

PAIN MANAGEMENT

Management of Acute Pain at Home: Oral Analgesics for Dogs and Cats

Sarah Shippy, DVM, MPH, MS, DACVAA

University of Florida College of Veterinary Medicine, Gainesville, Florida



**GET CONTINUING
EDUCATION CREDIT**



Scan the QR code
after reading this article
to take the quiz at
vetfolio.com and earn
free CE.

Abstract

Oral analgesic medications are an essential part of acute pain management. The ideal medication treats acute pain and related inflammation without significant adverse effects. Unfortunately, the perfect “one-size-fits-all” medication does not exist. Based on current literature, NSAIDs remain the most consistent anti-inflammatory analgesics for acute pain. Alternative options such as oral opioids, gabapentinoids, and amantadine have less severe adverse effects but lack efficacy studies for treatment of acute pain.

Take-Home Points

- Acute postsurgical pain is characterized by inflammation; the best oral analgesics for this type of pain target pain pathways and decrease inflammation.
- NSAIDs are the mainstay of acute pain management in dogs and cats.
- Alternative oral analgesics (e.g., opioids, gabapentinoids) have weak evidence in treatment of acute pain and are best used as supportive agents in a multimodal pain plan.
- Alternative analgesics (e.g., acetaminophen, gabapentin, amantadine) are used off-label and do not have veterinary-specific formulations. Careful client education is essential when prescribing these medications.

When formulating an analgesic plan for the management of acute pain, practitioners must consider the type of pain their patient is experiencing, including potential chronic pain. The complex physiology of pain demands a multimodal analgesic plan targeting peripheral nociceptors, spinal pathways, and central nervous system (CNS) signaling to provide optimal pain management (**BOX 1**).

It is worth noting that a major challenge in evaluating the evidence for oral analgesics is that they are often combined in efficacy studies. On one hand, this makes it difficult to interpret an individual drug's usefulness, but on the other, it may highlight important synergism between analgesic classes.

Administration of oral analgesics at home presents challenges such as lack of owner compliance, diversion of controlled drugs, and failure of the owner to recognize adverse effects of the medications immediately.

Nociception and Pain Transmission

Acute pain management is challenging due to the complexity of the pain pathways. Nociception starts when peripheral nociceptors are activated in response to thermal, chemical, and/or mechanical stimuli. Pain signals are then transmitted to the central nervous system via nerve fibers: A δ fibers for acute, sharp pain and C fibers for dull, aching pain. Additionally, the inflammatory cascade releases cytokines in response to

these nociceptive stimuli and further activates peripheral nociceptors. This inflammatory activation of nociceptors highlights decreasing inflammation as a key component of acute pain management.

At the level of the spinal cord, pain transmission is modulated through either inhibition, which decreases the signal to the brain, or upregulation, which leads to increased signaling. Prolonged peripheral activation (inflammation) can lead to an increase in neuronal activation known as peripheral sensitization, while

BOX 1

Oral Analgesics: Mechanisms of Action

- **Acetaminophen:** Not clearly understood, but possible COX-3 inhibition
- **Amantadine:** NMDA receptor antagonism and dopamine agonism
- **Gabapentin and pregabalin:** Inhibition of $\alpha_2\delta$ subunit of calcium channels decreases excitatory cell signaling and modulates pain signaling in the brain and spinal cord
- **NSAIDs:** COX-1/COX-2 inhibition leading to decreased prostaglandin production, decreased inflammation, and analgesia
- **Opioids:** Agonism at μ and κ receptors leading to peripheral and central modulation of pain signals

COX = cyclooxygenase; NMDA = N-methyl-D-aspartate

prolonged upregulation of neuron activity in the CNS can lead to central sensitization. Chronic pain states often lead to central sensitization and become maladaptive, making them especially challenging to treat.

NSAIDs

NSAIDs have been a mainstay of treating acute pain and inflammation in human and veterinary medicine for decades (TABLE 1).

Clinical Use

Clinically, NSAIDs provide potent analgesia for acute pain and inflammatory states (BOX 2). They are also first-line analgesics for osteoarthritis pain and are often used for chronic pain.

Mechanism of Action

The primary mechanism of action of NSAIDs is inhibition of prostaglandin production throughout the body. Cyclooxygenase (COX) enzymes produce various prostaglandins (e.g., prostaglandin E₂, thromboxane, prostacyclin) from arachidonic acid, which is present in cell membranes, and prostaglandins are responsible for maintaining many homeostatic functions, including gastrointestinal (GI) and renal blood flow, water balance, and coagulation. However, uncontrolled upregulation of prostaglandin production in states of inflammation can contribute to the development of peripheral and central sensitization. Inhibition of COX enzymes by NSAIDs leads to decreased prostaglandin formation and, ideally, decreased inflammation and pain.

Generally, COX-1 enzymes are responsible for normal homeostasis, while COX-2 enzymes increase during times of inflammation. This has led to the development of drugs trying to target only COX-2 enzymes to mitigate adverse effects. However, COX-1 and COX-2 enzymes both have roles in homeostasis and inflammation. Therefore, despite various COX selectivity, all NSAIDs carry a risk of adverse effects if not administered at recommended doses.

Potential Adverse Effects

The main adverse effects of NSAIDs include GI signs such as vomiting, diarrhea, and decreased appetite. In severe cases, NSAIDs can cause GI ulceration, bleeding, and perforation. GI side effects occur via 2 mechanisms: (1) direct irritation of the mucosa and (2) a decrease in prostaglandin-mediated mucosal blood flow, cell turnover, and mucus production. Decreased prostaglandin synthesis hinders GI repair mechanisms, potentially leading to further damage.

Secondarily, NSAIDs can cause kidney injury due to inhibition of prostaglandin’s role in modulating renal blood flow and water balance. Studies investigating the renal effects of NSAIDs in dogs have shown no significant kidney injury if administered to healthy patients at recommended dosages.^{1,2} In cases of decreased renal perfusion, such as from dehydration, hypovolemia, or hypotension, further reduction in renal blood flow caused by inhibition of prostaglandins can lead to or worsen acute kidney injury.

Many cats may have a mix of chronic pain and acute inflammation that could benefit from NSAID therapy. However, cats, especially those middle-aged or older,

TABLE 1 NSAID Selectivity and Dosages in Dogs and Cats

NSAID	SELECTIVITY	DOSAGE (DOGS)	DOSAGE (CATS)
Carprofen	COX-2 preferential	2.2 mg/kg PO q12h or 4.4 mg/kg PO q24h	—
Meloxicam	COX-2 preferential	0.2 mg/kg PO initial dose, then 0.2 mg/kg PO q24h	0.1 mg/kg PO initial dose, then 0.05 mg/kg PO q24h
Firocoxib	COX-2 selective	5 mg/kg PO q24h	1.5 mg/kg PO once
Robenacoxib	COX-2 selective	1–2 mg/kg PO q24h	1–2.4 mg/kg PO q24h
Deracoxib	COX-2 selective	3–4 mg/kg PO q24h up to 7 days	1 mg/kg PO once
Grapiprant	EP ₄ antagonist	2 mg/kg PO q24h	Not established

COX=cyclooxygenase; EP₄=prostaglandin E₂ receptor 4

often have chronic kidney disease. Studies of cats with stable kidney disease did not show worsening of disease with meloxicam or robenacoxib administration at below-label and label dosing, respectively.³ In many cases, use of low-dose NSAIDs may be beneficial in cats with stable chronic kidney disease and concurrent chronic pain such as osteoarthritis without worsening kidney values. Guidelines for long-term use of NSAIDs for chronic pain conditions in cats were published in 2024 by the International Society of Feline Medicine and the American Association of Feline Practitioners.³ Having informed discussions with owners about the benefits (e.g., analgesia, improved quality of life) and risks (e.g., possible worsening renal values) of NSAID use in cats with chronic kidney disease is warranted.

Acetaminophen

Acetaminophen, also called paracetamol in Europe, often gets grouped with traditional NSAIDs despite noted differences.

Clinical Use

Unlike traditional NSAIDs, acetaminophen does not cause significant GI effects such as ulceration or renal injury. For this reason, it has increased in popularity in dogs for mild analgesia. Optimal dosing and timing are still debatable, as acetaminophen has a short half-life in dogs and may require dosing every 6 to 8 hours to maintain adequate plasma levels.⁴

BOX 2

FAQ: How Should I Treat Postsurgical Pain in Nursing Animals?

What is the best option for at-home analgesia in a dog or cat following cesarean section (c-section)? The main concern in these cases is transfer of drug to neonates through the milk. For this reason, excretion of drugs in milk has been extensively studied in human medicine and cattle. Consistently, evidence supports that NSAIDs have limited excretion in milk and are not contraindicated in nursing dams or queens. Prescribing a few days of oral NSAIDs can provide effective analgesia after c-section in dogs and cats.

Mechanism of Action

Acetaminophen's mechanism of action is not on the COX-1 or COX-2 pathways and is still not fully understood. One possible mechanism behind acetaminophen's fever-reducing and analgesic effects is COX-3 inhibition in the brain.

Supporting Evidence

Efficacy studies for acute pain management with acetaminophen in dogs are lacking, despite common use in Europe and the United States. In a noninferiority study comparing oral acetaminophen/codeine to oral meloxicam, both drug protocols provided adequate analgesia after soft tissue and orthopedic procedures when administered with buprenorphine for the first 24 hours postoperatively.⁵ Another study compared acetaminophen, carprofen, and meloxicam in dogs after elective ovariohysterectomy and found that each treatment was equally efficacious.⁶ However, in experimentally induced lameness in dogs, acetaminophen/codeine was less effective than carprofen in improving ground force assessments.⁷ In another study, acetaminophen at 20 mg/kg IV did not provide adequate analgesia after ovariohysterectomy in dogs premedicated with meperidine.⁸

When to Use

Currently, no veterinary-specific formulation of acetaminophen is approved in the United States. Over-the-counter (OTC) human formulations of acetaminophen and of acetaminophen with codeine (Tylenol 3 and Tylenol 4) are available.

Acetaminophen should *never* be administered to cats due to risk of severe toxicity, which can cause oxidative damage to the liver and red blood cells leading to methemoglobinemia and potentially death.

If prescribing acetaminophen, it is important to have careful, clear discussion with clients, including cautioning them about OTC human formulations, which can contain xylitol.

Opioids

After NSAIDs, opioids are the other major class of analgesics used perioperatively. While opioids provide excellent analgesia when administered parenterally,

pharmacokinetic studies indicate that bioavailability after oral administration is poor in dogs and cats due to first-pass hepatic metabolism.

Opioid Derivatives

The oral opioid derivatives that have been studied in dogs and cats include tramadol, codeine, and hydrocodone.

Tramadol, a synthetic opioid agonist, acts as a serotonin and norepinephrine reuptake inhibitor. Its opioid agonism on the μ receptor is primarily mediated through its metabolite, *O*-desmethyltramadol, with far less activation from the parent drug. Unfortunately, dogs do not produce this metabolite in significant amounts necessary to provide adequate acute analgesia. An extensive systemic review on tramadol in dogs found that the efficacy of tramadol is low for treatment of postoperative pain compared to other analgesics.⁹ Cats produce higher concentrations of *O*-desmethyltramadol, and studies have shown analgesic effects after surgery.⁴ While this makes tramadol seem promising for use in cats, oral formulations are very unpalatable and cause hypersalivation, making administration challenging for owners.

Codeine and hydrocodone, both μ receptor agonists, have poor bioavailability in dogs and cats and do not provide adequate acute analgesia after oral administration.¹⁰

Transmucosal Buprenorphine

Transmucosal buprenorphine has shown some efficacy for postoperative pain management, especially in cats.^{11,12}

Clinical Use

While this route is distinctly different from oral administration, transmucosal buprenorphine is frequently prescribed for at-home administration for acute pain management.

Mechanism of Action

Buprenorphine, a partial μ receptor agonist, has a pKa, or dissociation constant, close to the feline oral pH,

which keeps the drug in a nonionized state that is more readily absorbed.

Supporting Evidence

Several studies in cats have assessed the efficacy of transmucosal buprenorphine, with mixed results. Two different studies found that transmucosal buprenorphine did not provide reliable postoperative analgesia compared to intravenous or intramuscular routes, but the dose used could have been too low (0.01 mg/kg).¹¹ Pharmacokinetics studies show variable bioavailability, potentially due to factors such as individual variation, inadvertent swallowing of the drug, or differences in oral pH.

In dogs, oral transmucosal buprenorphine has shown efficacy at high doses (0.12 mg/kg) for dogs undergoing ovariohysterectomy.¹³ This high dose requires a large volume in larger dogs, which can be difficult to administer and more costly. A pharmacokinetics study assessed transmucosal administration of Simbadol (Zoetis), a more concentrated formulation, at a lower dose (0.03 mg/kg) and found a bioavailability of 41%.¹⁴ This bioavailability is potentially promising, and the smaller volume may be easier to administer; however, analgesic efficacy still needs to be explored.

When to Use

At this time, the current body of evidence does not support the use of oral opioids for the management of acute pain. The lack of efficacy studies, in conjunction with the high abuse potential, discourages prescription of these drugs. Oral transmucosal buprenorphine anecdotally provides postoperative analgesia in cats and may provide some benefit in dogs; however, volume, cost, and mixed results are discouraging. Despite the challenges with oral opioids, recent development of longer-acting buprenorphine formulations, both transdermal (Zorbum, Elanco) and injectable (Simbadol, Zoetis), may be effective alternatives for at-home analgesia.

Gabapentinoids

Gabapentin has grown in popularity in the last few years, with pregabalin less commonly used. Both drugs are structural analogs of γ -aminobutyric acid (GABA) but do not act on the GABA receptor. Their mechanism

of action is mediated through the $\alpha_2\delta$ subunit of voltage-gated calcium channels by inhibiting the release of excitatory neurotransmitters and decreasing cell signaling.

Gabapentin

In both dogs and cats, gabapentin has a short half-life, suggesting the need for frequent dosing (up to 3 times daily) and a wide dose range between 10 and 20 mg/kg. However, pharmacokinetics in cats with chronic kidney disease showed decreased elimination of gabapentin, suggesting the need to reduce the dose.¹⁵

Supporting Evidence

Used in human medicine as an anticonvulsant, gabapentin has been investigated in human and veterinary medicine for a role in treating acute, chronic, and neuropathic pain. Unfortunately, studies are still conflicted on the efficacy of gabapentin in acute pain management. For example, no significant reduction in pain score was seen with the addition of gabapentin to opioids in dogs after hemilaminectomy surgery.¹⁶ Another study that investigated gabapentin use in dogs after forelimb amputation did not see a difference in treatment groups.¹⁷ Limitations cited in that study include the small sample size and the concurrent use of other analgesics (e.g., opioids, locoregional block, NSAIDs) confounding the effects of gabapentin.

In cats, most research has focused on gabapentin's anxiolytic and sedative effects. The literature on acute pain management is lacking, often with small sample sizes or in conjunction with other analgesic drugs, thus clouding the reliability of gabapentin as a solo agent. A recent systemic review found 56 articles on the use of gabapentin and pregabalin in cats, with only 7 assessing acute pain, 5 assessing chronic pain, and the remainder evaluating sedation effects.¹⁸ In 1 study, cats receiving buprenorphine in combination with either meloxicam or gabapentin showed no statistical difference in rescue analgesia requirements.¹² However, cats were only assessed for the first 8 hours postoperatively, which limits translation to analgesia at home, and more cats in the gabapentin group (25%) required rescue analgesia compared to meloxicam (13%). Thermal threshold testing of gabapentin at 3 escalating doses also did not show an antinociceptive effect of gabapentin in research cats.¹⁹

When to Use

In a 2021 survey of veterinary professionals, the most common reason to prescribe gabapentin was for analgesia when an NSAID was contraindicated.²⁰ Patients with concurrent GI, kidney, or liver disease may have contraindications to NSAID therapy. While gabapentin's lack of significant adverse effects (primarily sedation and ataxia) makes it a desirable alternative, current research does not support its use as a solo oral analgesic. Evidence does support its use as an adjunctive analgesic to modulate pain signaling in conjunction with NSAIDs and/or opioids or for use in neuropathic conditions.

Pregabalin

Pregabalin also has limited research in veterinary species, with some supportive evidence for its use in neuropathic conditions but less benefit in acute pain conditions. Pregabalin's site of action on calcium channels in the spinal cord and CNS could explain its documented benefit in neuropathic pain cases, while its lack of peripheral receptor activation could explain its limited benefit in acute inflammatory conditions.

Supporting Evidence

Pregabalin improved pain scores in dogs after hemilaminectomy compared with opioids alone, in contrast to the similar study using gabapentin.^{16,21} This could be due to differences in pharmacokinetics between the drugs. Additionally, pregabalin decreased neuropathic pain behaviors in dogs with syringomyelia.^{22,23} However, in dogs undergoing mastectomy, both pregabalin and gabapentin provided minimal or no additional analgesia when added to opioids and meloxicam.^{24,25} These studies highlight the potential benefit pregabalin may have in modulating neuropathic pain but also its deficiency in acute pain management.

When to Use

While some studies suggest pregabalin could be more beneficial than gabapentin, prescribing pregabalin can be more challenging as it is a Schedule V controlled medication. Gabapentin is not federally controlled, but some states have passed laws defining it as a Schedule V medication as well, and other states are tracking prescriptions.

RECOMMENDED READING

- Donati PA, Tarragona L, Franco JVA, et al. Efficacy of tramadol for postoperative pain management in dogs: systematic review and meta-analysis. *Vet Anaesth Analg*. 2021;48(3):283–296. doi:10.1016/j.vaa.2021.01.003
- Miranda-Cortés AE, Prado-Ochoa MG, Díaz-Torres R, et al. Comparison of the anxiolytic and analgesic effects of gabapentin and pregabalin in cats: a systematic review. *Animals (Basel)*. 2025;15(16):2346. doi:10.3390/ani15162346

Amantadine

Amantadine acts as an *N*-methyl-D-aspartate (NMDA) antagonist and dopamine agonist and may help decrease central pain sensitization. Veterinary studies on the acute and chronic effects of amantadine are limited, with the few publications focusing on its use in osteoarthritis and neuropathic pain.

Supporting Evidence

In a population of research cats, amantadine did not significantly change thermal threshold response when administered in combination with oxymorphone.²⁶ However, in a study of owned cats, cats with osteoarthritis showed improved owner-reported quality of life and mobility when given amantadine alone.²⁷

In dogs, amantadine acted synergistically with meloxicam for osteoarthritis pain that failed NSAID therapy alone.²⁸ Amantadine, administered alone and in conjunction with meloxicam, improved force gait analysis in dogs with degenerative lumbosacral stenosis that was previously refractory to NSAID therapy.²⁹

When to Use

Repetitive activation of neurons in the dorsal horn of the spinal cord, as occurs in chronic pain conditions, leads to the activation and recruitment of NMDA receptors or central sensitization. Acute pain is typically short term and less likely to cause repetitive

activation at the level of the spinal cord. This difference in acute and chronic pain pathway activation may explain amantadine's conflicting clinical effect. Thus, similar to gabapentin, amantadine is not adequate as a solo analgesic agent for acute pain. It is best used in combination with NSAIDs or opioids when there may be a component of central sensitization.

Summary

Oral analgesic therapy in dogs and cats can greatly improve quality of life and is often essential for treatment of postoperative pain. Inflammation is often a major component of acute pain, requiring treatment with NSAIDs. Despite their potential adverse effects, NSAIDs remain the most effective oral analgesic option in dogs and cats. Acetaminophen may be an alternative mild analgesic in dogs with NSAID contraindications but lacks anti-inflammatory properties. Alternative drugs such as oral opioids, gabapentinoids, and amantadine show benefits as adjunctive analgesics targeting the CNS pain pathways, but their efficacy as solo agents may be lacking. Ultimately, when formulating an analgesic plan for dogs and cats, consider ways to target multiple areas of the pain pathway (peripheral and central) through combination drug therapy, use of locoregional techniques, or nonpharmaceutical therapies. **TVP**

References

1. Boström IM, Nyman G, Hoppe A, Lord P. Effects of meloxicam on renal function in dogs with hypotension during anaesthesia. *Vet Anaesth Analg*. 2006;33(1):62–69. doi:10.1111/j.1467-2995.2005.00208.x
2. Fusellier M, Desfontis JC, Le Roux A, et al. Effect of short-term treatment with meloxicam and pimobendan on the renal function in healthy beagle dogs. *J Vet Pharmacol Ther*. 2008;31(2):150–155. doi:10.1111/j.1365-2885.2007.00934.x
3. Taylor S, Gruen M, KuKanich K, et al. 2024 ISFM and AAEP consensus guidelines on the long-term use of NSAIDs in cats. *J Feline Med Surg*. 2024;26(4):1098612X241241951. doi:10.1177/1098612X241241951
4. Pang DSJ. Anesthetic and analgesic adjunctive drugs. In: Lamont L, Grimm K, Robertson S, Love L, Schroeder C, eds. *Veterinary Anesthesia and Analgesia*. 6th ed. Wiley-Blackwell; 2024:420–447. <https://doi.org/10.1002/9781119830306.ch25>
5. Pacheco M, Knowles TG, Hunt J, Slingsby LS, Taylor PM, Murrell JC. Comparing paracetamol/codeine and meloxicam for postoperative analgesia in dogs: a non-inferiority trial. *Vet Rec*. 2020;187(8):e61. doi:10.1136/vr.105487
6. Hernández-Avalos I, Valverde A, Ibancovich-Camarillo JA, et al. Clinical evaluation of postoperative analgesia, cardiorespiratory parameters and changes in liver and renal function tests of paracetamol compared to meloxicam and carprofen in dogs undergoing ovariohysterectomy. *PLoS One*. 2020;15(2):e0223697. doi:10.1371/journal.pone.0223697

7. Budsberg SC, Kleine SA, Norton MM, Sandberg GS, Papich MG. Comparison of the effects on lameness of orally administered acetaminophen-codeine and carprofen in dogs with experimentally induced synovitis. *Am J Vet Res*. 2020;81(8):627-634. doi:10.2460/AJVR.81.8.627
8. Leung J, Beths T, Carter JE, Munn R, Whittem T, Bauquier SH. Intravenous acetaminophen does not provide adequate postoperative analgesia in dogs following ovariohysterectomy. *Animals (Basel)*. 2021;11(12):3609. doi:10.3390/ani11123609
9. Donati PA, Tarragona L, Franco JVA, et al. Efficacy of tramadol for postoperative pain management in dogs: systematic review and meta-analysis. *Vet Anaesth Analg*. 2021;48(3):283-296. doi:10.1016/j.vaa.2021.01.003
10. Heffernan AE, Katz EM, Sun Y, Rendahl AK, Conzemius MG. Once daily oral extended-release hydrocodone as analgesia following tibial plateau leveling osteotomy in dogs. *Vet Surg*. 2018;47(4):516-523. doi:10.1111/vsu.12792
11. Steagall PV, Monteiro-Steagall BP, Taylor PM. A review of the studies using buprenorphine in cats. *J Vet Intern Med*. 2014;28(3):762-770. doi:10.1111/jvim.12346
12. Steagall PV, Benito J, Monteiro BP, Doodnaught GM, Beauchamp G, Evangelista MC. Analgesic effects of gabapentin and buprenorphine in cats undergoing ovariohysterectomy using two pain-scoring systems: a randomized clinical trial. *J Feline Med Surg*. 2018;20(8):741-748. doi:10.1177/1098612X17730173
13. Ko JC, Freeman LJ, Barletta M, et al. Efficacy of oral transmucosal and intravenous administration of buprenorphine before surgery for postoperative analgesia in dogs undergoing ovariohysterectomy. *JAVMA*. 2011;238(3):318-328. doi:10.2460/javma.238.3.318
14. Enomoto H, Love L, Madsen M, Wallace A, Messenger KM. Pharmacokinetics of intravenous, oral transmucosal, and intranasal buprenorphine in healthy male dogs. *J Vet Pharmacol Ther*. 2022;45(4):358-365. doi:10.1111/jvp.13056
15. Quimby JM, Lorbach SK, Saffire A, et al. Serum concentrations of gabapentin in cats with chronic kidney disease. *J Feline Med Surg*. 2022;24(12):1260-1266. doi:10.1177/1098612X221077017
16. Aghighi SA, Tipold A, Piechotta M, Lewczuk P, Kästner SB. Assessment of the effects of adjunctive gabapentin on postoperative pain after intervertebral disc surgery in dogs. *Vet Anaesth Analg*. 2012;39(6):636-646. doi:10.1111/J.1467-2995.2012.00769.X
17. Wagner AE, Mich PM, Uhrig SR, Hellyer PW. Clinical evaluation of perioperative administration of gabapentin as an adjunct for postoperative analgesia in dogs undergoing amputation of a forelimb. *JAVMA*. 2010;236(7):751-756. doi:10.2460/javma.236.7.751
18. Miranda-Cortés AE, Prado-Ochoa MG, Díaz-Torres R, et al. Comparison of the anxiolytic and analgesic effects of gabapentin and pregabalin in cats: a systematic review. *Animals (Basel)*. 2025;15(16):2346. doi:10.3390/ani15162346
19. Pypendop BH, Siao KT, Ilkiw JE. Thermal antinociceptive effect of orally administered gabapentin in healthy cats. *Am J Vet Res*. 2010;71(9):1027-1032. doi:10.2460/ajvr.71.9.1027
20. Reader R, Olaitan O, McCobb E. Evaluation of prescribing practices for gabapentin as an analgesic among veterinary professionals. *Vet Anaesth Analg*. 2021;48(5):775-781. doi:10.1016/j.vaa.2021.06.007
21. Schmierer PA, Tüsmeyer J, Tipold A, Hartnack-Wilhelm S, Leszczuk P, Kästner SBR. Randomized controlled trial of pregabalin for analgesia after surgical treatment of intervertebral disc disease in dogs. *Vet Surg*. 2020;49(5):905-913. doi:10.1111/vsu.13411
22. Sanchis-Mora S, Chang YM, Abeyesinghe SM, et al. Pregabalin for the treatment of syringomyelia-associated neuropathic pain in dogs: a randomised, placebo-controlled, double-masked clinical trial. *Vet J*. 2019;250:55-62. doi:10.1016/j.tvjl.2019.06.006
23. Thoenfer MS, Skovgaard LT, McEvoy FJ, Berendt M, Bjerrum OJ. Pregabalin alleviates clinical signs of syringomyelia-related central neuropathic pain in Cavalier King Charles Spaniel dogs: a randomized controlled trial. *Vet Anaesth Analg*. 2020;47(2):238-248. doi:10.1016/j.vaa.2019.09.007
24. Cerazo LML, Peruchi LG, Bruno TS, Segatto CZ, Nicácio GM, Cassu RN. Analgesic efficacy of pregabalin in dogs undergoing mastectomy with ovariohysterectomy. *Top Companion Anim Med*. 2025;67:100993. doi:10.1016/j.tcam.2025.100993
25. Crociolli GC, Cassu RN, Barbero RC, Rocha TL, Gomes DR, Nicácio GM. Gabapentin as an adjuvant for postoperative pain management in dogs undergoing mastectomy. *J Vet Med Sci*. 2015;77(8):1011-1015. doi:10.1292/jvms.14-0602
26. Siao KT, Pypendop BH, Escobar A, Stanley SD, Ilkiw JE. Effect of amantadine on oxymorphone-induced thermal antinociception in cats. *J Vet Pharmacol Ther*. 2012;35(2):169-174. doi:10.1111/j.1365-2885.2011.01305.x
27. Shipley H, Flynn K, Tucker L, et al. Owner evaluation of quality of life and mobility in osteoarthritic cats treated with amantadine or placebo. *J Feline Med Surg*. 2021;23(6):568-574. doi:10.1177/1098612X20967639
28. Lascelles BD, Gaynor JS, Smith ES, et al. Amantadine in a multimodal analgesic regimen for alleviation of refractory osteoarthritis pain in dogs. *J Vet Intern Med*. 2008;22(1):53-59. doi:10.1111/j.1939-1676.2007.0014.x
29. Caterino C, Della Valle G, Aragosa F, Cavalli S, Lamagna F, Fatone G. Amantadine as a therapeutic option for neuropathic pain in dogs with degenerative lumbosacral stenosis. *BMC Vet Res*. 2025;21(1):469. doi:10.1186/s12917-025-04911-9

Author



Sarah Shippy

Dr. Shippy graduated in 2017 from the University of Missouri, where she also completed a master of public health degree. She completed a rotating internship in small animal medicine and surgery at Louisiana State University. Continuing to pursue her interest in anesthesia, she completed an anesthesiology and pain management residency at the University of Florida, where she also completed a master's degree in veterinary sciences in 2022. She has continued to work at the University of Florida as a clinical assistant professor. Her clinical interests include pain management techniques and exotic animal anesthesia.



Elevate Veterinary Client Care

Give your customer service team the tools to deliver exceptional care.

This certification builds critical skills in communication, empathy, and client interactions—enhancing every client experience and boosting your clinic's reputation.



**Certify
Your Team
Today!**

NAVCC
YOUR VETERINARY CERTIFICATIONS

Continuing Education

PEER REVIEWED

EARN CE CREDIT

Management of Acute Pain at Home: Oral Analgesics for Dogs and Cats



▲
**SCAN THE
QR CODE**
to take the
quiz for free
on VetFolio

This article has been submitted for **RACE approval for 1 hour of continuing education credit** and will be opened for enrollment upon approval. To receive credit, take the test at vetfolio.com by searching the name of the article or scanning the QR code.

- Free registration is required.
- Questions and answers online may differ from those below.
- Tests are valid for 2 years from the date of approval.

CE Quiz Questions

1. The site of action of gabapentinoids is the:
 - a. NMDA receptor
 - b. $\alpha_2\delta$ subunit of calcium channels
 - c. α subunit of the GABA_A receptors
 - d. κ receptor
2. Which nerve fibers are responsible for transmitting dull, aching pain?
 - a. B fibers
 - b. A δ fibers
 - c. C fibers
 - d. A β fibers
3. NSAIDs with more COX-2 selectivity have a decreased risk of gastrointestinal side effects.
 - a. True
 - b. False
4. Which statement regarding acetaminophen is true?
 - a. It is a COX-2 selective anti-inflammatory drug.
 - b. It can be used off-label in cats.
 - c. Adverse effects include acute kidney injury and gastrointestinal damage.
 - d. It has a short half-life in dogs and may require dosing every 8 hours.
5. Which of the following drugs is not federally controlled?
 - a. Buprenorphine
 - b. Pregabalin
 - c. Robenacoxib
 - d. Acetaminophen with codeine