

Pharmacologic treatment of situational fear and anxiety in dogs: Travel, vet visits, thunderstorms, and fireworks

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Learning Objectives: At the conclusion of this lesson, participants will be able to:

- Recognize behavioral signs in dogs associated with fears and anxieties
- When given a case scenario of an anxious or fearful dog, develop a pharmacologic treatment plan

Introduction:

Dogs suffer from a number of behavioral disorders, including fear, anxiety, phobia, and stress. Since there is some confusion about the meaning and use of these words, to avoid confusion, they are defined, below.

--Fear is an emotion of alarm and agitation caused by a real or threatened danger. Among animals, fear is manifest by physiological responses such as tachycardia, hypersalivation, or elimination, and behavioral responses associated with escape, avoidance or defensiveness. Fear responses occur in response to the presence or proximity of an object, individual, or social situation.

--Anxiety is a reaction to an unreal or imagined danger or uncertainty. Anxiety includes both physiological signs (increased respiratory and heart rates, vasomotor changes, trembling or paralysis, increased salivation or sweating, gastrointestinal disturbances, etc.) as well as behavioral signs. The behavioral signs may include changes in activity (immobility, pacing, circling, restlessness), changes in nearest neighbor distances, reluctance to eat, etc.

--A phobia is a marked, persistent and excessive fear of clearly discernible, circumscribed objects or situations. Exposure to a phobic stimulus almost invariably provokes an immediate anxiety or fear response. The response may take the form of a situationally-bound or situationally-predisposed "panic attack". Phobias often lead to avoidance behavior.

--"Stress" is a term used to describe a state of chronic anxiety and distress that impairs normal functioning and competence, and may be associated with frustration, fatigue, agitation, and inability to relax. Scientifically, stress refers to permutations in the hypothalamic-pituitary-adrenal axis, causing an increase in endogenous steroids and is characterized by increased heart rate and respiratory rate. In dogs, these negative welfare states may be difficult to differentiate.

Animals in these states show physical signs, including: ↑ resp. rate, ↑ heart rate, trembling, hypersalivation, dilated pupils, loss of bladder/bowel control, and anal gland expression. Behavioral signs include: aggression, anorexia, attention-seeking, barking, catatonia, destructiveness, hiding, hyperattachment, immobility, pacing, restlessness, self-injurious, and whining as well as postural signs.

The cause of fears, phobias or anxiety states varies from individual to individual. Often a specific cause cannot be identified. In certain cases, a specific frightening event triggers future responses. Some potential etiologies include: inadequate socialization and impoverished early experience, innate (heritable) response, breed or individual temperament predispositions, learned responses through traumatic experiences, or a combination of one or more of these potential etiologies.

In this talk, pharmacologic management of dogs' specific responses to travel, veterinary visits, thunderstorms, and fireworks will be discussed. Since these events are transient and episodic, situational medication is indicated (Table 1). Management is most successful when events are predictable, allowing affected dogs to be medicated in advance. Common situational medications include benzodiazepines, trazodone, and transmucosal dexmedetomidine, and clonidine.

Treatment Strategy (Table 1):

- Client should "test drive" the situational drug and dose before the inciting event.
- If possible, administer the situational drug BEFORE starting travel preparations, i.e. getting in car to go to vet, before thunderstorms, and before fireworks.
- If this is not possible, give the situational drug as soon as possible when the event begins.
- Positive behavioral management (not punishment) should be utilized in combination with the drug(s)

--The first dose of the situational drug may be given the day prior to the event to increase the effectiveness of the situational drug. . May increase event of situational drug to give first dose the day before the event.

--All situational drugs may be used in combination with daily SSRIs, such as fluoxetine.

Table 1

Drug Class	Drug	Approximate Onset of Action	Approximate Duration of Action
Benzodiazepine	alprazolam	60-90	medium
	diazepam	30-60	long
	lorazepam	60-90*	medium
	clonazepam	60-90	long
SARI Serotonin Antagonist & Reuptake Inhibitor	trazodone	1-2 hr	4 hr
Alpha-2 agonist	dexmedetomidine Sileo©	20-40 min	2 hr (may redose)
	clonidine	1 hr	4+ hr

*No active metabolites

Additional Resources (access via <https://scholar.google.com/>)

--Gruen ME, Sherman BL, Drugs Affecting Animal Behavior, In Veterinary Pharmacology and Therapeutics, 10th edition (Papich MG, Rivier JE, editors), Ames IA: Wiley-Blackwell, 2018.

-- Gruen ME, Roe S, Griffith E, Hamilton A, **Sherman BL***. The use of trazodone to facilitate post-surgical confinement in dogs. *J Am Vet Med Assoc* 2014; 245:296-301.

-- Gruen ME, **Sherman BL**. Use of trazodone as an adjunctive agent in the treatment of canine anxiety disorders: 56 Cases (1995-2007) *J Am Vet Med Assoc* 2008;233(12):1902-1907.

--Horwitz DF, Blackwell's Five Minute Veterinary Consult, Clinical Companion: Canine and Feline Behavior, 2nd edition, 2018.

--Landsberg G, Hunthausen W, Ackerman L, Handbook of Behavior Problems of the Dog and Cat, 3rd Edition, 2013.

--Merck Veterinary Manual Behavior Drug Formulary:

<http://www.merckvetmanual.com/behavior/behavioral-medicine-introduction/principles-of-pharmacologic-and-natural-treatment-for-behavioral-problems>

--Ogata N, Dodman N. 2011. The use of clonidine in the treatment of fear-based behavior problems in dogs: an open trial. *J Vet Beh* 2011;6:130-137.

--Korpivaara M, Laapas K, Huhtinen M, Schoning B, Overall K. Dexmedetomidine oromucosal gel for noise-associated acute anxiety and fear in dogs—a randomised, double-blind, placebo-controlled clinical study. *Vet Record*. 2017:180.