



POLICY

TITLE:	Non-Survival Surgery
Policy Number:	2014-033
Responsible Department:	Institutional Animal Care and Use Committee
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Revised:	9/13/17 (Added major surgeries on un-anesthetized animals is prohibited); 5/13/2020 (Added the <i>Guide</i> policy)

Purpose of Policy: To ensure that laboratory animals undergoing non-survival surgery do not experience unnecessary pain or distress prior to their death.

Policy Information: Non-survival surgery is any surgical procedure in which the animal is not intended to recover from anesthesia. This does not include procedures conducted postmortem; however, it does include procedures where an incision is made following the administration of a lethal dose of anesthesia but prior to actual death of the animal e.g. euthanasia via transcatheter perfusion or exsanguination.

Animals undergoing non-survival surgery must be listed in the research protocol under USDA Pain Category D (pain or distress appropriately relieved with anesthetics, analgesics and/or tranquilizers drugs). Conducting major surgical procedures on un-anesthetized animals is prohibited. Certain minor surgeries may be conducted under local anesthesia as long as the IACUC has approved such procedure.

[USDA Animal Care Policy #3](#) states that “Non-survival surgery does not require aseptic techniques or dedicated facilities. It should be performed in a clean area, free of clutter, using acceptable veterinary sanitation practices equivalent to those used in a standard examination/treatment room. Personnel present in the area should observe reasonable cleanliness practices for both themselves and the animals”; and the [Guide for the Care and Use of Laboratory Animals](#) states “...at a minimum, the surgical site should be clipped, the surgeon should wear gloves and the instruments and the surrounding area should be clean. For non-survival procedures of extended duration, attention to aseptic technique may be more important in order to ensure stability of the model and a successful outcome”.

If non-survival surgery is used as a method of collecting tissues for subsequent implantation into another animal, the use of aseptic technique is a critical requirement in minimizing infection in the recipient animal and therefore must be used when operating on the donor animal.

Policy: For non-survival procedures not requiring the use of aseptic technique or a dedicated facility, the following policies will be in effect.

- At minimum, a clean lab coat or gown and clean gloves should be worn. However, procedures conducted on animals exposed to hazardous agents or animals with potential for zoonoses may require additional appropriate personal protective equipment. The use of clean, non-sterile instruments and supplies is acceptable except when tissues will be collected from the non-surviving animal for subsequent implantation into a surviving animal.
- Non-survival surgeries must be performed in a clean area, free of clutter, and using acceptable veterinary sanitation practices analogous to those used in a standard examination/treatment room. The room where surgery is conducted must not be used for other purposes during the time of surgery. Personnel present in the area must observe strict cleanliness practices for both themselves and the animals.

USE OF DRUGS AND OTHER COMPOUNDS IN NON-SURVIVAL SURGERY: Expired emergency, anesthetic, analgesic or euthanasia drugs **may not be used** even for terminal procedures. All drugs and compounds administered to an animal during surgery, including terminal procedures, must be of pharmaceutical grade whenever available. Refer to the Institutional Animal Care and Use Committee's (IACUC) Policy No. 001, Use of Non-Pharmaceutical Grade Compounds, Compounded Mixtures or Expired Compounds or Materials.

PRE-SURGICAL EVALUATION & TREATMENT: Pre-existing health conditions may negatively affect the success of any surgical procedure. Performing a pre-surgical evaluation will help ensure that the animals are not overtly ill. This must include visual inspection of the animal and assessment of the behavioral status of the animal. For furred mammals and other species, the animals must be alert, behaving normally, have a smooth coat, clear eyes and other appropriate signs of health. Physical or behavioral abnormalities must be brought to the attention of the veterinary staff.

Withholding food or water is generally not necessary in rodents or birds unless specifically mandated by the protocol or surgical procedure (e.g., gastrointestinal surgery). Withholding food or water for more than six hours, in accordance with the approved protocol, must also be approved by the Attending Veterinarian.

ANESTHESIA: Generally, isoflurane gas inhalation is recommended for longer procedures that would otherwise require multiple injections of anesthesia. In any case, the animal must be fully anesthetized prior to initiating the procedure and a consistent plane of anesthesia must be maintained throughout the surgery until euthanasia. Anesthetic depth may be monitored by respiration rate, corneal reflex, positive toe pinch, etc. For rodents and birds, it is generally not necessary or feasible to monitor heart rate. For guidance in selection and use of anesthetics, contact the Attending Veterinarian.

SURGICAL PROCEDURES must be performed only by appropriately trained individuals to ensure that good surgical technique is practiced. All surgical procedures must be conducted as described in the approved protocol. Evaluation of the anesthetic depth during the surgical procedure is critical. For longer procedures, it is necessary to maintain normal body temperature and hydration status.

Paralytic agents may not be used without anesthesia. If a neuromuscular blocking agent is required, refer to the IACUC Policy No.2014-018, Use of Neuromuscular Blocking Agents.

RECORD-KEEPING REQUIREMENTS: Records of non-survival surgeries on USDA-covered species must be maintained in accord with USDA requirements and recommendations of the Association for Assessment and Accreditation of Laboratory Animal Care (AAALAC) International. These records must include the administration of anesthetics, fluids and any drugs; details of the procedure, including

intra-operative monitoring; the method of euthanasia, including all drugs administered to cause death; and the initials of the individual performing these tasks. All medications, including the name, dose, route, and time of administration must be recorded. Additionally, any adverse outcomes requiring euthanasia of the animal prior to completion of the procedure must be noted.

Please note that all locations where non-survival surgeries are performed are subject to inspection by the IACUC. All records relating to surgical procedures are subject to review during inspection or audit and must be available during regular business hours.

Related Policies: IACUC Policy No. 2014-001, Use of Non-Pharmaceutical Grade Compounds, Compounded Mixtures or Expired compounds or Materials; Policy No. 2014-018, Use of Neuromuscular Blocking Agents