

**THE UNIVERSITY OF MICHIGAN**  
**Unit for Laboratory Animal Medicine**  
**018 Animal Research Facility**

**UCUCA Policy on Analgesic Use in Animals Undergoing Surgery**

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**PURPOSE:** To provide guidelines on the use of analgesics in various surgical procedures.

**GUIDELINES:**

1. Animal welfare regulations require that experimental procedures involving animals avoid or minimize discomfort, distress, and pain to the animals. If procedures involve more than momentary or slight pain and discomfort to animals, as is often the case in surgery, regulations require the appropriate use of analgesics, unless withholding of such agents is scientifically justified in writing and approved by the University Committee for the Use and Care of Animals (UCUCA).

2. The ULAM *Anesthesia & Analgesia Guidelines* specified for each species (accessible at the UCUCA website: <http://www.ucuca.umich.edu/guideaa.htm>) should be consulted prior to submission of the protocol. Any questions regarding the choice of drugs, dose range, etc. should be directed to the ULAM veterinary staff.

3. Assessment of pain and distress in animals is difficult and can be subjective. As such, procedures that cause pain or distress in humans should be assumed to cause similar effects in animals, unless the contrary is established. Information on judging pain in animals is available at the above website.

4. The above website also offers species-specific behaviors (arranged by species) and circumstances indicative of pain and suggesting the need for analgesics.

5. The UCUCA Policy is that animals undergoing surgery should receive post-operative analgesics. Table 1 categorizes surgical procedures based on whether analgesia is "recommended" or "required." For surgical procedures where analgesics are recommended, the investigator can request approval to withhold analgesics, however, adequate justification must be provided to the UCUCA. For surgical procedures where analgesics are required, the investigator can request approval to withhold analgesics but SCIENTIFIC justification must be provided to the UCUCA. If the UCUCA approves the withholding of analgesics for procedures in the required category, the procedure will automatically be elevated to Humane Use Category 7, 8, or 9 as is appropriate and will be reported to the USDA annually for covered species.

6. Analgesic use should always be in accordance with current accepted veterinary practice for the specific procedure including the preemptive, intraoperative and postoperative use of analgesics. As a general rule, analgesia (especially in "required"

cases) should be administered pre-emptively, i.e. shortly before or immediately after the animal is anesthetized but prior to skin incision. Further doses of analgesia are dictated by acceptable current veterinary practice. .

7. Finally, although every effort has been made to include types of surgical procedures used on research animals at the university, in the event that a surgical procedure is not adequately described by the list provided, the veterinarian reviewing the protocol will utilize professional judgment to determine the need for analgesics.

References:

1. *U.S. Government Principles for the Care and Use of Animals Used in Testing, Research, and Training* (1983)
2. *Guide for the Care and Use of Laboratory Animals* (NRC, 1996)
3. *Animal Welfare Regulations* (9 CFR, chapter I, subchapter A)

**University of Michigan Policy on the Use of Analgesics in Animal Surgery**

	<b>Analgesia Recommended</b>	<b>Analgesia Required</b>
Thoracic		Thoracotomy Sternotomy
Abdominal	Laparoscopy without insufflation	Laparoscopy with insufflation Laparotomy (Midline) Nephrectomy Splenectomy Ovariectomy Adrenalectomy Cecal ligation and puncture Parabiosis
Orthopedic	Arthroscopic surgery	Osteotomy Amputation (Limb) Laminectomy
Cranial		Cochlear and/or ear surgery Craniotomy Hypophysectomy
Subcutaneous	Vascular cut-down Subcutaneous (SQ) cut-down Muscle cut-down Muscle biopsy/graft Abaxial myotomy Nerve cut-down Dermal	Ligation (Arterial) Muscle cut-down Cranial/cervical dissection Hernia creation (diaphragm)
Other	Orchiectomy Oral Soft tissue biopsy Biopsy Muscle, skin/SQ, tumor biopsy Fine-needle aspirate Endoscopic biopsy Tail biopsy (non-rodent) Tracheotomy Vasectomy	Ophthalmic surgery Oral Bone involvement Tooth extraction Nerve resection Dental carries Biopsy Ear removal Brain biopsy Abdominal organ biopsy Thoracic organ biopsy Gingival biopsy (Ovario)hysterectomy

For rodent tail biopsies, see *Tail Biopsy Guidelines*, available on the UCUCA website.