Chapter_01_An_Overview_of_Nutrition

1 Which characteristic is most typical of a chronic disease?

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

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

- cost
- taste
- convenience
- nutritional value
- habit

3 A child develops a strong dislike of noodle soup after she consumes a bowl while sick with the flu. Her reaction is an example of a food-related ____.

- habit
- social interaction
- emotional turmoil
- negative association
- comfort eating

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

- habit
- availability
- body image
- environmental concerns
- cultural values

5 Which individual is making a food choice based on negative association?

- A tourist from China who rejects a hamburger due to unfamiliarity
- A child who spits out his mashed potatoes because they taste too salty
- A teenager who grudgingly accepts an offer for an ice cream cone to avoid offending a close friend
- An elderly gentleman who refuses a peanut butter

and jelly sandwich because he considers it a child's food

- An adult who refuses to eat foods that are not locally-sourced and organic

6 The motive for a person who alters his diet due to religious convictions is most likely related to his ____.

- values
- body image
- ethnic heritage
- functional association
- comfort

7 Farah is viewing an exciting sports match of her favorite team and eating because of nervousness. Her food choice will most likely be based on ____.

- regional cuisines
- preferences
- emotional comfort
- positive association
- functional value

8 What term describes foods that contain nonnutrient substances whose known action in the body is to promote well-being to a greater extent than that contributed by the food's nutrients?

- fortified foods
- enriched foods
- functional foods
- health-enhancing foods
- bioavailable foods

9 Nonnutrient substances found in plant foods that may demonstrate biological activity in the body are commonly known as

- bioenhancements
- inorganic fibers
- phytochemicals
- phytoactive chemicals
- nonnutritive additives

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

- fats
- water
- proteins

- carbohydrates
- vitamins and minerals

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

- nutraceutical.
- metabolic nutrient
- organic nutrient
- essential nutrient
- phytonutrient.

12 Which nutrient is an example of a macronutrient?

- proteins
- minerals
- water-soluble vitamins
- fat-soluble vitamins
- water

13 Which nutrient is classified as a micronutrient?

- minerals
- proteins
- alcohols
- carbohydrates
- fats

14 Which nutrient is an organic compound?

- salt
- water
- calcium
- vitamin C
- iron

15 An essential nutrient is one that ____.

- must be made in large quantities by the body
- can only by synthesized by the body
- cannot be made in sufficient quantities by the body
- is used to synthesize other compounds in the body
- must be both consumed and synthesized to be complete

16 The term *organic*, as related to compounds, would be best defined as ____.

- products sold at health food stores
- products grown without use of pesticides
- foods having superior nutrient qualities
- (•) substances with carbon-carbon or carbon-hydrogen bonds
- substances that contain water

17 How much energy is required to raise the temperature of one kilogram (liter) of water 1°C?

- 10 calories
- 100 calories
- (•) 1 kilocalorie
- 10 kilocalories
- 100 kilocalories

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

- (•) fats
- alcohols
- proteins
- carbohydrates
- vitamins and minerals

19 Food energy is commonly expressed in kcalories and in ____.

- (•) kilojoules
- kilograms
- kilometers
- kilonewtons
- kiloliters

20 Units of energy used by most scientists and nutritionists, aside from those in the United States, are expressed in ____.

- newtons
- liters
- (•) kilojoules
- kilocalories
- grams

21 Approximately how many milliliters are contained in a half-cup of milk?

- 50
- 85
- (•) 120
- 170

- 200

22 A normal half-cup vegetable portion weighs approximately how many grams?

- 5
- 50
- 100
- 150
- 200

23 A weight reduction regimen calls for a daily intake of 1400 kcalories, which includes 30 g of fat. Approximately what percentage of the total energy is contributed by fat?

- 8.5%
- 15.0%
- 19.0%
- 25.5%
- 32.0%

24 Which nutrient source will yields **more** than 4 kcalories per gram?

- plant fats
- plant proteins
- animal proteins
- plant carbohydrates
- animal carbohydrates

25 What results from the metabolism of energy nutrients?

- Energy is released.
- Body fat increases.
- Energy is destroyed.
- Body water decreases.
- Body mass increases.

26 Which statement best describes the composition of most foods?

- Most contain only one of the three energy nutrients, although a few contain all of them.
- They contain equal amounts of the three energy nutrients.
- They contain mixtures of the three energy nutrients, although only one or two may predominate.
- They contain only two of the three energy nutrients, and those two are contained in equal amounts.

- They contain only two of the three energy nutrients, and one is present in far greater amounts than the other.

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

- 5
- 8
- 10
- 13
- 17

28 Which statement is true of minerals in their role as nutrients?

- They are organic.
- They yield 4 kcalories per gram.
- Some become dissolved in body fluids.
- Some may be destroyed during cooking.
- They are more fragile than vitamins.

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

- 8
- 12
- 16
- 20
- 24

30 Your friend Carrie took a daily supplement of vitamin C and tells you that she feels a lot better. Her statement to you is *best* described as a(n) ____.

- anecdote
- theory.
- interpretation
- conclusion.
- hypothesis

31 What is the study of how a person's genes interact with nutrients?

- genetic counseling
- nutritional genomics
- genetic metabolomics
- nutritional genetics
- biogenetic nutrition

32 How does a double-blind experiment work?

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

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

- theory
- prediction
- hypothesis
- correlation
- deduction

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

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

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

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

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

- Chance variation is less likely to affect the results.
- The possibility of a placebo effect is eliminated.
- The experiment will be double-blind.

- The control group will be similar to the experimental group.
- Experimenter bias is less likely to have an effect.

37 You have been asked to help a top nutrition researcher conduct human experiments 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?

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

38 An increase in exercise accompanied by a decrease in body weight is an example of a ____.

- variable effect
- positive correlation
- **negative correlation**
- randomization effect
- placebo effect

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 ____.

- **peer review**
- cohort review
- research intervention
- double-blind examination
- peer replication

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

- nutrient allowance
- **nutrient requirement**
- nutrient tolerable limit

- nutrient adequate intake
- nutrient recommendation

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

- 10
- 25
- 33
- 40
- 50

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?

- The Dietary Reference Intakes, because they are a set of nutrient intake values for healthy people in the United States and Canada
- The Tolerable Upper Intake levels, because they are the maximum daily amount of a nutrient that appears safe for most healthy people
- The Estimated Average Requirements, 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
- The Recommended Dietary Allowances, because they represent the average daily amount of a nutrient considered adequate to meet the known nutrient needs of practically all healthy people.
- The Estimated Energy Requirement, 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

43 Recommended Dietary Allowances may be used to ____.

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

44 Recommended Dietary Allowances are based on the ____.

- Lower Tolerable Limit
- Upper Tolerable Limit
- Subclinical Deficiency Value
- (•) Estimated Average Requirement
- Adequate Intake

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

- Adequate Intake.
- Daily Recommended Value.
- Tolerable Upper Intake Level.
- (•) Recommended Dietary Allowance.
- Necessary and Sufficient Intake

46 The RDAs (Recommended Dietary Allowances) for nutrients are generally ____.

- more than twice as high as anyone needs
- the minimum amounts that average people need
- (•) designed to meet the needs of almost all healthy people
- designed to prevent deficiency diseases in half the population
- reflective of current dietary preferences

47 What is a purpose of both the Recommended Dietary Allowance and Adequate Intake?

- (•) Setting nutrient goals for individuals
- Identifying toxic intakes of nutrients
- Restoring health of malnourished individuals
- Developing nutrition programs for schoolchildren
- Improving population-level health

48 Which statement is true of nutrient intakes?

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

49 What does the Tolerable Upper Intake Level of a nutrient represent?

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

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

- (•) Estimated Energy Requirement
- Adequate Average Requirement
- Recommended Dietary Allowance
- Acceptable Energy Distribution Range
- Tolerable Upper Energy Limit

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 ____.

- Estimated Energy Requirements
- Tolerable Range of Kilocalorie Intakes
- Estimated Energy Nutrient Recommendations
- (•) Acceptable Macronutrient Distribution Ranges
- Healthy People Recommendations

52 What is the AMDR for carbohydrate?

- 5-10%
- 15-25%
- 30-40%
- (•) 45-65%
- 70-80%

53 What is the AMDR for protein?

- (•) 10-35%
- 40-45%
- 50-60%
- 65-75%
- 80-80%

54 What is the AMDR for fat?

- 10-30%

- 20-35%
- 40-50%
- 55-65%
- 70-80%

55 The Dietary Reference Intakes may be used to ____.

- treat people with diet-related disorders
- assess adequacy of all required nutrients
- plan and evaluate diets for healthy people
- assess adequacy of only vitamins and minerals
- diagnose diet-related disorders

56 Which method is used to detect nutrient deficiencies?

- Nutrition assessment
- Nutrient stages identification
- Overt symptoms identification
- Outward manifestations assessment
- Nutritional diagnostic programs

57 As a registered dietitian at Jones 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?

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

58 Which measure is anthropometric?

- body weight
- blood pressure
- blood iron level
- food intake information
- serum electrolytes

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

◉ Declining nutrient stores, abnormal functions within the body, and overt signs
○ Abnormal functions within the body, declining nutrient stores, and overt signs
○ Abnormal functions within the body, overt signs, and declining nutrient stores
○ Declining nutrient stores, overt signs, and abnormal functions within the body
○ Overt signs, abnormal functions, and declining nutrient stores

60 What type of deficiency is caused by inadequate absorption of a nutrient?

○ primary
○ clinical
◉ secondary
○ subclinical
○ chronic

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

○ shows overt signs
◉ is in the early stages
○ shows resistance to treatment
○ is similar to a secondary deficiency
○ is of acute onset

62 The overall objective of the Healthy People program is to ____.

○ establish the DRI
○ identify national trends in food consumption
○ identify leading causes of death in the United States

◉ set goals for the nation's health over the next 10 years
○ decrease health care costs

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

○ one
◉ four
○ six
○ eight
○ nine

64 Which statement explains the association between a risk factor and the

development of a disease?

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

65 What single behavior contributes to the most deaths in the United States?

- poor diet
- tobacco use
- alcohol intake
- risky sexual activity
- unsafe driving

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

- chiropractor
- medical doctor
- registered dietitian
- health food store manager
- nutrition consultant

67 Which statement best describes the legal limitations, if any, for a person who disseminates dietary advice to the public?

- The title "dietitian" can be used by anyone in all states.
- The title "nutritionist" can be used by anyone in all states.
- A license to practice as a nutritionist or dietitian is required by some states.
- A license to practice as a nutritionist is mandatory in all states but very few license dieticians.
- Nutrition consultants are subject to more stringent licensure than are dietitians.

68 Which individuals is likely to possess the **least** amount of nutrition training and to have gotten his or her agree from an "alternative" educational program?

- dietetic technician
- registered dietician
- certified nutritionist
- dietetic technician, registered
- public health nutritionist

69 For which of the following titles, by definition, require the individual to be college educated and pass a national examination administered by the Academy of Nutrition and Dietetics?

- medical doctor
- registered dietician
- certified nutritionist
- certified nutrition therapist
- registered nutritional consultant

70 A person who assists registered dietitians has the formal title of ____.

- dietetic assistant
- nutrition assistant
- dietetic technician
- nutrition technician
- dietetic aide

71 Risk factors for chronic disease tend to _____ and tend to _____.

Answer:
persist; cluster
Answer:
cluster; persist

72 Foods associated with a particular culture are called _____ foods.

Answer:
ethnic

73 Foods that provide health benefits beyond their nutrient contributions are called _____ foods.

Answer:
functional

74

Nonnutrient compounds found in plants, some of which have biological activity in the body, are called _____.

Answer:
phytochemicals

75 The normal range for _____ is 18 to 21% for young men and 23 to 26% for young women.

Answer:
body fat composition

76 The three energy-yielding nutrients are _____, _____, and _____.

Answer:
carbohydrate; fat; protein
Answer:
carbohydrate; protein; fat
Answer:
fat; protein; carbohydrate
Answer:
fat; carbohydrate; protein
Answer:
protein; carbohydrate; fat
Answer:
protein; fat; carbohydrate

77 Although _____ provides energy, it is not considered a nutrient because it does not sustain life.

Answer:
alcohol

78 Match the correct answer with the appropriate term.

a. 7	k. Placebo
b. 16	l. Inorganic
c. 20	m. Validity
d. 40	n. Hypothesis

e. 100
o. Healthy People

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

Nutrient with the highest body concentration

Answer:
g

79 Match the correct answer with the appropriate term.

a. 7
k. Placebo

b. 16
l. Inorganic

c. 20
m. Validity

d. 40
n. Hypothesis

e. 100
o. Healthy People

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

Substance containing no carbon or not pertaining to living things

Answer:
l

80 Match the correct answer with the appropriate term.

a. 7	k. Placebo
b. 16	l. Inorganic
c. 20	m. Validity
d. 40	n. Hypothesis
e. 100	o. Healthy People
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

Number of indispensable nutrients for human beings

Answer:
d

81 Match the correct answer with the appropriate term.

a. 7	k. Placebo
b. 16	l. Inorganic
c. 20	m. Validity

d.	40	n.	Hypothesis
e.	100	o.	Healthy People
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

Most substances containing carbon-hydrogen bonds

Answer:
j

82 Match the correct answer with the appropriate term.

a.	7	k.	Placebo
b.	16	l.	Inorganic
c.	20	m.	Validity
d.	40	n.	Hypothesis
e.	100	o.	Healthy People
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

Substance containing nitrogen

Answer:
i

83 Match the correct answer with the appropriate term.

a. 7	k. Placebo
b. 16	l. Inorganic
c. 20	m. Validity
d. 40	n. Hypothesis
e. 100	o. Healthy People
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

Energy (kcal) required to increase temperature of 1 kg of water from 0° C to 100° C

Answer:
e

84 Match the correct answer with the appropriate term.

a. 7	k. Placebo
b. 16	l. Inorganic

c. 20
d. 40
e. 100
f. Fat
g. Water
h. Energy
i. Protein
j. Organic
m. Validity
n. Hypothesis
o. Healthy People
p. National nutrition surveys
q. Anthropometrics
r. Overt deficiency
s. Physical examination
t. Subclinical deficiency

Nutrient with the highest energy density

Answer:
f

85 Match the correct answer with the appropriate term.

a. 7
b. 16
c. 20
d. 40
e. 100
f. Fat
g. Water
h. Energy
i. Protein
k. Placebo
l. Inorganic
m. Validity
n. Hypothesis
o. Healthy People
p. National nutrition surveys
q. Anthropometrics
r. Overt deficiency
s. Physical examination

j.	Organic	t.	Subclinical deficiency

Energy (kcal) yield of five grams of sugar

Answer:
c

86 Match the correct answer with the appropriate term.

a.	7	k.	Placebo
b.	16	l.	Inorganic
c.	20	m.	Validity
d.	40	n.	Hypothesis
e.	100	o.	Healthy People
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

Energy (kcal) yield of one gram of alcohol

Answer:
a

87 Match the correct answer with the appropriate term.

a.	7	k.	Placebo
b.	16	l.	Inorganic

c. 20	m. Validity
d. 40	n. Hypothesis
e. 100	o. Healthy People
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

Number of indispensable minerals for human beings

Answer:
b

88 Match the correct answer with the appropriate term.

a. 7	k. Placebo
b. 16	l. Inorganic
c. 20	m. Validity
d. 40	n. Hypothesis
e. 100	o. Healthy People
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

An unproven statement

Answer:
n

89 Match the correct answer with the appropriate term.

a.	7	k.	Placebo
b.	16	l.	Inorganic
c.	20	m.	Validity
d.	40	n.	Hypothesis
e.	100	o.	Healthy People
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

An inert medication

Answer:
k

90 Match the correct answer with the appropriate term.

a.	7	k.	Placebo
b.	16	l.	Inorganic

c. 20
m. Validity

d. 40
n. Hypothesis

e. 100
o. Healthy People

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

Possessing the quality of being evidence based

Answer:
m

91 Match the correct answer with the appropriate term.

a. 7
k. Placebo

b. 16
l. Inorganic

c. 20
m. Validity

d. 40
n. Hypothesis

e. 100
o. Healthy People

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

The recommended intake is set at the population mean

Answer:
h

92 Match the correct answer with the appropriate term.

a. 7
k. Placebo

b. 16
l. Inorganic

c. 20
m. Validity

d. 40
n. Hypothesis

e. 100
o. Healthy People

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

Gather information about dietary, nutritional, and health status

Answer:
p

93 Match the correct answer with the appropriate term.

a. 7
k. Placebo

b. 16
l. Inorganic

c. 20	m. Validity
d. 40	n. Hypothesis
e. 100	o. Healthy People
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

Program that sets goals to increase the quality and years of healthy life

Answer:
o

94 Match the correct answer with the appropriate term.

a. 7	k. Placebo
b. 16	l. Inorganic
c. 20	m. Validity
d. 40	n. Hypothesis
e. 100	o. Healthy People
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

Measurement of physical characteristics

Answer:
q

95 Match the correct answer with the appropriate term.

a.	7	k.	Placebo
b.	16	l.	Inorganic
c.	20	m.	Validity
d.	40	n.	Hypothesis
e.	100	o.	Healthy People
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

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

Answer:
s

96 Match the correct answer with the appropriate term.

a.	7	k.	Placebo
b.	16	l.	Inorganic

c. 20	m. Validity
d. 40	n. Hypothesis
e. 100	o. Healthy People
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

A nutrient deficiency showing outward signs

Answer:
r

97 Match the correct answer with the appropriate term.

a. 7	k. Placebo
b. 16	l. Inorganic
c. 20	m. Validity
d. 40	n. Hypothesis
e. 100	o. Healthy People
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

A nutrient deficiency in the early stages

Answer:
t

98 Describe six behavioral or social motives governing people's food choices.

Answer:

Preferences: As you might expect, the number one reason most people choose certain foods is taste-they like the flavor. Two widely shared preferences are for the sweetness of sugar and the savoriness 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 a 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 when 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 hot dogs at ball 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 behaviors. 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 that they believe will improve their physical appearance and avoid those they believe might be detrimental. Such decisions can be beneficial when 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.

99 

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

Answer:

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 a 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 that they believe will improve their physical appearance and avoid those they believe might be detrimental. Such decisions can be beneficial when based on sound nutrition and fitness knowledge, but decisions based on fads or carried to extremes undermine good health.

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

Answer:

Emotions guide food choices and eating behaviors. 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.

101 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.

Answer:

In chemistry, organic refers to substances or molecules containing carbon-carbon bonds or carbon-hydrogen bonds that 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.

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

Answer:

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 generalize findings on human beings to all human beings
- Cannot use certain treatments for clinical or ethical reasons

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

Answer:

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.

104 

Describe the steps involved in establishing nutrient values that make up the Dietary Reference Intakes.

Answer:

The DRI 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 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 commit- tee 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 Allowances (RDA): Once a nutrient requirement is established, the committee must decide what intake to recommend for everybody-the Recommended Dietary Allowance (RDA). The EAR is probably closest to everyone's need. 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 Intakes (AI): For some nutrients, such as vitamin K, there is insufficient scientific evidence to determine an EAR (which is needed to set an RDA). In these cases, the committee establishes an Adequate Intake (AI) instead of an RDA. An AI reflects the average amount of a nutrient that a group of healthy people consumes. Like the RDA, the AI may be used as nutrient goals for individuals.

Tolerable Upper Intake Levels (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 Tolerable Upper Intake Level (UL).

105 

Compare and contrast the meaning of Adequate Intakes, Recommended Dietary Allowances, Estimated Average Requirements, and Tolerable Upper Intake Levels for nutrients.

Answer:

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106 

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

Answer:

In contrast to the RDA 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 (kcalories 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 DRI committee has determined that the composition of a diet that provides adequate energy and nutrients and reduces the risk of chronic diseases is:

45 to 65 percent kcalories from carbohydrate

20 to 35 percent kcalories from fat

10 to 35 percent kcalories from protein.

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

Answer:

To prepare a nutrition assessment, a registered dietitian (or registered dietitian nutritionist), dietetic technician registered, or other trained health-care professional 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 that have a genetic tendency to run in families. Economic circumstances may show 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 nonnutrition 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, analyze 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.

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

Answer:

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 (low-income families, pregnant women, adolescents, the elderly, African Americans, and Mexican Americans) 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, Congress uses 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 Dietary Reference Intakes 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.

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

Answer:

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 candy 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.

110 List 10 goals of the Healthy People program. How successful is the program thus far?

Answer:

Increase the proportion of adults who are at a healthy weight

Reduce the proportion of adults who are obese

Reduce iron deficiency among young children and females of childbearing age

Reduce iron deficiency among pregnant females

Reduce the proportion of children and adolescents who are overweight or obese

Increase the contribution of fruits to the diets of the population aged 2 years and older

Increase the variety and contribution of vegetables to the diets of the population aged 2 years and older

Increase the contribution of whole grains to the diets of the population aged 2 years and older

Reduce consumption of saturated fat in the population aged 2 years and older

Reduce consumption of sodium in the population aged 2 years and older

Increase consumption of calcium in the population aged 2 years and older

Increase the proportion of worksites that offer nutrition or weight management classes or counseling

Increase the proportion of physician office visits that include counseling or education related to nutrition or weight

Eliminate very low food security among children in US households

Prevent inappropriate weight gain in youth and adults

Increase the proportion of primary care physicians who regularly measure the body mass index of their patients

Reduce consumption of kcalories from solid fats and added sugars in the population aged 2 years and older

Increase the number of states that have state-level policies that incentivize food retail outlets to provide foods that are encouraged by the Dietary Guidelines

Increase the number of states with nutrition standards for foods and beverages provided to preschool-aged children in childcare

Increase the percentage of schools that offer nutritious foods and beverages outside of school meals

Progress in meeting the 2010 goals was mixed. A few objectives were met, about half made some progress, and several showed no progress-or

even moved in the wrong direction. The objective to reduce average blood cholesterol levels was achieved, but objectives to eat more fruits, vegetables, and whole grains and to increase physical activity showed little or no improvement. Trends in over-weight and obesity actually worsened. Clearly, "what we eat in America" must change if we hope to meet the Healthy People goals.

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

Answer:

Factors that increase or reduce the risk of developing chronic diseases can be identified by analyzing 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.

112 Discuss two important characteristics of chronic disease risk factors.

Answer:

Risk factors tend to persist over time. Without intervention, a young adult with high blood pressure will most likely continue to have high blood pressure as an older adult, for example. Thus, to minimize 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 reduce weight. Physical activity and weight loss will, in turn, help to lower blood pressure and blood cholesterol.

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

Answer:

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 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 within the context of other research findings.

114  List techniques that help identify nutrition quackery.

Answer:

In contrast to registered 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. 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 or related fields from an accredited college or university. Such a degree generally requires 4 to 5 years of study. Similarly, minimum standards of education for a dietetic technician specify an associate degree that typically requires 2 years of study. In contrast, a fake nutritionist may display a degree from a 6-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 in regulating the Internet, fraudulent and illegal sales of medical products have hit a bonanza. 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.

115 

(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.

Answer:

A registered dietitian (RD) has the educational background necessary to deliver reliable nutrition advice and care. To become an RD, a person must earn an undergraduate degree requiring about 60 credit hours in nutrition, food science, and other related subjects; complete a year's clinical internship or the equivalent; pass a national examination administered by the Academy of 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 recognize that an RD is a credentialed nutritionist, the Academy of Nutrition and Dietetics recently approved the optional use of the term registered dietitian nutritionist (RDN). The meanings of RD and RDN are identical.

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, fitness centers, and hospitals. Depending on their work settings, dietitians can assume a number of different job responsibilities and positions. In hospitals, administrative dietitians manage the foodservice system; clinical dietitians provide client care; and nutrition support team dietitians coordinate nutrition care with other health-care professionals. In the food industry, dietitians conduct research, develop products, and market services.