

# CLINICAL EXERCISE PHYSIOLOGIST REQUIREMENTS

Minimum requirements for the clinical exercise physiologist is comprised of academic preparation and hands-on clinical experience. To be eligible to take the exam, candidates must possess the following:

*Master’s degree in Clinical Exercise Physiology or equivalent and  
600 hours of hands-on clinical experience*

*OR*

*Bachelor’s degree in Exercise Science, Exercise Physiology, or equivalent and  
1,200 hours of hands-on clinical experience*

## DEGREE REQUIREMENTS

1. Official transcripts from a regionally accredited college or university
2. CoAES accredited degree programs – candidates who graduate from a CAAHEP/CoAES accredited **Exercise Physiology** degree program may skip steps 3 through 4.
  - a. Additional information about CoAES accreditation may be found here: <http://www.coaes.org/>.
3. Candidates must submit the following support documents:
  - a. Course curriculum
  - b. Course descriptions
    - i. Syllabi and learning objectives may be requested if the course description lacks sufficient detail
4. Content requirements – candidates are required to document formal preparation in the content areas listed below. Additional details are provided in Appendix A. Candidates may be required to map their course curriculum to the content requirements.
  - a. Clinical exercise testing and prescription
  - b. Advanced exercise physiology
  - c. Clinical exercise physiology/pathophysiology

## HANDS-ON CLINICAL EXPERIENCE HOUR REQUIREMENTS

Candidates are required to provide documented clinical experience; master’s prepared – 600 hours, bachelor’s prepared – 1,200 hours. Experiential hours must be gained exclusively from a clinical setting. Additional restrictions are provided in Table 1. Clinical hours may be earned through internships, volunteer hours and/or work experience.

Table 1. Restrictions for clinical experience

<b><u>Applicable experience</u></b>	<b><u>Non-applicable experience</u></b>
<ol style="list-style-type: none"> <li>1. Clinical hours related to:               <ol style="list-style-type: none"> <li>a. clinical assessment</li> <li>b. exercise testing</li> <li>c. exercise prescription</li> <li>d. exercise training</li> <li>e. electrocardiography</li> </ol> </li> </ol>	<ol style="list-style-type: none"> <li>1. Observation hours</li> <li>2. Non-clinical experience</li> <li>3. Hours with athletes or apparently healthy population</li> <li>4. Personal training</li> </ol>

<ul style="list-style-type: none"> <li>f. patient education and counseling</li> <li>g. disease management of cardiovascular, pulmonary, metabolic, orthopedic/musculoskeletal, neuromuscular, neoplastic, immunologic and hematologic disorders</li> </ul> <p>2. Assisted or direct role in providing services for:</p> <ul style="list-style-type: none"> <li>a. exercise assessment</li> <li>b. exercise prescription</li> <li>c. supervision</li> <li>d. counseling</li> <li>e. education</li> </ul>	
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**RECOMMENDED QUALIFICATIONS**

Successful candidates will have a well-rounded academic and hands-on clinical experience that addresses the competencies presented in Table 2. Further, the distribution of clinical experience hours would align to what is provided in Table 3.

Table 2. 2017 Clinical Exercise Physiologist Job Task Analysis

<b><i>Domain I. Patient Assessment</i></b>
A. Review and assess a patient’s medical record for information related to their visit.
B. Interview patient regarding medical history for their visit and reconcile medications.
C. Obtain and assess resting biometric data (e.g., height, weight, ECG, arterial oxygen saturation, blood glucose, body composition and spirometry).
D. Determine a sufficient level of monitoring/supervision based on a pre-participation health screening.
E. Assess patient goals, needs and objectives based on health and exercise history, motivation level and physical activity readiness.
<b><i>Domain II. Exercise Testing</i></b>
A. Assess appropriateness of symptom-limited maximal exercise testing and/or other health assessments.
B. Select, administer and interpret tests to assess muscular strength and/or endurance.
C. Select, administer and interpret tests to assess flexibility and mobility.
D. Select, administer and interpret submaximal aerobic exercise tests.
E. Select, administer and interpret functional and balance tests (e.g., Get Up and Go, Berg Balance, Selective Functional Movement Assessment).
F. Prepare patient for a symptom-limited maximal exercise test by providing a clear explanation of the test procedures, obtaining informed consent and prepping the patient for ECG monitoring.
G. Administer a symptom-limited maximal exercise test.

H. Evaluate and report results from a symptom-limited maximal exercise test to medical providers and in the medical record as required.
I. Calibrate, troubleshoot, operate and maintain testing equipment.
J. Identify relative and absolute contraindications for test termination and report to medical personnel as needed.
<b><i>Domain III. Exercise Prescription</i></b>
A. Evaluate and develop personalized exercise prescription to support patient needs, goals and objectives.
B. Clearly communicate the exercise prescription including the proper use of all exercise equipment and the importance of promptly reporting any adverse reactions or symptoms.
C. Describe and check for patient understanding of exercise intensity and measures to assess exercise intensity (e.g., target heart rate, RPE, signs/symptoms, talk test).
D. Design independent home exercise prescription based on available equipment, technology and behavioral strategies.
E. Discuss the importance of addressing barriers to exercise adoption and implement strategies to optimize adherence.
F. Evaluate and modify the exercise prescription based on the patient's compliance, signs/symptoms and physiologic response to the exercise program, as needed.
<b><i>Domain IV. Exercise Training and Leadership</i></b>
A. Discuss and explain the exercise training plan, patient and clinician expectations and goals.
B. Identify, adapt and instruct in cardiorespiratory fitness, muscular strength and endurance, flexibility, coordination and agility exercise modes.
C. As indicated, provide patient monitoring and supervision during exercise.
D. Evaluate the patient's contraindications to exercise training and associated risk/benefit and modify the exercise/activity program accordingly.
E. Evaluate, document and report patient's clinical status and response to exercise training in the medical record.
F. Discuss clinical status and response to exercise training with patients and adapt and/or modify the exercise program, as indicated.
G. Promptly report new or worsening symptoms and adverse events in the patient's medical record and consult with the responsible healthcare provider.
<b><i>Domain V. Education and Behavior Change</i></b>
A. Evaluate patients on an ongoing basis using observation, interaction and industry-accepted tools to identify those who may benefit from counseling or other mental health services using industry-accepted screening tools.
B. Observe/interact with patients on an ongoing basis to identify recent changes that may benefit from counseling or other mental health services.
C. Describe and check patient understanding of their disease and/or disability, readiness to adopt behavior change and learning needs for self-management of treatment plan.
D. Conduct group and individual education to teach patients about their disease/condition and the role of lifestyle behavior in the prevention, management and treatment of the disease.

E. Assess knowledge of and compliance with health behaviors and apply healthy behavior change techniques (e.g., MI, CBT, Health Coaching) to encourage the adoption of healthy behaviors.
F. Promote maintenance of healthy behaviors through a patient centered approach by addressing barriers, engaging in active listening, expressing interest and empathy, increasing self-efficacy, teaching relapse prevention techniques and identifying support.
<b>Domain VI. Legal and Professional Considerations</b>
A. Evaluate the exercise environment and implement routine inspection procedures based on established facility and industry standards and guidelines.
B. Perform regular inspections of emergency equipment and practice emergency procedures (e.g., crash cart, activation of emergency procedures) per industry and regulatory standards and facility guidelines.
C. Clearly communicate safe operating procedures, use of self-monitoring of exercise, availability of personnel and the prompt reporting of adverse reactions, symptoms or events.
D. Comply with data protection and related legislation required under law (e.g., HIPAA) where practice and/or services are provided.
E. Follow industry-accepted professionally defined scope of practice, ethical, legal, and business standards and ensure/maintain professional liability coverage.

Table 3. Recommended distribution of clinical experience

<b>Condition or disease</b>	<b>Master's hours</b>	<b>Bachelor's hours</b>
Cardiovascular	180	360
Pulmonary	40	80
Obesity/Metabolic	150	300
Orthopedic/Musculoskeletal	40	80
Neoplastic	40	80
Frailty	40	80
Behavior Change/Education	70	140
Neuromuscular	<u>40</u>	<u>80</u>
<b>Total:</b>	600	1,200

# Appendix A. Content Requirements

- 1) Clinical exercise testing and prescription
  - a) Pre-exercise screening procedures
  - b) Indications and contraindications for exercise testing
  - c) Exercise testing procedures and protocols
  - d) Interpretation of the exercise response
  - e) Exercise prescription for clinical diseases or conditions (e.g., cardiovascular, pulmonary, obesity/metabolic, orthopedic/musculoskeletal, neoplastic, frailty, neuromuscular)
- 2) Advanced exercise physiology
  - a) Musculoskeletal system, structure and plasticity
  - b) Cardiopulmonary structure, function and dynamics
  - c) Nervous system and neuromuscular function
  - d) Macronutrient metabolism, bioenergetics, and mitochondrial biogenesis
  - e) Endocrine and immune systems
  - f) Integrated exercise responses
  - g) Environmental exercise physiology
- 3) Clinical exercise physiology/pathophysiology
  - a) Pathophysiology of common cardiovascular diseases, obstructive and restrictive pulmonary diseases, metabolic diseases, neoplastic, immunologic/hematologic disorders and neuromuscular diseases.
  - b) ECG interpretation involving the recognition of the most common abnormalities
  - c) Pharmacokinetics and pharmacodynamics of commonly prescribed drugs (e.g., antibiotics/antivirals, anti-inflammatory drugs, pain medications, muscle relaxers, asthma medications, antihistamines, GI tract medications, hypertension and heart disease medications, antipsychotic medications, diabetes medication)