



1. PURPOSE

This Standard Operating Procedure (SOP) intends to describe methods of assessing pain in birds and mitigating pain by administering analgesic medications.

2. RESPONSIBILITY

Principal investigator (PI) and their research staff.

3. GENERAL CONSIDERATIONS

- 3.1. A procedure expected to be painful in humans must be considered painful to the animal.
 - 3.2. When there is a question of whether a procedure is painful, the animal should benefit from analgesia.
 - 3.3. Analgesia should be provided at an appropriate dose and frequency to control pain.
 - 3.4. Any deviation from this procedure must be justified by the investigator and approved by the BGU Ethical committee.
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4. PAIN RECOGNITION AND ASSESSMENT

- 4.1. Adapt the observation frequency to the procedure's invasiveness (minimum once a day).
- 4.2. Start by observing the animal from a distance, so the observer's presence does not alter the animal's behavior. Then proceed to observe the animal more closely.
- 4.3. Look for any changes in the behavior. Report animals that appear to be in pain to the vets.
- 4.4. Birds do not exhibit obvious clinical signs of pain. Because birds can experience pain as mammals, the assumption is made by extrapolation from human observers.

Note: *The most reliable signs of pain and distress are changes in behavior.*

5. ANALGESIA PLAN

- 5.1. Specify the analgesia plan in your animal protocol.
- 5.2. Provide analgesia just before the painful stimulus whenever possible, as it is more effective in preventing pain (e.g., give analgesic before surgery).
- 5.3. Use a combination of analgesics, often more effective than a single agent. For example, a variety of

opioids, non-steroidal anti-inflammatory drugs (NSAID), and infiltration of a local analgesic.

5.4. Extend analgesia from pre-op to 72 hours post-op for surgical procedures unless specified otherwise in the Animal Use protocol and approved by the BGU Ethical committee.

6. LOCAL ANESTHESIA

6.1. Infiltrate or apply local analgesics to areas where a painful stimulus may be induced. Repeat the application of local agents at specified intervals to maintain analgesia. In some cases, a sedative is recommended when using regional analgesia.

Anesthetic	Dose	Route	Duration	Note
Lidocaine	< 2 mg/kg	SC, Infiltration of surgical wounds	30–60 min.	Use lidocaine HCl 2% (20mg/ml) injectable solution. Because this drug is acidic, it is recommended to dilute it 3:1 with sodium bicarbonate injectable solution (at 5 or 8.4%). Dilution must be prepared immediately before use and should not be stored. A diluted solution is as effective, but induction of analgesia is slightly prolonged. *Dilution with sodium bicarbonate is unnecessary if lidocaine is administered to an anesthetized animal.
EMLA cream	Thick spread	Topical	30–60 min.	Apply only to intact skin. Spread or pluck the feathers. Ideally, 10 minutes before the painful procedure.
Lidocaine	Thick spread			Apply only to intact skin. Spread or pluck the feathers. Ideally, 10 minutes before the painful procedure.
Eye drops Localine(R)	1-2 drops	Ocular	30-60min	
Bupivacaine	< 2 mg/kg	SC, Infiltration of surgical wounds	3–4 hrs.	Use bupivacaine HCl 0.05% (5mg/ml) injectable solution. Same comment as for lidocaine.

7. SYSTEMIC ANALGESIA

7.1. Administration of non-steroidal anti-inflammatory drugs (NSAIDs):

7.1.1. NSAIDs include carprofen, ketoprofen, meloxicam

7.1.2. Ensure good water intake and monitor hydration status during the treatment period.

7.1.3. Suspend water restriction before administration of NSAIDs.

7.2. Administration of opiates

7.2.1. Opiates include Buprenorphine and butorphanol.

7.2.2. Ensure good water intake and monitor hydration status during the treatment period.

7.2.3. Suspend water restriction before administration of opiates.

Bird

Analgesic	Dose	Route	Frequency	Note
Buprenorphine	0.01–0.05 mg/kg	IM	8–12 hr.	Controlled drug.
Butorphanol	2–4 mg/kg	IM	4–6 hr.	Controlled drug.
Meloxicam	0.2–0.3mg/kg 1-2 mg/kg	SC, PO IM	12-24 hr.	If given PO: Can be diluted in 2.5% dextrose. Shake vigorously before administration. Provide 1-2 drops onto the bird's beak and watch for swallowing.
Ketoprofen	2 mg/kg 5-10 mg/kg	SC IM	12–24 hr.	

SOP 103 BIRD ANALGESIA

Written on (dd,mm,yyyy) 01.11.2022

Revised on (dd,mm,yyyy) 13.03.2023

Approved by the BGU Animal Policy and Welfare Oversight Committee