

Prescribing Psychoactive Medications to BCSPCA Shelter Animals

General Considerations

Psychoactive medications work by modulating neurochemistry through a wide variety of pathways to reduce anxiety.

Behaviour problems are rarely solved using medication alone. Humane & effective behaviour modification plans are required for long-term behaviour change. For cats and dogs with anxiety disorders or going through a stressful transition period, medications can be very helpful to reduce anxiety and improve the success rate of behaviour modification plans.

Making a Diagnosis

Responsible use of psychoactive medications requires a behavioural diagnosis. Some common diagnoses in shelter animals include acute conditions such as kennel stress or barrier frustration, or chronic conditions such as separation anxiety or generalized anxiety.

In general, the history from the previous owner, and the pet's interactions with shelter staff are your best sources of information for reaching a diagnosis. However, you can ask for video of the problem behaviour or any other tests you think might be relevant.

Whether or not a psychoactive medication, or which type of medication is indicated for a behaviour problem depends on a number of factors, including:

- Underlying emotional motivation: fear & anxiety based behaviour respond best to medication
- Alternatives – are there simple alternatives to medication that would be likely to benefit this patient?
 - The BCSPCA staff are trained to use environmental modifications, pheromones, ambient noise, nutraceuticals, and other interventions with shelter animals experiencing stress. You can ask the branch manager or animal care attendant which interventions have been tried.
 - Note: psycho-active medications should NOT be used as a “last-resort” if nothing else is working. If the patient is experiencing significant anxiety, it should be treated in a timely manner to prevent ongoing suffering.
- Chronicity
 - Short-term, or transient anxiety (eg. Kennel stress) requires fast-acting medication such as trazodone that can be weaned off after adoption.
 - Chronic anxiety disorders require long-term (sometimes life-long) medications. Long (slow acting) medications such as SSRI's are preferable for long-term use due to low side effect profile, low cost, and SID dosing.

- Both: some patients have acute anxiety in shelter AND a history suggestive of chronic anxiety problems. These patients may benefit from a fast-acting medication (eg. Trazodone) which will take effect quickly, but can also be started on a slow-acting medication (eg. An SSRI) which can be continued long-term. Once the SSRI has taken effect, the trazodone can be weaned off.
- Cost: Most of the psychoactive medications used in pets are off patent and very inexpensive. There are a few exceptions, including clomipramine and the tablet form of fluoxetine. The BCSPCA does not wish to burden the patient's future adaptors with high ongoing medical costs unnecessarily, so we recommend trying to avoid expensive medications, especially for long-term use.
- Controlled drugs: the BCSPCA tries not to keep controlled drugs in shelters, so please avoid prescribing controlled drugs (eg. Benzodiazepines) where possible.

B Mod Plans

The BCSPCA has established protocols for treating common behaviour problems. Expert help for more complicated cases is available within the organization. Veterinary assistance with behaviour modification plans is always appreciated, but not necessary in most cases.

Blood Tests

Due to the wide range of safety with most psychoactive medications and limited medical budgets, the BCSPCA does not recommend pre-medication blood work for every animal receiving these drugs.

Most psychoactive medications are metabolized by the liver and excreted by the kidneys. Pre-medication blood work is recommended for geriatric animals or those with active disease processes. Young, healthy animals should not have blood work done solely for anticipated use of psychoactive medications.

Follow-Up

Establishing a contact person to deliver timely updates on the patient's response to medications is crucial. Usually the branch manager, or the patient's main animal care attendant can be tasked with providing updates by phone or e-mail on pre-arranged dates.

Since these medications take effect at different times, please give shelter staff specific dates to update you on the patient's progress. For example, trazodone takes effect within an hour, so you should ask for an update the next day. SSRI's take at least 4 weeks to reach full effect, so ask for a staff member to contact you with a status report at that time.

Trial & Error

Psychoactive medications do not have the same effects in every animal. Individual variation in genetics & neurochemistry lead to about 70% success rate for each individual medication. Doses often require adjustment as well for optimum results.

In general, starting at the low end of the dose range and weaning up to effect produces the best outcomes and the least side effects. Fast-acting medications can be adjusted based on response from 1 dose to the next. Slow acting medications take 4-6 weeks to reach full effect, and 2 weeks for dose increases to take effect.

Weaning and wash-out periods are recommended when switching from 1 long-acting medication to another. When switching medications, a fast wean and wash-out is recommended. For example:

'Waffles' 25kg FS Collie X has been on paroxetine for 6 weeks, and getting her maximum dose of 45mg (1.5 x 30mg tablets) SID for the last 2 weeks. It is having no noticeable effect on her anxiety, so you decide to trial sertraline instead.

Instructions to shelter: Give 30mg paroxetine (1 tablet) SID for 2 days, 15mg (1/2 tablet) paroxetine SID for 2 days, then no SSRI for 3 days. Then start sertraline at 25mg (1/2 tablet) once daily. Update me on her response by e-mail on (insert date 4 weeks from now), or sooner if she develops any side effects.

Fast-Acting Medications

Serotonin Antagonist Reuptake Inhibitors (SARIs)

Major actions: Blocks the reuptake at serotonin transporter. Antagonist at serotonin 2A /2C receptors. Hypnotic at low doses. Antihistamine.

General use: Anti-anxiety, sleep cycle, compulsive behaviors, mood stabilizing, aggression.

Time to onset: ~60 minutes

Name	Dog	Form	Indications	Contraindications/ side effects
Trazodone (Desyrel®)	4-8 mg/kg q8-12 hours for kennel stress, Doses up to 12 mg/kg	T: 50, 100, 150, 300 mg Extend Release: 150, 300 mg	Anxiety, compulsive behaviors, "bridging drug" for SSRIs/TCAs	Side effects: sedation, lethargy, ataxia, cardiac conduction disturbances, increased anxiety, and aggression. Contraindicated in patients receiving MAOI (including amitraz and possibly selegiline). Use with

	for stressful event or sedation			caution in patients with severe cardiac disease or hepatic or renal impairment.
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Alternative Dosing Chart:

Weight of dog	Initial dose	Target dose
< 10 kg	25 mg q8-24h	50 mg q8-24h
≥ 10-20 kg	50 mg q12-24h	100 mg q8-24h
≥ 20-40 kg	100 mg q12-24h	200 mg q8-24h
> 40 kg	100 mg q12-24h	200-300 mg q8-24h

Alpha2 Agonists - Sympatholytic

Major action: Centrally-acting agonist at α_2 receptors in the brain as well as imidazoline receptors.

General use: Treats anxiety in dogs; often in conjunction with SSRI or TCA when the serotonin receptor drugs are not enough. Clonidine treats neuropathic pain and hypertension in humans.

Time to onset: ~60 minutes

Name	Dog	Form	Indications	Contraindications/ side effects
Clonidine (Kapvay®, Nexiclon®)	0.01-0.05 mg/kg PO PRN 30-90 min prior to trigger; can be bid-tid	T: 0.1, 0.2, 0.3 mg	General over-arousal, fear aggression, separation anxiety, storm/noise phobia, reactivity.	Side effects dry mouth, constipation, sedation, aggression, increased agitation, collapse, and slow heart rate.
Sileo® (dexmedetomidine oral transmucosal gel)	125 mcg/m ²	Weight-specific dose marked on dose-metered syringe.	Dose-metered syringe FDA-approved for noise aversion in dogs; useful for other situational fears.	Side effects (reported in trials): vomiting, diarrhea, sedation, peri-orbital edema, inappropriate urination, and ataxia.

Gabapentin

Major action: Not fully understood. Does not affect GABA or serotonin pathways.

General use: Vet visits and travel for cats (high dose). Partial seizures, neuropathic pain, reactivity, generalized anxiety, panic disorders.

Time to onset: ~2 hours

Name	Dog	Cat	Form	Indications	Contraindications/ side effects
Gabapentin (Neurontin®)	5-20 mg/kg q12h mid range dose 20-40 mg/kg prior to stressful event, or for sedation, higher doses can be helpful for euthanasia, generally given with trazodone 2.5 mg/kg q12h low dose	10mg/kg for fearful cats in shelter 20-40 mg/kg or 100mg/cat for potent anxiety triggers or sedation, higher doses can be helpful for euthanasia	T: 600, 800 mg C: 100, 300, 400 mg	May be useful as primary or secondary treatment for fearful/under- socialized animals, separation anxiety, generalized anxiety, or any problem with reactivity as a component.	Side effects: sedation, ataxia. Avoid Neurontin® liquid, which may include xylitol.

Benzodiazepines *Controlled Drugs

*Use of benzodiazepines is discouraged in shelter animals due to concerns with storing controlled drugs in shelters, and the side effect of decreasing bite inhibition.

Major action: Facilitate inhibitory GABA neurotransmission and other inhibitory transmitters by binding to specific benzodiazepine receptor sites.

General use: Usually consider for short term, acute problems. Short-term relief from anxieties (separation anxiety, other phobias), Feline urine marking, feline aggression.

Time to onset: ~30 minutes

Name	Dog	Cat	Form	Indications	Contraindications/ side effects
Alprazolam (Xanax®)	0.05-0.1 mg/kg bid-tid; 0.25-2 mg/DOG	0.125-0.25 mg/CAT bid-tid	0.25, 0.5, 1, 2mg (1 & 2mg scored)	See above. Appears to be longer acting than diazepam. No active metabolites.	Side effects: paradoxical excitation, sedation, lethargy, ataxia, increased appetite, increase affection. May impair memory. May decrease BITE inhibition. Contraindications: impaired renal or hepatic function (use with caution), acute narrow angle glaucoma, myasthenia gravis. Drug dependence and tolerance. Wean off meds slowly.
Diazepam (Valium®)	0.5-2.2 mg/kg bid-tid; 0.25-1 mg/kg/PRN	1-2 mg/CAT bid	T: 1, 2, 5, 10 mg	As above.	As above. CAUTION IN CATS: Diazepam documented to cause fulminant hepatic necrosis in 11 cats receiving oral form.
Clonazepam (Klonopin®)	0.1-0.5 mg/kg bid-tid	0.02 mg/kg sid-tid	T: 0.5,1, 2 mg	Sleep disorders, seizures, psychomotor seizures. Vet med use: adjunctive anticonvulsant in dogs not controlled by other medications.	As above.
Oxazepam (Seras®)	0.2-1 mg/kg	0.2-0.5 mg/kg	T: 15 mg C: 10, 15, 30 mg	Appetite stimulant, and as above.	As above.

Lorazepam (Ativan®)	0.02-0.1 mg/kg q 8-24 h	0.125-0.25 mg/kg q 12-24 h	T: 0.5, 1, 2 mg	Appetite stimulant, and as above.	As above.
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Long (Slow) Acting Medications

Selective Serotonin Reuptake Inhibitors (SSRIs)

Major actions: Blocks the reuptake of serotonin. Little effect on other neurotransmitters.
 General use: Anti-anxiety, urine marking, compulsive behaviors, mood stabilizing, aggression, impulsivity.
 May see a protracted onset of action (4-6 weeks for full effect).

Name	Dog	Cat	Form	Indications	Contraindications/Side Effects
Fluoxetine (Prozac®)	0.5-2 mg/kg sid	0.5-2 mg/kg sid	T: 10 mg C: 10, 20mg *tablet form is very expensive	Urine marking, separation anxiety. Said to be more uplifting in people.	Side effects: reduced appetite, nausea, diarrhea, sedation, anxiety, overdose: tremors Contraindications: Concurrent use with TCAs, SSRIs, or MAOIs (Anipryl, amitraz flea and tick collars and Mitaban).
Paroxetine (Paxil®)	0.5-2 mg/kg sid	0.5-1 mg/kg sid	T: 10, 20, 30 mg	Said to be more calming in people. More anticholinergic effects.	As above. Caution in geriatric patients d/t anticholinergic effects.
Sertraline (Zoloft®)	1-3 mg/kg sid	No data	T: 25, 50, 100 mg	As above.	As above.

Tricyclic Antidepressants/Antianxiety (TCAs)

Major action: Blocks amine reuptake (serotonin, norepinephrine, dopamine).

General uses: Anti-anxiety, urine marking, compulsive behaviors, mood stabilizing, aggression.
 May see a protracted onset of action (4-6 weeks for full effect).

Name	Dog	Cat	Form	Indications	Contraindications/Side Effects
Clomipramine (Clomicalm®)	2-4 mg/kg sid or divided bid	0.5-1 mg/kg sid	T: 20, 40, 80 mg C(human) 25, 50, 75 mg *very expensive – try to avoid long-term use in shelter animals	Licensed for use in dogs for separation anxiety. Most selective of TCAs for serotonin.	Side effects: sedation, anticholinergic effects (cardiac arrhythmias, dry mouth, urinary retention, constipation, mydriasis). Diarrhea/vomiting. Hyperexcitability. Hematological effects (bone marrow suppression). Lowers seizure threshold. Contraindications: Concurrent use with TCAs, SSRIs, or MAOIs with cimetidine. Concurrent use of thyroid replacement therapy. Concurrent use with neuroleptics (acepromazine). Concurrent use of Azoles (ketoconazole, etc.) Overdosage: life threatening.
Amitriptyline (Elavil®)	2.2-4.4 mg/kg sid or divided bid	2-4 mg/kg sid or divided bid	T: 10, 25, 50, 75, 100, 150 mg	Not as selective for serotonin as other TCAs. Affects dopamine and norepinephrine. More side effects than clomipramine. Blocks	As above.

				histamine (H1 and H2 sites)	
Doxepin (Sinequan®, Adapin®)	1.5 mg/kg sid	No data	C: 10, 25, 25, 75, 100, 150 mg	Most effective for antihistaminic effects. Psychogenic dermatitis. More commonly used in horses	As above

Example Protocols:

- 1) Acute Anxiety (eg. Travel Stress, Kennel Stress)
 - a. Dog: Trazodone 4-8 mg/kg q8-12 hours until anxiety symptoms resolve or 2 weeks post-adoption. Can wean or stop abruptly.
 - b. Cat: Gabapentin 10-20mg/kg mixed with wet food ~2 hours prior to stressful event.

- 2) Chronic Anxiety
 - a. Dog (eg. Anxiety with Multiple Triggers): Paroxetine 0.5-2mg/kg SID starting at low end of dose range and titrating up to effect after 4-6 weeks.
 - b. Cat (eg. Urine Marking due to unavoidable social stress): Fluoxetine (compounded tablets) 0.5-2mg/kg SID starting at low end of dose range and titrating up to effect after 4-6 weeks.

- 3) Chronic and Acute Anxiety – Dog (eg. Separation Anxiety with significant emotional distress or frantic escape behaviour on departure)
 - a. Trazodone 4-8 mg/kg PRN or every 8-12 hrs. Can use higher dose ~60 minutes before departure. Wean off when SSRI takes effect or continue for situational use (eg. Situational anxiolysis for pre-departure)
 - b. SSRI – eg. Paroxetine 0.5-2mg/kg SID. Will take 4-6 weeks to take full effect.

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Additional Recommended Resources:

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