

**Subject: Aseptic Technique**

Source: Institutional Animal Care and Use Committee (IACUC)  
Effective Date: 04/13/20  
Replaces: 02/12/18  
Applies to: Personnel involved in research or teaching studies involving animals  
Reference: Animal Welfare Act; PHS Policy on Humane Care & Use of Laboratory Animals; Guide for the Care & Use of Laboratory Animals



**Introduction**

The Institutional Animal Care and Use Committee (IACUC) maintains oversight review for federally mandated rules and regulations with regard to animal research, ethics, misconduct and biomedical research for the University of Colorado Denver | Anschutz Medical Campus (CU Denver | Anschutz).

**Policy Statement**

This policy provides information on aseptic technique requirements and establishes procedures to be followed. Aseptic technique is used to reduce microbial contamination to the lowest practical level. No single procedure, piece of equipment, or germicide alone can achieve that objective. The contribution and importance of each of these techniques will vary with the surgical procedure.

- Aseptic technique is required by the IACUC for all survival surgeries in all species, unless scientific justification is provided.
- Surgery location:
  - Non-rodent survival surgery must be conducted only in facilities intended for that purpose unless an exception is specifically justified as an essential component of the research protocol and approved by the IACUC.
  - Rodent survival surgery must be conducted in an area that is dedicated for that use when surgeries are being prepared and performed.
  - Most bacteria are carried on airborne particles or fomites, so surgical facilities should be maintained and operated in a manner that ensures cleanliness and minimizes unnecessary traffic.
  - If it is necessary to use the operating area for other purposes it is imperative that the area be returned to an appropriate level of cleanliness before its use for surgery.
  - Clipping of the hair and removal of gross debris should occur in a location away from the surgical area. If it must occur in the surgical area, methods to remove hair and other gross debris should be employed before preparing the patient for surgery.
- Standard aseptic technique includes:
  - Preparation of the patient
    - If the animal is haired, removing the hair from the surgical site is required. Methods include clipping, shaving, and chemical removal (i.e. Nair). The method of hair removal should be described in the protocol.
      - If a chemical method is used, the chemical must be included in the protocol and the procedure should be described.
    - The surgical site must be disinfected (alcohol by itself is not sufficient).
      - An example of an appropriate disinfection method is scrubbing with an appropriate disinfectant (betadine or chlorhexidine) alternated with alcohol three times each (6 total).
  - Preparation of the surgeon
    - A hair bonnet, surgical mask, and lab coat, surgical scrubs or isolation gown are required.
    - Sterile surgical gloves are required if the surgeon's hands will touch the surgical site. Exam gloves may be used if the surgical site will only be touched by the tips of instruments and appropriate use of the "Tips Only" technique is employed.
  - Sterilization of instruments, supplies, and implanted materials

- All survival surgical procedures require the use of sterile instruments, supplies, and implanted materials using an accepted method of sterilization (i.e. autoclave, Vaporized hydrogen peroxide, ethylene oxide).
  - Alcohol and liquid sterilants are not acceptable for instrument sterilization.
- Tips only technique in rodents
  - Requires that instruments begin the day fully sterilized by an acceptable method (see above)
  - Instruments may be used on successive animals (up to 5) provided that the instrument tips are re-sterilized in-between animals by an acceptable method (i.e. bead sterilizer)
    - Newly sterilized tips must be placed into a sterile field.
- Surgical techniques to reduce the likelihood of infection:
  - Create a sterile field, generally achieved through draping
    - Materials can include surgical drapes, gauze (4x4s), Press N Seal
  - When not in use, instruments must be kept sterile (i.e. placed on a sterile surface)
  - Ensure suture material remains sterile throughout the procedure
- General information
  - The species of animal may also influence the selection of appropriate aseptic techniques
    - For example, skin preparation in amphibians and fish is not recommended as such preparation will remove the protective slime coats.
  - If a non-sterile part of an animal, such as the gastrointestinal tract, is to be surgically exposed or if a procedure is likely to cause immunosuppression, pre-operative antibiotics might be appropriate. However, antibiotics should never be considered as a replacement for aseptic techniques.
  - Modifications in standard aseptic techniques may be approved by the IACUC if scientifically justified by the investigator.
    - Each protocol proposing the use of non-standard aseptic techniques will be considered and reviewed by the IACUC on a case-by-case basis.

Per regulatory requirements, failure to comply with this policy may result in notification of your funding agency (e.g. NIH) and regulatory agencies (e.g. USDA) that your research has violated federal and/or local policies regarding the humane use of animals. This notification may affect continuous funding of your animal-related research. Further, depending on the violation, you may be required to take additional training and/or your privilege to conduct animal research at CU Denver | Anschutz might be temporarily suspended or even completely revoked.