

# Biological principles of energy metabolism

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I will discuss mammalian energy metabolism, which is classically considered as a balance of energy intake, absorption, storage, and expenditure. Nowadays, the genetic makeup of humans exposed to environments rich in high caloric, ultra-processed foods has led to a rise in obesity, as every second person in Germany is overweight. In my presentation, I will highlight how we use indirect calorimetry to study biological principles of energy expenditure in preclinical animal models, including the molecular basis of adaptive thermogenesis and exercise.