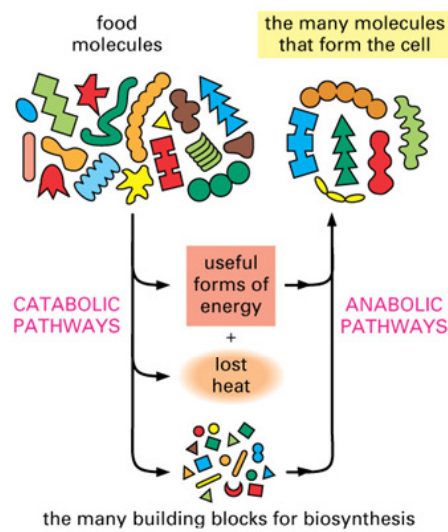


Introduction to Metabolism

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

Integration

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



+ 30 ATP

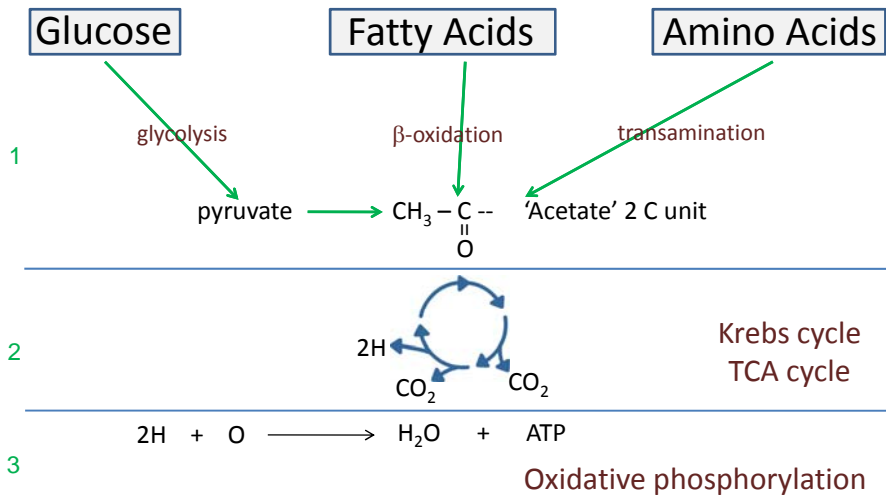
Provide energy for tissues such as muscle, kidney and brain

Summary Diagrams

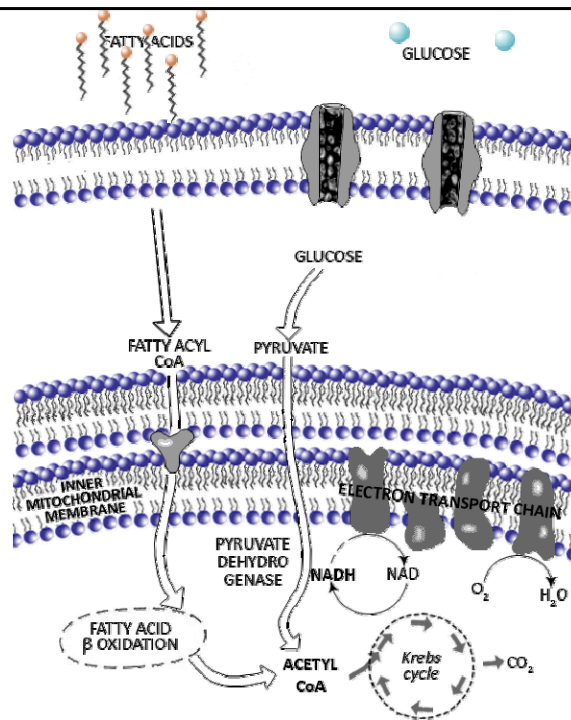
Biochemistry text books show summary diagrams of metabolic pathways with **links** to other main metabolic processes

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

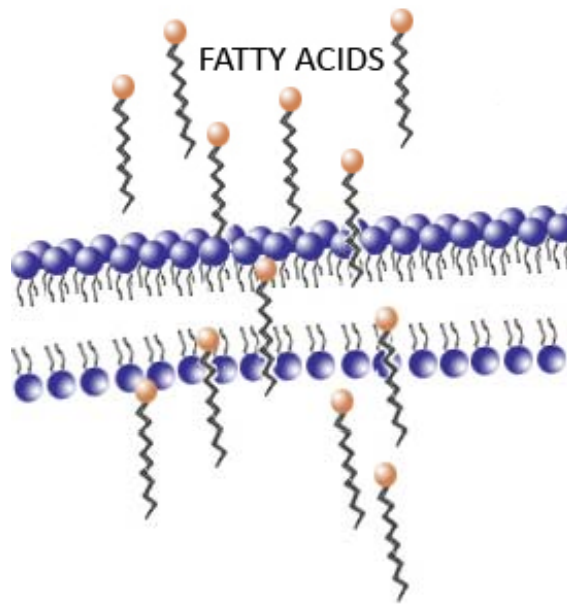
Catabolism of sugars, fats & amino acids occurs in 3 stages



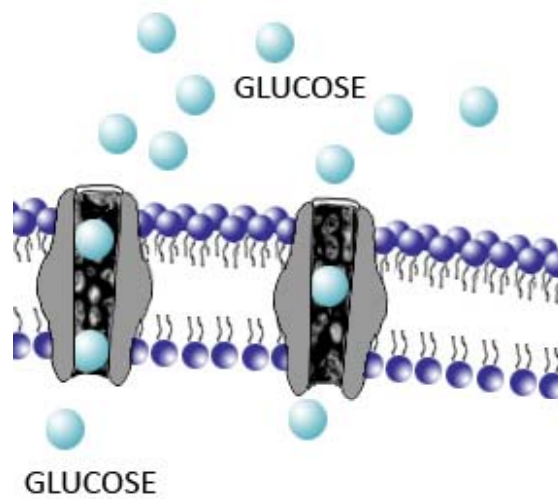
Cell Structure



Cell Structure



Cell Structure



Cell Structure

