

Behavior Tips: *Can medications help improve behaviour and decrease distress?*

The addition of behavioural medications to behaviour modification protocols can aid in attaining better and faster treatment outcomes. Studies have shown that dogs acquire behaviour modification lessons faster when taking medication. Multi-modal therapy has a huge potential to improve quality of life for both pets and owners. While these drugs cannot promise a “quick fix” for behavioural problems, they can be effective as a part of an integrated treatment program and can actually make it easier to implement necessary behavioural and environmental modifications.

When your pet is scared or stressed, the body releases a lot of the stress hormone cortisol. When there’s been too much cortisol circulating in the body for too long, it can actually interfere with learning at the cellular level by preventing proper protein production within neurons. This is critical as essentially everything in your body is made of proteins, meaning you need proteins to be able to learn. A lot of the drugs used today in veterinary (and human) medicine act to reduce stress and anxiety by the end goal of making new proteins to allow the patient to make new memories and learn faster.

Commonly Used Behavioural Medications

Prior to prescribing behavioural medication for your dog or cat, your veterinarian will do a physical exam and take some blood to examine general health, and kidney and liver function. Most of the medications used are broken down by the liver or kidneys and some need to go through the liver to be transformed into the active compound. In veterinary medicine, the most commonly used classes of behavioural medications used include the benzodiazepines (and related compounds), tricyclic antidepressants (TCAs) and selective serotonin reuptake inhibitors (SSRIs). Within these classes there are several commonly used medications that are used safely to treat a range of behavioural issues including social anxiety, generalized anxiety disorders, fear and noise phobias.

Benzodiazepines

Benzodiazepines are a class of drugs that function at the GABA_A receptor within neurons to enhance the action of a chemical called GABA. GABA is an inhibitory neurotransmitter, so when it’s stimulated excitatory neurochemicals are inhibited resulting in calmness, or at higher dosages, drowsiness. This is why benzodiazepines are good options for panic disorders, fears and phobias.

Alprazolam, one commonly used benzodiazepine, can be used as a preventative, prior to a stressful event to avoid fear and stress due to vet visits, new social situations, storm or noise phobias, and more. Benzodiazepines all have appetite stimulating effects so can be helpful to anxious animals who stop eating.

Gabapentinoids

Gabapentin binds to a calcium channel that releases an excitatory neurotransmitter called glutamate, which is critical for neuron-to-neuron communication but can be very damaging in large amounts in conditions like stroke, epilepsy and profound anxiety. By binding to this channel, gabapentin can reduce the amount of glutamate released in the brain and therefore temporarily block the pathways in the brain responsible for anxiety. Gabapentin is commonly prescribed on its own or as an adjunctive medication with other drugs. Gabapentin has been used to help reduce fear and panic in dogs (and humans) with social anxiety. It can also be used to treat dogs (and humans) with generalized anxiety disorders to decrease overall reactivity to triggering stimuli, and can also be beneficial in dogs who are hyper-reactive. Gabapentin has very few potential adverse effects, but these may include arousal and sedation, depending on the patient.

Tricyclic Antidepressants

Serotonin and noradrenaline are crucial neurochemicals that help neurons communicate with each other and affect almost every part of the brain. Anxiety and cognition issues can arise when there is an imbalance in these neurotransmitters and their receptors. Tricyclic antidepressants block the reuptake of serotonin and noradrenaline, allowing for a higher concentration of these neurochemicals around their receptors, which enhances the efficiency of neuron-to-neuron signaling. Ultimately this improves learning through production of new proteins, some of which become new receptors.

Clomipramine is a TCA sold under the veterinary label Clomicalm. It has been used for the long-term treatment of behavioural disorders including social anxiety, separation anxiety, obsessive-compulsive (OCD). In dogs with separation anxiety, clomipramine can be effective in decreasing anxiety and facilitating more appropriate social and outgoing behaviour.



This cat is kept happy with daily treatment for generalized anxiety disorder with the TCA, clomipramine

Selective Serotonin Reuptake Inhibitors

Selective serotonin reuptake inhibitors, or SSRIs function similarly to TCAs but are more specific and primarily inhibit the reuptake of serotonin. This means that more serotonin will be available for sending messages. When an animal is on this type of medication long term it can enhance the animal’s ability to learn and modulate information by forming more binding proteins and receptors, in a similar manner to TCAs.

Fluoxetine is a commonly prescribed SSRI which is also known as the brand names Prozac (human product) and Reconcile (veterinary product). It is used alone or in combination with other medications for treatment of a range of behavioural pathologies such as separation anxiety, generalized anxiety disorder, pathological aggression and obsessive-compulsive disorder (OCD).

While we only discussed 2 of the 5 behavioural medications licensed for use in veterinary medicine (there is also Anipryl/selegiline (cognitive dysfunction/brain aging), Sileo/OTM dexmedetomidine (fear of noises), Pexion/imepitoin (fear of noises)), there are many other medications used “extra-label” – for the same conditions in dogs and cats as they are in humans – that can help veterinary patients.

It’s amazing that we now know enough about the brain that we are able to start treating it like any other organ. If our pancreas can’t make enough insulin, instead of suffering with diabetes, we give our body the insulin it needs. So why should it be any different with our brain? If our pets can’t make enough of the right proteins, let’s give them some help! This type of behavioural saves relationships, decreasing relinquishment and euthanasia....and it keeps pets and their people sane and happy.

Although these tips are helpful, please discuss any behavioural/medical concerns with your local veterinarian. For all cases where you still have concerns, seek specialist services (www.dacvb.org). At AVC you can contact the AVC Behavioural Medicine Service (AVCBehaviouralMed@upe.ca).