

University of Central Florida (UCF) HUN3011 Human Nutrition Practice Exam 2 (Sample)

Study Guide



Everything you need from our exam experts!

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Questions

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1. How do trans fats negatively impact health?
 - A. They increase HDL cholesterol levels
 - B. They reduce blood sugar levels
 - C. They can raise LDL cholesterol levels and lower HDL cholesterol
 - D. They promote muscle growth
2. What is a primary purpose of the USDA Dietary Guidelines for Americans?
 - A. To provide recipes for nutritious meals
 - B. To promote organic farming
 - C. To provide science-based recommendations for dietary patterns
 - D. To standardize food labeling
3. What is a consequence of excessive vitamin A intake?
 - A. Enhanced skin health and radiance
 - B. Toxicity can lead to symptoms such as nausea, headaches, dizziness, and even liver damage
 - C. Improved immune function and resistance to infections
 - D. No significant consequences noted
4. Which type of carbohydrate primarily provides energy?
 - A. Vitamins
 - B. Simple carbohydrates
 - C. Proteins
 - D. Minerals
5. Which sugar is known to be the sweetest and contributes to the flavor of fruits and honey?
 - A. Glucose
 - B. Fructose
 - C. Sucrose
 - D. Galactose

6. Where does the digestion of fats and lipids primarily occur?
- A. Stomach
 - B. Small intestine
 - C. Large intestine
 - D. Pancreas
7. What are starch and dietary fiber classified as?
- A. Simple carbohydrates
 - B. Complex carbohydrates
 - C. Sugars
 - D. Monosaccharides
8. Which mineral is necessary for the transport of oxygen in the blood?
- A. Calcium
 - B. Iron
 - C. Magnesium
 - D. Zinc
9. Which of the following is a key function of fat in our diet?
- A. Source of energy
 - B. Source of fiber
 - C. Source of water
 - D. Source of carbohydrates
10. What are the two classes of amino acids in terms of their necessity in the diet?
- A. Essential and non-essential
 - B. Simple and complex
 - C. Saturated and unsaturated
 - D. Complete and incomplete

Answers

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1. C
2. C
3. B
4. B
5. B
6. B
7. B
8. B
9. A
10. A

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Explanations

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1. How do trans fats negatively impact health?

- A. They increase HDL cholesterol levels
- B. They reduce blood sugar levels
- C. They can raise LDL cholesterol levels and lower HDL cholesterol
- D. They promote muscle growth

Trans fats negatively impact health primarily because they can raise levels of low-density lipoprotein (LDL) cholesterol, often referred to as "bad" cholesterol, while simultaneously lowering high-density lipoprotein (HDL) cholesterol, known as "good" cholesterol. This dual effect contributes to an increased risk of cardiovascular diseases, as higher levels of LDL cholesterol are associated with the buildup of plaque in arteries, potentially leading to heart attacks or strokes. In contrast, HDL cholesterol is beneficial as it helps remove cholesterol from the bloodstream and brings it to the liver for excretion. Understanding this harmful interaction is crucial for making informed dietary choices. Foods high in trans fats, such as partially hydrogenated oils commonly found in processed snacks and baked goods, can significantly disrupt lipid profiles and exacerbate health issues related to cardiovascular systems. Thus, a diet low in trans fats is recommended for maintaining healthy cholesterol levels and overall heart health.

2. What is a primary purpose of the USDA Dietary Guidelines for Americans?

- A. To provide recipes for nutritious meals
- B. To promote organic farming
- C. To provide science-based recommendations for dietary patterns
- D. To standardize food labeling

The primary purpose of the USDA Dietary Guidelines for Americans is to provide science-based recommendations for dietary patterns that can improve health and reduce the risk of chronic diseases. These guidelines are developed based on extensive research in nutrition and health and are intended to help individuals make informed dietary choices that lead to a balanced and healthful lifestyle. The guidelines aim to address various aspects of nutrition, including the types and amounts of foods to consume, as well as to highlight the importance of physical activity. By focusing on dietary patterns rather than individual nutrients, they offer a comprehensive approach that reflects the complexity of human eating behaviors. This guidance is crucial for public health as it informs various stakeholders, including health professionals, policymakers, and the general public, allowing for consistent and evidence-based dietary advice. It supports initiatives to improve health outcomes and reduce healthcare costs associated with diet-related diseases.

3. What is a consequence of excessive vitamin A intake?

- A. Enhanced skin health and radiance
- B. Toxicity can lead to symptoms such as nausea, headaches, dizziness, and even liver damage
- C. Improved immune function and resistance to infections
- D. No significant consequences noted

Excessive intake of vitamin A can indeed lead to toxicity, which manifests in various adverse health symptoms. The body requires vitamin A for several vital functions, including vision, immune system performance, and skin health; however, when consumed in amounts significantly higher than the recommended dietary allowances, it can result in hypervitaminosis A. Symptoms of this toxicity may include nausea, headaches, and dizziness, reflecting the body's distress due to the overload of this nutrient. Prolonged excessive consumption can lead to severe issues such as liver damage, as the liver plays a central role in metabolizing vitamins and managing their levels in the body. In contrast, other choices suggest outcomes that either imply beneficial effects or indicate a lack of any health consequences from excess intake, which misrepresents the known risks associated with vitamin A. Therefore, understanding the balance and recommended limits for vitamin intake is crucial for maintaining overall health and avoiding adverse effects from excessive supplementation.

4. Which type of carbohydrate primarily provides energy?

- A. Vitamins
- B. Simple carbohydrates
- C. Proteins
- D. Minerals

Simple carbohydrates are primarily responsible for providing energy due to their chemical structure and rapid digestion. They consist of one or two sugar units (monosaccharides and disaccharides), which the body can quickly convert into glucose, the primary source of energy for cells. Simple carbohydrates are found in foods such as fruits, honey, and sugar, which can lead to a quick spike in blood sugar levels and provide an immediate energy source. In contrast, the other options listed do not primarily serve an energetic function. Vitamins, for instance, are essential micronutrients that play critical roles in various biochemical processes but do not provide energy. Proteins can be used for energy through gluconeogenesis if carbohydrates are insufficient, yet their primary roles are in growth, repair, and maintenance of bodily tissues. Minerals are also vital for various metabolic pathways, but like vitamins, they do not directly supply energy. Thus, simple carbohydrates stand out as the most direct and efficient source of energy among the choices provided.

5. Which sugar is known to be the sweetest and contributes to the flavor of fruits and honey?

A. Glucose

B. Fructose

C. Sucrose

D. Galactose

Fructose is recognized as the sweetest naturally occurring sugar, which significantly contributes to the flavor profile of various fruits and honey. This sweetness is due to its unique molecular structure, which allows it to bind more effectively to sweet taste receptors on the tongue compared to other sugars. In fruits, fructose is often present in high concentrations, enhancing their sweetness and making them more appealing. Honey, primarily composed of fructose and glucose, derives its sweetness largely from the fructose content. This high sweetness level can also influence sugar content labeling in food products, where fructose might be used as a sweetener in many processed items. Understanding the distinct sweetness of fructose compared to other sugars, such as glucose, sucrose, and galactose, is essential in nutrition and culinary applications, as it highlights the role of different sugars in enhancing flavor and overall taste experiences.

6. Where does the digestion of fats and lipids primarily occur?

A. Stomach

B. Small intestine

C. Large intestine

D. Pancreas

The digestion of fats and lipids primarily occurs in the small intestine due to the presence of bile and pancreatic enzymes that are specifically designed to emulsify fats and break them down into smaller molecules. Bile, produced by the liver and stored in the gallbladder, is released into the small intestine and helps to break down large fat globules into smaller droplets, making them more accessible to digestive enzymes. In the small intestine, the pancreas secretes pancreatic lipase, an enzyme that is crucial for the breakdown of triglycerides into monoglycerides and free fatty acids. This process is essential for the absorption of fats through the intestinal walls into the bloodstream. The structure of the small intestine, with its villi and microvilli, also enhances nutrient absorption, including the products of lipid digestion. While the stomach does initiate the digestion of some fats through gastric lipase, the process is minimal compared to what occurs in the small intestine. The large intestine mainly focuses on the absorption of water and electrolytes and does not play a significant role in fat digestion. The pancreas is crucial for producing enzymes, but digestion itself predominantly takes place in the small intestine.

7. What are starch and dietary fiber classified as?

- A. Simple carbohydrates
- B. Complex carbohydrates
- C. Sugars
- D. Monosaccharides

Starch and dietary fiber are classified as complex carbohydrates because they are polysaccharides made up of long chains of glucose molecules. This structure allows them to serve different roles in nutrition: starch acts as an energy source, while dietary fiber contributes to digestive health and regulates blood sugar levels. Unlike simple carbohydrates, which consist of one or two sugar molecules (monosaccharides or disaccharides), complex carbohydrates contain three or more sugar units. Their complex structure means they are typically digested more slowly than simple sugars, providing sustained energy and promoting satiety. In the context of dietary nutrition, both starch and fiber are important components of a balanced diet, contributing to overall health. Understanding their classification helps in distinguishing between various types of carbohydrates and their effects on the body.

8. Which mineral is necessary for the transport of oxygen in the blood?

- A. Calcium
- B. Iron
- C. Magnesium
- D. Zinc

Iron is essential for the transport of oxygen in the blood because it is a key component of hemoglobin, the protein in red blood cells that binds oxygen. When blood is oxygenated in the lungs, iron within hemoglobin interacts with oxygen molecules, allowing the red blood cells to carry oxygen to tissues throughout the body. Without sufficient iron, the body cannot produce adequate hemoglobin, leading to reduced oxygen transport and potentially resulting in symptoms like fatigue and weakness. While calcium, magnesium, and zinc play important roles in various physiological functions, they do not have a direct role in the transport of oxygen. Calcium is crucial for bone health and muscle function, magnesium is involved in energy production and enzyme function, and zinc is important for immune function and DNA synthesis. Thus, iron stands out as the critical mineral necessary for oxygen transport specifically.

9. Which of the following is a key function of fat in our diet?

- A. Source of energy
- B. Source of fiber
- C. Source of water
- D. Source of carbohydrates

Fat plays a vital role in our diet primarily as a source of energy. It provides the most concentrated form of energy among macronutrients, yielding about 9 calories per gram compared to 4 calories per gram provided by carbohydrates and proteins. The body utilizes this energy for various physiological functions, including physical activity and maintaining body temperature. In addition to being an energy source, fats are essential for the absorption of certain fat-soluble vitamins (A, D, E, and K) and play a critical role in hormone production and cellular structure. The inclusion of healthy fats in the diet is important for overall health, as they contribute to satiety and help to regulate metabolism. Given these roles, the significance of fat as an energy source is foundational to understanding its importance in human nutrition.

10. What are the two classes of amino acids in terms of their necessity in the diet?

A. Essential and non-essential

B. Simple and complex

C. Saturated and unsaturated

D. Complete and incomplete

Amino acids are categorized into two classes based on whether they are required in the diet: essential and non-essential. Essential amino acids are those that the body cannot synthesize on its own, meaning they must be obtained through dietary sources. There are nine essential amino acids, which include histidine, isoleucine, leucine, lysine, methionine, phenylalanine, threonine, tryptophan, and valine. On the other hand, non-essential amino acids can be produced by the body, so it is not necessary to consume them through food. Examples of non-essential amino acids include alanine, aspartic acid, and glutamic acid. Understanding this classification is crucial for nutritional planning, as it highlights the importance of including a variety of protein sources in the diet to ensure adequate intake of essential amino acids, especially for individuals who may not consume animal products.

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