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Dietary-induced thermogenesis as influenced by meal frequency and gender in rats

Thermogenese und Häufigkeit der Mahlzeiten

Aim

The purpose of the study was to elucidate the relationship between meal frequency and the thermic effect of meal in rats.

Materials and methods

The study was conducted in 5 male Wistar rats with an average body weight of 247 g and 5 female Wistar rats with average body weight of 180 g. Animals were fed ad libitum a commercial stock diet.

Rats were given either 4 g of the diet as a single large meal or 2 small equal meals (2g/meal). Measurements of gas exchange was performed twice for each rat in an open-circuit animal respiratory chamber. The rate of carbon dioxide production was measured with the aid of a carbon dioxide analyzer - UNOR 6N (Maihak, Germany) before and immediately after animals were fed.

Conclusions

Results obtained in this study indicated that

1. Diet given in 2 small equal meals induced a higher thermogenesis than when given as a large single meal.
2. Dietary-induced thermogenesis was relatively higher in male rats compared to female young adult rats.