

Chapter 17 Nutrition and Metabolism

Review of Chapter Objectives

1. Define metabolism and explain why cells need to synthesize new organic structures.
2. Describe the basic steps in glycolysis, the TCA cycle, and the electron transport system.
3. Describe the pathways involved in lipid metabolism.
4. Discuss protein metabolism and the use of proteins as an energy source.
5. Discuss nucleic acid metabolism.
6. Explain what constitutes a balanced diet and why it is important.
7. Discuss the functions of vitamins, minerals, and other important nutrients.
8. Describe the significance of the caloric value of foods.
9. Define metabolic rate and discuss the factors involved in determining an individual's metabolic rate.
10. Discuss the homeostatic mechanisms that maintain a constant body temperature.

Search Terms:

- cholesterol
- nutrition
- catabolism
- high density lipoproteins
- low density lipoproteins
- trace minerals
- fat soluble vitamins
- water soluble vitamins
- basal metabolic rate
- hypothermia

Ch 17. Nutrition & Metabolism - Important Ideas/Questions

1. Why must neurons be provided with a reliable supply of glucose?
2. In resting skeletal muscles, a significant portion of the metabolic demand is met through the _____ ?
3. What is the difference between aerobic respiration and anaerobic respiration?
4. For each glucose molecule converted to 2 pyruvates, the anaerobic reaction sequence in glycolysis provides a net gain of _____ molecules of ATP for the cell
5. For each glucose molecule processed during aerobic cellular respiration the cell gains _____ molecules of ATP
6. Although small quantities of lipids are normally stored in the liver, most of the synthesized triglycerides are bound to what?
7. Why is protein catabolism an impractical source of quick energy ?
8. The first step in amino acid catabolism is the removal of the _____ ?
9. Why are minerals, vitamins, and water classified as essential nutrients?
10. The "trace" minerals found in extremely small quantities in the body include :
11. The greatest amount of the daily water intake is obtained by?
12. What is the minimum resting energy expenditure of an awake, alert person called?
13. What is scurvy?

14. What is an individual's basal metabolic rate?

15. What must happen to the large vitamin B12 molecule before it can be absorbed?

16. What is Hypervitaminosis? Which vitamins does this usually involve and which rarely?