

ABSTRACT:

The relationship between metabolic rate and animal body size of the animal has been studied for more than hundred years. Recently, attention of scientists moved from the interspecific to the intraspecific level. The work focuses on the intraspecific scaling of metabolism. When plotting the metabolic rate against body mass during ontogeny the resulting line often exhibits one or more breaks. Why these breaks (and thus reduction the metabolic rate) occur hasn't been fully explained. It is assumed that can be due to certain factors that affect an individual during development. Some of these factors came from the most famous of several hypotheses attempting to explain the scaling of metabolic rate. These hypotheses include the Metabolic Theory of Ecology (MTE), the Metabolic Level Boundaries (MLB), the Cell model and the Dynamic Energy Budget (DEB) hypothesis. There are several factors that could affect individuals during ontogeny. These include internal factors, which result from the internal processes within the body. These factors are often interrelated with each other in different ways; therefore, it is unlikely to choose only one particular factor which affects metabolic rate. The most frequently studied factors are changes of cell size and changes in the proportion of metabolically active organs. The aim of this thesis is to summarize knowledge about changes in metabolic rate in animals during ontogeny and point to the main factors affecting metabolic scaling at the intraspecific level.