

KEY FINDINGS

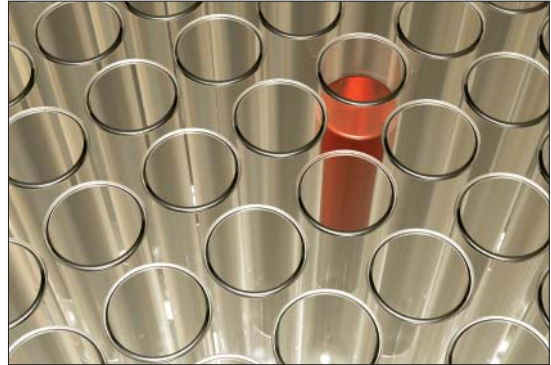
Guide for the Care and Use of Laboratory Animals

This seventh update to the National Research Council's *Guide for the Care and Use of Laboratory Animals* integrates recently published data, scientific principles, and expert opinion to recommend practices for the humane care and use of animals in research, testing, and teaching. The *Guide* is an internationally accepted primary reference on animal care for the scientific community. Previous editions have served as the basis for accreditation of institutions worldwide by the Association for Assessment and Accreditation of Laboratory Animal Care International. Also, use of previous editions has been required for researchers supported by the United States' National Institutes of Health. Additions to this eighth edition of the *Guide* include expanded coverage of the ethics of laboratory animal use; components of effective Animal Care and Use Programs; and new guidelines for the housing, environment, and enrichment of terrestrial and aquatic animals, and for veterinary and clinical care.

- 1. The three Rs—replacement, refinement, and reduction—continue to be the core foundation of the *Guide* for scientific laboratory animal use.** The three Rs are a practical strategy for researchers to apply when considering experiments that involve the use of laboratory animals and in designing humane animal research studies.
- 2. A framework for an Animal Care and Use Program is provided to help institutions integrate regulations, policies, and principles with day-to-day operations and management.** Discussion of institutional policies and responsibilities, personnel and program management and oversight, occupational health and safety, and animal facility design and management is provided to help in developing an effective animal care and use program.
- 3. The utility of the performance standards approach for animal care and care practices is reaffirmed.** The performance standards approach describes a desired outcome but with flexibility to those responsible for managing animal care and use in achieving this outcome.
- 4. For the first time, the *Guide* contains information on the care and use of fish and other aquatic species, reflecting the growing use of these animals in research.**
- 5. Housing space or enclosures should account for animals' social needs.** Social animals should be housed in stable pairs or larger groups of compatible individuals. If there is a compelling reason to house animals singly, it should be for the shortest duration possible.



6. **Environmental enrichment can enhance animal well-being, provide sensory and motor stimulation, and promote psychological health.** Examples of enrichment include structural additions such as perches and visual barriers for monkeys and other nonhuman primates; elevated shelves for cats and rabbits, and shelters for guinea pigs, as well as resources such as novel objects and foraging devices and nesting material for mice. Like other environmental factors, enrichment may affect the experimental outcomes and should be appropriately controlled.
7. **The updated *Guide* provides the first discussion of animal biosecurity practices.** Animal biosecurity refers to all measures taken to contain, prevent, and eradicate infections that may cause disease or otherwise make laboratory animals unsuitable for research. Elements of a successful animal biosecurity program include ensuring that only animals in good health enter the facility, that materials such as food do not harbor infectious agents, and that practices are in place to limit cross contamination should an infectious agent be introduced. In addition, a comprehensive ongoing evaluation of animals' health status is needed.
8. **Expanded information on topics such as transportation, pain and distress, euthanasia, and veterinary medicine is given.** An acceptable veterinary program that offers a high quality of care and ethical standards is expected, regardless of the number of animals or species being maintained.



Committee for the Update of the Guide for the Care and Use of Laboratory Animals: Janet C. Garber (*Chair*), Garber Consulting; **R. Wayne Barbee**, Virginia Commonwealth University; **Joseph T. Bielitzki**, University of Central Florida; **Leigh Ann Clayton**, National Aquarium, Baltimore; **John C. Donovan**, BioResources Consulting; **Coenraad F.N. Hendriksen**, Netherlands Vaccine Institute, The Netherlands (until March 2009); **Dennis F. Kohn**, Columbia University (retired); **Neil S. Lipman**, Memorial Sloan-Kettering Cancer Center and Weill Cornell Medical College; **Paul A. Locke**, Johns Hopkins Bloomberg School of Public Health; The Honorable **John Melcher**, U.S. Senate (retired); **Fred W. Quimby**, Rockefeller University; **Patricia V. Turner**, University of Guelph, Canada; **Geoffrey A. Wood**, University of Guelph, Canada; **Hanno Würbel**, Justus Liebig University of Giessen, Germany; **Lida Anestidou** (*Study Director*), National Research Council.

The National Academies appointed the above committee of experts to address the specific task requested. The members volunteered their time for this activity; their report is peer-reviewed and the final product signed off by both the committee members and the National Academies. This report brief was prepared by the National Research Council based on the committee's report.



For more information, contact the Institute for Laboratory Animal Research at (202) 334-2590 or visit <http://nationalacademies.org/ilar>. Copies of the *Guide for the Care and Use of Laboratory Animals* are available from the National Academies Press, 500 Fifth Street, NW, Washington, D.C. 20001; (800) 624-6242; www.nap.edu.

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