

A small-N study of body weight during free-feeding in the brushtail possum (*Trichosurus vulpecula*)

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Abstract

Animals in captivity can develop physiological characteristics such as obesity that could negatively affect their health. In the captive brushtail possum (*Trichosurus vulpecula*), it is unknown what effect long-term free-feeding has on body weight. In this study, which took place over 12 months, three possums were fed according to a free-feeding regime. Food intake was measured daily, and the possums were weighed every four days. The possums all gained weight but showed bouts of stable body weights across the year. Stability was evaluated using mathematical models. It was concluded that long-term free-feeding is not recommended for animals-in-waiting for use in operant experiments to mitigate weight gain due to overeating.

Keywords: Brushtail possum, *Trichosurus vulpecula*, free-feeding, captive animals

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