

CSEP ***HIGH PERFORMANCE*** ***SPECIALIZATION™***

Advanced specialization for qualified exercise professionals.





Background

For over 35 years, the Canadian Society for Exercise Physiology Professional Standards Program® has been delivering evidence-informed certifications to the most qualified exercise professionals in their field. Through our more than 50 thousand certified members over nearly four decades, CSEP certified members continue to improve the health outcomes for Canadians through safe, effective training and guidelines.

The CSEP Professional Standards Program® continues to evolve to reflect the latest research, industry trends, population changes and needs of members. In addition to its longstanding certifications, CSEP Specializations are geared toward specific areas of focus within the clinical, practical or applied areas of exercise physiology and personal training.

The first of its kind in Canada, the CSEP High Performance Specialization™, focuses on performance and occupational testing and training for qualified exercise professionals working with elite athletes, emergency services personnel, armed forces, and high performance clients.

This guide serves to provide qualified exercise professionals with an overview of the Specialization, the core competencies covered in the Specialization exam, as well as information on how the Specialization will enhance their current CSEP certification.



Eligibility

All CSEP certified members in good standing are eligible to pursue the CSEP High Performance Specialization™. By pursuing this cutting edge specialization, your advanced knowledge of high performance and occupational testing and training will be confirmed by the leading organization in exercise science and personal training in Canada.

To earn the CSEP High Performance Specialization™, qualified candidates must successfully challenge a 60-question Theory Exam. There are no additional pre-requisites.

The Exam

CSEP High Performance Specialization™ candidates must challenge a Theory Exam which will demonstrate they have the appropriate theoretical knowledge in all five core competency areas.

The Theory Exam is a 60-question, 120-minute, multiple choice exam. It is hosted by independent, third-party testing centres across Canada, as well as online.

The exam sitting fee is \$180.00* and the required passing score is 70%.

Exam Content Breakdown

- Sport and occupational biomechanics, physiology, and performance psychology
- Sport and occupational performance assessment
- Sport and occupational performance exercise design and prescription
- Energy intake for sport and occupational performance
- Professional and ethical practice

* Price as of November 2019. Price subject to change and all applicable taxes.

Core Competencies

The CSEP High Performance Specialist™ must demonstrate advanced knowledge in the following five Core Competency areas:

Core Competency #1: Sport and Occupational Biomechanics, Physiology, and Performance Psychology

- Sport and occupational physiology
- Biomechanics of sport and occupational performance
- Environmental and physiological considerations
- Sport psychology

Core Competency #2: Sport and Occupational Performance Assessment

- Sport and occupational specific testing protocols
- Monitoring internal and external training load
- Body composition

Core Competency #3: Sport and Occupational Performance Exercise Design and Prescription

- Performance training principles
- Advanced periodization/prescription across the lifespan
- Monitoring performance/training

Core Competency #4: Energy Intake for Sport and Occupational Performance

- Applied sport and exercise nutrition

Core Competency #5: Professional and Ethical Practice

- Administration of a training program for a high performance group/team
- Facility design and layout
- Inter-disciplinary professionalism, professional practice
- Usefulness and limitations of technology
- Illegal ergogenic aides



How Your Scope of Practice is Enhanced

As a CSEP High Performance Specialist™, CSEP has confirmed your advanced knowledge of high performance testing and training.

Upon successfully completing the exam for the CSEP High Performance Specialization™ the member's current Scope of Practice is enhanced:

For the CSEP Certified Personal Trainer® (CSEP-CPT)

- Previous restrictions on maximal aerobic and anaerobic assessment protocols or exercise program development are lifted.
- Previous restrictions on muscular strength assessment protocols or program design that exceed 90% of 1-RM are lifted.

For the CSEP Clinical Exercise Physiologist™ (CSEP-CEP)

- As a CSEP-CEP, your pre-existing advanced knowledge in the field of exercise physiology does not restrict you from safely working with high performance or occupational clients. However, as a CSEP High Performance Specialist™, you have now demonstrated your knowledge of high performance testing and training strategies at a more advanced level.

*All qualified exercise professionals (QEP) are expected to recognize their own area of expertise and refer clients who fall outside that expertise to another QEP, a physician, or other appropriate health care provider.

Credentials

As a CSEP High Performance Specialist™, you are encouraged to include this advanced credential in your email signature and marketing materials. This is how you can use the credential:

Jamie Noname, CSEP-CPT, CSEP High Performance Specialist™

Sam Noname, CSEP-CEP, CSEP High Performance Specialist™

Jamie Noname

CSEP-CPT, CSEP High Performance Specialist™

Sam Noname

CSEP-CEP, CSEP High Performance Specialist™



Steps to Earn Specialization

1. Apply online at csep.ca to challenge the CSEP High Performance Theory Exam.
2. Schedule an exam date and time with Pearson VUE.
3. Review the Core Competencies and prepare for the exam with the CSEP recommended resources. Visit csep.ca/high-performance for the full list of resources.
4. Challenge the Theory Exam (requires a score of 70% or higher).

Maintaining Specialization

CSEP High Performance Specialization™ renews annually with your CSEP Certified membership. There are no additional fees or professional development required to renew the Specialization. CSEP members' comprehensive CSEP Professional and General Liability insurance remains unchanged.



Preparation Modules

To prepare for the exam, or to simply enhance your professional knowledge, a 40-hour online module has been developed by experts in the field which covers all five Core Competencies. Each section may be purchased separately, and in any order. Purchase of the module is available to all qualified exercise professionals. Visit csep.ca/high-performance to purchase.

Module 1: Physiology and Training Prescriptions for the Components of Fitness

- Endurance
- Strength
- Stature
- Flexibility
- Speed and agility

Module 2: Performance Specialization

- Athlete health and common injuries

Module 3: Performance Assessment

- Properties of measurement
- Testing considerations
- Assessment methods

Module 4: Planning and Management of Training

- Fatigue, plyometrics and concurrent training
- Training density and distribution
- Tapering
- Training principles
- Periodization
- Monitoring

Practice Questions

1. Velocity is calculated as?
 - a. Distance divided by time.
 - b. Displacement divided by time.
 - c. Force divided by time.
 - d. Force divided by distance.
2. In terms of the amount of ATP that can be regenerated from muscle biochemical pathways, the greatest capacity for exercise is available from?
 - a. Stored adenosine triphosphate (ATP).
 - b. Oxidative phosphorylation/Aerobic metabolism.
 - c. Anaerobic glycolysis.
 - d. Anaerobic lactic energy transfer.
3. An athlete gets assessed one day and achieves a high score, the next day they get tested again under the same conditions and achieves a low score. Which of the following aspects of test quality are most likely compromised?
 - a. Validity
 - b. Reliability
 - c. Criterion-referenced validity
 - d. Construct validity
4. You are working with a hockey player in the off-season and one of the training goals is to improve her acceleration from standing still. What is the most appropriate of the following tests to indicate whether the training program is being effective?
 - a. Cycling VO_2max test
 - b. 5s Wingate Test
 - c. 30s Wingate test
 - d. 1-RM Bench Press
5. Muscular endurance is best achieved through which combination of repetitions and weight (resistance)?
 - a. High repetitions, high resistance.
 - b. High repetitions, low resistance.
 - c. Low repetitions, low resistance.
 - d. Low repetitions, high resistance.
6. During a barbell back squat the head should be:
 - a. Looking around to watch surroundings.
 - b. Positioned to look down to ensure proper foot position is maintained.
 - c. Positioned so that the neck is in alignment with the back.
 - d. Positioned to look at the ceiling.
7. An elite athlete approaches you to discuss methods they can adopt to promote weight loss. She had her body fat assessed by skinfold measurements and the result was 14%. What would you suggest?
 - a. Recommend a reduction in total calories.
 - b. Recommend increased participation in physical activity.
 - c. Praise them for recognizing she needs to lose weight.
 - d. None of the above.
8. An athlete that does an extreme amount of exercise at a very high intensity will require _____ g/kg/day of carbohydrates, according to current sport nutrition guidelines.
 - a. 3 to 4
 - b. 6 to 8
 - c. 8 to 12
 - d. >15
9. Which statement is not correct regarding the use of personal protective equipment (PPE) in the fire service?
 - a. Wearing PPE at maximal exercise increases expired minute ventilation when compared to wearing regular physical training clothing.
 - b. Wearing PPE reduces maximal oxygen uptake (VO_2max) when compared to wearing regular physical training clothing.
 - c. Wearing PPE reduces maximal tidal volume when compared to wearing regular physical training clothing.
 - d. Wearing PPE does not change maximal heart rate when compared to wearing regular physical training clothing.
10. The acute:chronic training load ratio «sweet spot» is:
 - a. 0.6-0.8.
 - b. 0.8-1.3.
 - c. 1.5-1.8.
 - d. 2.0-2.4.

Answers to the practice questions are available on page 10.

Acknowledgements

Prep Module Developers

Graeme Challis, MSc, CSEP-CEP, CSCS

Graeme Challis has worked in sport science for the past 12 years, across local and national levels. He joined the Canadian Sport Institute Calgary full time in 2013, where he now takes on multiple roles: providing strength and conditioning support in talent ID and talent transfer programs, supporting data-informed decisions in the sport sciences, and leading quality assurance within the CSI Calgary strength lab. He holds a degree in Kinesiology ('07) and a Master of Science ('10) with both specializations in exercise and health physiology. He is a Clinical Exercise Physiologist through the Canadian Society for Exercise Physiology and a certified strength and conditioning coach through the National Strength and Conditioning Association.

Scott Forbes, PhD, CSEP-CEP

Dr. Scott Forbes is an assistant professor in the department of Physical Education at Brandon University with a research focus in exercise physiology. His research examines various nutritional and training interventions to enhance performance in a variety of populations. Dr. Forbes has worked as a personal trainer as well as an athlete consultant for several professional and varsity level sport teams. Dr. Forbes has completed the International Olympic Committee diploma in Sports Nutrition and is a Clinical Exercise Physiologist (CSEP).

Jeff Osadec, MKin CSEP-CEP, CSCS

Jeff has coached for the past 15 years working with athletes both development and national level. Jeff holds degrees in General Studies ('00) and Education ('02) from Brandon University, Exercise and Sport Science ('05) from the University of Manitoba and a Masters in Kinesiology ('09) from the University of Calgary. Jeff joined the Canadian Sport Institute full time in the fall of 2011 as a strength coach and physiologist. He is a Clinical Exercise Physiologist through the Canadian Society for Exercise Physiology and a strength and conditioning coach through the National Strength and Conditioning Association.

Specialization, Prep Modules and Exam Contributors

The following contributors were selected based on their extensive knowledge of biomechanics, sport nutrition, sport psychology, military and police services training and testing protocols, and Sport and Occupational Performance Assessment and Prescription.

Bart Arnold, PhD, CSEP-CEP, University of Saskatchewan

Sylvain Lemelin, PhD, CSEP-CEP, Edmonton Police Services

Gerren McDonald, PhD, CSEP-CEP, University of Winnipeg

Greg Percy, PhD, CSEP-CEP, Northwestern University

Stuart Phillips, PhD, McMaster University

Marcel Roy, BScKin, CSEP-CEP, Department of National Defense/Canadian Armed Forces

Heather Whelan, MSc, CSEP-CEP, Mount Royal University

Answers to Practice Questions on page 9

1. b 2. b 3. b 4. b 5. b 6. c 7. d 8. c 9. a 10. b

CANADIAN SOCIETY FOR EXERCISE PHYSIOLOGY

The Canadian Society for Exercise Physiology (CSEP) is the Gold Standard in exercise science and personal training in Canada. CSEP is the resource for translating advances in exercise science research into the promotion of fitness, performance, and health outcomes for Canadians. CSEP sets the highest standards for qualified exercise professionals through evidence-based practice and certification.

CSEP is a non-profit voluntary organization composed of professionals interested and involved in the scientific study of exercise physiology, exercise biochemistry, fitness, and health. CSEP (then known as the Canadian Association of Sport Sciences), was founded at the Pan American Games, Winnipeg, Manitoba in 1967; the result of four years of cooperative efforts by the Canadian Medical Association and the Canadian Association for Health, Physical Education, Recreation and Dance.

CSEP's 6000 members have extensive educational training and are the most highly qualified exercise science researchers and fitness practitioners in Canada. The CSEP brand, The Gold Standard in Exercise Science and Personal Training, identifies CSEP as the scientific authority and the source of expertise in physical activity, health, and fitness.



Canadian Society for Exercise Physiology
495 Richmond Road, Suite 101, Ottawa ON, K2A 4B1
1-877-651-3755 | info@csep.ca | csep.ca | [@CSEPdotCA](https://twitter.com/CSEPdotCA)