General Postoperative Analgesia Guidelines

‘Procedures that may cause more than momentary or slight pain or distress to the animals will be performed with appropriate sedatives, analgesics, or anesthetics, unless withholding such agents is justified for scientific reasons...’¹

‘Successful surgical outcomes require appropriate attention to ... appropriate use of analgesics, and animal physiologic status during all phases of a protocol involving surgery and postoperative care.’²

In order to alleviate pain and / or distress post-operatively, the IACUC requires the administration of analgesics for all survival surgeries. Selection of the appropriate analgesic agent(s) should be based on the type of surgical procedure, be provided for a minimum of 24 hours (minor surgery) to 48 hours (major surgery), and continued longer if the animal is displaying any symptoms associated with pain.

A major surgery may require the administration of a narcotic agent such as Buprenorphine (Buprenex®), Morphine, or Fentanyl patch for adequate pain control and/or relief. Non-steroidal anti-inflammatory agents such as acetaminophen, ibuprofen, carprofen, and ketorolac may be suitable for minor surgeries. Depending on the procedure, administration of a local anesthetic may aid in pain reduction (eg: Marcaine® (local anesthetic agent able to reduce pain), Lidocaine® (local anesthetic agent for relief of itching, burning and pain due to skin inflammation)). Note: Sedatives (able to reduce irritability / excitement) and anxiolytics (able to prevent or reduce anxiety) do not relieve pain. However, they may be used in conjunction with appropriate analgesics.

For specific agents, dosages, and routes please refer to the Division of Laboratory Animal Medicine (DLAM) Reference List of Commonly Used Analgesics and Sedatives³, or contact the DLAM veterinary staff at 843-7992.

The USDA and PHS policies require proper documentation of animal care and use to assess compliance with research protocols and clinical care procedures. Dates of all observations, treatments, and procedures must be recorded. Dates and times (including AM/PM) of all time-sensitive observations or treatments (post-operative evaluations, pain medication) must be recorded. Extent of records vary based on the nature of the procedure; however, at a minimum, records of the procedure must consist of: Animal ID, date of procedure, type of procedure, anesthetics/analgesics used (dose, route, time), anesthesia chart (vital signs – e.g. pulse rate, heart rate), drugs given (dose, time), general procedures (e.g. intubation, beginning and end of surgery, etc.). Any deviations from the procedure as approved in the protocol due to...
emergency need must be documented, explained, and reported to the Office of Animal Care and Use. All records must be available for review at any time by IACUC and external regulatory officials.

**Definitions:**

**Distress:** ‘may be defined as an aversive state in which an animal fails to cope or adjust to various stressors with which it is presented. Distress may not induce an immediate and observable pathologic or behavioural alteration.\(^2\)

**Non-survival surgery:** ‘an animal is euthanized before recovery from anesthesia.\(^2\)

**Major survival surgery:** ‘penetrates and exposes a body cavity or produces substantial impairment of physical or physiologic functions (such as laparotomy, thoracotomy, joint replacement, and limb amputation), or involves extensive tissue dissection or transection.\(^2\)

**Minor survival surgery:** ‘does not expose a body cavity and causes little or no physical impairment (such as wound suturing; peripheral vessel cannulation; percutaneous biopsy; routine agricultural animal procedures such as castration, and most procedures routinely done on an "outpatient" basis in veterinary clinical practice).\(^2\)

**Pain:** ‘Pain is a complex experience that typically results from stimuli that damage tissue or have the potential to damage tissue.\(^2\)

**References:**

1. *Animal Welfare Act*: Page 34, §2.31(d)(iv)(A)

2. *Guide for the Care and Use of Laboratory Animals 2010*, Veterinary Care: Pages 123, 126, 127, 129, 130

3. UNC at Chapel Hill DLAM *Reference List of Commonly Used Analgesics and Sedatives*. 

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Disclaimer: if your experimental procedure requires a significant deviation to this Standard Operating Procedure (SOP), please amend your application(s) to include Addendum 8.0 Request for Exception to Policy and indicate the following: a description of the exception; the rationale (provide scientific justification and/or justification based on animal welfare); the potential adverse effects/clinical signs resulting from the exception; and specify which (and the total number of) animals in the approved protocol that will be affected. The IACUC will review your request at the next monthly meeting.