

# Lipids as an energy source

The utilization of lipids for energy production takes place in three basic phases:

1. **Lipid mobilization** - hydrolysis of TAG to MK and glycerol and their transport blood.
2. **Activation of MK** in the cytosol and **their transport** into the matrix mitochondria.
3.  **$\beta$ -oxidation** - breaking down MK into acetyl~CoA, which enters the Krebs cycle, or ketone bodies are formed from it.

## Lipid mobilization - lipolysis

The mobilization of stored lipids is enzymatically ensured by **hormone-sensitive lipase'** (*HSL*). It catalyzes the reaction:



The released fatty acids bind to *serum albumin*, which transports them to their destination (e.g. the liver). Glycerol is transported freely dissolved in plasma.

## Regulation of lipolysis

As the name suggests, the enzyme is under strict hormonal control. Its activity is stimulated by the ``phosphorylation of its molecule. *Insulin as an anabolic hormone causes its **inhibition**, counterregulatory hormones (glucagon, catecholamines) or thyroid hormones on the contrary **activate** it.*

## Reference

- ws:Lipidy jako zdroj energie