Understanding SDA and Metabolic Rate

Nutrition Science · Answer Key · 10 Questions

1. What is the primary definition of SDA (Specific Dynamic Action)?

A) The energy used for physical exercise

B) The energy required to digest, absorb, and process nutrients

C) The minimum energy needed to stay alive at rest

D) The total caloric content of a meal

2. Which macronutrient requires the highest amount of metabolic energy to process?

A) Carbohydrates

B) Fats

C) Proteins

D) Fiber

3. What is BMR (Basal Metabolic Rate)?

A) The energy burned during intense exercise

B) The heat generated during sleep

C) The minimum energy needed for basic life functions at rest

D) The energy used to store body fat

4. Why does protein consumption increase body heat production?

A) Because it contains toxic chemicals

B) Because deamination and protein synthesis require significant metabolic energy

C) Because it is stored as pure fat

D) Because it is easier to digest than carbohydrates

5. What happens to excess amino acids that the body cannot store?

A) They are converted into glucose instantly

B) They are excreted as pure nitrogen

C) They undergo deamination to remove the nitrogen-containing amino group

D) They are converted into vitamins

6. Approximately what percentage of energy from protein is used for TEF?

A) 0-3%

B) 5-10%

C) 20-30%

D) Up to 30%

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7. How do fats compare to proteins in terms of TEF (Thermic Effect of Food)?

A) Fats have a higher TEF

B) Fats have a lower TEF

C) Fats have the same TEF

D) Fats cannot be metabolized

8. Which factor has the most significant impact on the total TEF of a meal?

A) The time of day the meal is eaten

B) The macronutrient composition and caloric content

C) The number of meals eaten per day

D) The temperature of the food

9. What is one physiological benefit of the heat produced by SDA?

A) It helps maintain body temperature in colder climates

B) It reduces the need for oxygen

C) It prevents the storage of carbohydrates

D) It slows down heart rate

10. Does meal frequency significantly affect total daily TEF?

A) Yes, it increases it significantly

B) No, provided total caloric intake is equal

C) Yes, but only for high-fat meals

D) No, it decreases it

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