

# What molecule provides long-term energy storage for animals

Glycogen, a polymer of glucose, is a short-term energy storage molecule in animals (Figure 9.9.1 9.9. 1). When there is plenty of ATP present, the extra glucose is converted into glycogen for storage. Glycogen is made and stored in the liver and muscle. Glycogen will be taken out of storage if blood sugar levels drop.

Cells store energy for long-term use in the form of lipids called fats (or triglycerides). Lipids also provide insulation from the environment for plants and animals (Figure 2.15 ). For example, they help keep aquatic birds and mammals dry because of their water-repelling nature.

Adenosine triphosphate (ATP), energy-carrying molecule found in the cells of all living things. ATP captures chemical energy obtained from the breakdown of food molecules and releases it to fuel other cellular processes. Learn more about the structure and

Cells use fat and starch for long-term energy storage instead of ATP molecules because ATP (adenosine triphosphate) is a molecule that provides immediate energy to the cell. It is a short-term energy source that is constantly being utilized and regenerated in the cell to support essential cellular activities.

Glycogen, a polymer of glucose, is a short-term energy storage molecule in animals. When there is adequate ATP present, excess glucose is converted into glycogen for storage. Glycogen is made and stored in the liver and muscle.

In this section we trace the major steps in the breakdown, or catabolism, of sugars and show how they produce ATP, NADH, and other activated carrier molecules in animal cells. We concentrate on glucose breakdown, since it dominates energy production in

Triglycerides--made from the bonding of glycerol and three fatty acids--are a form of long-term energy storage in animals. Animals can make most of the fatty acids they need. Triglycerides can be both made and broken down through parts of the glucose catabolism pathways.

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