



Behavioral Drug Therapy

How are drugs used for behavior modification in pets?

A number of drugs are now being utilized to treat pet behavior problems. In order to determine if drug therapy might be a consideration, it is first essential to determine the diagnosis and cause of the problem. Drugs are indicated when behavior techniques alone are unlikely to improve the problem, in cases that have not responded successfully to behavior therapy, or where it might be difficult or dangerous to proceed without the aid of drugs. In those cases where the pet is excessively anxious or exhibiting behaviors that might be harmful to themselves or others, drugs may be indicated for humane reasons. In some cases, such as when there might be abnormalities in receptors and neurotransmission, drugs might be a necessary part of the treatment plan to help achieve more normal brain function. A few of the types of conditions where drugs might be used include compulsive disorders, urine marking, attention deficit disorders, epilepsy and cases in which the pet exhibits anxiety, phobias or behavioral dyscontrol. While drugs might help to improve the outcome for some behavioral cases, it is the behavior management program that is required to obtain the desirable behavior and ultimately resolve the problem. Conversely, without the aid of drugs, training and behavior modification may be impractical (e.g. when the pet is excessively anxious).

Which drugs are licensed for veterinary use?

To date, few of the drugs used in veterinary behavior have been approved for pets. In addition to sedatives, only clomipramine and selegiline have been approved for use in dogs in North America. Most of the drugs utilized in veterinary behavior therapy are human drugs, so that doses, side effects and applications for animals have been extrapolated from human use. Such drugs can be used under the supervision of your veterinarian but you may be required to sign a form acknowledging your informed consent for such use. Each behavior case needs to be handled individually. Medications are specific for each pet and must not be transferred to other pets in the home nor, of course, used by owners.



Don't behavioral drugs just sedate my pet?

Many of the behavioral drugs that have been used in the past are sedatives that have broad effects and side-effects. Recently behaviorists have been turning to human medications, which have effects on the individual that are more specific. For example, by using anti-depressant medications, we can often treat panic and phobias without compromising social, play or exploratory behaviors.

What tests are required prior to drug use?

Before drugs can be considered, the pet should have a full assessment (e.g. physical examination, diagnostic tests) to rule out any medical problems that might be contributing to the behavior problem, and to ensure that there are no contraindications for drug therapy. These tests should include a general biochemical blood profile, urinalysis and blood count. Additional blood work including a thyroid profile or an EKG may be needed if a problem is suspected. For some drugs, monitoring may be necessary throughout the course of therapy.

What are the side-effects and contraindications?

Except for those drugs licensed for veterinary use, the side-effects, adverse effects and contraindications are for the most part, extrapolated from human literature. Since the number of pets treated with these drugs is relatively small, new problems may yet arise and each pet should be closely monitored for any undesirable or unexpected effects on health or behavior. For some drugs, the physical and behavioral effects seen in the first few days, whether problematic or desirable, may be a temporary side effect that could resolve with ongoing therapy. It may take weeks or even months for the full behavioral effects of some drugs to be noted.

Antihistamines: how are they used in behavior therapy?

Antihistamines may be useful in behavior therapy for their antipruritic (anti-itching) and sedative effects. They have been used in pets for sedation prior to car travel, for pets that are waking through the night, and for some forms of compulsive scratching and self trauma. Antihistamines are sedating, especially during the first few days of therapy. They are contraindicated in pets that might be prone to urine retention (e.g. prostate disease), glaucoma, thyroid disease, heart disease, or liver disease.

Anti-anxiety drugs

Depending on the type of drug utilized, anti-anxiety drugs may have an effect within hours of starting therapy, or may take a week or longer to achieve their effect. Side effects vary with the type and class of drug being used, ranging from increased appetite and sedation to agitation with little or no sedation. Any anti-anxiety drug can reduce fear to such a point that some pets become more confident, bold and aggressive (disinhibition).

What are benzodiazepines and how are they used?

For anxiety, urine marking, noise phobias, fear induced aggression, generalized fear, waking at night, and some panic disorders, anti-anxiety drugs such as the benzodiazepines (e.g. diazepam, oxazepam, alprazolam) might be used. Because of their short onset of action and relatively short duration, these drugs are primarily used for specific predictable situations that might produce temporary anxiety, and less frequently for long term or on-going problems. Because of the potential for dependency and rebound effects (i.e. worsening of the problem on withdrawal), gradual withdrawal is recommended after continuous therapy. Liver function should be monitored prior to and during therapy because of the potential for liver damage, particularly in cats.

Benzodiazepines may cause sedation and appetite stimulation, and some pets might even become more agitated or anxious when therapy is first initiated. These effects usually resolve within a few days. Be certain to report any unexpected behavior changes, or any medical changes such as decreased appetite or vomiting to your veterinarian immediately.

What is buspirone and how is it used?

Buspirone is a non-sedating anti-anxiety drug that is used for some forms of fear, anxiety and urine marking. It does not stimulate appetite and has not been associated with any major side

effects. As with other anti-anxiety drugs, buspirone may remove the inhibitions associated with fear and could lead to an increase in aggression. Buspirone may take several weeks to take effect and is therefore not useful for the treatment of temporary situational anxieties.

What is propranolol and how is it used?

In humans, the heart drug propranolol has been used for reducing situational anxiety without causing sedation. The drug works by blocking some of the physical effects that accompany fear. In theory, if the pet cannot exhibit the physical effects of fear, the behavioural signs are less likely to be exhibited. The heart rate is slowed, blood pressure is lowered, and the tremors or diarrhea that might be associated with fear are reduced. Propranolol should not be used in pets with heart, respiratory or liver problems.

Antidepressants: when are they used?

Most anti-depressants work by causing changes in the brain chemicals called serotonin and / or noradrenaline. These chemicals transmit signals between brain cells (neurotransmitters). Since each antidepressant can have a slightly different effect on neurotransmitters, they may each have slightly different uses and slightly different side effects. Antidepressants have been used to treat urine spraying in cats, urinary incontinence, anxiety, panic disorders, sleep disorders and some forms of aggression. These drugs are generally used on a long-term basis. All antidepressants require several weeks to reach full effect and therefore cannot be used on an as-needed basis. After long-term use, they should be withdrawn slowly (decrease the dose by approximately 25% every two to four weeks. It is important to note that, while behavior therapy alone can lead to improvement for most behavior problems, drugs may help to improve the outcome but do not generally improve the behavior problem on their own.



The only antidepressant licensed for veterinary use is clomipramine. It can be used for separation anxiety as well as compulsive and repetitive disorders, phobias and anxiety disorders in dogs. It is licensed in Australia for use in cats with urine spraying. Clomipramine, like imipramine and amitriptyline, is a tricyclic antidepressant. However, clomipramine has a greater influence on serotonin than other tricyclic antidepressants, which makes it useful for the treatment of compulsive disorders. Amitriptyline has greater antihistaminic effects and has also been used as a treatment in some forms of chronic pain. Side effects may include a dry mouth, urine retention, sedation or constipation, especially during the first few days of therapy. Additionally they may cause tachycardia, an increase in heart rate. If your pet has any evidence of heart disease, an electrocardiogram may be advisable prior to use.

Another class of antidepressants, known as selective serotonin re-uptake inhibitors, includes drugs such as fluoxetine, paroxetine and sertraline. They are most useful for compulsive, anxiety, phobic and panic disorders, urine marking and perhaps some forms of aggression. They seldom cause sedation and have few side effects, but may occasionally cause restlessness, agitation, insomnia, weight loss and gastrointestinal upset in humans. They can take up to a month to achieve therapeutic effect.

Progestins: when are they used?

Progestins, which are female hormones, have been used to treat a variety of behavior problems. They have a general calming effect, and can be used in the treatment of aggression, urine marking, and compulsive grooming. They are also used to reduce male behaviors such as

marking and mounting. Progestins may lead to serious adverse effects including diabetes and suppression of the bone marrow, adrenal gland and immune system. Therefore, they are generally used only in those cases where no other treatment is likely to be effective. The pet should be monitored closely throughout the course of therapy.

Sedatives: when are they used?

Sedatives have generalized effects on behavior, causing primarily sedation. They can be useful for the treatment of excessive vocalization, noise phobias, sleep disorders and to control the anxiety and excitability associated with events such as car rides, nail trimming or veterinary visits. They are also effective in preventing nausea. They should not be used in patients with seizures, liver disease or heart problems, and can lead to a dry mouth or urine retention.

Stimulants: when are they used?

Stimulants such as methylphenidate are used for attention deficit disorders in people. Although rare, some dogs that have short attention spans, are difficult to train, display repetitive behaviors, or are extremely active and have difficulty settling down may have attention deficit disorders. Since these drugs are stimulants they generally cause an increase in heart rate and activity level. However in hyperactive pets, they actually have the opposite effect, leading to a calmer pet with a slower heart rate.

Anti-convulsants: when are they used?

Anticonvulsants such as phenobarbital and some benzodiazepines are used to control seizures. Since certain parts of the brain control behavior, a seizure in these parts of the brain could lead to sudden and bizarre changes in behavior, which come and go without any apparent stimulus. If a seizure focus is suspected to be the cause of unusual behavior, anticonvulsants may be effective. Anticonvulsants have also been used on their own or in combination with other medications for some anxiety, panic and sleep disorders.

Selegiline: when is it used?

Selegiline is licensed for use in dogs in both Canada and the United States for the treatment of cognitive dysfunction syndrome (CDS) as well as in the control of clinical signs of Cushing's disease. Signs of cognitive dysfunction are those of senility disorientation, including decreased responsiveness to owners, altered sleep-wake cycles and house-soiling. The drug known as an MAOB inhibitor may help neurotransmission of dopamine and noradrenaline, which may decline with age. It may also help cognitive dysfunction by protecting brain cells, and decreasing free radicals (see handout on 'Behavior problems of older pets' for more details). Selegiline should not be used with other MAO inhibitors such as amitraz, narcotics, drugs that might lead to increased blood pressure such as ephedrine, phenylpropanolamine or tricyclic antidepressants such as clomipramine and amitriptyline, and serotonin reuptake inhibitors such as fluoxetine. Selegiline has been used in the treatment of emotional disorders with components of generalized anxiety, especially in cases where physical well-being is being affected (e.g. sleep, appetite, grooming). Selegiline is not licensed in cats, but the drug may also be effective at controlling the signs of cognitive dysfunction in cats.

Clinic name and address:

Telephone:

INFORMED CONSENT FOR BEHAVIOR-MODIFYING DRUG USE

Pet's name: _____ Sex: _____ Age: _____

Owner name: _____

Owner address: _____

Telephone: _____

I, the undersigned, being the owner or duly authorized agent for the owner of the above animal, understand that the drug _____ has not been approved for use in dogs or cats.

I have been advised that the drug is being used on an extra label basis and I accept the consequences of its use. I will not hold the veterinarian responsible for any adverse effects, be they physical or behavioral that might arise out of the use of this drug.

I have been advised of the potential side effects and adverse effects of the medication, such as:

_____ and will discontinue the use of the drug and contact my veterinarian or the after hours emergency hospital immediately should any adverse or unexpected effects be exhibited.

I understand that the following laboratory tests need to be performed prior to drug use:

I understand that these tests should be repeated on:

I understand that this drug may not alter the course of the behavioral problem, and that my animal may continue with the problem behavior and may injure itself, other animals or other people.

I hereby give my informed consent to the administration of this drug to my animal. I accept full responsibility, legal and financial, for all actions that may occur from the use of this drug.

I have been advised that a follow-up examination or assessment is next due on:

Signed: _____ Date: _____