ACSM Certified Clinical Exercise Physiologist®

Exam Content Outline

Effective July 10, 2025

The job task analysis (JTA) is intended to serve as a blueprint of the job of an ACSM Certified Clinical Exercise Physiologist® (ACSM-CEP®). The exam intended to assess the practice-related knowledge of professionals seeking certification as an ACSM-CEP® is based on the content of this document. Each performance domain is divided into job tasks. Within each task is a list of statements that describe what an ACSM-CEP® should know and/or be able to perform as part of their job, either in-person or remotely. When preparing for the exam, it is important to remember that all exam questions are based on this outline.

Job Definition

The ACSM Certified Clinical Exercise Physiologist® (ACSM-CEP®) is an allied health professional with a minimum of a bachelor's degree in exercise science or equivalent and 1,200 hours of clinical hands-on experience or with a master's degree in clinical exercise physiology and 600 hours of hands-on clinical experience. ACSM-CEPs® use prescribed exercise and basic health behavior interventions, as well as promote physical activity for individuals with chronic diseases or conditions; examples include, but are not limited to, individuals with cardiovascular, pulmonary, metabolic, orthopedic, musculoskeletal, neuromuscular, neoplastic, immunologic and hematologic diseases. The ACSM-CEP® provides primary and secondary prevention strategies designed to improve, maintain or attenuate declines in fitness and health in populations ranging from children to older adults.

Chronic disease includes, but are not limited to, cardiovascular, pulmonary, metabolic, orthopedic/musculoskeletal, neuromuscular, neoplastic, immunologic and hematologic disorders.

Overview

The ACSM-CEP® exam has a seat time of 210 minutes and consists of 115 items; of which 100 items are scored and 15 are non-scored.
The percentages listed in Table 1 indicate the proportion of questions representing each performance domain.

Before an item can be used on an exam, it is subjected to Credentialing Committee review and pre-testing. Pretesting allows the Credentialing Committee to gather statistical information about new items for evaluation purposes without affecting candidate scores. Statistical information gathered from pre-test items is analyzed to determine if the items function properly and are ready for use as scored items. Pre-test items are randomly interspersed throughout the exam and indistinguishable from scored items. Candidates should treat each item as if it will be scored.

Table 1. 2021 ACSM-CEP® Performance Domains

Domain I: Patient Assessment	18%
Domain II: Exercise Testing	18%
Domain III: Exercise Prescription	22%
Domain IV: Exercise Training and Leadership	24%
Domain V: Education and Behavior Change	13%
Domain VI: Legal and Professional Responsibilities	5%
Total	**100%**

Cognitive Level

The job of a clinical exercise physiologist can range between simple and complicated tasks. Much in the same way, the ACSM-CEP® items are written at different levels of cognitive complexity. Cognitive complexity is a way of describing the extent to which a candidate should know or be able to do something. A low level of cognitive processing is simple recall of information whereas a higher level of cognitive processing includes analysis, evaluations and judgments. ACSM uses three levels of cognitive challenge: recall, application and synthesis.

Recall = remember basic facts, information or steps in a process.

Example: Which exercise testing protocol is preferable for a deconditioned patient with chronic disease?

A. Naughton
B. Åstrand-Ryhming
C. Ellestad
D. Bruce

Application = comprehend and implement processes, interpret simple results or summarize information.

Example: A 55-year-old man with a height of 69 inches (180 cm) undergoes exercise testing. He achieves a peak oxygen consumption of
1.7 L/min and 5.2 METs. Which of the following best describes the client?

A. underweight
B. normal weight
C. overweight
D. obese

Synthesis = differentiate, relate parts of a system, make judgments on new information based on given criteria, critique a process or product and make recommendations.

Example: Phase II cardiac rehab patient with history of MI/PCI experiences chest discomfort and shortness of breath during exercise.
The single lead ECG is indeterminate for ST changes. Vitals are as follows:

- SaO2 – 96%
- Heart rate – 112 bpm
- Blood pressure – 132/88 mm Hg
- Symptoms do not improve with seated rest and sublingual nitroglycerin.

What step is the most appropriate to perform next?

A. Check blood glucose.
B. Obtain a 12-lead ECG.
C. Give supplemental oxygen.
D. Have patient perform Valsalva maneuver.

Example keys

Recall: A
Application: C
Synthesis: B

Table 2. Job tasks and related knowledge and skill statements

Domain I: Patient Assessment

A. Assess a patient's medical record for information related to their visit. — **Application**

1. Knowledge of:

   a. the procedure to obtain and store patient's medical history through available documentation following HIPAA and HITRUST rules and regulations

   b. the necessary medical records needed to accurately assess a patient given their diagnosis and/or reason for referral

   c. the procedure to obtain physician referral and medical records required for program participation

   d. information and documentation required for program participation

   e. the epidemiology, pathophysiology, progression, risk factors, key clinical findings and treatments of chronic diseases

   f. the techniques (for example, lab results, diagnostic tests) used to diagnose chronic diseases, their indications, limitations, risks, normal and abnormal results

   g. medical charting, terminology and common acronyms, reconciliation across sources of information (for example, records, patient, medication)

2. Skill in:

   a. interpreting information from medical records in patient care, exercise assessment and/or prescription

   b. interpreting vital signs (for example, heart rate, blood pressure, SpO_2) using clinical reasoning

   c. assessing patient physician referral and/or medical records to determine patient status

B. Interview patient regarding medical history for their visit and reconcile medications. — **Application**

1. Knowledge of:

   a. when to use open-ended inquiry, active listening, and attention to nonverbal behavior while demonstrating interest and empathy

   b. information and documentation required for program participation

   c. commonly used medications in patients who have chronic diseases

   d. basic pharmacodynamics and pharmacokinetics of commonly prescribed medications as it relates to exercise

   e. medical charting, terminology and common acronyms

2. Skill in:

   a. administering informed consent

   b. interviewing patient for medical history pertinent to the reason for their visit

   c. active listening and using health counseling techniques

   d. data collection during assessment (for example, risk, intake, discharge)

   e. proficiency in basic medical charting

Domains/Tasks	Cognitive Level
C. Obtain and assess resting biometric data (for example, oxygen saturation, blood pressure, body composition, ECG).	**Recall**

1. Knowledge of:

   a. best practice-based intake assessment tools and techniques to assess and interpret clinical and health measures (for example, height, weight, anthropometrics, body mass index, resting energy expenditure)

   b. medical therapies for chronic diseases and their effect on resting vital signs and symptoms

   c. normal cardiovascular, pulmonary and metabolic anatomy and physiology

   d. chronic disease risk factors and contraindications for exercise

   e. typical presentation of chronic disease populations

   f. techniques for assessing signs and symptoms (for example, peripheral pulses, blood pressure, edema, pain)

   g. 12-lead and telemetry ECG interpretation for normal sinus rate and rhythm or abnormalities (for example, arrhythmias, blocks, ischemia, infarction)

   h. common ECG changes associated with, but not limited to, drug therapies and electrolyte abnormalities

2. Skill in:

   a. administering best practice intake assessment tools and techniques

   b. interpreting resting biometric data to determine baseline health status

   c. preparing a patient and ECG electrode application for resting ECGs

   d. assessing vital signs and symptoms at rest

D. Determine a sufficient level of monitoring/supervision based on a preparticipation health screening.	**Synthesis**

1. Knowledge of:

   a. normal physiologic responses to exercise

   b. abnormal responses/signs/symptoms to exercise associated with different pathologies (for example, cardiovascular, pulmonary, metabolic)

   c. pertinent areas of a patient's medical history (for example, any symptoms since their procedure, description of discomfort/pain, orthopedic issues)

   d. indications and contraindications to exercise testing and training

   e. current published guidelines for management of chronic disease (for example, American College of Cardiology/American Heart Association [ACC/AHA] Joint Guidelines, Global Initiative for Chronic Obstructive Lung Disease [GOLD], American Diabetes Association [ADA], American Association of Cardiovascular and Pulmonary Rehabilitation [AACVPR])

   f. industry recognized preparticipation health screening practices (for example, the Physical Activity Readiness Questionnaire for Everyone [PAR-Q+], the ACSM preparticipation screening algorithm)

   g. medical therapies for chronic diseases and their effect on the physiologic response to acute and chronic exercise

   h. the timing of daily activities (for example, medications, dialysis, meals, glucose monitoring) and their effect on exercise in patients who have chronic diseases

   i. abnormal signs and symptoms in apparently healthy individuals and those with chronic disease

2. Skill in:

   a. implementing industry-recognized preparticipation health screening practices
   b. selecting assessments based on a patient's disease, condition, and ability
   c. determining risk and level of patient monitoring using health history, medical history, medical records and additional diagnostic assessments

E. Assess patient goals, needs and objectives based on health and exercise history, motivation level and physical activity readiness. — **Synthesis**

1. Knowledge of:

   a. patient-centered health coaching techniques
   b. assessment of patient goals and exercise history through use of open-ended inquiry, active and reflective listening, and attention to nonverbal behavior
   c. the effects of a sedentary lifestyle, including extended periods of physical inactivity and approaches to counteract these changes
   d. behavior modification theories, tools and techniques to assess patient's expectations, goals and motivation levels (for example, health literacy, identification of real and perceived barriers, decisional balance)
   e. common barriers to exercise compliance and adherence (for example, physical/disease state, environmental, demographic, vocation)
   f. known demographic factors related to likelihood of adherence and maintenance of exercise (for example, age, sex, socioeconomic status, education, ethnicity)
   g. characteristics associated with poor adherence to healthy behaviors (for example, low self-efficacy, poor social support)
   h. psychological issues associated with acute and chronic illness (for example, anxiety, depression, social isolation, suicidal ideation)
   i. validated tools for measurement of psychosocial health status
   j. behavioral assessment tools and strategies for their use
   k. adverse effects of exercise in apparently healthy individuals or those with chronic disease

2. Skill in:

   a. active listening and behavior modification techniques
   b. counseling techniques and strategies to overcome real and perceived barriers
   c. applying health behavior theories and strategies to strengthen self-efficacy and optimize compliance and adherence in support of goals
   d. modifying an exercise program based on unique patient needs and abilities
   e. administering commonly used screening tools to evaluate mental health status

Domains/Tasks	Cognitive Level

Domain II: Exercise Testing

A. Select, administer and interpret submaximal aerobic exercise tests (for example, treadmill, cycle, step test, 6-minute walk). — Application

1. Knowledge of:

   a. tests to assess submaximal aerobic endurance
   b. the acute and chronic responses to aerobic exercise on the function of the cardiovascular, respiratory, musculoskeletal, neuromuscular, metabolic, endocrine and immune systems in trained and untrained individuals
   c. the mechanisms underlying the acute and chronic responses to aerobic exercise on the function of the cardiovascular, respiratory, musculoskeletal, neuromuscular, metabolic, endocrine and immune systems in trained and untrained individuals
   d. the effect of chronic diseases on acute and chronic responses to aerobic exercise
   e. standard and/or disease-specific endpoints for submaximal aerobic exercise tests in apparently healthy individuals and those with chronic disease
   f. typical submaximal aerobic test results and physiological values in trained and untrained individuals and those with and without chronic diseases
   g. abnormal signs and symptoms in apparently healthy individuals and those with chronic disease
   h. abnormal readings and results from exercise testing equipment (for example, treadmill, ergometers, electrocardiograph, spirometer, metabolic cart, sphygmomanometer) that may indicate equipment malfunction
   i. commonly used medications in patients who have chronic diseases, their mechanisms of action and side effects, and their effect on physiological values during exercise
   j. relative and absolute contraindications
   k. normal and abnormal endpoints (signs/symptoms) for termination of exercise testing

2. Skill in:

   a. selecting the appropriate exercise test based on a patient's disease, condition and ability
   b. administering and interpreting submaximal aerobic exercise tests
   c. modifying submaximal aerobic tests and/or interpreting results in response to medication use, timing and side effects
   d. communicating level of effort required for successful testing (for example, RPE, target HR) with patient

B. Select, administer and interpret tests to assess musculoskeletal fitness, mobility and balance. — Application

1. Knowledge of:

   a. tests to assess flexibility, range of motion, mobility, muscular fitness (strength, endurance, power), and neuromotor skills (balance, agility, proprioception)
   b. the acute and chronic responses to resistance exercise on the function of the cardiovascular, respiratory, musculoskeletal, neuromuscular, metabolic, endocrine and immune systems in trained and untrained individuals

c. the acute and chronic responses to flexibility and mobility exercises on the function of the cardiovascular, respiratory, musculoskeletal, neuromuscular, metabolic, endocrine and immune systems

d. the mechanisms underlying the acute and chronic responses to resistance exercise on the function of the cardiovascular, respiratory, musculoskeletal, neuromuscular, metabolic, neoplastic, hematologic, orthopedic, immunologic, musculoskeletal, neurological, endocrine and immune systems in trained and untrained individuals

e. the effects of chronic diseases and their treatments on acute and chronic responses to resistance exercise and an individual's flexibility and mobility

f. standard and/or disease-specific endpoints for muscular strength, endurance, functional and balance testing in apparently healthy individuals and those with chronic disease

g. typical muscular strength, muscular endurance, functional and balance test results and physiological values in a broad range of individuals (for example, trained and untrained, across the age groups, those with and without chronic diseases)

h. commonly used medications in patients who have chronic diseases, their mechanisms of action and side effects

2. Skill in:

a. selecting an exercise test based on a patient's disease, condition and ability

b. administering and interpreting tests to assess muscular strength, endurance, and power

c. administrating and interpreting physical function and balance tests

d. modifying musculoskeletal fitness, mobility, and balance tests and/or interpreting results in response to medication use, timing and side effects

C. Select, prepare and administer maximal, symptom-limited exercise tests. — **Application**

1. Knowledge of:

a. contraindications to symptom-limited, maximal exercise testing and factors associated with complications (for example, probability of coronary heart disease, abnormal blood pressure)

b. standard disease-specific practice guidelines/recommendations

c. the timing of daily activities (for example, medications, dialysis, meals, glucose monitoring) and the effect on exercise in patients who have chronic diseases

d. cardiovascular, pulmonary and metabolic pathologies, their clinical progression, diagnostic testing and medical regimens/procedures to treat

e. abnormal signs and symptoms in apparently healthy individuals and those with chronic disease

f. medical therapies for chronic diseases and their effect on resting and exercise vital signs and symptoms

g. commonly used medications in patients who have chronic diseases, their mechanisms of action, side effects, and physiological effects on exercise

h. procedures to prepare a patient for ECG monitoring, including standard and modified lead placement

i. tools to guide exercise intensity (for example, heart rate, perceived exertion, dyspnea scale, pain scale)

j. the use of effective communication techniques (for example, active listening and attention to nonverbal behavior, open-ended questioning, reflective listening skills) to address patient concerns with exam procedures

k. tests to assess maximal exercise tolerance

l. the physiologic responses during incremental exercise to maximal exertion in trained and untrained individuals and those with and without chronic diseases

m. standard and/or disease-specific endpoints for maximal exercise testing in apparently healthy individuals and those with chronic disease

n. typical maximal exercise test results and physiological values in trained and untrained individuals and those with and without chronic diseases

o. medical therapies for chronic diseases and their effect on clinical measurements and the physiologic response to maximal exercise

2. Skill in:

a. selecting and administering a symptom-limited, maximal exercise test

b. preparing a patient for ECG monitoring during exercise

c. assessing vital signs and symptoms before, during, and after exercise

d. interpreting ECG rhythms and 12-lead ECGs

e. recognizing and responding to relative and absolute contraindications to exercise testing

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D. Evaluate and report results from a symptom-limited maximal exercise test to medical providers and in the medical record as required. — **Synthesis**

1. Knowledge of:

a. the effects of chronic diseases on acute responses to maximal exercise

b. standard and/or disease-specific endpoints for maximal exercise testing in apparently healthy individuals and those with chronic disease

c. abnormal signs and symptoms in apparently healthy individuals and those with chronic disease during maximal exercise testing

d. typical maximal exercise test results and physiological values in trained and untrained individuals and those with and without chronic diseases

e. medical therapies for chronic diseases and their effect on clinical measurements and the physiologic response to maximal exercise

f. the interpretation of maximal exercise test measures (for example, ECG response, oxygen saturation, rate-pressure product, claudication, blood pressure) and prognostic tools (for example, Duke Treadmill Score) in context with the indication for the test, termination reason and the patient's medical history

2. Skill in:

a. interpreting and reporting results from a symptom-limited, maximal exercise test

b. assessing basic metabolic data (for example, VO_2, respiratory exchange ratio, anaerobic threshold)

Domains/Tasks	Cognitive Level
E. Identify relative and absolute indications for test termination and report to Recall medical personnel as needed. 1. Knowledge of: a. relative and absolute indications and endpoints for terminating exercise testing 2. Skill in: a. interpreting and reporting results from a symptom-limited, maximal exercise test b. assessing vital signs and symptoms during exercise c. interpreting ECG rhythms and 12-lead ECGs	Recall
Domain III: Exercise Prescription	
A. Develop individualized exercise prescription to support patient needs and goals for various exercise environments (for example, home/community based, medical facility or fitness facility based, virtual). 1. Knowledge of: a. exercise prescription principles (e.g., frequency, intensity, type, time [FITT], specificity, progression) to meet the needs and abilities of apparently healthy individuals and those with chronic disease b. the benefits and risks of aerobic, resistance and flexibility/mobility exercise training in apparently healthy individuals and those with chronic disease c. the effects of physical inactivity and/or sedentary lifestyle and methods to counteract these changes through physical activity and exercise levels d. normal and abnormal physiologic responses to exercise in healthy individuals and those with chronic diseases e. the timing of daily activities (for example, medications, dialysis, meals, glucose monitoring, occupational exercise) and the effect on exercise training in patients who have chronic diseases f. disease-specific strategies or tools (for example, breathing techniques, assistive devices, medications) to improve exercise tolerance in patients who have chronic disease g. appropriate modifications to the exercise prescription in response to environmental conditions in apparently healthy individuals and those with chronic disease h. current practice guidelines/recommendations (for example, U.S. Department of Health and Human Services, American College of Sports Medicine, Arthritis Foundation) for exercise prescription in apparently healthy individuals and those with chronic disease i. metabolic calculations and their uses j. proper biomechanical techniques for exercise (for example, gait assessment, proper weightlifting form) k. muscle strength/endurance and flexibility/mobility modalities and their safe application and instruction l. principles and applications of exercise session organization and prioritization m. known demographic factors related to likelihood of adherence and maintenance of exercise (for example, age, sex, socioeconomic status, education, ethnicity, vocation) n. psychological issues associated with acute and chronic illness (for example, anxiety, depression, social isolation, suicidal ideation)	Synthesis

o. goal setting (for example, SMART goals), reviewing and providing constructive feedback in identifying barriers and reinforcing positive changes

p. risk factor reduction programs and alternative community resources (for example, dietary counseling, weight management, smoking cessation, stress management, physical therapy/back care)

q. incorporating health behavior theories into clinical practice

2. Skill in:

a. basic interpretation of functional (for example, muscular, aerobic, neuromotor) and diagnostic exercise testing with applications to exercise prescription

b. developing an exercise prescription based on a patient's clinical status and goals

c. applying metabolic calculations

d. applying strategies to reduce risk of adverse events during exercise (for example, gait belt, blood glucose monitoring)

e. individualizing exercise programs based on an individual's resources and environment

f. optimizing patient compliance and adherence to an exercise prescription

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B. Communicate the exercise prescription, the proper use of exercise equipment, and the importance of promptly reporting any adverse reactions or symptoms. — **Recall**

1. Knowledge of:

a. normal and abnormal physiologic responses to exercise in healthy individuals and those with chronic diseases

b. the timing of daily activities (for example, medications, dialysis, meals, glucose monitoring, occupational exercise), the effect on exercise training in patients with chronic diseases and how to communicate this information to the patient

c. lay terminology for explanation of an exercise prescription

d. the operation of various exercise equipment/modalities

e. proper biomechanical techniques for exercise (for example, gait assessment, proper weightlifting form)

f. muscle strength/endurance and flexibility and mobility modalities and their safe application and instruction

g. principles and applications of exercise session organization

h. fitness technology (for example, wearable devices, apps), user function and application to communication of the exercise prescription

2. Skill in:

a. communicating exercise prescription, exercise techniques and organization of exercises

b. demonstration of exercises, analyses of technique and appropriate recommendations to correct form and/or alternatives to meet patient needs and goals

c. using, teaching and problem-solving fitness technology options (for example, wearable devices, apps) to support patient engagement in exercise prescription

Domains/Tasks	Cognitive Level
C. Explain and confirm patient understanding of exercise intensity and measures to assess exercise intensity (for example, target heart rate, RPE, signs/symptoms, talk test). 1. Knowledge of: a. tools to guide exercise intensity (for example, target heart rate, RPE, signs/symptoms, talk test) b. abnormal signs and symptoms during exercise training in apparently healthy individuals and those with chronic disease c. clear communication using patient learning style and/or health literacy to explain exercise intensity assessments d. clear communication through effective communication techniques (for example, active listening and attention to nonverbal behavior, open-ended questioning, reflective listening skills) 2. Skill in: a. teaching patients how to monitor exercise intensity based on the individual's resources and environment	**Recall**
D. Evaluate and modify the exercise prescription based on the patient's compliance, signs/symptoms and physiologic response to the exercise program, as needed. 1. Knowledge of: a. physiologic effects due to changes in medical therapies for chronic diseases and their impact on exercise training b. typical responses to aerobic, resistance and flexibility/mobility training in apparently healthy individuals and those with chronic disease c. the timing of daily activities (for example, medications, dialysis, meals, glucose monitoring, occupational exercise) and their effect on exercise in patients who have chronic diseases d. disease-specific strategies or tools (for example, breathing techniques, assistive devices, medications) to improve exercise tolerance in patients who have chronic disease e. abnormal signs and symptoms during exercise training in apparently healthy individuals and those with chronic disease f. frequency, intensity, type, time [FITT], specificity, and progression of exercise to produce favorable outcomes in apparently healthy individuals and those with chronic disease g. commonly used medications in patients who have chronic disease, their mechanisms of action and side effects h. modifications to the exercise prescription in response to environmental conditions in apparently healthy individuals and those with chronic disease i. systems for tracking patient progress in both preventive and rehabilitative exercise programs j. patient progress in a preventive and rehabilitative exercise program given sex, age, clinical status, pre-program fitness level, specifics of the exercise program (for example, walking only vs. comprehensive monitored program) and rate of program participation	**Synthesis**

Domains/Tasks	Cognitive Level

2. Skill in:

   a. helping patients identify barriers and providing strategies to overcome them

   b. assessing adequacy of patient's progress in a preventive or rehabilitative exercise program given age, sex, clinical status, specifics of the exercise program and rate of program participation

   c. developing an individualized exercise prescription

   d. using patient feedback in developing an individualized exercise prescription and/or care plan

   e. active listening

   f. modifying an exercise prescription specifically to meet a patient's individual needs and goals

   g. demonstrating exercises, analysis of technique and appropriate recommendations to correct form and/or alternatives to meet patient needs and/or physiological responses to exercise modifying exercise/physical activity program in response to medication use, timing and side effects

Domain IV: Exercise Training and Leadership

A. Discuss and explain exercise training plan, patient and clinician expectations and goals. Application

1. Knowledge of:

   a. health counseling techniques (for example, the patient-centered approach) and nonjudgmental positive regard in the creation of a collaborative partnership

   b. effective communication techniques using clear, patient-friendly terms (for example, active listening, body language, motivational interviewing)

   c. factors related to health literacy skills and capacity

   d. cardiovascular, pulmonary metabolic, orthopedic/musculoskeletal, neuromuscular, neoplastic, immunologic, and hematologic disorders, their clinical progression, diagnostic testing and medical regimens/procedures

   e. the FITT principle (frequency, intensity, time, type) for exercise prescription

   f. the timing of daily activities (for example, medications, dialysis, meals, glucose monitoring, occupational exercise) and their effect on exercise training in patients who have chronic disease

   g. disease-specific strategies or tools (for example, breathing techniques, assistive devices, medications) to improve exercise tolerance in patients who have chronic disease

   h. exercise training concepts such as work hardening, work conditioning, work fitness and basic workplace ergonomics

   i. commonly used medications for cardiovascular, pulmonary and metabolic diseases

   j. the unique barriers to participation of patients who have chronic disease (for example, transportation)

2. Skill in:

   a. identifying the unique needs of patients who have chronic diseases in exercise prescription

   b. communicating the exercise prescription

c. educating patients following the observation of problems with comprehension and performance of their exercise program

d. applying techniques to reduce risk of adverse events during exercise (for example, gait belt, blood glucose monitoring)

e. educating patients on the basic use and effects of medications

f. communicating with patients from a variety of educational backgrounds

g. using patient feedback to develop an individualized exercise prescription and/or care plan

h. active listening

B. Instruct and modify in cardiorespiratory fitness, muscular strength and endurance, flexibility, coordination and agility exercise modes. — **Synthesis**

1. Knowledge of:

a. the selection, operation and modification of exercise equipment/ modalities based on the disease, condition and ability of the patient

b. proper biomechanical technique for exercise (for example, gait, weightlifting form)

c. exercise techniques to reduce risk and maximize the development of cardiorespiratory fitness, muscular strength and flexibility/mobility

d. frequency, intensity, time, and type of exercise to produce favorable outcomes in apparently healthy individuals and those with chronic disease

e. disease-specific strategies or tools (for example, breathing techniques, assistive devices, prophylactic nitroglycerin) to improve exercise tolerance in patients who have chronic disease

f. counseling techniques to optimize patient's disease management, risk reduction and goal attainment

g. modifications to the exercise prescription in response to environmental conditions in apparently healthy individuals and those with chronic disease

h. the benefits and risks of aerobic, resistance and flexibility/mobility training in apparently healthy individuals and those with chronic disease

2. Skill in:

a. identifying the unique needs and goals of a patient and modifying an exercise program

b. supervising and leading individual patients and groups of patients during exercise training

c. communicating the exercise prescription

d. educating patients following the observation of problems with comprehension and performance of their exercise program

e. providing cues to optimize performance and safety based on observation of their exercise program

Domains/Tasks	Cognitive Level
C. Provide patient monitoring (for example, pulse oximetry, biometric data) and supervision during exercise.	Synthesis

1. Knowledge of:

   a. normal and abnormal exercise responses, signs and symptoms associated with different pathologies (including cardiovascular, pulmonary, metabolic, orthopedic/ musculoskeletal, neuromuscular, neoplastic, immunologic and hematologic disorders)

   b. normal and abnormal 12-lead and telemetry ECG interpretation

   c. exercise program monitoring (for example, telemetry, oximetry, glucometry)

   d. disease-specific strategies or tools (for example, breathing techniques, assistive devices, medications) to improve exercise tolerance in patients who have chronic disease

   e. the benefits and risks of aerobic, resistance and flexibility/mobility training in apparently healthy individuals and those with chronic disease

   f. the components of a patient's medical history necessary to screen during program participation

   g. commonly used medications in patients who have chronic disease, their mechanisms of action and side effects

   h. the timing of daily activities with exercise (for example, medications, meals, insulin/glucose monitoring)

   i. how medications or missed dose(s) of medications impact exercise and its progression

   j. psychological issues associated with acute and chronic illness (for example, depression, social isolation, suicidal ideation)

   k. health counseling techniques and nonjudgmental positive regard

2. Skill in:

   a. monitoring and supervising individual patients and groups of patients during exercise training

   b. interpreting ECG rhythms and 12-lead ECGs

   c. recognizing adverse effects of exercise in apparently healthy individuals or those with pathologies of acute and/or chronic disease

   d. applying and interpreting tools for clinical assessment (for example, telemetry, oximetry and glucometry, perceived rating scales)

   e. modifying exercise/physical activity in response to medication use, timing and side effects

D. Evaluate the patient's contraindications to exercise training and associated risk/benefit and modify the exercise/activity recommendations accordingly.	Synthesis

1. Knowledge of:

   a. the relative and absolute contraindications to exercise training and factors associated with complications in apparently healthy individuals and those with chronic disease

   b. indications to stop exercise training

   c. the benefits and risks of aerobic, resistance and flexibility/mobility training in apparently healthy individuals and those with chronic disease

   d. abnormal signs and symptoms in apparently healthy individuals and those with chronic disease

e. the acute and chronic responses to exercise training on the function of the cardiovascular, respiratory, musculoskeletal, neuromuscular, metabolic, endocrine and immune systems in trained and untrained individuals

f. cardiovascular, pulmonary, metabolic, orthopedic/musculoskeletal, neuromuscular, neoplastic, immunologic and hematologic disorders, diagnostic testing and medical management regimens and procedures

2. Skill in:

a. identifying relative and absolute contraindications to exercise training while working with individuals and groups

b. modifying the exercise recommendations based on patient's signs and symptoms, feedback and exercise responses

E. Evaluate, document and report patient's clinical status and response to exercise training in medical records. — Application

1. Knowledge of:

a. assessment tools (for example, lab results, diagnostic tests) used to diagnose different pathologies, their indications, limitations, risks, normal and abnormal results

b. the acute and chronic responses to exercise training on the function of the cardiovascular, respiratory, musculoskeletal, neuromuscular, metabolic, neoplastic, endocrine, immune and cognitive systems in trained and untrained individuals

c. normal and abnormal exercise responses, signs and symptoms associated with different pathologies (including cardiovascular, pulmonary, metabolic, cognitive, orthopedic/musculoskeletal, neuromuscular, neoplastic, immunologic and hematologic disorders)

d. how chronic diseases may affect the acute and chronic responses to exercise training

e. abnormal signs or symptoms which may be associated with worsening of a chronic disease

f. proper medical documentation according to generally accepted principles

g. regulations relative to documentation and protecting patient privacy (for example, written and electronic medical records, Health Insurance Portability and Accountability Act [HIPAA], Health Information Trust Alliance [HITRUST])

2. Skill in:

a. summarizing patient exercise sessions, outcomes and clinical status in their medical record

b. basic medical charting

F. Discuss clinical status and response to exercise training with patients and modify the exercise program, as indicated. — Application

1. Knowledge of:

a. common barriers to exercise compliance and adherence (for example, physical, environmental, demographic)

b. effective communication techniques (for example, active listening, body language)

c. techniques to modify exercise program based on patient needs

d. assess patient progress based on known cardiorespiratory fitness, muscular fitness, and flexibility/mobility improvements expected within a given population population

e. assess patient tolerance to exercise modality and suggest comparable alternative modalities

f. communicating health information based on patient learning style and health literacy

2. Skill in:

a. modifying an exercise program based on patient signs and symptoms, feedback and exercise responses using patient data to inform adjustments to the program

b. summarizing patient exercise sessions, outcomes and clinical status in their medical record

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G. Promptly report new or worsening symptoms and adverse events in the patient's medical record and consult with the responsible health care provider. — **Recall**

1. Knowledge of:

a. proper medical documentation according to generally accepted principles

b. the basic scope of practice of health care professionals (for example, physical therapist, nurse, dietitian, psychologist, health coach)

c. abnormal signs and symptoms during exercise training in apparently healthy individuals and those with chronic disease

d. the effects of chronic diseases on the acute and chronic responses to exercise training

2. Skill in:

a. assessing normal and abnormal response to exercise

b. educating patients following the observation of problems with comprehension and performance of their exercise program

c. evaluating and prompt reporting of a patient's adverse response to an exercise program in accordance with a facility policy and procedures

d. collaborating with interdisciplinary healthcare team members, including physicians, nurses, and other allied health professionals, to coordinate patient care

e. educating patients about the importance of reporting symptoms and adverse events and seeking timely medical attention

Domains/Tasks	Cognitive Level

Domain V: Education and Behavior Change

A. Continually evaluate patients using observation, interaction and industry-accepted tools to identify those who may benefit from counseling or other behavioral health services using industry-accepted screening tools. — Synthesis

1. Knowledge of:

   a. methods to establish rapport through the use of open-ended questions, active listening and attention to nonverbal behavior, compassion and empathy
   b. the psychological issues associated with acute and chronic illness (for example, anxiety, depression, social isolation, hostility, aggression, suicidal ideation)
   c. theories of health behavior change (for example, Social Cognitive Theory, Health Belief Model, Transtheoretical Model)
   d. industry-accepted screening tools to evaluate behavioral health status (for example, SF-36, Beck Depression Index, PHQ9)
   e. signs and symptoms of failure to cope during personal crises (for example, job loss, bereavement, illness)
   f. accepted methods of referral to behavioral health or other specialists

2. Skill in:

   a. identifying patients who may benefit from behavioral health services
   b. recognizing signs of distress or behavioral health concerns during patient interactions and screenings
   c. motivating and empowering patients to set and achieve realistic health goals through behavior change strategies
   d. collaborating effectively with other healthcare professionals to coordinate patient care and recognize when to facilitate referrals to qualified professionals (for example, psychologist, health well-being coach, social worker)

B. Assess patient understanding of their disease and/or disability and conduct education to teach the role of lifestyle in the prevention, management and treatment of the disease/disability. — Application

1. Knowledge of:

   a. active listening, open-ended questioning, reflective listening skills
   b. patient-centered health counseling techniques (for example, Five-A's Model, motivational interviewing)
   c. factors related to health literacy skills and capacity
   d. barriers to exercise compliance (for example, physical/disease state, psychological, environmental, demographic)
   e. psychological issues associated with acute and chronic illness (for example, anxiety, depression, suicidal ideation)
   f. theories of health behavior change (for example, Social Cognitive Theory, Health Belief Model, Transtheoretical Model, Social Ecological Model)
   g. tools to determine patient knowledge and readiness to change (for example, scoring rulers, decisional balance)
   h. the benefits and risks of aerobic, resistance, flexibility/mobility and balance training in apparently healthy individuals and those with chronic disease

i. the health benefits of a physically active lifestyle, the hazards of sedentary behavior and current recommendations from U.S. national reports on physical activity (for example, U.S. Surgeon General, National Academy of Medicine)

j. abnormal signs and symptoms during rest and exercise in apparently healthy individuals and those with chronic disease

k. the epidemiology, pathophysiology, progression, risk factors, key clinical findings and treatments of chronic disease

l. education content and program development based on patient medical history, needs and goals

m. medical therapies and commonly used medications for chronic diseases and their effect on resting vital signs, clinical measurements and the response to exercise

n. disease-specific strategies and tools to improve exercise tolerance (for example, breathing techniques, insulin pump use, prophylactic nitroglycerin)

o. risk factor reduction strategies (for example, healthy nutrition, weight management/BMI, body composition, smoking cessation, stress management)

2. Skill in:

a. using current educational materials and programs on disease and the role of lifestyle intervention that are specific to the patient's need

b. teaching health information to patients in individual and group settings

c. delivering health information in a clear, accessible manner tailored to patient preference and comprehension level

d. assessing a patient's ability to learn and comprehend health information

e. using assessment tools, such as scoring rulers and decisional balance assessments, to evaluate patient knowledge and readiness to change regarding lifestyle behaviors and disease management

f. engaging patient in collaborative discussions to explore motivations, barriers, and goals related to behavior change

g. understanding the epidemiology, pathophysiology, progression, risk factors, clinical findings, and treatments of chronic diseases, and integrating this knowledge into patient education and lifestyle interventions

h. understanding the effects of medical therapies and commonly used medications for chronic diseases on patient exercise response and overall health

i. implementing risk factor reduction strategies, including diabetes education, weight management, and stress management techniques

C. **Use motivational interviewing techniques to engage patients in collaborative conversations, exploring and strengthening their motivation for behavior change.** **Application**

1. Knowledge of:

    a. active listening, open-ended questioning, reflective listening skills
    b. barriers to exercise compliance and adherence (for example, physical/disease state, psychological, environmental, demographic, vocational)
    c. known demographic factors related to likelihood of adherence and maintenance of exercise (for example, age, gender identity, socioeconomic status, education, ethnicity)
    d. characteristics associated with poor adherence to healthy behaviors
    e. health counseling techniques (for example, the patient-centered approach)
    f. goal setting (for example, SMART goals), reviewing and providing constructive feedback in support of patient for best likelihood of achieving goals
    g. theories of health behavior change (for example, Social Cognitive Theory, Health Belief Model, Transtheoretical Model)
    h. application of behavior-change techniques (for example, motivational interviewing, health coaching)
    i. eliciting patient change through motivational interviewing
    j. development of self-efficacy (task and barriers) in exercise behaviors

2. Skill in:

    a. assessing a patient's readiness for change
    b. using behavior-change techniques
    c. active listening of patient feedback and consideration with decision making of exercise prescription and/or care plan
    d. promoting patient engagement in the process of fitness and health improvement
    e. creating clear communication using medical terminology suitable for patient's health literacy and/or learning style

D. **Promote adherence to healthy behaviors through a patient-centered approach (for example, addressing barriers, engaging in active listening, expressing interest and empathy, increasing self-efficacy, teaching relapse prevention techniques and identifying support).** **Synthesis**

1. Knowledge of:

    a. establishing rapport through open-ended questions, active listening and attention to nonverbal behavior, interest and empathy
    b. health counseling techniques (for example, the patient-centered approach) and nonjudgmental positive regard in the creation of collaborative partnership
    c. theories of health behavior change (for example, Social Cognitive Theory, Health Belief Model, Transtheoretical Model, Five-A's Model)
    d. barriers to exercise compliance and adherence (for example, physical/disease state, psychological, environmental, demographic, vocational)
    e. known demographic factors related to likelihood of adherence and maintenance of exercise (for example, age, gender identity, socioeconomic status, education, ethnicity)
    f. tools for measuring clinical exercise tolerance (for example, heart rate, glucometry, subjective rating scales) and consideration of affect regulation in determining exercise prescription

g. risk factor reduction programs and alternative community resources (for example, wellness coaching, smoking cessation, physical therapy/back care, dietary counseling)

h. goal setting (including SMART goals), reviewing and constructive feedback in support of patient for best likelihood of achieving goals

i. eliciting change talk by patient through motivational interviewing techniques

j. development of self-efficacy (task and barriers) in exercise behaviors

k. promotion of patient-intrinsic motivation (for example, supporting feelings of autonomy and competence, positive feedback, enjoyment) in facilitating long-term adherence to exercise

l. community resources (exercise and/or health support) available for patient use following program conclusion and/or discharge

m. relapse prevention techniques (for example, proactive problem solving, managing lapses, maintaining high self-efficacy in health behaviors, identifying social support)

n. guidance of social support (for example, reassurance, nurturance, supportive exercise groups)

2. Skill in:

a. effective use of behavior-change techniques

b. active listening and receptiveness to patient feedback in decision-making of exercise prescription and/or care plan

c. effective communication with patients from a wide variety of backgrounds

d. promoting patient engagement in process of fitness and health improvement

Domain VI: Legal and Professional Responsibilities

A. Evaluate the exercise environment and perform regular inspections of any emergency equipment and practice emergency procedures (for example, crash cart, activation of emergency procedures) per industry and regulatory standards and facility guidelines. **Recall**

1. Knowledge of:

a. professional standards and practice for patient care (for example, American Association of Cardiovascular and Pulmonary Rehabilitation [AACVPR], American College of Sports Medicine [ACSM], Academy of Nutrition and Dietetics [AND], American Diabetes Association [ADA])

b. government and industry standards and guidelines (for example, Joint Commission Accreditation, Health Care, Certification [JCAHO], Occupational Health and Safety Act [OHSA], Americans with Disabilities Act, Health Insurance Portability and Accountability Act [HIPAA])

c. the operation, routine maintenance, and calibration of exercise equipment

d. current practice guidelines and recommendations for facilities

e. standards of practice during emergency situations (for example, American Heart Association [AHA], American Red Cross [ARC])

f. local and institutional procedures for activation of the emergency medical system

g. standards for inspection of emergency medical equipment

h. risk-reduction strategies, universal precautions, basic life support, emergency equipment and standard emergency procedures

2. Skill in:

a. adhering to legal guidelines and documents

b. implementing facility safety policies and procedures

c. using medical terminology

B. Follow industry-accepted scopes of practice, ethical, legal (for example, data privacy, informed consent) and business standards. **Recall**

1. Knowledge of:

a. professional liability and common types of negligence seen in exercise rehabilitation and exercise testing environments

b. the legal implications of documented safety procedures, the use of incident documents and ongoing safety training

c. the basic scope of practice of health care professionals (for example, physical therapist, nurse, dietitian, psychologist)

d. current practice guidelines and recommendations (for example, National Heart, Lung and Blood Institute [NHLBI], Arthritis Foundation [AF], National Multiple Sclerosis Society [NMSS]) for the prevention, evaluation, treatment and management of chronic diseases

e. regulations relative to documentation and protecting patient privacy (for example, written and electronic medical records, Health Insurance Portability and Accountability Act [HIPAA])

2. Skill in:

a. basic medical charting

b. applying industry and regulatory standards

c. adhering to legal guidelines and documents

d. using medical terminology