

Brief Report

Comparison of dietary preferences in mice and rats during sedentary and exercise periods

Atsuko KOIKE ^{*1}, Naohiro NARITA ^{*2}, Shin TERADA ^{*1, *2}

^{*1} Department of Life Science, Graduate School of Arts and Science, The University of Tokyo

^{*2} Department of Integrated Science, College of Arts and Science, The University of Tokyo

ABSTRACT

【Aim】

Previous studies have suggested that mice and rats, which are widely used in basic research on sports nutrition, have different preferences for high-fat diets during exercise periods. The purpose of this study was to compare the dietary preferences of mice and rats directly using the same dietary and exercise protocols.

【Method】

Male 7-week-old ICR mice and SD rats were individually housed and given a choice between a normal diet and a high-fat diet for 15 days. All the mice and rats were subjected to a swimming exercise for 10-90 min on days 6 to 10. Their consumption of each diet was recorded every day.

【Result】

The mice preferred a high-fat diet over a normal diet throughout the intervention period. In addition, their total energy intake was decreased significantly during the exercise period. On the other hand, rats avoided a high-fat diet during both the sedentary and exercise periods, and their total energy intake did not change throughout intervention period.

【Conclusion】

These results suggest that even if mice and rats are fed the same diets, they may have different dietary preferences. Furthermore, the same swimming exercise affected energy intake differently in mice and rats.

Keywords: laboratory animals, food intake, dietary preference, swimming exercise, high-fat diet