

Supplementary Material

Effect of Exercise and Calorie Restriction on Tissue Acylcarnitines, Tissue Desaturase Indices, and Fat Accumulation in Diet-Induced Obese Rats

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Estimated energy cost of treadmill running

In the current study, the energy expenditure of treadmill running by indirect calorimetry was not explicitly measured. An approximate estimate of the energy cost of exercise was made using the oxygen cost of treadmill exercise reported in literature²⁸. In resting state, O₂ consumption in 4 month old Fischer-F344 rats was found to be 28.6 ml kg⁻¹ min⁻¹, while O₂ consumption during horizontal (0% grade) treadmill running at 20 m min⁻¹ was 55.32 ml kg⁻¹ min⁻¹, which translates to an extra O₂ cost of running of 26.72 ml kg⁻¹ min⁻¹. Each liter of O₂ consumption corresponds to the generation of approximately 5 kcal. The mean body weight of EX1 and EX2 cohorts prior to the start of the intervention was 0.365 kg. The EX1 and EX2 cohorts were put through 30 mins and 60 mins of treadmill running, respectively, at 20 m min⁻¹ for 5 days a week, for 4 weeks. Hence the estimated daily energy expenditures due to treadmill running in EX1 and EX2 cohort are 1.04 kcal and 2.08 kcal, respectively. Additionally, increases in the basal metabolic rate, exercise-induced dietary thermogenesis and anticipatory energy consumption prior to the start of the exercise may contribute to energy expenditure in exercise-trained rats.