University of Cincinnati
Institutional Animal Care and Use Committee

Rodent Survival Surgery Guidelines

These guidelines apply to all survival surgical procedures performed on rodents at the University of Cincinnati.

Questions or Schedule training- contact LAMS veterinary staff at 558-5171 or LAMS@uc.edu.

Definitions:
- **Survival Surgery** – a surgical procedure from which an animal is expected to regain consciousness.
  - **Major** - any surgical intervention that penetrates and exposes a body cavity; any procedure that has the potential for producing permanent or significant physical or physiological impairment.
  - **Minor** – any surgical intervention that neither penetrates nor exposes a body cavity, or produces permanent or significant impairment of physical or physiological function.
  - **Multiple** – surgical procedures conducted as separate anesthetic events.
- **Aseptic Surgical Procedure** – surgery performed using procedures that limit microbial contamination.
  - **Patient** – removal of hair and preparation of the surgical site with an appropriate skin disinfectant.
  - **Surgeon** – don required surgical attire and maintain asepsis.
  - **Instruments** – must be sterilized (e.g., steam, ethylene oxide or other approved sterilant) and maintained on an aseptic field.
- **Sterilization** – the process whereby all viable microorganisms are eliminated or destroyed.
- **Disinfection** – the chemical or physical process that involves the destruction of pathogenic organisms. Disinfectants are effective against vegetative forms of organisms, but not necessarily spores.

Regulatory Principles:
- All survival surgery must be performed using aseptic technique.

Required Surgical Attire:
- Dedicated surgical attire such as a clean lab coat, surgical scrubs, or disposable gown (“street clothes” alone are not permitted).
- Mask.
- Sterile surgical gloves.
- **Note:** Hair bonnet/cap is recommended.
Pre-Operative Procedures:
Surgery should be conducted in a clean, uncluttered, minimal-traffic portion of the lab dedicated for surgery. Non-animal procedures may not be performed in this dedicated space during the surgery.

- Pre-emptive analgesics should be used unless otherwise noted in the IACUC-approved protocol.
- Animals must be surgically prepared as described in the IACUC-approved protocol.
  - Hair removal should be performed in an area separate from the surgical area.
- Surgeons should wash with soap and dry their hands before aseptically donning sterile surgical gloves.
- Begin surgery with instruments that have been steam or gas sterilized and handle instruments aseptically.
  - Sterilization indicators, such as autoclave tape, must be used on all sterilized packs.
  - The date of sterilization must be noted on each instrument pack.
    - If the pack is damaged OR not used within 6 months of the sterilization date, it must be re-sterilized.
- Instruments must be handled aseptically and maintained on a sterile field
- For multiple surgeries conducted in a single session, one sterile surgical pack cannot be used for MORE THAN 5 ANIMALS.
- When instruments are used between animals during the same surgical session, they must be sterilized between each procedure. The following methods are recommended:
  - Glass bead sterilization - clean instruments prior to submersion into beads.
    - Only the instrument tips are sterile.
    - Ensure tips have cooled prior to touching tissue.
    - Replace glass beads annually – per manufacturer recommendation.

Monitoring the anesthetized animal (See Rodent Anesthesia Guidelines)
- The animal must be maintained at an appropriate depth of anesthesia before the surgical procedure is initiated and must be monitored for surgical plane of anesthesia (negative response to a painful stimulus) throughout the procedure.
- Monitor the animal’s vital signs (e.g., depth and rate of respiration) throughout surgery.
- Note: Anesthetized animals must never be left alone during the procedure

Post-Operative Procedures:
- All post-operative monitoring is the responsibility of the research staff unless prior arrangements are made with LAMS veterinary staff.
- After surgery, move the animal to a warm, dry area and monitor until sternal.
- Post-operative analgesics must be used unless otherwise noted in the IACUC approved protocol.
- The general condition of the animal must be evaluated and any abnormalities promptly reported to LAMS veterinary staff. The following frequency of post-operative observations is required:
  - Minor surgery- Observe at least one day post-operatively.
  - Major surgery- Observe daily for at least 3 days post-operatively.
- Sutures and/or staples should be removed 10-14 days after surgery unless otherwise noted in the IACUC approved protocol.

**Surgical Records**
- Surgical records must be maintained for all survival surgeries.
- For animals surviving **6 hours or less** following recovery, the following information must be documented on the LAMS bar coded cage card:
  - Date
  - Time
  - Procedure performed
  - Surgeon’s initials
- For animals surviving **greater than 6 hours** following recovery, the LAMS surgery/procedure cage card must be used.
  - The cage card record must be complete.
  - The cage card must remain on the cage throughout the lifespan of the rodent.

**Records for Surgically Manipulated Animals by the Vendor**
- The following information must be documented on the LAMS bar coded cage card
  - Date of surgery
  - Procedure performed
  - Vendor performing the surgery (e.g., CRL, JAX)
- Skin staples/sutures should be removed 10-14 days post-operatively.

**References:**