



## Hunter College

### Analgesia Guidelines

Because the anatomic structures and neurophysiologic mechanisms leading to the perception of pain are similar in humans and non-human animals, it is reasonable to assume that if a stimulus:

- is painful to humans
- is damaging or potentially damaging to tissues
- induces escape and emotional responses in an animal, it must be considered to be painful to that animal

The choice of post-surgical analgesic drug must take into consideration (and be appropriate for) the estimated level and duration of post-surgical/post-procedural pain/discomfort associated with the specific surgery/procedure.

Generally speaking, analgesics should be provided as early in the exercise as possible. Providing analgesic PRIOR to the initiation of the painful stimulus is most preferred; providing analgesia during the procedure (of an anesthetized animal) is considered the minimal standard when pre-procedural analgesia is not possible.

This concept of pre-emptive analgesic is important to the stability of the research animal and the outcome of the research data. An additional benefit of pre-emptive analgesia is that the amount of anesthetics required for proper anesthesia are often reduced, further benefiting the animal with a rapid return to normal, while saving critical research dollars.

Hunter utilizes a tiered system of analgesic delivery, based upon generalized observations of degrees of pain or discomfort. Guidelines for use of analgesics are included in tables below.

Agent	Dose, Route, Frequency	Minor Procedures Mild pain	Procedures with mild to moderate pain	Procedures with moderate to severe pain
buprenorphine (Buprenex)	<b>Mice</b> – 0.5-1.0 mg/kg SQ q 8-12 hrs  <b>Rats</b> – 0.5-1.0 mg/kg SQ q 8-12 hrs	24 hrs	48 hrs	Use with other drug or increase frequency of administration – contact vet staff for advice
carprofen	<b>Rodents</b> - 5mg/kg, SQ, give once a day	24 hrs	Pre-emptive and 48 hrs post procedure	* Not recommended
**carprofen wafers	<b>Mice</b> - one 5g tablet, orally, given once per day  <b>Rats</b> - 3 tablets orally once per day	24 hrs	48 hrs	* Not recommended
ketoprofen	<b>Rodents</b> - 5mg/kg, SQ, give once a day	24 hrs	Pre-emptive and 48 hrs post procedure	* Not recommended
meloxicam	<b>Rodents</b> - 2 mg/kg, SQ, give once a day  <b>Birds</b> – 0.1 mg/kg PO	24 hrs	Pre-emptive and 48 hrs post procedure	* Not recommended

\* Not recommended as the sole agent. Can be used with other analgesics, consult with College Veterinarian

\*\* Must ensure animal is eating and singly housed. Recommend using one dose of injectable carprofen immediately post operatively for survival surgery, followed by the wafers.

Procedures with potential for Mild Pain	Procedures with potential for Moderate Pain	Procedures with potential for Severe Pain
<ul style="list-style-type: none"> <li>• Catheter placement</li> <li>• Osmotic pump implantation</li> <li>• Intracerebral electrode implant</li> <li>• Intraocular injection</li> <li>• Intracranial microinjection</li> </ul>	<ul style="list-style-type: none"> <li>• Laparotomy</li> <li>• Nerve resections</li> <li>• Nerve crush</li> <li>• Air sack cannulation</li> </ul>	<ul style="list-style-type: none"> <li>• Orthopedic Procedures</li> <li>• Burn procedures</li> <li>• Spinal Cord procedures</li> </ul>