

PHYSICAL RESTRAINT OF LABORATORY ANIMALS FOR EXPERIMENTAL PURPOSES

The James Madison University's Institutional Animal Care and Use Committee (IACUC) acknowledges that physical restraint of an awake, unanesthetized animal may be necessary due to the scientific goals of some studies. The IACUC has adopted the following guideline to outline the minimally acceptable standards for physical restraint of laboratory animal species for experimental purposes.

DEFINITIONS

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 (*Guide p29*). Personnel safety may also necessitate restraint of an animal. If routine restraint is not prolonged and does not cause distress or discomfort to the animal, a detailed description is NOT required in the IACUC protocol.

Prolonged restraint is defined as physical restraint of a conscious animal lasting longer than 30 minutes. Prolonged restraint, including chairing of non-human primates, should be avoided unless it is essential for achieving research objectives and is specifically approved by the IACUC (NRC 2003).

For prolonged restraint, the protocol must include:

- Description of the restraint device
- Amount of time the animal will be restrained
- Description of how the animal will be observed during the procedure

If the duration of prolonged restraint (≥ 6 hours) limits the ability of the animal to access food and water, the protocol must also include:

- a) Description of when food and water will be given
- b) How body weight will be monitored
- c) How hydration status will be monitored

GUIDELINES

Restraint devices are not to be considered normal methods of housing and must be justified in the animal use protocol. Alternatives to physical restraint should be considered. Systems that do not limit an animal's ability to make normal postural adjustments (e.g., subcutaneous implantation of osmotic pumps in rodents) should be used when compatible with protocol objectives.

Restraint devices should not be used simply as a convenience in handling or managing animals. In some situations, chemical restraint can be used as an alternative to physical restraint devices. When restraint devices are used, they should be specifically designed to accomplish research goals that are impossible or impractical to accomplish by other means or to prevent injury to animals or personnel.

Restraint devices should be suitable in size, design, and operation to minimize discomfort, pain, distress, and the potential injury to the animal or research staff. Personnel performing the restraint must be familiar with and be appropriately trained in using the equipment.

Animals to be placed in restraint devices should be given training to adapt to the equipment and personnel. Many animals can be trained, through the use of positive reinforcement techniques, to

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cooperate with research procedures or remain immobile for brief periods. Animals that fail to adapt to training should be removed from the study.

Veterinary care must be provided if lesions or illnesses associated with restraint are observed. The presence of lesions, illness, or severe behavioral change often necessitates the temporary or permanent removal of the animal from restraint.

REFERENCES

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