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### **1. PURPOSE**

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This Standard Operating Procedure (SOP) describes methods for anesthetizing birds.

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### **2. RESPONSIBILITY**

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Principal investigator (PI) and their research staff.

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### **3. GENERAL CONSIDERATIONS**

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- 3.1. The fasting period for birds depends on the size of the birds. Small birds have an adequate fasting period of fewer than 2 hours.
  - 3.2. Birds can be anesthetized with either inhalant gas or injectable drugs. The use of inhalant gases is the preferred method of anesthesia whenever possible.
  - 3.3. Heat loss is rapid in anesthetized birds. Keep animals warm by covering them with a gauze pad or towel or providing a heat source until the animal has recovered from anesthesia. Care should be taken not to overheat or burn the animal; do not place animals directly in contact with the heat source; use a drape or other material as a barrier.
  - 3.4. **Never leave an anesthetized animal unattended.**
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### **4. MATERIALS**

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- 4.1. Material or equipment to provide or conserve body heat, e.g., gauze pads, towels, heating pads, jackets, or heat lamps. If using a heat lamp, use 60W bulbs or less.
- 4.2. Ophthalmic ointment (natural tears)
- 4.3. Gas anesthesia machine, calibrated within the last 12 months, with adequate gas scavenging system or filter
- 4.4. Induction chamber constructed of a see-through material (glass, polycarbonate, etc.)
- 4.5. Tight-fitting mask
- 4.6. Isoflurane
- 4.7. Ketamine (100mg/mL) \*Controlled drug
- 4.8. Xylazine (20mg/mL)
- 4.9. Midazolam (5mg/mL)
- 4.10. Atropine (0.5mg/mL)

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## 5. PROCEDURE

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- 5.1. As a pre-anesthetic, atropine 0.01mg/kg can be administered to prevent secretions
- 5.2. Isoflurane anesthesia:
- 5.2.1. Induction:
- 5.2.1.1. Place the mask, connected to the Bain circuit, over the beak of the animal
  - 5.2.1.2. Adjust the oxygen flowmeter to 0.5 to 2.5 L/min.
  - 5.2.1.3. Adjust the isoflurane vaporizer to 3% to 5% until loss of consciousness
- 5.2.2. Maintenance:
- 5.2.2.1. Adjust the flowmeter to 0.5 to 2.5 L/min.
  - 5.2.2.2. Adjust the isoflurane vaporizer to 0.5 to 2 % (dose to effect).
  - 5.2.2.3. Apply ophthalmic ointment (natural tears) to both eyes to prevent dryness and damage to the cornea. Reapply as needed.
- 5.2.3 Recovery:
- 5.2.3.1. Turn off the isoflurane vaporizer, flush the system and keep the animal on oxygen.
  - 5.2.3.2. Transfer the animal to its cage once it begins to move and allow it to recover fully (sternal position).
- 5.3. Injectable anesthesia:
- 5.3.1 Injectable anesthetic dose can vary with the sex, age, strain, and body condition of the animal.
  - 5.3.2 Can be used alone for short, non-invasive procedures or before the use of isoflurane anesthesia for smooth and rapid induction.
  - 5.3.3 Contact the veterinarian staff on the appropriate dose before use.
  - 5.3.4 After injection, place the animal in a dark, quiet holding chamber with a heat source.
  - 5.3.5 Apply ophthalmic ointment (natural tears) to both eyes to prevent dryness and damage to the cornea. Reapply as needed.

Drug	Dose	Route	Duration of Effect	Notes
Ketamine	10- 40mg/kg	IM	15 to 30 minutes	
Ketamine Midazolam	10-40mg/kg 0.5-2mg/kg	IM	30 minutes to 1 hour	It can be mixed in the same syringe.
Ketamine Xylazine	25- 40mg/kg 5- 50mg/kg	IM	1 to 2 hours	It can be mixed in the same syringe. After 30 minutes, a half dose may be administered as needed.

**SOP 204 BIRD ANESTHESIA**

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Approved by the BGU Animal Policy and Welfare Oversight Committee