

# 2015 AAHA/AAFP Pain Management Guidelines for Dogs and Cats



# IMPLEMENTATION TOOLKIT





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## AAHA Standards of Accreditation

The *AAHA Standards of Accreditation* include standards that address pain management. For information on how accreditation can help your practice provide the best care possible for your patients, visit <http://bit.ly/1yhc5Da> or call 800-252-2242.

### Free web conference available now!

Join Dr. Michael Petty and Dr. Sheila Robertson for an engaging discussion on best practices for veterinary staff to implement the *2015 AAHA/AAFP Pain Management Guidelines for Dogs and Cats*. Earn 1 hour of CE credit. Go to [aaha.org/webconf](http://aaha.org/webconf).





Veterinary practice guidelines, like the recently revised and updated *2015 AAHA/AAFP Pain Management Guidelines for Dogs and Cats*, help ensure that pets get the best possible care. From medical director to veterinary assistant, guidelines keep your hospital staff on the cutting edge of veterinary medicine.

The *2015 AAHA/AAFP Pain Management Guidelines for Dogs and Cats* is the most complete and medically sound compilation of updates, insights, advice, and recommendations ever developed for helping you ensure that all pets receive regular, appropriate pain management.

AAHA guidelines review the latest information to help staff address central issues and perform essential tasks to improve the health of pets. In addition, guidelines define the role of each staff member, so everyone on the health care team can work together to offer the best-quality medical care.

Guidelines are just that—a guide—established by experts in a particular area of veterinary medicine. Guidelines do not outweigh a veterinarian's clinical judgment; instead, they help veterinarians develop and carry out treatment plans that meet each patient's needs and circumstances.

Aligning your practice's protocols with guideline recommendations is a key step in ensuring that your practice continues to deliver best-quality care.

To support your dedicated efforts, AAHA is pleased to offer this toolkit. Here you'll find facts, figures, highlights, tips, client handouts, and other tools you can use every day to implement the recommendations of the *2015 AAHA/AAFP Pain Management Guidelines for Dogs and Cats*.

Thank you for helping advance our shared mission to deliver the best in companion animal medical care. Together, we can make a difference!

*Michael T. Cavanaugh, DVM*

Michael T. Cavanaugh, DVM, DABVP (C/F)  
AAHA Chief Executive Officer

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When selecting products, veterinarians have a choice of products formulated for humans and those developed and approved for veterinary use. Manufacturers of veterinary-specific products spend resources to have their products reviewed and approved by the US Food and Drug Administration (FDA) for canine and/or feline use. These products are specifically designed and formulated for dogs and cats; they are not human generic products. AAHA suggests that veterinary professionals make every effort to use veterinary FDA-approved products when available and base their inventory purchasing decisions on what product is most beneficial to the patient.

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# At-a-Glance-Highlights

**Alleviating pain is a professional obligation** and a key contributor to successful case outcomes and enhancement of the veterinarian–client–patient relationship.

**Recognition and proper management of chronic pain** can be as life-saving as any other medical intervention in veterinary medicine.

**Pain management treatment should focus on the underlying cause of pain** (nociceptive, inflammatory, or pathological) rather than strictly on its duration.

**Appropriate pain management requires a continuum of care** that begins with a case-specific pain assessment and treatment plan, including anticipation of pain, early intervention, and evaluation of the treatment response on an individual-patient basis.

**In addition to pharmacologic treatment of pain**, there is a strong role for nonpharmacologic modalities of pain management as part of a balanced, individualized treatment plan.

**The most accurate method for evaluating pain in animals is observation of behavior**, including deviation from normal behaviors and development of new behaviors, utilizing a validated pain-scoring tool for dogs and cats.

**Every veterinary health care team member should be able to recognize pain-associated behaviors** in patients and know how to respond appropriately.

**Pain assessment should be a routine component** of every physical exam.

**Pain-scoring tools should be routinely used** to assess acute and chronic pain.

**To target multiple pain pathways**, effective pain management involves a balanced or multimodal strategy using several classes of pain-modifying medications.

**Opioids are the most effective drug class** for managing acute pain.

**Because the majority of painful conditions have an inflammatory component**, nonsteroidal anti-inflammatory drugs are a mainstay for managing chronic pain and for perioperative use.





**Pharmacologic intervention can usually be enhanced** by various nonpharmacologic approaches, including weight optimization, physical rehabilitation, environmental modifications, and proper-patient handling techniques.

**Although degenerative joint disease, including osteoarthritis,** disproportionately affects older patients, its onset often begins at an early age in dogs and cats.

**Early intervention can delay the onset and severity of degenerative joint disease** and should involve the caregiver as part of the treatment strategy.

**In cases involving hospice and palliative care,** it is important to offer explanations of probable outcomes and to provide end-of-life choices designed to relieve the pet's pain and suffering.

**Pain management in clinical practice is a team effort,** with the pet owner functioning as an integral part of the team.

**All veterinary health care team members** should have a defined role in the practice's approach to providing compassionate care to its patients.

**Proper handling of older patients at home and during veterinary visits is an important component to minimizing discomfort** of degenerative joint disease and other chronic pain conditions.

**Each pain management plan should include patient-specific instructions,** given verbally and in writing to the pet owner, including the prevention and recognition of adverse drug effects.

# Summary of 2015 AAHA/AAFP Pain Management Guidelines for Dogs and Cats\*

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## Abstract

The robust advances in pain management for companion animals underlie the decision of AAHA and AAFP to supplement and expand on the information provided in the *2007 AAHA/AAFP Pain Management Guidelines for Dogs and Cats*. The 2015 guidelines summarize and offer a discriminating review of much of this new knowledge. Pain management is central to veterinary practice, alleviating pain, improving patient outcomes, and enhancing both quality of life and the veterinarian-client-patient relationship. The management of pain requires a continuum of care that includes anticipation, early intervention, and evaluation of response on an individual-patient basis. The guidelines include both pharmacologic and nonpharmacologic modalities to manage pain; they are evidence-based insofar as possible and otherwise represent a consensus of expert opinion. Behavioral changes are currently the principal indicator of pain and its course of improvement or progression, and the basis for recently validated pain scores. A team-oriented approach, including the owner, is essential for maximizing the recognition, prevention, and treatment of pain in animals. Postsurgical pain is eminently predictable but a strong body of evidence exists supporting strategies to mitigate adaptive as well as maladaptive forms. Degenerative joint disease is one of the most significant and underdiagnosed diseases of cats and dogs. Degenerative joint disease is ubiquitous, found in pets of all ages, and inevitably progresses over time; evidence-based strategies for management are established in dogs, and emerging in cats. These guidelines support veterinarians in incorporating pain management into practice, improving patient care. (*J Am Anim Hosp Assoc* 2015; 51:65–82. DOI 10.5326/JAAHA-MS-7331)

## Introduction

Pain management is central to veterinary practice, not adjunctive. Alleviating pain is not only a professional obligation (recall the veterinarians pledge to “the relief of animal pain and suffering”) but also a key contributor to successful case outcomes and enhancement of the veterinarian-client-patient relationship. A commitment to pain management identifies a practice as one that is committed to compassionate care; optimum recovery from illness, injury, or surgery; and enhanced quality of life.

These guidelines continue the trend in all branches of medicine toward evidence-based consensus statements that address key issues in clinical practice. Although not a review article, this compilation is a force multiplier for the busy practitioner, consolidating in a single place current recommendations and insights from experts

in pain management. These guidelines are the product of a collaborative effort by the American Animal Hospital Association (AAHA) and the American Association of Feline Practitioners (AAFP). The recommendations of the guidelines task force are evidence based insofar as possible and otherwise represent a consensus of expert opinion.

These guidelines are designed to expand on the information contained in the *2007 AAHA/AAFP Pain Management Guidelines for Dogs and Cats*.<sup>1,2</sup> The 2015 guidelines differ from the earlier version in several ways. The first sections are general concepts designed to “set the stage” for the remaining, more specific content. The 2015 guidelines also discuss the importance of an integrated approach to managing pain that does not rely strictly on analgesic drugs.

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\*These guidelines were prepared by a task force of experts convened by the American Animal Hospital Association and the American Association of Feline Practitioners for the express purpose of producing this article. These guidelines are supported by a generous educational grant from Abbott Animal Health, Elanco Companion Animal Health, Merial, Novartis Animal Health, and Zoetis, and are endorsed by the International Veterinary Academy of Pain Management. They were subjected to the same external review process as all JAAHA articles.

From Epstein M, Rodan I, et. al 2015 AAHA/AAFP Pain Management Guidelines for Dogs and Cats. *J Am Anim Hosp Assoc*; 51:65-82 DOI 10.5326/JAAHA-MS-7331.



Because pain assessment in animals has become more scientifically grounded in recent years, various clinically validated instruments for scoring pain in both dogs and cats are described. The extensive list of published references includes numerous studies published within the past 3 yr, reflecting the rapid pace of advances in managing pain for companion animals. The 2015 guidelines summarize and offer a discriminating review of much of this new knowledge.

## Types of Pain

All types of tissue injury can be generators of pain. Occasionally, pain may occur in the absence of such causative factors. Understanding the mechanisms of pain is the key to its successful prevention and treatment. The pain response is unique to each individual and involves two components: (1) the sensory component is nociception, which is the neural processing of noxious stimuli, and (2) the affective component is pain perception, which is the unpleasant sensory and emotional experience associated with either actual or potential tissue damage. Pain is the endpoint of nociceptive input and can only occur in a conscious animal; however, there is also involvement of autonomic pathways and deeper centers of the brain involved with emotion and memory. Hence pain is a multi-dimensional experience; it is not just *what* you feel but also *how* it makes you feel.<sup>3</sup>

Acute pain has been defined as pain that exists during the expected time of inflammation and healing after injury (up to 3 mo), and chronic pain is defined as that which exists beyond the expected duration associated with acute pain. Therapy should be focused on the underlying cause of pain, (nociceptive, inflammatory, or pathological) rather than on arbitrary labels based on duration.<sup>4</sup>

Nociceptive pain occurs when peripheral neural receptors are activated by noxious stimuli (e.g., surgical incisions, trauma, heat, or cold). Inflammatory pain results gradually from activation of the immune system in response to injury or infection, and pathological pain, also called maladaptive pain, occurs when pain is amplified and sustained by molecular, cellular, and microanatomic changes, collectively termed peripheral and central hypersensitization.

Pathological pain is characterized by hyperalgesia (exaggerated response to noxious stimulus), allodynia (painful response to nonnoxious stimuli, such as touch or pressure), expansion of the painful field beyond its original boundaries, and pain protracted beyond the expected time of inflammation and healing. Under some conditions, genomic, phenotypic changes occur that create the condition known as neuropathic pain, whereby pain can be considered a disease of the central nervous system. Those changes are not necessarily chronologic. Maladaptive pain, or the risk for it, can occur within a matter of minutes of certain acute pain conditions (e.g., nerve injury, severe tissue trauma, or presence of pre-existing inflammation).



Understanding the mechanisms of pain is the key to its successful prevention and treatment.

## A Continuum of Care

Appropriate pain management requires a continuum of care based on a well-thought-out plan that includes anticipation, early intervention, and evaluation of response on an individual-patient basis. It should be noted that response to therapy is a legitimate pain assessment tool. Continuous management is required for chronically painful conditions, and for acute conditions until pain is resolved. The acronym PLATTER has been devised to describe the continuum of care loop for managing pain (**Figure 1**). The components of the PLATTER algorithm for pain management are *PLan*, *Anticipate*, *Treat*, *Evaluate*, and *Return*.

## It's Not Just About Drugs

Classic veterinary medical education places a strong emphasis on treatment of disease through pharmacology and surgery, the esoteric skills that are the domain of the trained clinician. Increasingly, evidence-based data and empirical experience justify a strong role for nonpharmacologic modalities for pain management. A number of those should be considered mainstream options and an integral part of a balanced, individualized treatment plan.

Examples of nonpharmacologic treatments supported by strong evidence include, but are not limited to, cold compression, weight optimization, and therapeutic exercise. Other treatment options gaining increasing acceptance include acupuncture, physical rehabilitation, myofascial trigger point therapy, therapeutic laser, and other modalities, which are discussed in these guidelines. In addition, nonpharmacologic adjunctive treatment includes an appreciation of improved nursing care, gentle handling, caregiver involvement, improved home environment, and hospice care. Those methods have the critical advantages of increased caregiver-clinician interaction and a strengthening of the human-pet bond. That shared responsibility promotes a team approach and leads to a more complete and rational basis for pain management decisions.<sup>5</sup>

FIGURE 1

## The PLATTER Approach to Pain Management

The PLATTER method provides individualized pain management for any patient and is devised not on a static basis but according to a continuous cycle of plan-treat-evaluate based on the patient's response. The PLATTER approach involves the following:

**Plan:** Every case should start with a patient-specific pain assessment and treatment plan.

**Anticipate:** The patient's pain management needs should be anticipated whenever possible so that preventive analgesia can either be provided or, in the case of preexisting pain, so that it can be treated as soon as possible.

**Treat:** Appropriate treatment should be provided that is commensurate with the type, severity, and duration of pain that is expected.

**Evaluate:** The efficacy and appropriateness of treatment should be evaluated, in many cases, using either a client questionnaire or an in-clinic scoring system.

**Return:** It can be argued that this is the most important step. This action takes us back to the patient where the treatment is either modified or discontinued based on an evaluation of the patient's response.

## Recognition and Assessment of Pain

### The Patient's Behavior is the Key

Because animals are nonverbal and cannot self-report the presence of pain, the burden of pain assumption, recognition, and assessment lies with veterinary professionals. It is now accepted that the most accurate method for evaluating pain in animals is not by physiological parameters but by observations of behavior. Pain assessment should be a routine component of every physical examination, and a pain score is considered the "fourth vital sign," after temperature, pulse, and respiration.<sup>1,2,6</sup> Obtaining a thorough patient history from the owner can help determine abnormal behavior patterns that may be pain related. [See page 18 of this toolkit for forms pet owners can complete in the exam room or at home.] Pet owners should be educated in observing any problematic behavioral changes in their pet and to contact their veterinarian in such cases.

As shown in **Figure 2**, pet owners and practitioners should have an awareness of behavior types that are relevant to pain assessment. Those include the animal's ability to maintain normal behavior, loss of normal behavior, and development of new behaviors that emerge either as an adaptation to pain or a response to pain relief. Because behavioral signs of pain are either often overlooked or mistaken for other problems, the healthcare team must be vigilant in recognizing those anomalies in the total patient assessment.

### Pain Scoring Tools

Although there is currently no gold standard for assessing pain in dogs and cats, the guidelines task force strongly recommends utilizing pain-scoring tools both for acute and chronic pain. It should be noted that those tools have varying degrees of validation, acute and chronic pain scales are not interchangeable, and canine and feline scales are not interchangeable. The use of pain scoring tools can decrease subjectivity and bias by observers, resulting in more effective pain management, which ultimately leads to better patient care.

FIGURE 2

## Behavioral Keys to Pain Assessment

When assessing an animal for pain, the following behavioral keys should be considered:

- Maintenance of normal behaviors.
- Loss of normal behaviors.
- Development of new behaviors.



## Pharmacological Intervention of Pain

Effective pain management generally involves a balanced or multimodal strategy using several classes of pain-modifying medications. The rationale behind this approach is that it addresses targeting multiple sites in pain pathways, potentially allowing lower doses of each drug and minimizing the potential for side effects associated with any single drug. The choice of medication should be based on anticipated pain levels and individual patient needs. Anticipatory analgesia provided prior to pain onset is more effective than analgesia provided once pain has occurred, contributing to both a dose- and anesthetic-sparing effect.

Pharmacological interventions discussed in the guidelines include:

- Opioids
- Nonsteroidal anti-inflammatory drugs
- Local anesthetics
- $\alpha$ -2 adrenergic agonists
- Ketamine
- Systemic lidocaine
- Tramadol
- Gabapentin
- Amantadine
- Tricyclic antidepressants (tcas)
- Selective serotonin (norepinephrine) reuptake inhibitors [ss(n)ris]
- Acetaminophen
- Maropitant
- Bisphosphonates
- Corticosteroids
- Polysulfated glycosaminoglycans (psgags)
- Nutraceuticals and other oral supplements

## Nonpharmacologic Modalities

### Weight Optimization for Pain Management

Adipose tissue secretes a mixture of cytokines that circulate throughout the body, contributing to the pathology of many diseases, including degenerative joint disease (DJD), and to the hypersensitization process in general. Either maintaining or regaining a lean body condition score is central to the treatment of chronic pain.

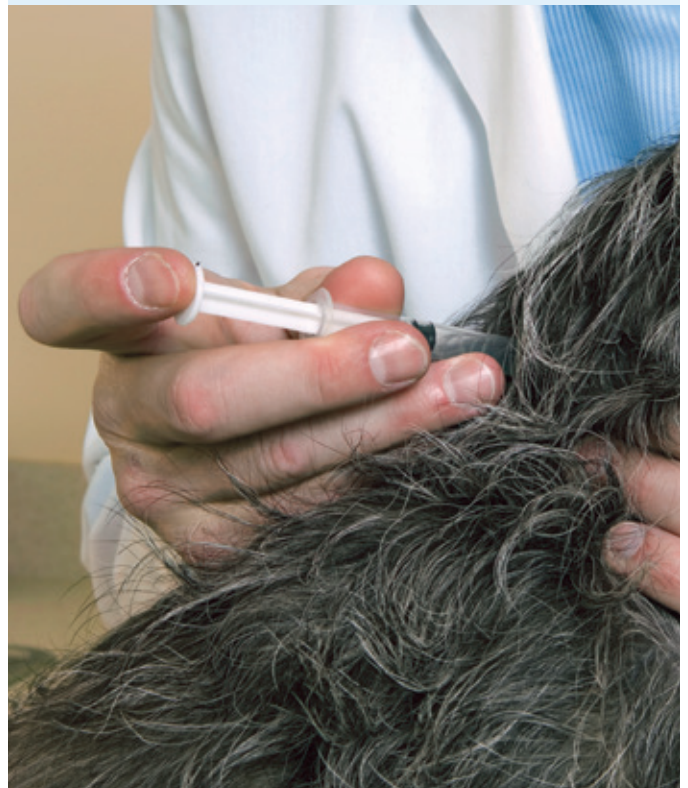
### Acupuncture for Pain Control

The guidelines task force holds that acupuncture offers a compelling and safe method for pain management in veterinary patients and should be strongly considered as a part of multimodal pain management plans.<sup>96</sup> It is a minimally invasive treatment that, for most animals, is not uncomfortable, often pleasant, and can be used either alone or in addition to other pain treatment modalities. Acupuncture has been recognized by the National Institutes of Health since 1998 as having applications in human medicine,

## Local Anesthetics (LAs)

**This is the only class of drug that renders complete analgesia.** The totality of evidence in humans and animal studies reveal the predictable analgesic and anesthetic drug-sparing effects of LAs. In addition, LAs are reported to be antimicrobial, immunomodulating, and can diminish postoperative maladaptive pain states. They do not appear to delay tissue healing.<sup>35</sup> LAs can be administered either directly at a simple incision site or into a specific nerve to provide analgesia to a large region (or area). A discussion of the many locoregional blocks that can be utilized in dogs and cats is beyond the scope of these guidelines but can be found in several readily accessible resources, and most of those blocks can be readily learned by clinicians. LAs are considered safe, with AEs generally limited to very high doses or inadvertent IV administration (bupivacaine especially).

**The task force supports the International Veterinary Academy of Pain Management position that, because of their safety and significant benefit, LAs should be utilized, insofar as possible, with every surgical procedure.**



especially pain management. There is a solid and still-growing body of evidence for the use of acupuncture for the treatment of pain in veterinary medicine to the extent that it is now an accepted treatment modality for painful animals.<sup>97–101</sup>

Other nonpharmacologic modalities discussed in the Guidelines include:

- Physical rehabilitation nutrition management
- Thermal modification (heat or cold)
- Environmental modifications
- Chiropractic care
- Homeopathy
- Gentle handling techniques

## Chiropractic Care

This task force has not found sufficient, reliable, noncontradictory evidence for the use of chiropractic care for pain management in veterinary medicine at this time. That said, chiropractic care has many well-defined applications in human medicine that have been supported through reliable research.

Other major topics covered in the guidelines include:

- Managing surgical pain associated with DJD for dogs and cats
- Hospice and palliative care

## A Team Approach and Client Education: Creating an Environment for Success

Primary care practices should be committed to educating the healthcare team and its clients about prevention, recognition, assessment, and treatment of pain. A team approach and consistent pain-management messages directed at clients will help ensure patient comfort during all stages of treatment. The client is often considered the most important member of the healthcare team. Each healthcare team member should be able to recognize pain-associated behavior in animals as described earlier in this document and know how to respond appropriately.

### Staff Training and Education

Ideally, every healthcare team member should have a defined role in managing animal pain. Staff and client education should address conditions associated with pain; its prevention and treatment; and appropriate interaction, handling, and nursing care involving the patient. Medical rounds and staff meetings are effective tools in making sure that all staff members are aware of the individualized pain management needs of every hospitalized patient. Having a



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Effective pain management is integrative in two respects. First, it does not rely solely on pharmacologic methods but also uses a variety of nonpharmacologic modalities.

patient advocate for each hospitalized animal will enable a highly accurate and individualized evaluation of the patient and ensure successful treatment.

#### **Client Education and Instructions**

With each pain management plan, it is important that the client be given specific instructions, both verbally and in writing. Potential adverse drug effects and action to be taken should be emphasized. It is advisable to provide a hands-on demonstration on how to administer medications and handle the pet at home.

To reinforce verbal information about pain assessment, provide handouts that discuss general information about animal pain and any side effects of medications. Compliance will improve if the pet owner understands the treatment schedule and a demonstration of how to administer oral medications is given. Clients should be encouraged to address their concerns about the pet's condition and treatment plan via e-mail, phone, or follow-up consultations.

#### **Conclusion**

Effective pain management is an essential component of companion animal medicine. It reduces disease morbidity, facilitates recovery, enhances quality of life (QOL), and solidifies the relationship among the veterinarian, client, and pet. Behavioral changes are the principal indicator of pain and its resolution, for which there are now several validated, clinical scoring instruments. Pain is not an isolated event but instead exists either as a continuum of causation, progression, and resolution or as a chronic condition. Thus, treatment of pain should consist of a continuum of care in the form of anticipatory analgesia through the anticipated pain period followed by longer-term or even chronic treatment that relies on periodic reassessment of the patient's response.

Effective pain management is integrative in two respects. First, it does not rely solely on pharmacologic methods but also uses a variety of nonpharmacologic modalities. Not least of those is gentle handling and nursing care of the patient in the context of a stress-free physical environment. When considering either nonpharmacologic methods or hospice care that may be outside the immediate skills or services provided by the primary practice, the veterinarian should have a list of experts for referral in place. A second aspect of integrative pain management is the multimodal use of medications that either block or modify multiple pain pathways. A multimodal approach also reduces reliance on any single agent, minimizing the potential for adverse drug events.

Pain management in clinical practice is a team effort, with the pet owner functioning as an integral part of the team. All health-care team members should have a defined role in the practice's approach to providing compassionate care to its patients. That enables the practice to speak with one voice and in a consistent manner in the implementation of pain management protocols. Client education is a key component that enables the pet owner to manage pain in the home setting. Direct involvement of the client in pain management efforts is consistent with the continuum of care concept and a demonstration of the practice's commitment to the pet's QOL. A fully integrated approach to pain management, involving recognition and systematic assessment, pharmacologic and nonpharmacologic methods, and one that includes both healthcare team members and the pet owner, ensures that everything possible has been done to relieve a patient's pain once it enters the practice's care. ■

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For references (footnotes) in this document, please refer to the 2015 AAHA/AAFP Pain Management Guidelines for Dogs and Cats [aaha.org/professional/resources/pain\\_management.aspx](http://aaha.org/professional/resources/pain_management.aspx).



## Nine Ways to Minimize the Risks of Nonsteroidal Anti-Inflammatory Drugs (NSAIDs)

1. Obtain a complete medication history. Avoid or use extreme caution with concurrent or recent use of NSAIDs and/or corticosteroids (including some nutritional supplements that may contain aspirin or other cyclooxygenase-inhibiting mechanisms). Practitioners should observe the following additional precautions due to potential drug interactions:
  - Avoid with furosemide and use caution with angiotensin-converting enzyme inhibitors.
  - Avoid with potentially nephrotoxic drugs (e.g., aminoglycosides, cisplatin).
  - Caution with use of additional multiple highly protein-bound drugs (e.g., phenobarbital, digoxin, cyclosporine, cefovecin, chemotherapy agents).
2. Be discriminating in patient selection. Be cautious or avoid NSAIDs in patients with the following existing/anticipated conditions:
  - Low-flow states such as dehydration, hypovolemia, congestive heart failure, and hypotension. In such cases, IV fluid support and blood pressure monitoring should be available for anesthetized animals.
  - Renal, cardiac, or hepatic dysfunction.
3. Provide verbal and written client instructions to avoid the medications described in point 1 above and to discontinue and alert the hospital at the first sign of an adverse event (see point 4).
4. Recognize the earliest signs of adverse events and withdraw NSAID treatment immediately if those events occur, especially in case of any gastrointestinal signs in dogs and cats with diminished appetites.
5. Perform laboratory monitoring. The frequency will depend on the risk factor of the patient.
  - Ideally, within first month of initiating therapy then  $q$  6 mo thereafter in low-risk patients.
  - For at-risk patients, monitor  $q$  2–4 mo depending on risk-factor assessment.
6. Utilize a balanced, integrated analgesic approach as part of NSAID-sparing strategies.
7. Consider washout periods. Clinically relevant washout periods remain controversial and largely undefined. Based on pharmacokinetics, practitioners who wish to err on the side of caution may want to withhold meloxicam for 5 days and other NSAIDs or short-acting corticosteroids for 7 days prior to initiating treatment with another NSAID. In the case of long-acting corticosteroids, a longer washout period needs to be considered. Aspirin should not be administered because there are safer alternatives. If a course of treatment with aspirin has been started in a dog, the recommended washout period before starting an approved veterinary NSAID is up to 10 days.
8. Use gastroprotectants to either treat suspected gastropathy or prevent its occurrence, especially if no washout period occurs. Proton pump inhibitors,  $H_2$  antagonists, misoprostol (the drug of choice in humans), and sucralfate can be helpful.
9. Dose optimization: base dosage on lean body weight. Although there is no definitive evidence that NSAID dose reduction lowers the risk of adverse events, some clinicians recommend titrating to the lowest effective dose.



## Summary of Appropriate Interventions for Pain in Dogs and Cats

	Approved NSAIDs	Other Analgesic Drugs	Opioid Premed +/- Tranquilizer Sedative	Local and/or Regional Anesthetic	Glycosaminoglycans (GAGs)	Acupuncture	Therapeutic Joint Diets	Therapeutic Exercise	Weight Management	Lifestyle/Environmental Change	Optimal Surgical Technique	Patient Warming Perioperative	Other Nonpharma Interventions	Comments/Details
DJD Dog	×	×		× (1)	×	×	×	×	×	×			×	
DJD Cat (with CKD)	× (2)	×		× (1)	×	×	×	×	×	×			×	
Soft Tissue Abdominal Sx	×	× (3)	×	×		×					×	×	×	
Dental Surgery	×	× (3)	×	×		×					×	×	×	
Orthopedic Procedure	×	×	×	×	× (4)	×	× (4)	× (4)	× (4)	× (4)	×	×	×	
<b>Hospital Procedures</b>														
• IV Catheterization			× (5)	× (8)							×		×	Consider local anesthetic cream
• Urinary Catheter	×		× (9)	× (10)							×		×	
• Bone Marrow Aspirate	×		× (9)	×							×	×	×	Consider local anesthetic cream
• Radiographic (Painful and/or Arthritic Patient)			× (9)										×	
• Anal Sac Expression			× (9)											
• Ear Cleaning	× (7)		× (7)	× (7)									×	Consider general anesthesia for deep ear cleaning
• Thoraco and/or Abdominal Centesis	×		× (9)	×							×		×	

- Notes:
- 1) Local or regional analgesia may be useful in localization of pain and short-term relief of significant DJD pain.
  - 2) See section concerning the use of NSAIDs in cats.
  - 3) The addition of other analgesic drugs will depend on patient characteristics and extent of the procedure.
  - 4) These interventions will be helpful pre- and post-operatively for the relief and/or prevention of post-operative and chronic pain.
  - 5) Ideally premedications should precede other preparations for general anesthesia such as placement of IV catheter.
  - 6) These are invasive procedures and should be treated as such to optimize patient care and minimize trauma/tissue damage and post-procedural pain.
  - 7) The level of intervention will be tailored to the invasiveness of the procedure. Deep ear cleaning will require more significant intervention than superficial cleaning in most cases.
  - 8) In nonemergent settings (e.g. routine pre-surgical application).
  - 9) Chemical restraint in lieu of manual restraint when patient fractious, distressed, or otherwise intolerant of procedure.
  - 10) Sterile lidocaine lubricant; caution in cases of urethral or bladder mucosal damage.

GAG = glycosaminoglycans, CKD = chronic kidney disease, DJD = degenerative joint disease.

# Staff Roles and Responsibilities for Pain Management

The following staff roles and responsibilities for pain management in companion animal practice create a general context for the implementation of a more specific pain management protocol (see the “Model Pain Management Protocol” on page 20).

## Veterinarian

- Assess pain in every patient, regardless of appointment type (wellness, acute care, follow-up).
- Develop pain management and prevention SOPs on:
  - Weight optimization
  - Prevention of dental disease
  - In-clinic handling and hospitalization procedures to avoid pain and fear
  - The PLATTER (*PL*an, *A*nticipate, *T*reat, *E*valuate, *R*eturn)
- Implement the practice’s pain management protocol (see the model protocol on page 20).
- Provide staff education on:
  - Effective client communication and education
  - Recognition and assessment of pain
  - Drug mode of action, interactions, and prevention and recognition of adverse reactions





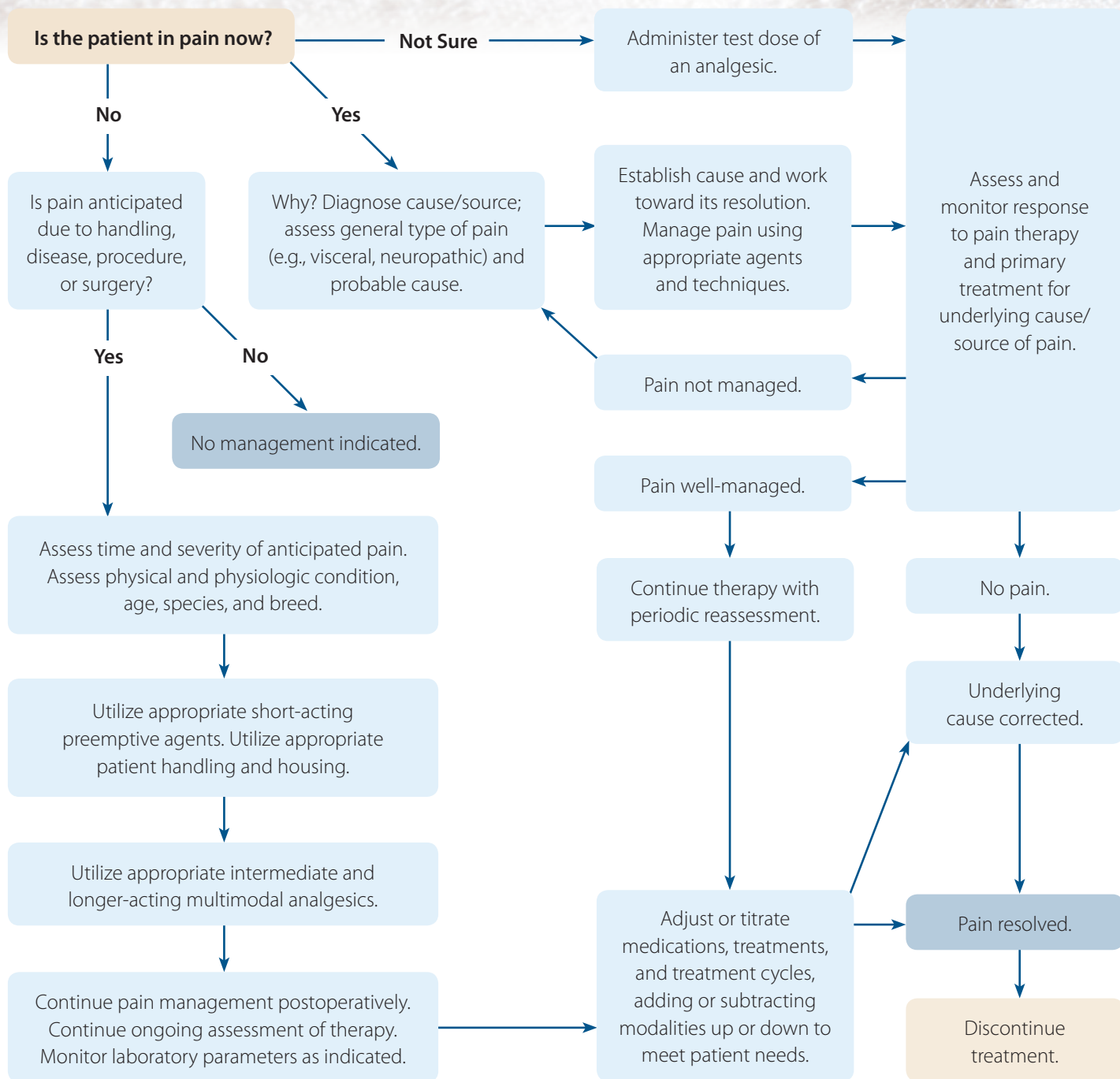
## Technician and other patient-care personnel

- Obtain patient's medical and complete medication history (include nutritional supplements).
- Anticipate painful clinical procedures.
- Apply proper patient handling and stress-relieving techniques.
- Recognize signs of pain and alert veterinarian.
- Administer medications and other treatments as directed by veterinarian.
- Recognize potential adverse reactions from treatment, and alert veterinarian if noted.
- Update patient records.
- Assess postoperative patients, and record pain scores.
- Assess chronic pain patients, and record pain scores.
- Maintain effective client education and follow-up.
- Provide client education consisting of verbal and written instructions for pain management, including prevention and recognition of potential adverse drug reactions.
- Interface between pet owner and veterinarian regarding ongoing patient care.
- Contact client following exam to respond to questions and concerns.

## Reception and other client-service personnel

- Be able to recognize patient indicators of pain at presentation to the hospital.
- Schedule follow-up appointment.
- Refer questions to medical staff as appropriate.
- Remind clients that they are part of a team-based approach to pain management, which requires their understanding, compliance, and feedback.

# Pain Management Algorithm





## Definitions Associated with Pain and Pain Management

Type of Pain	Definition
Adaptive pain— inflammatory*	Spontaneous pain and hypersensitivity to pain in response to tissue damage and inflammation. Occurs with tissue trauma, injury, surgery. Causes suffering. Responds to treatment.
Adaptive pain— nociceptive*	Transient pain in response to a noxious stimulus. Small aches and pains that are relatively innocuous and that protect the body from the environment.
Allodynia <sup>†</sup>	Pain caused by a stimulus that does not normally result in pain.
Analgesia <sup>†</sup>	Absence of pain in response to stimulation that would normally be painful.
Anesthesia <sup>†</sup>	Medically induced insensitivity to pain. The procedure may render the patient unconscious (general anesthesia) or merely numb a body part (local anesthesia).
Distress <sup>§</sup>	Acute anxiety or pain.
Dysphoria <sup>§</sup>	A state of anxiety or restlessness, often accompanied by vocalization.
Hospice <sup>†</sup>	A facility or program designed to provide a caring environment for meeting the physical and emotional needs of the terminally ill.
Hyperalgesia <sup>†</sup>	An increased response to a stimulus that is normally painful.
Maladaptive pain— neuropathic*	Spontaneous pain and hypersensitivity to pain in association with damage to or a lesion of the nervous system.
Maladaptive pain— functional*	Hypersensitivity to pain resulting from abnormal processing of normal input.
Maladaptive pain— central neuropathic pain*	Pain initiated or caused by a primary lesion or dysfunction in the central nervous system. Often called "central pain." <sup>**</sup>
Modulation <sup>§</sup>	Altering or adaptation according to circumstances.
Multimodal analgesia <sup>\</sup>	Use of more than one drug with different actions to produce optimal analgesia.
Neurogenic pain <sup>‡</sup>	Pain initiated or caused by a primary lesion, dysfunction, or transitory perturbation in the peripheral or central nervous system.
Nociception <sup>¶</sup>	Physiologic component of pain consisting of the processes of transduction, transmission, and modulation of neural signals generated in response to an external noxious stimulus.
Pain <sup>†</sup>	An unpleasant sensory and emotional experience associated with actual or potential tissue damage.
Palliative care <sup>†</sup>	Care that relieves or alleviates a problem (often pain) without dealing with the cause.
Peripheral neuropathic pain <sup>†</sup>	Pain initiated or caused by a primary lesion or dysfunction in the peripheral nervous system.
Preemptive analgesia <sup>\</sup>	Administration of an analgesic before painful stimulation.
Principle of analogy <sup>§,#</sup>	A similarity of forms having a separate evolutionary origin. Similar structures may have evolved through different pathways, a process known as convergent evolution, or may be homologous.
Wind-up pain <sup>**,+†</sup>	Heightened sensitivity that results in altered pain thresholds—both peripherally and centrally.

\* Woolf CJ. Pain: Moving from symptom control toward mechanism-specific pharmacologic management. *Ann Intern Med* 2004;140:1441–1451.

† IASP (International Association for the Study of Pain): [www.iasp-pain.org](http://www.iasp-pain.org).

‡ MSN Encarta Dictionary: [www.encarta.msn.com](http://www.encarta.msn.com).

§ Random House Webster's College Dictionary. New York: Random House, 1997.

\ Gaynor J, Muir W. *Handbook of Veterinary Pain Management*. Saint Louis, MO: Elsevier Publishing, 2002.

¶ *Vet Clin North Am Small Anim Pract* 2000;30(4):704.

# Wikipedia: [http://en.wikipedia.org/wiki/Main\\_Page](http://en.wikipedia.org/wiki/Main_Page)

\*\* Hansen B. *Managing pain in emergency and critical care patients*. Proc Atlantic Coast Veterinary Conf. 2005.

+† Muir WW, Hubbell JA. *Handbook of Veterinary Anesthesia*. 4th ed. St. Louis, MO: Elsevier Publishing, 2006.



### Please read this information prior to starting the NSAID

**Nonsteroidal anti-inflammatory drugs (NSAIDs)** are one of the most powerful medications available for veterinary use to control pain. NSAIDs are commonly prescribed for chronic pain conditions such as osteoarthritis and also for acute pain following surgical or dental procedures.

Veterinary NSAIDs are safe and effective with proper use; however, as with all medications, there are potential side effects and adverse reactions. Most notably, these uncommon NSAID adverse reactions can include stomach upset and even ulcers, kidney damage, and, very rarely, liver damage.

To help minimize the chances of such problems, especially when the drug is used for a longer term, we recommend periodic lab tests to assess red blood cells, kidney, and liver function. Be sure to administer the medication only as directed, and call us if you have any questions or concerns at all.

**Do NOT** give your dog or cat human-specific, over-the-counter pain relievers or prescription pain medicines; do NOT mix this medication with other NSAIDs; and do NOT give any NSAID along with prednisone or other steroid. Inform us of any over-the-counter

**No question should go unanswered.** Please contact our office with

nutritional supplements you may give. There may be interactions with NSAIDs. Do not give counter supplements without our approval. Keep out of reach of children.

While on NSAIDs, please watch your cat for the following signs:

- Decrease in appetite or not eating
- Vomiting
- Change in bowel habits (diarrhea or constipation)
- Change in behavior (depression, lethargy, seizure, or aggression)
- Yellow color of the gums, skin, or whites of the eyes
- Change in urination habits (frequency or color)

If you see any of these signs in your cat, please discontinue the use of the NSAID and bring your cat to an emergency hospital as soon as possible. If you see any of the above signs, stopping the NSAID is the proper treatment.

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**No question should go unanswered.** Please contact our office with

### How to tell if your cat is in pain

You are in the best position to notice changes in your cat's behavior.

**Please check all that apply.**

#### Vocalization:

- Meowing more frequently
- Purring that seems unusual
- Hissing
- Growling
- Vocalizes differently than normal for his breed

#### Daily habits:

- Withdraws from interaction with other animals
- Decreased activity
- Sleeps more frequently in an unusual position, not in his favorite spot, and may be easily startled
- Changes in eating habits
- Urinates or defecates in unusual places
- Getting in and out of the litter box more frequently
- Constipation or diarrhea
- Won't groom himself
- Licking, biting, or scratching himself

#### Activity level:

- Restless
- Reluctant to move
- Trembling or shivering
- Limping
- Less active than usual
- Avoids interaction with people
- Avoids interaction with other animals
- Seeks out people or other animals
- Hides

Name of your cat:

#### You

Associate with your cat to be recommended for treatment.

AAEP of your cat's exam and treatment.



## How to tell if your dog is in pain

You are in the best position to look for subtle changes in behavior that indicate your pet may be in pain. If your dog shows one or more of these behaviors, he/she may be hurting. By completing this assessment, you are helping us to identify possible painful conditions.

**Please check all that apply:**

### Vocalization:

- Whining
- Howling
- Whimpering
- Yelping
- Groaning
- Grunting

### Daily habits:

- Decreased appetite
- Withdraws from social interaction
- Changes in sleeping (less or more)
- Changes in drinking habits
- Lapses in housetraining or struggling to get into position
- Seeks more affection than usual

### Self-mutilation:

- Licking one or more areas obsessively of his/her body
- Biting at one or more areas of his/her body
- Scratching a particular part of his/her body

### Activity level:

- Restless, pacing
- Repeatedly gets up and lies down; can't seem to get comfortable
- Difficulty lying down or getting up
- Trembling, circling, or lying very still
- Moves stiffly or slowly after exercise or sleeping/resting
- Less energy or activity
- Reluctant to move
- Less playful or willing to exercise
- Less eager or able to jump on furniture or into car
- Difficulty walking or running, particularly on wood or tile floors or stairs

### Facial expression:

- Grimaces, vacant stare
- Glazed, wide-eyed, or looks sleepy
- Enlarged pupils
- Flattened ears
- Pants excessively at rest

### Self-protection:

- Protects a body part
- Doesn't put weight on a leg
- Limp
- Doesn't want to be held or picked up

### Aggression:

*Especially a previously friendly dog*

- Acts out of character
- Growls
- Bites
- Pins ears back
- A normally aggressive dog may act quiet, docile

### Posture:

- Hunched, with hindquarters raised and front end down on the ground
- Lies on his or her side

**Please list any other changes that are not listed above:**

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Name of pet: \_\_\_\_\_ Date: \_\_\_\_\_ Your signature: \_\_\_\_\_

**You are taking the best care of your best friend:** Your veterinary practice is accredited by the American Animal Hospital Association. Unlike human hospitals, veterinary practices are not required to be accredited. Your veterinary team volunteered to be evaluated on about 900 standards of veterinary excellence in order to become accredited. AAHA-accredited practices are recognized among the finest in the profession and are consistently at the forefront of advanced veterinary medicine. AAHA's Standards of Accreditation are continuously reviewed and updated to keep our accredited practices on the cutting edge of veterinary excellence. Our standards address patient care and pain management, surgery, pharmacy, laboratory, exam facilities, medical records, cleanliness, emergency services, dental care, diagnostic imaging, anesthesia, and continuing education. To maintain accredited status, hospitals undergo comprehensive onsite evaluations every three years. Learn more about our standards and how they contribute to the health of your pet at [bit.ly/XNnomU](http://bit.ly/XNnomU).



**For our accredited practices only.**

These client handouts  
are available in the AAHA  
Download Center.

<http://bit.ly/1yQAFH>

**For our accredited practices only.**

# Model Pain Management Protocol

Step	Procedure	Responsibility
1	<p><b>Obtain patient's history and weight</b></p> <ul style="list-style-type: none"> <li>• Inquire about pain-related behaviors (exercise tolerance, activity level and mobility, urination and defecation habits, vocalization habits, change in normal behavior, development of new behaviors).</li> <li>• Determine complete medication (include nutritional supplements) and diet history.</li> <li>• Measure current weight.</li> <li>• Update patient's medical history records.</li> </ul>	Technician, assistant, other patient-care personnel
2	<p><b>Physical exam</b></p> <ul style="list-style-type: none"> <li>• Observe patient without interaction.</li> <li>• Observe patient response to handling and palpation.</li> <li>• Determine body condition score.</li> <li>• Evaluate results of pain assessment. Document pain score.</li> <li>• Perform complete physical exam, including gait analysis if indicated.</li> <li>• Perform diagnostics, including imaging if indicated.</li> </ul>	Veterinarian
3	<p><b>Diagnosis of pain etiology</b></p> <ul style="list-style-type: none"> <li>• Identify pain source (underlying cause).</li> <li>• Determine pain type (acute, chronic, nociceptive, inflammatory, pathologic).</li> </ul>	Veterinarian
4	<p><b>Treatment plan for chronic pain</b></p> <ul style="list-style-type: none"> <li>• Recommend appropriate pharmacologic intervention.</li> <li>• Recommend appropriate nonpharmacologic intervention, including weight optimization plan if needed.</li> </ul> <p><b>Treatment plan for acute or perioperative pain</b></p> <ul style="list-style-type: none"> <li>• Anticipate patient's pain management needs.</li> <li>• Determine and recommend appropriate treatment plan, commensurate with pain type, severity, and duration, utilizing balanced, integrated, multimodal strategy.</li> <li>• Recommend pharmacologic intervention.</li> <li>• Recommend nonpharmacologic intervention.</li> </ul>	Veterinarian
5	<p><b>Client education</b></p> <ul style="list-style-type: none"> <li>• Explain how to recognize and score pain.</li> <li>• Demonstrate handling techniques and administration of medications.</li> <li>• Provide verbal and written instructions.</li> <li>• Include prevention and recognition of potential adverse drug effects.</li> </ul>	Veterinarian, technician, assistant, patient-care advisor
6	<p><b>Exam follow-up</b></p> <ul style="list-style-type: none"> <li>• Contact client about questions or concerns.</li> <li>• Schedule follow-up appointment as needed.</li> <li>• Repeat pain scoring utilizing same pain assessment as originally performed, ideally by same observer.</li> </ul>	Reception or other client-service personnel
7	<p><b>Re-exam evaluation of treatment response</b></p> <p>Repeat steps 1 through 3.</p>	Veterinarian
8	<p><b>Treatment plan modification or case resolution</b></p> <p>Repeat steps 4 and 5.</p>	Veterinarian







# Frequently Overlooked Causes of Pain

## Hospital procedures

Restraint (examination, obtaining blood and urine samples, radiographs, and ultrasound; even gentle handling and hard surfaces can increase pain in an already painful animal). Urinary/IV catheterization, bandaging, surgery, thoracocentesis, chest tube placement and drainage procedures, abdominocentesis. Manual extraction of stool and anal sac expression (especially in cats).

## Surgical procedures

Ovariohysterectomy, castration, onychectomy,\* growth removal, and all other surgical procedures.

*\*Regardless of method used, onychectomy causes a higher level of pain than spays and neuters.*

## Dermatologic

Otitis, severe pruritus, burns, chronic wounds; abscess, cellulitis, clipper burns, urine scalding, severe chin acne.

## Ocular

Corneal disease and ulcers, glaucoma, uveitis.

## Dental

Oral tumors, feline oral resorptive lesions ("neck" lesions), fractures (no matter how small), tooth abscess, ulcers, stomatitis.

## Neurologic

Diabetic neuropathy.

## Oncologic

Any and all cancer.

## Cardiopulmonary

Congestive heart failure (pulmonary edema and pleural effusion); pleuritis, cerebral vascular accident, thromboembolism (clot).

## Gastrointestinal

Constipation, obstipation, obstruction, megacolon; anal sac impaction; hemorrhagic gastroenteritis, pancreatitis, gastric dilatation-volvulus (GDV), foreign body.

## Musculoskeletal

Most often overlooked in cats. Muscular soreness, arthritis, degenerative joint disease, tendon or ligament injury, intervertebral disc disease, facet pain of spondylosis, osteodystrophy, dislocations.

## Urogenital

Feline lower urinary tract disease (idiopathic cystitis, urethral obstruction, urolithiasis, urinary tract infection), queening, whelping, acute renal failure, enlarged kidneys (capsular swelling), canine urinary tract infection, canine urolithiasis.



## Pain Management Resources

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### AAHA's Pain Management Resources website

(<http://bit.ly/1ycQAFh>)

#### How to Pinpoint Pain

Exam room tool helps clients recognize and report signs of pain.

#### Pain: How Much Do You Know?

This staff-training quiz from *Trends magazine* provides detailed discussion of 10 questions every veterinary technician should be able to answer.

#### What Would You Say to These Clients about NSAIDs? (Flash cards)

Win over clients who resist a recommendation for NSAIDs by preparing staff to answer client challenges.

#### What Would You Say to These Clients about Pain? (Video quiz)

Leading pain experts Robin Downing, DVM, and James S. Gaynor, DVM, MS, answer the questions clients ask most often. We incorporated their answers into a video quiz. Can you pass the test?

#### Client take-home instructions for NSAIDs

Give this brief handout to clients.

#### Signs of Pain in Dogs and Cats (for AAHA members only)

From squinting eyes to resisting handling, this simple table helps staff and clients decode clues to pets' suffering.

#### For our accredited practices only:

##### 15 Signs of Pain in Dogs

Use this handout to help clients understand the physical and behavioral signs of pain in dogs.

#### Diagnostic tool: How to tell if your dog is in pain

Use this patient history form in the exam room to help clients identify pain in their pets. Includes a message promoting accreditation! Hint: Post the questionnaire on your website and ask clients to bring it with them—for every pet, every visit.

#### Diagnostic tool: How to tell if your cat is in pain

Use this patient history form in the exam room to help clients identify pain in their pets. Includes a message promoting accreditation! Hint: Post the questionnaire on your website and ask clients to bring it with them—for every pet, every visit.

### AAHA Store

#### Managing Your Pet's Pain

This AAHA Pet Health Brochure answers clients' questions about their pets' pain—causes, treatment, and more. <http://bit.ly/1ApN9LQ>



This implementation toolkit was developed by the American Animal Hospital Association (AAHA) to provide information for practitioners regarding pain management for dogs and cats. The information contained in this toolkit should not be construed as dictating an exclusive protocol, course of treatment, or procedure, nor is it intended to be an AAHA standard of care.



**About AAHA**—The American Animal Hospital Association is an international organization of nearly 6,000 veterinary care teams comprising more than 48,000 veterinary professionals committed to excellence in companion animal care. Established in 1933, AAHA is recognized for its leadership in the profession, its high standards for pet health care and most important, its accreditation of companion animal practices. For more information about AAHA, visit [aaha.org](http://aaha.org).



**About the American Association of Feline Practitioners**—The American Association of Feline Practitioners (AAFP) improves the health and welfare of cats by supporting high standards of practice, continuing education, and scientific investigation. The AAFP has a long-standing reputation and track record in the veterinary community for facilitating high standards of practice and publishes guidelines for practice excellence which are available to veterinarians at the AAFP website. Over the years, the AAFP has encouraged veterinarians to continuously re-evaluate preconceived notions of practice strategies in an effort to advance the quality of feline medicine practiced. The Cat Friendly Practice program is the newest effort created to improve the treatment, handling, and overall health care provided to cats. Its purpose is to equip veterinary practices with the tools, resources, and information to elevate the standard of care provided to cats. Find more information at [catvets.com](http://catvets.com).

This implementation toolkit is sponsored by a generous educational grant to AAHA from Abbott Animal Health, Elanco Companion Animal Health, Merial, Novartis Animal Health, and Zoetis.

