deviations were found in classification groups for SR and SC which indicated that there are significant differences in stroke metrics within a classification, which opens the opportunity to continue this research further.

Conclusion: The reliability of the classification system is often questioned in Para swimming. Although created with the aim of providing competitive equality, the classification system has been questioned based on inconsistencies in its methods of grading athletes. The scientific community has proposed a more evidence-based classification system for many years. This research will open opportunities to use the findings in stroke metrics across different classification groups to give more insight into the impacts on performance in and across classification groups to further improve the classification system.

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Objectifying Motor Control Assessment via Contactless Motion Capture

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Background/Introduction: Physical inactivity among adolescents is a global public health concern, with approximately 80% failing to achieve recommended activity levels (WHO, 2021). Motor Competence (MC), encompassing fundamental motor skills such as locomotion, object control, and stability, significantly influences lifelong engagement in physical activity (Logan et al., 2018). Early childhood proficiency in MC is strongly correlated with sustained physical activity throughout life (Stodden et al., 2008). However, the availability of valid, practical, and accessible assessments for MC remains limited. The Test of Gross Motor Development-3 (TGMD-3), widely employed in practice, requires considerable resources, including trained assessors and extensive administration time (Barnett et al., 2013). Emerging technologies, particularly contactless motion capture systems, present promising alternatives, yet their validity and practicality require further investigation (Bossavit & Arnedillo-Sánchez, 2023).

Methodology: This study evaluated Freemocap, an open-source contactless motion capture system, for assessing MC proficiency in locomotor tasks, specifically running and skipping. Captured synchronized footage, via USB web-cameras, was processed through computer vision algorithms to track joint positions in 2D camera space. Joint coordinates were then triangulated into 3D space, enabling detailed movement analysis. Algorithms extracted essential features such as joint angles and temporal positional data. A heuristic, rule-based approach, independent of pre-existing datasets, facilitated real-time analysis.

Results: Despite utilising inexpensive USB web-cameras, operating at 30 frames per second, the multi-camera configuration accurately reconstructed 3D joint positions, effectively capturing rapid movements such as running. Furthermore, the system reliably identified critical footfall patterns in line with TGMD-3 standards, including distinguishing heel or toe landings versus flat-footed landings.

Discussion: These findings affirm the feasibility of contactless motion capture technology for practical, objective assessment of MC. The extracted movement patterns enhance manual assessments or serve as

input for advanced machine learning models to classify MC proficiency levels accurately. Future research should leverage larger datasets and various forms of Machine Learning analyses to further refine automated classification approaches, bolstering assessment accuracy and scalability.

Conclusion: This study highlights the potential of open-source contactless motion capture technology for reliable, accessible MC assessment, offering an innovative pathway paving the way for early identification and intervention in motor skill development.

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An International mixed-methods study on the mental health, well-being, and coping strategies of jockeys based in Ireland and Great Britian

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Background/Introduction: Horseracing is recognised as both a physically and psychologically challenging sport (Landolt et al., 2017). Previous studies among Irish jockeys have identified a high prevalence of mental health issues (King et al., 2021; Losty et al., 2019). Research involving both Flat and National Hunt jockeys has revealed that burnout, career dissatisfaction, and retirement contemplation are significant independent

predictors of psychological distress and generalised anxiety (King et al., 2021). To date, no comparable studies have been conducted on jockeys based in Great Britian (GB). The aim of the study is to examine the mental health, well-being, and coping strategies of Irish and GB licenced amateur and professional jockeys from both Flat and National Hunt codes.

Methodology: An online anonymous questionnaire through Qualtrics will be used to gather qualitative information on the lifestyle and occupational behaviours, common mental health disorders (CMDs), well-being and coping strategies of Irish and GB licenced jockeys. Descriptive statistics will be produced for all assessed measures and prevalence and risk factors will be calculated. Binary univariate logistic regression expressed as odds ratios, and 95% confidence intervals, will be conducted to determine associations between CMDs, well-being, coping strategies, and demographic and lifestyle characteristics.

Expected Outcomes: This research is expected to provide elucidation of the current mental health status of jockeys in both Ireland and GB. The CMD and well-being trends of Irish and GB licenced jockeys will be established, which is essential for planning of future services. Associations between CMDs and potential risk factors will be examined, hypothesising significant correlations between these variables. Findings from this study are anticipated to offer valuable insights into effective support mechanisms and contribute to the development of therapeutic pathways to enhance overall mental health within this population.

Discussion: While previous research has highlighted significant mental health concerns among jockeys (King et al., 2021; Losty et al., 2019), the potential causal factors for these high levels of CMD prevalence have yet to be established, demonstrating a notable gap in the research.

Conclusion: Limited existing research indicates that further investigation is needed to uncover the current mental health status of jockeys in both Ireland and GB, facilitating future advancements for their overall well-being.

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Scaling Community-Based Recreational Football for Men's Health: A Translational Evaluation of the Football Cooperative Initiative

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Background/Introduction: Men continue to experience disproportionately adverse health outcomes compared to women, including higher rates of non-communicable diseases, premature mortality, and social isolation [1]. These outcomes are compounded by a sharp decline in physical activity with age and by sociocultural norms that discourage help-seeking and emotional disclosure [2]. Community-based, gender-sensitive health promotion strategies are therefore imperative. Recreational football has emerged as a promising vehicle for engaging men in health-enhancing behaviours due to its social, physical, and emotional benefits [3]. The Football Cooperative initiative is a volunteer-led social enterprise offering accessible and inclusive 'pick-up' football sessions designed to foster social connection, increase physical activity, and enhance overall well-being, indicating a high potential for scale-up.

Methods: This proposed study will employ a mixed methods participatory research design informed by implementation science. The evaluation will be guided by the PRACTIS framework and Milat et al.'s [4] model for scaling health interventions. Quantitative data will be collected through stakeholder surveys to assess implementation outcomes such as fidelity, reach, and acceptability. Qualitative data will be gathered via focus groups, interviews, and observational fieldwork. The Implementation Scalability Assessment Tool (ISAT) will also be utilised.

Expected Outcomes: The study is expected to generate a comprehensive understanding of the key contextual enablers and barriers to the effective replication of the Football Cooperative initiative. It will evaluate how fidelity to the original model can be maintained while allowing for necessary local adaptations. The research will also produce a replicable implementation strategy that can support national and international scale-up of the initiative. In doing so, the study will contribute to the broader implementation science literature by advancing theoretical and practical insights into the design, delivery, and evaluation of gender-sensitive, community-based physical activity interventions aimed at improving men's health outcomes.

Conclusion: Findings from this study will contribute to the development of a robust, evidence-informed strategy for scaling the Football Cooperative initiative. By embedding implementation science and stakeholder engagement, the study aims to address critical gaps in men's health promotion through sustainable, socially embedded physical activity.

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A Pilot study of an extended exercise intervention on senescent T cells and inflammatory markers in older adults.

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Background/Introduction: The immune system undergoes significant changes with age, a process termed immunosenescence. This involves reductions in naïve T cells and increases in senescent and exhausted T cells, contributing to inflammation and age-related diseases like frailty, cancer, and vascular disease (Owens et al., 2021). The impact of regular exercise on T cell subpopulations in aging individuals remains poorly understood (Brauer et al., 2021; Donovan et al., 2021). This study seeks to investigate the effectiveness of a mixed exercise regime (combination of MICT & HIIT and resistance exercise) on senescent and exhausted T cells in individuals with elevated baseline values.

Methods: Design: Randomised controlled trial. Inclusion criteria: Women and men, over 60 will be recruited; Not meeting the physical activity guidelines; Either a higher proportion of cells that protect the body from infection (specifically CD8 + CD28 null T cells ≥ 50%) or hsCRP value ≥ 2mg/L). Blood Measurement timepoints: Week -2, -1, 0, 12, 24, 25 and 26 with all samples taken 48 hours after the last exercise bout. The -2, -1 and 0 measures along with the week 24, 25 and 26 measures will be used to calculate co-efficient of variation and to reduce biological variation in the estimates. Training protocol:MICE element: 50% VO 2 max increasing to 40 min per session. Supervised sessions supplemented by 1 additional home-based sessions (brisk walking) after week 12. HIIE element:Supervised sessions to involve progressive HIIE element (cycle ergometer and uphill treadmill walking) after week 12 supplementedResistance element: Moderate intensity weights (8 – 12 RM type resistance)

Expected outcomes: Acute exercise may induce apoptosis in senescent cells, potentially creating "space" for naïve cells, but this hypothesis requires further validation (Simpson, 2011). However, there is evidence that exercise may not affect senescent T cell populations.

Discussion: Exercise shows potential in promoting apoptosis in resistant T cells. In turn, potentially driving a positive rejuvenating effect on immune T cell phenotypes. Concerns will need to be answered including those of dose response, sex differences and the impact of prior infections (Eg: CMV)

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Evaluating the sleep behaviours of elite athletes and support staff.

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Background/Introduction: Sleep problems exist within elite athletes (Gupta et al., 2017) and support staff (Curtis et al., 2024). Gupta et al., (2017) reported that 38-57% of elite athletes have sleep disturbances, often linked to short sleep duration. The sleep behaviours of athletes have been well studied however the data on elite athletes is limited (Walsh et al., 2021). The sleep behaviours of coaches and support staff working in high performance sporting environments has been reviewed (Curtis et al., 2024) however further research is required to clarify the recurring sleep patterns and specific strategies to improve sleep.

Method: One hundred and thirty-four respondents completed the online version of the sleep research surveys 'The Athlete Sleep Screening Questionnaire' (ASSQ) and 'Pittsburgh Sleep Quality Index' (PSQI). An established taxonomy has been used to establish the 'elite-ness' of athletes (Swann et al., (2015).

Results: A total of 134 individuals participated in the study, consisting of 93 elite athletes and 41 coaches/support staff with a male-to-female respondent ratio of 104:31. According to the ASSQ, 30.1% of elite athletes and 53.6% of coaches/support staff reported getting less than 7 hours of sleep per night. Furthermore, 32% of athletes (21/93) took 31-60 minutes to fall asleep, compared to just 9.7% of support

staff, most of whom (48.7%) fell asleep in less than 15 minutes. Sleep disturbances while traveling were reported by 50.5% of athletes and 63% of support staff. In terms of caffeine consumption, 19% of support staff drank four or more caffeinated beverages per day, while only 10.7% of athletes consumed the same amount. Additionally, 83.8% of elite athletes and 70.7% of support staff used electronic devices within an hour before bed. The PSQI revealed that 17.2% of athletes (16/93) and 21.9% of support staff (9/41) rated their sleep quality as "fairly bad."

Discussion: The findings highlight that both cohorts experience significant sleep challenges. A notable proportion of athletes (30.1%) and support staff (53.6%) obtain less than 7 hours of sleep per night, experience prolonged sleep onset latency and report disturbances while travelling. High electronic device use before bed and caffeine consumption, particularly among athletes (83.8%) may further contribute to poor sleep quality in this population.

Conclusion: Given the prevalence of inadequate sleep and related behaviours, targeted interventions focusing on sleep hygiene, caffeine management and travel-related sleep strategies may be beneficial for optimising recovery and performance in both elite athletes and support staff.

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A Qualitative Analysis of the Management of Relative Energy Deficiency in Sport from the Perspective of the Nutrition Professional

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Background/Introduction: Relative energy deficiency in sport (REDs) is a condition wherein athletes have inadequate energy intake to meet the demands of exercise in addition to normal physiological requirements. Consequently, the athlete may experience impaired physiological and/ or psychological function, as well as impaired performance. Despite its long-term existence, formal definition and inquiry into REDs remains relatively recent (Mountjoy et al., 2014). Consequently, there is limited guidance for its management by Registered Dietitians and Nutritionists (RDNs). Furthermore, there is limited insight into how such management is perceived by RDNs. The aim of the present study is to qualitatively explore the barriers and facilitators to REDs management from the perspective of the RDN.

Methodology: Semi-structured interviews were held online with 9 sports RDNs who have worked with athletes with REDs or suspected REDs in Ireland and the United Kingdom. Reflexive thematic analysis was applied to the dataset to produce themes according to three research questions regarding the experience of the RDN in management of REDs. These resultant themes were then explored using a critical realist philosophical paradigm.

Results: Management of REDs was generally seen as challenging yet rewarding and was acknowledged to be a gradual process. Perceived barriers include lack of resources, psychosocial factors amongst athletes, and the sporting environment. Perceived facilitators include athlete-centred practice and effective resource use.

Discussion: The results of the present study are largely reflective of prior research in similar areas. The complex nature of REDs aligns with how its management was perceived by RDNs. Personal factors were found to interact with environmental factors, further compounding the complexity of its management. Optimal management of REDs was highlighted to be highly individualised, especially in the context of inadequate resourcing.

Conclusion: The present study highlights the need for improved integration of nutrition services into sports multidisciplinary teams (MDTs), as well as the importance of a collaborative approach between athletes, RDNs, other MDT members, and the athlete's personal support network. Future research should explore the effectiveness of interventions such as dissonance-based activities in cases of intentional REDs, as well as developing personal and professional supports for RDNs.

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Nutrition culture and service provision: what are the perspectives and experiences from key stakeholders within elite male rugby union academies?

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Background/Introduction: Developing rugby players have high energy expenditures (Smith et al., 2018) increasing their vulnerability to low energy availability (LEA). Athlete eating behaviours, which contributes to this risk, may be shaped by cultural factors and interactions with support staff (Pensgaard et al., 2023). Accordingly, the purpose of the current study was to explore stakeholder perceptions and experiences of nutrition culture and related service provision practice within elite male rugby union academy training environments.

Method: Semi-structured interviews (40 ± 15 mins in length) were conducted with 35 participants (male: n = 34; female: n = 1), working full time across elite male rugby union academies in Ireland (4 professional, 4 non-professional pre-academies). Participants included academy managers (n = 4), athletic development coaches (n=11), physiotherapists (n=5), rugby coaches (n=13) and sport psychologists (n = 2). A reflexive thematic analysis approach was employed. Data was transcribed and coded, leading to the identification of emerging themes.

Results: The themes that emerged were: a) nutritionist value and presence, b) mixed ideologies and low knowledge regarding body composition practices, low energy availability (LEA) and relative energy deficiency in sport (REDs), c) lack of stakeholder nutrition education and d) growing stakeholder awareness of possible player under fuelling practices, disordered eating behaviours, body image and physique concerns.

Discussion: Nutrition support is valued in elite male rugby academies but stakeholders perceive it as under-resourced. While they engage in player conversations regarding nutrition, their ideologies – shaped by personal experiences and limited nutrition education - risk misinformation sharing. A culture of positional physique ideals within rugby union, and the pressure placed on players to attain these to achieve a future

professional status is acknowledged. Physique expectations are potentially contributing to associated symptoms of problematic LEA, which may go unnoticed due to limited interdisciplinary knowledge.

Conclusion: A broader understanding of the interconnection between nutrition, mental health, and physique ideals within academy environments is essential. Future research should explore rugby union players' experiences and perspectives on disordered eating, body image, and physique concerns to develop targeted interventions mitigating the risk of LEA.

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Parental Involvement in Irish Youth Sport.

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Introduction: Youth sport is widely recognised as a vehicle for positive youth development. Parents are significant contributing factors to children's introductions to, and experiences in sport (Fredricks & Eccles, 2005). Parental influence is persistent in the child's development in sport, actuated both overtly and covertly. This can be paradoxical for the child whereby the family system e.g., parent(s), can be both the origin of, and a protection from sport specific pressure (Hellstedt, 2005). Inappropriate parental behaviour in sport can result in child dropout (Bonavolontà et al., 2021).

Method: An online survey was completed by 1171 youth sport parents in Ireland. The survey consisted of two sections: (1) parent related data e.g., age, gender, income education, parental sport history and, (2) child related data e.g., age, gender, sport involvement. This resulted in data corresponding to 2172 parent-child dyads. The Parental Involvement in Sport Questionnaire (PISQ; Wuerth et al., 2004) was also included. The PISQ assesses parental involvement across four dimensions (Active Involvement, Directive Behaviour, Praise and Understanding, and Pressure), using a 1-5 Likert scale.

Preliminary results: Results showed that 92.1% of parents had previously participated in sport and/or physical activity, with 69.8% of respondents indicating that they had a good or excellent experience. 84.3% of

participants introduced their child to sport. 37.7% of parents were either currently coaching their child or had previously coached their child. The most common sports participated in by children were Gaelic football (53.6%), soccer (46.5%), hurling/camogie (43.9%) and swimming (28.8%). Mean PISQ subscale scores indicated high Praise and Understanding ($\mu = 4.4$) and Active Involvement ($\mu = 3.6$) amongst parents. Lower scores were observed for both Directive Behaviour ($\mu = 2.6$) and Pressure ($\mu = 1.97$).

Conclusion: This research will examine parental behaviour patterns in youth sport in Ireland, to inform the practice of governing bodies to empower parents to support their child. This research is unique, as it is the first large scale investigation of parental behaviour in sport from an Irish perspective.

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A Novel Method for Identifying Key Determinants of Physical Activity Behaviours in Children and Adolescents: A Multi-Source Analysis

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Background/Introduction: Understanding key determinants of physical activity behaviours (PABs) in children and adolescents is essential for developing effective policies and practices. This study presents a novel approach for identifying these determinants focusing on high-valued references and applying a scoring system ranking them.

Method: To rank the most important determinants of PABs, six key sources were reviewed. An initial literature search in PubMed identified 2932 reviews, with 70 included following screening. Further important sources included seven DEDIPAC (Determinants of Diet and Physical Activity) Umbrella Reviews (1), three DEPASS BESt (Determinants of Physical Activity and Sedentary Behaviour Best Evidence Statement Reviews) (2), a DEDIPAC concept mapping study (3), DEPASS questionnaires, and a Web of Science targeted review.
A weighted scoring system was developed to rank determinants. Each source was assigned a weight and a

point value based on its methodological reliability and strength to ensure that more credible sources had higher impacts on the overall score. Determinants were evaluated based on the frequency of reporting across sources and the strength of the reported correlations. Final scores were calculated by multiplying the weight and point value of each source reporting a determinant with the frequency of reporting the determinant. This method ensured a balanced evaluation, considering the quantity and quality of evidence.

Results: The analysis identified unique determinants across different domains of a socioecological model (4). The following determinants were ranked as the top intrapersonal determinants: self-efficacy, motivation, perceived competence, intention, body image, outcome expectations, knowledge of physical activity benefits, goal setting, enjoyment, and perceived motor competence. These were frequently reported across high-importance sources, highlighting their significant role in influencing PABs.
Discussion: The findings indicate the important effects of various determinants on youth PABs. The scoring system provided a clear and reliable method for assessing determinant importance and source reliability. Discussing multiple scoring approaches enhanced the consistency and accuracy of the overall findings.

Conclusion: This study introduces a systematic approach for identifying and ranking key determinants of PABs in children and adolescents. The results inform future research on the methodology of measuring key intrapersonal determinants and improving physical activity interventions for the youth.

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UG Poster Presentations

An Investigation into the Fluctuations in Strength Over the Menstrual Cycle in Physically Active College Students.

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Introduction: With women's sport participation and coverage on the rise globally, evidence informed practice should be implemented in training and coaching (Carmichael et al., 2021). The menstrual cycle is a key characteristic unique to women which may affect female sport, with strength fluctuations having the potential to impact athletic performance. Aim: This study aimed to investigate how the menstrual cycle, specifically early follicular and ovulation phases, affects strength in physically active students.

Methodology: Seven eumenorrheic students (20.71±1.38years) had maximal isometric strength of their quadriceps and handgrip strength measured. Participants were tested twice over their four-week cycle, during ovulation and during menstruation with these time points being self-reported. Additionally, a subjective questionnaire was completed in the exercise laboratory on the first day of testing.

Results: Isometric maximal quadriceps strength was 0.03Nm/Kg (0.95%) higher during ovulation (2.69±0.42 Nm/Kg) than during menstruation (2.66±0.40 Nm/Kg), $p = 0.358$. Handgrip strength was 2.29Kg (7.49%) lower during ovulation (30.57±7.04 Kg) than during menstruation (32.86±5.01 Kg), $p = 0.088$. Subjective experiences found 86% of participants reported their menstrual cycle affected their training. The most frequent perception was that prior to and during menstruation had the worst impact on performance. Negative effects included feeling fatigued more easily and expressing concern in relation to bleeding through clothes. The most common positive effect experienced primarily in the mid-luteal phase was improved energy levels.

Discussion/Conclusion: These results suggest that while participants perceived performance was impacted by the menstrual cycle, the fluctuations in hormone levels had no significant effect on actual strength. These findings may help inform practice in sporting bodies such as Sport Ireland and the LGFA, while also linking into initiatives such as Her Moves.

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The Acute Effects of Exercise-Induced Cardiovascular Fatigue on The Landing Error Scoring System (LESS) in Collegiate Students

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Introduction: Identifying movement mechanics that contribute to injury risk is a key focus in sports performance. The Landing Error Scoring System (LESS) is a screening tool used to identify altered movement mechanics. It is a validated and reliable screening tool, with poor LESS scores been associated with an increased chance of injury (Padua et al., 2011; Everard et al., 2017). However, there is a lack of research on the impact of fatigue on the LESS.

Methods: Thirty active collegiate students (18 males and 12 females, mean age 23.8 ± 6.0; mass 76.7 ± 14.5 kg; height 174.4 ± 10.4 cm) participated in this study. The participants were randomly allocated into a control or intervention group. In the control group they performed the LESS and did not complete the intervention protocol and were retested. The intervention group completed the LESS pre and post the intervention protocol. Differences in LESS scores pre and post intervention were assessed using a dependent t-test.

Results: The intervention groups LESS scores were significantly worse post-intervention (p-value = 0.004) with a mean difference of 2.1, with a large Cohen's D size (0.81). There were no significant differences between the pre- and post-LESS scores in the control group.

Discussion: These findings suggest exercise-induced cardiovascular fatigue negatively impact movement qualities measured by the LESS which has implications for injury risk screening. Strength and conditioning professionals and physiotherapists should account for a fatigue status when administering prehabilitation or rehabilitation.

Conclusion: It is evident that there is a need for more research to examine the effects of fatigue on the LESS and how practitioners can use it to reduce injury risk in athletes.

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The Difference in Training and Match Play Demands Between Starting and Non-Starting Players (subs) In an Irish Professional Football Team in the 2024 Premier Division League of Ireland season.

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Introduction: Football coaches want to ensure that all their players achieve adequate training during the week to optimize performance in matches. Athletes that play the full match or up to 60 minutes (Starters) have a different weekly training load than those that don't start matches and may not play at all or play 60 minutes or less (Non-Starters). Previous research has reported that non-starters experience significantly lower training loads than starters (Stevens et al., 2017; Casamichana et al., 2022; Varjan et al., 2023). However, Oliveira et al., (2023) reported non-starters had greater training loads than starters. The main aim of this study was to examine the difference between starting and non-staring league of Ireland senior player's training loads in the 2024 season.

Methods: This study is a full 36-week season review of a professional football team in Ireland. Professional football players competing in the League of Ireland Premier Division from one team were analyzed for 36 weeks resulting in a different order of players for each week for the 2024 season. A linear mixed model (LMM) was used to compare differences between two independent groups (Group 1 vs. Group 2) on the dependent variables.

Results: Starters presented higher significant differences between all variables assessed but three of the variables have trivial effect sizes. Total Distance ($p=<0.001$, Cohens D = 0.68) had a medium effect size and decelerations ($p=<0.001$ Cohens D=0.30) had small effect sizes. high speed running ($p=0.005$, Cohens D = 0.14), sprint distance ($p=<0.001$ Cohens D = 0.15) and acceleration ($p=<0.001$, Cohens D= 0.10) had trivial effect sizes.

Discussion: These results indicate that there is a substantial difference for TD comparing starters to non-starters. The trivial effect size for high-speed metrics including HSR, SD, and ACCELS indicates that starters and non-starters are getting a similar stimulus for the high-speed metrics while DECEL results indicate a difference between the groups.

Conclusion: This study adds new information to this area as it is the first study to analysis the physical demand of professional football players in Ireland and is also the first study to be done on league of Ireland players.

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Body Composition Analysis: Investigating Levels of Agreement Between Skinfolds and Girths, Portable Ultrasound and Segmental BIA as a Means of Monitoring Changes in Body Composition After a Four Day Period of Leg Immobilisation in Active Females.

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Introduction: Many injuries involve a long period of leg immobilisation resulting in rapid muscle atrophy. Current research in males has shown up to 3.5% quadricep muscle reduction after a short 4-day immobilisation period (Wall et al., 2014) but limited research exists in females. MRI is the gold standard method to assess muscle loss in injured athletes (Lukaski and Raymond-Pope, 2021), however this is often unattainable for Athlete Support Personnel, thus limiting objective tracking of nutrition and exercise interventions to reduce muscle atrophy over the injury period. Purpose: To determine level of agreement between skinfolds, girths, portable ultrasound and segmental BIA (whole leg) to track percentage changes in leg body composition after a 4-day period of leg disuse, and its relationship with percentage changes in isokinetic hamstring and quadriceps strength.

Methods: 14 healthy college level (19-25) females underwent a 4 day long bilateral knee immobilisation intervention by means of knee brace and crutches. Before and after the intervention, girth and skinfold of the thigh and calf were assessed using ISAK standards, portable ultrasound (Hosand Bodymetrix), and segmental BIA (Tanita BC-545N). Hamstring and quadricep strength was determined using the Biodex system 3 isokinetic tests. Half of the subject group were assigned to wear their brace on their dominant leg and the other half on their non-dominant leg. The non-immobilized limb functioned as a within subject control.

Results: No tested variable showed statistical significance. Total leg girths veered close ($p = 0.068$ $d = 0.42$) and were deemed the most suitable means of monitoring change in leg composition paired with BIA lean mass ($p = 0.055$, $d = 1{,}54$). Correlation data confirmed the validity of all body composition measures and implied an inverse relationship between strength and body composition variables.

Conclusion: It was concluded that limb circumference measured by girths and lean mass derived from BIA is the most appropriate means of monitoring compositional changes during periods of disuse. Corrected thigh girths may be a more suitable in monitoring functional decline due its strong correlation with strength variables but further research in necessary to draw firm conclusions

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An Investigation into the Effectiveness of Probiotics Present in Kefir in Managing Stress and Anxiety in College Students. A Randomised Controlled Trial with Assessment of Nutritional Status.

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Introduction: Anxiety and stress are becoming an increasingly recognised concern amongst the general population (Goodwin et al., 2020). This issue highlights the need for realistic and feasible interventions. Developing research in the realm of nutritional psychiatry has considered the use of probiotics, implying favourable outcomes for managing mental health via the gut brain axis (Ma et al., 2024). Certain nutrients (omega-3, vitamin D and fibre) are also believed to impact psychological well-being through similar biological pathways ((Saghafian et al., 2022; Alimohammadi-Kamalabadi et al., 2024). The aim of this study was to determine the effectiveness of probiotics present in kefir to assess the associated symptoms in anxiety and stress. This study also looked at examining the effect of specific nutrients (omega-3, vitamin d and fibre) in influencing indicators of anxiety and stress. Finally, the role of gastrointestinal health in anxiety and stress was observed.

Methods: Sixteen students were assigned randomly to either a kefir group or a control group. Participants consumed 250ml of their allocated drinks for 14 consecutive days. Anxiety (GAD-7), Stress (PSS) and GI health were assessed pre and post intervention along with a food diary.

Results: Anxiety levels significantly reduced in both the kefir (mean difference = 2.5, $p = 0.033$, $d = 0.94$) and control group (mean difference = 4.6, $p = 0.005$, $d = 1.4$) although there was no significant reduction between groups ($p = 0.197$). There was no significant change in stress or GI symptoms in either group. A moderate positive correlation was observed between GI symptoms and anxiety ($r = 0.042$, $p = 0.017$), however there was an insignificant association between nutrient intake with either of the measured mental health outcomes or GI health.

Conclusion: These findings indicate that kefir may have potential to manage anxiety, although the potential influence of placebo effects warrants further investigation. Future research should adhere to extended trial periods, larger sample sizes and make use of biomarker-based assessment of variables to reduce bias and strengthen validity.

References: (1) Goodwin et al. (2020), J Psychiatr Res, 130, 441–446 **(2)** Ma et al. (2024), Microbiol Spectr, 12(6), e0041324. **(3)** Saghafian, F., Hajishafiee, M et al. (2022). Nutritional Neuroscience, 26(2), 108–126. **(4)** Alimohammadi-Kamalabadi et al. (2024), Health Sci Rep, 7(8), e2276

Heart Rate Variability and Heart Rate Kinetics: Exploring Markers of Fatigue, Recovery, and Readiness in Athletic Performance. Could Heart Rate Kinetics at the Onset of Exercise Be the New Predictor of Recovery and Readiness in Sport?

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Introduction: Monitoring fatigue and readiness to train is crucial for maximizing athletic performance and preventing overtraining (Bestwick-Stevenson et al., 2022). Heart rate variability (HRV) is a widely used tool to assess autonomic regulation, fatigue, and readiness to train (Plews et al., 2013; Picabea et al., 2021). Heart rate (HR) kinetics at the onset of exercise, which describes how the heart rate adapts in response to exercise, may offer an alternative approach to monitor training status, reflecting autonomic regulation at the onset of exercise (Almas et al., 2022). This study aimed to investigate the relationship between resting HRV and HR kinetics in response to submaximal constant load exercise, and to assess their utility in detecting fatigue in endurance-trained individuals.

Methods: In a randomized cross-over design, nine endurance-trained participants (age = 26 ± 3 years) completed two testing sessions, under rested and fatigued conditions. Fatigue was induced through a 50% increase in training load from their typical weekly load. HRV was measured at rest (Kubios Scientific V 4.1.2) and HR kinetics response was assessed during three 6-minute constant-load cycling bouts at 150W, and the time constant (Tau) of the HR response was calculated using mono-exponential modelling (Cosmed Omnia).

Results: HRV analysis showed no significant differences between Fatigued and Rested conditions across time-domain, frequency-domain, non-linear, or additional HRV metrics ($p > 0.05$). HR kinetics analysis showed that the time constant (Tau) was significantly higher in the Fatigued state (36.68 ± 17.46 s) compared to the Rested state (29.39 ± 16.71 s), with a mean difference of 7.29 seconds ($p = 0.032$).

Discussion/Conclusion: Findings of this study indicate that HR kinetics at the onset of constant load exercise is significantly slower in a fatigued state compared to a rested state, suggesting delayed cardiovascular adjustment under fatigue. In contrast, HRV measures demonstrated inconsistent responses between conditions, highlighting their limitations in reliably detecting physiological fatigue in trained individuals. Its evident that further research is needed to explore heart rate kinetics as a practical tool for assessing fatigue and readiness to train, potentially enhancing current training monitoring and helping athletes make more informed decisions about their recovery and physiological state.

References: (1) Almas et al. (2022), J Endocrinol Invest, 46(1), 51–57 **(2)** Bestwick-Stevenson et al. (2022), Int J Sports Med, 43(14) **(3)** Picabea et al. (2021), J Hum Kinet, 77(1), 107–115 **(4)** Plews et al. (2013), Sports Med, 43(9), 773–781

The Nature and Prevalence of Injury in Hyrox

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Introduction: Considering the popularity of functional fitness training (FFT) modalities such as CrossFit and Hyrox are rapidly increasing, little is known about their short-term injury patterns, particularly Hyrox, due to its relatively recent inception in 2017. Therefore, the purpose of this study was to investigate the nature and prevalence of injuries within the sport.

Methods: A multi-question survey was distributed to the top 200 male and female athletes within the Hyrox PRO division, that collected data on their demographics and injury experience, across a 4-week recall period.

Results:65 athletes responded, 57% male (age 31.6 ± 5.3 years, mass 83.97 ± 7.6 kg, height 183.1 ± 6.4cm) and 43% female (age 34.1 ± 5.7 years, mass 65.6 ± 6.4 kg, height 171.1 ± 6.8cm). According to the findings, 43% of athletes reported sustaining an injury or complaint, with the lower back (17%), knee (14%) and calf (12%) being the most frequently cited locations of injury. Running was reported as the main cause of injury with overuse accounting for 49% of injuries, although no direct relationship can be established. Only 6% of athletes reported a complete inability to train.

Discussion: Study found a moderate injury rate, with 43% of athletes reporting injury across 4 week recall period, which can be seen as similar to runners and CrossFit athletes. However, only 6% were completely unable to train, suggesting a lower injury severity when compared with CrossFit.

Conclusion: The findings produce a moderate short term injury rate; however, injury severity appears to be lower than other FFT modalities. This highlights the necessity for prospective injury surveillance within the sport.

References: (1) Claudino et al. (2018), *Sports Med Open*, 4(1). **(2)** Gajardo-Burgos et al. (2021), *Int J Environ Res Public Health*, 18(10), 5431. **(3)** Mountjoy et al. (2015), *Br J Sports Med*, 50(10), 590–596.

Does Nutrition Knowledge Vary Between Regularly Injured Athletes and Uninjured Athletes.

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Introduction: Recreational running is linked to high rates of running-related injuries (RRIs) with annual incidence rates ranging from 19 to 79% (Burke et al., 2023). Inadequate dietary intake resulting in low energy availability (LEA), may compromise tissue integrity potentially increasing injury. Broadening the scope of injury development to include nutrition knowledge may be beneficial, as it is a modifiable factor associated with improved dietary intake. The aim of the study is to examine nutrition knowledge and LEA risk between regularly injured and uninjured athletes.

Methods: An online questionnaire was completed by 139 recreational runners (male = 58, female = 81; age 29.7 ± 10.1), recruited from local park runs and social media across Ireland. Participants were categorised into three injury status groups: never injured (n=44), injury resistance (n=39), and recently/currently injured (n=56). The questionnaire included the Abridged Sport Nutrition Knowledge Questionnaire (A-NSKQ) (Trakman et al., 2018), Low Energy Availability in Female Questionnaire (LEAF-Q) (Melin et al., 2014), and the Low Energy Availability in Males Questionnaire (LEAM-Q) (Lundy et al., 2022). Female LEA risk was identified by a LEAF-Q score of ≥8, with either an injury score ≥2 and/or menstruation dysfunction score ≥4. Male LEA risk was identified by sex drive score ≥2 on selected LEAM-Q items.

Results: Total nutrition knowledge scores were 49.9 % and classified as poor. No significant differences were observed in total (p= 0.132, n2=0.132), general (p= 0.354, n2=.015), and sport specific (p= 0.317, n2=.017) nutrition knowledge across the three injury status groups. However, a significant difference was found in LEA risk between the recently/currently injured group compared the other injury status groups (p= 0.002, V= 0.33). Further analysis revealed males had no significant difference of LEA risk (p=0.386, V= 0.19) while females had a significant difference between LEA risk in the currently/recently injured group compared to the other injury groups (p=<.001, V= 0.52).

Discussion/Conclusion: Findings suggest that recreational runners could benefit from nutrition education, and LEA could potentially be driving injury in the currently/recently injured female athletes, future longitudinal studies are needed to confirm this.

References: (1) Burke et al. (2023), *Sports Med Open*, 9, 46. **(2)** Melin et al. (2014), *Br J Sports Med*, 48, 540–545. **(3)** Lundy et al. (2022), *Nutrients*, 14, 1873. **(4)** Trakman et al. (2018), *J Int Soc Sports Nutr*, 15, 17

Investigating the Relationship Between Blood Pressure and Physical Function in Cardiovascular Disease Patients: A Retrospective Study

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Introduction: Cardiovascular diseases (CVDs) are the leading cause of death globally, with hypertension being a critical modifiable risk factor. While exercise-based rehabilitation is known to improve physical function and blood pressure (BP), few studies have explored how BP status influences response to exercise in CVD populations. Aim: This study investigated the relationship between BP and physical function in patients with CVD participating in a 12-week exercise programme, with subgroup analysis of hypertensive and normotensive participants.

Methods: Twenty-eight individuals with CVD (n = 7 hypertensive; n = 21 normotensive) were assessed at baseline, post-intervention, and 12-week follow-up. Measures included systolic blood pressure (SBP), diastolic blood pressure (DBP), handgrip strength (HGS), and 6-minute walk test (6MWT). Statistical analyses included repeated-measures ANOVA, mixed model linear regressions, and correlation testing.

Results: Significant improvements in HGS were observed ($p = 0.019$), particularly among normotensive participants. No significant changes were found in SBP or 6MWT, though a trend toward significance was demonstrated. DBP significantly increased in normotensive participants between post-intervention and follow-up.

Conclusion: The findings suggests that HGS may be an indicator of functional improvement in CVD rehabilitation. Furthermore, differentiating responses between hypertensive and normotensive patients suggests a need for more targeted, individualised rehabilitation programmes. Further research with larger, more diverse cohorts is needed to confirm trends in BP and 6MWT response.

References: (1) Naci et al. (2019), *Br J Sports Med*, 53(14), 859–869. **(2)** Paluch et al. (2024), *Circulation*, 149(3), e217–e231. **(3)** Poli et al. (2024), *Heliyon*, 10(16).

Every Swimmer Matters: A Framework for Irish Youth Swimming Development

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Introduction: National governing bodies of swimming generally emphasise competition times as a means to quantify youth swimming development. Some countries have development frameworks; however, psychological components are often disregarded. With swimming having one of the highest attrition rates of any sport in Europe (and Ireland), national youth swimming frameworks seem to be failing to keep swimmers engaged. This paper aims to review current frameworks employed by Swim Ireland and other territories to identify strengths and weaknesses to propose a new, athlete-centred model, relevant to the Irish swimming landscape.

Methods: A narrative review of psychological theories in relation to youth sport motivation was conducted. General athlete development models and their use were discussed. Informal consultations with a swim coach/swimmer and motor development lecturer took place to provide additional context. Resources from Swim USA, Swim England, GB Aquatics, and Swim Ireland were critically appraised.

Results: Analysis revealed a number of limitations with the current youth development strategy in Ireland, with a lack of coach guidance and swimmer-wellbeing emphasis noted.

Discussion: The proposed framework addresses these issues and incorporates psychological principles to place the swimmer at the forefront, with the aim of addressing poor retention rates in Irish swimming. Practical guidance is provided for coaches to support long-term swimmer engagement, with sample resources provided.

References: (1) Bailey et al. (2013), *Int J Coach Sci*, 7(1). **(2)** Barth et al. (2023), *Sports Med*
(3) Woods et al. (2023), *Children's Sport Participation and Physical Activity Study 2022 (CSPPA 2022)*, Univ. of Limerick & Sport Ireland

Examining claims of Deceptive Advertising of Athletic Footwear

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Introduction: This study aimed to replicate Robbins and Waked's (1997) study asking if advertising messages on footwear have an effect on impact forces (main effect of advertising message), utilising close replication of the original study. Secondary descriptive measures of loading rate (N/kg/s) and shoe comfort were explored given their association with injury.

Methods: 27 male recreational runners (age 25±9 years, height 181.65±7.21 cm, mass 80.92±11.44 kg) were faced with 4 surfaces: a bare force plate, and 3 with this plate covered by identical foam crafted to look different and advertised differently. Advertising messages included a deceptive, neutral and warning message. VPIF (N) and loading rate (N/kg/s) were recorded for 10 footfalls barefoot per surface, and comfort ratings were recorded after each set of 10 footfalls. This study was preregistered: https://aspredicted.org/fk8v-tcnj.pdf.

Results: A two-way repeated-measures ANOVA showed that the advertising message received did elicit statistically significant changes in VPIF (N) ($F_{2,52}=3.441$, $p=0.04$, $\eta p^2=0.117$), but no pairwise differences were observed (all $p>0.05$). We did not observe a significant main effect for message in the same direction as the original study, the z-test reported a significantly smaller effect size in the replication ($\eta p^2=0.117$) vs. original ($\eta p^2=0.87$) estimates [$z=6.97$, $p\leq0.001$, difference=1.19]. A non-parametric Friedman's test showed no statistically significant difference in loading rate (N/kg/s) across the three advertising conditions ($\chi^2(2)=4.667$, $p=0.097$). A one-way repeated-measures ANOVA showed the advertising message given significantly affected comfort ratings ($F_{2,52}=42.775$, $p\leq0.001$, $\eta p^2=0.622$), specifically comfort ratings decreased across conditions; from 8.444 ± 1.155 (deceptive) to 6.852±1.916 (neutral) ($p<0.001$, Meandiff=-1.593) and further decrease to 5.111±1.867 (warning) ($p<0.001$, Meandiff=-3.333).

Discussion: The failure to replicate Robbins and Waked's (1997) claims suggests that biomechanical variables often associated with injury are not influenced by advertising, unlike the subjective measure of comfort. This questions the validity of comfort as a surrogate predictor of injury risk, as it can be shaped by advertising. Future footwear prescription should therefore focus on objective, well-evidenced measures to reduce injury risk and guide footwear selection.

Conclusion: This present study showed that advertising messages had no impact on biomechanical variables related to injury, only comfort; therefore, we failed to replicate the original study.

References: (1) Robbins & Waked (1997), *Br J Sports Med*, 31(4), 299–303

The Effect of Transcranial Direct Current Stimulation on Skill Acquisition in Novice Sim Racers

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Introduction: The motor cortex is a key brain region underlying the acquisition of motor skills (Kawai et al., 2015). The use of anodal Transcranial Direct Current Stimulation (tDCS) on the motor cortex has been found to accelerate improvements in the acquisition of various skills (Yamaguchi et al., 2020). Esports require accurate motor control of the hands and arms for successful performance, making them suitable for investigating the effects of tDCS (Toth et al. 2021). While studies have investigated the effects of tDCS on skill development in esports, no research has investigated the effect in sim racing. The purpose of this study was to investigate the effect of tDCS on the acquisition of skill among novice sim racers. We hypothesised that tDCS would enhance an individual's development and retention of trained skills and that a five day training program would improve performance.

Methods:15 participants (21.7 ± 2.4 years old) were recruited for this randomised controlled trial. They were evenly divided into three subgroups: control group, sham group, and stim group. Baseline, post, and retention tests were conducted which involved completing 7 laps of Circuit Paul Ricard on the Assetto Corsa software. The training protocol was carried out over 5 days and consisted of two 12-minute training blocks with 5 minutes break in between.

Results: Analysis of steering reversal rate and lane deviation revealed a significant effect of tDCS on performance ($F= 3.414$, $p = .044$, $\eta p2= .159$) ($F= 3.336$, $p = .047$, $\eta p2= .156$). Training was shown to significantly improve lap time, average speed, average peak brake, average lane deviation, and steering reversal rate ($p < 0.001$).

Discussion: Our findings suggest that tDCS had a significant effect on steering behaviours, while only marginal insignificance was found for average peak brake. Training was shown to positively impact performance with significant improvements across a wide range of recorded variables.

Conclusion: From this analysis, we can conclude that the use of anodal stimulation on the hand region of the M1 can enhance the skill acquisition of motor skills controlled by the hands, but it had less of an effect on braking behaviours controlled by the feet.

References: 1) Kawai et al. (2015), *Neuron*, 86(3), 800–812**. (2)** Toth et al. (2021), *Comput Hum Behav*, 121, 106782 **(3)** Yamaguchi et al. (2020), *J Neuroeng Rehabil*, 17, 1–13

An Investigation into the Association Between Eating Disorder Risk and Self-Esteem among Irish Collegiate Athletes and Non-Athletes.

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Introduction: Collegiate athletes and non-athletes experience significant pressures academically and physically; these pressures have been found to increase the risk of developing disordered eating (Daly & Costigan, 2022; Chapa et al., 2022). Self-esteem has been increasingly recognised as a significant factor in the development and maintenance of EDs (Krauss et al., 2023). Based on these factors, there is a need to address this gap in research on the association between eating disorder risk and self-esteem across gender and athletic status among Irish college students.

Methods: This study investigated the association between self-esteem levels and eating disorder risk among 80 Irish collegiate athletes and non-athletes, classifying as either male or female. Data analysis was conducted using SPSS to assess Chi-square crosstabulations on the association between eating disorder risk and self-esteem levels as well as eating disorder risk among gender and athletic status. Participants completed an online questionnaire including brief demographic and consensual questions, the Eating Attitudes Test (EAT-26) and the Rosenberg Self-Esteem Scales (RSES).

Results: A significant association was found between low self-esteem and risk of eating disorder on across the entire sample. Additionally, non-athletes with low self-esteem were found to be at risk of eating disorder. There was no difference found statistically between males and females. However, 28% of females were found to be at risk in comparison to only 10% of males.

Discussion: An association was found between low self-esteem and eating disorder risk among non-athletes, aligning with research showing undergraduates often have lower self-esteem due to social, physiological, and academic pressures (Radeef & Faisal, 2019). Low self-esteem was linked to increased ED risk among Irish college students, supporting prior research showing greater vulnerability among adolescents and young adults (Krauss et al., 2023).

Conclusion: Results indicate there is an association between eating disorder risk and self-esteem. Non-athletes with low-self are risk of eating disorder. This study highlights the important role that college support services, coaches and sports departments can potentially make regarding education around eating disorders.

References: (1) Chapa et al. (2022), *Int J Eat Disord*, 55(7), 861–885. **(2)** Daly & Costigan (2022), *Psychiatry Res*, 317, 114882 **(3)** Krauss et al. (2023), *Clin Psychol Sci*, 11(6), 1141–1158. **(4)** Radeef & Faisal (2019), *Eur J Med Health Sci*, 1(1)

Exploring the Feasibility of Resistance Exercise Snacking Among Sedentary University Faculty: A Pilot Intervention Study

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Introduction: Prolonged sedentary behaviour is a known contributor to musculoskeletal decline and cardiometabolic disease risk (Guthold et al., 2018). Despite widespread recommendations for resistance training (RT), many fail to meet the guidelines due to common barriers such as time, equipment, and motivation (Ryde et al., 2020). Brief, equipment-light bouts of Resistance Exercise Snacking (RES) have emerged as a potential workplace-friendly strategy to increase RT engagement (Fyfe et al., 2022). This study aimed to evaluate the feasibility and preliminary outcomes of an eight-week RES intervention among university faculty.

Method: Twenty-one sedentary faculty members were randomised into an intervention group (IG, n=11) or control group (CG, n=10) in a parallel-group design. The IG performed two five-minute RES sessions daily (morning and afternoon) using resistance bands during work hours. Feasibility was assessed via adherence (≥80% target) and retention (≥85% goal). Secondary outcomes included upper and lower limb strength (1RM), grip strength, countermovement jump height, aerobic capacity, and body composition (via BIA). Pre- and post-testing was conducted under standardised conditions. Statistical analysis included ANCOVA and Cohen's d to assess between-group differences and effect sizes.

Results: Seventeen participants completed the study (81% retention), with a mean adherence rate in the IG of 74.9% ± 21.1%. One-third of IG participants met the 80% adherence target. Significant between-group differences were found in upper limb strength (+13.9 kg, $p = 0.023$, $d = 1.27$) and lower limb strength (+18.7 kg, $p = 0.030$, $d = 1.23$). No significant changes were observed in grip strength, jump height, body composition or aerobic fitness.

Discussion: The RES intervention aligned with current literature as it was feasible, safe, and well-accepted by participants, with meaningful gains in muscular strength despite limited equipment and time (Nuzzo & Pinto, 2024). While adherence fell slightly below the pre-set threshold, results suggest RES can be integrated into busy schedules and still yield significant benefits. High scalability enhances its public health potential.

Conclusion: RES offers a practical and time-efficient method to improve muscular strength among sedentary working adults. Future research should explore strategies to improve adherence and examine long-term outcomes in larger and more diverse populations.

References: (1) Fyfe, J. J., et al. (2022). BMC Geriatrics, 22(1), 521. **(2)** Guthold, R., et al. (2018). The Lancet Global Health, 6(10), e1077–e1086. **(3)** Nuzzo, J. L., & Pinto, M. D. (2024). Sports Medicine, 54(5), 1139–1162. **(4)** Ryde, G. C., et al. (2020). BMC Public Health, 20, 460.

The Effects of a 12 Week Community-Based Exercise Intervention (ULMedX) on Physical Activity Behaviours in Type 2 Diabetes and Cardiovascular Disease Patients

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Introduction: Community-based exercise programmes (CBEPs) offer a scalable, cost-effective model for managing chronic diseases such as type 2 diabetes (T2D) and cardiovascular disease (CVD). This quasi-experimental study evaluated the impact of a 12-week CBEP (ULMedX) on physical activity (PA) behaviours in older adults with T2D and CVD.

Methodology: Thirty-eight participants (T2D: n=14; CVD: n=24; mean age: 66.37±10.7 years) completed a twice-weekly, 60-minute supervised group exercise intervention. PA behaviours were objectively measured at baseline, post-intervention, and 3-month follow-up using the ActivPAL3 Micro accelerometer.

Results: Linear mixed model analysis revealed no significant main effect for time in light-intensity PA (LIPA), moderate-to-vigorous PA (MVPA), step count, or stepping/standing time ($p>0.05$). Significant group x time interactions at post-intervention show a decrease in standing time of 1 hour in the T2D compared to an increase of 22 mins in CVD. 56% of standing time/day was replaced with waking sedentary behaviour in the T2D group, in complete contrast to the CVD group. The CVD group demonstrated significantly higher MVPA (+13.2, +22.3 mins/day) and step count (+2,000, +3,700) at baseline and post-intervention respectively when compared to the T2D group. PA behaviour at follow-up was very similar to baseline.

Discussion: These differences may reflect prior exposure to structured cardiac rehabilitation programmes and significant baseline differences in BMI (T2D: 33.86±9.40; CVD: 28.14±4.26) and sex distribution (T2D: 64% female; CVD: 17% female) in this study. Despite no significant improvements in PA over time, existing PA levels were largely maintained at follow-up, suggesting a stabilising effect of CBEP's during transitional care. The absence of behavioural change towards PA may be attributed to the lack of an integrated behavioural change component such as 1:1 exercise consultations and PA information sessions, as included in similar Irish programmes (Cantwell et al., 2024; García Bengoechea et al., 2021; García Bengoechea and Woods, 2025; Skelly, 2021)

Conclusion: These findings underline the limitations of exercise-only CBEP's and should spark discussion around the impact of these programmes on modifying PA behaviours. Future programmes should explore varying exercise and programme doses and should incorporate behavioural change strategies to improve motivation and adherence to habitual PA outside class-based exercise hours.

References: (1) Cantwell et al. (2024), *Support Care Cancer*, 32(2). **(2)** García Bengoechea et al. (2021), *Eval Program Plann*, 89, 101983. **(3)** García Bengoechea & Woods (2025), *Eur J Ageing*, 22(1), 10. **(4)** Skelly (2021), PhD Thesis, Dublin City University

The impact of External and Internal Cues on Changes in Peak Vertical Tibial Accelerations among Recreational Runners Following a Four-Week Intervention and A Two-Week Retention Trial.

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Introduction: It has been proposed that high peak vertical tibial accelerations, a crucial surrogate metric of impact loading, are linked to an increased risk of tibial stress fractures, an overuse injury that frequently occurs among runners (Sheerin et al., 2019; Milner et al., 2006). One suggested approach to reducing impact loading is through the use of cues (Creaby and Smith, 2016). This study was conducted to examine the impact of self regulated external and internal cues on changes in peak vertical tibial accelerations among recreational runners after a four-week intervention period, and to determine whether these effects persist during a subsequent two-week retention trial.

Methodology: Twenty-one male and female recreational runners (Age 22 ± 2 years; Stature 175.9 ± 10.4 cm; Mass 74 ± 11 kg) were randomly assigned to an internal focus (n=11) or external focus (n=10) verbal cue group. Over the course of four weeks, participants applied the designated cue while running. At baseline, post intervention, and following a two-week retention period, peak vertical tibial accelerations was measured.

Results: A two-way mixed ANCOVA showed no significant main effect of cue type on post intervention tibial accelerations, $F(1, 18) = 0.559$, $p = 0.464$, partial $\eta^2 = 0.030$. Thus,during the two-week retention trial, no effects persisted.

Discussion: Although there is theoretical evidence that external cues enhance motor skills, there were not significant changes in tibial accelerations. Low baseline values, individual variability and decreased engagement are some potential causes. Self-regulated cueing might not provide the reinforcement required to change habitual running behaviours.

Conclusion: Peak vertical tibial accelerations are unaffected by both internal and external cues after the cueing intervention and the two-week follow-up. These findings indicate simple verbal cues are insufficient to effectively alter tibial accelerations in a self-regulated real world gait retraining scenario.

References: ((1) Sheerin et al. (2019), *Gait Posture*, 67, 12–24. **(2)** Milner et al. (2006), *Med Sci Sports Exerc*, 38(2), 323–328. **(3)** Creaby & Smith (2016)

An Investigation into the Growth and Maturation Profile of Female Youth Artistic Gymnasts

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Introduction: Growth and maturation (GAM) become a trending topic in youth athletic development. Neeru et al., (2021) state that early specialising sports such as gymnastics should consider factors such as biological maturity when developing training programmes. This research project aims to offer an insight into the current growth and maturation status of female youth artistic gymnasts in Ireland and will investigate whether a relationship exists between relative age and maturation.

Methods: The researcher gained access to twenty (n=20) female artistic gymnasts between the ages of 11 and 16 inclusive who were involved in the club development group (n=10) or the recreation group (n=10). The Khamis-Roche method of percentage of peak adult height was used to estimate the participant's biological maturity. Additionally, relative age was determined by grouping the participants' birth month into quartiles 1-4. Data was analysed using SPSS (Version 29).

Results: The mean maturation score for the development group showed the average maturation classification was late maturing (-1.198 ± 0.627) and the mean maturation for the recreation group was classified as on-time (0.1730 ± 0.50270). Data analysis found a medium, positive correlation between relative age and maturation.

Discussion: The growth profile for the development group was in line with findings from previous research, concluding female artistic gymnasts are below the national average for their same-aged peers (Malina et al., 2013). The over-representation of late maturing athletes in the development group was consistent with previous studies, whereby female artistic gymnasts tend to be later maturing when compared to other female sports as well as other gymnastics disciplines (Theodoropoulou et al., 2005; Baxter-Jones et al., 2008; Steinberg et al., 2025). The relationship between relative age and maturation is not well established in artistic gymnastics. However, research from Hancock et al., (2015) found that relative age may become more prominent in older athletes.'

Conclusion: This research study offers a broad insight into the current profile of growth and maturation in female artistic gymnasts in Ireland. A sub-aim of this research project was to highlight the value of education around the area of (GAM) for Irish gymnastics from a performance and participation standpoint.

References: (1) Baxter-Jones (2013), *Gymnastics*, 15–27. **(2)** Hancock et al. (2015). **(3)** Malina et al. (2013), *Sports Med*, 43(9), 783–802. **(4)** Patel et al. (2020), *Int J Sports Sci Coach*, 16(3), 1747

The Validation of the ActivPAL Activity Monitor as a Measure of Cycling, Seated Transportation, and Sleep

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Introduction: The activPAL (AP) is a widely used activity monitor for assessing sedentary behaviour and posture. However, its ability to accurately detect specific behaviours such as cycling, lying (sleeping), and sitting in transport has not been thoroughly validated. This study aimed to examine the validity of the AP in identifying activities under both controlled laboratory and free-living conditions in a healthy adult population.

Methods: Fifteen participants (14 males, 1 female; mean age = 23.0 ± 1.59 years) completed a two-phase study. In the laboratory phase, participants completed cycling, lying in four postures (back, front, left, right), and sitting in transport, while being directly observed. In the free-living phase, participants wore the AP for 48 hours and logged their activities in self-reported diaries. AP data were processed using PALanalysis software and compared against direct observation (lab) and self-report (free-living) using paired-sample t-tests, Pearson correlations, and Bland–Altman analysis.

Results: In the lab phase, the AP showed strong agreement with direct observation for detecting total lying time ($r = 0.718$, $p = 0.003$) and transport sitting ($r = 0.990$, $p < .001$), with minimal mean bias and narrow limits of agreement. However, posture-specific lying detection and cycling showed weaker agreement. Cycling was misclassified, with two participants recording zero AP-detected cycling time despite confirmed activity. Removing these outliers improved agreement metrics. In the free-living phase, agreement between AP and self-reported data was moderate for transport, cycling and weak for lying.

Discussion: The key findings of this study revealed that the AP displayed strong agreement with direct observation in detecting total lying time and transport sitting time, but weaker agreement in detecting cycling and lying postures.

Conclusion: The AP is valid for measuring total lying time and transport-based sitting but has limited accuracy in detecting cycling. Future improvements should include algorithm refinement, integration of intensity-based measures (e.g., RPE, cadence), and machine learning to enhance classification accuracy.

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Title: Strength Profiles of Recreational CrossFit and Weightlifting Athletes: An Investigation of Maximal Isometric Strength, Reactive Strength, and Jump Height

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Introduction: CrossFit (CF) and Olympic weightlifting (WL) are two distinct training modalities that both incorporate strength and power development through compound and Olympic lifts (Comfort et al., 2023, (Escobar, Morales, & VanDusseldorp, 2017). While CF promotes broad, non-specific adaptation through varied, high-intensity training, WL emphasizes structured, technical training aimed at maximizing force and speed. This study aimed to investigate whether these differing training approaches produce distinct outcomes in relative maximal strength, reactive strength, and jump performance among recreational CF and WL athletes.

Methods: Fourteen recreational male and female athletes participated in this study (CF: n = 7, mean age = 32.6 ± 5.9 years, WL: n = 7, mean age = 22.4 ± 1.8 years). Relative maximal isometric strength (N/kg) was assessed using the isometric mid-thigh pull (IMTP). Reactive strength and jump height were measured using the countermovement jump (CMJ). Statistical analyses included independent samples t-tests and calculation of Cohen's d effect sizes.

Results: No statistically significant differences were found between groups for jump height ($t(12) = 1.04$, $p = 0.321$), RSI mod ($t(12) = 1.35$, $p = 0.203$), or IMTP ($t(12) = -0.76$, $p = 0.463$). However, effect sizes suggested small to moderate differences favouring CrossFit athletes in jump height ($d = 0.55$) and RSI mod ($d = 0.72$), while IMTP values slightly favoured weightlifters ($d = 0.41$).

Discussion/Conclusion: Contrary to the initial hypothesis, the results indicated no significant performance differences between CF and WL participants. Considerations such as small sample size, age disparity (CF: 32.6 ± 5.9 years; WL: 22.4 ± 1.8 years), and differing training ages (CF: 2.93 ± 1.5 years; WL: 1.83 ± 1.1 years) may have influenced outcomes. While the strength and power scores were sub-elite (Stone et al., 2005), they were comparable to other weightlifting research and exceeded those reported in other force-dominant sports (Jiménez-Reyes et al., 2018). This study found that recreational CF athletes displayed similar strength and power characteristics to recreational weightlifters, despite having a longer training age.

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Evaluating the Impact of an 8-week Wellbeing Programme for Adults who Attend a Hospital Based Mental Health Service

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Introduction: Mental health issues affect at least one quarter of the population (Tay et al. 2018) These individuals are at an increased risk of developing chronic diseases that are detrimental to quality of life and life expectancy. Research is scarce and limited regarding the effectiveness of an exercise intervention, especially in Ireland. The aim of this study was to investigate the impact that an eight-week wellbeing programme including measures of physical and psychosocial health has on adults who attend a hospital based mental health service in Offaly.

Methods: Seven participants; four female, three male who attended a hospital based mental health service (Mean ±, height: 173.214±10.6765cm, body mass: 35.19±6.36kg) took part in an eight-week wellbeing programme that aimed to increase physical and psychosocial health outcomes. Seven participants took part in one session of pre-testing, two one-hour exercise sessions per week (16 exercise sessions in total) and one session of post testing. Weight, height, body mass index (BMI), cardiorespiratory fitness (CRF), lower muscular strength, balance, flexibility, physical activity (PA), sedentary behaviour (SB), self-efficacy for exercise (SEE), mental well-being (MWB), quality of life (QOL) and attendance to the programme were measured in this study.

Results: Significant improvements were observed in lower body muscular strength(p=.034) and in balance on the right foot with eyes open (p=.014). There was an improvement in every other outcome measure-both physical and psychosocial although not statistically significant. Attendance to the programme was poor and this had a negative impact on results.

Conclusion: An eight-week wellbeing programme had a positive effect on participants physical health and psychosocial measures of health with significant improvements observed in lower body muscular strength and balance on the right foot with eyes open

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The Effects of a Basic Pelvic Floor Muscle Strengthening Programme on Stress Urinary Incontinence in Active Females

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Introduction: This study aimed to evaluate the effects of a basic pelvic floor muscle strengthening programme (PFMSP) on stress urinary incontinence (SUI) in active females. It also sought to explore the impact of SUI on quality of life (QoL) and to determine whether outcomes differed based on pelvic floor muscle training (PFMT) frequency.

Methods: A total of 23 physically active women (mean age 46.2±12.2 y) reporting SUI completed a basic 4 week PFMSP. Participants were allocated to either low-frequency (EG1: 1x/week) or high-frequency (EG2: 4-6x/week) training groups. The intervention involved progressive Kegel exercises with weekly phone-call check-ins. Data collection included measurement of urinary leakage (UL) assessed using the 20-minute pad test, and symptom burden assessed using the Australian Pelvic Floor Questionnaire (APFQ), the International Consultation on Incontinence Questionnaire-Short Form (ICIQ-SF) and two supplementary questions regarding self-perceived improvements.

Results: A significant reduction in UL was observed from pre- to post-intervention as measured by the pad test ($Z = -3.483$, $p < .001$, $r = .76$). EG2 experienced greater improvements compared to EG1 ($U = 31.50$, $p = .037$, $r = .43$), with average pad weight decreasing by ~77.5%, exceeding the MDC_{90} threshold of 15.94g, indicating a clinically meaningful improvement. Significant improvement was also observed in the APFQ bladder domain ($p = .027$), with change scores surpassing MDC_{90} threshold of 1.93. Lastly, EG2 reported greater self-perceived improvements in UL and QoL post intervention.

Conclusion: A basic 4 week PFMSP can elicit significant improvements in UL, PF symptoms and QoL among active women, with higher training frequency associated with greater benefit. These findings support the integration of structured PFMT into physical activity and sport environments for women.

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Body Composition and Body Image: A Coaches' Perspective

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Introduction: Coaches play a significant role in shaping how athletes experience and respond to body composition (BC) and body mass (BM). This study aimed to explore coaches' knowledge, beliefs, and practices related to BC as a performance variable, as well as their experiences with BC assessment and communication

Methods: A cross-sectional online survey was completed anonymously by 55 coaches across a range of sports and competitive levels. The survey collected both quantitative and qualitative data on BC knowledge, performance, perceptions, and communication approaches. Descriptive statistics were used for closed-ended questions, while open-ended responses underwent reflexive thematic analysis.

Results: Eighty-five percent of coaches agreed that BC influences performance, while 78% rejected the idea of an "ideal" BC for their sport. Coaches recognised the performance benefits of increased muscle mass and the negative effects of excess body fat, particularly for agility and endurance. However, opinions varied by sport and competition level. Three main themes were identified: BC as one of many individualised performance metrics, coaches responsibilities: education, limits and further support, and creating safe and supportive communication environments. Only 12.7% of coaches utilised coaching courses, despite 55% relying on current research as sources of information on BC. Just 42% of coaches believed athletes feel supported in relation to BC and BM.

Conclusion: Coaches acknowledge the relevance of BC to performance but reject the concept of an "ideal" body type. The findings highlight the need for clearer guidance, adaptable education and support to help coaches approach BC with sensitivity, individualisation, and athlete well-being in mind.

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An Investigation into the Prevalence of Strength Asymmetries in Female Field Sports Players

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Introduction: The purpose of this study was to determine the prevalence of interlimb and intralimb asymmetries within and between dominant and nondominant legs in female field sports players using isokinetic dynamometry.

Methods: Twenty-five female field sports players (22.3 ± 6.1 years), volunteered to undergo measures of peak torque for isokinetic testing of flexion and extension at 60°s-1, 180°s-1, and 300°s-1. Additionally, participants completed a self-reported questionnaire regarding strength training habits, perceived asymmetries, and injury history.

Results: Significant interlimb asymmetries were found at 60°s-1 during extension ($p<.001$) and flexion ($p=.001$) and at 180°s-1 during extension ($p=.005$) and flexion ($p=.031$) with the dominant limb producing higher torque values. No significant interlimb asymmetries were found at 300°s-1 during extension ($p=.188$) and flexion ($p=.421$). Hamstring to quadriceps ratios (H:Q ratio) were significantly below accepted thresholds (0.6 - 0.75), indicating muscular imbalances that may compromise knee joint stability. Questionnaire responses demonstrated that 60% of participants did not take part in any form of structured strength training, 84% had previously sustained a lower limb injury and the dominant leg was the most commonly injured.

Discussion: The results of the study indicate that there is a high prevalence of significant strength asymmetries and injury occurrence in female field sports players. Future research should be conducted to determine the effect of interventions to correct strength asymmetries and its effect on injury occurrence.

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The Perceptions and Practices of Recreational Runners of the Causes and Prevention of Running-Related Injuries

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Introduction: Recreational running is a popular physical activity for the general population, however, it is associated with high running-related injury rates. While runners perceive certain factors increase or decrease injury risk, little is known about how runners' perceptions of injury risk and prevention translate into practice. Therefore, this study aims to assess recreational runners' perceptions of injury risk and prevention, determine their sources of injury risk and prevention information, their current injury prevention practices, and the translation of their perceptions into practice. A secondary aim is to determine any differences between runners with or without a previous injury.

Methods: In this cross-sectional study, an anonymous online questionnaire was completed by 162 recreational runners. The questionnaire examined runners' demographics, perceptions of injury risk and injury prevention, information sources, and current injury prevention practices. Descriptive analyses were generated from questionnaire responses, and chi-square or Fisher's exact tests examined differences for injury history.

Results: Runners perceived injury prevention as 'very important' (77%) and that they had some understanding of injury risk (60%) and injury prevention (59%). Previous injury, running with muscle tightness, and hard running surfaces were perceived as injury risk factors. Rest, warm-ups, and resistance training were perceived as injury prevention practices. Runners did not consistently seek information (19%); the main sources were a physio/athletic therapist, online resources, and experienced running friends. Runners did not consistently implement injury prevention practices (38%); the main practices implemented were warm-ups, rest days, and wearing comfortable shoes. The injury prevention practices implemented varied by runners' perceptions of injury risk and prevention. Runners with an injury history were more likely to consistently seek injury prevention information and implement injury prevention practices.

Discussion:/Conclusion: Although runners had an awareness of injury risk, their perceptions of injury risk factors do not align with scientific evidence. Despite runners' perception of injury risk and injury prevention, consistent implementation of injury prevention is low, and a gap exists between what runners think and what they practice. Previous injury experiences may influence runners' approach to injury prevention; however, their practices do not always align with their perceptions.

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Differences In Range Of Motion Between Dominant And Non-Dominant Sides Of The Shoulder In Hurling And Camogie Players

Author Ellie Murphy & Leonore Smyth

Introduction: Hurling and Camogie are high-intensity, unilateral, dominant side striking sports, potentially leading to asymmetries in shoulder range of motion (ROM). While such ROM asymmetries have been well documented in similar striking sports, such as tennis and badminton, research in hurling and camogie remains limited. This study aims to investigate the effect of striking dominance on dominant (DS) and non-dominant shoulder (NDS) ROM in athletes and the use of the contralateral limb as a reliable control for pre-injury ROM.

Methods: An observation research design was conducted on 25 healthy collegiate hurlers and camogie players (mean age 21.5 ± 1.3 years). Active shoulder ROM (flexion, abduction, internal rotation and external rotation) was measured bilaterally using the validated digital inclinometer app GetMyROM and striking side (dominant side) preference of each participant was noted. A Wilcoxon Signed Ranks test was used to analyse due to the non-normally distributed.

Results: Statistical analysis revealed that the NDS had significantly more ROM in abduction ($p<0.001$) and external rotation (ER) ($p<0.001$) than the DS. Conversely, no significant differences between the DS and NDS ROM in flexion and internal rotation were observed.

Conclusion: The null hypothesis that there is no significant difference in ROM between the DS and NDS in all planes of motion has been accepted. Therefore, there is support for the use of the contralateral limb as a measure of pre-injury ROM. However, there was a significant increase in abduction and external rotation ROM in the NDS. The normative ROM values established in this study may assist healthcare professionals in injury prevention, clinical assessment, and return-to-play decision-making for hurling and camogie athletes.

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