

CONFIDENTIAL**POLICY ON USE OF PHYSICAL RESTRAINT ON RESEARCH ANIMALS****1. Policy statements**

The IACUC must determine the maximum allowable period of restraint considering the animals' biological needs, including their behavioural requirements and their needs for appropriate exercise and rest

This policy outlines the standards and expectations for researchers performing physical restraint on research animals. In accordance with the Guide, the period of restraint should be kept to the minimum necessary to accomplish the study objectives.

2 Definitions

Physical restraint	Use of manual or mechanical means to limit some or all of an animal's normal movement for the purpose of examination, sample collection, drug administration, therapy, or experimental manipulation.
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3 Scope

This policy applies to all species used for research, testing and teaching in NUS.

4 Guidelines**4.1 IACUC protocol requirements and scientific justifications**

Restraint devices should be used to the minimum extent, for the minimum period required to accomplish the purpose of the experiment and be appropriate for the animal. Periods of prolonged restraint should be avoided. While most situations require a short period of immobility, prolonged physical restraint, lasting longer than 15 minutes, must be included in the IACUC protocol, scientifically justified, and approved before being implemented.

Protocols involving the use of physical restraint must include the following information:

1. A clear description of the proposed restraint procedure including:
 - a. purpose of restraining animals
 - b. choice of device, methods of restraint and justification for use
 - c. any training or conditioning planned to help the animals cope with restraint
 - d. time of restraint, length of restraint and frequency of restraint
 - e. observation intervals, parameters and frequency
 - f. fate of animals that fail to adapt to restraint
2. Any potential adverse consequences of the restraint procedure, and planned intervention
3. Criteria for temporary, or permanent, removal from physical restraint, and humane end points

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4.2 Considerations for the use of physical restraint

The use of physical restraint on research animals requires special IACUC considerations due to its potential impact on animal well-being.

Restraint devices should not be considered as normal methods of housing, or used as convenient means of handling or managing animals.

Alternatives of physical restraint should be considered. The least period of restraint, to accomplish the research objectives, should be used.

Device that allows for postural adjustment should be used when compatible with the protocol objectives.

Animals should be handled by trained personnel to minimize distress and injury.

When applicable, animals to be placed in restraint devices should be trained, with positive reinforcement, to acclimatise to the equipment and personnel. Animals that fail to adapt should be removed from the study.

Provisions should be made to monitor the animal/s at appropriate intervals, as determined by the IACUC. In addition to PI/researcher monitoring, these animals should be monitored regularly by the AV or his/her designee.

If any ill effects are apparent, the animal should be removed from the restraint device or the method modified. If an animal does not adapt to restraint despite habituation, it should be removed from the study or other appropriate accommodations made to accomplish the purpose of the study. When animal welfare is compromised, for example, exhibiting clinical symptoms of ill health, lesion, or behavioural abnormalities, the Attending Veterinarian (AV) or designee may temporarily or permanently remove the animal from physical restraint/the protocol before the experimental endpoints are reached.

4.3 Physical restraint on NHPs

NHPs must never be housed in restraint devices, such as chairs, bags, slings, or on tables.

Restraint devices should be used only to the extent necessitated by the nature of an experiment and the period of restraint should be no longer than is absolutely necessary to achieve the research objectives.

NHPs should be acclimatised to chair, or other restraint, through step-wise training and positive reinforcement prior to the start of the study.

Criteria should be established for temporary or permanent removal of NHPs from a chair, or other restraint, if they fail to adapt.

5. References

1. [Guide for the Care and Use of Laboratory Animals. National Research Council, 2011.](#)
2. [Guidelines on the Care and Use of Animals for Scientific Purposes. National Advisory Committee for Laboratory Animal Research. 2022](#)

6 Related documents/SOPs

1. CM SOP 409: Non-Human Primate pole, chair and task training

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Revision	Author	IACUC approval date
Last reviewed	Dr Foo Tet Wei, John	14 August 2013
P220.01. Reviewed to:	Dr Chew Li Li	3 January 2023
1. ensure policies are in compliance with the NAELAR Guidelines 2022 and the updated Animals and Birds (Care and Use of Animals for Scientific Purposes) Rules 2004; and	IACUC	
2. up-to-date with current practices		
Changes made:		
1. under section 1 to add "The IACUC must determine the maximum allowable period of restraint their behavioural requirements and their needs for appropriate exercise and rest"; and		
2. under section 4.1 to update to "Restraint devices should be used to the minimum extent be appropriate for the animal. Periods of prolonged restraint should be avoided."; and		
3. under section 4.1, 1b. to include "methods of restraint", 1c. updated to "any training or conditioning planned to help the animals cope with restraint" and 1d. updated to "time of restraint, length of restraint"; and		
4. under section 4.2 to add "In addition to PI/researcher monitoring, these animals should be monitored appropriate accommodations made to accomplish the purpose of the study."; and		
5. to add section 4.3 "Physical restraint on NHPs"		
6. under section 5, updated to "Guidelines on the Care and Use of Animals for Scientific Purposes. National Advisory Committee for Laboratory Animal Research. 2022"		