

ACSM's
Exercise Management for Chronic
Diseases & Disabilities

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LEARNING OBJECTIVES

After reading *ACSM's Exercise Management for Persons with Chronic Diseases and Disabilities*, the participant will be able to:

Part I

1. Identify the seven exercise test families
2. Explain the effects of medicine on exercise capacity.
3. Identify the two kinds of risks involved in exercise when working with persons with a chronic disease or disability.
4. Explain the physiological differences between children and adults in response to exercise.
5. Describe the recommended method used to regulate exercise intensity for young children.

Part II

1. Describe the signs and symptoms used in diagnosis of a myocardial infarction.
2. Describe the positive results of exercise training on persons with previous MI.
3. Explain the possible effects of cardiovascular medication on exercise response.
4. Explain the effects of revascularization on exercise response.
5. Explain exercise program recommendations that should be considered for persons who have undergone CABGS or PTCA.
6. Identify the three forms of symptomatic angina.
7. Explain the effects ischemia can have on exercise response.
8. Identify the goal of exercise training for persons with angina.
9. Explain exercise program recommendations that should be considered for persons with angina.
10. Explain the effects of atrial fibrillation on exercise response.

11. Explain exercise program recommendations that should be considered for persons with atrial fibrillation.
12. Identify the basic types of pacemakers and how they function.
13. Identify the Valvular heart disease that is most often congenital.
14. Explain exercise program recommendations that should be considered for persons with Valvular heart disease.
15. Identify the hemodynamic or organ changes that are associated with chronic heart failure.
16. Describe the effects of exercise training on persons with chronic heart failure.
17. Explain exercise program recommendations that should be considered for persons with chronic heart failure.
18. Identify valid causes for exercise intolerance for persons who have undergone cardiac transplant surgery.
19. Explain exercise program recommendations that should be considered for persons who have undergone cardiac transplant.
20. Explain the effects of regular exercise on blood pressure.
21. Identify lifestyle changes recommended for control of high blood pressure.
22. Explain exercise program recommendations that should be considered for persons with high blood pressure.
23. Explain the technique used to assess peripheral circulation.
24. Explain the effects of exercise training on peripheral arterial disease.
25. Identify the recommended mode of exercise for persons with peripheral arterial disease.
26. Identify the primary cause of congenital aortic aneurysms.
27. Explain the effects of exercise on aneurismal disease.
28. Explain exercise program recommendations that should be considered for persons with aneurismal disease.

PART III:

1. Explain what is meant by restrictive pulmonary disease and what is meant by obstructive pulmonary disease.
2. Explain the effects of COPD on exercise response.
3. Explain exercise program recommendations that should be considered for persons with COPD.
4. Explain exercise testing recommendations that should be considered for persons with chronic restrictive pulmonary disease.
5. Explain exercise program recommendations that should be considered for persons with chronic restrictive pulmonary disease.
6. Explain the effects of asthma on exercise response.

7. Explain exercise program recommendations that should be considered for persons with asthma.
8. Explain the effects of cystic fibrosis on exercise response.
9. Identify the preferred method for exercise testing for persons with cystic fibrosis.
10. Explain exercise program recommendations that should be considered for persons with cystic fibrosis.
11. Explain the effects of lung and heart lung transplantation on exercise response.
12. Explain exercise testing recommendations that should be considered for persons with lung or heart lung transplantation.

PART IV

1. Identify the primary goal of exercise training for persons with renal failure.
2. Explain exercise program recommendations that should be considered for persons with ESRD and ESLD.
3. Identify a common disease risk for persons with long standing diabetes.
4. Explain the effects of diabetes on exercise response.
5. Identify the principal lipoprotein classes and identify which one transports cholesterol from peripheral tissues back to the liver.
6. Explain what effect lipid lowering medications can have on exercise.
7. Explain exercise program recommendations that should be considered for persons with hyperlipidemia.
8. Explain how obesity is associated with disease risk.
9. Explain exercise program recommendations that should be considered for obese adults.
10. Explain exercise testing recommendations that should be considered for frail adults.
11. Identify the goal of exercise training for frail, elderly adults.
12. Explain exercise program recommendations that should be considered for frail, elderly adults.

PART V

1. Explain the effects of cancer on exercise response.
2. Explain exercise program recommendations that should be considered for persons with cancer.
3. Explain the effects exercise training can have on persons with AIDS.
4. Explain exercise program recommendations that should be considered for persons with AIDS.

5. Explain the effects of abdominal organ transplantation on exercise response.
6. Explain exercise program recommendations that should be considered for persons who have undergone organ transplant.
7. Explain exercise testing recommendations that should be considered for persons with chronic fatigue syndrome.
8. Explain exercise program recommendations that should be considered for persons with chronic fatigue syndrome.
9. Identify which exercise activities are not recommended for persons with fibromyalgia.
10. Explain exercise program recommendations that should be considered for persons with fibromyalgia.
11. Explain the effects of anemia on exercise response.
12. Explain exercise program recommendations that should be considered for persons with anemia.
13. Explain the risk association between platelet count and lifting heavy weights.
14. Explain exercise program recommendations that should be considered for persons with bleeding or clotting disorders.

PART VI

1. Identify the two most common rheumatologic diseases.
2. Explain the effects of arthritis on exercise response.
3. Explain exercise program recommendations that should be considered for persons with rheumatologic disease.
4. Explain the different methods used to measure appropriate exercise activity for persons with chronic LBP and persons with acute LBP.
5. Explain exercise program recommendations that should be considered for persons with lower back pain.
6. Explain exercise testing recommendations that should be considered for persons with osteoporosis.
7. Identify the benefits of exercise training for persons with osteoporosis.
8. Explain exercise program recommendations that should be considered for persons with osteoporosis.
9. Explain the possible disadvantages of using walking or jogging as a long term exercise activity for LL amputees.
10. Explain exercise testing recommendations that should be considered for LL amputees.

PART VII

1. Explain the association between the area of the brain involved in neurological impairment and exercise response.

2. Explain exercise program recommendations that should be considered for persons who have experienced a CVA or TBI.
3. Explain the difference between tetraplegia, paraplegia, and quadriplegia.
4. Explain exercise testing recommendations that should be considered for persons with spinal cord disabilities.
5. Explain exercise testing recommendations that should be considered for persons with muscular dystrophy.
6. Explain exercise program recommendations that should be considered for persons with muscular dystrophy.
7. Explain the different types of seizures that may affect a person with epilepsy.
8. Identify activities that are not recommended for persons with epilepsy.
9. Explain exercise testing recommendations that should be considered for persons with multiple sclerosis.
10. Explain exercise program recommendations that should be considered for a person with multiple sclerosis.
11. Explain exercise testing recommendations that should be considered for persons with polio and post polio syndrome.
12. Explain exercise program recommendations that should be considered for persons with polio or post polio syndrome.
13. Explain exercise program recommendations that should be considered for persons with ALS.
14. Identify the benefits and overall goal of exercise training for persons with ALS.
15. Explain the exercise abilities associated with the different CP ISRA groups.
16. Identify the effects of exercise training on persons with CP
17. Explain exercise program recommendations that should be considered for persons with CP.
18. Explain the motor symptoms of Parkinson's disease.
19. Explain the exercise program recommendations that should be considered for persons with Parkinson's disease.

PART VIII

1. Explain the classification levels of mental retardation.
2. Explain the effects of Down's syndrome on exercise response.
3. Explain exercise testing recommendations that should be considered for persons with mental retardation.
4. Identify exercise activities that are effective and increase motivation for persons with mental retardation.
5. Explain exercise program recommendations that should be considered for persons with Alzheimer's disease.

6. Identify the three most common mental illness diagnoses.
7. Explain exercise testing and programming recommendations that should be considered for persons with mental illness.
8. Explain exercise program recommendations that should be considered for persons with hearing loss.
9. Identify which type of visual impairment has the most effect on mobility.
10. Explain exercise program recommendations that should be considered for persons with visual impairment.



***Course Examination for:
ACSM's Exercise Management
For Persons with Chronic Diseases and Disabilities***

Choose the most appropriate answer.

- 1. Which of the following is not one of the seven exercise test families?**
 - a. Flexibility tests
 - b. Functional tests to measure hand to eye coordination
 - c. Endurance tests
 - d. Strength tests

- 2. Which of the following is considered to be the most difficult of the five problem-oriented management steps?**
 - a. Obtaining subjective data
 - b. Obtaining objective data
 - c. Making an assessment
 - d. Formulating an action plan

- 3. Which medication has been most thoroughly studied in regard to its effects on the body during exercise?**
 - a. Beta blockers
 - b. Birth control pills
 - c. Diuretics
 - d. Viagra

- 4. When comparing medical prescriptions to exercise prescription, exhaustion resulting from exercise is considered to be:**
 - a. A realistic goal
 - b. An adaptive goal
 - c. An exercise overdose
 - d. De-motivating

- 5. The two kinds of risks involved in exercise are _____ and musculoskeletal injury, and must be considered when working with individuals with a chronic disease or disability**
- Shoulder impingement
 - Sudden death
 - Nose bleeds
 - Compound fractures
- 6. Which of the following diseases are serious and prevalent chronic conditions facing children today?**
- Malaria
 - Whooping cough
 - Type II diabetes
 - German measles
- 7. Which of the following is frequently used as an indicator of health status in children?**
- Comparison to siblings
 - BMI
 - Age of puberty
 - Growth charts
- 8. Which of the following statements is true regarding the physiological differences between adults and children in response to exercise?**
- Children have higher maximal heart rates than adults
 - A child's blood pressure does not increase during exertion
 - Children have shorter attention spans than adults
 - Children sweat more than adults
- 9. Which of the following methods for regulating exercise intensity is recommended for use with young children?**
- Dyspnea scale
 - Karvonen formula
 - Metabolic equivalents
 - Using the walk/talk principle

10. Which of the following statements regarding myocardial infarction is false?

- a. A stroke is caused by a complete obstruction of a coronary artery
- b. Coronary risk in middle aged men and women can be strongly predicted by cortisol levels
- c. Decreased serum levels of cardiac enzymes is used in the diagnosis of a myocardial infarction
- d. Any of the above

11. _____ is a decrease in systolic blood pressure in response to progressive exercise.

- a. Myocardial infarction
- b. Exertional hypotension
- c. Blood pooling
- d. DOMS

12. All of the following are positive results of exercise training for clients with previous myocardial infarction except:

- a. Improvement in ventilatory response to exercise
- b. Decreased heart rate variability
- c. Increased high density lipoprotein
- d. Decreased body weight, fat stores, and total blood cholesterol

13. Which of the following statements regarding the potential affect of cardiovascular medications on exercise response is true?

- a. Persons taking vasodilators and ACE inhibitors may be subject to hypotension in the post-exercise period
- b. Amphetamines receptor blockers lower systolic and diastolic blood pressure
- c. Caffeine alters aerobic capacity on all patients
- d. Multiple vitamins affect functional capacity and may decrease exercise tolerance in clients with angina

14. _____ is the technique used on the majority of patients referred for revascularization.

- a. Bypass surgery
- b. Installation of a cardiac stent
- c. Heart transplant
- d. Percutaneous transluminal coronary angioplasty

15. The typical improvement in work capacity and max VO₂ for those who have had CABGs is:

- a. 0%
- b. 100%
- c. 50%
- d. 20%

16. Cessation of smoking at age 40 have an average gain of how many years towards life expectancy?

- a. 1 years
- b. 30 years
- c. 9 years
- d. 24 years

17. Which of the following statements regarding exercise programming for CABGS and PTCA patients is true?

- a. Walking is recommended as the primary mode of exercise
- b. Generally CABGS patients devote more time to upper body range of motion exercises
- c. Upper body resistance exercise is recommended within 24 to 48 hours after CABGS to help patients regain strength
- d. Both a and b

18. All of the following are considered ways that unstable angina presents EXCEPT:

- a. Chest pain when waking from sleep lasting longer than 20 minutes
- b. Chest pain when exposed to cold air
- c. New onset of angina chest pain
- d. Increased severity from when originally diagnosed

19. Ischemia that does not display symptoms is known as _____ ischemia, and is common among diabetics

- a. Silent
- b. Pernicious
- c. Maladroit
- d. Pervasive

20. When myocardial demand increases during the transition from rest to exercise, what is the primary way the heart muscle receives oxygen?

- a. A reduction in ejection fraction
- b. Reduction in BPM
- c. An increase in coronary blood flow
- d. Cellular respiration

21. The goal of exercise training for people with angina is to _____.

- a. Decrease pain threshold
- b. Cure the disease
- c. Raise their ischemic threshold
- d. Increase life expectancy

22. Clients who have been diagnosed with CAD should always carry _____ with them.

- a. Proof of insurance
- b. Two forms of identification
- c. Plavix
- d. A cell phone

23. Which of the following is an appropriate exercise recommendation for people with angina?

- a. Warm-up and cool-down can be eliminated
- b. Resistance training should be done with light weights
- c. Heart rate does not need to be monitored
- d. Strength training should encourage Valsalva exercises

24. Atrial fibrillation can have all of the following effects on exercise response except:

- a. A reduction in exercise tolerance
- b. An increased stroke volume and cardiac output
- c. A rapid, irregular ventricular response
- d. A higher heart rate at any level of exercise

25. Which of the following statements regarding exercise and persons with atrial fibrillation is false?

- a. Maximal heart rate is a valid measure for exercise intensity
- b. Underlying heart diseases are the major concern in exercise programming
- c. AF can be intermittent and this can influence a person's response tolerance and level of fatigue
- d. Digoxin helps prevent "false positive" ECG changes

26. Which of the following statements regarding atrial fibrillation and exercise programming is true?

- a. Rating of perceived exertion should be between 7 and 9
- b. Aerobic exercise should only be done a maximum of 3 days/week
- c. Weight machines are the recommended mode for strength training
- d. Aerobics should be done in 15–20 minute sessions

27. "Loss of normal heart rhythm, usually due to a ventricular tachyarrhythmia, can lead to death if normal heart rhythm is not restored," describes _____?

- a. Chronotropic incompetence
- b. Sudden cardiac death syndrome
- c. Acute myocardial infarction
- d. Vasospastic angina

28. Which of the following statements is false?

- a. A pacemaker with the code DDDR is dual chamber based, dual chamber sensed, dual chamber inhibited response
- b. The first three letters of the standardized code for pacemakers is used to indicate the chamber paced, the chamber sensed, and the response to a sensed event
- c. In persons who have normal SA node function, the VVIR is considered the optimal pacing mode
- d. None of the above

29. When an ICD lead detects a tachyarrhythmia, the unit can _____ and/or _____ to terminate the arrhythmia.

- a. Pace-terminate the arrhythmia; release chemicals to slow the heart rate
- b. Pace-terminate the arrhythmia; deliver electric cardioversion/defibrillation shocks
- c. Prevent syncope and hypotension; deliver shock therapy
- d. Release nitric oxide to vasodilate coronary arteries; deliver shock therapy

30. All of the following statements regarding exercise programming for individuals with ICD's and pacemakers is true except:

- a. The upper limit of the exercise training heart rate should be set below the person's ischemic threshold and ICD activation threshold
- b. The type and function of the pacemaker should be known prior to starting a program
- c. Circuit training is an appropriate strength training program
- d. The risk of inappropriate shocks decreases with exercise

31. The predominate cause of mitral stenosis is:

- a. Rheumatic fever
- b. Bacterial destruction
- c. High cholesterol
- d. Lupus

32. Which of the following statements regarding aortic stenosis is true?

- a. The symptoms for AS usually occur between the ages of 40 and 50
- b. People who have symptomatic AS are not candidates for exercise programs
- c. Angiography is used to diagnose the severity of AS
- d. Even mild stenosis is not well tolerated and should not exercise

33. Which valvular heart disease is most often congenital?

- a. Pulmonic stenosis
- b. Mitral stenosis
- c. Aortic regurgitation
- d. Tricuspid regurgitation

- 34. All of the following statements regarding exercise programming and valvular heart disease are true except:**
- Exercise tolerance may decrease in those with aortic regurgitation
 - Asymptomatic patients with mitral regurgitation who have normal sinus rhythm, left ventricular function and pulmonary artery pressure have no exercise restrictions
 - Aerobic exercise should be done 3—7 days/week with a long term goal of increasing the heart rate to 60—80% of aerobic capacity
 - Strength training should be avoided for persons with significant aortic stenosis and pulmonic stenosis
- 35. Chronic heart failure is associated with all of the following hemodynamic or organ changes except:**
- Decreased cardiac output during exercise
 - Lower than normal filling pressures
 - Renal insufficiency
 - Impaired vasodilation
- 36. The majority of individuals with CHF are limited by _____ rather than by _____ during exercise testing.**
- Dyspnea; angina
 - Dyspnea; leg fatigue
 - Angina; dyspnea
 - Leg fatigue; dyspnea
- 37. Which of the following is not a valid statement regarding the effects of exercise training on persons with CHF?**
- Exercise training can improve skeletal muscle metabolism
 - Exercise training can improve vasodilatory capacity
 - Exercise training can significantly strengthen the heart muscle and improve left ventricular function
 - Exercise training is effective in lessening CHF symptoms and improving quality of life

- 38. Which of the following statements regarding exercise programming for persons with CHF is false?**
- a. Warm-up and cool-down sessions should be longer
 - b. Exercise sessions should be lower intensity and longer duration
 - c. RPE and dyspnea scales should be used for intensity
 - d. Health status stays stable with CHF and therefore does not require re-evaluation of their exercise program for a year
- 39. All of the following are valid causes for continued exercise intolerance after cardiac transplant surgery except:**
- a. Right ventricular dysfunction
 - b. Loss of skeletal muscle mass
 - c. Pulmonary diffusion abnormalities
 - d. Inactivity before surgery
- 40. Which of the following is not a valid difference between cardiac transplant patients and healthy individuals in response to exercise?**
- a. Persons with cardiac transplant have an increased resting heart rate
 - b. Persons with cardiac transplant have an increased cardiac output
 - c. Persons with cardiac transplant have a higher resting blood pressure
 - d. Persons with cardiac transplant have a reduced chronotropic response to exercise
- 41. Which of the following statements regarding medications for persons with cardiac transplant is false?**
- a. High doses of corticosteroids can increase bone density and decrease the risk of fractures
 - b. There may be a need for a longer warm-up
 - c. Calf cramps occur in about 15% of patients
 - d. Prednisone may cause fluid retention and decrease leg strength

42. All of the following statements regarding cardiac transplant patients and exercise programming are true except:

- a. Aerobic exercise should be performed 4 to 5 times per week gradually increasing duration
- b. Strength training for the legs, lower back, arms, and shoulders should be performed 2 to 4 days per week
- c. To counteract the effects of corticosteroids, high intensity strength training should be performed 3 to 4 days per week with 3 sets of 15 to 20 reps
- d. To guide intensity, a rating of perceived exertion between 11 and 14 is recommended

43. Which of the following statements regarding high blood pressure and adults is false?

- a. An adult with a blood pressure of 138/92 would be classified as having Stage 1 hypertension
- b. The majority of hypertensive adults seen in clinical practice have no identifiable cause for their high blood pressure
- c. Immediately following a 30 to 45 minute bout of dynamic exercise there is increase in systolic BP that can last several hours
- d. None of the above are false

44. Regular aerobic exercise has been shown to be effective in reducing both systolic and diastolic blood pressure by an average of about _____ points in persons with Stage I or II hypertension.

- a. 10 -20
- b. 5-7
- c. 12-18
- d. 12 - 18

45. All of the following lifestyle changes are recommended for control of high blood pressure and/or cardiovascular risk reduction except:

- a. Maintain adequate sodium intake of at least 2.4 g/day
- b. Stop smoking
- c. If overweight, lose weight
- d. Perform aerobic activity for 30—45 minutes on most days of the week

46. Which of the following statements regarding exercise programming for persons with hypertension is true?

- a. For persons whose resting BP is greater than 200/115mmHG, performing aerobic exercise for 30—60 minutes six days a week will lower their BP without medication
- b. Large muscle aerobic activities should be performed 3—4 days per week
- c. Performing resistance exercise using low resistance and high repetitions lowers BP as effectively as aerobic exercise
- d. Performing aerobic exercise at lower intensities appears to lower BP as much as performing aerobic exercise at higher intensities

47. In order to assess peripheral artery disease the _____ is measured and is expressed relative to the _____, and is termed the _____.

- a. Ankle systolic blood pressure; radial systolic blood pressure; ankle/radial blood pressure index
- b. Ankle systolic blood pressure; brachial systolic blood pressure; ankle/brachial systolic blood pressure index
- c. Ankle blood pressure; brachial blood pressure; peripheral blood pressure index
- d. Ankle diastolic blood pressure; brachial diastolic blood pressure; brachial/ankle peripheral pressure index

48. Exercise training has all of the following effects on peripheral arterial disease except:

- a. Blood flow is distributed more favorably
- b. Blood flow in the legs is increased
- c. Reliance on anaerobic metabolism is increased
- d. Walking economy and oxygen uptake kinetics are improved

49. When performing exercise testing on clients with PAD, holding on to the handrails is discouraged because:

- a. The patient puts stress on their arms and upper body
- b. Balance problems can not be detected
- c. It alters metabolic demands which can cause variability in claudication times
- d. It is not part of the treadmill test protocol

50. For persons with PAD the recommended mode of exercise is _____ at an intensity that causes a _____ on a 4-point scale.

- a. Cycling two times a week; pain score of 3
- b. Interval walking three times a week; pain score of 3
- c. Stair climbing four times a week; pain score of 2
- d. Interval walking five times a week; pain score of 2

51. Aneurysms most commonly occur in the _____ and are referred to as _____.

- a. Brain; aortic artery aneurysm
- b. Aorta; atherosclerotic aneurysm
- c. Brain; berry aneurysm
- d. Aorta; aortic root aneurysms

52. The primary cause of congenital aortic aneurysms is _____, and persons with this disease are limited in the _____ training they can perform.

- a. Marfan's syndrome; flexibility
- b. Hypertension; resistance
- c. Polycystic kidney disease; flexibility
- d. Atherosclerosis; aerobic

53. All of the following statements regarding aneurysms and the affects of exercise are true except:

- a. Exercise has no effect on the progressive enlargement of an aneurysm
- b. Exercise can increase the risk of tearing of the arterial wall
- c. Exercise can increase the risk of rupture of an aneurysm
- d. All of the above are true

54. Which of the following statements regarding recommendations for exercise programming for persons with aneurysmal disease is false?

- a. Heart rate should never go higher than 100 contractions per minute
- b. Resistance exercise should be completely avoided
- c. Aerobic activities should be performed 3—4 days per week
- d. Walking and swimming are recommended aerobic activities

55. What is the primary cause of COPD?

- a. Cat dander
- b. Cigarette smoking
- c. Genetics
- d. Food allergies

56. All of the following statements regarding COPD are true except:

- a. In obstructive pulmonary disease, airways tend to become smaller as lung volume decreases therefore airway obstruction is compromised mainly during expiration
- b. Persons with COPD become aerobically deconditioned due to their reduced ability to do physical activity
- c. Smoking related chronic bronchitis, a restrictive pulmonary disease, is intermittent with varying degrees of severity
- d. Muscular dystrophy can cause a restrictive ventilatory defect due to neuromuscular weakness of the respiratory muscles

57. Which of the following statements regarding the effects of COPD on exercise response is false?

- a. A person with a restrictive pulmonary disease may have limited inspiratory capacity, but usually will have unimpeded expiration
- b. A smoker can have increases in carboxyhemoglobin which will impair blood oxygen transport
- c. A person who has emphysema could suffer from hypoxemia during exercise
- d. Psychological factors rarely limit exercise in those with COPD

58. Patients with COPD should usually exercise _____, use _____ to monitor intensity, and may have to initially start with _____.

- a. RPE between 5 and 10/20; exercise intervals of 5—10 minutes
- b. A heart rate monitor; tai chi and balance exercises
- c. Dyspnea scale; 20—30 minutes of walking initially
- d. RPE or dyspnea; exercise intervals of 5—10 minutes initially

- 59. All of the following statements regarding chronic restrictive pulmonary disease are true except:**
- Diastolic ventricular filling can potentially be restricted due to reduced compliance of the cardiac fossa
 - Because breathing is more difficult, the blood flow requirement of the respiratory muscles is increased which decreases the blood flow available for working limb muscles
 - In neuromuscular and skeletal diseases of the thorax, ventilatory muscle strength and endurance is not impaired, but ventilatory mechanical efficiency is reduced
 - Clients with chronic restrictive pulmonary disease can be disproportionately debilitated not only by their pulmonary dysfunction, but also by the development of cardiovascular deconditioning that accompanies progressive pulmonary disease
- 60. Which of the following is not a valid consideration or recommendation for exercise testing for individuals with chronic restrictive pulmonary disease?**
- Medications should not be taken prior to testing in order to get a baseline measure of disability due to pulmonary dysfunction
 - Supplemental oxygen may be required during testing to maintain the oxyhemoglobin saturation above 90%
 - Aerobic testing can be done on an ergometer or a treadmill
 - Flexibility testing can be done using a sit and reach test to measure hip, lower back, and hamstring flexibility
- 61. Which of the following statements regarding exercise programming for clients with chronic restrictive pulmonary disease is false?**
- Aerobic exercise such as walking, cycling, or swimming should be done 3—7 days per week
 - Intensity should be monitored using RPE and dyspnea
 - For sedentary clients, the initial training program should be 30—45 minutes of continuous exercise performed 2—3 days per week
 - Strength training should be done 2—3 days per week using low resistance and high number of repetitions

- 62. All of the following statements regarding asthma are true except:**
- Asthma can vary widely in severity from individual to individual
 - For persons with EIA, wheezing, coughing, and/or shortness of breath are symptoms that can occur 5 to 15 minutes after exercising
 - Persons with asthma, no matter how mild, should not participate in high intensity athletic events
 - Exercise can provoke or exacerbate an asthmatic episode
- 63. When conducting exercise testing on persons with asthma, it is recommended testing be done in _____ since asthmatic symptoms are worse in the _____.**
- Mid to late morning; early morning
 - Mid to late morning; early evening
 - Early morning; late afternoon
 - Early afternoon, mid to late morning
- 64. Which of the following statements regarding exercise programming for clients with asthma is false?**
- For persons with mild asthma or EIA, an aerobic program similar to what is prescribed according to ACSM recommendations for healthy sedentary persons can be completed
 - Use of the Borg scale is recommended to assess intensity of breathlessness associated with exercise
 - Clients with asthma should learn to self monitor exercise intensity using a heart rate monitor
 - Large muscle activities are recommended for aerobic exercise
- 65. _____ using _____ is recommended to build endurance and strength for persons with severe asthma (ATS criteria _____.)**
- Musculoskeletal conditioning; free weight exercises; $FEV_1 = 40-60\%$ predicted
 - Musculoskeletal conditioning; circuit training exercises; $FEV_1 < 40\%$ predicted
 - Musculoskeletal improvement; free weight exercises; $FEV_1 < 60\%$ predicted
 - Musculoskeletal improvement; circuit training exercises; $FEV_1 < 60\%$ predicted

- 66. Cystic fibrosis is a _____ that causes mucus blockage that can effect both the _____ and the _____ .**
- Cardiovascular disease; heart; lungs
 - Genetic disease; heart; lungs
 - Genetic disease; pancreas; lungs
 - Inherited disease; lungs; liver
- 67. All of the following statements regarding the effects of cystic fibrosis on exercise response are true except:**
- In persons where the disease has progressed, peak heart rate may be below age-predicted maximal values
 - Exercise can be limited by dyspnea, chest pain and excessive coughing in persons with severe lung disease
 - Heart rate, oxygen consumption, and minute ventilation may be very low during sub-maximal exercise
 - Exercise capacity may be limited by malnutrition and deconditioning
- 68. When performing exercise testing on individuals with cystic fibrosis, the preferred method for testing aerobic fitness is the _____ and _____ is reported as the major reason for terminating the test.**
- Treadmill; excessive coughing
 - Treadmill; leg fatigue
 - Cycle ergometer; excessive coughing
 - Cycle ergometer; leg fatigue
- 69. Which of the following statements regarding exercise programming for persons with cystic fibrosis is false?**
- Continuous aerobic exercise for 20 to 30 minutes is recommended for most persons with CF who do not have severe lung disease
 - For persons who have evidence of cor pulmonale, exercise training should be continuous and high intensity to improve aerobic capacity
 - Lifestyle changes should be recommended to encourage clients to include walking, jogging, biking, rowing, and swimming into their activities
 - Older clients with CF may have developed impaired glucose tolerance or even diabetes and this will effect their exercise program

- 70. All of the following statements regarding exercise and lung and heart lung transplant patients is true except:**
- Immunosuppressive drugs have little or no effect on exercise response
 - Exercise related bronchospasms and dyspnea may be effected by bronchial hyper responsiveness seen in lung transplant patients
 - There may be a decrease in muscle mass/force related to corticosteroids
 - There may be an alteration in muscle fiber proportion and reduced mitochondrial activity which may contribute to a reduction in aerobic capacity
- 71. Chronic graft rejection, or _____, may affect _____ of lung transplant patients by five years**
- Ventilatory obliterans syndrome; two-thirds
 - Ventilatory obliterans syndrome; one-half
 - Bronchiolitis obliterans syndrome; two-thirds
 - Bronchiolitis obliterans syndrome; one-half
- 72. All of the following are valid objectives for exercise testing on pre-or post-transplant individuals except:**
- Assess the severity of disease and risk of death while awaiting transplant
 - Assess progress or changes in fitness and cardiorespiratory responses to exercise for post-transplant individuals
 - Observe cardiorespiratory and metabolic responses to exercise for both pre- and post-transplantation
 - All of the above are valid
- 73. To monitor intensity during exercise, rating of perceived exertion may be preferable for post-transplant individuals due to _____ which may limit _____:**
- Calcium-channel blockers; blood pressure response
 - Beta blockers; heart rate response
 - Calcium-channel blockers; heart rate response
 - Beta blockers; blood pressure response

74. _____ are the four principal lipoprotein classes with _____ being the lipoprotein involved in transport of cholesterol from the peripheral tissues back to the liver.
- Chylomicrons, VLDL, LDL, and HDL; chylomicrons
 - Chylomicrons, VLDL, LDL, and HDL; HDL
 - Lipoprotein lipase, VLDL, LDL, and HDL; HDL
 - Lipoprotein lipase, LDL, IDL, and HDL;
75. The primary therapy for reducing lipid and lipoprotein levels is:
- Diet and exercise therapy
 - Diet and weight loss therapy
 - Pharmacological therapy
 - Hygienic therapy
76. Lipid lowering medications generally have few effects on _____, but they can have a side effect that causes _____.
- Weight loss; muscle discomfort
 - Hemodynamics or electrocardiographs; muscle discomfort
 - Muscle tissue; changes to hemodynamics and electrocardiographs
 - Muscle tissue; increases in blood pressure
77. Which of the following is not a valid recommendation for exercise programming for a person with hyperlipidemia?
- Emphasis should be on decreasing HDLs
 - Exercise should be performed at moderate intensities of 40-80% of maximum
 - Preferably exercise should be done 5 days a week or more
 - Exercise should be performed once a day for 20-60 min/session or twice a day for 10-30 minutes
78. Renal failure may cause all of the following consequences except:
- Peripheral neuropathy
 - Elevated triglycerides and increased high density lipoprotein cholesterol
 - Left ventricular hypertrophy
 - Secondary hyperparathyroidism

- 79. The primary objective of exercise training for persons with renal failure is _____.**
- Increasing stroke volume
 - Improving VO₂ peak by 30%
 - Maintain exercise capacity
 - Increasing cardiac output
- 80. Which of the following statements regarding exercise testing and ESRD and ESLD individuals is not valid?**
- Exercise testing is a good diagnostic tool to use to assess exercise limitations for both ESRD and ESLD patients
 - ESRD patients should perform exercising testing on a non-dialysis day
 - When performing strength testing, it is recommended a 10-12 RM be used
 - ESRD patients treated with continuous ambulatory peritoneal dialysis should be tested without fluid in their abdomen
- 81. Which of the following statements regarding recommendations for exercise programming for ESRD and ESLD patients is false?**
- Exercise training is considered an integral part of the treatment plan for ESRD and ESLD patients as the way to increase the functional capacity and VO₂ peak
 - Thera-Bands, free weights, or weight machines can be used for strength training concentrating on low weights and high repetitions
 - Aerobic exercise performed at 50-90% peak HR, 4-7 days per week progressing from 20 to 60 minutes per session is appropriate
 - Activity-specific exercises are recommended
- 82. For individuals who have long standing diabetes, _____ is a common disease risk.**
- Chronic bronchitis
 - Obesity
 - Cancer
 - Silent ischemia

- 83. Which of the following statements is false regarding Type 2 diabetes mellitus?**
- Insulin therapy is always required in the treatment of Type 2 diabetes
 - Common features of Type 2 diabetes are peripheral tissue insulin resistance and defective insulin secretion
 - The majority of people diagnosed with Type 2 diabetes are obese at onset
 - The majority of people with diabetes mellitus have Type 2 diabetes
- 84. All of the following affect the exercise response of a person with diabetes except:**
- The intensity, duration, and type of exercise completed
 - The timing, amount, and type of food intake prior to the exercise session
 - The blood glucose level prior to the exercise session
 - The rest and recovery time between sessions being less than four days
- 85. Which of the following statements is not a contraindication for exercise for a person with diabetes?**
- The presence of active retinal hemorrhage or recent therapy for retinopathy
 - The person is ill or has an infection
 - The blood glucose level is 100 to 120 mg/dl which increases the risk of hypoglycemia
 - The blood glucose level is above 250 mg/dl and ketones are present
- 86. Type III obesity classification is associated with _____.**
- Excess body mass or percentage fat
 - Excess abdominal visceral fat
 - Excess gluteal-femoral fat
 - Excess subcutaneous truncal-abdominal fat
- 87. Which of the following statements regarding obesity is true?**
- The distribution of body fat may contribute more to disease than total body fat
 - Exercise training is very effective in reducing body weight in morbid obesity but is not as effective in moderate obesity
 - BMI can be used to estimate body fat distribution
 - Both a and c

- 88. All of the following statements are true regarding individuals who are most likely to be successful in weight loss except:**
- The person has a sincere desire to lose weight
 - The person is slightly to moderately obese
 - The person became overweight as an adult
 - The person has excess abdominal visceral fat
- 89. The most important consideration in exercise programming for obese adults is:**
- Weight loss
 - Injury prevention
 - Risk of hyperthermia
 - Client motivation and goal setting
- 90. When performing exercise testing on an elderly, frail adult all of the following recommendations should be observed except:**
- Medical history and current medication should be reviewed prior to testing
 - Observe client for any signs of balance difficulties, heat illness, or exhaustion during testing
 - Focus the test on shorter work stages with increases in grade rather than speed
 - Individualize the test to meet the needs of the client
- 91. To assess muscle strength for a frail, elderly adult a _____ can be used.**
- 6 or 12 minute walk test
 - Handheld dynamometer
 - 1-legged stance test
 - Isotonic machines
- 92. The primary goal of exercise for frail, elderly adults is:**
- Increase strength and aerobic capacity
 - Prevent disease progression
 - Increase functional capacity and independence
 - Prevent falls and improve balance

- 93. Which of the following statements regarding exercise programming and frail, elderly adults is false?**
- Walking is always a good activity for all elderly adults
 - Ankle weights, wrist weights, and thera-bands can be used for low level strength training
 - Intensity should not be the main focus
 - Avoid isometric and static resistance exercises
- 94. All of the following statements regarding cancer are true except:**
- Cancer treatments can include surgery, radiation, chemotherapy and immunotherapy, or some combination
 - If the client does not have a recurrence of cancer within five years of treatment, many cancers are considered cured
 - Cancer is considered a single disease that involves excessive uncontrolled cellular proliferation in a localized area of the body
 - The response to exercise of persons with cancer is influenced by where the cancer is located, if it has metastasized, and the side effects of the treatment
- 95. Which of the following treatment effects is not usually associated with chemotherapy?**
- Skin breakdown
 - Fatigue
 - Nerve damage
 - Muscle pain
- 96. Which of the following statements regarding exercise programming for persons with cancer is false?**
- The exercise goal for cancer survivors is to return to a healthy, active lifestyle and incorporate exercise into their lifestyle
 - The mode of exercise should accommodate any disease or treatment specific limitations the client may have
 - The exercise prescription should accommodate for periods of increased fatigue and for cycles of treatment
 - The exercise duration should always be limited to ten minutes or less and exercise frequency should always be limited to two days per week

- 97. Under which of the following conditions should a cancer patient's exercise session be postponed?**
- Clients with neutropenic fever
 - Clients with uncontrolled vomiting or diarrhea
 - Clients who have an acute change in general health status
 - All of the above
- 98. The correct definition of AIDS is:**
- 5 or more of the 25 different AIDS-defining illnesses
 - A CD4 + T-cell count below 200
 - A CD4 + T=cell count above 200
 - A diagnoses of HIV
- 99. Which potential HIV-associated change might lead to abnormal neuroendocrine responses at moderate and high intensity test stages during graded exercise stress tests?**
- Asymptomatic AIDS
 - Asymptomatic HIV
 - Symptomatic HIV
 - AIDS
- 100. Which drug stops the processing of HIV genetic material within the infected cell?**
- Aerosolized pentamidine
 - Transcriptase inhibitors
 - Protease inhibitors
 - Nucleoside analogs
- 101. All of the following are recommendations to follow for exercise programming for persons with HIV/AIDS except:**
- Stretching should be performed after each exercise session
 - Strength training should include keeping frequency constant and increasing resistance based on the 2+2 method
 - Exercise progression should focus on increasing exercise intensity and duration as quickly as possible
 - Severe AIDS and comorbidities may require intensity restrictions

- 102. The weight gain experienced by many individuals after organ transplant was once thought to be due to _____, but evidence now shows it may be due to _____.**
- a. Increased appetite due to induced diabetes; extended rest and recovery time
 - b. Extended rest and recovery time; increased appetite due to corticosteroid use
 - c. Increased caloric intake due to increased physical activity; increased appetite due to corticosteroid use
 - d. Increased appetite due to corticosteroid use; increased caloric intake with minimal physical activity
- 103. Which of the following statements regarding the effects of an organ transplant on exercise response is true?**
- a. Liver transplant patients have improved VO₂ peak
 - b. Transplant recipients who participate in regular physical activity have a higher exercise capacity
 - c. Transplant recipients may exhibit exaggerated blood pressure responses to a single session of exercise
 - d. All of the above
- 104. Which of the following transplant recipients may exhibit a blunted heart rate response to exercise?**
- a. Pancreas-kidney recipient
 - b. Diabetic kidney only recipient
 - c. Liver recipients
 - d. Kidney recipient
- 105. All of the following are valid recommendations for exercise programming for organ transplant recipients except:**
- a. Strength training may need to be progressed slowly due to the muscle wasting effects of prednisone
 - b. Exercise training should continue during rejection episodes with no change to program intensity or duration
 - c. Extreme fatigue may be experienced by liver transplant recipients being treated for hepatitis C
 - d. Some transplant recipients are able to progress to jogging or competitive activities while others better tolerate non-weight bearing activities

- 106. All of the following statements regarding chronic fatigue (CFS) are true except:**
- a. Symptoms may include painful lymph nodes, low-grade fever, frequent sore throats, headache, and difficulty with concentration and memory
 - b. Diagnosis of chronic fatigue is based on symptomatology and exclusion of other conditions
 - c. CFS only afflicts well-educated Caucasian women
 - d. Nutritional deficiency, viral infection, immunologic dysfunction, are some of the possible proposed causes of CFS
- 107. Because diagnosed CFS clients are often very deconditioned, when exercise testing is performed it is recommended protocols should be initiated at work rates _____ and increasing _____.**
- a. Below 2 METS; .5 to 1 MET per stage
 - b. Below 2 METS; 1 to 1.5 METS per stage
 - c. Below 2 METS; 1 to 2 METS per stage
 - d. Below 3 METS; 1 MET per stage
- 108. Which of the following is not a valid recommendation for exercise programming for a person diagnosed with CFS?**
- a. Aerobic exercise should begin at a low level with an activity the client can tolerate
 - b. Preventing progressive de-conditioning should be the exercise programming goal
 - c. Strength training should focus on maintaining strength levels adequate for completing activities of daily living
 - d. Flexibility exercise of any type should be avoided as stretching could create more fatigue
- 109. Progression in the exercise program should focus on _____ and clients should be told what to expect during exercise training so they can _____.**
- a. Increasing frequency; rest for several days
 - b. Increasing duration; budget their energy
 - c. Increasing intensity; ration their energy
 - d. Increasing intensity and duration; budget their energy

- 110. Fibromyalgia is a condition characterized by _____ and the majority of people afflicted with this disorder are _____.**
- a. Joint pain throughout the body; women over 55 years of age
 - b. Joint pain throughout the body; women between 20 and 55 years of age
 - c. Chronic diffuse pain in specific "tender points"; women over 55 years of age
 - d. Chronic diffuse pain in specific "tender points"; women between 20 and 55 years of age
- 111. Which of the following exercise activities is recommended for individuals with fibromyalgia?**
- a. Vigorous or high impact exercise
 - b. Sustained overhead exercise activities
 - c. Exercises involving eccentric muscle contractions
 - d. Low impact activities minimizing eccentric contractions
- 112. Which of the following statements regarding programming for individuals with fibromyalgia is true?**
- a. Aerobic activities should be moderate intensity and can be either high or low impact
 - b. Strength training activities should be intense enough to increase strength and muscle mass
 - c. Flexibility exercises alone have been shown to be very beneficial for long term relief of symptoms
 - d. It may be appropriate to increase the duration of aerobic exercise sessions to 40 to 60 minutes since individuals with fibromyalgia usually only work out twice a week
- 113. Which of the special considerations regarding exercise programs for individuals with fibromyalgia is false?**
- a. Morning exercise should be avoided
 - b. Cycling is a good option for exercising since it is non-weight bearing
 - c. Clients may have increased symptoms
 - d. Supervision may help increase adherence

- 114. The primary symptoms of anemia include easy fatigability, shortness of breath with exercise, and decreased work capacity and are related primarily to:**
- a. An increase in the number of red blood cells
 - b. A reduction in the quantity of hemoglobin
 - c. Iron, B12, or folate deficiency
 - d. Both b and c
- 115. All of the following statements regarding the effect anemia has on exercise response are true except:**
- a. Due to their low levels of hemoglobin, individuals with sickle cell anemia and thalassemia are severely limited in their response to exercise
 - b. Individuals with sickle cell trait have normal hemoglobin levels and their response to exercise is not limited
 - c. Sickle cell trait is a benign form of anemia and does not effect young athletes or their response to intense exercise
 - d. Peak performance and sub-maximal endurance are reduced in individuals with anemia
- 116. All of the following are valid exercise considerations for individuals with anemia except:**
- a. Optimal frequency and duration should be 3-5x/week for 20-40 minutes
 - b. For individuals with known or suspected heart disease, until the cause of their anemia has been identified and treated, their exercise training should be carefully monitored
 - c. Moderate exercise and liberal fluid intake is recommended for individuals with sickle cell anemia or trait
 - d. Vigorous exercise may elicit or unmask claudication
- 117. An insufficient number of platelets, a common platelet disorder that causes bleeding, is known as ____.**
- a. Coagulation
 - b. Thrombocytopenia
 - c. Hemophilia
 - d. Fibrinolysis

- 118. Lifting heavy weights in persons with platelet counts between _____ is not recommended due to the risk of _____.**
- a. 20,000 and 50,000/mm³; increases in blood pressure
 - b. 50,000 and 100,000/mm³; intracranial bleeding
 - c. 20,000 and 50,000/mm³; retroperitoneal bleeding
 - d. 50,000 and 100,000/mm³; retroperitoneal bleeding
- 119. All of the following statements regarding the effect of bleeding and clotting disorders on exercise training are true except:**
- a. Non-weight bearing aerobic exercise, strength training, and flexibility training is beneficial for persons with hemophilia
 - b. Studies on the effect of exercise training on the balance of thrombosis and fibrinolysis have not given consistent results
 - c. Exercise training can increase blood pressure and may increase C-reactive protein
 - d. It is recommended that if an athlete develops a DVT, they should lay off from sporting activities for six months or more until the thrombus has resolved
- 120. Which of the following is not a valid recommendation or special consideration for exercise programming for persons with bleeding or clotting disorders?**
- a. Flexibility training may help to restore ROM in hemarthritic joints
 - b. Contact sports should be avoided by individuals who have a bleeding disorder or are receiving medical anticoagulation
 - c. The goal of exercise training for persons with bleeding or clotting disorders is to improve endurance, strength, and flexibility
 - d. Aspirin and other nonsteroidal anti-inflammatory drugs can be used as analgesics or thrombosis prophylaxis
- 121. The two most common rheumatologic diseases are _____, which is a _____, and _____, which is a _____.**
- a. Lupus; degenerative joint disease; gout; inflammatory disease involving multiple joints
 - b. Osteoarthritis; degenerative joint disease; rheumatoid arthritis; inflammatory disease involving multiple joints
 - c. Osteoarthritis; inflammatory disease involving multiple joints; rheumatoid arthritis; degenerative joint disease
 - d. Psoriatic arthritis; degenerative joint disease; rheumatoid arthritis; inflammatory disease involving multiple joints

- 122. All of the following statements regarding exercise response in persons having osteoarthritis or rheumatoid arthritis (in the absence of acute flare-ups) is true except:**
- a. Biomechanical inefficiency, gait abnormalities, pain and stiffness can decrease the metabolic cost of exercise by almost half
 - b. Joint range of motion may be restricted by stiffness, swelling, pain and other conditions
 - c. Exercise mode for aerobic tests and strength tests is determined by the site and severity of joint involvement
 - d. Walking speed and cycle rpms may be affected by the persons inability to perform rapid, repetitive movements
- 123. Which of the following statements regarding exercise programming for persons with arthritis is false?**
- a. Low impact activities such as walking, swimming, water aerobics, and cycling should be used for aerobic conditioning
 - b. Stretching activities should not be included in the program
 - c. Time goals should be set rather than distance goals
 - d. High-repetition, high resistance, and high impact exercise activities are not recommended
- 124. Which of the following statements regarding exercise and rheumatologic disease is true?**
- a. There are only seven rheumatologic diseases with Lupus and Gout being the two most common
 - b. Loss of flexibility, muscle atrophy, weakness, depression, and fatigue are common problems in inflammatory disease, but not in degenerative conditions
 - c. Exercise dose can be accumulated by performing several sessions throughout the day
 - d. Avoid exercising in the afternoon for clients with rheumatoid arthritis because of increased stiffness and fatigue
- 125. All of the following statements regarding lower back pain are true except:**
- a. It is frequently difficult to identify the specific source of lower back pain
 - b. Nocioception signals can persist even after the affected tissue has healed
 - c. Non-specific low back pain that has no known cause is the most common form of low back pain syndrome
 - d. A persons interpretation of their lower back pain can be influenced by past experience, work, and leisure activity factors

- 126. Which group of low back clients should delay hip and back exercises for at least 2 weeks?**
- Arthritic low back pain
 - Psychological low back pain
 - Chronic low back pain
 - Acute low back pain
- 127. Which of the following statements regarding exercise programming and lower back pain is false?**
- High impact aerobic activities are not recommended
 - Hip and back exercise should be started one week or less after the onset of lower back pain
 - The medications commonly used to treat lower back pain (such as aspirin, ibuprofen, acetaminophen, and/or non-narcotic analgesics) should not affect exercise capacity
 - Exercise programming goals for persons with lower back pain are to improve exercise tolerance and muscular endurance and prevent debilitation caused by inactivity
- 128. All of the following statements regarding osteoporosis are true except:**
- WHO defines osteopenia as BMD > 1 standard deviation below young normal values, and osteoporosis as BMD > 2.5 standard deviations below young normal
 - Low body weight can decrease the risk of developing osteoporosis
 - Women may experience an acceleration of bone loss after menopause due to estrogen deficiency
 - Excessive intake of protein can increase one's risk for osteoporosis
- 129. For most persons with osteoporosis it is recommended that during exercise testing they _____.**
- Test cardiovascular function on a treadmill if they have severe kyphosis
 - Avoid any strength testing
 - Have ECG monitoring for ischemic responses
 - Avoid balance training since this would be high risk

- 130. Recommendations for exercise programing for those with osteoporosis include all of the following EXCEPT:**
- a. Floor calisthenics and some lifting activities need to be modified to avoid forward flexion and twisting.
 - b. Specific exercises focusing on balance can be helpful in individual cases
 - c. Aerobic weight bearing activities should be no more than 2 days per week due to the risk of fractures
 - d. Vigorous impact oriented activities are appropriate for those not yet classified as severely osteoporotic
- 131. Which of the following is not considered a functional activity appropriate for someone with osteoporosis?**
- a. Brisk walking
 - b. Sport activities
 - c. Chair sit to stand
 - d. Balancing exercises
- 132. Which of the following statements describes a vascular amputee?**
- a. Persons over 55 years of age who have had LL amputation as a result of trauma, tumors, or congenital deformities
 - b. Persons over 55 years of age who have had LL amputation as a result of type 2 diabetes or atherosclerosis
 - c. Persons younger than 50 years of age who have had LL amputation as a result of trauma, tumors, or congenital deformities
 - d. Persons younger than 50 years of age who have had LL amputation as a result of type 2 diabetes or atherosclerosis
- 133. All of the following statements regarding lower leg amputee exercise recommendations except:**
- a. Those with lower leg amputations can follow the same frequency, intensity, and time as the apparently healthy
 - b. Long term walking or jogging exercise can lead to skin breakdowns or infections for some LL amputees
 - c. Aerobic exercise should incorporate enough muscle mass to create improvements in cardiovascular fitness
 - d. Strength training and stretching would follow the same guidelines as those with muscular dystrophy

- 134. Which of the following statements regarding recommendations for exercise testing for LL amputees is false?**
- a. When testing for strength, free weights should be used rather than machines
 - b. Walking capacity should be tested using distances of 500-600 yards for physically fit unilateral above or below knee amputees
 - c. An arm crank ergometer, upper body ergometer, or the arm mechanism of an arm-leg ergometer should be used with LL amputees unable to involve their lower extremities when using an arm-leg ergometer
 - d. Walking tests should be performed on a smooth, level surface
- 135. The cycle ergometer is recommended for all amputees except:**
- a. Unilateral above-knee and bilateral below the knee
 - b. Unilateral above-knee and bilateral above the knee
 - c. Bilateral below-knee and bilateral above-knee
 - d. Bilateral above-knee and unilateral below-knee
- 136. All of the following are primary factors that increase a person's risk of developing a cerebrovascular accident except:**
- a. Alcoholism
 - b. High blood pressure
 - c. Diabetes mellitus
 - d. Osteoarthritis
- 137. Neurological impairment in which part of the brain can lead to inability to coordinate movement?**
- a. Frontal lobe
 - b. Brain stem
 - c. Cerebellum
 - d. Cerebrum
- 138. All of the following statements regarding exercise testing for individuals who have experienced a CVA are true except:**
- a. A combination arm/leg ergometer can be used for aerobic testing
 - b. A treadmill should never be used for aerobic testing regardless of the amount of motor impairment the person may have
 - c. It is recommended that exercise testing should be monitored with a 12-lead ECG and supervised by a physician
 - d. When completing flexibility tests, joint range of motion can be measured using a goniometer

- 139. Which of the following statements regarding recommendations for exercise programming for individuals who have experienced a CVA or TBI is false?**
- a. During the initial weeks of training, an intermittent training protocol might be most suitable for very deconditioned clients
 - b. Aerobic exercise programs should focus on both increasing the level of physical fitness and reducing the risk factors associated with CVA
 - c. Ballistic stretches for flexibility are beneficial
 - d. A client who lacks motivation might do better in a group setting
- 140. Injury to C1-C8 or T1 causes _____ and impairment of the _____.**
- a. Tetraplegia; arms, legs, trunk, pelvic organs
 - b. Paraplegia; trunk, legs; pelvic organs; legs, pelvic organs
 - c. Lower paraplegia; legs, pelvic organs or both
 - d. Paraplegia; legs only
- 141. All of the following are common secondary complications during exercise for individuals with spinal cord disabilities except:**
- a. Orthostatic and exercise hypotension
 - b. Excessive venous pooling
 - c. Tachycardia
 - d. Headache
- 142. Which statement regarding exercise testing for persons with spinal cord disabilities is false?**
- a. Work through shoulder pain since strong shoulders are needed to propel wheelchairs
 - b. Osteoporosis may exist in leg bones increasing the risk for fractures from a fall
 - c. To prevent inducing autonomic dysreflexia, the bladder or leg bag should be emptied prior to exercising
 - d. If blood pressure is below 80/50 mm Hg, the client should wear support stockings and an abdominal binder

- 143. It is recommended that for persons with _____, a _____ should be used for exercise**
- a. Spinal bifida; clinic or gym with air conditioning to keep the workout area cool
 - b. Tetraplegia; wheelchair treadmill
 - c. Spinal bifida; wheelchair treadmill
 - d. Tetraplegia; thermo neutral, environmentally controlled gym, lab, or clinic
- 144. Which type of muscular dystrophy is related to a deletion in chromosome 4 with the majority of clients noticing facial weakness and periscapular weakness by their late teens.**
- a. DMD
 - b. FSHD
 - c. LGMD
 - d. BMD
- 145. All of the following statements regarding muscular dystrophy and exercise testing are true except:**
- a. Pulmonary testing (spirometry) should be included as part of the exercise testing
 - b. A goniometer can be used for flexibility testing
 - c. Body composition should be measured to help provide dietary advice for maintaining an acceptable body fat percentage
 - d. Strength declines can be easily observed and noticed
- 146. Which of the following statements regarding exercise for clients with muscular dystrophy is false?**
- a. Make the activities game-like for children
 - b. When muscles are weaker than antigravity strength, formal weight training should be increased
 - c. Stretching to maintain overall flexibility should be performed daily
 - d. Exercise should be performed with a partner

- 147. All of the following special considerations for exercise programming for clients with muscular dystrophy are true except:**
- a. DMD, BMD, and LGMD should have an ECG, an echocardiogram, and a cardiology consult before exercise testing or programming
 - b. Some clients may be limited in the ability to use certain training devices due to contractures
 - c. A bone scan to determine bone mineral content should be done on any client who wants to participate in a contact sport
 - d. Clients with myotonic MD do well swimming in cold water in order to prevent overheating
- 148. Which of the following statements regarding epilepsy is false?**
- a. In 60-70% of individuals with epilepsy, the cause is of known origin and more likely the cause of head trauma
 - b. Epilepsy can be caused by head trauma, injuries, infections, and strokes
 - c. Partial seizures are the most common type of seizure
 - d. In order to be diagnosed with epilepsy, a person must have recurrent, unprovoked seizures of cerebral origin
- 149. Which type of seizure is characterized by brief episodes of 2-15 seconds of staring with lack of awareness and responsiveness?**
- a. Atonic
 - b. Myoclonic
 - c. Absence
 - d. Tonic-clonic
- 150. Which sports are typically prohibited for persons with epilepsy?**
- a. Bicycling
 - b. Horseback riding
 - c. Supervised swimming
 - d. Diving

- 151. Multiple sclerosis (MS) is an autoimmune disease that affects what system?**
- Peripheral Nervous System
 - Central Nervous System
 - Skeletal/muscular system
 - Respiratory system
- 152. All of the following statements regarding exercise testing for persons with MS are true except:**
- Recumbent leg cycle ergometry is the preferred mode for testing
 - A continuous or discontinuous protocol of 5-7 minutes stages should be used
 - The best time for exercise testing is in the morning
 - It is recommended that toe clips and heel straps be used to ensure foot stability and counteract spasticity, tremor, and weakness
- 153. Which of the following statements regarding special considerations for exercise programming for persons with MS is true?**
- MS has no effect on cognitive abilities so a person's ability to understand and follow instructions should not be compromised
 - If a client experiences any exacerbation in their disease symptoms they should be encouraged to continue exercising to prevent any physical deterioration
 - Room temperature should not be warm or hot during aerobic exercise due to impaired sweating response
 - Incontinence is common so drinking water during exercise should not be encouraged
- 154. All of the following statements regarding polio and post-polio syndrome are true except:**
- Symptoms similar to the initial onset of polio have developed in affected persons up to 40 years after they contracted acute poliomyelitis
 - Many persons with post-polio syndrome have diminished aerobic power that is related to muscle weakness and deconditioning
 - Fatigue, weakness, muscle and joint pain, sleep disorders, and heat intolerance are common symptoms of post-polio syndrome
 - Excessive body fat can also contribute to muscle weakness, fatigue, and pain by overloading already weak leg muscles

- 155. Which of the following statements regarding recommendations for exercise testing for polio and PPS clients is false?**
- a. For clients with severe lower limb involvement, a Schwinn Air-Dyne bike is recommended
 - b. The testing protocol should use a submaximal intensity over an increased period of time
 - c. It is recommended that equipment that does not require complex motor coordination be used
 - d. Flexibility can be measured using a sit and reach test or a goniometer can be used to measure specific joint active and passive ranges of motion
- 156. What intensity for cardiovascular exercise is recommended for those with post-polio syndromes.**
- a. 8 on the 1-10 RPE scale
 - b. 70-80% VO₂ max
 - c. 3-4 on the 1-10 RPE scale
 - d. 60-70% VO₂ max
- 157. All of the following are valid special considerations for exercise programming for polio or PPS clients except:**
- a. Before beginning an exercise program, previously sedentary individuals should consult a physician or a certified rehabilitation therapist
 - b. The work period should be decreased and the rest period should be increased if muscle spasms and fasciculations occur
 - c. It is recommended that a submaximal re-evaluation be performed on the client every 6-12 months
 - d. If the client experiences progressive sudden fatigue, this could be an indication of overly high intensity
- 158. Which of the following statements regarding amyotrophic lateral sclerosis (ALS) is false?**
- a. ALS is a progressive disease that occurs at a steady rate but with a rate of decline that is variable among individuals
 - b. ALS is a rare form of motor neuron disease in adults with 55 years being the average age of diagnosis
 - c. About 90-95% of those with ALS have no apparent cause for the disease
 - d. ALS can cause weakness in any of the skeletal muscles but it rarely affects the muscles of the diaphragm and trunk

- 159. Which of the following statements is true regarding exercise training for persons with ALS?**
- a. Regular exercise training can slow or even reverse the degeneration of lower and upper motor neurons
 - b. Exercise helps to strengthen the client's healthy muscle fiber and may help maintain a higher functional level for a longer time
 - c. Stretching joints affected by spastic muscles may exacerbate pain in those joints
 - d. For ALS clients, there is no exercise protocol that can help improve or maintain aerobic endurance
- 160. Which of the following statements best describes the overall goal of an exercise program for a client with ALS?**
- a. The goal of exercise is to prevent respiratory weakness
 - b. The goal of an exercise program is to help reduce the number of medications an ALS client must take
 - c. The goal of an exercise program is to maintain a higher functional level than the person would have otherwise
 - d. The goal of an exercise program is to extend the length of time the person can perform activities before becoming fatigued
- 161. The medical classification of CP depends on _____ and _____.**
- a. Age of diagnosis; what the etiology is
 - b. The brain injury site; the resulting changes in muscle tone
 - c. When the brain injury occurred; the brain injury site
 - d. When the brain injury occurred; the resulting changes in muscle tone
- 162. "The person ambulates well with assistive devices, has minimal to moderate spasticity in one or both lower extremities and is able to run" describes which CP ISRA group of CP exercise abilities?**
- a. CP2
 - b. CP4
 - c. CP5
 - d. CP7

- 163. Which of the following statements regarding the effects of exercise training on persons with CP is true?**
- a. Fatigue and stress do not typically affect exercise performance for those with CP
 - b. Those with CP tend to have higher peak physiological responses than able bodied controls
 - c. Those with CP tend to have lower blood pressure responses to exercise
 - d. Those with CP tend to have higher heart rate responses to exercise
- 164. Exercise programming for individuals with CP should include:**
- a. Muscular strength and flexibility only
 - b. Muscular strength, flexibility, and aerobic endurance
 - c. Aerobic endurance using the treadmill for ambulatory clients and the arm crank ergometry for non-ambulatory clients only
 - d. Aerobic endurance and flexibility only
- 165. Symptoms of Parkinson's disease occur when there is _____ of the _____ and it is found slightly more frequently in men than women.**
- a. Greater than 50% loss; dopaminergic cells
 - b. Greater than 80% loss; cells in the basal ganglia
 - c. Greater than 50% loss; cells in the basal ganglia
 - d. Greater than 80% loss; dopaminergic cells
- 166. All of the following statements regarding the motor symptoms of Parkinson's disease are true except:**
- a. Standing posture is characterized by increased lordosis and hyper-extended knees and elbows
 - b. There is a drastic reduction in the ability to move the fingers, hands, arms, or legs
 - c. Handwriting can become illegible
 - d. Gait becomes slow and shuffling with involuntary hurrying, decreased arm swing, and difficulty initiating a step

- 167. Which of the following statements regarding special considerations for exercise programming for persons with Parkinson's disease is false?**
- a. Reaching target heart rates can be challenging
 - b. Time of day for exercise and medication should be kept as constant as possible
 - c. Exercise heart generally stays consistent from day to day
 - d. Repeated demonstrations with written and visual cues may be needed to assist with exercise adherence
- 168. According to the American Association on Intellectual and Developmental Disabilities, which of the following is the appropriate classification system for those with mental disabilities?**
- a. Mild, Moderate, Severe, and Profound
 - b. Intermittent, Limited, Extensive, and Pervasive
 - c. Limited, Severe, Extensive, and Profound
 - d. Intermittent, Moderate, Extensive, and Pervasive
- 169. All of the following statements regarding exercise response and Down Syndrome (Ds) are true except:**
- a. Individuals with Ds often have poor muscle control
 - b. Individuals with Ds have maximal heart rates that are approximately 30 to 35 contractions/min below expected levels
 - c. Individuals with Ds rarely have any type of heart defects
 - d. Individuals with Ds have reduced ventilatory ability due to poor pulmonary function
- 170. Which of the following statements regarding exercise testing for individuals with mental retardation is false?**
- a. For strength testing, isokinetic machines are recommended
 - b. Prior to exercise testing, it is recommended that individuals with mental retardation be tested for potential congenital cardiovascular problems
 - c. For testing children with mental retardation, the 600-yd run/walk or the 20-m shuttle run are recommended
 - d. All of the above are true

- 171. Which type of exercise activities have been shown to be effective and to increase motivation in individuals with mental retardation.**
- a. Activities set to music
 - b. Gymnastics
 - c. Swimming
 - d. Walking/jogging
- 172. Alzheimer's disease is the primary cause of dementia with the highest rate occurring after what age?**
- a. 65
 - b. 55
 - c. 75
 - d. 85
- 173. Which stage of Alzheimer's disease is categorized by major gaps in memory such as recalling the date, day of the week or current season?**
- a. Stage 2
 - b. Stage 4
 - c. Stage 5
 - d. Stage 7
- 174. All of the following are valid considerations for exercise programming for persons with Alzheimer's disease except:**
- a. Participation is extremely important especially in the early stages in order to set up a routine
 - b. Moderate to high intensity is the focus in the early stages of Alzheimer's
 - c. During the later stages of Alzheimer's disease, the client may have outbursts of physical aggression and anger
 - d. The goal of exercise for persons with Alzheimer's disease is enjoyment of the exercise session
- 175. Which of the following is not considered a type of serious mental illness?**
- a. Severe depression
 - b. Bipolar disorders
 - c. Alzheimer's
 - d. Schizophrenia

- 176. Which of the following statements is false regarding exercise testing and programming for persons with mental illness?**
- a. Familiarizing the client to the staff and surroundings is beneficial
 - b. Low to moderate intensity is the recommended level for exercise programming
 - c. Persons with mental illness are almost always taking medications some of which can cause fatigue, dehydration, depression, lack of motivation and cardiovascular effects
 - d. The treadmill is a less intimidating and more dependable mode of testing for this population
- 177. The type of hearing loss where the cochlea is affected and where balance is sometimes affected is _____.**
- a. Otosclerosis hearing loss
 - b. Sensorineural hearing loss
 - c. Conductive hearing loss
 - d. Mixed hearing loss
- 178. The most important causes of hearing deterioration statistically are _____.**
- a. Idiopathic and hereditary factors
 - b. Birth defects and childhood diseases
 - c. Aging and noise pollution
 - d. Head injury and infection
- 179. All of the following are special considerations when working with someone who has hearing loss except:**
- a. When participating in contact sports, gymnastics, self defense classes, and water sports, hearing aids should be removed
 - b. Do not pretend you understand the client, instead ask them to repeat what was said if the client's speech is unclear
 - c. Speak loudly and enunciate fully when speaking to an individual who has a hearing aid or cochlear implant
 - d. The client should be oriented to all aspects of the facility, especially emergency exits and fire evacuation procedures
- 180. Blind by visual field means _____.**
- a. Having the ability to see at 20 feet what the normal eye sees at 200 feet
 - b. Not being able to see bright lights
 - c. Having a vision of 20/200 or less while wearing glasses
 - d. Having a visual field of less than 10 ft of central vision or having tunnel vision

- 181. Which of the following statements regarding visual impairment is false?**
- a. Diabetes, glaucoma, macular degeneration, and cataracts are the leading causes of visual impairment in children
 - b. Visual impairment is a major problem of old age
 - c. Visual impairment is the second least common disability in children
 - d. In about 95% of those considered to be blind, there is enough residual vision that can allow them to participate in normal daily activities
- 182. Which type of visual loss can most affect mobility?**
- a. Legal blindness
 - b. Peripheral vision
 - c. Visual impairment caused by tumors
 - d. Visual impairment caused by cerebral palsy
- 183. All of the following statements regarding exercise programming for persons with visual impairment are true except:**
- a. Most sports, such as swimming, weight training, dance, golf are appropriate activities for visually impaired persons
 - b. All clutter should be removed from the workout area
 - c. Eyeglasses should be removed during activities to safeguard against breakage
 - d. Persons with aphakia, detached retina, or high myopia should not engage in high-impact activities