

ASK A SPECIALIST

Top Questions About Perioperative Pain Strategies

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Managing postoperative pain in dogs and cats is a crucial aspect of veterinary care, ensuring faster recovery, reduced complications, and better patient wellbeing. In humans, it has been established that fear and anxiety increase pain perception. Although proving this association in animals is more challenging, veterinary professionals know that anxiety and pain scores for patients increase in the postoperative setting.¹ Advances in pain management (e.g., regional anesthesia, multimodal analgesia, long-acting local anesthetics such as liposomal bupivacaine) enable safer, more effective postoperative care. This article incorporates the latest research and clinical best practices to address common questions about perioperative pain control.

What can clients give before bringing the patient to the hospital?

Some medications can be administered before the

patient arrives at the hospital. Preoperative pain control plays an essential role in reducing stress as well as optimizing anesthesia and analgesia throughout the surgical event. However, not all medications are appropriate before surgery as some may interact with anesthesia drugs or increase bleeding risks.

Medications That Can Be Given Orally to Dogs Before Arrival

- **Gabapentin (10 to 20 mg/kg, 4 to 6 hours before arrival):** Provides mild sedation and helps control neuropathic pain. It is particularly beneficial for patients with chronic pain conditions such as osteoarthritis or intervertebral disk disease.²
- **Pregabalin (4 mg/kg, 4 to 6 hours before arrival):** More potent than gabapentin and has a longer duration of action, making it preferable for patients with severe neuropathic pain or those requiring stronger preoperative sedation.²

Abstract

Effective perioperative pain management enhances veterinary patient recovery, minimizes discomfort, and reduces postsurgical complications. Preventive analgesia using multimodal techniques should start well before the surgical event and continue postoperatively.



Take-Home Points

- Multimodal pain management combining anxiolytic agents, systemic analgesics, and regional local anesthesia optimizes perioperative comfort.
- Preoperative anxiolytics and analgesics administered by the client before the appointment can reduce stress, especially for fearful and aggressive patients.
- Regional nerve blocks and epidurals provide targeted, opioid-sparing analgesia, improving patient outcomes while reducing systemic adverse effects.
- Liposomal bupivacaine offers extended postoperative pain relief, decreasing the need for postoperative parenteral medications.

- **Trazodone (3 to 10 mg/kg, 3 to 6 hours before arrival):** Reduces anxiety and stress without causing excessive sedation and works well for nervous or aggressive dogs. May reduce the needed volume of induction drug and aids recovery.
- **Maropitant (2 mg/kg, the night before or morning of surgery):** Reduces nausea and vomiting, enhancing postoperative comfort.

Medications to Avoid or Use With Caution

- **NSAIDs:** Some clinicians advise withholding NSAIDs before surgery due to potential risks for bleeding or renal injury associated with hypotension during anesthesia. However, if a patient is already receiving an NSAID for chronic pain management, consider whether to continue or pause it before surgery.
- **Opioids:** Unless specifically prescribed, preoperative opioids at home, such as tramadol or codeine, should be avoided as they can cause sedation, vomiting, or respiratory depression and therefore can potentially interfere with anesthesia.

What is the best approach for fearful or aggressive patients?

In dogs, pain and anxiety have a complex, potentially bidirectional, relationship. Pain can lead to or exacerbate anxiety; conversely, anxiety can make dogs more sensitive to pain.³ Preplanning and appropriate at-home premedication can greatly decrease stress for patients, clients, and hospital staff. Medication administration should be timed to ensure medications take effect before the stimulation caused by the trip to the hospital.

The Chill Protocol, developed at Tufts University, is thought to provide mild sedation and mild to moderate anxiolysis.⁴ For patients that demonstrate severe anxiety

or aggression and need moderate to profound sedation and additional analgesic effects, dexmedetomidine combined with other medications may be recommended (**TABLE 1**). An alternative option to the dexmedetomidine gel is having the client administer the injectable form transmucosally at 10 to 20 µg/kg 30 to 60 minutes before the appointment. Additional information is available at fearfreepets.com.



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If possible, the patient and client should avoid the general waiting area when entering the hospital and be settled in a quiet, dimly lit room, where premedication (e.g., dexmedetomidine at 5 to 10 µg/kg IM or SC, hydromorphone at 0.05 mg/kg IM or SC) can then be administered. This protocol typically provides the patient a moderate to deep plane of sedation, suitable for IV catheter placement and routine anesthesia.

Which regional nerve blocks can I perform?

Regional nerve blocks offer superior pain control by blocking pain transmission at its source, reducing the need for systemic analgesics. Training and technique are necessary to properly perform the blocks, and ultrasound guidance can improve accuracy and safety.

Common Regional Blocks for Small Animals

The local anesthetics most commonly used are

TABLE 1 Protocols Commonly Used for Fearful or Aggressive Patients

PROTOCOL	DRUG DOSAGES	PRIMARY EFFECTS	ONSET TIME	DURATION	SEDATION DEPTH
Chill (Tufts)	Gabapentin 20–25 mg/kg PO starting evening before and 1–2 h prior to appointment; melatonin 0.5–1 mg small, 1–3 mg medium, 5 mg large dog PO 1–2 h prior to appointment; acepromazine 0.025–0.05 mg/kg OTM 30 min prior to appointment	Anxiolysis, mild sedation	1–2 h	4–6 h	Mild to moderate
Sileo	Dexmedetomidine oral gel 0.1 mL/2 kg OTM 30–60 min prior to appointment	Sedation, mild analgesia	1–2 h	2–3 h	Moderate
Sileo + melatonin	Dexmedetomidine oral gel 0.1 mL/2 kg OTM 30–60 min prior to appointment, melatonin 1–5 mg PO 1–2 h prior to appointment	Sedation, mild anxiolysis	1–2 h	2–4 h	Moderate
Sileo + gabapentin	Dexmedetomidine oral gel 0.1 mL/2 kg OTM 30–60 min prior to appointment, gabapentin 10–20 mg/kg PO 1–2 h prior to appointment	Sedation, anxiolysis, analgesia	30–60 min	4–6 h	Moderate to deep
Sileo + gabapentin + trazodone	Dexmedetomidine oral gel 0.1 mL/2 kg OTM 30–60 min prior to appointment, gabapentin 20 mg/kg PO 2 h prior to appointment, trazodone 3–5 mg/kg PO 2 h prior to appointment	Sedation, anxiolysis, analgesia	30–60 min	6–8 h	Deep
Sileo + pregabalin	Dexmedetomidine oral gel 0.1 mL/2 kg OTM 30–60 min prior to appointment, pregabalin 4–5 mg/kg PO 2 h prior to appointment	Sedation, anxiolysis, analgesia	30–60 min	6–12 h	Moderate to deep

bupivacaine or ropivacaine, often combined with morphine for extended pain relief. Local anesthetics with different durations of action (e.g., lidocaine for shorter procedures) can also be used.

- **Maxillary/infraorbital block:** Used for dental extractions, oral tumor removals, and maxillofacial surgeries.
- **Mandibular/mental block:** Ideal for mandibular fracture repairs, dental work, and oral surgery.
- **Brachial plexus block:** Provides forelimb analgesia; useful for amputations, fracture repairs, and elbow surgeries.
- **Sciatic and femoral block:** Provides hindlimb analgesia, particularly for tibial plateau leveling osteotomy (TPLO), femur fractures, and hip surgeries.
- **Intercostal block:** Used for thoracic wall surgeries and rib fractures.
- **Lumbosacral epidural:** Provides hindlimb, perineal, and abdominal analgesia.

When is an epidural useful?

Epidurals are extremely valuable when performing hindlimb, perineal, and major abdominal surgeries; they provide prolonged, opioid-sparing analgesia. Epidurals can also be used in combination with general anesthesia to provide balanced analgesia. Morphine plus bupivacaine provides 12 to 24 hours of analgesia. Low-dose dexmedetomidine enhances pain relief. Only preservative-free injectables should be used for epidurals.

Indications

- TPLO, femoral head ostectomy, hip surgeries
- Perineal surgeries (anal sacculotomy, tail amputation)
- Cesarean sections (pain relief that does not sedate puppies/kittens)



ANALGESIA	INDICATIONS	CONTRAINDICATIONS
Minimal	Mild to moderate fear or aggression	Dogs prone to prolonged acepromazine effects, or if reversible sedation may be needed
Mild	Moderate sedation	Cardiovascular disease, liver or kidney failure, puppies <16 weeks
Mild	Mild to moderate sedation and mild anxiety	Cardiovascular disease, liver or kidney failure, puppies <16 weeks
Mild	Moderate sedation and fear/aggression	Cardiovascular disease, liver or kidney failure, puppies <16 weeks
Mild	Strong sedation for very aggressive dogs	Cardiovascular disease, liver or kidney failure, puppies <16 weeks
Mild	Moderate sedation and fear/aggression	Cardiovascular disease, liver or kidney failure, puppies <16 weeks

Contraindications

- Sepsis
- Coagulopathies
- Severe hypotension

Should I use liposomal bupivacaine?

Yes! Bupivacaine liposome injectable suspension (Nocita; Elanco, [my.elanco.com](https://www.my.elanco.com)) is a game-changing option for providing long-lasting postoperative analgesia. However, although liposomal bupivacaine is valuable, it is part of a multimodal plan and not a replacement for all other analgesics in every case. Liposomal bupivacaine is administered as a single-dose nerve block; it is not for intravenous, intra-articular, or epidural use. Avoid use of liposomal bupivacaine in traumatized tissue or patients with high risk for infection.⁵

To administer liposomal bupivacaine, use the “moving needle” technique for even distribution. Dilute 1:1 with sterile saline for large surgical sites.

Benefits

- A single injection provides up to 72 hours of pain relief.⁵
- Reduces reliance on opioids for postoperative pain management and greatly reduces the need for postoperative parenteral drug administration
- Is FDA-approved for use in dogs and cats

Best Uses

- Orthopedic procedures such as TPLO and fracture repairs
- Amputations
- Soft tissue mass removals
- Onychectomy (cats)

What are common protocols for postoperative home medication?

Most veterinary surgery patients are discharged within 24 hours. Postoperative home medication protocols are crucial for ensuring continued pain management and a smooth recovery after the patient leaves the hospital.

The protocols should be based on the individual patient, the surgery performed, and the in-hospital analgesia provided. Common components include:

- **NSAIDs.** Prescribe these medications if their anti-inflammatory and analgesic properties are needed. Use only veterinary-specific NSAIDs and provide clear instructions to clients regarding dosage, administration, and potential adverse effects.
- **Opioids.** Prescribe medications such as buprenorphine or other opioids to relieve moderate to severe pain. Clear instructions for dosage, frequency, and potential adverse effects (e.g., sedation, constipation [which may affect cats]) are essential.
- **Gabapentin or pregabalin.** If needed, have these medications continued at home, especially if neuropathic pain is a concern. They can also help provide mild sedation to aid activity restriction. Pregabalin is the author's choice for more severe pain, and gabapentin remains a good general option.
- **Adjunctive medications.** Depending on the surgery, other medications such as sedatives, muscle relaxants, or antimicrobials can be included.
- **Detailed instructions.** Give clients clear, written



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instructions detailing the name of each medication, the dosage, the frequency of administration, the route of administration, the duration of treatment, potential adverse effects, and any necessary precautions.

- **Follow-up communication.** Schedule follow-up calls or appointments to assess the patient's pain level and adjust medications as needed.
- **Client education.** Educate owners on how to assess their pet's pain, how to administer medications properly, and what signs to watch for that may indicate complications or inadequate pain control.

SUMMARY

A well-planned, multimodal approach to perioperative pain management is key to improving surgical outcomes in veterinary patients. By integrating anxiolytics, regional nerve blocks, and extended-release local anesthetics, veterinarians can provide superior pain relief while minimizing patient opioid dependence. **TVP**

References

1. Ellwood B, Murison PJ. Investigating the effect of anxiety on pain scores in dogs. *Vet Anaesth Analg.* 2022;49(1):135-142. doi:10.1016/j.vaa.2021.07.005
2. Moore SA. Managing neuropathic pain in dogs. *Front Vet Sci.* 2016;3:12. doi:10.3389/fvets.2016.00012
3. Demirtas A, Atilgan D, Saral B, et al. Dog owners' recognition of pain-related behavioral changes in their dogs. *J Vet Behav.* 2023;62:39-46. <https://doi.org/10.1016/j.jveb.2023.02.006>
4. Costa RS, Karas AZ, Borns-Weil. Chill protocol to manage aggressive & fearful dogs. Clinician's Brief. Updated May 2019. Accessed June 9, 2025. <https://www.cliniciansbrief.com/article/chill-protocol-manage-aggressive-fearful-dogs>
5. Enomoto M, Enomoto H, Messenger K, Lascelles BD. Bupivacaine liposome injectable suspension. *Today's Vet Pract.* 2020;10(5):73-80.



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