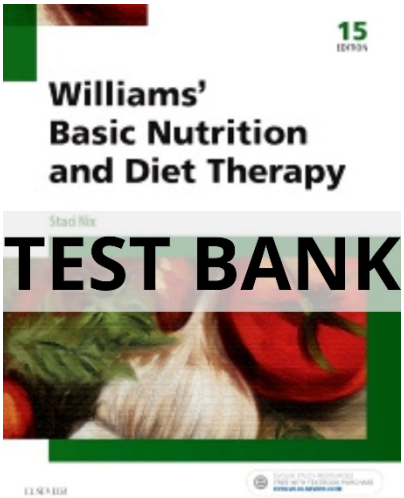
Chapter 01: Food, Nutrition, and Health
Nix: Williams' Basic Nutrition and Diet Therapy, 15th Edition



MULTIPLE CHOICE

1. Promoting a health care service that improves diabetes management for the elderly in a community would assist in which of the following?
   a. Supporting the national health goals *Healthy People 2020*
   b. Reducing hunger in a subset of the United States population
   c. Improving Medicare reimbursement claims
   d. Providing access to primary health care services

   ANS: A
   Healthy People 2020 has a wide influence and is the focus of the nation's main objective to promote health and prevent disease.

   DIF: Cognitive Level: Application REF: p. 2
   TOP: Nursing Process: Implementation MSC: NCLEX: Health Promotion and Maintenance

2. A patient requires a nutrition assessment. The most appropriate professional to perform the assessment is a
   a. physician.
   b. nurse.
   c. public health nutritionist.
   d. registered dietitian.

   ANS: D
   The registered dietitian is the nutrition expert registered with the Commission of Dietetic Registration (CDR), the certifying agency of Academy of Nutrition and Dietetics. Registered dietitians are the only professionals who have met strict educational and professional prerequisites and passed a national registration examination that properly prepares them to conduct a nutrition assessment.

   DIF: Cognitive Level: Application REF: p. 1
   TOP: Nursing Process: Assessment
   MSC: NCLEX: Safe and Effective Care Environment: Management of Care

3. The sum of all body processes inside living cells that sustain life and health is
   a. science.
   b. digestion.
   c. metabolism.
   d. nutrition.

   ANS: C
   Metabolism is the sum of all chemical changes that take place in the body. Metabolism provides energy, builds tissue, and regulates metabolic processes in the body.

   DIF: Cognitive Level: Knowledge REF: p. 3 TOP: Nursing Process: Planning

MSC: NCLEX: Physiological Integrity: Physiological Adaptation

4. The nutrients that provide the body with its primary source of fuel for energy are
   a. vitamins.
   b. minerals.
   c. fiber.
   d. carbohydrates.

   ANS: D
   Carbohydrates (e.g., starches and sugars) are the body's primary fuel to carry out necessary processes; fat is the secondary source of energy.

   DIF: Cognitive Level: Knowledge REF: p. 4 TOP: Nursing Process: Planning
   MSC: NCLEX: Physiological Integrity: Physiological Adaptation

5. Which of the following is the most accurate statement regarding the functions of protein?
   a. Proteins can be a primary fuel source even if there is adequate carbohydrate intake.
   b. Proteins are a necessary nutrient to provide energy for the body in times of stress.
   c. Proteins can be used as coenzyme factors during cell metabolism.
   d. Proteins are essential to building and repairing tissues within the body.

   ANS: D
   The primary function of proteins is to provide amino acids, which are the building units necessary to building and repairing tissues within the body. This is a constant process that ensures adequate growth and maintenance of tissues for a strong body.

   DIF: Cognitive Level: Comprehension REF: p. 4
   TOP: Nursing Process: Assessment
   MSC: NCLEX: Physiological Integrity: Physiological Adaptation

6. A 65-year-old man requires 2000 kcal/day without any specific fat or carbohydrate requirements. The approximate number of kilocalories per day from fat that his diet should provide is _____ kcal/day.
   a. 400 to 700
   b. 100 to 300
   c. 500 to 800
   d. 900 to 1200

   ANS: A
   Fat should provide no more than 20% to 35% of the total kilocalories per day, so for a 2000-kcal diet, 400 to 700 kcal should be provided.

   DIF: Cognitive Level: Application REF: p. 4 TOP: Nursing Process: Planning
   MSC: NCLEX: Health Promotion and Maintenance

7. The body's main storage form of carbohydrate is
   a. glycogen.
   b. glycerol.
   c. glucagon.
   d. glucose.

   ANS: A

Glycogen is a polysaccharide that is the main storage form of carbohydrate in the human body. It is mainly stored in the liver and to a lesser extent in muscle tissue.

DIF: Cognitive Level: Knowledge REF: p. 4 TOP: Nursing Process: Planning
MSC: NCLEX: Physiological Integrity: Physiological Adaptation

8. The number of kilocalories provided by one slice of bread that contains 30 g carbohydrate, 3 g protein, and 1 g fat is _____ kcal.
   a. 34
   b. 136
   c. 141
   d. 306

   ANS: C
   Calculate as follows: Carbohydrate provides 4 kcal/g, protein provides 4 kcal/g, and fat provides 9 kcal/g. Therefore:

   30 g carbohydrate × 4 kcal/g = 120 kcal
   3 g protein × 4 kcal/g = 12 kcal
   1 g fat × 9 kcal/g = 9 kcal
   = 141 total kcal (120 kcal + 12 kcal + 9 kcal)

   DIF: Cognitive Level: Application REF: p. 4
   TOP: Nursing Process: Assessment
   MSC: NCLEX: Physiological Integrity: Physiological Adaptation

9. The number of kilocalories from fat in a sandwich that contains 22 g fat is _____ kcal.
   a. 88
   b. 132
   c. 154
   d. 198

   ANS: D
   Fat provides 9 kcal/g. Thus, 22 g fat × 9 kcal/g = 198 kcal.

   DIF: Cognitive Level: Application REF: p. 4
   TOP: Nursing Process: Assessment
   MSC: NCLEX: Physiological Integrity: Physiological Adaptation

10. The number of kilocalories from protein in a sandwich that contains 15 g protein is _____ kcal.
    a. 45
    b. 60
    c. 75
    d. 135

    ANS: B
    Protein provides 4 kcal/g. Thus, 15 g protein × 4 kcal/g = 60 kcal.

    DIF: Cognitive Level: Application REF: p. 4
    TOP: Nursing Process: Assessment
    MSC: NCLEX: Physiological Integrity: Physiological Adaptation

11. The basic building units of protein are called _____ acids.
    a. fatty
    b. amino
    c. nucleic
    d. carboxyl

    ANS: B
    The basic building units of protein are amino acids, which are necessary for building, repairing, and maintaining body tissues.

    DIF: Cognitive Level: Knowledge REF: p. 4 TOP: Nursing Process: Planning
    MSC: NCLEX: Physiological Integrity: Physiological Adaptation

12. The main nutrients involved in metabolic regulation and control are
    a. water and vitamins.
    b. vitamins and minerals.
    c. vitamins and fatty acids.
    d. minerals and carbohydrates.

    ANS: B
    Vitamins and minerals are the key nutrients in regulating and controlling the many chemical processes in the body. Vitamins and minerals function as coenzyme factors, which are components of cell enzymes that govern cell chemical reactions in cell metabolism.

    DIF: Cognitive Level: Knowledge REF: p. 5 TOP: Nursing Process: Planning
    MSC: NCLEX: Physiological Integrity: Physiological Adaptation

13. The dietary regimen that would provide optimal nutrition for a person who is recovering from an extended illness is a diet
    a. low in protein, fat, and carbohydrates; high in minerals and vitamins; and very low in fiber.
    b. providing adequate amounts of carbohydrates, protein, fat, minerals, and vitamins along with adequate water and fiber.
    c. high in protein, fiber, and fluid; low in carbohydrates; and adequate in vitamins and minerals.
    d. with essential amounts of vitamins and minerals; high in protein; and low in fat, carbohydrates, and fiber.

    ANS: B
    Optimal nutrition incorporates a varied diet supplying adequate amounts of all nutrients, including carbohydrates, protein, fat, vitamins, minerals, fiber, and fluid.

    DIF: Cognitive Level: Application REF: p. 5 TOP: Nursing Process: Planning
    MSC: NCLEX: Physiological Integrity: Physiological Adaptation

14. A young woman is 5 months pregnant. She currently lives in a condition of poverty and often runs out of money to buy food. She is most at risk for
    a. liver damage.
    b. osteopenia.
    c. undernutrition.
    d. overnutrition.

    ANS: C

A person with undernutrition, or an intake less than the desired amounts of nutrients a person needs to sustain and maintain health, carries a greater risk for physical illness than a person receiving adequate nutrition. In this case, a young, pregnant woman living in poverty who cannot obtain the necessary nutrition for herself and her baby is in a state of undernutrition, placing both at nutritional risk.

DIF: Cognitive Level: Application REF: p. 5 TOP: Nursing Process: Diagnosis
MSC: NCLEX: Safe and Effective Care Environment: Management of Care

15. Which factors place a person at the greatest risk for malnutrition?
    a. Poor appetite, insufficient nutrient intake, poor hygiene, and depleted nutrition reserves
    b. Poor hygiene, insufficient exercise, and excess carbohydrate intake
    c. Depleted carbohydrate intake, poor hygiene, and excess calorie intake
    d. Poor appetite, insufficient nutrient intake, depleted nutrition reserves, and a form of metabolic stress

    ANS: D
    Malnutrition appears when nutritional reserves are depleted and nutrient and energy intake is not sufficient to meet day-to-day needs or added metabolic stress.

    DIF: Cognitive Level: Knowledge REF: p. 5 TOP: Nursing Process: Diagnosis
    MSC: NCLEX: Physiological Integrity: Physiological Adaptation

16. Mr. Katz, who is 48 years old, is admitted to the hospital with a fracture to his left hip. He weighs 248 lb (54 lb above his desired weight). He is considered to be in a state of overnutrition. The statement most true regarding his state of overnutrition is that
    a. desired nutrients are consumed in excess amounts without the risk of malnutrition.
    b. because excess body fat is evident and excess calories are consumed, there is no risk of nutrient deficiency leading to malnutrition.
    c. even though excess body fat and excess nutrient intake are evident, there still may be a risk for some type of nutrient deficiency leading to malnutrition.
    d. excess body weight may or may not be present along with excess consumption of carbohydrates and fat, which results in inadequate vitamin and mineral intake.

    ANS: C
    Overnutrition results from excess nutrient and energy intake over time, resulting in excess weight and a state of obesity. Malnutrition can result from excess body weight and the lack of vitamin- and mineral-rich food consumption (e.g., consumption of fatty and carbohydrate-rich foods only).

    DIF: Cognitive Level: Application REF: p. 5 TOP: Nursing Process: Diagnosis
    MSC: NCLEX: Physiological Integrity: Physiological Adaptation

17. Which is least likely to be a primary cause of malnutrition?
    a. Conditions of poverty
    b. Prolonged hospitalization
    c. Homelessness
    d. Exercise

    ANS: D

Malnutrition appears when nutritional reserves are depleted and nutrient and energy intake is not sufficient to meet day-to-day needs or the additional requirements necessary during periods of stress, thus exercise is not a factor.

DIF: Cognitive Level: Application REF: p. 5
TOP: Nursing Process: Assessment
MSC: NCLEX: Physiological Integrity: Physiological Adaptation

18. Overnutrition is characterized by
    a. overeating at a meal.
    b. excess nutrient and energy intake over time.
    c. eating a diet with too much variety.
    d. using dietary supplements.

ANS: B
Overnutrition results from excess nutrient and energy intake over time or occurs when excessive amounts of nutrient supplements are consumed, resulting in tissue-damaging effects.

DIF: Cognitive Level: Comprehension REF: p. 5 TOP: Nursing Process: Diagnosis
MSC: NCLEX: Physiological Integrity: Physiological Adaptation

19. The Dietary Reference Intakes (DRIs) address the nutrient needs of
    a. all adults.
    b. most healthy population groups.
    c. minority ethnic groups.
    d. pregnant women, infants, and children.

ANS: B
The DRIs refer to a system of reference values that can be used for assessing and planning diets for healthy population groups and other purposes.

DIF: Cognitive Level: Knowledge REF: p. 6
TOP: Nursing Process: Implementation MSC: NCLEX: Health Promotion and Maintenance

20. The Dietary Reference Intakes (DRIs) are developed by the
    a. U.S. Public Health Service.
    b. U.S. Food and Drug Administration (FDA).
    c. Food and Nutrition Board of the Institute of Medicine
    d. National Institutes of Health (NIH).

ANS: C
DRIs are developed by the Food and Nutrition Board of the Institute of Medicine.

DIF: Cognitive Level: Knowledge REF: p. 6
TOP: Nursing Process: Implementation MSC: NCLEX: Health Promotion and Maintenance

21. When not enough scientific evidence is available to establish a Recommended Dietary Allowance (RDA), the value used to guide intake is called the
    a. Dietary Reference Intake (DRI).
    b. tolerable upper intake level (UL).
    c. estimated average requirement (EAR).
    d. adequate intake (AI).

ANS: D
AI is used as a guide when not enough scientific data are available to establish the RDA figure.

DIF: Cognitive Level: Knowledge REF: p. 7
TOP: Nursing Process: Implementation MSC: NCLEX: Health Promotion and Maintenance

22. You are asked to help plan meals for a local monthly community dinner meeting for the elderly. The tool that would be most helpful for planning healthy meals is the
    a. Dietary Reference Intakes.
    b. *Dietary Guidelines for Americans.*
    c. MyPlate food guidance system.
    d. basic four food groups.

ANS: C
MyPlate, provided by the U.S. Department of Agriculture, provides a valuable tool for meal planning, providing serving sizes for each food group and the ability to create a balanced meal from each group listed.

DIF: Cognitive Level: Knowledge REF: p. 7
TOP: Nursing Process: Implementation MSC: NCLEX: Health Promotion and Maintenance

23. You are asked to explain the *Dietary Guidelines for Americans* to an adult community education class at the local college. The most appropriate areas to cover in teaching this topic include
    a. appropriate amounts of sodium, saturated fat, cholesterol, trans-fatty acids, whole grains, and alcohol.
    b. adequate calories and protein for weight maintenance, smoking cessation, herbal supplements, and food fads.
    c. the importance of low-carbohydrate diets, smoking cessation, herbal supplements, appropriate food groups, and sodium and potassium.
    d. food security, weight maintenance, glucose monitoring, and blood pressure monitoring technique.

ANS: A
The *Dietary Guidelines* outlines key recommendations to balance calories and maintain weight along with foods and food components to reduce including sodium, saturated fatty acids, cholesterol, trans-fatty acids, added fats and sugars, refined grains, along with recommendations for limiting alcohol.

DIF: Cognitive Level: Application REF: p. 7
TOP: Nursing Process: Implementation MSC: NCLEX: Health Promotion and Maintenance

24. A patient asks you what he should eat to maintain an optimal diet. An appropriate response would be to
    a. eat a variety of foods and eat in moderation.
    b. avoid all fast food and processed foods.
    c. eat only natural, organic foods.
    d. use vitamin and mineral supplements to ensure adequate nutrients.

ANS: A
An optimal diet contains a variety of foods and in appropriate quantities to maintain proper weight and health. All foods can fit into a healthy diet in moderation.

DIF: Cognitive Level: Application REF: p. 5
TOP: Nursing Process: Implementation MSC: NCLEX: Health Promotion and Maintenance

25. The goal of the MyPlate food guide is to promote
    a. variety, proportion moderation, gradual improvements, and physical activity.
    b. physical activity, portion control, daily blood pressure monitoring, and gradual improvements in health.
    c. portion control, daily physical activity, daily glucose monitoring, moderation, and variety.
    d. variety, moderation, weighing food portions, daily blood pressure monitoring, and glucose monitoring.

    ANS: A
    The goal of MyPlate is to promote variety, proportion moderation, gradual improvements, and physical activity.

    DIF: Cognitive Level: Knowledge REF: p. 7
    TOP: Nursing Process: Implementation MSC: NCLEX: Health Promotion and Maintenance

26. A patient is to receive 2400 kcal/day while recovering from a motor vehicle accident. He is to receive 50% of calories from carbohydrates, 25% of calories from fat, and 25% of calories from protein. Which of the following represents the appropriate calories for each substrate?
    a. 1500 kcal from carbohydrates, 500 kcal from fat, and 400 kcal from protein
    b. 1400 kcal from carbohydrates, 600 kcal from fat, and 400 kcal from protein
    c. 1200 kcal from carbohydrates, 600 kcal from fat, and 600 kcal from protein
    d. 1600 kcal from carbohydrates, 400 kcal from fat, and 400 kcal from protein

    ANS: C
    2400 kcal × 0.50 = 1200 kcal from carbohydrates; 2400 kcal × 0.25 = 600 kcal from fat; and 2400 kcal × 0.25 = 600 kcal from protein.

    DIF: Cognitive Level: Application REF: pp. 3-4
    TOP: Nursing Process: Implementation
    MSC: NCLEX: Health Promotion and Maintenance | NCLEX: Physiological Integrity: Physiological Adaptation

27. A patient is placed on a 2300-kcal diet. The health care provider is asked to calculate the grams of carbohydrates the patient is receiving on the diet. The number of grams of carbohydrates is
    a. 50 g.
    b. 35 g.
    c. 250 g.
    d. impossible to calculate from this data.

    ANS: D
    The percentage of carbohydrates in the diet typically ranges from 45% to 65% of the total calories depending on individual needs, tastes, habits, living situations, and energy demands. However, the health care provider would need to know the specific foods the patient is eating to calculate carbohydrate intake.

    DIF: Cognitive Level: Application REF: pp. 3-4
    TOP: Nursing Process: Assessment