

What to Consider when Choosing an Opioid for Use in a Canine or Feline Patient



There are many factors to consider when choosing an opioid, including the degree of desired analgesia, onset and duration of action, adverse effects, and availability. This table can help you do what you do best—comfort your patients in their time of need.

Opioid	Analgesia	Onset (min)	Duration	Comments and Adverse Effects	Dose	Typical Starting Dose
					<i>in mg/kg unless otherwise indicated</i>	
Fentanyl 50 µg/mL DEA Class II	Profound analgesia Full mu and kappa agonists	<1–2	20–30 min	Less likely to cause adverse effects than other full opioid agonists; most commonly used as bolus for brief painful stimulus, as an infusion, or in a transdermal patch More potent than the drugs listed below	Dog and cat: 0.001–0.005 IV, Can administer up to 0.02 Most commonly used as a CRI	CRI, dog and cat: Loading dose: 0.001–0.003 (mg/kg), Intra-op: 0.05–0.7 µg/kg/min, Post-op: 0.03–0.2 µg/kg/min
Morphine 10 mg/mL DEA Class II	Profound analgesia Full mu and kappa agonists	1–5 IV or 10–20 IM	2–4 hr	Adverse effects are minimal; may cause vomiting after IM injection, histamine release if administered fast IV, bradycardia and respiratory depression. Recommend co-administration with a tranquilizer to decrease excitement in cats.	Dog: 0.25–1.0 IM or slowly IV Cat: 0.1–0.3 IM or slowly IV	Dog: 0.5 (0.25 for geriatric and compromised patients) IM. Cat: 0.2 IM
Hydromorphone 2 mg/mL DEA Class II				Similar to morphine but no histamine release. May cause hyperthermia in cats, especially at doses >0.1 mg/kg	Dog: 0.1–0.2 IM or IV Cat: 0.1 IM or IV	Dog and cat: 0.1 IM, IV
Methadone 10 mg/mL DEA Class II				Similar to morphine but no histamine release and little to no vomiting; is also an N-methyl-D-aspartate antagonist but clinical significance is not known	Dog and cat: 0.2–0.4 IV; 0.2–0.6 (up to 1.0 in dogs) IM Cat: 0.6 OTM	Dog and cat: 0.4 IM, IV
Buprenorphine 0.3 mg/mL DEA Class III	Moderate analgesia Partial mu agonist	20–45	4–8 hr depending on pain intensity, concentration, and dose	Long duration of action but slow onset of action and minimal to no sedation; same adverse effects as other opioids but effects are generally mild	Dog and cat: 0.01–0.03 IM, IV Commonly used in cats OTM to administer at home at 0.03–0.05 BID - TID	Dog and cat: 0.02 for IV, IM. Use 75% of label dose (0.18 mg/kg) if using multimodal analgesia
1.8 mg/mL DEA Class III			1 hr		24 hr	
Butorphanol 10mg/mL DEA Class IV	Mild - moderate analgesia Kappa agonist, mu antagonist	3–5 IV or 5–15 IM	20–60 min (dog) 90 min (cat)	Decent sedative in both dogs and cats, especially if combined with a tranquilizer; same adverse effects as other opioids but effects are generally mild	Dog and cat: 0.2-0.4 mg/kg IM or IV	Dog and cat: 0.4 for surgery, 0.2 for sedation without surgery

Choose an opioid based on the anticipated level of pain that may be experienced by the patient based on comorbidities and surgical procedure.
OTM, oral transmucosal

The 2020 AAHA Anesthesia and Monitoring Guidelines for Dogs and Cats are available at aaha.org/anesthesia.

This document is intended as a guideline only, not an AAHA standard of care. These guidelines and recommendations should not be construed as dictating an exclusive protocol, course of treatment, or procedure. Variations in practice may be warranted based on the needs of the individual patient, resources, and limitations unique to each individual practice setting.

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