



Albert Einstein College of Medicine

# Requirements for Performance of Survival Surgery in Rodents Policy

## I. Purpose

This Policy outlines requirements for performing surgery on laboratory animals.

## II. Scope

This Policy applies to all research experiments and programs at Einstein.

## III. Policy

### A. PREOPERATIVE CARE

Animals (other than some rodents) should generally be fasted prior to anesthesia to prevent vomiting, aspiration, and problems associated with a distended intestinal tract. Animals should be evaluated by performing a brief physical examination and recording such parameters as body weight, body temperature, heart rate, and respiratory rate prior to the administration of an anesthetic agent. Dosages of anesthetic agents must be calculated individually according to body weight. Only appropriate anesthetics which are part of an approved animal use protocol must be used. Anesthetics must be sterile and must be used and stored in a way that avoids contamination or chemical decomposition.

### B. ASEPTIC TECHNIQUE

Major surgical procedures on mammals other than rodents must be conducted in approved non-rodent surgical facilities intended for that purpose, using aseptic techniques. The surgeon(s) must scrub and wear sterile surgical gloves, gowns, caps and face masks. Separate supplies and instruments must be used for each animal, and must be sterilized by autoclaving, gas, or chemical sterilization. The surgical site must be prepared by clipping the hair and scrubbing the skin with a suitable disinfectant (such as Betadine® or Nolvasan® scrub followed by an alcohol rinse; alcohol alone is not sufficient). The surgical site must be prepared by removing the fur and scrubbing the skin with a suitable disinfectant (such as Betadine®/povidone iodine or Nolvasan®/chlorhexidine scrub; alcohol alone is not sufficient).

Asepsis of the surgical site must be maintained by use of sterile drapes and careful aseptic technique.

Minor surgical procedures on mammals other than rodents may be performed in a suitably located and equipped laboratory area which is clean, uncluttered, and is not used for any other purposes during the surgery, as approved by the Institutional Animal Care and Use Committee (IACUC). Asepsis must be maintained by preparation of the surgical site and use of sterile supplies and instruments as above. The surgeon(s) must wear sterile gloves and a surgical mask.

Surgical procedures on rodents may be performed in a suitably located and equipped laboratory area which is clean, uncluttered, and is not used for any other purposes during the surgery. Asepsis must be maintained by preparation of the surgical site and use of sterile supplies and instruments. Instruments may be reused for multiple animals if 1) the instruments were sterilized prior to the day's surgery session, 2) sterility has not been compromised, and 3) the instruments are cleaned and disinfected between animals. Disinfection of instrument tips between animals, for instance by use of a glass bead sterilizer, is highly recommended. The surgeon(s) should wear a clean laboratory coat or scrub shirt, and a surgical mask. Sterile gloves are recommended for all procedures and are required for any procedures requiring direct handling of internal body tissues, organs, or an implanted device.

### **C. SUTURE MATERIAL**

Only sterile suture material should be used. Skin may be closed with simple interrupted sutures or wound clips. Skin sutures must be monofilament and non-wicking (e.g., nylon, prolene, steel) to reduce the potential of bacterial colonization within braided material and subsequent wound infection. Skin sutures or wound clips should be removed 1-2 weeks after surgery. Wound clips are not recommended for rabbits.

### **D. POSTOPERATIVE CARE**

Animals must be monitored closely during the immediate post-operative period and should not be returned to their home cages until able to maintain sternal recumbency. Animals must be kept warm during recovery. Recommended methods include the use of a heat lamp, hot-water heating pad, or intensive care chamber. Electric heating pads should not be used. Once returned to the cage, animals should be checked frequently until ambulatory, and several times during the next 24-48 hours for signs of distress. Frequency and intensity of post-operative care will depend on the specific procedure and any treatments being given. Analgesic treatment must be given pre-emptively to animals undergoing any procedure which would be expected to result in post-operative pain for humans, unless its omission is scientifically justified and approved in advance as part of an animal protocol. Specific plans for post-operative assessment and conditional or routine treatment (or its omission) must be part of the approved animal use protocol.

### **E. SURGICAL RECORDS**

Written documentation of all surgical procedures, including the types, amounts, and time of administration of anesthetic, analgesic or tranquilizing drugs used and the physiologic parameters (i.e., heart rate, respiratory rate, body temperature, etc.) monitored during the procedure, as well as preoperative and postoperative assessments and treatments, is required for all mammalian species. These records should include the date, time, person making the observations, condition of animals, and any treatments/procedures performed, and must be readily available for inspection by the Institutional Animal Care and Use Committee, Institute for Animal Studies veterinarians, USDA, AAALAC or other regulatory agencies. For mice and rats / rodents these records may be maintained in laboratory notebook.

#### **IV. Definitions**

Survival surgery is defined as any surgery from which the animal recovers consciousness.

Major surgery is any surgical intervention that penetrates a body cavity or has the potential for producing an impairment in physical or physiological function in an animal that is expected to recover (e.g., laparotomy, craniotomy, amputation, etc.).

Minor surgery is any operative procedure in which only skin or mucous membrane is incised (e.g., vascular cutdown for catheter placement, implanting pumps in subcutaneous tissue).

#### **V. Effective Date**

Effective as of: 19 February 2018

#### **VI. Policy Management and Responsibilities**

Einstein's Institutional Animal Care and Use Committee (IACUC) is the Responsible Office under this Policy. The Institutional Official for the IACUC is the Responsible Executive for this Policy. The IACUC Chairperson is the Responsible Officer for the management of this Policy.

#### **VII. Approved (or Revised)**

	
_____ Institutional Official	_____ Date

Revision dates: 11/16/99, 7/16/03, 4/20/2005, 6/15/2011, 1/14/2014, 2/19/18, 7/13/22