

Common Analgesic Drugs*

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DRUG	DOSE	ROUTE
Full Mu Opioids		
Hydromorphone	0.05–0.1 mg/kg	SC, IM, IV
Morphine	0.3–1.0 mg/kg	SC, IM, IV
Methadone	0.2–0.5 mg/kg	SC, IM, IV
Oxymorphone	0.02–0.06 mg/kg	SC, IM, IV
Partial Agonists		
Buprenorphine	10–20 mcg/kg	IM, IV
Simbadol (cats only)	0.24 mg/kg	SC
Mixed Agonist		
Butorphanol	0.2–0.4 mg/kg	SC, IM, IV
Alpha₂-Agonists		
Dexmedetomidine	2.5–10 mcg/kg	IM, IV
Dexmedetomidine (postanesthetic recovery dose)	0.05–2 mcg/kg	IV
Alpha₂-Antagonists		
Atipamezole	10× dexmedetomidine dose; same volume as dexmedetomidine	IM
NMDA Antagonists		
Ketamine (sedation)	5–10 mg/kg	SC, IM
Ketamine + midazolam (induction)	Ketamine: 5 mg/kg Midazolam: 0.3 mg/kg	IV
Ketamine + diazepam (induction)	Ketamine: 5 mg/kg Diazepam: 0.5 mg/kg	IV
Amantadine (treatment of pain)	3–5 mg/kg once daily	PO
Adjunct Drugs		
Gabapentin	Generally start at 5–10 mg/kg twice daily; increase or decrease based on the individual patient	PO
Tramadol	Dogs: 3–5 mg/kg 3 times daily Cats: 2–4 mg/kg twice daily	PO

Quick Reference: Common Analgesic Drugs *continued*

Common Constant-Rate Infusions

DRUG	LOADING DOSE	CRI
Ketamine	0.5–1 mg/kg	10–20 mcg/kg/min
Fentanyl	Cats: 5 mcg/kg Dogs: 5–10 mcg/kg	Cats: 0.2–0.4 mcg/kg/min (anesthetic dose) Dogs: 0.5–0.7 mcg/kg/min (anesthetic dose); 0.05–0.3 mcg/kg/min (analgesic dose)
Remifentanyl	None	Cats: 0.2–0.4 mcg/kg/min (anesthetic dose) Dogs: 0.5–0.7 mcg/kg/min (anesthetic dose); 0.05–0.3 mcg/kg/min (analgesic dose)
Lidocaine (dogs only)	1 mg/kg	50–100 mcg/kg/min
Hydromorphone	0.05 mg/kg	0.05–0.1 mg/kg/h (anesthetic dose) 0.01–0.02 mg/kg/h (postoperative analgesic dose)
Morphine	0.5 mg/kg	0.1–0.2 mg/kg/h

Common Injectable NSAIDs for Postoperative Analgesia

- Carprofen (dogs only): 2 to 4 mg/kg SC, IV; note that this usage is off-label in the United States
- Meloxicam: 0.2 mg/kg SC
- Robenacoxib: 2 mg/kg SC

Local Anesthetic Blockades

- Lidocaine: 1–4 mg/kg
- Bupivacaine: 0.5–2 mg/kg

Epidural Analgesia and Anesthesia

- Lidocaine: 1–2 mg/kg
- Bupivacaine: 0.5–1 mg/kg
- Morphine: 0.1 mg/kg
- Buprenorphine: 12.5 mcg/kg
- Drugs should be added to preservative-free saline for proper delivery. To calculate total volume of drug and saline needed for epidural administration, use the following:

$$\text{Weight} \times 0.3 \text{ mL} = \text{total volume}$$

*Drug protocols should be tailored to each individual patient. Debilitated, pediatric, and geriatric patients may require smaller doses than animals that are considered healthy. All drug doses are commonly used at and printed with permission from the UC Davis Veterinary Medical Teaching Hospital.