**Basic Nutrition & Diet Therapy**

**Food, Nutrition, and Health**

**MULTIPLE CHOICE**

1. One of the main objectives for *Healthy People 2010* is to

|  |  |
| --- | --- |
| a. | promote positive health and prevent disease. |
| b. | reduce hunger worldwide. |
| c. | provide access to dental care services for older adults. |
| d. | provide access to child care services for children. |

ANS: A

*Healthy People 2010* was published in 1990 by the U.S. Department of Health and Human Services. This report has a wide influence and is the focus of the nation’s main objective to promote health and prevent disease.

REF: 3

2. The health care professional who is the nutrition authority on the hospital health care team is the

|  |  |
| --- | --- |
| 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 The American Dietetic Association (ADA). The term registered dietitiancan be used only when a person has met strict educational and professional prerequisites and passed a national registration examination.

REF: 2

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. The metabolism provides energy, builds tissue, and regulates metabolic processes in the body.

REF: 4

4. The nutrients that provide the body with its primary source of fuel for heat and 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.

REF: 4

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 tissue building and repair within the body. |

ANS: D

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

REF: 4

6. A 65-year-old man requires 2000 kcal/day without any fat or carbohydrate adjustments. The approximate number of kilocalories per day from fat 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, with approximately two thirds of this amount derived from plant sources.

REF: 4

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. It is mainly stored in the liver and to a lesser extent in muscle tissue.

REF: 4

8. The number of kilocalories provided by 1 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)

REF: 4

9. The number of kilocalories from fat in a sandwich that contains 22 g fat is \_\_\_\_\_ kcal.

|  |  |
| --- | --- |
| a. | 88 |
| b. | 132 |
| c. | 198 |
| d. | 154 |

ANS: C

Fat provides 9 kcal/g. Thus, 22 g fat  9 kcal/g = 198 kcal.

REF: 4

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.

REF: 4

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.

REF: 4

12. The 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.

REF: 5

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 carbohydrate; high in minerals and vitamins; and very low in fiber. |
| b. | providing essential amounts of carbohydrate, protein, fat, minerals, and vitamins along with adequate water and fiber. |
| c. | high in protein, fiber, and fluid; low in carbohydrate; and adequate in vitamins and minerals. |
| d. | with essential amounts of vitamins and minerals; high in protein; and low in fat, carbohydrate, 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.

REF: 5

14. A young woman is 5 months' pregnant. She currently lives in a condition of poverty and cannot afford the necessary foods to meet her and her unborn child’s nutrition needs. 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 her and her baby is in a state of undernutrition, placing both at nutritional risk.

REF: 5

15. Which factors place a person at the greatest risk for malnutrition?

|  |  |
| --- | --- |
| a. | Poor appetite, insufficient nutrient intake, poor hygiene, and depleted nutrition reserves to meet daily needs |
| 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 to meet daily needs, 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.

REF: 5

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 overnutrition is

|  |  |
| --- | --- |
| 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 overweight and 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).

REF: 6

17. Which is least likely to be the 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.

REF: 5-6

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.

REF: 6

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 populations and other purposes.

REF: 6

20. The Dietary Reference Intakes (DRIs) are developed by the

|  |  |
| --- | --- |
| a. | U.S. Public Health Service. |
| b. | Food and Drug Administration (FDA). |
| c. | National Academy of Sciences, Food and Nutrition Board. |
| d. | National Institutes of Health (NIH). |

ANS: C

DRIs are developed by the National Academy of Sciences, Food and Nutrition Board.

REF: 6

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. Both the RDA and the AI can be used as goals for individual intake.

REF: 7

22. You are asked to help at a local community function by planning general meals for a local dinner meeting once a month for the elderly. Tools helpful in planning a healthy meal include the

|  |  |
| --- | --- |
| a. | Dietary Reference Intakes. |
| b. | *Dietary Guidelines for Americans.* |
| c. | MyPyramid food guidance system. |
| d. | basic four food groups. |

ANS: C

MyPyramid, 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.

REF: 7-8

23. You are asked to explain the *Dietary Guidelines for Americans* to an adult community evening class at the local college. The most appropriate areas to cover in teaching this topic include

|  |  |
| --- | --- |
| a. | adequate nutrients with adequate calories, weight gain, physical activity, importance of no-fat meals, carbohydrate, sodium and potassium, alcohol, and food safety. |
| b. | adequate calories and protein for weight maintenance, smoking cessation, herbal supplements, food fads. |
| c. | 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* outline nine focus areas, including adequate nutrients within calorie needs, weight management, physical activity, appropriate food groups, fats, carbohydrate, sodium and potassium, alcohol, and food safety.

REF: 8-9

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. |
| c. | eat only natural, organic foods. |
| d. | use herbal supplements in addition to protein powders and extra vitamins and minerals to ensure adequate nutrition intake. |

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.

REF: 10

25. The goal of the MyPyramid food guide is to promote

|  |  |
| --- | --- |
| a. | physical activity, proportionality, moderation, variety, and gradual improvements in health. |
| 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 MyPyramid is to promote physical activity, proportionality, moderation, variety, and gradual improvements in health.

REF: 8-10

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 carbohydrate, 500 kcal from fat, and 400 kcal from protein |
| b. | 1400 kcal from carbohydrate, 600 kcal from fat, and 400 kcal from protein |
| c. | 1200 kcal from carbohydrate, 600 kcal from fat, and 600 kcal from protein |
| d. | 1600 kcal from carbohydrate, 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.

REF: 4

27. A patient is placed on a 2300-kcal diet. The health care provider is asked to calculate the grams of carbohydrate he is receiving from the diet. The number of grams of carbohydrate is

|  |  |
| --- | --- |
| a. | 50 g. |
| b. | 35 g. |
| c. | 250 g. |
| d. | insufficient data to calculate. |

ANS: D

The percentage of carbohydrate in the diet can range from 45% to 65% of total calories depending on individual needs, tastes, habits, living situations, and energy demands.

REF: 4

28. A 52-year-old single woman comes to the health professional for advice on maintaining optimal nutritional health. Her food intake records indicate that she does not cook at home often, likes to eat at fast food restaurants at least twice a week, and relies on processed foods for the majority of her dietary intake. She maintains an active lifestyle and works part time at the local bank. The next step to assist this woman would be to

|  |  |
| --- | --- |
| a. | assess her ability to cook and plan a way to incorporate the MyPyramid food guide along with the dietary guidelines into meal planning that will fit her lifestyle. |
| b. | obtain laboratory values to further assess her nutrition status and recommend supplementing her diet with vitamins and minerals. |
| c. | find ways to decrease eating at fast food restaurants and incorporating physical exercise into her daily routine. |
| d. | recommend that she use the MyPyramid food guide to change her eating style and attend cooking classes at the local community center. |

ANS: A

The American food environment has been constantly changing over the past several years, with more people eating out and consuming more processed foods. Educating people to follow the MyPyramid food guide and the *Dietary Guidelines for Americans* is important to maintain a healthy lifestyle.

REF: 7

29. The person most at risk for malnutrition would be a(n)

|  |  |
| --- | --- |
| a. | active young adult who eats 3 to 5 servings of fruits and vegetables along with lean meats and fish and complex carbohydrates and exercises three times a week. |
| b. | young child who refuses to eat peas, green beans, and broccoli but loves fruits and other vegetables. |
| c. | middle-aged man undergoing chemotherapy for leukemia who is having difficulty eating solid and liquid food. |
| d. | young weightlifter who has recently undergone surgery for a compound fracture of his left femur. |

ANS: C

Malnutrition appears when nutrition reserves are depleted or nutrient and energy intake is not sufficient to meet the day-to-day needs along with the added metabolic stress. In this case, cancer and chemotherapy place an increased metabolic stress on the body and the patient is unable to consume enough food to meet his nutrient requirements, placing him at risk for malnutrition.

REF: 5-6

30. The fundamental principles of nutrient interactions include

|  |  |
| --- | --- |
| a. | (1) specific metabolic functions for individual nutrients and (2) no nutrient works alone. |
| b. | (1) enhanced body functions and (2) the ability to take over metabolic functions during metabolic stress. |
| c. | (1) the availability of glycogen stores and (2) the amount of kilocalories required to meet energy demands. |
| d. | (1) relations among the basic nutrients but not with their metabolic products and (2) nutrients are best studied by placing in similar groups according to their response to environmental factors. |

ANS: A

The fundamental principles of nutrient interaction are: (1) individual nutrients have many specific metabolic functions, including primary and supporting roles, and (2) no nutrient ever works alone.

REF: 4