**Chapter 1 – An overview of nutrition**

**MULTIPLE CHOICE**

1. Which characteristic is most typical of a chronic disease?

|  |  |
| --- | --- |
| a. | It has a rapid onset. |
| b. | It rarely has noticeable symptoms. |
| c. | It produces sharp pains |
| d. | It progresses gradually. |
| e. | It disrupts daily life, but is unlikely to be life-threatening. |

ANS: D DIF: Bloom's: Understand REF: Introduction

OBJ: Describe how various factors influence personal food choices.

2. What is the chief reason most people choose the foods they eat?

|  |  |
| --- | --- |
| a. | Cost |
| b. | Taste |
| c. | Convenience |
| d. | Nutritional value |
| e. | Habit |

ANS: B DIF: Bloom's: Remember REF: Food choices

OBJ: Describe how various factors influence personal food choices.

3. A child develops a strong dislike of vegetables after she is forced to eat them before leaving the table. Her reaction is an example of a food-related:

|  |  |
| --- | --- |
| a. | habit |
| b. | social interaction |
| c. | emotional turmoil |
| d. | negative association |
| e. | comfort eating |

ANS: D DIF: Bloom's: Evaluate REF: Food choices

OBJ: Describe how various factors influence personal food choices.

4. A person who eats a bowl of cereal for breakfast every day is most likely making a food choice based on:

|  |  |
| --- | --- |
| a. | habit |
| b. | availability |
| c. | body image |
| d. | environmental concerns |
| e. | cultural values |

ANS: A DIF: Bloom's: Evaluate REF: Food choices

OBJ: Describe how various factors influence personal food choices.

5. Which individual is making a food choice based on their social interactions?

|  |  |
| --- | --- |
| a. | A tourist from China who rejects a hamburger due to unfamiliarity |
| b. | A child who spits out his mashed potatoes because they taste too salty |
| c. | A teenager who grudgingly accepts an offer of an ice-cream cone to avoid offending a close friend |
| d. | An elderly gentleman who refuses a peanut-butter-and-jam sandwich because he considers it a child's food |
| e. | An adult who refuses to eat foods that are not locally sourced and organic |

ANS: A DIF: Bloom's: Evaluate REF: Food choices

OBJ: Describe how various factors influence personal food choices.

6. The motive of a person who alters their diet due to religious convictions is most likely related to their:

|  |  |
| --- | --- |
| a. | values |
| b. | body image |
| c. | ethnic heritage |
| d. | functional association |
| e. | comfort |

ANS: A DIF: Bloom's: Understand REF: Food choices

OBJ: Describe how various factors influence personal food choices.

7. Sarah is studying for an upcoming exam and eating because of nervousness. Her food choice will most likely be based on:

|  |  |
| --- | --- |
| a. | regional cuisines |
| b. | preferences |
| c. | emotional comfort |
| d. | positive association |
| e. | functional value |

ANS: C DIF: Bloom's: Evaluate REF: Food choices

OBJ: Describe how various factors influence personal food choices.

8. Which term describes foods that provide health benefits beyond their nutrient contributions?

|  |  |
| --- | --- |
| a. | Fortified foods |
| b. | Enriched foods |
| c. | Functional foods |
| d. | Health-enhancing foods |
| e. | Bioavailable foods |

ANS: C DIF: Bloom's: Understand REF: Food choices

OBJ: Describe how various factors influence personal food choices.

9. Which of the following is *not* an example of a functional food?

|  |  |
| --- | --- |
| a. | Bread with added fibre |
| b. | Milk with omega-3 fish oil |
| c. | Tomatoes rich in natural lycopene |
| d. | Margarine with plant sterols |
| e. | Yoghurt with probiotics |

ANS: C DIF: Bloom’s: Remember REF: Food choices

OBJ: Describe how various factors influence personal food choices.

10. By chemical analysis, what nutrient is present in the highest amounts in most foods?

|  |  |
| --- | --- |
| a. | Fats |
| b. | Water |
| c. | Proteins |
| d. | Carbohydrates |
| e. | Vitamins and minerals |

ANS: B DIF: Bloom's: Remember REF: The nutrients

OBJ: Name the six major classes of nutrients and identify which are organic and which yield energy.

11. What type of nutrient is needed by the body and must be supplied by foods?

|  |  |
| --- | --- |
| a. | Nutraceutical |
| b. | Metabolic nutrient |
| c. | Organic nutrient |
| d. | Essential nutrient |
| e. | Phytonutrient |

ANS: D DIF: Bloom's: Understand REF: The nutrients

OBJ: Name the six major classes of nutrients and identify which are organic and which yield energy.

12. Which nutrient is an example of a macronutrient?

|  |  |
| --- | --- |
| a. | Proteins |
| b. | Minerals |
| c. | Water-soluble vitamins |
| d. | Fat-soluble vitamins |
| e. | Water |

ANS: A DIF: Bloom's: Evaluate REF: The nutrients

OBJ: Name the six major classes of nutrients and identify which are organic and which yield energy.

13. Which nutrient is classified as a micronutrient?

|  |  |
| --- | --- |
| a. | Minerals |
| b. | Proteins |
| c. | Alcohols |
| d. | Carbohydrates |
| e. | Fats |

ANS: A DIF: Bloom's: Evaluate REF: The nutrients

OBJ: Name the six major classes of nutrients and identify which are organic and which yield energy.

14. Which of the following nutrients is an inorganic compound?

|  |  |
| --- | --- |
| a. | Carbohydrate |
| b. | Water |
| c. | Protein |
| d. | Lipids |
| e. | Vitamin C |

ANS: B DIF: Bloom's: Evaluate REF: The nutrients

OBJ: Name the six major classes of nutrients and identify which are organic and which yield energy.

15. An essential nutrient is one that:

|  |  |
| --- | --- |
| a. | must be made in large quantities by the body |
| b. | can only by synthesised by the body |
| c. | cannot be made in sufficient quantities by the body |
| d. | is used to synthesise other compounds in the body |
| e. | must be both consumed and synthesised to be complete |

ANS: C DIF: Bloom's: Understand REF: The nutrients

OBJ: Name the six major classes of nutrients and identify which are organic and which yield energy.

16. As it relates to compounds, the term ‘organic’ would be best defined as:

|  |  |
| --- | --- |
| a. | products sold at health food stores |
| b. | products grown without use of pesticides |
| c. | foods having superior nutrient qualities |
| d. | substances with carbon, hydrogen and oxygen |
| e. | substances that contain water |

ANS: D DIF: Bloom's: Understand REF: The nutrients

OBJ: Name the six major classes of nutrients and identify which are organic and which yield energy.

17. Which of the following is an energy-yielding nutrient?

|  |  |
| --- | --- |
| a. | Vitamin C |
| b. | Water |
| c. | Protein |
| d. | Iron |
| e. | Zinc |

ANS: C DIF: Bloom's: Remember REF: The nutrients

OBJ: Name the six major classes of nutrients and identify which are organic and which yield energy.

18. Gram for gram, which class of nutrient provides the most energy?

|  |  |
| --- | --- |
| a. | Fats |
| b. | Alcohols |
| c. | Proteins |
| d. | Carbohydrates |
| e. | Vitamins and minerals |

ANS: A DIF: Bloom's: Remember REF: The nutrients

OBJ: Name the six major classes of nutrients and identify which are organic and which yield energy.

19. Food energy is commonly expressed in kilocalories and in:

|  |  |
| --- | --- |
| a. | kilojoules |
| b. | kilograms |
| c. | kilometers |
| d. | kilonewtons |
| e. | kilolitres |

ANS: A DIF: Bloom's: Remember REF: The nutrients

OBJ: Name the six major classes of nutrients and identify which are organic and which yield energy.

20. The units of energy used by most scientists and nutritionists, aside from those in the US, are expressed in:

|  |  |
| --- | --- |
| a. | newtons |
| b. | litres |
| c. | kilojoules |
| d. | kilocalories |
| e. | grams |

ANS: C DIF: Bloom’s: Remember REF: The nutrients

OBJ: Name the six major classes of nutrients and identify which are organic and which yield energy.

21. How many kilojoules are there in 100 kilocalories?

|  |  |
| --- | --- |
| a. | 50 |
| b. | 85 |
| c. | 140 |
| d. | 170 |
| e. | 200 |

ANS: C DIF: Bloom's: Apply REF: The nutrients

OBJ: Name the six major classes of nutrients and identify which are organic and which yield energy.

22. Which of the following substances contributes 29 kilojoules per gram?

|  |  |
| --- | --- |
| a. | Water |
| b. | Carbohydrate |
| c. | Alcohol |
| d. | Fat |
| e. | Protein |

ANS: C DIF: Bloom's: Remember REF: The nutrients

OBJ: Name the six major classes of nutrients and identify which are organic and which yield energy.

23. Which of the following food items would be most energy-dense?

|  |  |
| --- | --- |
| a. | Lettuce |
| b. | Celery |
| c. | Bread |
| d. | Yoghurt |
| e. | Chocolate |

ANS: E DIF: Bloom's: Apply REF: The nutrients

OBJ: Name the six major classes of nutrients and identify which are organic and which yield energy.

24. Which of the following nutrient sources will yield more than 17 kilojoules per gram?

|  |  |
| --- | --- |
| a. | Plant fats |
| b. | Plant proteins |
| c. | Animal proteins |
| d. | Plant carbohydrates |
| e. | Animal carbohydrates |

ANS: A DIF: Bloom's: Apply REF: The nutrients

OBJ: Name the six major classes of nutrients and identify which are organic and which yield energy.

25. What results from the metabolism of energy nutrients?

|  |  |
| --- | --- |
| a. | Energy is released. |
| b. | Body fat increases. |
| c. | Energy is destroyed. |
| d. | Body water decreases. |
| e. | Body mass increases. |

ANS: A DIF: Bloom's: Understand REF: The nutrients

OBJ: Name the six major classes of nutrients and identify which are organic and which yield energy.

26. Which statement best describes the composition of most foods?

|  |  |
| --- | --- |
| a. | They contain only one of the three energy nutrients, although a few contain all of them. |
| b. | They contain equal amounts of the three energy nutrients. |
| c. | They contain mixtures of the three energy nutrients, although only one or two may predominate. |
| d. | They contain only two of the three energy nutrients, and those two are contained in equal amounts. |
| e. | They contain only two of the three energy nutrients, and one is present in far greater amounts than the other. |

ANS: C DIF: Bloom's: Evaluate REF: The nutrients

OBJ: Name the six major classes of nutrients and identify which are organic and which yield energy.

27. How many vitamins are known to be required in the diet of human beings?

|  |  |
| --- | --- |
| a. | Five |
| b. | Eight |
| c. | 10 |
| d. | 13 |
| e. | 17 |

ANS: D DIF: Bloom's: Remember REF: The nutrients

OBJ: Name the six major classes of nutrients and identify which are organic and which yield energy.

28. Which statement is true of minerals?

|  |  |
| --- | --- |
| a. | They are organic. |
| b. | They yield 4 kilocalories per gram. |
| c. | Some are environmental contaminants. |
| d. | Some may be destroyed during cooking. |
| e. | They are more fragile than vitamins. |

ANS: C DIF: Bloom's: Analyse REF: The nutrients

OBJ: Name the six major classes of nutrients and identify which are organic and which yield energy.

29. How many minerals are known to be essential for human nutrition?

|  |  |
| --- | --- |
| a. | Eight |
| b. | 12 |
| c. | 16 |
| d. | 20 |
| e. | 24 |

ANS: C DIF: Bloom's: Remember REF: The nutrients

OBJ: Name the six major classes of nutrients and identify which are organic and which yield energy.

30. Your friend Carrie has been taking a daily supplement of vitamin C, and tells you that she has been feeling a lot better. Her statement to you is best described as a(n):

|  |  |
| --- | --- |
| a. | placebo |
| b. | theory |
| c. | interpretation |
| d. | conclusion |
| e. | hypothesis |

ANS: A DIF: Apply REF: The science of nutrition

OBJ: Explain the scientific method and how scientists use various types of research studies and methods to acquire nutrition information.

31. What is the study of how a person's genes interact with diet and disease?

|  |  |
| --- | --- |
| a. | Genetic counselling |
| b. | Nutritional genomics |
| c. | Genetic metabolomics |
| d. | Nutritional genetics |
| e. | Biogenetic nutrition |

ANS: B DIF: Bloom's: Understand REF: The science of nutrition

OBJ: Explain the scientific method and how scientists use various types of research studies and methods to acquire nutrition information.

32. How does a double-blind experiment work?

|  |  |
| --- | --- |
| a. | Both subject groups take turns getting each treatment. |
| b. | Neither the subjects nor the researchers know which subjects are in the control and the experimental groups. |
| c. | Neither group of subjects knows whether they are in the control or the experimental group, but the researchers do know. |
| d. | Both subject groups know whether they are in the control or the experimental group, but the researchers do not know. |
| e. | Neither the subjects nor the persons having contact with the subjects know the true purpose of the experiment. |

ANS: B DIF: Bloom's: Evaluate REF: The science of nutrition

OBJ: Explain the scientific method and how scientists use various types of research studies and methods to acquire nutrition information.

33. In the scientific method, a tentative solution to a problem is called a:

|  |  |
| --- | --- |
| a. | theory |
| b. | prediction |
| c. | hypothesis |
| d. | correlation |
| e. | deduction |

ANS: C DIF: Bloom's: Remember REF: The science of nutrition

OBJ: Explain the scientific method and how scientists use various types of research studies and methods to acquire nutrition information.

34. What is one major weakness of a laboratory-based study?

|  |  |
| --- | --- |
| a. | The costs are typically prohibitive. |
| b. | Findings are difficult to replicate. |
| c. | Results from animal testing cannot be applied to human beings. |
| d. | Experimental variables cannot be easily controlled. |
| e. | Causality cannot be inferred. |

ANS: C DIF: Bloom's: Analyse REF: The science of nutrition

OBJ: Explain the scientific method and how scientists use various types of research studies and methods to acquire nutrition information.

35. What is one benefit of using controls in an experiment?

|  |  |
| --- | --- |
| a. | The size of the groups can be very large. |
| b. | The subjects do not know anything about the experiment. |
| c. | The subjects who are treated are balanced against the placebos. |
| d. | The subjects are similar in all respects except for the treatment being tested. |
| e. | The costs associated with the study are usually much lower. |

ANS: D DIF: Bloom's: Evaluate REF: The science of nutrition

OBJ: Explain the scientific method and how scientists use various types of research studies and methods to acquire nutrition information.

36. What is one benefit of using a large sample size in an experiment?

|  |  |
| --- | --- |
| a. | Chance variation is less likely to affect the results. |
| b. | The possibility of a placebo effect is eliminated. |
| c. | The experiment will be double-blind. |
| d. | The control group will be similar to the experimental group. |
| e. | Experimenter bias is less likely to have an effect. |

ANS: A DIF: Bloom's: Evaluate REF: The science of nutrition

OBJ: Explain the scientific method and how scientists use various types of research studies and methods to acquire nutrition information.

37. You have been asked to help a top nutrition researcher conduct a double-blind study on vitamin C. As the subjects walk into the laboratory, you distribute all the vitamin C pill bottles to the girls and all the placebo pill bottles to the boys. The researcher instantly informs you that there are *two* errors in your research practice. What steps should you have taken to conduct your experiment correctly?

|  |  |
| --- | --- |
| a. | Giving all the boys the vitamin C and the girls the placebo, and telling them what they were getting |
| b. | Distributing the bottles randomly, randomising the subjects, and telling them what they were getting |
| c. | Telling the subjects which group they were in, but preventing yourself from knowing the contents of the pill bottles |
| d. | Preventing yourself from knowing the contents of the pill bottles, and distributing the bottles randomly to the subjects |
| e. | Allowing the subjects to decide whether they take the Vitamin C or the placebo, and then giving them the opposite of what they requested |

ANS: D DIF: Bloom's: Evaluate REF: The science of nutrition

OBJ: Explain the scientific method and how scientists use various types of research studies and methods to acquire nutrition information.

38. An increase in Vitamin C accompanied by a decrease in number of colds is an example of a:

|  |  |
| --- | --- |
| a. | variable effect |
| b. | positive correlation |
| c. | negative correlation |
| d. | randomisation effect |
| e. | placebo effect |

ANS: C DIF: Bloom's: Understand REF: The science of nutrition

OBJ: Explain the scientific method and how scientists use various types of research studies and methods to acquire nutrition information.

39. Before publication in a reputable journal, the findings of a research study must undergo scrutiny by experts in the field in a process known as:

|  |  |
| --- | --- |
| a. | peer review |
| b. | cohort review |
| c. | research intervention |
| d. | double-blind examination |
| e. | peer replication |

ANS: A DIF: Bloom's: Remember REF: The science of nutrition

OBJ: Explain the scientific method and how scientists use various types of research studies and methods to acquire nutrition information.

40. What is the smallest amount of a nutrient that, when consumed over a prolonged period, maintains a specific function?

|  |  |
| --- | --- |
| a. | Nutrient allowance |
| b. | Nutrient requirement |
| c. | Nutrient tolerable limit |
| d. | Nutrient adequate intake |
| e. | Nutrient recommendation |

ANS: B DIF: Bloom's: Remember REF: Nutrient Reference Values

OBJ: Define the four categories of the NRVs and explain their purposes.

41. A group of people consumes an amount of protein equal to the estimated average requirement (EAR) for their population group. What percentage of people will receive insufficient amounts?

|  |  |
| --- | --- |
| a. | 10 |
| b. | 25 |
| c. | 33 |
| d. | 40 |
| e. | 50 |

ANS: E DIF: Bloom's: Apply REF: Nutrient Reference Values

OBJ: Define the four categories of the NRVs and explain their purposes.

42. A health magazine contacts you for your expert opinion on what measure best describes the amounts of nutrients that should be consumed by the population. How should you reply?

|  |  |
| --- | --- |
| a. | The Nutrient Reference Values (NRVs), because they are a set of nutrient intake values for healthy people in Australia and New Zealand. |
| b. | The Upper Level of Intake (UL), because they are the maximum daily amount of a nutrient that appears safe for most healthy people. |
| c. | The Estimated Average Requirements (EAR), because they reflect the average daily amount of a nutrient that will maintain a specific function in half of the healthy people of a population. |
| d. | The Recommended Dietary Intakes (RDI), because they represent 98% of a nutrient considered adequate to meet the known nutrient needs of practically all healthy people. |
| e. | The Estimated Energy Requirement (EER), because it represents what will maintain energy balance and good health in a person of a given age, gender, weight, height and level of physical activity. |

ANS: C DIF: Bloom's: Apply REF: Nutrient Reference Values

OBJ: Define the four categories of the NRVs and explain their purposes.

43. Recommended Dietary Intakes (RDI) may be used to:

|  |  |
| --- | --- |
| a. | measure nutrient balance of population groups |
| b. | assess dietary nutrient adequacy for individuals |
| c. | treat persons with diet-related illnesses |
| d. | calculate the exact food requirements for most individuals |
| e. | recommend amounts of nutrients when there is insufficient evidence to determine the EAR |

ANS: B DIF: Bloom's: Evaluate REF: Nutrient Reference Values

OBJ: Define the four categories of the NRVs and explain their purposes.

44. The amount of nutrient that appears sufficient for half the population is known as:

|  |  |
| --- | --- |
| a. | Lower Tolerable Limit |
| b. | Upper Level of Intake |
| c. | Sub-clinical Deficiency Value |
| d. | Estimated Average Requirement |
| e. | Adequate Intake |

ANS: D DIF: Bloom's: Remember REF: Nutrient Reference Values

OBJ: Define the four categories of the NRVs and explain their purposes.

45. The amount of a nutrient that meets the needs of about 98% of a population is known as the

|  |  |
| --- | --- |
| a. | Adequate Intake |
| b. | Daily Recommended Value |
| c. | Upper Level of Intake |
| d. | Recommended Dietary Intake |
| e. | Necessary and Sufficient Intake |

ANS: D DIF: Bloom's: Remember REF: Nutrient Reference Values

OBJ: Define the four categories of the NRVs and explain their purposes.

46. The Recommended Dietary Intakes (RDIs) for nutrients are generally:

|  |  |
| --- | --- |
| a. | more than twice as high as anyone needs |
| b. | the minimum amounts that average people need |
| c. | designed to meet the needs of almost all healthy people |
| d. | designed to prevent deficiency diseases in half the population |
| e. | reflective of current dietary preferences |

ANS: C DIF: Bloom's: Understand REF: Nutrient Reference Values

OBJ: Define the four categories of the NRVs and explain their purposes.

47. What is a purpose of both the Recommended Dietary Intake (RDI) and Adequate Intake (AI)?

|  |  |
| --- | --- |
| a. | Setting nutrient goals for individuals |
| b. | Identifying toxic intakes of nutrients |
| c. | Restoring the health of malnourished individuals |
| d. | Developing nutrition programs for schoolchildren |
| e. | Improving population-level health |

ANS: A DIF: Bloom's: Understand REF: Nutrient Reference Values

OBJ: Define the four categories of the NRVs and explain their purposes.

48. Which statement is true of nutrient intakes?

|  |  |
| --- | --- |
| a. | Higher intakes are always safer than lower intakes. |
| b. | Intakes below the EAR decrease risk of deficiency. |
| c. | A typical intake falling between the RDA and the EAR is almost always adequate. |
| d. | Intakes above the RDA are required to be safe. |
| e. | Intakes above the UL put an individual at risk of toxicity. |

ANS: E DIF: Bloom's: Evaluate REF: Nutrient Reference Values

OBJ: Define the four categories of the NRVs and explain their purposes.

49. What does the Upper Level of Intake (UL) of a nutrient represent?

|  |  |
| --- | --- |
| a. | The maximum amount allowed for fortifying a food |
| b. | A number calculated by taking twice the RDA or three times the AI |
| c. | The maximum allowable amount available in supplement form |
| d. | The maximum amount from all sources that appears safe for most healthy people |
| e. | The amount that can be absorbed from a typical diet |

ANS: D DIF: Bloom's: Evaluate REF: Nutrient Reference Values

OBJ: Define the four categories of the NRVs and explain their purposes.

50. What set of values is used to recommend the average kcalorie intake that maintains population groups in energy balance?

|  |  |
| --- | --- |
| a. | Estimated Energy Requirement |
| b. | Adequate Average Requirement |
| c. | Recommended Dietary Allowance |
| d. | Acceptable Energy Distribution Range |
| e. | Tolerable Upper Energy Limit |

ANS: A DIF: Bloom's: Remember REF: Nutrient Reference Values

OBJ: Define the four categories of the NRVs and explain their purposes.

51. The percentages of kcalorie intakes for protein, fat, and carbohydrate that are thought to reduce the risk of chronic diseases are known as the:

|  |  |
| --- | --- |
| a. | Estimated Energy Requirements |
| b. | Tolerable Range of Kilocalorie Intakes |
| c. | Estimated Energy Nutrient Recommendations |
| d. | Acceptable Macronutrient Distribution Ranges |
| e. | Healthy People Recommendations |

ANS: D DIF: Bloom's: Remember REF: Nutrient Reference Values

OBJ: Define the four categories of the NRVs and explain their purposes.

52. What is the AMDR for carbohydrate?

|  |  |
| --- | --- |
| a. | 5–10% |
| b. | 15–25% |
| c. | 30–40% |
| d. | 45–65% |
| e. | 70–80% |

ANS: D DIF: Bloom's: Remember REF: Nutrient Reference Values

OBJ: Define the four categories of the NRVs and explain their purposes.

53. What is the AMDR for protein?

|  |  |
| --- | --- |
| a. | 15–25% |
| b. | 40–45% |
| c. | 50–60% |
| d. | 65–75% |
| e. | 80–80% |

ANS: A DIF: Bloom's: Remember REF: Nutrient Reference Values

OBJ: Define the four categories of the NRVs and explain their purposes.

54. What is the AMDR for fat?

|  |  |
| --- | --- |
| a. | 10–30% |
| b. | 20–35% |
| c. | 40–50% |
| d. | 55–65% |
| e. | 70–80% |

ANS: B DIF: Bloom's: Remember REF: Nutrient Reference Values

OBJ: Define the four categories of the NRVs and explain their purposes.

55. The Nutrient Reference Values may be used to:

|  |  |
| --- | --- |
| a. | treat people with diet-related disorders |
| b. | assess the adequacy of all required nutrients |
| c. | plan and evaluate diets for healthy people |
| d. | assess the adequacy of only vitamins and minerals |
| e. | diagnose diet-related disorders |

ANS: C DIF: Bloom's: Apply REF: Nutrient Reference Values

OBJ: Define the four categories of the NRVs and explain their purposes.

56. Which method is used to detect nutrient deficiencies?

|  |  |
| --- | --- |
| a. | Nutrition assessment |
| b. | Nutrient stages identification |
| c. | Overt symptoms identification |
| d. | Outward manifestations assessment |
| e. | Nutritional diagnostic programs |

ANS: A DIF: Bloom's: Understand REF: Nutrition assessment

OBJ: Explain how the four assessment methods are used to detect energy and nutrient deficiencies and excesses.

57. As a dietitian at a busy general hospital, you are instructed to write a policy statement on nutrition assessment procedures for all new patients. Which parameters would be most useful for the nutrition assessment of individuals?

|  |  |
| --- | --- |
| a. | Diet recall, food likes and dislikes, allergies, and favorite family recipes |
| b. | Anthropometric data, physical examinations, food likes and dislikes, and family tree |
| c. | Diet records that include what the patient usually eats will provide sufficient information |
| d. | Historical information, anthropometric data, physical examinations, and laboratory tests |
| e. | Diet records that take the ‘average’ of what the patient reports and what an objective observer reports |

ANS: D DIF: Bloom's: Evaluate REF: Nutrition assessment

OBJ: Explain how the four assessment methods are used to detect energy and nutrient deficiencies and excesses.

58. Which measure is anthropometric?

|  |  |
| --- | --- |
| a. | Body weight |
| b. | Blood pressure |
| c. | Blood iron level |
| d. | Food intake information |
| e. | Serum electrolytes |

ANS: A DIF: Bloom's: Remember REF: Nutrition assessment

OBJ: Explain how the four assessment methods are used to detect energy and nutrient deficiencies and excesses.

59. Which sequence of stages is most typical in the development of a nutrient deficiency resulting from inadequate intake?

|  |  |
| --- | --- |
| a. | Declining nutrient stores, abnormal functions within the body, and overt signs |
| b. | Abnormal functions within the body, declining nutrient stores, and overt signs |
| c. | Abnormal functions within the body, overt signs, and declining nutrient stores |
| d. | Declining nutrient stores, overt signs, and abnormal functions within the body |
| e. | Overt signs, abnormal functions, and declining nutrient stores |

ANS: A DIF: Bloom's: Remember REF: Nutrition assessment

OBJ: Explain how the four assessment methods are used to detect energy and nutrient deficiencies and excesses.

60. What type of deficiency is caused by inadequate absorption of a nutrient inside the body?

|  |  |
| --- | --- |
| a. | Primary |
| b. | Clinical |
| c. | Secondary |
| d. | Sub-clinical |
| e. | Chronic |

ANS: C DIF: Bloom's: Understand REF: Nutrition assessment

OBJ: Explain how the four assessment methods are used to detect energy and nutrient deficiencies and excesses.

61. A subclinical nutrient deficiency is defined as one that:

|  |  |
| --- | --- |
| a. | shows overt signs |
| b. | is in the early stages |
| c. | shows resistance to treatment |
| d. | is similar to a secondary deficiency |
| e. | is of acute onset |

ANS: B DIF: Bloom's: Remember REF: Nutrition assessment

OBJ: Explain how the four assessment methods are used to detect energy and nutrient deficiencies and excesses.

62. The overall objective of national nutrition surveys is to:

|  |  |
| --- | --- |
| a. | establish the RDI |
| b. | identify national trends in food consumption |
| c. | identify leading causes of death |
| d. | establish public policy on nutrition education, health programs and regulation of food supply |
| e. | decrease health-care costs |

ANS: D DIF: Bloom's: Remember REF: Nutrition assessment

OBJ: Explain how the four assessment methods are used to detect energy and nutrient deficiencies and excesses.

63. Of the 10 leading causes of illness and death, how many are associated directly with nutrition?

|  |  |
| --- | --- |
| a. | One |
| b. | Four |
| c. | Six |
| d. | Eight |
| e. | Nine |

ANS: B DIF: Bloom's: Remember REF: Diet and health

OBJ: Identify several risk factors and explain their relationships to chronic diseases.

64. Which statement explains the association between a risk factor and the development of a disease?

|  |  |
| --- | --- |
| a. | All people with the risk factor will develop the disease. |
| b. | The absence of a risk factor guarantees freedom from the disease. |
| c. | The more risk factors for a disease, the greater the chance of developing that disease. |
| d. | The presence of a factor such as heredity can be modified to lower the risk of degenerative diseases. |
| e. | Risk factors tend to be short-lived, so their presence does not predict long-term risk of disease. |

ANS: C DIF: Bloom's: Understand REF: Diet and health

OBJ: Identify several risk factors and explain their relationships to chronic diseases.

65. Which risk factor contributes to the most deaths in Australia?

|  |  |
| --- | --- |
| a. | Poor diet |
| b. | Tobacco use |
| c. | Alcohol intake |
| d. | High blood pressure |
| e. | High blood cholesterol |

ANS: D DIF: Bloom's: Remember REF: Diet and health

OBJ: Identify several risk factors and explain their relationships to chronic diseases.

66. Who would be the most appropriate person to consult for nutrition information?

|  |  |
| --- | --- |
| a. | Chiropractor |
| b. | Medical doctor |
| c. | Accredited practising dietitian |
| d. | Health food store manager |
| e. | Nutrition consultant |

ANS: C DIF: Bloom's: Evaluate

REF: Nutrition information and misinformation

OBJ: Recognise misinformation and describe how to identify reliable nutrition information.

67. Which of the following risk factors for chronic disease *cannot* be changed through lifestyle modifications?

|  |  |
| --- | --- |
| a. | Genetics |
| b. | Gender |
| c. | Age |
| d. | Ethnicity |
| e. | High body mass |

ANS: C DIF: Bloom's: Evaluate

REF: Risk factors for chronic diseases

OBJ: Identify several risk factors and explain their relationships to chronic diseases.

68. Which individual is likely to possess the *least*amount of nutrition training, and to have gotten his or her degree from an ‘alternative’ educational program?

|  |  |
| --- | --- |
| a. | Dietetic assistant |
| b. | Registered dietician |
| c. | Certified nutritionist |
| d. | Research dietitian |
| e. | Public health nutritionist |

ANS: C DIF: Bloom's: Evaluate

REF: Nutrition information and misinformation

OBJ: Recognise misinformation and describe how to identify reliable nutrition information.

69. For which of the following titles, by definition, require the individual to be university educated and meet requirements of the Dietitians Association of Australia?

|  |  |
| --- | --- |
| a. | Accredited practising dietitian |
| b. | Registered dietician |
| c. | Certified nutritionist |
| d. | Certified nutrition therapist |
| e. | Registered nutritional consultant |

ANS: A DIF: Bloom's: Understand

REF: Nutrition information and misinformation

OBJ: Recognise misinformation and describe how to identify reliable nutrition information.

70. Which of the following titles, by definition, requires the individual to be university-educated and to meet the requirements of the New Zealand Dietitians Association?

|  |  |  |
| --- | --- | --- |
| a. | Accredited practising dietitian |  |
| b. | Registered dietitian |  |
| c. | Certified nutritionist |  |
| d. | Certified nutrition therapist |  |
| e. | Registered nutritional consultant |  |

ANS: B DIF: Bloom's: Remember

REF: Nutrition information and misinformation

OBJ: Recognize misinformation and describe how to identify reliable nutrition information.

**COMPLETION**

1. Risk factors for chronic disease tend to \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ and tend to \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_.

ANS: persist; cluster

DIF: Bloom's: Remember REF: Diet and health

OBJ: Identify several risk factors and explain their relationships to chronic diseases.

2. Foods associated with a particular culture are called \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ foods.

ANS: ethnic

DIF: Bloom's: Remember REF: Food choices

OBJ: Describe how various factors influence personal food choices.

3. Foods that provide health benefits beyond their nutrient contributions are called \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ foods.

ANS: functional

DIF: Bloom's: Remember REF: Food choices

OBJ: Describe how various factors influence personal food choices.

4. Non-nutrient compounds found in plants, some of which have biological activity in the body, are called \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_.

ANS: phytochemicals

DIF: Bloom's: Remember REF: Food choices

OBJ: Describe how various factors influence personal food choices.

5. The normal range for \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ is 13–21% for young men and 23–26% for young women.

ANS: body fat composition

DIF: Bloom's: Remember REF: The nutrients

OBJ: Name the six major classes of nutrients and identify which are organic and which yield energy.

6. The three energy-yielding nutrients are \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_, \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ and \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_.

ANS:

carbohydrate; fat; protein

DIF: Bloom's: Remember REF: The nutrients

OBJ: Name the six major classes of nutrients and identify which are organic and which yield energy.

7. Although \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ provides energy, it is not considered a nutrient because it does not sustain life.

ANS: alcohol

DIF: Bloom's: Remember REF: The nutrients

OBJ: Name the six major classes of nutrients and identify which are organic and which yield energy.

**MATCHING**

Match the correct answer with the appropriate term.

|  |  |  |  |
| --- | --- | --- | --- |
| a. | Seven | k. | Placebo |
| b. | 16 | l. | Inorganic |
| c. | 20 | m. | Validity |
| d. | 40 | n. | Hypothesis |
| e. | 100 | o. | Nutrient reference values |
| f. | Fat | p. | National nutrition surveys |
| g. | Water | q. | Anthropometrics |
| h. | Energy | r. | Overt deficiency |
| i. | Protein | s. | Physical examination |
| j. | Organic | t. | Subclinical deficiency |

1. Nutrient with the highest body concentration

2. Substance containing no carbon or not pertaining to living things

3. Number of essential nutrients for human beings

4. Most substances containing carbon-hydrogen bonds

5. Substance containing nitrogen

6. Energy (kcal) equivalent to 420 kilojoules

7. Nutrient with the highest energy density

8. Energy (kcal) yield of five grams of sugar

9. Energy (kcal) yield of one gram of alcohol

10. Number of indispensable minerals for human beings

11. An unproven statement

12. An inert medication used in control trials

13. Possessing the quality of being evidence based

14. The recommended intake is set at the population mean

15. Gather information about dietary, nutritional and health status

16. Set of nutrition values used to determine healthy population and individual diets

17. Measurement of physical characteristics

18. Inspection of skin, tongue, eyes, hair and fingernails

19. A nutrient deficiency showing outward signs

20. A nutrient deficiency in the early stages

1. ANS: G DIF: Bloom's: Remember REF: The nutrients

OBJ: Name the six major classes of nutrients and identify which are organic and which yield energy.

2. ANS: L DIF: Bloom's: Remember REF: The nutrients

OBJ: Name the six major classes of nutrients and identify which are organic and which yield energy.

3. ANS: D DIF: Bloom's: Remember REF: The nutrients

OBJ: Name the six major classes of nutrients and identify which are organic and which yield energy.

4. ANS: J DIF: Bloom's: Remember REF: The nutrients

OBJ: Name the six major classes of nutrients and identify which are organic and which yield energy.

5. ANS: I DIF: Bloom's: Remember REF: The nutrients

OBJ: Name the six major classes of nutrients and identify which are organic and which yield energy.

6. ANS: E DIF: Bloom's: Remember REF: The nutrients

OBJ: Name the six major classes of nutrients and identify which are organic and which yield energy.

7. ANS: F DIF: Bloom's: Remember REF: The nutrients

OBJ: Name the six major classes of nutrients and identify which are organic and which yield energy.

8. ANS: C DIF: Bloom's: Remember REF: The nutrients

OBJ: Name the six major classes of nutrients and identify which are organic and which yield energy.

9. ANS: A DIF: Bloom's: Remember REF: The nutrients

OBJ: Name the six major classes of nutrients and identify which are organic and which yield energy.

10. ANS: B DIF: Bloom's: Remember REF: The nutrients

OBJ: Name the six major classes of nutrients and identify which are organic and which yield energy.

11. ANS: N DIF: Bloom's: Remember REF: The science of nutrition

OBJ: Explain the scientific method and how scientists use various types of research studies and methods to acquire nutrition information.

12. ANS: K DIF: Bloom's: Remember REF: The science of nutrition

OBJ: Explain the scientific method and how scientists use various types of research studies and methods to acquire nutrition information.

13. ANS: M DIF: Bloom's: Remember REF: The science of nutrition

OBJ: Explain the scientific method and how scientists use various types of research studies and methods to acquire nutrition information.

14. ANS: H DIF: Bloom's: Remember

REF: Dietary reference Intakes

OBJ: Define the four categories of the DRI and explain their purposes.

15. ANS: P DIF: Bloom's: Remember REF: Nutrition assessment

OBJ: Explain how the four assessment methods are used to detect energy and nutrient deficiencies and excesses.

16. ANS: O DIF: Bloom's: Remember REF: Nutrition assessment

OBJ: Explain how the four assessment methods are used to detect energy and nutrient deficiencies and excesses.

17. ANS: Q DIF: Bloom's: Remember REF: Nutrition assessment

OBJ: Explain how the four assessment methods are used to detect energy and nutrient deficiencies and excesses.

18. ANS: S DIF: Bloom's: Remember REF: Nutrition assessment

OBJ: Explain how the four assessment methods are used to detect energy and nutrient deficiencies and excesses.

19. ANS: R DIF: Bloom's: Remember REF: Nutrition assessment

OBJ: Explain how the four assessment methods are used to detect energy and nutrient deficiencies and excesses.

20. ANS: T DIF: Bloom's: Remember REF: Nutrition assessment

OBJ: Explain how the four assessment methods are used to detect energy and nutrient deficiencies and excesses.

**ESSAY**

1. Describe six behavioural or social motives governing people's food choices.

ANS:

*Preferences*: As you might expect, the number one reason most people choose certain foods is taste – they like the flavour. Two widely shared preferences are for the sweetness of sugar and the savoury taste of salt. High-fat foods also appear to be a universally common preference.

*Habit*: People sometimes select foods out of habit. They eat cereal every morning, for example, simply because they have always eaten cereal for breakfast. Eating a familiar food and not having to make any decisions can be comforting.

*Ethnic heritage and regional cuisines*: Among the strongest influences on food choices are ethnic heritage and regional cuisines. People tend to prefer the foods they grew up eating. Every country – and in fact every region of every country – has its own typical foods and ways of combining them into meals. These cuisines reflect a unique combination of local ingredients and cooking styles.

*Social interactions*: Most people enjoy companionship while eating. It’s fun to go out with friends for a meal or share a snack while watching a movie together. Meals are often social events, and sharing food is part of hospitality. Social customs invite people to accept food or drink offered by a host or shared by a group – regardless of hunger signals.

*Availability, convenience, and economy*: People often eat foods that are accessible, quick and easy to prepare, and within their financial means. Consumers who value convenience frequently eat out, bring home ready-to-eat meals or have food delivered.

*Positive and negative associations*: People tend to like particular foods associated with happy occasions – such as pies at football games or cake and ice-cream at birthday parties. By the same token, people can develop aversions and dislike foods that they ate when they felt sick, or that they were forced to eat in negative situations. Similarly, children learn to like and dislike certain foods when their parents use foods as rewards or punishments.

*Emotions*: Emotions guide food choices and eating behaviours. Some people cannot eat when they are emotionally upset. Others may eat in response to a variety of emotional stimuli – for example, to relieve boredom or depression, or to calm anxiety.

*Values*: Food choices may reflect people’s religious beliefs, political views or environmental concerns.

*Body weight and image*: Sometimes people select certain foods and supplements they believe will improve their physical appearance, and avoid those they believe might be detrimental. Such decisions can be beneficial when they are based on sound nutrition and fitness knowledge, but decisions based on fads or carried to extremes undermine good health.

*Nutrition and health benefits*: Many consumers make food choices they believe will improve their health.

DIF: Bloom's: Understand REF: Food choices

OBJ: Describe how various factors influence personal food choices.

2. Explain how food choices are influenced by habits, emotions, physical appearance and ethnic background.

ANS:

*Habit*: People sometimes select foods out of habit. They eat cereal every morning, for example, simply because they have always eaten cereal for breakfast. Eating a familiar food and not having to make any decisions can be comforting.

*Ethnic heritage and regional cuisines*: Among the strongest influences on food choices are ethnic heritage and regional cuisines. People tend to prefer the foods they grew up eating. Every country – and in fact every region of every country – has its own typical foods and ways of combining them into meals. These cuisines reflect a unique combination of local ingredients and cooking styles.

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*Body weight and image*: Sometimes people select certain foods and supplements they believe will improve their physical appearance and avoid those they believe might be detrimental. Such decisions can be beneficial when they are based on sound nutrition and fitness knowledge, but decisions based on fads or carried to extremes undermine good health.

DIF: Bloom's: Understand REF: Food choices

OBJ: Describe how various factors influence personal food choices.

3. Discuss some of the consequences of eating in response to emotions.

ANS:

Emotions guide food choices and eating behaviours. Some people cannot eat when they are emotionally upset. Others may eat in response to a variety of emotional stimuli – for example, to relieve boredom or depression, or to calm anxiety. A depressed person may choose to eat rather than to call a friend. A person who has returned home from an exciting evening out may unwind with a late-night snack. These people may find emotional comfort, in part, because foods can influence the brain’s chemistry and the mind’s response. Carbohydrates and alcohol, for example, tend to calm, whereas proteins and caffeine are more likely to stimulate. Eating in response to emotions and stress can easily lead to overeating and obesity, but it may be helpful at times. For example, sharing food at times of bereavement serves both the giver’s need to provide comfort and the receiver’s need to be cared for and to interact with others, as well as to take nourishment.

DIF: Bloom's: Understand REF: Food choices

OBJ: Describe how various factors influence personal food choices.

4. Define the term ‘organic’. How do the properties of vitamins relate to their organic nature? Contrast these points with the properties of inorganic compounds such as minerals.

ANS:

In chemistry, ‘organic’ refers to substances or molecules containing carbon–carbon bonds or carbon–hydrogen bonds, which are characteristic of living organisms. The four classes of nutrients that are organic are carbohydrates, lipids (fats), proteins and vitamins.

Inorganic compounds or substances are those not containing carbon or pertaining to living organisms. The two classes of nutrients that are inorganic are minerals and water.

DIF: Bloom's: Understand REF: The nutrients

OBJ: Name the six major classes of nutrients and identify which are organic and which yield energy.

5. List the strengths and weaknesses of epidemiological studies and experimental studies.

ANS:

*Epidemiological studies* research the incidence, distribution, and control of disease in a population. Epidemiological studies include cross-sectional, case-control, and cohort studies.

Strengths:

* Can narrow down the list of possible causes
* Can raise questions to pursue through other research

Weaknesses:

* Cannot control variables that may influence the development or the prevention of a disease
* Cannot prove cause and effect

*Experimental studies* test cause-and-effect relationships between variables. Experimental studies include laboratory-based studies – on animals or in test tubes (in vitro) – and human intervention (or clinical) trials.

Strengths:

* Can control conditions (for the most part)
* Can determine effects of a variable
* Can apply some findings on human beings to some groups of human beings

Weaknesses:

* Cannot apply results from test tubes or animals to human beings
* Cannot generalise findings on human beings to all human beings
* Cannot use certain treatments for clinical or ethical reasons

DIF: Bloom's: Understand REF: The science of nutrition

OBJ: Explain the scientific method and how scientists use various types of research studies and methods to acquire nutrition information.

6. Explain the importance of the placebo and the double-blind technique in carrying out research studies.

ANS:

*Placebos*: If people who take vitamin C for colds believe it will cure them, their chances of recovery may improve. Taking pills believed to be beneficial may shorten the duration and lessen the severity of illness regardless of whether the pills contain active ingredients. This phenomenon, the result of expectations, is known as the placebo effect. In experiments designed to determine vitamin C’s effect on colds, this mind–body effect must be rigorously controlled. Severity of symptoms is often a subjective measure, and people who believe they are receiving treatment may report less severe symptoms. One way experimenters control for the placebo effect is to give pills to all participants. Those in the experimental group, for example, receive pills containing vitamin C, and those in the control group receive a placebo – pills of similar appearance and taste containing an inactive ingredient. This way, the expectations of both groups will be equal. It is not necessary to convince all subjects that they are receiving vitamin C, but the extent of belief or unbelief must be the same in both groups. A study conducted under these conditions is called a blind experiment – that is, the subjects do not know (are blind to) whether they are members of the experimental group (receiving treatment) or the control group (receiving the placebo).

*Double Blind*: When both the subjects and the researchers do not know which subjects are in which group, the study is called a double-blind experiment. Being fallible human beings, and having an emotional and sometimes financial investment in a successful outcome, researchers might record and interpret results with a bias in the expected direction. To prevent such bias, the pills are coded by a third party, who does not reveal to the experimenters which subjects are in which group until all results have been recorded.

DIF: Bloom's: Understand REF: The science of nutrition

OBJ: Explain the scientific method and how scientists use various types of research studies and methods to acquire nutrition information.

7. Describe the steps involved in establishing nutrient values that make up the Nutrient Reference Values (NRVs).

ANS:

The NRV Committee consists of highly qualified scientists who base their estimates of nutrient needs on careful examination and interpretation of scientific evidence. These recommendations apply to healthy people and may not be appropriate for people with diseases that increase or decrease nutrient needs.

*Estimated Average Requirements (EAR)*: The NRV Committee reviews hundreds of research studies to determine the requirement for a nutrient – how much is needed in the diet. The Committee selects a different criterion for each nutrient based on its roles in supporting various activities in the body and in reducing disease risks.

An examination of all the available data reveals that each person’s body is unique and has its own set of requirements. Men differ from women, and needs change as people grow from infancy through old age. For this reason, the Committee clusters its recommendations for people into groups based on gender and age. Even so, the exact requirements for people of the same gender and age are likely to be different. Using this information, the Committee determines an Estimated Average Requirement (EAR) for each nutrient – the average amount that appears sufficient for half of the population.

*Recommended Dietary Intakes (RDI)*: Once a nutrient requirement is established, the Committee must decide what intake to recommend for everybody – the Recommended Dietary Intakes (RDI). The EAR is probably closest to everyone’s actual needs. If people consumed exactly the average requirement of a given nutrient each day, however, approximately half of the population would develop deficiencies of that nutrient. Recommendations are therefore set greater than the EAR to meet the needs of most healthy people.

*Adequate Intake (AI)*: For some nutrients, such as vitamin K, there is insufficient scientific evidence to determine an EAR (which is needed to set an RDI). In these cases, the Committee establishes an Adequate Intake (AI) instead of an RDI. An AI reflects the average amount of a nutrient that a group of healthy people consumes. Like the RDI, the AI may be used as nutrient goals for individuals.

*Upper Level of Intake (UL)*: The recommended intakes for nutrients are generous, yet they may not be sufficient for every individual for every nutrient. Nevertheless, it is probably best not to exceed these recommendations by very much or very often. Individual tolerances for high doses of nutrients vary, and somewhere beyond the recommended intake is a point beyond which a nutrient is likely to become toxic. This point is known as the Upper Level of Intake (UL).

DIF: Bloom's: Understand REF: Dietary reference intakes

OBJ: Define the four categories of the DRI and explain their purposes.

8. Compare and contrast the meaning of Adequate Intakes (AI), Recommended Dietary Intakes (RDI), Estimated Average Requirements (EAR), and Upper Level of Intake (UI) for nutrients.

ANS:

*Estimated Average Requirements (EAR)*: The NRV Committee reviews hundreds of research studies to determine the requirement for a nutrient – how much is needed in the diet. The Committee selects a different criterion for each nutrient based on its roles in supporting various activities in the body and in reducing disease risks. An examination of all the available data reveals that each person’s body is unique and has its own set of requirements. Men differ from women, and needs change as people grow from infancy through old age. For this reason, the Committee clusters its recommendations for people into groups based on gender and age. Even so, the exact requirements for people of the same gender and age are likely to be different. Using this information, the Committee determines an Estimated Average Requirement (EAR) for each nutrient – the average amount that appears sufficient for half of the population.

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DIF: Bloom's: Understand REF: Dietary reference intakes

OBJ: Define the four categories of the DRI and explain their purposes.

9. What approach is taken in setting recommendations for energy intakes, and why? How does this approach differ from that taken for other nutrients?

ANS:

In contrast to the RDI and AI values for nutrients, the recommendation for energy is not generous. Excess energy cannot be readily excreted, and is eventually stored as body fat. These reserves may be beneficial when food is scarce, but they can also lead to obesity and its associated health consequences.

*Estimated Energy Requirement (EER)*: The energy recommendation – called the Estimated Energy Requirement (EER) – represents the average dietary energy intake (kilojoules per day) that will maintain energy balance in a person who has a healthy body weight and level of physical activity. Balance is key to the energy recommendation. Enough food energy is needed to sustain a healthy and active life, but too much can lead to weight gain and obesity. Because any amount in excess of energy needs will result in weight gain, no upper level for energy has been determined.

*Acceptable Macronutrient Distribution Ranges (AMDR)*: People don’t eat energy directly; they derive energy from foods containing carbohydrates, fats, and proteins. Each of these three energy-yielding nutrients contributes to the total energy intake, and those contributions vary in relation to one another. The NRV Committee has determined that the composition of a diet that provides adequate energy and nutrients and reduces the risk of chronic diseases is:

* 45–65% kcals from carbohydrate
* 20–35% kcals from fat
* 10–25% kcals from protein.

DIF: Bloom's: Understand REF: Dietary reference intakes

OBJ: Define the four categories of the DRI and explain their purposes.

10. List and discuss four methods commonly used to assess nutritional status of individuals.

ANS:

To prepare a nutrition assessment, a registered dietitian (or accredited practicing dietitian) uses:

* historical information
* anthropometric measurements
* physical examinations
* laboratory tests.

One step in evaluating nutrition status is to obtain information about a person’s history with respect to health status, socioeconomic status, drug use and diet. The health history reflects a person’s medical record and may reveal a disease that interferes with the person’s ability to eat or the body’s use of nutrients. The person’s family history of major diseases is also noteworthy, especially for conditions, such as heart disease, which have a genetic tendency to run in families. Economic circumstances may bring about a financial inability to buy foods or inadequate kitchen facilities in which to prepare them. Social factors such as marital status, ethnic background and educational level also influence food choices and nutrition status. A drug history, including all prescribed and over-the-counter medications, may highlight possible interactions that lead to nutrient deficiencies.

A second technique that may help to reveal nutrition problems is taking anthropometric measures such as height and weight. The assessor compares a person’s measurements with standards specific for gender and age, or with previous measures on the same individual.

A third nutrition assessment technique is a physical examination looking for clues to poor nutrition status. Visual inspection of the hair, eyes, skin, posture, tongue and fingernails can provide such clues. In addition, information gathered from an interview can help identify symptoms. The examination requires skill, because many physical signs and symptoms reflect more than one nutrient deficiency or toxicity – or even non-nutrition conditions. Like the other assessment techniques, a physical examination alone does not yield firm conclusions. Instead, physical examinations reveal possible imbalances that must be confirmed by other assessment techniques, or they confirm results from other assessment measures.

A fourth way to detect a developing deficiency, imbalance or toxicity is to take samples of blood or urine, analyse them in the laboratory, and compare the results with normal values for a similar population. Laboratory tests are most useful in uncovering early signs of malnutrition before symptoms appear. In addition, they can confirm suspicions raised by other assessment methods.

DIF: Bloom's: Remember REF: Nutrition assessment

OBJ: Explain how the four assessment methods are used to detect energy and nutrient deficiencies and excesses.

11. Discuss how the results from national nutrition surveys are used by private and government agencies and groups.

ANS:

National nutrition surveys gather information about the population’s dietary, nutritional and related health status. One survey collects data on the kinds and amounts of foods people eat. Another survey examines the people themselves, using anthropometric measurements, physical examinations and laboratory tests. The data provide valuable information on several nutrition-related conditions, such as growth retardation, heart disease and nutrient deficiencies. National nutrition surveys often oversample high-risk groups (e.g. low-income families, pregnant women, adolescents, the elderly) to glean an accurate estimate of their health and nutrition status. The resulting wealth of information from the national nutrition surveys is used for a variety of purposes. For example, public health departments use this information to establish public policy on nutrition education, food assistance programs and the regulation of the food supply. Scientists use the information to establish research priorities. The food industry uses these data to guide decisions in public relations and product development. The Nutrient Reference Values (NRVs) and other major reports that examine the relationships between diet and health depend on information collected from these nutrition surveys. These data also provide the basis for developing and monitoring national health goals.

DIF: Bloom's: Remember REF: Nutrition assessment

OBJ: Explain how the four assessment methods are used to detect energy and nutrient deficiencies and excesses.

12. Describe the national trends of food consumption over the past 40 years.

ANS:

We eat more meals away from home, particularly at fast-food restaurants. We eat larger portions. We drink more sweetened beverages and eat more energy-dense, nutrient-poor foods such as lollies and chips. We snack frequently. As a result of these dietary habits, our energy intake has risen and, consequently, so has the incidence of overweight and obesity. Overweight and obesity, in turn, profoundly influence our health.

DIF: Bloom's: Remember REF: Nutrition assessment

OBJ: Explain how the four assessment methods are used to detect energy and nutrient deficiencies and excesses.

13. List 10 leading causes of death in Australia and how diet and lifestyle factors may be linked to some of these diseases (noting which of the 10 have relationships with diet).

ANS:

* Cancer
* Heart disease
* Dementia and Alzheimer’s disease
* Stroke
* Chronic lung disease
* Diabetes mellitus
* Heart failure
* Kidney disease
* Influenza and pneumonia
* Suicide

The four diseases which have relationships with diet are cancer, heart disease, stroke and diabetes mellitus. Risk factors such as genetics can influence whether people develop these diseases, but a number of modifiable risk factors are also related to diet and lifestyle, including being overweight and having a diet with excess energy and excessive amounts of fat, in particular saturated fat. For all of the diseases listed, being obese or overweight increases the risk of developing the disease and premature death.

DIF: Bloom's: Remember REF: Diet and health

OBJ: Chronic diseases

14. Discuss the meaning and significance of the relationships between risk factors and chronic diseases.

ANS:

Factors that increase or reduce the risk of developing chronic diseases can be identified by analysing statistical data. A strong association between a risk factor and a disease means that when the factor is present, the likelihood of developing the disease increases. It does not mean that all people with the risk factor will develop the disease. Similarly, a lack of risk factors does not guarantee freedom from a given disease. On the average, though, the more risk factors in a person’s life, the greater that person’s chances of developing the disease. Conversely, the fewer risk factors in a person’s life, the better the chances for good health.

DIF: Bloom's: Remember REF: Diet and health

OBJ: Identify several risk factors and explain their relationships to chronic diseases.

15. Discuss two important characteristics of chronic disease risk factors.

ANS:

Risk factors tend to persist over time. Without intervention, a young adult with high blood pressure, for example, will most likely continue to have high blood pressure as an older adult. Thus, to minimise the damage, early intervention is most effective.

Risk factors tend to cluster. For example, a person who is obese may be physically inactive, have high blood pressure and have high blood cholesterol – all risk factors associated with heart disease. Multiple risk factors act synergistically to increase the risk of disease dramatically. Intervention that focuses on one risk factor often benefits the others as well. For example, physical activity can help to reduce weight. Physical activity and weight loss will, in turn, help to lower blood pressure and blood cholesterol.

DIF: Bloom's: Remember REF: Diet and health

OBJ: Identify several risk factors and explain their relationships to chronic diseases.

16. What cautions should you keep in mind when considering popular news reports about nutrition?

ANS:

Consumers get much of their nutrition information from Internet websites, television news and magazine articles, which have heightened awareness of how diet influences the development of diseases. Consumers benefit from news coverage of nutrition when they learn to make lifestyle changes that will improve their health. Sometimes, however, popular reports mislead consumers and create confusion. They often tell a lopsided story quickly, instead of presenting the integrated results of research studies or a balance of expert opinions.

Tight deadlines and limited understanding sometimes make it difficult to provide a thorough report. Hungry for the latest news, the media often report scientific findings quickly and prematurely – without the benefit of careful interpretation, replication or peer review. Usually, the reports present findings from a single, recently released study, making the news current and controversial. Consequently, the public receives diet and health news fast, but not always in perspective. Reporters may twist inconclusive findings into ‘meaningful discoveries’ when pressured to write catchy headlines and sensational stories.

As a result ‘surprising new findings’ sometimes seem to contradict one another, and consumers may feel frustrated and betrayed. Occasionally, the reports are downright false, but more often the apparent contradictions are simply the normal result of science at work. A single study contributes to the big picture, but when viewed alone, it can easily distort the image. To be meaningful, the conclusions of any study must be presented cautiously and within the context of other research findings.

DIF: Bloom's: Remember REF: Nutrition information and misinformation

OBJ: Recognise misinformation and describe how to identify reliable nutrition information.

17. List techniques that help to identify nutrition quackery.

ANS:

In contrast to registered or accredited dietitians, thousands of people obtain fake nutrition degrees and claim to be nutrition consultants or doctors of ‘nutrimedicine’. These and other such titles may sound meaningful, but most of these people lack the established credentials and training of an RD or APD. If you look closely, you can see signs of their fake expertise.

Consider educational background, for example. The minimum standards of education for a dietitian specify a Bachelor of Science (BS) degree in food science and human nutrition and dietetics, or a degree in related fields from an accredited university. Such a degree generally requires four years of undergraduate study. In contrast, a fake nutritionist may display a degree from a six-month course. Such a degree simply falls short. In some cases, businesses posing as schools offer even less – they sell certificates to anyone who pays the fees. To obtain these ‘degrees’, a candidate need not attend any classes, read any books or pass any examinations.

Sales of unproven and dangerous products have always been a concern, but the Internet now provides merchants with an easy and inexpensive way to reach millions of customers around the world. Because of the difficulty of regulating the Internet, fraudulent and illegal sales of medical products have hit a bonanza level. As is the case with the air, no one owns the Internet, and similarly, no one has control over the pollution. Countries have different laws regarding sales of drugs, dietary supplements and other health products, but applying these laws to the Internet marketplace is almost impossible. Even if illegal activities could be defined and identified, finding the person responsible for a particular website is not always possible. Websites can appear and disappear in a blink of a cursor. Now more than ever, consumers must heed the caution, ‘Buyer beware.’

In summary, when you hear nutrition news, consider its source. Ask yourself these two questions: Is the person providing the information qualified to speak on nutrition? Is the information based on valid scientific research? If not, find a better source. After all, your health depends on it.

DIF: Bloom's: Remember REF: Nutrition information and misinformation

OBJ: Recognise misinformation and describe how to identify reliable nutrition information.

18. (a.) Explain the education and training requirements associated with obtaining registration as a dietitian.

(b.) List several career areas in which registered dietitians are often employed.

ANS:

A registered or accredited practicing dietitian (RD/APD) has the educational background necessary to deliver reliable nutrition advice and care. To become a dietitian, a person must earn an undergraduate degree in nutrition and dietetics; and maintain up-to-date knowledge and registration by participating in required continuing education activities, such as attending seminars, taking courses or conducting research. To help consumers recognise that a dietitian is credentialed, the NZ Dietitians Association and Dietitians Association of Australia are working to make the term ‘Dietitian’ a protected title which cannot be used by underqualified professionals.

Dietitians perform a multitude of duties in many settings in most communities. They work in the food industry, pharmaceutical companies, home health agencies, long-term care institutions, private practice, public health departments, research centers, education settings and hospitals. Depending on their work setting, dietitians can assume a number of different job responsibilities and positions: in hospitals, food service dietitians manage the food service system and menu design; clinical dietitians provide client care; and nutrition support team dietitians coordinate nutrition care with other health-care professionals. However, it is not unusual for dietitians to have multiple roles in the same setting. In the food industry, dietitians conduct research, develop products and market services.

DIF: Bloom's: Remember REF: Nutrition information and misinformation

OBJ: Recognise misinformation and describe how to identify reliable nutrition information.