

Metabolism

Required:

1. Summarize your understanding of carbohydrate metabolism by defining and discussing glycogenesis, glycogenolysis, gluconeogenesis.
2. Explain the metabolic pathways utilized to produce ATP from lipids: lipolysis and beta-oxidation.
3. Describe the conditions which result in keto-acidosis, especially in insulin-deficient diabetics.
4. Explain the methods utilized for production of ATP from proteins by discussing transamination and oxidative deamination reactions.
5. Discuss the catabolic-anabolic steady state of the body by describing the interconversions of proteins, fats, and carbs from food intake.
6. Describe the absorptive and post absorptive states.
7. Describe the hormonal control of the absorptive and post absorptive states (specifically the effects of insulin, glucagon and epinephrine).
8. Describe the role of the liver, adipose tissue and muscle in the absorptive and post absorptive states.
9. Describe the structure of LDLs and HDLs and describe how each functions in cholesterol metabolism.
10. Define *basal metabolic rate (BMR)* and describe how it is measured.
11. List the factors that affect the BMR.
12. Define TMR total metabolic rate and compare and contrast it to BMR.
13. Describe the mechanisms of heat gain and loss by the body.
14. Describe the mechanisms for regulation of body temperature.