

## CEC Course

Special Populations

## Eligibility

Current IDEA members

## Total CECs

0.2 CEC from ACE

0.3 CEC from NSCA

0.3 CEC from NASM

Additional credits may be available from other certifications.

## CEC-Approved Articles

- Power Training for Older Adults
- Heart Disease: Is There a Gender Divide?
- Working With Diabetic Clients

## Certification Agencies

IDEA has been awarded continuing education credits (CECs) or units (CEUs) from selected certification agencies. IDEA is recognized by the American Council on Exercise (ACE) as a Continuing Education Specialist. For those certified by the American College of Sports Medicine (ACSM), CECs from ACE may be applied toward the ACSM continuing education certification process. Additional agencies may accept these credits. Please contact your certification agency to inquire.

## Submission Deadline

December 31, 2010

(3 years from publication)

## Procedure

1. After reading the articles, complete the multiple-choice test and record your answers on the test answer form. Please select only one answer (a, b, c or d) per question. You may use a photocopy.
2. Return the test answer form, along with your credit card number or check, to this address:  
IDEA Home Study  
10455 Pacific Center Ct.  
San Diego, CA 92121-4339
3. IDEA will mail a certificate of completion within 2 weeks of receiving your test answer form. You must have 80% of the answers correct to pass the test. Please forward all questions to (800) 999-4332, ext. 7, or (858) 535-8979, ext. 7.

# test questions

1. The rate of decline in power is approximately \_\_\_\_\_ the decline in strength.
  - a. one-third
  - b. one-half
  - c. equal to
  - d. twice
2. Creatine phosphate and anaerobic glycolysis can replace ATP at \_\_\_\_\_ and \_\_\_\_\_ its rate of utilization.
  - a. 25%, 12%
  - b. 120%, 100%
  - c. 50%, 60%
  - d. 75%, 50%
3.  $\text{VO}_2\text{max}$  is measured in \_\_\_\_\_.
  - a.  $\text{ml}\cdot\text{kg}^{-1}\cdot\text{min}^{-1}$
  - b. liters
  - c. watts
  - d.  $\text{m}\cdot\text{s}^{-1}$
4. What is the most likely reason for the decline in muscle power with aging?
  - a. hypertrophy
  - b. increased myelination
  - c. decrease in type I muscle fibers
  - d. decreased neuromuscular transmission
5. The load that would most likely have the greatest impact on standing from a chair is \_\_\_\_\_, while the load that would have the greatest impact on gait speed would be \_\_\_\_\_.
  - a. 20%, 40%
  - b. 40%, 20%
  - c. 80%, 40%
  - d. 40%, 80%
6. Which field test would be the safest and most effective in evaluating power associated with gait?
  - a. the stair-climbing test
  - b. the ramp power test
  - c. the isokinetic power test
  - d. the vertical jump test
7. Which training technique is associated with the lowest injury risk from momentum?
  - a. aquatic exercise
  - b. plyometrics
  - c. stack-weight machines
  - d. free weights
8. Which of the following statements is most accurate?
  - a. Maximal power production should occur at the same load as maximal strength production.
  - b. In older persons, power is more affected by movement speed than strength.
  - c. Power is the sum of force and velocity.
  - d. Metabolic power and mechanical power are completely unrelated.
9. Which of the following statements best describes the correct loading technique for power training?
  - a. The load should be between 80% and 100% of 1RM.
  - b. The load should be high enough to keep movement velocity to a minimum.
  - c. The load equals the force dictated by gravity divided by the muscle's maximum velocity.
  - d. The load should be adjusted to reflect the goal of the training session.
10. For which of the following applications can translational training cycles *not* be used?
  - a. to allow practice of ADL-specific movements
  - b. to provide recovery after a training cycle
  - c. to maximize the load at which power will be developed
  - d. to provide dynamic drills for increasing balance
11. Which statement is most true regarding cardiovascular disease (CVD)?
  - a. It is the same threat to a woman's health as it is to a man's health.
  - b. It is second only to breast cancer as the leading killer of women.
  - c. It is the leading cause of death in women.

- d. It is a deadly disease that begins to develop in older adults.
- 12. Which of the following best describes the condition known as atherosclerosis?**
- high blood pressure
  - heart attack
  - damage to the heart muscle
  - hardening of the arteries caused by plaque deposits in the heart's arterial wall
- 13. When does atherosclerosis typically first develop in both genders?**
- in childhood
  - during adolescence
  - in late middle age
  - in frail older adulthood
- 14. Which of the following clients is at highest risk of developing CVD?**
- a 35-year-old woman with type 2 diabetes, a blood pressure of 120/80 mm Hg and an HDL cholesterol of 50 mg/dl
  - a 50-year-old woman who has smoked a pack a day of cigarettes for 20 years and has a blood pressure of 144/92 mm Hg and an HDL cholesterol of 40 mg/dl
  - a 20-year-old obese woman who smokes and has a blood pressure of 156/80 mm Hg and HDL cholesterol of 40 mg/dl
  - an otherwise healthy 60-year-old woman with a family history of CVD
- 15. Which of the following reasons best explains why women develop cardiovascular disease later in life than men?**
- High levels of estrogen help protect the heart.
  - Women generally exercise more and eat more healthfully.
  - Men respond to stress differently than women.
  - Testosterone speeds up the atherosclerotic process.
- 16. Which is (are) the most common symptom(s) of heart attack in women?**
- nausea and projectile vomiting
  - pain in the chest
  - severe fatigue, shortness of breath and indigestion
  - unexplained weight loss
- 17. Which of the following is the most up-to-date and sound lifestyle recommendation to reduce a woman's CVD risk?**
- Eat a very low-fat diet.
  - Take a folic acid supplement every day.
  - Aim for a BMI lower than 20.
  - Exercise for at least 30 minutes per day.
- 18. What is the best exercise program for a female client who has recently been treated for worsening chest pain?**
- a low-intensity cardiovascular personal training program
  - a group fitness class for older adults
  - a high-rep, low-weight resistance training program
  - a cardiac rehab program under the supervision of a physician
- 19. Which of the following are CVD risk factors for women?**
- elevated total and LDL cholesterol levels with hypertension
  - overttraining and smoking
  - high HDL cholesterol levels and obesity
  - poor diet and low LDL cholesterol levels
- 20. Under the latest AHA guidelines, which of the following describes a woman who is at "high risk" for developing CVD?**
- She has one or more risk factors for heart disease.
  - She has more than a 20% chance of having a heart attack in the next 10 years.
  - She has less than a 10% chance of having a heart attack in the next 10 years.
  - She has no current risk factors and is in no danger of CVD.
- 21. Type 2 diabetes is a disease that primarily afflicts which group of clients?**
- children
  - overweight, inactive adults
  - older adults and seniors
  - endurance athletes
- 22. Which of the following is true about insulin, the hormone that regulates blood glucose?**
- It is secreted by the pancreas when blood glucose levels begin to rise.
  - It is delivered directly to the stomach to aid in the digestion of carbohydrates.
  - It can be injected, infused or taken orally.
  - It is utilized by type 2 diabetics.
- 23. How does type 1 diabetes differ from type 2 diabetes?**
- Type 1 occurs when the insulin receptor cells are destroyed.
  - Type 1 cannot cause exercise-induced hypoglycemia.
  - Type 1 has a higher prevalence in African Americans and Hispanics.
  - Type 1 results when the body cannot manufacture its own insulin because the beta cells of the pancreas have been destroyed.
- 24. Which of the following are risk factors for type 2 diabetes?**
- habitual inactivity
  - ethnicity and race
  - history of vascular disease
  - all of the above
- 25. Both type 1 and type 2 diabetes can:**
- be controlled with diet and exercise intervention
  - be diagnosed and confirmed by a fasting plasma glucose test measurement of 126 mg/dl or higher
  - afflict mostly Caucasian adults
  - be a reason to forgo regular exercise



26. When should clients with diabetes test their blood glucose levels in the fitness setting?

- a. before, during, and after exercise
- b. 20 minutes after eating a meal
- c. only if they feel lightheaded or excessively perspire
- d. if they feel jittery or lethargic

27. What advice would you give to diabetic clients to reduce the risk of developing pain or numbness in their feet?

- a. Do not engage in any weight-bearing exercise.
- b. Avoid using handheld weights.
- c. Wear cushioned, supportive, well-fitting shoes.
- d. Only exercise in 20-minute bouts.

28. Which of the following is not a sign or symptom of exercise-induced hypoglycemia?

- a. confusion and anxiety
- b. low blood pressure
- c. nausea
- d. loss of consciousness

29. Which of the following recommendations are appropriate for clients with diabetes?

- a. Get physician clearance before starting a fitness program.
- b. Avoid strenuous, high-impact or static exercise.
- c. Carry a carbohydrate snack when exercising.
- d. All of the above are appropriate.

30. Which of the following is a sign or symptom of hyperglycemia?

- a. increased thirst and hunger
- b. blood glucose levels lower than 300 mg/dl
- c. lack of ketones in the urine
- d. an excess of glucose in the body

## answer sheet

### CEC Course

Special Populations

For each question, circle the correct answer.

- |                 |                 |                 |
|-----------------|-----------------|-----------------|
| 1. a. b. c. d.  | 11. a. b. c. d. | 21. a. b. c. d. |
| 2. a. b. c. d.  | 12. a. b. c. d. | 22. a. b. c. d. |
| 3. a. b. c. d.  | 13. a. b. c. d. | 23. a. b. c. d. |
| 4. a. b. c. d.  | 14. a. b. c. d. | 24. a. b. c. d. |
| 5. a. b. c. d.  | 15. a. b. c. d. | 25. a. b. c. d. |
| 6. a. b. c. d.  | 16. a. b. c. d. | 26. a. b. c. d. |
| 7. a. b. c. d.  | 17. a. b. c. d. | 27. a. b. c. d. |
| 8. a. b. c. d.  | 18. a. b. c. d. | 28. a. b. c. d. |
| 9. a. b. c. d.  | 19. a. b. c. d. | 29. a. b. c. d. |
| 10. a. b. c. d. | 20. a. b. c. d. | 30. a. b. c. d. |

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