

# Advanced Dietetics: Human Physiology and Health

Dietetics · Answer Key · 8 Questions

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**1. Which micronutrient is essential for the synthesis of thyroxine and triiodothyronine, crucial hormones regulating metabolism?**

- A) Selenium
- B) Iron
- C) Iodine**
- D) Zinc

**2. The absorption of which fat-soluble vitamin is significantly impaired in individuals with cystic fibrosis due to pancreatic exocrine insufficiency?**

- A) Vitamin A
- B) Vitamin D
- C) Vitamin E
- D) Vitamin K**

**3. Which amino acid is a precursor for nitric oxide (NO) production, a potent vasodilator involved in cardiovascular health?**

- A) Glycine
- B) Arginine**
- C) Proline
- D) Lysine

**4. A deficiency in which B vitamin can lead to megaloblastic anemia due to impaired DNA synthesis, affecting rapidly dividing cells like red blood cells?**

- A) Pyridoxine (B6)
- B) Thiamine (B1)
- C) Riboflavin (B2)
- D) Folate (B9)**

**5. The metabolic pathway of gluconeogenesis primarily occurs in which organ, converting non-carbohydrate precursors into glucose?**

- A) Skeletal Muscle
- B) Adipose Tissue
- C) Liver**
- D) Brain

**6. Which type of dietary fiber, when fermented by gut microbiota, produces short-chain fatty acids (SCFAs) like butyrate, which are a primary energy source for colonocytes?**

A) Lignin

**B) Pectin**

C) Cellulose

D) Resistant Starch

**7. The enzyme lipoprotein lipase (LPL) plays a critical role in the hydrolysis of triglycerides from circulating lipoproteins, primarily in which type of tissue?**

A) Liver

**B) Skeletal Muscle and Adipose Tissue**

C) Kidneys

D) Central Nervous System

**8. Which mineral is a cofactor for over 300 enzymes in the human body, including those involved in protein synthesis, wound healing, and immune function?**

A) Calcium

B) Magnesium

C) Copper

**D) Zinc**