

CHAPTER OVERVIEW

13: Energy Metabolism

Metabolism is the set of life-sustaining chemical transformations within the cells of living organisms. The three main purposes of metabolism are the conversion of food/fuel to energy to run cellular processes, the conversion of food/fuel to building blocks for proteins, lipids, nucleic acids, and some carbohydrates, and the elimination of nitrogenous wastes. These enzyme-catalyzed reactions allow organisms to grow and reproduce, maintain their structures, and respond to their environments. Metabolism is usually divided into two categories: **catabolism**, the breaking down of organic matter, for example, by cellular respiration, and **anabolism**, the building up of components of cells such as proteins and nucleic acids. Usually, breaking down releases energy and building up consumes energy.

[13.0: Prelude to Energy Metabolism](#)

[13.1: ATP- the Universal Energy Currency](#)

[13.2: Stage I of Catabolism](#)

[13.3: Overview of Stage II of Catabolism](#)

[13.4: Stage III of Catabolism](#)

[13.5: Stage II of Carbohydrate Catabolism](#)

[13.6: Stage II of Lipid Catabolism](#)

[13.7: Stage II of Protein Catabolism](#)

[13.E: Energy Metabolism \(Exercises\)](#)

[13.S: Energy Metabolism \(Summary\)](#)

Template:HideTOC

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