

## PAIN MANAGEMENT FOR YOUR PET

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### **Pain** *“What is it and when would my pet have to deal with it?”*

Let's start from the very beginning. “Pain” is a perception that the brain creates from input called “nociception” (pronounced *no-si-sep-tion*). This is the physiology term to describe the chemical processes that are at work in the body that receive a stimulus, modify it and transfer it to the brain for interpretation and reaction. The stimulus can be physical, temperature, chemical or inflammatory damage to tissues. The brain processes this nociceptive input, mixes it with other data, and creates the perception we call pain; the whole event documents the *pain pathway*. Everyone's pain perception and reaction to it may be different, even if the same nociceptive data is entering the brain. The anatomy and chemical processes of this nociception system are very similar between human and non-human animals. We can't ask the toddler if he/she hurts, just like we can't ask the cat, but we can generally assume that injury or illness that is perceived as painful in children and adults would be perceived as painful in non-human animals as well. Animals clearly demonstrate behaviors that suggest they experience pain much the same way as people.

Not all pain is bad—pain lets us know that something may be harming our bodies that we need to stop. A hand pulled quickly away from a hot stove is a great example of how pain prevents more serious damage. But “pathologic pain” is a type of pain that is no longer serving this helpful purpose. Most of the pain issues we are likely to encounter with our pets in the medical situation are examples of pathologic pain.

Pain can be caused by many things (i.e. stimuli); just think about all of the ways in which you hurt or can be hurt!

- Physical trauma, such as falling down or being hit by something.
- Internal organ problems, such as intestinal upset or kidney blockage.
- Surgical procedures, such as abdominal surgery or bone surgery.
- Brain or spine problems, such as a slipped disc, pinched nerve or headache.
- Degenerative changes, such as arthritis and cartilage damage.

**Pain Behavior** *“How do I know when my pet is hurting?”*

Our reaction to pain is seen as “pain behavior”. A child cries when he breaks his arm. A woman holds her head and squints her eyes when having a migraine headache. A man winces when he stands up on his bad knee. To an observer, these behaviors display pain in action. In the veterinary medical setting, we use these pain behaviors, common to each different species but unique in each different patient, to grade the pain experience.

Many owners are surprised to learn that their pet may be experiencing pain, since some pain behaviors are not seen in people. Common pain behaviors are:

- Crying and/or whining (dogs)
- Growling and/or purring (cats)
- Hiding (cats and dogs)
- Not grooming (cats)
- Squinting (cats)
- Glassy-eyed, vacant look (dogs)
- Hunched up body (cats and dogs)
- Restlessness and changing positions a lot (dogs)
- Not moving from one spot (cats)
- Irritable or aggressive (cats and dogs)
- No appetite (cats and dogs)
- Shaking and trembling (dogs)
- Protecting the hurting body part (cats and dogs)

Complicating this interpretation of pain signs is the fact that many of the pain medications, we have available to us, cause “dysphoria” and sedation themselves.

Dysphoria is a state of unawareness and odd responses to the environment.

Dysphoric pets can show a glassy-eyed, vacant look; restlessness; no appetite; whining; sudden movements when touched or with loud noises; inability to be comforted. Notice the commonality of these signs with many signs of pain.

Working through your pet’s status requires a balancing of information to best judge likelihood and level of pain in the face of current medications and current injury level. Overmedication is a risk we must avoid as well.

**The Health Cost of Pain** *“Is experiencing pain bad for my pet’s health and recovery?”*

If we think about the “reason” why we experience pain—why our primitive ancestors and current-day wild animals experience pain—we can understand why the body

responds to pain like it does. Pain is actually set up to help, but that doesn't mean it works in the positive direction all the time! The body is injured, the brain perceives pain, the brain tells the body to get away, or stand and fight, or hide from your predators, or protect the injury so it can heal. During and right after a painful injury or other illness, the body responds in several ways; the heart and breathing rate go up, muscles tense, endorphins (natural pain killers) are released internally. But after awhile, other stress hormones are released as the pain continues. This is when the down side of pain starts to outweigh the earlier benefits. The bad effects of pain include:

- No eating or drinking
- Poor intestinal function, poor nutrient uptake
- Increased risk of infection or delayed wound healing
- Poor hygiene and ability to move around
- Inability to sleep
- Irritable or aggressive behavior, preventing nursing care or therapy

Any one or all of these complications may be present and may risk the patient's recovery. Sometimes it means the patient does not recover; sometimes it means treatment is more prolonged, intensive, invasive, ineffective or costly. Painful illnesses in a pet's life may make future illness or injuries more difficult to treat. The pet may have a bad memory of veterinary care he/she received, and be fearful or aggressive the next time he/she needs treatment.

Not all pain is created equal. Some is short-lived (like an injection), some is manageable with accommodation (like limping to relieve a sore ankle), and some is incredibly severe (like a broken back that makes an animal bite his/her owner when being helped). If pain goes away quickly and is minor enough, the negative impact is slight. As the duration and/or severity of pain rises, all of the negative impacts start to add up, and animals need our help.

**Pain Management** *"I don't want my pet to hurt; what can be done?"*

Not all pain needs treatment; we always need to balance the risks and benefits of treating pain. If the treatment prevents an accurate diagnosis that will save a patient's life, the treatment must be delayed. If the treatment causes negative side-effects that last longer than the pain, the treatment must be modified or withheld.

A pain management plan must be individualized to the patient, their medical condition and their pain. It must also be supervised to allow for modifications as the

patient response unfolds; the time-frame may be over minutes, hours or weeks depending on the medical condition and pain being treated.

There are several stages in a patient's medical experience when we can address pain; each stage is an opportunity for providing treatment or "analgesia" (i.e. pain relief) and having a plan for each stage allows us to keep each treatment to a minimum (less risk, less cost).

*For explanation purposes, this outline most directly speaks to situations when we create the pain, for example a surgical procedure. All of the concepts are similarly applied to the patient who is experiencing internal pain from illness or traumatic injury.*

#### Stage 1—Before Pain:

The most effective way to treat pain is to prevent it. "Pre-emptive" analgesia means we provide known analgesia treatment before the patient is exposed to painful procedures, like surgery. Medical data in human and non-human animals suggests that pre-emptive analgesia decreases the severity and duration of post-procedure pain, and helps to minimize the development of chronic pain.

Examples— Skin patch medications (narcotics like morphine, or local anesthetics like novacaine, absorbed thru the skin)

Local anesthetic injections at procedure site (like novacaine you get at the dentist)

Narcotic injections (morphine and its relatives; additional benefit is sedation to alleviate anxiety before a procedure)

#### Stage 2—Pain Stimulus Applied:

When a likely painful medical diagnostic test or therapy is being applied, most animals will try to get away or stop the painful stimulus. We have several options that allow us to work with the patient.

1) We can physically restrain them—essentially force them to experience the painful experience. This might be appropriate for a simple injection, for example, that has mild and very short duration pain associated with it.

2) We can make them unconscious at the brain level, so they don't perceive the pain at that moment. This is usually called *general anesthesia*; because it works at the brain level, it does not address the whole pain (or nociceptive) pathway we

discussed at the beginning of this article. This might be appropriate for diagnostic tests that may hurt while they are being performed, but don't hurt when they are over (an endoscope procedure, for example.)

3) We can treat one or more steps in the pain pathway so that the patient does not feel pain while it is being applied, but also so that pain is stopped or minimized after the test or therapy is over. This combination approach, called *balanced anesthesia*, allows us to not only use smaller, safer drug doses, but it appears to be the most effective approach for procedures, such as surgery, that will hurt even after the cutting has stopped.

### Stage 3—Ongoing Pain:

Most things we medically do to a patient during therapy and most painful illnesses create an ongoing pain experience for the patient. Usually this pain starts high and tapers off over a variable timeframe (hours, days, weeks). During these early hours when a patient is in the hospital, we can continue to strike the pain pathway in multiple locations. This “multimodal analgesia” is more effective and safer for the patient. In hospital treatments might include, for example, IV drips with continuous pain medications, frequent injections of pain medications that work in different ways, and supportive physiotherapy such as optimal bedding, ice pack therapy, massage.

### Stage 4—Pain at Home:

Once out of the hospital or home from the day-clinic, our options for managing a patient's pain are more narrow, but a multimodal analgesia approach remains the most effective. Multiple oral medications that work in different ways, skin patch medications (for multiple-day slow release of pain medications), and the same simple physiotherapy techniques can reduce the pain a patient is experiencing well into the at-home period.

### **Talking about Pain** “*How do I find out the plan for my pet's Pain Management?*”

It is as important for people to talk with their primary care or specialty care veterinarian about the expected pain experience and how it will be managed. The timing of this conversation should coincide with early discussions regarding the diagnostic and treatment plans; pain management is an integral part of both diagnosis and treatment of patients. As mentioned above, in Stage 2, advanced plans for providing more than just physical restraint for a painful procedure should be made, for example. How long a patient remains in the hospital under 24-hour

supervision may be dictated by how long more advanced pain management techniques are needed. Fully discussing the expected needs of the patient and outlining a therapy plan are best completed early in patient care.

One should always feel completely free to seek second and even third opinions in this area as well. To do so is not an insult to anyone's professional expertise, but rather an example of thoroughness and genuine concern for one's pet.

Since most people do not have pain management medical backgrounds and even fewer have experience applying this field in animals, it can be difficult carrying out these discussions. The simple question "Will my pet receive pain medicine?" is probably not thorough enough. And likewise, the simple answer "Yes we will give pain medication." is really not sufficient either. But what are the right questions? And how can answers be interpreted?

Below are some questions that may be useful to you in starting the conversation. Also included are some of the details you can expect in a thorough answer to your questions. Each person, both pet owner and doctor, will have their own communication style, so be prepared to adjust and modify the discussion to generate a genuine "shared understanding" of the expectations and the plans.

*(Please note that the below answers are **not** recommendations to be followed; they are generic answers to these hypothetical questions with examples of the types of detail to expect.)*

1) Will this test or therapy cause discomfort or pain for my pet?

- "Yes, mild / moderate / severe pain is expected and it will last XXX hours / days/ weeks. By XXX date, your pet should be pain-free."

2) What techniques can be used to pre-treat this expected pain?

- "Your pet will have a nerve block performed immediately prior to the procedure."
- "We will give an injection of morphine (or equivalent) 30 minutes before surgery."

3) Will sedatives or general anesthetics be used to reduce the pain perception (and associated emotional stress) my pet experiences?

- "Your pet will be unconscious under general anesthesia breathing anesthetic gas during the entire procedure; this will last 20 minutes after the procedure."

- “We will give an IV injection of a sedative immediately prior to the procedure so your pet is calm and sleepy for the procedure; this will last 4 hours after the procedure.”

4) What pain techniques will be added during general anesthesia to achieve a safer, “balanced” anesthesia and prevent my pet from waking up in pain?

- “We will give an injection of morphine (or equivalent) 30 minutes before surgery, and this will last 4 hours after surgery.”
- “Your pet will be receiving an IV drip of several pain medications during the anesthetic period, and we will continue this constant delivery for 24 hours after surgery.”
- “A local anesthetic block will be applied during the procedure that will numb the surgical site for up to 8 hours.”
- “Your pet will receive all of the above therapies.”

5) What options are available to continue the pain control once my pet is back home with me?

- “We will prescribe two oral medications you can give at home for the next 10 days; one acts as an anti-inflammatory pain reliever and the other acts more like a codeine-type medication. You can give these on a schedule or as needed when pain is more severe.”
- “We recommend ice/cold packs be applied to the surgical site three times daily for 10 minutes each session; you may continue this therapy for 5 days to relieve some of the pain related to surgical inflammation.”

6) What do you look for to know that my pet is in pain? What can I look for at home?

- **\*\*Note, in this situation, you may be the best person to advise on expected pain behaviors in your pet; you know him/her best. Make sure you discuss this.**
- “We will be looking for XYZ behaviors in the first two hours, then we will watch for ABC behaviors over the next 24 hours. You may look for ABC behaviors as well over the next week, and when they stop/start doing XXX you can interpret that to mean they are pain free.”

**The Financial Cost of Pain** *“One clinic’s estimate is more expensive than the other for this surgery; why is that?”*

Pain medications and techniques should be viewed like antibiotics—part of the treatment. Some clinics and hospitals will itemize these charges while others will simply include the therapy as part of advanced anesthesia or hospitalization charges. Different veterinarians will prescribe different medications or use different techniques based on their expertise, experience and/or knowledge. There are current “standard of care” guidelines in the veterinary medical field, but there are no “the best” protocols. A pain management plan must be tailored to the patient and the medical condition; charges for these services will vary patient to patient.

The pain management plan must not be viewed as a shopping list of items to be chosen or rejected if the estimate is too high. It may be possible to tailor a lower cost plan by re-evaluating the patient’s needs, but it is inappropriate to build a pain management plan with the “cheapest” options and then apply it to the patient. When you have the financial discussions regarding your pet’s overall care, make sure you are clear with your goals regarding the pain management portion of their care.

### **Summary**

Pain is a common component of illness, injury and medical therapy. It starts with some sort of insult to the body, becomes perceived by the body as the signals travel thru the nervous system, and ultimately alters the physiology and behavior of the patient. It is not a pleasant thing to experience, and if it is severe or prolonged can be quite difficult to tolerate. Exactly when the pain experience becomes true “suffering” is variable from patient to patient, but it can usually be agreed upon that avoiding, preventing or reducing pain is preferred.

The veterinary profession is sufficiently advanced to recognize and successfully manage pain in our patients. We have medications, techniques and experience that can be customized to the species and the medical condition; current standard of care allows for the vast majority of patients to be made comfortable the majority of the time. Pet owners should feel empowered to be part of the medical decision-making regarding this, and other, aspects of their pet’s medical care. From the common spay procedure to the complex trauma case, reserve the time for these pain management discussions with your primary care veterinarian or your surgeon.