

Chapter 02 - Assessment of Physical Fitness

True / False

1. Lean body mass is equivalent to body weight minus fat weight.

- a. True
- b. False

ANSWER: True

REFERENCES: 2.7 Body Composition

LEARNING OBJECTIVES: FITW.HOEG.17.2.6 - Understand the components of body composition.

OTHER: Bloom's: Remember

2. Storage fat is the body fat needed for normal physiological functions.

- a. True
- b. False

ANSWER: False

REFERENCES: 2.7 Body Composition

LEARNING OBJECTIVES: FITW.HOEG.17.2.6 - Understand the components of body composition.

OTHER: Bloom's: Remember

3. Storage fat is the body fat needed for normal physiological functions.

- a. True
- b. False

ANSWER: False

REFERENCES: 2.7 Body Composition

LEARNING OBJECTIVES: FITW.HOEG.17.2.6 - Understand the components of body composition.

OTHER: Bloom's: Remember

4. Nonresponders constitute less than 5 percent of exercise participants.

- a. True
- b. False

ANSWER: True

REFERENCES: 2.2 Responders Versus Nonresponders

LEARNING OBJECTIVES: FITW.HOEG.17.2.1 - Identify the health-related components of physical fitness.

OTHER: Bloom's: Remember

5. Good muscular strength can improve bone density and help prevent osteoporosis.

- a. True
- b. False

ANSWER: True

REFERENCES: 2.5 Muscular Fitness

LEARNING OBJECTIVES: FITW.HOEG.17.2.3 - Understand the difference between muscular strength and muscular endurance.

OTHER: Bloom's: Remember

6. The majority of all low back problems in the United States stem from genetic factors.

- a. True

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b. False

ANSWER: False

REFERENCES: 2.6 Muscular Flexibility

LEARNING OBJECTIVES: FITW.HOEG.17.2.5 - Be able to assess muscular flexibility.

OTHER: Bloom's: Remember

7. The 1.5-Mile Run Test is a submaximal exercise test.

a. True

b. False

ANSWER: False

REFERENCES: 2.4 Cardiorespiratory Endurance

LEARNING OBJECTIVES: FITW.HOEG.17.2.2 - Be able to assess cardiorespiratory fitness.

OTHER: Bloom's: Remember

8. A negative caloric balance leads to a decrease in lean body mass.

a. True

b. False

ANSWER: True

REFERENCES: 2.8 Effects of Exercise and Diet on Body Composition

LEARNING OBJECTIVES: FITW.HOEG.17.2.9 - Learn to assess disease risk based on body mass index (BMI), waist circumference, and waist-to-height ratio.

OTHER: Bloom's: Remember

9. The 1.0-Mile Walk Test alone can determine an individual's overall level of fitness.

a. True

b. False

ANSWER: False

REFERENCES: 2.3 Fitness Assessment Battery

LEARNING OBJECTIVES: FITW.HOEG.17.2.1 - Identify the health-related components of physical fitness.

OTHER: Bloom's: Remember

10. Too much flexibility leads to unstable and loose joints, which may actually increase the injury rate.

a. True

b. False

ANSWER: True

REFERENCES: 2.6 Muscular Flexibility

LEARNING OBJECTIVES: FITW.HOEG.17.2.5 - Be able to assess muscular flexibility.

OTHER: Bloom's: Remember

Multiple Choice

11. BMI is calculated by multiplying your weight in pounds by ____ and dividing this figure by the square of the height in inches.

a. 575

b. 625

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- c. 705
- d. 815
- e. 945

ANSWER: c

REFERENCES: 2.7 Body Composition

LEARNING OBJECTIVES: FITW.HOEG.17.2.7 - Be able to assess body composition.

OTHER: Bloom's: Remember

12. Regarding skinfold thickness measurements, ____.

- a. use the chest, abdomen, and thigh skinfolds for women
- b. use the triceps, suprailium, and thigh skinfolds for men
- c. all measurements are taken on the right side of the body with the person standing
- d. all measurements are taken on the left side of the body with the person lying in a supine position
- e. measure each site twice

ANSWER: c

REFERENCES: 2.7 Body Composition

LEARNING OBJECTIVES: FITW.HOEG.17.2.7 - Be able to assess body composition.

OTHER: Bloom's: Remember

13. Which body composition assessment method can also be used to measure bone density?

- a. hydrostatic weighing
- b. air displacement
- c. skinfold thickness
- d. bioelectrical impedance
- e. DXA

ANSWER: e

REFERENCES: 2.7 Body Composition

LEARNING OBJECTIVES: FITW.HOEG.17.2.7 - Be able to assess body composition.

OTHER: Bloom's: Remember

14. Essential fat constitutes about ____ percent of the total weight in men and ____ percent in women.

- a. 3; 12
- b. 5; 15
- c. 7; 18
- d. 9; 16
- e. 11; 14

ANSWER: a

REFERENCES: 2.7 Body Composition

LEARNING OBJECTIVES: FITW.HOEG.17.2.6 - Understand the components of body composition.

OTHER: Bloom's: Remember

15. Much of the blood glucose from food consumption goes to the muscles, where it is stored as ____.

- a. triglycerides
- b. glycogen

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- c. protein
- d. glucagon
- e. sucrose

ANSWER: b

REFERENCES: 2.5 Muscular Fitness

LEARNING OBJECTIVES: FITW.HOEG.17.2.3 - Understand the difference between muscular strength and muscular endurance.

OTHER: Bloom's: Remember

16. The ability of a muscle to exert submaximal force repeatedly over time is known as ____.

- a. isometric training
- b. progressive resistance
- c. muscular strength
- d. hypertrophy
- e. muscular endurance

ANSWER: e

REFERENCES: 2.5 Muscular Fitness

LEARNING OBJECTIVES: FITW.HOEG.17.2.3 - Understand the difference between muscular strength and muscular endurance.

OTHER: Bloom's: Remember

17. Researchers believe that ____ secretes harmful inflammatory substances that contribute to chronic conditions.

- a. visceral fat
- b. subcutaneous fat
- c. retroperitoneal fat
- d. essential fat
- e. lean body mass

ANSWER: a

REFERENCES: 2.7 Body Composition

LEARNING OBJECTIVES: FITW.HOEG.17.2.7 - Be able to assess body composition.

OTHER: Bloom's: Remember

18. According to the BMI, the lowest risk for chronic disease is in the ____ range.

- a. 18 to 21
- b. 22 to 25
- c. 26 to 29
- d. 30 to 33
- e. 34 to 37

ANSWER: b

REFERENCES: 2.7 Body Composition

LEARNING OBJECTIVES: FITW.HOEG.17.2.7 - Be able to assess body composition.

OTHER: Bloom's: Remember

19. Which muscular endurance test is done by men only?

- a. Modified Push-Up

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- b. Bench Jump
- c. 1 RM
- d. Modified Dip
- e. Abdominal Crunch

ANSWER: d

REFERENCES: 2.5 Muscular Fitness

LEARNING OBJECTIVES: FITW.HOEG.17.2.4 - Learn to assess muscular strength.

OTHER: Bloom's: Remember

20. Muscular flexibility relates primarily to ____ and the index of physical activity.

- a. body temperature
- b. age
- c. gender
- d. genetic factors
- e. weight

ANSWER: d

REFERENCES: 2.6 Muscular Flexibility

LEARNING OBJECTIVES: FITW.HOEG.17.2.5 - Be able to assess muscular flexibility.

OTHER: Bloom's: Remember

21. Which body composition assessment method is most frequently used in research and by medical facilities?

- a. air displacement
- b. bioelectrical impedance
- c. DXA
- d. hydrostatic weighing
- e. skinfold thickness

ANSWER: c

REFERENCES: 2.7 Body Composition

LEARNING OBJECTIVES: FITW.HOEG.17.2.7 - Be able to assess body composition.

OTHER: Bloom's: Remember

22. Some research indicates that lack of improvement in cardiorespiratory endurance among nonresponders might be related to low levels of ____.

- a. leg strength
- b. blood glucose
- c. upper body strength
- d. overall flexibility
- e. body fat

ANSWER: a

REFERENCES: 2.2 Responders Versus Nonresponders

LEARNING OBJECTIVES: FITW.HOEG.17.2.1 - Identify the health-related components of physical fitness.

OTHER: Bloom's: Remember

23. In general, what is the single most important component of health-related physical fitness?

- a. body weight

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- b. muscular flexibility
- c. muscular endurance
- d. muscular strength
- e. cardiorespiratory endurance

ANSWER: e

REFERENCES: 2.4 Cardiorespiratory Endurance

LEARNING OBJECTIVES: FITW.HOEG.17.2.2 - Be able to assess cardiorespiratory fitness.

OTHER: Bloom's: Remember

24. Which health-related component of physical fitness seems to be the most important in the older-adult population?

- a. muscular strength
- b. muscular endurance
- c. muscular flexibility
- d. cardiorespiratory endurance
- e. body weight

ANSWER: a

REFERENCES: 2.5 Muscular Fitness

LEARNING OBJECTIVES: FITW.HOEG.17.2.3 - Understand the difference between muscular strength and muscular endurance.

OTHER: Bloom's: Remember

25. Richard is a 42-year-old male. What is his recommended body fat percent range?

- a. 12–20%
- b. 13–21%
- c. 14–22%
- d. 17–25%
- e. 18–26%

ANSWER: b

REFERENCES: 2.7 Body Composition

LEARNING OBJECTIVES: FITW.HOEG.17.2.7 - Be able to assess body composition.

OTHER: Bloom's: Remember

26. Susan is a 25-year-old female. What is her recommended body fat percent range?

- a. 12–20%
- b. 13–21%
- c. 14–22%
- d. 17–25%
- e. 18–26%

ANSWER: d

REFERENCES: 2.7 Body Composition

LEARNING OBJECTIVES: FITW.HOEG.17.2.7 - Be able to assess body composition.

OTHER: Bloom's: Remember

27. Which activity will most likely promote cardiorespiratory endurance?

- a. plyometrics

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- b. yoga
- c. calisthenics
- d. lifting weights
- e. cross-country skiing

ANSWER: e

REFERENCES: 2.4 Cardiorespiratory Endurance

LEARNING OBJECTIVES: FITW.HOEG.17.2.2 - Be able to assess cardiorespiratory fitness.

OTHER: Bloom's: Remember

28. Cardiorespiratory endurance is determined by ____.

- a. maximum heart rate
- b. resting heart rate
- c. $\text{VO}_{2\text{max}}$
- d. blood oxygen saturation
- e. blood pressure during exercise

ANSWER: c

REFERENCES: 2.4 Cardiorespiratory Endurance

LEARNING OBJECTIVES: FITW.HOEG.17.2.2 - Be able to assess cardiorespiratory fitness.

OTHER: Bloom's: Remember

29. The human body burns about ____ calories for each liter of oxygen consumed.

- a. 2
- b. 5
- c. 8
- d. 12
- e. 15

ANSWER: b

REFERENCES: 2.4 Cardiorespiratory Endurance

LEARNING OBJECTIVES: FITW.HOEG.17.2.2 - Be able to assess cardiorespiratory fitness.

OTHER: Bloom's: Remember

30. What information is needed to complete the equation to determine your estimated $\text{VO}_{2\text{max}}$ after the 1.0-Mile Walk Test?

- a. age
- b. BMI
- c. resting heart rate
- d. gender
- e. weight in kilograms

ANSWER: d

REFERENCES: 2.4 Cardiorespiratory Endurance

LEARNING OBJECTIVES: FITW.HOEG.17.2.2 - Be able to assess cardiorespiratory fitness.

OTHER: Bloom's: Remember

31. A maximal oxygen uptake of 45 mL/kg/min for a male who is 22 is considered ____.

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- a. poor
- b. fair
- c. average
- d. good
- e. excellent

ANSWER: d

REFERENCES: 2.4 Cardiorespiratory Endurance

LEARNING OBJECTIVES: FITW.HOEG.17.2.2 - Be able to assess cardiorespiratory fitness.

OTHER: Bloom's: Remember

32. Which assessment gives a good measure of absolute strength but also requires a basic skill level and a considerable amount of time to administer?

- a. Bench Jump
- b. Modified Push-up
- c. Modified Dip
- d. Bent-Leg Curl-up
- e. 1 RM

ANSWER: e

REFERENCES: 2.5 Muscular Fitness

LEARNING OBJECTIVES: FITW.HOEG.17.2.4 - Learn to assess muscular strength.

OTHER: Bloom's: Remember

33. A WC of more than ____ inches in men and ____ inches in women indicates a higher risk for cardiovascular disease, hypertension, and type 2 diabetes.

- a. 32; 35
- b. 35; 38
- c. 38; 40
- d. 40; 35
- e. 42; 32

ANSWER: d

REFERENCES: 2.7 Body Composition

LEARNING OBJECTIVES: FITW.HOEG.17.2.7 - Be able to assess body composition.

OTHER: Bloom's: Remember

34. During the Abdominal Crunch test, you should ____.

- a. shrug your shoulders
- b. place your chin against your chest
- c. regulate your cadence with a metronome set at 60 beats per minute
- d. cross your arms in front of your chest
- e. lie on the floor in a supine position with your legs straight

ANSWER: c

REFERENCES: 2.5 Muscular Fitness

LEARNING OBJECTIVES: FITW.HOEG.17.2.4 - Learn to assess muscular strength.

OTHER: Bloom's: Remember

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35. Flexibility exercises have been prescribed successfully to treat ____.

- a. dysmenorrhea
- b. type 2 diabetes
- c. arthritis
- d. varicose veins
- e. gastrointestinal problems

ANSWER: a

REFERENCES: 2.6 Muscular Flexibility

LEARNING OBJECTIVES: FITW.HOEG.17.2.5 - Be able to assess muscular flexibility.

OTHER: Bloom's: Remember

36. If you engage in a diet and exercise program, you should repeat body composition measurements about ____ to monitor changes in lean and fat tissue.

- a. once a week
- b. once a month
- c. every 3 months
- d. every 6 months
- e. once a year

ANSWER: b

REFERENCES: 2.8 Effects of Exercise and Diet on Body Composition

LEARNING OBJECTIVES: FITW.HOEG.17.2.9 - Learn to assess disease risk based on body mass index (BMI), waist circumference, and waist-to-height ratio.

OTHER: Bloom's: Remember

37. Sports medicine specialists believe that many muscular/skeletal problems and injuries, especially in adults, are related to a lack of ____.

- a. strength
- b. cardiorespiratory endurance
- c. flexibility
- d. balance
- e. coordination

ANSWER: c

REFERENCES: 2.6 Muscular Flexibility

LEARNING OBJECTIVES: FITW.HOEG.17.2.5 - Be able to assess muscular flexibility.

OTHER: Bloom's: Remember

38. The Modified Sit-and-Reach Test is used to assess ____ flexibility.

- a. quadriceps
- b. hip
- c. hamstring and low back
- d. shoulder and chest
- e. back and abdominal

ANSWER: c

REFERENCES: 2.6 Muscular Flexibility

LEARNING OBJECTIVES: FITW.HOEG.17.2.5 - Be able to assess muscular flexibility.

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OTHER: Bloom's: Remember

39. During aerobic exercise, the average person trains at between ____ percent of maximal oxygen uptake.
- a. 40 and 70
 - b. 50 and 75
 - c. 60 and 80
 - d. 70 and 85
 - e. 80 and 90

ANSWER: b

REFERENCES: 2.4 Cardiorespiratory Endurance

LEARNING OBJECTIVES: FITW.HOEG.17.2.2 - Be able to assess cardiorespiratory fitness.

OTHER: Bloom's: Remember

40. A WHtR of .6 indicates a(n) ____ disease risk.
- a. increased
 - b. very low
 - c. moderate
 - d. high
 - e. extremely high

ANSWER: b

REFERENCES: 2.7 Body Composition

LEARNING OBJECTIVES: FITW.HOEG.17.2.7 - Be able to assess body composition.

OTHER: Bloom's: Remember

Matching

Select the key term that is most associated with the description below. Each term is used only once.

- a. android obesity
- b. BMI
- c. functional independence
- d. gynoid obesity
- e. metabolic profile
- f. principle of individuality
- g. resting metabolism
- h. sarcopenia
- i. stretching
- j. $\text{VO}_{2\text{max}}$

REFERENCES:

- 2.4 Cardiorespiratory Endurance
- 2.7 Body Composition
- 2.5 Muscular Fitness
- 2.6 Muscular Flexibility
- 2.3 Fitness Assessment Battery
- 2.2 Responders Versus Nonresponders

LEARNING OBJECTIVES: FITW.HOEG.17.2.1 - Identify the health-related components of physical fitness.
FITW.HOEG.17.2.2 - Be able to assess cardiorespiratory fitness.

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FITW.HOEG.17.2.3 - Understand the difference between muscular strength and muscular endurance.

FITW.HOEG.17.2.5 - Be able to assess muscular flexibility.

FITW.HOEG.17.2.7 - Be able to assess body composition.

OTHER:

Bloom's: Remember

41. the ability to carry out activities of daily living without assistance from other individuals

ANSWER: c

42. obesity pattern seen in people who store fat primarily around the hips and thighs

ANSWER: d

43. age-related loss of lean body mass, strength, and function

ANSWER: h

44. the energy requirement to maintain the body's vital processes in the resting state

ANSWER: g

45. moving the joints beyond the accustomed range of motion

ANSWER: i

46. obesity pattern seen in individuals who tend to store fat in the trunk or abdominal area

ANSWER: a

47. result of the assessment of diabetes and cardiovascular disease risk through plasma insulin, glucose, lipid, and lipoprotein levels

ANSWER: e

48. an index that incorporates height and weight to estimate critical fat values at which risk for disease increases

ANSWER: b

49. maximum amount of oxygen the human body is able to utilize per minute of physical activity

ANSWER: j

50. training concept that states that genetics plays a major role in individual responses to exercise training and that these differences must be considered when designing exercise programs for different people

ANSWER: f

Subjective Short Answer

51. Differentiate between health fitness standards and physical fitness standards.

ANSWER: Health fitness standards are the lowest fitness requirements for maintaining good health, decreasing the risk for chronic diseases, and lowering the incidence of muscular/skeletal injuries. Attaining the health fitness standards requires only moderate amounts of physical activity. The physical fitness standard is set higher than the health fitness standard and requires a more vigorous exercise program. Physical fitness standards are required criteria to achieve a high level of physical fitness and the ability to do moderate-to vigorous physical activity without undue fatigue.

REFERENCES: 2.3 Fitness Assessment Battery

LEARNING OBJECTIVES: FITW.HOEG.17.2.1 - Identify the health-related components of physical fitness.

OTHER: Bloom's: Remember

Essay

52. Describe the correct anatomical landmarks for all five skinfold sites.

ANSWER:

- Chest: a diagonal fold halfway between the shoulder crease and the nipple
- Abdomen: a vertical fold about one inch to the right of the umbilicus
- Triceps: a vertical fold on the back of the upper arm, halfway between the shoulder and the elbow
- Thigh: a vertical fold on the front of the thigh, midway between the knee and the hip
- Suprailium: a diagonal fold above the crest of the ilium (on the side of the hip)

REFERENCES: 2.7 Body Composition

LEARNING OBJECTIVES: FITW.HOEG.17.2.7 - Be able to assess body composition.

OTHER: Bloom's: Remember

53. Describe how the Bent-Leg Curl-Up is performed.

ANSWER: For the Bent-Leg Curl-Up, lie down on the floor, face up, and bend both legs at the knees at approximately 100 degrees. Your feet should be on the floor, and you must hold them in place yourself throughout the test. Cross your arms in front of your chest, each hand on the opposite shoulder. Now raise your head off the floor, placing your chin against your chest. This is the starting and finishing position for each curl-up. The back of the head may not come in contact with the floor, the hands cannot be removed from the shoulders, and neither the feet nor the hips can be raised off the floor at any time during the test. The test is terminated if any of these four conditions occur. When you curl up, your upper body must come to an upright position before going back down. The repetitions are performed to a two-step cadence (up-down) regulated with the metronome set at 40 beats per minute. Count as many repetitions as you are able to perform following the proper cadence. The test is terminated if you fail to maintain the appropriate cadence or if you accomplish 100 repetitions.

REFERENCES: 2.5 Muscular Fitness

LEARNING OBJECTIVES: FITW.HOEG.17.2.4 - Learn to assess muscular strength.

OTHER: Bloom's: Remember

54. Summarize the benefits of participating in a regular flexibility program.

ANSWER:

- It helps to maintain good joint mobility.
- It increases resistance to muscle injury and soreness.
- It prevents low back and other spinal column problems.
- It improves and maintains good postural alignment.
- It enhances proper and graceful body movement.
- It improves personal appearance and self-image.
- It facilitates the development of motor skills throughout life.

Flexibility exercises also have been prescribed successfully to treat dysmenorrhea, general neuromuscular tension (stress), and knots (trigger points) in muscles and fascia. Regular stretching helps decrease the aches and pains caused by psychological stress and contributes to a decrease in anxiety, blood pressure, and breathing rate.

REFERENCES: 2.6 Muscular Flexibility

LEARNING OBJECTIVES: FITW.HOEG.17.2.5 - Be able to assess muscular flexibility.

OTHER: Bloom's: Remember

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55. Differentiate between android obesity and gynoid obesity. Based on recent evidence, discuss which group(s) of individuals are at an increased risk of developing chronic diseases and which of these diseases have been reported.

ANSWER: Android obesity is seen in individuals who tend to store fat in the trunk or abdominal area (which produces the “apple” shape). Gynoid obesity is seen in people who store fat primarily around the hips and thighs (which creates the “pear” shape). Obese individuals with abdominal fat are clearly at higher risk for heart disease, hypertension, type 2 diabetes, stroke, some types of cancer, dementia, migraines, and diminished lung function. Evidence also indicates that among individuals with a lot of abdominal fat, those whose fat deposits are located around internal organs (intra-abdominal or visceral fat) rather than subcutaneously or retroperitoneally have an even greater risk for disease than those with fat mainly just beneath the skin (subcutaneous fat). Of even greater significance, the results of a recent study that followed more than 350,000 people over almost 10 years concluded that even when body weight is viewed as “normal,” individuals with a large waist circumference nearly double the risk for premature death. Researchers believe that visceral fat secretes harmful inflammatory substances that contribute to chronic conditions.

REFERENCES: 2.7 Body Composition

LEARNING OBJECTIVES: FITW.HOEG.17.2.7 - Be able to assess body composition.

OTHER: Bloom’s: Remember