CHAPTER 1: THE RELATIONSHIP OF NUTRITION AND HEALTH

MULTIPLE CHOICE

1. Which of the following nutrients helps build and repair body tissues?
   a. protein          c. fat
   b. carbohydrates    d. all of the above

   ANS: A    PTS: 1    DIF: A    TOP: Nutrients and Their Functions

2. Malnutrition can be caused by ____.
   a. eating too much       c. both a and b
   b. eating too little     d. none of the above

   ANS: C    PTS: 1    DIF: A    TOP: Malnutrition

3. Which food is considered to have a low nutrient density?
   a. potato chips          c. apples
   b. carrots               d. steak

   ANS: A    PTS: 1    DIF: A    TOP: Individuals at Risk from Poor Nutritional Intake

4. There are many cumulative effects of a poor, unbalanced diet. Which of these disease states may be attributable to a low nutrient density diet?
   a. atherosclerosis       c. obesity
   b. hypertension          d. all of the above

   ANS: D    PTS: 1    DIF: B    TOP: Cumulative Effects of Nutrition

5. Which mineral is needed to prevent osteoporosis from occurring?
   a. iron               c. zinc
   b. magnesium          d. calcium

   ANS: D    PTS: 1    DIF: B    TOP: Cumulative Effects of Nutrition
6. A part of a nutrition assessment involves anthropometric measurements. What is measured during this type of assessment?
   a. percentage of muscle mass       c. percentage of fat and muscle tissue
   b. percentage of fat tissue only    d. percentage of body fluid

   ANS: B    PTS: 1    DIF: A    TOP: Nutrition Assessment

7. What biochemical analysis of blood samples may indicate kidney failure?
   a. serum albumin level       c. creatinine excretion
   b. serum transferrin level   d. blood urea nitrogen

   ANS: D    PTS: 1    DIF: A    TOP: Nutrition Assessment

8. What is the most common method of assessing a client’s dietary history?
   a. three-day food record       c. three-day food diary
   b. 24-hour recall              d. three-day recall

   ANS: A    PTS: 1    DIF: A    TOP: Nutrition Assessment

9. Which nutrient deficiency displays lesions at the corners of the mouth?
   a. vitamin B       c. folic acid
   b. riboflavin      d. iron

   ANS: B    PTS: 1    DIF: B    TOP: Deficiency Diseases

10. Obesity can increase your risk of developing
    a. iron deficiency anemia       c. kidney failure
    b. diabetes                    d. osteoporosis
11. Education in good nutritional health practices would eliminate many health problems that may be caused by malnutrition. Which of the following is the best method for teaching the young child good health habits?
   a. a good health program in kindergarten
   b. have the physician discuss nutrition with the child
   c. imitation of adult behavior
   d. imitation of eating habits of other children

ANS: C  PTS: 1  DIF: C
TOP: Considerations for the Health Care Professional

12. What is the most common form of nutrient deficiency in the United States?
   a. niacin
   b. iron
   c. protein
   d. vitamin C

ANS: B  PTS: 1  DIF: B
TOP: Deficiency Diseases

13. Which biochemical test measures protein status?
   a. serum transferrin level
   b. creatinine excretion
   c. serum albumin level
   d. serum creatinine level

ANS: C  PTS: 1  DIF: B
TOP: Nutrition Assessment

14. Which biochemical test indicates a depleted muscle mass?
   a. serum transferrin level
   b. creatinine excretion
   c. serum albumin level
   d. serum creatinine level

ANS: B  PTS: 1  DIF: B
TOP: Nutrition Assessment

15. Which blood test can indicate pernicious anemia?
   a. hemoglobin test
   b. red blood cell test
   c. blood urea nitrogen
   d. lipid profile
16. Which biochemical test indicates iron-carrying protein in the blood?
   a. serum transferrin level  
   b. creatinine excretion  
   c. serum albumin level  
   d. serum creatinine level

ANS: A  PTS: 1  DIF: B  TOP: Nutrition Assessment

17. Which of the following is characteristics of poor nutritional status?
   a. apathy  
   b. insomnia  
   c. both a and b  
   d. none of the above

ANS: C  PTS: 1  DIF: C  TOP: Characteristics of Good Nutrition

18. Which of the following diseases is related to vitamin C deficiency?
   a. anemia  
   b. goiter  
   c. scurvy  
   d. xerophthalmia

ANS: C  PTS: 1  DIF: B  TOP: Deficiency Diseases

19. Which of the following measures is not included in the lipid profile?
   a. glucose  
   b. serum triglycerides  
   c. total serum cholesterol  
   d. high-density lipoproteins

ANS: A  PTS: 1  DIF: B  TOP: Nutrition Assessment

20. Goiter is a deficiency disease related to deficiency of what nutrient?
   a. iron  
   b. iodine  
   c. calcium  
   d. folic acid

ANS: B  PTS: 1  DIF: B  TOP: Deficiency Diseases
21. Which of the following are inorganic nutrients?
   a. vitamins  
   b. minerals  
   c. both a and b  
   d. none of the above

ANS: B  PTS: 1  DIF: B  TOP: Nutrients and Their Functions

SHORT ANSWER

1. Poorly shaped bones or teeth are a symptom of calcium and vitamin D deficiency. Discuss the relationship between these substances.

ANS:
Vitamin D is necessary for the utilization of calcium in the body.

PTS: 1  DIF: B  TOP: Deficiency Diseases

2. Why is a social history important when doing a nutritional assessment?

ANS:
To determine whether the client has the financial resources to obtain the needed food and the ability to store and prepare the food.

PTS: 1  DIF: B  TOP: Nutrition Assessment

3. List the methods, or means of data collection, used to complete an accurate nutritional assessment that is the framework for a dietary treatment plan.

ANS:
Social history, 24-hour diet recall, food diary for three to four days, computer analysis of the diet, review for any food-drug interactions, review of medical records, clinical examinations, and review of results of any biochemical tests and anthropometric measurements.

PTS: 1  DIF: C  TOP: Nutrition Assessment
4. The adolescent and the elderly are age groups that are very prone to malnutrition. Discuss the reasons for this.

ANS:
The adolescent responds to peer pressure to determine the types of foods consumed (chips, colas, candy, etcetera.), and the lifestyle of a teen (always on the go) may result in many skipped meals. The elderly are often alone and mealtimes can be unpleasant and lonely, resulting in skipped meals and in eating poorly-balanced meals. Living conditions often do not encourage a healthy appetite. Financially, some elderly may not be able to afford fresh fruits and vegetables or the protein sources of foods.

PTS: 1  DIF: C  TOP: Individuals at Risk from Poor Nutritional Intake

5. Describe the appearance of an 18-year-old female who is at the optimal level of nutritional balance.

ANS:
Shiny hair, clear skin, clear eyes, erect posture, alert expressions, firm flesh on well-developed bone structure, healthy appetite, regular sleep and elimination habits, and positive emotional adjustments.

PTS: 1  DIF: C  TOP: Characteristics of Good Nutrition

6. Describe the primary function(s) of each of the organic nutrients.

ANS:
The primary function of carbohydrates and fats is to provide energy. Proteins build and repair body tissues, and vitamins regulate body processes.

PTS: 1  DIF: B  TOP: Nutrients and Their Functions

7. Wellness is a way of life that integrates mind, body, and spirit. What lifestyle habits will help one achieve wellness?

ANS:
Wellness can be accomplished through lifestyle habits such as focusing on healthy food choices, not smoking, participating in regular physical activity, and maintaining a healthy weight.

PTS: 1    DIF:  A    TOP: Introduction

MODIFIED TRUE/FALSE

1. **Appetite** is the physiological need for food. **Hunger** is a psychological desire for food.  
   ______________________________

   ANS: F, Hunger; Appetite

   PTS: 1    DIF:  B    TOP: Characteristics of Good Nutrition

2. The essential nutrient water **provides energy**. ______________________________

   ANS: F, regulates body processes

   PTS: 1    DIF:  B    TOP: Nutrients and Their Functions

3. Osteoporosis is a dietary deficiency of calcium and **vitamin D** that causes bones to soften and may cause the spine to bend. ______________________________

   ANS: T    PTS: 1    DIF:  B
   TOP: Deficiency Diseases

4. The body must be provided with nutrients that are necessary for life. These nutrients are only available in food, must be obtained by the body’s nutritional intake, and are known as **essential nutrients**. ______________________________

   ANS: T    PTS: 1    DIF:  A
   TOP: Nutrients and Their Functions

5. Primary deficiencies are **those an individual is born with**, while secondary deficiencies are those caused by a disease condition associated with malabsorption, accelerated excretion, or by destruction of the nutrients. ______________________________
ANS: F, caused by inadequate dietary intake

PTS: 1       DIF: B       TOP: Deficiency Diseases

6. Ingestion of megadoses of various vitamins and minerals is one of the major causes of overnutrition in the United States. ______________________

ANS: T       PTS: 1       DIF: B
TOP: Malnutrition

7. Biochemical tests include various blood, urine, and stool tests. A deficiency or toxicity can be determined by a visual analysis of the samples. ______________________

ANS: F, laboratory

PTS: 1       DIF: B       TOP: Nutrition Assessment

8. The deficiency disease beriberi is caused by inadequate niacin intake.____________________

ANS: F, thiamin

PTS: 1       DIF: A       TOP: Deficiency Diseases

CASE

Ms. Wooly brought her daughter, Mary, age 14, to the health care center to be seen by the nurse for a referral to the physician. Together, they tell the nurse that Mary has had nausea, vomiting, and headaches for the past two weeks. She has vomited “almost every day.” Ms. Wooly began to cry as she tells the nurse that Mary does not remember the date of her last menstrual period and that she is afraid that Mary is pregnant. During this interchange, Mary appears stoic and does not cry or have any verbalizations. After a blood test confirmed the pregnancy, Ms. Wooly became calmer. A prenatal assessment was begun. Ms. Wooly answered most of the questions even though they were directed at Mary. Last menstrual period was estimated to be two months ago. Menses onset began two years ago.
Ht: 5’8”   Wt: 103
Medium frame size
She described her usual dietary intake as including hamburgers, hot dogs, chips, candy, and colas. Mary denies alcohol, drug, or cigarette use. Mary would not discuss the father of the child, nor did she volunteer any additional information. It is evident that Mary has some urgent needs that must be addressed during this visit. Mary must accept the pregnancy, but she must also begin to eat properly to meet her nutritional needs and those of the infant.

1. Problem nutrients for teen pregnancies include calcium, zinc, iron, vitamin A, vitamin C, and protein. What are the nutritional needs for each of these nutrients for a pregnant teenager?

ANS:
Calcium: (under 18) 1300 mg
Vitamin A: 750 mg
Zinc: 13 mg
Vitamin C: 80 mg
Iron: 27 mg
Protein: 1.57–1.7 g/kg body weight

PTS: 1          DIF: B        TOP: Individuals at Risk from Poor Nutritional Intake

2. State three nursing diagnosis statements from the assessment data.

ANS:
Altered nutrition: less than body requirements related to adolescent pregnancy, when her own needs for growth and maturation are still high and eating habits are poor. Knowledge deficit related to nutritional requirements during pregnancy. Anxiety related to changes, discomforts, or emotional feelings resulting from pregnancy.

PTS: 1          DIF: C        TOP: Individuals at Risk from Poor Nutritional Intake

3. List nursing interventions to help Mary achieve an adequate nutritional status.

ANS:
Using the MyPyramid, teach Mary nutritional needs during pregnancy and the characteristics of an adequate diet. Help Mary individualize her diet so that she achieves an adequate intake. Teach Mary strategies for coping with nutrition-related discomforts of pregnancy.

Advise Mary to use nutritional supplements, vitamins, and iron appropriately. Consult with and make referrals to other professionals, dietician, social services, and other programs developed to aid pregnant women, such as the Special Supplemental Program for Women, Infants, and Children (WIC).

PTS: 1  DIF:  C  TOP: Care Planning

4. Mary’s age, physical symptoms, and diagnosis will factor into her care. Teen pregnancy is impacted by several life cycle needs, and also covers a broad range of developmental needs based on the pregnancy and the woman’s age. Discuss the factors associated with nutrition and identify goals to help Mary obtain a successful outcome.

ANS:
Mary is a pregnant teenager. She still has the pressures of being a teenager and the demands of eating nutritionally. In addition to eating properly for the fetus, Mary is still growing and developing with her own nutritional needs. She will also have cravings related to fast foods or empty calories and aversions to meat and eggs. Her list of “usual foods” shows how difficult it will be for her to change her dietary habits and eat healthily. Goal 1: Mary will verbalize understanding of the rationale for eating a nutritious diet. Goal 2: Mary will select foods and make a meal plan that adheres to dietary guidelines for a pregnant teen.

PTS: 1  DIF:  C  TOP: Individuals at Risk from Poor Nutritional Intake

5. Describe the usual weight gain recommended for a pregnant adolescent who is at the recommended weight for her height, for an overweight teen, and for an underweight teen. Identify recommended amounts of each vitamin or mineral that is important during pregnancy. Use your text, other textbooks, or an Internet source to determine the recommended dietary allowances (RDAs).

ANS:
The recommended weight gain for a teenager should be at the higher end of the range. A gain of 1 pound (lb) per week in the second and third trimesters of pregnancy is advised. If the adolescent is underweight, a 40-lb gain is recommended; for normal weight, 35 lbs; and 25 lbs for an overweight teen. Generally, pregnant adolescents should consume not fewer than 2,000 calories per day. In many cases, higher caloric intakes are needed. Iron 30 mg is recommended for all pregnant women. If the adolescent consumes fewer than 600 mg per day of calcium, supplementation of 600 mg is recommended, in addition to the usual intake for nonpregnant teens. Multivitamins and folate are recommended for all adolescents.

6. Contact the WIC program in your community. Discuss the benefits and goals and describe the positive outcomes.

ANS:
An individualized nutritional risk profile is developed for each person and a specific nutritional rehabilitation program is determined. Goals are increased birth weight, decreased preterm delivery, and decreased maternal morbidity and perinatal morbidity and mortality.

7. When Mary hears the nurse tell her she will need to increase her caloric intake, her first response to the nurse was, “More chips, candy, colas.” What is the nurse’s response?

ANS:
The MyPyramid must be used as a basis for daily food choices. The nurse must make Mary understand that the weight gain must be from desirable foods, and emphasize the importance of choosing a varied diet. The empty calories that Mary prefers provide no nutritional value.
8. Before a meaningful exchange of information will occur with Mary, the nurse must first build a trusting relationship and establish good communication lines. Describe the setting that will be most conducive to beginning this dialogue. Who will be present? What will help Mary be relaxed and feel nonthreatened? Describe positive communication techniques that will be useful. How should the session begin?

ANS:
Development of a trusting relationship should begin with the nurse meeting with Mary alone. Allow her to be in a comfortable position. Sit on a couch next to her, not behind a desk with her facing you. Use open-ended questions, exploratory statements; and body language that is nonthreatening so Mary will feel comfortable. Don’t ask leading questions such as, “You don’t drink or smoke pot, do you?” Begin by talking about daily events to put Mary at ease. As the conversation progresses, use silence to allow Mary to gather her thoughts. Speak with Mary as an adult. Encourage questions from her.

PTS: 1  DIF: C  TOP: Care Planning

Mr. Lew was transported to the emergency room (ER) by emergency transport. City police officers called an ambulance after finding Mr. Lew lying in an alley with apparent unconsciousness. The emergency medical team started an intravenous (IV), and upon arriving at the ER Mr. Lew had regained consciousness but is now unconscious again. Physical data collected included:

Physical appearance is unkempt and dirty.
Odor suggests consumption of alcohol is likely.
T 96, P 124, R 36, B/P 90/40
Very emaciated appearance
Legs and arms very dry and flaky
Mottled purplish areas to lower extremities
Edema 3+ in ankles and lower legs
Abdomen tight and distended
Facial color and nail beds pale
No response to painful or verbal stimuli

After physician examination, Mr. Lew was admitted to the hospital with malnutrition, R/O pancreatitis, and cirrhosis of the liver due to ETOH abuse.
9. Mr. Lew has no family or friends present and his level of awareness will greatly restrict data collection. List the data collection methods that are available considering Mr. Lew’s condition. Identify any tools you will need to collect assessment data to begin the planning phase.

ANS:
Data collection methods include a physical examination, including anthropometric measurements, a nursing history, and biochemical analyses. When Mr. Lew regains complete orientation, a dietary history and dietary recall can be done. Scales, tape measure, and a stethoscope are needed. A dietary history will be difficult to complete; however, as the location of his body (in an alley) may indicate the type of lifestyle he has been leading. Tools needed will vary but may include paper, pencil, thermometer, stethoscope, sphygmomanometer, and watch.

PTS: 1  DIF: C  TOP: Nutrition Assessment

10. List data that will be assessed.

ANS:
Eyes should be bright and shiny; assess gums for caries, lesions, missing teeth, gums edematous, and presence of bleeding; face and skin dry, scaly, or smooth and firm; tongue for redness, bumpiness, and roughness; nails firm and pink; posture; wasted appearance; reflexes; vital signs; fat-fold measures; height and weight.

PTS: 1  DIF: C  TOP: Nutrition Assessment

11. Identify the biochemical analyses that should be monitored.

ANS:
Serum albumin, hematocrit, hemoglobin, electrolytes, glucose, BUN, cholesterol, uric acid, calcium, magnesium, enzymes, creatinine, iron

PTS: 1  DIF: C  TOP: Nutrition Assessment

12. Identify goals for Mr. Lew, relating to nutrition. Be specific as to protein needs.

ANS:
Mr. Lew will: stabilize fluid and electrolyte balance within 24–48 hours; receive adequate nutrients to meet nutritional needs; gain 0.25–0.5 lb/kg a week.

PTS: 1  DIF: C  TOP: Care Planning

13. For each goal, what outcome data will verify that the goals have been met?

ANS:
Fluid intake and output will be balanced and vital signs normal. Nutritional therapy will be ongoing. Overall physical indicators may not be notable for several weeks, considering the time period it may have taken to reach the level of emaciation. Weight will be fluctuating at first; a stable weight with gain will validate the goal. An adequate diet for Mr. Lew will be necessary for the rest of his life. Laboratory values will be stable, within normal limits, within 48 hours.

PTS: 1  DIF: C  TOP: Care Planning

14. Of the goals identified, which is the highest in priority?

ANS:
Normal laboratory values are the highest priority. In his present condition it is of utmost need to stabilize his body’s fluid and electrolyte balance.

PTS: 1  DIF: B  TOP: Care Planning

15. Identify nursing interventions to meet the identified goals.

ANS:
Weigh daily, monitor I & O hourly, monitor B/P, T, P, R rate, breath sounds, and edema. Monitor lab values: glucose, vitamins, minerals, trace elements, electrolytes, albumin, and BUN. Mouth care every two hours. Offer small, frequent feedings. Collaborate with dietician for a progressive diet, high in nutrients. Monitor calorie count for three days. Assess client’s knowledge of a balanced diet. Provide positive reinforcement for food intake.

PTS: 1  DIF: C  TOP: Care Planning

16. Describe the role alcohol has played in Mr. Lew’s nutritional status.
ANS:
Alcohol produces euphoria that results in depressed appetite and impacts the diet of a drinker. People afflicted in this manner tend to eat very little. The alcohol is rich in calories and energy; however alcohol provides empty calories. The more one drinks, the less food is eaten. Even when food is eaten, the alcohol interferes with the body’s ingestion, digestion, absorption, metabolism, and excretion of nutrients. Nutrient deficiencies are an inevitable result of alcoholism.

PTS: 1       DIF: C       TOP: Care Planning