INTRODUCTION
Canine fears are not necessarily maladaptive but can intensify over time, interfering with the dog’s quality of life and the dog–owner interaction. Fear is a conscious response to avoid a stimulus and can manifest as freezing, fleeing, fighting, and fidgeting. Anxiety, a response to the anticipation of danger or uncertainty, can be mild or so severe as to interfere with the dog’s ability to function. A phobia is an exaggerated fear that is out of proportion to the level of danger and is generally maladaptive. Sensitivity to noise, one of the most common behavioral concerns of dog owners, may provoke any of these responses.

Both underlying anxiety and learned response to storms may influence the development of storm-related fears. Dogs that are afraid of thunderstorms normally respond by attempting to escape, hide, or seek comfort during a storm. Through repeat exposure, some dogs determine that storms are not a real threat as they become accustomed to the noise and barometric changes, whereas other dogs display a variety of anxiety-related behaviors. An individual dog’s reaction to thunderstorms may be categorized as normal, fearful, anxious, or phobic.

TREATMENT
Environmental Management
- Limit the dramatic visual stimulation of lightning flashes by covering windows or keeping the room brightly lit.
- Use the television or DVDs as counteracting visual stimuli.
- Mask thunderstorm sounds with competing noises, such as fans, music, television, or white noise.
- Apply a sound-muting head wrap.
- Encourage use of a safe area in the home where visual and auditory stimuli can be reduced, such as closets, covered crates, bathrooms, or basements.
- Cover the dog’s crate with sound-blocking materials.

Behavior Modification
- Do not punish a dog for behaviors related to fear or anxiety—punishment never reduces fear.
- Ignore fearful behavior if the dog can recover naturally and without intervention.
- Use favored rewards (treats, toys) to reinforce any decrease in anxiety and help the dog return to a positive emotional state more quickly.
- Assist the phobic dog if the dog’s reaction is extreme or disproportionate to the stimulus and cannot recover spontaneously. These dogs might benefit from reassurance, massage, or cues to settle. High-level rewards, products that might reduce anxiety (eg, shirts, wraps, anti-static capes, head halters), and drugs or natural supplements may be helpful.
- Change the significance of the storm by having “storm parties” during which the dog gets lots of treats and playtime.
PHARMACOLOGIC AND NATURAL ANXIOLYTICS

Early intervention is most helpful because the dog learns from each negative experience. Easing anxiety when the pet’s response is minimal may prevent a serious reactivity to storms from developing. In addition, the welfare of the pet is best served by reducing states of anxiety, panic, or phobia. Owners may be more amenable to providing treatment with natural supplements that are perceived to have fewer side effects. However, a product is not necessarily safe just because it is natural, and clinicians should exercise caution when recommending supplements because of the high potential for a placebo effect. Treatment should be selected on the basis of available evidence and the clinician’s experience with the patient, client, and problem.

Desensitization and Counter-Conditioning Program

- Controlled exposures must be done before the storm season.
- Settle the dog at the beginning of exposure session, then maintain its focus on the trainer and rewards and not the stimulus.
- Play thunderstorm-related noise at sufficiently low intensity so fear or anxiety is not evoked.
- Aim to expose the dog to gradually more intense levels of the stimuli while it remains relaxed.
- Guide the dog to appropriate behavior and reward.
- Use clicker training, target training, and lure reward to help move more quickly and practically to the desired outcome.
- Techniques may be applied to mild real storms, but ideally the dog should not be exposed to severe weather during the conditioning program.

Pharmacologic Therapeutics

Clomipramine and fluoxetine are licensed for behavioral use in dogs in North America. Randomized, controlled clinical trials have demonstrated the efficacy of these agents in the treatment of separation anxiety in dogs when administered in combination with a program of behavioral modification. Several studies have shown these drugs to be efficacious adjuncts to other medications and behavior programs for treating storm phobias and other anxieties.

Natural Anxiolytics

Dog Appeasing Pheromone (DAP®, ceva.com) is a synthetic pheromone that has been reported to be effective for reducing firework fears when owners ignore problem behaviors and use desensitization and counter-conditioning techniques. Some evidence suggests that l-theanine and alpha-casozepine might also help reduce fear and anxiety in dogs.

Harmonease® Chewable Tablets (harmoneasevet.com) are a proprietary blend of extracts of Magnolia officinalis and Phellodendron amurense for the treatment of stress-related behaviors in dogs. The active botanical ingredients in the extracts in Harmonease have been identified as honokiol, magnolol, and berberine, each of which has demonstrated anxiolytic properties in people, rodents, chicks, and dogs. In 2 pilot studies involving kennelled dogs, daily treatment for 6 days resulted in a reduction of fear and anxiety-induced behaviors, such as licking, spinning and cowering.6

Assessment of behavior interventions for storms by clinical trial poses many unique challenges. CanCog Technologies (cancog.com)3 has developed a laboratory model of noise-induced anxiety in dogs that uses an open-field testing room and a recording of thunderstorm sounds.5 The model measures stress-related clinical signs before, during, and after exposure to the recording, such as distance the dog travels, inactivity duration, and inactivity frequency. Using this model in a crossover study of 20 dogs after 6 days of therapy, significantly more dogs receiving Harmonease had improved response than those dogs in the placebo group, and more in the latter group worsened. On the basis of this placebo-controlled laboratory study, clinical observations, and studies in other species, Harmonease Chewable Tablets have been shown to be effective for alleviating signs of anxiety in dogs.6

EXPECTATIONS

The challenges to overcome fear of stimuli controlled by storm-related noises are to identify all stimuli that might lead to the fear response and to develop a gradient of exposure. A comprehensive program of management, behavior modification, and anxiolytic support should, at a minimum, prevent the dog’s storm-related anxiety from worsening. With patience, education, and dedication, many owners can successfully alleviate their dogs’ fears, phobias, and noise aversions.

REFERENCES