

Animal Use Guidelines

Humane animal treatment:

- A. Both the type of anesthesia and the route of administration should be approved by the institutional animal use body and should comply with humane standards of care.
Observe safety procedures, such as working under a biological safety cabinet or fume hood and wearing personal protective garments, as appropriate.
- B. Proper anesthetization must be confirmed prior to surgery (e.g. toe pinch), and the depth of anesthesia during surgery must be assessed and maintained.
- C. Use ophthalmic ointment on eyes to prevent dryness while under anesthesia.
- D. Provide thermal support (e.g. heating pad or blanket) and monitoring as needed.
- E. For survival surgeries, animals must receive post-surgical treatment, such as recovery housing and treatment for post-surgical pain (ideally including a preemptive dose of analgesics immediately prior to anesthetization).
- F. Do not leave an animal unattended until it has regained sufficient consciousness to maintain sternal recumbancy.
- G. Do not return an animal which has undergone a surgical treatment to the company of other animals until fully recovered.
- H. If the animal is not intended to survive the procedure, the text should discuss the euthanasia method used. If the animal is to survive for a designated amount of time and then be euthanized, these details should also be provided.
- I. Animal surgeries, dissections, or euthanasia should not be performed in view of other animal subjects. For example, if a mouse is to be anesthetized and operated upon, a home cage containing other mice should not be sitting on the bench adjacent to the surgery area.
- J. Certain videos can be considered exemplary with respect to proper sterile technique and humane animal treatment. Please refer to the JoVE SciEd series on Laboratory Animals. In addition, we encourage authors to consult the following articles in order to view best practices:
<http://www.jove.com/details.php?id=2586>

Maintaining sterile conditions during survival surgery:

- A. Sterile surgical instruments and other sterile items (e.g., overhead surgical lamp handles) should only be handled with sterile gloves and not come in contact with non-sterile surfaces.
- B. Surgical instruments should not be modified with tape or in any other way that will prevent proper sterilization.
- C. 150% of the area surrounding a surgical site should be shaved or cleared of fur using depilatory cream, to avoid contamination of the wound through contact with fur.
 - a. Due to differences in international veterinary opinions regarding shaving of surgical fields, deviation from this standard may be acceptable if the authors provide specific documentation from their institutional animal use body indicating

that the amount of shaving they use has been approved.

- b. In any case, hair/fur should be kept clear of any wound, and should not be pulled or stretched by suturing. In addition, no hair should be present in the surgical wound.
- c. Some examples of good shaving practices are shown below:



- D. The surgical area must be disinfected several times in a circular motion with both alcohol and an iodine-based or chlorhexidine-based scrub.
- E. Use a sterile surgical drape around the incision site.
 - a. It may be permissible to omit surgical draping for demonstration purposes, but this will require a text disclaimer on screen.
- F. Scissors should not be used to make skin incisions for recovery surgeries.
- G. Retractors should be used to pull back the abdominal wall rather than using needles to pin it back.
- H. Avoid dragging suture material over non-sterile surfaces while suturing wounds
- I. Care should be taken during the procedure to prevent contamination of instruments or the researcher's gloved hands.

Public sensitivity considerations and protection of institutions and individuals from extremists:

Videos of procedures involving live or dead animals are a sensitive topic. The following additional guidelines are to be included for video production and refereed review and are meant to ensure that the video appears tasteful and the chances of re-filming sections are minimized:

- A. Make sure to only show that portion of the animal necessary for the procedure rather than the entire animal (anesthetized or dead) when possible. For example in an invasive procedure, having the entire surgical site draped to cover the rest of the animal besides the incision window, for example, will serve this purpose.
- B. Similarly, if tumors, abscesses, or other lesions are to be videoed in situ, the anatomic site of interest (e.g., abdominal cavity, lungs) can either be isolated by a closer shot or a drape covering the rest of the animal as described above. Alternatively, the organ or tissues of interest can be excised first and then filmed on an appropriate background.
- C. The act of anesthesia/euthanasia may be included only if the following three conditions are met:
 - (1) *no* other videos of the same method already exist on JoVE,
 - (2) the method of anesthesia/euthanasia involved is critical to the procedure or science being explained,
 - (3) the method of anesthesia/euthanasia involves no evidence of distress exhibited by the animal.
- D. Even in non-survival procedures or dissections of euthanized animals, the work space should be kept clean. Discarded tissue should be kept outside the video shot, and excess blood/fluids should be cleaned between filming as necessary.
- E. If animal housing rooms or facilities are to be filmed, ensure that these comply with veterinary and institutional standards. Important considerations include (but are not limited to): over-all cleanliness, appropriate cage type and size, and presence of windows (light-dark cycle control).
- F. Authors are responsible for obtaining all of the necessary permission for the documentation of procedures involving animal use in their facilities.