PAWLY UNDERSTOOD
VETERINARY BEHAVIOUR & PSYCHIATRY SERVICES
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Anxiety and mental illness in dogs

Behavioural disorders are extremely common in dogs. At least one in five dogs are affected by an anxiety disorder and mental illness. Some research and estimates suggest as many as 80% of dogs may be affected by anxiety.

It is a scary, sad and confronting statistic that behavioural problems are the **number 1 terminal illness of dogs in Australia**. More pets are euthanized due to behaviour problems than due to many other leading causes of death combined. Behavioural disorders are a major contributing factor to surrender, relinquishment and euthanasia as they degrade the human-animal bond. Such problems pose a welfare concern for pets and their human families by being hugely detrimental to health and quality of life. Behavior problems can also be dangerous when anti-social behaviour such as aggression is manifesting. For these reasons, there are moral, ethical, welfare, health and safety reasons to address behaviour problems and treat anxiety and mental illness in our pets.

It is often very hard to live with an animal with a behavior problem. It can be anything from frustrating to humiliating to heart-breaking to very dangerous. In cases where behavioural issues exist, often there is a lack of understanding of what is going on and why it is occurring. This leads to animals often never getting the help and treatment they need and even worse, receiving unethical, inappropriate, damaging and dangerous treatment and training.

Anxiety is a medical disease.

- Anxiety has many detrimental effects on the body.
- Anxiety is a serious and harmful disease which necessitates prompt medical treatment.
- Chronic stress and anxiety has been proven to shorten life and impair quality of life.
- Animals with anxiety disorders have significant abnormalities of neurochemistry and circuity in their brains.
- The brains of anxious animals do not function normally – the perception and processing of information is impaired – this is why their behaviour often seems irrational and out of context.

- Anxiety disorders involve abnormal activity in the amygdala in the base of the brain, initiating the body's stress and fight/flight physiology too often, too strongly and for too long.
- Animals with anxiety have hyper-arousal / over-activity of the sympathetic nervous system.
    - This causes elevated levels of stress hormones (cortisol, adrenaline).
    - Excess stress hormone causes far-reaching damage to almost every system in the body.
    - The immune system is compromised.
    - Inflammatory changes happen in the body which makes diseases of the skin, bladder and bowel more likely as well as infections and auto-immune diseases.
    - Inflammation also directly harms the brain.
- Metabolism and organ function is affected.
- The microbiome and gut function can be altered.
- The brain itself is directly harmed by too much stress hormone (cortisol damages cells in the hippocampus, the memory centre of the brain).
    - This makes learning and training very difficult.
- Pain and anxiety are strongly linked via interaction in the central nervous system and perception in the brain:
    - Pain is worsened / heightened by anxiety
    - Anxiety is worsened / heightened by pain

What causes Behaviour Problems?

There is not one single cause or reason for a behaviour problem. They are multi-factorial.

Behaviour is influenced by 3 factors:

GENETICS, LEARNING / EXPERIENCE and ENVIRONMENT

Each of these is partly responsible for the problem in a dynamic and overlapping way. At any one time, an animal's behaviour is the result of its genetics, experience and environment – each are as important as the other, just like the way in which each of the length, width and depth are crucial in determining the volume of a cube.

Genetics

Genetics plays a role in the animal's innate instinctive responses. Sometimes it influences certain breed traits which have been selected for over time. Genetics sets the limits of what is possible for an individual. Emotional and behavioural traits in pets fall along genetic spectrums just like in people. For example, a pet's resilience, optimism, pessimism or fear could be anywhere on the genetic spectrum from low to high.

Importantly, genetics is certainly not as fixed or rigid as we once thought. In fact, genes can be quite plastic and malleable and altered in terms of how they are expressed – they can be switched on and off and tuned up or down. This is why genetically identical twins can actually be quite different in terms of their behaviour, preferences etc.

This is called **"epi-genetics"** and refers to how genes are acted upon and altered by our environment and experiences.

Epi-genetic influences are very important in dogs and begin in the womb, before a pup is even born. For example, stress, pain or poor nutrition in the mother dog will impact on the developing body and nervous system of the pup in-utero to alter the expression of their genes. This is why puppies from the impoverished and stressful environment of puppy farms are often behaviourally abnormal and may be predisposed to mental health problems.

Learning and experience

This is responsible for shaping the dog's brain (within the confines of its genetic limitations). Learning makes connections and strengthens circuits in the brain. Learning can be beneficial or harmful, acting either to build confidence, resilience and coping or undermine it. It is very detrimental if dogs either miss out on necessary good learning and/or if they encounter negative damaging experiences.

Normal neurological development is interrupted both if **"things which should happen, do not and things which should not happen, do".** This is why socialisation is so important.

Environment

This is the immediate context the animal is in. We need to consider both internal environment (the outside world such as what is happening around the dog, presence of triggers etc.) and internal environment (what is happening inside the dog such as hormones, physiology, nutrition, pain, disease, discomfort etc.). In an optimal environment an animal can thrive, in an impoverished or overwhelming environment an animal will flounder and suffer distress.

Objectives and goals of treatment for behavioural disorders:

- Improve patient quality of life, health, welfare and longevity
- Reduce emotional disturbances such as anxiety, fear, panic and hyper-arousal
- Improve current undesirable behaviours
- Allow to function as normally and optimally as possible
- Render as calm and safe as possible to reduce potential risk of conflict and anti-social behaviour
- Improve impulse control and coping strategies / choices when fearful / anxious

- Improve rational information processing ie improve ability to perceive and respond appropriately to the environment
    - Improve ability to recognise when something is or is not a threat and when something does or does not warrant attending to
- Reduce response to many benign everyday stimuli
- Ensure normal ability to rest, relax, sleep and "switch off"
- Enable optimal intervention with behaviour modification - improve attention, concentration and learning ability by reducing abnormal anxiety and over-arousal

Treatment:

Treatment needs to be multi-angled to address all of the factors contributing to the psychological and behavioural problems of each patient, as discussed above.

Treatment involves "THE 4 Ms" approach:

MEDICATION, MODIFICATION, MANAGEMENT and MONITORING

Medication addresses the genetic neurological and internal environmental abnormalities. Nutrition and pheromone therapy also be included in this category of treatment.

Modification addresses learning – especially in relation to learning emotional associations.

Management addresses the environment.

Monitoring ensures we objectively assess and record response to treatment so that all of the above parameters can be measured and adjusted as required.

Medication:

Medication is prescribed when a medical mental health diagnosis has been made. It aims to correct the disease present via addressing the genetic and epi-genetic abnormalities present in the patient by altering the internal environment of the brain and body for the better. The aim of using medication in animals is to normalise their brain chemistry and stress response to relieve harmful anxiety and improve their health, welfare, emotional state, functioning and behaviour.

Broadly there are 2 categories or phases of medical treatment:

One involves using a quick-acting medication to help the patient promptly or in acute short-term situations. Often these medications can be weaned down or withdrawn several months into treatment if no longer required.

Two involves using a long-acting baseline medication. These long-acting medications form the foundation of treatment in the mid to long term but are not quick to work – they may take up to 3 months for effect in some patients. This is why we often need to first rely on a short/quick acting medication in the meantime or in certain situations where the baseline alone is not enough to stabilise the patient initially.

- Some patients may require more than one single medication long-term to keep them stable and functioning optimally – depending on the severity of their disease and how they respond to treatment.

Modification:

Behaviour modification is all about learning.

In many cases, patients may not be able to engage successfully with behaviour modification until they are medicated. This is because until treated and stabilised, they are not capable of normal learning and information processing due to abnormal levels of stress and anxiety and decreased functioning of the rational centres of their brain.

All behaviour is secondary to an underlying emotion and motivation.

Behaviour modification involves changing emotional reactions from bad to good (and the associated behaviour from undesirable to desirable) using structured systematic re-learning and training. It teaches the patient to cope with and react appropriately in the face of their triggers. Behaviour modification also aims to teach the patient how to calmly interact with the world around them to get their wants and needs met which helps them to relax.

Over time, it works synergistically with medication and management to build new adaptive nerve pathways in the brain, fostering new behavioural responses.

The following exercises form the foundation of initial behaviour modification.

These exercises are designed to help you interact with your dog in a way which alleviates stress and anxiety and to teach them how to relax and navigate the world. It is recommended you commence this program under the guidance of a qualified force-free positive reinforcement trainer.

Name Game	You need to build a strong reliable default positive association with your pet's name so that they willingly respond to it in any context without even thinking. We want the response to be hard wired and subconscious – so it can be performed even in times of high arousal / stress. Say your pet's name excitedly at random times and reward them immediately when they alert to you (come or even just make eye contact). This will condition your pet to enjoy a dopamine release and positive emotions when they hear their name and ensure they are likely to respond to it in times when they need to.

	KEY POINT: Never say your pet's name in a harsh or punitive way! It should only mean good things to your pet!
Follow the mantra: "Don't do that, do this instead!"	Redirect any undesirable behaviour into an appropriate alternative response. Never punish a behavior – this may suppress it but will make your pet more anxious and may worsen any aggression. Dogs need to know what to do rather than what not to do. If they are doing a behaviour, there is a physical or emotional need to do it and it requires an outlet, it is a coping strategy – it's up to us to teach a desirable outlet and better response. If you need to say "NO", then back it up with a "YES". EG if your dog is barking at something, lure them to come to you and sit, then tell them how brilliant they are and give them a reward.
Catching Calm – "whisper therapy"	Do not ignore your dog when it is being quiet and good – praise it! Be vigilant in watching for any spontaneous calm or desirable behaviour and be sure to gently acknowledge and reinforce it with a gentle whisper of "Good dog". Speak calmly and softly. The aim is for your pet to just hear the praise and know everything is ok so they can relax further – we don't want to arouse them. Eventually the "good dog" cue will become conditioned to elicit a calm / relaxation response after having been paired with this state repeatedly. Then just saying the words will help your pet relax in many different situations. Dogs can hear far better than we can so you only ever need to whisper to your dog.
"Sit to speak" Or "Protocol for deference".	This is all about structuring interactions to give your dog a reliable, effective, consistent, calm means of communicating with people to get their wants and needs met. This gives them control over their environment and will relieve uncertainly and anxiety. This is very empowering for dogs! To do this: simply encourage your pet to sit and make eye contact with you before ANY interaction with them e.g. for any attention, petting, brushing, feeding, going through a door etc. Once your pet learns all they need to do is calmly sit and defer to you by making eye contact in order to get more information about what is happening and what to do then they will be able to relax and feel in control.
"Sit/calm/look"	This is for relaxation and mindfulness.

	This exercise is also useful for impulse control. Do this for 1-2 minutes at a time, several times per day. Don't do it for too long per session or your pet will get bored and possibly frustrated. Gently and quietly reward your pet with food treats for sitting, staying and looking at you. Use clear hand or verbal signals. It encourages entering a state of relaxation where your pet doesn't have to worry about what's going on in their world. This exercise relieves anxiety by relieving uncertainty because your pet knows: what is going to happen, what to do about it and that the consequence will be positive. The aim is to get your pet to switch off and slip into a relaxed state. This is NOT about obedience. If the pet cannot engage in the exercise then simply walk away and try again later. A behavioural trainer can demonstrate this exercise for you at a consultation as it is of fundamental importance to get it right. This exercise forms the solid foundation on which we later build. We need the pet to be able to relax on cue and to learn that they can in fact relax in order to them ask them to relax in the face of their triggers.
Protocol for deference.	"Deference" means that your dog defers to you to get information. We need your dog to be able to reliably and calmly look to you for information about the world so that they can know what is happening and get direction about how they should feel and what they should do. The aim is for your dog's default response to feeling worried or threatened to be coming to you and calmly awaiting more information or instruction so they have a strategy to cope and navigate the situation. The dog needs to know they can rely on you to offer support, assistance, reassurance and direction and help them calmly get their wants and needs met. Another way to think of this is that we are trying to teach your dog to come to you to ask "Is everything ok? Can you help me? What should I do?" when it feels anxious or scared or confused.
Go Find	Teaching your pet to search for treats tossed on the ground on cue can be a useful distraction and redirection technique to prevent or stop reactivity when triggers arise.

	Say “go find” and toss a handful of high value treats on the floor near your pet so that they can snuffle about to locate and eat them all. This can be taught at home initially, then practised when out and about in more distracting contexts.

Additional (more advanced) exercises:

Target touching or “stationing”	Teach your pet via luring and rewarding, to rest their chin on your hand or touch your hand with their nose. This is really handy to use as a distraction and re-focusing exercise when out and about if your pet starts to get aroused / anxious / distracted / reactive
Deep breath training	Taking a deep breath stimulates the parasympathetic (calming) nervous system. It is paired with physiological relaxation. Wave a high value treat close in front of your dog’s nose – as they follow the odour stream watch for the moment when they flare their nostrils and sniff the treat – immediately mark and reward this inhaling behaviour. Repeat this multiple times until the breathing in behaviour is paired reliably with the cue. Then shape for deeper and longer breaths by rewarding these differentially. Please get help from your behavioural trainer if you are finding this difficult to achieve. Timing is critical and you have to be very switched on to get it right
Desensitisation	This involves exposing your pet to their triggers at a level of intensity which is under their threshold for reacting i.e. at a level they can cope with – without getting anxious / stressed / overly aroused. We gradually increase the intensity of the stimulus as the pet learns they are able to cope. This needs to be done under the guidance of a behavioural trainer. It needs to be done very carefully to ensure the pet is becoming desensitized – not sensitized. If this is done incorrectly then it can worsen the patient. NOTE: this is paired with “counter-conditioning” – see below.
Counter-conditioning	This is the process of using classical conditioning to teach your pet to actually feel good in the presence of their triggers.

	We pair a primary reinforcer (usually high value food) with exposure to the stimulus (at a low level the animal can cope with) so that the positive emotional response to the food eventually becomes generalised to include the trigger. E.g. giving roast chicken to a dog whenever another dog is nearby – so that it learns that good consequences are associated with the presence of other dogs and thus becomes less fearful and more optimistic around other dogs. This needs to be done under the guidance of a behavioural trainer.

Management:

Management is fundamentally important to manipulate the patient's environment to set up for success, protect the patient from further harm and unhelpful "backwards" learning and provide for all of the patient's needs. Management involves ensuring the pet is safe, protected and free from fear/anxiety at all times as much is possible within the confines of our control.

General recommendations: helpful and encouraged for all anxious dogs

1. CEASE ANY AND ALL PUNISHMENT OR NEGATIVE INTERACTIONS.

- Punishment makes animals more fearful and anxious which worsens their stress and can cause or worsen aggression.
- Your pet needs to have complete faith that you will always help them make their way in this world and be the source of positive experiences, not scary, confusing, unpredictable ones.
- Punishment includes physical and verbal reprimands – we must not even raise our voice at our dogs
- See handout called No Punishment for further details

2. SET UP FOR SUCCESS!

- Identify all potential triggers.
- Anticipation and reading body language / arousal zone is paramount.
- Pre-empt and intervene before undesirable emotion and behaviour occurs.
- Do not put your pet in situations which they can't cope with or in which they are likely to make bad choices or likely fail

3. “BUBBLE WRAP” THE PATIENT:

- Avoid all triggers and keep your dog under threshold for reacting or becoming stressed
- Every time they become fearful and stressed and repeat an undesirable behaviour, this causes harmful learning which can never be erased and sets them backwards.
- The aim is to ensure they stay in GREEN ZONE. Avoid any situations which cause their arousal and anxiety to go into yellow or red zone
- This may require strict and diligent management initially eg not going for walks if your pet can’t remain relaxed out and about
- Often less is more for special needs patients – they need time during the initial phases of treatment to relax, stabilise and have less to worry about

4. CREATE AND ADHERE TO A SET ROUTINE:

- This helps animals feel calm and in control as they know what to expect and what to do
- Anxiety is all about uncertainty – knowing what is going to happen and that everything is going to be ok will alleviate anxiety
- Anxious dogs need routine and predictability to be better able to cope with the world

5. CREATE A SAFE SPOT or SANTUARY (“ZEN DEN”):

- Ensure a safe retreat for your pet where they can seclude themselves to help shut out the world and control their own anxiety
- A covered crate or other confined area is ideal
- They must never be bothered when in there and must never be forced or locked in. They must be free to come and go as they please
- They will likely need to be first trained to use this area and to associate positive emotions and feeling calm with this spot
- Using Adaptil pheromone in this area is recommended
- A behavioural trainer can assist with this training process

6. MAT / PLACE TRAINING:

- Being able to ask your pet to go to a mat / bed on cue and relax there is a fundamentally helpful tool in controlling their behaviour
- It allows you to direct their movement and helps them know what to do as a default pattern when things are going on around them or they are getting worried

7. ENRICHMENT:

- The aim is to meet and exceed the physical, psychological and behavioural needs of the pet
- Increase the time budget spent in positive, productive, focused, engaging activities which are enjoyable and incompatible with feeling anxious

- Such activities are a natural boost for helpful positive neurochemicals which compliment medical treatment
- Examples include:
    - Creative feeding: Food dispensing toys, stuffed Kongs, stuffed and frozen toilet rolls, long-lasting chews, lick plates etc
    - Scent work: scatter searches over large areas with small bits of food encourage your pet to use their instincts and nose to find the treats
    - Aerobic exercise: boosts serotonin and is inherently enjoyable. Be sure the exercise is appropriate for your pet physically and psychologically i.e. not free play with other dogs if your dog is scared of other dogs – instead a game of chasey around the yard might suffice.
    - Play: toys, tug or just running around! Whatever your pet loves. Anxious pets often struggle to play as it is a luxury that is engaged in when they feel calm and happy. It might take time at first but is worth it
    - Training: Aids communication and is very stimulating for dogs. Keep sessions short and super positive. Use really high value rewards to boost motivation. NOTE training will need to be kept very simple and easy for anxious special needs dogs
        - Relaxation exercises e.g. Sit/Calm/Look as described above
        - Physical contact e.g. massage, petting, grooming – provided your pet is comfortable with these activities

Other recommendations which may be helpful for certain patients:

1. MUZZLE TRAINING:

- This is a consideration for some pets who display anti-social behaviour and aggression as part of the way they cope with their anxiety.
- A muzzle ensures a fail-safe barrier to reduce a bite being inflicted if they do find themselves in a situation where they are over-aroused, reactive and at risk of being aggressive.
- **It also serves as a really helpful visual signal to keep people and their dogs away! This will really help ensure your pet gets the space they need out and about and is not approached by people and their dogs.**
- The aim is to ensure the pet is happy, comfortable and content wearing a muzzle.
- A plastic basket muzzle must be used – NOT a fabric muzzle. A basket muzzle allows the animal to pant, drink, eat etc as they can still open their mouths. A fabric muzzle causes dogs to be stressed and overheat as it holds there mouth shut.
- The muzzle should be considered a “treat basket” or “party hat”.
- This has to be done gradually and carefully as we must set up positive emotional associations with the muzzle.
- Your pet must be rewarded for successive approximations of interacting with and wearing the muzzle.

- Slow and steady is the ticket!
- The muzzle must not cause extra stress to the animal or serve as a trigger.
- It is recommended to do this under the guidance of your behavioural trainer.

Figure 1: Muzzle

2. VISUAL AIDS:

- There are many bright coloured clothing and equipment items on the market which serve as clear visual aids to warn people of dogs who are fearful / anxious / aggressive.
- Such things can be purchased online or from major pet stores.
- Pets could wear a special collar, lead and vest when out and about to signify to others that they need space and should not be approached.
- This helps us provide for the patient's needs as well as ensuring safety for members of the public and their pets.

Figure 2: Visual Aid

3. CALMING CAP: available online or at large pet stores

- Reduces visual stimuli in situations where they may get over-aroused or anxious
- Helps calm the dog down by placing gentle pressure on their eyes (stimulates the parasympathetic nervous system)
- Must be introduced gently, slowly and with positive counter-conditioning to ensure the dog tolerates and enjoys wearing it.
- We MUST avoid making the dog fearful of it.
- Often helpful for triggers or stressors such as going to the vet
- NOTE: these are great for some dogs but not others – some dogs benefit from the reduced visual input but others get more anxious as their ability to see and gather information is compromised.

Figure 3: Calming Cap

Monitoring:

How do we know if the patient is improving? What do we look for?

Monitoring is extremely important. Behaviour patients need to be closely and diligently observed and objectively assessed so that any subtle changes can be noted and acted upon. Without proper and accurate monitoring, we cannot gauge if treatment is working and to what extent. Without the right information, treatment is often delayed, interrupted and sub-optimal.

Often when we see our pet every day we find it difficult to notice them changing and we may forget what they were once like. This is why it is so important to make recordings.

Don't forget: behavioural treatment is all about trying to rebuild and redesign a brain! This is often a slow process and we need to be sure to note any subtle or mild changes to know if we are making progress.

Please keep a diary relating to your pet's behaviour.

Be sure to note the **FID (frequency, intensity, duration)** for EACH of your pet's problem behaviours:

1. **FREQUENCY:** How often does the behaviour occur?
2. **INTENSITY:** When it does occur, how severe is it? What level of arousal/distress is the pet in? How readily can they be interrupted / distracted?
3. **DURATION:** How long does the behaviour occur for and last? How easily does the patient recover, settle and return to baseline? What level of resilience do they show?

It is ideal to rank **the FID out of 10 for each problem behaviour** with 10 being the worst the behaviour ever was (i.e. before any treatment) and 0 being the problem has completely resolved and disappeared.

See monitoring table below as an example of how to record:

DATE:	PROBLEM BEHAVIOUR	SCORE / 10 (10 = worst, 0 = best)			
		FREQUENCY	INTENSITY/ SEVERITY	DURATION	AVERAGE

You can also keep a "traffic light calendar" for your pet. In this you record when and why your pet enters the different traffic light zones of arousal (blue, green, yellow, red).

Date	Time	Zone (blue, green, yellow, red)	Reason

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