Statement:
This policy applies to all research and teaching protocols at Marquette University that contain physical restraint of animals. This policy does not apply to restraint used for veterinary treatment, routine caging, handling and transportation.

It is the responsibility of the Marquette IACUC to evaluate all research and instructional protocols for the potential to cause pain and/or distress in vertebrate animals. The IACUC must also assess the steps that are to be taken to eliminate or minimize the potential for pain and distress and ensure that alternatives to these procedures have been considered. Because physical restraint of an animal can be associated with discomfort, pain, distress, and the potential for injury, the Marquette IACUC must have sufficient information to evaluate protocols that include restraint procedures.

Purpose:
The purpose of this policy is to define physical restraint and prolonged physical restraint and to provide clarification regarding when prolonged physical restraint may be used with research and teaching animals at Marquette University. The Guide for the Care and Use of Laboratory Animals distinguishes between short-term and prolonged physical restrained of animals, and Marquette University is obligated to report the use of prolonged restraint in animal research to AAALAC International. This policy defines what the IACUC considers to be prolonged physical restraint, and establishes guidelines for research protocols that use restraint in conscious research animals.

Physical restraint is the use of manual, mechanical, or chemical (i.e., sedatives or tranquilizers) means to limit some or all of an animal’s normal movement for such purposes as examination, collection of samples, drug administration, etc. Typically, animals are restrained for brief periods, usually minutes, in most research applications. Some species can be trained, through use of positive reinforcement, to cooperate or remain immobile for brief procedures. Restraint devices must be suitable in size, design, and operation to minimize discomfort or injury to the animals. The IACUC Protocol Form must include a description of the device, the duration of restraint, and justification for use for the IACUC to review.

Prolonged Restraint is defined by the Marquette IACUC as physical restraint of a non-sedated animal for 30 minutes or longer in a natural position, 10 minutes or longer in an unnatural position, or any duration for any position (natural or unnatural) in which a body part is fixed. Restraint procedures must be detailed in the IACUC protocol #23 and appendix E. Approval by

1 A “natural position is defined as a position in which an animal normally engages (e.g., any normal postural position for that species). An “unnatural position” in one in which the particular animal species would not typically engage, assuming it is a healthy animal.

2 A “fixed body part” is defined as any body part that is restrained such that normal rotational movement of that body part is not possible.
the Marquette IACUC requires scientific justification, a description of the restrain device, the duration of the restraint, monitoring procedures and methods to minimize animal distress. Prolonged physical restraint of research animals warrants placement of animals in “Animal Use Category E” unless shown otherwise by the PI.

<table>
<thead>
<tr>
<th>Immobility</th>
<th>Short-Term</th>
<th>Prolonged</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Minimal Physical Restraint</strong> – rotational movement of the body can occur; no portion of the body is completely immobilized</td>
<td>5-60 minutes</td>
<td>Greater than 60 minutes</td>
</tr>
<tr>
<td><strong>Partial Physical Restraint</strong> – one or more immobilized body parts, allowing for some movement (ex: most rodent restraint devices)</td>
<td>5-30 minutes</td>
<td>Greater than 30 minutes</td>
</tr>
<tr>
<td><strong>Complete Physical Restraint</strong> – all body parts are immobilized, no normal movement is possible</td>
<td>5-10 minutes</td>
<td>Greater than 10 minutes</td>
</tr>
</tbody>
</table>

**Guidelines for All Restraint**

The following should be considered by the PI and the Marquette IACUC in planning or evaluating experimental procedures that involve the physical restraint of animals:

- Restraint devices should not be used simply as a convenience in handling or managing animals.
- When restraint devices are used, they should be specifically designed to accomplish project goals that are impossible or impractical to accomplish by other means, or to prevent injury to animals or personnel.
- The period of restraint should be the minimum required to accomplish the project objectives.
- Acclimation or training (with positive reinforcement) to restraint methods is required for studies involving prolonged restraint – unless the acclimation itself would increase the stress to the animals – and must be described in the animal care and use protocol. Prolonged restraint without acclimation or training must be justified in the animal care and use protocol.
- Animals that fail to adapt to the restraint should be removed from the study. Criteria for the temporary or permanent removal of an animal from a study that requires restraint must be developed and described in Appendix E of the Marquette IACUC protocol form for review by the IACUC.
- Provisions should be made for monitoring the animal at appropriate intervals.
- The presence of any lesion, illness, or severe behavioral change often necessitates temporary or permanent removal of the animal from restraint. In this case, contact the Consulting Veterinarian for care and assistance.
- Personnel involved with the study must be trained on the specific equipment, procedures, duration and monitoring.