

When Chemical Restraint of Dogs or Cats is Warranted

Our topics for this week are::

- **Anxiety: detrimental to development or a learning facilitator?**
- **Safety and efficacy of anti-anxiety nutraceuticals and drugs**
- **Indications for the use of chemical restraint**

Anxiety is a normal response to a new situation. Learning is facilitated by anxiety, and all anxiety does not need to be suppressed with drugs. Handling an anxious animal without sedation in a non-painful, quiet, calm way is a learning situation that can help the animals become less stressed in the present and future situations.

People who do not have the knowledge or skills to handle or restraint animals properly often resort to behavior modifying chemicals to calm or sedate animals. Behavior modifying drugs should not be used a crutch for a lack of handler knowledge or skills. However, there are justified indications for chemical restraint of dogs or cats. So, what are these chemicals and when is their use justified?

Over the Counter Anti-Anxiety Chemicals

The first group of chemicals are non-prescription anti-anxiety drugs. Most of these are called nutraceuticals. That means they do not undergo the scrutiny of prescription drugs to ensure purity, safety, or efficacy. Marketing is primarily based on anecdotal evidence, testimonials, and biased trials. Nutraceuticals are regulated by the U.S. Food and Drug Administration's response to public complaints involving egregious medical claims, misleading marketing, and contamination with hazardous materials.

Anti-anxiety nutraceuticals include products containing L-tryptophan, 5-HTP, melatonin, *Magnolia officinalis*, ashwagandha, magnesium, alpha-Casozepine, L-theanine, Souroubea and Platanus, *Bifidobacterium longum*, passion flower, Chamomile, Valerian, or cannabidiol (CBD) .

Non-prescription antianxiety products also include first-generation antihistamines such as diphenhydramine: Diphenhydramine is a over-the-counter antihistamine that can cause mild sedation and relieve anxiety in some dogs. Chlorpheniramine is an over-the-counter antihistamine can cause mild sedation and relieve anxiety in some cats.

Prescription Anti-Anxiety Drugs

Prescription anti-anxiety drugs are mostly tranquilizers, alpha-2 agonists, or benzodiazepines. Acepromazine is a prescription tranquilizer for dogs, cats, or horses. It can moderate anxiety but may cause temporary protrusion of the 3rd eyelid and lower blood pressure. Cats may experience paradoxical excitation. Male horses may have prolonged protrusion of the penis. Reserpine is a longer acting tranquilizer for horses that can cause colic, protrusion of the 3rd eyelid, protrusion of the penis in males, mild diarrhea, and excessive sweating.

Diazepam, alprazolam, and other benzodiazepines are Schedule IV, controlled prescription sedative hypnotic anti-anxiety drugs used off-label in dogs, cats, and horses. They may cause ataxia and excessive drooling. In rare cases, anxiety may be increased. Imepitoin is an imidazolone that is a partial agonist of the benzodiazepine sites. It is an anticonvulsant with proposed antianxiety effects in dogs and cats. It is approved in the U.S. for use in dogs to treat noise phobias. It can cause ataxia, increased appetite, vomiting, and sleepiness. Benzodiazepines can suppress learning and memory, adversely affecting training to be handled.

Trazodone and fluoxetine are serotonin-antagonist/reuptake inhibitor drugs marketed as an antidepressant in humans and used off-label to control anxiety in dogs or cats. They may cause dilated pupils, protruding 3rd eyelid, vomiting, diarrhea, panting, ataxia, hypotension, or arrhythmias. In rare cases, anxiety may be increased.

Clomipramine is a tri-cyclic antidepressant and a serotonin reuptake inhibitor marketed for use in humans and in dogs for the control of anxiety. It can cause nausea, vomiting, diarrhea, increased appetite, urine retention, and increased intraocular pressures.

Gabapentin is a prescription drug marketed for the control of seizures in humans and often used off-label as an anti-anxiety drug for cats. Britain classified gabapentin as a Class C controlled drug in April 2019 due to risks of abuse and addiction. It may cause ataxia, drooling, and vomiting.

Alpha-2 agonist sedatives include clonidine, xylazine, detomidine, and romifidine. Clonidine is a prescription drug marketed for humans with resistant high blood pressure. It is used in dogs for anxieties and phobias. It may cause ataxia, bradycardia, hypotension, and in some cases, increased anxiety and agitation. Detomidine is a prescription injectable drug marketed for moderate to deep sedation with analgesia for dogs, cats and horses. It is also available as an oral gel for noise aversion in dogs and sedation in horses. In dogs, it may cause vomiting and bradycardia. Romifidine is similar to detomidine but with longer duration of effects.

Tiletamine is a dissociative anesthetic chemically related to ketamine. It is a Schedule III controlled drug in the United States. Approved as an injectable combined with zolazepam for dogs and cats, it has been advocated for chemical restraint when administered off-label by buccal administration. It can cause drying of the eyes, hypersalivation, tachycardia, hypertension and later decreased cardiac output, tachypnea, hypoxemia, and cyanosis.

Proper Use of Chemical Restraint

Potential advantages of appropriately used chemical restraint can be safety and convenience. Recent innovations in chemical restraint (sedation and anesthesia) have been highly beneficial to animals, owners, and veterinarians in alleviating animal stress and possible physical injury. The convenience of chemical restraint can lead to decreased risk to the handler and shorter handling time.

Potential disadvantages of unnecessary chemical restraint can be altered vital signs during a physical exam, adverse health effects, and fostering fear. Chemical restraint can also interfere with a physical exam by altering vital signs (heart rate, respiratory rate, and body temperature). All sedative and anesthetics have potentials to cause adverse health effects. Chemical alteration of consciousness may alleviate some of the fear and resistance to restraint in animals, although in some cases memory of the loss of full control of their body during induction or recovery may instill fear in some animals.

Sedatives can be dangerous when used in horses since their sense of balance or agility can be adversely affected. Riders or drivers of sedated horses can be endangered. Only stabled horses should receive any chemical restraint.

Conclusion

Chemical restraint should only be used when physical restraint techniques are substantially less safe for the animal or the handler, not just for convenience, to supplement income, or as a substitute for good handling and physical restraint methods. In addition, when chemical restraint must be used, it should be supplemented by sufficient humane physical restraint to optimize the animal and handler safety during administration, induction, and recover from the drug's effects.

If you have comments or you're interested in particular animal handling subjects, contact us at CBC@BetterAnimalHandling.com

Now let's recap the key points to remember from today's episode:

- 1. All chemical restraint methods have the potential for adverse effects and all last longer than using handling or physical restraint methods without the use of chemical restraint.**
- 2. Chemical restraint is indicated in instances where an animal or its handler could be injured by attempting only common handling or restraint methods.**
- 3. Chemical restraint is not justifiable on the basis of handler convenience, to generate extra income, or as a substitute for not knowing good handling and physical restraint methods for animals.**

More information on animal handling can be found in my books, *Animal Handling and Physical Restraint*, *Concise Textbook of Small Animal Handling*, and *Concise Textbook of Large Animal Handling* all published by CRC Press and available on Amazon and from many other fine book supply sources.

Additional information is provided at: www.betteranimalhandling.com . This website has more than 250 past podcasts with notes on handling of dogs, cats, other small mammals, birds, reptiles, horses, cattle, small ruminants, swine, and poultry.

Don't forget, serious injury or death can result from handling and restraining some animals. Safe and effective handling and restraint requires experience and continual practice. Acquisition of the needed skills should be under the supervision of an experienced animal handler.