

TECHNICAL BULLETIN

The Path to Effective Surgical Pain Control



Principles of Acute Pain Management Include:^{1,2}

Preventive Analgesia

Administration of analgesics during the perioperative period to provide the appropriate duration of pain relief

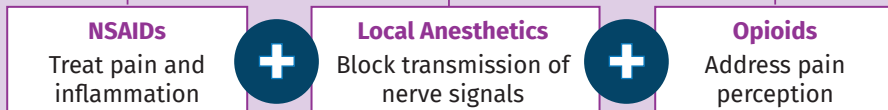
Multimodal Analgesia

Administration of two or more analgesic drugs with different mechanisms of action to target multiple sites in the pain pathway

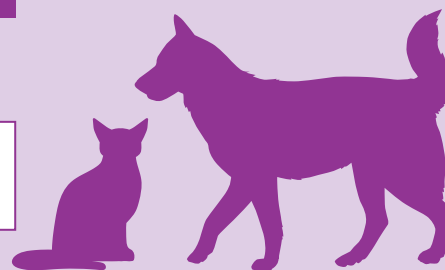
Nonpharmacologic therapies and nursing care

ISFM and AAHA Pain Management Guidelines for Acute Pain Management:^{1,2}

Starting point for all surgeries should be administration of:



Combining NSAIDs, local anesthetics, and opioids in a multimodal approach improves analgesia.



The Pain Pathway

The nociceptive system can be broken down into four steps.^{3,4}

1 TRANSDUCTION

Stimuli (temperature, mechanical, chemical insult) are detected by sensory nerves and converted into nerve impulses

EXAMPLES:

- NSAIDs
- Local anesthetics
- Opioids
- Corticosteroids

2 TRANSMISSION

Incoming nerve impulses are sent through the sensory nervous system to the spinal cord

EXAMPLES:

- Local anesthetics
- Alpha-2 agonists

4 PERCEPTION

Recognition of pain occurs in the brain and may lead to a response

EXAMPLES:

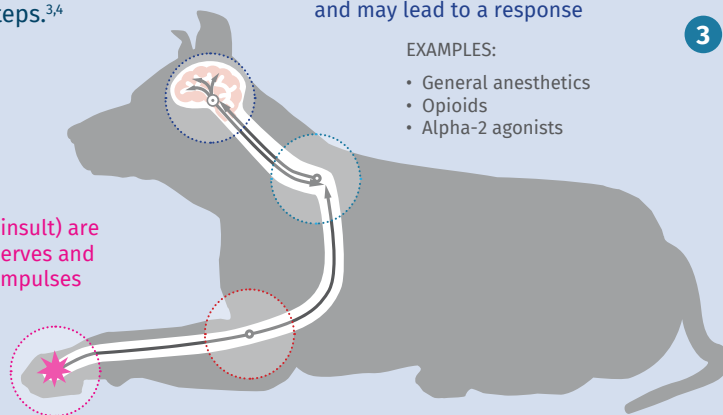
- General anesthetics
- Opioids
- Alpha-2 agonists

3 MODULATION

Incoming impulses are modified (amplified or downregulated) within the dorsal horn of the spinal cord

EXAMPLES:

- NSAIDs
- Local anesthetics
- Opioids
- Alpha-2 agonists
- NMDA antagonists (i.e. ketamine)
- Other (i.e. gabapentin)



The Path to Successful Pain Management with Dr. Tammy Grubb

References

1. Gruen M, et al. 2022 AAHA Pain Management Guidelines for Dogs and Cats. *J Am An Hos Assoc.* 2022;58(2):55-76
2. Steagall PV, et al. 2022 ISFM Consensus Guidelines on the Management of Acute Pain in Cats. *J Feline Med Surg.* 2022;24(1):4-30.
3. Woolf CJ. Pain: moving from symptom control toward mechanism-specific pharmacologic management. *Ann Intern Med.* 2004;140(6):441-51.
4. Beckman B. Anesthesia and pain management for small animals. *Vet Clin North Am Small Anim Pract.* 2013;43(3):669-88.