

Standard Operating Procedure

SOP Number: **02-18-5450**

Service: **Research**

Operating Section: **Surgery**

Unit: **CMF**

Title: **Animal Anesthesia: General Policies and Recommendations**

Purpose:

To delineate requirements for animals undergoing general anesthesia.

Procedure:

- 1) Overview
 - a) All animals undergoing surgery are to be appropriately anesthetized in accordance with accepted veterinary guidelines. Anesthesia must be fully described in the protocol and approved by the IACUC.
 - b) Individual animals may respond differently to an anesthetic drug. Each animal must be closely observed for appropriate anesthetic depth before and during the surgical procedures. Toe pad pinch, palpebral and corneal reflex tests are commonly used to test anesthetic depth. Physiological parameters such as increases in arterial blood pressure or heart rate are also good indicators of the need to increase the depth of anesthesia.
 - c) If paralytic agents are required during the surgical procedure, it is absolutely essential that anesthetic depth be checked before the paralytic drug is given and that strict attention is paid to physiologic parameters during the interval of paralysis since somatic reflexes will not be present. Use of paralytic drugs must be fully described in the protocol, and the IACUC must approve their use.
 - d) Expiration dates on all drugs must be checked prior to each use. All drugs must be discarded, in accordance with HSD policy, on or before the expiration date. Any controlled drugs must be logged and recorded per HSD policies.
 - e) All personnel administering anesthesia must be trained and knowledgeable concerning the dose of anesthetic and other drugs required for the study. They must know the signs of anesthetic depth. The individual's training in laboratory animal anesthesia must be described in the protocol, and the IACUC must review/approve their credentials.
- 2) Anesthesia Procedures for non-rodent mammals
 - a) General Anesthesia Induction:

General anesthesia is to be induced in the animal preparation room or housing for surgical procedures. After induction, the surgical site is to be prepared by clipping the hair followed by a surgical scrub of the incision site. A surgical scrub consists of cleaning the area with a povidone iodine solution, or equivalent, followed by isopropyl alcohol, and repeating three times. Shaving and depilatories are not recommended in routine surgical procedures.
 - b) Intravenous Lines/Endotracheal Intubation:
 - 1) Intravenous catheter and endotracheal tube placement generally takes place in the OR animal preparation rooms.
 - 2) Catheter placement is to be preceded by a surgical scrub as described above. Site selection must be in accordance with accepted veterinary practice and all personnel attempting to place intravenous catheters must be knowledgeable in the technique.

- 3) Endotracheal intubation is strongly recommended. An appropriately sized, cuffed endotracheal tube is to be used. The endotracheal tube should be secured in place by means of tying it to the animal's muzzle and/or behind the animal's head.
- c) **General Anesthesia Maintenance**
- 1) Following premedication, induction, preparation, intravenous line placement and intubation, the animal is to be brought to the operating room. If gaseous anesthetics are required, the animal's endotracheal tube is connected to an anesthesia machine. The set-up is based on the description in the approved IACUC protocol.
 - 2) Flow rates for oxygen and nitrous oxide are set and the inhalational anesthetic concentration is set. The inspiratory rate and volume are set in accordance with the size and species of the animal. Close observation of the animal for depth of anesthesia is essential. Adjustments to concentrations and volumes are often required. If gaseous anesthetics are not required, it is recommended that the animal be placed on a ventilator which will artificially ventilate the animal with room air with or without oxygen supplementation.
- d) **Records**
- 1) Careful and complete recording of all anesthetics and ancillary drug use must be made on the animal's medical records. Such records are to include, but not be limited to, the timing and duration of administration, the person responsible for such administration, concentrations and amounts of all drugs and any notations, and any adverse reactions.
 - 2) The signature or initials of the person making the entry is- required. This is a critical component of medical records and compliance and must be done at the time of operation or administration.

OFFICE USE ONLY:

Responsible Official Signature		Date	
QA Signature		Date	
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