

Hack Your Metabolism: 9th Grade Bioavailability & Nutrition Quiz

How does your body prioritize nutrient absorption? Analyze the biochemical impact of micronutrients and metabolic pathways on your long-term health.

1. Which of the following describes the 'thermic effect of food' (TEF) and its impact on your metabolic rate?

- A. The energy required to store excess glucose as adipose tissue.
- B. The energy expended by the body to digest, absorb, and process nutrients.
- C. The drop in body temperature during periods of prolonged fasting.
- D. The heat released only when consuming spicy foods like capsaicin.

2. Fat-soluble vitamins such as A, D, E, and K are stored in the body's liver and fatty tissues, meaning they do not need to be consumed as frequently as water-soluble vitamins.

- A. True
- B. False

3. The process of _____ refers to the degree to which a nutrient is absorbed from the digestive tract and used for various physiological functions.

- A. Bioavailability
- B. Mastication
- C. Peristalsis
- D. Glycolysis

4. High-density lipoprotein (HDL) is often termed 'good cholesterol' because its primary physiological role is to:

- A. Transport glucose to the muscle cells for immediate anaerobic respiration.
- B. Clog arterial walls to prevent blood leakage during injury.
- C. Carry excess cholesterol from the tissues back to the liver for disposal.
- D. Act as a primary catalyst for the synthesis of Vitamin C.

5. Essential amino acids are those that the human body can synthesize on its own from other carbon and nitrogen sources.

- A. True
- B. False

6. Consuming _____ carbohydrates, such as those found in lentils or oats, leads to a slower rise in blood glucose compared to simple sugars.

- A. Refined
- B. Complex
- C. Saturated

Name: _____

Date: _____

D. Synthetic

7. Which of these is a likely consequence of a diet consistently lacking in dietary fiber?

- A. Increased efficiency of the small intestine's nutrient absorption.
- B. Rapid decrease in resting heart rate.
- C. Altered gut microbiome and increased risk of diverticular disease.
- D. Improved regulation of insulin response to high-sugar foods.

8. The _____ is a numerical scale used to indicate how quickly a carbohydrate-containing food raises blood glucose levels.

- A. Basal Metabolic Rate
- B. Body Mass Index
- C. Glycemic Index
- D. Amino Acid Score

9. Electrolytes like magnesium and potassium are minerals that carry an electric charge and are vital for muscle contraction and nerve signaling.

- A. True
- B. False

10. When assessing a food label, why should a consumer be wary of 'Daily Value' (DV) percentages based on a 2,000-calorie diet?

- A. Individual caloric needs vary significantly based on age, sex, and activity level.
- B. The FDA does not actually regulate the percentages listed on the labels.
- C. Most teenagers require exactly 4,000 calories per day, making the label useless.
- D. The percentages refer to the weight of the food, not its nutritional content.