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IACUC GUIDELINE:	PROLONGED PHYSICAL RESTRAINT
DATE IMPLEMENTED:	October 22, 2010
DATE(s) REVISED:	February 17, 2012, November 18, 2019; January 25, 2024

Background:

The *Guide for The Care and Use of Laboratory Animals* states:

> "Prolonged restraint, including chairing of nonhuman primates, should be avoided unless it is essential for achieving research objectives and is approved by the IACUC… 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."

Definitions:

The definition of physical restraint in the *Guide*: "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."

The definition of prolonged is not given in the *Guide*.

IACUC Expectations:

Physical restraint lasting more than a brief period (i.e., more than a few minutes) of time should be avoided unless it is scientifically justified and approved by the IACUC. The

justification should describe the scientific objective (i.e., purpose) requiring prolonged physical restraint, and the frequency and duration of that restraint. Alternatives to physical restraint should be considered, and criteria for the temporary or permanent removal of the animal from restraint should also be described in the protocol.

These recommendations should be followed when physical restraint is used:

- Physical or device-facilitated restraint should only be used for the minimum amount of time required to achieve the research objectives.
- Whenever possible, the animals should first be acclimated to being handled and held by the researcher (with gloved hands), then it should be introduced to the restraint device (e.g., head fixation), and finally the duration of the restraint period should be gradually increased over a period of days.
- Positive reinforcement (palatable treats) should be used to adapt the animal to the equipment and personnel.
- The restraint device should be of the appropriate size and material (i.e., no wood), well-built to avoid potential trauma to the animal, and allow the animal to maintain a normal posture.
- Restrained animals should be closely monitored. Animals exhibiting overt signs of distress (e.g., struggling, vocalizing) should be removed from the restraint device, unless inescapable restraint stress is scientifically required and a justified component of the approved protocol. Any abnormal lesions or wounds (e.g., decubital ulcers) should be promptly reported to the Attending Veterinarian. The presence of lesions, illness, or severe behavioral change necessitates the temporary or permanent removal of the animal from restraint.
- The restraint device should be sanitized between groups of animals to minimize the risk of contamination and disease transmission.

Reference:

1. *Guide for the Care and Use of Laboratory Animals,* 8th Edition. National Academies Press. 2011. Pages 29-30.
2. *Guidelines for the Care and Use of Mammals in Neuroscience and Behavioral Research*. National Academies Press. 2003. Pages 46-49.
3. C. Barkus, et.al., Refinements to rodent head fixation and fluid/food control for neuroscience. 2022. J Neuroscience Methods, 381:190705 (https://doi.org/10.1016/j.jneumeth.2022.109705)