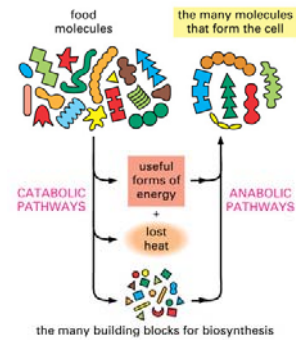


Introduction to Metabolism

Barbara Moreland



Overview of Metabolism



Source: Essential Cell Biology, Alberts, Bray, Johnson, Hopkin, Lewis, Raff, Roberts & Walter
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Definition

Series of enzyme reactions within cells for converting fuel molecules into 'useful energy'

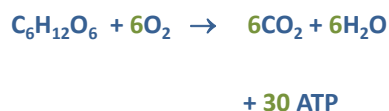
The enzyme reactions of synthesis/breakdown/interconversion of essential biomolecules

Metabolism

Catabolism	Anabolism
names end in 'lysis'	names end in 'genesis'
glycolysis	gluconeogenesis
lipolysis	lipogenesis
glycogenolysis	glycogenesis
generate ATP & NADH (mitochondrial)	Use ATP, GTP, UTP mostly in cytosol

Integration

Pathways of glycolysis and TCA cycle act together to convert glucose to CO₂



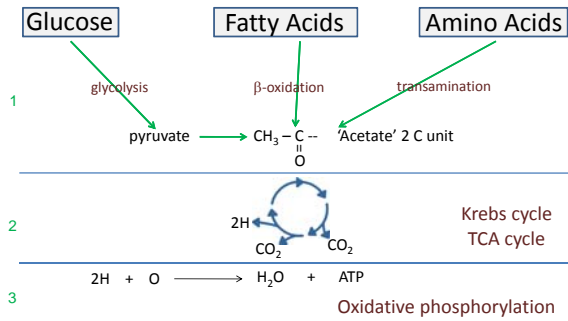
Provide energy for tissues such as muscle, kidney and brain

Summary Diagrams

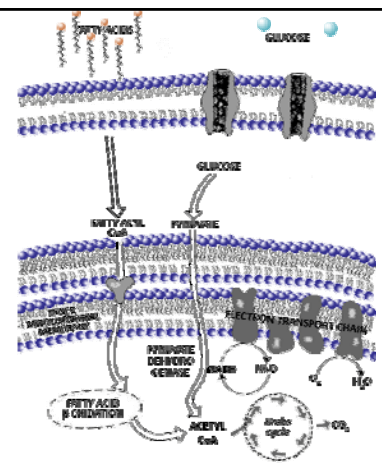
Biochemistry text books show summary diagrams of metabolic pathways with [links](#) to other main metabolic processes

Cell Biology textbooks show summary diagrams with the **cellular location** of the main metabolic pathways

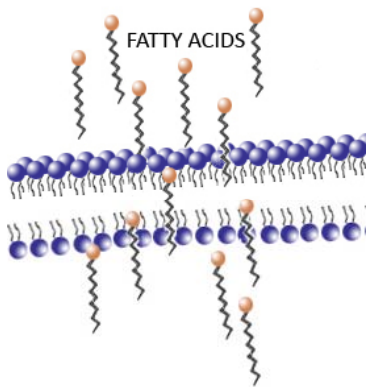
Catabolism of sugars, fats & amino acids occurs in 3 stages



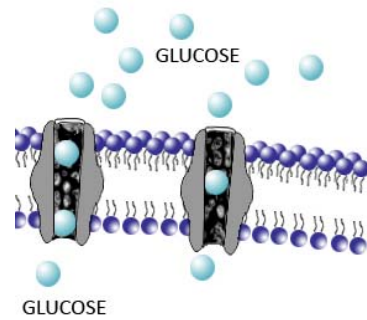
Cell Structure



Cell Structure



Cell Structure



Cell Structure

