Anesthesia Monitoring and Record-Keeping Policy

Policy Statement

All anesthetized animals must be monitored to assess an adequate level of anesthesia. In general, the duration of the procedure (< 15 minutes, > 15 minutes) will dictate the frequency of animal observations. Anesthesia monitoring records are to be maintained and made available for review by the IACUC and any internal or external auditing agencies.

**Note:** This document currently lists species used on campus with anesthesia and/or surgery. The policy will be revised as species are added.

Reason for Policy

Per the 8th edition of the *Guide* (p. 119): Careful monitoring and timely attention to problems increase the likelihood of a successful surgical outcome. Monitoring includes routine evaluation of anesthetic depth and physiologic functions and conditions, such as body temperature, cardiac and respiratory rates and pattern, and blood pressure, and should be appropriately documented.
Procedures

Rodent Species:

- Rat
- Mouse
- Siberian Hamster
- Vole

**Signs of adequate anesthesia:** Rodents will be unresponsive to surgical or procedural stimulation. There is an absence of withdrawal reflexes when their rear toes are pinched. Incisions are not to be made until the loss of reflex responses has occurred. Anesthetized animals have regular respiration rates. Their ears and feet remain pink, indicating that peripheral perfusion is adequate. A source of supplemental heat (e.g., recirculating hot water pad, microwaveable gel pack, hot water bottle, heating pad) is to be used to prevent hypothermia.

**Criteria for administration of additional anesthetic:** Respiration rate increases in response to surgical or procedural stimulation; withdrawal reflexes return. The LAR veterinary staff should be consulted if the selected anesthesia does not appear to be effective with the species or strain.

*Monitoring Frequency During the Procedure*

**If the procedure is less than 15 minutes:** Visually monitor every 3-5 minutes, intra-operatively. As the surgeon and anesthesiologist are typically the same individual when working with these species, it is not necessary to document monitoring during the procedure. However, the fact that the animal was monitored should be described in an anesthesia or surgery log.

**If the procedure is greater than 15 minutes:** Visually monitor and record observations of mucous membranes (if visible), respiration rate, and, if applicable, % gas anesthetic on an anesthesia record form, approximately every 10-15 minutes. Additional parameters that may be of use – and if support equipment is available are body temperature, blood pressure, and oxygenation (via capillary refill time or pulse oximetry).

**Anesthetic Monitoring records:** Non USDA covered species: Records are to be retained by the PI for three years, following the death of the animal. USDA covered species: Records are to be retained by the PI for three years, following the death of the animal or three years following the expiration of the protocol, whichever is the greater time frame. Records must be available for review by the IACUC during semi-annual inspections.

*Note: For hamsters and voles, please submit a copy or original of the surgery records to the LAR at LAR@Indiana.edu*

**Non-Rodent, Terrestrial Species:**

- Rabbit
**Signs of adequate anesthesia**: The animal is unconscious with good muscle relaxation and absent jaw tone. There is no limb withdrawal reflex when the toes are pinched. The palpebral reflex is absent. The respiration and heart rates are stable, with no increase noted in response to surgical or procedural stimulation. The mucous membranes are pink and the capillary refill time is 1-3 seconds. A source of supplemental heat (e.g., recirculating hot water pad, microwaveable gel pack, hot water bottle, heating pad) is to be used to prevent hypothermia.

**Criteria for administration of additional anesthetic**: Respiration and/or heart rates increase in response to surgical or procedural stimulation, jaw tone returns, and/or withdrawal reflexes return.

**Monitoring frequency during the procedure**: Visually monitor and record observations of mucous membranes (if visible), respiration rate, and, if applicable, % gas anesthetic (if applicable) on an anesthesia record form, approximately every 10 – 15 minutes. Additional parameters that may be of use – and if support equipment is available – are body temperature, blood pressure, and oxygenation (via capillary refill time or pulse oximetry).

**Anesthetic Monitoring records**: Please submit a copy of the anesthesia record form to LAR at LAR@Indiana.edu. This document will be retained with the animal’s medical record.

**Aquatic Species**:

**Amphibians**:

**Fish**

**Signs of adequate anesthesia**: Loss of righting ability; decreased abdominal respiratory movement (frogs); lack of response to surgical or procedural stimulation.

**Criteria for administration of additional anesthetic**: Return of responses during procedural stimulation; increased abdominal respiratory movement (frogs).

**Monitoring frequency during the procedure**: Visually monitor every 3-5 minutes. As the surgeon and anesthesiologist are typically the same individual when working with these species, it is not necessary to document monitoring during the procedure. However, the fact that the animal was monitored should be described in an anesthesia or surgery log.

**Anesthetic Monitoring records**: Records are to be retained by the PI for three years, following the death of the animal. Records must be available for review by the IACUC during semi-annual inspections.

**Avian Species**:

**Various**

**Signs of adequate anesthesia**: Loss of withdrawal reflex (wing or toe); loss of jaw tone; upon stimulation under deep anesthesia, the nictitating membrane will move slowly.

**Criteria for administration of additional anesthetic**: Inhalant anesthesia is encouraged. Consult with the LAR veterinary staff prior to conducting the initial surgical procedure.
Monitoring frequency during the procedure: Visually monitor every 3-5 minutes. As the surgeon and anesthesiologist are typically the same individual when working with these species, it is not necessary to document monitoring during the procedure. However, the fact that the animal was monitored should be described in an anesthesia or surgery log.

Anesthetic Monitoring records: Records are to be retained by the PI for three years, following the death of the animal. Records must be available for review by the IACUC during semi-annual inspections.

Contacts

<table>
<thead>
<tr>
<th>Subject</th>
<th>Contact</th>
<th>Phone</th>
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<tr>
<td>Anesthesia, Records</td>
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Web Address for this Policy

http://researchcompliance.iu.edu/iacuc/iub/biacuc_policies.html