



INTERNATIONAL CONFEDERATION
OF SPORT AND EXERCISE SCIENCE PRACTICE

International
Clinical Exercise Physiology
Professional Standards

External Consultation Supporting Document

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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), British Association of Sport and Exercise Science (BASES), Canadian Society for Exercise Physiology (CSEP), Exercise & Sports Science Australia (ESSA) and Sport and Exercise Science New Zealand (SESNZ). 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 Clinical Exercise Physiology standards for the five countries recognised as having existing national certification systems. The audit process was conducted using a modified scoping review protocol based on the documentation provided by the ACSM, ESSA, BASES, CSEP and SESNZ. The findings of the audit were used to set the scene for the Draft Clinical Exercise Physiology Professional Standards project. Interested parties can learn more about the audit process and findings by reviewing the article 'Clinical Exercise Physiology Accreditation: An Audit of Existing Standards' (Reeves et.al 2023) published in the Journal of Clinical Exercise Physiology (<https://doi.org/10.31189/2165-6193-12.3.87>).

Equipped with the audit findings of existing country and region-based Clinical Exercise Physiology standards, the ICSESP commissioned the project to draft a set of International Clinical Exercise Physiology Professional Standards. The ICSESP envisages that a set of international Clinical Exercise Physiology 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 clinical exercise physiology in jurisdictions where it is yet to be established.

The Draft Clinical Exercise Physiology Professional Standards address the underpinning aspects of practice applying the science of exercise to developing interventions that improve health and fitness, well-being, and performance. The professional standards describe the minimum standards of practice and are comprised of four standard domains: Professional Practice, Foundational Knowledge, Assessment & Client Management, and Design & Delivery of Exercise-based (EB) Interventions. 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 clinical exercise physiology practice.

PROJECT GOVERNANCE AND METHODOLOGY

The project to develop a set of international Clinical Exercise Physiology Professional Standards commenced in July 2023 with the establishment of a Project Steering Committee. The Project Steering Committee membership consists of four ICSESP Directors, all with clinical exercise physiology experience in practice, academic, research and standards development/review domains in their respective countries. The committee has been responsible for: 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 Clinical Exercise Physiology Professional Standards and presenting them to the ICSESP Board for approval.

Under the guidance of the Project Lead, working group expressions of interest were sorted from individuals in: countries with existing clinical exercise physiology national standards; countries where clinical exercise physiology national standards are an active aspiration; and countries/regions where there is an existing clinical exercise physiology workforce.

The Project Working Group was created in November 2023 and is comprised of 21 members from 15 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 clinical exercise physiology professional standards.

Using the complete list of Clinical Exercise Physiology Professional Standards identified in the systematic audit as a starting point, the Project Working Group members participated in a number of 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 four standard domains.

The Project Lead has 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 Lead.

PROJECT CONTRIBUTORS

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Standard Domain: Professional Practice

Core Elements

Practice within Scope of Practice, Code of Conduct and Ethical Practice

Practice in accordance with legislation, regulations and standards, and respect the privacy and confidentiality of all personal information

Develop effective, concise, respectful and informative clinical documentation and reports

Practice in a culturally safe, inclusive, sensitive and respectful way and according to person-centered care principles

Practice collaboratively with other professionals and promote onward referral pathways as indicated

Demonstrate emergency procedures

Practice consistent with equity, diversity and inclusion

Non-Core Element

Develop reflective practices

Notes:

Core elements in this standard domain represent expected practice behaviours of a Clinical Exercise Physiologist

Non-core elements in this standard domain represent highly desirable practice behaviours of a Clinical Exercise Physiologist

Reflective practice can include a range of individual or group activities and initiatives undertaken by a Clinical Exercise Physiologist at any stage across the learner to experienced practitioner continuum

Standard Domain: Foundational Knowledge

Core Elements

Integrate foundational knowledge and apply these to inform safe and effective movement, physical activity and exercise-based interventions for individuals and population groups throughout all stages of their life

Examine principles of biopsychosocial care, value-based care, person-centered care and cultural determinants of health and apply this to promote health and well-being for individual clients and population groups

Evaluate the effect of commonly prescribed medications, diagnostic procedures, medical, surgical, and other interventions on both resting and exercise-related physiological responses across the full health spectrum

Evaluate and apply contextual learning principles and behaviour change strategies to improve health outcomes, increase engagement, motivation and adherence and empower self-management of health conditions

Notes:

A Clinical Exercise Physiologist's foundational knowledge will ideally include the following sub-disciplines: functional anatomy, human anatomy, human physiology, exercise physiology, exercise prescription and delivery, biomechanics, growth and development, health and exercise assessment, motor learning and control, nutrition, physical activity and health, psychology of health and exercise, and research methods and data analysis

Core elements in this standard domain represent expected practice behaviours of a Clinical Exercise Physiologist

Standard Domain: Assessment & Client Management

Core Elements

Distinguish, record, report, and appropriately action changing risk factors and adverse signs and symptoms that may arise before, during, and after assessments and interventions

Distinguish and communicate appropriate client support to effect service delivery including onward referral and using various modalities to communicate

Formulate appropriate screening processes to evaluate and stratify risk, and the formulation, implementation and effect evaluation of exercise prescription to realize a client's physical activity, exercise, health and/or functional performance goals

Determine absolute and relative contraindications to exercise and utilize a variety of evidence-based standardized and individualized measurements, including patient reported outcome measurements

Notes:

Core elements in this standard domain represent expected practice behaviours of a Clinical Exercise Physiologist

Standard Domain: Design & Delivery of EB Interventions

Core Elements

Formulate meaningful and goal-orientated evidence-based exercise prescription, interventions and recommendations that address health and treatment related client needs

Design, prescribe, deliver and monitor safe and effective movement, physical activity and evidence-based interventions for clients with complex presentations

Formulate and apply strategies to manage risk, evaluate progress and adapt recommendations and interventions

Create and apply communication strategies to educate and engage clients

Non-Core Element

Formulate strategies during treatment to enable clients

Notes:

Core elements in this standard domain represent expected practice behaviours of a Clinical Exercise Physiologist

Non-core elements in this standard domain represent highly desirable practice behaviours of a Clinical Exercise Physiologist

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.

Reeves, N. E., Ryan, C., & Davison, K. (2023). Clinical Exercise Physiology Accreditation: An Audit of Existing Standards. *Journal of Clinical Exercise Physiology*, 12(3), 87-93.

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