



## Guidelines for the Human Transportation of Research Animals

Committee on Guidelines for Humane Transport of Laboratory Animals, *xvi*+376 pp., 2006, National Research Council Press, Washington, DC. \$34.95 (paperback).

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Transportation of research animals is a major component of the research enterprise but one that can have a substantial negative impact on animal well-being. Both environmental conditions and the novelty of the transportation experience can cause stress, which can result in short-term changes in the physiological and psychological condition of the animals and thus affect subsequent research outcomes, especially if the animals are utilized immediately after transportation. Therefore, the primary goal for all individuals involved in animal transport should be to move them in a manner that does not jeopardize their well-being and ensures their safe arrival at their destination in good health and with minimal distress.

While shipments from breeders to research institutions are generally well executed through the use of company-owned fleets of environmentally controlled vehicles, arranging humane transport from vendors without established transport systems, or between research institutions, can be challenging for research facility staff without extensive experience. International transport of nonhuman primates (hereafter primates) is particularly challenging because their shipment and quarantine require adherence to the legislation of each country involved and because few airlines are willing to carry them.

What is needed to meet these challenges is comprehensive guidance detailing the potential negative effects of the transportation process on research animal well-being and the steps necessary to minimize adverse effects for the main species transported, as well as the relevant local, national and international regulations and the various organizations involved. Although a working group of the United Kingdom's Laboratory Animal Science Association (LASA) has recently considered these issues and developed guidance for Europe (Swallow *et al.* 2005), no single source of such information existed for the United States of America (USA) until publication of this book from the National Research Council's Institute for Laboratory Animal Research (ILAR).

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Aimed at government agencies, investigators and animal facility managers shipping animals, the book contains a wealth of information and advice from an expert committee organized into 5 chapters. Tables, figures and bulleted lists (e.g. characteristics of a good shipper) complement the text and represent useful aids for achieving humane transportation.

Chapter 1 is a short introduction that ends with a checklist of issues to consider when arranging transportation between research facilities. Chapter 2 summarizes the national and international laws, regulations, and regulatory agencies responsible for animal transportation; web links are provided for further reading.

Chapter 3 begins with a fair review of stress caused by transportation, though little information is presented for primates, reflecting the dearth of published literature in this area, and there is no reference to the extensive reports of the European Commission's Scientific Committee on Animal Health and Welfare (2002) and the European Food Safety Authority (2004). Good practices of animal handling, management and care essential for humane transportation of research animals are described in the form of performance standards, developed by the expert committee based on some universal concepts of animal physiology and a scientific understanding of species-specific needs and differences. Many aspects of the animal transportation process that can affect animal welfare are covered, including the thermal environment, space allocation, food and water supplies, and the competency and attitude of personnel. A minor criticism is that more attention should have been given to route and contingency planning.

Chapter 4 concerns policies and measures for minimizing the risk of introducing infectious pathogens into human, agricultural animal or research animal populations (biosecurity), including special considerations when transporting primates. The final chapter presents 5 recommendations, 3 of which concern transportation of primates, though not from the standpoint of animal welfare: 1) National Primate Plan and ensuring continuity of supply for biomedical research, 2) encouraging ground transport, and 3) development of a self-contained overshipper. The book closes with 2 appendices: 1) a summary of the Animal Welfare Act regulations pertaining to transportation, and 2) an analysis of patterns in the ground transportation of research animals in the US.

In summary, I recommend this book to anyone with responsibility for coordinating and managing the transportation of research animals into, out of, or within the USA, especially individuals who are new to the area. Like other ILAR reports, the whole book can be read online ([http://books.nap.edu/catalog.php?record\\_id=11557](http://books.nap.edu/catalog.php?record_id=11557)). Readers outside of the USA may wish to concentrate on Chapter 3.

## References

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