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The utility of voluntary weighing in captive group-living rhesus macaques (*Macaca mulatta*)

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Abstract

Bodyweight is an important health and welfare indicator for captive non-human primates (NHPs). Bodyweight can be measured during routine handling procedures, which cause stress. Alternatively, animals can be trained to step onto a scale, but training success varies greatly between individuals. Being able to weigh animals regularly without having to handle or train them is thus desirable for monitoring animal health and welfare. This study investigates the utility, ie the participation, reliability and time investment, of voluntary weighing in captive NHPs living in large social groups. Subjects of the study were 92 rhesus macaques (*Macaca mulatta*) housed in four social groups at the Biomedical Primate Research Centre in Rijswijk, The Netherlands. A scale was placed in their home enclosure during several sessions. Individuals were unwilling to step onto an unbaited scale. When likeable food items were used to attract individuals to the scale, 68% of them stepped onto the scale. Age and dominance rank did not affect stepping onto the scale, whereas exploratory tendency and social group did. The level of agreement between bodyweight by voluntary weighing and bodyweight measured during sedation was very high. These results show that the majority of rhesus macaques in social groups can be weighed voluntarily and that voluntary weighing is reliable. When optimising and further developing the method, voluntary weighing can form a valuable tool in the captive management of NHPs.

Keywords: animal welfare, bodyweight, captive management, macaque, social housing, voluntary weighing