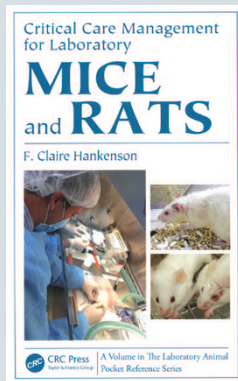


# A pocket-series approach to rodent critical care

Reviewed by Dalis Collins, DVM & Jason Villano, DVM, MSc, MS, DACLAM



## CRITICAL CARE MANAGEMENT FOR LABORATORY MICE AND RATS

By F. Claire Hankenson

CRC Press, Boca Raton, FL

Price: \$59.95

Spiral-bound paperback, 271 pages

ISBN: 978-0-849-32499-4

The first edition of *Critical Care Management for Laboratory Mice and Rats*, a volume of the Laboratory Animal Pocket Reference Series, is a valuable resource written for a wide audience involved in rodent biomedical research including researchers and veterinary staff. The text is divided into five chapters, each with varying relevance to different members of its audience. The book focuses on rodent health at an individual rather than a colony level and therefore excludes many infectious diseases. Rodent health concerns are appropriately triaged to focus on the most common conditions.

Chapter 2 (“Management for Laboratory Mice”) and Chapter 3 (“Management for Laboratory Rats”) provide thorough but concise descriptions of diseases and evidence- and performance-based approaches to their treatment in mice and rats, respectively. In these chapters, spontaneous conditions, like ringtail, and research-related medical concerns, like cranial implant maintenance, are discussed separately, and descriptions of conditions that the two species share are not repeated. The numerous colored images, tables, diagnostic flow charts and sample assessment scales for conditions like ulcerative dermatitis are especially useful. Step-by-step directions for procedures like endotracheal intubation as well as practical tips to improve outcomes, like the use of aversive substances to discourage self-trauma, are well written and accessible to both researchers and veterinary staff. Ultimately, the author cautions readers that all treatments should be carried out with the guidance and input of a veterinarian, supporting the veterinarian’s role in the care of research animals.

Whereas much of the clinical information included in the aforementioned chapters is especially helpful for veterinary staff, Chapter 1

(“General Approaches”) and Chapter 4 (“Special Considerations”) contain material applicable to a larger audience. Chapter 1 covers topics like physical exams, triage, body condition scoring and drug administration. Chapter 4 addresses humane endpoints, perioperative care and other special considerations, including issues pertaining to specific rodent models, complementing the previous chapters and presenting a holistic discussion of rodent critical care management.

In the final chapter, resources are listed by type and are accompanied by brief descriptions. The author endeavors to cover the breadth of materials pertinent to the use of laboratory rodents, but information about an important few (e.g., Association for Assessment and Accreditation of Laboratory Animal Care International) is lacking. The appendices, including a glossary, a list of suggested medical supplies and a rodent formulary, are especially well organized. From a veterinary viewpoint, the rodent formulary, with its comprehensive coverage of commonly used medications, would be reason enough to purchase the book.

Future editions may benefit from a few adjustments or additions. From a clinical perspective, a table presenting normal biochemistry, hematology and urinalysis parameters for mice and rats would be a valuable addition to the appendices. The organization of topics within the clinical disease chapters is alphabetical with medical issues categorized as spontaneous or research-related; however, an organizational scheme in which diseases are further categorized by affected organ system (e.g., dermatologic or cardiovascular) would allow for easy cross-referencing by grouping similar topics together (e.g., dystocia, cross-fostering and uterine prolapse) and would make it easier to find information pertinent to a condition with varying terminology (e.g., ‘poor body condition’ versus ‘emaciated’).

Furthermore, some sections may have limited applicability to individual institutions. For example, a section on euthanasia considerations only references the *AVMA Guidelines for the Euthanasia of Animals: 2013 Edition*, which may not be applicable to institutions outside the US. Additionally, appropriate veterinary care and oversight for certain conditions like tumor burden can vary widely depending on institutional guidelines and policies as well as the clinician’s discretion. In this text, the author uses her professional judgment to make recommendations about best practices; however, inclusion of a statement acknowledging that there is variability in industry-accepted practice standards might be appropriate.

In summary, as the first reference to focus specifically on the challenging topic of laboratory rodent critical care management, the book is a welcome and timely addition to laboratory animal literature. It is a must-have resource for any laboratory animal veterinarian or technician and a valuable supplemental text for any researcher working with rodent disease models.

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