



Fast growth and aggressive personalities: implications for the metabolic rate of fishes

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What determines the metabolic rates of fishes? During the past decade, there has been considerable research into the intra-specific variability in the metabolic rates in fish species ranging from guppies to salmon. Differences in the standard metabolic rate (SMR) have been used as indicators of behavioural phenotypes, suggesting that high SMR individuals are more combative and more risk-prone. Our measurements of MO_2 in rainbow trout and Atlantic salmon have not been able to show similar correlations. In contrast, we have shown that routine metabolism, understandably so, can vary depending on personality. It might be difficult to envisage how personality alone could influence the true SMR unless associated with underlying physiological changes. To test how oxygen requirements for tissue maintenance may be influenced by food availability, we measured SMR in rainbow trout on different growth trajectories. This revealed that growth rate, SMR, and relative mass of the digestive tissues, are strongly correlated. These results do not explain all variability but provide some insight into the possible determinants of SMR in fishes.

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Seminar room at Zoophysiology (1131-127)