The Old School, Brewhouse Hill, Wheathampstead,
Hertfordshire AL4 8AN, UK
www.ufaw.org.uk

Animal Welfare 2022, 31: 387-401
ISSN 0962-7286
doi: 10.7120/09627286.31.1.013

On the use of body mass measures in severity assessment in laboratory passerine birds

CP Andrews

University of Stirling, Division of Psychology, Faculty of Natural Sciences, Stirling FK9 4LA, UK
Newcastle University, Population Health Sciences Institute, Henry Wellcome Building, Framlington Place, Newcastle-upon-Tyne NE2 4HH, UK
Contact for correspondence: clare.andrews@stir.ac.uk

Abstract

Criteria for assessing the severity of scientific procedures in laboratory rodents include the loss of body mass. However, guidance is limited for passerine birds and application of criteria developed for mammals risks poor welfare decisions. Here, I ask whether, and how, body mass criteria could be incorporated into laboratory welfare assessment of passerines. Passerine birds strategically adjust their body mass to minimise combined mortality risk from starvation and predation. A systematic literature review found that strategic mass changes can be sizeable (sometimes > 10%) even over short timescales. Many aspects of a bird's current or past environment, including husbandry and experimental procedures, may alter perceived starvation or predation risks and thus drive strategic mass change via evolved mechanisms. Therefore, body mass criteria used for rodents may be too stringent for passerines, potentially leading to over-estimated severity. Strategic mass changes might obscure those stemming from experimental interventions yet could also offer insights into whether birds perceive an intervention or altered husbandry as a threat. Mass criteria for severity assessment should be species- and context-specific in order to balance needs for refinement and reduction. To guide the development of appropriate criteria, a future research priority is for greater data collection and sharing based on standardised routine monitoring of mass variation under a representative range of husbandry conditions and procedures.

Keywords: *animal welfare, avian model, body mass, mass regulation, passerine, severity*