

Storm
Phobia:
It's Not Just
About the
Boom

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GENERALIZED ANXIETY - REACTIVITY

- State of anticipation in the presence of a threat or loss
- Initially can be functional and adaptive
- Chronic stress facilitates increased fear responses and escalation of behaviours
- If unresolved, dogs will manifest ongoing distress or learned helplessness

STRESS BEHAVIOURS

- Any situation where dog is motivated to behave in one way but is prevented from doing so
- REDIRECTED BEHAVIOUR
- Sniffing/licking on the floor, playing with inanimate object, visual scanning, excessive activity, destruction of property
- DISPLACEMENT ACTIVITY
- Licking/scratching his own body, mounting, body shaking, yawning, stretching, vocalization, swallowing, self-harm
- APPEASEMENT GESTURES
- Blinking, looking away, closing both eyes, averting eyes, lying down/exposing belly, turning body away, nose/lip licking, yawning, lifting a paw

NOISE/STORM PHOBIAS

- Diagnosis based on intense and disproportionate response to particular stimuli
- Clients may describe excessive avoidance and panic-related behaviours or catatonic-like states
- Physiological response triggered by the sympathetic branch of the autonomic nervous system
- Extreme negative affective state interferes with ability to be soothed and to learn

RISK FACTORS

Genetics

- Multiple gene involvement
- Herding breeds over-represented
- Phobic relatives within breeding lines
- Noise phobia is not a “normal response” in certain breeds but a pathological condition

Physiology

- Some animals predisposed to becoming statically charged

Experience

- Difficult to determine which dog will become phobic
 - Dogs may present before two-years-old
 - Dogs who have been “apprehensive” during storms will experience a flooding episode, possibly due to static electrical discharge, as a mature individual

HUMAN FACTORS CONTRIBUTING TO NOISE ANXIETY

- Client believes that exposing dog to loud noises is “good for them”
 - Inadvertently creates opportunity for flooding
- Client ignores early signalling that dog is triggered by certain noises or conditions
- Inconsistent responses to anxious behaviour from incident to incident and among family members

BODY LANGUAGE ASSOCIATED WITH FEAR

COMMON CLIENT RESPONSES

- Over-protective

- Client is over-protective and does not promote resilience
- Client emotional response may contribute to increasing anxiety

- Controlling

- Verbal and physical punishment in the face of anxious behaviours and property destruction
- Anticipation of punishment may contribute to increasing anxiety

TYPES OF NOISE PHOBIAS

Household noises

Construction/heavy traffic

Gunshot

Fireworks

Wind storms

Thunderstorms

HOUSEHOLD AND CONSTRUCTION/TRAFFIC NOISE

FIREWORKS

- Extreme visual stimulus associated with the bright explosive effects trigger different associations than storms
- Olfactory stimuli related to air-borne residual chemicals may compound sensitization
- Treating noise sensitivity is foundation of treatment
- Add desensitization for visual triggers as necessary for the individual dog

Dog response to recorded firework noise before and after desensitization and counter-conditioning using self-help CDs as reported by owners (Levine et al. 2007)

CHALLENGES IN STORM PHOBIA TREATMENT

- Complexity of multiple triggers – auditory (wind, rain, thunder), visual (lightning), olfactory (ozone, nitrogen oxides), tactile (rumbling in environment, static electricity, changes in barometric pressure)
- Behavioural modification must be addressed in numerous different locations, including different rooms in the home
 - Anxious dogs may not easily generalize new learning to all environments
 - Ask clients to define at least three distinct contexts/environments where they will perform training

PILLARS OF TREATMENT

- Establish Safe Haven space (may be multiple)
- Relaxation Therapy
- Desensitization
- Counter-Conditioning
- Pharmaceutical Intervention
- Adjunctive Therapy

CLASSICAL CONDITIONING

- Involves placing a neutral signal before a reflex and focusing on involuntary behaviours
- The introduction of a neutral stimulus such as an object (rubber-backed mat), sound (classical music), or smell (synthetic pheromone) when the dog is in a relaxed state
- Pair the neutral stimulus and relaxed dog in a new environment until an association is made
- The object, etc. becomes the conditioned stimulus and the relaxed state within the new environment is the conditioned response
- Foundation for Safe Haven experience and Desensitization exercises

ENVIRONMENTAL MODIFICATION: CREATING A SAFE HAVEN

- Remove dog from scary situation
 - Basement, other room with no windows/covered windows
 - Consider sound-proofing with thick curtains or wallboard
 - Use rubber-backed mats to help “ground” the dog
 - An open-door crate or other favourite bedding/furniture
 - Keep lights bright
 - Use music, such as classical or reggae, to mask thunder noises (maybe not the 1812 Overture in initial stages)
 - Offer food, water, toys, and training activities
- Ensure dog has been acclimated to this space during prior to calming protocols, desensitization and counter-conditioning exercises

OPERANT CONDITIONING

- Involves applying reinforcement after a behaviour to strengthen a voluntary behaviour
(conversely applying a punishment to weaken a behaviour)
- An association is formed between the behaviour and consequences for that behaviour
- The dog is rewarded, which entices him to participate actively in the learning process
- Foundation for Relaxation Exercises

ENCOURAGE CALM BEHAVIOUR IN BOTH DOG AND CLIENT

- Determine specific positive reinforcers for the dog
 - Start with food rewards directly from the owner
 - Work toward foraging activities and food puzzles/toys that do not require owner presence
- Use a rubber-backed mat as a visual cue and mini-Safe Haven
- Explain the importance of choice in motivating canine learning and promoting relaxation behaviours
- Encourage the owner to have fun with their dog
- Always end training sessions on a positive note

NO PLACE FOR PUNISHMENT IN TREATING ANXIETY

- Utilizing positive punishment (verbal and physical) and compulsion techniques will increase anxiety
- There is no benefit to establishing “dominance hierarchy” models in treating anxiety
- Clients need to understand behaviour modification programs are not about getting a dog to perform perfectly but to improve doggy confidence

CALMING EXERCISES

- Encourage simple command and trick training with positive reinforcement
 - The dog is mentally stimulated by positive interaction with the owner and food reinforcers
- Teach the dog to focus on the client
 - Initially the dog derives confidence from the owner's presence
 - Use Target Training to encourage slow, deep breathing
 - See Karen Overall's Protocol for Relaxation
- Teach the Bucket Game to encourage calm focus away from the client
- Reward increasing approximations of relaxed behaviour with food, verbal and hand praise

BUCKET GAME VIDEO

DESENSITIZATION

- Process by which an emotional response to an aversive stimulus is DIMINISHED via repeated exposure to the stimulus
- We begin at a level below threshold of response and increase the intensity of the stimulus as we observe a neutral or positive response to counter-conditioning exercises
- Coach clients about canine body language
 - Improved opportunity for success when owners recognize early signs of anxiety and panic

NOISE-ONLY DESENSITIZATION

- Clients need to understand that noise desensitization is only a part of the treatment process
- Noise stimuli may not be the trigger for all storm phobic dogs
- Additional desensitization exercises may be employed as dog experiences success
 - Waving branches, fans to mimic wind
 - Sprinklers to mimic rain against windows
 - Flashing lights to mimic lightning

STORM RECORDINGS

- A number of online and commercial thunderstorm recordings are available
- Determine threshold of sounds at which:
 - Dog notices the noise with an ear flick or head nod and continues normal activity
 - We will start desensitization exercises below this threshold
 - Avoid threshold at which dog begins to show anxious body language or behaviour like lip licking, tucked tail, panting, or tense body posture
- Gradually increase volume over several weeks
- Acclimated recordings or other types of music, fans, white noise can be used during actual storms

COUNTER-CONDITIONING

- The process of CHANGING the emotional response to an aversive stimulus by pairing it with something of innate value (food, toy, client attention)
- We can avoid flooding experience if the dog maintains a positive emotional state
- Here we combine the different aspects of training that we have building to encourage calm behaviours in the face of storm-based stimuli
- Once program is complete, clients must ensure regular exposure in different environments to maintain positive associations
- Add desensitization program for additional triggers as required for the individual dog

Would
rather
destroy
raccoon
than take
treats
today

PHARMACEUTICAL INTERVENTION

Event-Based Medication

Vs

Long-term Anxiety Therapy

EVENT-BASED MEDICATION

BENZODIAZEPINES

Alprazolam

Dose 0.02-0.1 mg/kg one to two hours before a storm

Benefit of retrograde and anterograde amnesia but short-term learning also impaired

May cause undesirable sedation and ataxia

Disinhibition with paradoxical excitement possible

Phenobarbital 2-5 mg/kg can be used in combination with alprazolam

Use trial dosing to determine appropriate dose while monitoring for adverse responses

Clonazepam may have a shorter duration but also less likely to cause side effects

EVENT-BASED MEDICATION

SEROTONIN ANTAGONIST AND REUPTAKE INHIBITORS

Trazodone 2-8 mg/kg given one to two hours before event

Can give a loading dose the morning of or evening before event

Sedation may be noted at higher doses

Unlikely to cause serotonin syndrome in combination with SSRIs or TCAs when lowest effective doses are used

Monitor for signs of anxiety, agitation, and pacing

LONG-TERM ANXIETY THERAPY

SELECTIVE SEROTONIN REUPTAKE INHIBITOR

Fluoxetine 0.5-1 mg/kg up to 40 mg total dose given q24h

Paroxetine 0.5-1 mg/kg up to 40 mg total dose given q24h

Owners may initially see some sedation but will take 4-6 weeks before full effects within brain

Other side effects include anorexia, GI effects, anxiety, irritability, aggression, lowering of seizure threshold

Begin month or two prior to thunderstorm season

If requested by owners, wean off at 25% decreasing dose every week after season is finished

LONG-TERM THERAPY

TRICYCLIC ANTIDEPRESSANTS

Clomipramine 2-3 mg/kg divided q12h

Owners may initially see some sedation but will take 4-6 weeks before full effects within brain

Other side effects include anorexia, GI signs, and tachycardia

Begin month or two prior to thunderstorm season

If requested by owners, wean off at 25% decreasing dose every week after season is finished

PHARMACEUTICAL INTERVENTION

Other medications that may be of interest

Clonidine 0.01-0.05 mg/kg prior to event

TCAs may block the antihypertensive effects

Dexmedetomidine (still waiting for Sileo) 125 ug/m² prior to event

Owner must wear gloves and use in prescribed dosing syringe

Meant to be absorbed by oral mucous membranes not given orally

ADJUNCTIVE THERAPY

- Pressure Apparel (with and without anti-static lining)
- Head Gear to cover eyes and/or ears to minimize exposure to stimulus
- Synthetic Pheromones
- Nutraceuticals: L-theanine, alpha-casozepine, pro-biotics
 - Best used as part of long-term management strategy in mild cases as opposed to event-based therapy

DOGS DO NOT READ JOURNALS

- There is no specific timeline which can be guaranteed for desensitization and counter-conditioning protocols
- Recommend clients start behavioural modification plan in early spring
- Improvement in calm behaviour may be noted quite early in program but desensitization and counter-conditioning can take months
- Pharmaceutical intervention plan should be recommended before storm season
 - Long-term pharmaceutical management can take 4-6 weeks before full effect
 - Trial therapy with short-term event medications will allow for observation of undesirable side effects

The one
thing
anxious dogs
don't worry
about –
Solar Eclipses