CDR RD - Quiz Questions with Answers

I. Principles of Dietetics

1.

In the aging process of fruit, enzymes cause chemical changes and starch changes to sugar. During this process, protopectin is converted to pectin, which is then converted to:

Pectic acid

Ethylene gas

Pectin acid

Turgor

Correct answer: Pectic acid

In the aging process of fruit, enzymes cause chemical changes to occur. During this process, starch changes to sugar. Protopectin is converted to pectin (ripe fruit) and then converted to pectic acid (overripe fruit).

Ethyne gas accelerates the ripening of fruits during storage, thereby enhancing the process from pectin to pectic acid. Turgor refers to the swelling from osmotic pressure of water-filled vacuoles. Pectin acid is a fabricated term.

2.

What is the name of the thin film on the outside of the shell of an egg?

Bloom

Shell membrane

Vitelline membrane

Chalaza

Correct answer: Bloom

On an egg, the thin film on the outside of the shell is called the bloom.

The other options are all different structures of an egg. The yolk is surrounded by the vitelline membrane. The chalaza is the yolk anchor and holds the yolk in the center of the egg. The shell membrane is the clear film that lines the inside of the shell and is often visible when you peel a hard-boiled egg.

3.

What does point of service (POS) software organize?

Sales, inventory, and customer information

Product, organization, and service management

Production, inventory, and food safety

Receiving, ordering, and storing inventory

Correct answer: Sales, inventory, and customer information

POS (point of service) software is commonly used in food service. It simplifies sales data, inventory management, and customer information.

4.

A 55-year-old male with a low income is diagnosed with type 2 diabetes mellitus and makes an appointment with a registered dietitian. What should the RD focus on during the consultation to best relate to their client?

Costs and traditional food habits

Goal orientation

Peer pressure and attitudes toward authority

Using written materials and client participation

Correct answer: Costs and traditional food habits

A needs assessment is the first step in program development and planning for nutrition education. In order to best relate to the client, the needs assessment should take into consideration the demographics of the client. For example, an adult with a lower income is generally interested in cost, traditional food habits, and solving current problems.

The other options are appropriate methods for relating to other demographic groups. Adults with middle- and higher-incomes are goal-oriented and desire relatable activities. When working with adolescents, relate to their interests and be aware of peer pressure and attitudes toward authority. The elderly have a decreased attention span, so encourage audience participation, stay on topic, and utilize written materials.

5.

"Fruit-For-All" is a community nutrition program focused on increasing the accessibility of fresh fruits in low-income areas. Fruit-For-All is in the beginning stages of program development, and their community nutrition RD has conducted a needs assessment.

What is the **next** step the RD should take in program development?

Develop program goals and objectives

Develop a program plan

Identify funding sources

Seek support from stakeholders

Correct answer: Develop program goals and objectives

The steps of program development and planning are as follows:

1. *Conduct a needs assessment*
2. *Develop program goals and objectives*
3. *Develop a program plan*
4. *Identify funding sources*
5. *Seek support from stakeholders*

6.

In motivational interviewing, which type of question is considered more restrictive and gives the dietitian less control over the conversation?

Closed

Open-ended

Neutral

Primary

Correct answer: Closed

Closed questions are more restrictive, limit the answers of the client , and give the dietitian less control.

Open-ended questions are the best types of questions to ask in motivational interviewing. They are broad and give the client more freedom to respond. Neutral questions are questions that do not reveal bias from the dietitian's side. Primary questions introduce new topics.

7.

Before providing nutrition advice to a client, what step should the dietitian take to make the client more receptive?

Ask the client's permission

Assess the client's current nutrition knowledge

Ask at least two patient identifiers

Give the client instructional materials

Correct answer: Ask the client's permission

Asking permission is a powerful strategy and places the client in an autonomous position, making them more receptive to incoming information. On the other hand, if the provider gives advice to the client without asking permission, or acts in a more authoritative way, the client may be less receptive, less engaged in learning, and may feel targeted or judged.

Although assessing the client's knowledge can be helpful before providing advice, the first step would be to ask permission. Asking at least two patient identifiers is a standard set by The Joint Commission to properly identify a patient and decrease wrong-patient clinical errors. For example, a dietitian can ask a patient their name and birth date before starting an assessment. Providing instructional materials can be a good takeaway for clients, but it should not be the first thing you do.

8.

Which of the following is **not** an example of being culturally competent?

Recognizing that all members of a cultural group share similar beliefs

Understanding and respecting the cultural meanings given to food

Understanding the environmental stressors experienced by your audience

Being aware of your own personal biases

Correct answer: Recognizing that all members of a cultural group share similar beliefs

Being culturally competent includes:

- *Being aware of your own personal biases*
- *Being respectful of cultural differences*
- *Obtaining relevant information about the culture you will be working with*
- *Understanding and respecting the cultural meanings given to food*
- *Understanding the environmental stressors experienced by your audience*

It is important not to assume that all members of a cultural group share the same beliefs, as there may be differences within the group.

9.

Which statement **best** reflects a client who is in the precontemplation stage of change?

"I don't need diet education because I am going to eat what I want, whenever I want."

"I want to better control my heart failure, but I don't have the money to cook all my meals at home."

"Next time I go to the grocery store, I am going to start reading the nutrition labels for sodium content."

"I ate leftover sausage all last week and I knew I shouldn't because it's a high-sodium food, but I got back to my low-sodium diet again yesterday."

Correct answer: "I don't need diet education because I am going to eat what I want, whenever I want."

Based on the trans-theoretical model, the first stage of change is precontemplation, in which the client has no intention of changing their behavior in the foreseeable future. When a client is at this stage, their statements reveal that they are uninterested, unaware, or unwilling to change.

10.

Mary is a preschool teacher and is planning a picnic for the children's end-of-the-school-year party. Which of the following foods would be the **best** for Mary to bring?

Strawberries

Grapes

Hot dogs

Milk

Correct answer: Strawberries

The best foods to bring to a picnic involving children would be those that do not commonly cause choking or allergic reactions.

Foods that most commonly cause choking include tough meats, hot dogs, nuts, grapes, hard candies, popcorn, and peanut butter.

Cow's milk protein is the most common single allergen for infants. Foods that most commonly cause allergies include milk, eggs, peanuts, tree nuts, fish, shellfish, soy, and wheat.

11.

How are water-soluble nutrients, such as vitamin C, absorbed?

Passive diffusion

Simple diffusion

Active transport

Sodium pump

Correct answer: Passive diffusion

Water-soluble nutrients, such as vitamins C and B, are absorbed through passive diffusion. In passive or carrier-facilitated diffusion, water-soluble nutrients attach to carriers and flow from high to low concentration and do not require energy.

Some water and electrolytes are absorbed through simple diffusion. In simple diffusion, nutrients diffuse from high to low concentrations, for example, absorption from the intestine to blood to lymph.

Active transport, or sodium pump, requires a carrier (Na) and energy (ATP). During this transport, nutrients flow across a gradient from low to high. This absorption method is used for most nutrients, including glucose, amino acids, Na, K, Mg, Ca, and Fe.

12.

Which of the following fruits/vegetables can be washed before storing for later use?

Peaches

Mushrooms

Blackberries

Raspberries

Correct answer: Peaches

Apples, peaches, and carrots can be washed before storing to wash away dust and spray residues.

Mushrooms and berries (strawberries, raspberries, blackberries) should be washed just before serving because these fruits/vegetables readily absorb water and become mushy.

13.

If a child is chronically malnourished, which growth parameter will be affected **first**?

Weight

Length

Head circumference

BMI

Correct answer: Weight

If a child is chronically malnourished, growth parameters will first affect weight, then length, and then head circumference.

BMI for children is age and gender-specific. This growth parameter can be used starting at the age of two years; adult BMI charts should not be used for interpretation.

14.

During an initial nutrition assessment, an RD identifies that a client is anemic and encourages her to eat more foods with iron. The RD provides the client with a handout of high-iron foods, shows her pictures of high-iron foods, and develops a high-iron meal plan with foods the client prefers. When the client returns for a follow-up nutrition assessment, she reports that she has increased her consumption of iron-rich foods and has higher energy levels. The RD praises the client and encourages the continuation of the new eating patterns.

What type of change strategy is the RD using?

Positive reinforcement

Avoidance learning

Extinction

Positive cause-effect

Correct answer: Positive reinforcement

Positive reinforcement is a behavior modification method that focuses on encouraging repetition of a certain behavior and provides meaningful attention from a superior.

Avoidance learning is when a client learns to escape undesirable consequences or avoid criticism by improving future performance. Extinction focuses on reducing an undesirable behavior until it goes away, or becomes extinct. Positive cause-effect is a fabricated term.

15.

In charting, which of the following are part of the ADIME format?

a. Diagnosis

b. Implementation

c. Medication

d. Assessment

a, d

a, b, d

a, c

b, d

Correct answer: a, d

ADIME stands for Assessment, Diagnosis, Intervention, Monitoring, and Evaluation.

16.

In creating a cancer screening tool, you want to include signs and symptoms that are early warning signs of cancer, according to the American Cancer Society, which uses the acronym CAUTION. Which of the following is not included on the American Cancer Society CAUTION list?

Unintentional weight loss

A sore that doesn't heal

Change in bowel or bladder habits

Thickening or lump in the breast or elsewhere

Correct answer: Unintentional weight loss

Unintentional weight loss is not part of the ACS CAUTION list.

The American Cancer Society CAUTION list includes:

- ***C**hange in bowel or bladder habits*
- ***A** sore that doesn't heal*
- ***U**nusual bleeding or discharge*
- ***T**hickening or lump in breast or elsewhere*
- ***I**ndigestion or difficulty swallowing or chewing*
- ***O**bvious change in a wart or mole*
- ***N**agging cough or hoarseness*

17.

Which of the following factors would **not** increase a patient's metabolic rate?

Reading

Smoking a pack of cigarettes

Consuming two cups of coffee

Cycling

Correct answer: Reading

Basal metabolic rate (BMR) is the minimum amount of energy needed at rest in fasting to carry on the involuntary work of the body. BMR is primarily affected by sex, age, body composition, and thyroid hormones. But it is also affected by extremes in environmental temperature; a tropical climate can induce a 5-20% increase in BMR. Additionally, metabolic stimulants (caffeine, alcohol, nicotine) can induce a 7-15% increase in BMR.

18.

Which of the following characteristics should a liquid have in order to foam?

Low surface tension

High surface tension

High vapor content

Low vapor content

Correct answer: Low surface tension

In order for a liquid to foam, the liquid must have low surface tension. For example, egg whites at room temperature whip quicker and yield a larger volume due to the low surface tension.

If the egg whites were cold, the surface tension would be higher and the mixture would collapse. If the egg whites had a high vapor content, the mixture would also collapse.

19.

What is the flavanoid in turmeric that has anti-inflammatory properties?

Curcumin

Quercetin

Glutathione

Coenzyme Q_{10}

Correct answer: Curcumin

Curcumin is the flavanoid in turmeric that has anti-inflammatory properties.

Quercetin is the flavanoid in citrus pulp, apples, and onions. Glutathione is a flavanoid found in foods such as asparagus and avocado. Coenzyme Q_{10} is a flavanoid found in fatty fish and organ meats, and is made in the body.

20.

A dietitian viewing a patient's blood sugar readings that the patient uploaded from her glucometer to use in educating the patient would be defined as what?

Telenutrition

Nutrition education

Telemedicine

Telehealth

Correct answer: Telenutrition

The Academy of Nutrition and Dietetics defines telenutrition as "the interactive use, by a RDN, of electronic information and telecommunications technologies to implement the Nutrition Care Process."

21.

A registered dietitian has developed a survey to assess middle school students' dietary habits and nutritional knowledge. She wants to ensure that the survey genuinely and accurately reflects the concepts she's studying, and not other unrelated factors. Before finalizing the survey, she wants to evaluate a specific type of validity to ensure its effectiveness. Which type of validity is the dietitian most concerned with?

Construct validity

Behavioral validity

Face validity

Criterion validity

Correct answer: Construct validity

Construct validity evaluates how well a tool measures the theoretical trait or concept it's designed to measure. It's about ensuring that the tool clearly measures the construct (e.g. "nutritional knowledge") and not other unrelated factors. If the dietitian wants to ensure her survey truly gauges dietary habits and nutritional knowledge without being influenced by external or unrelated factors, she's looking at construct validity.

Face validity comes from pilot testing with the intended audience and finding out if the tool is suitable. Criterion validity determines how well one measure predicts an outcome for another measure. Behavioral validity is a fabricated term.

22.

Which of the following is an example of lobbying?

A group of RDs meets with legislators to encourage support of an issue

A food service manager informs employees of goals, policies, and responsibilities

Nutritionists present their views in front of a bill's sponsors

An appropriations committee provides funding for a nutrition bill

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Correct answer: A group of RDs meets with legislators to encourage support of an issue

Lobbying is performing activities aimed at influencing public officials and legislators. An example of lobbying is when a group of RDs meets with legislators to encourage support of an issue.

Orientation is informing employees of goals, policies, and responsibilities. A public hearing is when testimony is heard by a bill's sponsors. An appropriations committee provides money for programs, which attaches funding to legislation. An example would be an appropriations committee providing funding for a nutrition bill.

23.

On average, how much water does a person lose per day due to insensible water loss?

- **1.0 L**
- 0.5 L
- 1.5 L
- 2.0 L

Correct answer: 1.0 L

On average, a person loses between 0.8 and 1.2 liters of water per day due to insensible water loss. Insensible water losses include transepidermal diffusion (water that passes through the skin and is lost by evaporation) and evaporative water loss through the respiratory tract—in other words, water lost through skin and breathing.

A sensible water loss can be seen, felt, and measured; for example, urine output.

24.

Which of the following is **false** about functional foods?

All functional foods are altered versions of natural foods

Functional foods do not have a legal definition

Nutraceuticals are functional foods

The FDA oversees functional food marketing

Correct answer: All functional foods are altered versions of natural foods

Functional foods are defined as any food that provides health benefits beyond that of their nutrient content. This includes naturally occurring foods.

Functional foods are not defined by law. They may also be called nutraceuticals. The FDA oversees marketing claims of functional foods.

25.

Which of the following groups of fruits and vegetables is considered climacteric?

Peach, banana, apple

Grapes, melon, lemon

Watermelon, pomegranate, grapes

Grapefruit, cherries, peppers

Correct answer: Peach, banana, apple

Climacteric fruits and vegetables ripen post-harvest. Examples of these include peaches, pears, bananas, apples, and tomatoes.

Non-climacteric fruits and vegetables ripen before harvest. Examples of these include grapes, melon, peppers, and citrus fruits.

26.

Which of the following is **not** true about telehealth?

Telehealth is never covered by insurance companies.

Telephone consultations are considered telehealth.

Video consultations conducted via the internet are considered telehealth.

Telehealth saves time over traditional office visits.

Correct answer: Telehealth is never covered by insurance companies.

Telehealth may be reimbursable by insurance companies, depending on the policy of coverage. Telehealth also includes both telephone and video interactions. One widely cited benefit of telehealth is that it saves time by allowing clients to receive care without making a trip to a provider's office.

27.

Which of the following contributes the largest amount to total body weight in an adult male with 7% body fat?

Water

Lean tissue

Bone

Adipose tissue

Correct answer: Water

Water contributes to about 60-70% of weight in a lean adult, which is the majority of the weight.

Lean tissue, adipose tissue, and bones also contribute to body weight.

28.

Which of the following statements is **not** true?

Thiamine will break down quickly in an acidic environment.

Riboflavin should be stored away from sunlight, which breaks it down easily.

Vitamin C is easily damaged by oxidation.

B-vitamins can leach into water when a food containing them is boiled.

Correct answer: Thiamine will break down quickly in an acidic environment.

Thiamine can be damaged by being heated for a long amount of time. However, it is stable in an acidic environment.

Riboflavin (a B-vitamin) is easily broken down by light. It is the most sensitive nutrient to sunlight damage. Vitamin C is easily damaged by oxidation. Cooking foods with water-soluble vitamins in water can cause those vitamins to leach into the water.

29.

Which United States government agency is responsible for regulating food products of biotechnology?

FDA

USDA

EPA

APHIS

Correct answer: FDA

The FDA regulates food products made with biotechnology.

The USDA regulates agricultural products made with biotechnology, and APHIS (Animal and Plant Health Inspection Service) is the department of the USDA that is primarily involved in that regulation. The EPA regulates herbicides and pesticides that use biotechnology.

30.

Most produce can be stored in the refrigerator (34-36 degrees Fahrenheit); however, some fruits ripen best at room temperature. Which of the following fruits should you store at room temperature?

Pears

Apples

Mushrooms

Oranges

Correct answer: Pears

Pears, avocados, bananas, and tomatoes ripen best at room temperature. Dried fruit should also be stored at room temperature.

The aging process (ripening) is delayed by storing fruits in the controlled atmosphere of a refrigerator or freezer due to the reduced oxygen environment. Apples, mushrooms, and oranges are examples of produce that should be stored in the refrigerator.

31.

"Given a variety of carbohydrate sources, participants will be able to differentiate between complex and simple carbohydrates with an accuracy of 90%."

What is the statement above an example of?

Cognitive objective

Affective objective

Psychomotor objective

Visual objective

Correct answer: Cognitive objective

Cognitive objectives measure intellectual processes, such as knowing, perceiving, recognizing, thinking, conceiving, judging, and reasoning.

Affective objectives measure feeling, emotion, attitude, appreciation, and value. Psychomotor objectives measure behaviors or physical skills. Visual objective is a fabricated term.

32.

Which of the following nutritional problems is **not** common in the elderly?

Diarrhea

Polypharmacy

Hypercholesterolemia

Protein energy malnutrition

Correct answer: Diarrhea

The elderly are considered individuals over 65 years of age and are categorized as young-old (65-74), aged (75-84), and oldest-old (>85), according to the U.S. Census Bureau. Common nutritional problems for the elderly include dysphagia, polypharmacy (multiple medications), chronic disease, protein-energy malnutrition, decreased absorption, hypercholesterolemia, and tooth loss.

Diarrhea is not a common nutrition problem; rather, constipation is more common due to decreased gastric motility and decreased HCl stomach secretion in the elderly.

33.

Which of the following methods to give nutrition information would be **most** cost-effective to reach the highest-percent of low-education, minority adults with few resources?

Social media

Newspaper

Television

Radio

Correct answer: Social media

Research has shown that about 2/3 of low-educated, minority adults with few resources use social media. Social media is used overall more often than print media, and it is more cost-effective than print media, television, or radio.

34.

Which of the following is **not** an example of food processing?

Biotechnology

Fermentation

Freeze-drying

Washing

Correct answer: Biotechnology

Biotechnology is not a type of food processing. It does change food, but food processing involves changing any type of fresh food into a food product.

All the other examples change food from one form into another, edible form. This can range from such minimal processing as washing food to more processed results of fermenting or freeze-drying a food.

35.

In a relationship between minutes of exercise and servings of fruit per week, *r* = 0.899. Based on the *r* value, what can you deduce about this relationship?

People who exercise more eat more fruit

People who exercise more eat less fruit

Minutes of exercise is moderately related to servings of fruit per week

There is no linear relationship

Correct answer: People who exercise more eat more fruit

Correlations represent the relationship between varying types of data. The linear correlation coefficient (r) measures the degree to which the points gather around a straight line, where the value of r is always between -1 (perfect negative) and 1 (perfect positive).

When r = 1, the points are on a straight line with a positive slope going up to the right. For our example, "when people who exercise more eat more fruit", the strength of the correlation is 0.899, representing a strong or high correlation.

The option "minutes of exercise is moderately related to servings of fruit per week" reflects a moderate correlation, or r = 0.4-0.7.

When r = -1, the points are on a straight line with a negative slope going up to the left —for example, when people who exercise more eat less fruit.

When r = 0, there is no linear relationship.

36.

Which of the following has **not** been achieved in regard to altering nutrient composition with biotechnology?

Improving flavor

Increasing vitamin content

Improving fatty acid profile

Reducing trans fatty acid levels

Correct answer: Improving flavor

Foods such as tomatoes have been modified to improve flavor, color, and texture; however, this is not an alteration in nutrient composition.

Rice has been modified with genes from daffodils to increase its vitamin A content. Rapeseeds have been modified to have a healthier fatty acid profile, which is then used to make canola oil with higher levels of lauric and oleic acids. Sunflower and peanut oils have been modified to have reduced trans fatty acids.

37.

In a 2007 study, 115 of the 260 men had diabetes and 75 of the 115 diabetic men died during the ten-year follow-up period. Calculate the morbidity rate for these men.

44.23%

65.21%

28.85%

32.71%

Correct answer: 44.23%

Morbidity is the rate of disease. So, in this case, the morbidity rate is 115 cases of diabetes / 260 total men = 0.4423 x 100 = 44.23%.

Mortality is the rate of death. For example, the mortality rate is 75 deaths / 115 diabetic men = 0.6521 x 100 = 65.21%.

38.

Which of the following statements is **false** in regard to print literacy?

Materials should be written at the 8th or 9th grade level

Accurate food label reading does not predict correct interpretation of the information

Low literacy has been shown to negatively affect medication adherence

Numeracy is not a type of print literacy

Correct answer: Materials should be written at the 8th or 9th grade level

Printed materials should be written at the 5th or 6th grade level.

Studies have shown that reading a food label accurately does not necessarily mean that the reader will correctly identify what that food label means. Low literacy has been shown to decrease the likelihood of taking medication as prescribed. Numeracy is related to mathematical literacy, not print literacy.

39.

Which of the following is a non-nutritive sweetener?

Frustooligosaccharides

Aspartame

Allulose

Sucrose

Correct answer: Fructooligosaccharides

Fructooligosaccharides (FOS) are non-nutritive sweeteners because they are not digested by the human body.

Aspartame and allulose are low-calorie sweeteners. Sucrose is another name for sugar, so it is not a non-nutritive sweetener.

40.

Multiple glutamic acid molecules must be hydrolyzed off to absorb which nutrient?

Folate

Glutamine

Pantothenic acid

Copper

Correct answer: Folate

Food sources of folate contain multiple glutamic acid molecules, which must be hydrolyzed off or removed in order to be absorbed. Examples of folate food sources include green leafy vegetables, fortified cereals, liver, kidney, citrus fruits, lentils, and beans.

Glutamine is a nonessential amino acid used in the biosynthesis of proteins and conditionally essential during catabolic stress. Examples of glutamine food sources include protein-rich foods such as beef, chicken, fish, dairy products, and eggs.

Pantothenic acid, or vitamin B-5, is synthesized by intestinal bacteria to be absorbed and function in the synthesis of fatty acids. Examples of vitamin B-5 food sources include animal foods, grains, and legumes.

Copper is a trace mineral attached to a protein, ceruloplasmin, and absorbed in the duodenum. Copper functions in hemoglobin formation and aids in iron absorption. Examples of copper food sources include liver, kidney, and shellfish.

41.

A three-month weight-loss program provides 1:1 nutrition counseling, meal planning, and workout regimens for ten participants. After the three-month program, the participants weighed in; their weight loss during the program is shown below. Determine the mean and median, respectively.

Pounds of weight lost: 12, 7, 29, 9, 31, 5, 23, 22, 9, 9

15.6; 10.5

10.5; 15.6

9; 31

10.5; 9

Correct answer: 15.6; 10.5

The mean is the simple average of the total scores and is calculated by adding all of the values, then dividing by the number of values. For example, 5 + 7 + 9 + 9 + 9 + 12 + 22 + 23 + 29 + 31 = 156 / 10 = 15.6.

The median is the value at the midpoint and is found by arranging the values in numerical order, then finding the number at the exact center. However, if there is an even number of values, the median is the average of the two numbers closest to the center. For example, 5, 7, 9, 9, 9, 12, 22, 23, 29, 31 --> 9 + 12 / 2 = 10.5.

42.

The USDA grades produce as Fancy, Extra #1, #1, Combination, and #2. These grades are based on all of the following characteristics **except**:

Taste

Firmness

Maturity

Color

Correct answer: Taste

The USDA grades are based on quality, firmness, color, maturity, freedom from defects, uniform size, and shape. Taste is not a characteristic that determines grade.

43.

An outpatient renal center is adding a nutrition clinic for dialysis patients to its facility next year. This year, the center wants to pilot test the nutrition clinic.

Which of the following would **not** be an effective activity for the pilot test?

Using a group of nurses from the renal center to participate in the pilot test

Using a focus group to assess if the activities of the pilot test were effective

Interviewing pilot test participants after they complete the test clinic

Having dialysis patients taste items made from recipes to be used in the nutrition clinic for acceptability

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Correct answer: Using a group of nurses from the renal center to participate in the pilot test

Testing before a program begins, known as pilot testing, helps identify parts of the plan that may need revision. It should be done with an audience similar to your intended audience. The nurses aren't the intended audience of the nutrition clinic, so this is not an effective plan.

Interviews and focus groups with the intended audience are acceptable activities for gathering data about the effectiveness of the pilot test. Testing recipes with the intended audience (dialysis patients) to check for acceptability would also be an effective part of pilot testing.

44.

When free fatty acids link together during frying, the oil becomes more viscous, more prone to foaming, and the oil quality decreases. This process is referred to as:

Polymerization

Hydrogenation

Recrystallization

Retrogradation

Correct answer: Polymerization

Polymerization is the process in which small molecules, called monomers, combine to produce a larger chain-like or network molecule, called a polymer. An example of this process occurs during frying when free fatty acids (FFAs) link together. This makes the oil more viscous and more prone to foaming and decreases the oil's quality.

Hydrogenation is the process of making fats and oils more solid at room temperature. An example of this process is the manufacturing of margarine. Retrogradation is the process of reforming hydrogen bonds into crystalline regions in starches. During the storage or cooling of a starch paste, the hydrogen bonds between amylose molecules break and rearrange themselves into tighter organized structures. This rearrangement and recrystallization give the product a gritty texture. An example of this process is the thawing of gravy.

45.

What particles transport dietary lipids in the bloodstream?

Chylomicrons

Micelles

Glycerol

Fatty acids

Correct answer: Chylomicrons

Chylomicrons are lipoprotein particles made of triglycerides, phospholipids, cholesterol, and proteins. They are formed during fat digestion and transport dietary lipids in the bloodstream.

Micelles are the end products of fat digestion composed of monoglycerides, diglycerides, long-chain fatty acids, and bile salts. This water-soluble particle is absorbed into the intestinal cells.

The end products of fat digestion are monoglycerides, diglycerides, glycerol, and fatty acids. These end products are directly absorbed into portal blood.

46.

Carla is putting together a nutrition education program for low-income adults who have diabetes. Which of the following is the first step she would take in the DESIGN Procedure?

Select the behavior change goals for managing diabetes

Survey low-income adults with diabetes about how they think managing their diabetes would be beneficial

Select social cognitive theory as the theory-based model

Decide on identifying carbohydrate-containing foods as one objective of the education program

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Correct answer: Select the behavior change goals for managing diabetes

The DESIGN Procedure has six steps:

D - Decide behaviors (Select the behavior change goals for managing diabetes)

E - Explore determinants (Survey low-income adults with diabetes about how they think managing their diabetes would be beneficial)

S - Select theory-based model (Select social cognitive theory as the theory-based model)

I - Indicate objectives (Decide on identifying carbohydrate-containing foods as one objective of the education program)

G - Generate plans

N - Nail down evaluation

47.

Which of the following statements is **false**?

DNA is made up of genes.

DNA is made up of nucleotides.

Thymine is a nucleotide.

DNA is translated into proteins.

Correct answer: DNA is made up of genes.

Genes are made up of DNA.

DNA is made up of nucleotides. Nucleotides consist of nitrogen-containing bases adenine, thymine, guanine, and cytosine. DNA is translated into proteins.

48.

Which of the following is **not** an example of an individual behavior determinant of health?

HIV status

Physical activity

Diet

Hand washing

Correct answer: HIV status

Determinants of health are the range of personal, social, economic, and environmental factors that influence health status. Determinants of health include biological and genetic makeup, individual behavior, social interactions and norms, physical environment, and access to health services.

Diet, physical activity, alcohol/tobacco/drug use, and handwashing are examples of individual behavior determinants of health.

HIV status is an example of a biological and genetic determinant of health.

49.

Which category of disease is scleroderma?

Autoimmune

Cancer

Cardiac

Acute

Correct answer: Autoimmune

Scleroderma is a chronic autoimmune disease that causes a hardening of the skin and visceral organs characterized by a deposition of fibrous connective tissue. Raynaud syndrome or Sjrogen's syndrome may occur.

Scleroderma is not a type of cancer or heart disease; it affects the organs and tissues.

50.

What adjustment would you need to make to cook pasta in boiling water as altitude increases?

Increase the cooking time, since the water temperature is lower

Decrease the cooking time, since the water temperature is higher

Use more water, since the pasta will absorb more

Make no changes, because altitude doesn’t impact the cooking

Correct answer: Increase the cooking time, since the water temperature is lower

Water boils at a lower temperature when atmospheric pressure is lower. As altitude increases, atmospheric pressure decreases. Therefore, at higher altitudes, the pasta will cook at a lower temperature, requiring an increase in cooking time.

It is also recommended to use more water, since more will evaporate at higher altitude, not because the pasta will absorb more.

51.

Which of the following nutrients is now required on the nutrition facts label?

Potassium

Vitamin A

Vitamin C

Phosphorous

Correct answer: Potassium

Some required or permitted nutrients have been updated on the new Nutrition Facts label. Vitamin D and potassium are now required to be on the label because Americans do not always get the recommended amounts.

Vitamins A and C are no longer required since deficiencies of these vitamins are rare today. The actual amount must be listed in addition to the percent daily value for vitamin D, calcium, iron, and potassium.

52.

All of the following are components of health literacy except:

Language spoken

Health beliefs

Reading level

Numeracy

Correct answer: Language spoken

The components of health literacy include:

- *Cultural and conceptual knowledge (health beliefs, attitudes, and practices and the perceptions of illness, health risks, and benefits)*
- *Oral literacy (listening and speaking)*
- *Print literacy (reading and writing)*
- *Numeracy (use of numbers and math skills in everyday activities)*

The language spoken is not a component of health literacy, although it can have an impact on understanding written materials or spoken information. Nonnative speakers of English have higher rates of restricted health literacy.

53.

Bile salts are required for the absorption of which nutrients?

Vitamins A, D, E, K

Vitamins B-1, B-2, B-12

Calcium, Iron

Intrinsic factor, B-12

Correct answer: Vitamins A, D, E, K

Fat-soluble vitamins (A, D, E, K) require assistance from bile salts for absorption.

For B vitamin absorption, thiamin (B-1) requires acid, riboflavin (B-2) requires phosphorous, and cobalamin (B-12) requires HCl and intrinsic factor (IF).

For mineral absorption, calcium requires an acid, vitamin D, and lactose, while iron requires HCl and calcium to bind oxalates.

54.

Which of the following recommendations has a strong rating in the Evidence Analysis Library (EAL) as it pertains to treating hypertension?

Consume 5-10 servings of fruits and vegetables a day.

Increase calcium intake.

Increase magnesium intake.

Increase consumption of omega-3 fatty acids.

Correct answer: Consume 5-10 servings of fruits and vegetables a day.

The EAL rates the recommendation of 5-10 servings of fruits and vegetables per day as "strong". It also rates reducing sodium intake and optimizing body weight as "strong".

The other recommendations listed are rated as "fair" in the EAL.

55.

A researcher wants to measure the tenderness of a baked custard. Which measurement method would be **most** useful?

Penetrometer

Warner-Bratzler shear

Mass spectrometer

Farinograph

Correct answer: Penetrometer

Objective testing uses equipment to evaluate food products instead of variable human sensory organs. Objective machines include the Warner-Bratzler shear, penetrometer, mass spectrometer, and farinograph.

- *A penetrometer measures tenderness and firmness and is typically used in baked custard testing.*
- *The Warner-Bratzler shear measures meat tenderness.*
- *A mass spectrometer measures molecular mass.*
- *The farinograph measures gluten development in dough.*

56.

A #10 can (107.60 fl oz) of green beans costs $4.73. Each portion of green beans uses a #10 disher. How much will each portion of green beans cost?

$0.14

$3.20

$0.18

$0.41

Correct answer: $0.14

To find the number of ounces per serving in any disher size, you divide 32 by the disher #(32 / 10 = 3.2 fl oz)

Then, you will divide the total of the #10 can by the number of ounces in the disher to get the number of portions. (107.60 / 3.2 = 33.63)

Last. you will take the cost of the can of green beans and divide it by the number of total portions. ($4.73 / 33.63 = $0.14)

57.

Metabolic acidosis may be caused by:

Uncontrolled diabetes

CVA

Hyperventilation

Anxiety

Correct answer: Uncontrolled diabetes

Metabolic acidosis is failure related to the renal system to control the body's acid-base balance. In this condition, the kidneys retain/produce too much hydrogen (↑H+) or excrete too much base (↓HCO_3). To compensate, the respiratory system increases ventilation to remove carbon dioxide to decrease carbonic acid. Metabolic acidosis may be caused by uncontrolled diabetes, increased hydrogen production or retention by kidneys, excessive base excretion by kidneys, uremia, or diarrhea.

Respiratory alkalosis is failure related to the pulmonary system and may be caused by loss of CO_2, hyperventilation, anxiety, or CVA.

58.

Which of the following causes egg yolk color to change?

Alteration of the feed provided

Storage conditions

Cholesterol content

Grade of the egg

Correct answer: Alteration of the feed provided

The color of an egg yolk depends on the amount and type of feed provided in the hen's diet.

Storage conditions do not impact the color of the egg yolk. Additionally, the cholesterol content is unrelated to the color of the egg yolk, although farmers are able to produce eggs with lower levels of cholesterol. The grade of the egg is determined by candling or passing an egg in front of a bright light to view its contents. This test judges the thickness of the egg white, the location of the yolk, and the condition of the yolk. The grades of the egg include AA, A, and B. The grading does not take into account the color of the shell or the size of the egg.

59.

Which of the following is focused on health promotion?

My Plate

RDA

NSLP

NFNS

Correct answer: My Plate

My Plate is part of the DGA (Dietary Guidelines for Americans) that provides guidelines for food consumption focused on overall health promotion.

The RDAs are focused on providing intake levels for individual nutrients that may be deficient with the aim of preventing nutrition-related disease. The NSLP (National School Lunch Program) is focused on providing reduced-cost meals to low-income students. The NFNS (National Food and Nutrition Survey) is focused on gathering information about food intake and health status.

60.

Which of the following learning activities is **most** likely to be meaningful to preschool children?

Identifying the shape and colors of fruit in a basket

Completing a self-assessment of fruit intake

Describing their favorite breakfast food

Singing songs about fruits and vegetables

Correct answer: Identifying the shape and colors of fruit in a basket

Adolescents enjoy activities like self-assessments, but this is too abstract a concept for preschool children.

Describing their favorite food or singing can be meaningful, but preschool children learn best by manipulating their environment. They understand food in terms of size, color, and some elements of taste. They do well with activities that are hands-on and play-based. Therefore, a hands-on activity like identifying fruits in a basket is likely to be meaningful to a preschool child. Preschoolers are likely able to understand how to identify foods that are fruits and can learn from playing with food models of fruits.

61.

In a research paper, what section is found after the results, and what is the purpose of this section?

Discussion; To interpret the results

Conclusion; To summarize the results

Methodology; To state the research methods used

Implication; To describe how the research might be applied in practice

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Correct answer: Discussion; To interpret the results

In a research report, the discussion is found after the results and the purpose is to provide the researchers' interpretation of the results and compare them with other studies. The sections of a research report are organized as follows:

1. ***Abstract**: A summary of the research report*
2. ***Introduction**: An introduction to the research's objectives, definitions, background, limitations, and order of report presentation*
3. ***Review of Existing Literature**: A summary of previous research on the subject*
4. ***Methodology**: The description of methods used and the hypothesis*
5. ***Results**: The subjective or objective findings*
6. ***Discussion**: The interpretation of the results*
7. ***Conclusion**: A summary of results, limitations, and recommendations for future research*
8. ***Implications**: How the research may be applied in practice*

62.

Which of the following would prevent the Maillard reaction?

Lemon juice

Sodium bicarbonate

Sugar

Heavy cream

Correct answer: Lemon juice

The Maillard reaction is a form of non-enzymatic browning caused by a reaction between protein and sugar. It gives browned foods their distinct flavor. This chemical reaction takes place in the presence of an alkaline environment and results in changes in taste, color, and texture. Adding a low-pH ingredient, such as cream of tartar or lemon juice, would prevent the Maillard reaction from occurring. Examples of foods that undergo this reaction include baked goods, seared steaks, fried rice, toasted marshmallows, and others.

Sodium bicarbonate would contribute to the Maillard reaction since it would raise the pH. Sugar is one of the essential components of the Maillard reaction, so this would not prevent it. Heavy cream would contribute to the Maillard reaction since it contains sugar in the form of lactose.

63.

Which of the following describes an objective measure of good quality custard?

Higher percent sag

Lower percent sag

Taste

Ratio of sugar to egg

Correct answer: Higher percent sag

Objective evaluation of foods involves instrumentation and use of physical and/or chemical techniques. Percent sag is an objective evaluation that measures gel strength; the higher the percent sag, the more tender the gel. When custards are overcooked, they become less tender and have a lower percent sag.

Taste is a subjective measure. The ratio of sugar to egg may affect quality, but it is not a standard objective measure.

64.

Where does protein digestion begin, and what enzyme is required?

Stomach; pepsin

Pancreas; trypsin

Mouth; amylase

Small intestine; lipase

Correct answer: Stomach; pepsin

Protein digestion begins in the stomach with hydrochloric acid and the enzyme protease, pepsin. Pepsin is formed when its inactive form, pepsinogen, is activated by hydrochloric acid.

Protein digestion ends in the pancreas with the enzymes trypsin, chymotrypsin, carboxypeptidase, and aminopeptidase in the intestine. Carbohydrate digestion begins in the mouth with amylase. Fat digestion begins in the small intestine with lipase.

65.

Which of the following was not a key change to the Nutrition Facts label?

"Percent Daily Value (%DV)" has been removed

"Calories" is now larger and bolder

"Calories from Fat" has been removed

"Added Sugar" is now required

Correct answer: "Percent Daily Value (%DV)" has been removed

On May 20, 2016, the FDA announced the new Nutrition Facts label for packaged foods to reflect more current scientific information, including the link between diet and chronic diseases (such as obesity and heart disease). A few of the key changes on the new and improved Nutrition Facts label include the following: "Calories" is now larger and bolder, "Calories from Fat" has been removed, and "Added Sugar" is now required, along with other updates.

"Percent Daily Value (%DV)" was not removed from the new label.

66.

Which carbohydrates are most and least sweet, respectively?

Fructose; lactose

Lactose; fructose

Glucose; sucrose

Sucrose; maltose

Correct answer: Fructose; lactose

Carbohydrates in order of sweetness are as follows: fructose (most sweet), invert sugar, sucrose, glucose, sorbitol, mannitol, galactose, maltose, lactose (least sweet).

67.

Which of the following phytochemicals should be recommended for a woman at risk for breast cancer?

Lignans

Thiols

Soy

Polyphenols

Correct answer: Lignans

Lignans are known for their phytoestrogens and anti-cancer properties and are found in flaxseeds, wheat bran, oats, and barley. Therefore, they may be a useful phytochemical for women at risk for breast cancer.

Phytochemicals, or phytonutrients, are found in fruits, vegetables, whole grains, legumes, beans, herbs, spices, nuts, and seeds and are classified according to their chemical structures and functional properties. In the diet, phytochemicals may help to prevent or treat chronic diseases. They can also be used for detoxification, as blocking agents, and in other ways.

Thiols detoxify carcinogens and are found in cruciferous vegetables like brussels sprouts. Soy foods are isoflavones and may lower elevated cholesterol. Polyphenols are found in cocoa and are associated with reduced risk of cardiovascular disease by improving endothelial function through blood vessel dilation.

68.

What is the **first** step in the process of moving a nutrient through the GI tract?

Ingestion

Digestion

Utilization

Absorption

Correct answer: Ingestion

Ingestion, or taking a substance into the body, must occur before any other process can begin in the body (digestion, absorption, or utilization).

69.

A nutrition professor delivered a series of 5 lectures on macronutrients to a 55-person classroom of college students. After the last lecture, he provided a piece of paper to each student, which asked them if the lectures had changed their perception of the benefits of macronutrients for health.

What type of evaluation is the professor using?

Outcome

Process

Determinant

Learning

Correct answer: Outcome

Outcome evaluations are done at the end of the program or intervention and provide information about the overall effects of the intervention.

Process evaluations are also done at the end of the program and provide information about how many people participated, and their evaluation of what they got out of the program and whether or not it worked well for them. Determinants are used in outcomes evaluations to help measure outcomes, but they are not a type of evaluation. Learning evaluation is a distractor.

70.

Which nutrient is responsible for the metabolism of pyruvate to generate energy in the TCA cycle?

Thiamin

Chromium

Zinc

Magnesium

Correct answer: Thiamin

Thiamin (vitamin B1) is responsible for the metabolism of pyruvate to generate energy in the TCA cycle. Without thiamin pyrophosphate, pyruvate is unable to convert to acetyl CoA for the TCA cycle, resulting in energy deprivation of the heart muscle.

Chromium and zinc are important nutrients for glucose metabolism. Magnesium is responsible for the metabolism of glucose to glucose 6-phosphate in glycolysis.

71.

During chronic nutrition deprivation, what is one way the body decreases BMR to conserve protein and bodily function?

Decreasing heart rate

Becoming hyperthermic

Becoming hypertensive

Increasing thyroid hormone secretion

Correct answer: Decreasing heart rate

During chronic nutrition deprivation, the body decreases BMR (basal metabolic rate) to conserve protein and bodily function. To decrease BMR, the body may decrease body temperature (hypothermia), blood pressure (hypotension), heart rate (bradycardia), or thyroid hormone secretion.

To increase BMR, the body may increase body temperature (hyperthermia), blood pressure (hypertension), heart rate (tachycardia), physical activity, or thyroid hormone secretion.

72.

A popular local bakery released a seasonal custard, and they have sold out of it every single day this spring. The customers claim it is the best and most tender custard they have ever had.

Which of the following objective methods of rating quality would **most likely** reflect the quality of this seasonal custard?

High percent sag

Low percent sag

Grade AA

Small crystal size

Correct answer: High percent sag

Percent sag (% sag) is an objective measure of quality used for custards. The larger the percentage of sag, the more tender the gel. A high quality and tender custard will have a high percent sag, while an overcooked and less tender custard will have a low percent sag.

Grading is used for rating egg quality and may classify eggs as AA, A, or B. Grade AA eggs are nearly perfect because the whites are thick and the yolks are free from defects.

Crystal size is used for measuring candy quality. For example, in crystalline sugar candies, such as fudge, small crystal sizes are associated with creamier fudges.

73.

Which of the following is **not** an acceptable end to an educational session?

The client is not ready to change, so the dietitian sets the goal for the client

The client is not ready to change, so a goal is not set

The client is resistant to change, so the dietitian affirms that the client has autonomy to make their own choices

The client is ready to change, so the dietitian collaborates goals with the client

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Correct answer: The client is not ready to change, so the dietitian sets the goal for the client

If the client is not yet ready to change, they should be supported, and this lack of readiness should be acknowledged. At this stage, setting a goal will lead to a negative outcome. Also, a goal should come from the client, not be prescribed from the dietitian.

74.

What is the following statement describing?

"...Where individuals can connect to others who are either struggling with an eating disorder, in recovery, or supporting someone with an eating disorder."

Community

Nutritional informatics

Synergy

Culture

Correct answer: Community

Community can be defined by common interests, geographic boundaries, and values. For example, the National Eating Disorder Association's (NEDA's) online community forum serves as "an online community where individuals can connect to others who are either struggling with an eating disorder, in recovery, or supporting someone with an eating disorder."

Nutritional informatics is the effective retrieval, organization, storage, and optimum use of information, data, and knowledge for food- and nutrition-related problem solving and decision-making. Informatics is supported by the use of information standards, processes, and technology. An example of nutritional information is an electronic health record (EHR).

Synergy is the theory that a group decision is superior to what an individual could have produced by working alone. For example, a group of RDs will provide a better plan of care for a patient than the most resourceful RD could have formulated solely.

Culture is the accumulation of a group's learned and shared behaviors in everyday life.

75.

The statement, "Vitamin K helps support normal blood clotting", is an example of what type of claim?

Structure/function claim

Disease claim

Health claim

Legal claim

Correct answer: Structure/function claim

According to the FDA, structure/function claims may describe the role of a nutrient or dietary ingredient intended to affect the normal structure or function of the human body. For example, "vitamin K helps support normal blood clotting".

According to the FDA, a disease claim is when a product states it can diagnose, cure, mitigate, treat, or prevent disease. A claim such as this requires prior approval by the FDA.

An FDA-authorized health claim requires a product description to use "may". For example, "This product may reduce the risk of heart disease".

There is currently no legal definition for functional foods. The USDA regulates claims that manufacturers make about functional foods' nutrient content and effects on disease, health, or body function.

76.

Caitlin is a 6-year-old girl who was born with sickle cell anemia. She lives in an urban area and takes the bus to school. There are not any parks close to her home, so she watches several hours of television after school.

Her inherited condition of sickle cell anemia is an example of which determinant of health?

Biological and genetic

Physical and social

Social and genetic

Physical

Correct answer: Biological and genetic

Determinants of health are the range of personal, social, economic, and environmental factors that influence health status. They include the categories of biological and genetic makeup, individual behavior, social interactions and norms, physical environment, and access to health services.

Caitlin's inherited health condition, sickle cell anemia, is an example of a biological and genetic determinant of health. Her age and sex would also fall under this determinant. Her neighborhood and school are examples of physical determinants. Her transportation options and exposure to mass media are examples of social determinants.

77.

The structure of linoleic acid is written as C18:2ω6. Where is the first double bond located?

6th carbon

2nd carbon

18th carbon

At the carboxyl group

Correct answer: 6th carbon

Fatty acid structures are composed of a straight hydrocarbon chain with a methyl group (CH_3) at one end and a carboxyl group (COOH) at the other terminating end. They are classified by the number of carbons in the chain, the position of the first double bond, and the number of double bonds. The location of the first double bond is counted from the methyl end and is designated by the omega sign (ω). For example, linoleic acid structure (C18:2ω6) tells us that there are 18 carbons, 2 double bonds, and the first double bond is located at the 6th carbon.

78.

According to the RDA for protein, how many calories of protein should a diet provide for a 195.8-pound adult?

285

71.2

250

356

Correct answer: 285

The RDA for protein is 0.8 grams per kilogram of body weight (10-15% of total energy intake) per day. To find the recommended number of protein calories per day for a 195.8-pound adult:

1. *Convert pounds to kilograms: 195.80 pounds / 2.2 kilograms = 89 kg*
2. *Calculate the required protein grams: 89 kg x 0.8 grams protein/kg body weight = 71.2 grams protein*
3. *Convert grams to calories: 71.2 grams protein x 4 (4 calories/1 gram protein) = 284.8 calories ~ 285 protein calories per day*

79.

Jordan is conducting a nutrition research study and is sending out a survey packet to participants who have agreed to take part in the study. The survey gathers participant's age, number of people living in the home, household income, and open-ended questions about attitudes toward healthy eating.

What type of research method is this and what type of data is he collecting?

Mixed method; both quantitative and qualitative data

Quantitative method; objective

Standard method; both quantitative and qualitative data

Qualitative method; subjective data

Correct answer: Mixed method; both quantitative and qualitative data

Mixed method studies collect both quantitative and qualitative data. The participant's age, number of people living in the home, and household income are quantitative. The open-ended questions about attitudes toward healthy eating are qualitative.

Qualitative data is subjective. Quantitative data is objective. Standard method usually refers to quantitative data.

80.

You are preparing an educational program about healthy meals to be presented within a low-resource community. Which of the following recipes that you are considering including is **least** likely to address the challenges facing this community?

A complicated recipe that requires extensive ingredient preparation

A complicated recipe that utilizes low-cost ingredients

A recipe focused on utilizing foods readily available in the community

A recipe that takes 10 minutes to prepare

Correct answer: A complicated recipe that requires extensive ingredient preparation

Low-resource communities often have challenges with adequate time for meal preparation, low availability of healthy foods at affordable prices, and financial resources available for food purchasing. There may also be lower literacy levels in these communities. Therefore, the complicated recipe that requires extensive ingredient preparation does not address the potential low literacy and time that will be required for prepwork.

A complicated recipe that utilizes low-cost ingredients doesn't address low literacy, but it does address financial resources. A recipe focused on utilizing foods readily available in the community addresses the foods that are available in the community, and a recipe that takes 10 minutes to prepare addresses providing adequate time.

81.

When baking at high altitudes, atmospheric pressure is reduced and there are necessary adjustments that need to be made to correct for this. What needs to be adjusted when baking at high altitudes?

Decrease baking powder and increase liquid

Increase baking powder and increase liquid

Decrease baking soda and decrease flour

Increase baking soda and increase fat

Correct answer: Decrease baking powder and increase liquid

The inverse relationship between altitude and pressure (high altitude, low pressure vs. low altitude, high pressure) requires alterations in cooking. At high altitudes, the boiling point is decreased and cooking time is decreased. Therefore, foods take longer to cook at lower temperatures because temperatures decrease as elevation increases.

During the high altitude cooking process, decreased air pressure causes gas to expand faster and steam to form earlier. As a result, gas expansion may occur before the protein has coagulated and starch has gelatinized, leaving an unstable structure. Therefore, baking powder, which is a leavening agent, should be decreased. Liquid should be increased, because liquids evaporate faster.

82.

What characteristics does the leavening agent impact in a batter or dough?

Volume and texture

Moistness and cell size

Tenderness and surface tension

Taste and cohesion

Correct answer: Volume and texture

Leavening agents provide the source for gases in batters and doughs. The gas produced expands the cell size in the batter or dough. That increase in cell size improves the texture of the product, as well as increases the volume of the product. This action also makes the product more tender by stretching the cell walls.

83.

Greg is a marathon runner who weighs 63 kilograms and is 65 inches tall. During his last marathon, he lost 3.5 pounds.

How much additional fluid should he have consumed during the race?

56 oz

3.5 oz

84 oz

63 oz

Correct answer: 56 oz

During endurance exercise, athletes should replace 100% of fluids lost during moderate to vigorous activity. For example, Greg lost 3.5 pounds (3.5 pounds = 56 ounces) so he should have drunk an additional 56 oz of fluid to replace 100% of his loss. The amount of fluids required during exercise can increase for high heat, high altitude, and/or high humidity situations.

After endurance exercise, athletes should replace 100-150% of fluids lost during moderate to vigorous activity with carbohydrates and electrolytes (Na) to rehydrate. For example, Greg lost 3.5 pounds during exercise, so he should drink 84 ounces to replace 150% of his losses (3.5 pounds = 56 ounces x 1.5 = 84 ounces).

84.

What does the NND provide?

Nutrient content of foods

Health status reports of individual states

Dietary recommendations

Funding for nutrition policy

Correct answer: Nutrient content of foods

The NND (National Nutrient Database) is a source of nutrient content of foods (ingredients, raw and cooked products), as provided by private industry, academic institutions, and government labs. It is maintained by the USDA.

85.

A cake is prepared with all-purpose flour and bran. When the cake is finished, the baker notices the end product has decreased volume compared to her usual cakes made with all-purpose flour only.

What ingredients should be increased to prevent this decreased volume in the cake?

Flour and liquid

Egg and liquid

Egg and sugar

Sugar and liquid

Correct answer: Flour and liquid

Bran is the heavy and hard outer layer of cereal grains. When bran is added to a baked flour mixture, the volume of the end product decreases due to its heaviness. Flour and liquid should be increased to prevent this decrease in the cake's volume.

86.

How does the hormone thyroxine raise blood sugar?

Stimulating liver glycogenolysis and gluconeogenesis

Stimulating the thyroid gland to produce more hormones

Increasing cell permeability to glucose and stimulating lipogenesis

Stimulating the sympathetic nervous system and decreasing release of insulin from the pancreas

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Correct answer: Stimulating liver glycogenolysis and gluconeogenesis

The hormone thyroxine (T4) raises blood sugar by stimulating liver glycogenolysis (glycogen --> glucose) and gluconeogenesis (noncarbohydrate substrate --> glucose).

When the level of thyroid hormones (T3 and T4) drops too low, the pituitary gland produces thyroid-stimulating hormone (TSH) to stimulate the thyroid gland to produce more hormones. TSH indirectly raises blood sugar by producing more T4.

Insulin is a hormone located in the beta cells of the pancreas; it lowers blood sugar levels by increasing cell permeability to glucose, fostering glycogenesis, and lipogenesis.

Epinephrine is a hormone located in the adrenal medulla that raises blood sugar by stimulating the sympathetic nervous system, stimulating liver and muscle glycogenolysis, and decreasing the release of insulin from the pancreas during catabolic stress.

87.

During a nutrition counseling session, a client says, "I know you want me to stop eating out, but I'm not ready to do that!" The dietitian responds by saying, "You can see that there are some issues, but you're not willing to think about stopping altogether."

Which principle of motivational interviewing is the dietitian using?

Roll with resistance

Express empathy

Develop discrepancy

Avoid argumentation

Correct answer: Roll with resistance

The 5 principles of motivational interviewing are to express empathy, develop discrepancy, avoid argumentation, roll with resistance, and support self-efficacy. Rolling with resistance is affirming the client's freedom of choice and telling the client reluctance is normal.

Expressing empathy verbally reflects an understanding of the client and clarifies feeling, meaning, or experience. Developing discrepancy compares and contrasts present and desired behaviors. Avoiding argumentation is not arguing or attempting persuasion.

88.

What is the **best** nutrition education for a person with type 1 diabetes?

Integrate insulin regimens into usual eating and exercise habits

Facilitate changes in eating that will reduce insulin resistance

Implement lifestyle strategies that will improve metabolic status

Use A1C tests to determine whether adjustments in meal planning are necessary

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Correct answer: Integrate insulin regimens into usual eating and exercise habits

Type 1 diabetes (T1DM) patients are insulin-dependent, and goals include integrating insulin regimens into their usual eating and exercise habits.

The other options are correct for type 2 diabetes (T2DM) patients who are insulin-independent; goals include facilitating changes in eating that will reduce insulin resistance, implementing lifestyle strategies that will improve metabolic status, and using A1C tests to determine whether adjustments in meal planning are necessary. Insulin is not the primary measure, since T2DM patients are not insulin-dependent.

89.

An increase in solutes (BUN), tachycardia, and rapid weight loss are signs and symptoms of what?

Dehydration

Overhydration

Hypoventilation

Respiratory acidosis

Correct answer: Dehydration

Dehydration is caused by decreased water intake, excessive water output, and/or heavy solute load (BUN). Signs and symptoms include nausea, dizziness, sunken eyes, fever, hyperventilation, excessive sweating, concentrated urine, dry inelastic skin, increase in solutes (BUN), tachycardia, headache, fatigue, decreased appetite, and/or rapid weight loss.

Dehydration is associated with hypernatremia, while overhydration is associated with hyponatremia. Serum sodium is the best assessment parameter for fluid status.

Respiratory acidosis is caused by CO_2 retention, hypoventilation, and emphysema. Signs and symptoms include decreased ventilation, headache, confusion, anxiety, drowsiness, and stupor.

90.

Water at 100^{o} F would be **best** described as which of the following?

Lukewarm

Freezing

Simmering

Boiling

Correct answer: Lukewarm

Descriptions of water at various temperatures:

- *Freezing: < 32^{o} F*
- *Lukewarm: 100^{o} F*
- *Simmering: 180-211^{o} F*
- *Boiling: 212^{o} F (100^{o}C)*

91.

The CDC chart item "stature/length for age" can be used to reflect which of the following?

Long-term nutritional status

Short-term nutritional status

Distinguish between stunting and wasting

Short-term marker of growth

Correct answer: Long-term nutritional status

Stature/length for age is used to define shortness/tallness, to reflect long-term nutritional status, and to determine the extent of stunting. This parameter can be affected by long-term nutritional stress or chronic illness.

Weight for length/stature is used in infants and young children to identify over-, under-, or within-normal limits for weight, to detect short-term changes in nutritional status, and to distinguish between stunting and wasting. This chart is the most accurate indicator of risk.

Weight for age is used as a short-term marker of growth and is affected by acute nutritional stress or illness.

92.

You are testing the reliability of your nutrition education assessment tool. You ask a sample of subjects to complete the assessment tool and then ask the same subjects to complete the same assessment tool two weeks later. You look to see if the assessment tool gives the same results for each subject the second time.

What type of reliability for the assessment tool are you testing?

Reproducibility

Internal consistency

Interrater reliability

Credibility

Correct answer: Reproducibility

Reproducibility looks at whether an instrument will provide the same results, for the same subjects, over time.

Internal consistency looks at whether related items within the instrument are consistent. For example, if you have three items on the instrument that measure the same attitudes about a food, they should provide consistent results with each other. Interrater reliability looks at whether individual data collectors are consistent with how they measure or record data. Credibility is not a type of reliability; it is a piece of qualitative data that is related to validity.

93.

A meal's respiratory quotient is measured and the result is 0.85. What is the **most likely** composition of the meal?

Mixed intake

Carbohydrates alone

Protein alone

Fat alone

Correct answer: Mixed intake

The respiratory quotient (RQ) is the ratio of volume of carbon dioxide (CO_2) expired to volume of oxygen (O_2) inspired, used to measure energy. The RQ changes based on the fuel mixture being metabolized. For example, 1 = carbohydrates alone, 0.82 = protein alone, 0.7 = fat alone, and 0.85 = mixed intake. Therefore, the meal's RQ of 0.85 reflects a mixed intake.

94.

Salad dressings that have to be shaken to distribute the ingredients uniformly each time they are used are classified as:

Temporary emulsions

Semipermanent emulsions

Permanent emulsions

Suspension

Correct answer: Temporary emulsions

Temporary emulsions are emulsions that separate very quickly into two layers. French and Italian dressings are common examples.

Semipermanent emulsions tend to remain intact for a few days, such as a starch-thickened sauce and a cooked sugar syrup. Permanent emulsions are aviscous emulsions containing an emulsifying agent that rarely separates into two layers, such as mayonnaise. A suspension is a gas in a solid, such as a sponge cake.

95.

What organization is responsible for establishing a standard definition of what makes an organization culturally competent?

The Joint Commission

Academy of Nutrition and Dietetics

World Health Organization

Centers for Medicare and Medicaid

Correct answer: The Joint Commission

The Joint Commission is working to define cultural competence and establish a standard definition of what makes an organization or institution culturally competent. Cultural competence is described as a set of congruent attitudes, behaviors, and policies. According to The Joint Commission, it is defined as "The ability of health care providers and health care organizations to understand and respond effectively to the cultural and language needs brought by the patient to the health care encounter. Cultural competence requires organizations and their personnel to do the following: (1) value diversity; (2) assess themselves; (3) manage the dynamics of difference; (4) acquire and institutionalize cultural knowledge; and (5) adapt to diversity and the cultural contexts of individuals and communities served."

The Academy of Nutrition and Dietetics (AND) is a non-governmental and professional organization that represents credentialed practitioners holding degrees in nutrition and dietetics.

The World Health Organization (WHO) is a specialized agency of the United Nations concerned with international public health. It helps develop RDAs for developing countries.

The Centers for Medicare and Medicaid is a federal agency in the United States Department of Health and Human Services (HHS) that administers Medicare, Medicaid, State Children's Health Insurance Program (SCHIP), and health insurance portability standards.

96.

Which taste preference remains throughout life and is universal to all cultures?

Sweet

Sour

Salty

Bitter

Correct answer: Sweet

Humans are born with a preference for sweet tastes that remain throughout life.

Humans are also born with a dislike of sour and bitter tastes. Salty tastes are formed several months after birth.

97.

Which of the following **best** describes the purpose of nutritional epidemiology?

To determine the relationship between dietary factors and their influence on etiology, occurrence, prevention, and treatment of disease

To express a certain quantity, amount, or range

To obtain information on processes, meaning, and more in-depth understandings

To determine the condition of a population's health influenced by intake and utilization of nutrients

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Correct answer: To determine the relationship between dietary factors and their influence on etiology, occurrence, prevention, and treatment of disease

Nutritional epidemiology: The use of epidemiological approaches to determine relationships between dietary factors and their influence on etiology, occurrence, prevention, and treatment of disease.

Quantitative: Data that is often numerical, which expresses a certain quantity, amount, or range.

Qualitative: Data collection based on text rather than numerical data; used to obtain information on processes, meaning, and more in-depth understandings.

Nutritional status: The condition of a population’s or individual's health influenced by intake and utilization of nutrients and non-nutrients.

98.

Jane, a dietitian, works at a community health center and is starting a new education program. She decided to focus on reducing risk factors for stroke, surveyed her audience about their perception of their risk of having a stroke, and decided to use the Social Cognitive Theory in her program development.

Using the DESIGN process, what is **next** in the education program development?

Write the educational objectives

Decide behaviors

Generate plans

Decide the evaluation method

Correct answer: Write the educational objectives

The 6 steps in DESIGN are:

1. *Decide behaviors (decide what health problem to address; stroke in this example)*
2. *Explore determinants (understand the motivations of the audience and identify psychosocial determinants; surveying the audience about their perceptions in this example)*
3. *Select theory-based model (choose which model will be used; Social Cognitive Theory in this example)*
4. *Indicate objectives (write the educational objectives)*
5. *Generate plans (translate the objectives and activities into a plan)*
6. *Nail down evaluations (decide on what evaluation method to use)*

99.

Which of the following does **not** have an additive as part of it's creation?

Instant oatmeal

Enriched cereal

Quick-cook grits

Orange juice with calcium

Correct answer: Instant oatmeal

Instant hot cereal is pre-cooked and then dehydrated before packaging in order to make it faster to prepare. It does not contain an additive.

Enriched cereals have nutrients as an additive in order to be "enriched". Quick-cook cereals have disodium phosphate added to make them cook faster. Orange juice with calcium has calcium added.

100.

Which United States government agency maintains the NND (National Nutrient Database)?

USDA

FDA

CDC

NCHS

Correct answer: USDA

The USDA maintains the NND, which is a resource for the nutrient content of food. The sources of this information are private industry, academic institutions, and government labs.