

PHYSICAL RESTRAINT OF UNANESTHETIZED ANIMALS

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Background

The Animal Care and Use Committee (ACUC) acknowledges that physical restraint of an awake, unanesthetized animal may be necessary due to the scientific goals of some studies. According to the Guide for the Care and Use of Laboratory Animals, physical restraint is the use of manual or mechanical means to limit some or all of an animal's normal movement for the purpose of examination, collection of samples, drug administration, therapy, or experimental manipulation.

These guidelines are intended to ensure that:

- The method of restraint is appropriate for the species of animal;
- The period of restraint is the minimum required for experimental objectives;
- The personnel performing the restraint have been appropriately trained; and,
- When prolonged physical restraint is necessary, the physical, physiological and psychological effects on the animal are minimized.

General Points

- Physical restraint must be described in the Principal Investigator's (PI's) Animal Use Protocol (AUP) and approved by the Animal Care and Use Committee (ACUC).
- The period of restraint should be the minimum required to accomplish the research objectives. For any species, restraint lasting longer than 15 minutes is considered prolonged restraint and should be avoided if possible.
- *If prolonged restraint is necessary* to achieve the research objective, scientific justification must be included in the AUP and approved by the ACUC. Convenience is not an adequate justification for prolonged restraint.
- Restraint devices:
 - Are not to be considered normal methods of housing and must be justified in the AUP
 - Should be specifically designed to (i) accomplish research goals that are otherwise impossible or impractical or (ii) to prevent injury to animals or personnel

- Should be suitable in size, design, and operation for the species in question and should minimize discomfort, pain, distress, and the potential injury to the animal or research staff
- Should not be used simply as a convenience in handling or managing animals
- Animals must be:
 - Attended throughout the period of restraint or observed at appropriate intervals as approved by the ACUC
 - Animals to be placed in restraint devices:
 - Must be given training (with positive reinforcement) to adapt to the equipment and personnel.
 - Must be removed from the study if the animal fails to adapt to the device.
- Nonhuman Primates (NHPs)
 - Nonhuman primates must not be maintained in restraint devices unless required for health reasons, as determined by the Attending Veterinarian or by the ACUC-approved AUP. Maintenance under such restraint must be for the shortest period possible.
 - If long-term restraint (>12 hr) is required, the nonhuman primate must be provided the opportunity daily for unrestrained activity for at least one continuous hour during the period of restraint. For extended periods of restraint, the frequency and type of rest periods must be described in the animal use protocol. Accurate daily records of food and water intake, weight, and bowel and bladder function must always accompany long-term restraint. This information should be entered on a record sheet and/or chart and should be available at all times for review by a veterinarian. Adequate access to food and water must be available.
- Alternatives to physical restraint should be considered
 - Chemical restraint can be used as an alternative to physical restraint when the primary objective is convenience or ease of animal handling
 - Less-restrictive devices or procedures that do not limit an animal's ability to make normal postural adjustments (e.g., a tether system for caged animals or stanchions for farm animals) are recommended when compatible with research objectives.
- Personnel
 - Personnel performing the restraint must be familiar with the equipment
 - Attention must be given to the development of lesions or illnesses associated with the restraint. If these occur, prompt veterinary care must be provided and the animal may require temporary or permanent removal

from the restraint device. The well-being of the animal must take priority over the research objectives.

References

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