





CONTENTS

Preface	3
Governance and Methodology	4
Contributors	5
Clinical Exercise Physiology Professional Standards	8
References	12















PREFACE

The International Confederation of Sport and Exercise Science Practice (ICSESP) is committed to positively impacting 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). Membership of the ICSESP continues to grow each year. 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 has completed 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, CEP-UK (advisory group to BASES), CSEP and SESNZ. The findings of the audit were used to set the scene for the International 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 develop a set of International Clinical Exercise Physiology Professional Standards. The ICSESP envisages that a set of International Clinical Exercise Physiology Professional Standards will 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 International 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 Case Formulation and Design & Delivery of Exercise-based Interventions.















The standard domains are further detailed in the underlying elements which describe expected practice behaviour 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.

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 consisted 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 was 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 had the responsibility of realising the project aim of developing a set of International Clinical Exercise Physiology Professional Standards. The ICSESP Board was responsibility for the final approval of the standards.

Project Working Group expressions of interest were sort 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 was comprised of 21 members from 15 countries (with a maximum of two representatives from any individual country). Each working group member satisfied 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;



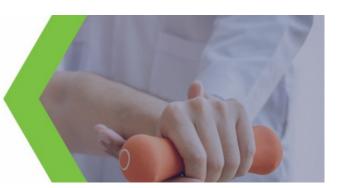












and to recognise if each of the elements should be core (expected prac-ce behaviour) or non-core (highly desirable practice behaviour) components across the four standard domains.

The Project Lead actively supported and guided the Project Working Group through each phase of their deliberations. The Steering Committee 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.















CONTRIBUTORS

Project Lead and Steering Committee Chair

Mr Nathan Reeves

Director International Confederation of Sport and Exercise Science Practice
Chair Standards Council Exercise & Sports Science Australia
ESSA Accredited Exercise Physiologist
Senior Lecturer and Program Director Exercise Science School of Health Sciences and Social

Senior Lecturer and Program Director Exercise Science School of Health Sciences and Social Work • Griffith University • Australia

Project Steering Committee

Associate Professor Kade Davison
Chair International Confederation of Sport and Exercise Science Practice
ESSA Accredited Exercise Physiologist
Dean of Programs (Allied Health) • Allied Health and Human Performance • University of South Australia

Assistant Teaching Professor Kirstin Lane
Deputy Chair International Confederation of Sport and Exercise Science Practice
CSEP Clinical Exercise Physiologist
Program Leader Kinesiology • Exercise Science, Physical & Health Education • University of Victoria • Canada

Dr Andrew Scott

Director International Confederation of Sport and Exercise Science Practice
AHSC Registered Clinical Exercise Physiologist
Senior Lecturer & Course Leader • MSc Clinical Exercise Physiology • School of Psychology,
Sport, and Health Science • University of Portsmouth • United Kingdom

Project Working Group

Dr Jessica Allan

Researcher • Faculty of Health • University of Canterbury • New Zealand















Ms Jessica Bellamy

Lecturer • School of Medical, Indigenous and Health Sciences • Faculty of Science, Medicine and Health • University of Wollongong • Australia

Practicing Clinical Exercise Physiologist and current PhD candidate • National Centre of Excellence in Intellectual Disability Health • Faculty of Medicine and Health • University of NSW • Australia

Dr Kate Bolam

Cardiometabolic Health and Exercise Physiology Lab • Baker Heart and Diabetes institute Affiliated Researcher • Department of Physical Activity and Health • Section for Health Sciences • The Swedish School of Sport and Health Sciences, Stockholm • Sweden

Professor Anna Campbell

Sport Exercise and Health Department • School of Applied Science • Edinburgh Napier University • Edinburgh • Scotland • United Kingdom

Professor Paolo Caserod

Head of the Research Center for Active and Health Living • Department of Sports Science and Clinical Biomechanics • University of Southern Denmark • Denmark

Dr Annabelle Emery

Clinical Exercise Physiologist • New Zealand

Professor Michael Harrison

Department of Sport and Exercise Science • South East Technological University • Waterford • Ireland

Mrs Sandy Knecht

Senior Clinical Exercise Physiologist • Cincinna- Children's Hospital Medical Center • United States of America

Ms Kelly Mackenzie

Research Manager • Cancer Exercise & Physiotherapy Lab • University of British Columbia • Canada

Associate Professor Andrea Macaluso

Department of Movement • Human and Health Sciences • University of Rome / Foro Italico • Italy















Dr Gregory duManoir

Associate Director & Associate Professor of Teaching • School of Health & Exercise Sciences • University of British Columbia Okanagan • Canada

Dr Gemma Miller

Lecturer • Sport and Exercise Sciences • Faculty of Science • Liverpool John Moores University • United Kingdom

Mr Lethobo Molobi

Biokinetics Association of South Africa • South Africa

Ms Carly Ryan

Regulations Manager • Exercise & Sports Science Australia • Australia

Professor Rita Santos-Rocha

Head of the Department of Physical Activity and Health ESDRM Sport Sciences School of Rio Maior • Santarém Polytechnic University • Portugal

Associate Professor Snjezana Schuster

Faculty of Kinesiology of the University of Zagreb and the University of Applied Health Sciences Docent • University of Primorska and Alma Mater University • Slovenia

Associate Professor Anna Szumilewicz

Director of PhD School • Gdansk University of Physical Education and Sport • Poland

Professor Ben Thompson

Exercise Science Program Director • Department of Exercise & Sport Science • Metropolitan State University of Denver • United States of America

Dr Joao Viana

Associate Professor • Vice-Rector • PhD in Sports Sciences Course Coordinator • University of Maia • Portugal

Vice-Director • Research Centre in Sports Sciences, Health Sciences and Human Development • Portugal

Professor Emeritus Zhengzhen Wang

College of Sports Medicine and Rehabilitation • Beijing Sport University • China

Tim Werner

Professor • Exercise Science • Salisbury University • United States of America



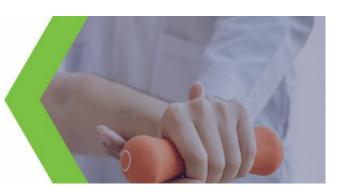












CLINICAL EXERCISE PHYSIOLOGY PROFESSIONAL STANDARDS

Standard Domain 1: Professional Practice

Elements

- 1.1 Practice within Scope of Practice, Code of Conduct and Ethical Practice
- 1.2 Practice in accordance with legislation, regulations and standards, and respect the privacy and confidentiality of all personal informa-on
- 1.3 Develop effective, concise, respectful and informative clinical documentation and reports
- 1.4 Practice in a culturally safe, sensitive and respectful way consistent with principles of equity, diversity and inclusion, and according to person-centered care principles
- 1.5 Practice collaboratively with other professionals and promote onward referral pathways as indicated
- 1.6 Identify potential client risks and demonstrate effective risk management and mitigation strategies
- 1.7* Develop reflective practices

Notes:

* This element represents a highly desirable practice behaviour of a Clinical Exercise Physiologist. Many, but not all, countries/regions will include this element in their professional standards.

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 2: Foundational Knowledge

Elements

- 2.1 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
- 2.2 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
- 2.3 Evaluate the effect of commonly prescribed medications, diagnostic procedures, medical, surgical, and other interventions on resting and exercise-related physiological responses and adaptations across the full health spectrum
- 2.4 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 for clinical populations, 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.















Standard Domain 3: Assessment & Client Management

Elements

- 3.1 Distinguish, record, report, and appropriately action changing risk factors and adverse signs and symptoms that may arise before, during, and after assessments and interventions
- 3.2 Develop client-centred methods to provide effective service delivery using various communication methods, including referral to relevant healthcare professionals
- 3.3 Formulate appropriate screening processes to evaluate and stratify risk, and the formulation, implementation and evaluation of exercise prescription to realise a client's physical activity, exercise, health and/or functional performance goals
- 3.4 Determine absolute and relative contraindications to exercise and utilize a variety of evidence-based standardized and individualized measurements, including patient reported outcome measurements















Standard Domain 4: Case Formulation and Design & Delivery of Exercise-Based Interventions

Elements

- 4.1 Formulate meaningful and goal-orientated evidence-based and evidence-informed exercise prescription, interventions and recommendations that address health and treatment related client needs
- 4.2 Design, prescribe, deliver and monitor safe and effective movement, physical activity and evidence-based interventions for clients with complex presentations
- 4.3 Formulate and apply strategies to manage risk, evaluate progress and adapt recommendations and interventions
- 4.4 Create and apply communication strategies to educate and engage clients
- 4.5* Formulate strategies during treatment to enable clients in self-management

Notes:











^{*} This element represents a highly desirable practice behaviour of a Clinical Exercise Physiologist. Many, but not all, countries/regions will include this element in their professional standards.

Being evidence-based and evidence-informed are identified as both being critical to making informed clinical decisions.





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.









