



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 frequency of observation to the invasiveness of the procedure (minimum once a day).
- 4.2. Start by observing the animal from a distance so the animal's behavior is not altered by the observer's presence. 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. Whenever possible, provide analgesia just before the painful stimulus, 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. For surgical procedures, extend analgesia from pre-op to 72 hours post-op unless specified otherwise in the Animal Use protocol and approved by the BGU Ethical committee.

6. LOCAL ANALGESIA

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.

Analgesic	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. Shave or pluck the fur. Ideally, 10 minutes before the painful procedure.
Localine	Thick spread			Apply only to intact skin. Shave or pluck the fur. Ideally, 10 minutes before the painful procedure.
Eye drops	1-2 drops	Ocular	30-60min	
Bupivacaine	< 2 mg/kg	SC, Infiltration of surgical wounds	3–4 hrs.	Use bupivacaine HCl 0.50% (5mg/ml) injectable solution. Same comment as for lidocaine.

7. GENERAL ANALGESIA

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

7.1.1. NSAIDs include carprofen, ketoprofen, meloxicam, and dipyrone.

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.

7.1.4. Do not administer NSAIDs to neonatal rodents.

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.	
Dipyrone	200 mg/kg	PO	In water bottle	Mild to moderate pain.

SOP 103 BIRD ANALGESIA

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Approved by the BGU Animal Policy and Welfare Oversight Committee