

## Metabolism Quiz Answer Key PDF

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#### What is the primary energy carrier in cells?

- A. NADH
- B. ATP ✓**
- C. FADH<sub>2</sub>
- D. ADP

#### Which metabolic process involves the breakdown of glucose to produce energy?

- A. Lipolysis
- B. Glycolysis ✓**
- C. Gluconeogenesis
- D. Photosynthesis

#### Which hormone is primarily responsible for lowering blood glucose levels?

- A. Glucagon
- B. Thyroxine
- C. Insulin ✓**
- D. Cortisol

#### What factors can influence basal metabolic rate? (Select all that apply)

- A. Gender ✓**
- B. Temperature ✓**
- C. Stress levels ✓**
- D. Blood type

#### Which processes are involved in energy production in cells? (Select all that apply)

- A. Glycolysis ✓
- B. Krebs cycle ✓
- C. Electron Transport Chain ✓
- D. Photosynthesis

**Which of the following are considered metabolic disorders? (Select all that apply)**

- A. Diabetes ✓
- B. Hyperthyroidism ✓
- C. Asthma
- D. Metabolic syndrome ✓

**Explain the role of ATP in cellular metabolism.**

**ATP serves as the primary energy currency in cells, providing energy for various biochemical reactions and processes.**

**Describe how enzymes function as catalysts in metabolic reactions.**

**Enzymes lower the activation energy of reactions, increasing the rate at which they occur without being consumed in the process.**

**What is the main function of enzymes in metabolism?**

- A. Store energy
- B. Act as catalysts ✓
- C. Provide structural support
- D. Transport nutrients

**Which organ is primarily responsible for regulating basal metabolic rate?**

- A. Liver
- B. Pancreas
- C. Thyroid gland ✓
- D. Adrenal gland

**Which metabolic pathway is responsible for the synthesis of glucose from non-carbohydrate sources?**

- A. Glycolysis
- B. Lipolysis
- C. Gluconeogenesis ✓**
- D. Krebs cycle

**What is the process called where the body adapts to changes in environment and diet?**

- A. Catabolism
- B. Anabolism
- C. Adaptive Thermogenesis ✓**
- D. Homeostasis

**Which of the following factors does NOT influence metabolic rate?**

- A. Age
- B. Muscle mass
- C. Eye color ✓**
- D. Activity level

**Which of the following are types of metabolic pathways? (Select all that apply)**

- A. Catabolism ✓**
- B. Anabolism ✓**
- C. Photosynthesis
- D. Glycolysis ✓**

**Which hormones play a critical role in regulating metabolism? (Select all that apply)**

- A. Insulin ✓**
- B. Glucagon ✓**
- C. Thyroxine ✓**
- D. Melatonin

**Which of the following are components of the citric acid cycle? (Select all that apply)**

**A. Acetyl-CoA ✓**

**B. NADH ✓**

C. Pyruvate

**D. FADH2 ✓**

**Discuss the impact of exercise on metabolic rate and energy expenditure.**

**Exercise increases metabolic rate by enhancing energy expenditure, promoting muscle growth, and improving efficiency of metabolic pathways.**

**How does the body regulate blood glucose levels through hormonal control?**

**The body uses insulin to lower blood glucose levels and glucagon to raise them, maintaining homeostasis.**

**What is the significance of the Krebs cycle in cellular respiration?**

**The Krebs cycle generates electron carriers (NADH and FADH<sub>2</sub>) that are crucial for ATP production in the electron transport chain.**

**Explain how genetic factors can influence an individual's metabolism.**

**Genetic factors can determine enzyme efficiency, hormone levels, and metabolic rate, affecting how efficiently the body processes nutrients.**