



Reference Resources

Note from AAALAC's Council on Accreditation regarding this resource:

ACLAM Position Statement on Pain and Distress in Research Animals

*This reference was adopted by the Council on Accreditation with the following clarification:

Point 1. The professional judgment of a trained veterinarian should be sought for all experimental situations that might result in pain or distress.

“As a global organization, AAALAC International recognizes diverse specialties and qualifications of veterinarians. Veterinarians providing clinical and/or program oversight and support must have appropriate experience and ongoing professional development in veterinary medicine, and relevant knowledge necessary to evaluate the health and welfare of the species used.” Further expectations on training and/or experience of veterinarians can be found at : <https://www.aaalac.org/accreditation-program/position-statements/#vetcare>

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ACLAM Position Statement on Pain and Distress in Research Animals

Introduction

The American College of Laboratory Animal Medicine recognizes and supports that:

- The appropriate use of anesthetics, tranquilizers, analgesics, and nonpharmacologic interventions in research animals is an ethical and scientific imperative;
- Pain and distress are undesirable variables in most scientific research projects and, if not relieved, can result in unacceptable animal welfare and invalid scientific outcomes;
- An integral component of veterinary medical care is prevention or alleviation of pain or distress associated with spontaneous or induced disease processes, experimental procedures, housing, and handling;
- The premise that animals perceive pain in similar ways to humans, and that investigators should consider that procedures that cause pain in humans may cause pain in research animals unless proven otherwise.
- Animals are capable of experiencing negative feelings, and housing, handling, and research methods should seek to eliminate or reduce distress

Background

Pain is defined as an unpleasant sensory and emotional experience associated with, or resembling that associated with, actual or potential tissue damage¹. Distress is defined as an aversive, negative state in which coping and adaptation processes in response to stressors fail to return an organism to physiological and/or psychological homeostasis². Fundamental to the relief of pain and distress in animals is the ability to recognize its presence in different species. It is essential that personnel caring for and using research animals be knowledgeable of species-specific and individual behavioral, physiologic, and psychologic indicators of well-being. Because many animals instinctively disguise pain as an evolutionary survival mechanism, the presence or absence of pain behaviors should not be used as the sole criterion for administration of analgesics or implementation of nonpharmacologic interventions. Examples of nonpharmacologic interventions include positive reinforcement training, provision of a comfortable environment, fluid therapy, thermal support, appetizing food supplements, and habituation to procedures.

Considerations for recognition and relief of pain and distress

1) Professional judgment

A trained laboratory animal veterinarian should be sought for all experimental situations that might result in

pain or distress. This should include recommendations for prevention, assessment, alleviation, and effective monitoring of pain and distress in research animals.

2) Agent selection and review

Anesthetic and analgesic agents are not without side effects and the risks associated with using either should be carefully weighed against the benefits accrued by the animal. As new knowledge regarding animal pain pathophysiology emerges and new analgesic drugs are developed, methods of pain relief should be periodically reassessed and updated.

3) Veterinary authority

The veterinarian must have the authority to alter the clinical care plan if unexpected pain or distress occur, in cooperation with the research team. The IACUC should review these types of unexpected outcomes as part of the post-approval monitoring process and require changes to methods of pain management in protocols, as needed.

4) Scientific justification

Procedures expected to cause more than slight or momentary pain require the use of appropriate pain-relieving measures. Requests for exceptions to provision of relief from pain or distress must be scientifically justified by the research team and approved by the IACUC prior to initiation of the experiment^{3,4,5}.

5) Study design

Research involving pain or distress should be designed and conducted such that endpoints are rapidly identified and the time to reach scientific objectives is minimized⁴.

Research procedures, special husbandry conditions or other eventualities that may result in animal distress should be alleviated by pharmacologic or nonpharmacologic methods. Animals that cannot adapt to research or husbandry procedures, and that show continued signs of distress, should be removed from the study or conditions that are associated with distress⁵.

References

1. Raja SN, et al. 2020. The revised International Association for the Study of Pain definition of pain: concepts, challenges, and compromises. *Pain* 161:1976-1982.
2. Committee on Recognition and Alleviation of Distress in Laboratory Animals, National Research Council (NRC) 2008. *Recognition and alleviation of distress in laboratory animals*. Washington (DC): National Academies Press.
3. United States Department of Agriculture (USDA), Animal and Plant Health Inspection Service (APHIS) *Animal Welfare Regulations* 2019.
4. Institute for Laboratory Animal Research (ILAR). 2000.

- Humane Endpoints for Animals Used in Biomedical Research and Testing. National Research Council Volume 41, Number 2.
5. NRC (National Research Council). 2011. Guide for the Care and Use of Laboratory Animals. 8th ed. Washington DC: National Academy Press.

Committee members, 2021-2022 Revision

Phillip Gerwin, Chair
Carolyn Doering
Jim Fox
Mark Suckow
Phillip Gerwin
Chuanwu Wang
Holly Burr
John Dutton
George DeMarco
Gerry Hisch
Manu Sebastian
Joshua Taylor
Monika Burns
Rachel Brownlee
Paul Makidon

Sub-committee members, 2016 publication

Pat Turner, Chair
Sharron Kirchain
Louis DiVincenti
Nirah Shomer
Elizabeth Nunamaker
Sumanth Putta
Norman Peterson
Todd Pavek