

**TEST BANK**



DeBRUYNE | PINNA | WHITNEY

**NUTRITION & DIET THERAPY**

SEVENTH EDITION



## Chapter 2 – Carbohydrates

Answer, K/A, page(s)

K = knowledge question; A = application question

### True/False

- T K 34 1. Whenever carbohydrate is available to the body, the human brain depends exclusively on it as an energy source.
- F K 36 2. Most food fiber is kcalorie-free.
- T A 40 3. A client consumes 2600 kcalories per day and 50 grams of carbohydrate from concentrated sweets. According to the USDA Food Guide recommendations, the client's sugar intake is within the guidelines.
- F K 39 4. Experts agree that moderate amounts of sugar in the diet may pose a number of major health risks.
- F A 48 5. A client consumes 2000 kcalories per day and 200 grams of carbohydrate. This person meets the current dietary recommendations for carbohydrate intake.
- T A 48, 50 6. Cindy consumed 2 servings of vegetables, 2 servings of fruit, 5 servings of whole grains, and 2 servings of legumes during the day. Cindy meets the DV recommendation for fiber for the day.

### Multiple Choice

- a K 34 1. The main function of carbohydrates in the body is to:
- furnish the body with energy.
  - provide material for synthesizing cell walls.
  - synthesize fat.
  - insulate the body to prevent heat loss.
- c K 34 2. Which of the following is a simple carbohydrate?
- starch
  - glycogen
  - sucrose
  - some fibers
- a K 34 3. The \_\_\_\_\_ are the basic units of all carbohydrates.
- monosaccharides
  - disaccharides
  - polysaccharides
  - sucrose molecules
- e K 34-35 4. Three monosaccharides important in nutrition are:
- glucose, lactose, and fructose.
  - fructose, glucose, and sucrose.
  - maltose, fructose, and lactose.
  - galactose, sucrose, and lactose.
  - fructose, glucose, and galactose.

- d K 34 5. The primary source of energy for the brain and nervous system under normal conditions is:
- sucrose.
  - amino acids.
  - fructose.
  - glucose.
  - fatty acids.
- b K 35 6. The hormone that moves glucose from the blood into the cells is:
- glucagon.
  - insulin.
  - testosterone.
  - sucrose.
- d K 35 7. Which of the following does not come exclusively from plants?
- glucose
  - maltose
  - fructose
  - galactose
- a K 35 8. Fructose is:
- the sweetest of the sugars.
  - known as milk sugar.
  - abundant in whole grains.
  - also known as dextrose.
- d K 35 9. Fructose occurs naturally in:
- bread.
  - milk.
  - meats.
  - fruits.
- d K 35 10. Which monosaccharide is found most often in nature as a part of a disaccharide?
- glucose
  - fructose
  - maltase
  - galactose
- c K 35 11. Which of the following compounds is a disaccharide?
- glucose
  - fructose
  - lactose
  - galactose
- b K 35 12. All of the following terms are used to describe sucrose except:
- white sugar.
  - milk sugar.
  - table sugar.
  - cane sugar.
- b K 35 13. The most familiar source of sucrose is:
- bread.
  - table sugar.
  - milk.
  - meat.
  - fruit.

- d A 35 14. The principle carbohydrate in cakes and cookies is:  
a. fructose.  
b. galactose.  
c. maltose.  
d. sucrose.
- a K 35 15. One molecule of sucrose contains \_\_\_\_\_ molecule(s) of glucose.  
a. one  
b. two  
c. three  
d. four
- d K 35 16. Which of the following is the principal carbohydrate in milk?  
a. galactose  
b. fructose  
c. sucrose  
d. lactose
- b K 35 17. Chemically, lactose is a:  
a. monosaccharide.  
b. disaccharide.  
c. dextrose.  
d. polysaccharide.
- a K 35 18. An example of a polysaccharide is:  
a. starch.  
b. meat.  
c. fruit.  
d. protein.
- b K 35 19. Which of the following carbohydrates is a polysaccharide?  
a. fructose  
b. starch  
c. maltose  
d. lactose
- a K 36 20. The stored form of glucose in the body is called:  
a. glycogen.  
b. insulin.  
c. fat.  
d. muscle.
- d K 34, 35 21. Polysaccharides are composed of:  
a. one glucose unit.  
b. two glucose units.  
c. three glucose units.  
d. many glucose units.
- b K 36 22. Excess glucose in the blood is converted into glycogen and stored primarily in the:  
a. brain and liver.  
b. liver and muscles.  
c. blood cells and brain.  
d. pancreas and brain.

- b K 36 23. The richest sources of starch are:  
a. fruits.  
b. grains.  
c. vegetables.  
d. soybeans.
- b K 36 24. Whole grains, vegetables, legumes, and fruits are rich sources of:  
a. sucrose.  
b. dietary fiber.  
c. fat.  
d. glycogen.
- c K 36-37 25. Cellulose, pectin, hemicellulose, and gums are:  
a. artificial sweeteners.  
b. sugar alcohols.  
c. fibers.  
d. simple carbohydrates.
- d K 37 26. \_\_\_\_\_ is a fiber found in all vegetables, fruits, and legumes.  
a. Hemicellulose  
b. Pectin  
c. Mucilage  
d. Cellulose
- b K 36, 37 27. Which of the following fibers is a nonpolysaccharide?  
a. cellulose  
b. lignin  
c. pectin  
d. gum
- c K 37 28. All of the following fibers are used by the food industry as additives or stabilizers except:  
a. pectins.  
b. gums.  
c. lignins.  
d. mucilages.
- a K 37 29. \_\_\_\_\_ escape digestion and absorption in the small intestine.  
a. Resistant starches  
b. Polysaccharides  
c. Bacteria  
d. Disaccharides
- b K 37 30. Fibers are categorized by:  
a. the type of chemical bonds that hold them together.  
b. their chemical and physical properties.  
c. the number of hydrogen molecules they contain.  
d. their ability to be digested by human enzymes.
- c K 38 31. The sugars in fruits, vegetables, grains, and milk are:  
a. usually added to these foods.  
b. considered discretionary kcalories.  
c. naturally occurring.  
d. resistant to digestion.

- b K 38 32. The steady upward trend in sugar consumption among Americans can be attributed to:
- consumer demand.
  - food manufacturers.
  - better food preservation techniques.
  - improved food safety practices.
- c K 38 33. The leading source of added sugar in the American diet is:
- baked goods such as cookies and cakes.
  - fruit packed in heavy syrup.
  - soft drinks and other sugar-sweetened beverages.
  - chocolate bars and other candy treats.
- b K 39 34. According to the World Health Organization's recommendations, no more than \_\_\_\_\_% of daily kcalories should come from added sugars.
- 5
  - 10
  - 15
  - 20
- c K 40 35. Which of the following statements best describes the role of sugar in the development of obesity?
- Sugar consumption is a direct cause of weight gain leading to obesity.
  - The increased use of added sugars by food manufacturers is the cause of obesity.
  - Sugar contributes to obesity when it is part of excessive energy intakes.
  - There is a direct correlation between the consumption of added sugars and the rise in obesity.
- c K 39 36. Which of the following statements about excessive sugar consumption is true?
- It causes cancer.
  - It causes heart disease.
  - It causes dental caries.
  - It causes hyperactive behavior in children.
- b A 43 37. Which of the following ingredients represents a sugar alcohol?
- polydextrose
  - maltitol
  - cellulose
  - aspartame
- d A 42 38. How many kcalories are provided by 100 grams of carbohydrate?
- 100
  - 200
  - 300
  - 400
- a K 42 39. Sweeteners that yield energy are called:
- nutritive sweeteners.
  - artificial sweeteners.
  - resistant sweeteners.
  - glycemic sweeteners.

*Ice Cream*

A carton of ice cream contains the following list of ingredients: milkfat and nonfat milk, sorbitol, pecans, cellulose, butter, caramel color, citric acid, aspartame, carrageenan.

- b A 42-44 40. Refer to *Ice Cream*. How many alternative sweeteners are contained in this product?
- one
  - two
  - three
  - four
- a A 44 41. Refer to *Ice Cream*. How many artificial sweeteners are contained in the product?
- one
  - two
  - three
  - four
- a K 45 42. The artificial sweetener sucralose is made from:
- sucrose.
  - an amino acid.
  - aspartame.
  - maltose.
- a K 45 43. The artificial sweetener that is similar in structure to fructose is:
- tagatose.
  - neotame.
  - sucralose.
  - stevia.
- b A 37, 46 44. Which of the following foods would you recommend to someone interested in lowering his or her blood cholesterol level?
- wheat bread
  - oatmeal
  - strawberries
  - pork
- b K 46 45. Soluble fiber can help reduce blood cholesterol levels by:
- converting cholesterol into vitamin D.
  - binding cholesterol and carrying it out of the body with the feces.
  - blocking the absorption of bile.
  - preventing the production of bile.
- d K 46-47 46. Which of the following statements is not true regarding the health benefits of fiber?
- Fiber aids in weight management.
  - Fiber aids in reducing the risk of type 2 of diabetes.
  - Fiber aids in overall health of the gastrointestinal tract.
  - Fiber aids in the prevention of osteoporosis.
- a K 46 47. The \_\_\_\_\_ describes the effect a food has on blood glucose levels.
- glycemic index
  - insulin index
  - solubility factor
  - viscosity index

- b K 48 48. Soluble fibers are found in:
- celery, wheat bran, and corn.
  - kidney beans, apples, and oatmeal.
  - corn, apples, and sunflower seeds.
  - celery, soybeans, and bran flakes.
- a K 46, 48 49. Which of the following is the most effective at alleviating constipation?
- cellulose
  - pectin
  - gums
  - psyllium
- c K 48 50. Carbohydrate should contribute approximately \_\_\_\_\_% of the total daily energy intake.
- 35-40
  - 45-55
  - 45-65
  - 55-60
- a A 48 51. A 2000-kcalorie diet that provides 175 grams of carbohydrate provides:
- inadequate carbohydrate.
  - excessive carbohydrate.
  - an appropriate amount of carbohydrate.
  - inadequate fiber.
- c K 48 52. The Dietary Reference Intake for dietary fiber is approximately \_\_\_\_\_ grams per day.
- 10-15
  - 15-25
  - 25-35
  - 35-50
- b K 49-50 53. Grains, legumes, and root vegetables contain predominantly:
- simple sugars and fiber.
  - starches and fiber.
  - fat and fiber.
  - simple sugars and fat.
- b A 49-50 54. Foods richest in carbohydrates are:
- eggs, cheese, and milk.
  - rice, broccoli, and apples.
  - milk, nuts, and oils.
  - mayonnaise, butter, and salad dressing.
- c A 50-51 55. Which of the following groups contains the least carbohydrate?
- grains and starchy vegetables
  - nuts and dried fruits
  - milk and cheese
  - fruits and vegetables
- a A 49-51 56. Jeff consumed the following foods for a meal: small baked potato,  $\frac{1}{2}$  cup of carrots, 1 cup skim milk, and 1 small banana. Approximately how many grams of carbohydrate did Jeff consume?
- 47
  - 57
  - 66
  - 69



- c K 39-40 57. A valid concern about excessive sugar consumption is:
- an increased risk for developing cancer.
  - its contribution to behavioral problems in children.
  - the potential for malnutrition.
  - an increased risk for developing hypertension.
- a K 39-40 58. High-fructose corn syrup is composed of:
- fructose and glucose.
  - glucose and galactose.
  - sucrose and maltitol.
  - fructose and galactose.
- a K 40 59. Which of the following is the equivalent of 1 teaspoon of white sugar?
- 1 tablespoon of catsup
  - 1 tablespoon of jelly
  - 2 oz. of a carbonated soft drink
  - 3 teaspoons of honey
- c K 44 60. Aspartame is made from:
- sucrose.
  - fructose.
  - two amino acids.
  - two monosaccharides.
- b K 49 61. The World Health Organization set an upper limit for fiber intake at \_\_\_\_\_ grams per day.
- 30
  - 40
  - 50
  - 60

Nutrition in Practice – The Glycemic Index in Nutrition Practice

- a K 55 62. The glycemic index ranks carbohydrate foods based on their effect on:
- blood glucose and insulin levels.
  - blood pressure.
  - weight.
  - blood cholesterol and triglyceride levels.
- a K 55 63. The glycemic index of a food can be measured by comparing the increase in one's blood glucose levels after consuming a carbohydrate to that caused by a reference food such as:
- white bread.
  - a banana.
  - ice cream.
  - oatmeal.
- d A 56 64. Which of the following breakfast foods has the lowest glycemic index?
- cornflakes
  - instant oatmeal
  - white bagel
  - cooked oatmeal

- d K 55-56 65. Factors that influence the GI value of a food include all of the following except the
- structure of the starch.
  - fiber content in the food.
  - manner in which the food was processed.
  - time of day the food is consumed.
- c K 55, 57 66. People with \_\_\_\_\_ may benefit from limiting their intake of high-GI foods.
- heart disease
  - arthritis
  - diabetes
  - migraine headaches
- a K 57 67. Which of the following statements most accurately reflects current recommendations about the glycemic index?
- People with type 2 diabetes may benefit from limiting high-GI foods.
  - High-GI foods such as potatoes and bread should be avoided.
  - There is ample evidence that low-GI diets should be recommended for the general population.
  - All foods with a GI greater than 70 should be avoided until further research is done.

### **Matching**

- |   |        |                      |   |
|---|--------|----------------------|---|
| h | 43     | 1. ADI               | a. a hormone secreted by the pancreas in response to high blood glucose; promotes cellular glucose uptake.  |
| b | 35     | 2. glucagon          | b. a hormone that is secreted by special cells in the pancreas in response to low blood glucose concentration; elicits release of glucose from storage. |
| c | 46, 47 | 3. glycemic response | c. a measure of the extent to which a food raises the blood glucose concentration and elicits an insulin response, as compared with pure glucose.       |
| g | 37     | 4. insoluble fibers  | d. the more common type of diabetes in which the fat cells resist insulin.  |
| a | 35     | 5. insulin           | e. indigestible food components that readily dissolve in water and often impart gummy or gel-like characteristics to foods.                             |
| e | 37     | 6. soluble fibers    | f. having a gel-like consistency.   |
| d | 47     | 7. type 2 diabetes   | g. the tough, fibrous structures of fruits, vegetables, and grains; indigestible food components that do not dissolve in water.                         |
| f | 37     | 8. viscous           | h. the amount of an artificial sweetener that individuals can safely consume each day over the course of a lifetime without adverse effect.             |

**Essay**

- 34 1. Of all the possible alternatives, why is carbohydrate the preferred energy source?
- 40-41 2. How would you respond to the statement that honey is more nutritious than white sugar?
- 43-45 3. Compare and contrast the 6 FDA-approved artificial sweeteners.
- 47 4. Describe how fiber-rich foods help with weight control.
- 47-48 5. Discuss the harmful effects of excessive fiber intake.
- 51 6. Given the nutrient information on food labels, how could you determine the number of grams of starch in a food product?
- 38 7. Differentiate between added sugars and naturally occurring sugars.
- 39-40 8. Does high-fructose corn syrup contribute to obesity more than other types of sugar? Explain your answer.