INTERNATIONAL CONFEDERATION
OF SPORT AND EXERCISE SCIENCE PRACTICE

International Sports Science Professional Standards

External Consultation Supporting Document

Project Steering Committee and Working Group Approved for External Consultation: August 2025

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PREFACE

The International Confederation of Sport and Exercise Science Practice (ICSESP) was established in 2020 as a not-for-profit company with the vision to positively impact individuals, communities and countries by advancing the international practice of the sport and exercise sciences. Foundation member organisations of the ICSESP included American College of Sports Medicine (ACSM), The Chartered Association of Sport and Exercise Sciences (CASES, formerly known as British Association of Sport and Exercise Science), Canadian Society for Exercise Physiology (CSEP), Exercise & Sports Science Australia (ESSA) and Sport and Exercise Science New Zealand (SESNZ). The Irish Sport and Exercise Sciences Association (ISESA) and Norwegian Association of Exercise Physiologists have joined ICSESP in recent years. Interested parties can visit the ICSESP website to learn more about the work of the confederation (https://icsesp.global/) and review the article 'Introducing the International Confederation of Sport and Exercise Science Practice (ICSESP)' (Reeves et.al 2022) published in the British Journal of Sports Medicine (https://doi.org/10.1136/bjsports-2022-106014).

Pursuant to one of the ICSESP strategic imperatives, 'establish and promote the adoption of an international set of standards for the professional practice of the sport and exercise sciences,' the ICSESP initiated a systematic audit of the Sports Science standards for the five countries identified as having existing national certification systems. The audit process (Stage 1) was conducted using a modified scoping review protocol based on the documentation identified from the National Strength and Conditioning Association (USA), CASES, CSEP, ESSA and SESNZ. The findings of the audit were used to set the scene for the Draft International Sports Science Professional Standards project (Stage 2). Interested parties can learn more about the audit process and findings by reviewing the International Sports Science Professional Standards Project Stage 1: Audit Results (https://icsesp.global/wp-content/uploads/2025/03/ICSESP-SS-Audit-Results.pdf).

Equipped with the audit findings of existing country and region-based Sports Science standards, the ICSESP commissioned the project to draft a set of International Sports Science Professional Standards. The ICSESP envisages that a set of international sports science professional standards could be used to set minimum requirements for ICSESP membership for current and aspiring member organisations. Additionally, it is forecast that these standards will provide the architecture for developing the profession of sports science in jurisdictions where it is yet to be established.

The professional standards describe the minimum standards of practice and are scaffolded upon the standards addressed in the prerequisite training in a Bachelor of Exercise Science or equivalent. The professional standards are comprised of five standard domains: Professional and Ethical Practice; Foundational Knowledge; Performance Assessment; Exercise Design and Delivery; and Data Analysis, Research and Technology. The standard domains are further detailed in the underlying elements which describe expected practice behaviour (core elements) and highly desirable practice behaviour (non-core elements) through measurable statements. The professional standards focus on the application and transfer of knowledge and skills, and it is expected that the knowledge and skills defined

throughout the elements of each standard domain will be integrated and applied across sports science practice.

The advanced practice of sports science includes a variety of specialisations which focus on optimising human performance and health in athletic and exercise contexts. Specialisations can include exercise physiology, biomechanics, sports psychology, nutrition, strength and conditioning, performance analysis, rehabilitation, coaching, etc. The draft International Sports Science Professional Standards are not designed to include the practice behaviours of the numerous specialisations that exist in the advanced practice of sports science, but rather entry level practice standards.

The draft International Sports Science Professional Standards principally address the underpinning aspects of practice applying the science of exercise to developing interventions that improve sport performance. In some countries and regions around the world however, sports scientists are practicing in occupational settings where they are delivering interventions to workers in vocations that have extremely high physical demands. These might include the emergency services (Police, Fire, Ambulance, etc.) and military (Army, Navy, Air Force, etc.). It is expected that the contribution sports science practitioners provide in this area will continue to grow. As such the draft International Sports Science Professional Standards have been developed to consider the skills and competencies necessary for entry level sports science practitioners to practice in these areas.

PROJECT GOVERNANCE AND METHODOLOGY

The project to develop a set of International Sports Science Professional Standards commenced in May 2024 with the establishment of a Project Steering Committee. The Project Steering Committee membership consists of five ICSESP Directors and two external members, all with sports science experience in practice, academic, research and/or standards development/review domains in their respective countries. The committee has been responsible for: conducting an audit of existing country/region specific sport science practice standards; identifying a list of working group inclusion criteria and candidates; determining the consensus methodology used on the project; and setting project key deliverables and timelines. The Project Steering Committee will ultimately be responsible for realising the project aim of developing a set of International Sports Science Professional Standards and presenting them to the ICSESP Board for approval.

Under the guidance of the two Co-Project Leads, working group expressions of interest were sort from individuals in: countries with existing national sports science professional standards; countries where sports science professional standards are an active aspiration; and countries/regions where there is an existing sports science workforce.

The Project Working Group was created in January 2025 and is comprised of 22 members from 16 countries (maximum of two representatives from any individual country). Each working group member satisfies the criteria as set by the Project Steering Committee for being an 'expert' in the field of sports science professional standards.

Using the complete list of Sports Science Professional Standards identified in the systematic audit as a starting point, the Project Working Group members participated in several online surveys and focus groups. A modified Delphi model was used to systematically reach consensus: on what elements from the original audit list should be included in the draft standards; to identify any additional elements that were not part of the original audit list and determine if they would be included in the draft standards; and to recognise if each of the elements should be core (expected practice behaviour) or non-core (highly desirable practice behaviour) components across the five standard domains.

The Project Leads have actively supported and guided the Project Working Group through each phase of their deliberations. The Steering Committee has convened meetings at each of the project milestones to monitor progress, ensure compliance with the project methodology, and to provide guidance and direction to the Project Leads.

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DRAFT SPORTS SCIENCE PROFESSIONAL STANDARDS

General Principles of the Standards

1. Describe the minimum standards of practice in sports science and are scaffolded upon the standards addressed in the prerequisite training in a Bachelor of Exercise Science or equivalent.

2. Are not designed to include the practice behaviours of the numerous specialisations that exist in the advanced practice of sports science.

3. Describe the practice behaviours of sports scientists practicing in occupational settings where interventions are delivered to workers in vocations that have extremely high physical demands.

Definitions

Core elements	Used in the standard domains to represent expected practice behaviours of a Sports Science practitioner.
Non-core elements	Used in the standard domains to represent highly desirable practice behaviours of a Sports Science practitioner.
EDI	Equity, diversity and inclusion.
Service User	An individual or entity that receives or accesses the services of a Sports Science practitioner.

Standard Domain 1: Professional and Ethical Practice

Core Elements

1.1 Apply knowledge of Scope of Practice, ethical boundaries, EDI practice, duty of care and the prioritisation of the service user interests in sport.

1.2 Apply knowledge of how an integrated high-performance team involving many professionals (multidisciplinary) collaborates with the goal to enhance sport.

1.3 Apply appropriate communication techniques in interactions with service users, colleagues and other professionals.

1.4 Understand and apply knowledge of legislated health and safety requirements in sports laboratory and field settings.

1.5 Demonstrate competency to accurately perform testing and calibration procedures, and basic equipment maintenance in sport.

1.6 Demonstrate the ability to empower service users to make informed decisions in sport.

1.7 Demonstrate competency in problem solving and impact evaluation in sport.

1.8 Understand and apply using confidentiality and privacy legislation with service user information in sport.

1.9 Understand the use of ergogenic aids including: rules as they apply to local and international anti-doping programs; practitioner and athlete rights, responsibilities and penalties; and side effects of doping.

1.10 Perform self-evaluation and undertake professional development in sport.

Standard Domain 2: Foundational Knowledge

Core Elements

2.1 Apply knowledge of human physiology and anatomy, functional anatomy and biomechanical principles to movement and the equipment used in sport.

2.2 Apply knowledge of motor control, learning and development to movement and the equipment used in sport.

2.3 Demonstrate knowledge of psychological issues and strategies pertaining to individuals and their impact on sport performance.

2.4 Demonstrate knowledge of applied sport and exercise nutrition within scope of practice.

2.5 Demonstrate knowledge of hydration strategies and their impact on performance, thermoregulation and recovery in sport.

2.6 Evaluate how stressors can impact on and contribute to performance and injury risk in sport.

Non-Core Element

2.7 Apply knowledge of environmental considerations in sport.

Standard Domain 3: Performance Assessment

Core Elements

3.1 Apply knowledge to select, conduct and evaluate frequently used sport-specific testing protocols.

3.2 Analyse the demands of sport and the capabilities of the individual, and perform a needs analysis to guide an assessment and training plan.

3.3 Apply knowledge of the monitoring of internal and external loads relative to sport.

3.4 Interpret assessment findings in the context of existing research and field standards in sport.

Non-Core Element

3.5 Understand the assessment and interpretation of body composition for exercising individuals relative to sport.

Standard Domain 4: Exercise Design and Delivery

Core Elements

4.1 Apply knowledge of training principles in sport as they apply throughout the lifespan and to individuals across sex, physical and psychological capabilities.

4.2 Create a training program for aerobic and anaerobic fitness, resistance, flexibility, agility, speed and sport specific technique and skills.

4.3 Develop and deliver a training program for a performance-based individual which is evidence-based and founded on the demands of sport.

4.4 Deliver or recommend evidence-based interventions to achieve performance goals in sport.

4.5 Critically evaluate the efficacy of implemented interventions in sport.

Standard Domain 5: Data Analysis, Research and Technology

Core Elements

5.1 Apply knowledge of statistical analysis for performance gains, longitudinal tracking methods, test validity and reliability in sport.

5.2 Understand and critically evaluate the reliability, validity, and practical application of new and emerging technologies and data in sport.

REFERENCES

Reeves, N., Draper, N., Lane, K. N., Neric, F., Tolfrey, K., & Davison, K. (2022). Introducing the International Confederation of Sport and Exercise Science Practice (ICSESP). *British Journal of Sports Medicine*, *56*(20), 1146-1147.