

Action Plan for **Osteoporosis**

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LEARNING OBJECTIVES FOR ACTION PLAN FOR OSTEOPOROSIS

After completing this course participants will be able to:

1. Explain how osteoporosis develops.
2. Identify which racial and ethnic groups are at higher risk for developing osteoporosis.
3. Explain how osteoporosis is diagnosed.
4. Identify the controllable risk factors for developing osteoporosis.
5. Identify the nutrients important to maintaining as well as improving bone health.
6. Identify the gold standard for measuring bone density.
7. Identify where in the body bone density is typically measured.
8. Identify where in the body fractures due to osteoporosis most commonly occur.
9. Explain the significance of a Z-score and a T-score.
10. Define an accidental fall.
11. Identify personal habits and medical conditions that can increase fall risk.
12. Identify fall-reduction strategies.
13. Identify the categories of physical fitness.
14. Explain the significance of a low amount of muscle relative to fat on physical condition.
15. Identify which type of exercise will improve bone health.
16. Explain the principles of overload, exercise volume, reversibility, and specificity.
17. Define the FITT acronym.

18. Explain how to measure intensity for resistance exercise.
19. Define impact exercise.
20. Explain the purpose of a warm up.
21. Explain why swimming and cycling may not be the best exercises for improving bone health.
22. Explain the significance of intensity that is required to improve bone strength when walking.
23. Explain the benefits of resistance exercise on improving bone health.
24. Explain the criteria exercise must meet in order to improve bone health.
25. Explain how to test for level of aerobic fitness.
26. Explain how to test for level of muscle strength and endurance
27. Explain how to test for flexibility.
28. Identify tips for keeping exercise safe.
29. Identify exercises and movements that should not be performed by women with diagnosed osteoporosis.
30. Explain the purpose of the Physical Activity Readiness Questionnaire.
31. Explain the importance of setting goals for exercise programs.
32. Identify the three stages of training.
33. Explain the significance of each stage of training on an exercise program.
34. Explain how to gauge intensity level when performing aerobic exercise.
35. Explain how to gauge intensity level when performing resistance exercise.
36. Explain how to initiate jumping exercise into an exercise program.
37. Explain the significance of balance exercises on fall prevention.
38. Identify proper aerobic exercise techniques.
39. Identify the advantages/disadvantages of performing resistance exercise with free weights and/or resistance machines.

- 40.** Explain how to perform exercises using bands or tubes and identify equivalent resistance machines or free weight exercises.
- 41.** Explain how to increase the intensity of jump exercises.
- 42.** Explain how to increase the intensity of balance exercises.
- 43.** Explain proper technique for stretching.
- 44.** Explain the importance of calcium to bone strength.
- 45.** Identify the amount of calcium recommended for both men and women.
- 46.** Explain the importance of Vitamin D, Vitamin A, and Vitamin K to bone health.
- 47.** Explain the importance of protein to bone health.
- 48.** Identify the current FDA approved drugs used to prevent or treat osteoporosis.
- 49.** Explain the advantages/disadvantages of exercising at home or in an exercise facility.
- 50.** Explain strategies to overcome the common barriers to exercising.



CEC/CEU Test for Action Plan For Osteoporosis
Please choose the BEST answer for each question

1. Osteoporosis is also known as which of the following?
 - A. Porous bone disease
 - B. Brittle bone disease
 - C. Silent disease
 - D. All of the above

2. **More than _____ of Americans over the age of _____ either have or are at risk for developing osteoporosis.**
 - A. 75 percent; 60
 - B. 55 percent; 50
 - C. 40 percent; 55
 - D. 25 percent; 60

3. **Which of the following statements regarding the development of osteoporosis is NOT true?**
 - A. Some women can have significant bone loss soon after menopause
 - B. Men tend to get osteoporosis at a later age than women
 - C. Genetics can play a role in some people having below-average bone mass at any age
 - D. Men having any condition that increases testosterone levels have an increased risk of developing osteoporosis

4. **_____ and _____ have a higher rate of osteoporosis than other racial and ethnic groups even though people of all backgrounds can be at risk.**
 - A. Caucasians; African Americans
 - B. Hispanics; Asians
 - C. Caucasians; Asians
 - D. Hispanics; African Americans

5. Which of the following statements regarding diagnosis and treatment of osteoporosis is NOT true?

- A. Because bone loss does not result in any noticeable symptoms, people can live with the disease and not know they have it.
- B. There is no single cause for osteoporosis but rather it is often the result of several factors together
- C. If diagnosed early, osteoporosis can be cured when treated with the proper medication.
- D. All of the above are true

6. Our skeleton serves all of the following purposes in our body except:

- A. The skeleton serves as a reservoir for potassium
- B. The skeleton provides a framework for the body and allows us to stand upright
- C. The skeleton contains certain bones that help make new red blood cells in their cavities
- D. The skeleton protects vital organs from trauma

7. The aging process can upset bone balance and cause us to lose up to _____ of our bone per year after age _____.

- A. One percent; 30
- B. Ten percent; 40
- C. One percent; 40
- D. Five percent; 30

8. Osteoporosis is a _____ disease that develops over a lifetime.

- A. Curable
- B. Acute
- C. Chronic
- D. Non-life threatening

9. For a person with osteoporosis, the most typical event associated with a bone fracture is _____.

- A. Twisting rapidly
- B. Sneezing repeatedly
- C. Lifting a heavy load
- D. Falling accidentally

- 10. Which of the following risk factors for developing osteoporosis is controllable?**
- A. Being postmenopausal
 - B. Leading an inactive lifestyle
 - C. Advancing age
 - D. Falling accidentally
- 11. Approximately _____ of osteoporosis cases occur in men.**
- A. 10 percent
 - B. 20 percent
 - C. 30 percent
 - D. 15 percent
- 12. Not only is adequate dietary intake of _____ important in maintaining bone health, but we must also get enough _____.**
- A. Calcium; Vitamin D
 - B. Calcium; Vitamin B
 - C. Potassium; Vitamin D
 - D. Potassium; Vitamin A
- 13. The test that is considered the gold standard for measuring bone mineral density is the _____.**
- A. MRI
 - B. X-ray
 - C. DXA
 - D. Heel Ultrasound
- 14. Bone density is typically measured at the bones that are most often fractured, which are the _____.**
- A. Heel, upper arm, and hip
 - B. Upper arm, forearm, and spine
 - C. Hip, spine, and forearm
 - D. Heel, spine, and hip

15. Which of the following statements best describes the difference between a Z-score and a T-score?

- A. The Z-score tells you how you compare to your peers as far as bone density, evaluates your risk of osteoporosis, and indicates whether or not you have osteoporosis or osteopenia
- B. The T-score compares your bone density reading with that of a young adult of similar race/ethnicity, and uses this score to give you an indication of whether or not you have either osteoporosis or osteopenia
- C. Both A and B are valid
- D. None of the above

16. Which of the following individuals should have a bone density test?

- A. Premenopausal women who have had a bone fracture
- B. All women 65 and older
- C. Both men and women who have had prolonged exposure to certain medications such as steroids
- D. Both B and C

17. If a woman has a DXA bone density test and her T-score is 1.5 units below young-normal, this is an indication that she _____.

- A. Has normal bone density
- B. Has osteopenia
- C. Has osteoporosis
- D. Has above normal bone density

18. Of adults over age 65 and living in the community, about _____ of them fall and about _____ of all falls result in serious injury.

- A. 50 percent; 30 percent
- B. 45 percent; 25 percent
- C. 35 percent; 25 percent
- D. 25 percent; 10 percent

19. Which of the following is the best example of an accidental fall?

- A. Stepping up on a curb, tripping over the edge, and falling to the sidewalk
- B. Having a seizure that causes you to lose your balance and fall to the floor
- C. Catching your toe on the corner of a rug and falling forward to the floor
- D. Both A and C

- 20. Which of the following is NOT a valid risk factor for falls?**
- A. Increased reaction time
 - B. Poor or impaired vision
 - C. Muscle weakness in the legs
 - D. Risky environment such as uneven flooring
- 21. Over 60 percent of falls occur _____.**
- A. When someone is moving about in their home
 - B. When someone is walking down a sidewalk
 - C. When someone is walking on a wide pathway
 - D. All of the above
- 22. Which of the following personal habits would NOT put someone at risk for a fall?**
- A. Wearing shoes with high or narrow heels
 - B. Drinking alcohol excessively
 - C. Using a quad cane when walking
 - D. Wearing shoes that do not fit properly
- 23. Which of the following medical conditions would put someone at risk for a fall?**
- A. Arthritis
 - B. Parkinson's disease
 - C. Multiple sclerosis
 - D. All of the above
- 24. _____ is the most significant risk factor for falling among older adults and becomes more pronounced after age _____.**
- A. Loss of muscle strength in the legs; 50
 - B. Loss of muscle strength in the legs; 60
 - C. Loss of muscle strength in the back; 60
 - D. Loss of muscle strength in the back; 50
- 25. All of the following are valid fall-reduction strategies except:**
- A. Begin a physical activity program to improve strength and balance
 - B. Use a deep shag carpet on floors to prevent slipping
 - C. Improve lighting in low-lit areas
 - D. Install grab bars in the bathroom in showers and near the toilet

26. Which of the following is not a category used to describe the concept of physical fitness?

- A. Muscle fitness
- B. Flexibility
- C. Posture
- D. Body composition

27. Increasing aerobic fitness has been shown to _____, _____, and _____.

- A. Decrease the risk of heart disease, improve bone health, decrease the risk of falls
- B. Decrease the risk of heart disease, decrease good cholesterol, improve bone health
- C. Decrease the risk of heart disease, improve bone health, improve mood
- D. Both A and C

28. Which of the following statements best defines muscle endurance?

- A. The ability of a muscle to move a weight through a full range of motion
- B. The ability of a muscle to lift a lot of weight one time
- C. The ability of a muscle to lift a weight many times
- D. The ability of a muscle to lift a lot of weight very quickly

29. Which of the following statements regarding flexibility is NOT true?

- A. Flexibility allows us to reach in front or above us, turn our heads and look behind us, and reach down to put on our shoes
- B. Flexibility helps reduce our risk of an injury from sudden movement
- C. Flexibility is the ability of our muscles and joints to move through a range of motion
- D. Flexibility training usually involves light resistance training performed several days a week

30. If someone has a body fat measurement done and finds they have a low amount of muscle relative to fat, they may be at higher risk for which of the following?

- A. High blood pressure
- B. Poor physical function
- C. Diabetes
- D. Heart disease

- 31. For college aged men typical percent body fat ranges from _____, and for college aged women typical body fat ranges from _____.**
- A. 15 to 20 percent; 25 to 30 percent
 - B. 10 to 15 percent; 25 to 30 percent
 - C. 10 to 15 percent; 20 to 25 percent
 - D. 15 to 20 percent; 20 to 25 percent
- 32. The biggest limitation to using body mass index (BMI) to determine body fatness is that _____.**
- A. BMI does not measure body fat directly
 - B. BMI requires a skilled technician to administer it
 - C. BMI does not measure muscle strength
 - D. BMI requires expensive equipment
- 33. When selecting exercise to improve bone health, you should choose exercise that _____ which follows the exercise principle of _____.**
- A. Increases strength in the leg muscles; specificity
 - B. Challenges the skeleton so it becomes stronger; overload
 - C. Increases strength in the leg muscles; overload
 - D. Challenges the skeleton so it becomes stronger; specificity
- 34. When referring to the principle of overload, another word that can be used in place of overload is _____.**
- A. Fatigue
 - B. Power
 - C. Challenge
 - D. Improvement
- 35. In order for your body to keep improving, an exercise program must continue to challenge you by gradually increasing _____.**
- A. The amount of weight lifted
 - B. The exercise volume
 - C. The length of the workout
 - D. The number of exercises performed

36. Which of the following statements regarding the principle of reversibility is true?

- A. If you stop exercising, you will lose the benefits you gained from exercise training
- B. If you stop exercising, you will lose the benefits gained twice as fast as it took you to gain them
- C. If you exercise really hard for two weeks, you can stop exercising for two weeks and not lose any of your fitness gains
- D. Both A and B

37. The four essential components of an exercise program are described by the acronym FITT, which stands for which of the following?

- A. Fitness, Intensity, Time, Type
- B. Fitness, Intensity, Time, Training
- C. Frequency, Intensity, Time, Type
- D. Frequency, Intensity, Time, Training

38. In order for a beneficial adaptation to occur, it is recommended that exercise be done at least _____.

- A. One day per week
- B. Two days per week
- C. Five days per week
- D. Six days per week

39. Intensity refers to which of the following?

- A. How hard you exercise
- B. How fast you progress
- C. Exercising at 50% of capability
- D. Exercising to exhaustion

40. For resistance exercise, which of the following methods is used to express intensity?

- A. A percentage of your maximal heart rate as determined by a test or your age
- B. A percentage of the maximum amount of oxygen you use during heavy exercise as determined by a test
- C. A percentage of the highest weight you can lift one time as determined from a one-repetition maximum test
- D. Both A and B

- 41. Time can be expressed as _____ if a person is walking or jogging as part of their exercise program.**
- A. Minutes
 - B. Distance
 - C. Hours
 - D. Days
- 42. Time can be expressed as the number of repetitions and the sets of repetitions for which of the following types of exercise?**
- A. Impact exercise
 - B. Resistance exercise
 - C. Flexibility exercise
 - D. All of the above
- 43. The type of exercise you select to do should fit the goal of the exercise program and follow _____.**
- A. The principle of progression
 - B. The principle of overload
 - C. The principle of muscle fitness
 - D. The principle of specificity
- 44. Exercise that provides a quick burst of force when your feet or another body part make contact with the ground defines which of the following types of exercise?**
- A. Aerobic exercise
 - B. Resistance exercise
 - C. Impact exercise
 - D. Flexibility exercise
- 45. Which of the following statements regarding a warm up is NOT true?**
- A. A warm up is an activity performed just prior to the main part of an exercise program
 - B. A warm up includes some type of low intensity activity that increases your heart rate 5 to 8 beats above your resting pulse
 - C. A warm up before formal exercise helps increase the delivery of oxygen and nutrients to your muscles and warms them up so they are more pliable
 - D. One method to warm up could include exercising at a low intensity for the first 5 to 10 minutes of your exercise session and then increasing the intensity

- 46. Stretching can be used as a cool down after _____.**
- A. Resistance exercise
 - B. Balance exercise
 - C. Impact exercise
 - D. Aerobic exercise
- 47. Which of the following statements best describes why swimming and cycling may not be the best exercises for improving bone strength?**
- A. When we exercise in an upright position, gravity puts a lot of stress on our bones
 - B. Water supports the body weight when swimming, and the bike supports the body weight when cycling so neither is considered weight bearing exercise
 - C. Athletes whose sport involves jumping or heavy weight lifting tend to have stronger skeletons than swimmers and cyclists
 - D. All of the above
- 48. Aerobic exercise has been shown to produce an average benefit in bone mass gains of _____.**
- A. Five percent
 - B. Two percent
 - C. One percent
 - D. One-half percent
- 49. In order for walking to improve and slow down bone loss it must _____.**
- A. Be performed at a slow pace for at least 60 minutes a session
 - B. Be performed at a very fast pace similar to race walking speeds
 - C. Be performed at maximum intensity for 30 minutes or until fatigue
 - D. Be performed at a walking pace of two to three miles per hour
- 50. Which of the following methods of applying resistance to the skeleton is most effective in helping increase bone mass?**
- A. Using a resistance machine to exercise
 - B. Using elastic tubing or bands to exercise
 - C. Using free weights to exercise
 - D. All of the above if the resistance is of sufficient intensity

51. All of the following are benefits of participating in resistance exercise programs except:

- A. It strengthens the leg muscles which helps contribute to better balance and gait
- B. Some evidence has shown it increases blood pressure and contributes to weight gain
- C. It is important in strengthening the muscles that help us do our every day tasks
- D. The strong muscle contractions required to lift, push, or pull a heavy weight helps increase bone mass

52. Jumping exercise performed alone has been shown to improve _____.

- A. Bone mass of the spine
- B. Bone mass in the legs
- C. Bone mass at the hips
- D. Bone mass at the spine and hip

53. All of the following are advantages to performing jump exercise except:

- A. Jumps can be performed anywhere, any time
- B. Research studies show that injuries due to jumping exercises are minimal
- C. Jumping exercises only take about 5 to 10 minutes to perform
- D. All of the above are advantages

54. Which of the following is the amount of physical activity for adults recommended by the U.S. Surgeon General, the CDC, ACSM, and Healthy People 2010?

- A. At least 30 minutes of moderate-intensity physical activity on five or more days of the week
- B. 20 minutes or more of vigorous-intensity physical activity three or more days per week
- C. Both A and B
- D. 15 to 20 minutes of vigorous-intensity physical activity on five or more days of the week

55. In order to improve bone health, exercise type should meet all of the following criteria except:

- A. Exercise type should focus on weight bearing exercise
- B. Resistance exercise should be low intensity and use light weight for many repetitions
- C. Aerobic exercise must be of moderate to high intensity
- D. Aerobic exercise should be performed for 30 to 60 minutes three to five days per week

56. Building bone is a slow process so it takes at least _____ before the effect of exercise on bone strength can be measured.

- A. Six months to a year
- B. Three to six months
- C. Twelve to sixteen weeks
- D. One to two months

57. Which of the following statements regarding exercise and fall prevention is true?

- A. Resistance exercise should be performed to strengthen weak leg muscles
- B. Resistance exercises should be performed to improve balance and gait
- C. Balance exercise alone has been shown to help prevent falls
- D. Both A and B

58. All of the following statements regarding evaluating your fitness level are true except:

- A. A fitness evaluation helps you identify your strong and weak areas
- B. Evaluating your current fitness level helps you develop a program that's not too difficult but challenging enough to be of benefit
- C. A fitness evaluation must always be completed before starting an exercise program in order to determine your starting level
- D. Completing a fitness evaluation before starting a program helps establish a baseline so you can measure progress

59. Which of the following aerobic fitness tests would be most appropriate for someone who is less fit?

- A. 1.5 mile walk
- B. 1.5 mile run
- C. Six-minute walk
- D. Two-minute step test

60. When performing the two-minute step test, how do you determine the step height?

- A. The knees should be lifted as high as possible on each step
- B. Find the point midway between the top of the kneecap and the top of the hip bone and place a piece of tape on a wall at this point
- C. Lift the foot four inches off the floor and place a piece of tape on the wall at the point where the kneecap is lifted
- D. Step in place lifting the knee only as high as it would come during normal gait

- 61. When using the one-repetition maximum strength test, which of the following exercises is typically used to test overall upper body strength?**
- A. Bench press
 - B. Chest press
 - C. Seated row
 - D. Lat pulldown
- 62. What is one disadvantage to using a sub maximal strength test such as the six-repetition (6RM) or ten repetition maximum (10RM)?**
- A. It takes a long time to administer the test
 - B. You may have to perform so many lifts that you get tired before determining your true 6RM or 10RM
 - C. The tests require multiple exercises using various muscle groups
 - D. None of the above
- 63. When performing the arm curl test, men use a _____, and women use a _____.**
- A. Ten pound dumbbell; eight pound dumbbell
 - B. Twenty pound barbell; fifteen pound barbell
 - C. Eight pound dumbbell; five pound dumbbell
 - D. Five pound dumbbell; three pound dumbbell
- 64. The sit-and-reach test measures the flexibility of _____ and is performed for _____ test trials.**
- A. The back; three
 - B. The back; two
 - C. The back of the legs; three
 - D. The back of the legs; two
- 65. When performing the tandem stance test for evaluating balance, the feet are in a _____ position and the test will stop when _____.**
- A. Heel-to-toe; 15 seconds has elapsed or you come out of position
 - B. Heel-to-toe; 30 seconds has elapsed or you come out of position
 - C. Side-by-side; 15 seconds has elapsed or you come out of position
 - D. Side-by-side; 30 seconds has elapsed or you come out of position
- 66. The up-and-go-test is used to measure _____.**
- A. Leg strength
 - B. Flexibility
 - C. Mobility
 - D. Balance

67. Which of the following statements is true regarding the up-and-go test?

- A. There are no norms for this test
- B. The test uses a treadmill to measure your ability to walk at a set speed
- C. The test measures the time it takes you to get up from a chair, walk 8 feet, turn around, walk back to the chair, and sit down
- D. The test measures the time it takes you to get up from a chair, walk 10 feet, turn around, walk back to the chair, and sit down

68. All of the following are valid tips for safe exercise except:

- A. Drink enough fluid to stay hydrated
- B. Push yourself as hard as you can each session in order to see benefits
- C. Include a warm up and cool down every time you work out
- D. All of the above are valid

69. Women with osteoporosis should avoid which of the following movements?

- A. Very high impact exercise
- B. Lifting heavy loads overhead
- C. Low to moderate resistance exercise to increase leg strength
- D. Both A and B

70. Which of the following statements regarding exercising after a fracture is NOT true?

- A. People who have suffered a fracture are hesitant to exercise because they are afraid of falling again
- B. A physical therapist should develop the exercise program for someone who is recovering from a fracture
- C. Once someone with osteoporosis has had a fracture they may not be able to exercise again or get any benefit from exercise
- D. Exercise can help counter the loss of physical conditioning, strength, and function that results from the inactivity during the recovery period after a fracture

71. It is recommended that a beginning exerciser should _____ before starting an exercise program.

- A. Obtain a physician's clearance
- B. Complete a series of fitness tests
- C. Purchase proper athletic shoes
- D. Observe several group exercise classes

- 72. The Physical Activity Readiness Questionnaire is designed to _____.**
- A. Determine which exercises would be appropriate for a beginner
 - B. Screen for health issues such as cardiac or bone and joint issues before beginning a moderate-intensity exercise program
 - C. Diagnose any undetected health issues such as cardiac disease, diabetes, or bone and joint issues
 - D. Determine if it is safe for an individual to start a vigorous-intensity exercise program with only one yes answer
- 73. Which of the following is NOT a valid reason for setting goals for an exercise program?**
- A. Goal setting serves as a motivator to keep you exercising regularly
 - B. Goal setting helps you to quickly achieve maximum aerobic fitness and muscle strength no matter your starting level
 - C. Goal setting helps give direction by giving you a specific objective to strive for
 - D. Goal setting helps give you a feeling of accomplishment when you reach your goals
- 74. When setting program goals, you should make sure they are _____, _____, and _____.**
- A. Long term; challenging; can not be changed
 - B. Broad; not too difficult; can not be changed
 - C. Realistic; challenging; can be revised if needed
 - D. Not too difficult; long term; can be revised if needed
- 75. One reason to set long term goals is to _____.**
- A. Give an overall sense of purpose to your program
 - B. Provide a way to determine if your exercise program is meeting your needs
 - C. Make sure the program is realistic and achievable
 - D. All of the above
- 76. The three stages of training used to set the appropriate amount of exercise for a program are the _____, _____, and _____.**
- A. Conditioning stage; intensity stage; maintenance stage
 - B. Competency stage; intensity stage; maintenance stage
 - C. Conditioning stage; improvement stage; maintenance stage
 - D. Competency stage; improvement stage; maintenance stage

- 77. As you progress through the first stage of training, you should gradually increase the _____.**
- A. Types of exercises you do
 - B. Duration of your exercise
 - C. Number of exercises you do
 - D. Amount of recovery time between sessions
- 78. Even though weight bearing exercise is more effective for challenging the skeleton, rowing exercise may be of benefit to the _____.**
- A. Legs
 - B. Arms
 - C. Chest
 - D. Spine
- 79. The heart rate reserve method for gauging intensity should not be used by which of the following?**
- A. People who are fit and ready to start a vigorous-intensity program
 - B. People with certain heart conditions that are on medications that slow their heart rate
 - C. People who are unable to estimate their resting heart rate
 - D. People who are very unfit and need to start at a low-intensity
- 80. Using the RPE scale, if you feel like you are exercising at an effort level of 13, your intensity level would be in the range of _____.**
- A. Light or very low-intensity
 - B. Light or low-intensity
 - C. Somewhat hard or moderate-intensity
 - D. Hard to extremely hard or vigorous-intensity
- 81. In order for resistance training to challenge the skeleton it should be _____ and _____.**
- A. Weight bearing; target the muscle groups attached to the hip and spine
 - B. Light-intensity; target the muscle groups attached to the hips
 - C. Weight bearing; target the muscle groups attached to the legs
 - D. Vigorous-intensity; target the muscle groups attached to the hips and legs

82. Which of the following statements regarding repetition maximum (RM) is NOT true?

- A. Your RM is the amount of weight you can lift a given number of times and no more
- B. The weight for a given RM will be different for different movements and different muscle groups
- C. The RM is a very precise and exact method that involves no guesswork
- D. All of the above are true

83. When doing a resistance program to improve bone health, to progress from the first or initial state to the improvement stage you would _____.

- A. First increase the number of repetitions
- B. First increase the weight you lift
- C. First add another workout day to your program
- D. First increase the number of sets

84. Impact exercise would be beneficial for which of the following groups of people?

- A. People with osteopenia of the hip who want to improve their bone mass
- B. People with mild osteoporosis of the hip who have physician clearance for doing impact exercise
- C. People who have had a recent fracture and need to improve their bone mass
- D. Both A and B

85. Which of the following statements regarding jumping exercise is NOT true?

- A. It is harder to gauge the intensity of jumping compared to aerobics and resistance training
- B. Intensity can be increased by jumping higher or jumping with added weight
- C. Simple jumping is not a problem for people who do not have advanced osteoporosis or joint limitations
- D. All of the above are true

86. For balance exercises to be effective in preventing falls, they should be combined with _____.

- A. Aerobic exercise
- B. Resistance training
- C. Flexibility training
- D. Impact exercise

- 87. Balance exercises can be performed every day because they _____.**
- A. Do not require physical recovery
 - B. Do not require special equipment
 - C. Can be performed almost anywhere
 - D. Do not require any repetition of the movements
- 88. One alternate form of exercise that challenges dynamic balance and has been shown to effectively reduce falls among older adults is _____.**
- A. Yoga
 - B. Karate
 - C. Tai Chi
 - D. Kick boxing
- 89. It is very important to exercise with proper technique and good form because _____.**
- A. Most exercises will not have any benefit if not done with good form
 - B. Exercises done with bad form will develop big muscles but not strong muscles
 - C. Exercises done with poor form can result in exercise related injuries
 - D. All of the above
- 90. All of the following are proper aerobic exercise techniques except:**
- A. Maintain a stable upright posture
 - B. Do not wear a hat in warm weather because it will effect the body's ability to cool down
 - C. Wear UV sun protection in sunny weather or higher altitudes
 - D. Keep the arms and shoulders relaxed when doing lower body exercises
- 91. Which of the following statements identify the advantage of using free weights instead of resistance machines?**
- A. Free weights allow you to work isolated muscle groups
 - B. Free weight equipment is lower in cost than machines
 - C. Free weights strengthen the accessory muscles used to stabilize the body
 - D. Both B and C

92. Which of the following statements regarding various types of resistance equipment is NOT true?

- A. It is easier to maintain good form when using resistance machines than it is when using free weights
- B. Elastic bands, elastic tubing, balls, and weighted vests are all examples of types of resistance equipment
- C. Elastic bands and tubing are available in a variety of resistances so there is no limit to the intensity level that can be achieved
- D. Weighted vests can be worn during lower body exercises to add resistance

93. All of the following are advantages to using weighted vests except:

- A. Weighted vests are low in cost and can be used for upper and lower body exercises
- B. The weights in a vest can be adjusted in small increments
- C. Weighted vests are safer to use than a barbell because the weight is evenly distributed and does not affect balance
- D. Weighted vests are portable and can be used with people of all ages

94. When performing a chest press with an elastic band, which of the following would decrease the resistance and make the exercise easier?

- A. Moving your grip on the band slightly back
- B. Moving your grip on the band slightly forward
- C. Working only one arm at a time
- D. Moving the band further down the back

95. Which of the following band exercises works the back and shoulders?

- A. Arm pull-down
- B. Seated row
- C. Chest fly
- D. Upright row

96. Which of the following exercises work the same muscle groups as the leg press machine?

- A. Chair raise
- B. Squat
- C. Lunge
- D. Both A and B

97. All of the following are proper resistance exercise techniques except:

- A. Before doing resistance exercise warm up with dynamic exercise such as walking
- B. Hold your breath during the active phase of the exercise and exhale during the recovery phase
- C. Always maintain proper form and stop the exercise when you start to lose form
- D. Move the weight band or tubing slowly for a count of three in each direction of the movement

98. Which of the following is NOT a proper jump technique?

- A. Always wear stable footwear, like athletic shoes, when jumping
- B. Always jump on a stable, even surface
- C. Land on the balls of your feet with your legs straight
- D. Stop jumping if you feel pain at any point in the jump

99. Which of the following is not recommended as a method to increase the intensity of a jump?

- A. Do a two-foot jump forward onto a bench and then jump back off
- B. Jump wearing a weighted vest
- C. Do a one-foot jump forward onto a bench and then jump back off
- D. All of the above are recommended

100. To increase the challenge when doing a one-leg stance, you would _____.

- A. Hold your leg straight out in front of you
- B. Close your eyes while standing on one leg
- C. Hold the position for up to 60 seconds on one leg
- D. Stand on an uneven surface on one leg

101. Stretching exercises should be done _____ and each stretch should be held for _____.

- A. After you exercise; 5 to 10 seconds
- B. Before you exercise; 10 to 60 seconds
- C. After you exercise; 10 to 60 seconds
- D. Before you exercise; 5 to 10 seconds

102. When performing a stretch you should not _____.

- A. Tense your muscles when you go into a stretch
- B. Bounce or jerk during the stretch
- C. Feel pain during the stretch
- D. All of the above

- 103. The body can lose calcium daily through all of the following ways except:**
- A. Skin shedding
 - B. Bleeding
 - C. Sweating
 - D. Bladder or bowel elimination
- 104. It is recommended that dietary supplements should only be used _____.**
- A. To help you meet recommended dietary levels
 - B. When you are sick for an extended period of time
 - C. To increase the level of important nutrients in your body
 - D. To prevent certain illnesses
- 105. In order to tell if you are getting enough or too much of certain nutrients, you should _____.**
- A. Eat at least 3,000 calories a day
 - B. Keep a food log of everything you eat and drink for a few days
 - C. Take one multi-vitamin a day
 - D. Eat a serving of leafy green vegetables and drink a quart of milk every day
- 106. The nutrient that is the essential building block for our bones is _____.**
- A. Calcium
 - B. Sodium
 - C. Potassium
 - D. Vitamin K
- 107. To prevent bone loss the recommended daily intake of calcium for adult women aged 19 to 50 is _____, and for men and women over 50 it is _____.**
- A. 1,200 milligrams; 1,400 milligrams
 - B. 1,200 milligrams; 1,000 milligrams
 - C. 1,000 milligrams; 1,200 milligrams
 - D. 1,400 milligrams; 1,200 milligrams
- 108. All of the following statements regarding dietary calcium and bone are true except:**
- A. It is very important that children get as much calcium as possible in their diets to improve their bone health when they are adults
 - B. Our ability to absorb calcium decreases as we get older
 - C. Intake of calcium above 2,500 milligrams per day should be avoided
 - D. All of the above are true

109. Only about _____ of calcium can be absorbed at a time so calcium supplement ingestion should be spread throughout the day.
- A. 1,000 milligrams
 - B. 500 milligrams
 - C. 300 milligrams
 - D. 100 milligrams
110. When taking calcium supplements to make sure they are safe and effective, you should _____.
- A. Check the label to make sure they are made from bone meal or dolomite
 - B. Make sure each dose is at least 1,000 milligrams
 - C. Look for supplements that have USP on the label
 - D. Check the label to make sure they are made from unrefined oyster shell
111. The recommended daily intake of Vitamin D is _____ and because it is fat soluble it should not be taken in excess of _____.
- A. Between 800 and 1,000 IU; 1,200 IU
 - B. Between 500 and 1,000 IU; 1,200 IU
 - C. Between 500 and 800 IU; 1,000 IU
 - D. Between 400 and 800 IU; 800 IU
112. Which of the following statements regarding Vitamin K is NOT true?
- A. Recommended levels of Vitamin K are 80 micrograms per day for men age 25 and over, and 65 micrograms per day for women 25 and over
 - B. Our bodies do not make Vitamin K so we have to get it from our diet
 - C. Vitamin K is important for blood clotting and bone development
 - D. Vitamin K supplementation could be harmful for people on blood thinning medications
113. The recommended dietary intake of Vitamin A for women is _____ and _____ for men with a warning from the Institute of Medicine not to take more than _____ daily.
- A. 2,300 IU; 3,000 IU; 15,000 IU
 - B. 2,300 IU; 3,000 IU; 10,000 IU
 - C. 2,000 IU; 2,500 IU; 10,000 IU
 - D. 2,000 IU; 2,500 IU; 5,000 IU

- 114. The recommended daily intake of sodium is an upper limit of _____ with excess sodium linked to _____.**
- A. 2,400 milligrams; high blood pressure
 - B. 2,500 milligrams; diabetes
 - C. 2,500 milligrams; high blood pressure
 - D. 2,400 milligrams; diabetes
- 115. Protein, a _____, is the main component of _____ which gives bone some of its flexibility.**
- A. Micronutrient; collagen
 - B. Mineral; elastin
 - C. Macronutrient; collagen
 - D. Micronutrient; elastin
- 116. Which of the following statements regarding protein and bone health is NOT true?**
- A. Low levels of protein in the diet can lessen the shock absorbing capacity of bone
 - B. Low protein can reduce the surface area for bone mineral deposits
 - C. Excessive amounts of protein can cause more calcium to be excreted the kidneys which can result in calcium being taken from bone
 - D. All of the above are true
- 117. Currently all but one of the FDA approved drugs for prevention or treatment of osteoporosis work by _____.**
- A. Stimulating bone forming cells
 - B. Rendering ineffective the bone cells that break down bone and stimulating bone forming cells
 - C. Rendering ineffective the bone cells that break down bone
 - D. Increase the number of bone cells that break down bone so that new, stronger bones can be formed
- 118. Which of the following classes of drugs is currently most effective at reducing fractures caused by osteoporosis?**
- A. Estrogen and progesterone (HRT)
 - B. Biphosphonates
 - C. Selective estrogen receptor modulators
 - D. Synthetic calcium-regulating hormones

- 119. Studies have shown that hormone replacement therapies reduce the incidence of hip and spine fractures by _____.**
- A. 10 to 20 percent
 - B. 20 to 30 percent
 - C. 25 to 50 percent
 - D. 30 to 50 percent
- 120. Hormone replacement therapy is not recommended for which of the following?**
- A. Women who have breast cancer or other estrogen dependent cancers
 - B. Women who have a risk of thromboembolic disease
 - C. Women who might become pregnant
 - D. All of the above
- 121. Which of the following drugs has been shown to reduce spine fractures by 50 percent, but not hip fractures, and reduce the incidence of breast cancer, but not alleviate menopausal symptoms?**
- A. Raloxifene
 - B. Progesterone
 - C. Tamoxifen
 - D. Risedronate
- 122. _____ is now commonly prescribed _____ and has been shown to reduce spine fractures by about 36 percent, but does not reduce hip fractures.**
- A. Calcitonin; to be given intravenously
 - B. Parathyroid hormone; in a nasal spray form
 - C. Calcitonin; in a nasal spray form
 - D. Parathyroid hormone; to be given in a once-a-month shot
- 123. Even though most Americans know that exercise is good for them, _____ get no leisure time exercise at all.**
- A. Almost one in ten
 - B. More than 50 percent
 - C. More than one in four
 - D. Almost 25 percent
- 124. Creating an exercise environment includes all of the following except:**
- A. Determining what exercise program to follow
 - B. Determining which days of the week to exercise
 - C. Determining where to exercise
 - D. Determining what equipment will be needed

- 125. All of the following statements regarding the advantages of exercising at home are true except:**
- A. Not having to pay a membership fee
 - B. Not having any distractions
 - C. Not having any travel time involved
 - D. Not having to go at a certain time of day
- 126. When selecting a facility for exercise you should ask _____.**
- A. For a short trial period to see if it is a fit for you
 - B. If your membership can be cancelled within one year
 - C. If you can get your money back if you do not like the facility
 - D. What the hours are to make sure it fits your schedule
- 127. A good tool to use to evaluate whether or not your original exercise plan is working for you is to _____.**
- A. Keep a calendar noting the days and times you exercised
 - B. Write the date and duration of your exercise and what type of exercise you did
 - C. Keep a monthly record of the dates, time and type of exercise you completed
 - D. Keep a exercise log or diary that notes the date, the activity, the intensity or pace, the time or distance, and notes on how you felt
- 128. In order to track the results of exercise in making improvements in your bone health, it is recommended you have a bone density test before you begin your program and again after _____.**
- A. Three months
 - B. Six months
 - C. Twelve months
 - D. Five years
- 129. Which of the following is NOT a strategy to use to overcome the barrier of not having enough time to exercise?**
- A. If you work, use your lunch hour to exercise
 - B. Exercise for a longer duration so that both aerobic and resistance exercise can be done in one session
 - C. Exercise first in the morning before your daily activities get started
 - D. All of the above are true
- 130. In order to stay motivated to exercise it is important that you _____.**
- A. Choose exercises that are simple and easy to learn
 - B. Find a routine you like and do not change it
 - C. Choose exercises that you enjoy doing
 - D. Never take a break from exercise so you do not get out of the habit

