Personal Nutrition 10th edition Boyle Test Bank

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Chapter 03

1. Hunger is controlled by involuntary mechanisms.
    a. True
    b. False

ANSWER: True
POINTS: 1
DIFFICULTY: BLOOM'S: Remember
REFERENCES: 3.1 The Digestive System—Overview
LEARNING OBJECTIVES: PNUT.BOYL.16.3.1 - Explain how food moves through the digestive system and identify the role of each organ involved in digestion, including accessory organs.

2. All the food from the stomach is gradually pushed into the small intestine.
    a. True
    b. False

ANSWER: True
POINTS: 1
DIFFICULTY: BLOOM'S: Remember
REFERENCES: 3.1 The Digestive System
LEARNING OBJECTIVES: PNUT.BOYL.16.3.1 - Explain how food moves through the digestive system and identify the role of each organ involved in digestion, including accessory organs.

3. Chyme must touch the walls of the small intestine to be absorbed at the proper places.
    a. True
    b. False

ANSWER: True
POINTS: 1
DIFFICULTY: BLOOM'S: Remember
REFERENCES: 3.1 The Digestive System—Small Intestine
LEARNING OBJECTIVES: PNUT.BOYL.16.3.1 - Explain how food moves through the digestive system and identify the role of each organ involved in digestion, including accessory organs.

4. Peristalsis is stimulated by the presence of both fiber and fat.
    a. True
    b. False

ANSWER: False
POINTS: 1
DIFFICULTY: BLOOM'S: Remember
REFERENCES: 3.1 The Digestive System
LEARNING OBJECTIVES: PNUT.BOYL.16.3.1 - Explain how food moves through the digestive system and identify the role of each organ involved in digestion, including accessory organs.

5. Our energy intake and expenditure is similar to that of our ancestors from 10,000 years ago.
    a. True

b. False

ANSWER: False
POINTS: 1
DIFFICULTY: BLOOM'S: Remember
REFERENCES: Nutrition Action: Do Your Genes Affect What's in Your Jeans?
LEARNING OBJECTIVES: PNUT.BOYL.16.3.3 - Recognize that most of the body's work is done automatically and is finely regulated to achieve a state of well-being.

6. Nearly all of our metabolism and physiology are the same as that of our ancestors who lived more than 10,000 years ago.

a. True
b. False

ANSWER: True
POINTS: 1
DIFFICULTY: BLOOM'S: Remember
REFERENCES: Do Your Genes Affect What's in Your Jeans?
LEARNING OBJECTIVES: PNUT.BOYL.16.3.3 - Recognize that most of the body's work is done automatically and is finely regulated to achieve a state of well-being.

7. The majority of the world's population experiences issues digesting lactose or lactose intolerance.

a. True
b. False

ANSWER: True
POINTS: 1
DIFFICULTY: BLOOM'S: Remember
REFERENCES: 3.4 Spotlight: Gut Feelings—Common Digestive Problems
LEARNING OBJECTIVES: PNUT.BOYL.16.3.4 - Identify common digestive problems and strategies to prevent them.

8. Constipation is defined as not having a bowel movement daily.

a. True
b. False

ANSWER: False
POINTS: 1
DIFFICULTY: BLOOM'S: Understand
REFERENCES: 3.4 Spotlight: Gut Feelings—Common Digestive Problems
LEARNING OBJECTIVES: PNUT.BOYL.16.3.4 - Identify common digestive problems and strategies to prevent them.

9. Essential nutrients are synthesized by the body in amounts sufficient to meet physiological needs.

a. True
b. False

ANSWER: False
POINTS: 1
DIFFICULTY: BLOOM'S: Remember
REFERENCES: Introduction
LEARNING OBJECTIVES: PNUT.BOYL.16.3.0 - Define essential nutrients.

10. The large intestine is the same diameter as the small intestine but longer in length.
    a. True
    b. False
ANSWER: False
POINTS: 1
DIFFICULTY: BLOOM'S: Remember
REFERENCES: 3.1 The Digestive System
LEARNING OBJECTIVES: PNUT.BOYL.16.3.1 - Explain how food moves through the digestive system and identify the role of each organ involved in digestion, including accessory organs.

11. The digestive system is made up of the gastrointestinal (GI) tract—also called the digestive tract—and the liver, pancreas, and gallbladder.
    a. True
    b. False
ANSWER: True
POINTS: 1
DIFFICULTY: BLOOM'S: Remember
REFERENCES: 3.1 The Digestive System
LEARNING OBJECTIVES: PNUT.BOYL.16.3.1 - Explain how food moves through the digestive system and identify the role of each organ involved in digestion, including accessory organs.

12. Physical digestion of fiber begins in the mouth.
    a. True
    b. False
ANSWER: True
POINTS: 1
DIFFICULTY: BLOOM'S: Understand
REFERENCES: 3.1 The Digestive System
LEARNING OBJECTIVES: PNUT.BOYL.16.3.1 - Explain how food moves through the digestive system and identify the role of each organ involved in digestion, including accessory organs.

13. Digestion begins in the esophagus.
    a. True
    b. False
ANSWER: False
POINTS: 1

DIFFICULTY: BLOOM'S: Remember
REFERENCES: 3.1 The Digestive System
LEARNING OBJECTIVES: PNUT.BOYL.16.3.1 - Explain how food moves through the digestive system and identify the role of each organ involved in digestion, including accessory organs.

14. Food entering the stomach from the esophagus triggers peristalsis in the stomach.
    a. True
    b. False
ANSWER: True
POINTS: 1
DIFFICULTY: BLOOM'S: Understand
REFERENCES: 3.1 The Digestive System
LEARNING OBJECTIVES: PNUT.BOYL.16.3.1 - Explain how food moves through the digestive system and identify the role of each organ involved in digestion, including accessory organs.

15. The colon has the same type of mixing and peristaltic movements as in other sections of the digestive tract, but they occur more frequently.
    a. True
    b. False
ANSWER: False
POINTS: 1
DIFFICULTY: BLOOM'S: Understand
REFERENCES: 3.1 The Digestive System
LEARNING OBJECTIVES: PNUT.BOYL.16.3.1 - Explain how food moves through the digestive system and identify the role of each organ involved in digestion, including accessory organs.

16. Bones provide reserves of calcium, sodium, and other minerals that can be drawn on to keep blood levels constant and to meet cellular demands.
    a. True
    b. False
ANSWER: True
POINTS: 1
DIFFICULTY: BLOOM'S: Understand
REFERENCES: 3.2 Metabolism: Breaking Down Nutrients for Energy
LEARNING OBJECTIVES: PNUT.BOYL.16.3.2 - Outline how the metabolic processes of catabolism and anabolism allow the body to store and release energy as needed.

17. Cholesterol and bile pigments from the breakdown of hemoglobin are excreted in bile.
    a. True
    b. False
ANSWER: True
POINTS: 1
DIFFICULTY: BLOOM'S: Remember

REFERENCES: 3.1 The Digestive System
LEARNING OBJECTIVES: PNUT.BOYL.16.3.1 - Explain how food moves through the digestive system and identify the role of each organ involved in digestion, including accessory organs.

18. _____ protects the lining of the digestive tract from gastric juices and digestive enzymes.
    a. Bile
    b. Ptyalin
    c. Chyme
    d. Bicarbonate
    e. Mucus

ANSWER: e
POINTS: 1
DIFFICULTY: BLOOM'S: Remember
REFERENCES: 3.1 The Digestive System
LEARNING OBJECTIVES: PNUT.BOYL.16.3.1 - Explain how food moves through the digestive system and identify the role of each organ involved in digestion, including accessory organs.

19. Heartburn is caused by which due to which sphincter muscles opening up and releasing acidic contents into the esophagus.
    a. Ileocecal valve
    b. Lower esophageal sphincter
    c. Upper esophageal sphincter
    d. Pyloric sphincter
    e. Rectum

ANSWER: b
POINTS: 1
DIFFICULTY: BLOOM'S: Remember
REFERENCES: 3.1 The Digestive System
LEARNING OBJECTIVES: PNUT.BOYL.16.3.1 - Explain how food moves through the digestive system and identify the role of each organ involved in digestion, including accessory organs.

20. The stomach is the digestive organ where digestion of ____ is initiated thanks to hydrochloric acid.
    a. vitamin B12
    b. lactose
    c. insoluble fiber
    d. protein
    e. soluble fiber

ANSWER: d
POINTS: 1
DIFFICULTY: BLOOM'S: Understand
REFERENCES: 3.1 The Digestive System
LEARNING OBJECTIVES: PNUT.BOYL.16.3.1 - Explain how food moves through the digestive system and

identify the role of each organ involved in digestion, including accessory organs.

21. What structure controls the flow of chyme into the small intestine?
    a. Lower esophageal sphincter
    b. Pyloric sphincter
    c. Ileocecal valve
    d. Oral cavity
    e. Cortex

ANSWER: b
POINTS: 1
DIFFICULTY: BLOOM'S: Remember
REFERENCES: 3.1 The Digestive System
LEARNING OBJECTIVES: PNUT.BOYL.16.3.1 - Explain how food moves through the digestive system and identify the role of each organ involved in digestion, including accessory organs.

22. What substance neutralizes the acidic chyme once it enters the small intestine?
    a. Amylase
    b. Pepsin
    c. Bile
    d. Bicarbonate
    e. Glycogen

ANSWER: d
POINTS: 1
DIFFICULTY: BLOOM'S: Remember
REFERENCES: 3.1 The Digestive System
LEARNING OBJECTIVES: PNUT.BOYL.16.3.1 - Explain how food moves through the digestive system and identify the role of each organ involved in digestion, including accessory organs.

23. When present in the small intestine, ____ stimulates peristalsis.
    a. protein
    b. fiber
    c. vitamins
    d. starch
    e. fat

ANSWER: b
POINTS: 1
DIFFICULTY: BLOOM'S: Remember
REFERENCES: 3.1 The Digestive System
LEARNING OBJECTIVES: PNUT.BOYL.16.3.1 - Explain how food moves through the digestive system and identify the role of each organ involved in digestion, including accessory organs.

24. The goal during digestion is to break carbohydrates, proteins, and lipids down into smaller units, including ____.

a. amino acids, fatty acids, and glucose
b. glycerol, protein, and glucose
c. fatty acids, amino acids, and pepsin
d. amino acids, fiber, and glycerol
e. glucose, pepsin, and cholesterol

ANSWER: a
POINTS: 1
DIFFICULTY: BLOOM'S: Understand
REFERENCES: 3.1 The Digestive System
LEARNING OBJECTIVES: PNUT.BOYL.16.3.1 - Explain how food moves through the digestive system and identify the role of each organ involved in digestion, including accessory organs.

25. By the time the digested mixture reaches the end of the small intestine, little is left but water, indigestible residue, and ____.
a. minerals
b. glucose
c. amino acids
d. vitamins
e. fat

ANSWER: a
POINTS: 1
DIFFICULTY: BLOOM'S: Remember
REFERENCES: 3.1 The Digestive System
LEARNING OBJECTIVES: PNUT.BOYL.16.3.1 - Explain how food moves through the digestive system and identify the role of each organ involved in digestion, including accessory organs.

26. What substances are normally present in feces?
a. Water, red blood cells, fiber, and bacteria
b. Fiber, water, bicarbonate, and bile
c. Bacteria, water, hydrochloric acid, and fiber
d. Fiber, maltase, water, and bacteria
e. Water, bile pigments, fiber, and bacteria

ANSWER: e
POINTS: 1
DIFFICULTY: BLOOM'S: Understand
REFERENCES: 3.1 The Digestive System
LEARNING OBJECTIVES: PNUT.BOYL.16.3.1 - Explain how food moves through the digestive system and identify the role of each organ involved in digestion, including accessory organs.

27. Joe finds himself troubled with gas after eating certain foods. The quantity and quality of intestinal gas is related to the types of food eaten and ____.
a. the characteristics of intestinal bacteria

b. the amount of water in the large intestine
c. the amount of food eaten
d. the quantity of vitamin K in the large intestine
e. the amount of bicarbonate secreted by the pancreas

ANSWER: a
POINTS: 1
DIFFICULTY: BLOOM'S: Understand
REFERENCES: 3.1 The Digestive System
LEARNING OBJECTIVES: PNUT.BOYL.16.3.1 - Explain how food moves through the digestive system and identify the role of each organ involved in digestion, including accessory organs.

28. Susan had her gallbladder removed. What substance would Susan's body normally store in this organ?
a. Amylase
b. Bile
c. Bicarbonate
d. Water
e. Glycogen

ANSWER: b
POINTS: 1
DIFFICULTY: BLOOM'S: Remember
REFERENCES: 3.1 The Digestive System
LEARNING OBJECTIVES: PNUT.BOYL.16.3.1 - Explain how food moves through the digestive system and identify the role of each organ involved in digestion, including accessory organs.

29. What chemical stimulates the gallbladder to send bile into the small intestine?
a. Cholecystokinin
b. Bicarbonate
c. Lycopene
d. Linoleic acid
e. Hydrochloric acid

ANSWER: a
POINTS: 1
DIFFICULTY: BLOOM'S: Remember
REFERENCES: 3.1 The Digestive System
LEARNING OBJECTIVES: PNUT.BOYL.16.3.1 - Explain how food moves through the digestive system and identify the role of each organ involved in digestion, including accessory organs.

30. What is an endocrine function of the pancreas?
a. Secreting enzymes that break down proteins
b. Secreting bicarbonate
c. Secreting amylase
d. Secreting insulin

e. Secreting bile

ANSWER: d
POINTS: 1
DIFFICULTY: BLOOM'S: Understand
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31. All nutrients leaving the digestive system by way of the blood are taken to the ____.

a. pancreas
b. large intestine
c. liver
d. gallbladder
e. stomach

ANSWER: c
POINTS: 1
DIFFICULTY: BLOOM'S: Remember
REFERENCES: 3.2 Metabolism: Breaking Down Nutrients for Energy
LEARNING OBJECTIVES: PNUT.BOYL.16.3.2 - Outline how the metabolic processes of catabolism and anabolism allow the body to store and release energy as needed.

32. Joe is taking a nutrition course and learns that the galactose in his milk ends up as glucose. Where does this conversion take place?

a. Brain
b. Liver
c. Gallbladder
d. Appendix
e. Pancreas

ANSWER: b
POINTS: 1
DIFFICULTY: BLOOM'S: Remember
REFERENCES: 3.2 Metabolism: Breaking Down Nutrients for Energy
LEARNING OBJECTIVES: PNUT.BOYL.16.3.2 - Outline how the metabolic processes of catabolism and anabolism allow the body to store and release energy as needed.

33. Amino acids cannot be altered or used in the liver to form ____.

a. glucose
b. fat
c. insoluble fiber
d. another amino acid
e. lipoprotein

ANSWER: c

POINTS: 1
DIFFICULTY: BLOOM'S: Understand
REFERENCES: 3.2 Metabolism: Breaking Down Nutrients for Energy
LEARNING OBJECTIVES: PNUT.BOYL.16.3.2 - Outline how the metabolic processes of catabolism and anabolism allow the body to store and release energy as needed.

34. Excess glucose in the body can be stored as ____.
    a. insulin
    b. amino acids
    c. lipoproteins
    d. fat and glycogen
    e. cholesterol and glucagon

ANSWER: d
POINTS: 1
DIFFICULTY: BLOOM'S: Remember
REFERENCES: 3.2 Metabolism: Breaking Down Nutrients for Energy
LEARNING OBJECTIVES: PNUT.BOYL.16.3.2 - Outline how the metabolic processes of catabolism and anabolism allow the body to store and release energy as needed.

35. Glycogen provides the body with glucose when ____.
    a. excess calories are eaten
    b. a high-carbohydrate meal is consumed
    c. glucose absorbed from ingested foods is depleted
    d. a person has type 1 diabetes
    e. the fat content of a person's diet is elevated

ANSWER: c
POINTS: 1
DIFFICULTY: BLOOM'S: Understand
REFERENCES: 3.2 Metabolism: Breaking Down Nutrients for Energy
LEARNING OBJECTIVES: PNUT.BOYL.16.3.2 - Outline how the metabolic processes of catabolism and anabolism allow the body to store and release energy as needed.

36. What conversion represents a catabolic reaction?
    a. Glucose to glycogen
    b. Amino acids to protein
    c. Fatty acids and glycerol to triglycerides
    d. Glycogen to glucose
    e. Glucose to protein

ANSWER: d
POINTS: 1
DIFFICULTY: BLOOM'S: Understand
REFERENCES: 3.2 Metabolism: Breaking Down Nutrients for Energy

LEARNING OBJECTIVES: PNUT.BOYL.16.3.2 - Outline how the metabolic processes of catabolism and anabolism allow the body to store and release energy as needed.

37. What body chemical is an emulsifier?
    a. Amino acids
    b. Bile
    c. Amylase
    d. Bicarbonate
    e. Hydrochloric acid

ANSWER: b
POINTS: 1
DIFFICULTY: BLOOM'S: Remember
REFERENCES: 3.1 The Digestive System
LEARNING OBJECTIVES: PNUT.BOYL.16.3.1 - Explain how food moves through the digestive system and identify the role of each organ involved in digestion, including accessory organs.

38. What secretion is responsible for neutralizing acid from the stomach in the small intestine?
    a. Mucus
    b. Cholecystokinin
    c. Intrinsic factor
    d. Bicarbonate
    e. Bile

ANSWER: d
POINTS: 1
DIFFICULTY: BLOOM'S: Understand
REFERENCES: 3.1 The Digestive System
LEARNING OBJECTIVES: PNUT.BOYL.16.3.1 - Explain how food moves through the digestive system and identify the role of each organ involved in digestion, including accessory organs.

39. Approximately how long does it take for a meal to empty from the stomach?
    a. One hour
    b. Two hours
    c. Four hours
    d. Six hours
    e. Eight hours

ANSWER: c
POINTS: 1
DIFFICULTY: BLOOM'S: Remember
REFERENCES: 3.1 The Digestive System
LEARNING OBJECTIVES: PNUT.BOYL.16.3.1 - Explain how food moves through the digestive system and identify the role of each organ involved in digestion, including accessory organs.

40. What is the main site of digestion and absorption of nutrients?
    a. Mouth
    b. Stomach
    c. Small intestine
    d. Large intestine
    e. liver

ANSWER: c
POINTS: 1
DIFFICULTY: BLOOM'S: Understand
REFERENCES: 3.1 The Digestive System
LEARNING OBJECTIVES: PNUT.BOYL.16.3.1 - Explain how food moves through the digestive system and identify the role of each organ involved in digestion, including accessory organs.

41. What enzyme present in the mouth is responsible for converting starch into small polysaccharides?
    a. Amylase
    b. Maltase
    c. Lactase
    d. Polypeptidase
    e. Lipase

ANSWER: a
POINTS: 1
DIFFICULTY: BLOOM'S: Remember
REFERENCES: 3.1 The Digestive System
LEARNING OBJECTIVES: PNUT.BOYL.16.3.1 - Explain how food moves through the digestive system and identify the role of each organ involved in digestion, including accessory organs.

42. Following digestion, what nutrients are first carried in the lymph?
    a. Protein and products of fat digestion
    b. Fat-soluble vitamins and minerals
    c. Water-soluble vitamins and protein
    d. Products of fat digestion and fat-soluble vitamins
    e. Water and minerals

ANSWER: d
POINTS: 1
DIFFICULTY: BLOOM'S: Understand
REFERENCES: 3.1 The Digestive System
LEARNING OBJECTIVES: PNUT.BOYL.16.3.1 - Explain how food moves through the digestive system and identify the role of each organ involved in digestion, including accessory organs.

43. Vitamin B12 requires what secretion in order to be absorbed?
    a. Amylase
    b. Insulin

c. Intrinsic factor
d. Cholecystokinin
e. Hydrochloric acid

ANSWER: c
POINTS: 1
DIFFICULTY: BLOOM'S: Remember
REFERENCES: 3.1 The Digestive System
LEARNING OBJECTIVES: PNUT.BOYL.16.3.1 - Explain how food moves through the digestive system and identify the role of each organ involved in digestion, including accessory organs.

44. Joe is eating a peanut butter and jelly sandwich on whole-wheat bread. The chemical digestion of what nutrient in his sandwich is started in his mouth?
a. The fat in the peanut butter
b. The fiber in the peanut butter
c. The vitamins in the bread
d. The starch in the bread
e. The protein in the bread and in the peanut butter

ANSWER: d
POINTS: 1
DIFFICULTY: BLOOM'S: Understand
REFERENCES: 3.1 The Digestive System
LEARNING OBJECTIVES: PNUT.BOYL.16.3.1 - Explain how food moves through the digestive system and identify the role of each organ involved in digestion, including accessory organs.

45. The ____ produces bile and the ____ stores it.
a. gallbladder; colon
b. stomach; liver
c. small intestine; large intestine
d. pancreas; gallbladder
e. liver; gallbladder

ANSWER: e
POINTS: 1
DIFFICULTY: BLOOM'S: Remember
REFERENCES: 3.1 The Digestive System
LEARNING OBJECTIVES: PNUT.BOYL.16.3.1 - Explain how food moves through the digestive system and identify the role of each organ involved in digestion, including accessory organs.

46. During the process of digestion, where in the body does chyme form?
a. In the esophagus
b. In the small intestine
c. In the colon
d. In the liver

e. In the stomach

ANSWER: e
POINTS: 1
DIFFICULTY: BLOOM'S: Remember
REFERENCES: 3,1 The Digestive System
LEARNING OBJECTIVES: PNUT.BOYL.16.3.1 - Explain how food moves through the digestive system and identify the role of each organ involved in digestion, including accessory organs.

47. What organs are the accessory organs of digestion?
a. Liver, gallbladder, and pancreas
b. Liver, rectum, and appendix
c. Colon, appendix, and gallbladder
d. Pancreas, esophagus, and salivary glands
e. Appendix, pancreas, and large intestine

ANSWER: a
POINTS: 1
DIFFICULTY: BLOOM'S: Remember
REFERENCES: 3.1 The Digestive System
LEARNING OBJECTIVES: PNUT.BOYL.16.3.1 - Explain how food moves through the digestive system and identify the role of each organ involved in digestion, including accessory organs.

48. Which characteristics most accurately depict our ancestors' diets and lifestyles?
a. They drank more milk than we do and were more active.
b. They ate less fiber than we do and were less active.
c. They ate less saturated fat than we do and were more active.
d. They ate more fruits and vegetables than we do and were less active.
e. They ate proportionately less meat than we do and were more active.

ANSWER: c
POINTS: 1
DIFFICULTY: BLOOM'S: Understand
REFERENCES: Nutrition Action: Do Your Genes Affect What's in Your Jeans?
LEARNING OBJECTIVES: PNUT.BOYL.16.3.3 - Recognize that most of the body's work is done automatically and is finely regulated to achieve a state of well-being.

49. When the body does not require immediate energy, the end-products of digestion are stored as ____.
a. protein and fat
b. fat and amino acids
c. glycogen and glucose
d. enzymes and glycogen
e. fat and glycogen

ANSWER: e
POINTS: 1

DIFFICULTY: BLOOM'S: Understand
REFERENCES: 3.2 Metabolism: Breaking Down Nutrients for Energy
LEARNING OBJECTIVES: PNUT.BOYL.16.3.2 - Outline how the metabolic processes of catabolism and anabolism allow the body to store and release energy as needed.

50. What nutrients are carried initially in the lymphatic system after absorption through the small intestine?
    a. Glucose and fructose
    b. Water-soluble vitamins
    c. Fat-soluble vitamins
    d. Minerals
    e. Amino acids

ANSWER: c
POINTS: 1
DIFFICULTY: BLOOM'S: Understand
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51. What task is a major function of the stomach?
    a. Producing emulsifiers
    b. Producing chyme
    c. Hosting bacteria that produce vitamin K
    d. Creating a food bolus
    e. Dismantling carbohydrates

ANSWER: b
POINTS: 1
DIFFICULTY: BLOOM'S: Understand
REFERENCES: 3.1 The Digestive System
LEARNING OBJECTIVES: PNUT.BOYL.16.3.1 - Explain how food moves through the digestive system and identify the role of each organ involved in digestion, including accessory organs.

52. One reason the stomach's hydrochloric acid is important is that it ____.
    a. synthesizes absorbable vitamin K
    b. kills bacteria
    c. breaks down and absorbs fat-soluble vitamins
    d. facilitates the action of amylase
    e. produces bile to emulsify fat particles

ANSWER: b
POINTS: 1
DIFFICULTY: BLOOM'S: Understand
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identify the role of each organ involved in digestion, including accessory organs.

53. How does the type of food eaten influence stomach emptying rate?
    a. The type of food has virtually no impact on the stomach emptying rate.
    b. Solids pass through the stomach more quickly than liquids.
    c. Proteins pass through the stomach more slowly than fats.
    d. Carbohydrates pass through the stomach more quickly than proteins.
    e. Fats pass through the stomach more quickly than carbohydrates.

ANSWER: d
POINTS: 1
DIFFICULTY: BLOOM'S: Understand
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54. The volume of an empty stomach is about ____, but its capacity can increase to about ____ after eating or drinking.
    a. 1/2 cup; 2 cups
    b. 1 ounce; 1½ liters
    c. 1½ ounces; 1 liter
    d. 1/2 liter; 1½ liters
    e. 3 ounces; 3 cups

ANSWER: c
POINTS: 1
DIFFICULTY: BLOOM'S: Remember
REFERENCES: 3.1 The Digestive System
LEARNING OBJECTIVES: PNUT.BOYL.16.3.1 - Explain how food moves through the digestive system and identify the role of each organ involved in digestion, including accessory organs.

55. What is the circular muscle surrounding the lower end of the small intestine that controls the exodus of small intestine contents?
    a. Pylorus
    b. Gastric sphincter
    c. Lower esophageal sphincter
    d. Ileocecal valve
    e. External sphincter

ANSWER: d
POINTS: 1
DIFFICULTY: BLOOM'S: Remember
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56. Hemorrhoids are ____.

a. a life-threatening complication of constipation
b. relatively rare in the U.S. adult population
c. patches of itchy, irritated skin around the anus
d. swollen and inflamed veins around the anus
e. seldom experienced during pregnancy

ANSWER: d
POINTS: 1
DIFFICULTY: BLOOM'S: Understand
REFERENCES: 3.4 Spotlight: Gut Feelings—Common Digestive Problems
LEARNING OBJECTIVES: PNUT.BOYL.16.3.4 - Identify common digestive problems and strategies to prevent them.

57. How can one prevent hemorrhoids from developing or recurring?

a. Eating more fiber and drinking more water
b. Taking 10-minute baths in warm water several times a day
c. Avoiding gas-producing foods (as determined by trial and error)
d. Applying over-the-counter hemorrhoid cream to the affected area
e. Taking a small dose of laxatives on a daily basis

ANSWER: a
POINTS: 1
DIFFICULTY: BLOOM'S: Understand
REFERENCES: 3.4 Spotlight: Gut Feelings—Common Digestive Problems
LEARNING OBJECTIVES: PNUT.BOYL.16.3.4 - Identify common digestive problems and strategies to prevent them.

Vignette #1
Sue and Juan are newlyweds, and Sue is taking a nutrition course at the local college. She wants to apply the principles that she has learned. Juan is currently a bit overweight and rarely eats a balanced diet. Sue notices that he usually has gas after meals, especially when dairy is present. Lately, he has also been complaining about constipation. Let's see what you can do to assist Sue in her efforts to analyze Juan's digestive problems.

58. Sue is planning a meal for Juan and wants to avoid any foods that are associated with causing gas. What food would you recommend to her that she omit from the meal?

a. Enriched white bread
b. Soda crackers
c. Cabbage
d. Strawberries
e. White rice

ANSWER: c
POINTS: 1
DIFFICULTY: BLOOM'S: Understand
REFERENCES: 3.4 Spotlight: Gut Feelings—Common Digestive Problems

PREFACE NAME: Vignette #1
LEARNING OBJECTIVES: PNUT.BOYL.16.3.4 - Identify common digestive problems and strategies to prevent them.

59. To help Juan with his constipation, which action is only advised after other measures have failed?
    a. Take a laxative after consulting a physician.
    b. Eat bran cereal for breakfast and more vegetables throughout the day.
    c. Drink more fluids.
    d. Take a walk at lunchtime and after work every day.
    e. Pay attention to the urge to have a bowel movement.

ANSWER: a
POINTS: 1
DIFFICULTY: BLOOM'S: Understand
REFERENCES: 3.4 Spotlight: Gut Feelings—Common Digestive Problems
PREFACE NAME: Vignette #1
LEARNING OBJECTIVES: PNUT.BOYL.16.3.4 - Identify common digestive problems and strategies to prevent them.

60. Juan is unsure about topics surrounding gas in the digestive system. What statement about gas is correct?
    a. Gas from swallowed air has a bad odor.
    b. Belched gas leaves through the rectum.
    c. The average adult passes gas twice a day.
    d. Some gas is produced by the bacteria that live in our colon.
    e. Gas produced due to lactose maldigestion is typically accompanied by constipation.

ANSWER: d
POINTS: 1
DIFFICULTY: BLOOM'S: Understand
REFERENCES: 3.4 Spotlight: Gut Feelings—Common Digestive Problems
PREFACE NAME: Vignette #1
LEARNING OBJECTIVES: PNUT.BOYL.16.3.4 - Identify common digestive problems and strategies to prevent them.

61. Juan frequently acquires the hiccups. What is a common cause for this ailment?
    a. Swallowing air
    b. Sphincter muscle spasms
    c. Eating beans and cruciferous vegetables
    d. Drinking hot beverages
    e. Consuming a glass of wine

ANSWER: a
POINTS: 1
DIFFICULTY: BLOOM'S: Understand
REFERENCES: 3.4 Spotlight: Gut Feelings—Common Digestive Problems

PREFACE NAME: Vignette #1
LEARNING OBJECTIVES: PNUT.BOYL.16.3.4 - Identify common digestive problems and strategies to prevent them.

62. Why might Juan have gas after eating dairy products?
    a. He eats dairy products with vegetables at the same meal.
    b. Bacteria in his colon digest the lactose, producing gas.
    c. The lactose from the milk remains in his stomach and creates gas.
    d. His body does not make enough sucrase to digest the dairy sugar.
    e. His body produces too much lactase, resulting in gas formation.

ANSWER: b
POINTS: 1
DIFFICULTY: BLOOM'S: Understand
REFERENCES: 3.4 Spotlight: Gut Feelings—Common Digestive Problems
PREFACE NAME: Vignette #1
LEARNING OBJECTIVES: PNUT.BOYL.16.3.4 - Identify common digestive problems and strategies to prevent them.

Vignette #2
Maggie is a 34-year-old mother of two children. She was told by her physician that she needs her gallbladder removed. Maggie panics and calls her mother saying, "Mom, I can't believe this!!! How am I going to live without my gallbladder? You have to have a gallbladder to survive, and the doctor wants to remove it!" Her mother tells her to calm down and that an individual cannot live without a liver but can live without a gallbladder,

63. What is the main role of the gallbladder?
    a. Digesting starch
    b. Storing bile until needed
    c. Controlling the emptying of the stomach
    d. Sending digestive enzymes to the small intestine
    e. Producing bile

ANSWER: b
POINTS: 1
DIFFICULTY: BLOOM'S: Remember
REFERENCES: 3.1 The Digestive System
PREFACE NAME: Vignette #2
LEARNING OBJECTIVES: PNUT.BOYL.16.3.1 - Explain how food moves through the digestive system and identify the role of each organ involved in digestion, including accessory organs.

64. Bile empties from the gall bladder into the ____.
    a. pancreas
    b. liver
    c. duodenum
    d. hepatic duct

e. jejunum

ANSWER: c
POINTS: 1
DIFFICULTY: BLOOM'S: Understand
REFERENCES: 3.1 The Digestive System
PREFACE NAME: Vignette #2
LEARNING OBJECTIVES: PNUT.BOYL.16.3.1 - Explain how food moves through the digestive system and identify the role of each organ involved in digestion, including accessory organs.

65. After Maggie's gallbladder has been removed, what nutrient might she have difficulty digesting?
a. Carbohydrates
b. Fat
c. Protein
d. Vitamins
e. Minerals

ANSWER: b
POINTS: 1
DIFFICULTY: BLOOM'S: Apply
REFERENCES: 3.1 The Digestive System
PREFACE NAME: Vignette #2
LEARNING OBJECTIVES: PNUT.BOYL.16.3.1 - Explain how food moves through the digestive system and identify the role of each organ involved in digestion, including accessory organs.

66. Where in the digestive process does bile aid with digestion?
a. In the mouth
b. In the stomach
c. In the small intestine
d. In the rectum
e. In the appendix

ANSWER: c
POINTS: 1
DIFFICULTY: BLOOM'S: Understand
REFERENCES: 3.1 The Digestive System
PREFACE NAME: Vignette #2
LEARNING OBJECTIVES: PNUT.BOYL.16.3.1 - Explain how food moves through the digestive system and identify the role of each organ involved in digestion, including accessory organs.

67. Where in the digestive process does bile aid with digestion?
a. In the mouth
b. In the stomach
c. In the small intestine
d. In the rectum

e. In the appendix

ANSWER: d
POINTS: 1
DIFFICULTY: BLOOM'S: Understand
REFERENCES: 3.1 The Digestive System
PREFACE NAME: Vignette #2
LEARNING OBJECTIVES: PNUT.BOYL.16.3.1 - Explain how food moves through the digestive system and identify the role of each organ involved in digestion, including accessory organs.

68. _____ is digested to glucose and fructose in the stomach.
a. Galactose
b. Maltose
c. Lactose
d. Sucrose
e. Soluble fiber

ANSWER: d
POINTS: 1
DIFFICULTY: BLOOM'S: Remember
REFERENCES: 3.1 The Digestive System—Overview
LEARNING OBJECTIVES: PNUT.BOYL.16.3.1 - Explain how food moves through the digestive system and identify the role of each organ involved in digestion, including accessory organs.

69. The innermost layer of the gastrointestinal (GI) tract wall is called the _____.
a. mucosa
b. jejunum
c. mesentery
d. ileum
e. villi

ANSWER: a
POINTS: 1
DIFFICULTY: BLOOM'S: Remember
REFERENCES: 3.1 The Digestive System
LEARNING OBJECTIVES: PNUT.BOYL.16.3.1 - Explain how food moves through the digestive system and identify the role of each organ involved in digestion, including accessory organs.

70. Chemical digestion of carbohydrates begins in the _____.
a. stomach
b. esophagus
c. mouth
d. small intestine
e. pancreas

ANSWER: c

POINTS: 1
DIFFICULTY: BLOOM'S: Understand
REFERENCES: 3.1 The Digestive System—The Mouth
LEARNING OBJECTIVES: PNUT.BOYL.16.3.1 - Explain how food moves through the digestive system and identify the role of each organ involved in digestion, including accessory organs.

71. The _____ protects the esophagus from stomach acid splashing back into the esophagus.
    a. epiglottis
    b. pyloric sphincter
    c. ileocecal valve
    d. lower esophageal spincter
    e. appendix

ANSWER: d
POINTS: 1
DIFFICULTY: BLOOM'S: Remember
REFERENCES: 3.1 The Digestive System
LEARNING OBJECTIVES: PNUT.BOYL.16.3.1 - Explain how food moves through the digestive system and identify the role of each organ involved in digestion, including accessory organs.

72. Once food is mixed into a semi-liquid blend in the stomach, it is called _____.
    a. chyme
    b. gastric secretions
    c. bolus
    d. indigestible residue
    e. partially digested food

ANSWER: a
POINTS: 1
DIFFICULTY: BLOOM'S: Remember
REFERENCES: 3.1 The Digestive System
LEARNING OBJECTIVES: PNUT.BOYL.16.3.1 - Explain how food moves through the digestive system and identify the role of each organ involved in digestion, including accessory organs.

73. Intrinsic factor in the stomach aids in the absorption of _____.
    a. iron
    b. folate
    c. vitamin B12
    d. vitamin B6
    e. potassium

ANSWER: c
POINTS: 1
DIFFICULTY: BLOOM'S: Remember
REFERENCES: 3.1 The Digestive System

LEARNING OBJECTIVES: PNUT.BOYL.16.3.1 - Explain how food moves through the digestive system and identify the role of each organ involved in digestion, including accessory organs.

74. _____are due to spasms in the muscle at the base of the lungs.
    a. Hiccups
    b. Choking
    c. Heartburn
    d. Gas
    e. Hemorroids

ANSWER: a
POINTS: 1
DIFFICULTY: BLOOM'S: Remember
REFERENCES: 3.4 Spotlight: Gut Feelings—Common Digestive Problems
LEARNING OBJECTIVES: PNUT.BOYL.16.3.4 - Identify common digestive problems and strategies to prevent them.

75. Bile salts play a role in absorption of _____.
    a. water-soluble vitamins
    b. fat-soluble vitamins
    c. minerals
    d. water
    e. fiber

ANSWER: b
POINTS: 1
DIFFICULTY: BLOOM'S: Understand
REFERENCES: 3.1 The Digestive System
LEARNING OBJECTIVES: PNUT.BOYL.16.3.1 - Explain how food moves through the digestive system and identify the role of each organ involved in digestion, including accessory organs.

76. Entry of chyme into the small intestine is controlled by the _____.
    a. sphincter of Oddi
    b. cardiac sphincter
    c. pyloric sphincter
    d. lower esophageal spincter
    e. ileocecal valve

ANSWER: c
POINTS: 1
DIFFICULTY: BLOOM'S: Remember
REFERENCES: 3.1 The Digestive System
LEARNING OBJECTIVES: PNUT.BOYL.16.3.1 - Explain how food moves through the digestive system and identify the role of each organ involved in digestion, including accessory organs.

77. In addition to digestive functions, the _____ is responsible for filtering bacteria and other particles from the blood.
a. small intestine
b. pancreas
c. liver
d. appendix
e. gallbladder

ANSWER: c
POINTS: 1
DIFFICULTY: BLOOM'S: Understand
REFERENCES: 3.1 The Digestive System
LEARNING OBJECTIVES: PNUT.BOYL.16.3.1 - Explain how food moves through the digestive system and identify the role of each organ involved in digestion, including accessory organs.

78. The _____ has both endocrine and exocrine functions.
a. small intestine
b. pancreas
c. liver
d. appendix
e. gallbladder

ANSWER: b
POINTS: 1
DIFFICULTY: BLOOM'S: Remember
REFERENCES: 3.1 The Digestive System
LEARNING OBJECTIVES: PNUT.BOYL.16.3.1 - Explain how food moves through the digestive system and identify the role of each organ involved in digestion, including accessory organs.

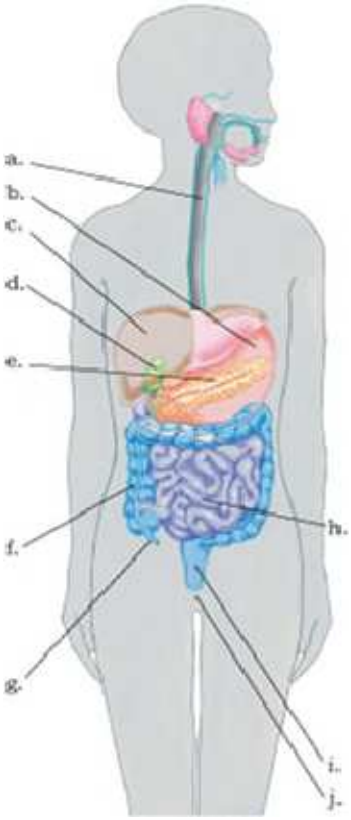
79. Nutrients that leave the digestive tract by way of lymph are packaged as _____ that circulate throughout the body, allowing cells to withdraw fats from them.
a. hormones
b. chylomicrons
c. glycogen
d. fat-soluble vitamins
e. bile

ANSWER: b
POINTS: 1
DIFFICULTY: BLOOM'S: Understand
REFERENCES: 3.2 Metabolism: Breaking Down Nutrients for Energy
LEARNING OBJECTIVES: PNUT.BOYL.16.3.2 - Outline how the metabolic processes of catabolism and anabolism allow the body to store and release energy as needed.

80. _____are blood vessels that carry nutrient-rich blood from the heart throughout the body to the tissues.
a. Capillaries

b. Veins
c. Arteries
d. Lipoproteins
e. Metabolic pathways

ANSWER: a
POINTS: 1
DIFFICULTY: BLOOM'S: Remember
REFERENCES: 3.1 The Digestive System
LEARNING OBJECTIVES: PNUT.BOYL.16.3.1 - Explain how food moves through the digestive system and identify the role of each organ involved in digestion, including accessory organs.



DIFFICULTY: BLOOM'S: Remember
REFERENCES: 3.1 The Digestive System
LEARNING OBJECTIVES: PNUT.BOYL.16.3.1 - Explain how food moves through the digestive system and identify the role of each organ involved in digestion, including accessory organs.

81. Pancreas
ANSWER: e
POINTS: 1

82. Large intestine
ANSWER: f
POINTS: 1

83. Small intestine
ANSWER: h
POINTS: 1

84. Stomach
ANSWER: b
POINTS: 1

85. Esophagus
ANSWER: a
POINTS: 1

86. Gallbladder
ANSWER: d
POINTS: 1

87. Liver
ANSWER: c
POINTS: 1

88. Rectum
ANSWER: i
POINTS: 1

89. Appendix
ANSWER: g
POINTS: 1

90. Anus
ANSWER: j
POINTS: 1

Match each enzyme or secretion to its function.
a. Splits the disaccharide maltose into two molecules of glucose
b. Separates protein into shorter chains of amino acids
c. Splits short chains of amino acids into molecules containing one, two, or three amino acids
d. Uncoils proteins
e. Splits the disaccharide lactose into glucose and galactose
f. Breaks down fats into fragments of fatty acids and glycerol
g. Breaks down starch into smaller chains of glucose molecules
h. Splits the disaccharide sucrose into glucose and fructose
i. An emulsifier that breaks down fat into particles small enough for enzymes to break down
j. neutralizes acidic fluids from the stomach

DIFFICULTY: BLOOM'S: Remember
REFERENCES: 3.1 The Digestive System
LEARNING OBJECTIVES: PNUT.BOYL.16.3.1 - Explain how food moves through the digestive system and identify the role of each organ involved in digestion, including accessory organs.

91. Amylase
ANSWER: g
POINTS: 1

92. Bicarbonate
ANSWER: j
POINTS: 1

93. Lactase
ANSWER: e
POINTS: 1

94. Hydrochloric acid
ANSWER: d
POINTS: 1

95. Lipase
ANSWER: f
POINTS: 1

96. Pepsin
ANSWER: b
POINTS: 1

97. Bile
ANSWER: i
POINTS: 1

98. Sucrase
ANSWER: h
POINTS: 1

99. Maltase
ANSWER: a
POINTS: 1

100. Trypsin
ANSWER: c
POINTS: 1

Chapter 03

101. The small intestine is narrow in diameter but approximately 20 feet long. What benefit does the small intestine's length provide?

ANSWER: Chyme must touch the walls of the small intestine to make contact with the secretions and to be absorbed at the proper places. The length of the small intestine, combined with its' smaller diameter allows for plenty of surface area contact for adequate nutrient absorption.

POINTS: 1

DIFFICULTY: BLOOM'S: Understand

REFERENCES: 3.1 The Digestive System

LEARNING OBJECTIVES: PNUT.BOYL.16.3.1 - Explain how food moves through the digestive system and identify the role of each organ involved in digestion, including accessory organs.

102. Where are the islets of Langerhans located and what is their purpose?

ANSWER: The islets of Langerhans (which are scattered on the surface of the pancreas) perform the endocrine functions of the pancreas. These cells help regulate blood glucose levels through secretion of the hormones insulin and glucagon into the blood.

POINTS: 1

DIFFICULTY: BLOOM'S: Understand

REFERENCES: 3.1 The Digestive System

LEARNING OBJECTIVES: PNUT.BOYL.16.3.1 - Explain how food moves through the digestive system and identify the role of each organ involved in digestion, including accessory organs.

103. Provide a general overview with a brief description (or example) of each level of organization within the body beginning with cells and ending with a body system.

ANSWER: Cells are organized into *tissues* designed to perform specialized tasks. For example, some cells are organized to form muscle tissue that helps move our bodies from place to place. Tissues can be organized to form *organs*. One organ, the heart, relies on muscle tissues, nerve tissues, and connective tissues to pump blood throughout the body. When several organs work together cooperatively, these organs are considered parts of a body *system*. One such system, the digestive system, consists of organs and tissues working together to supply necessary energy, water, and essential nutrients to every cell in our bodies.

POINTS: 1

DIFFICULTY: BLOOM'S: Understand

REFERENCES: Introduction

LEARNING OBJECTIVES: PNUT.BOYL.16.3.0 - Define essential nutrients.

104. Where is bile produced and stored, and what is its purpose during digestion?

ANSWER: The liver produces about one liter of bile each day. Bile, made up of water, bile salts, bile pigments, and cholesterol, is slightly alkaline, which helps neutralize acidic chyme in the intestinal tract. Bile is stored in the gallbladder.
When chyme with fatty content enters the small intestine, a hormome triggers the release of bile through the common bile duct into the small intestine. The bile emulsifies the fat, making it ready for enzyme action. Bile emulsifies fat-soluble vitamins and aids in their absorption with other fats. The bile pigments and cholesterol are waste products and are eventually eliminated from the body.

POINTS: 1

DIFFICULTY: BLOOM'S: Understand

REFERENCES: 3.1 The Digestive System

LEARNING OBJECTIVES: PNUT.BOYL.16.3.1 - Explain how food moves through the digestive system and identify the role of each organ involved in digestion, including accessory organs.

105. What is the difference between an exocrine and an endocrine function? Give an example of each.

ANSWER: **Endocrine** is a term to describe a gland secreting or a hormone being secreted into the blood.
Example: The pancreas secretes the hormones insulin and glucagon into the blood.
Exocrine describes glands that secrete chemical messengers through a duct into a body cavity or onto the surface of the skin; *exo* means "out."
Example: Bicarbonate and digestive enzymes are secreted by the pancreas into the duodenum.

POINTS: 1

DIFFICULTY: BLOOM'S: Understand

REFERENCES: 3.1 The Digestive System

LEARNING OBJECTIVES: PNUT.BOYL.16.3.1 - Explain how food moves through the digestive system and identify the role of each organ involved in digestion, including accessory organs.

106. Briefly discuss the body's glycogen and fat storage systems regarding each system's ability to supply the body with sugar.

ANSWER: The glycogen stored in the liver provides a reserve supply of the body's sugar, glucose, and thus can sustain cell activities if intervals between meals become so long that glucose absorbed from ingested foods is used up. When the body is depending solely on liver glycogen, however, the supply is used up within three to six hours. Similarly, fat cells store reserves of fat, the body's other principal energy nutrient. Unlike the liver, however, fat cells have virtually infinite storage capacity and can continue to supply fat for days, weeks, or even months when no food is eaten.

POINTS: 1

DIFFICULTY: BLOOM'S: Understand

REFERENCES: 3.2 Metabolism: Breaking Down Nutrients for Energy

LEARNING OBJECTIVES: PNUT.BOYL.16.3.2 - Outline how the metabolic processes of catabolism and anabolism allow the body to store and release energy as needed.

107. Briefly discuss ideas for treating constipation and preventing its recurrence.

ANSWER: Constipation is a symptom, not a disease. Most constipation is temporary and not serious. Treatment depends on the cause, severity, and duration of the constipation, but in most cases dietary and lifestyle changes will help relieve symptoms and assist in preventing them from recurring.
Diet: 20 to 35 grams of fiber each day helps the body form soft, bulky stools.
Lifestyle changes: Increasing water consumption and other liquids, daily exercise, and not ignoring the urge to have a bowel movement will help prevent constipation.
Laxatives: Most cases of mild constipation do not require use of laxatives. However, if the constipation is of long duration, a physician should be consulted for the best treatment to retrain a persistently lethargic bowel.

POINTS: 1

DIFFICULTY: BLOOM'S: Apply

REFERENCES: 3.4 Spotlight: Gut Feelings—Common Digestive Problems

LEARNING OBJECTIVES: PNUT.BOYL.16.3.4 - Identify common digestive problems and strategies to prevent them.

108. List at least four food, nutrient, or lifestyle changes that have contributed to increased chronic disease risk in individuals today compared to our ancestors who were hunter-gatherers about 10,000 years ago? What foods are commonly found in the modern diet that was unavailable to our prehistoric ancestors?

ANSWER:

Food/Nutrient	Ancient Ancestors' Eating Habits	The Way We Eat Today
Grains (wheat, rice, corn, oats, barley)	Rarely used	40–90% of total caloric intake
Meat	30% total calories (undomesticated wild game, fish)	12% total calories (domesticated animals)
Fruits	50% total calories	6% total calories
Vegetables	> 100 different species of uncultivated plant foods, roots, tubers	5% total calories
Fiber	> 100 g/day	< 20 g/day
Milk & milk products	Nonexistent after weaning	1.8 c/day (or 14% total calories)
Fats	˜35% total calories (varied with latitude)	20–35% total calories
Saturated fats	5–7.5% total calorie intake	11–15% total calorie intake
Sugar	Honey when available	20 to 30 tsp/day
Sodium	600 mg/day	˜4,000 mg/day
Potassium	7,000 mg/day	˜3,000 mg/day
Energy intake	Feast–famine	Food abundance (food available 24 hours/day)
Energy expenditure	Obligatory for survival (probably ≥ 3,000 calories/day)	Sedentary (< 30 min/day of moderate-intensity physical activity, ˜ 2,000 calories/day)

Foods found in the modern diets that were generally unavailable to our prehistoric ancestors include: dairy products (milks, cheese, butter), cereal grains (whole and refined grains, added sugars, syrups including high-fructose corn syrup), refined vegetable oils (salad and cooking oils, margarine, shortening), and alcohol.

POINTS: 1

DIFFICULTY: BLOOM'S: Understand

REFERENCES: Nutrition Action: Do Your Genes Affect What's in Your Jeans?

LEARNING OBJECTIVES: PNUT.BOYL.16.3.3 - Recognize that most of the body's work is done automatically and is finely regulated to achieve a state of well-being.

109. Briefly describe catabolism and anabolism, giving at least one example related to digestion or metabolism of each reaction

ANSWER: The breakdown of body compounds is known as *catabolism*. These reactions usually release energy. Glycogen can be broken down to glucose, triglycerides to fatty acids and glycerol, and protein to amino acids. When the body needs energy, it breaks any or all of the four basic units—glucose, fatty acids, glycerol, and amino acids—into even smaller units. When the body does not require energy, the end products of digestion (glucose, amino acids, glycerol, and fatty acids) are used to build body compounds in a process

called *anabolism*. Anabolic reactions involve conversion of glucose to glycogen or fat, conversion of amino acids to body proteins or fat, and synthesis of body fat from glycerol and fatty acids. Catabolism and anabolism are examples of energy metabolism.

POINTS: 1
DIFFICULTY: BLOOM'S: Understand
REFERENCES: 3.2 Metabolism: Breaking Down Nutrients for Energy
LEARNING OBJECTIVES: PNUT.BOYL.16.3.2 - Outline how the metabolic processes of catabolism and anabolism allow the body to store and release energy as needed.

110. What are common factors that initiate choking? What are the preferred methods to assist a person who is choking? What foods are commonly associated with choking?

ANSWER: Sometimes a sip of a beverage or a tiny bit of food "slips down the wrong pipe." The body's first response is to cough, and quite often coughing clears the passage. When someone is truly choking, however, food has slipped into the trachea and completely blocked the air passageways. Thus the person cannot cough— or even breathe. Without oxygen, the person may suffer permanent brain damage within 5 minutes or may even die. For this reason, it is imperative that everyone learn to recognize the universal distress signal for choking (hands wrapped around the throat) and act promptly.

Because the larynx is in the trachea and makes sounds only when air is pushed across it, a person choking will be unable to speak. For this reason, to help a person who is choking, first ask "Can you speak?" If the person is coughing, breathing adequately, or able to speak, do not interfere. Whatever you do, do not hit him on the back as the particle may become lodged more firmly in his air passageway. If the person cannot speak or cough, shout for help and perform the Heimlich maneuver. Almost any food can cause choking, although some are cited more often than others: chunks of meat, hot dogs, nuts, whole grapes, raw carrots, marshmallows, hard or sticky candies, gum, popcorn, and peanut butter. These foods are particularly difficult for young children (especially those 4 years of age and younger) to safely chew and swallow. Each year more than 10,000 children (14 years old or younger) in the United States choke; more than half choke on food. Every 5 days, a child in the United States chokes to death on food. An adult should be present and alert to the dangers of choking whenever young children are eating. To prevent choking, cut food into small pieces, chew thoroughly before swallowing, don't talk or laugh with food in your mouth, and don't eat when breathing hard.

POINTS: 1
DIFFICULTY: BLOOM'S: Apply
REFERENCES: 3.4 Spotlight: Gut Feelings—Common Digestive Problems
LEARNING OBJECTIVES: PNUT.BOYL.16.3.4 - Identify common digestive problems and strategies to prevent them.