

WVU IACUC POLICY: Prolonged Physical Restraint of Animals

Purpose

This policy defines prolonged physical restraint and indicates circumstances where prolonged physical restraint may be used in non-sedated animals at WVU. Prolonged physical restraint in conscious animals may induce stress. However, this manipulation may be necessary to accomplish research goals in some studies. In these cases, the prolonged restraint **must** be justified and approved by the IACUC committee. In addition, steps **must** be taken to mitigate the stress through proper acclimation to the restraint procedure, minimizing the time required for restraint, and encouraging positive reinforcement training when applicable.

The Guide for the Care and Use of Laboratory Animals (the Guide, NRC 2011) states: "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. Animals are restrained for brief periods (minutes) in many research applications." (p. 29) As the duration of restraint increases, a concomitant increase in attention should be given to alternatives, health and well-being of the animal, and endpoint criteria for restraint (*Guidelines for the Care and Use of Mammals in Neuroscience and Behavioral Research, NCR, 2003, page 49*)

Physical restraint of agricultural animals for routine agricultural procedures in research and teaching **must** be performed in accordance with the *Guide for the Care and Use of Agricultural Animals in Research and Teaching* (NRC, 2020, page 18-19) and applicable agricultural programs standards of care.

Prolonged physical restraint of agricultural animals involves the restriction of normal movements for an extended period, typically hours or days. This type of restraint is not considered routine. Restraint not associated with typical agricultural procedures should be described in the animal use protocol along with the associated task, including specification of a time period and frequency, The IACUC will determine if further justification as prolonged restraint is required on a case-by-case basis. Researchers who have questions are encouraged to discuss this topic with a member of the veterinary staff before submission of their protocol.

Definitions

- **Prolonged Physical Restraint of laboratory animals** is defined by the WVU IACUC as physical restraint of a non-sedated/anesthetized animal for:
 - 30 minutes or longer restrained in a *natural position*.
 - 10 minutes or longer restrained in an *unnatural position*.
- **Restraint Device:** A device used to physically restrain an animal.
 - **Examples:**
 - Decapicone

- Rodent Tube Holders
 - Rabbit Restrainers
 - Slings
 - Stall/Stanchion
 - Wrap
 - Traps/nets
- **Manual Restraint:** Use of a manual hold to restrict freedom of movement.
 - **Natural position:** a position that an animal normally engages in (e.g. any normal postural position for that species).
 - **Unnatural position:** is one in which the animal species would not typically engage, assuming it is a healthy animal.
 - **Immobilization:** is defined as any body part that is restrained in such a way that normal movement of that part is not possible (e.g. head post for head stabilization during neurological testing procedures).

Policy

1. Prolonged restraint should be avoided unless it is essential for achieving research objectives.
2. Justification for prolonged restraint and consideration of alternatives (e.g. subcutaneous implants, infusion pumps, implantable telemetry devices, free stall housing for farm animals) **must** be provided in the animal use protocol approval by the IACUC **must** be obtained before implementing such practices.
3. Animals that do not adapt to the restraint system **must** be removed from the study.
4. Restraint devices CANNOT be considered normal methods of housing.
5. When restraint devices are used, they **must** 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.
6. Alternative systems that do not limit an animal's ability to engage in normal postural adjustments (e.g. subcutaneous implantation of osmotic minipumps in rodents) **must** be considered and used when compatible with research objectives.
7. Restraint devices may not be used simply as a convenience in handling or managing animals.
8. The period of restraint **must** be the minimum required to accomplish the research objectives.
9. The animal **must** be acclimated to the restraint device and laboratory environment prior to the procedure, and provided training, when appropriate, to adapt to the equipment and personnel.
10. Provision **must** be made for observation of the animal at appropriate intervals as defined in the animal use protocol, amendment or SOP.
11. Veterinary care **must** be provided if lesions or illness associated with restraint are observed. The presence of lesions, illnesses, deleterious or maladaptive behavior or other behavioral changes may necessitate temporary or permanent removal of the animal from the restraint device. The animal may be removed from restraint at the discretion of the veterinary staff, if deemed necessary.
12. The purpose of the restraint and the duration of restraint **must** be clearly explained to all personnel involved in the study.

13. The animal use protocol *must* include:
- a. a description of the restraint device.
 - b. scientific justification, specific to the type of restraint proposed.
 - c. the estimated duration of the restraint with a maximum duration stated.
 - d. monitoring procedures and methods used to minimize distress (e.g. acclimation to the device).

References

- NRC (2011) *Guide for the Care and Use of Laboratory Animals Eighth Edition*, National Academies Press
- FASS (2010) *Guide for the Care and Use of Animals in Agricultural Research and Teaching*, 3rd edition
- NRC (2003) *Guidelines for the Care and Use of Mammals in Neuroscience and Behavioral Research*, Washington D. C. National Academies Press
- USDA *Animal Welfare Act Regulations* 9CFR, Part 3, Chapter 1 3.81.d