

## **Glycogen Metabolism and Gluconeogenesis**

### Chapter 15 Learning Objectives

*By the end of the chapter you should be able to:*

#### **Gluconeogenesis**

- 1) Describe the physiological significance of gluconeogenesis.
- 2) Know the precursors of glucose and their entry points.
- 3) Understand the thermodynamic considerations of glycolysis and gluconeogenesis.
- 4) Understand why there is a need for such a pathway.
- 5) List the irreversible reactions of glycolysis and the steps that gluconeogenesis bypasses them.
- 6) Identify the organs that carry out gluconeogenesis and where in the cell this pathway occurs.
- 7) Understand the means that the key steps in gluconeogenesis are regulated.
- 8) Understand the general manner in which biotin is involved in carrying one carbon units.
- 9) Know the role of acetyl CoA in pyruvate carboxylase and gluconeogenesis.
- 10) Understand the confusing bifunctional enzyme and what the regulation of glycolysis and gluconeogenesis.
- 11) Understand the means the role of insulin, glucagon and epinephrine play in gluconeogenesis.