University of Cincinnati
Institutional Animal Care and Use Committee

Policy for Mouse, Rat, Hamster, & Gerbil Survival Surgery

Applicability:
- These guidelines apply to all survival surgical procedures performed on mice, rats, hamsters, and gerbils at the University of Cincinnati.
- An IACUC-approved protocol is required prior to performing any surgical procedures.

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

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.

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 must 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 must be used unless otherwise noted in the IACUC-approved protocol.
• Animals must be surgically prepared as described in the IACUC-approved protocol #.
  o Hair removal must 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.
  o Sterilization indicators, such as autoclave tape, should be used on all sterilized packs.
  o 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:
  o 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
• 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 should 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:
  o Minor surgery- Observe at least one day post-operatively.
  o Major surgery- Observe daily for at least 3 days post-operatively.
• Sutures and/or staples are to 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:
  o Date
  o Time
  o Procedure performed
  o Surgeon’s initials

• For animals surviving greater than 6 hours following recovery, the LAMS surgery/procedure cage card must be used.
  o The cage card record must be complete.
  o 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
  o Date of surgery
  o Procedure performed
  o Vendor performing the surgery (e.g., CRL, JAX)

• Skin staples/sutures must be removed 10-14 days post-operatively.

**References:**