

Glucose Metabolism

Chapter 14 Learning Objectives

Page 382 - 412 without strict attention to the each reaction mechanism. Look at the CD it is interesting and helpful. *By the end of this chapter you should be able to:*

- 1) Relate the glycolytic pathway in the role of generating energy. What are the various endpoints. Why are they different?
- 2) Describe for each of the key glycolytic enzymes:
 - How can a key enzyme can be identified
 - The method by which these enzymes are regulated
 - Relate the thermodynamics of each key enzyme in relation to its importance in the pathway.
- 3) Know the different reactions that occur during glycolysis. What is the important points for each of the enzymes in glycolysis.
- 4) Recognize the glycolytic intermediates based on their nomenclature and basic structure.
- 5) Know each of the enzymes that catalyze the reactions in glycolysis
- 6) List the important characteristics distinguishing glucokinase from hexokinase, as well as the characteristics that are common to both of them.
- 7) Know what the difference/relationship is between the R and T conformations of PFK. How are each regulated.
- 8) Understand the regulation of the isozymes of pyruvate kinase activity.
- 9) Identify the site of a substrate level oxidative phosphorylation in the glycolytic pathway.
- 10) Identify those reactions along the glycolytic pathway which are considered irreversible. How is glycolysis regulated?
- 11) Relate the metabolism in glucose in red vs. white muscle tissues.