



IACUC Guidance:	<b>TAMU-G-022</b>	Title:	<b>IACUC Guidelines on the Performance of Non-Survival Surgery</b>	
	Location	Effective Date	Review By	
	<b>College Station/Dallas/Galveston/Kingsville</b>	02/01/2024	01/31/2027	
	<b>Houston</b>	03/01/2024	01/31/2027	

**1. PURPOSE**

- 1.1. This document provides information to be used when planning and performing non-survival surgical procedures on animals used for research, teaching, or other purposes at Texas A&M University.

**2. SCOPE**

- 2.1. Exceptions will be granted when scientifically justified in writing in the approved protocol.
- 2.2. Anesthesia/analgesia will not be discussed here. See TAMU-G-002.
- 2.3. For non-survival surgical procedures requiring aseptic technique, see TAMU-G-013 or TAMU-G-018, as applicable.

**3. RESPONSIBILITY**

- 3.1. The **PI** is responsible for:
  - 3.1.1. Following these guidelines for approval of protocols which include non-survival surgery.
  - 3.1.2. Listing all locations where surgery will be performed in the AUP, including areas used for preparation of the animal; and amending the AUP to add/remove locations to ensure the list of surgical locations remain up to date.
  - 3.1.3. Listing participants, with their qualifications to perform the activities or procedures selected, on the AUP when initially submitted.
  - 3.1.4. Ensuring that AUP personnel complete all training and BOHP enrollment activities as outlined in TAMU-G-029 and maintaining documentation of training.
- 3.2. The IACUC and the AV are responsible for:
  - 3.2.1. determining the categorization of surgery as major or minor and the impact on the animal’s well-being; and
  - 3.2.2. reviewing the stated experience and qualification of protocol participants and identifying any needed additional training requirements.
- 3.3. The **IACUC** must inspect and approve all locations where non-survival surgery will be performed prior to use.

**4. DEFINITIONS AND/OR ACRONYMS**

- 4.1. **Aseptic Surgical Techniques:** Well-established methods used to avoid the introduction of microbial contamination into tissues exposed and/or manipulated during surgery.
- 4.2. **AUP:** Animal Use Protocol. Document submitted by the PI indicating the housing and procedures involving animals.
- 4.3. **AV:** Attending Veterinarian. Individual designated by Texas A&M University to fulfil the regulatory role of AV. May also describe veterinary staff who report directly to, and have delegated authority from, the AV.
- 4.4. Centrally administered support service for animal research and teaching programs at Texas A&M University:
  - 4.4.1. **ARU:** Animal Resource Unit supports the School of Dentistry vivarium
  - 4.4.2. **CMP:** Comparative Medicine Program supports the Texas A&M College Station Campus
  - 4.4.3. **PAR:** Program for Animal Resources supports the Institute of Biosciences and Technology vivarium
  - 4.4.4. **PRF:** Pharmaceutical Research Facility supports the Kingsville Pharmaceutical Science Facility vivarium
  - 4.4.5. **Sea Life:** The Sea Life Facility supports the Galveston campus
- 4.5. **Non-survival surgery:** A surgery in which animals are euthanized under general anesthesia prior to anesthetic recovery.

- 4.5.1. Perfusion alone is not considered a surgical procedure, unless time to death is prolonged, or perfusion is conducted with a second procedure.
- 4.5.2. Examples of non-survival surgery include euthanasia after transcardial perfusion with the removal of a vital organ (such as the brain) and terminal laparotomy.
- 4.6. **Surgery:** Cutting into the body through the use of a tool such as a scalpel blade, surgical scissors, laser, or other suitable device. May also refer to an invasive measurement under anesthesia.

## **5. GUIDELINES OR PROCEDURE**

### **5.1. Preparation of Surgical Supplies**

- 5.1.1. All instruments should be visibly clean at the beginning of surgery.
  - 5.1.1.1. Aseptic technique is recommended but may or may not be required. The Office of the Attending Veterinarian can provide guidance on applicability.
- 5.1.2. Expired surgical materials such as suture or implants may only be used with prior IACUC review and approval.
- 5.1.3. All drugs (anesthetics, analgesics etc.) and any fluids administered must **not** be expired.
- 5.1.4. Drugs and compounds administered to animals during surgery, including terminal procedures, must be of human or veterinary pharmaceutical-grade formulations, when available.

### **5.2. Preparation of Surgical Area**

- 5.2.1. Clean the work surface of visible dirt, debris or clutter.
- 5.2.2. Apply a clean drape over the working surface where the surgery will be performed.
- 5.2.3. Do not use the immediate surrounding area, where surgery is conducted, for other purposes during the time of surgery.

### **5.3. Preparation of the Animal**

- 5.3.1. Perform a pre-surgical evaluation since pre-existing health conditions may negatively affect research outcomes.
- 5.3.2. Withholding food/water
  - 5.3.2.1. Not necessary for rodents or birds unless specifically mandated by the protocol.
  - 5.3.2.2. Withholding food or water for non-rodent species more than 12 hours must be discussed with the AV, or designee and described in the approved protocol.
- 5.3.3. In an area separate from where the surgery will be performed, remove hair from the surgical site(s).
- 5.3.4. Wipe the surgical site clean using alcohol, surgical scrub or warm water.
- 5.3.5. Anesthetize the animal, in accordance with the approved protocol.
  - 5.3.5.1. Depending on the nature and duration of the procedure, it may be appropriate to administer a single, lethal dose of anesthesia prior to surgery, or maintain the animal under a surgical plane of anesthesia followed by a lethal dose of anesthesia or physical method of euthanasia at the completion of the surgery.
  - 5.3.5.2. A surgical plane of anesthesia must be established prior to initiating the procedure and a consistent plane of anesthesia must be maintained for the duration of surgery until euthanasia is carried out.
  - 5.3.5.3. Anesthetic depth may be monitored in a number of ways (*e.g.*, respiration rate, corneal reflex, absence of a response from a toe pinch) and may vary depending upon the species and anesthetic agent used. For example, in rodents and birds, it is generally not necessary or feasible to monitor heart rate.
    - 5.3.5.3.1. Depth of anesthesia must be monitored no less than every 15 minutes.
- 5.3.6. Apply ophthalmic lubricating ointment to both eyes to prevent corneal desiccation.
- 5.3.7. When euthanasia is not immediate, normal body temperature and hydration status must be maintained.

### **5.4. Preparation of the Surgeon**

- 5.4.1. Wear a clean lab coat, or gown.
- 5.4.2. Wear clean gloves.

- 5.5. Records are required for every animal that has undergone surgery.** Research records, including surgical records, must be maintained consistent with TAMU SAP 15.99.03.M1.03., **and should contain:**
- 5.5.1. Date of procedure
  - 5.5.2. Protocol number
  - 5.5.3. Identification of the type of surgery performed; e.g. “terminal laparotomy”
  - 5.5.4. Species and animal or cage identifier
  - 5.5.5. The name of the surgeon and any assistants
  - 5.5.6. Pre-surgical assessment
  - 5.5.7. Pre-op preparation, as applicable
    - 5.5.7.1. Ophthalmic ointment applied
    - 5.5.7.2. Hair/fur removal
    - 5.5.7.3. Surgical scrub or site preparation
  - 5.5.8. Event times or total time under anesthesia
  - 5.5.9. Vital parameters monitored
  - 5.5.10. Times of monitoring
  - 5.5.11. A notation of any complication or abnormality identified
  - 5.5.12. Method and time of euthanasia
  - 5.5.13. Drugs administered: dose, route and frequency of administration
  - 5.5.14. When DEA controlled substances are used, the date and drug usage volumes recorded in the controlled substance log and the dates and amounts recorded in the animal surgery records should match.

## 6. EXCEPTIONS

- 6.1. The PI may request an exception to the above standards by describing the departure in the AUP
- 6.2. For programmatic exceptions, the facility director or manager may submit a request for the exception using TAMU-F-013

## 7. REFERENCES, MATERIALS, AND/OR ADDITIONAL INFORMATION

- 7.1. References
  - 7.1.1. Fish, R., Danneman, P., Brown, M., Karas, A., (Eds.). *Anesthesia and Analgesia in Laboratory Animals*, Second Edition. New York: Academic Press (2008).
  - 7.1.2. Institute for Laboratory Animal Research. [Guide for the Care and Use of Laboratory Animals](#), 8th Edition. National Academies Press, 2011.
  - 7.1.3. [ACLAM Position Statement – Medical Records for Animals Used in Research, Teaching, and Testing](#)
  - 7.1.4. TAMU SAP [15.99.03.M1.03](#) The Responsible Stewardship of Research Data
- 7.2. Resources
  - 7.2.1. For more information concerning the planning and performance of surgical procedures, please contact:
    - 7.2.1.1. [CMP](#) at 979-845-7433
    - 7.2.1.2. [ARU](#): at (214) 828-8149
    - 7.2.1.3. [PAR](#): at (713) 677-7471
    - 7.2.1.4. [PRF](#): at (361) 221-0770
  - 7.2.2. [AWO](#): (requires TAMU NetID authentication)
    - 7.2.2.1. TAMU-G-002 Guidelines on the Use of Anesthesia and Analgesia
    - 7.2.2.2. TAMU-G-013 IACUC Guidelines for Surgical Procedures in Rodents
    - 7.2.2.3. TAMU-G-018 Guidelines for Performing Surgical Procedures in Non-Rodent Mammals
- 7.3. Acknowledgements
  - 7.3.1. The document contains materials adapted from UCLA and University of Iowa.

## 8. HISTORY



Effective Date	Version #	Description
07/18/2019	000	College Station/Galveston: New document
12/16/2019	001	Houston/Kingsville: New document
01/21/2020	002	Dallas: New document
05/03/2021	003	College Station/Galveston: Renewal document; updated purpose, scope, definitions and references
06/01/2021	004	Houston/Kingsville: Renewal document; updated purpose, scope, definitions and references
06/15/2021	005	Dallas: Renewal document; updated purpose, scope, definitions and references
03/24/2022	006	College Station/Dallas/Galveston: Merging of Dallas animal care and use program with College Station/Galveston
10/20/2022	007	College Station/Dallas/Galveston/Kingsville: Merging of Kingsville animal care and use program with College Station/Dallas/Galveston.
02/01/2024	008	College Station/Dallas/Galveston/Kingsville: Renewal; updated responsibility, definitions and resources sections; clarification of aseptic technique and record keeping requirements; addition of exceptions section. Reviewed and approved via TEAMS
03/01/2024	009	Houston: Renewal; updated responsibility, definitions and resources sections; clarification of aseptic technique and record keeping requirements; addition of exceptions section. Reviewed and approved via TEAMS