

Chapter 01: Overview of Healthy Eating Habits

Stegeman: The Dental Hygienist's Guide to Nutritional Care, 5th Edition

MULTIPLE CHOICE

1. Each is true regarding designations for professionals in the field of nutrition, *except* one. Which is the exception?
 - a. A nutritionist usually works in a public health setting.
 - b. A registered dietitian (RD) must pass a national registration examination.
 - c. An RD who works in public health can call herself a registered dietitian nutritionist (RDN).
 - d. A dietetic technician, registered (DTR) works under supervision of a registered nurse.

ANS: D

A dietetic technician, registered (DTR) normally works under the supervision of a registered dietitian. Like the registered dietitian, the DTR must pass a national registration examination and receive continuing education. Although the DTR can complete a 4-year curriculum, there also is a 2-year option. Regarding the distinction between the registered dietitian and the nutritionist, all registered dietitians are nutritionists, but not all nutritionists are registered dietitians.

DIF: Comprehension

REF: p. 2

OBJ: 1

TOP: NBDHE, 3.0 Biochemistry and Nutrition

2. Nutrition is the process by which living things use food to obtain nutrients for energy, growth and development. Energy is the measure of heat equivalent to 1000 cal needed to do work.
 - a. Both statements are true.
 - b. Both statements are false.
 - c. The first statement is true; the second is false.
 - d. The first statement is false; the second is true.

ANS: C

The first statement is true; the second is false. The process by which living things use food to obtain nutrients for energy is nutrition. Energy is the ability or power to do work, whereas a kilocalorie (kcal) is a measure of heat equivalent to 1000 cal. The second statement confuses energy with the definition of a kilocalorie.

DIF: Comprehension

REF: p. 2

OBJ: 2

TOP: NBDHE, 3.0 Biochemistry and Nutrition

3. Increase in consumption of which of the following has the greatest effect on an increase in body weight?
 - a. Carbohydrate intake
 - b. Protein intake
 - c. Fat intake
 - d. Kilocalorie intake

ANS: D

7. Each nutrient provides energy, *except* one. Which is the exception?
- Proteins
 - Carbohydrates
 - Fats
 - Vitamins
 - Alcohol

ANS: D

Vitamins do not provide energy, nor do minerals. Although proteins, carbohydrates, fats, and alcohol provide energy, the body cannot use energy from the energy-containing components of food without adequate amounts of vitamins and minerals.

DIF: Recall REF: p. 3 OBJ: 2
TOP: NBDHE, 3.0 Biochemistry and Nutrition

8. Increasing the variety of foods often causes nutrient excesses and toxicities. A dietary change to eliminate or increase intake of one specific food or nutrient usually alters the intake of other nutrients.
- Both statements are true.
 - Both statements are false.
 - The first statement is true; the second is false.
 - The first statement is false; the second is true.

ANS: D

The first statement is false; the second is true. Increasing the variety of foods is recommended to reduce the probability of developing isolated nutrient deficiencies, nutrient excesses, and toxicities resulting from nonnutritive components or contaminants in any particular food. For example, because red meats are an excellent source of iron and zinc, decreasing cholesterol intake by limiting these meats can reduce dietary iron and zinc intake.

DIF: Comprehension REF: p. 3 OBJ: 2
TOP: NBDHE, 3.0 Biochemistry and Nutrition

9. Precursors are substances from which an active substance is formed. Nonessential nutrients cannot be synthesized from other substances.
- Both statements are true.
 - Both statements are false.
 - The first statement is true; the second is false.
 - The first statement is false; the second is true.

ANS: C

The first statement is true; the second is false. Nonessential nutrients can be used by the body; they either are not required or can be synthesized from dietary precursors. Carotene is a precursor to vitamin A. It is found in fruits and vegetables and is converted to an active form of vitamin A by the liver.

DIF: Recall REF: p. 3 OBJ: 2
TOP: NBDHE, 3.0 Biochemistry and Nutrition

10. Which nutrient is the most important?
- Protein

- b. Carbohydrate
- c. Minerals
- d. Water

ANS: D

Water is the most important nutrient. After water, nutrients in highest priority are those that provide energy, which must be provided from foods or can be supplied from quantities stored in the body.

DIF: Recall REF: p. 3 OBJ: 2
TOP: NBDHE, 3.0 Biochemistry and Nutrition

11. The human body has adaptive mechanisms that tolerate modest ranges in nutrient intakes. The metabolic rate usually increases to compensate for decreased caloric intake.
- a. Both statements are true.
 - b. Both statements are false.
 - c. The first statement is true; the second is false.
 - d. The first statement is false; the second is true.

ANS: C

The first statement is true; the second is false. The human body adapts to tolerate a modest range of nutrient intake. However, the metabolic rate usually decreases to compensate for decreased caloric intake. This is an adaptive mechanism that “saves” energy for future needs in situations of decreased nutritional intake.

DIF: Recall REF: p. 3 OBJ: 2
TOP: NBDHE, 3.0 Biochemistry and Nutrition

12. *Healthy People 2020*, issued by the U.S. Department of Health and Human Services, has influenced a remarkable reduction in childhood obesity. Since the program’s initiation, the number of children participating in annual dental visits has increased.
- a. Both statements are true.
 - b. Both statements are false.
 - c. The first statement is true; the second is false.
 - d. The first statement is false; the second is true.

ANS: B

Both statements are false. A midcourse progress report for *Healthy People 2020* indicates little to no detectable change in rates of childhood obesity. The number of children who had an annual dental visit actually declined, since the instigation of the program.

DIF: Recall REF: p. 4 OBJ: 3
TOP: NBDHE, 3.0 Biochemistry and Nutrition

13. Dietary reference intakes (DRIs) do NOT:
- a. replace the older recommended daily allowances.
 - b. attempt to estimate required nutrients to improve long-term health.
 - c. specifically address individuals whose requirements are affected by a disease state.
 - d. attempt to establish maximum safe levels of tolerance for nutrients.

ANS: C

Dietary reference intakes (DRIs) are inappropriate for malnourished individuals or patients whose requirements are affected by a disease state. DRIs were intended for planning and assessing diets of healthy Americans and Canadians. DRIs replace an earlier publication, the recommended daily allowances (RDAs). Note that there is also a new RDA which is intended as a goal for achieving adequate intakes.

DIF: Recall REF: p. 4 OBJ: 4
TOP: NBDHE, 3.0 Biochemistry and Nutrition

14. Which set of guidelines is intended to assess population groups, not individuals?
- Old recommended dietary allowances (RDAs)
 - Estimated average requirement (EAR)
 - New recommended dietary allowances (RDAs)
 - Tolerable upper intake level (UL)

ANS: B

The estimated average requirement (EAR) is the amount of a nutrient that is estimated to meet the needs of half of the healthy individuals in a specific age and gender group. This set of values is useful in assessing nutrient adequacy or planning intakes of population groups, not individuals.

DIF: Recall REF: p. 4 OBJ: 3
TOP: NBDHE, 3.0 Biochemistry and Nutrition

15. The average amount of a nutrient that seems to maintain a defined nutritional state is measured by the:
- recommended daily allowance (RDA).
 - estimated average requirement (EAR).
 - adequate intake (AI).
 - acceptable macronutrient distribution ranges (AMDRs).

ANS: C

To overcome shortcomings in both the EAR and the RDA, an AI was established. Derived from mean nutrient intakes by groups of healthy people and based upon scientific judgments, an AI is the average amount of a nutrient that seems to maintain a defined nutritional state. Values were established for various life stages for several nutrients, including fluoride. AMDRs were established for the macronutrients, fat, carbohydrate, protein, and two polyunsaturated fatty acids, to ensure sufficient intakes of essential nutrients.

DIF: Recall REF: p. 4 OBJ: 4
TOP: NBDHE, 3.0 Biochemistry and Nutrition

16. Which is NOT true of the acceptable macronutrient distribution ranges (AMDRs)?
- AMDRs were established to ensure sufficient intakes of the micronutrients.
 - One focus of the AMDRs is reduction of chronic disease.
 - Macronutrients are fat, carbohydrate, protein, and two polyunsaturated fatty acids.
 - Consuming amounts outside the AMDRs increases risk of insufficient intake of essential nutrients.

ANS: A

AMDRs were established for the macronutrients, fat carbohydrate, protein, and two polyunsaturated fatty acids, rather than the micronutrients, like vitamins and minerals. The goal of the guideline is to ensure sufficient intakes of essential nutrients, while reducing risk of chronic disease.

DIF: Recall REF: p. 4 OBJ: 4
TOP: NBDHE, 3.0 Biochemistry and Nutrition

17. Acceptable macronutrient distribution ranges (AMDRs) are expressed as a percentage of total energy intake because an intake of each depends on intake of the others or of the total energy requirement of the individual. Increasing or decreasing one energy source while consuming a set amount of kilocalories affects the intake of the other sources of energy.
- Both the statement and the reason are correct and related.
 - Both the statement and the reason are correct but are not related.
 - The statement is correct, but the reason is not correct.
 - The statement is not correct, but the reason is correct.
 - Neither the statement nor the reason is correct.

ANS: A

Both the statement and the reason are correct and related. For example, if an individual who routinely consumes 2000 kcal decides to reduce the amount of fat ingested, either the protein or carbohydrate intake would need to increase proportionately.

DIF: Comprehension REF: p. 4 OBJ: 4
TOP: NBDHE, 3.0 Biochemistry and Nutrition

18. The nutrient-based reference value that is defined as dietary energy intake predicted to maintain energy balance in healthy individuals of a defined age, gender, and weight is the:
- acceptable macronutrient distribution ranges (AMDRs).
 - estimated energy requirement (EER).
 - recommended daily allowance (RDA).
 - estimated average requirement (EAR).

ANS: B

The estimated energy requirement (EER) is similar to the EAR. The major difference is that the EAR is the amount of a nutrient that is estimated to meet the needs of half of the healthy individuals in specific groups, whereas the EER addresses all healthy individuals in terms of age, sex, weight, height, and physical activity. Because energy requirement depends on activity level, four different activity levels are provided.

DIF: Recall REF: p. 5 OBJ: 4
TOP: NBDHE, 3.0 Biochemistry and Nutrition

19. Each, *except* one, is a valid consideration for a dental hygienist when making dietary recommendations. Which is the exception?
- The dietary reference intakes (DRIs) can be used as an assessment guide for all patients.
 - An individual's exact requirement for a specific nutrient is not known.
 - The upper limits (ULs) can be used to warn patients of adverse effects of excessive intake of nutrients.
 - The DRIs are general guidelines and do not provide specific requirements.

e. Specific foods or groups of foods should be discussed rather than nutrients.

ANS: A

DRI is designed as an assessment guide for healthy patients only. These guidelines apply to average daily intakes, and they should be met by consuming a variety of foods whenever possible. Patients with specific illnesses or dietary imbalances should be referred to as registered dietitian.

DIF: Recall REF: p. 5 OBJ: 4
TOP: NBDHE, 3.0 Biochemistry and Nutrition

20. The *MyPlate* food guidance icon is divided into sextants, each of which is a different color to represent a different food type. *MyPyramid* replaced the well-known *MyPlate* icon in 2011.
- Both statements are true.
 - Both statements are false.
 - The first statement is true; the second is false.
 - The first statement is false; the second is true.

ANS: B

Both statements are false. In 2011, the well-known food guide *MyPyramid* was replaced with *MyPlate*. This new food guidance system is divided into four quadrants, not six sextants, to represent a different food type—protein, grain, fruit, and vegetables.

DIF: Recall REF: p. 16 OBJ: 9
TOP: NBDHE, 3.0 Biochemistry and Nutrition

21. Each accurately describes features of *MyPlate*, *except* one. Which is the exception?
- MyPlate* replaces the well-known food guide, *MyPyramid*.
 - The interactive website is intended to help consumers apply personalized dietary guidance.
 - MyPlate* materials on the website can be printed in English or French.
 - Foods providing similar types of nutrients are grouped together and emphasizes proportionality of food selections.
 - MyPlate* is designed as a food guidance tool for the general public.

ANS: C

MyPlate brochures, tip sheets, graphics, and archived material can be printed from the website in English or Spanish, not French.

DIF: Recall REF: p. 17 OBJ: 9
TOP: NBDHE, 3.0 Biochemistry and Nutrition

22. Which message is NOT synonymous with *MyPlate*?
- Fruits and vegetables should fill half the plate.
 - Fruit juices should be consumed frequently.
 - Lean proteins foods should be chosen in moderation.
 - Whole grains should occupy about one fourth of the plate.
 - Physical activity is encouraged through the activity tab that has links to *MyJournal*.

ANS: B

DIF: Application REF: p. 10 OBJ: 6
TOP: NBDHE, 3.0 Biochemistry and Nutrition

26. Each is true of dietary considerations from the milk and milk product groups, *except* one. Which is the exception?
- Fortified milk products are important sources of vitamin D.
 - Many mild substitutes are not fortified with vitamin D.
 - Children 2 to 3 years of age need 2 cups of milk daily.
 - Whole milk and many cheeses are high in unsaturated fat.

ANS: D

Whole milk and many cheeses are high in *saturated* fat and can have negative health consequences. Low-fat or fat-free milk products provide little or no fat and should be chosen most often to avoid consuming more kilocalories than needed.

DIF: Recall REF: p. 11 OBJ: 6
TOP: NBDHE, 3.0 Biochemistry and Nutrition

27. The dairy group includes butter and cream because they are high in calcium, riboflavin, and protein.
- Both the statement and the reason are correct and related.
 - Both the statement and the reason are correct but are not related.
 - The statement is correct, but the reason is not correct.
 - The statement is not correct, but the reason is correct.
 - Neither the statement nor the reason is correct.

ANS: E

High-fat products such as butter and cream are not included in the dairy products group because they are not high in calcium, riboflavin, and protein.

DIF: Comprehension REF: p. 11 OBJ: 6
TOP: NBDHE, 3.0 Biochemistry and Nutrition

28. Consumption of milk and milk products can promote the achievement of peak bone mass in children and adolescents. Studies indicate that higher dairy consumption is associated with decreased dental caries but has no effect on periodontal disease.
- Both statements are true.
 - Both statements are false.
 - The first statement is true; the second is false.
 - The first statement is false; the second is true.

ANS: C

The first statement is true; the second is false. Studies indicate that higher dairy consumption correlates with decreased prevalence and severity of both dental caries and periodontal health.

DIF: Recall REF: p. 11 OBJ: 6
TOP: NBDHE, 3.0 Biochemistry and Nutrition

29. Current scientific evidence shows that most people consume only half the required amount of protein. Protein supplements promoted to increase muscle mass contain several amino acids not easily absorbed from foods.

The daily reference value for fiber is 25 g. Note that the daily reference values (DRVs) do not appear on the nutrient label. Instead the term *daily value* appears on the label for ease of understanding and reflects the DRV and the DRI standards to encourage a healthy diet. In addition, the DRI for protein has been established for certain groups. The 50 g of protein in the DRV is for adults and children older than 4 years of age only.

DIF: Recall REF: p. 21, Box 1.3 OBJ: 10
TOP: NBDHE, 3.0 Biochemistry and Nutrition

33. The process of restoring iron, thiamin, riboflavin, folic acid, and niacin removed during processing to approximately their original levels is called:
- fortification.
 - enrichment.
 - satiety.
 - ghrelin.

ANS: B

The process of restoring nutrients removed during processing is called *enrichment*. This process is controlled by the U.S. Food and Drug Administration (USDA), which establishes the quantity of nutrients that can be added. White bread is an example of a highly enriched product. Fortification is the process of adding nutrients not present in the natural product or increasing the amount above that in the original product. Satiety is the feeling of fullness provided by food. Fats provide more satiety than do lean proteins. Ghrelin is an appetite-stimulating hormone that is suppressed by proteins better than by carbohydrates and lipids.

DIF: Recall REF: p. 10 OBJ: 6
TOP: NBDHE, 3.0 Biochemistry and Nutrition

34. The nutrient facts label was established by the USDA and the FDA to improve health and well-being by enhancing nutritional knowledge. Nutrient content claims describe a relationship between a food or food component and reduced risk of a disease or health-related condition.
- Both statements are true.
 - Both statements are false.
 - The first statement is true; the second is false.
 - The first statement is false; the second is true.

ANS: C

The first statement is true; the second is false. Two categories of claims currently can be used on food labels: nutrient content claims and health claims. Nutrient content claims describe the percentage of a nutrient in a product relative to the daily value. Health claims describe a relationship between a food or food component and reduced risk of a disease or health-related condition.

DIF: Comprehension REF: p. 21 OBJ: 10
TOP: NBDHE, 3.0 Biochemistry and Nutrition

35. Each is true of terminology on food nutrition labels, *except* one. Which is the exception?
- Daily reference values (DRVs) are the levels of nutrients considerable desirable for health.

38. Unsweetened juices and milk contain significant amounts of sugars because of the natural content of simple carbohydrates.
- Both the statement and the reason are correct and related.
 - Both the statement and the reason are correct, but are not related.
 - The statement is correct, but the reason is not correct.
 - The statement is not correct, but the reason is correct.
 - Neither the statement nor the reason is correct.

ANS: A

This is confusing for some patients because both beverages are encouraged in appropriate amounts. Looking at “sugars” on the label can be misleading, whereas the total carbohydrate in the product more closely reflects actual carbohydrate content.

DIF: Comprehension

REF: p. 26

OBJ: 10

TOP: NBDHE, 3.0 Biochemistry and Nutrition

39. Which statement regarding obesity is false?
- The prevalence of obesity is showing signs of leveling off.
 - During the past 20 years, the heaviest body mass index groups have been increasing at the fastest rates.
 - Statistics are more promising for ethnic groups because prevalence is less than in white Americans.
 - Hypertension, osteoarthritis, and elevated blood cholesterol accompany obesity.
 - Larger waist measurements are associated with increased health risks.

ANS: C

Obesity statistics are discouraging in ethnic groups (Hispanics, African Americans, Native Americans, and Alaska natives) because the prevalence of obesity is markedly higher than in white Americans.

DIF: Recall

REF: p. 26

OBJ: 10

TOP: NBDHE, 3.0 Biochemistry and Nutrition

40. Each is true regarding body weight in relation to height, *except* one. Which is the exception?
- Currently, the body mass index (BMI) is the preferred method of defining body weight in relation to height.
 - BMI is determined mathematically by first dividing weight by height, dividing this number by height again, and multiplying this number by 703.
 - Chronic disease risk increases in most people with a BMI greater than 25.
 - Major ethnic differences exist regarding BMI.
 - BMI reveals significant details about overall body composition.

ANS: E

Although BMI is the current preferred method of evaluating weight in relation to height, it has inherent weaknesses as a diagnostic guide. For example, a frail or inactive person with a normal-range BMI can have excess body fat and not appear out of shape. BMI reflects overall fat distribution and is cheap and quick. BMI is not appropriate for pregnant and nursing women, infants, and children younger than age 2 years, nor is it appropriate for some athletes with a large percentage of muscle.

DIF: Comprehension

REF: p. 8

OBJ: 6

TOP: NBDHE, 3.0 Biochemistry and Nutrition

41. Which is NOT commonly associated with bariatric surgery?
- Greater and sustained weight loss than conventional methods
 - Reduced incidence of diabetes
 - Reduced incidence and severity of cardiovascular disease
 - A shorter life span

ANS: D

This drastic but effective measure typically results in a longer, not shorter, life because of the positive health effects that accompany sustained weight loss in obese patients. Side effects include altered absorption of many nutrients, pulmonary embolism, and some postoperative deaths.

DIF: Recall

REF: p. 27

OBJ: 10

TOP: NBDHE, 3.0 Biochemistry and Nutrition