Advanced
Sports Nutrition

CORRESPONDENCE EDUCATION PROGRAM #90

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LEARNING OBJECTIVES

After reading Advanced Sports Nutrition, the participant will be able to:

1. Identify the sources and roles of the various macronutrients and their impact on athletic performance and recovery.

2. Understand the need for vitamins and minerals and their roles in tissue building, fluid balance and reducing oxidative stress.

3. Learn the strategies for maintaining good hydration status and electrolyte balance.

4. Understand the effect dehydration can have on an athlete’s performance.

5. Be able to discuss the pros and cons of various ergogenic aids and their potential positive impact on performance.

6. Understand the methods to use to evaluate the benefits and safety of various ergogenic aids.

7. Understand good food consumption strategies.

8. Understand the digestion and food absorption processes.

9. Understand the effects age related changes have on energy expenditure.

10. Identify the most common nutritional deficiency among athletes.
11. Identify the potential impacts of travel on athletes’ nutritional needs.

12. Understand the effects of high altitude on exercise performance and understand how to minimize the effects of jet lag.

13. Understand the various energy systems utilized for both power and endurance activities.

14. Identify the warning signs of eating disorders.

15. Develop nutritional plans for specific sports.

16. Understand the use of food exchange lists in developing balanced meal plans.
CEC/CEU TEST FOR:  *Advanced Sports Nutrition*

*Please choose the best answer. Put all answers on the answer sheet.*

1. Which of the following energy sources helps mediate insulin response by slowing the rate at which other energy sources enter the bloodstream?
   a. Bran  
   b. Glucose  
   c. Starch  
   d. Sugar

2. The right amount of ______ at the right time optimizes ______ stores and improves endurance performance.
   a. Protein, carbohydrate  
   b. Carbohydrate, carbohydrate  
   c. Fat, carbohydrate  
   d. Protein, protein

3. *Indigestible complex carbohydrates are commonly referred to as ______.*
   a. Oligosaccharides  
   b. Fiber  
   c. Sugar  
   d. Polymers

4. *Humans can store approximately 350 grams or ______ kilocalories of glycogen in the form of muscle glycogen.*
   a. 1000  
   b. 1200  
   c. 1400  
   d. 3150
5. Glucose is released by the liver to sustain blood sugar and the rate at which it is released is determined by ______.
   a. Timing of last meal
   b. Exercise intensity
   c. Genetics
   d. Fitness level

6. Which of the following symptoms can occur as a result of lactose intolerance?
   a. Bloating
   b. Abdominal pain and diarrhea
   c. Dehydration
   d. All of the above

7. Which of the following is NOT one of the four energy metabolic systems?
   a. Anabolic glycolysis
   b. Anaerobic glycolysis
   c. Aerobic glycolysis
   d. Phosphocreatine

8. Gluconeogenesis refers to the process of making glucose from ______ sources.
   a. Fat
   b. Protein
   c. Carbohydrate
   d. Non-carbohydrate

9. Which of the following factors does not decrease the relative energy expenditure from carbohydrate?
   a. High intensity activity
   b. Endurance training
   c. Temperature adaptation
   d. Gender

10. The average minimal usage of glucose by the brain is ______ grams per day.
    a. 45
    b. 75
    c. 110
    d. 130
11. Between ______ and ______ grams of carbohydrate per kilogram of body weight per day is the recommended carbohydrate intake for endurance trained athletes.
   a. 3, 5
   b. 5, 7
   c. 7, 12
   d. 7, 9

12. What is the adult AMDR for total fat intake?
   a. 10 to 20% of total calories
   b. 15 to 25% of total calories
   c. 20 to 25% of total calories
   d. 20 to 35% of total calories

13. Athletes interested in lowering body fat should exercise at least as high as ______ of VO2 max to optimize fat burned.
   a. 40 percent
   b. 55 percent
   c. 65 percent
   d. 75 percent

14. ______ is the only nutrient that contains nitrogen, making it both essential and potentially toxic.
   a. Carbohydrate
   b. Protein
   c. Fat
   d. None of the above

15. Which of the following is NOT a valid reason why athletes require a higher protein intake than non-athletes?
   a. Endurance activities use more protein
   b. Protein is the primary fuel for exercise
   c. Muscle damage from exercise increases the protein requirement
   d. Exercise may cause protein to be lost in the urine

16. The Diet Reference Intakes (DRIs) are based on all of the following sources except:
   a. The Food Guide Pyramid
   b. The Recommended Dietary allowance
   c. The Adequate Intake
   d. The Tolerable Upper Intake
17. Taking greater than 500 mg/day of water-soluble Vitamin B6 can result in which of the following?
   a. Dehydration
   b. Vomiting
   c. Peripheral Neuropathy
   d. Scurvy

18. Vitamin B6 deficiency can cause which of the following symptoms?
   a. Depression
   b. Irritability
   c. Muscle weakness
   d. All of the above

19. Vitamin B12 has a major involvement in all of the following except:
   a. Red blood cell formation
   b. DNA synthesis
   c. Nerve development
   d. Bone development

20. Which of the following is NOT a function of minerals?
   a. Assists with skeleton strength and structure
   b. Controls blood and tissue acid-base balance
   c. Provides energy
   d. Serves as bridges for electrical impulses that stimulate muscular movements

21. What is the key ingredient in sports drinks that drives the desire to drink?
   a. Potassium
   b. Sodium
   c. Calcium
   d. Magnesium

22. When sweat losses are high, athletes may require more than ______ grams of sodium per day.
   a. 10
   b. 8
   c. 5
   d. 3
23. Which of the following is NOT a symptom of iron deficiency?
   a. Increased oxygen carrying capacity
   b. Poor immune function
   c. Short attention span
   d. Irritability

24. Which of the following is the single most important factor associated with sustaining a high level of athletic performance?
   a. Getting adequate sleep
   b. Eating 6 meals per day
   c. Maintaining fluid balance
   d. Consuming caffeine

25. During exercise almost all heat loss from the body occurs via ______.
   a. Conduction
   b. Radiation
   c. Convection
   d. Evaporation

26. The thirst sensation is not a good indicator of fluid needs because it doesn’t surface until ______ liters of body water is lost.
   a. .5 – 1.0
   b. 1.0 – 1.5
   c. 1.5 – 2.0
   d. 2.0 – 2.5

27. Gastric emptying time decreases when carbohydrate concentration exceeds ______ percent.
   a. 4
   b. 5
   c. 6
   d. 7

28. Which of the following is NOT a body adjustment that occurs during acclimatization?
   a. Muscle glycogen increases
   b. Heart pumps more blood per beat
   c. Sweat glands hypertrophy
   d. Sweating starts at a lower temperature
29. Signs and symptoms of low blood sodium (hyponatremia) include which of the following?
   a. Bloated stomach
   b. Headache
   c. Cramping
   d. All of the above

30. Sodium in sports drinks is not always palatable so which of the following food alternatives should an athlete consume after exercise?
   a. Gummi bears
   b. Pretzels
   c. Power bar
   d. Jelly beans

31. Which of the following is NOT a valid hydration guideline for an athlete to follow before exercise?
   a. Athletes should wait until they feel thirsty and then consume one cup of fluid
   b. Athletes should consume enough fluids before exercise to produce clear urine
   c. Athletes should carry fluid with them wherever they go
   d. Athletes should avoid foods and drinks that may have a diuretic effect

32. Which of the following is NOT a good method to use when evaluating supplements?
   a. Look for accurate claims
   b. Look for supporting research
   c. Look for a product that is highly advertised as the best available
   d. Look for the USP symbol on the label

33. To reduce protein breakdown and promote protein synthesis, how many grams of carbohydrate per kilogram of body weight should an athlete consume after exercise?
   a. 1
   b. 3
   c. 5
   d. 7
34. It appears that when caffeine is consumed at doses of ______ milligrams/day, it has an ergogenic benefit in long-endurance activity.
   a. 1 – 3
   b. 2 – 4
   c. 3 – 9
   d. 6 – 12

35. Medium chain triglycerides offer all of the following benefits except:
   a. Provide a quick source of energy
   b. Help mobilize body fat stores for energy
   c. Decrease the metabolic rate
   d. Spare muscle

36. Which of the following statements is true regarding the research on the use of anabolic steroids as an ergogenic aid?
   a. Using anabolic steroids is recommended because there are no known negative side effects
   b. Using anabolic steroids is a safe and acceptable way to increase lean muscle mass and strength
   c. Using anabolic steroids will increase lean muscle mass and strength but with significantly dangerous side effects
   d. Using anabolic steroids increases lean muscle mass but decreases exercise motivation

37. Which substance used as an ergogenic aid is banned by the IOC?
   a. Amphetamines
   b. Ma huang
   c. Antioxidants
   d. Bee pollen

38. Which of the following can cause gastritis when used excessively by an athlete?
   a. Tums
   b. Non-steroidal anti-inflammatory drugs
   c. High fiber foods
   d. None of the above
39. Which of the following factors does NOT affect gastric emptying?
   a. Ingested volume
   b. Energy concentration
   c. Type of carbohydrate
   d. Type of exercise

40. Which of the following symptoms is not caused by overtraining?
   a. Decreased resting heart rate
   b. Sleepless nights
   c. Frequent illness
   d. Appetite loss

41. Crohn’s disease affects the ileum, which is the site of ______ absorption, and this lack of absorption ultimately leads to megaloblastic, hypochromic anemia.
   a. Vitamin B1
   b. Vitamin B12
   c. Vitamin B2
   d. Vitamin B6

42. Which of the following drugs destroy intestinal microflora?
   a. Antipsychotics
   b. Antacids
   c. Antidepressants
   d. Antibiotics

43. Increased urinary losses of magnesium results in all of the symptoms listed below except:
   a. GI bleeding
   b. Muscle cramps
   c. Weakness
   d. Cardiac arrhythmias

44. The common eating pattern of athletes, emphasizing large end-of-day meals, promotes which of the following?
   a. Increased energy levels
   b. Higher body fat levels
   c. Increased lean body mass
   d. None of the above
45. Low blood sugar and large meals are associated with ______.
   a. Gastritis
   b. Hyperinsulinemia
   c. Low energy levels
   d. Hypoglycemia

46. Under-hydrated athletes could be at heatstroke risk within ______ minutes after starting to exercise.
   a. 26
   b. 33
   c. 57
   d. 45

47. Thirst sensation is not a good indicator of when to drink because it doesn’t occur until after ______ to ______ liters of body water are lost.
   a. 4, 5
   b. 2, 3
   c. 3, 4
   d. 1, 2

48. Which of the following is NOT one of the major goals that should be met by the sequence of events occurring in the week prior to a competition?
   a. Cross train in an alternate sport
   b. Get gradual rest
   c. Build up muscle glycogen stores
   d. Become well hydrated

49. Consumption of carbohydrate containing substances during exercise delays fatigue by all of the following mechanisms except:
   a. Maintains blood glucose
   b. Increases cortisol production
   c. Maintains branched chain amino acid levels
   d. Reduces the usage of muscle glycogen

50. Athletes should plan on consuming ______ to ______ calories from carbohydrate immediately following exercise.
   a. 50, 100
   b. 100, 150
   c. 200, 400
   d. 400, 500
51. High intensity exercise increases cellular respiration which causes a ______ -fold increase in oxygen demand for working muscles.
   a. 10
   b. 15
   c. 25
   d. 20

52. What type of climate conditions may cause an athlete to experience exercise induced asthma (EIA)?
   a. Cold, dry air
   b. Cold, wet air
   c. Warm, dry air
   d. Warm, wet air

53. ______ is the iron containing, oxygen carrying protein in red blood cells.
   a. Myoglobin
   b. Ferritin
   c. Transferrin
   d. Hemoglobin

54. When athletes increase the intensity of their training, they may experience a condition referred to as ______.
   a. Sports anemia
   b. Dilutional pseudo-anemia
   c. None of the above
   d. Both a and b

55. Antioxidant vitamins and minerals, which inhibit the production of reactive oxygen species (ROS or free radicals) include all of the following except:
   a. Vitamin C
   b. Selenium
   c. Vitamin D
   d. Beta-carotene

56. ______ is the most common nutrient deficiency.
   a. Vitamin C
   b. Iron
   c. Protein
   d. Calcium
57. Which of the following vitamins does NOT have an impact on appetite?
   a. Vitamin D
   b. Vitamin B2
   c. Vitamin B6
   d. Vitamin B1

58. What has been found to be a useful beverage to aid in quick recovery from exercise?
   a. Orange juice
   b. Soda
   c. Sports drinks
   d. Chocolate milk

59. Traveling to competition and the resulting circadian rhythm desynchronization can result in which of the following?
   a. Increased energy
   b. Increased appetite
   c. Disturbed sleep
   d. Improved performance

60. Good general tips for athletes eating on the road include which of the following?
   a. Bring your own snacks
   b. Avoid hidden fats
   c. Order “a la carte”
   d. All of the above

61. Which of the following is NOT a valid recommendation to help minimize the effect of jet lag on a large phase shift?
   a. Arrive at destination 1 day early
   b. Follow a low protein diet
   c. Maintain regular sleeping and eating habits
   d. Participate in social activities and exercise

62. If an athlete is traveling across 2 time zones to get to an event, how many days should be allowed for acclimatization?
   a. 1
   b. 2
   c. 3
   d. 4
63. **Athletes training at higher altitudes can expect a ______ respiration and ______ heart rate.**
   a. Faster, faster  
   b. Slower, slower  
   c. Faster, slower  
   d. No change in respiration or heart rate

64. **Successful production of red blood cells requires an intake of ______ milligrams of iron per day.**
   a. 10  
   b. 15  
   c. 18  
   d. 20

65. **Cold stress and shivering increases muscle glycogen utilization, thus increasing the need for adequate ______ consumption.**
   a. Carbohydrate  
   b. Protein  
   c. Fat  
   d. Water

66. **All of the following factors increase the risk of developing altitude sickness except:**
   a. Fast rate of ascent  
   b. Long stay at altitude  
   c. High level of exertion  
   d. High carbohydrate, low protein, low fat diet

67. **High altitude cerebral edema (HACE), caused by capillary leakage in the brain, includes which of the following symptoms?**
   a. Gait ataxia  
   b. Confusion  
   c. Psychiatric changes of varying degrees  
   d. All of the above

68. **High altitude pulmonary edema (HAPE) is not well understood, but it rarely occurs below ______ feet.**
   a. 2000  
   b. 4000  
   c. 6000  
   d. 8000
69. Which of the following statements regarding the energy and nutrient needs of athletes exercising at high altitudes is NOT true?
   a. Athletes should focus on consuming sufficient carbohydrate foods
   b. Athletes exercising in high altitude environments frequently gain weight from consuming too many calories
   c. Athletes should make sure their iron status is excellent before exercising at high altitudes
   d. Athletes should consider consuming a multivitamin or multimineral supplement to reduce oxidative stress

70. The female athlete triad relates to eating disorder, menstrual dysfunction and ______.
   a. Borderline personality
   b. Mood swings
   c. Low bone density
   d. Weight loss

71. Menstrual dysfunction is associated with ______, which may be offset by ______.
   a. Reduction in endurance, increasing caloric intake
   b. Reduction in energy, iron supplementation
   c. Reduction in bone mass, increasing caloric intake
   d. Reduction in muscle gain, protein supplementation

72. The protein recommendation for athletes is between ______ and ______ grams per kilogram per day.
   a. .8, 1.0
   b. 1.0, 1.2
   c. 2.0, 2.5
   d. 1.2, 1.7

73. Factors causing primary and secondary amenorrhea include which of the following?
   a. Excess physical activity
   b. Inadequate energy intake
   c. Adequacy of nutrient intake
   d. All of the above
74. Age related changes in ______ have an impact on resting energy expenditure, recovery time, bone mass, nutrient absorption, and heat tolerance.
   a. Body composition
   b. Body weight
   c. Blood pressure
   d. None of the above

75. Energy expenditure decreases approximately ______ calories per year for men and ______ calories per year for women after age 20.
   a. 20, 15
   b. 10, 7
   c. 15, 10
   d. 25, 20

76. Amenorrhea is defined as the absence of a menstrual period for ______ months, or the absence of the menstrual cycle for ______ cycles.
   a. 2, 4
   b. 1, 2
   c. 6, 3
   d. 8, 4

77. Body mass index (BMI) is not likely to be useful for categorizing weight for athletes because it ______ the weight-to-height ratio.
   a. Lengthens
   b. Increases
   c. Shortens
   d. Decreases

78. For athletes, a high ratio of ______ to ______ is typically synonymous with a high strength-to-weight ratio, which is associated with athletic success.
   a. Fat-free mass to muscle
   b. Fat mass to lean muscle
   c. Fat-free mass to fat mass
   d. None of the above
79. The most common methods for assessing body composition include all of the following except:
   a. Body mass index calculations
   b. Hydrostatic weighing
   c. Skin fold measurements
   d. Bioelectrical impedance analysis

80. The potentials for error in hydrostatic weighing are related to residual volume and ______.
   a. Fat-free mass
   b. Muscle mass
   c. Land weight
   d. Hydration status

81. Since most skin fold equations are meant for the general population, the results for athletes tend to be ______.
   a. Unrealistically high
   b. Fairly accurate
   c. Unrealistically low
   d. None of the above

82. Dual-energy X-ray absorptiometry (DEXA), considered the most accurate method of determining body composition, provides all of the following measurements except:
   a. Bone density
   b. Body fat percentage
   c. Distribution of abdominal fat
   d. Lean body mass

83. The amount of radiation energy used with DEXA is so small that you would need ______ scans before being exposed to the same amount of radiation received from one standard chest X-ray.
   a. 800
   b. 600
   c. 400
   d. 200

84. Ectomorph body types have a predisposition towards ______ with less ______.
   a. Muscular build, body fat
   b. Slender build, body fat
   c. Stocky build, body fat
   d. None of the above
85. Because of the change in metabolism as people age, an extra _____ calories consumed per day could lead to a ______ pound weight gain in one year.
   a. 25, 1 
   b. 50, 3 
   c. 50, 5 
   d. 25, 7 

86. Which of the following is the recommended frequency for assessing an athlete’s body composition?
   a. 12 times per year 
   b. 4 – 6 times per year 
   c. 2 – 4 times per year 
   d. Annually 

87. According to the traditional view of eating disorders, a combination of all of the following factors create a basis for their development except:
   a. Psychological 
   b. Genetic 
   c. Social 
   d. Religious 

88. Which of the following are considered warning signs of eating disorders?
   a. Preoccupation with food 
   b. Preoccupation with weight 
   c. Use of laxatives 
   d. All of the above 

89. Which of the following is not considered criteria for anorexia athletica?
   a. Loss of desire to exercise 
   b. Binge eating 
   c. Disturbance in body image 
   d. Use of purging methods 

90. Which of the following is a symptom of Bulimia Nervosa?
   a. Teeth and gum corrosion 
   b. Edema 
   c. Excessive bathroom visits 
   d. All of the above
91. Type I muscle fibers are associated more with which of the following activities?
   a. Endurance sports
   b. Weightlifting
   c. Shot Put
   d. Sprinting

92. Muscles rely on _____ and _____ for anaerobic activities.
   a. Protein, calories
   b. Phosphocreatine, glycogen
   c. Amino acids, water
   d. Glycogen, caffeine

93. Energy supplied by the breakdown of phosphocreatine (PCr) does not last longer than _____ seconds.
   a. 5
   b. 10
   c. 15
   d. 20

94. Glycolysis has half the power to create energy as the PCr system, but has _____ times the capacity.
   a. 3
   b. 4
   c. 5
   d. 6

95. Poor hydration is associated with higher core temperatures that can reduce _____.
   a. Body temperature
   b. Muscle size
   c. Coordination
   d. All of the above

96. Fluids that are best for replacing carbohydrate stores and maintaining hydration status contain _____ percent carbohydrate solution.
   a. 2 – 3
   b. 4 – 5
   c. 6 – 7
   d. 7 – 8
97. With adequate calories, a protein intake of ______ grams/kilograms will support the synthesis of creatine and growing muscle mass.
   a. .8 – 1.2
   b. 1.2 – 1.7
   c. 1.7 – 2.0
   d. 2.0 – 2.5

98. Which baseball position has the highest energy and fluid requirements?
   a. Catcher
   b. Pitcher
   c. Outfielder
   d. Infielder

99. A bodybuilder’s second phase of training is aimed at reducing ______.
   a. Water weight
   b. Subcutaneous fat
   c. Muscle mass
   d. None of the above

100. The ideal composition of a bodybuilder’s diet should be ______ from carbohydrates, ______ from fat, and ______ from protein.
    a. 60 to 75 percent, 10 to 15 percent, 20 to 25 percent
    b. 30 to 40 percent, 20 to 25 percent, 35 to 50 percent
    c. 55 to 60 percent, 15 to 20 percent, 25 to 30 percent
    d. 40 to 50 percent, 10 to 15 percent, 35 to 50 percent

101. Which of the following does NOT play a role in a person’s body fat percentage?
    a. Genetic make-up
    b. Dietary habits
    c. Height and bone structure
    d. Exercise habits

102. Small, frequent meals is a strategy used to suppress the production of body fat because ______.
    a. People are more satisfied
    b. It lowers the insulin response to food
    c. People don’t overeat
    d. All of the above
103. Instead of the typical diet cycling that body builders do to gain muscle mass, the logical approach is to consume an additional ______ of complex carbohydrate combined with specific muscle building activities.
   a. 100 – 200 calories
   b. 200 – 400 calories
   c. 300 – 500 calories
   d. 500 – 700 calories

104. In order for linemen to achieve a high level of muscle mass, their diet should include 300 to 500 calories more than their energy requirements with a diet that consists of ______ from fat intake and ______ from protein intake.
   a. 30 to 40 percent of total calories, 60 to 70 percent of total calories
   b. 25 to 30 percent of total calories, 60 to 75 percent of total calories
   c. Less than 5 percent of total calories, less than 10 percent of total calories
   d. Less than 25 percent of total calories, 12 to 15 percent of total calories

105. Inadequate ______ is associated with anemia, a risk factor in the development of amenorrhea.
   a. Iron
   b. Calcium
   c. Calories
   d. Protein

106. Which of the following is NOT a possible cause of delay or cessation of menses?
   a. Low body fat
   b. Poor iron status
   c. Poor sleep habits
   d. Low energy intake

107. Hockey players’ performance is directly related to muscle glycogen metabolism, requiring their food intake to be ______ percent carbohydrate.
   a. 50 – 55
   b. 60 – 65
   c. 65 – 70
   d. 70 – 75
108. Since sprints rarely last longer than 10 seconds, they primarily use phosphocreatine and ______ as fuels.
   a. Water
   b. Glycogen
   c. Protein
   d. Iron

109. Supercompensation is used to force more ______ into the muscles and is not recommended for ______.
   a. Protein, sprinters
   b. Fat, long-distance runners
   c. Carbohydrate, sprinters
   d. Water, long-distance runners

110. Glycogen is stored with water in which ratio?
   a. 1 to 3 grams
   b. 1 to 4 grams
   c. 2 to 1 grams
   d. 4 to 1 grams

111. For early morning swimmers, it is recommended that they consume snacks or drink fluids containing 100 to 200 calories of ______ before practice.
   a. Carbohydrate
   b. Protein
   c. Fat
   d. None of the above

112. For swimming sprints lasting 2 minutes or longer, a recovery period of up to ______ minutes is required.
   a. 2
   b. 3
   c. 3.5
   d. 4

113. Swimmers need at least ______ calories of carbohydrate per kilogram of body weight.
   a. 20
   b. 25
   c. 30
   d. 35
114. **Weight cutting is a technique used by wrestlers to**
   a. Promote rapid weight reduction  
   b. Decrease body fat  
   c. Increase lean body mass  
   d. None of the above

115. **Weight cycling associated with making weight can lead to which of the following?**
   a. Glycogen depletion  
   b. Lower muscle mass  
   c. Increase in body fat  
   d. All of the above

116. **Signs of overtraining include which of the following?**
   a. Increase in appetite  
   b. Swelling of lymph nodes  
   c. High illness frequency  
   d. Both b and c

117. **Which of the following is NOT a factor associated with the development of the overtraining syndrome?**
   a. Frequent competition  
   b. Healthy diet  
   c. Psychosocial stressors  
   d. Monotonous training with insufficient rest

118. **Which of the following steps should female runners take to reduce the risk of osteoporosis?**
   a. 1500 milligrams of calcium per day  
   b. Do not consume too much protein  
   c. Avoid overtraining  
   d. All of the above

119. **A critical factor in the performance of all endurance athletes is**
   a. Hydration status  
   b. Iron status  
   c. Protein status  
   d. Total caloric intake
120. Which of the following is a common cause of low iron status in runners?
   a. Excess loss of blood in the GI tract
   b. Poor iron absorption
   c. Excess menstrual blood loss
   d. All of the above

121. In order for triathletes to keep up with their energy requirements, they need to consume ______ grams of carbohydrate per kilogram of body weight per hour.
   a. .8 – 1.0
   b. 1.0 – 1.2
   c. 1.0 – 1.5
   d. 2.0 – 2.5

122. Gatorade’s mixture of sucrose and glucose are well tolerated, whereas the ______ in PowerAde has been shown to cause GI distress.
   a. Lactose
   b. Fructose
   c. Maltose
   d. Galactose

123. Basketball players need ______ grams per kilo of body weight of high glycemic carbohydrate beverages and foods immediately after exercise and every 2 hours after that.
   a. .5 – 1.0
   b. 1.0 – 1.5
   c. 2.0 – 2.5
   d. 2.5 – 3.0

124. During routine soccer training, players should consume ______ of carbohydrate per kilogram of body weight.
   a. 3 – 5 grams
   b. 5 – 7 grams
   c. 8 – 10 grams
   d. 10 – 12 grams

125. Carbohydrates should make up what percentage of a sports drink for golfers?
   a. 6-7%
   b. 100 – 200 mg
   c. 10-12%
   d. 400-600 mg