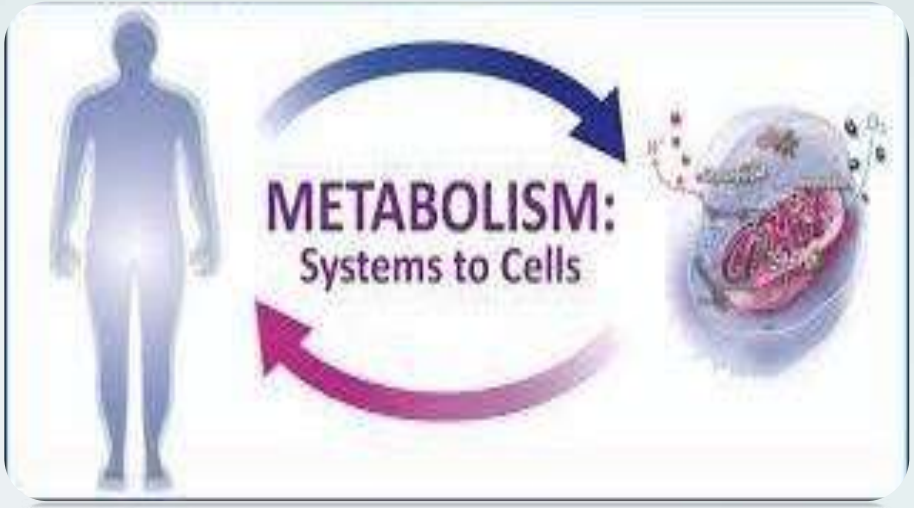


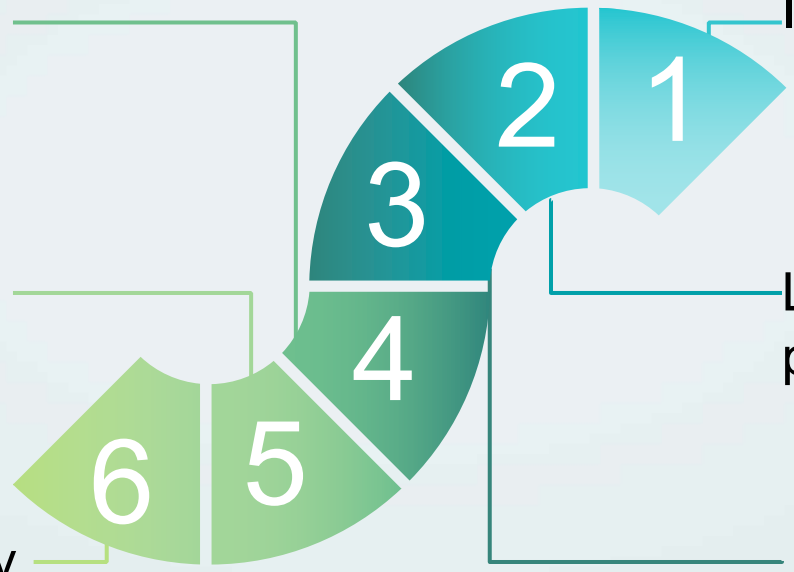
METABOLIC PATHWAYS

RAGHAD ALOBEDI

YASIN ALAA

NOOR ALMUKASABY

Objectives



1. Introduction
2. List types of metabolic pathways
3. Discuss anabolic pathway and their examples
4. Discuss catabolic pathway and their examples
5. Discuss Amphibolic pathway and their examples
6. Summary

Introduction

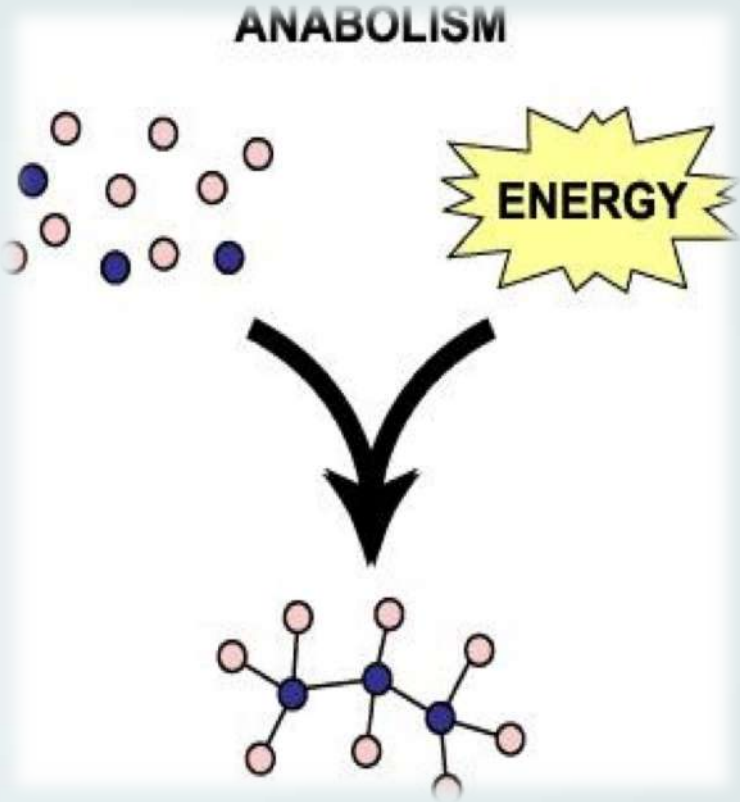
The term 'metabolism' comes from the Greek word metabole, which means change. It refers to the total of an organism's chemical reactions. A metabolic pathway is a series of steps found in biochemical reactions that help convert molecules or substrates, such as sugar, into different, more readily usable materials.

Types of metabolic pathways

- Anabolic pathway
- Catabolic pathway
- Amphibolic pathway

ANABOLIC PATHWAY

Anabolic reactions, or biosynthetic reactions, synthesize larger molecules from smaller constituent parts, using ATP as the energy source for these reactions. Anabolic reactions build bone, muscle mass, and new proteins, fats, and nucleic acids.

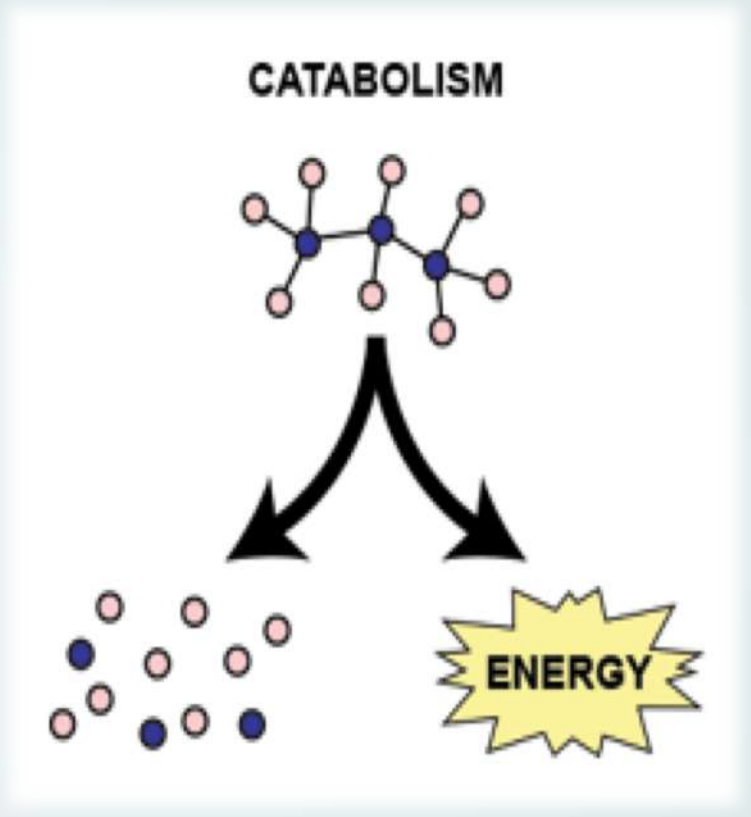


The examples of anabolic reactions

Anabolic reactions require an input of energy to synthesize complex molecules from simpler ones.
Synthesizing sugar from CO_2 is one example.
Other examples are the synthesis of large proteins from amino acid building blocks, and the synthesis of new DNA strands from nucleic acid building blocks.

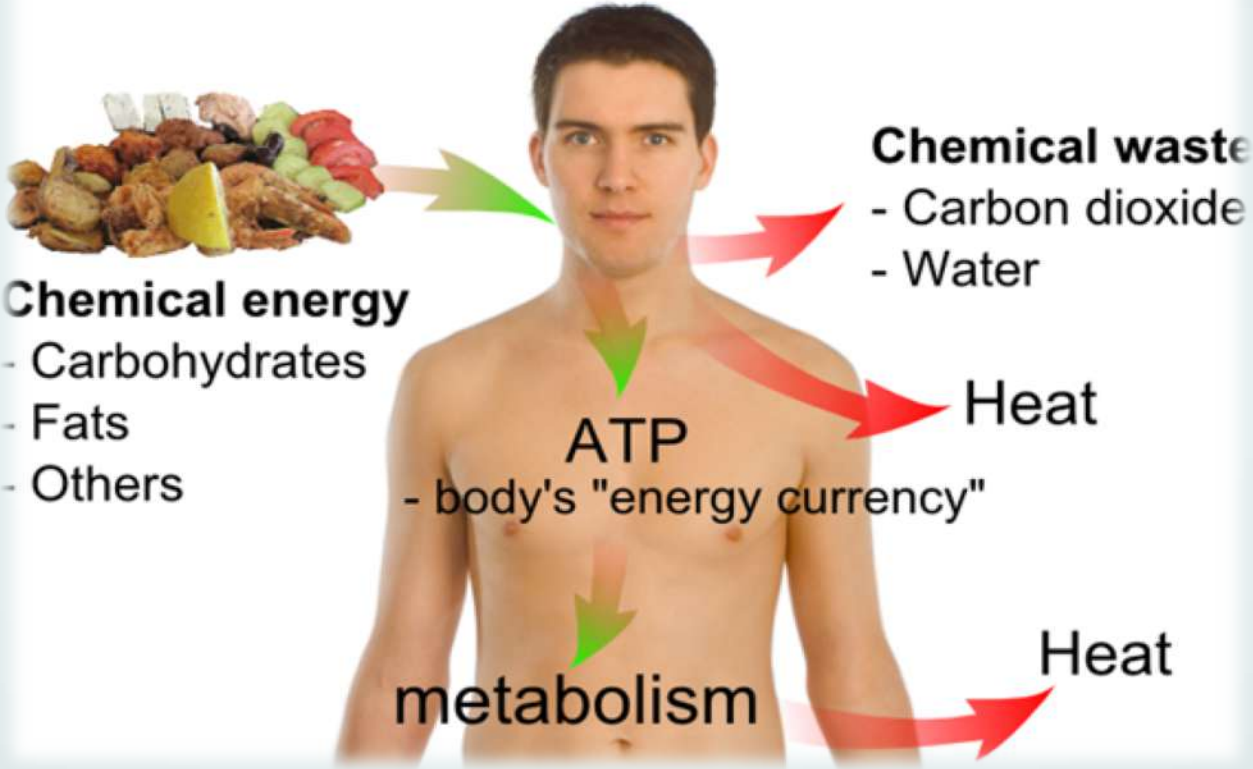
CATABOLIC PATHWAY

catabolic this type of pathway releases energy and is used to break down large molecules into smaller ones (degradation).



Basic overview of

Energy and human life

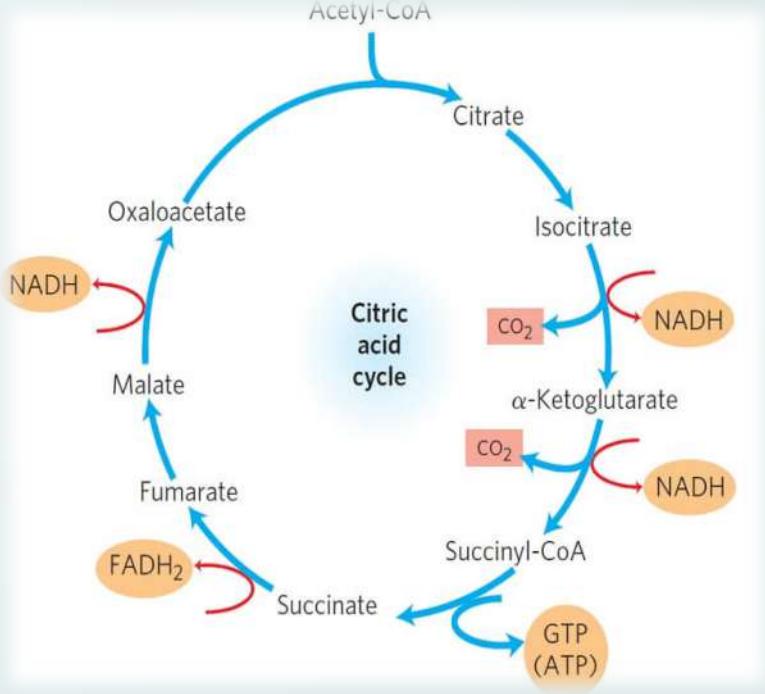


AMPHIBOLIC PATHWAY

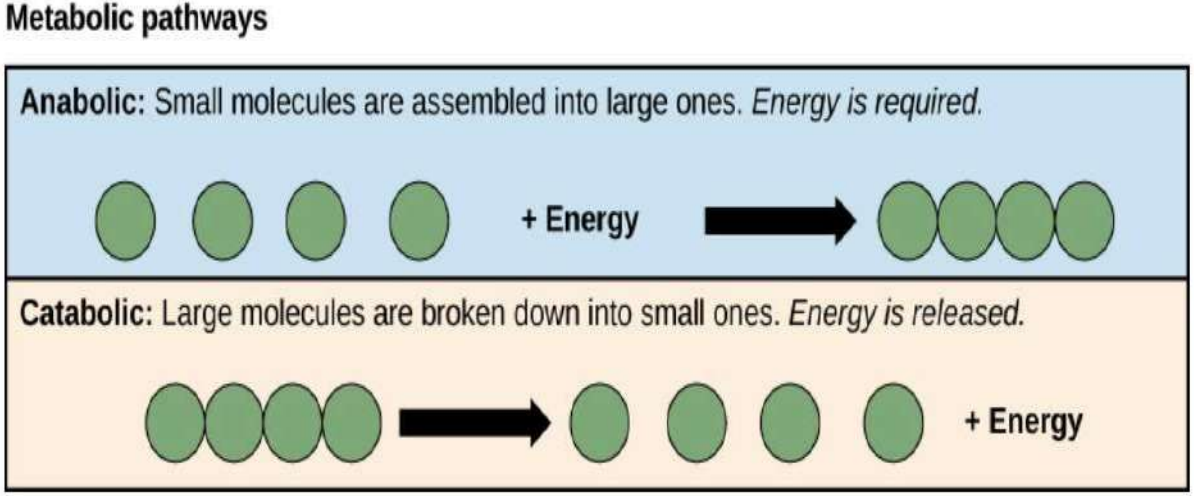
Amphibolic pathways are seen at cross-roads of metabolism, where both anabolic and catabolic pathways are linked.

The examples of amphibolic reactions

An important example of an amphibolic pathway is the Krebs cycle, which involves both the catabolism of carbohydrates and fatty acids and the synthesis of anabolic precursors for amino-acid synthesis (e.g. α-ketogluturate and oxaloacetate).



SUMMARY



Amphibolic pathways are seen at cross-roads of metabolism, where both anabolic and catabolic pathways are linked.

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THANKS!