

**DREXEL UNIVERSITY COLLEGE OF MEDICINE  
ANIMAL CARE AND USE COMMITTEE  
POLICY FOR PREOPERATIVE AND POSTOPERATIVE CARE  
FOR NON-RODENT MAMMALS**

**OBJECTIVE:** This policy is to ensure that appropriate provisions have been made for preoperative and postoperative care of non-rodent animals (rabbits, cats, dogs, pigs, or nonhuman primates) in accordance with the "Animal Welfare Act" and the American Association for Accreditation of Laboratory Animal Care's guidelines, as outlined in the "Guide for the Care and Use of Laboratory Animals."

**RESPONSIBILITIES**

**Veterinarian's Responsibilities:**

The veterinarian shall provide the IACUC with assessments of the following:

1. Preparation of the animal for the surgical intervention, to include the use of pre-anesthetic drugs where indicated, and appropriate anesthetic agents;
2. The individual performing the surgery has adequate experience or training for the specific procedure outlined in the study;
3. Aseptic procedures are appropriate for the surgery;
4. That adequate post-operative care, to include post-operative analgesics where indicated is provided and
5. Veterinarian has implicit responsibilities to assess the potential for pain and distress that might be associated with the proposed animal activities, and to recommend the use of pain alleviating drugs, whenever possible, to alleviate those conditions.

**Investigator's Responsibilities:**

1. The responsibility for proper preoperative, surgical, and postoperative care (including weekends) is that of the Principal Investigator. The veterinarian and ULAR personnel shall provide guidance and train personnel in these three general areas of care. The Principal Investigator is responsible for training or arranging training on the specific surgical procedure;
2. Regulations require that investigators proposing procedures that may cause more than momentary or slight pain or distress to the animals must consult with the veterinarian or his/her designee. The veterinary staff of the ULAR will be available to provide guidance in the care and use of animals regarding handling, immobilization, anesthesia, analgesia, tranquilization and euthanasia;
3. Federal regulations and our internal institutional policies require that protocols must be implemented as approved by the IACUC. Any deviation from the approved protocol must be approved by the IACUC before they are implemented;
4. Investigators shall have a system in place to sufficiently document animal care and use that meets regulatory requirements and veterinary practice.

## **PROCEDURES**

All survival surgery must be performed using aseptic procedures, including surgical gloves, masks, sterile instruments, and aseptic techniques. Major operative procedures\* must be conducted in an aseptic surgery suite. Non-major procedures may be performed in IACUC approved dedicated areas in laboratories and must be performed using aseptic procedures as noted above. Exceptions to these procedures must be approved by the IACUC.

\*Any surgical intervention that penetrates and exposes a body cavity or any procedure which produces permanent impairment of physical or physiological functions in an animal which is expected to recover from anesthesia.

## **PREOPERATIVE PERIOD**

Preoperative preparation involves determination of the health status of the proposed animal, removing food from the animal's cage, and organizing what will be needed for surgery and for the postoperative period.

Animals must be fasted a minimum of 12 hours before being anesthetized.

Decisions concerning the choice of surgical instruments, suture material and intravenous fluids for surgery as well as the need for antibiotics and analgesics administration postoperatively should be made when preparing the IACUC protocol. The ULAR staff is available to advise you in these areas.

The use of sterile instruments, suture material and supplies is required. Instruments may be sterilized by autoclaving. If surgical instruments are going to be sterilized using an autoclave, the use of autoclave tape alone, on the outside of instruments packs, to monitor the effectiveness of such sterilization procedure is inadequate. Surgical packs must contain a sterilization indicator **INSIDE** of the pack. These strips should be kept in a log book along with surgical records. The outside of the pack should be wrapped with autoclave indicator tape. The ULAR staff is available to advise you in these areas.

Implanted medical devices must be sterile. If these are unable to be heat sterilized, the hospital may be contacted for gas sterilization. Contact the ULAR veterinary staff for more information.

## **SURGERY**

Following the induction of anesthesia, the site of the surgical incision and the area surrounding it should be shaved so that there is enough of an area in which to work comfortably and aseptically. Always intubate cats, dogs, and monkeys with an appropriately sized endotracheal tube. Check the tube prior to insertion to ensure that the cuff is intact and after insertion to make sure that the tube is within the trachea. The anatomy of pigs and rabbits makes intubation difficult for non-experienced personnel.

Consult with the ULAR veterinary staff if you are interested in intubating pigs and rabbits. Corneas must be protected from drying with an ophthalmic ointment such as LacriLube®. Catheterization of a vein is strongly recommended. This enables fluids such as Lactated Ringers Solution to be delivered if there is blood loss during surgery, as well as for emergency drug administration.

The animal should be placed on a water-circulating heating pad for all surgical procedures to maintain body temperature. The surgical area must be scrubbed with a suitable skin disinfectant such as Betadine Surgical Scrub®. Ethyl alcohol alone may not be used for this purpose. For major operative survival procedures, the surgeon prepares for surgery by scrubbing for 5 minutes and donning appropriate attire. The animal is draped with a sterile drape. Surgery can then commence.

If at any time during surgery your glove touches a non-sterile surface, you must change gloves before proceeding. Similarly if an instrument touches a non-sterile surface, it must not be used until it is re-sterilized.

The monitoring of anesthesia depth is important to ensure the animal not experiencing pain or distress during the procedure. To ensure anesthesia, basically you will be following the procedure you have enumerated on the IACUC protocol. Records of anesthesia and monitoring must be maintained by the investigator and/or staff. Use the ULAR Anesthesia and Monitoring Form for this purpose.

### **POSTOPERATIVE PERIOD**

Postoperatively, the animal should be supplied with supplemental heat either with a heating pad or by being draped. The animal must be monitored at least every 15 minutes until it regains sternal recumbency. Records indicating that the animal has been observed must be kept during this period. Do not return an animal to its housing room until the animal has fully recovered.

The endotracheal tube should not be removed until the swallowing reflex appears. Depending on the surgical procedure, postoperative fluid administration may be necessary to speed recovery. Antibiotic administration may be appropriate at this time.

Provision of analgesia before or during the postoperative recovery period is a requirement for operative procedures. Exceptions may occur only if scientific justification for withholding analgesics is provided in your IACUC protocol. Suggestions for appropriate analgesics may be found by consulting a member of the veterinary staff.

Once the animal has regained sternal recumbence and is awake, the animals should have access to water. If a bowl is used, fill to approximately 1/2" depth. This allows an animal to reach water, but will not be dangerous to the animal while groggy.

The date of surgery must be marked on the cage card.

Skin sutures or wound clips must be removed at 10-14 days post-surgery, assuming normal healing.

Animals must be checked daily by the research team for general health, pain, discomfort, infection and body temperature (if appropriate for the species) for a minimum of three days post-surgery. Please contact ULAR if you need assistance.

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