



BROWN

## Institutional Animal Care and Use Committee (IACUC)

### Policy on Aseptic Techniques (Non-USDA Species)

Date of IACUC Approval: June 1, 2018

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**I. Purpose:** The Brown University IACUC has developed this policy to provide guidance to research personnel involved in survival surgical procedures involving species not covered by the USDA Animal Welfare Regulations. All survival surgical procedures should follow the general principles of asepsis. Aseptic technique is used to reduce microbial contamination to the lowest possible practical level and includes preparation of the patient, surgeon, and instruments and adhering to aseptic technique throughout the procedure.

**II. Preparation of the Surgical Field:** A separate, dedicated operating room is not required to perform surgery in these species. A facility procedure room or a space in the lab may be used. If surgeries will be done in the lab, it must be done in an area dedicated to surgery and related activities. The area should be uncluttered, easily organized and disinfected, and relatively free from traffic. This must be described in the IACUC approved protocol and will be inspected twice a year.

Before collecting the animal from the facility, gather and aseptically lay-out all of the needed items including: sterilized instruments, implants, suture material, anesthetics, analgesics, etc. Set up your field with drapes, a warming device, and lighting prior to anesthetizing animals.

**III. Preparation of the Patient:** Animal preparation must occur in a separate area from the operating space and after the animal is sedated/anesthetized. It includes the following.

- Placing ophthalmic ointment in both eyes to prevent drying of the cornea during surgery.
- Removal of hair/feathers from the surgical site. This can be accomplished using small clippers or a cream hair removal for hair/fur or plucking for feather removal. If using a cream hair removal, it is important to be sure to remove all of it prior to surgery to avoid chemical burns.
- The shaved/plucked area should be wide enough to avoid contamination from the surrounding skin and hair/feathers during surgery, but should be the minimum compatible with achieving an appropriate sterile field. Removing more hair/feathers than is necessary predisposes the animal to hypothermia during the surgical procedure.

- Hair/feathers that have been removed, along with cream hair removal if used, should be cleaned away using water and/or alcohol.
- The animal can then be moved to the surgical field.
- The skin of the planned surgical site should be disinfected using an appropriate surgical scrub pattern (in a concentric pattern moving from the innermost to outermost areas). This should be done with either dilute chlorhexidine or povidone iodine, alternated with sterile water or alcohol, repeated three times.
- The animal is then draped with the sterile surgical site the only part of the animal not covered. This can be done using paper drapes, reusable fabric drapes, or Glad Press 'N' Seal®.

**IV. Preparation of the Surgeon and Surgical Assistant(s):** Surgeons and any person who will have contact with the sterile surgical field during the surgery (surgical assistants) must prepare in the following manner:

- They must wear the appropriate personal protective equipment (PPE) including clean scrubs or a disposable lab coat over street clothes, a surgical face mask, a hair bonnet, close toed shoes, and shoe covers.
- The face mask and hair bonnet must be placed before donning sterile gloves.
- The hands should be thoroughly washed and surgical gloves of the correct size are then donned using appropriate technique so as to not contaminate the outside of the gloves.
- Once the surgeon has donned sterile gloves, care must be taken to avoid touching non-sterile items such as the table, anesthetic equipment, lights, or scopes. Sterile gauze or autoclaved squares of tin foil can be placed over items that may need to be adjusted during the surgery.
  - If a non-sterile item/surface is accidentally touched, the surgeon must change their contaminated gloves for a new sterile pair.
- Non-surgeons that will not have contact with the sterile field must wear appropriate PPE, which is at least a disposable cover gown, a mask, a hair bonnet, shoe covers, and gloves.

**V. Preparation and Handling of the Instruments**

- All surgical instruments must be cleaned and autoclaved prior to use on animals for all surgical procedures.
  - Autoclaved surgical packs should contain a sterilization indicator, the date of sterilization, and expiration date for the pack.
  - Checking the indicator/mark on packaged instruments and checking that the outer packaging has not been breached will ensure that the sterilization process has been effective.
- Equipment or implants that will come into contact with the sterile field that are unable to withstand the conditions of autoclaving must be sterilized in another way.
  - Ethylene oxide sterilization is available through ACF for a fee. It is important to plan ahead for the time it takes for processing and subsequent off-gassing.

- Cold sterilization should only be used as a last resort when other methods are not appropriate. A specific cold sterilant must be used and the manufacturer instructions must be strictly followed. The instruments must be rinsed with sterile water or sterile saline before putting them in contact with animals.
- If surgeries will be completed on multiple animals in the same session, the use of a hot bead sterilizer can be used to sterilize the instruments between animals. It is important to use the hot bead sterilizer in the correct way to ensure sterilization.
  - It must be turned on and given sufficient time to heat up. It is recommended to turn it on before beginning the first surgery.
  - All blood and tissue must be cleaned from the instruments – do not use volatile compounds, such as alcohol.
  - The tips of the instruments should be placed at least 1.5 inches into the beads and left in place for at least 15 seconds.
  - Only 1-2 instruments should be sterilized at a time.
  - It is critical that the instruments are allowed to cool off before coming into contact with an animal to avoid severe, life-threatening burns.
- All consumables that will be used during the procedure (e.g. gauze, swabs, needles, suture materials) must be sterile and should be of an appropriate size and packaged in suitable quantities.
- Instruments should be placed either on a sterile surface (e.g. sterile drape) or on a sterile tray when not being used.
  - Where it is suspected that instruments may have been accidentally contaminated, these must be replaced with sterile ones before continuing.